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TARAGO RAIL CORRIDOR AND TARAGO AREA DETAILED SITE INVESTIGATION

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Description **This detailed site investigation presents the results of an assessment of contamination within the rail corridor at Tarago and impacts from the contamination within the rail corridor on the Tarago Area.**

Revision	Date	Prepared by	Checked by	Approved by	Description
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EXECUTIVE SUMMARY

Ramboll Australia Pty Ltd (Ramboll) was engaged by John Holland Rail Pty Limited (JHR) to assess and provide management advice relating to contamination within the rail corridor at Tarago. Previous investigation identified contamination within the corridor along approximately 1000 lineal meters and this area is here-in referred to as the 'site' (presented as **Appendix 1, Figure 1**). Data gaps were identified relating to potential contaminant migration through groundwater and surface water.

A community meeting was held on 9 March 2020 at which community stakeholders raised concerns that contamination from the rail corridor may have impacted the surrounding area. The community was particularly concerned that offsite contaminant migration may have occurred during recent rail loop extension works and requested further assessment of potential community exposure to lead via airborne dust.

The objective of this investigation was to assess the nature and extent of the Contaminant at the site and the migration of the Contaminant from the site.

The scope of works completed included:

1. Review of previous investigations and preparation of a preliminary conceptual site model.
2. Supplementary assessment of the vertical extent of the Contaminant and test pitting of the former Loadout Complex on a systematic pattern to delineate the Contaminant within the site
3. Installation of a groundwater monitoring well network targeting the site and surrounding environment. This work included:
 - 3.1. Drilling of seven boreholes and collection of soil samples
 - 3.2. Installation of seven new groundwater wells
 - 3.3. Groundwater sampling of new and existing wells
 - 3.4. Laboratory analysis for soil and groundwater samples.
4. Assessment of offsite Contaminant migration in surface water and sediment. This work included co-located sampling of surface water and sediment onsite and within the receiving environment at 10 locations. All samples were analysed for the Contaminant and other metals potentially
5. Assessment of lead in public road reserves by field portable x-ray fluorescence (XRF) metals analyser
6. Assessment of lead at 43 discrete properties
7. Installation of an air quality monitoring network targeting the environment
8. Refinement of the conceptual site model
9. Preparation this report.

Key findings of this investigation were:

1. The Contaminant has been delineated onsite within the rail formation, adjacent shallow soils and drainage lines. Investigation within the footprint of the former Loadout Complex identified the Contaminant at depth though this is considered unlikely to present a risk to human health or the environment.
2. The Contaminant has not impacted groundwater. All contaminant concentrations measured in groundwater at all locations tested were reported below the Australian Drinking Water Guidelines and guidelines relevant for potable use. Some metals in groundwater exceed criteria relevant to protection of ecology. Impacts to groundwater from site contamination are considered to be low and acceptable and no further investigation is warranted.
3. Offsite migration of the Contaminant and other metals has occurred via surface water. Deposition of elevated metal concentrations in surficial soils appears to have occurred in land immediately east of the site and across Boyd Street onto other nearby properties.
4. Surface water impacts to the Mulwaree River are not evident.
5. Offsite migration of the Contaminant has occurred in airborne dust. Elevated concentrations of lead in rainwater tank sediment and internal dust were identified in close proximity of the site indicating limited off site migration of contaminants in air borne dust has occurred. Dust monitoring is ongoing however early data suggests migration of lead in dust from the site is now low.
6. All contaminant concentrations measured in rainwater tank water at all locations tested were below the Australian Drinking Water Guidelines and guidelines relevant for all potable use. Based on risks from metals rainwater tank water is considered suitable for all potable uses and unimpacted by contamination from the site.
7. High metal concentrations have been identified in local public road reserves and (with the exception of Boyd Street) appear to be unrelated to the rail corridor.

Key recommendations are:

1. Further Investigation is recommended to confirm the extent of offsite contaminant migration via surface water and to delineate the Contaminant at depth within the footprint of the former loadout complex buildings
2. Remediation is required onsite and offsite to address risks associated with the Contaminant
3. An Action Plan should be developed to mitigate risks associated with site contamination until remediation can occur
4. Ongoing monitoring of surface water and air quality should occur until a long term remedial strategy is implemented and proven to be effective.

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ABBREVIATIONS

	Description
%	per cent
µg/L	Micrograms per Litre
µg/m ³	Micrograms per Cubic Metre
Ha	Hectare
Km	Kilometres
M	Metre
mAHD	Metres Australian Height Datum
Mbgl	Metres below ground level
mg/kg	Milligrams per Kilogram
mg/L	Milligrams per Litre
mg/m ³	Milligrams per Cubic Metre
mm	Millimetre
ppm	Parts Per Million
ADWG	Australian Drinking Water Guidelines
AHD	Australian Height Datum
ANZECC	Australian and New Zealand Environment and Conservation Council
BaP	Benzo(a)pyrene
BTEX	Benzene, Toluene, Ethylbenzene & Xylenes (Monocyclic Aromatic Hydrocarbons)
CH	Chainage
CLM Act	NSW Contaminated Land Management Act 1997
COC	Chain of Custody
Council	Goulburn Mulwaree Shire Council
DP	Deposited Plan
DQI	Data Quality Indicator
DQO	Data Quality Objective
EIL	Ecological Investigation Level
EMP	Environmental Management Plan
EPA	Environment Protection Authority (NSW)
ESL	Ecological Screening Level
Eurofins	Eurofins Environment Testing
GIL	Groundwater Investigation Level
GME	Groundwater Monitoring Event
HIL	Health Investigation Level
HSL	Health Screening Level
LCS	Laboratory Control Sample
LEP	Local Environment Plan
LOR	Limit of Reporting
Mercury	Inorganic mercury unless noted otherwise
MS	Matrix Spike
NATA	National Association of Testing Authorities
NC	Not Calculated
ND	Not Detected
NEHF	National Environmental Health Forum
NEPM	National Environment Protection Measure

NHMRC	National Health and Medical Research Council
NL	Non-Limiting
n	Number of Samples
OCPs	Organochlorine Pesticides
OEH	Office of Environment and Heritage
OH&S	Occupational Health & Safety
OPPs	Organophosphorus Pesticides
PAHs	Polycyclic Aromatic Hydrocarbons
PCBs	Polychlorinated Biphenyls
pH	A measure of acidity, hydrogen ion activity
PQL	Practical Quantitation Limit
QA/QC	Quality Assurance/Quality Control
RAP	Remediation Action Plan
RPD	Relative Percent Difference
SAQP	Sampling Analysis and Quality Plan
SWL	Standing Water Level
TCLP	Toxicity Characteristic Leaching Procedure
TPHs	Total Petroleum Hydrocarbons
TRHs	Total Recoverable Hydrocarbons
UCL	Upper Confidence Limit
USEPA	United States Environmental Protection Agency
XRF	X-Ray Fluorescence
-	On tables is "not calculated", "no criteria" or "not applicable"

1. INTRODUCTION

Ramboll Australia Pty Ltd (Ramboll) was engaged by John Holland Rail Pty Limited (JHR) on behalf of Transport for NSW (TfN) to assess contaminant impacts from the former Woodlawn Mines Ore Concentrate Loadout Complex (the Loadout Complex) which was identified as having been historically located within the Goulburn – Bombala rail corridor at Tarago, New South Wales, Australia.

Previous investigations of impacts from the activities of the Loadout Complex to soils within the rail corridor were undertaken from mid-2019 to facilitate proper management of soils during the Tarago Rail Loop Extension Project. Soil impacts within the corridor were identified along approximately 1000 lineal meters and this area is here-in referred to as the 'site' (presented as **Appendix 1, Figure 1**). Once identified, further site characterisation was completed including assessment of adjacent land and at Tarago Public School. These offsite locations were selected to assess potential migration pathways and a key sensitive receptor within the local area. These investigations indicated impacts from site contamination in the rail corridor to offsite receptors had likely occurred to a residence adjacent the corridor and to surface water discharging from the rail corridor after rainfall. However, data gaps were identified in the assessment of potential offsite impacts associated with dust, groundwater and surface water pathways.

This investigation focusses on further characterisation of the site and the Tarago area to complete site characterisation; determine potential offsite migration pathways; and assess potential impacts to human health and the environment.

1.1 Background

Ramboll has assisted JHR to date in the management of rail worker exposure to contamination during and after construction to extend the Tarago Rail Loop. Ramboll has also completed an assessment of risks to other human health and ecological receptors within and surrounding the site. This previous assessment included identification of data gaps that limited capacity to assess potential risks to users of Tarago Station and sensitive offsite receptors.

In November 2019 the site was notified to the NSW Environment Protection Authority (EPA) under Section 60 of the *Contaminated Land Management Act 1997* (CLM Act) and on 25 March 2020 the NSW EPA declared the site to be significantly contaminated under Section 11 of the CLM Act (Declaration Number: 20201102; Area Number 3455). The site was published on the EPA's list of notified sites as "contamination is regulated by the EPA under the CLM Act". The declaration defines the substance of concern ("the Contaminant") in soil as lead described as follows:

1. lead concentrations in soil within the rail corridor (Lot 22 DP1202608) exceed national guideline values for the protection of human health and the environment
2. lead contamination has impacted adjacent land at 106 Goulburn Street, Tarago (Lot 1 DP816626), with soil found to contain lead at concentrations exceeding national guideline values for the protection of human health and the environment
3. there are complete exposure pathways to lead for occupants of 106 Goulburn Street, as well as potentially complete exposure pathways for persons working within the rail corridor and
4. there are potentially complete exposure pathways for onsite and offsite ecological receptors.

A voluntary management proposal (VMP) was prepared to define how the Contaminant and associated risks would be managed and this was approved by the NSW EPA on 28 May 2020. Principal features of the VMP as relate to assessment of the Contaminant include:

- P1. Appoint a NSW EPA auditor accredited under the Contamination Land Management Act 1997.
- P2. Collate and review data from third parties in relation to the Contaminant in soil and water in the Tarago area.
- P3. Undertake delineation of the Contaminant within the site and at the Load-Out Complex.
- P4. Install groundwater monitoring wells to assess impacts to groundwater from the Contaminant originating from the site.
- P5. Assess the potential migration from the site of the Contaminant in surface waters and sediments.
- P6. Prepare a Detailed Site Investigation report.

1.2 Objectives

The objective of this investigation was to assess the nature and extent of the Contaminant at the site and the migration of the Contaminant from the site.

1.3 Scope of Work

The DSI was carried out in general accordance with the *National Environmental Protection (Assessment of Site Contamination) Amendment Measure 2013 (No. 1)* (NEPM) (NEPC, 2013).

The scope of work performed to meet the objective(s) comprised:

- 5. Review of previous investigations and preparation of a preliminary conceptual site model.
- 6. Installation of a groundwater monitoring well network targeting the site and surrounding environment. This work included:
 - 6.1. Drilling of seven boreholes and collection of soil samples
 - 6.2. Installation of seven new groundwater wells
 - 6.3. Groundwater sampling of new and existing wells
 - 6.4. Laboratory analysis for soil and groundwater samples.
- 7. Delineation of the Contaminant at and around the Loadout Complex
- 8. Assessment of the potential migration of the Contaminant from site in surface waters, sediments or dust including
 - 8.1. Assessment of the Contaminant in soils in local public road reserves by field portable XRF
 - 8.2. Assessment of the Contaminant at 43 discrete properties
- 9. Installation of an air quality monitoring network targeting the environment
- 10. Assessment of results against adopted assessment criteria
- 11. Assessment of data quality and reliability
- 12. Refinement of the conceptual site model
- 13. Preparation this report.

In order to maintain confidentiality for the Tarago community specific identifiers for private property assessments have been excluded from this DSI.

2. SITE DESCRIPTION

2.1 Site Identification

The site locality is shown in **Figure 1, Appendix 1**, a site features plan is presented as **Figures 2a – 2e, Appendix 1**.

The site details are presented in **Table 2-1**.

Table 2-1: Site Identification

Information	Description
Street Address:	Accessed from Stewart Street and Goulburn Street Tarago NSW
Identifier:	Part Lot 22 DP1202608
Site Area:	Approximately 7.5 ha
Local Government:	Goulburn Mulwaree Shire
Owner:	Transport for NSW
Current Site Use:	Forms part of the Goulburn to Bombala rail line and the Country Regional rail Network (CRN)

2.2 Land Use

The site forms part of the Goulburn – Bombala rail corridor. Review of satellite imagery and site inspection identified land use within the surrounding environment including:

1. Tarago Station (onsite).
2. A residence adjacent (east of) the site and adjacent (north of) Tarago Station. This residence is defined as 106 Goulburn Street Tarago (Lot 1 DP816626 - the Station Masters Cottage) and is known to be impacted by the Contaminant (see **Section 1.1**)
3. A residence with a dam that receives waters from the site (during surface water flow), located adjacent (east of) the northern end of site.
4. Tarago Public School approximately 120 m east of the northern end of site.
5. Residences approximately 70 m west of the south end of site and east of Goulburn Street.
6. Tarago Recreation Area approximately 300 m east of site.

3. SITE HISTORY

Site history previously presented (Ramboll 2020a) is supplemented by interview of a former employee of the load out complex and is summarised below as **Table 3-1**.

Table 3-1: Site History Summary

Site	Description
Zoning	<p>The site is currently zoned RU2 Rural Landscape under the Goulburn Mulwaree Local Environmental Plan (LEP).</p>
Council Records	<p>Council held records identified as relevant to the former loadout complex were limited to the Woodlawn Project Environmental Impact Statement (Jododex Australia 1976). The following excerpts from the EIS (Section 8.11 Transport of Concentrates) are considered relevant to the type and distribution of contamination associated with the former loadout complex:</p> <p><i>The Woodlawn project will market four products. These are a zinc concentrate, a lead concentrate and two different copper concentrates, one from the 'complex ore' and one from the 'footwall copper ore'.</i></p> <p><i>The zinc concentrate consists mainly of sphalerite (zinc sulphide), the lead concentrate of galena (lead sulphide) and both copper concentrates of chalcopyrite (copper iron sulphide). Each of the concentrates contain various proportions of the other base metal sulphides and pyrite (iron sulphide) as the main contaminants...</i></p> <p><i>Separate storages for the various types of concentrates would be provided in the shed and a passageway between concentrate stockpiles and the railway spur line will allow trucks to enter and depart from opposite ends of the building. The tipped concentrates will be pushed up by front end loader to make best possible use of the available storage space. The amount of storage capacity provided at Tarago will not be large as it is anticipated that there will be frequent dispatches of concentrates by rail from Tarago. The average quantity of material involved will be about 775 wet tonnes per day, requiring about 35 truck movements.</i></p>
Mine Owner (Heron Resources Limited) Records	<p>Review of records accessible from the website of Heron Resources Limited (the mine owner) (SRK 2015) indicate the Woodlawn deposit was discovered in 1970 and mined by open-pit and underground methods between 1978 and 1998. Additionally, the SRK report references a rail siding in Tarago that was historically used to rail concentrates to smelters in Newcastle and Port Kembla and to a concentrate berth at Port Kembla.</p>
Dangerous Goods	<p>A search of the SafeWork NSW Dangerous Goods register has not been completed as previous inspection of the site indicates all infrastructure associated with the former loadout complex (except the rail formation) has been removed.</p>
Licenses, Permits and Approvals	<p>A search of the NSW Environment Protection Authority (EPA) Public Register (www.epa.nsw.gov.au/prpoeoapp) was undertaken on 13 January 2020 and identified JHR operate the CRN under EPL 13421. EPL 13421 includes environmental limits for pollution of waters, noise, blasting, odour and dust as well as requirements for notification of environmental harm.</p>

Site	Description
EPA Records	<p>The site was notified to the NSW EPA under section 60 of the Contaminated Land Management Act in November 2019.</p>
Historical Aerial Photographs	<p>Historical aerial photographs were obtained and reviewed for the years 1960, 1976, 1985, 1991, 1997 and 2005. Review indicates the loadout complex was located approximately 20 m north of Tarago Station adjacent/over the west side of the rail formation. Loadout complex infrastructure appears to have included a loop road for truck access from the south, a truck dumping station, a conveyor from the dumping station to a larger square building and an undercover rail loading point extending over part of the rail formation (the former Woodlawn siding). The loadout complex appears to have been constructed between 1976 and 1985 with demolition between 1997 and 2005. Evidence of the loadout complex in satellite imagery after demolition appears limited to remnants of the haul road for truck access from the south. The loadout complex is identified as the main potential source of site contamination.</p>
Interview of loadout complex employee	<p>Key points from interview of a former employee of the loadout complex (and long term resident of Tarago) are summarised below:</p> <ol style="list-style-type: none"> a. The load-out complex floor elevation was approximately the same elevation as the remnant Woodlawn Siding. The current elevation across the area of the load-complex footprint is approximately one meter higher. This is a results of soil that was imported to cap the area after demolition of the buildings. b. During operation, ore was transported to the loadout complex by truck, tipped at a dump station, transported via conveyor into the main building and loaded onto rail cars using a front-end loader c. The tail gates of trucks used to haul ore from the mine to the corridor used to bang all the way down Stewart Street as they drove off and the road was green from the ore. d. Movement of sediment from the former ore concentrate load-out complex occurred during high rainfall weather events. A flood occurred in the early 1980s which washed through the load-out complex and knocked over the fences to the station masters cottage. Sediment was transported down Wallace Street and possibly across Boyd Street through the tennis courts to the River.
Historical Title Search	<p>A historical title search was not completed based on the longstanding use of the site as a rail corridor.</p>

4. PREVIOUS INVESTIGATIONS

Assessment and management support provided to JHR in relation to site contamination is provided within the following documents:

1. 'Tarago – Rail Siding Extension, Preliminary Contaminated Site Assessment' dated June 2015 by McMahon Earth Science (McMahon 2015).
2. 'August 2019 Surface Water Monitoring - Tarago Loop Extension' dated 29 August 2019 by Ramboll (Ramboll 2019)
3. 'Tarago Loop Extension Further Intrusive Assessment and Lead Management Plan' dated 11 September 2019 by Ramboll (Ramboll 2019a).
4. 'Tarago Crossing Loop Extension Short-Term Lead Management Plan' dated 11 September 2019 by Ramboll (Ramboll 2019b).
5. 'Tarago Loop Extension Preliminary Human Health Risk Assessment Ramboll' dated 17 October 2019 by Ramboll (Ramboll 2019c).
6. 'Tarago Rail Corridor Environmental Site Assessment' dated 18 October 2019 by Ramboll (Ramboll 2019d).
7. 'Tarago Loop Extension: Interim Lead Management Plan' dated 16 December 2019 by Ramboll (Ramboll 2019e).
8. 'Tarago Loop Extension Remedial Action Plan' dated 16 December 2019 by Ramboll (Ramboll 2019f).
9. 'Tarago Rail Corridor Environmental Data Gap Assessment' DRAFT, dated 30 January 2020 by Ramboll (Ramboll 2020a).
10. 'Rail Sleeper Waste Classification, Tarago Loop Extension', dated 26 March 2020 by Ramboll (Ramboll 2020b).
11. 'Tarago Air Quality Monitoring Report April 2020', dated 21 May 2020 by Ramboll (Ramboll 2020c).
12. 'Tarago Air Quality Monitoring Report May 2020' dated 3 June 2020 by Ramboll (Ramboll 2020d).

These documents are summarised in the sections below.

4.1 McMahon 2015 Tarago Rail Siding Extension: Preliminary Contaminated Site Assessment

A previous preliminary site assessment found lead levels exceeding relevant human-health guideline values in certain parts of the site (McMahon 2015). Based on review of this report Ramboll concluded:

1. A siding adjacent to Tarago Station (the Woodlawn Siding) was historically used to load lead ore from the former Woodlawn mine and this practice is identified as a source of potential contamination at the site
2. Intrusive assessment included composite sampling and analyses for a broad range of contaminants and identified contamination limited to lead along approximately 870 lineal meters of rail corridor (CH: 261.980 km to CH: 262.850 km) within the site including the siding historically used to load lead ore (the Woodlawn Siding). Ramboll recommended that the results of composite sampling as described in McMahon (2015) should be used to screen the potential presence / absence of lead impacts only. Factoring required when interpreting composite sample results (i.e. multiplying reported concentrations by the number of sub-samples) can lead to conservative interpretation of the degree of impact and composite

sample results (as described) should not be relied upon to assess risk associated with lead exposure

3. Further assessment of the degree and extent of lead impact between CH: 261.980 km and CH: 263.000 km was recommended
4. Further assessment of the Proposed Tarago Loop north of CH: 261.980 km was not considered warranted at the time and construction could proceed in this area without requirement for management measures associated with contamination. This included construction of the signal trench in this area
5. Construction of signal trench from CH: 263.027 km (the Goulburn Street level crossing) to CH: 265.200 km (the country end of the Crisps Creek Intermodal Facility) could occur without requirement for management measures associated with contamination.

4.2 Ramboll 2019 August 2019a Surface Water Monitoring

The scope of works completed under this assessment included:

1. Inspection of drain lines upstream and downstream of three culverts passing beneath the Woodlawn Siding (and adjacent lines).
2. Observation of surface water at one upstream location plus one downstream location during August 2019 and two upstream locations. Surface water was not observed upstream or downstream of the northern most culvert.
3. Collection of samples where water was observed
4. Analysis of samples for total recoverable hydrocarbons (TRH), benzene, toluene, ethylbenzene, xylenes and naphthalene (BTEXN), dissolved metal(oids)s (aluminium (Al), barium (Ba), beryllium (Be), cobalt (Co), iron (Fe), manganese (Mn), arsenic (As), cadmium (Cd), chromium (Cr), copper (Cu), lead (Pb), nickel (Ni), zinc (Zn) and mercury (Hg)), total lead and physicals/inorganics (pH, conductivity, total dissolved solids (TDS), total suspended solids (TSS), turbidity, nitrite (NO₂⁻), nitrate (NO₃⁻), ammonia (NH₃), total nitrogen (N), kjehladl N, total phosphorus (P)).

Results from the location upstream of the southern culvert were reported below assessment criteria for receiving waters. Results from the location upstream of the middle culvert included exceedances of assessment criteria however visual assessment indicated waters were likely impacted by fines from the Woodlawn Siding.

Results from downstream locations were reported above assessment criteria for receiving waters as follows:

1. Phosphate was reported at a maximum of 30,000 ug/L, above the Australian and New Zealand Guidelines (ANZG) for Fresh and Marine Water Quality criteria protective of irrigation (800 – 1200 ug/L).
2. Aluminium was reported at a maximum of 380 ug/L above the ANZG freshwater ecological criteria for 95% species protection (55 ug/L).
3. Iron was reported at a maximum of 370 ug/L above the ANZG freshwater ecological criteria for 95% species protection (300 ug/L).
4. Lead was reported at a maximum of 33 ug/L above the ANZG freshwater ecological criteria for 95% species protection (3.4 ug/L).
5. Cadmium was reported at a maximum of 13 ug/L above the ANZG freshwater ecological criteria for 95% species protection (0.2 ug/L).

6. Copper was reported at a maximum of 200 ug/L above the ANZG freshwater ecological criteria for 95% species protection (1.4 ug/L) and above the ANZG criteria protective of irrigation (100 ug/L).
7. Nickel was reported at a maximum of 19 ug/L above the ANZG freshwater ecological criteria for 95% species protection (11 ug/L).
8. Zinc was reported at a maximum of 2600 ug/L above the ANZG freshwater ecological criteria for 95% species protection (8 ug/L).

4.3 Ramboll 2019b Further Intrusive Assessment and Lead Management Plan

Works completed targeted the Woodlawn Siding and surrounds within the area identified in the McMahon assessment as being lead impacted and a 2 km length of proposed signal trench south of the Goulburn Street level crossing. Assessment was completed in July – August 2019 and assessment of the Woodlawn Siding included:

1. Advancement of nine test pits (TP1 to TP9) on approximate 100 m lineal increments through the Woodlawn Siding rail formation along the approximate 900 m where elevated lead concentrations were considered likely to exist (based on review of historic assessment);
 - 1.1. Soil conditions were logged for each of the nine test pits.
 - 1.2. Discrete soil samples were collected from each of the three distinct layers of material present within each test pit. This included the top ballast layer (mostly fines), middle capping layer and bottom structural base/subgrade.
 - 1.3. Six samples from the ballast layer were analysed for petroleum hydrocarbons (TRH), benzene, toluene, ethyl benzene, xylene (BTEXN), polycyclic aromatic hydrocarbons (PAH), 8 metals (As, Cd, Cr, Cu, Pb, Ni, Zn, Hg) and asbestos. Remaining samples were analysed for lead.
2. Collection of 51 shallow soil samples including:
 - 2.1. 12 samples collected adjacent (west of) the Woodlawn Siding between test pit locations to refine assessment extent of lead impacts.
 - 2.2. Five samples collected from grassed land west of the Woodlawn Siding to assess potential presence of lead between the rail corridor access road (by which it is assumed lead ore was historically transported to the siding) and the Woodlawn Siding where loading of lead ore onto rail cars is understood to have occurred.
 - 2.3. Five sediment samples from cess drains feeding two culverts within the area of previously identified impact.
 - 2.4. Eight samples from within the Woodlawn Siding targeting the northern end of site and 'tie-ins' to the active loop and main line.
 - 2.5. Six samples from ballast fines in the loop line between CH 262.440 and CH 262.750. All shallow soil samples were analysed for lead. Additionally, three samples where elevated total lead concentrations were observed were analysed for leachate under acidic conditions following the Toxicity Characteristic Leachate Procedure (TCLP) and three similar samples were analysed for leachate under pH neutral conditions following the Australian Standard Leachate Procedure (ASLP).
3. Field measurement of lead using a portable X-Ray Fluorescence (XRF) device in the main line on 25 m to 50 m lineal increments at 29 locations including:
 - 3.1. Hand removal of upper 0.1 – 0.3 m of ballast to expose fines between tracks and in the western shoulder of the main line formation
 - 3.2. XRF measurement of lead of exposed fines in the shoulder and between tracks

3.3. Averaging of shoulder and in-track readings to define a representative impact at each location

Results identified site materials impacted by lead from CH: 261.950 to 262.950 including fines in ballast in the main and loop lines; ballast at the top of the Woodlawn Siding formation; and soils adjacent (west of) the Woodlawn Siding (CH: 261.980 km to CH: 262.880 km). A distinct area with much higher lead concentrations was observed between CH: 262.090 km and CH: 262.700 km. Samples from capping underlying ballast in the Woodlawn Siding from nine of nine test pits reported lead concentrations below site assessment criteria supporting conclusion that vertical migration is limited to shallow soils. Lead concentrations were observed to be highly variable over short distances and ranged from 7 mg/kg to 38,000 mg/kg within the proposed loop extension footprint. This variability was considered consistent with historical deposition of lead ore concentrate during loading of rail cars.

pH during ASLP was reported at 3.7 – 4.3 indicating rail formation soils impacted by ore concentrate are moderately to highly acidic. Lead leachate following TCLP was observed at 4.3 – 32 mg/L and following ASLP at <0.01 – 1.1 mg/L.

Assessment of the signal trench included:

1. Advancement of five test pits on 400 lineal meter increments along the 2 km signal trench alignment to a depth of approximately one meter (anticipated depth of trenching)
2. Collection of one sample from shallow soils within each test pit
3. Analyses of all samples for TRH, BTEXN, PAH, 8 metals and asbestos.

Results from assessment of the signal trench were reported below assessment criteria with the exception of zinc reported at TP13_0.1 (300 mg/kg) which exceeded the adopted EIL of 110 mg/kg).

4.4 Ramboll 2019c Short-Term Lead Management Plan

A short-term lead management plan (SLMP) was developed to mitigate lead exposure risks to workers associated with the proposed Tarago Loop Extension. Recommendations included excavation of lead impacted soils to temporary stockpile areas to remove lead exposure risk from the proposed loop extension footprint as well as work practices to mitigate exposures while completing these excavation works.

4.5 Ramboll 2019d Preliminary Human Health Risk Assessment

The scope of works completed under the human health risk assessment (HHRA) included derivation of management criteria for lead in soil based on targeted blood lead levels prescribed in relevant regulatory guidance and an exposure scenario specific to rail workers. An assessment of lead bio-accessibility within soils targeting the range of observed concentrations above the generic HIL D (1500 mg/kg) was commissioned through the University of South Australia.

Concentrations of lead present at the site were considered likely to present an unacceptable level of risk to site workers. Based on current SafeWork NSW lead risk work guidelines of 10 µg/dL of lead in blood, a safe lead in soil concentration was estimated at **5,300 mg/kg** for current works within the known contaminated areas at the site. As concentrations at the site exceed this criterion it was recommended that any works at the site should implement the recommendations contained within the SLMP, unless there is certainty that work is being carried out in areas where current exposure concentrations are less than the calculated safe level. A clean-up criterion

based on the future blood lead guideline value of 5 µg/dL was estimated at **2,200 mg/kg** and this was recommended as a clean-up criteria protective of future rail workers.

Observations of variability in lead concentrations observed through earlier works were supported by analyses completed as part of the HHRA. Of particular note, lead in surface ballast fines adjacent remnant ore loadout infrastructure (concrete in Woodlawn Siding – Ramboll ref TP4a) was reported at 184,000 mg/kg. This varied from the concentration reported at TP4 collected from 0.1 – 0.3 m depth of 38,000 mg/kg. Through correspondence with the University of South Australia and the primary laboratory engaged for this project (Eurofins MGT) it was identified that while the analytical method applied (LTM-MET-3040 Metals in Waters, Soils & Sediments by ICP-MS) is endorsed under the NEPM as appropriate for assessment of lead in soil, application to samples significantly impacted by lead ore concentrate may underrepresent lead concentrations. This inferred a degree of uncertainty over results from previous assessment (Ramboll 2019) however this uncertainty was considered limited to highly concentrated impacts (>10,000 mg/kg) and the analytical method applied was considered adequate for assessing concentrations against the site assessment criteria ($\leq 5,300$ mg/kg).

4.6 Ramboll 2019e Tarago Rail Corridor Environmental Site Assessment

The scope of works completed under this assessment included:

1. Collection of 31 shallow soil samples to establish grid-based coverage across the site (integrating completed sampling locations).
2. Collection of four samples targeting the boundary shared by the house adjacent and north of Tarago Station
3. Collection of one sample from surface soils 10 m north of TP4a and one sample 10 m south of TP4a
4. Analysis of all samples for lead
5. Analysis of 20 samples for TRH, BTEXN, PAH, 8 metals and asbestos to supplement existing analyses for these COPC and to provide broad coverage across the site
6. Analysis of 5 samples from outside the rail formation but within the corridor for pH, conductivity, particle size distribution, % Fe and organic carbon content (to facilitate consideration of site-specific ecological uptake).

Interpretation of results indicated:

1. Contaminant concentrations that may present risk to human health or the environment in soil appeared limited to lead.
2. Lead impacts did not appear to extend west outside of the corridor.
3. Lead impacts along the eastern boundary inferred potential for offsite impacts exceeding generic residential criteria of 300 mg/kg. This criterion was considered relevant to the residence north of Tarago Station only and samples SS52 – SS55 exceeded 300 mg/kg.
4. Lead impacts along the eastern boundary inferred potential for offsite impacts exceeding generic open space criteria of 600 mg/kg. This criterion was considered relevant to public open spaces including footpaths and samples SS55, SS61, SS71, SS75 and SS88 exceeded 600 mg/kg.
5. Soils outside of the rail formation are moderately acidic (pH: 4.7 – 5.9).

4.7 Ramboll 2019f Interim Lead Management Plan

Ramboll were engaged to revise the Short Term Lead Management Plan (Ramboll 2019b) to mitigate risks to rail workers onsite from the completion of the loop extension until remediation of associated spoil could occur.

4.8 Ramboll 2019g Remedial Action Plan

Ramboll were engaged to prepare a remedial action plan (RAP) to support appropriate management of spoil generated during extension of the Tarago Rail Loop. The RAP included:

1. Review of remedial options.
2. Identification of onsite aboveground containment as the preferred remedial option.
3. A remedial action works plan.
4. A validation plan to assess the success of remediation.
5. Figures

4.9 Ramboll 2020a Tarago Rail Corridor Environmental Data Gaps Assessment (DRAFT)

The scope of works completed under this assessment included:

1. Review of existing information relating to site contamination and identification of remaining data gaps.
2. Review of site history to assess potential for localised areas of site contamination that may not have been identified including:
 - 2.1. Assessment of historic aerial photographs,
 - 2.2. Council held records and plans for historic site infrastructure
 - 2.3. Discussion with persons with knowledge of the operation and decommissioning of the historic lead ore concentrate loadout complex (if available)
3. Review of regional geology and hydrogeology and completion of a groundwater usage survey to assess potential for contamination in groundwater and to improve confidence in identification of local groundwater receptors
4. Sampling and analyses to inform assessment of potential risks to users of Tarago Station and other offsite receptors as summarised in **Table 4-1**.

Table 4-1: Summary of testing under the data gaps assessment (Ramboll 2020 DRAFT)

Data Gap	Assessment Scope
Potential for groundwater impact	<p>Assessment of leachate data for lead in soils to inform assessment of potential migration of lead via leachate to groundwater or surface water.</p> <p>Advancement of three soil bores within areas of lead impact outside of the rail formation to a depth of 1.0m to assess vertical migration of lead through soils onsite in areas of previously identified impact outside the rail formation. Collection of a total of 15 samples (4 from each borehole - surface, 0.25, 0.5, 0.75m and 1.0m depths).</p>
Potential impacts to human health receptors (rural land adjacent rail corridor, Tarago Station, the Station Masters Cottage, Goulburn Street pathway and Tarago Public School)	<p>Sampling including:</p> <ol style="list-style-type: none"> a. Three samples on the eastern site boundary adjacent SS61 (where 5,000 mg/kg lead was previously identified) b. Five samples of dust from inside buildings at Tarago Public School c. Five samples of dust from outside buildings at Tarago Public School d. Ten shallow soil samples (0-0.1 m below ground level (mbgl)) from the grounds at Tarago Public School including five samples along the western boundary of the school on 30 m approximated lineal increments and five samples to provide broad coverage across remaining accessible soils e. Five paint samples from external building surfaces at Tarago Public School f. Five dust samples from outside buildings at Tarago station g. Six shallow soil samples (0-0.1 mbgl) from the Station Masters Cottage targeting the western boundary and other accessible soils h. Three dust samples from outside the Station Maters Cottage i. Three dust samples from inside the Station Masters Cottage j. Three external paint samples from the Station Masters Cottage k. Ten shallow soil samples (0-0.1 mbgl) from the pathway adjacent Goulburn Street and Tarago Station carpark on 30 m approximated lineal increments. <p>All of the samples above were analysed for lead.</p>

Data Gap	Assessment Scope
	<p>Target sampling locations are presented in Appendix 1 figures.</p>
<p>Potential for offsite surface water impacts</p>	<p>Assessment of the presence of surface water downstream of the site. Sampling at the following locations:</p> <ol style="list-style-type: none"> a. A dam on rural land adjacent the site (Lot A DP440822) b. Sampling of an unnamed tributary to the Goulburn Mulwaree River which passes through the site c. The Goulburn Mulwaree River upstream of the discharge of the tributary d. The Goulburn Mulwaree River downstream of the discharge of the tributary

Key findings of the assessment included:

1. Vertical migration of lead through soils appears largely limited to the upper 0.5 mbgl and while elevated lead leachate has been observed, potential for impacts to groundwater from site contamination is considered limited due to the depth to groundwater being in excess of 5.5 mbgl.
2. Elevated lead concentrations identified near the northern end of the rail corridor do not appear to extend offsite.
3. Risks to users of Tarago Station associated with exposure to lead dust are considered low and acceptable.
4. Risks to pedestrians using Goulburn Street associated with exposure to lead in soils are considered low and acceptable.
5. Risks to users of the Station Masters Cottage associated with exposure to lead in internal and external dust, and in soil have been identified with co-contribution from lead paint and site dust identified.
6. Risks to users of Tarago Public School associated with exposure to lead in internal and external dust, and in soil are considered low and acceptable.

Recommendations were made for further assessment of contaminant migration through groundwater and surface water and associated risks to offsite receptors.

4.10 Ramboll 2020b Rail Sleeper Waste Classification

Ramboll was engaged to assess timber rail sleepers removed from the Woodlawn Siding during loop extension for offsite disposal. Sleepers were stockpiled adjacent the Woodlawn Siding at time of assessment and occupied a volume of approximately 50m³. Key aspects of this assessment included:

1. Collection of four primary samples (plus a duplicate) recovered from the rail sleepers using a hand held drill and a hand saw creating drill shavings and saw dust. Samples comprised materials recovered from the surface of the sleeper and at depths of up to 2 cm below the surface of the sleepers
2. Samples were analysed for TRH (following silica gel clean-up), PAH, metals (As, Cd, Cr, Cu, Pb, Ni, Zn, Hg), OPP and TCLP lead
3. Results were assessed against the NSW EPA Waste Classification Guidelines (2014) and summarised in a waste classification report recommending sleepers were suitable for offsite disposal as General Solid Waste.

4.11 Ramboll 2020c – d Tarago Air Quality Monitoring Report

Ramboll was engaged to establish and maintain an air quality monitoring network targeted at assessment of potential impacts via airborne dust from the corridor. Key aspects of this program have included:

1. Deposited dust and lead measured continuously throughout each month at four locations in the area surrounding the site
2. Total suspended particulates (TSP) including lead contained within the TSP measured for a 24-hour period completed every one day in six days at one location adjacent the site
3. Particulates less than 10 microns in aerodynamic diameter (PM10) and less than 2.5 microns measured continuously throughout each month (PM2.5) at one location adjacent the site.

Results provide a preliminary indication of the potential for offsite migration of contaminants over the seasonal period monitored and under current site conditions. Key findings have included:

1. Deposited lead is below adopted criteria
2. TSP is low and lead in TSP is below adopted criteria
3. PM10 and PM2.5 were below adopted criteria and showed no correlation with the observed lead concentrations.

4.12 Summary of Previous Investigation Data

Data from previous investigations is presented on figures as **Appendix 1**, in tables **H1 – H8** in **Appendix 3** and in summary tables below.

Table 4-2: Previous investigation results summary from site soils - TRH, BTEXN PAH, metals

Analyte	Arsenic	Cadmium	Chromium	Copper	Lead	Nickel	Zinc	Mercury	Naphthalene	Acenaphthylene	Acenaphthene	Fluorene	Phenanthrene	Anthracene	Fluoranthene	Pyrene	Benz(a)anthracene	Chrysene	Benzo(b+j)fluoranthene	Benzo(k)fluoranthene	Benzo(a)pyrene	Indeno(1.2.3.cd)pyrene	Dibenz(a,h)anthracene	Benzo(g,h,i)perylene	Sum of polycyclic aromatic hydrocarbons	Benzo(a)pyrene TEQ (zero)	Benzo(a)pyrene TEQ (half LOR)	Benzo(a)pyrene TEQ (LOR)	C6 - C10 Fraction	C6 - C10 Fraction minus BTEX (F1)	>C10 - C16 Fraction	>C16 - C34 Fraction (F3)	>C34 - C40 Fraction (F4)	>C10 - C40 Fraction (sum)	>C10 - C16 Fraction minus Naphthalene (F2)	Benzene	Toluene	Ethylbenzene	meta- & para-Xylene	ortho-Xylene	Total Xylenes			
	Number of Samples (n)	35	35	35	35	197	35	35	35	35	35	35	35	35	35	35	35	35	35	35	35	35	35	35	35	35	35	35	35	30	30	35	35	35	30	30	30	30	30	30	30	30	30	30
Detections	31	33	26	31	196	16	35	8	3	0	0	0	1	0	2	4	4	0	0	0	4	3	0	3	7	4	4	4	0	0	7	18	9	13	2	0	0	0	0	0	0	0	0	
Minimum (mg/kg)	2	0.4	5	5	5	5	5	0.1	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	20	20	50	100	100	100	50	0.1	0.1	0.1	0.2	0.1	0.3			
Maximum (mg/kg)	150	15	57	1700	184000	17	2800	0.6	1.7	0.3	0.3	0.3	1.3	0.3	1.2	1	0.7	0.3	0.25	0.25	0.7	0.6	0.25	0.6	6	0.8	1.1	1.4	10	10	125	1700	840	506	92	0.1	0.1	0.1	0.1	0.1	0.2			
Human health investigation levels	n > Residential with garden/accessible soil (HIL A)	1	0	0	103	0	0	0	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	0	n/a	n/a	0	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	
	n > Public open space (HIL C)	0	0	0	72	0	0	0	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	0	n/a	n/a	0	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a
	n > Commercial / industrial (HIL D)	0	0	0	42	0	0	0	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	0	n/a	n/a	0	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a
Ecological investigation levels	n > Urban residential and public open space	1	n/a	0	21	58	0	27	n/a	0	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a
	n > Commercial and industrial	0	n/a	0	15	47	0	13	n/a	0	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a

n/a – non applicable

Table 4-3: Previous investigation results summary - lead in soil leachate

	Lead (US Leachate)	Lead (AUS Leachate - Reagent Water)
Number of Samples (n)	3	3
Detections	3	2
Minimum (mg/L)	4.3	0.01
Maximum (mg/L)	32	1.1

Paint sampling was completed to inform differentiation between the Contaminant and potential sources that may contribute to lead contamination observed offsite.

Table 4-4: Previous investigation results summary - lead in offsite soil

Number of Samples (n)		26
Detections		26
Minimum (mg/kg)		17
Maximum (mg/kg)		1200
HIL	n > Residential with garden/accessible soil (HIL A)	8
	n > Public open space (HIL C)	5
	n > Commercial / industrial (HIL D)	0
EIL	n > Urban residential and public open space	2
	n > Commercial and industrial	0

Table 4-5: Previous investigation results summary - lead in offsite paint

	Lead
Number of Samples (n)	8
Detections	8
Minimum %	0.03
Maximum %	16

Table 4-6: Previous investigation results summary - lead in dust

		Lead (External Dust)	Lead (Internal Dust)
Number of Samples (n)		13	8
Detections		13	8
Minimum (mg/L)		162.5	12.2
Maximum (mg/L)		20000	17800
Dust Criteria	NSW EPA (2003)¹	3	n/a
	US EPA (2020)²	n/a	3

¹NSW EPA (2003) Managing Lead Contamination in Home Maintenance, Renovation and ²Demolition Practices. A Guide for Councils. NSW Environment Protection Authority.

²US EPA (2020) Protect your family from lead in your home

n/a – non applicable

5. GEOLOGY AND HYDROGEOLOGY

A summary of the geology and hydrogeology is detailed in **Table 5-1**.

Table 5-1: Summary of Geology and Hydrogeology

Site	Details
Geology	<p>Review of the Australian Geoscience Information Network (AUSGIN) portal (http://portal.geoscience.gov.au/ accessed 8/1/2020) identified regional geology including channel and flood plain alluvium (gravel, sand and clay) locally formed as calcrete overlying quaternary sedimentary rock (including some of low metamorphic grade).</p>
Excavation Logs	<p>Excavation logs reviewed to assess site geology included a registered onsite groundwater well, one test pit west of the rail formation opposite Tarago Station and nine test pits through the rail formation.</p> <p>The bore log from the registered bore identified fill from surface to 0.6 mbgl overlying clay to 7 mbgl overlying sand to 12.2 mbgl (depth of bore).</p> <p>The test pit west of the rail formation identified silty gravel fill to 0.4 mbgl overlying clay to 0.8 mgl (depth of test pit)</p> <p>The nine test pits within the rail formation identified a profile consistent with expected layers of ballast, capping and base formation materials. These included silty gravel (ballast) from surface generally to 0.5 mbgl overlying black gravelly clay (capping) and grey / brown gravelly clay to depth of test pits (generally 0.7 mbgl).</p>
Location and Extent of Fill	<p>Fill was identified progressively through site assessments (Ramboll 2019a – e and Ramboll 2020a) broadly across the site including in the area of the former loadout complex, the rail formation and adjacent the eastern side of the rail formation. At the loadout complex a maximum of approximately one meter of fill (battered to the road to the west, rail to the east and stormwater drain to the north) was observed during targeted test pitting (described within this report) consistent with anecdotal account of application of clay ‘capping’ following demolition of buildings. Localised stockpiles were identified east and west of the rail formation and north of Tarago Station. The identification of these stockpiles on an historic survey plan indicates presence before loop extension works. Stockpiles of contaminated spoil (approx. 750m³ of fouled ballast and approx. 50m³ of timber sleepers) were also created during construction west of the rail formation and opposite Tarago Station.</p>
Onsite Wells	<p>One groundwater well is present onsite. Review of the NSW Department of Planning Industry Environment MinView portal identified well ref: GW053976) was installed in 1984 to a depth of 12.2 mbgl with a water bearing zone in sands from 7 mbgl. No other wells were identified onsite. Records indicate the well was constructed using 0.15m diameter steel casing with 2 mm wide vertical screen slots.</p>
Groundwater Bore Search	<p>Review of the NSW Department of Planning Industry Environment MinView portal (https://minview.geoscience.nsw.gov.au/) identified 12 wells within a 500 m radius from the site.</p>

Site	Details
Depth to Groundwater Flow	<p>Review of drilling and construction details for registered wells indicates the shallowest regional aquifer is present in gravel layers from 5.5 – 18.6 mbgl with deeper aquifers present in fractures of underlying shale, siltstone and limestone from 50 – 74 mbgl.</p>
Groundwater Usage	<p>Assessment of groundwater usage has occurred including:</p> <ol style="list-style-type: none"> 1. A search for registered groundwater bores (described above) 2. A groundwater usage survey delivered by JHR to 94 letter boxes in Tarago. A total of 17 responses were received. 3. Discussion with 43 private property owners during assessments of discrete properties
Groundwater Usage	<p>Integrated findings of the groundwater usage survey and discussions with property owners included:</p> <ol style="list-style-type: none"> 1. 20 properties were identified where groundwater bores had been installed. 2. At all properties groundwater use included (or was assumed to include) watering gardens 3. At three properties groundwater was reported to include drinking and washing 4. At two properties groundwater use was reported for agriculture 5. At one property groundwater was reported to be used for filling a pool 6. At two properties groundwater use remained unclear
Direction and Rate of Groundwater Flow	<p>It is considered likely that the shallower aquifer flows toward the Mulwaree River approximately 550 m east of site.</p>
Direction of Surface Water Runoff	<p>Regional surface water runoff is expected to flow toward the Mulwaree River approximately 500 m east of site.</p>
Background Water Quality	<p>Review of drilling and construction details indicates groundwater salinity is low.</p> <p>Review of satellite imagery identified the Mulwaree river as the main water course close to site. Three culverts direct surface water beneath the rail formation onsite and then offsite to the east. Each culvert receives water from contaminated areas of site via cess drains on the west side of and running parallel to the rail line as described below:</p>
Preferential Water Courses	<ol style="list-style-type: none"> 1. The southern most culvert is located at CH 262.660 and directs a local water course through the rail corridor. This water course is an unnamed tributary to the Mulwaree River. Water discharging from site flows (after high rainfall events only) under the Goulburn Street bridge and through agricultural land before discharging to the River. 2. The middle culvert is located at CH 262.354 and directs water to a shallow pond within the corridor and then offsite through a causeway on Boyd Street. From the Boyd Street causeway surface water is partly directed into a drain along the eastern side of Boyd Street and partly discharges into an adjacent paddock. 3. The northern culvert is located at CH 262.040 and directs water along an informal flow path to a dam on an adjacent agricultural property.

6. SITE CONDITION AND SURROUNDING ENVIRONMENT

Site details are consolidated in **Table 6-1**. Site photographs are shown in **Appendix 2**.

Table 6-1: Site Condition and Surrounding Environment

Site	Description
Topography	<p>Review of Google Earth satellite imagery identifies site elevation of approximately 688 mAHD and slopes down to the east. The rail formation, former loadout complex and unsealed access roads along the west side of the rail formation were observed to be free of vegetation. Some trees were observed west of the rail formation along Stewart Street and east of the rail line to the south of Tarago Station. Grass was generally observed across the remainder of the site. Some vegetative stress was observed though across the site and in the surrounding offsite areas of assessment (the Station Masters Cottage Goulburn Street footpaths and Tarago Public School) though appeared consistent with the surrounding environment and with stress that could be expected from recent drought conditions.</p>
Conditions at Site Boundary	<p>Evidence of contamination was identified at several locations near the eastern site boundary and is described in Section 4.3 and Section 4.6. The site was observed to be fenced on the western boundary and partially fenced on the eastern boundary. Access remained feasible from Tarago Station and the Goulburn Street level.</p>
Visible Signs of Contamination	<p>Visible evidence of contamination was observed as green and orange staining of silt within fouled ballast in the areas of lead impact identified on Figures 2a – 2e, Appendix 1. Potential relationship between stressed vegetation and contamination was most notable along the haul route from the mine to the corridor. Vegetative stress was observed along localised areas of road verge compared to the road verge generally which was vegetated with grass.</p> <p>Within the corridor areas of contamination (eg: rail formation, adjacent soils, cess drains) generally align with areas where routine maintenance would include removal of vegetation. An exception to this was the former loadout complex where little vegetation was observed. Historic assessment of this area however identified low contaminant concentrations and the absence of vegetation is likely associated with low organic carbon content within the clay surface soils, recent trafficking by heavy machinery and low rainfall over the longer term. Additionally, stress to trees and shrubs at 106 Goulburn Street observed in December 2019 (ie: in soils impacted by the Contaminant) appeared consistent with other areas of Tarago (not impacted by the Contaminant). Based on these observations vegetative stress is not considered a reliable indicator of impact from the Contaminant.</p>

7. PRELIMINARY CONCEPTUAL SITE MODEL

A conceptual site model (CSM) is a site-specific qualitative description of the source(s) of contamination, the pathway(s) by which contaminants may migrate through the environmental media, and the populations (human or ecological) that may potentially be exposed. This relationship is commonly known as a Source-Pathway-Receptor (SPR) linkage. Where one or more elements of the SPR linkage are missing, the exposure pathway is considered to be incomplete and no further assessment is required. Where this linkage is found to be complete, it does not indicate that health or environmental risk is present, but rather triggers either a more detailed investigation or exposure controls. The findings of all previous assessments referenced above are considered in the exposure pathway assessment presented in **Table 7-1**.

Key findings from historic assessment comprised:

1. Vertical migration of lead through soils appeared to be largely limited to the upper 0.75 mbgl and while elevated lead leachate was observed, potential for impacts to groundwater from site contamination were considered limited due to the depth to groundwater being in excess of 5.5 mbgl and the presence of heavy clay limiting infiltration
2. Elevated lead concentrations identified near the northern end of the rail corridor do not appear to extend offsite
3. Risks to users of Tarago Station associated with exposure to lead dust were considered to be low and acceptable based on assessment of lead loadings from platform dust samples collected against Tier 1 assessment criteria
4. Risks to pedestrians using Goulburn Street associated with exposure to lead in soils are considered low and acceptable based on assessment of lead concentrations from surface soil samples collected against Tier 1 assessment criteria
5. Risks to users of the Station Masters Cottage associated with exposure to lead in internal and external dust, and in soil have been identified with co-contribution from lead paint and site dust identified in samples collected.
6. Risks to users of Tarago Public School associated with exposure to lead in internal and external dust, and in soil are considered low and acceptable based on assessment of lead concentrations and loadings from the samples collected against tier 1 assessment criteria.

Data gaps were considered to remain in assessment of potential offsite impacts associated with groundwater and surface water pathways.

Table 7-1: Exposure Pathway Assessment

	Source-Pathway-Receptor Link? (Yes (Y) / No (N) / Potential (P))								Justification
	Rural land owners / tenants of the Tarago area	Users of Tarago Station	Goulburn Street pedestrians	Station Masters Cottage tenants	Tarago Public School	Onsite workers ¹	Onsite ecology	Offsite ecological receptors, including livestock	
Soil									
Dermal contact with dust/soil	N	N	N	Y	N	N	Y	P	Concentrations in soils exceed onsite assessment criteria however management measures (Ramboll 2019f) adequately mitigate risks to onsite workers. Potential remains for impacts to onsite ecology.
Incidental ingestion of dust/soil	N	N	N	Y	N	N	Y	P	Concentrations in soil and / or dust are below assessment criteria at the northern end of site adjacent the eastern site boundary, Tarago Station, Goulburn Street and Tarago Public School. Risks to these receptors are considered low and acceptable.
Outdoor dust inhalation	P	N	N	Y	N	N	Y	P	Concentrations in soil and dust (internal and external) at the Station Masters Cottage exceed adopted assessment criteria and risks to the tenants of the cottage are considered to exist. Historic displacement of the Contaminant in site soils into the Station Masters Cottage yard appears to have occurred.

	Source-Pathway-Receptor Link? (Yes (Y) / No (N) / Potential (P))								Justification
	Rural land owners / tenants of the Tarago area	Users of Tarago Station	Goulburn Street pedestrians	Station Masters Cottage tenants	Tarago Public School	Onsite workers ¹	Onsite ecology	Offsite ecological receptors, including livestock	
Paint									
Dermal contact with dust/soil	N	N	N	Y	N	N	N	N	Elevated concentrations of lead in external paint were observed at the Station Masters Cottage and affected paint was observed to be in poor condition. It is considered likely that lead in paint has contributed to lead in soils.
Incidental ingestion of dust/soil	N	N	N	Y	N	N	N	N	
Outdoor dust inhalation	N	N	N	Y	N	N	N	N	
Surface Water									
Dermal Contact	P	NA	NA	NA	NA	N	N	P	Flow was not observed in any of the drains or culverts present at the site during initial investigations due to drought conditions. However, this is likely upon rainfall, which can mobilise contaminated soils into the local
Incidental Ingestion	N	NA	NA	NA	NA	N	N	P	
Potable Ingestion	N	NA	NA	NA	NA	NA	N	NA	

	Source-Pathway-Receptor Link? (Yes (Y) / No (N) / Potential (P))								Justification
	Rural land owners / tenants of the Tarago area	Users of Tarago Station	Goulburn Street pedestrians	Station Masters Cottage tenants	Tarago Public School	Onsite workers ¹	Onsite ecology	Offsite ecological receptors, including livestock	
Irrigation Pathways	N	NA	NA	NA	NA	N	N	P	waterway where aquatic ecological receptors may become exposed.

Notes:

¹Risks to onsite workers have been considered under the assumption that the Interim Lead Management Plan is implemented (Ramboll 2019e)

Y – Yes, N – No, P – Potential, NA – not applicable

Data gaps remained in assessment of potential offsite impacts associated with groundwater and surface water pathways.

8. SAMPLING, ANALYSIS AND QUALITY PLAN

8.1 Data Quality Objectives

Ramboll developed data quality objectives (DQOs) using the US EPA seven-step DQO process, endorsed in Schedule B2 of NEPM (2013). The DQOs set quality assurance and quality control parameters for the field and laboratory program to ensure data of appropriate reliability has been used to assess the environmental condition at the site and surrounding area. The DQO process is a systemic process that defines criteria the sampling program should satisfy in accordance with the NSW EPA (2017) *Contaminated Land Management: Guidelines for the NSW Site Auditor Scheme (3rd Edition)*.

The seven step DQOs process comprises:

- Step 1: State the problem
- Step 2: Identify the decisions / goal of the study
- Step 3: Identify the information inputs
- Step 4: Define the boundaries of the study
- Step 5: Develop the decision rules or analytical approach
- Step 6: Specify the performance or acceptance criteria
- Step 7: Develop the plan for obtaining data

8.1.1 Step 1: State the problem

Previous investigations identified lead contamination within the rail corridor from approximately chainage (CH): 261.950 km to CH: 262.950 km. Data gaps were identified in relation to potential offsite contaminant migration via groundwater and surface water.

A community meeting was held on 9 March 2020 where community stakeholders raised concerns that contamination from the site may have impacted the surrounding area. The community was particularly concerned that offsite contaminant migration may have occurred during recent rail loop extension works and requested further assessment of potential community exposure to lead via airborne dust.

Lead is a metal found frequently within the environment and due to its impact on human health and the environment lead remains as a significant legacy in the community (NSW EPA 2020). The wide distribution of lead presented potential for multiple sources that could complicate assessment of impacts from the site.

8.1.2 Step 2: Identify the decisions/ goal of the study

Goals of the study were adopted from the VMP and included:

1. Undertake delineation of the Contaminant within the site and at the former Loadout Complex.
2. Install groundwater monitoring wells to assess impacts to groundwater from the Contaminant originating from the site.
3. Assess the potential migration from the site of the Contaminant in surface waters and sediments.

Additional goals that were adopted included:

4. To address community concern relating to potential offsite migration of the Contaminant in airborne dust and the potential for associated impacts.
5. To assess road haulage of ore concentrate from the mine to the corridor and/or the use of lead based paint as additional sources of offsite contamination.

Decisions for the study include:

1. Is the data collected of sufficient quality to meet the project objectives?
2. Is the data reliable?
3. What is the fate and transport of contaminants offsite?
4. What are the potential risks to human health or the environment?
5. Is further investigation of the potential risks to human health or the environment required?
6. Is remediation or risk assessment required?

8.1.3 Step 3: Identify the information inputs

Inputs to the decisions will be sourced from:

1. Review of existing site assessments, historical aerial photography, council held records, other available records and publicly available databases relevant to contamination sources, pathways and receptors at the site¹.
2. The preliminary CSM in **Section 7**, which consolidates the findings of previous assessments summarised in **Section 4**.
3. Sampling of soil, groundwater, surface water and sediment, interior dust, rainwater tank water and sediment and paint as summarised in **Section 8.2** and analysis for identified contaminants of concern
4. Comparison of the above samples to the site acceptance criteria outlined in **Section 10**.

8.1.4 Step 4: Definition of the Study Boundary

The boundaries for the validation works are defined as follows:

1. The site forming part Lot 1 DP 595856, as shown on **Figure 2a to 2e, Appendix 1**.
2. The Station Masters Cottage defined as Lot 1 in DP 816626.
3. Local public road reserves including nature strips and road side verges within Tarago and along the route from the Woodlawn mine to the rail corridor.
4. The dam located downgradient from the site northern rail culvert forming part Lot A DP 440822, and two locations along the Mulwaree River, as shown on **Figure 3, Appendix 1**.
5. Select discrete properties² within the township of Tarago.
6. Air quality monitoring locations offsite as shown on **Figure 4, Appendix 1**.
7. Groundwater monitoring wells located onsite and offsite monitoring wells as shown on **Figure 5, Appendix 1**.
8. The vertical extent includes buildings, residences and tanks on private properties, soil to a maximum depth of 4.5 mbgl, surface water bodies and groundwater observed within alluvial gravels from around 7 mbgl.
9. The temporal boundaries of this investigation were from March – June 2020.

8.1.5 Step 5: Develop the Decision Rules

The decision rules, defined for this investigation, are presented in **Table 8-1**.

¹ This was to include review of data from third parties in relation to the Contaminant in soil and water in the Tarago area however 3rd party data was not able to be sourced. Principal Feature P2 of the VMP will only be considered further if 3rd parties make relevant data available.

² The private properties tested were those requested by the residents following the community meeting in March 2020.

Table 8-1 Investigation Decision Rules

Decision	Task	Decision Rule
1. Supplement existing assessment of the Contaminant onsite with targeting the former Loadout Complex.	Assess the degree and extent of the Contaminant at the former Loadout Complex through a systematic pattern of sampling.	If the systematic pattern of sampling supports delineation of the degree and extent of the Contaminant then Principal Feature P3 of the VMP will be considered complete.
2. Has a groundwater MW network been installed that allows assessment of the degree and extent of the Contaminant in groundwater?	Install and monitor a groundwater MW network targeted at assessing groundwater flow direction and the degree and extent of the Contaminant in groundwater.	If groundwater monitoring adequately inform assessment of the degree and extent of the Contaminant in groundwater then Principal Feature P4 will be considered complete.
3. Has Contaminant migration via surface water (including sediment) been adequately assessed?	Assess surface water and sediment upstream and downstream of the site sufficiently to inform assessment of the degree and extent of the Contaminant migration through surface water.	If monitoring of surface water and sediment adequately informs assessment of the degree and extent of the Contaminant migration through surface water then Principal Feature P5 of the VMP will considered complete.
1. Is all data shown to be reliable?	Comparison of all data against data quality indicators (DQIs) and DQOs outlined in Section 8.1.6	Data considered to be acceptable when assessed against Section 8.1.6 . If data is considered reliable, then the information will be used to address the assessment objectives. If the data is not considered to be reliable, then further investigations may be required to reduce uncertainties.
2. Does the data define clear presence or absence of unacceptable risk when assessed against Tier 1 criteria?	Assess data against Tier 1 criteria defined in Section 10 . Where exceedances are less than 250% of the adopted assessment criteria, the 95% upper confidence limit (UCL) of the mean contaminant concentration will be calculated. Assessment of the 95% UCL will then form the basis of assessing compliance.	Further risk assessment is considered to necessary if concentrations are above Tier 1 criteria (including 95% UCL if / where appropriate) and a Tier 1 hazard quotient of >1 is identified.
3. If Tier 1 assessment of risk is not clear then does a Tier 2 / 3 risk assessment define the presence or absence of unacceptable risk?	Assess data above Tier 1 criteria against Tier 2 / 3 criteria or conclude unacceptable risk is present.	Unacceptable risk considered to exist if data is above Tier 2 / 3 criteria.
5. Is remediation/management required?		If unacceptable risk is considered to exist, then remediation/management is required to ameliorate the risk.
4. Are there remaining data gaps?	Assess the assumptions and completeness of the risk assessment and if further information is required to conclude on potential risk.	Unable to conclude on potential risk due to data gap.

8.1.6 Step 6: Specify the Performance or Acceptance Criteria

The tolerable limits on decision errors are as follows:

1. Probability that 95% of data will satisfy the DQIs, therefore a limit on decision error will be 5% that a conclusive statement may be incorrect:
 - 1.1. A 5% probability of a false negative (i.e. assessing that the average concentration of contaminants of concern are less than the assessment criteria when they are not); and

- 1.2. A 5% probability of a false positive (i.e assessing that the average concentration of contaminants of concern are more than the assessment criteria when they are not).

The potential for significant decision errors will be minimised by:

1. Completion of QA/QC measures of the investigation data to assess if the data satisfies the DQIs.
2. Assessment of whether appropriate sampling and analytical densities were completed for the purposes of the investigation.
3. Ensuring that the criteria set for the investigation were appropriate for the land use.

DQIs have been established to set acceptance limits on field and laboratory data collected as part of the investigation and are discussed further in **Appendix 6**.

8.1.7 Step 7: Develop the Plan for Obtaining Data

The sampling plan is considered according to the following separable elements and further detail is provided in **Section 8.2**:

1. Assessment of local public spaces surrounding the site including:
 - 1.1. Nature strips and road side verges within Tarago township (**Figure 6a, Appendix 1**)
 - 1.2. Nature strips and road side verges along the route from the Woodlawn mine to the rail corridor (**Figure 6b, Appendix 1**) and
 - 1.3. Public spaces (**Figure 7, Appendix 1**)
2. Assessment of 43 discrete properties as requested by the residents of the Tarago area including:
 - 2.1. Soil
 - 2.2. Rainwater tank water and sediment
 - 2.3. Groundwater bore water
 - 2.4. Interior dust and
 - 2.5. Paint.

Sampling was undertaken at 36 private properties and the following discrete public properties (**Figure 7, Appendix 1**):

- 2.1. Tarago Hall
 - 2.2. Tarago Preschool
 - 2.3. Tarago Sports Ground
 - 2.4. Tarago CWA
 - 2.5. Tarago RFS
 - 2.6. Tarago Showground
 - 2.7. Tarago Public School
3. Assessment of the footprint of the former ore load-out complex including advancement of 20 test-pits through the fill profile to assess the degree and extent of remnant lead contamination associated with the former load-out complex (**Figure 8, Appendix 1**).
 4. Surface water and sediment sampling (**Figure 3, Appendix 1**).
 5. Dedicated groundwater sampling **Figure 5, Appendix 1**).

8.2 Sampling Methodology

Ramboll completed the assessment works at the site in general accordance with the NEPM (2013). Guidance that was adopted specific to sampling of each media is described below.

1. Soil sampling was completed in general accordance with AS 4482.1-2005 *Guide to the investigation and sampling of sites with potentially contaminated soil - Non-volatile and Semi-Volatile Compounds* (Standards Australia 2005).
2. Vacuum sampling of internal dust was completed in general accordance with the *Guidance for the sampling and analysis of lead in indoor residential dust for use in the integrated exposure uptake biokinetic (IEUBK) model* (US EPA 2008)
3. Swab sampling of internal dust sampling was completed in general accordance with US EPA 2009 *Lead Dust Sampling Technician Field Guide* (US EPA 2009).
4. Paint sampling was completed in general accordance with AS 4361.2-1998 *Guide to lead paint management - Residential and commercial buildings* (Standards Australia 1998).
5. Groundwater sampling was completed in general accordance with NSW EPA 2007 *Guidelines for the assessment and management of groundwater contamination, Environment Protection Authority* (NSW EPA 2007).

8.2.1 Soil Onsite and within the Former Loadout Complex

Assessment of potential lead contamination within and around the footprint of the former loadout complex (approximately 1.5 Ha) occurred and integrated advancement of 20 test pits on an approximate 25m triangular grid pattern. Sample locations are presented on **Figure 8, Appendix 1**.

Test pits were advanced using a 2.5-ton excavator with a 0.3 m wide toothed/mud bucket was used to excavate to a maximum depth of 2.0 mbgl.

Representative soil samples were collected directly from the excavator bucket, from undisturbed materials in the centre of the bucket where practicable. Samples were collected from each material type identified in the test pit including underlying natural soils where encountered. Samples were also collected where visual or olfactory evidence of potential contamination were observed. Up to four soil samples were collected from each test pit with all samples scheduled for laboratory analysis.

Soil sampling also occurred to supplement assessment of the vertical extent of lead in soils onsite and in response to observation of localised evidence of ore concentrate in surface soils onsite (not previously observed).

Assessment of the vertical extent of lead in soil onsite integrated sampling of boreholes advanced during monitoring well construction. Boreholes were advanced by solid flight auger, soil samples were collected at depths of 0-0.05, 0.5, 1, 1.5, 2.4, 3.5 and 4.5 mbgl and were analysed for lead. Sample locations are presented as MW1 – MW7 on **Figures 2a – 2e and Figure 5, Appendix 1**.

Assessment of localised surface impacts occurred via field portable XRF metals analyser per the process described in **Section 8.2.5** above. Sample locations are presented as PIA 1 – PIA 7 on **Figures 2b, Appendix 1**.

8.2.2 Groundwater

8.2.2.1 Well Installation

Drilling works were completed between 18 and 20 March 2020 by Stratacore Drilling. Boreholes were advanced using solid flight augers to approximately 2 m below where groundwater was encountered. A Ramboll field engineer recorded field observations on a borehole logging field sheets, including the collection of samples.

The groundwater monitoring wells were constructed with 50 mm PVC class 18 factory slotted well screen, and 50 mm PVC class 18 casing, both with o-ring sealed male-female threaded joints. A push-on end cap was installed at the base of each well. A graded 2 mm gravel pack was installed from the base, generally to 0.5 m above the top of the well screen in the annulus between the well screen/casing and the borehole wall. An annular seal consisting of at least 1 m of 3/8" bentonite chips was installed on top of the gravel pack and the remaining annulus was grouted to surface with a cementitious grout slurry. Wells were completed with a flush mounted well cover (three public locations) or an above ground monument cover, set in a concrete plinth. Borehole logs and well construction details for new well locations are provided in **Appendix 4**.

The newly installed wells were allowed to settle at least overnight to allow for the grout to cure before being developed. Well development was carried out using disposable bailers. Development was carried out to remove fine material from the well screen and gravel pack to improve productivity as well as to remove any introduced water from the drilling process. Purged volumes were measured using 10 L pails, with observations of turbidity, colour, and odour being recorded periodically on the field sheet. Generally, a minimum of 10 bore volumes were removed from each location; however, some of the wells exhibited lower yields and, in these cases, the wells were purged dry.

Groundwater well locations are described in **Table 8-2** and shown on **Figure 5, Appendix 1**.

Table 8-2: Groundwater Monitoring Well Locations

Well ID	Location
MW1	Intended as an up gradient location of the former load-out complex, on the western side rail corridor.
MW2	Located within footprint of former load-out complex.
MW3	Down gradient of former load-out complex, on western side of rail corridor.
MW4	Immediately down gradient of former load-out complex, adjacent to southern boundary of the Station Masters Cottage.
MW5	Down gradient of former load-out complex, on eastern side of rail corridor near Boyd Street.
MW6	Down gradient of former load-out complex, located within grassed area adjacent to the Town Hall.
MW7	Down gradient of the site along Lumley Road, near Mulwaree River.

Following installation, the groundwater monitoring wells were surveyed by a registered surveyor, Hanlons Consulting and coordinates informed location of monitoring wells and groundwater contours as presented on the figures in **Appendix 1**.

8.2.2.2 Groundwater Sampling

A GME was conducted on 27 March and 2 April 2020. Prior to the commencement of sampling, the depth to groundwater and total depth of the monitoring well was gauged with an interface probe. The interface probe was decontaminated between sampling locations using laboratory provided rinsate water.

The sampling was completed using low flow-sampling techniques using a peristaltic pump and low flow ¼" OD HDPE and silicon tubing. All tubing was dedicated for each sampling location. The inlet of the tubing during sampling activities was placed midway in the water column of each well. The peristaltic pump was set at a sufficiently low rate to minimise drawdown of the water level in the well and collect discrete water samples directly from the screened formation. The water level was measured intermittently during sampling with the interface probe, and the pump rate adjusted as required, to ensure drawdown was minimised.

Prior to sample collection, groundwater was pumped through a flow cell and a calibrated water quality meter to establish field water quality parameters. The calibration certificate is provided in **Appendix 5**. Field water quality parameters, consisting of temperature, pH, EC, redox potential, DO and TDS, were recorded periodically on the field sheet until stabilisation was observed to within 10% of the previous reading. Groundwater sampling field sheets are provided in **Appendix 5**.

Following stabilisation of the field water quality parameters, groundwater samples were collected into laboratory provided sampling bottles, with appropriate preservatives as required, labelled with the project identification, well identification, date and time. Samples were collected directly from the dedicated tubing at each location to reduce chances of cross contamination from field decontaminated equipment and analysed for total and dissolved metal(loid)s (Al, As, Ba, Be, Cd, Cr, Co, Cu, Fe, Pb, Mn, Hg, Ni and Zn). Samples to be analysed for dissolved metal(oids) were filtered to 0.45 µm in the field.

8.2.3 Surface Water and Sediment Sampling

The following procedures were undertaken for the surface water sampling program:

1. Surface water samples were collected from ten locations (SW1_UP, SW1 to SW9). Sample locations are described in **Table 8-3** and shown on **Figure 3 (Appendix 1)**.
2. At each sampling location, surface water was collected from a depth of approximately 0.1 m below the water surface using a clean container and placed into clean laboratory-supplied sample bottles, containing the appropriate preservative for the analysis required.
3. Chemical and physical parameters, including temperature, pH, EC, DO, redox potential and RDS were measured in the field. Surface water sampling field sheets are provided in **Appendix 5**. Samples were filtered in the field for metals analysis.
4. Each sample bottle was clearly labelled with a unique sample name, date and location.
5. Samples were analysed for total and dissolved metal(loid)s (Al, As, Ba, Be, Cd, Cr, Co, Cu, Fe, Pb, Mn, Hg, Ni and Zn).

The following procedures were undertaken for the sediment sampling program:

1. Sediment samples were collected from ten locations (SED1_UP, SED1 to SED9). Sample locations are described in **Table 8-3** shown on **Figure 3 (Appendix 1)**.
2. Samples were collected by hand, using a 32mm push-tube sampler from an approximate depth of surface to 0.1 mbgl.

3. Sediment samples were placed into laboratory-supplied glass sample containers with minimal to no headspace. Each sample container was clearly labelled with a unique sample name, date and location.
4. Between sample locations the sediment corer was washed in a solution of Decon 90 and then rinsed with potable water and/or a new sampler was used.
5. Samples were analysed for total metal(loid)s (Al, As, Ba, Be, Cd, Cr, Co, Cu, Fe, Pb, Mn, Hg, Ni and Zn).

Table 8-3: Surface Water and Sediment Sampling Locations

Sample ID	Location
SW1/SED1_UP	Intended as an up-gradient sample, located on a western tributary of the Mulwaree River, approximately 100 m west of the rail corridor at CH. 262.600.
SW1/SED1	Adjacent to a culvert on the western side of the rail line at CH 262.600 on tributary of Mulwaree River.
SW2/SED2	Adjacent to a culvert on the eastern side of the rail line at CH 262.600 on tributary of Mulwaree River.
SW3/SED3	Adjacent to a culvert on the western side of the rail line at CH 262.300.
SW4/SED4	Adjacent to a culvert on the eastern side of the rail line at CH 262.300.
SW5/SED5	Adjacent to a culvert on the western side of the rail line at CH 262.000.
SW6/SED6	Adjacent to a culvert on the eastern side of the rail line at CH 262.000.
SW7/SED7	Dam located on rural land downgradient from the site's northern rail culvert (forming part Lot A DP 440822).
SW8/SED8	Mulwaree River, near intersection with Lumley Road, downstream of the discharge of the tributary.
SW9/SED9	Mulwaree River, upstream of the discharge of the tributary.

8.2.4 Discrete Properties

Assessment of discrete properties generally occurred at the request of the community rather than in response to evidence from previous investigations of contaminant migration from the site. Sampling plans and densities were designed to provide an indicative assessment of the presence or absence of risks associated with site contamination and to provide a preliminary indication of potential contamination from lead based paint.

8.2.4.1 Soil

Intrusive soil investigations were completed at 42 of the 43 discrete properties on 19 March, 23 to 26 March, 30 March to 2 April, 27 to 30 April and 18 May 2020. A total of 478 soil samples were collected and analysed for lead across all properties. A total of 16 soil samples were collected and analysed for a broader heavy metal suite (Al, As, Ba, Be, Cd, Cr, Co, Cu, Fe, Pb, Mn, Hg, Ni and Zn) from 12 sample locations across three properties along overland flow paths from the site towards the Mulwaree River.

Shallow soil samples were collected via use of hand tools. Bore holes were predominantly advanced to a maximum depth of 0.3 mbgl (a few sites, such as the Station Masters Cottage and P2 were advanced to a maximum depth of 0.5 mbgl after sub-surface clearance by a specialist service locator on 23 March 2020) using a hand auger. Samples from the bore holes were generally collected at the approximate depths of 0-0.05 mbgl and 0.2-0.3 mbgl.

8.2.4.2 Groundwater Bores

Groundwater bores were present on ten of the 43 discrete properties. A total of ten groundwater samples were collected on 24 to 26 March 2020, 31 March 2020 and 2 and 30 April 2020 and analysed for varying suites of total and dissolved metal(loid)s (Al, As, Ba, boron (B), Be, Cd, Cr, Co, Cu, Fe, Pb, Mn, Hg, Ni, selenium (Se) and Zn).

The collection process for groundwater samples varied depending on the bore set up at the property. Where there were pumps already set up for the bore at the property (properties P1, P2, P10, P12, P14, P32, P39 and Tarago Public School) the depth to standing groundwater level was gauged, if possible. The tap connected to the bore was allowed to run for two minutes before the sample container was placed under the flow from the tap. Where there was no pump set up for the bore, the groundwater was sampled using the methodology described in **Section 8.2.2.2**. Filtered and unfiltered samples were collected for analysis.

8.2.4.3 Rainwater Tank Water

Rainwater tanks were present on 33 of the 43 discrete properties. A total of 68 rainwater tank water samples were collected on 24 to 26 March, 30 March to 2 April, 24 April, 28 to 30 April, 31 May, 5 June 2020 and analysed for varying suites of total and dissolved metal(loid)s (Al, As, Ba, B, Be, Cd, Cr, Co, Cu, Fe, Pb, Mn, Hg, Ni, Se and Zn).

The standing water level and total depth of tank was measured from the top of the tank. Water was extracted by lowering a low flow micro-purge pump or peristaltic pump tubing through tank inlets approximately one meter below the standing water level. Prior to sample collection, water quality parameters, consisting of temperature, pH, electrical conductivity (EC), oxidation-reduction potential (redox potential), dissolved oxygen (DO) and total dissolved solids (TDS), were recorded. Samples to be analysed for dissolved metal(oids) were filtered to 0.45 µm in the field.

8.2.4.4 Rainwater Tank Sediment

Rainwater tanks were present on 33 of the 43 discrete properties. A total of 49 rainwater tank sediment samples (noting some rainwater tanks did not contain sediment) were collected on 24 to 26 March, 30 March to 2 April, 24 April, 28 to 30 April, 31 May, 5 June 2020 and dried and analysed for lead.

Tank sediment was generally collected using a micropurge pump lowered through inlets to the base of each tank. Approximately 5L of sediment laden water was removed from each tank to a plastic bucket and set aside to settle. After settling clear water was poured off and remnant sediment was poured (as a liquid) into sample bottles preserved for metals analysis. Additional sampling of tank sediment occurred on 5 June at two properties where sediment had not been retrieved and property owners were concerned that sediment existed in tanks. This sampling occurred using a pole mounted sampling vessel.

8.2.4.5 Interior Dust

Internal dust sampling was completed at 26 of 43 properties and included sampling via vacuum and/or swab. Vacuum sampling was limited to floor spaces (mostly carpets) and included:

1. Mark-out of sampling areas using masking tape. Sampling areas of 2 m² were targeted where feasible
2. Sampling areas were further divided into 0.5 m² sub-sample areas
3. A high-flow cyclonic vacuum was used with plastic barrel and reduced shaft length
4. Sampling occurred by running the vacuum in strips to cover each sub-sample area four times back and forth

Swab sampling included:

1. Targeted swab sampling of windowsills and hard surface floors.

2. Mark-out of sampling areas using masking tape. Sampling areas of 0.09 m² were targeted where feasible. Some exceptions occurred where available surface area was less than 0.09 m² (eg: window sills). In these instances the maximum available area was sampled.
3. Dust sampling was completed wearing single use disposable nitrile gloves and using single use sanitary wipes. Dust was collected by making S-shaped motions through the sampling area, folding the wipe in half and repeating the process at least three times and until all visible dust was removed.

Sampling of internal dust also included a number of locations at request of residents (eg: fans, air conditioning units and ceiling cavities). Sampling at these locations occurred by swabbing or as grab samples (by hand). Procedures described above were followed to extent practical though measurement of sampling areas in particular was not feasible at some locations.

All dust sampling occurred wearing disposable nitrile rubber gloves. Samples were stored in single use zip lock bags labelled with unique identifiers which were cross-referenced with site plans and submitted to the laboratory under chain of custody.

8.2.4.6 Paint

Where paint was observed to be flaking off the building, the flakes were carefully collected into a resealable bag. If paint was not flaking off, an area of the building determined to not impact on aesthetics to the property, paint was carefully peeled off the building and placed into a resealable plastic bag. The sample bags were clearly labelled with a unique sample name, date and location.

8.2.5 Surficial Soil in Road Reserves

The assessment of surficial soil in local public road reserves was completed over the period 18 to 24 March 2020 using a ThermoFisher Scientific Niton™ XL3t portable x-ray fluorescence (XRF) metal analyser. The instrument in soil mode and data was collected using 60 second dwell. The analyser uses a 50kV x-ray tube which provides sufficient flux to enable separation of spectra lines for highly accurate quantification of elements of interest.

XRF readings were completed by a suitably experienced scientist holding a NSW EPA license required for field based XRF testing. Testing was completed in accordance with relevant provisions described in US EPA method 6200 (USEPA 2007).

The XRF was used in-situ and measurements were taken by placing the XRF directly on the ground surface. The soil surface to be measured was cleared of debris and grass prior to taking the measurement. This was to ensure that there was no obstruction, the analyser window was protected and maintained the required contact with the sample surface during measurements. As moisture is known to affect measured concentrations (see uncertainty section), visually dry surfaces were chosen for measurement.

Readings were recorded digitally on the XRF unit and are reported as a wet weight and are not directly comparable with the dry weight guideline concentration. Some soil samples were collected and sent to a laboratory for analysis to determine the correlation coefficient between the XRF and laboratory measurements³.

³ Correlation between field XRF testing and laboratory analysis indicates a 95% correlation coefficient indicating near definitive results were achieved by the XRF. On this basis the XRF result was adopted as a directly comparable result to the HIL guideline discussed in **Section 11.1**.

9. QUALITY ASSURANCE / QUALITY CONTROL PROGRAM

Quality assurance (QA) measures and quality control (QC) testing completed across the DSI sampling program is described in **Appendix 6**.

Overall it is considered that the completed investigation and the data obtained adequately complied with the requirements of NEPM (2013) and the data is considered to be of suitable quality to meet the project objectives.

10. ASSESSMENT CRITERIA

10.1 Soil

The criteria proposed for the assessment of soil contamination were sourced from the following references:

1. National Environment Protection Council (NEPC), National Environment Protection (Assessment of Site Contamination) Measure 1999, as amended 2013 (NEPM, 2013).
2. 'Tarago Loop Extension Preliminary Human Health Risk Assessment Ramboll' dated 17 October 2019 by Ramboll (Ramboll 2019c).

The NEPM (2013) provides health-based soil investigation levels (HILs) and ecological-based investigation levels (EILs) for various land uses. Based on the current and future use of the site, and the surrounding land, the guidelines adopted for the DSI are as follows:

1. HIL A – Health investigation level for residential use including residential with garden/accessible soil (home grown produce <10% fruit and vegetable intake, (no poultry), also includes children's day care centres, preschools and primary schools.
2. HIL C – Health investigation level for recreational/open space such as parks, playgrounds, playing fields, secondary schools and footpaths. This does not include undeveloped public open space where the potential for exposure is lower and where a site specific assessment may be more appropriate.
3. HIL D – Health investigation level for commercial/industrial such as shops, offices, factories and industrial sites. The HILs are applicable for assessing human health risk via all relevant pathways of exposure. The HILs are generic to all soil types and apply generally to a depth of 3 m below the surface for industrial use.
4. EIL for urban recreational and public open space and EIL for commercial/ industrial use – ecological investigations levels applicable for assessing risk to terrestrial ecosystems. EILs depend on specific soil physicochemical properties and generally apply to the top 2 m of soil.

Ramboll (2019c) determined a site-specific trigger level (SSTL) protective of current and future onsite workers of 2,200 mg/kg.

The human health and ecological criteria adopted for the DSI are provided in **Table 10-1**.

Table 10-1: Soil Assessment Criteria – Human Health and Ecological Investigation Levels (mg/kg)

Contaminant	HIL A – Low density residential	HIL C – Recreational/ Public Open Space	HIL D – Commercial/ Industrial	EIL – Urban Residential and Public Open Space	EIL - Commercial/ Industrial
Aluminium	-	-	-	-	-
Arsenic	100	300	3,000	100	160
Barium	-	-	-	-	-
Beryllium	60	90	500	-	-
Cadmium	20	90	900	-	-
Chromium	100 ^a	300 ^a	3,600 ^a	430 ^{b,c}	710 ^{b,c}
Cobalt	100	300	4,000	-	-
Copper	6,000	17,000	240,000	110 ^c	160 ^c
Iron	-	-	-	-	-
Lead	300	600	2,200 ^d	1,100	1,800
Manganese	3,800	19,000	60,000	-	-
Mercury	40 ^e	80 ^e	730 ^e	-	-
Nickel	400	1,200	6,000	200 ^c	340 ^c
Zinc	7,400	30,000	400,000	250 ^c	370 ^c

^a HIL for chromium (VI).

^b EIL for chromium (III).

^c Site specific EIL (calculated during Ramboll 2019d).

^d SSTL for lead (Ramboll 2019c).

^e HIL for inorganic mercury.

10.2 Groundwater and Surface Water

The criteria proposed for the assessment of groundwater and surface water contamination are sourced from the following references:

1. National Environment Protection Council (NEPC), National Environment Protection (Assessment of Site Contamination) Measure 1999, as amended 2013 (NEPM, 2013).
2. National Health and Medical Research Council (NHMRC) (2001) National Resource Management Ministerial Council (NRMMC) Australian Drinking Water Guidelines 6, Version 3.5 updated August 2018, (ADWG 2011).
3. National Health and Medical Research Council (NHMRC), National Resource Management Ministerial Council (NRMMC) Guidelines for Managing Risks in Recreational Water (NHMRC, 2008).
4. Department of Environment and Conservation (DEC) Guidelines for the Assessment and Management of Groundwater Contamination (DEC, 2007).
5. Australian and New Zealand Guidelines for Fresh and Marine Water Quality (ANZG 2018) (available at www.waterquality.gov.au/anz-guidelines).
6. Australian and New Zealand Environment and Conservation Council (ANZECC) & Agriculture and Resource Management Council of Australia and New Zealand (ARMCANZ) Australian and New Zealand Guidelines for Fresh and Marine Water Quality (ANZECC, 2000).

A groundwater usage survey was conducted by JHR in February 2020. Review indicate that respondents are extracting groundwater predominantly for use within the garden, but some respondents also extract groundwater for use within the house, drinking water, refilling swimming pools and irrigation of commercial worm farms. Therefore, the beneficial uses and environmental values of the regional aquifer are considered to include:

- Irrigation of produce and stock watering.
- Freshwater ecosystems.
- Irrigation watering of fields.
- Drinking water.

Assessment criteria adopted for surface water and groundwater are summarised in **Table 10-2**.

Table 10-2: Groundwater and Surface Water Investigation Levels (µg/L)

Contaminant	95% Freshwater (ANZG 2018)	Drinking Water (ADWG 2011)	Irrigation Short-term Trigger Value (ANZECC 2000)	Stock Water (ANZECC 2000)
Heavy Metals				
Aluminium	55 ^a	-	20,000	5,000
Arsenic	24 ^b	10	2,000	500-5,000
Barium	-	2,000	-	-
Beryllium	-	60	500	-
Cadmium	0.2	2	50	10
Chromium	1.0 ^c	50 ^c	1,000	1,000
Cobalt	1.4	-	100	1,000
Copper	1.4	2,000	5,000	400-5,000
Iron	-	-	10,000	not sufficiently toxic
Lead	3.4	10	5,000	100
Manganese	1,900	500	10,000	not sufficiently toxic
Mercury	0.06 ^{d, e}	1	2	2
Nickel	11	20	2,000	1,000
Zinc	8	-	5,000	20,000
Inorganics				
Ammonia (as N)	900	-	-	-
Nitrate	-	50,000	-	-
Nitrite	-	-	-	-
Total nitrogen	-	-	25,000-125,000	-
Total phosphate (as P)	-	-	800-12,000	-
BTEXN				
Benzene	950	1	-	-
Toluene	180	800	-	-
Ethylbenzene	80	300	-	-
Total xylenes	75 ^f	600	-	-
Naphthalene	16	-	-	-

blank cell denoted with – indicates no criterion available.

^a Aluminium guidelines for pH > 6.5, based on the pH of groundwater measured at the site and surrounding area.

^b Guideline value for arsenic (III).

^c Guideline value for chromium (VI).

^d Guideline value for inorganic mercury.

^e 99% species protection level DGV has been adopted to account for the bioaccumulating nature of this contaminant.

^f Guideline value for m-xylene. Guideline values also exist for both o-xylene and p-xylene as per ANZG (2018). The default guideline value for m-xylene guideline has been adopted as it is the most conservative.

10.3 Dam, Drainage Line and River Sediment

The criteria proposed for the assessment of sediment contamination are sourced from the default guideline values in ANZG (2018). The adopted assessment criteria for sediment are summarised in **Table 10-3**.

Table 10-3: Sediment Assessment Criteria – Ecological Investigation Criteria (mg/kg)

Contaminant	Sediment DGV	GV-High
Aluminium	-	-
Arsenic	20	70
Barium	-	-
Beryllium	-	-
Cadmium	1.5	10
Chromium	80	370
Cobalt	-	-
Copper	65	270
Iron	-	-
Lead	50	220
Manganese	-	-
Mercury	0.15	1.0
Nickel	21	52
Zinc	200	410

The DGV was derived using a ranking of both observed field and laboratory ecotoxicity-effects and represents the 10th percentiles of that data distribution.
 GV-high represents the median of that data distribution to provide an upper guideline value. Effects on sediment biota are rarely seen for concentrations below the DGV, while effects are more frequently evident above the GV-high value.

10.4 Rainwater Tank Water and Sediment

The criteria proposed for the assessment of rainwater tank water and rainwater tank sediment contamination are sourced from the following references:

1. National Environment Protection Council (NEPC), National Environment Protection (Assessment of Site Contamination) Measure 1999, as amended 2013 (NEPM, 2013).
2. National Health and Medical Research Council (NHMRC) (2001) National Resource Management Ministerial Council (NRMCC) Australian Drinking Water Guidelines 6, Version 3.5 updated August 2018, (ADWG 2011).

Assessment criteria adopted for rainwater tank water and sediment are summarised in **Table 10-4**. Rainwater tank sediment criteria are based on reuse of sediment on the site however are also protective of incidental sediment consumption in drinking water.

Table 10-4: Rainwater Tank Water and Sediment Assessment Criteria

Contaminant	Rainwater Tank Water (ADWG 2011) (µg/L)	Rainwater Tank Sediment (mg/kg)	
		HIL A – Low density residential	HIL C – Recreational/ Public Open Space
Lead	10	300	600

10.5 Dust

The preliminary screening criteria proposed for the assessment of dust contamination are sourced from the following references:

1. USEPA (2020) Protect your family from lead in your home. US Environmental Protection Agency – January 2020.
2. AS 4361.2-1998 Guide to lead paint management - Residential and commercial buildings.

The dust results are to be presented as lead loadings ($\mu\text{g}/\text{m}^2$). Where dust samples were collected by vacuum, the lead loading was calculated using the following equation:

$$\text{Lead loading } (\mu\text{g}/\text{m}^2) = \frac{\text{lead concentration (mg/kg)} \times \text{dust sample mass (g)}}{\text{sample area (m}^2\text{)}}$$

Where samples were collected by swab, the lead loading was calculated using the following equation:

$$\text{Lead loading } (\mu\text{g}/\text{m}^2) = \frac{\text{total lead } (\mu\text{g})}{\text{sample area (m}^2\text{)}}$$

Assessment criteria adopted for lead dust contamination are summarised in **Table 10-5**.

Table 10-5: Lead Dust Assessment Criteria ($\mu\text{g}/\text{m}^2$)

	Residential Property (including child care centres)	Commercial Property
Dust interior – hard floors	108	1,000
Dust interior – window sills and shelves	1,076	5,000

10.6 Paint

As there is no specific guidance regarding lead concentration in paint, the criterion proposed for the assessment of lead in paint is sourced from the Australian Government Department of the Environment, Lead Alert: the six step guide to painting your home, 5th Ed. 2016.

Assessment criterion adopted for lead in paint is summarised in **Table 10-6**.

Table 10-6: Lead in Paint Criterion

Contaminant	Maximum Allowable Amount in House Paint
Lead	0.1%

11. RESULTS

11.1 Delineation of the Contaminant Onsite and at the Former Loadout Complex

Results relevant to delineation of the Contaminant in soil at the site are presented in **Section 11.1.1 to 11.1.3**

11.1.1 The Former Loadout Complex

Test pitting soil analytical results are summarised in **Table 11-1** and tabulated in **Table 7, Appendix 3**. Soil laboratory analytical reports are included in **Appendix 7**.

Table 11-1: Summary of Load-Out Complex Soil Lead Analytical Results

Number of Samples (n)	64
Detections	63
Minimum (mg/kg)	<5
Maximum (mg/kg)	1,200
Mean (mg/kg)	127.97
n > Site specific human health guideline (2,200 mg/kg)	0
n > Site specific ecological guideline (1,800 mg/kg)	0

Lead was reported below the SSTL for human health and ecological receptors in all samples from the footprint of the former load-out complex with the exception of MW2.

11.1.2 Vertical Delineation of the Contaminant in Soil

Results from analyses of soil samples collected from monitoring well boreholes are presented in **Table 10, Appendix 3**. Soil laboratory analytical reports are included in **Appendix 7**.

11.1.3 Additional Assessment of Site Surface Soils

Evidence of ore concentrate was visually observed at the north of the former Loadout Complex adjacent a drainage channel upstream of the middle rail culvert. Results from field portable XRF are presented in **Table 11-2** below.

Table 11-2: XRF Results from Additional Assessment of Site Surface Soils

SAMPLE	As	Cu	Pb	Ni	Zn
WLB1_262.5	81.36	1172.52	5322.19	<LOD	3915.66
PIA-1	11.68	37.73	49.34	<LOD	133.27
PIA-2	842.35	2804.36	9404.2	236.66	3015.17
PIA-2_0.1	24.02	54.47	123.58	81.6	125.53
PIA-3	<LOD	56.72	215.66	<LOD	122.68
PIA-4	1576.36	5107.27	15510.1	224.52	3745.53
PIA-4_0.1	9.09	34.68	33.66	36.69	51.5
PIA-5	26.76	236.15	830.68	<LOD	1204.63
PIA-5_0.1	11.47	84.93	206.45	38.55	455.06
PIA-6	304.32	753.34	7040.33	146.81	1259.26
PIA-7	<LOD	140.34	396.68	69.73	296.26

<LOD – below the limit of detection.

11.2 Groundwater

11.2.1 Groundwater Gauging Data

The seven groundwater monitoring wells were gauged on 15 April 2020. A summary of the groundwater gauging data is presented in **Table 11-3**.

Table 11-3: Groundwater level observations

Well ID	Coordinates MGA Zone 56S		Top of Casing Elevation	Standing Water Level		Depth of Well
	Easting	Northing	mAHD	mbtoc	mAHD	mbtoc
MW1	741504.21	6115627.04	690.59	6.15	684.44	10.79
MW2	741756.36	6116009.7	689.16	6.955	682.205	12.69
MW3	741875.76	6116215.04	688.33	6.1	682.23	9.48
MW4	741813.67	6116016.97	686.47	4.38	681.835	7.09
MW5	741938.29	6116212.86	688.27	6.435	682.09	12.25
MW6	741917.66	6116051.99	685.89	3.99	681.9	8.46
MW7	742268.21	6115965.68	682.35	1.21	681.14	8.51

mAHD – metres above Australian Height Datum

mbtoc – metres below top of casing

Groundwater level contours were developed using Surfer software and are presented in **Figure 8, Appendix 1**. The groundwater was inferred to flow to the east, towards Mulwaree River.

11.2.2 Groundwater Quality Parameters

Groundwater quality parameters were measured in the field prior to sampling to ensure collection of water that is representative of the groundwater conditions. The groundwater quality parameters are presented in **Table 11-4**.

Table 11-4: Field physico-chemical groundwater quality parameters

Well ID	Date	Temp	Spec. Cond.	pH	Dissolved Oxygen	Redox Potential	Total Dissolved Solids	Comments
		°C	µS/cm	pH units	mg/L	mV	mg/L	
MW1	2/04/2020	17.26	682	7.55	6.12	114	446	Light brown, medium turbidity, no odour
MW2	2/04/2020	17.24	504	6.94	1.84	-72	322	Brown, low turbidity, no odour
MW3	2/04/2020	16.46	1,020	6.81	0.00	-154	655	Light brown, med-high turbidity, no odour
MW4	27/03/2020	16.60	615	7.04	2.97	125	393	Light brown, low turbidity, no odour
MW5	2/04/2020	18.1	601	6.86	1.07	112.9	390	
MW6	27/03/2020	17.0	643	7.06	1.14	114.5	416.0	Difficult to filter, cloudy
MW7	27/03/2020	16.0	475.5	6.77	0.75	-70.8	308.75	Difficult to filter
GW053976¹	2/04/2020	16.63	260	7.57	2.19	126	169	Clear, no turbidity, no odour

¹ GW053976 is an old well located within the rail corridor located to the north of MW5. As the well depth and construction details are unknown, the well is excluded from the discussion below.

- pH is generally neutral, with measurements ranging from pH6.77 at MW7, closest to the Mulwaree River, to pH7.55 at MW1, located furthest from Mulwaree River.
- EC measurements ranged from 475.5 µS/cm at MW7 to 1,020 µS/cm at MW3, indicating fresh groundwater conditions.
- DO ranged from 0.0 mg/L (MW3) to 6.94 mg/L (MW1), with an average of 2.0 mg/L across the investigation area.
- Redox potential measurements varied between -154 mV at MW3 (reducing conditions) to 114.5 mV (oxidising conditions).
- TDS concentrations ranged from 308.75 ppm (MW7) to 655 ppm (MW3), indicating fresh groundwater.

11.2.3 Analytical Results

Soil lead analytical results from samples collected during the installation of the groundwater monitoring wells are summarised in **Table 11-5**.

Table 11-5: Summary of Groundwater Monitoring Well Soil Lead Analytical Results

Number of Samples (n)		46
Detections		466
Minimum (mg/kg)		13
Maximum (mg/kg)		3,600
Mean (mg/kg)		164
HILs	n > Site specific human health guideline (2,200 mg/kg)	1
	n > Public open space (HIL C)	0
EILs	n > Site specific ecological guideline (1,800 mg/kg)	1
	n > Urban residential and public open space	0

Notes: Site specific HIL and EIL adopted for monitoring wells MW-MW4 located within the rail corridor. HIL C and EIL for urban residential and public open space adopted for monitoring wells MW5-MW6 located outside of the rail corridor.

Groundwater analytical results are summarised in **Table 11-6** and tabulated in **Table 10, Appendix 3**. Groundwater sampling laboratory analytical reports are included in **Appendix 7**.

Table 11-6: Summary of Groundwater Monitoring Well Results

Analyte / Grouping	Number of samples (n)	n = 'detects'	Maximum (mg/L)	Guidelines			
				n > 95% fresh water species protection	n > livestock use	n > irrigation use	n > drinking water
Filtered metal(loid)s							
Aluminium	5	0	<0.05	-	0	0	-
Arsenic	8	2	0.005	0	0	0	0
Barium	5	5	0.16	-	-	-	0
Beryllium	8	0	<0.001	0	-	0	0
Boron	3	0	<0.05	-	0	0	0
Cadmium	8	2	0.003	1(MW5)	0	0	0
Chromium	8	1	0.002	1 (MW4)	0	0	-
Cobalt	8	6	0.029	5 (MW1, MW2, MW3, MW4 & MW7)	0	0	0
Copper	8	2	0.003	1 (GW053976)	0	0	0
Lead	8	2	0.005	1 (GW053976)	-	0	0
Manganese	8	8	2	1 (MW3)	0	0	0
Mercury	8	0	<0.0001	0	0	0	0
Nickel	8	6	0.004	0	0	0	-
Selenium	3	0	<0.001	-	0	0	-
Zinc	8	7	0.27	6 (MW1-MW5, GW053976)	0	0	0

11.3 Surface Water

11.3.1 Surface Water Quality Parameters

Surface water quality parameters were measured in the field prior to sample collection. The surface quality parameters are presented in **Table 11-7**.

Table 11-7: Field Physico-chemical Surface Water Quality Parameters

Site ID	Date	Temp	Spec. Cond.	pH	Dissolved Oxygen	Redox Potential	Total Dissolved Solids	Comments
		°C	µS/cm	pH units	mg/L	mV	mg/L	
SW1	1/04/2020	17.4	575	6.35	5.88	115	368	Clear brown, low/no turbidity, minor suspended solids, no odour, no flow Clear, no turbidity, no odour, no flow Brown, low-med turbidity, some suspended solids, no odour, no flow Brown-yellow, med turbidity, some brown matter on water surface Light brown, low turbidity, no odour, no flow
SW1_UP	1/04/2020	19.94	584	7.05	4.75	154	374	
SW2	1/04/2020	17.54	358	7.25	3.84	163	233	
SW3	1/04/2020	21.75	245	6.23	5.24	178	159	
SW4	1/04/2020	20.33	297	6.73	5.24	168	193	
SW5	1/04/2020					DRY		
SW6	1/04/2020					DRY		
SW7	2/04/2020	18.1	234.2	7.23	4.45	114.2	152.1	
SW8	2/04/2020	18.0	425.7	7.23	4.39	124.0	275.9	
SW9	2/04/2020	18.2	381.7	7.62	6.29	124.5	247.65	Dam, highly turbid Grease on surface, lots of algae growing on plants Non-turbid, slightly turbid, not flowing but full

- pH is generally slightly alkaline to neutral, with measurements ranging from pH6.23 at SW3, located within the centre of the site, to pH7.62 at SW9, located upstream in Mulwaree River.
- EC measurements ranged from 234.2µS/cm at SW7 in the dam to 575 µS/cm at SW1, indicating fresh water conditions.
- DO ranged from 3.84 mg/L (SW3) to 6.29 mg/L (SW9), with an average of 5.01 mg/L across the investigation area.
- Redox potential measurements varied between 114.2 mV at SW7 to 178 mV at SW3 indicating oxidising conditions across the investigation area water bodies.
- TDS concentrations ranged from 152.1 ppm (SW7) to 374 ppm (SW1_UP), indicating fresh water.

11.3.2 Analytical Results

Surface water analytical results are summarised in **Table 11-8** and tabulated in **Table 8** in **Appendix 3**. Surface water laboratory analytical reports are included in **Appendix 7**.

Table 11-8: Summary of Surface Water Results

Analyte / Grouping	Number of samples (n)	n = 'detects'	Maximum (mg/L)	Guidelines			
				n > 95% fresh water species protection	n > livestock use	n > irrigation use	n > drinking water
Total metal(loid)s							
Aluminium	10	8	0.92	7 (SW1, SW2-SW4, SW7 1-2 April 2020 & SW2, SW4 30 April 2020)	0	-	-
Arsenic	10	8	0.004	0	0	0	0
Barium	10	10	0.15	-	-	-	0
Beryllium	10	0	<0.001	0	0	-	0
Cadmium	10	7	0.04	7 (SW1, SW2-SW4, SW7 1-2 April 2020 & SW2, SW4 30 April 2020)	0	3 (SW3 and SW4 1 April 2020 & SW2, SW4 30 April 2020)	2 (SW3 1 April 2020 & SW2, SW4 30 April 2020)
Chromium	10	4	0.002	1 (SW3 1 April 2020)	0	0	0
Cobalt	10	8	0.014	7 (SW1, SW2-SW4, SW7-SW8 1-2 April 2020, SW2, SW4 30 April 2020)	0	0	-
Copper	10	8	0.31	7 (SW1, SW2-SW4, SW7 1-2 April 2020, SW2, SW4 30 April 2020)	0	0	0
Iron	10	10	4.5	-	-	0	-
Lead	10	7	0.17	7 (SW1, SW2-SW4, SW7 1-2 April 2020, SW2, SW4 30 April 2020)	2 (SW3, SW4 April 2020)	0	0
Manganese	10	10	1.9	0	-	0	0
Mercury	10	0	<0.0001	0	0	0	0
Nickel	10	8	0.12	3 (SW3, SW4 1-2 April 2020, SW4 30 April 2020)	0	0	3 (SW3, SW4 1-2 April 2020, SW4 30 April 2020)
Zinc	10	10	7	10	0	1 (SW4 30 April 2020)	-

11.4 Sediment

Sediment analytical results are summarised in **Table 11-9** and tabulated in **Table 9, Appendix 3**. Sediment laboratory analytical reports are included in **Appendix 7**.

Table 11-9: Summary of Sediment Analytical Results

Metals	Number of samples (n)	n = 'detects'	Minimum (mg/kg)	Maximum (mg/kg)	n > DGV	n > GV-High
Aluminium	12	12	4,400	13,000	-	-
Arsenic	12	12	2.9	37	1 (SED4)	0
Barium	12	12	60	200	-	-
Beryllium	12	0	<2	<2	-	-
Boron	10	9	<0.4	7.2	-	-
Cadmium	12	12	0.5	20	10 (SED1-SED9)	7 (SED1-SED4, SED8-SED9)
Chromium	12	7	<5	18	0	0
Cobalt	12	7	<5	9.5	-	-
Copper	12	12	10	600	5 (SED1, SED2, SED4, SED7, BR_SED2)	2 (SED2, SED4)
Iron	12	12	6,600	23,000	-	-
Lead	12	12	18	4,700	8 (SED1, SED2-SED4, SED6, SED7, BR_SED1, BR_SED2)	3 (SED1, SED2, SED4)
Manganese	12	12	56	400	-	-
Mercury	12	2	<0.1	0.3	1 (SED4)	0
Nickel	12	10	6.6	16	0	0
Zinc	12	12	20	2,400	8 (SED1, SED2-SED4, SED6, SED7, BR_SED1, BR_SED2)	6 (SED1, SED2, SED4, SED6, SED7, BR_SED2)

11.5 Public Spaces

Results of the assessment of lead in surficial soil in local public road reserves are presented on **Figure 6a – b, Appendix 1** in **Table 12 – 13, Appendix 3** and in summary as **Table 11-10** and **Table 11-11**.

XRF results within the town included lead concentrations above HIL C in 22 samples. Arsenic and cobalt exceeded HIL C in three samples each. Zinc was observed to exceed EIL C in 64 samples. Copper exceeded the EIL C in 25 samples. Lead and arsenic concentrations exceeded EIL C in five and four samples respectively. Review of **Table 12 – 13, Appendix 3** indicates elevated metal concentrations are co-located and are generally limited to Boyd Street, Goulburn Street and Stewart Street (noting that zinc exceeds EIL C at several locations on Wallace Street). XRF results on Boyd Street align with elevated metal concentrations previously observed in surface water downstream of a nearby rail culvert (refer to sample ID SWM4 presented on **Figure 8, Appendix 1**) and visible evidence of vegetative stress.

XRF results along the haul route found lead concentrations above HIL D in 10 samples and arsenic above HIL D at one location. Zinc was observed to exceed EIL D in 29 samples. Copper exceeded the EIL C in 17 samples. Lead and arsenic concentrations exceeded EIL C in one and two samples respectively.

Table 11-10: Summary assessment of XRF results for Tarago Town

Analyte	Arsenic	Barium	Cadmium	Chromium	Cobalt	Copper	Iron	Lead	Manganese	Mercury	Nickel	Zinc
Number of Samples (n)	169	169	169	169	169	169	169	169	169	169	169	169
Detections	101	113	8	46	12	143	169	150	167	0	15	169
Minimum (mg/kg)	4.75	45.77	10.93	16.84	49.42	13.46	1903.78	5.77	56.22	0	30.45	16.16
Maximum (mg/kg)	491.11	924.35	42.94	99.74	464.12	2736.94	72358.66	5993.39	619.73	0	61.51	5450.25
n > Human Health Investigation Level - Public open space (HIL C)	3	n/a	0	0	3	0	n/a	20	0	0	0	0
n > Ecological Investigation Level - Urban residential and public open space (EIL C)	4	n/a	n/a	0	n/a	25	n/a	5	n/a	n/a	0	64

¹Mercury was not reported in any XRF sample above limit of detection.

n/a – no criteria available

Table 11-11: Summary assessment of XRF results for the haul route

Analyte	Arsenic	Barium	Cadmium	Chromium	Cobalt	Copper	Iron	Lead	Manganese	Mercury ¹	Nickel	Zinc
Number of Samples (n)	30	30	30	30	30	30	30	30	30	30	30	30
Detections	25	16	2	11	1	30	30	30	30	0	6	30
Minimum (mg/kg)	2	10	0.4	5	5	24	6490	71	87	0	5	161
Maximum (mg/kg)	374	722	36	125	120	1944	40801	4321	1100	0	72	7625
n > Human Health Investigation Level - Public open space (HIL C)	1	n/a	0	0	0	0	n/a	10	0	0	0	0
n > Ecological Investigation Level - Urban residential and public open space (EIL C)	2	n/a	n/a	0	n/a	17	n/a	1	n/a	n/a	0	29

¹Mercury was not reported in any XRF sample above limit of detection.

n/a – no criteria available

11.6 Discrete Properties

11.6.1 Soil

Soil analytical results from discrete private and public properties are tabulated in **Table 1, Appendix 3**. Soil laboratory analytical reports are included in **Appendix 7**.

11.6.1.1 Field Observations

The soil encountered across the investigation area generally comprised brown sandy silt/silty sand to a general depth of 0.15 mbgl, which gradually became more clayey to general maximum depth of investigation (approximately 0.3 mbgl). At some locations on the hill located to the northwest of the site, refusal was encountered on large gravels/rock.

11.6.1.2 Analytical Results – Lead

Soil lead analytical results are summarised in **Table 11-12**.

Table 11-12: Summary of Discrete Property Soil Lead Analytical Results

Number of Samples (n)		472
Detections		466
Minimum (mg/kg)		<5
Maximum (mg/kg)		3,800
Human health investigation levels	n > Residential with garden/accessible soil (HIL A)	19
	n > Public open space (HIL C)	1
	n > Commercial / industrial (HIL D)	0
Ecological investigation levels	n > Urban residential and public open space	4
	n > Commercial and industrial	0
	n > Disposal of Biosolid Products	4

Notes: HIL A adopted for properties P1, P4-P5, P10, P12-P28, P30-P41 and the Station Masters Cottage. HIL C adopted for properties P2, P3, P6, P8, P9 and P11. The EPA (2000) *Environmental Guidelines: Use and Disposal of Biosolid Products* guideline is not relevant to potential impacts from the rail corridor however the criteria was adopted to assess potential impacts for agricultural land in the absence of other Australian guidance.

Lead was reported in excess of the HIL A criterion for a residential land use with garden/accessible soil in 19 samples across six residential properties (SMC, P1, P4, P34, P39 and P40) and HIL C criterion for public open space in one sample from the yard of one commercial property (P2) within the investigation area.

Lead was reported in excess of the EIL criterion for urban residential and public open space in four samples across two properties (SMC and P2) and in excess of the adopted agricultural criterion in four samples at one property (P29).

Individual letter reports for discrete public properties, P3, P5, P6, P8, P9 and P11, are provided **Appendix 8**.

11.6.1.3 Analytical Results – Other Heavy Metals

Soil analytical results for other heavy metals are summarised in **Table 11-13**.

Table 11-13: Summary of Discrete Property Soil Heavy Metal Analytical Results

Metal(loid)s	Number of samples (n)	Detections	Minimum (mg/kg)	Maximum (mg/kg)	n > HIL A	n > EIL (urban residential and public open space)
Aluminium	16	16	<0.05	0.13	-	-
Arsenic	16	16	<0.001	0.01	0	-
Barium	16	16	<0.02	0.06	-	-
Beryllium	16	0	<2	<2	0	-
Cadmium	16	13	<0.4	9.1	0	-
Chromium	16	15	<5	21	0	0
Cobalt	16	2	<5	7.3	0	-
Copper	16	15	<5	740	0	2
Iron	16	16	4,600	23,00	-	-
Manganese	16	16	69	400	0	-
Mercury	16	1	<0.1	0.2	0	0
Nickel	16	4	<5	15	0	0
Zinc	16	16	19	1,100	-	6

11.6.2 Discrete Property Groundwater Bores

11.6.2.1 Analytical Results

Discrete property groundwater bore analytical results are summarised in **Table 11-14** and tabulated in **Table 2, Appendix 3**. Groundwater bore laboratory analytical reports are included in **Appendix 7**. Unfiltered results are presented below and are likely an over representation of concentrations present in settled groundwater, such as that used for drinking.

Table 11-14: Summary of Discrete Property Groundwater Bore Results

Analyte / Grouping	Number of samples (n)	n = 'detects'	Minimum (mg/L)	Maximum (mg/L)	Exceedences		
					n > livestock use	n > irrigation use	n > drinking water
Filtered metal(loid)s							
Aluminium	3	0	<0.05	<0.05	0	-	-
Arsenic	8	1	<0.001	0.005	0	0	0
Barium	3	3	0.002	0.053	-	-	-
Beryllium	8	0	<0.001	<0.001	0	-	0
Boron	5	0	<0.05	<0.05	0	0	0
Cadmium	8	0	<0.0002	<0.0002	0	0	0
Chromium	8	0	<0.001	<0.001	0	0	0
Cobalt	8	1	<0.001	0.001	0	0	-
Copper	8	3	<0.001	0.02	-	0	0
Iron	3	1	<0.05	13	0	0	-
Lead	8	0	<0.001	<0.001	-	0	0
Manganese	8	6	<0.005	0.19	0	0	0
Mercury	8	0	<0.0001	<0.0001	0	0	0
Nickel	8	2	<0.001	0.004	0	0	0
Selenium	5	0	<0.001	<0.001	0	-	0
Zinc	8	4	<0.005	0.034	0	0	-

- no criteria

Individual letter reports for discrete public properties, P3, P5, P6, P8, P9 and P11, are provided **Appendix 8**.

11.6.3 Rainwater Tank Water

11.6.3.1 Analytical Results

Rainwater tank water analytical results are summarised in **Table 11-15** and tabulated in **Table 3, Appendix 3**. Soil laboratory analytical reports are included in **Appendix 7**.

Table 11-15: Summary of Discrete Property Rainwater Tank Water Analytical Results

Dissolved metal(loid)s	Number of samples (n)	n = 'detects'	Minimum (mg/L)	Maximum (mg/L)	n > drinking water
Aluminium	64	2	<0.05	0.13	-
Arsenic	69	4	<0.001	0.01	0
Barium	67	7	<0.02	0.06	-
Beryllium	69	0	<0.001	<0.001	0
Boron	25	2	<0.05	0.59	0
Cadmium	67	7	<0.0002	0.0015	0
Chromium	69	37	<0.001	0.057	0
Cobalt	69	2	<0.001	0.006	-
Copper	69	36	<0.001	0.25	0
Iron	64	6	<0.05	11	-
Lead	69	6	<0.001	0.3	0
Manganese	69	29	<0.005	0.25	0
Mercury	69	1	<0.0001	0.0002	0
Nickel	69	6	<0.001	0.016	0
Selenium	26	1	<0.001	0.002	0
Zinc	69	65	<0.005	2	-

Lead was reported in excess of the drinking water criterion in one rainwater tank water sample (SMC). This property is located immediately east of the site. Individual letter reports for discrete public properties, P3, P5, P6, P8, P9 and P11, are provided **Appendix 8**.

11.6.4 Rainwater Tank Sediment

11.6.4.1 Analytical Results

Rainwater tank sediment analytical results are summarised in **Table 11-16** and tabulated in **Table 4, Appendix 1**. Rainwater tank sediment laboratory analytical reports are included in **Appendix 8**.

Table 11-16: Summary of Discrete Property Rainwater Tank Sediment Analytical Results

Metals	Number of samples (n)	n = 'detects'	Minimum (mg/kg)	Maximum (mg/kg)	n > HIL A	n > HIL C
Aluminium	2	2	9,600	15,000	-	-
Arsenic	5	5	3	410	1	0
Barium	2	2	37	43	-	-
Beryllium	5	3	<2	17	0	0
Boron	3	3	12	460	0	0
Cadmium	3	1	<5	31	1	0
Chromium	2	2	35	60	0	0
Cobalt	5	3	<5	170	1	0
Copper	5	5	8	4,900	0	0
Iron	2	2	16,000	18,000	-	-
Lead	35	35	11	9,100	6	0
Manganese	5	5	70	6,100	1	0
Mercury	5	3	<0.1	6	0	0
Nickel	5	3	<5	500	1	0
Selenium	3	1	<2	45	0	0
Zinc	5	5	62	16,000	1	0

Notes: HIL A adopted for properties P1, P4, P7, P10, P12-P28, P30-P41 and the Station Masters Cottage. HIL C adopted for properties P3, P6 and P11.

Lead was reported in excess of the HIL A criterion for a residential land use with garden/accessible soil in six rainwater tank sediment samples (SMC, P1, P24, P25, P27 and P39). These properties are located immediately east and west of the site. Individual letter reports for discrete public properties, P3, P5, P6, P8, P9 and P11, are provided **Appendix 8**.

11.6.5 Dust

11.6.5.1 Analytical Results

Dust analytical results are summarised in **Table 11-17**, **Table 11-18** and **Table 11-19** and tabulated in **Table 5**, **Appendix 1**. Soil laboratory analytical reports are included in **Appendix 7**.

Table 11-17: Summary of Discrete Property Dust Analytical Results (Window Sills and Shelves)

Number of Samples (n)	22
Detections	22
Minimum (μg / $\mu\text{g}/\text{m}^2$)	2.2 / 24.4
Maximum (μg / $\mu\text{g}/\text{m}^2$)	520 / 2,803
Mean (μg / $\mu\text{g}/\text{m}^2$)	55.5 / 535
n > Residential Property (including child care centres)	2
n > Commercial properties	0

Lead concentrations were reported in excess of the adopted residential criteria for lead in dust on window sills and shelves in two residential properties (P1 and P18).

Table 11-18: Summary of Discrete Property Dust Analytical Results (Hard and Carpeted Floors)

Number of Samples (n)	107
Detections	95
Minimum (mg/kg / μg / $\mu\text{g}/\text{m}^2$)	<5 / <1 / <0.7
Maximum (mg/kg / μg / $\mu\text{g}/\text{m}^2$)	540 / 200 / 2,222
Mean (mg/kg / μg / $\mu\text{g}/\text{m}^2$)	60 / 16 / 191
n > Residential Property (including child care centres)	17
n > Commercial properties	2

Lead concentrations were reported in excess of the adopted residential criteria for lead in dust on floors in 17 dust samples in eight residential properties (SMC, P1, P5, P17, P18, P32, P34 and P37) and in two commercial properties (P3 and P9).

Table 11-19: Summary of Private Property Dust Analytical Results (External samples, grab samples and man holes)

	External Dust	Grab Samples	Man holes
Number of Samples (n)	2	9	18
Detections	2	9	18
Minimum	1,000 mg/kg	24 mg/kg / 11 µg	61 mg/kg / 1 µg
Maximum	1,100 mg/kg	11,000mg/kg / 13 µg	5,100 mg/kg / 120 µg
Mean	1,050 mg/kg	2,422 mg/kg / 12 µg	1,063.5 mg/kg / 22.55 µg

Individual letter reports for discrete public properties, P3, P5, P6, P8, P9 and P11, are provided **Appendix 8**.

11.6.6 Paint

Paint analytical results are summarised in **Table 11-20** and tabulated in **Table 6, Appendix 3**. Paint laboratory analytical reports are included in **Appendix 7**.

Table 11-20: Summary of Private Property Paint Analytical Results

Number of Samples (n)	10
Detections	8
Minimum (%)	<0.01
Maximum (%)	3.1
n > Australian Government Department of the Environment (2005) <i>Lead Alert: the six step guide to painting your home</i>	6

Individual letter reports for discrete public properties, P3, P5, P6, P8, P9 and P11, are provided **Appendix 8**.

12. DISCUSSION

Discussion of results is presented below with regard for the goals of the study as defined in **Section 8.1.2**.

12.1 Delineation of the Contaminant within Soils at the Site and at the Loadout Complex

Delineation of the Contaminant within soils at the site and at the Loadout Complex is considered in **Sections 12.1.1** to **12.1.3**. Regional delineation of the Contaminant within groundwater and surface water is considered in **Sections 12.2** and **12.3**.

12.1.1 Review of Historic Assessments

Results from previous assessments (summarised in **Section 4.12**) informed delineation of the Contaminant within the rail formation and adjacent soils across an area of approximately two hectares and to a maximum depth of 0.5 mbgl. The Contaminant was observed in cess drain soils and surface waters upstream and downstream of the three culverts identified onsite.

12.1.2 Vertical Delineation of the Contaminant within the site

Results indicate the vertical extent of contamination in site soil was generally limited to the upper 0.5m bgl. One exception was observed where elevated lead was observed on the east side of the former loadout complex (MW2) where lead exceeded assessment criteria at a depth of one meter below ground level. The elevated concentration observed at MW2 (3,600 mg/kg) occurred in material indicative of the site surface during operation of the Loadout Complex (ie: before application of capping).

Assessment of the vertical extent of lead in site soil (integrating results from historic assessment and recent sampling from monitoring well boreholes) is summarised on **Figures 2a – 2e, Appendix 1** in summary tables which describe lead concentrations reported at increasing depth through the soil profile at 15 locations. Those summary tables have been further consolidated in **Table 12-1** below.

Table 12-1: Summary of Vertical Delineation of Lead in Site Soils

Depth (mbgl)	0-0.1	0.1 - <0.5	0.5	1	1.5	2.5	3.5	4.5
Number of samples (n)	9	9	15	12	4	4	4	4
Detections	9	9	15	12	4	4	4	4
Minimum (mg/kg)	51	12	7.4	6.7	16	15	15	22
Maximum (mg/kg)	29000	184000	390	3600	540	200	140	42
Mean (mg/kg)	4615.7	25293.6	87.9	357.0	148.8	64.3	51.8	29.8
n > Site specific human health guideline (2,200 mg/kg)	3	5	0	1	0	0	0	0
n > Site specific ecological guideline (1,800 mg/kg)	4	5	0	1	0	0	0	0

Concentrations of lead were observed to be highest in shallow soils and generally dropped below assessment criteria from 0.5 mbgl. Continued reduction in lead concentrations was observed from 0.5 – 4.5m and qualitative assessment indicates a relationship between concentrations of lead and other metals such as copper and zinc.

12.1.3 Additional Assessment of Site Surface Soil

Visual evidence of ore concentrate was observed in surface soils adjacent a drainage line onsite in June 2020. It is considered likely these impacts occurred during the rail loop extension as this evidence was not observed during previous assessment of the area. Assessment by field portable XRF identified concentrations of the Contaminant above assessment criteria for the site. Further, concentrations of the Contaminant and other metals were observed that could be expected to adversely impact the receiving environment for downstream surface waters.

Soils were analysed at 0.1 mbgl at three locations where concentrated lead was reported at the surface (PIA2, PIA4, PIA5). Metals concentrations were observed to be much lower at 0.1 mbgl compared to the surface and this supports conclusion that the observed impacts are limited to surface soils.

This area of surface soil contamination is presented on **Figure 2b, Appendix 1**. The extent of the Contaminant onsite (including at the former Loadout Complex) has been delineated and is described by red shading on **Figures 2a – 2e, Appendix 1**.

12.2 Groundwater

Metals concentrations were reported below drinking water guidelines in all bores tested.

Lead concentrations in groundwater were reported above the adopted criteria protective of freshwater ecosystems (95% species protection) in registered bore GW053976 located within the rail corridor. All other dissolved lead concentrations were reported below the freshwater ecosystem criteria.

Generally concentrations of the Contaminant, and other heavy metal concentrations were low and all were reported below relevant assessment criteria protective of human health. This is consistent with the vertical profile of contaminants in site soil described in **Section 12.1.2** which indicates that potential for impacts from site soil contamination to groundwater is limited. Concentrations of zinc and cobalt exceeded ecological criteria up and down gradient of identified site contamination and copper, lead, and chromium were observed in groundwater onsite down gradient of site contamination. Lead was only observed onsite in one pre-existing well (GW053976). This well is located approximately 300m south and cross-gradient of the most concentrated soil contamination. Based on the unknown history of GW053976 and the absence of lead in groundwater above adopted assessment criteria in any of the purpose-built monitoring wells, lead reported at GW053976 is considered an anomaly. This discussion supports conclusion that the Contaminant has not impacted groundwater.

In the closest downgradient offsite well (MW6), all contaminant concentrations were reported below ecological and human health criteria. Cobalt was reported above ecological criteria in the nearest well to the Mulwaree River (MW7) however based on the presence of cobalt in groundwater upgradient of site contamination and the absence of cobalt immediately downgradient of site, the observed cobalt concentrations in groundwater are considered indicative of a regional conditions unrelated to the site.

Dissolved concentrations, indicative of contaminant migration are low and indicate a low potential for impacts in the receiving body of Mulwaree River and the community use of the aquifer.

12.3 Surface Water and Sediment

Lead concentrations in surface water were reported above the freshwater ecosystems criteria in seven of the ten locations and above the stock watering criteria in two of the ten locations

sampled in April 2020, with the higher lead concentrations reported in SW3, SW4 and SW1 located within the area of known lead impact in the rail corridor and appeared to decrease down-gradient of the site. Upstream samples, SW1_UP and SW9, and SW8 located downstream of the Mulwaree River tributary did not report lead concentrations above the laboratory limit of reporting. Lead concentrations in sediment followed a similar distribution to the surface water samples, with the highest lead concentrations reported in SED1, SED2 and SED4 above the GV-high criterion, indicating there is potential for toxicity-related adverse effects to be observed in these locations. The lowest lead sediment concentrations were reported in upstream samples SED1_UP and SW9, and SED8 located downstream of the Mulwaree River tributary.

Other heavy metals were variably reported above the adopted criteria for surface waters and sediments, with the highest concentrations generally reported in sample locations within the area of known lead impact (SW1, SW3 and SW4). Heavy metal concentrations remain relatively consistent between the earlier surface water sampling rounds in August and September 2019, with no significant changes between monitoring rounds.

12.4 Discrete Property Investigation

The results of the discrete property investigation indicate that lead concentrations reported within the surface and near surficial soil at the 42 properties investigated is unlikely to be the result of migration from the site, with the exception of SMC (located immediately adjacent to the site) and P29, P39 and P40 located along the overland flow path from the site towards Mulwaree River where lead concentrations have the potential to impact on human health and ecological receptors.

Lead concentrations in groundwater bores were reported below drinking water guidelines in all bores tested.

Lead concentrations reported within rainwater tank water were low and not likely to pose a risk to human health in all tanks sampled. Lead concentrations reported within rainwater tank sediment were low and below the adopted assessment criteria for tank sediment with the exception of properties SMC, P1, P24, P25, P26, P27 and P39, located immediately east and west of the site. The elevated lead concentrations in these tank sediment samples are considered to be potentially the result of dust migration from the site.

Lead concentrations in dust samples were reported above the adopted criteria in ten properties across the investigation area. Internal dust sampling included swab and vacuum sampling. Lead loadings (as $\mu\text{g}/\text{m}^2$) from swab samples were compared directly to adopted guidelines. Indicative loadings from vacuum samples were used to assess the presence or absence of elevated levels of lead in dust (generally vacuum sampling occurred on carpets). The calculated dust lead loading is not indicative of the level of lead in dust that people may be exposed to when accessing the carpet, however the elevated levels triggered further assessment.

The level of lead in dust samples collected by vacuum can be reported as a concentration, just like for outdoor soil. The soil HILs are concentration based guidelines that represents safe lead concentrations where lead exposure can occur from both outdoor soil and indoor dust. In the absence of elevated outdoor soil lead concentrations, the indoor dust concentrations collected by vacuum can be directly compared with the HILs.

Elevated lead loadings were reported from vacuum samples where loadings from swab samples were reported below criteria at four discrete properties (P5, P11, P17 and P18). At each of these

properties the approach described above was applied and supported conclusion that risks from lead in internal dust were low and acceptable.

Analysis of additional heavy metals in soil on properties along the overland flow path (namely P6, P29 and P39) indicate that copper and zinc may be present at levels that have the potential to cause harm to ecological receptors. Lead based paint was observed at six properties (P12, P18, P32, PS and SMC) and in poor condition at two of these properties.

12.5 Public Spaces

The results of the public space investigation by XRF indicate lead concentrations in surface soil in most areas assessed are below the adopted assessment criteria indicating that widespread impacts from the lead ore within rail corridor have not occurred. However, there are three areas identified with elevated concentrations as follows:

1. In areas along the haul route between the mine and the rail corridor.
2. On Mulwaree Street and in the roadside drain downstream.
3. On an overland flow path from the rail corridor adjacent the Station Masters Cottage and across Boyd Street.

Items 1 and 2 are considered unrelated to lead within the rail corridor for the following reasons:

1. The Contaminant has been delineated onsite with the exception of localised offsite migration through surface water and dust. This includes delineation of the Contaminant onsite and elevated lead concentrations on Stewart Street (the closest part of the haul route).
2. Historic practices are known to have occurred along the haul route (transport of ore by truck) and on Mulwaree Street that could have resulted in lead contamination
3. The haul route and Mulwaree Street are elevated above the site such that movement of the Contaminant via surface water is infeasible; and
4. The degree of contamination in the haul route and on Mulwaree Street exceeds the degree of impacts linked to dust by an order of magnitude.

Item 3 is considered to be related to the migration of lead ore from the rail corridor by surface water and further investigation of this is required.

13. CONCEPTUAL SITE MODEL

A Conceptual Site Model (CSM) is a site-specific qualitative description of the source(s) of contamination, the pathway(s) by which contaminants may migrate through the environmental media, and the populations (human or ecological) that may potentially be exposed. This relationship is commonly known as a Source-Pathway-Receptor ("SPR") linkage. Where one or more elements of the SPR linkage are missing, the exposure pathway is considered to be incomplete and no further assessment is required. Where this linkage is found to be complete, it does not indicate that health or environmental risk is present, but rather triggers either a more detailed investigation or exposure controls. The findings of all assessments referenced here-in are considered in the exposure pathway assessment presented below. This is a revision to the preliminary CSM presented in **Section 7**.

The preliminary CSM has been updated following the results of the current investigation. CSM figures are presented **Sections A1 – A2** and **B1 – B2, Appendix 1** and support the following discussion of SPR linkages .

13.1 Sources of the Contaminant

The primary source of the Contaminant was identified as the ore concentrate from the former Loadout Complex that has been deposited within the rail formation and adjacent shallow soils. Secondary sources were identified as:

1. surface water and sediment in drainage lines onsite and in the local offsite receiving environment; and
2. dust that has accumulated within buildings and as sediment in rainwater tanks close to the site.

Sources considered within this CSM are those clearly related to the Contaminant as defined above.

Lead contamination that has been identified but which is not related to the site (ie: is not the Contaminant) includes impacts on the haul route between the mine and the rail corridor and on Mulwaree Street. Additionally, several instances of localised lead contamination that was geographically separated from the site were identified on private properties. At some of these properties lead based paint was identified in poor condition and lead is generally known to be a cheap and useful metal found frequently in the environment and older homes (NSW EPA 2020). Lead contamination that has been identified but which is not related to the site should be considered further by the polluters, property owners and relevant regulatory stakeholders. Where it is reasonable to conclude that contamination is not the Contaminant at the site or related to the migration of the Contaminant from the site that contamination has been excluded from further consideration.

13.2 Receptors

The receptors identified in this CSM were based on a current and future use of the site and surrounding land, which currently includes residential and a range of community uses.

The human receptors identified were:

1. Onsite workers (including intrusive maintenance and construction workers)
2. Users of Tarago Train Station
3. The owners of the Station Masters Cottage

4. Other local residents
5. A range of community facilities including the Public School, Preschool and Townhall
6. Workers in adjacent public road reserves.

The ecological receptors identified were:

1. Onsite ecology
2. Offsite ecology including crops and livestock
3. Ecological receptors in the Mulwaree River.

13.3 SPR Linkages

An assessment of the SPR linkages for the Contaminant onsite (including the former loadout complex) is summarised in **Table 13-1**.

Table 13-1: Exposure Assessment Summary

Exposure Route	Potentially Complete SPR? (Y / N / P)							Justification
	Onsite Workers	Onsite Ecology	Residents	Community Activities	Offsite Workers	Offsite Ecology	Irrigation and Livestock	
Soil and Sediment								
Direct Contact	P	P	P ¹	N	P	P	P	Concentrations in soils exceed onsite assessment criteria however management measures have been defined to mitigate risks to onsite workers (Ramboll 2019f). Potential remains for impacts to onsite ecology. Concentrations in sediment / soil offsite exceed human health and ecological criteria.
Inhalation	P	P	P ¹	N	P	P	P	
Incidental Ingestion	P	P	P ¹	N	P	P	P	
Root Uptake	N/A	P	N/A	N/A	N/A	N/A	N/A	
Surface Water								
Direct Contact	N	P	N	N	N	P	P	Flow was not observed in any of the drains or culverts present at the site. However, this is likely upon rainfall, which can mobilise contaminated soils into the local waterway where aquatic ecological receptors may become exposed.
Incidental Ingestion	N	P	N	N	N	P	P	
Root Uptake	N/A	P	N/A	N/A	N/A	P	N/A	
Migration to groundwater	N	P	N	N	N	P	P	
Groundwater								
Potable use including drinking	N	N/A	N	N	N	N/A	N/A	Concentrations in groundwater reported below human health criteria. Some metals exceed ecological criteria onsite though not defined offsite and do not appear to discharge to the receiving Mulwaree River so ecological exposure considered unlikely.
Direct Contact	N	N	N	N	N	N	N	
Incidental Ingestion	N	N	N	N	N	N	N	
Root Uptake	N/A	N	N/A	N/A	N/A	N	N	
Dust								
Direct Contact	N	N/A	P	N	N	N/A	N/A	Contaminant migration via airborne dust has occurred to several local houses and lead exceeds assessment criteria.
Inhalation	N	N/A	P	N	N	N/A	N/A	
Incidental Ingestion	N	N/A	P	N	N	N/A	N/A	
Rain Tank Water								
Potable use including drinking	N/A	N/A	N	N	N/A	N	N	Rain tank water reported below criteria.
Direct Contact	N/A	N/A	N	N	N/A	N	N	
Incidental Ingestion	N/A	N/A	N	N	N/A	N	N	
Root Uptake	N/A	N/A	N	N	N/A	N	N	
Rain Tank Sediment								
Direct Contact	N/A	N/A	P	N	N/A	P	N	Contaminant migration via airborne dust has occurred and concentrations in tank sediment exceeds criteria for soil at some houses. Exposure to sediment could occur if sediment is discharged to the ground when cleaning tanks.
Inhalation	N/A	N/A	P	N	N/A	P	N	
Incidental Ingestion	N/A	N/A	P	N	N/A	P	N	

¹Potentially complete exposure pathways between the Contaminant in soil and offsite residents are limited to approved (though not current) use of one residential property.

13.4 Data Gaps

The extent of offsite contaminant migration via surface water has not yet been determined. The extent of lead impacts at depth within the footprint of the former loadout complex buildings requires further delineation.

14. CONCLUSIONS AND RECOMMENDATIONS

The objective of this investigation was to assess the nature and extent of the Contaminant at the site and the migration of the Contaminant from the site.

Key findings of this investigation were:

1. The Contaminant has been delineated onsite within the rail formation, adjacent shallow soils and drainage lines. Investigation within the footprint of the former Loadout Complex buildings identified localised Contaminant at depth though this is considered unlikely to present a risk to human health or the environment.
2. The Contaminant has not impacted groundwater. All contaminant concentrations measured in groundwater at all locations tested were reported below the Australian Drinking Water Guidelines and guidelines relevant for potable use. Some metals in groundwater exceed criteria relevant to protection of ecology. Impacts to groundwater from site contamination are considered to be low and acceptable and no further investigation is warranted.
3. Offsite migration of the Contaminant and other metals has occurred via surface water. Deposition of elevated metal concentrations in surficial soils appears to have occurred in land immediately east of the site and across Boyd Street onto other nearby properties.
4. Surface water impacts to the Mulwaree River are not evident.
5. Offsite migration of the Contaminant has occurred in airborne dust. Elevated concentrations of lead in rainwater tank sediment and internal dust were identified in close proximity of the site indicating limited off site migration of contaminants in air borne dust has occurred. Dust monitoring is ongoing however early data suggests migration of lead in dust from the site is now low.
6. All contaminant concentrations measured in rainwater tank water at all locations tested were below the Australian Drinking Water Guidelines and guidelines relevant for all potable use. Based on risks from metals rainwater tank water is considered suitable for all potable uses and unimpacted by contamination from the site.
7. High metal concentrations have been identified in local public road reserves and (with the exception of Boyd Street) appear to be unrelated to the rail corridor.

Key recommendations are:

1. Further investigation is recommended to confirm the extent of offsite contaminant migration via surface water and to delineate the Contaminant at depth within the footprint of the former loadout complex buildings
2. Remediation is required onsite and offsite
3. An Action Plan should be developed to mitigate risks associated with site contamination until remediation can occur
4. Ongoing monitoring of surface water and air quality should occur until a long term remedial strategy is implemented and proven to be effective.

15. LIMITATIONS

Ramboll Australia Pty Ltd (Ramboll) prepared this report in accordance with its engagement with John Holland Rail and in accordance with our understanding and interpretation of current regulatory standards.

A representative program of sampling and laboratory analyses was undertaken as part of this investigation, based on past and present known uses of the site. While every care has been taken, concentrations of contaminants measured may not be representative of conditions between the locations sampled and investigated. We cannot therefore preclude the presence of materials that may be hazardous. Site conditions may change over time. This report is based on conditions encountered at the Site at the time of the report and Ramboll disclaims responsibility for any changes that may have occurred after this time.

The conclusions presented in this report represent Ramboll's professional judgment based on information made available during the course of this assignment and are true and correct to the best of Ramboll's knowledge as at the date of the assessment.

Ramboll did not independently verify all of the written or oral information provided to Ramboll during the course of this investigation. While Ramboll has no reason to doubt the accuracy of the information provided to it, the report is complete and accurate only to the extent that the information provided to Ramboll was itself complete and accurate.

This report does not purport to give legal advice. This advice can only be given by qualified legal advisors.

15.1 User Reliance

This report has been prepared exclusively for John Holland Rail and may not be relied upon by any other person or entity without Ramboll's express written permission.

16. REFERENCES

- ANZECC. (2000). *Australia and New Zealand Environment and Conservation Council, Guidelines for Fresh and Marine Water Quality.*
- ANZG. (2018). *Australian and New Zealand Guidelines for Fresh and Marine Water Quality.*
- BOM. (2018). *Australian Groundwater Explorer.*
- DEC. (2007). *Department of Environment and Conservation NSW, Guidelines for the Assessment and Management of Groundwater Contamination.*
- DECCW. (2010). *UPSS Regulation - Sensitive Zones Map.*
- Department of Environment and Heritage Protection. (2012). *Guidelines for Contaminated Land Professionals.*
- Friebel, E. &. (2011). *Health Screening Levels for petroleum hydrocarbons in soil and groundwater. CRC Care Technical Report no.10.* Adelaide, Australia: CRC for Contamination Assessment and Remediation of the Environment.
- NEPC. (2013). *National Environment Protection (Assessment of Site Contamination) Amendment Measure 2013 (No. 1).* NEPC.
- NEPC. (2013). *National Environment Protection Council (NEPC), National Environment Protection (Assessment of Site Contamination) Measure 1999, as amended 2013.*
- NHMRC. (2008). *National Health and Medical Research Council Guidelines for Managing Risk in Recreational Waters.*
- NHMRC. (2008). *National Health and Medical Research Council Guidelines for Managing Risks in Recreational Waters.*
- NHMRC. (2018). *National Health and Medical Research Council, Australian Drinking Water Guidelines.*
- NSW EPA. (1995). *Sampling Design Guidelines.*
- NSW EPA. (2014). *Waste Classification Guidelines, Part 1: Classifying Waste.*
- NSW EPA. (2017). *Guidelines for the Site Auditor Scheme (3rd Edition).*
- OEH. (2011). *Guidelines for Consultants Reporting on Contaminated Sites.*
- OEH. (2011). *Office of Environment and Heritage, Contaminated Sites: Guidelines for Consultants reporting on Contaminated Sites.*
- WHO. (2008). *World Health Organisation (WHO) Guidelines for Drinking-water Quality, third edition.*
- NSW EPA (2003) *Managing Lead Contamination in Home Maintenance, Renovation and Demolition Practices. A Guide for Councils.* NSW Environment Protection Authority.
- Ramboll (2019a) *Tarago Loop Extension Further Intrusive Assessment and Lead Management Plan*
- Ramboll (2019b) *Tarago Loop Extension Short Term Lead Management Plan*
- Ramboll (2019c) *Tarago Loop Extension Preliminary Human Health Risk Assessment*
- Ramboll (2019d) *August 2019 Surface Water Monitoring – Tarago Rail Loop Expansion*
- Ramboll (2019e) *September 2019 Surface Water Monitoring – Tarago Rail Loop Expansion*
- Ramboll (2019f) *Tarago Loop Extension Remedial Action Plan*
- Ramboll (2019g) *Tarago Loop Extension Interim Lead Management Plan*
- Ramboll (2019h) *Tarago Rail Corridor Environmental Site Assessment*
- SRK Consulting (2015) *Technical report (NI43-101) Preliminary Economic Assessment of the Woodlawn Project, New South Wales, Australia.*
- Standards Australia (1998) AS4361.2 *Guide to Lead Paint Management Part 2: Residential and Commercial Buildings*

Standards Australia (2005) AS 4482.1-2005 Guide to the investigation and sampling of sites with potentially contaminated soil - Non-volatile and Semi-Volatile Compounds
US EPA (2009) Lead Dust Sampling Technician Field Guide
US EPA (2020) Protect your family from lead in your home

APPENDIX 1 FIGURES

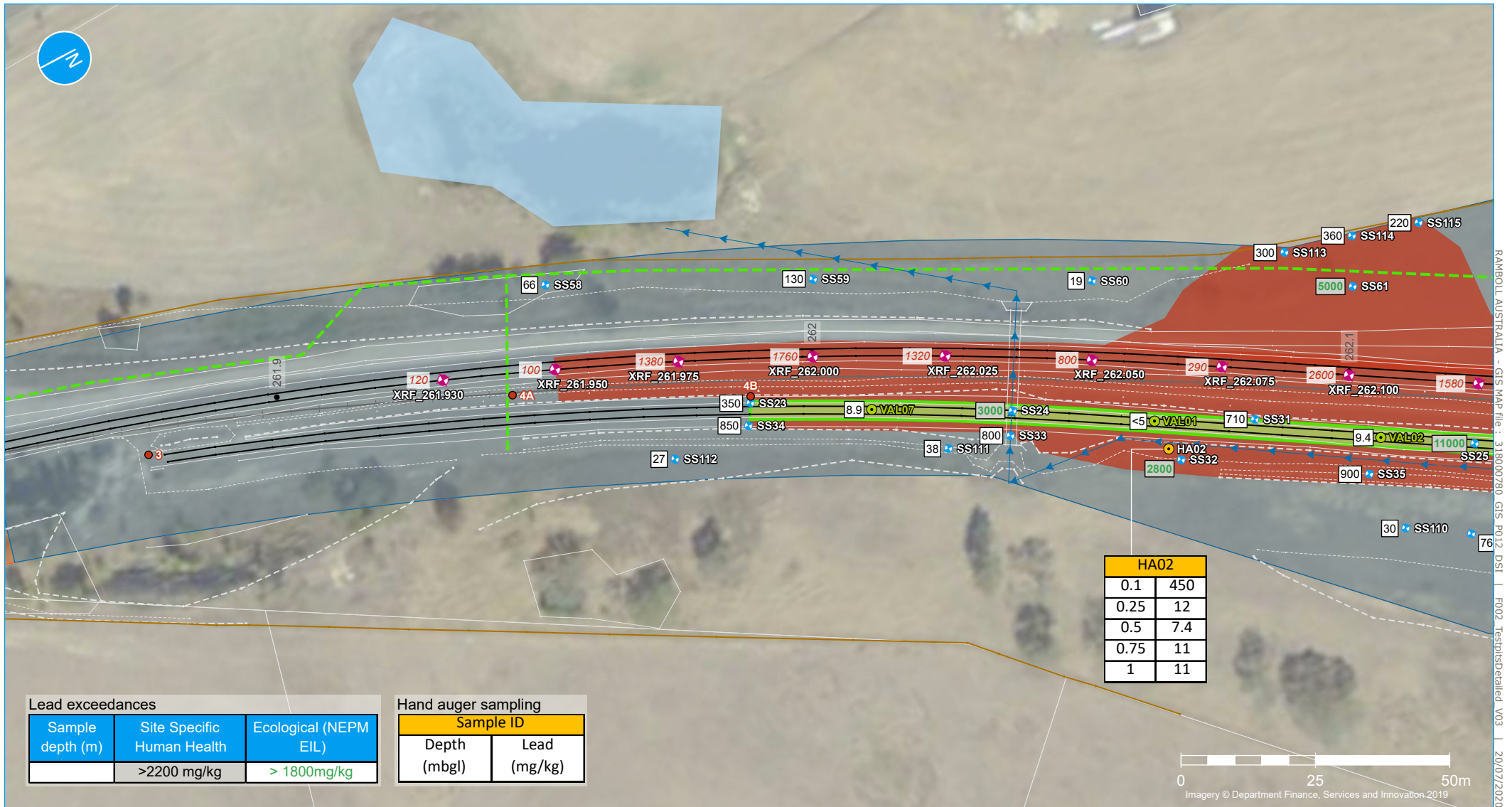


- Legend**
- Site boundary
 - Rail corridor
 - Rail corridor fence

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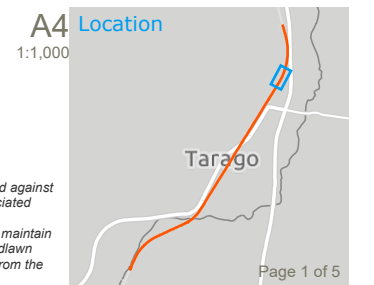


Figure 1 | Locality Plan



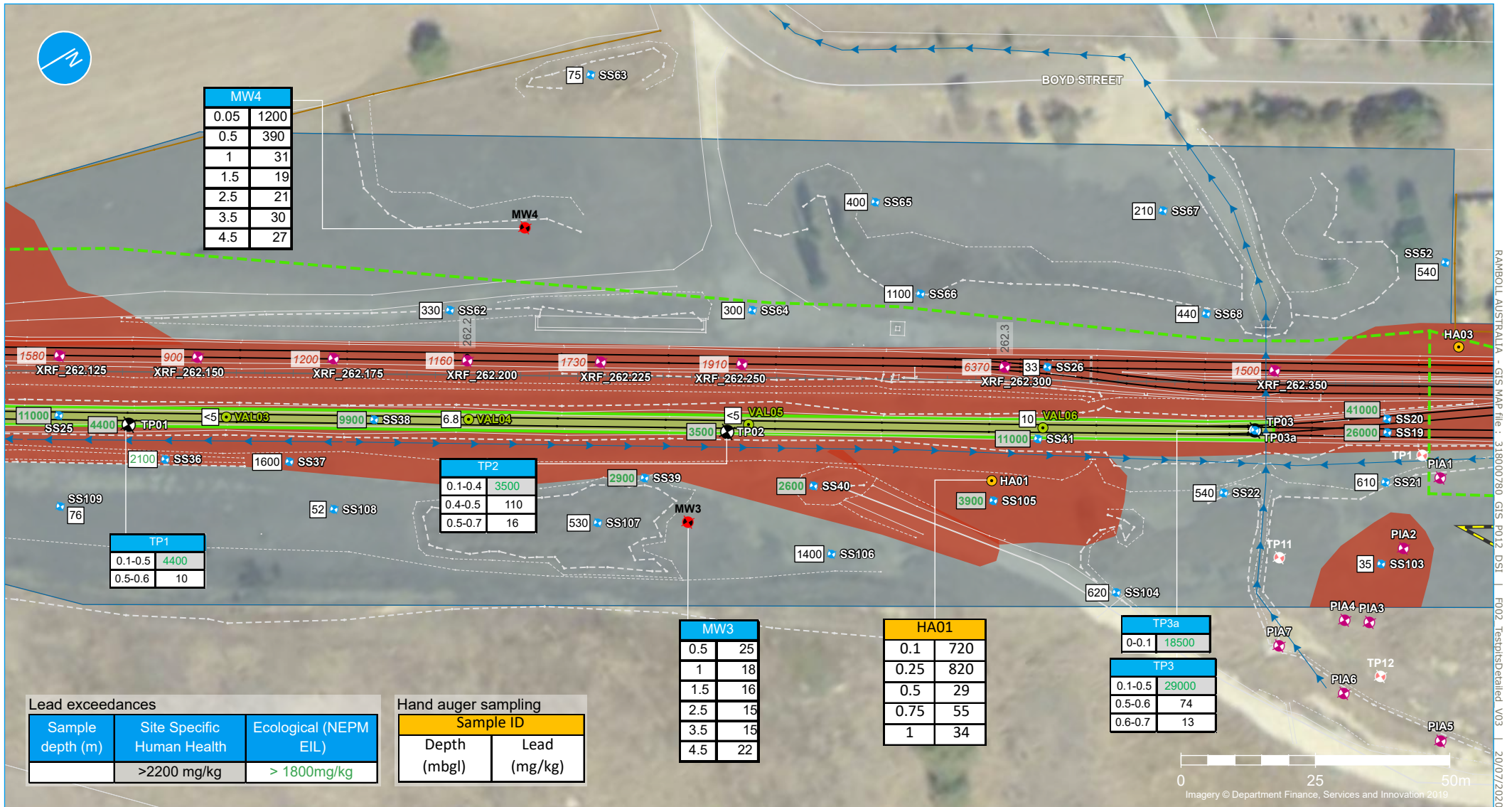
Legend

- Site boundary
- Rail corridor fence
- 0.1km chainage point
- Signal trench (approximate)
- Surface water flow (indicative)
- Survey lines
- Rail track
- Top of bank
- Bottom of bank
- Other elements
- X-Ray fluorescence sampling (Ramboll 2019, 2020)
- Previous sampling location (McMahon)
- Shallow soil (Ramboll 2019)
- Hand auger (Ramboll 2019)
- 1200 Lead concentration for XRF sample (mg/kg)
- Validation sample (Ramboll 2019)
- Lead impacted area
- Area of excavation during loop extension (no further excavation proposed)



Note: X-Ray fluorescence sampling results were conservatively assessed against a management threshold of 1200 mg/kg Pb to mitigate uncertainty associated with these.
Data relating to impacts on private properties has not been presented to maintain privacy for affected parties. Data for TP1 – TP9 and TP15 from the Woodlawn siding is presented in Appendix 3, Table H2 – H3. Data for TP1 – TP20 from the Loadout Complex Footprint is presented in Appendix 3, Table 7.

Figure 2a | Site Plan



Legend

- Site boundary
 - Rail corridor fence
 - 0.1km chainage point
 - Signal trench (approximate)
 - Surface water flow (indicative)
 - Survey lines
 - Rail track
 - Top of bank
 - Bottom of bank
 - Other elements
 - ◆ X-Ray fluorescence sampling (Ramboll 2019, 2020)
 - ◆ Shallow soil (Ramboll 2019)
 - ⊕ Test pit (Ramboll 2019)
 - Hand auger (Ramboll 2019)
 - ◆ 1200 Lead concentration for XRF sample (mg/kg)
 - Validation sample (Ramboll 2019)
 - ◆ Groundwater monitoring location
 - ◆ Test pit (loadout complex)
 - Lead impacted area
 - Area of excavation during loop extension (no further excavation proposed)
 - Former loadout road (approximate)
- Note: X-Ray fluorescence sampling results were conservatively assessed against a management threshold of 1200 mg/kg Pb to mitigate uncertainty associated with these.
Data relating to impacts on private properties has not been presented to maintain privacy for affected parties. Data for TP1 – TP9 and TP15 from the Woodlawn siding is presented in Appendix 3, Table H2 – H3. Data for TP1 – TP20 from the Loadout Complex Footprint is presented in Appendix 3, Table 7.
- A4 Location**

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Tarago

Page 2 of 5

Figure 2b | Site Plan

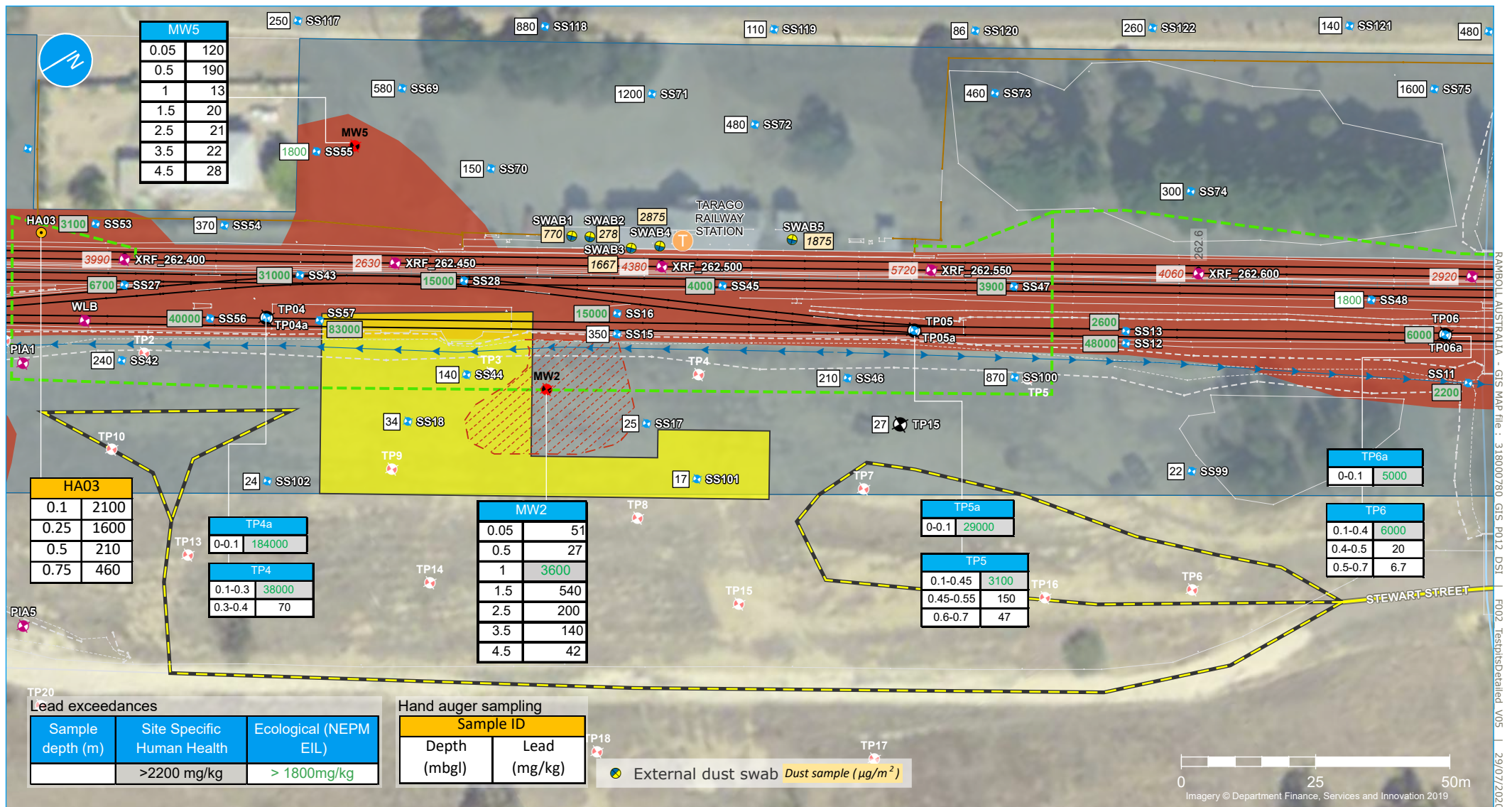
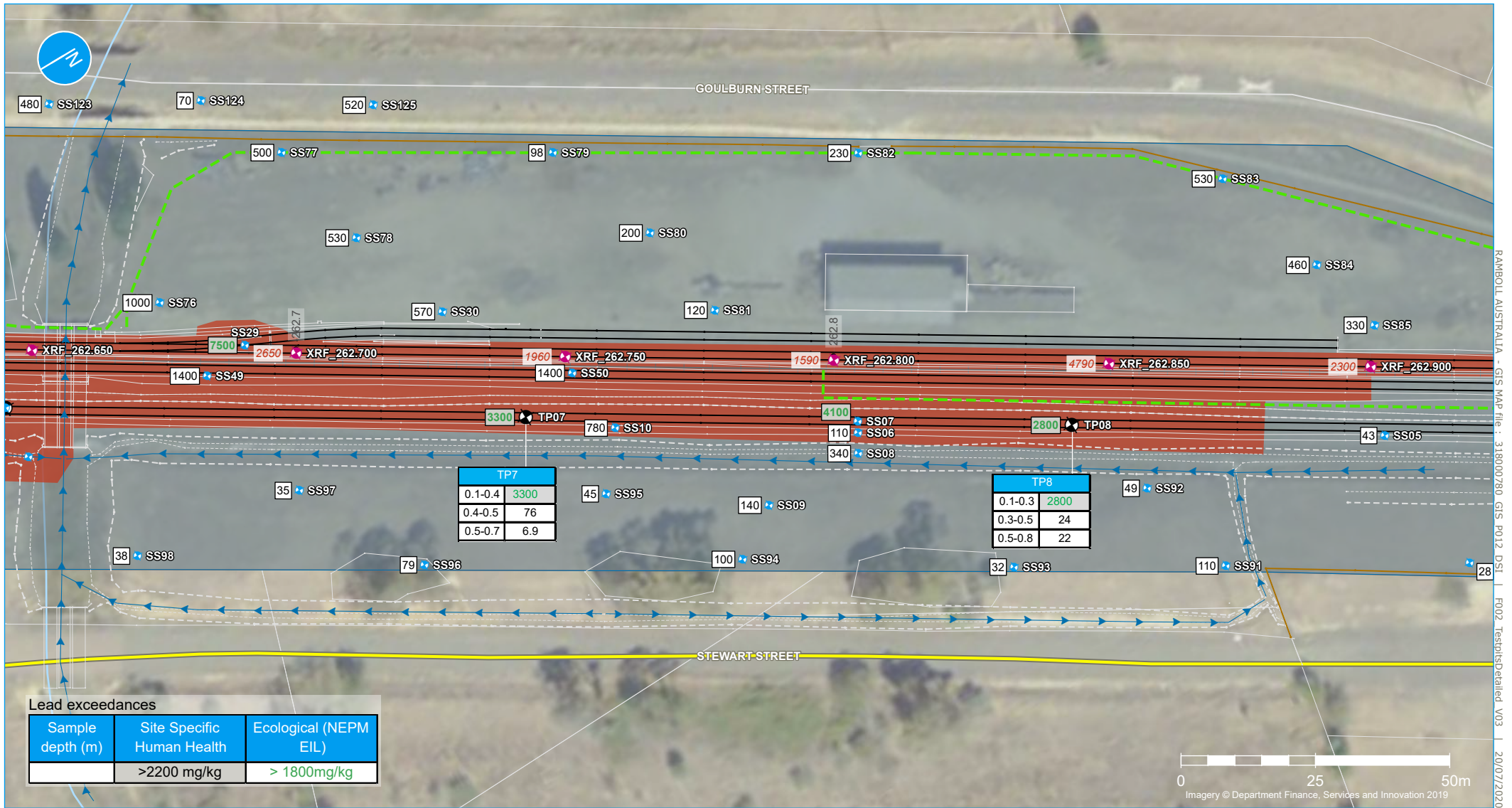


Figure 2c | Site Plan

Note: X-Ray fluorescence sampling results were conservatively assessed against a management threshold of 1200 mg/kg Pb to mitigate uncertainty associated with these.
Data relating to impacts on private properties has not been presented to maintain privacy for affected parties. Data for TP1 – TP9 and TP15 from the Woodlawn siding is presented in Appendix 3, Table H2 – H3. Data for TP1 – TP20 from the Loadout Complex Footprint is presented in Appendix 3, Table 7.





Legend

- Site boundary
- Rail corridor fence
- 0.1km chainage point
- Signal trench (approximate)
- Surface water flow (indicative)
- Survey lines
- Rail track
- Top of bank
- Bottom of bank
- Other elements
- ◆ X-Ray fluorescence sampling (Ramboll 2019, 2020)
- ◆ Shallow soil (Ramboll 2019)
- Test pit (Ramboll 2019)
- 1200 Lead concentration for XRF sample (mg/kg)
- Lead impacted area
- Haul route

Note: X-Ray fluorescence sampling results were conservatively assessed against a management threshold of 1200 mg/kg Pb to mitigate uncertainty associated with these. Data relating to impacts on private properties has not been presented to maintain privacy for affected parties. Data for TP1 – TP9 and TP15 from the Woodlawn siding is presented in Appendix 3, Table H2 – H3. Data for TP1 – TP20 from the Loadout Complex Footprint is presented in Appendix 3, Table 7.

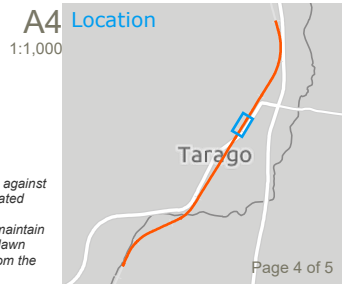
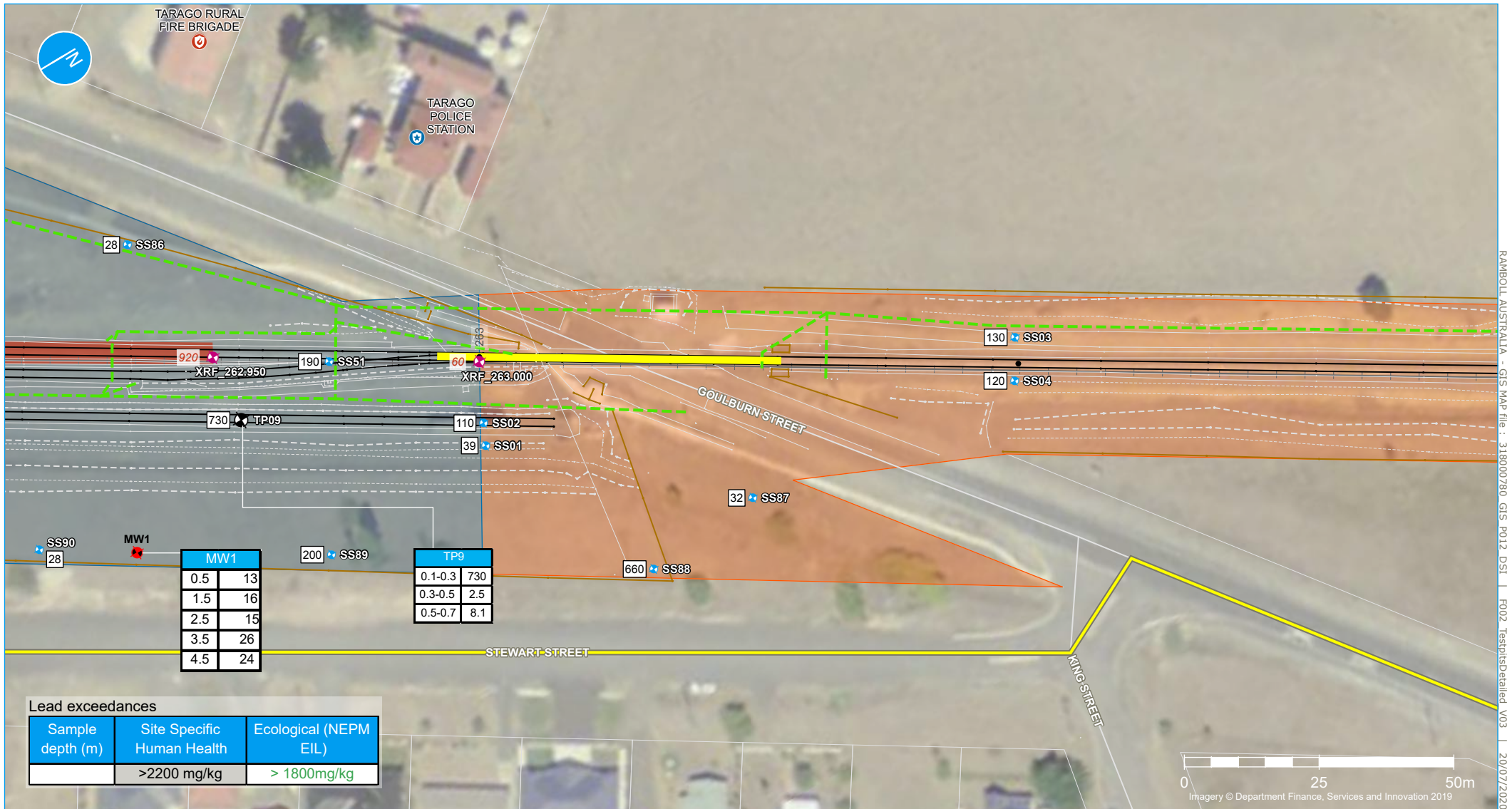


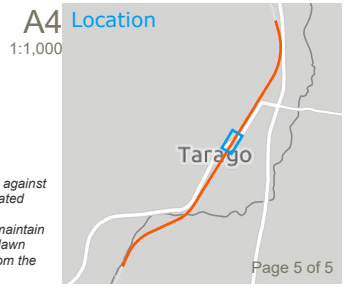
Figure 2d | Site Plan



RAMBOLL AUSTRALIA - GIS MAP file : 318000780_GIS_P012_DSI | F002_TestpitsDetailed_V03 | 20/07/2020

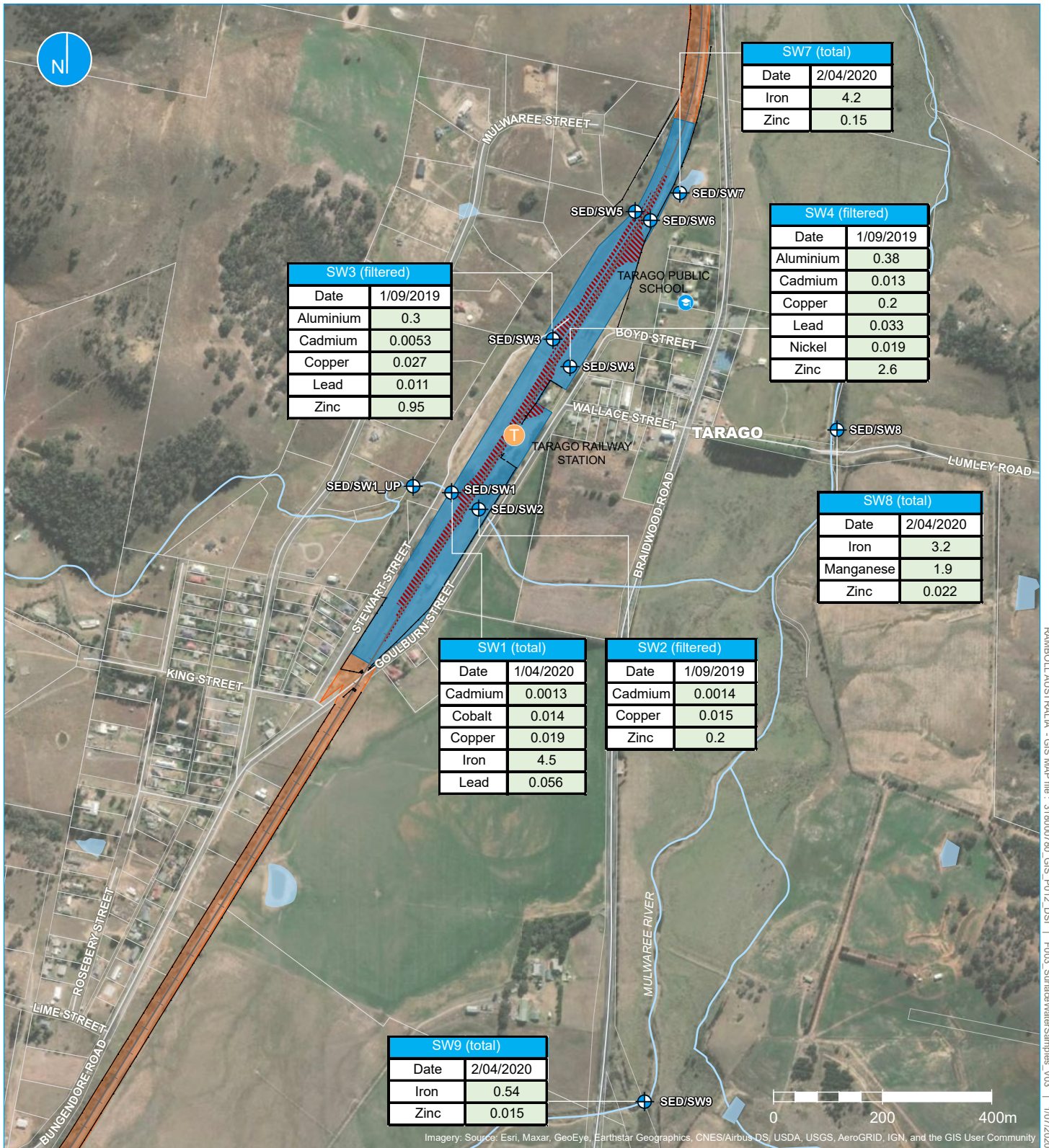
Legend

- Site boundary
- Rail corridor fence
- 0.1km chainage point
- Goulburn Street level crossing
- Signal trench (approximate)
- Surface water flow (indicative)
- Survey lines
- Rail track
- Top of bank
- Bottom of bank
- Other elements
- X-Ray fluorescence sampling (Ramboll 2019, 2020)
- Shallow soil (Ramboll 2019)
- Test pit (Ramboll 2019)
- 1200
- Lead concentration for XRF sample (mg/kg)
- Groundwater monitoring location
- Lead impacted area
- Haul route



*Note: X-Ray fluorescence sampling results were conservatively assessed against a management threshold of 1200 mg/kg Pb to mitigate uncertainty associated with these.
Data relating to impacts on private properties has not been presented to maintain privacy for affected parties. Data for TP1 – TP9 and TP15 from the Woodlawn siding is presented in Appendix 3, Table H2 – H3. Data for TP1 – TP20 from the Loadout Complex Footprint is presented in Appendix 3, Table 7.*

Figure 2e | Site Plan



RAMBOLL AUSTRALIA - GIS MAP file : 318000780_GIS_P012_DSI | F003_SurfaceWaterSamples_V03 | 1/07/2020

Legend

- Surface water and sediment sampling locations (co-located)
- Rail corridor
- Rail corridor fence
- Area of lead exceedance (within rail corridor)

Exceedances (surface water)

Contaminant (mg/L)	> ANZG 2018 Freshwater Ecosystems
Aluminium	0.055
Cadmium	0.0002
Cobalt	0.09
Copper	0.0014
Iron	0.3
Lead	0.0034
Manganese	1.9
Nickel	0.011
Zinc	0.008



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Figure 3 | Surface water and sediment sampling locations

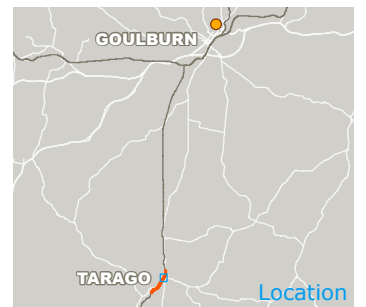


Legend

- Site boundary
- Rail corridor
- Rail corridor fence
- Area of lead contamination within the rail corridor

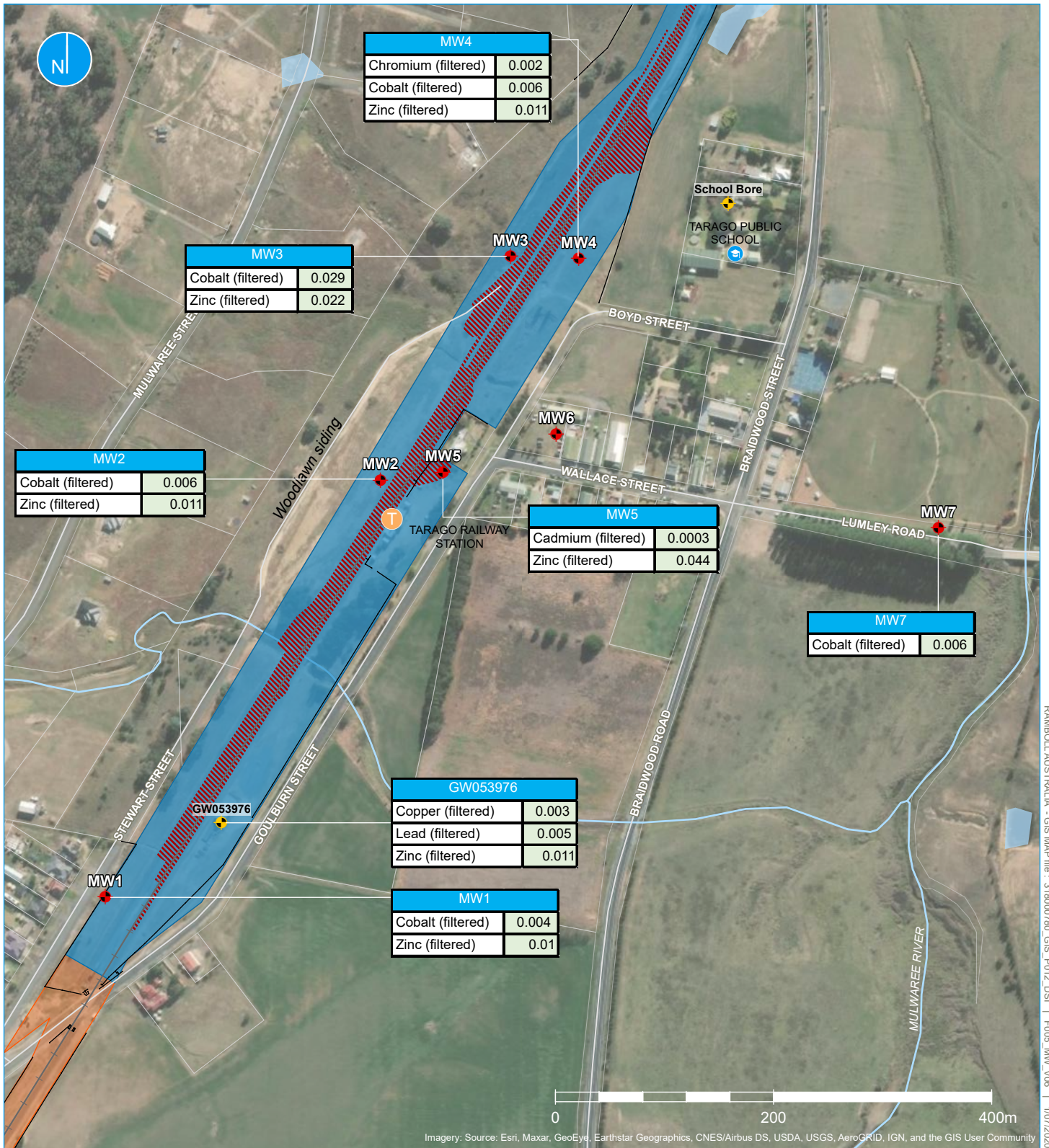
Sampling locations

- Deposited dust and lead (from dust deposition gauge)
- TSP and lead (from high volume air sampler)
- Continuous PM10 and PM2.5 (from particle counter)
- Regional meteorological monitoring from DPIE Air quality monitoring station (see location inset)



A4
1:5,000

Figure 4 | Air quality monitoring locations



RAMBOLL AUSTRALIA - GIS MAP file - 318000730_GIS_PO12_DSI | F005_MW_V06 | 1/07/2020

Legend

- ◆ Groundwater monitoring location
- ◆ Groundwater monitoring location (registered, approximate)
- Site boundary
- Rail corridor
- Rail corridor fence
- Area of lead contamination within the rail corridor

Exceedances

Contaminant (mg/L)	> ANZG 2018 Freshwater Ecosystems
Cadmium (filtered)	0.0002
Chromium (filtered)	0.001
Cobalt (filtered)	0.0014
Lead (filtered)	0.0034
Zinc (filtered)	0.008

A4
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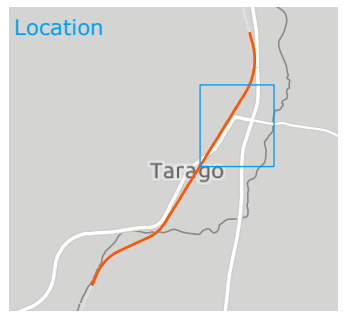
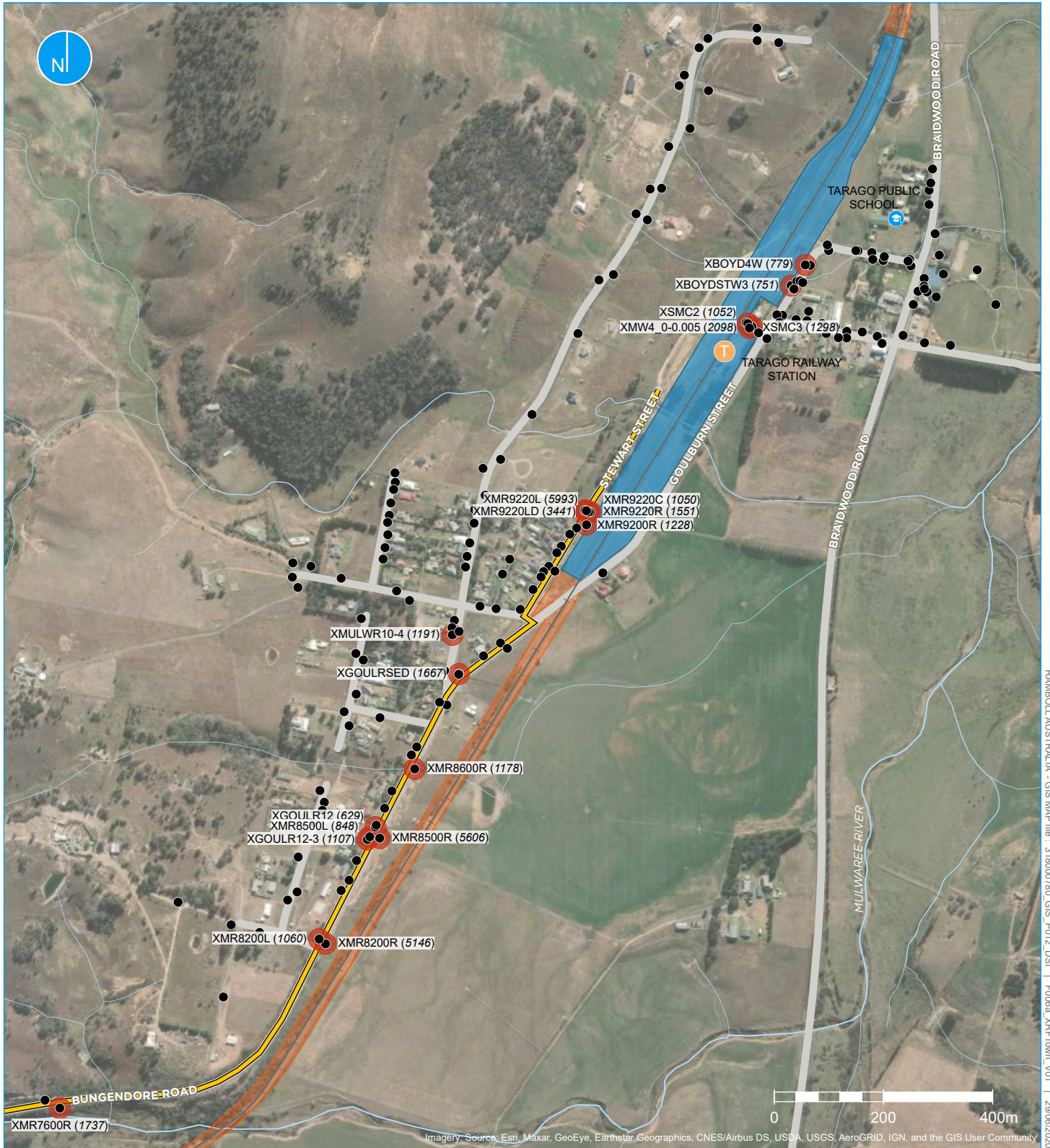


Figure 5 | Groundwater monitoring well locations



RAMBOLL AUSTRALIA - GIS MAP file - 318000700_GIS_P012_DSI | F008a_XRFtown_V01 | 29/06/2020

Legend

- Site boundary
- Rail corridor
- XRF (X-Ray Fluorescence) sample location
- Lead reading exceeding 600 mg/kg
- Hauling route

A4
1:10,000

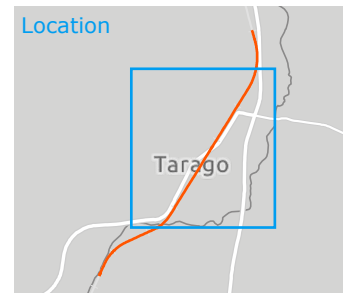
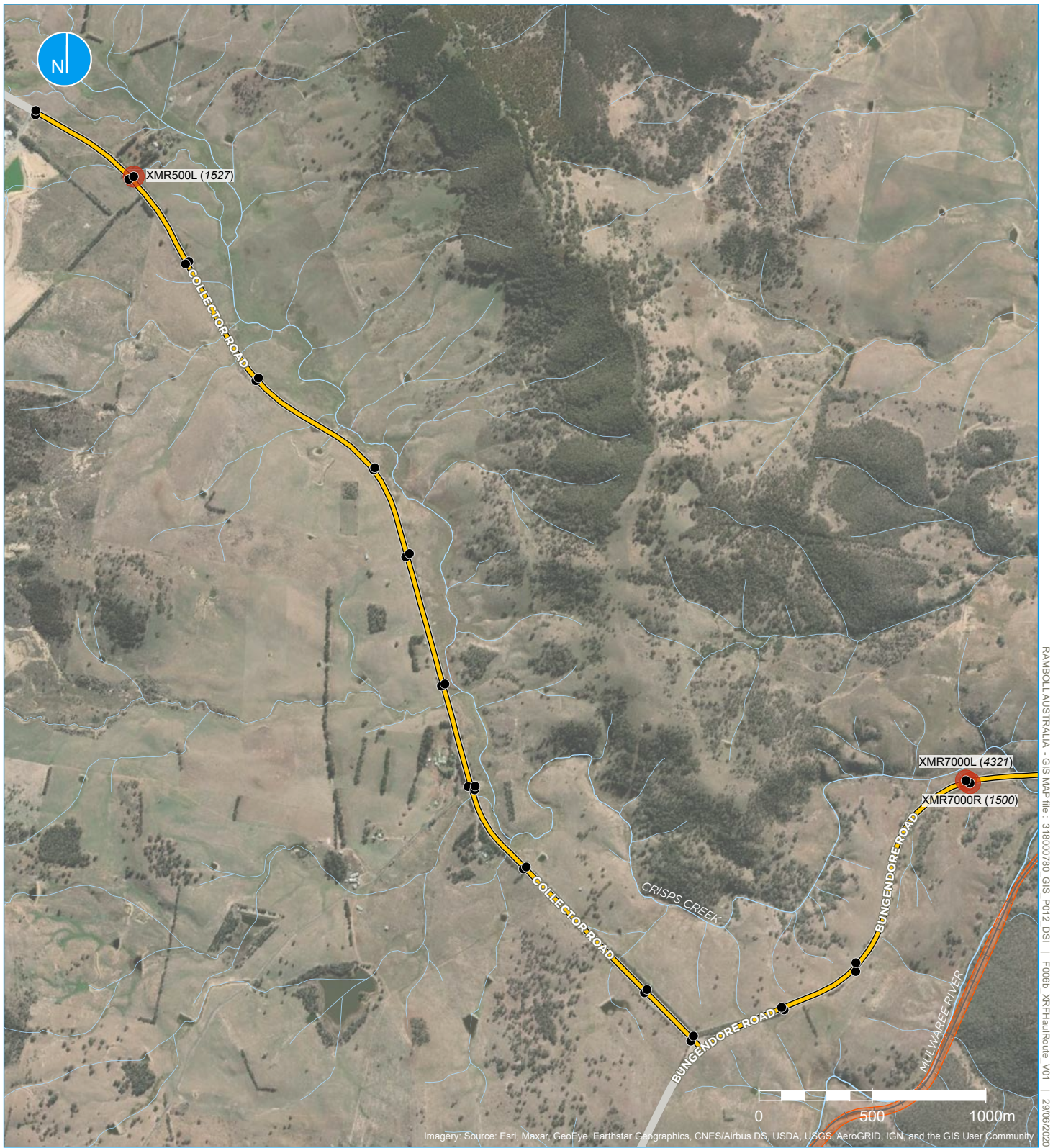






Figure 6a | Public road reserve XRF sampling locations - Tarago Town



Legend

-  Rail corridor
-  XRF (X-Ray Fluorescence) sample location
-  Lead reading exceeding 1500 mg/kg
-  Hauling route

A4
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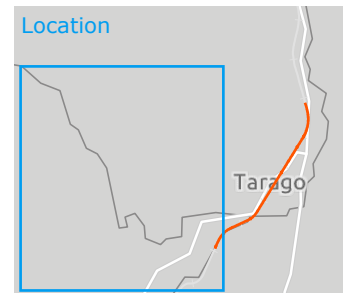
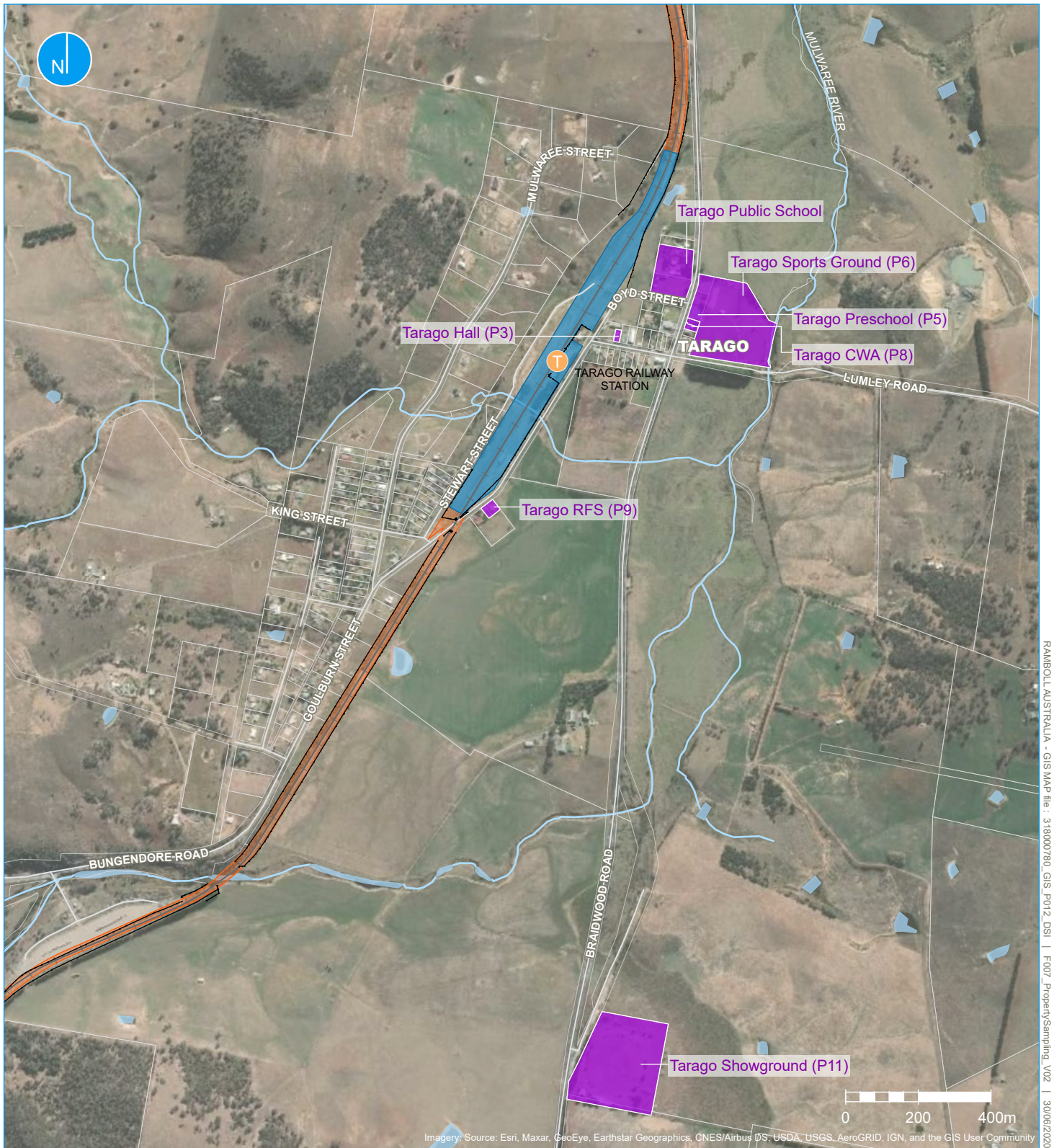


Figure 6b | Public road reserve XRF sampling locations - Haul Route



RAMBOLL AUSTRALIA - GIS MAP file : 318000780_GIS_P012_DSI | F007_Property/Sampling_V02 | 30/06/2020

Legend

- Site boundary
- Rail corridor
- Rail corridor fence
- Property sampled (public)

A4
1:15,000

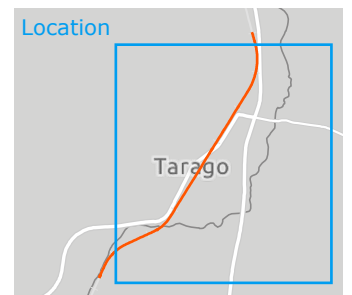
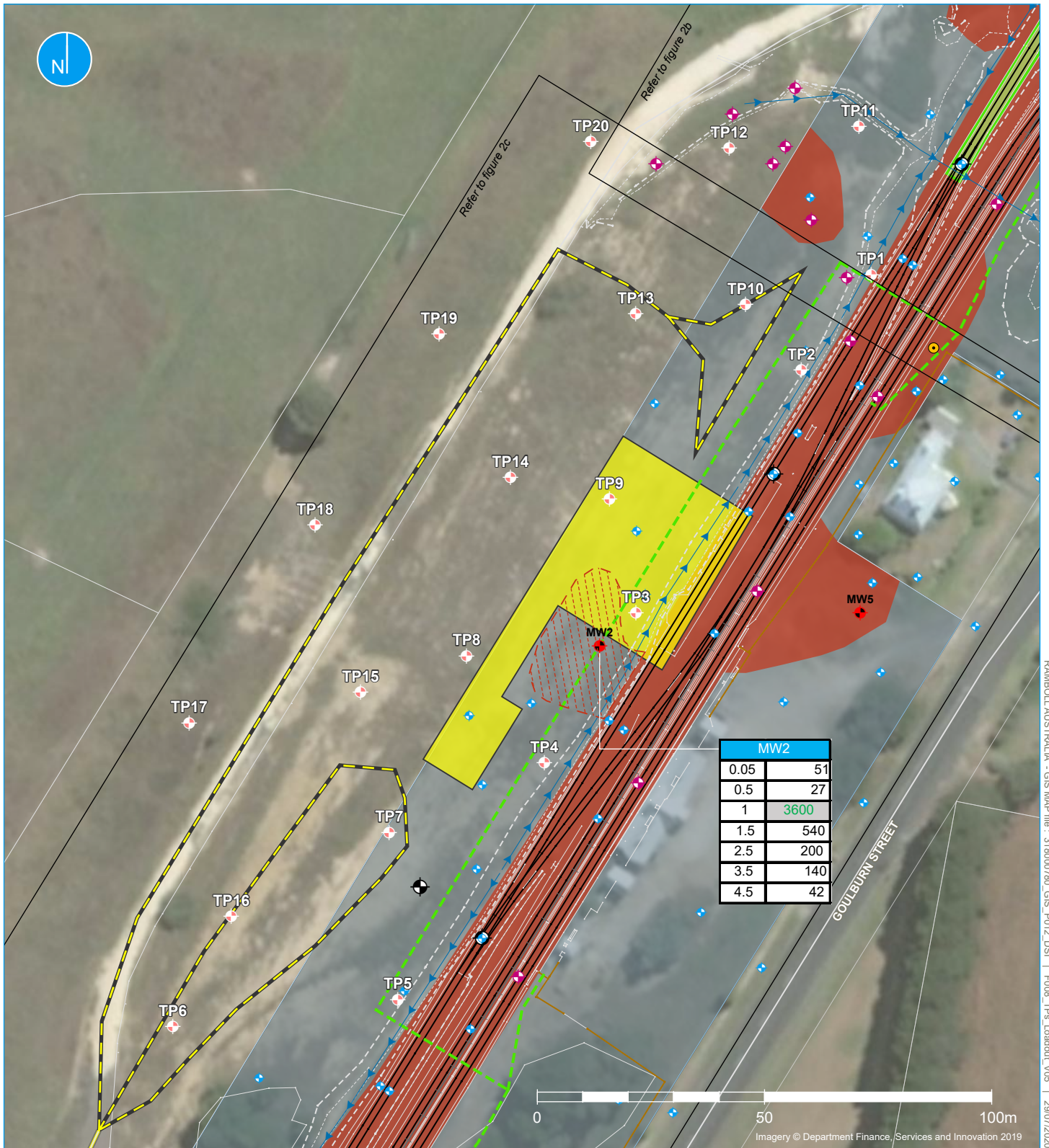


Figure 7 | Discrete public properties sample locations



Legend

- ◆ Test pit (loadout complex)
- Former loadout complex building footprint
- Former loadout road (approximate)
- Haul route
- Site boundary
- Surface water flow (indicative)
- Signal trench (approximate)
- Rail corridor fence
- Area of excavation during loop extension (no further excavation proposed)
- Lead impacted area
- Indicative lead impacted area
- ◆ Groundwater monitoring location
- ◆ X-Ray fluorescence sampling (Ramboll 2019, 2020)
- ◆ Shallow soil (Ramboll 2019)
- ◆ Test pit (Ramboll 2019)
- Hand auger

A4
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Figure 8 | Loadout complex sampling locations



Imagery: Source: Esri, Maxar, GeoEye, Earthstar Geographics, CNES/Airbus DS, USDA, USGS, AeroGRID, IGN, and the GIS User Community

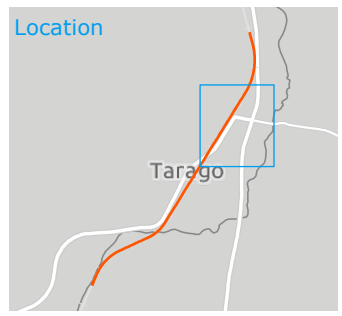
RAMBOLL AUSTRALIA - GIS MAP file : 318000780_GIS_P012.DSI | F009_GWcontours_V02 | 30/06/2020

Legend

- ◆ Groundwater monitoring location
- Site boundary
- Rail corridor
- Rail corridor fence
- Area of lead contamination within the rail corridor

- Groundwater contours**
- 1m contour
 - 0.25m contour
 - 0.05m contour

Note: MW1 has been excluded from contouring as groundwater is likely to be influenced by the nearby tributary to the Mulwaree River.

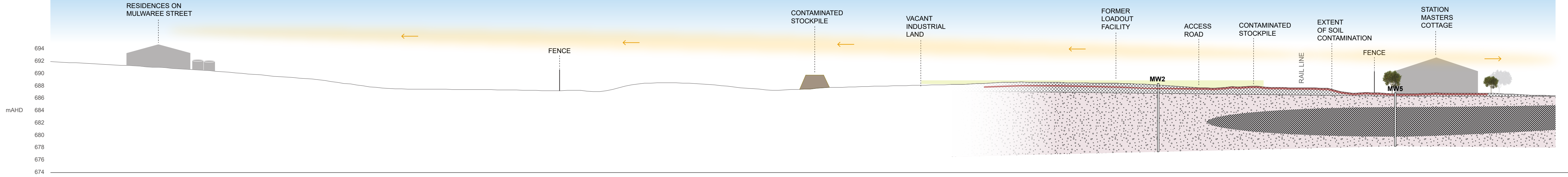


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Figure 9 | Groundwater contours

Detail

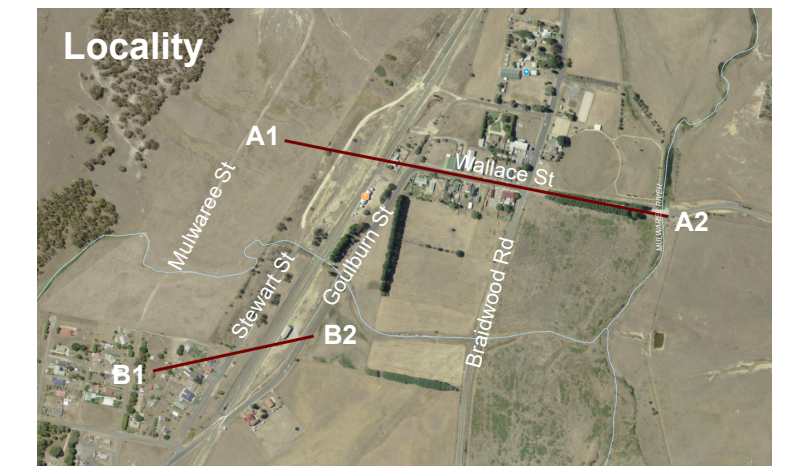
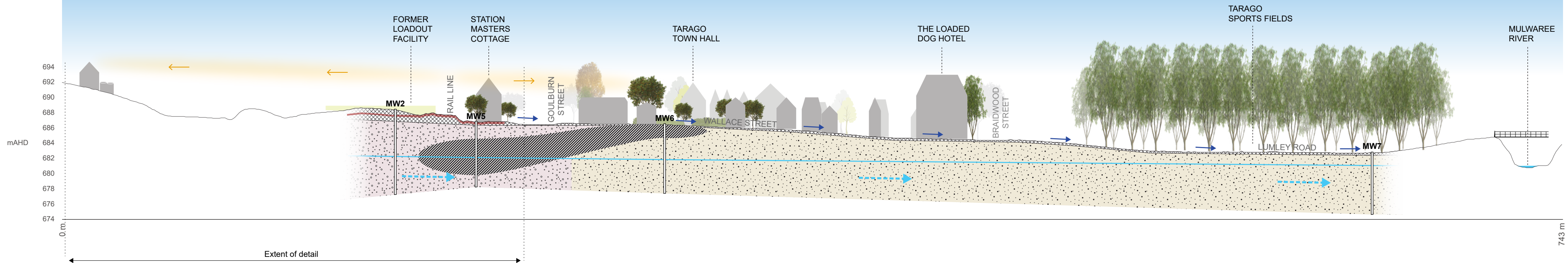
VERTICAL EXAGGERATION: 1



A1

A2

VERTICAL EXAGGERATION: 4



Section A1 - A2

Tarago

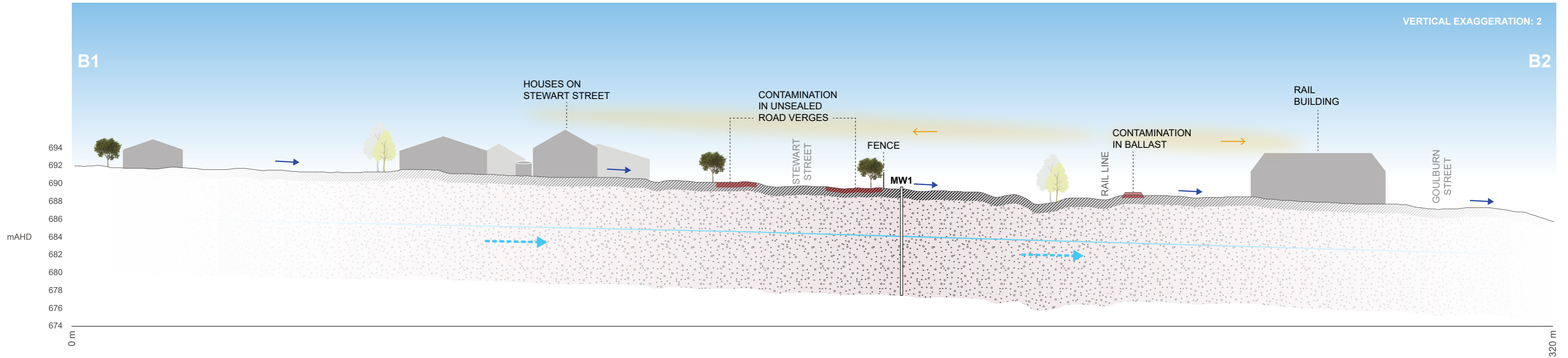
KEY			
	Fill		Groundwater flow direction
	Clay		Surface water flow direction
	Gravelly clay		Standing water level
	Clayey gravel		Historic dust - Not observed since application of controls in the corridor (2020)
	Extent of soil contamination		

DATE	VERSION	MAP	ISSUE
29/07/2020	05	01	FINAL
PAGE	SCALE	SPATIAL REFERENCE	
na	na	na	

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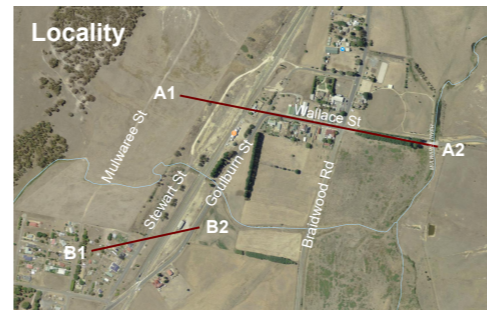
B1

B2



Section B1 - B2

Tarago



KEY

- Grass overlying clay
- Gravelly clay
- Extent of soil contamination
- Groundwater flow direction
- Surface water flow direction
- Standing water level
- Historic dust - Not observed since application of controls in the corridor (2020)

DATE	VERSION	MAP#	ISSUE
22/07/2020	04	02	FINAL
PAGE	SCALE	SPATIAL REFERENCE	
na	na	na	

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APPENDIX 2 PHOTOGRAPHIC LOG



Photo 1

Excavation of test pits were conducted with a 2.5-t excavator. Date: 31/03/20



Photo 2

20 test pits were excavated in the vicinity of the former loadout complex adjacent to the rail line. Date: 31/03/20



Photo 3

The capping material at the loadout complex was observed as a gravelly clay with sand/siltstone cobbles. Date: 31/3/20



Photo 4

The typical soil profile observed in the capped area of the former loadout complex – a gravelly clay with sand/siltstone cobbles with an underlying clay fill of slightly differing colour. Date: 31/3/20



Photo 5

The capping material was observed to >2.0 mbgs at two locations (TP6-7). Date:31/03/20



Photo 6

An asphalt layer was observed at approximately 1.0 mbgs at two locations. Date 31/03/20

Title: Annex 2 – Photo Log	Approved: SM	Project Number: 318000780	Date: 23/07/20
Site: Tarago Rail Loop – Former Loadout Complex			
Client: John Holland Rail			



Photo 7

An orange conduit with wires was observed at TP01 at approximately 0.5 mbgs. Date: 31/03/20



Photo 8

The clay capping was observed to contain little to no anthropogenic inclusions. The surface was generally partially grassed. Date 31/3/20



Photo 9

TP14 and TP15 were immediately adjacent to the concrete-capped soil stockpile. 31/03/20.



Photo 10

In some locations, anthropogenic inclusions such as reinforced steel pieces were observed in the fill (TP09). Date: 31/03/20



Photo 11

In some areas, remnant ballast was present on the surface. Date 31/03/20



Photo 12

Clay fill underlying capping (Starting from approx. 0.5-1.5 mbgs) was generally a different colour and contained less cobbles and gravels.

Title: Annex 2 – Photo Log	Approved: SM	Project Number: 318000780	Date: 23/07/20
Site: Tarago Rail Loop – Former Loadout Complex			
Client: John Holland Rail			



Photo 13
In the uncapped areas the soil profile generally comprised a brown silty sand topsoil with minor fill (to a maximum depth of 0.6 mbgs) with underlying natural clay. Date:01/04/20



Photo 14
The natural clay underlying the site. Date: 01/04/20



Photo 15
Tarago Town Hall, facing north. Date: 03/04/20



Photo 16
Interior of Tarago Town Hall. Date: 26/03/20



Photo 17
Tarago Preschool. Date:03/04/20



Photo 18
Tarago Preschool. Date: 18/05/20

Title: Annex 2 – Photo Log	Approved: SM	Project Number: 318000780	Date: 23/07/20
Site: Tarago Rail Loop – Former Loadout Complex			
Client: John Holland Rail		RAMBOLL	



Photo 19
Tarago Preschool water tank. Date:18/05/20



Photo 20
Tarago Preschool interior. Date: 18/05/20

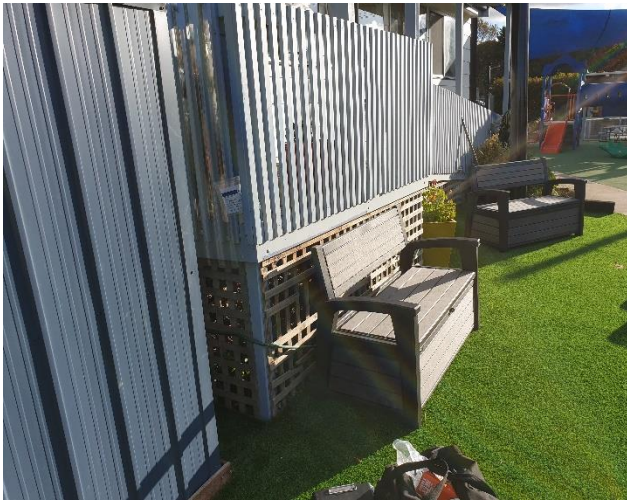


Photo 21
Tarago Preschool. Date: 18/05/20



Photo 22
Tarago Sportsground. Date: 26/03/20



Photo 23
Tarago Sportsground carpark area. Date: 25/03/20.



Photo 24
Tarago Country Womens Association (CWA). Date: 03/04/20

Title: Annex 2 – Photo Log	Approved: SM	Project Number: 318000780	Date: 23/07/20
Site: Tarago Rail Loop – Former Loadout Complex			
Client: John Holland Rail			RAMBOLL



Photo 25
Water tank at the Tarago RFS. Date: 25/03/20



Photo 26
Water tanks at the Tarago RFS. Date: 25/03/20



Photo 27
Tarago Showground, interior of building. Date: 26/03/20



Photo 28
Tarago Public School. Date: 03/04/20



Photo 29
Tarago Public School. Date: 03/04/20



Photo 30
Tarago Public School underground bore. Date: 24/03/20

Title: Annex 2 – Photo Log	Approved: SM	Project Number: 318000780	Date: 23/07/20
Site: Tarago Rail Loop – Former Loadout Complex		RAMBOLL	
Client: John Holland Rail			

APPENDIX 3 RESULTS

		SS94	SS95	SS101	SS112	D03_230919	Average
	Units						
Cation exchange capacity	cmol/kg	15	15	10	15	9	12.8
pH (calcium chloride method)	pH Units	5.9	5.4	5.2	4.7	4.9	5.22
Organic carbon content	%	2.2	2.5	0.8	1.3	2.1	1.78
Iron content (aqua regia method)	%	1.1	0.76	0.88	1.4	1.1	1.048
% clay	%	13	13	8.5	18	7.5	12
Measured background concentration							
Copper	mg/kg	-	-	6.9	-	-	-
Nickel	mg/kg	-	-	<u>2.5</u>	-	-	-
Chromium	mg/kg	-	-	7.2	-	-	-
Zinc	mg/kg	-	-	31	-	-	-

Underlined values were reported <LOR and have been halved to allow for comparison of data.

SS101 selected for background due to low concentrations.

Sample ID	Sample Date	Sample Location	Sample Type	Soil															
				S19-J139840	S19-J139841	S19-J139842	S19-J139843	S19-J139844	S19-J139845	S19-J139846	S19-J139847	S19-J139848	S19-J139849	S19-J139850	S19-J139851	S19-J139852	S19-J139853	S19-J139854	S19-J139855
TP4 0.1-0.3	26/07/19	Tarago Loop	TP4 0.1-0.3	3	3.7	2.4	< 1	1.1	21	9.1	10	9.4	11	2.3	7.3	8	2.5	14	17
TP5 0.1-0.45	26/07/19	Tarago Loop	TP5 0.1-0.45	594	540	65	247	430	259	59	53	68	51	66	751	853	1120	937	574
TP6 0.1-0.4	26/07/19	Tarago Loop	TP6 0.1-0.4	594	540	65	247	430	259	59	53	68	51	66	751	853	1120	937	574
TP7 0.1-0.4	26/07/19	Tarago Loop	TP7 0.1-0.4	594	540	65	247	430	259	59	53	68	51	66	751	853	1120	937	574
TP8 0.1-0.3	26/07/19	Tarago Loop	TP8 0.1-0.3	594	540	65	247	430	259	59	53	68	51	66	751	853	1120	937	574
TP9 0.1-0.3	26/07/19	Tarago Loop	TP9 0.1-0.3	594	540	65	247	430	259	59	53	68	51	66	751	853	1120	937	574
TP10 0.2	26/07/19	Tarago Loop	TP10 0.2	594	540	65	247	430	259	59	53	68	51	66	751	853	1120	937	574
TP11 0.1	26/07/19	Tarago Loop	TP11 0.1	594	540	65	247	430	259	59	53	68	51	66	751	853	1120	937	574
TP12 0.1	26/07/19	Tarago Loop	TP12 0.1	594	540	65	247	430	259	59	53	68	51	66	751	853	1120	937	574
TP13 0.1	26/07/19	Tarago Loop	TP13 0.1	594	540	65	247	430	259	59	53	68	51	66	751	853	1120	937	574
TP14 0.1	26/07/19	Tarago Loop	TP14 0.1	594	540	65	247	430	259	59	53	68	51	66	751	853	1120	937	574
TP16 0.1	22-09-19	Tarago Loop Lead Management	TP16 0.1	594	540	65	247	430	259	59	53	68	51	66	751	853	1120	937	574
SS52	22-09-19	Tarago Loop Lead Management	SS52	594	540	65	247	430	259	59	53	68	51	66	751	853	1120	937	574
SS53	22-09-19	Tarago Loop Lead Management	SS53	594	540	65	247	430	259	59	53	68	51	66	751	853	1120	937	574
SS54	22-09-19	Tarago Loop Lead Management	SS54	594	540	65	247	430	259	59	53	68	51	66	751	853	1120	937	574
SS55	22-09-19	Tarago Loop Lead Management	SS55	594	540	65	247	430	259	59	53	68	51	66	751	853	1120	937	574
Sampling Method:				Test Pit	Test Pit	Test Pit	Test Pit	Test Pit	Test Pit	Test Pit	Test Pit	Test Pit	Test Pit	Test Pit	Test Pit	Test Pit	Test Pit	Test Pit	Test Pit
Sample Description:				Tarago Loop	Tarago Loop	Tarago Loop	Tarago Loop	Tarago Loop	Tarago Loop	Tarago Loop	Tarago Loop	Tarago Loop	Tarago Loop	Tarago Loop	Tarago Loop	Tarago Loop	Tarago Loop	Tarago Loop	Tarago Loop
Analyte grouping/Analyte				Units LOR															
EA055: Moisture Content				Moisture Content (dried @ 103°C)															
EA200: AS 4964 - 2004 Identification of Asbestos in Soils				Asbestos Detected, Asbestos Type, Sample weight (dry)															
EG005T: Total Metals by ICP-AES				Arsenic, Cadmium, Chromium, Copper, Lead, Nickel, Zinc															
EG035T: Total Recoverable Mercury by FIMS				Mercury															
EP075(SIM)B: Polynuclear Aromatic Hydrocarbons				Naphthalene, Acenaphthylene, Acenaphthene, Fluorene, Phenanthrene, Anthracene, Fluoranthene, Pyrene, Benz(a)anthracene, Chrysene, Benzo(b)fluoranthene, Benzo(k)fluoranthene, Benzo(a)pyrene, Indeno(1,2,3-cd)pyrene, Dibenz(a,h)anthracene, Benzo(g,h,i)perylene, Sum of polycyclic aromatic hydrocarbons, Benzo(a)pyrene TEQ (zero), Benzo(a)pyrene TEQ (half LOR), Benzo(a)pyrene TEQ (LOR)															
EP080/071: Total Recoverable Hydrocarbons - NEPM 2013 Fractions				C6 - C10 Fraction, C6 - C10 Fraction minus BTEX (F1), >C10 - C16 Fraction, >C16 - C34 Fraction (F3), >C34 - C40 Fraction (F4), >C10 - C40 Fraction (sum), >C10 - C16 Fraction minus Naphthalene (F2)															
EP080: BTEXN				Benzene, Toluene, Ethylbenzene, meta- & para-Xylene, ortho-Xylene, Total Xylenes, Naphthalene															

Blank Cell indicates no criterion available
 LOR = Limit of Reporting
 National Environment Protection Council (2013) National Environmental Protection (Assessment of Site Contamination) Amendment Measure 2013 (No. 1) (NEPM).
 CRC Care Technical Report no.10, Health Screening Levels for petroleum hydrocarbons in soil and groundwater September 2011
 * For soil texture classification undertaken in accord with AS 1726, the classifications of sand, silt and clay may be applied as coarse, fine with liquid limit <50% and fine with liquid limit >50% respectively, as the underlying properties to develop the HSLs may reasonably be selected to be similar. Where there is uncertainty, either a conservative approach may be adopted or laboratory analysis should be carried out. Generally SAND has been adopted in these scenarios.
 * The most conservative ESL guideline value has been adopted for all analytes
 * Management limits are applied after consideration of relevant ESLs and HSLs. Separate management limits for BTEX and naphthalene are not available hence these should not be subtracted from the relevant fractions to obtain F1 and F2.
 * Direct Contact are applied to surface soils or soils that could result in immediate contact.
 * Human Health Guideline for Lead adopted from the Human Health Risk Assessment (Ramboll 2019d)
 NL = Non Limiting. No HSL is presented for these chemicals as a soil vapour source concentration for a petroleum mixture could not exceed a level that would result in the maximum allowable vapour risk for the given scenario.
 Health Investigation Levels for chromium based on chromium (VI)
 Chromium (III) EIL, based on a low clay content (% clay) of 1%
 Nickel EIL, based on CEC of 5cmol/kg
 Copper EIL, based on CEC of 5cmol/kg
 Zinc EIL, based on slightly acidic soil pH of 4.0 and CEC of 5cmol/kg
 To obtain F1 subtract the sum of BTEX concentrations from the C6-C10 fraction.
 To obtain F2 subtract naphthalene from the >C10-C16 fraction.
 Benzo(a)pyrene ESL derived ecological guideline (95% confidence limits) based on CRC CARE Technical Report no. 39 Risk-based remediation and management guidance for benzo(a)pyrene developed using a species sensitivity distribution (SSD) for eco-toxicity data from five independent studies involving one soil bacteria, three soil invertebrate taxa and four plant taxa (13 endpoints) in preference to NEPM low reliability data.
 Concentration in red font and grey box exceed the adopted HSL/ESL 'D' for Commercial/Industrial
 Concentration in orange font and grey box exceed the adopted EIL/ESL 'D' for Commercial/Industrial use
 Concentrations in box exceed the screening value >2.5 times
 Where one or more guideline value is exceeded, the highest guideline exceeded will be highlighted
 Underlined values were reported <LOR and have been halved to allow for comparison of data.

Sample Type:	Soil	Soil	Soil	Soil	Soil	Soil	Soil	Soil	Soil	Soil	Soil	Soil	Soil	Soil	Soil	Soil
Laboratory Sample number	S19-JI39891	S19-JI39892	S19-JI39893	S19-JI39894	S19-JI39895	Report 677385	S19-JI39896	S19-JI39897	S19-JI39898	Report 677385	S19-JI39899	S19-JI39900	Report 677385	S19-JI39901	Report 677385	S19-JI39901
Sample date:	26/07/19	26/07/19	26/07/19	26/07/19	26/07/19	16-09-19	26/07/19	26/07/19	26/07/19	26/07/19	16-09-19	26/07/19	26/07/19	26/07/19	16-09-19	26/07/19
Sample ID:	TP1 0.1-0.5	TP1 0.5-0.6	TP2 0.1-0.4	TP2 0.4-0.5	TP2 0.5-0.7	TP3a 0-0.1	TP3 0.1-0.5	TP3 0.5-0.6	TP3 0.6-0.7	TP4a 0-0.1	TP4 0.1-0.3	TP4 0.3-0.4	TP5a 0-0.1	TP5 0.1-0.45		
Site:	Tarago Loop	Tarago Loop	Tarago Loop	Tarago Loop	Tarago Loop	Tarago Loop	Tarago Loop	Tarago Loop	Tarago Loop	Tarago Loop	Tarago Loop	Tarago Loop	Tarago Loop	Tarago Loop	Tarago Loop	Tarago Loop
Sampling Method:	Test pit	Test pit	Test pit	Test pit	Test pit	Test pit	Test pit	Test pit	Test pit	Test pit	Test pit	Test pit	Test pit	Test pit	Test pit	Test pit

Analyte grouping/Analyte	Units	LOR
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EG005T: Total Metals by ICP-AES																		
Lead	2,200	1,800	mg/kg	5	4,400	10	3,500	110	16	18,500	29,000	74	13	184,000	38,000	70	29,000	3,100

Blank Cell indicates no criterion available
 LOR = Limit of Reporting
 National Environment Protection Council (2013) National Environmental Protection (Assessment of Site Contamination) Amendment Measure 2013 (No. 1) (NEPM).
 Concentration in red font and grey box exceed the adopted Human Health Guideline for Commercial/Industrial (Ramboll 2019d)
 Concentration in orange font and grey box exceed the adopted EIL 'D' for Commercial/Industrial (Ramboll 2019c)
 Concentrations in box exceed the screening value >2.5 times
 Where one or more guideline value is exceeded, the highest guideline exceeded will be highlighted
 * indicates higher duplicate value adopted
 Underlined values were reported <LOR and have been halved to allow for comparison of data.
 Concentrations at TP3a, TP4a, TP5a, SS12, SS20 and SS29 are reported based on 250um fractions separated and analysed to inform bio-accessibility analyses completed as part of HHRA (Ramboll 2019c)

	Soil	Soil	Soil	Soil	Soil	Soil	Soil	Soil	Soil	Soil	Soil	Soil	Soil	Soil	Soil	Soil	Soil	
Sample Type:	Soil	Soil	Soil	Soil	Soil	Soil	Soil	Soil	Soil	Soil	Soil	Soil	Soil	Soil	Soil	Soil	Soil	
Laboratory Sample numb	S19-JI39902	S19-JI39903	S19-JI39904	S19-JI39905	S19-JI39906	S19-JI39907	S19-JI39908	S19-JI39909	S19-JI39910	S19-JI39911	S19-JI39912	S19-JI39845	S19-JI39914	S19-JI39915				
Sample date:	26/07/19	26/07/19	26/07/19	26/07/19	26/07/19	26/07/19	26/07/19	26/07/19	26/07/19	26/07/19	26/07/19	26/07/19	26/07/19	26/07/19				
Sample ID:	TP5 0.45-0.55	TP5 0.6-0.7	TP6 0.1-0.4	TP6 0.4-0.5	TP6 0.5-0.7	TP7 0.1-0.4	TP7 0.4-0.5	TP7 0.5-0.7	TP8 0.1-0.3	TP8 0.3-0.5	TP8 0.5-0.8	TP9 0.1-0.3	TP9 0.3-0.5	TP9 0.5-0.7				
Site:	Tarago Loop	Tarago Loop	Tarago Loop	Tarago Loop	Tarago Loop	Tarago Loop	Tarago Loop	Tarago Loop	Tarago Loop	Tarago Loop	Tarago Loop	Tarago Loop	Tarago Loop	Tarago Loop				
Sampling Method:	Test pit	Test pit	Test pit	Test pit	Test pit	Test pit	Test pit	Test pit	Test pit	Test pit	Test pit	Test pit	Test pit	Test pit				
Analyte grouping/Analyte	Units																LOR	
EG005T: Total Metals by ICP-AES																		
Lead	2,200	1,800	mg/kg	5	150	47	6,000	20	7	3,300	76	7	2,800	24	22	730	2.50	8

Blank Cell indicates no criterion available
 LOR = Limit of Reporting
 National Environment Protection Council (2013) National Environmental Protection (Assessment of Site Contamination) Amendment Measure 2013 (No. 1) (NEPM).
 Concentration in red font and grey box exceed the adopted Human Health Guideline for Commercial/Industrial (Ramboll 2019d)
 Concentration in orange font and grey box exceed the adopted EIL 'D' for Commercial/Industrial (Ramboll 2019d)
 Concentrations in box exceed the screening value >2.5 times
 Where one or more guideline value is exceeded, the highest guideline exceeded will be highlighted
 * indicates higher duplicate value adopted
 Underlined values were reported <LOR and have been halved to allow for comparison of data.
 Concentrations at 1P3a, 1P4a, 1P5a, 5S12, 5S20 and 5S29 are reported based on 250um fractions separated and analysed to inform bio-accessibility analyses completed as part of HHRA (Ramboll 2019c)

	HHRA (Ramboll 2019d)	NEPM 2013 EIL Commercial / Industrial	Sample Type:	Soil	Soil	Soil	Soil	Soil	Soil	Soil	Soil	Soil	Soil	Soil	Soil	Soil	Soil
			Laboratory Sample numb	S19-JI39846	S19-JI39847	S19-JI39848	S19-JI39849	S19-JI39850	S19-JI39918	S19-JI39919	S19-JI39851	S19-JI39920	S19-JI39921	S19-JI39922	S19-JI39923	S19-JI39924	S19-JI39925
			Sample date:	26/07/19	26/07/19	26/07/19	26/07/19	26/07/19	26/07/19	26/07/19	26/07/19	26/07/19	26/07/19	26/07/19	26/07/19	26/07/19	26/07/19
			Sample ID:	TP10 0.2	TP11 0.1	TP12 0.1	TP13 0.1	TP14 0.1	TP15 0.1	TP15 0.8	TP16 0.1	SS1 0.0-0.1	SS2 0.0-0.1	SS3 0.0-0.1	SS4 0.0-0.1	SS5 0.0-0.1	SS6 0.0-0.1
			Site:	Tarago Loop	Tarago Loop	Tarago Loop	Tarago Loop	Tarago Loop	Tarago Loop	Tarago Loop	Tarago Loop	Tarago Loop	Tarago Loop	Tarago Loop	Tarago Loop	Tarago Loop	Tarago Loop
			Sampling Method:	Test pit	Test pit	Test pit	Test pit	Test pit	Test pit	Test pit	Test pit	Test pit	Test pit	Test pit	Test pit	Test pit	Test pit

Analyte grouping/Analyte	Units	LOR
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EG005T: Total Metals by ICP-AES																		
Lead	2,200	1,800	mg/kg	5	18	43	11	39	6.4	27	26	10	39	110	130	120	43	110

Blank Cell indicates no criterion available
 LOR = Limit of Reporting
 National Environment Protection Council (2013) National Environmental Protection (Assessment of Site Contamination) Amendment Measure 2013 (No. 1) (NEPM).
 Concentration in red font and grey box exceed the adopted Human Health Guideline for Commercial/Industrial (Ramboll 2019d)
 Concentration in orange font and grey box exceed the adopted EIL 'D' for Commercial/Industrial (Ramboll 2019d)
 Concentrations in box exceed the screening value >2.5 times
 Where one or more guideline value is exceeded, the highest guideline exceeded will be highlighted
 * indicates higher duplicate value adopted
 Underlined values were reported <LOR and have been halved to allow for comparison of data.
 Concentrations at 1P3a, 1P4a, 1P5a, S5L2, S5Z0 and S5Z9 are reported based on ZSUUM fractions separated and analysed to inform bio-accessibility analyses completed as part of HHRA (Ramboll 2019c)

			Sample Type:	Soil	Soil	Soil	Soil	Soil	Soil	Soil	Soil	Soil	Soil	Soil	Soil	Soil	Soil	Soil
			Laboratory Sample numb	S19-JI39926	S19-JI39927	S19-JI39928	S19-JI39929	S19-JI39930	Report 67385	S19-JI39932	S19-JI39933	S19-JI39934	S19-JI39935	S19-JI39997	S19-JI39998	S19-JI39999	Report 67385	
			Sample date:	26/07/19	26/07/19	26/07/19	26/07/19	26/07/19	26/07/19	26/07/19	26/07/19	26/07/19	26/07/19	26/07/19	26/07/19	26/07/19	26/07/19	26/07/19
			Sample ID:	SS7 0.0-0.1	SS8 0.0-0.1	SS9 0.0-0.1	SS10 0.0-0.1	SS11 0.0-0.1	SS12 0.0-0.1	SS13 0.0-0.1	SS14 0.0-0.1	SS15 0.0-0.1	SS16 0.0-0.1	SS17 0.0-0.1	SS18 0.0-0.1	SS19 0.0-0.1	SS20 0.0-0.1	
			Site:	Tarago Loop	Tarago Loop	Tarago Loop	Tarago Loop	Tarago Loop	Tarago Loop	Tarago Loop	Tarago Loop	Tarago Loop	Tarago Loop	Tarago Loop	Tarago Loop	Tarago Loop	Tarago Loop	Tarago Loop
			Sampling Method:	Test pit	Test pit	Test pit	Test pit	Test pit	Test pit	Test pit	Test pit	Test pit	Test pit	Shallow Soil	Shallow Soil	Shallow Soil	Shallow Soil	

Analyte grouping/Analyte	Units		LOR															
EG005T: Total Metals by ICP-AES																		
Lead	2,200	1,800	mg/kg	5	4,100	340	140	780	2,200	48,000	2,600	31	350	15,000	25	34	26,000	41,000

Blank Cell indicates no criterion available
 LOR = Limit of Reporting
 National Environment Protection Council (2013) National Environmental Protection (Assessment of Site Contamination) Amendment Measure 2013 (No. 1) (NEPM).
 Concentration in red font and grey box exceed the adopted Human Health Guideline for Commercial/Industrial (Ramboll 2019d)
 Concentration in orange font and grey box exceed the adopted EIL 'D' for Commercial/Industrial (Ramboll 2019d)
 Concentrations in box exceed the screening value >2.5 times
 Where one or more guideline value is exceeded, the highest guideline exceeded will be highlighted
 * indicates higher duplicate value adopted
 Underlined values were reported <LOR and have been halved to allow for comparison of data.
 Concentrations at 1P3a, 1P4a, 1P5a, SS12, SS20 and SS29 are reported based on ZSUUM fractions separated and analysed to inform bio-accessibility analyses completed as part of HHRA (Ramboll 2019c)

			Sample Type:	Soil	Soil	Soil	Soil	Soil	Soil	Soil	Soil	Soil	Soil	Soil	Soil	Soil	Soil
			Laboratory Sample numb	S19-JI40001	S19-JI40002	S19-Au17274	S19-Au17275	S19-Au17276	S19-Au17277	S19-Au17278	S19-Au17279	Report 67385	S19-Au17281	S19-Au39076	S19-Au39077	S19-Au39078	S19-Au39079
			Sample date:	26/07/19	26/07/19	12-08-19	12-08-19	12-08-19	12-08-19	12-08-19	12-08-19	12-08-19	12-08-19	27-08-19	27-08-19	27-08-19	27-08-19
			Sample ID:	SS21	SS22	SS23	SS24	SS25	SS26	SS27	SS28	SS29	SS30	SS31	SS32	SS33	SS34
			Site:	Tarago Loop	Tarago Loop	Tarago Loop	Tarago Loop	Tarago Loop	Tarago Loop	Tarago Loop	Tarago Loop	Tarago Loop	Tarago Loop	Tarago Loop	Tarago Loop	Tarago Loop	Tarago Loop
			Sampling Method:	Shallow Soil	Shallow Soil	Shallow Soil	Shallow Soil	Shallow Soil	Shallow Soil	Shallow Soil	Shallow Soil	Shallow Soil	Shallow Soil	Shallow Soil	Shallow Soil	Shallow Soil	Shallow Soil

Analyte grouping/Analyte	Units		LOR														
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EG005T: Total Metals by ICP-AES																		
Lead	2,200	1,800	mg/kg	5	610	540	350	3,000	11,000	33	6,700	15000*	7,500	570*	710	2800*	800	850

Blank Cell indicates no criterion available
 LOR = Limit of Reporting
 National Environment Protection Council (2013) National Environmental Protection (Assessment of Site Contamination) Amendment Measure 2013 (No. 1) (NEPM).
 Concentration in red font and grey box exceed the adopted Human Health Guideline for Commercial/Industrial (Ramboll 2019d)
 Concentration in orange font and grey box exceed the adopted EIL 'D' for Commercial/Industrial (Ramboll 2019d)
 Concentrations in box exceed the screening value >2.5 times
 Where one or more guideline value is exceeded, the highest guideline exceeded will be highlighted
 * indicates higher duplicate value adopted
 Underlined values were reported <LOR and have been halved to allow for comparison of data.
 Concentrations at 1P3a, 1P4a, 1P5a, SS12, SS20 and SS29 are reported based on 250um fractions separated and analysed to inform bio-accessibility analyses completed as part of HHRA (Ramboll 2019c)



	HHRA (Ramboll 2019d)	NEPM 2013 EIL Commercial / Industrial	Sample Type:	Soil	Soil	Soil	Soil	Soil	Soil	Soil	Soil	Soil	Soil	Soil	Soil	Soil	Soil
Laboratory Sample numb			S19-Au39080	S19-Au39075	S19-Au39082	S19-Au39083	S19-Au39084	S19-Au39085	S19-Au39086	S19-Au39087	S19-Au39088	S19-Au39089	S19-Au39090	S19-Au39091	S19-Au39092	S19-Au39093	
Sample date:			27-08-19	27-08-19	27-08-19	27-08-19	27-08-19	27-08-19	27-08-19	27-08-19	27-08-19	27-08-19	27-08-19	27-08-19	27-08-19	27-08-19	
Sample ID:			SS35	SS36	SS37	SS38	SS39	SS40	SS41	SS42	SS43	SS44	SS45	SS46	SS47	SS48	
Site:			Tarago Loop	Tarago Loop	Tarago Loop	Tarago Loop	Tarago Loop	Tarago Loop	Tarago Loop	Tarago Loop	Tarago Loop	Tarago Loop	Tarago Loop	Tarago Loop	Tarago Loop	Tarago Loop	
Sampling Method:	Shallow Soil	Shallow Soil	Shallow Soil	Shallow Soil	Shallow Soil	Shallow Soil	Shallow Soil	Shallow Soil	Shallow Soil	Shallow Soil	Shallow Soil	Shallow Soil	Shallow Soil	Shallow Soil			

Analyte grouping/Analyte	Units	LOR
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EG005T: Total Metals by ICP-AES																		
Lead	2,200	1,800	mg/kg	5	900	2,100	1,600	9,900	2,900	2,600	11,000	240	31,000	140	4,000	210	3,900	1,800

Blank Cell indicates no criterion available
 LOR = Limit of Reporting
 National Environment Protection Council (2013) National Environmental Protection (Assessment of Site Contamination) Amendment Measure 2013 (No. 1) (NEPM).
 Concentration in red font and grey box exceed the adopted Human Health Guideline for Commercial/Industrial (Ramboll 2019d)
 Concentration in orange font and grey box exceed the adopted EIL 'D' for Commercial/Industrial (Ramboll 2019d)
 Concentrations in box exceed the screening value >2.5 times
 Where one or more guideline value is exceeded, the highest guideline exceeded will be highlighted
 * indicates higher duplicate value adopted
 Underlined values were reported <LOR and have been halved to allow for comparison of data.
 Concentrations at 1P3a, 1P4a, 1P5a, 5S12, 5S20 and 5S29 are reported based on 250um fractions separated and analysed to inform bio-accessibility analyses completed as part of HHRA (Ramboll 2019c)

	Soil	Soil	Soil	Soil	Soil	Soil	Soil	Soil	Soil	Soil	Soil	Soil	Soil	Soil	Soil	Soil
Sample Type:	Soil	Soil	Soil	Soil	Soil	Soil	Soil	Soil	Soil	Soil	Soil	Soil	Soil	Soil	Soil	Soil
Laboratory Sample numb	S19-Au39094	S19-Au39095	S19-Au39096	S19-Se36992	S19-Se36993	S19-Se36994	S19-Se36995	S19-Se36998	S19-Se37001	S19-Se37002	S19-Se37003	S19-Se37004	S19-Se37005	S19-Se37006		
Sample date:	27-08-19	27-08-19	27-08-19	22-09-19	22-09-19	22-09-19	22-09-19	22-09-19	22-09-19	22-09-19	22-09-19	22-09-19	22-09-19	22-09-19		
Sample ID:	SS49	SS50	SS51	SS52	SS53	SS54	SS55	SS56 0.1g	SS57 0.1g	SS58	SS59	SS60	SS61	SS62		
Site:	Tarago Loop	Tarago Loop	Tarago Loop	Tarago Rail Corridor	Tarago Rail Corridor	Tarago Rail Corridor	Tarago Rail Corridor	Tarago Rail Corridor	Tarago Rail Corridor	Tarago Rail Corridor	Tarago Rail Corridor	Tarago Rail Corridor	Tarago Rail Corridor	Tarago Rail Corridor		
Sampling Method:	Shallow Soil	Shallow Soil	Shallow Soil	Discrete	Discrete	Discrete	Discrete	Discrete	Discrete	Discrete	Discrete	Discrete	Discrete	Discrete		

Analyte grouping/Analyte	Units		LOR															
EG005T: Total Metals by ICP-AES																		
Lead	2,200	1,800	mg/kg	5	1,400	1,400	190	540	3,100	370	1,800	40,000	83,000	66	130	19	5,000	330

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 LOR = Limit of Reporting
 National Environment Protection Council (2013) National Environmental Protection (Assessment of Site Contamination) Amendment Measure 2013 (No. 1) (NEPM).
 Concentration in red font and grey box exceed the adopted Human Health Guideline for Commercial/Industrial (Ramboll 2019d)
 Concentration in orange font and grey box exceed the adopted EIL 'D' for Commercial/Industrial (Ramboll 2019c)
 Concentrations in box exceed the screening value >2.5 times
 Where one or more guideline value is exceeded, the highest guideline exceeded will be highlighted
 * indicates higher duplicate value adopted
 Underlined values were reported <LOR and have been halved to allow for comparison of data.
 Concentrations at 1P3a, 1P4a, 1P5a, S512, S520 and S529 are reported based on 250um fractions separated and analysed to inform bio-accessibility analyses completed as part of HHRA (Ramboll 2019c)



	HHRA (Ramboll 2019d)	NEPM 2013 EIL Commercial / Industrial	Sample Type:	Soil	Soil	Soil	Soil	Soil	Soil	Soil	Soil	Soil	Soil	Soil	Soil	Soil	Soil
			Laboratory Sample numb	S19-Se37007	S19-Se37008	S19-Se37009	S19-Se37010	S19-Se37011	S19-Se37012	S19-Se37013	S19-Se37014	S19-Se37015	S19-Se37016	S19-Se37017	S19-Se37018	S19-Se37019	S19-Se37020
			Sample date:	22-09-19	22-09-19	22-09-19	22-09-19	22-09-19	22-09-19	22-09-19	22-09-19	22-09-19	22-09-19	22-09-19	22-09-19	22-09-19	22-09-19
			Sample ID:	SS63	SS64	SS65	SS66	SS67	SS68	SS69	SS70	SS71	SS72	SS73	SS74	SS75	SS76
			Site:	Tarago Rail Corridor	Tarago Rail Corridor	Tarago Rail Corridor	Tarago Rail Corridor	Tarago Rail Corridor	Tarago Rail Corridor	Tarago Rail Corridor	Tarago Rail Corridor	Tarago Rail Corridor	Tarago Rail Corridor	Tarago Rail Corridor	Tarago Rail Corridor	Tarago Rail Corridor	Tarago Rail Corridor
			Sampling Method:	Discrete	Discrete	Discrete	Discrete	Discrete	Discrete	Discrete	Discrete	Discrete	Discrete	Discrete	Discrete	Discrete	Discrete

Analyte grouping/Analyte	Units	LOR																
EG005T: Total Metals by ICP-AES																		
Lead	2,200	1,800	mg/kg	5	75	300	400	1,100	210	440	580	150	1,200	480	460	300	1,600	1,000

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 LOR = Limit of Reporting
 National Environment Protection Council (2013) National Environmental Protection (Assessment of Site Contamination) Amendment Measure 2013 (No. 1) (NEPM).
 Concentration in red font and grey box exceed the adopted Human Health Guideline for Commercial/Industrial (Ramboll 2019d)
 Concentration in orange font and grey box exceed the adopted EIL 'D' for Commercial/Industrial (Ramboll 2019d)
 Concentrations in box exceed the screening value >2.5 times
 Where one or more guideline value is exceeded, the highest guideline exceeded will be highlighted
 * indicates higher duplicate value adopted
 Underlined values were reported <LOR and have been halved to allow for comparison of data.
 Concentrations at 1P3a, 1P4a, 1P5a, 5S12, 5S20 and 5S29 are reported based on 250um fractions separated and analysed to inform bio-accessibility analyses completed as part of HHRA (Ramboll 2019c)



	HHRA (Ramboll 2019d)	NEPM 2013 EIL Commercial / Industrial	Sample Type:	Soil	Soil	Soil	Soil	Soil	Soil	Soil	Soil	Soil	Soil	Soil	Soil	Soil	Soil
			Laboratory Sample numb	S19-Se37021	S19-Se37022	S19-Se37023	S19-Se37024	S19-Se37025	S19-Se37026	S19-Se37027	S19-Se37028	S19-Se37029	S19-Se37030	S19-Se37031	S19-Se37032	S19-Se37033	S19-Se37034
			Sample date:	22-09-19	22-09-19	22-09-19	22-09-19	22-09-19	22-09-19	22-09-19	22-09-19	22-09-19	22-09-19	22-09-19	22-09-19	22-09-19	22-09-19
			Sample ID:	SS77	SS78	SS79	SS80	SS81	SS82	SS83	SS84	SS85	SS86	SS87	SS88	SS89	SS90
			Site:	Tarago Rail Corridor	Tarago Rail Corridor	Tarago Rail Corridor	Tarago Rail Corridor	Tarago Rail Corridor	Tarago Rail Corridor	Tarago Rail Corridor	Tarago Rail Corridor	Tarago Rail Corridor	Tarago Rail Corridor	Tarago Rail Corridor	Tarago Rail Corridor	Tarago Rail Corridor	Tarago Rail Corridor
			Sampling Method:	Discrete	Discrete	Discrete	Discrete	Discrete	Discrete	Discrete	Discrete	Discrete	Discrete	Discrete	Discrete	Discrete	Discrete

Analyte grouping/Analyte	Units	LOR																
EG005T: Total Metals by ICP-AES																		
Lead	2,200	1,800	mg/kg	5	500	530	98	200	120	230	530	460	330	28	32	660	200	28

Blank Cell indicates no criterion available
 LOR = Limit of Reporting
 National Environment Protection Council (2013) National Environmental Protection (Assessment of Site Contamination) Amendment Measure 2013 (No. 1) (NEPM).
 Concentration in red font and grey box exceed the adopted Human Health Guideline for Commercial/Industrial (Ramboll 2019d)
 Concentration in orange font and grey box exceed the adopted EIL 'D' for Commercial/Industrial (Ramboll 2019d)
 Concentrations in box exceed the screening value >2.5 times
 Where one or more guideline value is exceeded, the highest guideline exceeded will be highlighted
 * indicates higher duplicate value adopted
 Underlined values were reported <LOR and have been halved to allow for comparison of data.
 Concentrations at 1P3a, 1P4a, 1P5a, 5S12, 5S20 and 5S29 are reported based on 250um fractions separated and analysed to inform bio-accessibility analyses completed as part of HHRA (Ramboll 2019c)



Sample Type:	Soil	Soil	Soil	Soil	Soil	Soil	Soil	Soil	Soil	Soil	Soil	Soil	Soil	Soil	Soil	Soil	Soil
Laboratory Sample numb	S19-Se37035	S19-Se37036	S19-Se37037	S19-Se37038	S19-Se37039	S19-Se37040	S19-Se37041	S19-Se37042	S19-Se37043	S19-Se37044	S19-Se37045	S19-Se37046	S19-Se37047	S19-Se37048			
Sample date:	22-09-19	22-09-19	22-09-19	22-09-19	22-09-19	22-09-19	22-09-19	22-09-19	22-09-19	22-09-19	22-09-19	22-09-19	22-09-19	22-09-19			
Sample ID:	SS91	SS92	SS93	SS94	SS95	SS96	SS97	SS98	SS99	SS100	SS101	SS102	SS103	SS104			
Site:	Tarago Rail Corridor	Tarago Rail Corridor	Tarago Rail Corridor	Tarago Rail Corridor	Tarago Rail Corridor	Tarago Rail Corridor	Tarago Rail Corridor	Tarago Rail Corridor	Tarago Rail Corridor	Tarago Rail Corridor	Tarago Rail Corridor	Tarago Rail Corridor	Tarago Rail Corridor	Tarago Rail Corridor			
Sampling Method:	Discrete	Discrete	Discrete	Discrete	Discrete	Discrete	Discrete	Discrete	Discrete	Discrete	Discrete	Discrete	Discrete	Discrete			

Analyte grouping/Analyte	Units	LOR																
EG005T: Total Metals by ICP-AES																		
Lead	2,200	1,800	mg/kg	5	110	49	32	100	45	79	35	38	22	870	17	24	35	620

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 LOR = Limit of Reporting
 National Environment Protection Council (2013) National Environmental Protection (Assessment of Site Contamination) Amendment Measure 2013 (No. 1) (NEPM).
 Concentration in **red** font and grey box exceed the adopted Human Health Guideline for Commercial/Industrial (Ramboll 2019d)
 Concentration in **orange** font and grey box exceed the adopted EIL 'D' for Commercial/Industrial (Ramboll 2019c)
 Concentrations in box exceed the screening value >2.5 times
 Where one or more guideline value is exceeded, the highest guideline exceeded will be highlighted
 * indicates higher duplicate value adopted
 Underlined values were reported <LOR and have been halved to allow for comparison of data.
 Concentrations at 1P3a, 1P4a, 1P5a, S512, S520 and S529 are reported based on 250um fractions separated and analysed to inform bio-accessibility analyses completed as part of HHRA (Ramboll 2019c)



Sample Type:	Soil	Soil	Soil	Soil	Soil	Soil	Soil	Soil	Soil
Laboratory Sample numb	S19-Se37049	S19-Se37050	S19-Se37051	S19-Se37052	S19-Se37053	S19-Se37054	S19-Se37145	S19-Se37146	
Sample date:	22-09-19	22-09-19	22-09-19	22-09-19	22-09-19	22-09-19	22-09-19	22-09-19	
Sample ID:	SS105	SS106	SS107	SS108	SS109	SS110	SS111	SS112	
Site:	Tarago Rail Corridor	Tarago Rail Corridor	Tarago Rail Corridor	Tarago Rail Corridor	Tarago Rail Corridor	Tarago Rail Corridor	Tarago Rail Corridor	Tarago Rail Corridor	
Sampling Method:	Discrete	Discrete	Discrete	Discrete	Discrete	Discrete	Discrete	Discrete	

Analyte grouping/Analyte	Units	LOR										
EG005T: Total Metals by ICP-AES												
Lead	2,200	1,800	mg/kg	5	3,900	1,400	530	52	76	30	38	27

Blank Cell indicates no criterion available
 LOR = Limit of Reporting
 National Environment Protection Council (2013) National Environmental Protection (Assessment of Site Contamination) Amendment Measure 2013 (No. 1) (NEPM).
 Concentration in **red** font and grey box exceed the adopted Human Health Guideline for Commercial/Industrial (Ramboll 2019d)
 Concentration in **orange** font and grey box exceed the adopted EIL 'D' for Commercial/Industrial (Ramboll 2019c)
 Concentrations in box exceed the screening value >2.5 times
 Where one or more guideline value is exceeded, the highest guideline exceeded will be highlighted
 * indicates higher duplicate value adopted
 Underlined values were reported <LOR and have been halved to allow for comparison of data.
 Concentrations at 1P3a, 1P4a, 1P5a, S51Z, S52U and S52Y are reported based on 250um fractions separated and analysed to inform bio-accessibility analyses completed as part of HHRA (Ramboll 2019c)

NEPM 2013 HIL D Commercial / Industrial	Sample Type:	Primary	Primary	Primary	Primary	Duplicate
	Sample number:	S20-Ma28575	S20-Ma28576	S20-Ma28577	S20-Ma28578	S20-Ma28579
	Sample date:	18-Mar-20	18-Mar-20	18-Mar-20	18-Mar-20	18-Mar-20
	Sample ID:	SLE01	SLE02	SLE03	SLE04	D01_180320
	Project Name:	John Holland	John Holland	John Holland	John Holland	John Holland
	Compound:					
	Site:	Tarago Rail Loop	Tarago Rail Loop	Tarago Rail Loop	Tarago Rail Loop	Tarago Rail Loop
	Sampling Method:	NA	NA	NA	NA	NA
Sample Description	Woodchips	Woodchips	Woodchips	Woodchips	Woodchips	

Analyte grouping/Analyte	Units	LOR
Total Metals		
Arsenic	3000 mg/kg	5 < 2, 6.9, 6.5 < 2, 4.6
Cadmium	900 mg/kg	1, 15, 11, 7.6, 11
Chromium (VI)	3600 mg/kg	2 < 5, 11, 14 < 5, < 5
Copper	240000 mg/kg	5, 140, 430, 1700, 230, 590
Lead	2200* mg/kg	5, 240, 1300, 1300, 560, 2700
Mercury	6000 mg/kg	0.1 < 0.1, < 0.1, 0.2 < 0.1, < 0.1
Nickel	400000 mg/kg	2 < 5, 11, 11, 5.7 < 5, < 5
Zinc	mg/kg	5, 2800, 1200, 1300, 1100, 1300

Organophosphorus Pesticides (OP)		Units	LOR
Azinphos-methyl	mg/kg	< 0.2	< 0.2
Bolstar	mg/kg	< 0.2	< 0.2
Chlorfenvinphos	mg/kg	< 0.2	< 0.2
Chlorpyrifos	2000 mg/kg	< 0.2	< 0.2
Chlorpyrifos-methyl	mg/kg	< 0.2	< 0.2
Coumaphos	mg/kg	< 2	< 2
Demeton-O	mg/kg	< 0.2	< 0.2
Demeton-S	mg/kg	< 0.2	< 0.2
Diazinon	mg/kg	< 0.2	< 0.2
Dichlorvos	mg/kg	< 0.2	< 0.2
Dimethoate	mg/kg	< 0.2	< 0.2
Disulfoton	mg/kg	< 0.2	< 0.2
EPN	mg/kg	< 0.2	< 0.2
Ethion	mg/kg	< 0.2	< 0.2
Ethoprop	mg/kg	< 0.2	< 0.2
Ethyl parathion	mg/kg	< 0.2	< 0.2
Fenitrothion	mg/kg	< 0.2	< 0.2
Fensulfotion	mg/kg	< 0.2	< 0.2
Fenthion	mg/kg	< 0.2	< 0.2
Malathion	mg/kg	< 0.2	< 0.2
Merphos	mg/kg	< 0.2	< 0.2
Methyl parathion	mg/kg	< 0.2	< 0.2
Mevinphos	mg/kg	< 0.2	< 0.2
Monocrotophos	mg/kg	< 2	< 2
Naled	mg/kg	< 0.2	< 0.2
Omethoate	mg/kg	< 2	< 2
Phorate	mg/kg	< 0.2	< 0.2
Pirimiphos-methyl	mg/kg	< 0.2	< 0.2
Pyrazophos	mg/kg	< 0.2	< 0.2
Ronnel	mg/kg	< 0.2	< 0.2
Terbufos	mg/kg	< 0.2	< 0.2
Tetrachlorvinphos	mg/kg	< 0.2	< 0.2
Tokuthion	mg/kg	< 0.2	< 0.2
Trichloronate	mg/kg	< 0.2	< 0.2

Polynuclear Aromatic Hydrocarbons		Units	LOR
Acenaphthene	mg/kg	< 0.5	< 0.5
Acenaphthylene	mg/kg	< 0.5	< 0.5
Anthracene	mg/kg	< 0.5	< 0.5
Benzo(a)anthracene	mg/kg	< 0.5	< 0.5
Benzo(a)pyrene	mg/kg	< 0.5	< 0.5
Benzo(a)pyrene TEQ (lower bound) *	40 mg/kg	< 0.5	< 0.5
Benzo(a)pyrene TEQ (medium bound) *	mg/kg	< 0.6	0.6
Benzo(a)pyrene TEQ (upper bound) *	mg/kg	< 0.7	1.2
Benzo(b&j)fluoranthene	mg/kg	< 0.5	< 0.5
Benzo(g,h,i)perylene	mg/kg	< 0.5	< 0.5
Benzo(k)fluoranthene	mg/kg	< 0.5	< 0.5
Chrysene	mg/kg	< 0.5	< 0.5
Dibenz(a,h)anthracene	mg/kg	< 0.5	< 0.5
Fluoranthene	mg/kg	< 0.5	< 0.5
Fluorene	mg/kg	< 0.5	< 0.5
Indeno(1,2,3-cd)pyrene	mg/kg	< 0.5	< 0.5
Naphthalene	mg/kg	< 0.6	1.7
Phenanthrene	mg/kg	< 0.5	< 0.5
Pyrene	mg/kg	< 0.5	< 0.5
Total PAH*	4000 mg/kg	< 0.6	1.7

TRH - 1999 NEPM Fractions (after silica gel clean-up)		Units	LOR
TRH C10-C14 (after silica gel clean-up)	mg/kg	< 100	< 100
TRH C10-C36 (Total) (after silica gel clean-up)	10000 mg/kg	< 250	1200
TRH C15-C28 (after silica gel clean-up)	mg/kg	< 250	300
TRH C29-C36 (after silica gel clean-up)	mg/kg	< 250	900

Total Recoverable Hydrocarbons - NEPM 2013 Fractions		Units	LOR
TRH >C10-C16 (after silica gel clean-up)	mg/kg	< 250	< 250
TRH >C16-C34 (after silica gel clean-up)	mg/kg	< 500	1100
TRH >C34-C40 (after silica gel clean-up)	mg/kg	< 500	< 500

Blank Cell indicates no criterion available
 LOR = Limit of Reporting
 National Environment Protection Council (2013) National Environmental Protection (Assessment of Site Contamination) Amendment Measure 2013 (No. 1) (NEPM).
 CRC Care Technical Report no.10, Health Screening Levels for petroleum hydrocarbons in soil and groundwater September 2011
 * Human Health Guideline for Lead adopted from the Human Health Risk Assessment (Ramboll 2019d)
 Health Investigation Levels for chromium based on chromium (VI)
 Chromium (III) EIL, based on a low clay content (% clay) of 1%

Sample Type:	Leachate	Leachate	Leachate	Leachate	Leachate	Leachate
Sample number:	S19-JI50740	S19-JI50741	S19-JI50742	S19-JI50743	S19-JI50744	S19-JI50745
Sample date:	26-Jul-19	26-Jul-19	26-Jul-19	26-Jul-19	26-Jul-19	26-Jul-19
Sample ID:	TP1 0.1-0.5	TP5 0.1-0.45	TP7 0.1-0.4	TP3 0.1-0.5	SS20 0-0.1	TP4 0.1-0.3
Project Name:	John Holland	John Holland	John Holland	John Holland	John Holland	John Holland
Compound:						
Site:	US Leachate	US Leachate	US Leachate	AUS Leachate - Reagent Water	AUS Leachate - Reagent Water	AUS Leachate - Reagent Water
Sampling Method:	NA	NA	NA	NA	NA	NA
Sample Description	Leachate	Leachate	Leachate	Leachate	Leachate	Leachate

Analyte grouping/Analyte	Units	LOR
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Metals TCLP								
Arsenic	mg/L	0.1	--	--	--	--	--	--
Cadmium	mg/L	0.05	--	--	--	--	--	--
Chromium (VI)	mg/L	0.1	--	--	--	--	--	--
Copper	mg/L	0.1	--	--	--	--	--	--
Lead	mg/L	0.1	4.3	32	8.2	1.1	0.03	<0.01
Nickel	mg/L	0.1	--	--	--	--	--	--
Zinc	mg/L	0.1	--	--	--	--	--	--
Mercury	mg/L	0.001	--	--	--	--	--	--

Blank Cell indicates no criterion available
 LOR = Limit of Reporting
 PFOS/PFOA values adopted from Addendum to the Waste Classification Guidelines (2014) - Part 1: classifying waste, October 2016 (NSW EPA). Noting these values have been based on the enHealth TDI values
 Blank cell indicates no screening criterion available
 For Limit of Reporting (LOR) refer to laboratory certificates of analysis
 --- Indicates sample not analysed
 Concentrations below the LOR noted as <value

	Sample Type:	Soil	Soil	Soil	Soil	Soil	Soil	Soil	Soil	Soil	Soil	Soil	Soil	Soil	Soil	Soil	Soil	Soil	
NEPM 2013 HIL C Open Space	Laboratory Sample number	S19-De30540	S19-De30541	S19-De30542	S19-De30543	S19-De30544	S19-De30545	S19-De30546	S19-De30547	S19-De30548	S19-De30549	S19-De30560	S19-De30561	S19-De30562	S19-De30563	S19-De30564	S19-De30565	S19-De30565	
	Sample date:	19-12-19	19-12-19	19-12-19	19-12-19	19-12-19	19-12-19	19-12-19	19-12-19	19-12-19	19-12-19	19-12-19	19-12-19	19-12-19	19-12-19	19-12-19	19-12-19	19-12-19	
	Sample ID:	SS116	SS117	SS118	SS119	SS120	SS121	SS122	SS123	SS124	SS125	SS136	SS137	SS138	SS139	SS140	SS141	SS141	
	Site:	Goulburn St	Goulburn St	Goulburn St	Goulburn St	Goulburn St	Goulburn St	Goulburn St	Goulburn St	Goulburn St	Goulburn St	Station Masters Cottage	Station Masters Cottage	Station Masters Cottage	Station Masters Cottage	Station Masters Cottage	Station Masters Cottage	Station Masters Cottage	
	Sampling Method:	Discrete	Discrete	Discrete	Discrete	Discrete	Discrete	Discrete	Discrete	Discrete	Discrete	Discrete	Discrete	Discrete	Discrete	Discrete	Discrete	Discrete	
Analyte grouping/Analyte		Units		LOR															
EG005T: Total Metals by ICP-AES																			
Lead	600	mg/kg	5	250	250	880	110	86	140	260	480	70	520	1,200	1,100	210	800	660	390

Blank Cell indicates no criterion available
 LOR = Limit of Reporting
 National Environment Protection Council (2013) National Environmental Protection (Assessment of Site Contamination) Amendment Measure 2013 (No. Concentration in red font and grey box exceed the adopted assessment criteria
 * indicates higher duplicate value adopted

Sample Type:	Soil	Soil	Soil	Soil	Soil	Soil	Soil	Soil	Soil	Soil	Soil	Soil	
Laboratory Sample number	S19-De30550	S19-De30551	S19-De30552	S19-De30553	S19-De30554	S19-De30555	S19-De30556	S19-De30557	S19-De30558	S19-De30559	S19-De30559	S19-De30559	
Sample date:	19-12-19	19-12-19	19-12-19	19-12-19	19-12-19	19-12-19	19-12-19	19-12-19	19-12-19	19-12-19	19-12-19	19-12-19	
Sample ID:	SS126	SS127	SS128	SS129	SS130	SS131	SS132	SS133	SS134	SS135	SS135	SS135	
Site:	Tarago Public School	Tarago Public School	Tarago Public School	Tarago Public School	Tarago Public School	Tarago Public School	Tarago Public School	Tarago Public School	Tarago Public School	Tarago Public School	Tarago Public School	Tarago Public School	
Sampling Method:	Discrete	Discrete	Discrete	Discrete	Discrete	Discrete	Discrete	Discrete	Discrete	Discrete	Discrete	Discrete	
Analyte grouping/Analyte	Units												LOR
EG005T: Total Metals by ICP-AES													
Lead	600	mg/kg	5	110	89	39	61	190	240	17	46	42	59

Blank Cell indicates no criterion available
 LOR = Limit of Reporting
 National Environment Protection Council (2013) National Environmental Protection (Assessment of Site Contamination) Amendment Measure 2013 (No. Concentration in red font and grey box exceed the adopted assessment criteria
 * indicates higher duplicate value adopted

	NEPM 2013 HIL C Open Space	Sample Type:	
		Laboratory Sample number:	
		Sample date:	
		Sample ID:	
		Site:	
		Sampling Method:	
Analyte grouping/Analyte		Units	LOR
EG005T: Total Metals by ICP-AES			
Lead	600	mg/kg	5

Blank Cell indicates no criterion available
 LOR = Limit of Reporting
 National Environment Protection Council (2013) National Environmental Protection (Assessment of Site Contamination) Amendment Measure 2013 (No. 1)
 Concentration in **red** font and grey box exceed the adopted assessment criteria
 * indicates higher duplicate value adopted

	Sample Type:		Paint	Paint	Paint	Paint	Paint	Paint	Paint	
	Laboratory Sample number:		S19-De30587	S19-De30588	S19-De30589	S19-De30590	S19-De30591	S19-De30592	S19-De30593	
	Sample date:		19-12-19	19-12-19	19-12-19	19-12-19	19-12-19	19-12-19	19-12-19	
	Sample ID:		PAINT1	PAINT2	PAINT3	PAINT4	PAINT5	PAINT6	PAINT7	
	Site:		Tarago P.S.	Tarago P.S.	Tarago P.S.	Tarago P.S.	Tarago P.S.	Station Masters Cottage	Station Masters Cottage	
	Sampling Method:		Grab Sample	Grab Sample	Grab Sample	Grab Sample	Grab Sample	Grab Sample	Grab Sample	
Analyte grouping/Analyt Units LOR										
Extractable metals in paint by ICP-AES										
Lead		%	0.01	0.09	0.25	1.8	0.29	0.03	0.07	16

Client: John Holland Rail
 Job No: 318000780
 Project Name: Tarago Loop Lead Management
 23-07-20

Table H7:
 Offsite Paint Results



	Sample Type:		Paint
	Laboratory Sample number:		S19-De30594
	Sample date:		19-12-19
	Sample ID:		PAINT8
	Site:		Station Masters Cottage
	Sampling Method:		Grab Sample
Analyte grouping/Analyt Units LOR			
Extractable metals in paint by ICP-AES			
Lead		%	0.01 15



	NSW EPA (2003)	US EPA (2020)	Sample Type:		SWAB	SWAB	SWAB	SWAB	SWAB	SWAB	SWAB
			Laboratory Sample number:	S19-De30581	S19-De30582	S19-De30583	S19-De30584	S19-De30585	S19-De30586	S19-De30566	
			Sample date:	19-12-19	19-12-19	19-12-19	19-12-19	19-12-19	19-12-19	19-12-19	
			Sample ID:	SWAB16	SWAB17	SWAB18	SWAB19	SWAB20	SWAB21	SWAB1	
			Site:	Station Masters Cottage Exterior	Station Masters Cottage Exterior	Station Masters Cottage Exterior	Station Masters Cottage Interior	Station Masters Cottage Interior	Station Masters Cottage Interior	Tarago Station	
			Sampling Method:	Grid Swab	Grid Swab	Grid Swab	Grid Swab	Grid Swab	Grid Swab	Grid Swab	

Analyte grouping/Analyte	Units	LOR
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External Dust

E022.5 -: Acid Extractable metals in paint by ICP-AES												
Total Lead	--	--	µg	1	1200	410	900	--	--	--	52	
Surface Area	--	--	m ²	--	0.06	0.09	0.09	--	--	--	0.0675	
Lead	4,300		µg/m ²	--	20000	4556	10000	--	--	--	770	

Internal Dust

in paint by ICP-AES												
Total Lead	--	--	µg	1	--	--	--	750	1600	47	--	
Surface Area	--	--	m ²	--	--	--	--	0.09	0.09	0.08	--	
Lead	NA	1,076	µg/m ²	--	--	--	--	8333	17778	588	--	

Blank Cell indicates no criterion available

LOR = Limit of Reporting

Concentration in **red** font and grey box exceed the adopted criteria

Concentrations in box exceed the screening value >2.5 times

NSW EPA (2003) Managing Lead Contamination in Home Maintenance, Renovation and Demolition Practices. A Guide for Councils. NSW Environment Protection Authority.

US EPA (2020) Protect your family from lead in your home



	NSW EPA (2003)	US EPA (2020)	Sample Type:		SWAB	SWAB	SWAB	SWAB	SWAB	SWAB	SWAB	SWAB
			Laboratory Sample number:	S19-De30567	S19-De30568	S19-De30569	S19-De30570	S19-De30571	S19-De30572	S19-De30573	S19-De30574	
			Sample date:	19-12-19	19-12-19	19-12-19	19-12-19	19-12-19	19-12-19	19-12-19	19-12-19	
			Sample ID:	SWAB2	SWAB3	SWAB4	SWAB5	SWAB6	SWAB7	SWAB8	SWAB9	
			Site:	Tarago Station	Tarago Station	Tarago Station	Tarago Station	Tarago P.S. Exterior	Tarago P.S. Exterior	Tarago P.S. Exterior	Tarago P.S. Exterior	
			Sampling Method:	Grid Swab	Grid Swab	Grid Swab	Grid Swab	Grid Swab	Grid Swab	Grid Swab	Grid Swab	

Analyte grouping/Analyte	Units	LOR
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External Dust

E022.5 -: Acid Extractable metals in paint by ICP-AES														
Total Lead	--	--		µg	1		25	150	230	150	13	24	110	29
Surface Area	--	--		m ²	--		0.09	0.09	0.08	0.08	0.08	0.09	0.05	0.09
Lead	4,300			µg/m ²	--		278	1667	2875	1875	163	267	2200	322

Internal Dust

in paint by ICP-AES														
Total Lead	--	--		µg	1		--	--	--	--	--	--	--	--
Surface Area	--	--		m ²	--		--	--	--	--	--	--	--	--
Lead	NA	1,076		µg/m ²	--		--	--	--	--	--	--	--	--

Blank Cell indicates no criterion available

LOR = Limit of Reporting

Concentration in **red** font and grey box exceed the adopted criteria

Concentrations in box exceed the screening value >2.5 times

NSW EPA (2003) Managing Lead Contamination in Home Maintenance, Renovation and Demolition Practices. A Guide for Councils. NSW Environment Protection Authority.

US EPA (2020) Protect your family from lead in your home

	NSW EPA (2003)	US EPA (2020)	Sample Type:		SWAB	SWAB	SWAB	SWAB	SWAB	SWAB
			Laboratory Sample number:		S19-De30575	S19-De30576	S19-De30577	S19-De30578	S19-De30579	S19-De30580
			Sample date:		19-12-19	19-12-19	19-12-19	19-12-19	19-12-19	19-12-19
			Sample ID:		SWAB10	SWAB11	SWAB12	SWAB13	SWAB14	SWAB15
			Site:		Tarago P.S. Exterior	Tarago P.S. Interior	Tarago P.S. Interior	Tarago P.S. Interior	Tarago P.S. Interior	Tarago P.S. Interior
			Sampling Method:		Grid Swab	Grid Swab	Grid Swab	Grid Swab	Grid Swab	Grid Swab
Analyte grouping/Analyte										
Units										
LOR										
External Dust										
E022.5 -: Acid Extractable metals in paint by ICP-AES										
Total Lead	--	--		µg	1	70	--	--	--	--
Surface Area	--	--		m ²	--	0.08	--	--	--	--
Lead	4,300			µg/m ²	--	875	--	--	--	--
Internal Dust										
in paint by ICP-AES										
Total Lead	--	--		µg	1	--	4	4	3	3
Surface Area	--	--		m ²	--	--	0.09	0.075	0.09	0.09
Lead	NA	1,076		µg/m ²	--	--	44	49	37	31

Blank Cell indicates no criterion available

LOR = Limit of Reporting

Concentration in **red** font and grey box exceed the adopted criteria

Concentrations in box exceed the screening value >2.5 times

NSW EPA (2003) Managing Lead Contamination in Home Maintenance, Renovation and Demolition Practices. A Guide for Councils. NSW Environment Protection Authority.

US EPA (2020) Protect your family from lead in your home

NEPM 2013 HIL A Residential	NEPM 2013 HIL C Open Space	NEPM 2013 EIL Residential / public Open Space	NSW EPA - Use and Disposal of Biosolids	Sample Type:	Soil	Soil	Soil	Soil	Soil	Soil	Soil	Soil	Soil	Soil	Soil	Soil			
				Site:	P01	P01	P01	P01	P01	P01	P01	P01	P01	P01	P01	P01	P01	P01	
				Lab Sample number:	M20-Ap03657	M20-Ap03658	M20-Ap03659	M20-Ap03660	M20-Ap03661	M20-Ap03662	M20-Ap03663	M20-Ap03664	M20-Ap03665	M20-Ap03666	M20-Ap03667	M20-Ap03668			
				Sample date:	19-03-20	19-03-20	19-03-20	19-03-20	19-03-20	19-03-20	19-03-20	19-03-20	19-03-20	19-03-20	19-03-20	19-03-20			
				Sample ID:	P1BH1_0.05	P1BH1_0.2	P1BH1_0.5	P1BH2_0.05	P1BH2_0.2	P1BH2_0.5	P1BH3_0.05	P1BH3_0.2	P1BH3_0.5	P1BH4_0.05	P1BH4_0.2	P1BH4_0.5			
				Project Name:	Community DSI	Community DSI	Community DSI	Community DSI	Community DSI	Community DSI	Community DSI	Community DSI	Community DSI	Community DSI	Community DSI	Community DSI	Community DSI		
Sampling Method:	Hand Auger	Hand Auger	Hand Auger	Hand Auger	Hand Auger	Hand Auger	Hand Auger	Hand Auger	Hand Auger	Hand Auger	Hand Auger	Hand Auger	Hand Auger						

Analyte grouping/Analyte	Units	LOR															
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LTM-GEN-7080 Moisture																		
Moisture Content (dried @ 103°C)					%	--	7.7	9.5	14	9.2	8.9	9.9	20	18	17	23	13	11

LTM-MET-3040 Metals in Waters, Soils & Sediments by ICP-MS																		
Aluminium					mg/kg	10	--	--	--	--	--	--	--	--	--	--	--	--
Arsenic	100	300	100	20	mg/kg	2	--	--	--	--	--	--	--	--	--	--	--	--
Barium					mg/kg	10	--	--	--	--	--	--	--	--	--	--	--	--
Beryllium	60	90			mg/kg	2	--	--	--	--	--	--	--	--	--	--	--	--
Cadmium	20	90		3	mg/kg	0.4	--	--	--	--	--	--	--	--	--	--	--	--
Chromium	100	300	430	100	mg/kg	5	--	--	--	--	--	--	--	--	--	--	--	--
Cobalt	100	300			mg/kg	5	--	--	--	--	--	--	--	--	--	--	--	--
Copper	6000	17000	110	100	mg/kg	5	--	--	--	--	--	--	--	--	--	--	--	--
Iron					mg/kg	20	--	--	--	--	--	--	--	--	--	--	--	--
Lead	300	600	1100	150	mg/kg	5	44	54	47	330	240	40	160	46	30	110	85	93
Manganese	3800	19000			mg/kg	5	--	--	--	--	--	--	--	--	--	--	--	--
Mercury	40	80		1	mg/kg	0.1	--	--	--	--	--	--	--	--	--	--	--	--
Nickel	400	1200	200	60	mg/kg	5	--	--	--	--	--	--	--	--	--	--	--	--
Zinc	7400	30000	250	200	mg/kg	5	--	--	--	--	--	--	--	--	--	--	--	--

National Environment Protection Council (2013) National Environmental Protection (Assessment of Site Contamination) Amendment Measure 2013 (No. 1) (NEPM).
 ^ For soil texture classification undertaken in accord with AS 1726, the classifications of sand, silt and clay may be applied as coarse, fine with liquid limit <50% and fine with liquid limit >50% respectively, as the underlying properties to develop the HSLs may reasonably be selected to be similar. Where there is uncertainty, either a conservative approach may be adopted or laboratory analysis should be carried out. Generally SAND has been adopted in these scenarios.
 Health Investigation Levels for chromium based on chromium (VI)
 Chromium (III) EIL, based on a low clay content (% clay) of 12%
 Nickel EIL, based on CEC of 12.8cmol/kg
 Copper EIL, based on CEC of 12cmol/kg, pH of 5.22, organic carbon content of 1.78%
 Zinc EIL, based on CEC of 12cmol/kg and pH of 5.22
 Concentration in **red** font and grey box exceed the adopted HIL/HSL 'A' for Low Density Residential
 Concentration in **orange** font and grey box exceed the adopted HIL/HSL 'C' for Open Space and Recreational Land Use (applicable for P2, P3, P6, P8, P9 and P11)
 Concentration in **green** font and grey box exceed the adopted EIL/ESL 'C' for Residential and Open Space and Recreational Land Use
 Concentration in **blue** font and grey box exceed the adopted Environmental Guidelines: Use and Disposal of Biosolid Products (NSW EPA 2000) (P29 only).
 Concentrations in box exceed the screening value >2.5 times
 Where one or more guideline value is exceeded, the highest guideline exceeded will be highlighted

	NEPM 2013 HIL A Residential	NEPM 2013 HIL C Open Space	NEPM 2013 EIL Residential / public Open Space	NSW EPA - Use and Disposal of Biosolids	Sample Type:	Soil	Soil
Site:					P01	P01	
Lab Sample number:					M20-Ap03669	M20-Ap03670	
Sample date:					19-03-20	19-03-20	
Sample ID:					P1BH5_0.05	P1BH5_0.2	
Project Name:					Community DSI	Community DSI	
Sampling Method:					Hand Auger	Hand Auger	

Analyte grouping/Analyte	Units	LOR
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LTM-GEN-7080 Moisture		
Moisture Content (dried @ 103°C)	%	--
		14

LTM-MET-3040 Metals in Waters, Soils & Sediments by ICP-MS					
Aluminium		mg/kg	10	--	--
Arsenic	100	300	100	20	2
Barium					10
Beryllium	60	90			2
Cadmium	20	90		3	0.4
Chromium	100	300	430	100	5
Cobalt	100	300			5
Copper	6000	17000	110	100	5
Iron					20
Lead	300	600	1100	150	5
Manganese	3800	19000			5
Mercury	40	80		1	0.1
Nickel	400	1200	200	60	5
Zinc	7400	30000	250	200	5

National Environment Protection Council (2013) National Environmental Protection (Assessment of Site Contamination) Amendment Measure 2013 (No. 1))
 ^ For soil texture classification undertaken in accord with AS 1726, the classifications of sand, silt and clay may be applied as coarse, fine with liquid limit <50% and fine with liquid limit >50% respectively, as the underlying properties to develop the HSLs may reasonably be selected to be similar. Where there is uncertainty, either a conservative approach may be adopted or laboratory analysis should be carried out. Generally SAND has been adopted in these scenarios.
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 Concentration in **orange** font and grey box exceed the adopted HIL/HSL 'C' for Open Space and Recreational Land Use (applicable for P2, P3, P6, P8, P9 and P11)
 Concentration in **green** font and grey box exceed the adopted EIL/ESL 'C' for Residential and Open Space and Recreational Land Use
 Concentration in **blue** font and grey box exceed the adopted Environmental Guidelines: Use and Disposal of Biosolid Products (NSW EPA 2000) (P29 only).
 Concentrations in box exceed the screening value >2.5 times
 Where one or more guideline value is exceeded, the highest guideline exceeded will be highlighted

Table 1:
 Tarago Area DSI - Discrete Properties Soil Results



NEPM 2013 HIL A Residential	NEPM 2013 HIL C Open Space	NEPM 2013 EIL Residential / public Open Space	NSW EPA - Use and Disposal of Biosolids	Sample Type:	Soil	Soil	Soil	Soil	Soil	Soil	Soil	Soil	Soil	Soil	Soil	Soil			
				Site:	P01	P02	P02	P02	P02	P02	P02	P02	P02	P02	P02	P02	P02	P02	
				Lab Sample number:	M20-Ap03671	M20-Ma43651	M20-Ma43652	M20-Ma43653	M20-Ma43654	M20-Ma43655	M20-Ma43656	M20-Ma43657	M20-Ma43658	M20-Ma43659	M20-Ma43660	M20-Ma43661			
				Sample date:	19-03-20	24-03-20	24-03-20	24-03-20	24-03-20	24-03-20	24-03-20	24-03-20	24-03-20	24-03-20	24-03-20	24-03-20			
				Sample ID:	P1BH5_0.5	P2_HA01_0.05	P2_HA01_0.2	P2_HA01_0.4	P2_HA02_0.0-0.05	P2_HA02_0.2	P2_HA02_0.4	P2_HA03_0.0-0.05	P2_HA03_0.2	P2_HA04_0.0-0.05	P2_HA04_0.2	P2_HA04_0.5			
				Project Name:	Community DSI	Community DSI	Community DSI	Community DSI	Community DSI	Community DSI	Community DSI	Community DSI	Community DSI	Community DSI	Community DSI	Community DSI	Community DSI	Community DSI	Community DSI
Sampling Method:	Hand Auger	Hand Auger	Hand Auger	Hand Auger	Hand Auger	Hand Auger	Hand Auger	Hand Auger	Hand Auger	Hand Auger	Hand Auger	Hand Auger	Hand Auger	Hand Auger	Hand Auger				

Analyte grouping/Analyte	Units	LOR														
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LTM-GEN-7080 Moisture																		
Moisture Content (dried @ 103°C)					%	--	9.4	1.1	3.7	5.6	1.3	8.4	7.8	1.1	4.3	2.4	14	12

LTM-MET-3040 Metals in Waters, Soils & Sediments by ICP-MS																		
Aluminium					mg/kg	10	--	--	--	--	--	--	--	--	--	--	--	--
Arsenic	100	300	100	20	mg/kg	2	--	--	--	--	--	--	--	--	--	--	--	--
Barium					mg/kg	10	--	--	--	--	--	--	--	--	--	--	--	--
Beryllium	60	90			mg/kg	2	--	--	--	--	--	--	--	--	--	--	--	--
Cadmium	20	90		3	mg/kg	0.4	--	--	--	--	--	--	--	--	--	--	--	--
Chromium	100	300	430	100	mg/kg	5	--	--	--	--	--	--	--	--	--	--	--	--
Cobalt	100	300			mg/kg	5	--	--	--	--	--	--	--	--	--	--	--	--
Copper	6000	17000	110	100	mg/kg	5	--	--	--	--	--	--	--	--	--	--	--	--
Iron					mg/kg	20	--	--	--	--	--	--	--	--	--	--	--	--
Lead	300	600	1100	150	mg/kg	5	26	28	94	12	46	150	33	25	220	140	470	100
Manganese	3800	19000			mg/kg	5	--	--	--	--	--	--	--	--	--	--	--	--
Mercury	40	80		1	mg/kg	0.1	--	--	--	--	--	--	--	--	--	--	--	--
Nickel	400	1200	200	60	mg/kg	5	--	--	--	--	--	--	--	--	--	--	--	--
Zinc	7400	30000	250	200	mg/kg	5	--	--	--	--	--	--	--	--	--	--	--	--

National Environment Protection Council (2013) National Environmental Protection (Assessment of Site Contamination) Amendment Measure 2013 (No. 1)
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 Concentration in **red** font and grey box exceed the adopted HIL/HSL 'A' for Low Density Residential
 Concentration in **orange** font and grey box exceed the adopted HIL/HSL 'C' for Open Space and Recreational Land Use (applicable for P2, P3, P6, P8, P9 and P11)
 Concentration in **green** font and grey box exceed the adopted EIL/ESL 'C' for Residential and Open Space and Recreational Land Use
 Concentration in **blue** font and grey box exceed the adopted Environmental Guidelines: Use and Disposal of Biosolid Products (NSW EPA 2000) (P29 only).
 Concentrations in box exceed the screening value >2.5 times

Where one or more guideline value is exceeded, the highest guideline exceeded will be highlighted

Table 1:
 Tarago Area DSI - Discrete Properties Soil Results

NEPM 2013 HIL A Residential	NEPM 2013 HIL C Open Space	NEPM 2013 EIL Residential / public Open Space	NSW EPA - Use and Disposal of Biosolids	Sample Type:	Soil	Soil	Soil	Soil	Soil	Soil	Soil	Soil	Soil	Soil	Soil	Soil				
				Site:	P02	P02	P02	P02	P02	P02	P02	P02	P02	P02	P02	P02	P02	P02		
				Lab Sample number:	M20-Ma43706	M20-Ma43662	M20-Ma43663	M20-Ma43664	M20-Ma43665	M20-Ma43666	M20-Ma43667	M20-Ma43668	M20-Ma43669	M20-Ma43670	M20-Ma43671	M20-Ma43672				
				Sample date:	24-03-20	24-03-20	24-03-20	24-03-20	24-03-20	24-03-20	24-03-20	24-03-20	24-03-20	24-03-20	24-03-20	24-03-20				
				Sample ID:	P2_HA05_0.0-0.5	P2_HA05_0.4	P2_HA05_0.7	P2_HA06_0.05	P2_HA06_0.2	P2_HA06_0.4	P2_HA07_0.0-0.05	P2_HA07_0.2	P2_HA07_0.4	P2_HA08_0.05	P2_HA08_0.2	P2_HA08_0.4				
				Project Name:	Community DSI	Community DSI	Community DSI	Community DSI	Community DSI	Community DSI	Community DSI	Community DSI	Community DSI	Community DSI	Community DSI	Community DSI				
Sampling Method:	Hand Auger	Hand Auger	Hand Auger	Hand Auger	Hand Auger	Hand Auger	Hand Auger	Hand Auger	Hand Auger	Hand Auger	Hand Auger	Hand Auger								
Analyte grouping/Analyte				Units	LOR															
LTM-GEN-7080 Moisture																				
Moisture Content (dried @ 103°C)				%	--	2.4	15	17	12	8.1	9.9	19	16	16	18	14	18			
LTM-MET-3040 Metals in Waters, Soils & Sediments by ICP-MS																				
Aluminium				mg/kg	10	--	--	--	--	--	--	--	--	--	--	--	--			
Arsenic	100	300	100	20	mg/kg	2	--	--	--	--	--	--	--	--	--	--	--			
Barium					mg/kg	10	--	--	--	--	--	--	--	--	--	--	--			
Beryllium	60	90			mg/kg	2	--	--	--	--	--	--	--	--	--	--	--			
Cadmium	20	90		3	mg/kg	0.4	--	--	--	--	--	--	--	--	--	--	--			
Chromium	100	300	430	100	mg/kg	5	--	--	--	--	--	--	--	--	--	--	--			
Cobalt	100	300			mg/kg	5	--	--	--	--	--	--	--	--	--	--	--			
Copper	6000	17000	110	100	mg/kg	5	--	--	--	--	--	--	--	--	--	--	--			
Iron					mg/kg	20	--	--	--	--	--	--	--	--	--	--	--			
Lead	300	600	1100	150	mg/kg	5	32	140	46	1500	440	63	150	61	26	100	74	23		
Manganese	3800	19000			mg/kg	5	--	--	--	--	--	--	--	--	--	--	--			
Mercury	40	80		1	mg/kg	0.1	--	--	--	--	--	--	--	--	--	--	--			
Nickel	400	1200	200	60	mg/kg	5	--	--	--	--	--	--	--	--	--	--	--			
Zinc	7400	30000	250	200	mg/kg	5	--	--	--	--	--	--	--	--	--	--	--			

National Environment Protection Council (2013) National Environmental Protection (Assessment of Site Contamination) Amendment Measure 2013 (No. 1)

^ For soil texture classification undertaken in accord with AS 1726, the classifications of sand, silt and clay may be applied as coarse, fine with liquid limit <50% and fine with liquid limit >50% respectively, as the underlying properties to develop the HSLs may reasonably be selected to be similar. Where there is uncertainty, either a conservative approach may be adopted or laboratory analysis should be carried out. Generally SAND has been adopted in these scenarios.

Health Investigation Levels for chromium based on chromium (VI)

Chromium (III) EIL, based on a low clay content (% clay) of 12%

Nickel EIL, based on CEC of 12.8cmol/kg

Copper EIL, based on CEC of 12cmol/kg, pH of 5.22, organic carbon content of 1.78%

Zinc EIL, based on CEC of 12cmol/kg and pH of 5.22

Concentration in **red** font and grey box exceed the adopted HIL/HSL 'A' for Low Density Residential
 Concentration in **orange** font and grey box exceed the adopted HIL/HSL 'C' for Open Space and Recreational Land Use (applicable for P2, P3, P6, P8, P9 and P11)

Concentration in **green** font and grey box exceed the adopted EIL/ESL 'C' for Residential and Open Space and Recreational Land Use

Concentration in **blue** font and grey box exceed the adopted Environmental Guidelines: Use and Disposal of Biosolid Products (NSW EPA 2000) (P29 only).

Concentrations in box exceed the screening value >2.5 times

Where one or more guideline value is exceeded, the highest guideline exceeded will be highlighted

Table 1:
 Tarago Area DSI - Discrete Properties Soil Results



	NEPM 2013 HIL A Residential	NEPM 2013 HIL C Open Space	NEPM 2013 EIL Residential / public Open Space	NSW EPA - Use and Disposal of Biosolids	Sample Type:	Soil	Soil	Soil	Soil	Soil	Soil	Soil	Soil	Soil	Soil	Soil	Soil					
					Site:	P02	P02	P02	P02	P02	P02	P02	P02	P02	P02	P02	P03	P03	P03	P03		
					Lab Sample number:	M20-Ma43673	M20-Ma43674	M20-Ma43675	M20-Ma43678	M20-Ma43676	M20-Ma43677	M20-Ma43679	M20-Ma43680	M20-Ma43681	M20-Ma43602	M20-Ma43604	M20-Ma43603					
					Sample date:	24-03-20	24-03-20	24-03-20	24-03-20	24-03-20	24-03-20	24-03-20	24-03-20	24-03-20	24-03-20	24-03-20	24-03-20					
					Sample ID:	P2_HA09_0.0-0.05	P2_HA09_0.2	P2_HA09_0.4	P2_HA10_0.0-0.05	P2_HA10_0.2	P2_HA10_0.4	P2_HA11_0.05	P2_HA11_0.2	P2_HA11_0.4	P3_HA01_0.05	P3_HA01_0.2	P3_HA01_0.4					
Project Name:	Community DSI	Community DSI	Community DSI	Community DSI	Community DSI	Community DSI	Community DSI	Community DSI	Community DSI	Community DSI	Community DSI	Community DSI	Community DSI	Community DSI	Community DSI	Community DSI	Community DSI	Community DSI				
Sampling Method:	Hand Auger	Hand Auger	Hand Auger	Hand Auger	Hand Auger	Hand Auger	Hand Auger	Hand Auger	Hand Auger	Hand Auger	Hand Auger	Hand Auger	Hand Auger	Hand Auger	Hand Auger	Hand Auger	Hand Auger	Hand Auger				
Analyte grouping/Analyte					Units	LOR																
LTM-GEN-7080 Moisture																						
Moisture Content (dried @ 103°C)					%	--	16	16	18	16	15	17	16	16	17	11	9.8	10				
LTM-MET-3040 Metals in Waters, Soils & Sediments by ICP-MS																						
Aluminium					mg/kg	10	--	--	--	--	--	--	--	--	--	--	--	--				
Arsenic	100	300	100	20	mg/kg	2	--	--	--	--	--	--	--	--	--	--	--	--				
Barium					mg/kg	10	--	--	--	--	--	--	--	--	--	--	--	--				
Beryllium	60	90			mg/kg	2	--	--	--	--	--	--	--	--	--	--	--	--				
Cadmium	20	90		3	mg/kg	0.4	--	--	--	--	--	--	--	--	--	--	--	--				
Chromium	100	300	430	100	mg/kg	5	--	--	--	--	--	--	--	--	--	--	--	--				
Cobalt	100	300			mg/kg	5	--	--	--	--	--	--	--	--	--	--	--	--				
Copper	6000	17000	110	100	mg/kg	5	--	--	--	--	--	--	--	--	--	--	--	--				
Iron					mg/kg	20	--	--	--	--	--	--	--	--	--	--	--	--				
Lead	300	600	1100	150	mg/kg	5	99	74	26	84	58	30	89	76	28	120	97	110				
Manganese	3800	19000			mg/kg	5	--	--	--	--	--	--	--	--	--	--	--	--				
Mercury	40	80		1	mg/kg	0.1	--	--	--	--	--	--	--	--	--	--	--	--				
Nickel	400	1200	200	60	mg/kg	5	--	--	--	--	--	--	--	--	--	--	--	--				
Zinc	7400	30000	250	200	mg/kg	5	--	--	--	--	--	--	--	--	--	--	--	--				

National Environment Protection Council (2013) National Environmental Protection (Assessment of Site Contamination) Amendment Measure 2013 (No. 1)

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Health Investigation Levels for chromium based on chromium (VI)

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Concentration in **red** font and grey box exceed the adopted HIL/HSL 'A' for Low Density Residential
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Concentration in **blue** font and grey box exceed the adopted Environmental Guidelines: Use and Disposal of Biosolid Products (NSW EPA 2000) (P29 only).

Concentrations in box exceed the screening value >2.5 times

Where one or more guideline value is exceeded, the highest guideline exceeded will be highlighted

Table 1:
 Tarago Area DSI - Discrete Properties Soil Results



	NEPM 2013 HIL A Residential	NEPM 2013 HIL C Open Space	NEPM 2013 EIL Residential / public Open Space	NSW EPA - Use and Disposal of Biosolids	Sample Type:	Soil	Soil	Soil	Soil	Soil	Soil	Soil	Soil	Soil	Soil	Soil				
Site:					P03	P03	P03	P03	P03	P03	P04	P04	P04	P04	P04	P04	P04	P04	P04	
Lab Sample number:					M20-Ma43605	M20-Ma43606	M20-Ma43607	M20-Ma43608	M20-Ma43609	M20-Ma43610	M20-Ma43685	M20-Ma43686	M20-Ma43687	M20-Ma43688	M20-Ma43689	M20-Ma43690				
Sample date:					24-03-20	24-03-20	24-03-20	24-03-20	24-03-20	24-03-20	24-03-20	24-03-20	24-03-20	24-03-20	24-03-20	24-03-20				
Sample ID:					P3_HA02_0.15	P3_HA02_0.4	P3_HA02_0-0.05	P3_HA03_0.15	P3_HA03_0.3	P3_HA03_0-0.05	P4_HA01_0-0.05	P4_HA01_0-0.2	P4_HA01_0-0.4	P4_HA02_0-0.05	P4_HA02_0-0.2	P4_HA02_0-0.35				
Project Name:					Community DSI	Community DSI	Community DSI	Community DSI	Community DSI	Community DSI	Community DSI	Community DSI	Community DSI	Community DSI	Community DSI	Community DSI				
Sampling Method:	Hand Auger	Hand Auger	Hand Auger	Hand Auger	Hand Auger	Hand Auger	Hand Auger	Hand Auger	Hand Auger	Hand Auger	Hand Auger	Hand Auger								

Analyte grouping/Analyte	Units	LOR															
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LTM-GEN-7080 Moisture																		
Moisture Content (dried @ 103°C)					%	--	14	14	3.7	9.3	12	6.5	11	9.9	8.7	13	11	9.1

LTM-MET-3040 Metals in Waters, Soils & Sediments by ICP-MS																		
Aluminium					mg/kg	10	--	--	--	--	--	--	--	--	--	--	--	--
Arsenic	100	300	100	20	mg/kg	2	--	--	--	--	--	--	--	--	--	--	--	--
Barium					mg/kg	10	--	--	--	--	--	--	--	--	--	--	--	--
Beryllium	60	90			mg/kg	2	--	--	--	--	--	--	--	--	--	--	--	--
Cadmium	20	90		3	mg/kg	0.4	--	--	--	--	--	--	--	--	--	--	--	--
Chromium	100	300	430	100	mg/kg	5	--	--	--	--	--	--	--	--	--	--	--	--
Cobalt	100	300			mg/kg	5	--	--	--	--	--	--	--	--	--	--	--	--
Copper	6000	17000	110	100	mg/kg	5	--	--	--	--	--	--	--	--	--	--	--	--
Iron					mg/kg	20	--	--	--	--	--	--	--	--	--	--	--	--
Lead	300	600	1100	150	mg/kg	5	400	320	100	420	240	320	32	13	< 5	29	17	5.8
Manganese	3800	19000			mg/kg	5	--	--	--	--	--	--	--	--	--	--	--	--
Mercury	40	80		1	mg/kg	0.1	--	--	--	--	--	--	--	--	--	--	--	--
Nickel	400	1200	200	60	mg/kg	5	--	--	--	--	--	--	--	--	--	--	--	--
Zinc	7400	30000	250	200	mg/kg	5	--	--	--	--	--	--	--	--	--	--	--	--

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 Health Investigation Levels for chromium based on chromium (VI)
 Chromium (III) EIL, based on a low clay content (% clay) of 12%
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 Concentration in **red** font and grey box exceed the adopted HIL/HSL 'A' for Low Density Residential
 Concentration in **orange** font and grey box exceed the adopted HIL/HSL 'C' for Open Space and Recreational Land Use (applicable for P2, P3, P6, P8, P9 and P11)
 Concentration in **green** font and grey box exceed the adopted EIL/ESL 'C' for Residential and Open Space and Recreational Land Use
 Concentration in **blue** font and grey box exceed the adopted Environmental Guidelines: Use and Disposal of Biosolid Products (NSW EPA 2000) (P29 only).
 Concentrations in box exceed the screening value >2.5 times
 Where one or more guideline value is exceeded, the highest guideline exceeded will be highlighted

Table 1:
 Tarago Area DSI - Discrete Properties Soil Results

	NEPM 2013 HIL A Residential	NEPM 2013 HIL C Open Space	NEPM 2013 EIL Residential / public Open Space	NSW EPA - Use and Disposal of Biosolids	Sample Type:	Soil	Soil	Soil	Soil	Soil	Soil	Soil	Soil	Soil	Soil	Soil				
Site:					P04	P04	P04	P04	P04	P04	P04	P04	P04	P04	P04	P04	P04	P04	P04	
Lab Sample number:					M20-Ma43691	M20-Ma43692	M20-Ma43693	M20-Ma43694	M20-Ma43695	M20-Ma43696	M20-Ma43697	M20-Ma43698	S20-My01439	S20-My01440	S20-My01311	S20-My01312				
Sample date:					24-03-20	24-03-20	24-03-20	24-03-20	24-03-20	24-03-20	24-03-20	24-03-20	29-04-20	29-04-20	29-04-20	29-04-20				
Sample ID:					P4_HA03_0-0.05	P4_HA03_0-0.3	P4_HA04_0-0.05	P4_HA04_0-0.2	P4_HA04_0-0.4	P4_HA05_0-0.05	P4_HA05_0-0.2	P4_HA05_0-0.4	P4_HA06_0-0.05	P4_HA07_0-0.05	P4_HA08_0-0-0.05	P4_HA09_0-0-0.05				
Project Name:					Community DSI	Community DSI	Community DSI	Community DSI	Community DSI	Community DSI	Community DSI	Community DSI	Community DSI	Community DSI	Community DSI	Community DSI	Community DSI	Community DSI	Community DSI	Community DSI
Sampling Method:	Hand Auger	Hand Auger	Hand Auger	Hand Auger	Hand Auger	Hand Auger	Hand Auger	Hand Auger	Hand Auger	Hand Auger	Hand Auger	Hand Auger	Hand Auger	Hand Auger	Hand Auger	Hand Auger				

Analyte grouping/Analyte	Units	LOR															
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LTM-GEN-7080 Moisture																		
Moisture Content (dried @ 103°C)					%	--	10	11	15	9.7	9.6	18	12	9.3	20	14	20	25

LTM-MET-3040 Metals in Waters, Soils & Sediments by ICP-MS																		
Aluminium					mg/kg	10	--	--	--	--	--	--	--	--	--	--	--	--
Arsenic	100	300	100	20	mg/kg	2	--	--	--	--	--	--	--	--	--	--	--	--
Barium					mg/kg	10	--	--	--	--	--	--	--	--	--	--	--	--
Beryllium	60	90			mg/kg	2	--	--	--	--	--	--	--	--	--	--	--	--
Cadmium	20	90		3	mg/kg	0.4	--	--	--	--	--	--	--	--	--	--	--	--
Chromium	100	300	430	100	mg/kg	5	--	--	--	--	--	--	--	--	--	--	--	--
Cobalt	100	300			mg/kg	5	--	--	--	--	--	--	--	--	--	--	--	--
Copper	6000	17000	110	100	mg/kg	5	--	--	--	--	--	--	--	--	--	--	--	--
Iron					mg/kg	20	--	--	--	--	--	--	--	--	--	--	--	--
Lead	300	600	1100	150	mg/kg	5	540	5.8	19	7.9	5.4	23	13	5.2	37	19	24	20
Manganese	3800	19000			mg/kg	5	--	--	--	--	--	--	--	--	--	--	--	--
Mercury	40	80		1	mg/kg	0.1	--	--	--	--	--	--	--	--	--	--	--	--
Nickel	400	1200	200	60	mg/kg	5	--	--	--	--	--	--	--	--	--	--	--	--
Zinc	7400	30000	250	200	mg/kg	5	--	--	--	--	--	--	--	--	--	--	--	--

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Table 1:
 Tarago Area DSI - Discrete Properties Soil Results

	NEPM 2013 HIL A Residential	NEPM 2013 HIL C Open Space	NEPM 2013 EIL Residential / public Open Space	NSW EPA - Use and Disposal of Biosolids	Sample Type:	Soil	Soil	Soil	Soil	Soil	Soil	Soil	Soil	Soil	Soil	Soil	
					Site:	P04	P04	P04	P04	P04	P04	P05	P05	P05	P05	P05	P05
					Lab Sample number:	S20-My01313	S20-My01314	S20-My01315	S20-My01316	S20-My01317	S20-My01318	M20-Ma43791	M20-Ma43789	M20-Ma43790	M20-Ma43793	M20-Ma43792	M20-Ma43794
					Sample date:	29-04-20	29-04-20	29-04-20	29-04-20	29-04-20	29-04-20	24-03-20	24-03-20	24-03-20	24-03-20	24-03-20	24-03-20
					Sample ID:	P4_HA10_0.0-0.05	P4_HA11_0.0-0.05	P4_HA12_0.0-0.05	P4_HA13_0.0-0.05	P4_HA14_0.0-0.05	P4_HA15_0.0-0.05	P5_HA01_0.0-0.05	P5_HA01_0.2	P5_HA01_0.3	P5_HA02_0.0-0.05	P5_HA02_0.3	P5_SANDPIT
					Project Name:	Community DSI	Community DSI	Community DSI	Community DSI	Community DSI	Community DSI	Community DSI	Community DSI	Community DSI	Community DSI	Community DSI	Community DSI
					Sampling Method:	Hand Auger	Hand Auger	Hand Auger	Hand Auger	Hand Auger	Hand Auger	Hand Auger	Hand Auger	Hand Auger	Hand Auger	Hand Auger	Hand Auger

Analyte grouping/Analyte	Units	LOR
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LTM-GEN-7080 Moisture																		
Moisture Content (dried @ 103°C)					%	--	20	7.4	17	4.6	18	13	8.5	13	13	12	11	< 1

LTM-MET-3040 Metals in Waters, Soils & Sediments by ICP-MS																		
Aluminium					mg/kg	10	--	--	--	--	--	--	--	--	--	--	--	--
Arsenic	100	300	100	20	mg/kg	2	--	--	--	--	--	--	--	--	--	--	--	--
Barium					mg/kg	10	--	--	--	--	--	--	--	--	--	--	--	--
Beryllium	60	90			mg/kg	2	--	--	--	--	--	--	--	--	--	--	--	--
Cadmium	20	90		3	mg/kg	0.4	--	--	--	--	--	--	--	--	--	--	--	--
Chromium	100	300	430	100	mg/kg	5	--	--	--	--	--	--	--	--	--	--	--	--
Cobalt	100	300			mg/kg	5	--	--	--	--	--	--	--	--	--	--	--	--
Copper	6000	17000	110	100	mg/kg	5	--	--	--	--	--	--	--	--	--	--	--	--
Iron					mg/kg	20	--	--	--	--	--	--	--	--	--	--	--	--
Lead	300	600	1100	150	mg/kg	5	22	23	19	25	20	21	38	42	26	67	33	< 5
Manganese	3800	19000			mg/kg	5	--	--	--	--	--	--	--	--	--	--	--	--
Mercury	40	80		1	mg/kg	0.1	--	--	--	--	--	--	--	--	--	--	--	--
Nickel	400	1200	200	60	mg/kg	5	--	--	--	--	--	--	--	--	--	--	--	--
Zinc	7400	30000	250	200	mg/kg	5	--	--	--	--	--	--	--	--	--	--	--	--

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Table 1:
 Tarago Area DSI - Discrete Properties Soil Results



	NEPM 2013 HIL A Residential	NEPM 2013 HIL C Open Space	NEPM 2013 EIL Residential / public Open Space	NSW EPA - Use and Disposal of Biosolids	Sample Type:	Soil	Soil	Soil	Soil	Soil	Soil	Soil	Soil	Soil	Soil	Soil				
Site:					P06	P06	P06	P06	P06	P06	P06	P06	P06	P06	P06	P06	P06	P06	P06	
Lab Sample number:					M20-Ma43797	M20-Ma43798	M20-Ma43796	M20-Ma43800	M20-Ma43801	M20-Ma43799	M20-Ma43802	M20-Ma43803	M20-Ma43804	M20-Jn34829	M20-Ma43805	M20-Ma43806				
Sample date:					25-03-20	25-03-20	25-03-20	25-03-20	25-03-20	25-03-20	25-03-20	25-03-20	25-03-20	25-03-20	25-03-20	25-03-20	25-03-20	25-03-20	25-03-20	25-03-20
Sample ID:					P6_HA1_0.2	P6_HA1_0.3	P6_HA1_0-0.05	P6_HA2_0.2	P6_HA2_0.3	P6_HA2_0-0.05	P6_HA3_0.0	P6_HA3_0.2	P6_HA4_0.0	P6_HA4_0.0	P6_HA4_0.2	P6_HA4_0.3				
Project Name:					Community DSI	Community DSI	Community DSI	Community DSI	Community DSI	Community DSI	Community DSI	Community DSI	Community DSI	Community DSI	Community DSI	Community DSI	Community DSI	Community DSI	Community DSI	Community DSI
Sampling Method:					Hand Auger	Hand Auger	Hand Auger	Hand Auger	Hand Auger	Hand Auger	Hand Auger	Hand Auger	Hand Auger	Hand Auger	Hand Auger	Hand Auger	Hand Auger	Hand Auger	Hand Auger	Hand Auger

Analyte grouping/Analyte	Units	LOR															
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LTM-GEN-7080 Moisture																		
Moisture Content (dried @ 103°C)					%	--	8.7	13	6.4	15	12	19	1.8	11	11		12	15

LTM-MET-3040 Metals in Waters, Soils & Sediments by ICP-MS																		
Aluminium					mg/kg	10	--	--	--	--	--	--	--	--	--	9900	--	--
Arsenic	100	300	100	20	mg/kg	2	--	--	--	--	--	--	--	--	--	4.8	--	--
Barium					mg/kg	10	--	--	--	--	--	--	--	--	--	140	--	--
Beryllium	60	90			mg/kg	2	--	--	--	--	--	--	--	--	--	< 2	--	--
Cadmium	20	90		3	mg/kg	0.4	--	--	--	--	--	--	--	--	--	0.8	--	--
Chromium	100	300	430	100	mg/kg	5	--	--	--	--	--	--	--	--	--	13	--	--
Cobalt	100	300			mg/kg	5	--	--	--	--	--	--	--	--	--	< 5	--	--
Copper	6000	17000	110	100	mg/kg	5	--	--	--	--	--	--	--	--	--	43	--	--
Iron					mg/kg	20	--	--	--	--	--	--	--	--	--	12000	--	--
Lead	300	600	1100	150	mg/kg	5	56	58	29	37	24	28	6	33	95	110	58	53
Manganese	3800	19000			mg/kg	5	--	--	--	--	--	--	--	--	--	320	--	--
Mercury	40	80		1	mg/kg	0.1	--	--	--	--	--	--	--	--	--	< 0.1	--	--
Nickel	400	1200	200	60	mg/kg	5	--	--	--	--	--	--	--	--	--	5.7	--	--
Zinc	7400	30000	250	200	mg/kg	5	--	--	--	--	--	--	--	--	--	160	--	--

National Environment Protection Council (2013) National Environmental Protection (Assessment of Site Contamination) Amendment Measure 2013 (No. 1))
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 Health Investigation Levels for chromium based on chromium (VI)
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 Nickel EIL, based on CEC of 12.8cmol/kg
 Copper EIL, based on CEC of 12cmol/kg, pH of 5.22, organic carbon content of 1.78%
 Zinc EIL, based on CEC of 12cmol/kg and pH of 5.22
 Concentration in **red** font and grey box exceed the adopted HIL/HSL 'A' for Low Density Residential
 Concentration in **orange** font and grey box exceed the adopted HIL/HSL 'C' for Open Space and Recreational Land Use (applicable for P2, P3, P6, P8, P9 and P11)
 Concentration in **green** font and grey box exceed the adopted EIL/ESL 'C' for Residential and Open Space and Recreational Land Use
 Concentration in **blue** font and grey box exceed the adopted Environmental Guidelines: Use and Disposal of Biosolid Products (NSW EPA 2000) (P29 only).
 Concentrations in box exceed the screening value >2.5 times
 Where one or more guideline value is exceeded, the highest guideline exceeded will be highlighted

	NEPM 2013 HIL A Residential	NEPM 2013 HIL C Open Space	NEPM 2013 EIL Residential / public Open Space	NSW EPA - Use and Disposal of Biosolids	Sample Type:	Soil P06	Soil P06	Soil P06	Soil P06	Soil P06	Soil P06	Soil P07	Soil P07	Soil P07	Soil P07	Soil P07
					Site:											
					Lab Sample number:	M20-Ma43807	M20-Jn34830	M20-Ma43808	M20-Ma43809	M20-Ma43810	M20-Ma43811	S20-Ma44416	S20-Ma44417	S20-Ma44418	S20-Ma44419	S20-Ma44420
					Sample date:	25-03-20	25-03-20	25-03-20	25-03-20	25-03-20	25-03-20	25-03-20	25-03-20	25-03-20	25-03-20	25-03-20
					Sample ID:	P6_HA5_0.0	P6_HA5_0.0	P6_HA5_0.15	P6_HA6_0.0	P6_HA6_0.2	P6_HA6_0.3	P7_HA01_0.0-0.05	P7_HA01_0.2	P7_HA02_0.0-0.05	P7_HA02_0.25	P7_HA03_0.0-0.05
					Project Name:	Community DSI	Community DSI	Community DSI	Community DSI	Community DSI	Community DSI	Community DSI	Community DSI	Community DSI	Community DSI	Community DSI
					Sampling Method:	Hand Auger	Hand Auger	Hand Auger	Hand Auger	Hand Auger	Hand Auger	Hand Auger	Hand Auger	Hand Auger	Hand Auger	Hand Auger

Analyte grouping/Analyte	Units	LOR														
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LTM-GEN-7080 Moisture																	
Moisture Content (dried @ 103°C)					%	--	10	16	17	12	18	17	6.1	8.8	9.8	7.5	19

LTM-MET-3040 Metals in Waters, Soils & Sediments by ICP-MS																	
Aluminium					mg/kg	10	--	13000	--	--	--	--	--	--	--	--	--
Arsenic	100	300	100	20	mg/kg	2	--	18	--	--	--	--	--	--	--	--	--
Barium					mg/kg	10	--	140	--	--	--	--	--	--	--	--	--
Beryllium	60	90			mg/kg	2	--	< 2	--	--	--	--	--	--	--	--	--
Cadmium	20	90		3	mg/kg	0.4	--	8.1	--	--	--	--	--	--	--	--	--
Chromium	100	300	430	100	mg/kg	5	--	21	--	--	--	--	--	--	--	--	--
Cobalt	100	300			mg/kg	5	--	7.3	--	--	--	--	--	--	--	--	--
Copper	6000	17000	110	100	mg/kg	5	--	610	--	--	--	--	--	--	--	--	--
Iron					mg/kg	20	--	23000	--	--	--	--	--	--	--	--	--
Lead	300	600	1100	150	mg/kg	5	430	430	160	30	25	15	17	16	23	20	19
Manganese	3800	19000			mg/kg	5	--	260	--	--	--	--	--	--	--	--	--
Mercury	40	80		1	mg/kg	0.1	--	< 0.1	--	--	--	--	--	--	--	--	--
Nickel	400	1200	200	60	mg/kg	5	--	15	--	--	--	--	--	--	--	--	--
Zinc	7400	30000	250	200	mg/kg	5	--	790	--	--	--	--	--	--	--	--	--

National Environment Protection Council (2013) National Environmental Protection (Assessment of Site Contamination) Amendment Measure 2013 (No. 1))
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Table 1:
 Tarago Area DSI - Discrete Properties Soil Results

	NEPM 2013 HIL A Residential	NEPM 2013 HIL C Open Space	NEPM 2013 EIL Residential / public Open Space	NSW EPA - Use and Disposal of Biosolids	Sample Type:	Soil	Soil	Soil	Soil	Soil	Soil	Soil	Soil	Soil	Soil	Soil			
Site:					P07	P07	P07	P07	P08	P08	P08	P08	P08	P09	P09	P09	P09	P09	
Lab Sample number:					S20-Ma44422	S20-Ma44423	S20-Ma44424	S20-Ma44425	M20-Ap22762	M20-Ap22763	M20-Ap22764	M20-Ap22765	S20-Ma44379	S20-Ma44380	S20-Ma44381	S20-Ma44382	S20-Ma44383	S20-Ma44384	S20-Ma44385
Sample date:					25-03-20	25-03-20	25-03-20	25-03-20	25-03-20	25-03-20	25-03-20	25-03-20	25-03-20	25-03-20	25-03-20	25-03-20	25-03-20	25-03-20	25-03-20
Sample ID:					P7_HA04_0.0-0.05	P7_HA04_0.25	P7_HA05_0.0-0.05	P7_HA05_0.25	P8_HA3_0.0	P8_HA3_0.3	P8_HA4_0.0	P8_HA4_0.3	P9_HA01_0.0-0.05	P9_HA01_0.2	P9_HA02_0.0	P9_HA03_0.0	P9_HA04_0.0	P9_HA05_0.0	P9_HA06_0.0
Project Name:					Community DSI	Community DSI	Community DSI	Community DSI	Community DSI	Community DSI	Community DSI	Community DSI	Community DSI	Community DSI	Community DSI	Community DSI	Community DSI	Community DSI	Community DSI
Sampling Method:	Hand Auger	Hand Auger	Hand Auger	Hand Auger	Hand Auger	Hand Auger	Hand Auger	Hand Auger	Hand Auger	Hand Auger	Hand Auger	Hand Auger	Hand Auger	Hand Auger	Hand Auger				

Analyte grouping/Analyte	Units	LOR															
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LTM-GEN-7080 Moisture																		
Moisture Content (dried @ 103°C)					%	--	11	14	9.5	9.7	20	14	7.9	8	< 1	4.3	3	4.2

LTM-MET-3040 Metals in Waters, Soils & Sediments by ICP-MS																		
Aluminium					mg/kg	10	--	--	--	--	--	--	--	--	--	--	--	--
Arsenic	100	300	100	20	mg/kg	2	--	--	--	--	--	--	--	--	--	--	--	--
Barium					mg/kg	10	--	--	--	--	--	--	--	--	--	--	--	--
Beryllium	60	90			mg/kg	2	--	--	--	--	--	--	--	--	--	--	--	--
Cadmium	20	90		3	mg/kg	0.4	--	--	--	--	--	--	--	--	--	--	--	--
Chromium	100	300	430	100	mg/kg	5	--	--	--	--	--	--	--	--	--	--	--	--
Cobalt	100	300			mg/kg	5	--	--	--	--	--	--	--	--	--	--	--	--
Copper	6000	17000	110	100	mg/kg	5	--	--	--	--	--	--	--	--	--	--	--	--
Iron					mg/kg	20	--	--	--	--	--	--	--	--	--	--	--	--
Lead	300	600	1100	150	mg/kg	5	16	8.6	11	14	130	30	93	18	33	32	10	32
Manganese	3800	19000			mg/kg	5	--	--	--	--	--	--	--	--	--	--	--	--
Mercury	40	80		1	mg/kg	0.1	--	--	--	--	--	--	--	--	--	--	--	--
Nickel	400	1200	200	60	mg/kg	5	--	--	--	--	--	--	--	--	--	--	--	--
Zinc	7400	30000	250	200	mg/kg	5	--	--	--	--	--	--	--	--	--	--	--	--

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 Zinc EIL, based on CEC of 12cmol/kg and pH of 5.22
 Concentration in **red** font and grey box exceed the adopted HIL/HSL 'A' for Low Density Residential
 Concentration in **orange** font and grey box exceed the adopted HIL/HSL 'C' for Open Space and Recreational Land Use (applicable for P2, P3, P6, P8, P9 and P11)
 Concentration in **green** font and grey box exceed the adopted EIL/ESL 'C' for Residential and Open Space and Recreational Land Use
 Concentration in **blue** font and grey box exceed the adopted Environmental Guidelines: Use and Disposal of Biosolid Products (NSW EPA 2000) (P29 only).
 Concentrations in box exceed the screening value >2.5 times
 Where one or more guideline value is exceeded, the highest guideline exceeded will be highlighted

Table 1:
 Tarago Area DSI - Discrete Properties Soil Results



	NEPM 2013 HIL A Residential	NEPM 2013 HIL C Open Space	NEPM 2013 EIL Residential / public Open Space	NSW EPA - Use and Disposal of Biosolids	Sample Type:	Soil	Soil	Soil	Soil	Soil	Soil	Soil	Soil	Soil	Soil	Soil			
Site:					P09	P09	P09	P09	P09	P09	P10	P10	P10	P10	P10	P10	P10	P10	
Lab Sample number:					S20-Ma44383	S20-Ma44384	S20-Ma44385	S20-Ma44386	S20-Ma44392	S20-Ma44393	S20-Ma44403	S20-Ma44404	S20-Ma44405	S20-Ma44407	S20-Ma44408	S20-Ma44409	S20-Ma44410	S20-Ma44411	S20-Ma44412
Sample date:					25-03-20	25-03-20	25-03-20	25-03-20	25-03-20	25-03-20	25-03-20	25-03-20	25-03-20	25-03-20	25-03-20	25-03-20	25-03-20	25-03-20	25-03-20
Sample ID:					P9_HA03_0.3	P9_HA04_0.0	P9_HA05_0.0	P9_HA05_0.3	P9_HA2_0.2	P9_HA4_0.3	P10_HA01_0.0-0.05	P10_HA01_0.2	P10_HA01_0.4	P10_HA02_0.3	P10_HA02_0.0-0.2	P10_HA03_0.0-0.05	P10_HA03_0.0-0.05	P10_HA03_0.0-0.05	P10_HA03_0.0-0.05
Project Name:					Community DSI	Community DSI	Community DSI	Community DSI	Community DSI	Community DSI	Community DSI	Community DSI	Community DSI	Community DSI	Community DSI	Community DSI	Community DSI	Community DSI	Community DSI
Sampling Method:	Hand Auger	Hand Auger	Hand Auger	Hand Auger	Hand Auger	Hand Auger	Hand Auger	Hand Auger	Hand Auger	Hand Auger	Hand Auger	Hand Auger	Hand Auger	Hand Auger	Hand Auger				

Analyte grouping/Analyte	Units	LOR															
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LTM-GEN-7080 Moisture																		
Moisture Content (dried @ 103°C)					%	--	8.8	8.7	9.3	11	8.7	11	17	12	12	11	11	13

LTM-MET-3040 Metals in Waters, Soils & Sediments by ICP-MS																		
Aluminium					mg/kg	10	--	--	--	--	--	--	--	--	--	--	--	--
Arsenic	100	300	100	20	mg/kg	2	--	--	--	--	--	--	--	--	--	--	--	--
Barium					mg/kg	10	--	--	--	--	--	--	--	--	--	--	--	--
Beryllium	60	90			mg/kg	2	--	--	--	--	--	--	--	--	--	--	--	--
Cadmium	20	90		3	mg/kg	0.4	--	--	--	--	--	--	--	--	--	--	--	--
Chromium	100	300	430	100	mg/kg	5	--	--	--	--	--	--	--	--	--	--	--	--
Cobalt	100	300			mg/kg	5	--	--	--	--	--	--	--	--	--	--	--	--
Copper	6000	17000	110	100	mg/kg	5	--	--	--	--	--	--	--	--	--	--	--	--
Iron					mg/kg	20	--	--	--	--	--	--	--	--	--	--	--	--
Lead	300	600	1100	150	mg/kg	5	14	34	46	45	17	39	62	54	17	34	39	25
Manganese	3800	19000			mg/kg	5	--	--	--	--	--	--	--	--	--	--	--	--
Mercury	40	80		1	mg/kg	0.1	--	--	--	--	--	--	--	--	--	--	--	--
Nickel	400	1200	200	60	mg/kg	5	--	--	--	--	--	--	--	--	--	--	--	--
Zinc	7400	30000	250	200	mg/kg	5	--	--	--	--	--	--	--	--	--	--	--	--

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 Zinc EIL, based on CEC of 12cmol/kg and pH of 5.22
 Concentration in **red** font and grey box exceed the adopted HIL/HSL 'A' for Low Density Residential
 Concentration in **orange** font and grey box exceed the adopted HIL/HSL 'C' for Open Space and Recreational Land Use (applicable for P2, P3, P6, P8, P9 and P11)
 Concentration in **green** font and grey box exceed the adopted EIL/ESL 'C' for Residential and Open Space and Recreational Land Use
 Concentration in **blue** font and grey box exceed the adopted Environmental Guidelines: Use and Disposal of Biosolid Products (NSW EPA 2000) (P29 only).
 Concentrations in box exceed the screening value >2.5 times
 Where one or more guideline value is exceeded, the highest guideline exceeded will be highlighted

	NEPM 2013 HIL A Residential	NEPM 2013 HIL C Open Space	NEPM 2013 EIL Residential / public Open Space	NSW EPA - Use and Disposal of Biosolids	Sample Type:	Soil	Soil	Soil	Soil	Soil	Soil	Soil	Soil	Soil	Soil	Soil				
Site:					P10	P10	P10	P10	P10	P11	P11	P11	P11	P11	P11	P11	P11	P11	P11	
Lab Sample number:					S20-Ma44409	S20-Ma44410	S20-Ma44411	S20-Ma44412	S20-Ma44413	S20-Ma43998	S20-Ma43999	S20-Ma44000	S20-Ma44001	S20-Ma44002	S20-Ma44003	S20-Ma44004				
Sample date:					25-03-20	25-03-20	25-03-20	25-03-20	25-03-20	26-03-20	26-03-20	26-03-20	26-03-20	26-03-20	26-03-20	26-03-20				
Sample ID:					P10_HA03_0.3	P10_HA04_0.0-0.05	P10_HA04_0.3	P10_HA05_0.0-0.05	P10_HA05_0.2	P11_HA01_0.0-0.05	P11_HA01_0.2	P11_HA02_0.0-0.05	P11_HA02_0.2	P11_HA02_0.3	P11_HA03_0.0-0.05	P11_HA03_0.2				
Project Name:					Community DSI	Community DSI	Community DSI	Community DSI	Community DSI	Community DSI	Community DSI	Community DSI	Community DSI	Community DSI	Community DSI	Community DSI				
Sampling Method:	Hand Auger	Hand Auger	Hand Auger	Hand Auger	Hand Auger	Hand Auger	Hand Auger	Hand Auger	Hand Auger	Hand Auger	Hand Auger	Hand Auger								

Analyte grouping/Analyte	Units	LOR															
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LTM-GEN-7080 Moisture																		
Moisture Content (dried @ 103°C)					%	--	11	11	12	8.6	7.3	2.6	7.6	6.9	5.1	5.9	1.5	4.6

LTM-MET-3040 Metals in Waters, Soils & Sediments by ICP-MS																			
Aluminium					mg/kg	10	--	--	--	--	--	--	--	--	--	--	--	--	
Arsenic	100	300	100	20	mg/kg	2	--	--	--	--	--	--	--	--	--	--	--	--	
Barium					mg/kg	10	--	--	--	--	--	--	--	--	--	--	--	--	
Beryllium	60	90			mg/kg	2	--	--	--	--	--	--	--	--	--	--	--	--	
Cadmium	20	90		3	mg/kg	0.4	--	--	--	--	--	--	--	--	--	--	--	--	
Chromium	100	300	430	100	mg/kg	5	--	--	--	--	--	--	--	--	--	--	--	--	
Cobalt	100	300			mg/kg	5	--	--	--	--	--	--	--	--	--	--	--	--	
Copper	6000	17000	110	100	mg/kg	5	--	--	--	--	--	--	--	--	--	--	--	--	
Iron					mg/kg	20	--	--	--	--	--	--	--	--	--	--	--	--	
Lead	300	600	1100	150	mg/kg	5	7.3	87	17	130	58	6	12	12	< 5	< 5	8.2	< 5	
Manganese	3800	19000			mg/kg	5	--	--	--	--	--	--	--	--	--	--	--	--	--
Mercury	40	80		1	mg/kg	0.1	--	--	--	--	--	--	--	--	--	--	--	--	--
Nickel	400	1200	200	60	mg/kg	5	--	--	--	--	--	--	--	--	--	--	--	--	--
Zinc	7400	30000	250	200	mg/kg	5	--	--	--	--	--	--	--	--	--	--	--	--	--

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 Concentration in **red** font and grey box exceed the adopted HIL/HSL 'A' for Low Density Residential
 Concentration in **orange** font and grey box exceed the adopted HIL/HSL 'C' for Open Space and Recreational Land Use (applicable for P2, P3, P6, P8, P9 and P11)
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 Concentrations in box exceed the screening value >2.5 times
 Where one or more guideline value is exceeded, the highest guideline exceeded will be highlighted

NEPM 2013 HIL A Residential	NEPM 2013 HIL C Open Space	NEPM 2013 EIL Residential / public Open Space	NSW EPA - Use and Disposal of Biosolids	Sample Type:	Soil	Soil	Soil	Soil	Soil	Soil	Soil	Soil	Soil	Soil	Soil	
				Site:	P11	P11	P11	P11	P11	P12	P12	P12	P12	P12	P12	P12
				Lab Sample number:	S20-Ma44005	S20-Ma44006	S20-Ma44007	S20-Ma44008	S20-Ma44009	S20-Ma44145	S20-Ma44146	S20-Ma44147	S20-Ma44148	S20-Ma44149	S20-Ma44150	S20-Ma44153
				Sample date:	26-03-20	26-03-20	26-03-20	26-03-20	26-03-20	26-03-20	26-03-20	26-03-20	26-03-20	26-03-20	26-03-20	26-03-20
				Sample ID:	P11_HA04_0.0-0.05	P11_HA04_0.2	P11_HA04_0.3	P11_HA05_0.0-0.05	P11_HA05_0.2	P12_HA01_0.0	P12_HA01_0.2	P12_HA01_0.3	P12_HA02_0.0_0.05	P12_HA02_0.2	P12_HA03_0.0_0.05	P12_HA03_0.2
				Project Name:	Community DSI	Community DSI	Community DSI	Community DSI	Community DSI	Community DSI	Community DSI	Community DSI	Community DSI	Community DSI	Community DSI	Community DSI
				Sampling Method:	Hand Auger	Hand Auger	Hand Auger	Hand Auger	Hand Auger	Hand Auger	Hand Auger	Hand Auger	Hand Auger	Hand Auger	Hand Auger	Hand Auger

Analyte grouping/Analyte	Units	LOR
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LTM-GEN-7080 Moisture																		
Moisture Content (dried @ 103°C)					%	--	12	9.4	9.1	8.2	6.1	9	9.6	9.3	11	13	13	12

LTM-MET-3040 Metals in Waters, Soils & Sediments by ICP-MS																		
Aluminium					mg/kg	10	--	--	--	--	--	--	--	--	--	--	--	--
Arsenic	100	300	100	20	mg/kg	2	--	--	--	--	--	--	--	--	--	--	--	--
Barium					mg/kg	10	--	--	--	--	--	--	--	--	--	--	--	--
Beryllium	60	90			mg/kg	2	--	--	--	--	--	--	--	--	--	--	--	--
Cadmium	20	90		3	mg/kg	0.4	--	--	--	--	--	--	--	--	--	--	--	--
Chromium	100	300	430	100	mg/kg	5	--	--	--	--	--	--	--	--	--	--	--	--
Cobalt	100	300			mg/kg	5	--	--	--	--	--	--	--	--	--	--	--	--
Copper	6000	17000	110	100	mg/kg	5	--	--	--	--	--	--	--	--	--	--	--	--
Iron					mg/kg	20	--	--	--	--	--	--	--	--	--	--	--	--
Lead	300	600	1100	150	mg/kg	5	12	8.2	7.3	11	7.1	130	20	9.3	85	110	260	200
Manganese	3800	19000			mg/kg	5	--	--	--	--	--	--	--	--	--	--	--	--
Mercury	40	80		1	mg/kg	0.1	--	--	--	--	--	--	--	--	--	--	--	--
Nickel	400	1200	200	60	mg/kg	5	--	--	--	--	--	--	--	--	--	--	--	--
Zinc	7400	30000	250	200	mg/kg	5	--	--	--	--	--	--	--	--	--	--	--	--

National Environment Protection Council (2013) National Environmental Protection (Assessment of Site Contamination) Amendment Measure 2013 (No. 1))
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 Health Investigation Levels for chromium based on chromium (VI)
 Chromium (III) EIL, based on a low clay content (% clay) of 12%
 Nickel EIL, based on CEC of 12.8cmol/kg
 Copper EIL, based on CEC of 12cmol/kg, pH of 5.22, organic carbon content of 1.78%
 Zinc EIL, based on CEC of 12cmol/kg and pH of 5.22
 Concentration in **red** font and grey box exceed the adopted HIL/HSL 'A' for Low Density Residential
 Concentration in **orange** font and grey box exceed the adopted HIL/HSL 'C' for Open Space and Recreational Land Use (applicable for P2, P3, P6, P8, P9 and P11)
 Concentration in **green** font and grey box exceed the adopted EIL/ESL 'C' for Residential and Open Space and Recreational Land Use
 Concentration in **blue** font and grey box exceed the adopted Environmental Guidelines: Use and Disposal of Biosolid Products (NSW EPA 2000) (P29 only).
 Concentrations in box exceed the screening value >2.5 times
 Where one or more guideline value is exceeded, the highest guideline exceeded will be highlighted

NEPM 2013 HIL A Residential	NEPM 2013 HIL C Open Space	NEPM 2013 EIL Residential / public Open Space	NSW EPA - Use and Disposal of Biosolids	Sample Type:	Soil	Soil	Soil	Soil	Soil	Soil	Soil	Soil	Soil	Soil	Soil	
				Site:	P12	P12	P12	P12	P14	P14	P14	P14	P14	P14	P14	P14
				Lab Sample number:	S20-Ma44154	S20-Ma44155	S20-Ma44156	S20-Ma44157	S20-Ma44055	S20-Ma44045	S20-Ma44046	S20-Ma44047	S20-Ma44048	S20-Ma44049	S20-Ma44050	S20-Ma44051
				Sample date:	26-03-20	26-03-20	26-03-20	26-03-20	26-03-20	26-03-20	26-03-20	26-03-20	26-03-20	26-03-20	26-03-20	26-03-20
				Sample ID:	P12_HA04_0.0	P12_HA04_0.3	P12_HA05_0.0	P12_HA05_0.2	P13_HA05_0.3	P14_HA01_0.0_0.05	P14_HA01_0.2	P14_HA02_0.0_0.05	P14_HA02_0.3	P14_HA03_0.0-0.05	P14_HA03_0.25	P14_HA04_0.0-0.05
				Project Name:	Community DSI	Community DSI	Community DSI	Community DSI	Community DSI	Community DSI	Community DSI	Community DSI	Community DSI	Community DSI	Community DSI	Community DSI
Sampling Method:	Hand Auger	Hand Auger	Hand Auger	Hand Auger	Hand Auger	Hand Auger	Hand Auger	Hand Auger	Hand Auger	Hand Auger	Hand Auger	Hand Auger				

Analyte grouping/Analyte	Units	LOR
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LTM-GEN-7080 Moisture		
Moisture Content (dried @ 103°C)	%	--
		11, 9.9, 14, 5.4, 14, 7.5, 8.4, 16, 14, 30, 13, 14

LTM-MET-3040 Metals in Waters, Soils & Sediments by ICP-MS		
Aluminium	mg/kg	10
Arsenic	mg/kg	2
Barium	mg/kg	10
Beryllium	mg/kg	2
Cadmium	mg/kg	0.4
Chromium	mg/kg	5
Cobalt	mg/kg	5
Copper	mg/kg	5
Iron	mg/kg	20
Lead	mg/kg	5
Manganese	mg/kg	5
Mercury	mg/kg	0.1
Nickel	mg/kg	5
Zinc	mg/kg	5

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 Concentration in **blue** font and grey box exceed the adopted Environmental Guidelines: Use and Disposal of Biosolid Products (NSW EPA 2000) (P29 only).
 Concentrations in box exceed the screening value >2.5 times

Where one or more guideline value is exceeded, the highest guideline exceeded will be highlighted

	NEPM 2013 HIL A Residential	NEPM 2013 HIL C Open Space	NEPM 2013 EIL Residential / public Open Space	NSW EPA - Use and Disposal of Biosolids	Sample Type:	Soil	Soil	Soil	Soil	Soil	Soil	Soil	Soil	Soil	Soil	Soil	
					Site:	P14	P14	P14	P15	P15	P15	P15	P15	P15	P15	P15	P15
					Lab Sample number:	S20-Ma44052	S20-Ma44053	S20-Ma44054	S20-Ap02850	S20-Ap02851	S20-Ap02852	S20-Ap02853	S20-Ap02854	S20-Ap02855	S20-Ap02856	S20-Ap02857	S20-Ap02858
					Sample date:	26-03-20	26-03-20	26-03-20	30-03-20	30-03-20	30-03-20	30-03-20	30-03-20	30-03-20	30-03-20	30-03-20	30-03-20
					Sample ID:	P14_HA04_0.3	P14_HA05_0.0-0.05	P14_HA05_0.2	P15_HA01_0.0-0.05	P15_HA01_0.2	P15_HA02_0.0	P15_HA02_0.2	P15_HA03_0.0-0.05	P15_HA03_0.2	P15_HA04_0.0	P15_HA04_0.2	P15_HA05_0.0
					Project Name:	Community DSI	Community DSI	Community DSI	Community DSI	Community DSI	Community DSI	Community DSI	Community DSI	Community DSI	Community DSI	Community DSI	Community DSI
					Sampling Method:	Hand Auger	Hand Auger	Hand Auger	Hand Auger	Hand Auger	Hand Auger	Hand Auger	Hand Auger	Hand Auger	Hand Auger	Hand Auger	Hand Auger

Analyte grouping/Analyte	Units	LOR															
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LTM-GEN-7080 Moisture																		
Moisture Content (dried @ 103°C)					%	--	9	25	15	6.7	7.7	8.8	8.9	7.1	8.2	14	8.8	14

LTM-MET-3040 Metals in Waters, Soils & Sediments by ICP-MS																		
Aluminium					mg/kg	10	--	--	--	--	--	--	--	--	--	--	--	--
Arsenic	100	300	100	20	mg/kg	2	--	--	--	--	--	--	--	--	--	--	--	--
Barium					mg/kg	10	--	--	--	--	--	--	--	--	--	--	--	--
Beryllium	60	90			mg/kg	2	--	--	--	--	--	--	--	--	--	--	--	--
Cadmium	20	90		3	mg/kg	0.4	--	--	--	--	--	--	--	--	--	--	--	--
Chromium	100	300	430	100	mg/kg	5	--	--	--	--	--	--	--	--	--	--	--	--
Cobalt	100	300			mg/kg	5	--	--	--	--	--	--	--	--	--	--	--	--
Copper	6000	17000	110	100	mg/kg	5	--	--	--	--	--	--	--	--	--	--	--	--
Iron					mg/kg	20	--	--	--	--	--	--	--	--	--	--	--	--
Lead	300	600	1100	150	mg/kg	5	11	19	13	22	19	24	21	15	9.9	27	38	20
Manganese	3800	19000			mg/kg	5	--	--	--	--	--	--	--	--	--	--	--	--
Mercury	40	80		1	mg/kg	0.1	--	--	--	--	--	--	--	--	--	--	--	--
Nickel	400	1200	200	60	mg/kg	5	--	--	--	--	--	--	--	--	--	--	--	--
Zinc	7400	30000	250	200	mg/kg	5	--	--	--	--	--	--	--	--	--	--	--	--

National Environment Protection Council (2013) National Environmental Protection (Assessment of Site Contamination) Amendment Measure 2013 (No. 1)
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 Health Investigation Levels for chromium based on chromium (VI)
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 Zinc EIL, based on CEC of 12cmol/kg and pH of 5.22
 Concentration in **red** font and grey box exceed the adopted HIL/HSL 'A' for Low Density Residential
 Concentration in **orange** font and grey box exceed the adopted HIL/HSL 'C' for Open Space and Recreational Land Use (applicable for P2, P3, P6, P8, P9 and P11)
 Concentration in **green** font and grey box exceed the adopted EIL/ESL 'C' for Residential and Open Space and Recreational Land Use
 Concentration in **blue** font and grey box exceed the adopted Environmental Guidelines: Use and Disposal of Biosolid Products (NSW EPA 2000) (P29 only).
 Concentrations in box exceed the screening value >2.5 times
 Where one or more guideline value is exceeded, the highest guideline exceeded will be highlighted

Table 1:
 Tarago Area DSI - Discrete Properties Soil Results

NEPM 2013 HIL A Residential	NEPM 2013 HIL C Open Space	NEPM 2013 EIL Residential / public Open Space	NSW EPA - Use and Disposal of Biosolids	Sample Type:	Soil	Soil	Soil	Soil	Soil	Soil	Soil	Soil	Soil	Soil	Soil	Soil				
				Site:	P15	P16	P16	P16	P16	P16	P16	P16	P16	P16	P16	P16	P16	P16	P17	
				Lab Sample number:	S20-Ap02859	S20-Ap02873	S20-Ap02874	S20-Ap02875	S20-Ap02876	S20-Ap02877	S20-Ap02878	S20-Ap02879	S20-Ap02880	S20-Ap02881	S20-Ap02882	S20-Ap02883	S20-Ap02884	S20-Ap02885	S20-Ap02886	S20-Ap02887
				Sample date:	30-03-20	30-03-20	30-03-20	30-03-20	30-03-20	30-03-20	30-03-20	30-03-20	30-03-20	30-03-20	30-03-20	30-03-20	30-03-20	30-03-20	30-03-20	30-03-20
				Sample ID:	P15_HA05_0.2	P16_HA01_0.0	P16_HA01_0.2	P16_HA02_0.0	P16_HA02_0.2	P16_HA03_0.0-0.05	P16_HA03_0.2	P16_HA04_0.0	P16_HA04_0.2	P16_HA05_0.0	P16_HA05_0.2	P17_HA01_0.0-0.05	P17_HA01_0.2	P17_HA02_0.0	P17_HA02_0.2	P17_HA03_0.0-0.05
				Project Name:	Community DSI	Community DSI	Community DSI	Community DSI	Community DSI	Community DSI	Community DSI	Community DSI	Community DSI	Community DSI	Community DSI	Community DSI	Community DSI	Community DSI	Community DSI	Community DSI
Sampling Method:	Hand Auger	Hand Auger	Hand Auger	Hand Auger	Hand Auger	Hand Auger	Hand Auger	Hand Auger	Hand Auger	Hand Auger	Hand Auger	Hand Auger	Hand Auger	Hand Auger	Hand Auger	Hand Auger				

Analyte grouping/Analyte	Units	LOR															
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LTM-GEN-7080 Moisture																		
Moisture Content (dried @ 103°C)					%	--	11	14	13	9.5	10	13	9.6	11	6.5	14	4.6	13

LTM-MET-3040 Metals in Waters, Soils & Sediments by ICP-MS																		
Aluminium					mg/kg	10	--	--	--	--	--	--	--	--	--	--	--	--
Arsenic	100	300	100	20	mg/kg	2	--	--	--	--	--	--	--	--	--	--	--	--
Barium					mg/kg	10	--	--	--	--	--	--	--	--	--	--	--	--
Beryllium	60	90			mg/kg	2	--	--	--	--	--	--	--	--	--	--	--	--
Cadmium	20	90		3	mg/kg	0.4	--	--	--	--	--	--	--	--	--	--	--	--
Chromium	100	300	430	100	mg/kg	5	--	--	--	--	--	--	--	--	--	--	--	--
Cobalt	100	300			mg/kg	5	--	--	--	--	--	--	--	--	--	--	--	--
Copper	6000	17000	110	100	mg/kg	5	--	--	--	--	--	--	--	--	--	--	--	--
Iron					mg/kg	20	--	--	--	--	--	--	--	--	--	--	--	--
Lead	300	600	1100	150	mg/kg	5	14	14	13	13	13	12	14	11	11	11	12	16
Manganese	3800	19000			mg/kg	5	--	--	--	--	--	--	--	--	--	--	--	--
Mercury	40	80		1	mg/kg	0.1	--	--	--	--	--	--	--	--	--	--	--	--
Nickel	400	1200	200	60	mg/kg	5	--	--	--	--	--	--	--	--	--	--	--	--
Zinc	7400	30000	250	200	mg/kg	5	--	--	--	--	--	--	--	--	--	--	--	--

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 Zinc EIL, based on CEC of 12cmol/kg and pH of 5.22
 Concentration in **red** font and grey box exceed the adopted HIL/HSL 'A' for Low Density Residential
 Concentration in **orange** font and grey box exceed the adopted HIL/HSL 'C' for Open Space and Recreational Land Use (applicable for P2, P3, P6, P8, P9 and P11)
 Concentration in **green** font and grey box exceed the adopted EIL/ESL 'C' for Residential and Open Space and Recreational Land Use
 Concentration in **blue** font and grey box exceed the adopted Environmental Guidelines: Use and Disposal of Biosolid Products (NSW EPA 2000) (P29 only).
 Concentrations in box exceed the screening value >2.5 times
 Where one or more guideline value is exceeded, the highest guideline exceeded will be highlighted

	NEPM 2013 HIL A Residential	NEPM 2013 HIL C Open Space	NEPM 2013 EIL Residential / public Open Space	NSW EPA - Use and Disposal of Biosolids	Sample Type:	Soil	Soil	Soil	Soil	Soil	Soil	Soil	Soil	Soil	Soil	Soil						
					Site:	P17	P17	P17	P17	P17	P17	P17	P17	P17	P17	P17	P17	P17	P17	P17	P17	
					Lab Sample number:	S20-Ap02884	S20-Ap02885	S20-Ap02886	S20-Ap02887	S20-Ap02888	S20-Ap02889	S20-Ap02890	S20-Ap02891	S20-Ap02892	S20-Ap02937	S20-Ap02938	S20-Ap02939					
					Sample date:	30-03-20	30-03-20	30-03-20	30-03-20	30-03-20	30-03-20	30-03-20	30-03-20	30-03-20	31-03-20	31-03-20	31-03-20					
					Sample ID:	P17_HA01_0.2	P17_HA02_0.0	P17_HA02_0.2	P17_HA03_0.0-0.05	P17_HA03_0.2	P17_HA04_0.0	P17_HA04_0.2	P17_HA05_0.0	P17_HA05_0.2	P18_HA01_0.0	P18_HA01_0.2	P18_HA02_0.0					
					Project Name:	Community DSI	Community DSI	Community DSI	Community DSI	Community DSI	Community DSI	Community DSI	Community DSI	Community DSI	Community DSI	Community DSI	Community DSI					
					Sampling Method:	Hand Auger	Hand Auger	Hand Auger	Hand Auger	Hand Auger	Hand Auger	Hand Auger	Hand Auger	Hand Auger	Hand Auger	Hand Auger	Hand Auger					

Analyte grouping/Analyte	Units	LOR																
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LTM-GEN-7080 Moisture																		
Moisture Content (dried @ 103°C)					%	--	9.1	13	11	11	12	10	12	14	11	18	12	19

LTM-MET-3040 Metals in Waters, Soils & Sediments by ICP-MS																		
Aluminium					mg/kg	10	--	--	--	--	--	--	--	--	--	--	--	--
Arsenic	100	300	100	20	mg/kg	2	--	--	--	--	--	--	--	--	--	--	--	--
Barium					mg/kg	10	--	--	--	--	--	--	--	--	--	--	--	--
Beryllium	60	90			mg/kg	2	--	--	--	--	--	--	--	--	--	--	--	--
Cadmium	20	90		3	mg/kg	0.4	--	--	--	--	--	--	--	--	--	--	--	--
Chromium	100	300	430	100	mg/kg	5	--	--	--	--	--	--	--	--	--	--	--	--
Cobalt	100	300			mg/kg	5	--	--	--	--	--	--	--	--	--	--	--	--
Copper	6000	17000	110	100	mg/kg	5	--	--	--	--	--	--	--	--	--	--	--	--
Iron					mg/kg	20	--	--	--	--	--	--	--	--	--	--	--	--
Lead	300	600	1100	150	mg/kg	5	19	150	15	25	28	9.8	16	97	14	28	26	71
Manganese	3800	19000			mg/kg	5	--	--	--	--	--	--	--	--	--	--	--	--
Mercury	40	80		1	mg/kg	0.1	--	--	--	--	--	--	--	--	--	--	--	--
Nickel	400	1200	200	60	mg/kg	5	--	--	--	--	--	--	--	--	--	--	--	--
Zinc	7400	30000	250	200	mg/kg	5	--	--	--	--	--	--	--	--	--	--	--	--

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 Concentrations in box exceed the screening value >2.5 times
 Where one or more guideline value is exceeded, the highest guideline exceeded will be highlighted

NEPM 2013 HIL A Residential	NEPM 2013 HIL C Open Space	NEPM 2013 EIL Residential / public Open Space	NSW EPA - Use and Disposal of Biosolids	Sample Type:	Soil	Soil	Soil	Soil	Soil	Soil	Soil	Soil	Soil	Soil	Soil	
				Site:	P18	P18	P18	P18	P18	P18	P18	P19	P19	P19	P19	P19
				Lab Sample number:	S20-Ap02940	S20-Ap02941	S20-Ap02942	S20-Ap02943	S20-Ap02944	S20-Ap02945	S20-Ap02946	S20-Ap02971	S20-Ap02972	S20-Ap02973	S20-Ap02974	S20-Ap02975
				Sample date:	31-03-20	31-03-20	31-03-20	31-03-20	31-03-20	31-03-20	31-03-20	31-03-20	31-03-20	31-03-20	31-03-20	31-03-20
				Sample ID:	P18_HA02_0.2	P18_HA03_0.0	P18_HA03_0.2	P18_HA04_0.0	P18_HA04_0.2	P18_HA05_0.0	P18_HA05_0.2	P19_HA01_0.0	P19_HA01_0.2	P19_HA02_0.0	P19_HA02_0.2	P19_HA03_0.0
				Project Name:	Community DSI	Community DSI	Community DSI	Community DSI	Community DSI	Community DSI	Community DSI	Community DSI	Community DSI	Community DSI	Community DSI	Community DSI
Sampling Method:	Hand Auger	Hand Auger	Hand Auger	Hand Auger	Hand Auger	Hand Auger	Hand Auger	Hand Auger	Hand Auger	Hand Auger	Hand Auger	Hand Auger				

Analyte grouping/Analyte	Units	LOR
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LTM-GEN-7080 Moisture																		
Moisture Content (dried @ 103°C)					%	--	21	14	9.8	2.7	15	20	14	9.4	15	14	11	16

LTM-MET-3040 Metals in Waters, Soils & Sediments by ICP-MS																		
Aluminium					mg/kg	10	--	--	--	--	--	--	--	--	--	--	--	--
Arsenic	100	300	100	20	mg/kg	2	--	--	--	--	--	--	--	--	--	--	--	--
Barium					mg/kg	10	--	--	--	--	--	--	--	--	--	--	--	--
Beryllium	60	90			mg/kg	2	--	--	--	--	--	--	--	--	--	--	--	--
Cadmium	20	90		3	mg/kg	0.4	--	--	--	--	--	--	--	--	--	--	--	--
Chromium	100	300	430	100	mg/kg	5	--	--	--	--	--	--	--	--	--	--	--	--
Cobalt	100	300			mg/kg	5	--	--	--	--	--	--	--	--	--	--	--	--
Copper	6000	17000	110	100	mg/kg	5	--	--	--	--	--	--	--	--	--	--	--	--
Iron					mg/kg	20	--	--	--	--	--	--	--	--	--	--	--	--
Lead	300	600	1100	150	mg/kg	5	73	60	48	15	86	160	20	14	10	13	5.7	10
Manganese	3800	19000			mg/kg	5	--	--	--	--	--	--	--	--	--	--	--	--
Mercury	40	80		1	mg/kg	0.1	--	--	--	--	--	--	--	--	--	--	--	--
Nickel	400	1200	200	60	mg/kg	5	--	--	--	--	--	--	--	--	--	--	--	--
Zinc	7400	30000	250	200	mg/kg	5	--	--	--	--	--	--	--	--	--	--	--	--

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 Copper EIL, based on CEC of 12cmol/kg, pH of 5.22, organic carbon content of 1.78%
 Zinc EIL, based on CEC of 12cmol/kg and pH of 5.22
 Concentration in red font and grey box exceed the adopted HIL/HSL 'A' for Low Density Residential
 Concentration in orange font and grey box exceed the adopted HIL/HSL 'C' for Open Space and Recreational Land Use (applicable for P2, P3, P6, P8, P9 and P11)
 Concentration in green font and grey box exceed the adopted EIL/ESL 'C' for Residential and Open Space and Recreational Land Use
 Concentration in blue font and grey box exceed the adopted Environmental Guidelines: Use and Disposal of Biosolid Products (NSW EPA 2000) (P29 only).
 Concentrations in box exceed the screening value >2.5 times
 Where one or more guideline value is exceeded, the highest guideline exceeded will be highlighted

Sample Type:	Soil P19	Soil P19	Soil P19	Soil P19	Soil P19	Soil P20	Soil P20	Soil P20	Soil P20	Soil P20	Soil P20	Soil P20	Soil P20	Soil P20
Site:														
Lab Sample number:	S20-Ap02976	S20-Ap02977	S20-Ap02978	S20-Ap02979	S20-Ap02980	S20-Ap02990	S20-Ap02991	S20-Ap02992	S20-Ap02993	S20-Ap02994	S20-Ap02995	S20-Ap02996		
Sample date:	31-03-20	31-03-20	31-03-20	31-03-20	31-03-20	30-03-20	30-03-20	30-03-20	30-03-20	30-03-20	30-03-20	30-03-20		
Sample ID:	P19_HA03_0.2	P19_HA04_0.0	P19_HA04_0.2	P19_HA05_0.0	P19_HA05_0.2	P20_HA01_0.0	P20_HA01_0.2	P20_HA02_0.0	P20_HA02_0.2	P20_HA03_0.0-0.05	P20_HA03_0.2	P20_HA04_0.0		
Project Name:	Community DSI	Community DSI	Community DSI	Community DSI	Community DSI	Community DSI	Community DSI	Community DSI	Community DSI	Community DSI	Community DSI	Community DSI		
Sampling Method:	Hand Auger	Hand Auger	Hand Auger	Hand Auger	Hand Auger	Hand Auger	Hand Auger	Hand Auger	Hand Auger	Hand Auger	Hand Auger	Hand Auger		

Analyte grouping/Analyte	Units	LOR															
LTM-GEN-7080 Moisture																	
Moisture Content (dried @ 103°C)	%	--	12	5	4.5	13	7.8	6.4	7.6	5.8	7.9	7.9	8.8	11			

LTM-MET-3040 Metals in Waters, Soils & Sediments by ICP-MS																	
Aluminium					mg/kg	10	--	--	--	--	--	--	--	--	--	--	--
Arsenic	100	300	100	20	mg/kg	2	--	--	--	--	--	--	--	--	--	--	--
Barium					mg/kg	10	--	--	--	--	--	--	--	--	--	--	--
Beryllium	60	90			mg/kg	2	--	--	--	--	--	--	--	--	--	--	--
Cadmium	20	90		3	mg/kg	0.4	--	--	--	--	--	--	--	--	--	--	--
Chromium	100	300	430	100	mg/kg	5	--	--	--	--	--	--	--	--	--	--	--
Cobalt	100	300			mg/kg	5	--	--	--	--	--	--	--	--	--	--	--
Copper	6000	17000	110	100	mg/kg	5	--	--	--	--	--	--	--	--	--	--	--
Iron					mg/kg	20	--	--	--	--	--	--	--	--	--	--	--
Lead	300	600	1100	150	mg/kg	5	8.1	9.6	5.7	21	6.9	24	33	8.9	7.8	11	5.7
Manganese	3800	19000			mg/kg	5	--	--	--	--	--	--	--	--	--	--	--
Mercury	40	80		1	mg/kg	0.1	--	--	--	--	--	--	--	--	--	--	--
Nickel	400	1200	200	60	mg/kg	5	--	--	--	--	--	--	--	--	--	--	--
Zinc	7400	30000	250	200	mg/kg	5	--	--	--	--	--	--	--	--	--	--	--

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 Copper EIL, based on CEC of 12cmol/kg, pH of 5.22, organic carbon content of 1.78%
 Zinc EIL, based on CEC of 12cmol/kg and pH of 5.22
 Concentration in **red** font and grey box exceed the adopted HIL/HSL 'A' for Low Density Residential
 Concentration in **orange** font and grey box exceed the adopted HIL/HSL 'C' for Open Space and Recreational Land Use (applicable for P2, P3, P6, P8, P9 and P11)
 Concentration in **green** font and grey box exceed the adopted EIL/ESL 'C' for Residential and Open Space and Recreational Land Use
 Concentration in **blue** font and grey box exceed the adopted Environmental Guidelines: Use and Disposal of Biosolid Products (NSW EPA 2000) (P29 only).
 Concentrations in box exceed the screening value >2.5 times
 Where one or more guideline value is exceeded, the highest guideline exceeded will be highlighted

	NEPM 2013 HIL A Residential	NEPM 2013 HIL C Open Space	NEPM 2013 EIL Residential / public Open Space	NSW EPA - Use and Disposal of Biosolids	Sample Type:	Soil	Soil	Soil	Soil	Soil	Soil	Soil	Soil	Soil	Soil	Soil		
					Site:	P20	P20	P20	P21	P21	P21	P21	P21	P21	P21	P21	P21	P21
					Lab Sample number:	S20-Ap02997	S20-Ap02998	S20-Ap02999	S20-Ap03003	S20-Ap03004	S20-Ap03005	S20-Ap03006	S20-Ap03007	S20-Ap03008	S20-Ap03009	S20-Ap03010	S20-Ap03011	
					Sample date:	30-03-20	30-03-20	30-03-20	31-03-20	31-03-20	31-03-20	31-03-20	31-03-20	31-03-20	31-03-20	31-03-20	31-03-20	
					Sample ID:	P20_HA04_0.2	P20_HA05_0.0	P20_HA05_0.2	P21_HA01_0.0	P21_HA01_0.2	P21_HA02_0.0	P21_HA02_0.2	P21_HA03_0.0	P21_HA04_0.0	P21_HA04_0.2	P21_HA05_0.0	P21_HA05_0.2	
					Project Name:	Community DSI	Community DSI	Community DSI	Community DSI	Community DSI	Community DSI	Community DSI	Community DSI	Community DSI	Community DSI	Community DSI	Community DSI	
Sampling Method:	Hand Auger	Hand Auger	Hand Auger	Hand Auger	Hand Auger	Hand Auger	Hand Auger	Hand Auger	Hand Auger	Hand Auger	Hand Auger	Hand Auger						

Analyte grouping/Analyte	Units	LOR
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LTM-GEN-7080 Moisture		
Moisture Content (dried @ 103°C)	%	--

LTM-MET-3040 Metals in Waters, Soils & Sediments by ICP-MS		
Aluminium	mg/kg	10
Arsenic	mg/kg	2
Barium	mg/kg	10
Beryllium	mg/kg	2
Cadmium	mg/kg	0.4
Chromium	mg/kg	5
Cobalt	mg/kg	5
Copper	mg/kg	5
Iron	mg/kg	20
Lead	mg/kg	5
Manganese	mg/kg	5
Mercury	mg/kg	0.1
Nickel	mg/kg	5
Zinc	mg/kg	5

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 Concentration in red font and grey box exceed the adopted HIL/HSL 'A' for Low Density Residential
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 Concentration in green font and grey box exceed the adopted EIL/ESL 'C' for Residential and Open Space and Recreational Land Use
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 Concentrations in box exceed the screening value >2.5 times

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NEPM 2013 HIL A Residential	NEPM 2013 HIL C Open Space	NEPM 2013 EIL Residential / public Open Space	NSW EPA - Use and Disposal of Biosolids	Sample Type:	Soil	Soil	Soil	Soil	Soil	Soil	Soil	Soil	Soil	Soil	Soil	Soil				
				Site:	P22	P22	P22	P22	P22	P22	P22	P22	P22	P22	P23	P23	P23	P23		
				Lab Sample number:	S20-Ap03057	S20-Ap03058	S20-Ap03059	S20-Ap03060	S20-Ap03061	S20-Ap03062	S20-Ap03063	S20-Ap03064	S20-Ap03083	S20-Ap03088	S20-Ap03089	S20-Ap03090				
				Sample date:	31-03-20	31-03-20	31-03-20	31-03-20	31-03-20	31-03-20	31-03-20	31-03-20	31-03-20	31-03-20	31-03-20	31-03-20				
				Sample ID:	P22_HA01_0.0	P22_HA02_0.0	P22_HA02_0.2	P22_HA03_0.0	P22_HA03_0.2	P22_HA04_0.0	P22_HA04_0.2	P22_HA05_0.0	P22_HA05_0.2	P23_HA01_0.0	P23_HA01_0.2	P23_HA02_0.0				
				Project Name:	Community DSI	Community DSI	Community DSI	Community DSI	Community DSI	Community DSI	Community DSI	Community DSI	Community DSI	Community DSI	Community DSI	Community DSI				
Sampling Method:	Hand Auger	Hand Auger	Hand Auger	Hand Auger	Hand Auger	Hand Auger	Hand Auger	Hand Auger	Hand Auger	Hand Auger	Hand Auger	Hand Auger								

Analyte grouping/Analyte	Units	LOR															
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LTM-GEN-7080 Moisture																		
Moisture Content (dried @ 103°C)					%	--	4.8	4.2	7.2	6.5	6.4	5.9	3.9	9	5.8	13	10	12

LTM-MET-3040 Metals in Waters, Soils & Sediments by ICP-MS																		
Aluminium					mg/kg	10	--	--	--	--	--	--	--	--	--	--	--	--
Arsenic	100	300	100	20	mg/kg	2	--	--	--	--	--	--	--	--	--	--	--	--
Barium					mg/kg	10	--	--	--	--	--	--	--	--	--	--	--	--
Beryllium	60	90			mg/kg	2	--	--	--	--	--	--	--	--	--	--	--	--
Cadmium	20	90		3	mg/kg	0.4	--	--	--	--	--	--	--	--	--	--	--	--
Chromium	100	300	430	100	mg/kg	5	--	--	--	--	--	--	--	--	--	--	--	--
Cobalt	100	300			mg/kg	5	--	--	--	--	--	--	--	--	--	--	--	--
Copper	6000	17000	110	100	mg/kg	5	--	--	--	--	--	--	--	--	--	--	--	--
Iron					mg/kg	20	--	--	--	--	--	--	--	--	--	--	--	--
Lead	300	600	1100	150	mg/kg	5	13	12	8.9	18	11	< 5	< 5	22	9.2	74	29	62
Manganese	3800	19000			mg/kg	5	--	--	--	--	--	--	--	--	--	--	--	--
Mercury	40	80		1	mg/kg	0.1	--	--	--	--	--	--	--	--	--	--	--	--
Nickel	400	1200	200	60	mg/kg	5	--	--	--	--	--	--	--	--	--	--	--	--
Zinc	7400	30000	250	200	mg/kg	5	--	--	--	--	--	--	--	--	--	--	--	--

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 Concentration in **green** font and grey box exceed the adopted EIL/ESL 'C' for Residential and Open Space and Recreational Land Use
 Concentration in **blue** font and grey box exceed the adopted Environmental Guidelines: Use and Disposal of Biosolid Products (NSW EPA 2000) (P29 only).
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NEPM 2013 HIL A Residential	NEPM 2013 HIL C Open Space	NEPM 2013 EIL Residential / public Open Space	NSW EPA - Use and Disposal of Biosolids	Sample Type:	Soil	Soil	Soil	Soil	Soil	Soil	Soil	Soil	Soil	Soil	Soil	Soil					
				Site:	P23	P23	P23	P23	P23	P23	P23	P24	P24	P24	P24	P24	P24	P24			
				Lab Sample number:	S20-Ap03091	S20-Ap03092	S20-Ap03093	S20-Ap03094	S20-Ap03095	S20-Ap03096	S20-Ap03097	P24_HA01_0.0	P24_HA01_0.2	P24_HA02_0.0	P24_HA02_0.2	P24_HA03_0.0					
				Sample date:	31-03-20	31-03-20	31-03-20	31-03-20	31-03-20	31-03-20	31-03-20	01-04-20	01-04-20	01-04-20	01-04-20	01-04-20					
				Sample ID:	P23_HA02_0.2	P23_HA03_0.0	P23_HA03_0.2	P23_HA04_0.0	P23_HA04_0.2	P23_HA05_0.0	P23_HA05_0.2	S20-Ap09824	S20-Ap09825	S20-Ap09826	S20-Ap09827	S20-Ap09828					
				Project Name:	Community DSI	Community DSI	Community DSI	Community DSI	Community DSI	Community DSI	Community DSI	Community DSI	Community DSI	Community DSI	Community DSI	Community DSI	Community DSI				
				Sampling Method:	Hand Auger	Hand Auger	Hand Auger	Hand Auger	Hand Auger	Hand Auger	Hand Auger	Hand Auger	Hand Auger	Hand Auger	Hand Auger	Hand Auger	Hand Auger				

Analyte grouping/Analyte	Units	LOR																
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LTM-GEN-7080 Moisture																		
Moisture Content (dried @ 103°C)					%	--	8.6	11	7.8	11	7.2	21	13	11	9.8	9	9	10

LTM-MET-3040 Metals in Waters, Soils & Sediments by ICP-MS																		
Aluminium					mg/kg	10	--	--	--	--	--	--	--	--	--	--	--	--
Arsenic	100	300	100	20	mg/kg	2	--	--	--	--	--	--	--	--	--	--	--	--
Barium					mg/kg	10	--	--	--	--	--	--	--	--	--	--	--	--
Beryllium	60	90			mg/kg	2	--	--	--	--	--	--	--	--	--	--	--	--
Cadmium	20	90		3	mg/kg	0.4	--	--	--	--	--	--	--	--	--	--	--	--
Chromium	100	300	430	100	mg/kg	5	--	--	--	--	--	--	--	--	--	--	--	--
Cobalt	100	300			mg/kg	5	--	--	--	--	--	--	--	--	--	--	--	--
Copper	6000	17000	110	100	mg/kg	5	--	--	--	--	--	--	--	--	--	--	--	--
Iron					mg/kg	20	--	--	--	--	--	--	--	--	--	--	--	--
Lead	300	600	1100	150	mg/kg	5	35	60	39	31	17	49	50	37	24	22	18	21
Manganese	3800	19000			mg/kg	5	--	--	--	--	--	--	--	--	--	--	--	--
Mercury	40	80		1	mg/kg	0.1	--	--	--	--	--	--	--	--	--	--	--	--
Nickel	400	1200	200	60	mg/kg	5	--	--	--	--	--	--	--	--	--	--	--	--
Zinc	7400	30000	250	200	mg/kg	5	--	--	--	--	--	--	--	--	--	--	--	--

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 Concentration in blue font and grey box exceed the adopted Environmental Guidelines: Use and Disposal of Biosolid Products (NSW EPA 2000) (P29 only).
 Concentrations in box exceed the screening value >2.5 times

Where one or more guideline value is exceeded, the highest guideline exceeded will be highlighted

	NEPM 2013 HIL A Residential	NEPM 2013 HIL C Open Space	NEPM 2013 EIL Residential / public Open Space	NSW EPA - Use and Disposal of Biosolids	Sample Type:	Soil	Soil	Soil	Soil	Soil	Soil	Soil	Soil	Soil	Soil	Soil	
					Site:	P24	P24	P24	P24	P24	P25	P25	P25	P25	P25	P25	P25
					Lab Sample number:	P24_HA03_0.2	P24_HA04_0.0	P24_HA04_0.2	P24_HA05_0.0	P24_HA05_0.2	S20-Ap09754	S20-Ap09755	S20-Ap09756	S20-Ap09757	S20-Ap09758	S20-Ap09759	S20-Ap09760
					Sample date:	01-04-20	01-04-20	01-04-20	01-04-20	01-04-20	01-04-20	01-04-20	01-04-20	01-04-20	01-04-20	01-04-20	01-04-20
					Sample ID:	S20-Ap09829	S20-Ap09830	S20-Ap09831	S20-Ap09832	S20-Ap09833	P25_HA01_0.0	P25_HA01_0.2	P25_HA02_0.0	P25_HA02_0.2	P25_HA03_0.0	P25_HA03_0.2	P25_HA04_0.0
					Project Name:	Community DSI	Community DSI	Community DSI	Community DSI	Community DSI	Community DSI	Community DSI	Community DSI	Community DSI	Community DSI	Community DSI	Community DSI
					Sampling Method:	Hand Auger	Hand Auger	Hand Auger	Hand Auger	Hand Auger	Hand Auger	Hand Auger	Hand Auger	Hand Auger	Hand Auger	Hand Auger	Hand Auger

Analyte grouping/Analyte	Units	LOR															
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LTM-GEN-7080 Moisture																		
Moisture Content (dried @ 103°C)					%	--	10	3.4	4.7	6.4	9	9.8	7.7	2.9	4.2	9.7	5.3	21

LTM-MET-3040 Metals in Waters, Soils & Sediments by ICP-MS																		
Aluminium					mg/kg	10	--	--	--	--	--	--	--	--	--	--	--	--
Arsenic	100	300	100	20	mg/kg	2	--	--	--	--	--	--	--	--	--	--	--	--
Barium					mg/kg	10	--	--	--	--	--	--	--	--	--	--	--	--
Beryllium	60	90			mg/kg	2	--	--	--	--	--	--	--	--	--	--	--	--
Cadmium	20	90		3	mg/kg	0.4	--	--	--	--	--	--	--	--	--	--	--	--
Chromium	100	300	430	100	mg/kg	5	--	--	--	--	--	--	--	--	--	--	--	--
Cobalt	100	300			mg/kg	5	--	--	--	--	--	--	--	--	--	--	--	--
Copper	6000	17000	110	100	mg/kg	5	--	--	--	--	--	--	--	--	--	--	--	--
Iron					mg/kg	20	--	--	--	--	--	--	--	--	--	--	--	--
Lead	300	600	1100	150	mg/kg	5	19	29	31	27	50	25	22	20	13	23	16	40
Manganese	3800	19000			mg/kg	5	--	--	--	--	--	--	--	--	--	--	--	--
Mercury	40	80		1	mg/kg	0.1	--	--	--	--	--	--	--	--	--	--	--	--
Nickel	400	1200	200	60	mg/kg	5	--	--	--	--	--	--	--	--	--	--	--	--
Zinc	7400	30000	250	200	mg/kg	5	--	--	--	--	--	--	--	--	--	--	--	--

National Environment Protection Council (2013) National Environmental Protection (Assessment of Site Contamination) Amendment Measure 2013 (No. 1))
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 Health Investigation Levels for chromium based on chromium (VI)
 Chromium (III) EIL, based on a low clay content (% clay) of 12%
 Nickel EIL, based on CEC of 12.8cmol/kg
 Copper EIL, based on CEC of 12cmol/kg, pH of 5.22, organic carbon content of 1.78%
 Zinc EIL, based on CEC of 12cmol/kg and pH of 5.22
 Concentration in **red** font and grey box exceed the adopted HIL/HSL 'A' for Low Density Residential
 Concentration in **orange** font and grey box exceed the adopted HIL/HSL 'C' for Open Space and Recreational Land Use (applicable for P2, P3, P6, P8, P9 and P11)
 Concentration in **green** font and grey box exceed the adopted EIL/ESL 'C' for Residential and Open Space and Recreational Land Use
 Concentration in **blue** font and grey box exceed the adopted Environmental Guidelines: Use and Disposal of Biosolid Products (NSW EPA 2000) (P29 only).
 Concentrations in box exceed the screening value >2.5 times
 Where one or more guideline value is exceeded, the highest guideline exceeded will be highlighted

Table 1:
 Tarago Area DSI - Discrete Properties Soil Results

	NEPM 2013 HIL A Residential	NEPM 2013 HIL C Open Space	NEPM 2013 EIL Residential / public Open Space	NSW EPA - Use and Disposal of Biosolids	Sample Type:	Soil P25	Soil P25	Soil P25	Soil P26	Soil P26	Soil P26	Soil P26	Soil P26	Soil P26	Soil P26	Soil P26	
					Site:												
					Lab Sample number:	S20-Ap09761	S20-Ap09762	S20-Ap09763	S20-Ap09870	S20-Ap09871	S20-Ap09872	S20-Ap09873	S20-Ap09874	S20-Ap09875	S20-Ap09876	S20-Ap09877	S20-Ap09878
					Sample date:	01-04-20	01-04-20	01-04-20	01-04-20	01-04-20	01-04-20	01-04-20	01-04-20	01-04-20	01-04-20	01-04-20	01-04-20
					Sample ID:	P25_HA04_0.2	P25_HA05_0.0	P25_HA05_0.2	P26_HA01_0.0	P26_HA01_0.2	P26_HA02_0.0	P26_HA02_0.2	P26_HA03_0.0	P26_HA03_0.2	P26_HA04_0.0	P26_HA04_0.2	P26_HA05_0.0
					Project Name:	Community DSI	Community DSI	Community DSI	Community DSI	Community DSI	Community DSI	Community DSI	Community DSI	Community DSI	Community DSI	Community DSI	Community DSI
					Sampling Method:	Hand Auger	Hand Auger	Hand Auger	Hand Auger	Hand Auger	Hand Auger	Hand Auger	Hand Auger	Hand Auger	Hand Auger	Hand Auger	Hand Auger

Analyte grouping/Analyte	Units	LOR															
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LTM-GEN-7080 Moisture																		
Moisture Content (dried @ 103°C)					%	--	13	9.7	7.5	11	12	10	12	18	14	12	10	13

LTM-MET-3040 Metals in Waters, Soils & Sediments by ICP-MS																		
Aluminium					mg/kg	10	--	--	--	--	--	--	--	--	--	--	--	--
Arsenic	100	300	100	20	mg/kg	2	--	--	--	--	--	--	--	--	--	--	--	--
Barium					mg/kg	10	--	--	--	--	--	--	--	--	--	--	--	--
Beryllium	60	90			mg/kg	2	--	--	--	--	--	--	--	--	--	--	--	--
Cadmium	20	90		3	mg/kg	0.4	--	--	--	--	--	--	--	--	--	--	--	--
Chromium	100	300	430	100	mg/kg	5	--	--	--	--	--	--	--	--	--	--	--	--
Cobalt	100	300			mg/kg	5	--	--	--	--	--	--	--	--	--	--	--	--
Copper	6000	17000	110	100	mg/kg	5	--	--	--	--	--	--	--	--	--	--	--	--
Iron					mg/kg	20	--	--	--	--	--	--	--	--	--	--	--	--
Lead	300	600	1100	150	mg/kg	5	65	18	13	20	23	32	35	30	33	27	17	57
Manganese	3800	19000			mg/kg	5	--	--	--	--	--	--	--	--	--	--	--	--
Mercury	40	80		1	mg/kg	0.1	--	--	--	--	--	--	--	--	--	--	--	--
Nickel	400	1200	200	60	mg/kg	5	--	--	--	--	--	--	--	--	--	--	--	--
Zinc	7400	30000	250	200	mg/kg	5	--	--	--	--	--	--	--	--	--	--	--	--

National Environment Protection Council (2013) National Environmental Protection (Assessment of Site Contamination) Amendment Measure 2013 (No. 1))
 ^ For soil texture classification undertaken in accord with AS 1726, the classifications of sand, silt and clay may be applied as coarse, fine with liquid limit <50% and fine with liquid limit >50% respectively, as the underlying properties to develop the HSLs may reasonably be selected to be similar. Where there is uncertainty, either a conservative approach may be adopted or laboratory analysis should be carried out. Generally SAND has been adopted in these scenarios.
 Health Investigation Levels for chromium based on chromium (VI)
 Chromium (III) EIL, based on a low clay content (% clay) of 12%
 Nickel EIL, based on CEC of 12.8cmol/kg
 Copper EIL, based on CEC of 12cmol/kg, pH of 5.22, organic carbon content of 1.78%
 Zinc EIL, based on CEC of 12cmol/kg and pH of 5.22
 Concentration in **red** font and grey box exceed the adopted HIL/HSL 'A' for Low Density Residential
 Concentration in **orange** font and grey box exceed the adopted HIL/HSL 'C' for Open Space and Recreational Land Use (applicable for P2, P3, P6, P8, P9 and P11)
 Concentration in **green** font and grey box exceed the adopted EIL/ESL 'C' for Residential and Open Space and Recreational Land Use
 Concentration in **blue** font and grey box exceed the adopted Environmental Guidelines: Use and Disposal of Biosolid Products (NSW EPA 2000) (P29 only).
 Concentrations in box exceed the screening value >2.5 times
 Where one or more guideline value is exceeded, the highest guideline exceeded will be highlighted

	NEPM 2013 HIL A Residential	NEPM 2013 HIL C Open Space	NEPM 2013 EIL Residential / public Open Space	NSW EPA - Use and Disposal of Biosolids	Sample Type:	Soil	Soil	Soil	Soil	Soil	Soil	Soil	Soil	Soil	Soil	Soil				
					Site:	P26	P26	P27	P27	P27	P27	P27	P27	P27	P27	P27	P27	P27	P27	P28
					Lab Sample number:	S20-Ap09879	S20-Ap09881	S20-Ap09724	S20-Ap09725	S20-Ap09726	S20-Ap09727	S20-Ap09728	S20-Ap09729	S20-Ap09730	S20-Ap09731	S20-Ap09732	S20-Ap09732	S20-Ap09683		
					Sample date:	01-04-20	01-04-20	01-04-20	01-04-20	01-04-20	01-04-20	01-04-20	01-04-20	01-04-20	01-04-20	01-04-20	01-04-20	01-04-20		
					Sample ID:	P26_HA05_0.2	P26_TWS1	P27_HA01_0.0	P27_HA02_0.0	P27_HA02_0.2	P27_HA03_0.0	P27_HA03_0.2	P27_HA04_0.0	P27_HA04_0.2	P27_HA05_0.0	P27_HA05_0.2	P28_HA01_0.0			
					Project Name:	Community DSI	Community DSI	Community DSI	Community DSI	Community DSI	Community DSI	Community DSI	Community DSI	Community DSI	Community DSI	Community DSI	Community DSI			
Sampling Method:	Hand Auger	Hand Auger	Hand Auger	Hand Auger	Hand Auger	Hand Auger	Hand Auger	Hand Auger	Hand Auger	Hand Auger	Hand Auger	Hand Auger								

Analyte grouping/Analyte	Units	LOR
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LTM-GEN-7080 Moisture		
Moisture Content (dried @ 103°C)	%	--

LTM-MET-3040 Metals in Waters, Soils & Sediments by ICP-MS		
Aluminium	mg/kg	10
Arsenic	mg/kg	2
Barium	mg/kg	10
Beryllium	mg/kg	2
Cadmium	mg/kg	0.4
Chromium	mg/kg	5
Cobalt	mg/kg	5
Copper	mg/kg	5
Iron	mg/kg	20
Lead	mg/kg	5
Manganese	mg/kg	5
Mercury	mg/kg	0.1
Nickel	mg/kg	5
Zinc	mg/kg	5

National Environment Protection Council (2013) National Environmental Protection (Assessment of Site Contamination) Amendment Measure 2013 (No. 1))
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 Copper EIL, based on CEC of 12cmol/kg, pH of 5.22, organic carbon content of 1.78%
 Zinc EIL, based on CEC of 12cmol/kg and pH of 5.22
 Concentration in red font and grey box exceed the adopted HIL/HSL 'A' for Low Density Residential
 Concentration in orange font and grey box exceed the adopted HIL/HSL 'C' for Open Space and Recreational Land Use (applicable for P2, P3, P6, P8, P9 and P11)
 Concentration in green font and grey box exceed the adopted EIL/ESL 'C' for Residential and Open Space and Recreational Land Use
 Concentration in blue font and grey box exceed the adopted Environmental Guidelines: Use and Disposal of Biosolid Products (NSW EPA 2000) (P29 only).
 Concentrations in box exceed the screening value >2.5 times

Where one or more guideline value is exceeded, the highest guideline exceeded will be highlighted

NEPM 2013 HIL A Residential	NEPM 2013 HIL C Open Space	NEPM 2013 EIL Residential / public Open Space	NSW EPA - Use and Disposal of Biosolids	Sample Type:	Soil	Soil	Soil	Soil	Soil	Soil	Soil	Soil	Soil	Soil	Soil	
				Site:	P28	P28	P28	P28	P28	P28	P28	P28	P29	P29	P29	P29
				Lab Sample number:	S20-Ap09684	S20-Ap09685	S20-Ap09686	S20-Ap09687	S20-Ap09688	S20-Ap09689	S20-Ap09690	S20-Ap09564	S20-Jn26502	S20-Ap09565	S20-Jn26503	S20-Ap09566
				Sample date:	01-04-20	01-04-20	01-04-20	01-04-20	01-04-20	01-04-20	01-04-20	02-04-20	02-04-20	02-04-20	02-04-20	02-04-20
				Sample ID:	P28_HA01_0.2	P28_HA02_0.0	P28_HA02_0.2	P28_HA03_0.0	P28_HA04_0.0	P28_HA05_0.0	P28_HA05_0.2	P29_HA01_0.0	P29_HA01_0.0	P29_HA01_0.2	P29_HA01_0.2	P29_HA02_0.0
				Project Name:	Community DSI	Community DSI	Community DSI	Community DSI	Community DSI	Community DSI	Community DSI	Community DSI	Community DSI	Community DSI	Community DSI	Community DSI
				Sampling Method:	Hand Auger	Hand Auger	Hand Auger	Hand Auger	Hand Auger	Hand Auger	Hand Auger	Hand Auger	Hand Auger	Hand Auger	Hand Auger	Hand Auger

Analyte grouping/Analyte	Units	LOR
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LTM-GEN-7080 Moisture		
Moisture Content (dried @ 103°C)	%	--

LTM-MET-3040 Metals in Waters, Soils & Sediments by ICP-MS		
Aluminium	mg/kg	10
Arsenic	mg/kg	2
Barium	mg/kg	10
Beryllium	mg/kg	2
Cadmium	mg/kg	0.4
Chromium	mg/kg	5
Cobalt	mg/kg	5
Copper	mg/kg	5
Iron	mg/kg	20
Lead	mg/kg	5
Manganese	mg/kg	5
Mercury	mg/kg	0.1
Nickel	mg/kg	5
Zinc	mg/kg	5

National Environment Protection Council (2013) National Environmental Protection (Assessment of Site Contamination) Amendment Measure 2013 (No. 1))
 ^ For soil texture classification undertaken in accord with AS 1726, the classifications of sand, silt and clay may be applied as coarse, fine with liquid limit <50% and fine with liquid limit >50% respectively, as the underlying properties to develop the HSLs may reasonably be selected to be similar. Where there is uncertainty, either a conservative approach may be adopted or laboratory analysis should be carried out. Generally SAND has been adopted in these scenarios.
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 Nickel EIL, based on CEC of 12.8cmol/kg
 Copper EIL, based on CEC of 12cmol/kg, pH of 5.22, organic carbon content of 1.78%
 Zinc EIL, based on CEC of 12cmol/kg and pH of 5.22
 Concentration in **red** font and grey box exceed the adopted HIL/HSL 'A' for Low Density Residential
 Concentration in **orange** font and grey box exceed the adopted HIL/HSL 'C' for Open Space and Recreational Land Use (applicable for P2, P3, P6, P8, P9 and P11)
 Concentration in **green** font and grey box exceed the adopted EIL/ESL 'C' for Residential and Open Space and Recreational Land Use
 Concentration in **blue** font and grey box exceed the adopted Environmental Guidelines: Use and Disposal of Biosolid Products (NSW EPA 2000) (P29 only).
 Concentrations in box exceed the screening value >2.5 times

Where one or more guideline value is exceeded, the highest guideline exceeded will be highlighted

Table 1:
 Tarago Area DSI - Discrete Properties Soil Results



	NEPM 2013 HIL A Residential	NEPM 2013 HIL C Open Space	NEPM 2013 EIL Residential / public Open Space	NSW EPA - Use and Disposal of Biosolids	Sample Type:	Soil	Soil	Soil	Soil	Soil	Soil	Soil	Soil	Soil	Soil	Soil				
Site:					P29	P29	P29	P29	P29	P29	P29	P29	P29	P29	P29	P29	P29	P29	P29	
Lab Sample number:					S20-Jn26504	S20-Ap09567	S20-Jn26505	S20-Ap09568	S20-Jn26506	S20-Ap09569	S20-Jn26507	S20-Ap09570	S20-Jn26508	S20-Ap09571	S20-Jn26509	S20-Ap09572				
Sample date:					02-04-20	02-04-20	02-04-20	02-04-20	02-04-20	02-04-20	02-04-20	02-04-20	02-04-20	02-04-20	02-04-20	02-04-20				
Sample ID:					P29_HA02_0.0	P29_HA02_0.2	P29_HA02_0.2	P29_HA03_0.0	P29_HA03_0.0	P29_HA03_0.2	P29_HA03_0.2	P29_HA03_0.2	P29_HA04_0.0	P29_HA04_0.0	P29_HA04_0.0	P29_HA05_0.0	P29_HA05_0.0	P29_HA05_0.2		
Project Name:					Community DSI	Community DSI	Community DSI	Community DSI	Community DSI	Community DSI	Community DSI	Community DSI	Community DSI	Community DSI	Community DSI	Community DSI	Community DSI	Community DSI	Community DSI	
Sampling Method:	Hand Auger	Hand Auger	Hand Auger	Hand Auger	Hand Auger	Hand Auger	Hand Auger	Hand Auger	Hand Auger	Hand Auger	Hand Auger	Hand Auger	Hand Auger	Hand Auger	Hand Auger					

Analyte grouping/Analyte	Units	LOR
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LTM-GEN-7080 Moisture		
Moisture Content (dried @ 103°C)	%	--
	18	16
	11	10
	12	19

LTM-MET-3040 Metals in Waters, Soils & Sediments by ICP-MS		
Aluminium	mg/kg	10
Arsenic	mg/kg	2
Barium	mg/kg	10
Beryllium	mg/kg	2
Cadmium	mg/kg	0.4
Chromium	mg/kg	5
Cobalt	mg/kg	5
Copper	mg/kg	5
Iron	mg/kg	20
Lead	mg/kg	5
Manganese	mg/kg	5
Mercury	mg/kg	0.1
Nickel	mg/kg	5
Zinc	mg/kg	5

National Environment Protection Council (2013) National Environmental Protection (Assessment of Site Contamination) Amendment Measure 2013 (No. 1))
 ^ For soil texture classification undertaken in accord with AS 1726, the classifications of sand, silt and clay may be applied as coarse, fine with liquid limit <50% and fine with liquid limit >50% respectively, as the underlying properties to develop the HSLs may reasonably be selected to be similar. Where there is uncertainty, either a conservative approach may be adopted or laboratory analysis should be carried out. Generally SAND has been adopted in these scenarios.
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 Nickel EIL, based on CEC of 12.8cmol/kg
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 Zinc EIL, based on CEC of 12cmol/kg and pH of 5.22
 Concentration in **red** font and grey box exceed the adopted HIL/HSL 'A' for Low Density Residential
 Concentration in **orange** font and grey box exceed the adopted HIL/HSL 'C' for Open Space and Recreational Land Use (applicable for P2, P3, P6, P8, P9 and P11)
 Concentration in **green** font and grey box exceed the adopted EIL/ESL 'C' for Residential and Open Space and Recreational Land Use
 Concentration in **blue** font and grey box exceed the adopted Environmental Guidelines: Use and Disposal of Biosolid Products (NSW EPA 2000) (P29 only).
 Concentrations in box exceed the screening value >2.5 times

Where one or more guideline value is exceeded, the highest guideline exceeded will be highlighted

	NEPM 2013 HIL A Residential	NEPM 2013 HIL C Open Space	NEPM 2013 EIL Residential / public Open Space	NSW EPA - Use and Disposal of Biosolids	Sample Type:	Soil	Soil	Soil	Soil	Soil	Soil	Soil	Soil	Soil	Soil	Soil		
					Site:	P29	P29	P29	P29	P29	P29	P29	P29	P30	P30	P30	P30	P30
					Lab Sample number:	S20-Jn26510	S20-Ap09573	S20-Jn26511	S20-Ap09574	S20-Jn26512	S20-Ap09575	S20-Jn26513	S20-Ap09555	S20-Ap09556	S20-Ap09557	S20-Ap09558	S20-Ap09559	
					Sample date:	02-04-20	02-04-20	02-04-20	02-04-20	02-04-20	02-04-20	02-04-20	02-04-20	02-04-20	02-04-20	02-04-20	02-04-20	
					Sample ID:	P29_HA05_0.2	P29_SURFACE1	P29_SURFACE1	P29_SURFACE2	P29_SURFACE2	P29_SURFACE3	P29_SURFACE3	P30_HA01_0.0	P30_HA01_0.2	P30_HA02_0.0	P30_HA03_0.0	P30_HA03_0.2	
					Project Name:	Community DSI	Community DSI	Community DSI	Community DSI	Community DSI	Community DSI	Community DSI	Community DSI	Community DSI	Community DSI	Community DSI	Community DSI	
Sampling Method:	Hand Auger	Hand Auger	Hand Auger	Hand Auger	Hand Auger	Hand Auger	Hand Auger	Hand Auger	Hand Auger	Hand Auger	Hand Auger	Hand Auger						

Analyte grouping/Analyte	Units	LOR
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LTM-GEN-7080 Moisture																							
Moisture Content (dried @ 103°C)					%	--	9.5		23		25		30		26		8.8		20		35		17

LTM-MET-3040 Metals in Waters, Soils & Sediments by ICP-MS																								
Aluminium					mg/kg	10	3500	--	6800	--	7500	--	8100	--	--	--	--	--	--	--	--	--	--	--
Arsenic	100	300	100	20	mg/kg	2	4.2	--	4.6	--	7.7	--	14	--	--	--	--	--	--	--	--	--	--	
Barium					mg/kg	10	50	--	72	--	61	--	75	--	--	--	--	--	--	--	--	--	--	
Beryllium	60	90			mg/kg	2	< 2	--	< 2	--	< 2	--	< 2	--	--	--	--	--	--	--	--	--	--	
Cadmium	20	90		3	mg/kg	0.4	0.6	--	3	--	4.3	--	9.1	--	--	--	--	--	--	--	--	--	--	
Chromium	100	300	430	100	mg/kg	5	10	--	11	--	13	--	13	--	--	--	--	--	--	--	--	--	--	
Cobalt	100	300			mg/kg	5	< 5	--	< 5	--	< 5	--	6.9	--	--	--	--	--	--	--	--	--	--	
Copper	6000	17000	110	100	mg/kg	5	21	--	81	--	94	--	740	--	--	--	--	--	--	--	--	--	--	
Iron					mg/kg	20	9400	--	7900	--	12000	--	9200	--	--	--	--	--	--	--	--	--	--	
Lead	300	600	1100	150	mg/kg	5	59	190	91	220	110	400	570	12	7.3	23	28	16						
Manganese	3800	19000			mg/kg	5	180	--	72	--	140	--	340	--	--	--	--	--	--	--	--	--	--	
Mercury	40	80		1	mg/kg	0.1	< 0.1	--	< 0.1	--	< 0.1	--	< 0.1	--	--	--	--	--	--	--	--	--	--	
Nickel	400	1200	200	60	mg/kg	5	< 5	--	< 5	--	5	--	8.2	--	--	--	--	--	--	--	--	--	--	
Zinc	7400	30000	250	200	mg/kg	5	140	--	350	--	650	--	1100	--	--	--	--	--	--	--	--	--	--	

National Environment Protection Council (2013) National Environmental Protection (Assessment of Site Contamination) Amendment Measure 2013 (No. 1))
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 Concentration in **red** font and grey box exceed the adopted HIL/HSL 'A' for Low Density Residential
 Concentration in **orange** font and grey box exceed the adopted HIL/HSL 'C' for Open Space and Recreational Land Use (applicable for P2, P3, P6, P8, P9 and P11)
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 Concentration in **blue** font and grey box exceed the adopted Environmental Guidelines: Use and Disposal of Biosolid Products (NSW EPA 2000) (P29 only).
 Concentrations in box exceed the screening value >2.5 times

Where one or more guideline value is exceeded, the highest guideline exceeded will be highlighted

Table 1:
 Tarago Area DSI - Discrete Properties Soil Results



NEPM 2013 HIL A Residential	NEPM 2013 HIL C Open Space	NEPM 2013 EIL Residential / public Open Space	NSW EPA - Use and Disposal of Biosolids	Sample Type:	Soil	Soil	Soil	Soil	Soil	Soil	Soil	Soil	Soil	Soil	Soil	Soil				
				Site:	P30	P30	P30	P30	P31	P31	P31	P31	P31	P31	P31	P31	P31	P31		
				Lab Sample number:	S20-Ap09560	S20-Ap09561	S20-Ap09562	S20-Ap09563	S20-Ap09838	S20-Ap09839	S20-Ap09840	S20-Ap09841	S20-Ap09842	S20-Ap09843	S20-Ap09844	S20-Ap09845	S20-Ap09845	S20-Ap09845	S20-Ap09845	S20-Ap09845
				Sample date:	02-04-20	02-04-20	02-04-20	02-04-20	02-04-20	02-04-20	02-04-20	02-04-20	02-04-20	02-04-20	02-04-20	02-04-20	02-04-20	02-04-20	02-04-20	02-04-20
				Sample ID:	P30_HA04_0.0	P30_HA04_0.2	P30_HA05_0.0	P30_HA05_0.2	P31_HA01_0.0	P31_HA01_0.2	P31_HA02_0.0	P31_HA02_0.2	P31_HA03_0.0	P31_HA03_0.2	P31_HA04_0.0	P31_HA04_0.2	P31_HA04_0.2	P31_HA04_0.2	P31_HA04_0.2	P31_HA04_0.2
				Project Name:	Community DSI	Community DSI	Community DSI	Community DSI	Community DSI	Community DSI	Community DSI	Community DSI	Community DSI	Community DSI	Community DSI	Community DSI	Community DSI	Community DSI	Community DSI	Community DSI
Sampling Method:	Hand Auger	Hand Auger	Hand Auger	Hand Auger	Hand Auger	Hand Auger	Hand Auger	Hand Auger	Hand Auger	Hand Auger	Hand Auger	Hand Auger	Hand Auger	Hand Auger	Hand Auger	Hand Auger	Hand Auger			

Analyte grouping/Analyte	Units	LOR																
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LTM-GEN-7080 Moisture																		
Moisture Content (dried @ 103°C)					%	--	37	10	20	13	21	10	21	11	25	6.2	26	17

LTM-MET-3040 Metals in Waters, Soils & Sediments by ICP-MS																		
Aluminium					mg/kg	10	--	--	--	--	--	--	--	--	--	--	--	--
Arsenic	100	300	100	20	mg/kg	2	--	--	--	--	--	--	--	--	--	--	--	--
Barium					mg/kg	10	--	--	--	--	--	--	--	--	--	--	--	--
Beryllium	60	90			mg/kg	2	--	--	--	--	--	--	--	--	--	--	--	--
Cadmium	20	90		3	mg/kg	0.4	--	--	--	--	--	--	--	--	--	--	--	--
Chromium	100	300	430	100	mg/kg	5	--	--	--	--	--	--	--	--	--	--	--	--
Cobalt	100	300			mg/kg	5	--	--	--	--	--	--	--	--	--	--	--	--
Copper	6000	17000	110	100	mg/kg	5	--	--	--	--	--	--	--	--	--	--	--	--
Iron					mg/kg	20	--	--	--	--	--	--	--	--	--	--	--	--
Lead	300	600	1100	150	mg/kg	5	20	12	9.3	7.2	30	33	50	17	26	27	35	19
Manganese	3800	19000			mg/kg	5	--	--	--	--	--	--	--	--	--	--	--	--
Mercury	40	80		1	mg/kg	0.1	--	--	--	--	--	--	--	--	--	--	--	--
Nickel	400	1200	200	60	mg/kg	5	--	--	--	--	--	--	--	--	--	--	--	--
Zinc	7400	30000	250	200	mg/kg	5	--	--	--	--	--	--	--	--	--	--	--	--

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 Concentration in **green** font and grey box exceed the adopted EIL/ESL 'C' for Residential and Open Space and Recreational Land Use
 Concentration in **blue** font and grey box exceed the adopted Environmental Guidelines: Use and Disposal of Biosolid Products (NSW EPA 2000) (P29 only).
 Concentrations in box exceed the screening value >2.5 times

Where one or more guideline value is exceeded, the highest guideline exceeded will be highlighted

	NEPM 2013 HIL A Residential	NEPM 2013 HIL C Open Space	NEPM 2013 EIL Residential / public Open Space	NSW EPA - Use and Disposal of Biosolids	Sample Type:	Soil	Soil	Soil	Soil	Soil	Soil	Soil	Soil	Soil	Soil	Soil				
					Site:	P31	P31	P32	P32	P32	P32	P32	P32	P32	P32	P32	P32	P32	P32	
					Lab Sample number:	S20-Ap09846	S20-Ap09847	S20-Ap09647	S20-Ap09647	S20-Ap09648	S20-Ap09648	S20-Ap09649	S20-Ap09649	S20-Ap09650	S20-Ap09650	S20-Ap09651	S20-Ap09651	S20-Ap09651	S20-Ap09651	S20-Ap09651
					Sample date:	02-04-20	02-04-20	02-04-20	02-05-20	02-04-20	02-05-20	02-04-20	02-05-20	02-04-20	02-05-20	02-04-20	02-05-20	02-04-20	02-05-20	
					Sample ID:	P31_HA05_0.0	P31_HA05_0.2	P32_HA01_0.0	P32_HA01_0.0	P32_HA01_0.2	P32_HA01_0.2	P32_HA02_0.0	P32_HA02_0.0	P32_HA02_0.2	P32_HA02_0.2	P32_HA03_0.0	P32_HA03_0.0	P32_HA03_0.0		
					Project Name:	Community DSI	Community DSI	Community DSI	Community DSI	Community DSI	Community DSI	Community DSI	Community DSI	Community DSI	Community DSI	Community DSI	Community DSI	Community DSI		
Sampling Method:	Hand Auger	Hand Auger	Hand Auger	Hand Auger	Hand Auger	Hand Auger	Hand Auger	Hand Auger	Hand Auger	Hand Auger	Hand Auger	Hand Auger	Hand Auger							

Analyte grouping/Analyte	Units	LOR
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LTM-GEN-7080 Moisture																		
Moisture Content (dried @ 103°C)					%	--	44	20	9.2	9.2	6.9	6.9	49	49	15	15	25	25

LTM-MET-3040 Metals in Waters, Soils & Sediments by ICP-MS																		
Aluminium					mg/kg	10	--	--	--	--	--	--	--	--	--	--	--	--
Arsenic	100	300	100	20	mg/kg	2	--	--	--	--	--	--	--	--	--	--	--	--
Barium					mg/kg	10	--	--	--	--	--	--	--	--	--	--	--	--
Beryllium	60	90			mg/kg	2	--	--	--	--	--	--	--	--	--	--	--	--
Cadmium	20	90		3	mg/kg	0.4	--	--	--	--	--	--	--	--	--	--	--	--
Chromium	100	300	430	100	mg/kg	5	--	--	--	--	--	--	--	--	--	--	--	--
Cobalt	100	300			mg/kg	5	--	--	--	--	--	--	--	--	--	--	--	--
Copper	6000	17000	110	100	mg/kg	5	--	--	--	--	--	--	--	--	--	--	--	--
Iron					mg/kg	20	--	--	--	--	--	--	--	--	--	--	--	--
Lead	300	600	1100	150	mg/kg	5	23	37	42	42	13	13	69	69	53	53	99	99
Manganese	3800	19000			mg/kg	5	--	--	--	--	--	--	--	--	--	--	--	--
Mercury	40	80		1	mg/kg	0.1	--	--	--	--	--	--	--	--	--	--	--	--
Nickel	400	1200	200	60	mg/kg	5	--	--	--	--	--	--	--	--	--	--	--	--
Zinc	7400	30000	250	200	mg/kg	5	--	--	--	--	--	--	--	--	--	--	--	--

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 Zinc EIL, based on CEC of 12cmol/kg and pH of 5.22
 Concentration in **red** font and grey box exceed the adopted HIL/HSL 'A' for Low Density Residential
 Concentration in **orange** font and grey box exceed the adopted HIL/HSL 'C' for Open Space and Recreational Land Use (applicable for P3, P3, P6, P8, P9 and P11)
 Concentration in **green** font and grey box exceed the adopted EIL/ESL 'C' for Residential and Open Space and Recreational Land Use
 Concentration in **blue** font and grey box exceed the adopted Environmental Guidelines: Use and Disposal of Biosolid Products (NSW EPA 2000) (P29 only).
 Concentrations in box exceed the screening value >2.5 times
 Where one or more guideline value is exceeded, the highest guideline exceeded will be highlighted

	NEPM 2013 HIL A Residential	NEPM 2013 HIL C Open Space	NEPM 2013 EIL Residential / public Open Space	NSW EPA - Use and Disposal of Biosolids	Sample Type:	Soil	Soil	Soil	Soil	Soil	Soil	Soil	Soil	Soil	Soil	Soil					
					Site:	P32	P32	P32	P32	P32	P32	P32	P32	P32	P32	P32	P32	P32	P32	P32	
					Lab Sample number:	S20-Ap09652	S20-Ap09652	S20-Ap09653	S20-Ap09653	S20-Ap09654	S20-Ap09654	S20-Ap09654	S20-Ap09655	S20-Ap09655	S20-Ap09656	S20-Ap09656	S20-My00633	S20-My00634			
					Sample date:	02-04-20	02-05-20	02-04-20	02-05-20	02-04-20	02-05-20	02-04-20	02-05-20	02-04-20	02-05-20	02-04-20	02-05-20	24-04-20	24-04-20		
					Sample ID:	P32_HA03_0.2	P32_HA03_0.2	P32_HA04_0.0	P32_HA04_0.0	P32_HA04_0.2	P32_HA04_0.2	P32_HA04_0.2	P32_HA05_0.0	P32_HA05_0.0	P32_HA05_0.2	P32_HA05_0.2	P33_HA01_0.0	P33_HA01_0.2			
					Project Name:	Community DSI	Community DSI	Community DSI	Community DSI	Community DSI	Community DSI	Community DSI	Community DSI	Community DSI	Community DSI	Community DSI	Community DSI	Community DSI	Community DSI	Community DSI	Community DSI
Sampling Method:	Hand Auger	Hand Auger	Hand Auger	Hand Auger	Hand Auger	Hand Auger	Hand Auger	Hand Auger	Hand Auger	Hand Auger	Hand Auger	Hand Auger	Hand Auger	Hand Auger	Hand Auger	Hand Auger					

Analyte grouping/Analyte	Units	LOR															
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LTM-GEN-7080 Moisture																		
Moisture Content (dried @ 103°C)					%	--	12	12	22	22	15	15	20	20	3.4	3.4	9.8	9.4

LTM-MET-3040 Metals in Waters, Soils & Sediments by ICP-MS																		
Aluminium					mg/kg	10	--	--	--	--	--	--	--	--	--	--	--	--
Arsenic	100	300	100	20	mg/kg	2	--	--	--	--	--	--	--	--	--	--	--	--
Barium					mg/kg	10	--	--	--	--	--	--	--	--	--	--	--	--
Beryllium	60	90			mg/kg	2	--	--	--	--	--	--	--	--	--	--	--	--
Cadmium	20	90		3	mg/kg	0.4	--	--	--	--	--	--	--	--	--	--	--	--
Chromium	100	300	430	100	mg/kg	5	--	--	--	--	--	--	--	--	--	--	--	--
Cobalt	100	300			mg/kg	5	--	--	--	--	--	--	--	--	--	--	--	--
Copper	6000	17000	110	100	mg/kg	5	--	--	--	--	--	--	--	--	--	--	--	--
Iron					mg/kg	20	--	--	--	--	--	--	--	--	--	--	--	--
Lead	300	600	1100	150	mg/kg	5	70	70	72	72	36	36	98	98	25	25	12	14
Manganese	3800	19000			mg/kg	5	--	--	--	--	--	--	--	--	--	--	--	--
Mercury	40	80		1	mg/kg	0.1	--	--	--	--	--	--	--	--	--	--	--	--
Nickel	400	1200	200	60	mg/kg	5	--	--	--	--	--	--	--	--	--	--	--	--
Zinc	7400	30000	250	200	mg/kg	5	--	--	--	--	--	--	--	--	--	--	--	--

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 Concentration in **red** font and grey box exceed the adopted HIL/HSL 'A' for Low Density Residential
 Concentration in **orange** font and grey box exceed the adopted HIL/HSL 'C' for Open Space and Recreational Land Use (applicable for P2, P3, P6, P8, P9 and P11)
 Concentration in **green** font and grey box exceed the adopted EIL/ESL 'C' for Residential and Open Space and Recreational Land Use
 Concentration in **blue** font and grey box exceed the adopted Environmental Guidelines: Use and Disposal of Biosolid Products (NSW EPA 2000) (P29 only).
 Concentrations in box exceed the screening value >2.5 times
 Where one or more guideline value is exceeded, the highest guideline exceeded will be highlighted

NEPM 2013 HIL A Residential	NEPM 2013 HIL C Open Space	NEPM 2013 EIL Residential / public Open Space	NSW EPA - Use and Disposal of Biosolids	Sample Type:	Soil	Soil	Soil	Soil	Soil	Soil	Soil	Soil	Soil	Soil	Soil	Soil
				Site:	P33	P33	P33	P33	P33	P33	P33	P33	P34	P34	P34	P34
				Lab Sample number:	S20-My00635	S20-My00636	S20-My00637	S20-My00638	S20-My00639	S20-My00640	S20-My00641	S20-My00642	S20-My01480	S20-My01479	S20-My01482	S20-My01481
				Sample date:	24-04-20	24-04-20	24-04-20	24-04-20	24-04-20	24-04-20	24-04-20	24-04-20	24-04-20	28-04-20	28-04-20	28-04-20
				Sample ID:	P33_HA02_0.0	P33_HA02_0.2	P33_HA03_0.0	P33_HA03_0.2	P33_HA04_0.0	P33_HA04_0.2	P33_HA05_0.0	P33_HA05_0.2	P34_HA01_0.2	P34_HA01_0-0.05	P34_HA02_0.2	P34_HA02_0-0.05
				Project Name:	Community DSI	Community DSI	Community DSI	Community DSI	Community DSI	Community DSI	Community DSI	Community DSI	Community DSI	Community DSI	Community DSI	Community DSI
Sampling Method:	Hand Auger	Hand Auger	Hand Auger	Hand Auger	Hand Auger	Hand Auger	Hand Auger	Hand Auger	Hand Auger	Hand Auger	Hand Auger	Hand Auger				

Analyte grouping/Analyte	Units	LOR															
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LTM-GEN-7080 Moisture																		
Moisture Content (dried @ 103°C)					%	--	5	4.7	3.6	3.6	5.3	3	5.8	5.2	11	8.9	8.2	12

LTM-MET-3040 Metals in Waters, Soils & Sediments by ICP-MS																		
Aluminium					mg/kg	10	--	--	--	--	--	--	--	--	--	--	--	--
Arsenic	100	300	100	20	mg/kg	2	--	--	--	--	--	--	--	--	--	--	--	--
Barium					mg/kg	10	--	--	--	--	--	--	--	--	--	--	--	--
Beryllium	60	90			mg/kg	2	--	--	--	--	--	--	--	--	--	--	--	--
Cadmium	20	90		3	mg/kg	0.4	--	--	--	--	--	--	--	--	--	--	--	--
Chromium	100	300	430	100	mg/kg	5	--	--	--	--	--	--	--	--	--	--	--	--
Cobalt	100	300			mg/kg	5	--	--	--	--	--	--	--	--	--	--	--	--
Copper	6000	17000	110	100	mg/kg	5	--	--	--	--	--	--	--	--	--	--	--	--
Iron					mg/kg	20	--	--	--	--	--	--	--	--	--	--	--	--
Lead	300	600	1100	150	mg/kg	5	9.8	5.4	21	19	42	24	13	9.5	90	93	8.3	120
Manganese	3800	19000			mg/kg	5	--	--	--	--	--	--	--	--	--	--	--	--
Mercury	40	80		1	mg/kg	0.1	--	--	--	--	--	--	--	--	--	--	--	--
Nickel	400	1200	200	60	mg/kg	5	--	--	--	--	--	--	--	--	--	--	--	--
Zinc	7400	30000	250	200	mg/kg	5	--	--	--	--	--	--	--	--	--	--	--	--

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Table 1:
 Tarago Area DSI - Discrete Properties Soil Results



NEPM 2013 HIL A Residential	NEPM 2013 HIL C Open Space	NEPM 2013 EIL Residential / public Open Space	NSW EPA - Use and Disposal of Biosolids	Sample Type:	Soil	Soil	Soil	Soil	Soil	Soil	Soil	Soil	Soil	Soil	Soil	Soil				
				Site:	P34	P34	P34	P34	P34	P34	P35	P35	P35	P35	P35	P35	P35	P35		
				Lab Sample number:	S20-My01484	S20-My01483	S20-My01486	S20-My01485	S20-My01494	S20-My01487	S20-My01761	S20-My01760	S20-My01763	S20-My01762	S20-My01745	S20-My01744				
				Sample date:	28-04-20	28-04-20	28-04-20	28-04-20	28-04-20	28-04-20	28-04-20	28-04-20	28-04-20	28-04-20	28-04-20	28-04-20				
				Sample ID:	P34_HA03_0.2	P34_HA03_0-0.05	P34_HA04_0.2	P34_HA04_0-0.05	P34_HA05_0.2	P34_HA05_0-0.05	P35_HA01_0.2	P35_HA01_0_0.05	P35_HA02_0.2	P35_HA02_0_0.05	P35_HA03_0.2	P35_HA03_0_0.05				
				Project Name:	Community DSI	Community DSI	Community DSI	Community DSI	Community DSI	Community DSI	Community DSI	Community DSI	Community DSI	Community DSI	Community DSI	Community DSI	Community DSI			
Sampling Method:	Hand Auger	Hand Auger	Hand Auger	Hand Auger	Hand Auger	Hand Auger	Hand Auger	Hand Auger	Hand Auger	Hand Auger	Hand Auger	Hand Auger	Hand Auger							

Analyte grouping/Analyte	Units	LOR															
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LTM-GEN-7080 Moisture																	
Moisture Content (dried @ 103°C)					%	--	13	15	16	5.4	5.6	6.1	21	15	16	10	6.4

LTM-MET-3040 Metals in Waters, Soils & Sediments by ICP-MS																	
Aluminium					mg/kg	10	--	--	--	--	--	--	--	--	--	--	--
Arsenic	100	300	100	20	mg/kg	2	--	--	--	--	--	--	--	--	--	--	--
Barium					mg/kg	10	--	--	--	--	--	--	--	--	--	--	--
Beryllium	60	90			mg/kg	2	--	--	--	--	--	--	--	--	--	--	--
Cadmium	20	90		3	mg/kg	0.4	--	--	--	--	--	--	--	--	--	--	--
Chromium	100	300	430	100	mg/kg	5	--	--	--	--	--	--	--	--	--	--	--
Cobalt	100	300			mg/kg	5	--	--	--	--	--	--	--	--	--	--	--
Copper	6000	17000	110	100	mg/kg	5	--	--	--	--	--	--	--	--	--	--	--
Iron					mg/kg	20	--	--	--	--	--	--	--	--	--	--	--
Lead	300	600	1100	150	mg/kg	5	18	270	55	800	16	420	37	24	25	34	7.7
Manganese	3800	19000			mg/kg	5	--	--	--	--	--	--	--	--	--	--	--
Mercury	40	80		1	mg/kg	0.1	--	--	--	--	--	--	--	--	--	--	--
Nickel	400	1200	200	60	mg/kg	5	--	--	--	--	--	--	--	--	--	--	--
Zinc	7400	30000	250	200	mg/kg	5	--	--	--	--	--	--	--	--	--	--	--

National Environment Protection Council (2013) National Environmental Protection (Assessment of Site Contamination) Amendment Measure 2013 (No. 1)
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 Health Investigation Levels for chromium based on chromium (VI)
 Chromium (III) EIL, based on a low clay content (% clay) of 12%
 Nickel EIL, based on CEC of 12.8cmol/kg
 Copper EIL, based on CEC of 12cmol/kg, pH of 5.22, organic carbon content of 1.78%
 Zinc EIL, based on CEC of 12cmol/kg and pH of 5.22
 Concentration in **red** font and grey box exceed the adopted HIL/HSL 'A' for Low Density Residential
 Concentration in **orange** font and grey box exceed the adopted HIL/HSL 'C' for Open Space and Recreational Land Use (applicable for P3, P4, P5, P6, P7 and P11)
 Concentration in **green** font and grey box exceed the adopted EIL/ESL 'C' for Residential and Open Space and Recreational Land Use
 Concentration in **blue** font and grey box exceed the adopted Environmental Guidelines: Use and Disposal of Biosolid Products (NSW EPA 2000) (P29 only).
 Concentrations in box exceed the screening value >2.5 times
 Where one or more guideline value is exceeded, the highest guideline exceeded will be highlighted

Table 1:
 Tarago Area DSI - Discrete Properties Soil Results

NEPM 2013 HIL A Residential	NEPM 2013 HIL C Open Space	NEPM 2013 EIL Residential / public Open Space	NSW EPA - Use and Disposal of Biosolids	Sample Type:	Soil	Soil	Soil	Soil	Soil	Soil	Soil	Soil	Soil	Soil	Soil	Soil				
				Site:	P35	P35	P35	P35	P36	P36	P36	P36	P36	P36	P36	P36	P36	P36		
				Lab Sample number:	S20-My01747	S20-My01746	S20-My01749	S20-My01748	S20-My00604	S20-My00605	S20-My00606	S20-My00607	S20-My00608	S20-My00609	S20-My00610	S20-My00611				
				Sample date:	28-04-20	28-04-20	28-04-20	28-04-20	28-04-20	28-04-20	28-04-20	28-04-20	28-04-20	28-04-20	28-04-20	28-04-20				
				Sample ID:	P35_HA04_0.2	P35_HA04_0_0.05	P35_HA05_0.2	P35_HA05_0_0.05	P36_HA01_0.0-0.05	P36_HA01_0.2	P36_HA02_0.0-0.05	P36_HA02_0.2	P36_HA03_0.0-0.05	P36_HA03_0.2	P36_HA04_0.0-0.05	P36_HA04_0.2				
				Project Name:	Community DSI	Community DSI	Community DSI	Community DSI	Community DSI	Community DSI	Community DSI	Community DSI	Community DSI	Community DSI	Community DSI	Community DSI				
Sampling Method:	Hand Auger	Hand Auger	Hand Auger	Hand Auger	Hand Auger	Hand Auger	Hand Auger	Hand Auger	Hand Auger	Hand Auger	Hand Auger	Hand Auger								

Analyte grouping/Analyte	Units	LOR															
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LTM-GEN-7080 Moisture																		
Moisture Content (dried @ 103°C)					%	--	9.3	11	9.9	6.4	11	8.9	10	9.9	9.7	8.8	18	16

LTM-MET-3040 Metals in Waters, Soils & Sediments by ICP-MS																		
Aluminium					mg/kg	10	--	--	--	--	--	--	--	--	--	--	--	--
Arsenic	100	300	100	20	mg/kg	2	--	--	--	--	--	--	--	--	--	--	--	--
Barium					mg/kg	10	--	--	--	--	--	--	--	--	--	--	--	--
Beryllium	60	90			mg/kg	2	--	--	--	--	--	--	--	--	--	--	--	--
Cadmium	20	90		3	mg/kg	0.4	--	--	--	--	--	--	--	--	--	--	--	--
Chromium	100	300	430	100	mg/kg	5	--	--	--	--	--	--	--	--	--	--	--	--
Cobalt	100	300			mg/kg	5	--	--	--	--	--	--	--	--	--	--	--	--
Copper	6000	17000	110	100	mg/kg	5	--	--	--	--	--	--	--	--	--	--	--	--
Iron					mg/kg	20	--	--	--	--	--	--	--	--	--	--	--	--
Lead	300	600	1100	150	mg/kg	5	15	25	12	37	160	20	180	22	45	12	44	14
Manganese	3800	19000			mg/kg	5	--	--	--	--	--	--	--	--	--	--	--	--
Mercury	40	80		1	mg/kg	0.1	--	--	--	--	--	--	--	--	--	--	--	--
Nickel	400	1200	200	60	mg/kg	5	--	--	--	--	--	--	--	--	--	--	--	--
Zinc	7400	30000	250	200	mg/kg	5	--	--	--	--	--	--	--	--	--	--	--	--

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 Zinc EIL, based on CEC of 12cmol/kg and pH of 5.22
 Concentration in **red** font and grey box exceed the adopted HIL/HSL 'A' for Low Density Residential
 Concentration in **orange** font and grey box exceed the adopted HIL/HSL 'C' for Open Space and Recreational Land Use (applicable for P2, P3, P6, P8, P9 and P11)
 Concentration in **green** font and grey box exceed the adopted EIL/ESL 'C' for Residential and Open Space and Recreational Land Use
 Concentration in **blue** font and grey box exceed the adopted Environmental Guidelines: Use and Disposal of Biosolid Products (NSW EPA 2000) (P29 only).
 Concentrations in box exceed the screening value >2.5 times
 Where one or more guideline value is exceeded, the highest guideline exceeded will be highlighted

Table 1:
 Tarago Area DSI - Discrete Properties Soil Results



NEPM 2013 HIL A Residential	NEPM 2013 HIL C Open Space	NEPM 2013 EIL Residential / public Open Space	NSW EPA - Use and Disposal of Biosolids	Sample Type:	Soil	Soil	Soil	Soil	Soil	Soil	Soil	Soil	Soil	Soil	Soil	Soil				
				Site:	P36	P36	P37	P37	P37	P37	P37	P37	P37	P37	P37	P37	P37	P37		
				Lab Sample number:	S20-My00612	S20-My00613	S20-My01795	S20-My01794	S20-My01797	S20-My01796	S20-My01799	S20-My01798	S20-My01801	S20-My01800	S20-My01817	S20-My01802	S20-My01802	S20-My01802	S20-My01802	S20-My01802
				Sample date:	28-04-20	28-04-20	29-04-20	29-04-20	29-04-20	29-04-20	29-04-20	29-04-20	29-04-20	29-04-20	29-04-20	29-04-20	29-04-20	29-04-20	29-04-20	29-04-20
				Sample ID:	P36_HA05_0.0-0.05	P36_HA05_0.2	P37_HA01_0.2	P37_HA01_0-0.05	P37_HA02_0.2	P37_HA02_0-0.05	P37_HA03_0.2	P37_HA03_0-0.05	P37_HA04_0.2	P37_HA04_0-0.05	P37_HA05_0.2	P37_HA05_0-0.05	P37_HA05_0.2	P37_HA05_0-0.05	P37_HA05_0.2	P37_HA05_0-0.05
				Project Name:	Community DSI	Community DSI	Community DSI	Community DSI	Community DSI	Community DSI	Community DSI	Community DSI	Community DSI	Community DSI	Community DSI	Community DSI	Community DSI	Community DSI	Community DSI	Community DSI
Sampling Method:	Hand Auger	Hand Auger	Hand Auger	Hand Auger	Hand Auger	Hand Auger	Hand Auger	Hand Auger	Hand Auger	Hand Auger	Hand Auger	Hand Auger	Hand Auger	Hand Auger	Hand Auger	Hand Auger				

Analyte grouping/Analyte	Units	LOR															
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LTM-GEN-7080 Moisture																		
Moisture Content (dried @ 103°C)					%	--	12	12	4.5	7.8	6.6	5.7	8.6	9.8	5.8	5.3	8.9	8.3

LTM-MET-3040 Metals in Waters, Soils & Sediments by ICP-MS																		
Aluminium					mg/kg	10	--	--	--	--	--	--	--	--	--	--	--	--
Arsenic	100	300	100	20	mg/kg	2	--	--	--	--	--	--	--	--	--	--	--	--
Barium					mg/kg	10	--	--	--	--	--	--	--	--	--	--	--	--
Beryllium	60	90			mg/kg	2	--	--	--	--	--	--	--	--	--	--	--	--
Cadmium	20	90		3	mg/kg	0.4	--	--	--	--	--	--	--	--	--	--	--	--
Chromium	100	300	430	100	mg/kg	5	--	--	--	--	--	--	--	--	--	--	--	--
Cobalt	100	300			mg/kg	5	--	--	--	--	--	--	--	--	--	--	--	--
Copper	6000	17000	110	100	mg/kg	5	--	--	--	--	--	--	--	--	--	--	--	--
Iron					mg/kg	20	--	--	--	--	--	--	--	--	--	--	--	--
Lead	300	600	1100	150	mg/kg	5	58	30	44	92	54	52	21	41	11	76	27	70
Manganese	3800	19000			mg/kg	5	--	--	--	--	--	--	--	--	--	--	--	--
Mercury	40	80		1	mg/kg	0.1	--	--	--	--	--	--	--	--	--	--	--	--
Nickel	400	1200	200	60	mg/kg	5	--	--	--	--	--	--	--	--	--	--	--	--
Zinc	7400	30000	250	200	mg/kg	5	--	--	--	--	--	--	--	--	--	--	--	--

National Environment Protection Council (2013) National Environmental Protection (Assessment of Site Contamination) Amendment Measure 2013 (No. 1))
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 Zinc EIL, based on CEC of 12cmol/kg and pH of 5.22
 Concentration in **red** font and grey box exceed the adopted HIL/HSL 'A' for Low Density Residential
 Concentration in **orange** font and grey box exceed the adopted HIL/HSL 'C' for Open Space and Recreational Land Use (applicable for P2, P3, P6, P8, P9 and P11)
 Concentration in **green** font and grey box exceed the adopted EIL/ESL 'C' for Residential and Open Space and Recreational Land Use
 Concentration in **blue** font and grey box exceed the adopted Environmental Guidelines: Use and Disposal of Biosolid Products (NSW EPA 2000) (P29 only).
 Concentrations in box exceed the screening value >2.5 times
 Where one or more guideline value is exceeded, the highest guideline exceeded will be highlighted

Table 1:
 Tarago Area DSI - Discrete Properties Soil Results

NEPM 2013 HIL A Residential	NEPM 2013 HIL C Open Space	NEPM 2013 EIL Residential / public Open Space	NSW EPA - Use and Disposal of Biosolids	Sample Type:	Soil	Soil	Soil	Soil	Soil	Soil	Soil	Soil	Soil	Soil	Soil	Soil					
				Site:	P38	P38	P38	P38	P38	P38	P38	P38	P38	P38	P38	P38	P38	P38	P38		
				Lab Sample number:	S20-My01776	S20-My01775	S20-My01778	S20-My01777	S20-My01780	S20-My01779	S20-My01782	S20-My01781	S20-My01784	S20-My01783	S20-My00960	S20-In26499					
				Sample date:	29-04-20	29-04-20	29-04-20	29-04-20	29-04-20	29-04-20	29-04-20	29-04-20	29-04-20	29-04-20	29-04-20	29-04-20	30-04-20				
				Sample ID:	P38_HA01_0.2	P38_HA01_0-0.05	P38_HA02_0.2	P38_HA02_0-0.05	P38_HA03_0.2	P38_HA03_0-0.05	P38_HA04_0.2	P38_HA04_0-0.05	P38_HA05_0.2	P38_HA05_0-0.05	P39_HA01_0.0-0.05	P39_HA01_0.0-0.05					
				Project Name:	Community DSI	Community DSI	Community DSI	Community DSI	Community DSI	Community DSI	Community DSI	Community DSI	Community DSI	Community DSI	Community DSI	Community DSI	Community DSI				
Sampling Method:	Hand Auger	Hand Auger	Hand Auger	Hand Auger	Hand Auger	Hand Auger	Hand Auger	Hand Auger	Hand Auger	Hand Auger	Hand Auger	Hand Auger	Hand Auger								

Analyte grouping/Analyte	Units	LOR
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LTM-GEN-7080 Moisture																	
Moisture Content (dried @ 103°C)					%	--	6.1	11	5.4	7.6	6.5	8	3.3	7.7	4.9	7.6	32

LTM-MET-3040 Metals in Waters, Soils & Sediments by ICP-MS																	
Aluminium					mg/kg	10	--	--	--	--	--	--	--	--	--	--	3200
Arsenic	100	300	100	20	mg/kg	2	--	--	--	--	--	--	--	--	--	--	3.3
Barium					mg/kg	10	--	--	--	--	--	--	--	--	--	--	54
Beryllium	60	90			mg/kg	2	--	--	--	--	--	--	--	--	--	--	< 2
Cadmium	20	90		3	mg/kg	0.4	--	--	--	--	--	--	--	--	--	--	3.2
Chromium	100	300	430	100	mg/kg	5	--	--	--	--	--	--	--	--	--	--	< 5
Cobalt	100	300			mg/kg	5	--	--	--	--	--	--	--	--	--	--	< 5
Copper	6000	17000	110	100	mg/kg	5	--	--	--	--	--	--	--	--	--	--	83
Iron					mg/kg	20	--	--	--	--	--	--	--	--	--	--	4700
Lead	300	600	1100	150	mg/kg	5	14	21	9.8	15	13	16	7	16	17	38	310
Manganese	3800	19000			mg/kg	5	--	--	--	--	--	--	--	--	--	--	290
Mercury	40	80		1	mg/kg	0.1	--	--	--	--	--	--	--	--	--	--	< 0.1
Nickel	400	1200	200	60	mg/kg	5	--	--	--	--	--	--	--	--	--	--	< 5
Zinc	7400	30000	250	200	mg/kg	5	--	--	--	--	--	--	--	--	--	--	360

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 Concentration in red font and grey box exceed the adopted HIL/HSL 'A' for Low Density Residential
 Concentration in orange font and grey box exceed the adopted HIL/HSL 'C' for Open Space and Recreational Land Use (applicable for P2, P3, P6, P8, P9 and P11)
 Concentration in green font and grey box exceed the adopted EIL/ESL 'C' for Residential and Open Space and Recreational Land Use
 Concentration in blue font and grey box exceed the adopted Environmental Guidelines: Use and Disposal of Biosolid Products (NSW EPA 2000) (P29 only).
 Concentrations in box exceed the screening value >2.5 times
 Where one or more guideline value is exceeded, the highest guideline exceeded will be highlighted

	NEPM 2013 HIL A Residential	NEPM 2013 HIL C Open Space	NEPM 2013 EIL Residential / public Open Space	NSW EPA - Use and Disposal of Biosolids	Sample Type:	Soil	Soil	Soil	Soil	Soil	Soil	Soil	Soil	Soil	Soil	Soil	
					Site:	P39	P39	P39	P39	P39	P39	P39	P39	P39	P39	P39	P39
					Lab Sample number:	S20-My00961	S20-My00962	S20-Jn26500	S20-My00963	S20-My00964	S20-My00965	S20-My00966	S20-My00967	S20-My00968	S20-My00969	S20-My00970	S20-My00971
					Sample date:			30-04-20									
					Sample ID:	P39_HA01_0.2	P39_HA02_0.0-0.05	P39_HA02_0.0-0.05	P39_HA03_0.0-0.05	P39_HA03_0.2	P39_HA04_0.0-0.05	P39_HA05_0.0-0.05	P39_HA05_0.2	P39_HA06_0.0-0.05	P39_HA07_0.0-0.05	P39_HA07_0.2	P39_HA08_0.0-0.05
Project Name:	Community DSI	Community DSI	Community DSI	Community DSI	Community DSI	Community DSI	Community DSI	Community DSI	Community DSI	Community DSI	Community DSI	Community DSI					
Sampling Method:	Hand Auger	Hand Auger	Hand Auger	Hand Auger	Hand Auger	Hand Auger	Hand Auger	Hand Auger	Hand Auger	Hand Auger	Hand Auger	Hand Auger					

Analyte grouping/Analyte	Units	LOR															
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LTM-GEN-7080 Moisture																	
Moisture Content (dried @ 103°C)					%	--	14	32	30	13	25	27	12	32	17	9.1	29

LTM-MET-3040 Metals in Waters, Soils & Sediments by ICP-MS																	
Aluminium					mg/kg	10	--	--	5200	--	--	--	--	--	--	--	--
Arsenic	100	300	100	20	mg/kg	2	--	--	5.1	--	--	--	--	--	--	--	--
Barium					mg/kg	10	--	--	56	--	--	--	--	--	--	--	--
Beryllium	60	90			mg/kg	2	--	--	< 2	--	--	--	--	--	--	--	--
Cadmium	20	90		3	mg/kg	0.4	--	--	2.1	--	--	--	--	--	--	--	--
Chromium	100	300	430	100	mg/kg	5	--	--	7.7	--	--	--	--	--	--	--	--
Cobalt	100	300			mg/kg	5	--	--	< 5	--	--	--	--	--	--	--	--
Copper	6000	17000	110	100	mg/kg	5	--	--	95	--	--	--	--	--	--	--	--
Iron					mg/kg	20	--	--	6600	--	--	--	--	--	--	--	--
Lead	300	600	1100	150	mg/kg	5	36	390	250	130	53	50	93	39	28	78	26
Manganese	3800	19000			mg/kg	5	--	--	90	--	--	--	--	--	--	--	--
Mercury	40	80		1	mg/kg	0.1	--	--	0.2	--	--	--	--	--	--	--	--
Nickel	400	1200	200	60	mg/kg	5	--	--	< 5	--	--	--	--	--	--	--	--
Zinc	7400	30000	250	200	mg/kg	5	--	--	340	--	--	--	--	--	--	--	--

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 Concentration in **orange** font and grey box exceed the adopted HIL/HSL 'C' for Open Space and Recreational Land Use (applicable for P2, P3, P6, P8, P9 and P11)
 Concentration in **green** font and grey box exceed the adopted EIL/ESL 'C' for Residential and Open Space and Recreational Land Use
 Concentration in **blue** font and grey box exceed the adopted Environmental Guidelines: Use and Disposal of Biosolid Products (NSW EPA 2000) (P29 only).
 Concentrations in box exceed the screening value >2.5 times
 Where one or more guideline value is exceeded, the highest guideline exceeded will be highlighted

NEPM 2013 HIL A Residential	NEPM 2013 HIL C Open Space	NEPM 2013 EIL Residential / public Open Space	NSW EPA - Use and Disposal of Biosolids	Sample Type:	Soil	Soil	Soil	Soil	Soil	Soil	Soil	Soil	Soil	Soil	Soil	Soil				
				Site:	P39	P39	P39	P40	P40	P40	P40	P40	P40	P40	P40	P40	P40	P40		
				Lab Sample number:	S20-My00972	S20-My00973	S20-My00974	S20-My00560	S20-My00561	S20-My00562	S20-My00563	S20-My00564	S20-My00565	S20-My00566	S20-My00567	S20-My00568				
				Sample date:				30-04-20	30-04-20	30-04-20	30-04-20	30-04-20	30-04-20	30-04-20	30-04-20	30-04-20				
				Sample ID:	P39_HA09_0.0-0.05	P39_HA09_0.2	P39_HA10_0.0-0.05	P40_HA01_0.0-0.05	P40_HA01_0.2	P40_HA02_0.0-0.05	P40_HA03_0.0-0.05	P40_HA03_0.2	P40_HA04_0.0-0.05	P40_HA05_0.0-0.05	P40_HA05_0.2	P40_HA06_0.0-0.05				
				Project Name:	Community DSI	Community DSI	Community DSI	Community DSI	Community DSI	Community DSI	Community DSI	Community DSI	Community DSI	Community DSI	Community DSI	Community DSI	Community DSI	Community DSI	Community DSI	Community DSI
Sampling Method:	Hand Auger	Hand Auger	Hand Auger	Hand Auger	Hand Auger	Hand Auger	Hand Auger	Hand Auger	Hand Auger	Hand Auger	Hand Auger	Hand Auger	Hand Auger	Hand Auger	Hand Auger	Hand Auger				

Analyte grouping/Analyte	Units	LOR															
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LTM-GEN-7080 Moisture																		
Moisture Content (dried @ 103°C)					%	--	17	5.6	26	16	13	20	24	9.9	19	30	14	7.9

LTM-MET-3040 Metals in Waters, Soils & Sediments by ICP-MS																		
Aluminium					mg/kg	10	--	--	--	--	--	--	--	--	--	--	--	--
Arsenic	100	300	100	20	mg/kg	2	--	--	--	--	--	--	--	--	--	--	--	--
Barium					mg/kg	10	--	--	--	--	--	--	--	--	--	--	--	--
Beryllium	60	90			mg/kg	2	--	--	--	--	--	--	--	--	--	--	--	--
Cadmium	20	90		3	mg/kg	0.4	--	--	--	--	--	--	--	--	--	--	--	--
Chromium	100	300	430	100	mg/kg	5	--	--	--	--	--	--	--	--	--	--	--	--
Cobalt	100	300			mg/kg	5	--	--	--	--	--	--	--	--	--	--	--	--
Copper	6000	17000	110	100	mg/kg	5	--	--	--	--	--	--	--	--	--	--	--	--
Iron					mg/kg	20	--	--	--	--	--	--	--	--	--	--	--	--
Lead	300	600	1100	150	mg/kg	5	79	46	110	260	28	67	220	200	83	650	66	190
Manganese	3800	19000			mg/kg	5	--	--	--	--	--	--	--	--	--	--	--	--
Mercury	40	80		1	mg/kg	0.1	--	--	--	--	--	--	--	--	--	--	--	--
Nickel	400	1200	200	60	mg/kg	5	--	--	--	--	--	--	--	--	--	--	--	--
Zinc	7400	30000	250	200	mg/kg	5	--	--	--	--	--	--	--	--	--	--	--	--

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 Zinc EIL, based on CEC of 12cmol/kg and pH of 5.22
 Concentration in **red** font and grey box exceed the adopted HIL/HSL 'A' for Low Density Residential
 Concentration in **orange** font and grey box exceed the adopted HIL/HSL 'C' for Open Space and Recreational Land Use (applicable for P2, P3, P6, P8, P9 and P11)
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	NEPM 2013 HIL A Residential	NEPM 2013 HIL C Open Space	NEPM 2013 EIL Residential / public Open Space	NSW EPA - Use and Disposal of Biosolids	Sample Type:	Soil	Soil	Soil	Soil	Soil	Soil	Soil	Soil	Soil	Soil	Soil	Soil					
					Site:	P40	P40	P40	P40	P40	P40	P41	P41	P41	P41	P41	P41	P41	P41	P41		
					Lab Sample number:	S20-My00569	S20-My00570	S20-My00571	S20-My00572	S20-My00573	S20-My00574	S20-My28582	S20-My28584	S20-My28583	S20-My28586	S20-My28585	S20-My28588					
					Sample date:	30-04-20	30-04-20	30-04-20	30-04-20	30-04-20	30-04-20											
					Sample ID:	P40_HA07_0.0-0.05	P40_HA07_0.2	P40_HA08_0.0-0.05	P40_HA09_0.0-0.05	P40_HA09_0.2	P40_HA10_0.0-0.05	P41_HA01_0-0.05	P41_HA02_0.2-0.3	P41_HA02_0-0.05	P41_HA03_0.15-0.2	P41_HA03_0-0.05	P41_HA04_0.2-0.3					
Project Name:	Community DSI	Community DSI	Community DSI	Community DSI	Community DSI	Community DSI	Community DSI	Community DSI	Community DSI	Community DSI	Community DSI	Community DSI	Community DSI	Community DSI	Community DSI	Community DSI	Community DSI	Community DSI				
Sampling Method:	Hand Auger	Hand Auger	Hand Auger	Hand Auger	Hand Auger	Hand Auger	Hand Auger	Hand Auger	Hand Auger	Hand Auger	Hand Auger	Hand Auger	Hand Auger	Hand Auger	Hand Auger	Hand Auger	Hand Auger	Hand Auger				

Analyte grouping/Analyte	Units	LOR																
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LTM-GEN-7080 Moisture																		
Moisture Content (dried @ 103°C)					%	--	30	10	22	26	19	32	7.3	12	10	3.9	5.3	11

LTM-MET-3040 Metals in Waters, Soils & Sediments by ICP-MS																		
Aluminium					mg/kg	10	--	--	--	--	--	--	--	--	--	--	--	--
Arsenic	100	300	100	20	mg/kg	2	--	--	--	--	--	--	--	--	--	--	--	--
Barium					mg/kg	10	--	--	--	--	--	--	--	--	--	--	--	--
Beryllium	60	90			mg/kg	2	--	--	--	--	--	--	--	--	--	--	--	--
Cadmium	20	90		3	mg/kg	0.4	--	--	--	--	--	--	--	--	--	--	--	--
Chromium	100	300	430	100	mg/kg	5	--	--	--	--	--	--	--	--	--	--	--	--
Cobalt	100	300			mg/kg	5	--	--	--	--	--	--	--	--	--	--	--	--
Copper	6000	17000	110	100	mg/kg	5	--	--	--	--	--	--	--	--	--	--	--	--
Iron					mg/kg	20	--	--	--	--	--	--	--	--	--	--	--	--
Lead	300	600	1100	150	mg/kg	5	270	31	91	540	68	450	24	15	47	15	18	13
Manganese	3800	19000			mg/kg	5	--	--	--	--	--	--	--	--	--	--	--	--
Mercury	40	80		1	mg/kg	0.1	--	--	--	--	--	--	--	--	--	--	--	--
Nickel	400	1200	200	60	mg/kg	5	--	--	--	--	--	--	--	--	--	--	--	--
Zinc	7400	30000	250	200	mg/kg	5	--	--	--	--	--	--	--	--	--	--	--	--

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 Concentration in **red** font and grey box exceed the adopted HIL/HSL 'A' for Low Density Residential
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 Concentration in **blue** font and grey box exceed the adopted Environmental Guidelines: Use and Disposal of Biosolid Products (NSW EPA 2000) (P29 only).
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NEPM 2013 HIL A Residential	NEPM 2013 HIL C Open Space	NEPM 2013 EIL Residential / public Open Space	NSW EPA - Use and Disposal of Biosolids	Sample Type:	Soil	Soil	Soil	Soil	Soil	Soil	Soil	Soil	Soil	Soil	Soil	Soil			
				Site:	P41	P41	P41	SMC	SMC	SMC	SMC	SMC	SMC	SMC	SMC	SMC	SMC	SMC	
				Lab Sample number:	S20-My28587	S20-My28590	S20-My28589	M20-Ma44100	M20-Ma44101	M20-Ma44102	M20-Ma44103	M20-Ma44104	M20-Ma44105	M20-Ma44106	M20-Ma44107	M20-Ma44108			
				Sample date:				23-03-20	23-03-20	23-03-20	23-03-20	23-03-20	23-03-20	23-03-20	23-03-20	23-03-20			
				Sample ID:	P41_HA04_0-0.05	P41_HA05_0.2-0.3	P41_HA05_0-0.05	SMC_HA01_0.0	SMC_HA01_0.2	SMC_HA01_0.5	SMC_HA02_0.0-0.05	SMC_HA02_0.2	SMC_HA02_0.4	SMC_HA03_0.0-0.05	SMC_HA03_0.2	SMC_HA03_0.4			
				Project Name:	Community DSI	Community DSI	Community DSI	Community DSI	Community DSI	Community DSI	Community DSI	Community DSI	Community DSI	Community DSI	Community DSI	Community DSI			
Sampling Method:	Hand Auger	Hand Auger	Hand Auger	Hand Auger	Hand Auger	Hand Auger	Hand Auger	Hand Auger	Hand Auger	Hand Auger	Hand Auger	Hand Auger							

Analyte grouping/Analyte	Units	LOR
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LTM-GEN-7080 Moisture																		
Moisture Content (dried @ 103°C)					%	--	9.2	9.6	12	9.1	11	10	17	13	9.8	19	11	11

LTM-MET-3040 Metals in Waters, Soils & Sediments by ICP-MS																		
Aluminium					mg/kg	10	--	--	--	--	--	--	--	--	--	--	--	--
Arsenic	100	300	100	20	mg/kg	2	--	--	--	--	--	--	--	--	--	--	--	--
Barium					mg/kg	10	--	--	--	--	--	--	--	--	--	--	--	--
Beryllium	60	90			mg/kg	2	--	--	--	--	--	--	--	--	--	--	--	--
Cadmium	20	90		3	mg/kg	0.4	--	--	--	--	--	--	--	--	--	--	--	--
Chromium	100	300	430	100	mg/kg	5	--	--	--	--	--	--	--	--	--	--	--	--
Cobalt	100	300			mg/kg	5	--	--	--	--	--	--	--	--	--	--	--	--
Copper	6000	17000	110	100	mg/kg	5	--	--	--	--	--	--	--	--	--	--	--	--
Iron					mg/kg	20	--	--	--	--	--	--	--	--	--	--	--	--
Lead	300	600	1100	150	mg/kg	5	19	16	17	1100	19	12	610	440	34	1200	49	110
Manganese	3800	19000			mg/kg	5	--	--	--	--	--	--	--	--	--	--	--	--
Mercury	40	80		1	mg/kg	0.1	--	--	--	--	--	--	--	--	--	--	--	--
Nickel	400	1200	200	60	mg/kg	5	--	--	--	--	--	--	--	--	--	--	--	--
Zinc	7400	30000	250	200	mg/kg	5	--	--	--	--	--	--	--	--	--	--	--	--

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 Concentration in **red** font and grey box exceed the adopted HIL/HSL 'A' for Low Density Residential
 Concentration in **orange** font and grey box exceed the adopted HIL/HSL 'C' for Open Space and Recreational Land Use (applicable for P2, P3, P6, P8, P9 and P11)
 Concentration in **green** font and grey box exceed the adopted EIL/ESL 'C' for Residential and Open Space and Recreational Land Use
 Concentration in **blue** font and grey box exceed the adopted Environmental Guidelines: Use and Disposal of Biosolid Products (NSW EPA 2000) (P29 only).
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Table 1:
 Tarago Area DSI - Discrete Properties Soil Results



	NEPM 2013 HIL A Residential	NEPM 2013 HIL C Open Space	NEPM 2013 EIL Residential / public Open Space	NSW EPA - Use and Disposal of Biosolids	Sample Type:	Soil	Soil	Soil	Soil	Soil	Soil	Soil	Soil	Soil	Soil	Soil	Soil
					Site:	SMC	SMC	SMC	SMC	SMC	SMC	SMC	SMC	SMC	SMC	SMC	SMC
					Lab Sample number:	M20-Ma44109	M20-Ma44110	M20-Ma44111	M20-Ma44112	M20-Ma44113	M20-Ma44114	M20-Ma44115	M20-Ma44116	M20-Ma44117	M20-Ma44118	M20-Ma44119	M20-Ma44120
					Sample date:	23-03-20	23-03-20	23-03-20	23-03-20	23-03-20	23-03-20	23-03-20	23-03-20	23-03-20	23-03-20	23-03-20	23-03-20
					Sample ID:	SMC_HA04_0.0	SMC_HA04_0.2	SMC_HA04_0.4	SMC_HA05_0.0-0.0	SMC_HA05_0.25	SMC_HA05_0.4	SMC_HA06_0.0	SMC_HA06_0.2	SMC_HA06_0.4	SMC_HA07_0.0	SMC_HA07_0.2	SMC_HA07_0.4
					Project Name:	Community DSI	Community DSI	Community DSI	Community DSI	Community DSI	Community DSI	Community DSI	Community DSI	Community DSI	Community DSI	Community DSI	Community DSI
					Sampling Method:	Hand Auger	Hand Auger	Hand Auger	Hand Auger	Hand Auger	Hand Auger	Hand Auger	Hand Auger	Hand Auger	Hand Auger	Hand Auger	Hand Auger

Analyte grouping/Analyte	Units	LOR															
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LTM-GEN-7080 Moisture																		
Moisture Content (dried @ 103°C)					%	--	10	10	9.6	13	12	11	15	13	10	19	13	12

LTM-MET-3040 Metals in Waters, Soils & Sediments by ICP-MS																		
Aluminium					mg/kg	10	--	--	--	--	--	--	--	--	--	--	--	--
Arsenic	100	300	100	20	mg/kg	2	--	--	--	--	--	--	--	--	--	--	--	--
Barium					mg/kg	10	--	--	--	--	--	--	--	--	--	--	--	--
Beryllium	60	90			mg/kg	2	--	--	--	--	--	--	--	--	--	--	--	--
Cadmium	20	90		3	mg/kg	0.4	--	--	--	--	--	--	--	--	--	--	--	--
Chromium	100	300	430	100	mg/kg	5	--	--	--	--	--	--	--	--	--	--	--	--
Cobalt	100	300			mg/kg	5	--	--	--	--	--	--	--	--	--	--	--	--
Copper	6000	17000	110	100	mg/kg	5	--	--	--	--	--	--	--	--	--	--	--	--
Iron					mg/kg	20	--	--	--	--	--	--	--	--	--	--	--	--
Lead	300	600	1100	150	mg/kg	5	240	34	19	490	1100	240	760	520	20	3800	93	14
Manganese	3800	19000			mg/kg	5	--	--	--	--	--	--	--	--	--	--	--	--
Mercury	40	80		1	mg/kg	0.1	--	--	--	--	--	--	--	--	--	--	--	--
Nickel	400	1200	200	60	mg/kg	5	--	--	--	--	--	--	--	--	--	--	--	--
Zinc	7400	30000	250	200	mg/kg	5	--	--	--	--	--	--	--	--	--	--	--	--

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 Concentration in **red** font and grey box exceed the adopted HIL/HSL 'A' for Low Density Residential
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 Concentrations in box exceed the screening value >2.5 times
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	NEPM 2013 HIL A Residential	NEPM 2013 HIL C Open Space	NEPM 2013 EIL Residential / public Open Space	NSW EPA - Use and Disposal of Biosolids	Sample Type:	Soil	Soil	Soil	
					Site:	SMC	SMC	SMC	
					Lab Sample number:	S20-Ma43347	S20-Ma43348	S20-Ma43349	
					Sample date:	23-03-20	23-03-20	23-03-20	
					Sample ID:	SMC_HA08_0.0-0.0:	SMC_HA08_0.2	SMC_HA08_0.45	
					Project Name:	Community DSI	Community DSI	Community DSI	
					Sampling Method:	Hand Auger	Hand Auger	Hand Auger	
Analyte grouping/Analyte					Units	LOR			
LTM-GEN-7080 Moisture									
Moisture Content (dried @ 103°C)					%	--	4.1	4.8	5.1
LTM-MET-3040 Metals in Waters, Soils & Sediments by ICP-MS									
Aluminium					mg/kg	10	--	--	--
Arsenic	100	300	100	20	mg/kg	2	--	--	--
Barium					mg/kg	10	--	--	--
Beryllium	60	90			mg/kg	2	--	--	--
Cadmium	20	90		3	mg/kg	0.4	--	--	--
Chromium	100	300	430	100	mg/kg	5	--	--	--
Cobalt	100	300			mg/kg	5	--	--	--
Copper	6000	17000	110	100	mg/kg	5	--	--	--
Iron					mg/kg	20	--	--	--
Lead	300	600	1100	150	mg/kg	5	840	260	280
Manganese	3800	19000			mg/kg	5	--	--	--
Mercury	40	80		1	mg/kg	0.1	--	--	--
Nickel	400	1200	200	60	mg/kg	5	--	--	--
Zinc	7400	30000	250	200	mg/kg	5	--	--	--

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	NHMRC Australian Drinking Water Guidelines ^A	ANZECC Fresh Water Guidelines - Irrigation ^B	ANZECC Fresh Water Guidelines - Stock Water ^B	Sample Type:	GroundWater	GroundWater	GroundWater	GroundWater	GroundWater	GroundWater	GroundWater	GroundWater	GroundWater	GroundWater
Site:				P1	P2	P10	P12	P14	P23	P32	P39	SMC	SCHOOL BORE	
Lab Sample number:				M20-Ap03656	S20-My00680	S20-Ma44400	S20-Ma44158	S20-Ma44056	S20-Ap03099	S20-Ap09659	S20-My00979	M20-Ma44097	M20-Ma42252	
Sample date:				24-03-20	30-04-20	25-03-20	26-03-20	26-03-20	31-03-20	02-04-20		24-03-20	24-03-20	
Sample ID:				P1-GW1	P2_GWBORE	P10_BORE	P12_BORE	P14_BORE	P23_BORE	P32_BORE	P39_GWBORE	SMC_GW	SMC_GW	
Project Name:				Community DSI	Community DSI	Community DSI	Community DSI	Community DSI	Community DSI	Community DSI	Community DSI	Community DSI	Community DSI	
Sampling Method:				Tap	Tap	Tap	Tap	Tap	Peristaltic/syphon	Tap	Tap	Peristaltic/syphon	Tap	
Analyte grouping/Analyte				Units	LOR									
LTM-MET-3040 Metals in Waters, Soils & Sediments by ICP-MS														
Aluminium	--			mg/L	--	< 0.05	--	--	--	0.34	< 0.05	< 0.05	--	< 0.05
Aluminium (filtered)		20	5	mg/L	--	< 0.05	--	--	--	< 0.05	< 0.05	--	--	< 0.05
Arsenic (filtered)	2	2	0.5	mg/L	0.001	< 0.001	< 0.001	< 0.001	< 0.001	0.005	< 0.001	--	< 0.001	< 0.001
Barium (filtered)		--	--	mg/L	--	0.12	--	--	--	0.08	0.07	--	--	0.09
Beryllium (filtered)	4	0.5	--	mg/L	0.001	< 0.001	< 0.001	< 0.001	< 0.001	< 0.001	< 0.001	--	< 0.001	< 0.001
Boron (filtered)		--	--	mg/L	0.05	< 0.05	--	< 0.05	< 0.05	--	--	--	< 0.05	--
Cadmium (filtered)	0.05	0.002	0.01	mg/L	0.0002	< 0.0002	< 0.0002	< 0.0002	< 0.0002	< 0.0002	< 0.0002	--	< 0.0002	< 0.0002
Chromium (filtered)		0.05	1	mg/L	0.001	< 0.001	< 0.001	< 0.001	< 0.001	< 0.001	< 0.001	--	< 0.001	< 0.001
Cobalt (filtered)	2	0.1	1	mg/L	0.001	< 0.001	< 0.001	< 0.001	< 0.001	0.001	< 0.001	--	< 0.001	< 0.001
Copper (filtered)		5	0.4	mg/L	0.001	0.02	< 0.001	< 0.001	0.001	< 0.001	0.003	< 0.001	--	< 0.001
Iron (filtered)		10	--	mg/L	--	< 0.05	--	--	--	< 0.05	13	--	--	3.5
Lead (filtered)	0.5	5	0.1	mg/L	0.001	< 0.001	< 0.001	< 0.001	< 0.001	< 0.001	< 0.001	--	< 0.001	< 0.001
Manganese (filtered)	0.5	10	--	mg/L	0.005	< 0.005	0.007	0.19	0.063	0.13	0.14	--	< 0.005	0.35
Mercury (filtered)	0.02	0.002	0.002	mg/L	0.0001	< 0.0001	< 0.0001	< 0.0001	< 0.0001	< 0.0001	< 0.0001	--	< 0.0001	< 0.0001
Nickel (filtered)	0.01	2	1	mg/L	0.001	< 0.001	< 0.001	< 0.001	0.004	< 0.001	0.001	< 0.001	--	< 0.001
Selenium (filtered)		--	--	mg/L	0.001	< 0.001	--	< 0.001	< 0.001	< 0.001	--	--	--	< 0.001
Zinc (filtered)		5	20	mg/L	0.005	0.015	< 0.005	< 0.005	0.009	< 0.005	0.034	< 0.005	--	0.009

LOR = Limit of Reporting

Concentration in purple font and grey box exceed the ANZECC Fresh Water Guidelines - Stock Water

Concentration in green font and grey box exceed the ANZECC Fresh Water Guidelines - Irrigation

Concentration in blue font and grey box exceed the NHMRC Australian Drinking Water Guideline

Concentrations in box exceed the screening value >2.5 times

Where one or more guideline value is exceeded, the highest guideline exceeded will be highlighted

^ANRMCC (2011 updated 2018) Australian Drinking Water Guidelines (ADWG) Paper 6 National Water Quality Management Strategy. National Health and Medical Research Council.

^BAustralia and New Zealand Environment and Conservation Council (2000) Australian and New Zealand Guidelines for Fresh and Marine Water Quality.

Table 3:

Tarago Area DSI - Discrete Properties Rainwater Tank Water Results



	NHMRC Australian Drinking Water Guidelines^A	Sample Type:	Tank Water	Tank Water	Tank Water	Tank Water	Tank Water	Tank Water	Tank Water	Tank Water	Tank Water
		Site:	P1	P1	P3	P4	P4	P5	P6	P7	P7
		Lab Sample number:	M20-Ap03653	M20-Ap03654	S20-Ap02121	M20-Ma43682	M20-Ma43683	M20-Ma43795	S20-Ap02122	S20-Ma44414	S20-Ma44415
		Sample date:	24-03-20	24-03-20	26-03-20	24-03-20	24-03-20	24-03-20	25-03-20	25-03-20	25-03-20
		Sample ID:	P1-TW1	P1-TW2	P3_TW2	P2*_TW1	P2*_TW2	P5_TW1	P6_TW1	P7_TW1	P7_TW2
		Project Name:	Community DSI	Community DSI	Community DSI	Community DSI	Community DSI	Community DSI	Community DSI	Community DSI	Community DSI
	Sampling Method:	Micropurge/ Syphon	Micropurge/ Syphon	Micropurge/syphon	Micropurge/syphon	Micropurge/syphon	Micropurge/syphon	Micropurge/syphon	Micropurge/syphon	Micropurge/syphon	

Analyte grouping/ Analyte	Units	LOR									
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LTM-MET-3040 Metals in Waters, Soils & Sediments by ICP-MS

Aluminium		mg/L		--	--	< 0.05				0.08	
Arsenic	0.01	mg/L	0.001	< 0.001	< 0.001	< 0.001	< 0.001	< 0.001	< 0.001	< 0.001	< 0.001
Barium	2	mg/L		--	--	< 0.02			< 0.001	< 0.02	< 0.001
Beryllium	0.06	mg/L	0.001	< 0.001	< 0.001	< 0.001	< 0.001	< 0.001	< 0.05	< 0.001	< 0.05
Boron		mg/L	0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05			
Cadmium	0.002	mg/L	0.0002	< 0.0002	< 0.0002	< 0.0002	< 0.0002	< 0.0002	< 0.0002	0.0003	< 0.0002
Chromium	0.05	mg/L	0.001	< 0.001	< 0.001	0.002	0.001	< 0.001	0.002	< 0.001	< 0.001
Cobalt		mg/L	0.001	< 0.001	< 0.001	< 0.001	< 0.001	< 0.001	< 0.001	< 0.001	< 0.001
Copper	2	mg/L	0.001	0.003	0.011	0.002	< 0.001	< 0.001	< 0.001	0.027	0.023
Iron		mg/L		--	--	< 0.05				< 0.05	
Lead	0.01	mg/L	0.001	< 0.001	0.001	< 0.001	< 0.001	< 0.001	< 0.001	< 0.001	0.002
Manganese	0.5	mg/L	0.005	0.006	0.033	< 0.005	< 0.005	< 0.005	0.25	0.024	0.026
Mercury	0.001	mg/L	0.0001	< 0.0001	< 0.0001	< 0.0001	< 0.0001	< 0.0001	< 0.0001	< 0.0001	< 0.0001
Nickel	0.02	mg/L	0.001	< 0.001	0.002	< 0.001	< 0.001	< 0.001	0.002	< 0.001	< 0.001
Selenium	0.01	mg/L	0.001	< 0.001	< 0.001		< 0.001	< 0.001	< 0.001		< 0.001
Zinc		mg/L	0.005	0.12	0.45	0.42	< 0.005	< 0.005	0.088	0.071	0.31

Concentration in blue font and grey box exceed the NHMRC Australian Drinking Water Guideline

^ANRMCC (2011 updated 2018) Australian Drinking Water Guidelines (ADWG) Paper 6 National Water Quality Management Strategy. National Health and Medical Research Council.

Table 3:

Tarago Area DSI - Discrete Properties Rainwater Tank Water Results



	NHMRC Australian Drinking Water Guidelines^A	Sample Type:	Tank Water	Tank Water	Tank Water	Tank Water	Tank Water	Tank Water	Tank Water	Tank Water	Tank Water
		Site:	P9	P9	P10	P10	P10	P11	P11	P12	P12
		Lab Sample number:	S20-Ma44377	S20-Ma44378	S20-My01303	S20-Ma44401	S20-Ma44402	S20-Ma43996	S20-Ma43997	S20-Ma44141	S20-Ma44142
		Sample date:	25-03-20	25-03-20	25-03-20	25-03-20	25-03-20	26-03-20	26-03-20	26-03-20	26-03-20
		Sample ID:	RFS_TW1	RFS_TW2	P10_BORETANK	P10_TW1	P10_TW2	P11_TW1	P11_TW2	P12_TW1	P12_TW2
		Project Name:	Community DSI	Community DSI	Community DSI	Community DSI	Community DSI	Community DSI	Community DSI	Community DSI	Community DSI
		Sampling Method:	Micropurge/syphon	Micropurge/syphon	Micropurge/ Syphon	Micropurge/ Syphon	Micropurge/ Syphon	Micropurge/syphon	Micropurge/syphon	Micropurge/syphon	Micropurge/syphon

Analyte grouping/ Analyte	Units	LOR									
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LTM-MET-3040 Metals in Waters, Soils & Sediments by ICP-MS

Aluminium		mg/L		--	--	< 0.05	--	--	--	--	--	--
Arsenic	0.01	mg/L	0.001	< 0.001	< 0.001	0.001	< 0.001	< 0.001	< 0.001	< 0.001	< 0.001	< 0.001
Barium	2	mg/L		--	--	0.05	--	--	--	--	--	--
Beryllium	0.06	mg/L	0.001	< 0.001	< 0.001	< 0.001	< 0.001	< 0.001	< 0.001	< 0.001	< 0.001	< 0.001
Boron		mg/L	0.05	< 0.05	< 0.05		0.06	0.59	< 0.05	< 0.05	< 0.05	< 0.05
Cadmium	0.002	mg/L	0.0002	< 0.0002	0.0015	< 0.0002	< 0.0002	< 0.0002	0.0003	< 0.0002	< 0.0002	0.0005
Chromium	0.05	mg/L	0.001	0.003	< 0.001	< 0.001	< 0.001	< 0.001	< 0.001	< 0.001	< 0.001	0.002
Cobalt		mg/L	0.001	< 0.001	< 0.001	< 0.001	< 0.001	< 0.001	< 0.001	< 0.001	< 0.001	< 0.001
Copper	2	mg/L	0.001	0.008	0.005	< 0.001	< 0.001	0.002	< 0.001	0.002	0.004	0.001
Iron		mg/L		--	--	< 0.05	--	--	--	--	--	--
Lead	0.01	mg/L	0.001	< 0.001	< 0.001	< 0.001	< 0.001	< 0.001	< 0.001	< 0.001	0.002	< 0.001
Manganese	0.5	mg/L	0.005	0.029	< 0.005	0.032	0.006	< 0.005	0.013	0.021	< 0.005	< 0.005
Mercury	0.001	mg/L	0.0001	< 0.0001	< 0.0001	< 0.0001	< 0.0001	< 0.0001	< 0.0001	< 0.0001	< 0.0001	< 0.0001
Nickel	0.02	mg/L	0.001	< 0.001	0.001	< 0.001	< 0.001	< 0.001	< 0.001	< 0.001	< 0.001	< 0.001
Selenium	0.01	mg/L	0.001	< 0.001	< 0.001		< 0.001	< 0.001	< 0.001	< 0.001	< 0.001	< 0.001
Zinc		mg/L	0.005	0.24	0.15	0.007	0.028	0.047	2	0.63	0.007	1.6

Concentration in blue font and grey box exceed the NHMRC Australian Drinking Water Guideline

^ANRMCC (2011 updated 2018) Australian Drinking Water Guidelines (ADWG) Paper 6 National Water Quality Management Strategy. National Health and Medical Research Council.

Table 3:

Tarago Area DSI - Discrete Properties Rainwater Tank Water Results



	NHMRC Australian Drinking Water Guidelines ^A	Sample Type:	Tank Water	Tank Water	Tank Water	Tank Water	Tank Water	Tank Water	Tank Water	Tank Water	Tank Water
		Site:	P14	P14	P14	P15	P15	P17	P17	P18	P18
		Lab Sample number:	S20-Ma44057	S20-Ma44058	S20-Ma44059	S20-Ap02860	S20-Ap02861	S20-Ap02893	S20-Ap02894	S20-Ap02947	S20-Ap02948
		Sample date:	26-03-20	26-03-20	26-03-20	30-03-20	30-03-20	30-03-20	30-03-20	31-03-20	31-03-20
		Sample ID:	P14_TW1	P14_TW2	P14_TW3	P15_TW1	P15_TW2	P17_TW1	P17_TW2	P18_TW1	P18_TW2
		Project Name:	Community DSI	Community DSI	Community DSI	Community DSI	Community DSI	Community DSI	Community DSI	Community DSI	Community DSI
		Sampling Method:	Micropurge/syphon	Micropurge/syphon	Micropurge/syphon	Micropurge/syphon	Micropurge/syphon	Micropurge/syphon	Micropurge/syphon	Micropurge/syphon	Micropurge/syphon
					28	29					
Analyte grouping/ Analyte		Units	LOR								
LTM-MET-3040 Metals in Waters, Soils & Sediments by ICP-MS											
Aluminium		mg/L		--	--	--	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05
Arsenic	0.01	mg/L	0.001	< 0.001	< 0.001	< 0.001	< 0.001	< 0.001	< 0.001	< 0.001	< 0.001
Barium	2	mg/L		--	--	--	< 0.02	< 0.02	< 0.02	< 0.02	< 0.02
Beryllium	0.06	mg/L	0.001	< 0.001	< 0.001	< 0.001	< 0.001	< 0.001	< 0.001	< 0.001	< 0.001
Boron		mg/L	0.05	< 0.05	< 0.05	< 0.05	--	--	--	--	
Cadmium	0.002	mg/L	0.0002	< 0.0002	< 0.0002	< 0.0002	< 0.0002	< 0.0002	< 0.0002	0.0003	< 0.0002
Chromium	0.05	mg/L	0.001	0.005	0.004	< 0.001	< 0.001	< 0.001	0.001	< 0.001	0.002
Cobalt		mg/L	0.001	< 0.001	< 0.001	< 0.001	< 0.001	< 0.001	< 0.001	< 0.001	< 0.001
Copper	2	mg/L	0.001	< 0.001	< 0.001	0.004	< 0.001	0.002	0.029	0.004	0.001
Iron		mg/L		--	--	--	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05
Lead	0.01	mg/L	0.001	< 0.001	< 0.001	< 0.001	< 0.001	< 0.001	< 0.001	< 0.001	< 0.001
Manganese	0.5	mg/L	0.005	0.006	< 0.005	< 0.005	< 0.005	< 0.005	0.036	0.016	< 0.005
Mercury	0.001	mg/L	0.0001	< 0.0001	< 0.0001	< 0.0001	< 0.0001	< 0.0001	< 0.0001	< 0.0001	< 0.0001
Nickel	0.02	mg/L	0.001	< 0.001	< 0.001	< 0.001	< 0.001	< 0.001	< 0.001	< 0.001	< 0.001
Selenium	0.01	mg/L	0.001	< 0.001	< 0.001	< 0.001	--	--	--	--	
Zinc		mg/L	0.005	0.091	0.05	0.12	0.046	0.039	0.099	0.045	0.28

Concentration in blue font and grey box exceed the NHMRC Australian Drinking Water Guideline

^ANRMMC (2011 updated 2018) Australian Drinking Water Guidelines (ADWG) Paper 6 National Water Quality Management Strategy. National Health and Medical Research Council.

Table 3:

Tarago Area DSI - Discrete Properties Rainwater Tank Water Results



	NHMRC Australian Drinking Water Guidelines ^A	Sample Type:	Tank Water	Tank Water	Tank Water	Tank Water	Tank Water	Tank Water	Tank Water	Tank Water	Tank Water	
Site:		P18	P18	P19	P21	P21	P23	P24	P24	P25		
Lab Sample number:		S20-Ap02949	S20-Ap02950	S20-Ap02981	S20-Ap03012	S20-Ap03013	S20-Ap03098	P24_TW1	P24_TW2	S20-Ap09764		
Sample date:		31-03-20	31-03-20	31-03-20	31-03-20	31-03-20	31-03-20	01-04-20	01-04-20	01-04-20		
Sample ID:		P18_TW3	P18_TW4	P19_TW1	P21_TW1	P21_TW2	P23_TW1	S20-Ap09834	S20-Ap09835	P25_TW1		
Project Name:		Community DSI	Community DSI	Community DSI	Community DSI	Community DSI	Community DSI	Community DSI	Community DSI	Community DSI		
Sampling Method:		Micropurge/syphon	Micropurge/syphon	Micropurge/syphon	Micropurge/syphon	Micropurge/syphon	Micropurge/syphon	Micropurge/syphon	Micropurge/syphon	Micropurge/syphon		
Analyte grouping/Analyte	Units	LOR										
LTM-MET-3040 Metals in Waters, Soils & Sediments by ICP-MS												
Aluminium		mg/L		< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	0.06	< 0.05	< 0.05
Arsenic	0.01	mg/L	0.001	< 0.001	< 0.001	< 0.001	< 0.001	< 0.001	< 0.001	< 0.001	< 0.001	< 0.001
Barium	2	mg/L		< 0.02	< 0.02	0.06	< 0.02	< 0.02	< 0.02	< 0.02	< 0.02	< 0.02
Beryllium	0.06	mg/L	0.001	< 0.001	< 0.001	< 0.001	< 0.001	< 0.001	< 0.001	< 0.001	< 0.001	< 0.001
Boron		mg/L	0.05				--	--				
Cadmium	0.002	mg/L	0.0002	0.0006	< 0.0002	< 0.0002	< 0.0002	< 0.0002	< 0.0002	< 0.0002	< 0.0002	< 0.0002
Chromium	0.05	mg/L	0.001	< 0.001	0.001	< 0.001	< 0.001	< 0.001	0.001	0.001	0.001	0.001
Cobalt		mg/L	0.001	< 0.001	< 0.001	< 0.001	< 0.001	< 0.001	< 0.001	< 0.001	< 0.001	< 0.001
Copper	2	mg/L	0.001	0.002	< 0.001	< 0.001	0.003	< 0.001	0.001	< 0.001	< 0.001	< 0.001
Iron		mg/L		< 0.05	< 0.05	< 0.05	< 0.05	0.05	< 0.05	0.1	< 0.05	< 0.05
Lead	0.01	mg/L	0.001	< 0.001	< 0.001	< 0.001	< 0.001	< 0.001	< 0.001	< 0.001	< 0.001	< 0.001
Manganese	0.5	mg/L	0.005	0.005	0.008	< 0.005	0.02	0.006	0.009	0.007	0.014	< 0.005
Mercury	0.001	mg/L	0.0001	< 0.0001	< 0.0001	< 0.0001	< 0.0001	< 0.0001	< 0.0001	< 0.0001	< 0.0001	< 0.0001
Nickel	0.02	mg/L	0.001	< 0.001	< 0.001	< 0.001	< 0.001	< 0.001	< 0.001	< 0.001	0.001	< 0.001
Selenium	0.01	mg/L	0.001				--	--				
Zinc		mg/L	0.005	0.61	0.42	0.021	0.046	0.017	1.9	0.064	0.044	0.051

Concentration in blue font and grey box exceed the NHMRC Australian Drinking Water Guideline

^ANRMCC (2011 updated 2018) Australian Drinking Water Guidelines (ADWG) Paper 6 National Water Quality Management Strategy. National Health and Medical Research Council.

	NHMRC Australian Drinking Water Guidelines ^A	Sample Type:	Tank Water	Tank Water	Tank Water	Tank Water	Tank Water	Tank Water	Tank Water	Tank Water	
		Site:	P25	P26	P26	P27	P28	P28	P28	P31	
		Lab Sample number:	S20-Ap09765	S20-Ap09880	S20-Jn09814	S20-Ap09733	S20-Ap09691	S20-Ap09692	S20-Ap09693	S20-Ap09848	
		Sample date:	01-04-20	01-04-20	05-06-20	01-04-20	01-04-20	01-04-20	01-04-20	02-04-20	
		Sample ID:	P25_TW2	P26_TW1	P26_TW1A	P27_TW1	P28_TW1	P28_TW2	P28_TW3	P31_TW1	
		Project Name:	Community DSI	Community DSI	Community DSI	Community DSI	Community DSI	Community DSI	Community DSI	Community DSI	
		Sampling Method:	Micropurge/syphon	Micropurge/syphon	Micropurge/syphon	Micropurge/syphon	Micropurge/syphon	Micropurge/syphon	Micropurge/syphon	Micropurge/syphon	
Analyte grouping/Analyte		Units	LOR								
LTM-MET-3040 Metals in Waters, Soils & Sediments by ICP-MS											
Aluminium		mg/L		< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	0.12	< 0.05	< 0.05
Arsenic	0.01	mg/L	0.001	< 0.001	< 0.001	< 0.001	< 0.001	< 0.001	< 0.001	< 0.001	< 0.001
Barium	2	mg/L		< 0.02	< 0.02	< 0.02	< 0.02	< 0.02	< 0.02	< 0.02	< 0.02
Beryllium	0.06	mg/L	0.001	< 0.001	< 0.001	< 0.001	< 0.001	< 0.001	< 0.001	< 0.001	< 0.001
Boron		mg/L	0.05								
Cadmium	0.002	mg/L	0.0002	< 0.0002	< 0.0002	< 0.0002	< 0.0002	< 0.0002	< 0.0002	< 0.0002	< 0.0002
Chromium	0.05	mg/L	0.001	0.001	0.001	< 0.001	0.002	0.002	0.002	< 0.001	0.001
Cobalt		mg/L	0.001	< 0.001	< 0.001	< 0.001	< 0.001	< 0.001	< 0.001	< 0.001	< 0.001
Copper	2	mg/L	0.001	0.002	< 0.001	< 0.001	< 0.001	0.002	0.004	0.002	0.002
Iron		mg/L		< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05
Lead	0.01	mg/L	0.001	< 0.001	< 0.001	< 0.001	< 0.001	< 0.001	< 0.001	< 0.001	< 0.001
Manganese	0.5	mg/L	0.005	0.017	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	0.008	< 0.005
Mercury	0.001	mg/L	0.0001	< 0.0001	< 0.0001	< 0.0001	< 0.0001	< 0.0001	< 0.0001	< 0.0001	< 0.0001
Nickel	0.02	mg/L	0.001	< 0.001	< 0.001	< 0.001	< 0.001	< 0.001	< 0.001	< 0.001	< 0.001
Selenium	0.01	mg/L	0.001								
Zinc		mg/L	0.005	0.044	0.063	0.078	0.057	0.13	0.061	0.22	0.037

Concentration in blue font and grey box exceed the NHMRC Australian Drinking Water Guideline

^ANRMCC (2011 updated 2018) Australian Drinking Water Guidelines (ADWG) Paper 6 National Water Quality Management Strategy. National Health and Medical Research Council.

Table 3:
 Tarago Area DSI - Discrete Properties Rainwater Tank Water Results



NHMRC Australian Drinking Water Guidelines ^A	Sample Type:	Tank Water	Tank Water	Tank Water	Tank Water	Tank Water	Tank Water
	Site:	P31	P31	P32	P32	P32	P32
	Lab Sample number:	S20-Ap09849	S20-Ap09850	S20-Ap09659	S20-Ap09657	S20-Ap09658	S20-Ap09657
	Sample date:	02-04-20	02-04-20	02-05-20	02-05-20	02-05-20	02-04-20
	Sample ID:	P31_TW2	P31_TW3	P32_BORE	P32_TW1	P32_TW2	P32_TW1
	Project Name:	Community DSI	Community DSI	Community DSI	Community DSI	Community DSI	Community DSI
	Sampling Method:	Micropurge/syphon	Micropurge/syphon	Micropurge/syphon	Micropurge/syphon	Micropurge/syphon	Micropurge/syphon
Analyte grouping/ Analyte		Units	LOR				
LTM-MET-3040 Metals in Waters, Soils & Sediments by ICP-MS							
Aluminium		mg/L		< 0.05	< 0.05	< 0.05	< 0.05
Arsenic	0.01	mg/L	0.001	< 0.001	< 0.001	< 0.001	< 0.001
Barium	2	mg/L		< 0.02	< 0.02	0.06	< 0.02
Beryllium	0.06	mg/L	0.001	< 0.001	< 0.001	< 0.001	< 0.001
Boron		mg/L	0.05				
Cadmium	0.002	mg/L	0.0002	< 0.0002	< 0.0002	< 0.0002	< 0.0002
Chromium	0.05	mg/L	0.001	0.003	0.001	0.002	< 0.001
Cobalt		mg/L	0.001	0.002	< 0.001	< 0.001	< 0.001
Copper	2	mg/L	0.001	0.005	0.006	< 0.001	0.002
Iron		mg/L		< 0.05	< 0.05	11	< 0.05
Lead	0.01	mg/L	0.001	< 0.001	< 0.001	< 0.001	< 0.001
Manganese	0.5	mg/L	0.005	0.009	0.021	0.13	< 0.005
Mercury	0.001	mg/L	0.0001	< 0.0001	< 0.0001	< 0.0001	< 0.0001
Nickel	0.02	mg/L	0.001	< 0.001	< 0.001	< 0.001	< 0.001
Selenium	0.01	mg/L	0.001				
Zinc		mg/L	0.005	0.066	0.51	0.006	0.015

Concentration in blue font and grey box exceed the NHMRC Australian Drinking Water Guideline

^ANRMCC (2011 updated 2018) Australian Drinking Water Guidelines (ADWG) Paper 6 National Water Quality Management Strategy. National Health and Medical Research Council.

Table 3:

Tarago Area DSI - Discrete Properties Rainwater Tank Water Results



	NHMRC Australian Drinking Water Guidelines^A	Sample Type:	Tank Water	Tank water	Tank water	Tank Water	Tank Water	Tank Water	Tank Water	Tank Water	Tank Water
		Site:	P32	P33	P33	P34	P35	P35	P36	P36	P37
		Lab Sample number:	S20-Ap09658	S20-My00643	S20-My00644	S20-My01488	S20-My01750	S20-My01751	S20-My00614	S20-My00615	S20-My01791
		Sample date:	02-04-20	24-04-20	24-04-20	28-04-20	28-04-20	28-04-20	28-04-20	28-04-20	29-04-20
		Sample ID:	P32_TW2	P33_TW1	P33_TW2	P34_TW1	P35_TW1	P35_TW2	P36_TW1	P36_TW2	P37_TW1
		Project Name:	Community DSI	Community DSI	Community DSI	Community DSI	Community DSI	Community DSI	Community DSI	Community DSI	Community DSI
		Sampling Method:	Micropurge/syphon	Micropurge/syphon	Micropurge/syphon	Micropurge/syphon	Micropurge/syphon	Micropurge/syphon	Micropurge/syphon	Micropurge/syphon	Micropurge/syphon

Analyte grouping/Analyte	Units	LOR									
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LTM-MET-3040 Metals in Waters, Soils & Sediments by ICP-MS											
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Aluminium		mg/L		< 0.05	< 0.05	0.13	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05
Arsenic	0.01	mg/L	0.001	< 0.001	< 0.001	0.001	< 0.001	< 0.001	< 0.001	< 0.001	< 0.001	< 0.001
Barium	2	mg/L		< 0.02	< 0.02	< 0.02	0.03	0.02	< 0.02	0.04	0.03	< 0.02
Beryllium	0.06	mg/L	0.001	< 0.001	< 0.001	< 0.001	< 0.001	< 0.001	< 0.001	< 0.001	< 0.001	< 0.001
Boron		mg/L	0.05							< 0.0002	< 0.0002	
Cadmium	0.002	mg/L	0.0002	< 0.0002	< 0.0002	< 0.0002	< 0.0002	< 0.0002	< 0.0002			< 0.0002
Chromium	0.05	mg/L	0.001	0.001	0.001	0.005	0.002	< 0.001	< 0.001	< 0.001	< 0.001	< 0.001
Cobalt		mg/L	0.001	< 0.001	< 0.001	< 0.001	< 0.001	< 0.001	< 0.001	< 0.001	< 0.001	< 0.001
Copper	2	mg/L	0.001	< 0.001	< 0.001	0.001	< 0.001	< 0.001	< 0.001	< 0.001	0.004	0.002
Iron		mg/L		< 0.05	< 0.05	0.07	0.14	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05
Lead	0.01	mg/L	0.001	< 0.001	< 0.001	< 0.001	< 0.001	< 0.001	< 0.001	< 0.001	< 0.001	< 0.001
Manganese	0.5	mg/L	0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005
Mercury	0.001	mg/L	0.0001	< 0.0001	< 0.0001	< 0.0001	< 0.0001	< 0.0001	< 0.0001	< 0.0001	< 0.0001	< 0.0001
Nickel	0.02	mg/L	0.001	< 0.001	< 0.001	< 0.001	< 0.001	< 0.001	< 0.001	< 0.001	< 0.001	< 0.001
Selenium	0.01	mg/L	0.001									
Zinc		mg/L	0.005	0.019	0.035	< 0.005	0.031	0.016	0.014	< 0.005	0.008	0.039

Concentration in blue font and grey box exceed the NHMRC Australian Drinking Water Guideline

^ANRMCC (2011 updated 2018) Australian Drinking Water Guidelines (ADWG) Paper 6 National Water Quality Management Strategy. National Health and Medical Research Council.

Table 3:

Tarago Area DSI - Discrete Properties Rainwater Tank Water Results



	NHMRC Australian Drinking Water Guidelines^A	Sample Type:	Tank Water	Tank Water	Tank Water	Tank Water	Tank Water	Tank Water	Tank Water	Tank Water	Tank Water
		Site:	P37	P38	P38	P39	P39	SMC	Tarago P.S.	Tarago P.S.	Tarago P.S.
		Lab Sample number:	S20-My01792	S20-My01771	S20-My01772	S20-My00975	S20-My00977	M20-Ma44098	S20-My00663	S20-My00664	S20-My00665
		Sample date:	29-04-20	29-04-20	29-04-20			24-03-20	30-04-20	30-04-20	30-04-20
		Sample ID:	P37_TW2	P38_TW1	P38_TW2	P39_TW1	P39_TW2	SMC_TW1	SCHOOL_TW1	SCHOOL_TW2	SCHOOL_TW3
		Project Name:	Community DSI	Community DSI	Community DSI	Community DSI	Community DSI	Community DSI	Community DSI	Community DSI	Community DSI
		Sampling Method:	Micropurge/syphon	Micropurge/syphon	Micropurge/syphon	Micropurge/syphon	Micropurge/syphon	Micropurge/syphon	Micropurge/syphon	Micropurge/syphon	Micropurge/syphon

Analyte grouping/Analyte	Units	LOR									
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LTM-MET-3040 Metals in Waters, Soils & Sediments by ICP-MS

Aluminium		mg/L		< 0.05	< 0.05	< 0.05	0.05	< 0.05	--	< 0.05	< 0.05	< 0.05
Arsenic	0.01	mg/L	0.001	0.001	< 0.001	< 0.001	< 0.001	< 0.001	< 0.001	< 0.001	< 0.001	< 0.001
Barium	2	mg/L		< 0.02	< 0.02	< 0.02	< 0.02	< 0.02	--	< 0.02	< 0.02	< 0.02
Beryllium	0.06	mg/L	0.001	0.001	< 0.001	< 0.001	< 0.001	< 0.001	< 0.001	< 0.001	< 0.001	< 0.001
Boron		mg/L	0.05						< 0.05			
Cadmium	0.002	mg/L	0.0002	< 0.0002	< 0.0002	< 0.0002	< 0.0002	< 0.0002	< 0.0002	< 0.0002	< 0.0002	< 0.0002
Chromium	0.05	mg/L	0.001	0.001	0.003	0.002	0.001	0.001	0.002	< 0.001	< 0.001	< 0.001
Cobalt		mg/L	0.001	< 0.001	< 0.001	< 0.001	< 0.001	< 0.001	< 0.001	< 0.001	< 0.001	< 0.001
Copper	2	mg/L	0.001	0.003	< 0.001	< 0.001	0.008	< 0.001	0.001	< 0.001	< 0.001	< 0.001
Iron		mg/L		< 0.05	< 0.05	< 0.05	< 0.05	0.05	--	< 0.05	< 0.05	< 0.05
Lead	0.01	mg/L	0.001	< 0.001	< 0.001	< 0.001	< 0.001	0.007	0.004	< 0.001	< 0.001	< 0.001
Manganese	0.5	mg/L	0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	0.029	0.028	0.023
Mercury	0.001	mg/L	0.0001	< 0.0001	< 0.0001	< 0.0001	< 0.0001	< 0.0001	< 0.0001	< 0.0001	< 0.0001	< 0.0001
Nickel	0.02	mg/L	0.001	< 0.001	< 0.001	< 0.001	< 0.001	< 0.001	0.002	< 0.001	< 0.001	< 0.001
Selenium	0.01	mg/L	0.001						< 0.001			
Zinc		mg/L	0.005	0.046	0.14	0.17	0.14	0.064	0.069	0.056	0.053	0.088

Concentration in blue font and grey box exceed the NHMRC Australian Drinking Water Guideline

^ANRMCC (2011 updated 2018) Australian Drinking Water Guidelines (ADWG) Paper 6 National Water Quality Management Strategy. National Health and Medical Research Council.

	NEPM 2013 HIL A Residential	NEPM 2013 HIL C Open Space	Sample Type:	Sediment	Sediment	Sediment	Sediment	Sediment	Sediment	Sediment	Sediment
			Site:	P1	P3	P4	P6	P7	P10	P10	P10
			Lab Sample number:	S20-Jn00670	S20-Ap02118	M20-Ma43684	S20-Ap02120	S20-Ma44426	S20-My01304	S20-Jn00675	S20-Jn00676
			Sample date:	31-05-20	26-03-20	24-03-20	25-03-20	25-03-20	25-03-20	31-05-20	31-05-20
			Sample ID:	P1_T1SED	P3_TWS2	P2*_TWS1	P6_TWS1	P7_TWS2	P10_BORETANKSED	P10_T1SED	P10_T2SED
			Project Name:	Community DSI	Community DSI	Community DSI	Community DSI	Community DSI	Community DSI	Community DSI	Community DSI
			Sampling Method:	Micropurge/Syphon	Micropurge/Syphon	Micropurge/Syphon	Micropurge/Syphon	Micropurge/Syphon	Micropurge/Syphon	Micropurge/Syphon	Micropurge/Syphon
Analyte grouping/ Analyte	Units	LOR									
LTM-MET-3040 Metals in Waters, Soils & Sediments by ICP-MS											
Aluminium			mg/kg	10	--	--	--	--	--	--	--
Arsenic	100	300	mg/kg	2	410	--	--	--	--	4	3
Barium			mg/kg	10	--	--	--	--	--	--	--
Beryllium	70	90	mg/kg	2	17	--	--	--	--	< 2	< 2
Boron	5000		mg/kg	5	460	--	--	--	--	12	34
Cadmium	20	90	mg/kg	0.4	31	--	--	--	--	< 0.4	< 0.4
Chromium		300	mg/kg	5	--	--	--	--	--	--	--
Cobalt	100	300	mg/kg	5	170	--	--	--	--	< 5	< 5
Copper	7000	17000	mg/kg	5	4,900	--	--	--	--	8	30
Iron			mg/kg	20	--	--	--	--	--	--	--
Lead	300	600	mg/kg	5	8,700	--	--	96	100	47	11
Manganese	3000	19000	mg/kg	5	6,100	--	--	--	--	180	70
Mercury	200	80	mg/kg	0.1	6	--	--	--	--	< 0.1	< 0.1
Nickel	400	1200	mg/kg	5	500	--	--	--	--	< 5	< 5
Selenium	200		mg/kg	2	45	--	--	--	--	< 2	< 2
Zinc	8000	30000	mg/kg	10	16,000	--	--	--	--	62	220
LTM-MET-3040 Metals in Waters, Soils & Sediments by ICP-MS											
Lead			mg/L	0.001	--	0.9	3.3	1	--	--	--

National Environment Protection Council (2013) National Environmental Protection
 (Assessment of Site Contamination) Amendment Measure 2013 (No. 1) (NFPM)
 Concentration in red font and grey box exceed the adopted HIL/HSL 'A' for Low Density
 Residential
 Concentration in orange font and grey box exceed the adopted HIL/HSL 'C' for Open Space
 and Recreation (Applicable for P2_P6_P9_P11)
 Concentrations in box exceed the screening value >2.5 times

	NEPM 2013 HIL A Residential	NEPM 2013 HIL C Open Space	Sample Type:	Sediment	Sediment	Sediment	Sediment	Sediment	Sediment	Sediment	Sediment	
			Site:	P11	P11	P12	P12	P14	P17	P18	P18	
			Lab Sample number:	S20-Ma44010	S20-Ma44011	S20-Ma44143	S20-Ma44144	S20-Ma44060	S20-Ap02895	S20-Ap02951	S20-Ap02952	
			Sample date:	26-03-20	26-03-20	26-03-20	26-03-20	26-03-20	30-03-20	31-03-20	31-03-20	
			Sample ID:	P11_TWS1	P11_TWS2	P12_TWS1	P12_TWS2	P14_TWS3	P17_TWS2	P18_TWS1	P18_TWS2	
			Project Name:	Community DSI	Community DSI	Community DSI	Community DSI	Community DSI	Community DSI	Community DSI	Community DSI	
			Sampling Method:	Micropurge/Syphon	Micropurge/Syphon	Micropurge/syphon	Micropurge/syphon	Micropurge/syphon	Micropurge/syphon	Micropurge/syphon	Micropurge/syphon	
Analyte grouping/Analyte	Units	LOR										
LTM-MET-3040 Metals in Waters, Soils & Sediments by ICP-MS												
Aluminium			mg/kg	10	--	--	--	--	--	--	--	
Arsenic	100	300	mg/kg	2	--	--	--	--	--	--	--	
Barium			mg/kg	10	--	--	--	--	--	--	--	
Beryllium	70	90	mg/kg	2	--	--	--	--	--	--	--	
Boron	5000		mg/kg	5	--	--	--	--	--	--	--	
Cadmium	20	90	mg/kg	0.4	--	--	--	--	--	--	--	
Chromium		300	mg/kg	5	--	--	--	--	--	--	--	
Cobalt	100	300	mg/kg	5	--	--	--	--	--	--	--	
Copper	7000	17000	mg/kg	5	--	--	--	--	--	--	--	
Iron			mg/kg	20	--	--	--	--	--	--	--	
Lead	300	600	mg/kg	5	590	47	--	--	87	280	110	
Manganese	3000	19000	mg/kg	5	--	--	--	--	--	--	--	
Mercury	200	80	mg/kg	0.1	--	--	--	--	--	--	--	
Nickel	400	1200	mg/kg	5	--	--	--	--	--	--	--	
Selenium	200		mg/kg	2	--	--	--	--	--	--	--	
Zinc	8000	30000	mg/kg	10	--	--	--	--	--	--	--	
LTM-MET-3040 Metals in Waters, Soils & Sediments by ICP-MS												
Lead			mg/L	0.001	4.8	0.6	0.18	2.8	0.13	--	7.6	0.44

National Environment Protection Council (2013) National Environmental Protection
 (Assessment of Site Contamination) Amendment Measure 2013 (No. 1) (NEPM)
 Concentration in red font and grey box exceed the adopted HIL/HSL 'A' for Low density
 Residential
 Concentration in orange font and grey box exceed the adopted HIL/HSL 'C' for Open Space
 and Recreation (Applicable for P2, P6, P9, P11)
 Concentrations in box exceed the screening value >2.5 times

	NEPM 2013 HIL A Residential	NEPM 2013 HIL C Open Space	Sample Type:	Sediment	Sediment	Sediment	Sediment	Sediment	Sediment	Sediment	Sediment	
			Site:	P19	P21	P21	P23	P24	P24	P25	P25	
			Lab Sample number:	S20-Ap13757	S20-Ap03014	S20-Ap03015	S20-Ap03100	P24_TWS1	P24_TWS2	S20-Ap09766	S20-Ap09767	
			Sample date:	31-03-20	31-03-20	31-03-20	31-03-20	01-04-20	01-04-20	01-04-20	01-04-20	
			Sample ID:	P19_TWS1	P21_TWS1	P21_TWS2	P23_TWS1	S20-Ap09836	S20-Ap09837	P25_TWS1	P25_TWS2	
			Project Name:	Community DSI	Community DSI	Community DSI	Community DSI	Community DSI	Community DSI	Community DSI	Community DSI	
			Sampling Method:	Micropurge/syphon	Micropurge/syphon	Micropurge/syphon	Micropurge/syphon	Micropurge/syphon	Micropurge/syphon	Micropurge/syphon	Micropurge/syphon	
Analyte grouping/Analyte	Units	LOR										
LTM-MET-3040 Metals in Waters, Soils & Sediments by ICP-MS												
Aluminium			mg/kg	10	--	--	--	--	--	--	--	
Arsenic	100	300	mg/kg	2	--	--	--	--	--	--	--	
Barium			mg/kg	10	--	--	--	--	--	--	--	
Beryllium	70	90	mg/kg	2	--	--	--	--	--	--	--	
Boron	5000		mg/kg	5	--	--	--	--	--	--	--	
Cadmium	20	90	mg/kg	0.4	--	--	--	--	--	--	--	
Chromium		300	mg/kg	5	--	--	--	--	--	--	--	
Cobalt	100	300	mg/kg	5	--	--	--	--	--	--	--	
Copper	7000	17000	mg/kg	5	--	--	--	--	--	--	--	
Iron			mg/kg	20	--	--	--	--	--	--	--	
Lead	300	600	mg/kg	5	--	--	--	40	8100	4300	71	
Manganese	3000	19000	mg/kg	5	--	--	--	--	--	--	--	
Mercury	200	80	mg/kg	0.1	--	--	--	--	--	--	--	
Nickel	400	1200	mg/kg	5	--	--	--	--	--	--	--	
Selenium	200		mg/kg	2	--	--	--	--	--	--	--	
Zinc	8000	30000	mg/kg	10	--	--	--	--	--	--	--	
LTM-MET-3040 Metals in Waters, Soils & Sediments by ICP-MS												
Lead			mg/L	0.001	0.15	2.1	0.76	1.4	0.069	0.16	0.16	0.24

National Environment Protection Council (2013) National Environmental Protection
 (Assessment of Site Contamination) Amendment Measure 2013 (No. 1) (NEPM)
 Concentration in red font and grey box exceed the adopted HIL/HSL 'A' for Low density
 Residential
 Concentration in orange font and grey box exceed the adopted HIL/HSL 'C' for Open Space
 and Recreation (Applicable for P2_P6_P9_P11)
 Concentrations in box exceed the screening value >2.5 times

	NEPM 2013 HIL A Residential	NEPM 2013 HIL C Open Space	Sample Type:	Sediment	Sediment	Sediment	Sediment	Sediment	Sediment	Sediment	Sediment
			Site:	P26	P27	P28	P28	P28	P31	P31	P31
			Lab Sample number:	S20-Jn09815	S20-Ap09734	S20-Ap09694	S20-Ap09695	S20-Ap09696	S20-Ap09851	S20-Ap09852	S20-Ap09853
			Sample date:	05-06-20	01-04-20	01-04-20	01-04-20	01-04-20	02-04-20	02-04-20	02-04-20
			Sample ID:	P26_TWS1A	P27_TWS1	P28_TWS1	P28_TWS2	P28_TWS3	P31_TWS1	P31_TWS2	P31_TWS3
			Project Name:	Community DSI	Community DSI	Community DSI	Community DSI	Community DSI	Community DSI	Community DSI	Community DSI
			Sampling Method:	Micropurge/syphon	Micropurge/syphon	Micropurge/syphon	Micropurge/syphon	Micropurge/syphon	Micropurge/syphon	Micropurge/syphon	Micropurge/syphon
Analyte grouping/ Analyte	Units	LOR									
LTM-MET-3040 Metals in Waters, Soils & Sediments by ICP-MS											
Aluminium			mg/kg	10	--	--	--	--	--	--	--
Arsenic	100	300	mg/kg	2	--	--	--	--	--	--	--
Barium			mg/kg	10	--	--	--	--	--	--	--
Beryllium	70	90	mg/kg	2	--	--	--	--	--	--	--
Boron	5000		mg/kg	5	--	--	--	--	--	--	--
Cadmium	20	90	mg/kg	0.4	--	--	--	--	--	--	--
Chromium		300	mg/kg	5	--	--	--	--	--	--	--
Cobalt	100	300	mg/kg	5	--	--	--	--	--	--	--
Copper	7000	17000	mg/kg	5	--	--	--	--	--	--	--
Iron			mg/kg	20	--	--	--	--	--	--	--
Lead	300	600	mg/kg	5	69	1000	72	110	33	97	120
Manganese	3000	19000	mg/kg	5	--	--	--	--	--	--	--
Mercury	200	80	mg/kg	0.1	--	--	--	--	--	--	--
Nickel	400	1200	mg/kg	5	--	--	--	--	--	--	--
Selenium	200		mg/kg	2	--	--	--	--	--	--	--
Zinc	8000	30000	mg/kg	10	--	--	--	--	--	--	--
LTM-MET-3040 Metals in Waters, Soils & Sediments by ICP-MS											
Lead			mg/L	0.001	--	0.21	36	1.1	0.19	4.3	18

National Environment Protection Council (2013) National Environmental Protection
 (Assessment of Site Contamination) Amendment Measure 2013 (No. 1) (NFPM)
 Concentration in red font and grey box exceed the adopted HIL/HSL 'A' for Low density
 Residential
 Concentration in orange font and grey box exceed the adopted HIL/HSL 'C' for Open Space
 and Recreation (Applicable for P2_P6_P9_P11)
 Concentrations in box exceed the screening value >2.5 times

	NEPM 2013 HIL A Residential	NEPM 2013 HIL C Open Space	Sample Type:	Sediment	Sediment	Sediment	Sediment	Sediment	Sediment	Sediment	Sediment
			Site:	P32	P32	P33	P33	P35	P35	P37	P38
			Lab Sample number:	S20-Ap09662	S20-Ap09662	S20-My00645	S20-My00646	S20-My01752	S20-My01753	S20-My01793	S20-My01773
			Sample date:	02-04-20	02-05-20	24-04-20	24-04-20	28-04-20	28-04-20	29-04-20	29-04-20
			Sample ID:	P32_TWS2	P32_TWS2	P33_TWS1	P33_TWS2	P35_TWS1	P35_TWS2	P37_TWS2	P38_TWS1
			Project Name:	Community DSI	Community DSI	Community DSI	Community DSI	Community DSI	Community DSI	Community DSI	Community DSI
			Sampling Method:	Micropurge/syphon	Micropurge/syphon	Micropurge/syphon	Micropurge/syphon	Micropurge/syphon	Micropurge/syphon	Micropurge/syphon	Micropurge/syphon
Analyte grouping/Analyte	Units	LOR									
LTM-MET-3040 Metals in Waters, Soils & Sediments by ICP-MS											
Aluminium			mg/kg	10	--	--	--	--	--	--	--
Arsenic	100	300	mg/kg	2	--	--	--	--	--	--	--
Barium			mg/kg	10	--	--	--	--	--	--	--
Beryllium	70	90	mg/kg	2	--	--	--	--	--	--	--
Boron	5000		mg/kg	5	--	--	--	--	--	--	--
Cadmium	20	90	mg/kg	0.4	--	--	--	--	--	--	--
Chromium		300	mg/kg	5	--	--	--	--	--	--	--
Cobalt	100	300	mg/kg	5	--	--	--	--	--	--	--
Copper	7000	17000	mg/kg	5	--	--	--	--	--	--	--
Iron			mg/kg	20	--	--	--	--	--	--	--
Lead	300	600	mg/kg	5	120	--	94	37	260	210	76
Manganese	3000	19000	mg/kg	5	--	--	--	--	--	--	--
Mercury	200	80	mg/kg	0.1	--	--	--	--	--	--	--
Nickel	400	1200	mg/kg	5	--	--	--	--	--	--	--
Selenium	200		mg/kg	2	--	--	--	--	--	--	--
Zinc	8000	30000	mg/kg	10	--	--	--	--	--	--	--
LTM-MET-3040 Metals in Waters, Soils & Sediments by ICP-MS											
Lead			mg/L	0.001	0.21	0.21	--	--	--	--	--

National Environment Protection Council (2013) National Environmental Protection
 (Assessment of Site Contamination) Amendment Measure 2013 (No. 1) (NEPM)
 Concentration in **red** font and grey box exceed the adopted HIL/HSL 'A' for Low density
 Residential
 Concentration in **orange** font and grey box exceed the adopted HIL/HSL 'C' for Open Space
 and Recreation (Applicable for P2_P6_P9_P11)
 Concentrations in box exceed the screening value >2.5 times

	NEPM 2013 HIL A Residential	NEPM 2013 HIL C Open Space	Sample Type:	Sediment	Sediment	Sediment	Sediment	Sediment	
			Site:	P38	P39	P39	SMC	Tarago P.S.	
			Lab Sample number:	S20-My01774	S20-My00976	S20-My00978	M20-Ma44121	S20-My00666	
			Sample date:	29-04-20			23-03-20	30-04-20	
			Sample ID:	P38_TWS2	P39_TWS1	P39_TWS2	SMCTW2	SCHOOL_TWS3	
			Project Name:	Community DSI	Community DSI	Community DSI	Community DSI	Community DSI	
			Sampling Method:	Micropurge/syphon	Micropurge/syphon	Micropurge/syphon	Micropurge/syphon	Micropurge/syphon	
Analyte grouping/ Analyte	Units	LOR							
LTM-MET-3040 Metals in Waters, Soils & Sediments by ICP-MS									
Aluminium			mg/kg	10	--	15,000	9,600	--	--
Arsenic	100	300	mg/kg	2	--	5	4	--	--
Barium			mg/kg	10	--	43	37	--	--
Beryllium	70	90	mg/kg	2	--	1	1	--	--
Boron	5000		mg/kg	5	--	--	--	--	--
Cadmium	20	90	mg/kg	0.4	--	0	2	--	--
Chromium		300	mg/kg	5	--	35	60	--	--
Cobalt	100	300	mg/kg	5	--	3	4	--	--
Copper	7000	17000	mg/kg	5	--	180	56	--	--
Iron			mg/kg	20	--	16,000	18,000	--	--
Lead	300	600	mg/kg	5	92	160	1,100	9100	120
Manganese	3000	19000	mg/kg	5	--	130	250	--	--
Mercury	200	80	mg/kg	0.1	--	0	0	--	--
Nickel	400	1200	mg/kg	5	--	9	15	--	--
Selenium	200		mg/kg	2	--	--	--	--	--
Zinc	8000	30000	mg/kg	10	--	410	1,800	--	--
LTM-MET-3040 Metals in Waters, Soils & Sediments by ICP-MS									
Lead			mg/L	0.001	--			--	

National Environment Protection Council (2013) National Environmental Protection
 (Assessment of Site Contamination) Amendment Measure 2013 (No. 1) (NEPM)
 Concentration in **red** font and grey box exceed the adopted HIL/HSL 'A' for Low density
 Residential
 Concentration in **orange** font and grey box exceed the adopted HIL/HSL 'C' for Open Space
 and Recreation (Applicable for P2_P6_P9_P11)
 Concentrations in box exceed the screening value >2.5 times

Table 5:
 Tarago Area DSI - Discrete Properties Dust Results



	Dust Interior - Floors (Residential) ^A	Dust Interior - Window Sills and Shelves (Residential) ^A	Dust Interior - Floors (commercial) ^B	Dust Interior - Window Sills and Shelves (Commercial) ^B	NEPM 2013 HIL A Residential	NEPM 2013 HIL C Open Space	Sample Type:	Dust P1	Dust P1	Dust P1	Dust P1	Dust P1	Dust P1
							Site:						
							Lab Sample number:	M20-Ap03788	M20-Ap03789	M20-Ap03790	M20-Ap03791	M20-Ap03792	M20-Ap03793
							Sample date:	24-03-20	24-03-20	24-03-20	24-03-20	24-03-20	24-03-20
							Sample ID:	DGrab-MH(17W)	DGrab-MH2(17W)	DSwab-BE(17W)	DSwab-DA(17W)	DSwab-FW(17W)	DSwab-TV(17W)
							Project Name:	Community DSI	Community DSI	Community DSI	Community DSI	Community DSI	Community DSI
							Sampling Method:	Vacuum	Vacuum	Swab	Swab	Swab	Swab
Analyte grouping/Analyte													
							Units	LOR					
LTM-MET-3040 Metals in Waters, Soils & Sediments by ICP-MS													
Lead					300	600	mg/kg	5	230	240	--	--	--
Total Lead							Total µg	1	--	--	4.6	2.3	520
Lead Loading													
Sample Area							m ²	NA	--	--	0.09	0.09	0.1855
Sample Mass							g		--	--	--	--	--
Lead Loading	108	1076	1000	5000			µg/m ²	NA	--	--	51.11111111	25.55555556	2803.234501

LOR = Limit of Reporting

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Concentration in **red** font and grey box exceed the adopted residential dust criteria

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Concentrations in box exceed the screening value >2.5 times

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^BAS 4361.2-1998 Guide to lead paint management - Residential and commercial buildings.

	Dust Interior - Floors (Residential) ^A	Dust Interior - Window Sills and Shelves (Residential) ^A	Dust Interior - Floors (commercial) ^B	Dust Interior - Window Sills and Shelves (Commercial) ^B	NEPM 2013 HIL A Residential	NEPM 2013 HIL C Open Space	Dust P1	Dust P1	Dust P3	Dust P3	Dust P3	Dust P3	Dust P3	Dust P3
							M20-Ap03794	M20-Ap03795	S20-Ap02130	S20-My01256	S20-My01260	S20-My01257	S20-My01261	S20-Ap02127
							24-03-20	24-03-20	25-03-20	27-04-20	27-04-20	27-04-20	27-04-20	25-03-20
							DVAC-BR1(17W)	DVAC-LR(17W)	DSWAB_FE (P3)	DSWAB_FE(P3)	DSWAB_FE(P3)	DSWAB_KE(P3)	DSWAB_KE(P3)	DSWAB_RE (P3)
							Community DSI	Community DSI	Community DSI	Community DSI	Community DSI	Community DSI	Community DSI	Community DSI
							Vacuum	Vacuum	SWAB	SWAB	SWAB	SWAB	SWAB	SWAB

Analyte grouping/Analyte

LTM-MET-3040 Metals in Waters, Soils & Sediments by ICP-MS

Lead					300	600	89	24						
Total Lead							--	--	28	18	13	9.2	5.8	9.2

Lead Loading

Sample Area							2	--	0.09	0.09	0.09	0.09	0.09	0.09
Sample Mass							8.675	--						
Lead Loading	108	1076	1000	5000			386.0375	--	311.1111111	200	144.4444444	102.2222222	64.44444444	102.2222222

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	Dust Interior - Floors (Residential) ^A	Dust Interior - Window Sills and Shelves (Residential) ^A	Dust Interior - Floors (commercial) ^B	Dust Interior - Window Sills and Shelves (Commercial) ^B	NEPM 2013 HIL A Residential	NEPM 2013 HIL C Open Space	Dust P3	Dust P3	Dust P3	Dust P3	Dust P3	Dust P3	Dust P3	Dust P4
							S20-Ap02128	S20-My01258	S20-My01262	S20-Ap02129	S20-My01259	S20-My01263	S20-Ap02148	S20-My01435
							25-03-20	27-04-20	27-04-20	25-03-20	27-04-20	27-04-20	25-03-20	29-04-20
							DSWAB_SE (P3)	DSWAB_SE(P3)	DSWAB_SE(P3)	DSWAB_WIN (P3)	DSWAB_WIN(P3)	DSWAB_WIN(P3)	DVAC_MH(P3)	DSWAB_BE(P4)
							Community DSI	Community DSI	Community DSI	Community DSI	Community DSI	Community DSI	Community DSI	Community DSI
							SWAB	SWAB	SWAB	SWAB	SWAB	SWAB	Vacuum	SWAB

Analyte grouping/Analyte

LTM-MET-3040 Metals in Waters, Soils & Sediments by ICP-MS

Lead					300	600								450	
Total Lead							110	79	12	31	10	2.4		4.8	

Lead Loading

Sample Area							0.09	0.09	0.09	0.09	0.09	0.09	4	0.09
Sample Mass													1.742	
Lead Loading	108	1076	1000	5000			1222.222222	877.777778	133.3333333	344.4444444	111.1111111	26.66666667	195.975	53.33333333

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Concentration in **red** font and grey box exceed the adopted residential dust criteria

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Concentrations in box exceed the screening value >2.5 times

Where one or more guideline value is exceeded, the highest guideline exceeded will be highlighted

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	Dust Interior - Floors (Residential) ^A	Dust Interior - Window Sills and Shelves (Residential) ^A	Dust Interior - Floors (commercial) ^B	Dust Interior - Window Sills and Shelves (Commercial) ^B	NEPM 2013 HIL A Residential	NEPM 2013 HIL C Open Space	Dust P4	Dust P4	Dust P4	Dust P4	Dust P4	Dust P5	Dust P5	Dust P5
							S20-My01436	S20-My01437	S20-My01438	S20-My01434	S20-My01433	M20-Ap02131	M20-Ap02133	S20-Ap02152
							29-04-20	29-04-20	29-04-20	29-04-20	29-04-20			
							DSWAB_FE(P4)	DSWAB_MH(P4)	DSWAB_WIN(P4)	DVAC_KB(P4)	DVAC_LR(P4)	DSWAB_BC (PS)	DSWAB_KA (PS)	DVAC-BE(PS)
							Community DSI	Community DSI	Community DSI	Community DSI	Community DSI	Community DSI	Community DSI	Community DSI
							SWAB	SWAB	SWAB	Vacuum	Vacuum	SWAB	SWAB	Vacuum
												shelf	Hard floor	Carpet floor

Analyte grouping/Analyte

LTM-MET-3040 Metals in Waters, Soils & Sediments by ICP-MS

Lead					300	600				53	11			52
Total Lead							3.2	120	60			13	1.7	

Lead Loading

Sample Area							0.09	0.286	0.06	2	2	0.09	0.09	2
Sample Mass										1.042	4.101			9.922
Lead Loading	108	1076	1000	5000			35.55555556	419.5804196	1000	27.613	22.5555	144.4444444	18.88888889	257.972

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National Environment Protection Council (2013) National Environmental Protection (Assessment of Site Contamination) Amendment Measure 2013 (No. 1) (NEPM).

Concentration in **red** font and grey box exceed the adopted residential dust criteria

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Concentrations in box exceed the screening value >2.5 times

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	Dust Interior - Floors (Residential) ^A	Dust Interior - Window Sills and Shelves (Residential) ^A	Dust Interior - Floors (commercial) ^B	Dust Interior - Window Sills and Shelves (Commercial) ^B	NEPM 2013 HIL A Residential	NEPM 2013 HIL C Open Space	Dust P5	Dust P5	Dust P5	Dust P5	Dust P5	Dust P5	Dust P5	Dust P5
							M20-Ap02149	M20-Ap02150	M20-Ap02151	S20-My27000	S20-My27001	S20-My27002	S20-My27003	S20-My27004
							DVAC-FE(PS)	DVAC-LA(PS)	DVAC-WPS(PS)	DSWAB_1 (PS)	DSWAB_2 (PS)	DSWAB_3 (PS)	DSWAB_4 (PS)	DSWAB_5 (PS)
							Community DSI	Community DSI	Community DSI	Community DSI	Community DSI	Community DSI	Community DSI	Community DSI
							Vacuum	Vacuum	Vacuum	SWAB	SWAB	SWAB	SWAB	SWAB
							Carpet floor	Carpet floor	whole area					

Analyte grouping/Analyte

LTM-MET-3040 Metals in Waters, Soils & Sediments by ICP-MS

Lead					300	600	78	74	17	-	-	-	-	-
Total Lead										2.1	1.2	1.4	1.3	2.1

Lead Loading

Sample Area							0.975	1	1	0.09	0.09	0.09	0.09	0.09
Sample Mass							9.34	7.614	3.604	-	-	-	-	-
Lead Loading	108	1076	1000	5000			747.2	563.436	61.268	23.33333333	13.33333333	15.55555556	14.44444444	23.33333333

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Concentration in **red** font and grey box exceed the adopted residential dust criteria

Concentration in **orange** font and grey box exceed the adopted commercial dust criteria (Applicable for P2, P6, P9, P11 & Tarago Station only)

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	Dust Interior - Floors (Residential) ^A	Dust Interior - Window Sills and Shelves (Residential) ^A	Dust Interior - Floors (commercial) ^B	Dust Interior - Window Sills and Shelves (Commercial) ^B	NEPM 2013 HIL A Residential	NEPM 2013 HIL C Open Space	Dust P5	Dust P5	Dust P5	Dust P5	Dust P5	Dust P5	Dust P5	
							S20-My27005	S20-My27006	S20-My27007	S20-My27000	S20-My27001	S20-My27002	S20-My27003	S20-My27004
							18-05-20	18-05-20	18-05-20	18-05-20	18-05-20	18-05-20	18-05-20	18-05-20
							DSWAB_6 (PS)	DSWAB_7 (PS)	DSWAB_8 (PS)	DSWAB_1 (PS)	DSWAB_2 (PS)	DSWAB_3 (PS)	DSWAB_4 (PS)	DSWAB_5 (PS)
							Community DSI	Community DSI	Community DSI	Community DSI	Community DSI	Community DSI	Community DSI	Community DSI
							SWAB	SWAB	SWAB	SWAB	SWAB	SWAB	SWAB	SWAB

Analyte grouping/Analyte

LTM-MET-3040 Metals in Waters, Soils & Sediments by ICP-MS

Lead					300	600	-	-	-	-	-	-	-	-
Total Lead							5.4	1.1	1.6	2.1	1.2	1.4	1.3	2.1

Lead Loading

Sample Area							0.09	0.09	0.09	0.09	0.09	0.09	0.09	0.09
Sample Mass							-	-	-	-	-	-	-	-
Lead Loading	108	1076	1000	5000			60	12.22222222	17.77777778	23.33333333	13.33333333	15.55555556	14.44444444	23.33333333

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National Environment Protection Council (2013) National Environmental Protection (Assessment of Site Contamination) Amendment Measure 2013 (No. 1) (NEPM).

Concentration in **red** font and grey box exceed the adopted residential dust criteria

Concentration in **orange** font and grey box exceed the adopted commercial dust criteria (Applicable for P2, P6, P9, P11 & Tarago Station only)

Concentrations in box exceed the screening value >2.5 times

Where one or more guideline value is exceeded, the highest guideline exceeded will be highlighted

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	Dust Interior - Floors (Residential) ^A	Dust Interior - Window Sills and Shelves (Residential) ^A	Dust Interior - Floors (commercial) ^B	Dust Interior - Window Sills and Shelves (Commercial) ^B	NEPM 2013 HIL A Residential	NEPM 2013 HIL C Open Space	Dust P5	Dust P5	Dust P5	Dust P7	Dust P7	Dust P7	Dust P7	Dust P7
							S20-My27005	S20-My27006	S20-My27007	S20-My01121	S20-My01119	S20-My01120	S20-My01118	S20-My01117
							18-05-20	18-05-20	18-05-20	29-04-20	29-04-20	29-04-20	29-04-20	29-04-20
							DSWAB_6 (PS)	DSWAB_7 (PS)	DSWAB_8 (PS)	DGRAB_MH(P7)	DSWAB_BE(P7)	DSWAB_FE(P7)	DVAC_KB(P7)	DVAC_LR(P7)
							Community DSI	Community DSI	Community DSI	Community DSI	Community DSI	Community DSI	Community DSI	Community DSI
							SWAB	SWAB	SWAB	SWAB	SWAB	SWAB	Vacuum	Vacuum

Analyte grouping/Analyte

LTM-MET-3040 Metals in Waters, Soils & Sediments by ICP-MS

Lead					300	600				61			25	41
Total Lead							5.4	1.1	1.6		2.6	1.2		

Lead Loading

Sample Area							0.09	0.09	0.09		0.09	0.09	2	2
Sample Mass							-	-	-	1.523			1.403	0.57
Lead Loading	108	1076	1000	5000			60	12.22222222	17.77777778		28.88888889	13.33333333	17.5375	11.685

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Concentration in **red** font and grey box exceed the adopted residential dust criteria

Concentration in **orange** font and grey box exceed the adopted commercial dust criteria (Applicable for P2, P6, P9, P11 & Tarago Station only)

Concentrations in box exceed the screening value >2.5 times

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	Dust Interior - Floors (Residential) ^A	Dust Interior - Window Sills and Shelves (Residential) ^A	Dust Interior - Floors (commercial) ^B	Dust Interior - Window Sills and Shelves (Commercial) ^B	NEPM 2013 HIL A Residential	NEPM 2013 HIL C Open Space	Dust P9	Dust P9	Dust P9	Dust P9	Dust P9	Dust P10	Dust P10	Dust P10
							S20-Ma44388	S20-Ma44391	S20-Ma44387	S20-Ma44389	S20-Ma44390	S20-My01299	S20-My01300	S20-My01297
							25-03-20	25-03-20	25-03-20	25-03-20	25-03-20	28-04-20	28-04-20	28-04-20
							DSWAB_BE(F9)	DSWAB_BS(P9)	DSWAB_FE(F9)	DSWAB_KF(F9)	DVAC_MA(P9)	DSWAB_BE(P10)	DSWAB_FE(P10)	DSWAB_MH(P10)
							Community DSI	Community DSI	Community DSI	Community DSI	Community DSI	Community DSI	Community DSI	Community DSI
							Swab	Swab	Swab	Swab	Vacuum Dust	Swab	Swab	Swab

Analyte grouping/Analyte

LTM-MET-3040 Metals in Waters, Soils & Sediments by ICP-MS

Lead					300	600	--	--	--	--	38			
Total Lead							11	210	9.4	8.4	--	2.1	1.9	11

Lead Loading

Sample Area							0.09	0.09	0.09	0.09	2	0.09	0.09	0.33
Sample Mass							--	--	--	--	28.492			
Lead Loading	108	1076	1000	5000			122.222222	2333.333333	104.444444	93.33333333	541.348	23.33333333	21.11111111	33.33333333

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	Dust Interior - Floors (Residential) ^A	Dust Interior - Window Sills and Shelves (Residential) ^A	Dust Interior - Floors (commercial) ^B	Dust Interior - Window Sills and Shelves (Commercial) ^B	NEPM 2013 HIL A Residential	NEPM 2013 HIL C Open Space	Dust P10	Dust P10	Dust P11	Dust P11	Dust P11	Dust P11	Dust P11	Dust P14
							S20-My01301	S20-My01298	S20-Ma44013	S20-Ma44015	S20-Ma44016	S20-Ma44014	S20-Ma44012	S20-My00997
							28-04-20	28-04-20	26-03-20	26-03-20	26-03-20	26-03-20	26-03-20	29-04-20
							DVAC_KB(P10)	DVAC_LR(P10)	DSWAB_FE(P11)	DSWAB_KC(P11)	DSWAB_OD(P11)	DSWAB_TC(P11)	DVAC_MA(P11)	DSWAB_BE(P14)
							Community DSI	Community DSI	Community DSI	Community DSI	Community DSI	Community DSI	Community DSI	Community DSI
							Vacuum	Vacuum	Swab	Swab	Swab	Swab	Vacuum	SWAB

Analyte grouping/Analyte

LTM-MET-3040 Metals in Waters, Soils & Sediments by ICP-MS

Lead					300	600	21	46	--	--	--	--	180	
Total Lead							20	17	24	76	--	--	< 1	

Lead Loading

Sample Area							9.18	2	0.09	0.09	0.09	0.09	2	0.09
Sample Mass							1.043	1.274	--	--	--	--	12	
Lead Loading	108	1076	1000	5000			2.385947712	29.302	222.2222222	188.8888889	266.6666667	844.4444444	1080	< 11.11

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							S20-My00998	S20-My00999	S20-My01000	S20-My00995	S20-My00996	S20-My00956	S20-My00955	S20-My00958
							29-04-20	29-04-20	29-04-20	29-04-20	29-04-20	30-04-20	30-04-20	30-04-20
							DSWAB_FE(P14)	DSWAB_MH(P14)	DSWAB_SE(P14)	DVAC_LR(P14)	DVAC_MB(P14)	DSWAB_AC(P17)	DSWAB_BE(P17)	DSWAB_FE(P17)
							Community DSI	Community DSI	Community DSI	Community DSI	Community DSI	Community DSI	Community DSI	Community DSI
							SWAB	SWAB	SWAB	Vacuum	Vacuum	SWAB	SWAB	SWAB

Analyte grouping/Analyte

LTM-MET-3040 Metals in Waters, Soils & Sediments by ICP-MS

Lead					300	600					19	28		
Total Lead							1.1	9.9	1.9			39	1.6	1

Lead Loading

Sample Area							0.09	0.09	0.09	2	2	0.09	0.09	0.09
Sample Mass										1.066	1.353			
Lead Loading	108	1076	1000	5000			12.22222222	110	21.11111111	10.127	18.942	433.3333333	17.77777778	11.11111111

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							S20-My00959	S20-My00957	S20-My00954	S20-My00953	S20-My01071	S20-My01068	S20-My01069	S20-My01070
							30-04-20	30-04-20	30-04-20	30-04-20	30-04-20	30-04-20	30-04-20	30-04-20
							DSWAB_MH(P17)	DSWAB_WIN(P17)	DVAC_LR(P17)	DVAC_MBR(P17)	DSWAB_AC(P18)	DSWAB_BE(P18)	DSWAB_FE(P18)	DSWAB_MH(P18)
							Community DSI	Community DSI	Community DSI	Community DSI	Community DSI	Community DSI	Community DSI	Community DSI
							SWAB	SWAB	Vacuum	Vacuum	SWAB	SWAB	SWAB	SWAB

Analyte grouping/Analyte

LTM-MET-3040 Metals in Waters, Soils & Sediments by ICP-MS

Lead					300	600			77	66				
Total Lead							12	6			72	20	13	54

Lead Loading

Sample Area							0.09	0.05	2	2	0.06	0.09	0.09	0.09
Sample Mass									1.043	3.362				
Lead Loading	108	1076	1000	5000			133.3333333	120	40.1555	110.946	1200	222.2222222	144.4444444	600

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							S20-My01067	S20-My01066	S20-My01831	S20-My01832	S20-My01833	S20-My01834	S20-My01835	S20-My01836
							30-04-20	30-04-20	30-04-20	30-04-20	30-04-20	30-04-20	30-04-20	30-04-20
							DVAC_KB(P18)	DVAC_LR(P18)	DVAC_MBR(P26)	DVAC_LR(P26)	DSWAB_LE(P26)	DSWAB_WIN(P26)	DSWAB_FE(P26)	DSWAB_MH(P26)
							Community DSI	Community DSI	Community DSI	Community DSI	Community DSI	Community DSI	Community DSI	Community DSI
							Vacuum	Vacuum	Vacuum	Vacuum	SWAB	SWAB	SWAB	SWAB

Analyte grouping/Analyte

LTM-MET-3040 Metals in Waters, Soils & Sediments by ICP-MS

Lead					300	600	83	48	11	20				
Total Lead											< 1	7.5	1	1.3

Lead Loading

Sample Area							2	2	2	1.5	0.09	0.12	0.09	0.06
Sample Mass							13.297	34.488	0.553	1.788				
Lead Loading	108	1076	1000	5000			551.8255	827.712	3.0415	23.84	<11.11	62.5	11.11111111	21.66666667

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	Dust Interior - Floors (Residential) ^A	Dust Interior - Window Sills and Shelves (Residential) ^A	Dust Interior - Floors (commercial) ^B	Dust Interior - Window Sills and Shelves (Commercial) ^B	NEPM 2013 HIL A Residential	NEPM 2013 HIL C Open Space	Dust P26	Dust P27	Dust P27	Dust P27	Dust P27	Dust P27	Dust P27	Dust P28
							S20-My01837	S20-My01273	S20-My01274	S20-My01272	S20-My01271	S20-My01275	S20-My01276	S20-My01110
							30-04-20	28-04-20	28-04-20	28-04-20	28-04-20	28-04-20	28-04-20	29-04-20
							DSWAB_BE(P26)	DSWAB_BE(P27)	DSWAB_FE(P27)	DSWAB_LE(P27)	DSWAB_MH(P27)	DVAC_KB(P27)	DVAC_RR(P27)	DSWAB_BE(P28)
							Community DSI	Community DSI	Community DSI	Community DSI	Community DSI	Community DSI	Community DSI	Community DSI
							SWAB	SWAB	SWAB	SWAB	SWAB	Vacuum	Vacuum	SWAB

Analyte grouping/Analyte

LTM-MET-3040 Metals in Waters, Soils & Sediments by ICP-MS

Lead					300	600							<5	42	
Total Lead							< 1	< 1	1.4	1.4	3.3				1.7

Lead Loading

Sample Area							0.09	0.09	0.09	0.09	0.09	9	2	0.09
Sample Mass												1.258	0.89	
Lead Loading	108	1076	1000	5000			<11.11	<11.11	15.55555556	15.55555556	36.66666667	<0.7	18.69	18.88888889

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	Dust Interior - Floors (Residential) ^A	Dust Interior - Window Sills and Shelves (Residential) ^A	Dust Interior - Floors (commercial) ^B	Dust Interior - Window Sills and Shelves (Commercial) ^B	NEPM 2013 HIL A Residential	NEPM 2013 HIL C Open Space	Dust P28	Dust P28	Dust P28	Dust P28	Dust P32	Dust P32	Dust P32
							S20-My01111	S20-My01112	S20-My01108	S20-My01109	S20-My01147	S20-My01145	S20-My01143
							29-04-20	29-04-20	29-04-20	29-04-20	30-04-20	30-04-20	30-04-20
							DSWAB_FE(P28)	DSWAB_MH(P28)	DVAC_LR(P28)	DVAC_MB(P28)	DGRAB_MH(P32)	DSWAB_AC(P32)	DSWAB_BE(P32)
							Community DSI	Community DSI	Community DSI	Community DSI	Community DSI	Community DSI	Community DSI
							SWAB	SWAB	Vacuum	Vacuum	Direct	SWAB	SWAB

Analyte grouping/Analyte

LTM-MET-3040 Metals in Waters, Soils & Sediments by ICP-MS

Lead					300	600			23	18	300		
Total Lead								5.7	4			17	4.5

Lead Loading

Sample Area							0.09	0.3	2	2.25		0.09	0.09
Sample Mass									9.691	7.714	4.622		
Lead Loading	108	1076	1000	5000			63.33333333	13.33333333	111.4465	61.712		188.8888889	50

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	Dust Interior - Floors (Residential) ^A	Dust Interior - Window Sills and Shelves (Residential) ^A	Dust Interior - Floors (commercial) ^B	Dust Interior - Window Sills and Shelves (Commercial) ^B	NEPM 2013 HIL A Residential	NEPM 2013 HIL C Open Space	Dust P32	Dust P32	Dust P32	Dust P32	Dust P32	Dust P32	Dust P32	
							S20-My01150	S20-My01149	S20-My01153	S20-My01144	S20-My01154	S20-My01152	S20-My01148	S20-My01141
							30-04-20	30-04-20	30-04-20	30-04-20	30-04-20	30-04-20	30-04-20	30-04-20
							DSWAB_BE(P32_T1)	DSWAB_BS(P32_T1)	DSWAB_BS(P32_T2)	DSWAB_FE(P32)	DSWAB_ME(P32_T2)	DSWAB_WIN(P32_T2)	DSWAB_WS(P32_T1)	DVAC_KB(P32)
							Community DSI	Community DSI	Community DSI	Community DSI	Community DSI	Community DSI	Community DSI	Community DSI
							SWAB	SWAB	SWAB	SWAB	SWAB	SWAB	SWAB	Vacuum

Analyte grouping/Analyte

LTM-MET-3040 Metals in Waters, Soils & Sediments by ICP-MS

Lead					300	600								140
Total Lead							23	7	15	3.8	26	33	17	

Lead Loading

Sample Area							0.09	0.09	0.09	0.09	0.09	0.049	0.0603	9.62
Sample Mass														3.549
Lead Loading	108	1076	1000	5000			255.5555556	77.77777778	166.6666667	42.22222222	288.8888889	673.4693878	281.9237148	51.64864865

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	Dust Interior - Floors (Residential) ^A	Dust Interior - Window Sills and Shelves (Residential) ^A	Dust Interior - Floors (commercial) ^B	Dust Interior - Window Sills and Shelves (Commercial) ^B	NEPM 2013 HIL A Residential	NEPM 2013 HIL C Open Space	Dust P32	Dust P32	Dust P33	Dust P33	Dust P33	Dust P33	Dust P33	Dust P33
							S20-My01142	S20-My01151	S20-My00632	S20-My00630	S20-My00631	S20-My00629	S20-My00628	S20-My00627
							30-04-20	30-04-20	24-04-20	24-04-20	24-04-20	24-04-20	24-04-20	24-04-20
							DVAC_LR(P32)	DVAC_LR(P32_T1)	DGRAB_MH(P33)	DSWAB_BE(P33)	DSWAB_FE(P33)	DSWAB_LE(P33)	DVAC_KB(P33)	DVAC_LR(P33)
							Community DSI	Community DSI	Community DSI	Community DSI	Community DSI	Community DSI	Community DSI	Community DSI
							Vacuum	Vacuum	Vacuum	SWAB	SWAB	SWAB	Vacuum	Vacuum

Analyte grouping/Analyte

LTM-MET-3040 Metals in Waters, Soils & Sediments by ICP-MS

Lead					300	600	53	49					12	29
Total Lead									1	1	1.3	3.9		

Lead Loading

Sample Area							2	2	0.3025	0.09	0.09	0.09	2	2
Sample Mass							9.286	0.39					1.76	5.596
Lead Loading	108	1076	1000	5000			246.079	9.555	3.305785124	11.11111111	14.44444444	43.33333333	10.56	81.142

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							S20-My01490	S20-My01489	S20-My01491	S20-My01492	S20-My01757	S20-My01756	S20-My01758	S20-My01759
							28-04-20	28-04-20	28-04-20	28-04-20	28-04-20	28-04-20	28-04-20	28-04-20
							DSWAB_BE(P34)	DSWAB_FE(P34)	DSWAB_MH(P34)	DVAC_BR(P34)	DSWAB_BE(P35)	DSWAB_FE(P35)	DSWAB_KC(P35)	DSWAB_MH(P35)
							Community DSI	Community DSI	Community DSI	Community DSI	Community DSI	Community DSI	Community DSI	Community DSI
							SWAB	SWAB	SWAB	Vacuum	SWAB	SWAB	SWAB	SWAB

Analyte grouping/Analyte

LTM-MET-3040 Metals in Waters, Soils & Sediments by ICP-MS

Lead					300	600				49				
Total Lead							15	9.7	3.1		< 1	1.5	2.9	38

Lead Loading

Sample Area							0.09	0.09	0.0275	2	0.09	0.09	0.09	0.34
Sample Mass										0.56				
Lead Loading	108	1076	1000	5000			166.6666667	107.7777778	112.7272727	13.72	< 11.11	16.66666667	32.22222222	111.7647059

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							S20-My01755	S20-My01754	S20-My01788	S20-My01789	S20-My01790	S20-My01787	S20-My01786	S20-My01785
							28-04-20	28-04-20	29-04-20	29-04-20	29-04-20	29-04-20	29-04-20	29-04-20
							DVAC_KB(P35)	DVAC_LR(P35)	DSWAB_BE(P37)	DSWAB_FE(P37)	DSWAB_MH(P37)	DSWAB_SE(P37)	DVAC_MBR(P37)	DVAC_LR(P37)
							Community DSI	Community DSI	Community DSI	Community DSI	Community DSI	Community DSI	Community DSI	Community DSI
							Vacuum	Vacuum	SWAB	SWAB	SWAB	SWAB	Vacuum	Vacuum

Analyte grouping/Analyte

LTM-MET-3040 Metals in Waters, Soils & Sediments by ICP-MS

Lead					300	600	31	35					37	35
Total Lead									3.4	26	13	3.7		

Lead Loading

Sample Area							8.31	2	0.09	0.09	--	0.09	2	2
Sample Mass							0.554	1.216					2.586	4.981
Lead Loading	108	1076	1000	5000			2.066666667	21.28	37.77777778	288.8888889		41.11111111	47.841	87.1675

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							S20-My01770	S20-My01768	S20-My01769	S20-My01767	S20-My01766	S20-My28577	S20-My28578	S20-My28579
							29-04-20	29-04-20	29-04-20	29-04-20	29-04-20			
							DGRAB_MH(P38)	DSWAB_BE(P38)	DSWAB_FE(P38)	DVAC_KB(P38)	DVAC_LR(P38)	P41_DSWAB_FE	P41_DSWAB_MBR	P41_DSWAB_KIT
							Community DSI	Community DSI	Community DSI	Community DSI	Community DSI	Community DSI	Community DSI	Community DSI
							Vacuum	SWAB	SWAB	Vacuum	Vacuum	SWAB	SWAB	SWAB

Analyte grouping/Analyte

LTM-MET-3040 Metals in Waters, Soils & Sediments by ICP-MS

Lead					300	600	< 5			13	20			
Total Lead								2.9	2.6			< 1	< 1	< 1

Lead Loading

Sample Area							--	0.09	0.09	2.34	6.44	--	--	--
Sample Mass							2.491			0.413	0.33	--	--	--
Lead Loading	108	1076	1000	5000				32.22222222	28.88888889	2.294444444	1.02484472	--	--	--

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	Dust Interior - Floors (Residential) ^A	Dust Interior - Window Sills and Shelves (Residential) ^A	Dust Interior - Floors (commercial) ^B	Dust Interior - Window Sills and Shelves (Commercial) ^B	NEPM 2013 HIL A Residential	NEPM 2013 HIL C Open Space	Dust P41	Dust P41	Dust SMC	Dust SMC	Dust SMC	Dust SMC	Dust SMC	Dust SMC
							S20-My28580	S20-My28581	S20-Ma43350	S20-Ma43351	S20-Ma43352	S20-Ap02153	S20-Ma43353	S20-Ma43354
									23-03-20	23-03-20	23-03-20	23-03-20	23-03-20	23-03-20
							P41_DSWAB_SILL	P41_DSWAB_BE	DGRAB-MH(SMC)	DSWAB-BE(SMC)	DSWAB-FE(SMC)	DVAC-LR(SMC)	DVAC-WH(SMC)	DVAL-CP(SMC)
							Community DSI	Community DSI	Community DSI	Community DSI	Community DSI	Community DSI	Community DSI	Community DSI
							SWAB	SWAB	Vacuum	Swab	Swab	Vacuum	Vacuum	Vacuum
Analyte grouping/Analyte														
LTM-MET-3040 Metals in Waters, Soils & Sediments by ICP-MS														
Lead					300	600			5100	--	--	540	11000	1100
Total Lead							< 1	1	--	190	200	--	--	--
Lead Loading														
Sample Area							--	--	--	0.09	0.09	2	--	--
Sample Mass							--	--	--	--	--	6.57	--	--
Lead Loading	108	1076	1000	5000			--	--	--	2111.111111	2222.222222	1773.9	--	--

LOR = Limit of Reporting

National Environment Protection Council (2013) National Environmental Protection (Assessment of Site Contamination) Amendment Measure 2013 (No. 1) (NEPM).

Concentration in red font and grey box exceed the adopted residential dust criteria

Concentration in orange font and grey box exceed the adopted commercial dust criteria (Applicable for P2, P6, P9, P11 & Tarago Station only)

Concentrations in box exceed the screening value >2.5 times

Where one or more guideline value is exceeded, the highest guideline exceeded will be highlighted

^AUSEPA (2020) Protect your family from lead in your home. US Environmental Protection Agency - January 2020.

^BAS 4361.2-1998 Guide to lead paint management - Residential and commercial buildings.

	Dust Interior - Floors (Residential) ^A	Dust Interior - Window Sills and Shelves (Residential) ^A	Dust Interior - Floors (commercial) ^B	Dust Interior - Window Sills and Shelves (Commercial) ^B	NEPM 2013 HIL A Residential	NEPM 2013 HIL C Open Space	Dust SMC	Dust SMC	Dust SMC	Dust SMC	Dust SMC	Dust SMC	Dust SMC	Dust SMC
							S20-Ma43355	S20-Jn00683	S20-Jn00684	S20-Jn00685	S20-Jn00686	S20-Jn00687	S20-Jn00688	S20-Jn00689
							24-03-20	31-05-20	31-05-20	31-05-20	31-05-20	31-05-20	31-05-20	31-05-20
							DVAL-KYAK(SMC)	SMC_SWAB_CDS	SMC_SWAB_COT	MC_SWAB_PRINTE	MC_SWAB_LOUNGE	SMC_SWAB_MAG	MC_SWAB_LOUNGE	SMC_SWAB_BOOKS
							Community DSI	Community DSI	Community DSI	Community DSI	Community DSI	Community DSI	Community DSI	Community DSI
							Vacuum	Swab	Swab	Swab	Swab	Swab	Swab	Swab
Analyte grouping/Analyte														
LTM-MET-3040 Metals in Waters, Soils & Sediments by ICP-MS														
Lead					300	600	1000							
Total Lead							--	1	18	2	20	2	9	3
Lead Loading														
Sample Area							--	0.09	0.09	0.03	0.09	0.061275	0.09	0.09
Sample Mass							--							
Lead Loading	108	1076	1000	5000			--	6	200	60	222	36	97	37

LOR = Limit of Reporting

National Environment Protection Council (2013) National Environmental Protection (Assessment of Site Contamination) Amendment Measure 2013 (No. 1) (NEPM).

Concentration in **red** font and grey box exceed the adopted residential dust criteria

Concentration in **orange** font and grey box exceed the adopted commercial dust criteria (Applicable for P2, P6, P9, P11 & Tarago Station only)

Concentrations in box exceed the screening value >2.5 times

Where one or more guideline value is exceeded, the highest guideline exceeded will be highlighted

^AUSEPA (2020) Protect your family from lead in your home. US Environmental Protection Agency - January 2020.

^BAS 4361.2-1998 Guide to lead paint management - Residential and commercial buildings.

	Dust Interior - Floors (Residential) ^A	Dust Interior - Window Sills and Shelves (Residential) ^A	Dust Interior - Floors (commercial) ^B	Dust Interior - Window Sills and Shelves (Commercial) ^B	NEPM 2013 HIL A Residential	NEPM 2013 HIL C Open Space
Analyte grouping/Analyte						
LTM-MET-3040 Metals in Waters, Soils & Sediments by ICP-MS						
Lead					300	600
Total Lead						
Lead Loading						
Sample Area						
Sample Mass						
Lead Loading	108	1076	1000	5000		

LOR = Limit of Reporting

National Environment Protection Council (2013) National Environmental Protection (Assessment of Site Contamination) Amendment Measure 2013 (No. 1) (NEPM).

Concentration in **red** font and grey box exceed the adopted residential dust criteria

Concentration in **orange** font and grey box exceed the adopted commercial dust criteria (Applicable for P2, P6, P9, P11 & Tarago Station only)

Concentrations in box exceed the screening value >2.5 times

Where one or more guideline value is exceeded, the highest guideline exceeded will be highlighted

^AUSEPA (2020) Protect your family from lead in your home. US Environmental Protection Agency - January 2020.

^BAS 4361.2-1998 Guide to lead paint management - Residential and commercial buildings.

	NSW EPA Lead in Paint guideline ^A	Sample Type:	Paint	Paint	Paint	Paint	Paint	Paint	Paint	Paint	Paint	
		Site:	P12	P14	P18	P3	P32	P32	P32	P5	SMC	
		Lab Sample number:	S20-Ma44159	S20-Ma44061	S20-Ap13759	S20-Ap02142	S20-My01146	S20-My01155	S20-My01156	S20-My27008	S20-Ap02141	
		Sample date:	26-03-20	26-03-20	31-03-20	23-03-20	30-04-20	30-04-20	30-04-20	18-05-20	26-03-20	
		Sample ID:	P12_PAINT1	P14_PAINT1	P18_PAINT	P3_PAINT 1	P32_HOUSEPAINT	P32_TRAINPAINT	P32_TRAINPAINT2	PAINT 1 (PS)	SMC_PAINT 1	
		Project Name:	Community DSI	Community DSI	Community DSI	Community DSI	Community DSI	Community DSI	Community DSI	Community DSI	Community DSI	
	Sampling Method:	Direct	Direct	Direct	Direct	Direct	Direct	Direct	Direct	Direct		
Analyte grouping/Analyte	Units	LOR										
E022.5 - ACID EXTRACTABLE METALS IN PAINT by ICP-MS												
Lead	0.1	%	0.01	0.44	< 0.01	2.8	< 0.01	0.24	0.29	3.1	0.02	0.51

LOR = Limit of Reporting

Concentration in **red** font and grey box exceed the adopted maximum allowable lead amount in house paint

^ANSW EPA Managing Lead Contamination in Home Maintenance, Renovation and Demolition Practices. A Guide for Councils 2003.

	NEPM 2013 HIL D Commercial / Industrial	NEPM EIL Commercial / Industrial (site specific)	Sample Type:	Soil	Soil	Soil	Soil	Soil	Soil	Soil	Soil	Soil	
			Site:	Rail Corridor	Rail Corridor	Rail Corridor	Rail Corridor	Rail Corridor	Rail Corridor	Rail Corridor	Rail Corridor	Rail Corridor	Rail Corridor
			Lab Sample number:	S20-Ap02695	S20-Ap02696	S20-Ap02697	S20-Ap02698	S20-Ap02699	S20-Ap02700	S20-Ap02701	S20-Ap02702	S20-Ap02703	
			Sample date:	31-03-20	31-03-20	31-03-20	31-03-20	31-03-20	31-03-20	31-03-20	31-03-20	31-03-20	
			Sample ID:	TP1_0.0-0.1	TP1_0.2-0.3	TP1_1.0-1.1	TP1_1.8-1.9	TP2_0.0-0.1	TP2_0.5-0.6	TP2_1.0-1.1	TP3_0.0-0.1	TP3_0.5-0.6	
			Project Name:	Community DSI	Community DSI	Community DSI	Community DSI	Community DSI	Community DSI	Community DSI	Community DSI	Community DSI	
			Sampling Method:	Excavator	Excavator	Excavator	Excavator	Excavator	Excavator	Excavator	Excavator	Excavator	
Analyte grouping/Analyte			Units	LOR									
LTM-GEN-7080 Moisture													
Moisture Content (dried @ 103°C)			%	--	12	8.1	10	12	8.3	5.9	5.9	7.6	4.2
LTM-MET-3040 Metals in Waters, Soils & Sediments by ICP-MS													
Lead	2200 ^a	1800	mg/kg	5	290	490	42	28	140	38	16	29	1100

LOR = Limit of Reporting
 National Environment Protection Council (2013) National Environmental Protection (Assessment of Site Contamination) Amendment Measure 2013 (No. 1) (NEPM).
 Concentration in **red** font and grey box exceed the adopted HIL for Commercial/Industrial use
 Concentration in **orange** font and grey box exceed the adopted EIL/ESL 'D' for Commercial/Industrial use
 Concentrations in box exceed the screening value >2.5 times
 Where one or more guideline value is exceeded, the highest guideline exceeded will be highlighted
^a Human Health Guideline for Lead adopted from the Human Health Risk Assessment (Ramboll 2019d)

Table 7:
 Tarago Area DSI - Load-Out Complex Soil Results

	NEPM 2013 HIL D Commercial / Industrial	NEPM EIL Commercial / Industrial (site specific)	Sample Type:	Soil	Soil	Soil	Soil	Soil	Soil	Soil	Soil	Soil	Soil	
			Site:	Rail Corridor	Rail Corridor	Rail Corridor	Rail Corridor	Rail Corridor	Rail Corridor	Rail Corridor	Rail Corridor	Rail Corridor	Rail Corridor	Rail Corridor
			Lab Sample number:	S20-Ap02704	S20-Ap02705	S20-Ap02706	S20-Ap02707	S20-Ap02708	S20-Ap02709	S20-Ap02710	S20-Ap02711	S20-Ap02712		
			Sample date:	31-03-20	31-03-20	31-03-20	31-03-20	31-03-20	31-03-20	31-03-20	31-03-20	31-03-20		
			Sample ID:	TP3_0.6-0.7	TP5_0.0-0.1	TP5_0.6-0.7	TP5_1.0-1.1	TP5_1.9-2.0	TP6_0.0-0.1	TP6_0.5-0.6	TP6_1.9-2.0	TP7_0.0-0.1		
			Project Name:	Community DSI	Community DSI	Community DSI	Community DSI	Community DSI	Community DSI	Community DSI	Community DSI	Community DSI		
			Sampling Method:	Excavator	Excavator	Excavator	Excavator	Excavator	Excavator	Excavator	Excavator	Excavator		
Analyte grouping/Analyte			Units	LOR										
LTM-GEN-7080 Moisture														
Moisture Content (dried @ 103°C)			%	--	9.5	6.5	11	10	14	4.2	17	13	6.4	
LTM-MET-3040 Metals in Waters, Soils & Sediments by ICP-MS														
Lead	2200 ^a	1800	mg/kg	5	< 5	51	160	28	18	33	16	15	13	

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 National Environment Protection Council (2013) National Environmental Protection (Assessment of Site Contamination) Amendment Measure 2013 (No. 1) (NEPM).
 Concentration in **red** font and grey box exceed the adopted HIL for Commercial/Industrial use
 Concentration in **orange** font and grey box exceed the adopted EIL/ESL 'D' for Commercial/Industrial use
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Table 7:
 Tarago Area DSI - Load-Out Complex Soil Results



NEPM 2013 HIL D Commercial / Industrial	NEPM EIL Commercial / Industrial (site specific)	Sample Type:	Soil	Soil	Soil	Soil	Soil	Soil	Soil	Soil	Soil	Soil				
		Site:	Rail Corridor	Rail Corridor	Rail Corridor	Rail Corridor	Rail Corridor	Rail Corridor	Rail Corridor	Rail Corridor	Rail Corridor	Rail Corridor	Rail Corridor			
		Lab Sample number:	S20-Ap02713	S20-Ap02714	S20-Ap02715	S20-Ap02716	S20-Ap02717	S20-Ap02718	S20-Ap02719	S20-Ap02720	S20-Ap02721	S20-Ap02722	S20-Ap02723			
		Sample date:	31-03-20	31-03-20	31-03-20	31-03-20	31-03-20	31-03-20	31-03-20	31-03-20	31-03-20	31-03-20	31-03-20			
		Sample ID:	TP7_0.5-0.6	TP7_1.9-2.0	TP8_0.0-0.1	TP8_0.5-0.6	TP8_1.1-1.2	TP8_1.9-2.0	TP9_0.0-0.1	TP9_0.5-0.6	TP9_1.2-1.3	TP9_1.2-1.3	TP9_1.2-1.3			
		Project Name:	Community DSI	Community DSI	Community DSI	Community DSI	Community DSI	Community DSI	Community DSI	Community DSI	Community DSI	Community DSI	Community DSI			
		Sampling Method:	Excavator	Excavator	Excavator	Excavator	Excavator	Excavator	Excavator	Excavator	Excavator	Excavator	Excavator			
Analyte grouping/Analyte		Units	LOR													
LTM-GEN-7080 Moisture																
Moisture Content (dried @ 103°C)		%	--	19	13	6.9	7.7	7.4	6.6	8.8	7.6	7.3				
LTM-MET-3040 Metals in Waters, Soils & Sediments by ICP-MS																
Lead	2200 ^a	1800	mg/kg	5	22	16	37	83	210	220	40	140	1200			

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 National Environment Protection Council (2013) National Environmental Protection (Assessment of Site Contamination) Amendment Measure 2013 (No. 1) (NEPM).
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 Concentration in **orange** font and grey box exceed the adopted EIL/ESL 'D' for Commercial/Industrial use
 Concentrations in box exceed the screening value >2.5 times
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^a Human Health Guideline for Lead adopted from the Human Health Risk Assessment (Ramboll 2019d)

	NEPM 2013 HIL D Commercial / Industrial	NEPM EIL Commercial / Industrial (site specific)	Sample Type:	Soil	Soil	Soil	Soil	Soil	Soil	Soil	Soil	Soil	Soil		
			Site:	Rail Corridor	Rail Corridor	Rail Corridor	Rail Corridor	Rail Corridor	Rail Corridor	Rail Corridor	Rail Corridor	Rail Corridor	Rail Corridor	Rail Corridor	Rail Corridor
			Lab Sample number:	S20-Ap02722	S20-Ap02723	S20-Ap02724	S20-Ap02725	S20-Ap02726	S20-Ap02727	S20-Ap02728	S20-Ap02729	S20-Ap02730	S20-Ap02730	S20-Ap02730	S20-Ap02730
			Sample date:	31-03-20	31-03-20	31-03-20	31-03-20	31-03-20	31-03-20	31-03-20	31-03-20	31-03-20	31-03-20	31-03-20	31-03-20
			Sample ID:	TP10_0.05-0.15	TP10_0.5-0.6	TP10_1.5-1.6	TP11_0.0-0.1	TP11_0.5-0.6	TP12_0.0-0.1	TP12_0.5-0.6	TP13_0.0-0.1	TP13_0.5-0.6	TP13_0.0-0.1	TP13_0.5-0.6	TP13_0.5-0.6
			Project Name:	Community DSI	Community DSI	Community DSI	Community DSI	Community DSI	Community DSI	Community DSI	Community DSI	Community DSI	Community DSI	Community DSI	Community DSI
			Sampling Method:	Excavator	Excavator	Excavator	Excavator	Excavator	Excavator	Excavator	Excavator	Excavator	Excavator	Excavator	Excavator
Analyte grouping/Analyte		Units	LOR												
LTM-GEN-7080 Moisture															
Moisture Content (dried @ 103°C)			%	--	8.8	12	9.3	9.8	19	15	18	6.7	7.1		
LTM-MET-3040 Metals in Waters, Soils & Sediments by ICP-MS															
Lead	2200 ^a	1800	mg/kg	5	25	140	17	550	23	810	130	17	18		

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 Concentration in **orange** font and grey box exceed the adopted EIL/ESL 'D' for Commercial/Industrial use
 Concentrations in box exceed the screening value >2.5 times
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^a Human Health Guideline for Lead adopted from the Human Health Risk Assessment (Ramboll 2019d)

Table 7:
 Tarago Area DSI - Load-Out Complex Soil Results

	NEPM 2013 HIL D Commercial / Industrial	NEPM EIL Commercial / Industrial (site specific)	Sample Type:	Soil	Soil	Soil	Soil	Soil	Soil	Soil	Soil	Soil	Soil		
Site:			Rail Corridor	Rail Corridor	Rail Corridor	Rail Corridor	Rail Corridor	Rail Corridor	Rail Corridor	Rail Corridor	Rail Corridor	Rail Corridor	Rail Corridor	Rail Corridor	
Lab Sample number:			S20-Ap02731	S20-Ap02732	S20-Ap02733	S20-Ap02734	S20-Ap02735	S20-Ap02736	S20-Ap06337	S20-Ap06338	S20-Ap06339				
Sample date:			31-03-20	31-03-20	31-03-20	31-03-20	31-03-20	31-03-20	01-04-20	01-04-20	01-04-20				
Sample ID:			TP13_1.2-1.3	TP13_1.9-2.0	TP14_0.0-0.1	TP14_0.5-0.6	TP14_0.8-0.9	TP14_1.9-2.0	TP15_0.0-0.1	TP15_0.5-0.6	TP15_1.9-2.0				
Project Name:			Community DSI	Community DSI	Community DSI	Community DSI	Community DSI	Community DSI	Community DSI	Community DSI	Community DSI				
Sampling Method:			Excavator	Excavator	Excavator	Excavator	Excavator	Excavator	Excavator	Excavator	Excavator				
Analyte grouping/Analyte	Units		LOR												
LTM-GEN-7080 Moisture															
Moisture Content (dried @ 103°C)			%	--	7.4	11	7	8.1	5.9	8.1	7.1	8.4	5.6		
LTM-MET-3040 Metals in Waters, Soils & Sediments by ICP-MS															
Lead	2200 ^a	1800	mg/kg	5	7.9	18	23	29	72	52	49	17	21		

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 National Environment Protection Council (2013) National Environmental Protection (Assessment of Site Contamination) Amendment Measure 2013 (No. 1) (NEPM).
 Concentration in **red** font and grey box exceed the adopted HIL for Commercial/Industrial use
 Concentration in **orange** font and grey box exceed the adopted EIL/ESL 'D' for Commercial/Industrial use
 Concentrations in box exceed the screening value >2.5 times
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Table 7:
 Tarago Area DSI - Load-Out Complex Soil Results

	NEPM 2013 HIL D Commercial / Industrial	NEPM EIL Commercial / Industrial (site specific)	Sample Type:	Soil	Soil	Soil	Soil	Soil	Soil	Soil	Soil	Soil	Soil	
			Site:	Rail Corridor	Rail Corridor	Rail Corridor	Rail Corridor	Rail Corridor	Rail Corridor	Rail Corridor	Rail Corridor	Rail Corridor	Rail Corridor	Rail Corridor
			Lab Sample number:	S20-Ap06340	S20-Ap06341	S20-Ap06342	S20-Ap06343	S20-Ap06344	S20-Ap06345	S20-Ap06346	S20-Ap06347	S20-Ap06348		
			Sample date:	01-04-20	01-04-20	01-04-20	01-04-20	01-04-20	01-04-20	01-04-20	01-04-20	01-04-20		
			Sample ID:	TP16_0.0-0.1	TP16_0.5-0.6	TP16_1.5-1.6	TP17_0.0-0.1	TP17_0.5-0.6	TP18_0.0-0.1	TP18_0.5-0.6	TP18_1.0-1.1	TP19_0.0-0.1		
			Project Name:	Community DSI	Community DSI	Community DSI	Community DSI	Community DSI	Community DSI	Community DSI	Community DSI	Community DSI		
			Sampling Method:	Excavator	Excavator	Excavator	Excavator	Excavator	Excavator	Excavator	Excavator	Excavator		
Analyte grouping/Analyte			Units	LOR										
LTM-GEN-7080 Moisture														
Moisture Content (dried @ 103°C)			%	--	13	8.6	19	9.5	5.1	18	15	12	17	
LTM-MET-3040 Metals in Waters, Soils & Sediments by ICP-MS														
Lead	2200 ^a	1800	mg/kg	5	31	31	24	49	18	210	23	46	180	

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 Concentration in **orange** font and grey box exceed the adopted EIL/ESL 'D' for Commercial/Industrial use
 Concentrations in box exceed the screening value >2.5 times
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^a Human Health Guideline for Lead adopted from the Human Health Risk Assessment (Ramboll 2019d)

Table 7:
 Tarago Area DSI - Load-Out Complex Soil Results



	NEPM 2013 HIL D Commercial / Industrial	NEPM EIL Commercial / Industrial (site specific)	Sample Type:	Soil	Soil	Soil	Soil	Soil	Soil	Soil	Soil	Soil	Soil		
			Site:	Rail Corridor	Rail Corridor	Rail Corridor	Rail Corridor	Rail Corridor	Rail Corridor	Rail Corridor	Rail Corridor	Rail Corridor	Rail Corridor	Rail Corridor	Rail Corridor
			Lab Sample number:	S20-Ap06349	S20-Ap06350	S20-Ap06351	S20-Ap06352	S20-Ap06353	S20-Ap44309	S20-Ap44310	S20-Ap44311	S20-Ap44312	S20-Ap44311	S20-Ap44312	S20-Ap44312
			Sample date:	01-04-20	01-04-20	01-04-20	01-04-20	01-04-20	31-05-20	31-05-20	31-05-20	31-05-20	31-05-20	31-05-20	31-05-20
			Sample ID:	TP19_0.3-0.4	TP19_1.0-1.1	TP20_0.0-0.1	TP20_0.5-0.6	TP20_1.2-1.3	TP3_1.5-1.6	TP4_0.0-0.1	TP4_0.5-0.6	TP4_1.0-1.1	TP4_1.0-1.1	TP4_1.0-1.1	TP4_1.0-1.1
			Project Name:	Community DSI	Community DSI	Community DSI	Community DSI	Community DSI	Community DSI	Community DSI	Community DSI	Community DSI	Community DSI	Community DSI	Community DSI
			Sampling Method:	Excavator	Excavator	Excavator	Excavator	Excavator	Excavator	Excavator	Excavator	Excavator	Excavator	Excavator	Excavator
Analyte grouping/Analyte			Units	LOR											
LTM-GEN-7080 Moisture															
Moisture Content (dried @ 103°C)			%	--	11	12	7.6	15	13	10	9.7	8.8	7.3		
LTM-MET-3040 Metals in Waters, Soils & Sediments by ICP-MS															
Lead	2200 ^a	1800	mg/kg	5	25	33	62	95	28	44	380	170	90		

LOR = Limit of Reporting
 National Environment Protection Council (2013) National Environmental Protection (Assessment of Site Contamination) Amendment Measure 2013 (No. 1) (NEPM).
 Concentration in **red** font and grey box exceed the adopted HIL for Commercial/Industrial use
 Concentration in **orange** font and grey box exceed the adopted EIL/ESL 'D' for Commercial/Industrial use
 Concentrations in box exceed the screening value >2.5 times
 Where one or more guideline value is exceeded, the highest guideline exceeded will be highlighted
^a Human Health Guideline for Lead adopted from the Human Health Risk Assessment (Ramboll 2019d)

		Sample Type:	Soil		
		Site:	Rail Corridor		
		Lab Sample number:	S20-Ap44313		
		Sample date:	31-05-20		
		Sample ID:	TP4_1.9-2.0		
		Project Name:	Community DSI		
		Sampling Method:	Excavator		
Analyte grouping/Analyte		Units	LOR		
LTM-GEN-7080 Moisture					
Moisture Content (dried @ 103°C)		%	--	8	
LTM-MET-3040 Metals in Waters, Soils & Sediments by ICP-MS					
Lead	2200 ^a	1800	mg/kg	5	29

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 Concentration in **orange** font and grey box exceed the adopted EIL/ESL 'D' for Commercial/Industrial use
 Concentrations in box exceed the screening value >2.5 times
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^a Human Health Guideline for Lead adopted from the Human Health Risk Assessment (Ramboll 2019d)

Table 9:
 Tarago Area DSI - Sediment Results

Sample Type:	Sediment		Sediment		Sediment		Sediment		Sediment		Sediment		Sediment		Surface Water		Surface Water		
	Tarago		Tarago		Tarago		Tarago		Tarago		Tarago		Tarago		Tarago		Tarago		
	Site:	S20-Ap12274	S20-Ap12275	S20-Ap12276	S20-Ap12277	S20-Ap12278	S20-Ap12279	S20-Ap12280	S20-Ap12281	S20-Ap12282	S20-Ap12283	S20-My01339	S20-My01340						
	Lab Sample number:																		
	Sample date:	01-04-20	01-04-20	01-04-20	01-04-20	01-04-20	01-04-20	01-04-20	02-04-20	02-04-20	02-04-20	30-04-20	30-04-20						
	Sample ID:	SED1	SED1_UP	SED2	SED3	SED4	SED5	SED6	SED7	SED8	SED9	BR_SED1	BR_SED2						
Project Name:	Community DSI	Community DSI	Community DSI	Community DSI	Community DSI	Community DSI	Community DSI	Community DSI	Community DSI	Community DSI	Community DSI	Community DSI	Community DSI						
Sampling Method:	Direct	Direct	Direct	Direct	Direct	Direct	Direct	Direct	Direct	Direct	Direct	Direct	Direct						
Analyte grouping/Analyte		Units		LOR															
LTM-GEN-7080 Moisture																			
Moisture Content (dried @ 103°C)		%		--														5.9	51
LTM-MET-3040 Metals in Waters, Soils & Sediments by ICP-MS																			
Aluminium	--	--	mg/kg	10	9200	12000	8300	13000	9200	4400	6500	5200	8500	12000	7000	10000			
Arsenic	20	70	mg/kg	2	19	8.6	18	5.1	37	2.9	10	6.4	4.8	3.6	8.4	9			
Barium	--	--	mg/kg	10	120	65	85	200	150	64	63	60	93	96	64	100			
Beryllium	--	--	mg/kg	2	< 2	< 2	< 2	< 2	< 2	< 2	< 2	< 2	< 2	< 2	< 2	< 2			
Boron	--	--	mg/kg	0.4	2.6	< 0.4	7.2	3	5	0.6	3.3	4.6	0.4	0.5	--	--			
Cadmium	1.5	10	mg/kg	0.4	16	20	14	16	17	8.3	9.6	8.1	12	17	0.5	1.1			
Chromium	80	370	mg/kg	5	9.5	5.5	6.1	< 5	< 5	< 5	< 5	< 5	6.3	5.5	18	16			
Cobalt	--	--	mg/kg	5	9.5	5.5	6.1	< 5	< 5	< 5	< 5	< 5	6.3	5.5	5.9	6.3			
Copper	65	270	mg/kg	5	200	10	490	58	600	14	59	190	12	13	49	84			
Iron	--	--	mg/kg	20	17000	23000	16000	15000	17000	6600	9200	7600	10000	14000	14000	15000			
Lead	50	220	mg/kg	5	4700	18	1600	130	2600	39	88	210	20	19	78	120			
Manganese	--	--	mg/kg	5	290	56	280	120	280	91	140	76	400	230	360	360			
Mercury	0.15	1	mg/kg	0.1	< 0.1	< 0.1	0.1	< 0.1	0.3	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1			
Nickel	21	52	mg/kg	5	9.8	8.6	8.7	7.6	9.8	< 5	6.9	< 5	6.6	8.4	16	11			
Zinc	200	410	mg/kg	5	610	20	2400	320	750	100	470	580	94	140	210	490			

LOR = Limit of Reporting
 Concentration in red font and grey box exceed the adopted Sediment DGV
 Concentration in orange font and grey box exceed the Sediment GV-High
 ^ANZG (2018) Toxicant default guideline values for sediment quality

Table 10:
 Tarago Area DSI - Groundwater Monitoring Well Soil Results



	NEPM 2013 HIL D Commercial / Industrial	NEPM EIL Commercial / Industrial (site specific)	NEPM 2013 HIL C Open Space	NEPM 2013 EIL Residential / public Open Space	Sample Type:	Soil	Soil	Soil	Soil	Soil	Soil	Soil	
					Site:	Rail Corridor	Rail Corridor	Rail Corridor	Rail Corridor	Rail Corridor	Rail Corridor	Rail Corridor	
					Lab Sample number:	M20-Ma43430	M20-Ma43431	M20-Ma43432	M20-Ma43433	M20-Ma43434	M20-Ma43435	M20-Ma43436	
					Sample date:	18-03-20	18-03-20	18-03-20	18-03-20	18-03-20	18-03-20	18-03-20	
					Sample ID:	MW01_0.5	MW01_1.5	MW01_2.5	MW01_3.5	MW01_4.5	MW2_0-0.05	MW2_1.0	
					Project Name:	Community DSI	Community DSI	Community DSI	Community DSI	Community DSI	Community DSI	Community DSI	
					Sampling Method:	Drill Rig	Drill Rig	Drill Rig	Drill Rig	Drill Rig	Drill Rig	Drill Rig	
Analyte grouping/Analyte					Units	LOR							
LTM-GEN-7080 Moisture													
Moisture Content (dried @ 103°C)					%	--	14	12	8.7	7.8	14	< 1	5.5
LTM-MET-3040 Metals in Waters, Soils & Sediments by ICP-MS													
Lead	2200 ^e	1800	600	1100	mg/kg	5	13	16	15	26	24	51	3600

LOR = Limit of Reporting

National Environment Protection Council (2013) National Environmental Protection (Assessment of Site Contamination) Amendment Measure 2013 (No. 1) (NEPM).

Concentration in **red** font and grey box exceed the adopted HIL/HSL 'D' for Commercial/Industrial use (Applicable for MW01, MW02, MW03 and MW04)

Concentration in **orange** font and grey box exceed the adopted EIL/ESL 'D' for Commercial/Industrial use (Applicable for MW01, MW02, MW03 and MW04)

Concentration in **blue** font and grey box exceed the adopted HIL/HSL 'C' for Open Space and Recreational Land Use (Applicable for MW5, MW6 and MW7)

Concentration in **green** font and grey box exceed the adopted EIL/ESL 'C' for Residential and Open Space and Recreational Land Use (Applicable for MW5, MW6 and MW7)

Concentrations in box exceed the screening value >2.5 times

Where one or more guideline value is exceeded, the highest guideline exceeded will be highlighted

Underlined values were reported <LOR and have been halved to allow for comparison of data.

Table 10:
 Tarago Area DSI - Groundwater Monitoring Well Soil Results



Soil	Soil	Soil	Soil	Soil	Soil	Soil	Soil	Soil	Soil	Soil	Soil	Soil	Soil
Rail Corridor	Rail Corridor	Rail Corridor	Rail Corridor	Rail Corridor	Rail Corridor	Rail Corridor	Rail Corridor	Rail Corridor	Rail Corridor	Rail Corridor	Rail Corridor	Rail Corridor	Rail Corridor
M20-Ma43437	M20-Ma43438	M20-Ma43439	M20-Ma43440	M20-Ma43441	M20-Ma43442	M20-Ma43443	M20-Ma43444	M20-Ma43445	M20-Ma43583	M20-Ma43584	M20-Ma43446	M20-Ma43447	M20-Ma43448
18-03-20	18-03-20	18-03-20	18-03-20	18-03-20	18-03-20	18-03-20	18-03-20	18-03-20	18-03-20	18-03-20	19-03-20	19-03-20	19-03-20
MW2_1.5	MW2_2.5	MW2_3.5	MW2_4.5	MW3_0.5	MW3_1.0	MW3_1.5	MW3_2.5	MW3_3.5	MW3_4.5	MW2_0.5	MW4_0-0.05	MW4_0.5	MW4_1.0
Community DSI	Community DSI	Community DSI	Community DSI	Community DSI	Community DSI	Community DSI	Community DSI	Community DSI	Community DSI	Community DSI	Community DSI	Community DSI	Community DSI
Drill Rig	Drill Rig	Drill Rig	Drill Rig	Drill Rig	Drill Rig	Drill Rig	Drill Rig	Drill Rig	Drill Rig	Drill Rig	Drill Rig	Drill Rig	Drill Rig
4.9	4.4	7	7.9	9.3	8.4	10	9.1	12	15	5.5	3.1	6.5	3.6
540	200	140	42	25	18	16	15	15	22	27	1200	390	31

Table 10:
 Tarago Area DSI - Groundwater Monitoring Well Soil Results



Soil	Soil	Soil	Soil	Soil	Soil	Soil	Soil	Soil	Soil	Soil	Soil	Soil	Soil
Rail Corridor	Rail Corridor	Rail Corridor	Rail Corridor	Rail Corridor	Rail Corridor	Rail Corridor	Rail Corridor	Rail Corridor	Rail Corridor	Rail Corridor	Rail Corridor	Rail Corridor	Rail Corridor
M20-Ma43449	M20-Ma43450	M20-Ma43451	M20-Ma43452	M20-Ma43453	M20-Ma43454	M20-Ma43455	M20-Ma43456	M20-Ma43457	M20-Ma43458	M20-Ma43459	M20-Ma43460	M20-Ma43461	M20-Ma43462
19-03-20	19-03-20	19-03-20	19-03-20	19-03-20	19-03-20	19-03-20	19-03-20	19-03-20	19-03-20	19-03-20	19-03-20	19-03-20	19-03-20
MW4_1.5	MW4_2.5	MW4_3.5	MW4_4.5	MW5_0.05	MW5_0.5	MW5_1.0	MW5_1.5	MW5_3.5	MW5_4.5	MW6_0.05	MW6_0.5	MW6_1.0	MW6_1.5
Community DSI	Community DSI	Community DSI	Community DSI	Community DSI	Community DSI	Community DSI	Community DSI	Community DSI	Community DSI	Community DSI	Community DSI	Community DSI	Community DSI
Drill Rig	Drill Rig	Drill Rig	Drill Rig	Drill Rig	Drill Rig	Drill Rig	Drill Rig	Drill Rig	Drill Rig	Drill Rig	Drill Rig	Drill Rig	Drill Rig
8.3	14	6.6	12	5.1	8.1	3.2	4.4	6.2	5.3	14	9	2.9	6.6
19	21	30	27	120	190	13	20	22	28	57	25	21	18

Table 10:
 Tarago Area DSI - Groundwater Monitoring Well Soil Results



Soil	Soil	Soil	Soil	Soil	Soil	Soil	Soil	Soil	Soil	Soil
Rail Corridor	Rail Corridor	Rail Corridor	Rail Corridor	Rail Corridor	Rail Corridor	Rail Corridor	Rail Corridor	Rail Corridor	Rail Corridor	Rail Corridor
M20-Ma43463	M20-Ma43464	M20-Ma43465	M20-Ma43585	M20-Ma43466	M20-Ma43467	M20-Ma43468	M20-Ma43469	M20-Ma43470	M20-Ma43471	M20-Ma43472
19-03-20	19-03-20	19-03-20	19-03-20	20-03-20	20-03-20	20-03-20	20-03-20	20-03-20	20-03-20	20-03-20
MW6_2.5	MW6_3.5	MW6_4.5	MW5_2.5	MW7_0.05	MW7_0.5	MW7_1.0	MW7_1.5	MW7_2.5	MW7_3.5	MW7_4.5
Community DSI	Community DSI	Community DSI	Community DSI	Community DSI	Community DSI	Community DSI	Community DSI	Community DSI	Community DSI	Community DSI
Drill Rig	Drill Rig	Drill Rig	Drill Rig	Drill Rig	Drill Rig	Drill Rig	Drill Rig	Drill Rig	Drill Rig	Drill Rig
4.1	7.5	5.8	5.5	7.6	8.9	7.2	9.9	17	13	< 1
14	19	28	21	210	43	52	18	43	44	20

Table 11:
 Tarago Area DSI - Groundwater Monitorign Well Results

	NHMRC Australian Drinking Water Guidelines ^A	ANZECC Fresh Water Guidelines - 95% Species Protection ^B	ANZECC Fresh Water Guidelines - Irrigation ^B	ANZECC Fresh Water Guidelines - Stock Water ^B	Sample Type:	Groundwater	Groundwater	Groundwater	Groundwater	Groundwater	Groundwater	Groundwater	Groundwater	
					Site:	Rail Corridor	Rail Corridor	Rail Corridor	Rail Corridor	Rail Corridor	Goulburn Street	Wallace Street	Wallace Street	
					Lab Sample number:	S20-Ap16796	S20-Ap16797	S20-Ap16798	S20-Ap16799	S20-Ap16800	S20-Ma43288	S20-Ma43289	S20-Ma43290	
					Sample date:	02-04-20	02-04-20	02-04-20	02-04-20	02-04-20	27-03-20	27-03-20	27-03-20	
					Sample ID:	MW1	MW2	MW3	MW4	GW053976	MW05	MW06	MW07	
					Project Name:	Community DSI	Community DSI	Community DSI	Community DSI	Community DSI	Community DSI	Community DSI	Community DSI	
Sampling Method:		Peristaltic	Peristaltic	Peristaltic	Peristaltic	Peristaltic	Peristaltic	Peristaltic	Peristaltic					
Analyte grouping/Analyte					Units	LOR								
LTM-MET-3040 Metals in Waters, Soils & Sediments by ICP-MS														
Aluminium (filtered)	0.01	0.055	20	5	mg/L	0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	--	--	--
Arsenic (filtered)	0.01	0.024	2	0.5	mg/L	0.001	< 0.001	< 0.001	< 0.001	< 0.001	0.005	< 0.001	< 0.001	0.003
Barium (filtered)	2				mg/L	0.02	0.14	0.16	0.08	0.11	0.05	--	--	--
Beryllium (filtered)	0.06		0.5		mg/L	0.001	< 0.001	< 0.001	< 0.001	< 0.001	< 0.001	< 0.001	< 0.001	< 0.001
Boron (filtered)	4				mg/L	0.05	--	--	--	--	--	< 0.05	< 0.05	< 0.05
Cadmium (filtered)	0.002	0.0002	0.002	0.01	mg/L	0.0002	< 0.0002	< 0.0002	< 0.0002	< 0.0002	0.0002	0.0003	< 0.0002	< 0.0002
Chromium (filtered)	0.05	0.001	0.05	1	mg/L	0.001	< 0.001	< 0.001	< 0.001	0.002	< 0.001	< 0.001	< 0.001	< 0.001
Cobalt (filtered)		0.0014	0.1	1	mg/L	0.001	0.004	0.006	0.029	0.006	< 0.001	0.001	< 0.001	0.006
Copper (filtered)	2	0.0014	5	0.4	mg/L	0.001	< 0.001	< 0.001	< 0.001	< 0.001	0.003	0.001	< 0.001	< 0.001
Lead (filtered)	0.01	0.0034	5	0.1	mg/L	0.001	< 0.001	< 0.001	< 0.001	< 0.001	0.005	0.002	< 0.001	< 0.001
Manganese (filtered)	0.5	1.9	10		mg/L	0.005	0.77	0.6	2	0.71	0.02	0.085	0.026	1.4
Mercury (filtered)	0.001	0.00006	0.002	0.002	mg/L	0.0001	< 0.0001	< 0.0001	< 0.0001	< 0.0001	< 0.0001	< 0.0001	< 0.0001	< 0.0001
Nickel (filtered)	0.02	0.011	2	1	mg/L	0.001	0.003	0.003	0.003	0.004	< 0.001	0.001	< 0.001	0.002
Selenium (filtered)	0.01				mg/L	0.001	--	--	--	--	--	< 0.001	< 0.001	< 0.001
Zinc (filtered)		0.008	5	20	mg/L	0.005	0.01	0.011	0.022	0.011	0.27	0.044	0.007	< 0.005

LOR = Limit of Reporting

Australian and New Zealand Guidelines for Fresh and Marine Water Quality (ANZG 2018)

Australia and New Zealand Environment and Conservation Council (2000) Australian and New Zealand Guidelines for Fresh and Marine Water Quality.

^ANRMCC (2011 updated 2018) Australian Drinking Water Guidelines (ADWG) Paper 6 National Water Quality Management Strategy.
 National Health and Medical Research Council.

Concentration in **red bold** font exceed the Health-based drinking water criteria

Concentration in **blue bold** font exceed the Irrigation short term value Criteria

Concentration in **purple bold** font exceed the Stock watering Criteria

Concentration in **green bold** font exceed the ANZG 2018 95% Species Protection

Where one or more guideline value is exceeded, the highest guideline exceeded will be highlighted

Details of Guideline values are presented in **Section 10** of report (**Table 10-2**)

NEPM 2013 HIL C Open Space	NEPM EIL Commercial / Industrial (site specific)	Sample Type:	Soil	Soil	Soil	Soil	Soil	Soil	Soil	Soil	Soil	Soil	Soil	Soil	Soil	Soil	Soil	Soil		
		Easting	741874	741863	741893	741895	741924	741915	741958	741955	742012	742008	742058	742060	742109	742106	742039			
		Northing	6116040	6116041	6116087	6116088	6116131	6116132	6116158	6116169	6116158	6116158	6116140	6116147	6116130	6116142	6116142			
		Sample date:	18-03-20	18-03-20	18-03-20	18-03-20	18-03-20	18-03-20	18-03-20	18-03-20	18-03-20	18-03-20	18-03-20	18-03-20	18-03-20	18-03-20	18-03-20	18-03-20		
		Sample ID:	XBOYD1E	XBOYD1W	XBOYD2E	XBOYD2W	XBOYD4E	XBOYD4W	XBOYD5E	XBOYD5W	XBOYD6E	XBOYD6W	XBOYD7E	XBOYD7W	XBOYD8E	XBOYD8WD	XBOYDR02			
		Project Name:	Community DSI	Community DSI	Community DSI	Community DSI	Community DSI	Community DSI	Community DSI	Community DSI	Community DSI	Community DSI	Community DSI	Community DSI	Community DSI	Community DSI	Community DSI	Community DSI	Community DSI	
Sampling Method:	XRF	XRF	XRF	XRF	XRF	XRF	XRF	XRF	XRF	XRF	XRF	XRF	XRF	XRF	XRF	XRF	XRF			
Analyte grouping/Analyte		Units	LOD																	
Field Portable XRF																				
Arsenic	300	160	mg/kg		20.94	24.73	15.88	16.62	14.21	67.15	8.61	<LOD	15.84	18.38	19.81	10.7	11.86	6.29	25.68	
Barium			mg/kg		<LOD	<LOD	464.42	<LOD	<LOD	236.89	140.95	<LOD	<LOD	<LOD	<LOD	<LOD	183.95		<LOD	
Cadmium	90		mg/kg		<LOD	<LOD	<LOD	<LOD	<LOD	<LOD	<LOD	<LOD	<LOD	<LOD	<LOD	<LOD	<LOD	<LOD	<LOD	
Chromium	300	710	mg/kg		<LOD	<LOD	<LOD	<LOD	<LOD	<LOD	<LOD	<LOD	<LOD	<LOD	<LOD	<LOD	<LOD	<LOD	<LOD	
Cobalt	300		mg/kg		<LOD	<LOD	<LOD	<LOD	<LOD	<LOD	<LOD	<LOD	<LOD	<LOD	<LOD	<LOD	<LOD	<LOD	<LOD	
Copper	17000	160	mg/kg		58.24	73.21	57.96	95.96	94.35	497.29	56.65	34.66	66.06	101.46	117.32	94.66	50.34	<LOD	148.12	
Iron			mg/kg		8418.78	8845.53	7680.24	6293.52	8987.34	14321.38	7954.57	6523.13	5787.58	7264.59	7140.61	5617.23	6180.88	7940.99	10717.13	
Lead	600	1800	mg/kg		162.1	167.62	60.98	195	213.22	779.14	100.49	113.46	135.18	233.06	138.88	169.87	79.68	10.23	265.35	
Manganese	19000		mg/kg		119.33	135.06	137.36	164.53	277.78	111.77	271.78	134.39	141.04	143.89	350.34	92.47	203.18	<LOD	341.2	
Mercury	80		mg/kg		<LOD	<LOD	<LOD	<LOD	<LOD	<LOD	<LOD	<LOD	<LOD	<LOD	<LOD	<LOD	<LOD	<LOD	<LOD	
Nickel	1200	340	mg/kg		<LOD	<LOD	<LOD	<LOD	<LOD	<LOD	<LOD	<LOD	<LOD	<LOD	<LOD	<LOD	<LOD	<LOD	<LOD	
Zinc	30000	370	mg/kg		512.36	1052.16	205.43	557.11	454.05	582.72	463.97	334.32	525.34	563.03	858.72	485.63	491.01	59.15	681.18	

LOD = Limit of Detection
 LOR = Limit of Reporting
 National Environment Protection Council (2013) National Environmental Protection (Assessment of Site Contamination) Amendment Measure 2013 (No. 1) (NEPM).
 Concentration in orange font and grey box exceed the adopted HIL for Open Space land use
 Concentration in green font and grey box exceed the adopted EIL for Commercial/Industrial use
 Concentrations in box exceed the screening value >2.
 Where one or more guideline value is exceeded, the highest guideline exceeded will be highlighted
 * Human Health Guideline for Lead adopted from the Human Health Risk Assessment (Ramboll 2019d)

NEPM 2013 HIL C Open Space	NEPM EIL Commercial / Industrial (site specific)	Sample Type:	Soil	Soil	Soil	Soil	Soil	Soil	Soil	Soil	Soil	Soil	Soil	Soil	Soil	Soil	Soil	Soil	
		Easting	742037	741910	741905	741900	741889	742142	742145	742094	742148	742113	742133	742122	742142	742153	742161		
		Northing	6116155	6116100	6116103	6116102	6116094	6116269	6116282	6116003	6116308	6116060	6116107	6116084	6116243	6116189	6116150		
		Sample date:	18-03-20	18-03-20	18-03-20	18-03-20	18-03-20	18-03-20	18-03-20	18-03-20	18-03-20	18-03-20	18-03-20	18-03-20	18-03-20	18-03-20	18-03-20		
		Sample ID:	XBOYDRPS	XBOYDSTE1	XBOYDSTW1	XBOYDSTW2	XBOYDSTW3	XBRAIDR10	XBRAIDR12	XBRAIDR1-4	XBRAIDR2135	XBRAIDRCH	XBRAIDRMPC	XBRAIDRPRE	XBRAIDRPS	XBRAIDSRA1	XBRAIDSRA2		
		Project Name:	Community DSI	Community DSI	Community DSI	Community DSI	Community DSI	Community DSI	Community DSI	Community DSI	Community DSI	Community DSI	Community DSI	Community DSI	Community DSI	Community DSI	Community DSI		
Sampling Method:	XRF	XRF	XRF	XRF	XRF	XRF	XRF	XRF	XRF	XRF	XRF	XRF	XRF	XRF	XRF				
Analyte grouping/Analyte		Units	LOD																
Field Portable XRF																			
Arsenic	300	160	mg/kg	<LOD	<LOD	32.27	45.6	57.14	<LOD	8.88	<LOD	6.92	8.13	<LOD	7.68	<LOD	15.72	<LOD	
Barium			mg/kg	<LOD	665.38	752.22	924.35	<LOD	71.4	370.53	155.79	304.27	496.06	67.63	<LOD	150.4	232.33	161.88	
Cadmium	90		mg/kg	<LOD	<LOD	21.67	<LOD	<LOD	<LOD	<LOD	<LOD	<LOD	<LOD	<LOD	<LOD	<LOD	<LOD	<LOD	
Chromium	300	710	mg/kg	<LOD	<LOD	33.29	16.84	<LOD	<LOD	<LOD	<LOD	<LOD	37.19	<LOD	<LOD	<LOD	<LOD	<LOD	
Cobalt	300		mg/kg	<LOD	<LOD	<LOD	<LOD	<LOD	<LOD	<LOD	<LOD	<LOD	<LOD	<LOD	<LOD	<LOD	<LOD	<LOD	
Copper	17000	160	mg/kg	63.87	195.21	281.69	272.2	336.6	15.34	28.81	36.08	28.83	34.27	<LOD	14.43	14.9	51.13	<LOD	
Iron			mg/kg	4165.9	11842.94	14450.2	17106.94	11380.42	7495.27	7035.5	11493.85	7559.12	22529.87	10147.92	7456.94	8851.25	10673.53	8349.91	
Lead	600	1800	mg/kg	129.99	459.09	412.32	363.84	750.91	15.67	66.77	66.45	32.61	46.58	14.64	18.12	13.41	69.56	29.35	
Manganese	19000		mg/kg	129.82	402.67	514.21	296.78	95.84	568.93	313.8	292.37	299.57	402.8	229.02	82.87	294.21	254.42	190.53	
Mercury	80		mg/kg	<LOD	<LOD	<LOD	<LOD	<LOD	<LOD	<LOD	<LOD	<LOD	<LOD	<LOD	<LOD	<LOD	<LOD	<LOD	
Nickel	1200	340	mg/kg	<LOD	<LOD	34.92	<LOD	<LOD	<LOD	<LOD	<LOD	<LOD	46.48	<LOD	<LOD	<LOD	<LOD	<LOD	
Zinc	30000	370	mg/kg	472.91	368.63	1017.64	604.04	688.35	90.33	96.23	221.85	243.46	133.37	85.96	525.38	202.73	231.06	70.47	

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 Concentration in orange font and grey box exceed the adopted HIL for Open Space land use
 Concentration in green font and grey box exceed the adopted EIL for Commercial/Industrial use
 Concentrations in box exceed the screening value >2.
 Where one or more guideline value is exceeded, the highest guideline exceeded will be highlighted
 * Human Health Guideline for Lead adopted from the Human Health Risk Assessment (Ramboll 2019d)

	NEPM 2013 HIL C Open Space	NEPM EIL Commercial / Industrial (site specific)	Sample Type:	Soil	Soil	Soil	Soil	Soil	Soil	Soil	Soil	Soil	Soil	Soil	Soil	Soil	Soil	Soil			
			Easting	741636	741645	741093	741127	741113	741144	741158	741203	741245	741259	741065	741079	741544	741281	741830			
			Northing	6115687	6115684	6115040	6115102	6115079	6115136	6115168	6115249	6115331	6115325	6114986	6115004	6115568	6115382	6116008			
			Sample date:	24-03-20	24-03-20	23-03-20	23-03-20	23-03-20	23-03-20	23-03-20	23-03-20	23-03-20	23-03-20	23-03-20	23-03-20	23-03-20	24-03-20	23-03-20	24-03-20		
			Sample ID:	XGOULGSL	XGOULGSR	XGOULR10	XGOULR12	XGOULR12-3	XGOULR14	XGOULR16	XGOULR22	XGOULR26	XGOULR41-43	XGOULR6	XGOULR8	XGOULRPS	XGOULRSED	XGOULTSL			
Project Name:	Community DSI	Community DSI	Community DSI	Community DSI	Community DSI	Community DSI	Community DSI	Community DSI	Community DSI	Community DSI	Community DSI	Community DSI	Community DSI	Community DSI	Community DSI	Community DSI	Community DSI	Community DSI			
Sampling Method:	XRF	XRF	XRF	XRF	XRF	XRF	XRF	XRF	XRF	XRF	XRF	XRF	XRF	XRF	XRF	XRF	XRF	XRF			
Analyte grouping/Analyte			Units	LOD																	
Field Portable XRF																					
Arsenic	300	160	mg/kg	47.36	35.01	50.84	<LOD	<LOD	18.27	<LOD	<LOD	<LOD	<LOD	22.74	20.98	11.85	<LOD	<LOD	11.89		
Barium			mg/kg	432.77	548.4	<LOD	171.77	<LOD	478.3	585.27	202.25	<LOD	409.15	<LOD	<LOD	<LOD	<LOD	399.83	290.96		
Cadmium	90		mg/kg	<LOD	<LOD	<LOD	<LOD	<LOD	19.36	<LOD	<LOD	<LOD	<LOD	<LOD	<LOD	<LOD	<LOD	<LOD	<LOD		
Chromium	300	710	mg/kg	52.81	65.62	<LOD	<LOD	<LOD	39.45	<LOD	<LOD	<LOD	<LOD	<LOD	<LOD	<LOD	<LOD	42.62	<LOD		
Cobalt	300		mg/kg	<LOD	<LOD	93.23	<LOD	<LOD	<LOD	<LOD	<LOD	<LOD	<LOD	<LOD	<LOD	<LOD	<LOD	<LOD	<LOD		
Copper	17000	160	mg/kg	57.96	121.26	195.12	180.16	386.06	<LOD	74.56	25.09	82.34	17.86	83.05	64.35	24.06	788.2	50.94			
Iron			mg/kg	14125.21	17134.8	9606.71	11862.31	10239.82	39845.07	16905.73	5181.07	7874.5	14303.43	7507.19	12555.79	6756.99	14975.85	10485.41			
Lead	600	1800	mg/kg	371	304.15	284.63	628.74	1107.23	16.03	220.55	43.05	297.05	55.02	233.81	166.1	211.36	1667.25	196.38			
Manganese	19000		mg/kg	488.28	176.5	419.5	292.61	434.49	165.16	205.23	97.56	174.75	156.09	134.61	238.21	268.55	143.66	219.86			
Mercury	80		mg/kg	<LOD	<LOD	<LOD	<LOD	<LOD	<LOD	<LOD	<LOD	<LOD	<LOD	<LOD	<LOD	<LOD	<LOD	<LOD			
Nickel	1200	340	mg/kg	<LOD	<LOD	<LOD	<LOD	<LOD	<LOD	<LOD	<LOD	<LOD	<LOD	<LOD	<LOD	<LOD	<LOD	<LOD			
Zinc	30000	370	mg/kg	468.67	740.43	1227.25	1880.91	2752.84	91.8	273.58	206.34	1214.06	86.7	695.33	896.93	337.95	1090.05	399.09			

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Table 12:
 Tarago Area DSI - Tarago Town XRF Results

Sample Type:	Soil		Soil		Soil		Soil		Soil		Soil		Soil		Soil		Soil		Soil	
	Easting	Northing	Sample date:	Sample ID:	Project Name:	Sampling Method:														
NEPM 2013 HIL C Open Space	NEPM EIL Commercial / Industrial (site specific)	741845	741190	741065	741349	741319	740985	741009	740975	740976	741166	740915	740766	740849	740863	742134				
		6115997	6115517	6115558	6115502	6115507	6115541	6115580	6115560	6115586	6115535	6114909	6114964	6114790	6114923	6115989				
		24-03-20	23-03-20	19-03-20	19-03-20	19-03-20	19-03-20	19-03-20	19-03-20	19-03-20	19-03-20	23-03-20	23-03-20	23-03-20	23-03-20	18-03-20				
		XGOULTSR	XKINGCH	XKINGR13	XKINGR2	XKINGR2	XKINGR41	XKINGR42	XKINGR43	XKINGR44	XKINGR7	XLIMER11	XLIMER16	XLIMER19	XLIMER21	XLUMRCC				
		Community DSI	Community DSI	Community DSI	Community DSI	Community DSI	Community DSI	Community DSI	Community DSI	Community DSI	Community DSI	Community DSI	Community DSI	Community DSI	Community DSI	Community DSI				
		XRF	XRF	XRF	XRF	XRF	XRF	XRF	XRF	XRF	XRF	XRF	XRF	XRF	XRF	XRF				
Analyte grouping/Analyte		Units		LOD																
Field Portable XRF																				
Arsenic	300	160	mg/kg	24.72	8.5	10.77	<LOD	<LOD	<LOD	<LOD	5.69	9.39	9.01	<LOD	6.25	5.9	<LOD	<LOD		
Barium			mg/kg	111.96	125.44	192.34	512.1	282.84	201.8	256.93	<LOD	523.23	614.72	176.36	333.43	105.64	<LOD	<LOD	390.12	
Cadmium	90		mg/kg	<LOD	<LOD	<LOD	<LOD	<LOD	<LOD	<LOD	<LOD	<LOD	<LOD	<LOD	<LOD	<LOD	<LOD	<LOD	<LOD	
Chromium	300	710	mg/kg	<LOD	<LOD	24.78	<LOD	33.68	<LOD	<LOD	36.08	38.42	45.6	<LOD	<LOD	<LOD	<LOD	<LOD	18.48	
Cobalt	300		mg/kg	<LOD	<LOD	<LOD	<LOD	<LOD	<LOD	<LOD	<LOD	<LOD	<LOD	<LOD	<LOD	<LOD	<LOD	<LOD	<LOD	
Copper	17000	160	mg/kg	81.04	20.76	<LOD	17.62	19.78	<LOD	15.79	18.87	18.69	29.48	17.24	15.19	19.92	16.77	32.86		
Iron			mg/kg	12435.07	6711.99	5775.35	6481.5	6014.83	4208.7	6419.19	17271.94	24702.47	17742.36	6798.31	10910.57	4061.05	5449.43	13891.34		
Lead	600	1800	mg/kg	256.7	75.95	<LOD	15.45	12.38	<LOD	6.49	8.43	10	33.36	53.26	<LOD	<LOD	13.83	41.35		
Manganese	19000		mg/kg	262.29	185.21	110.27	287.65	280.27	372.82	146.63	110.29	129.98	261.54	182.2	110.3	177.38	133.32	367.2		
Mercury	80		mg/kg	<LOD	<LOD	<LOD	<LOD	<LOD	<LOD	<LOD	<LOD	<LOD	<LOD	<LOD	<LOD	<LOD	<LOD	<LOD	<LOD	
Nickel	1200	340	mg/kg	<LOD	<LOD	<LOD	<LOD	<LOD	<LOD	<LOD	<LOD	<LOD	34.03	<LOD	<LOD	<LOD	<LOD	<LOD	<LOD	
Zinc	30000	370	mg/kg	702.62	112.71	63.49	51.93	48.8	41.03	88.71	55.87	111.54	137.17	177.94	39.52	34.73	82.03	85.52		

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 Concentrations in box exceed the screening value >2.
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 * Human Health Guideline for Lead adopted from the Human Health Risk Assessment (Ramboll 2019d)

Table 12:
 Tarago Area DSI - Tarago Town XRF Results

Sample Type:	Soil	Soil	Soil	Soil	Soil	Soil	Soil	Soil	Soil	Soil	Soil	Soil	Soil	Soil	Soil	Soil	Soil	Soil	
Easting	740522	740549	741024	741036	741117	741135	741193	741199	741357	741369	741456	741514	741518	741511	741514				
Northing	6114601	6114587	6114896	6114888	6115084	6115081	6115234	6115208	6115439	6115429	6115571	6115656	6115679	6115682	6115681				
Sample date:	24-03-20	24-03-20	24-03-20	24-03-20	24-03-20	24-03-20	24-03-20	24-03-20	24-03-20	24-03-20	24-03-20	24-03-20	24-03-20	24-03-20	24-03-20				
Sample ID:	XMR7600L	XMR7600R	XMR8200L	XMR8200R	XMR8500L	XMR8500R	XMR8600L	XMR8600R	XMR9000L	XMR9000R	XMR9100R	XMR9200R	XMR9220C	XMR9220L	XMR9220LD				
Project Name:	Community DSI	Community DSI	Community DSI	Community DSI	Community DSI	Community DSI	Community DSI	Community DSI	Community DSI	Community DSI	Community DSI	Community DSI	Community DSI	Community DSI	Community DSI				
Sampling Method:	XRF	XRF	XRF	XRF	XRF	XRF	XRF	XRF	XRF	XRF	XRF	XRF	XRF	XRF	XRF				
Analyte grouping/Analyte			Units	LOD															
Field Portable XRF																			
Arsenic	300	160	mg/kg		12.98	137.05	50.07	389.39	57.6	100.96	43.91	119.72	<LOD	<LOD	29.21	71.58	<LOD	388.05	491.11
Barium			mg/kg		640.76	69.64	<LOD	<LOD	<LOD	668.46	<LOD	<LOD	321.42	201.1	<LOD	<LOD	803.94	577.8	719.43
Cadmium	90		mg/kg		<LOD	<LOD	<LOD	<LOD	<LOD	<LOD	<LOD	<LOD	<LOD	<LOD	<LOD	<LOD	42.94	<LOD	<LOD
Chromium	300	710	mg/kg		39.65	99.74	30.86	<LOD	<LOD	29.2	<LOD	27.88	<LOD	<LOD	<LOD	<LOD	28.85	<LOD	<LOD
Cobalt	300		mg/kg		<LOD	<LOD	<LOD	<LOD	<LOD	<LOD	<LOD	<LOD	<LOD	<LOD	<LOD	<LOD	<LOD	<LOD	<LOD
Copper	17000	160	mg/kg		70.2	437.52	349.09	1064.28	308.06	792.3	153.88	379.68	62.83	143.99	114.93	396.69	598.76	2736.94	1167.05
Iron			mg/kg		14677.7	13130.33	12296.1	23425.76	12524.78	25706.48	10993.27	12393.45	9386.12	8111.11	6979.12	10498.68	15838.04	30484.98	53784.95
Lead	600	1800	mg/kg		57.24	1736.62	1060.39	5145.91	848.48	5606.03	570.33	1177.73	221.84	496.96	394.74	1227.99	1049.98	5993.39	3441.45
Manganese	19000		mg/kg		313.59	301.4	56.22	214.21	247.93	<LOD	111.32	111.18	97.01	164.59	272.41	227.18	261.17	172.98	269.23
Mercury	80		mg/kg		<LOD	<LOD	<LOD	<LOD	<LOD	<LOD	<LOD	<LOD	<LOD	<LOD	<LOD	<LOD	<LOD	<LOD	<LOD
Nickel	1200	340	mg/kg		60.81	<LOD	<LOD	<LOD	<LOD	<LOD	<LOD	<LOD	<LOD	<LOD	<LOD	<LOD	40.54	<LOD	47.72
Zinc	30000	370	mg/kg		237.86	2454.56	3018.88	4395.83	2110.58	239.81	1984.27	5240.12	280.53	1029.63	1295.68	1547.49	1438.17	5450.25	621.48

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NEPM 2013 HIL C Open Space	NEPM EIL Commercial / Industrial (site specific)	Sample Type:	Soil	Soil	Soil	Soil	Soil	Soil	Soil	Soil	Soil	Soil	Soil	Soil	Soil	Soil	Soil	Soil	
		Easting	741521	741268	741631	741652	741272	741268	741268	741281	741665	741374	741704	741684	741738	741694	741721		
		Northing	6115679	6115465	6116271	6116273	6115481	6115467	6115454	6115460	6116349	6115593	6116382	6116461	6116451	6116480	6116530		
		Sample date:	24-03-20	23-03-20	19-03-20	19-03-20	23-03-20	23-03-20	23-03-20	23-03-20	19-03-20	23-03-20	19-03-20	19-03-20	19-03-20	19-03-20	19-03-20		
		Sample ID:	XMR9220R	XMULWR10	XMULWR101	XMULWR102	XMULWR10-2	XMULWR10-3	XMULWR10-4	XMULWR10-5	XMULWR109	XMULWR11	XMULWR116-114	XMULWR121	XMULWR122	XMULWR123	XMULWR129		
		Project Name:	Community DSI	Community DSI	Community DSI	Community DSI	Community DSI	Community DSI	Community DSI	Community DSI	Community DSI	Community DSI	Community DSI	Community DSI	Community DSI	Community DSI	Community DSI		
Sampling Method:	XRF	XRF	XRF	XRF	XRF	XRF	XRF	XRF	XRF	XRF	XRF	XRF	XRF	XRF	XRF				
Analyte grouping/Analyte		Units	LOD																
Field Portable XRF																			
Arsenic	300	160	mg/kg	102.69	46.18	<LOD	<LOD	12.94	14.96	62.43	15.62	<LOD	10.01	<LOD	6.95	<LOD	<LOD	6.95	
Barium			mg/kg	<LOD	<LOD	<LOD	275.95	<LOD	<LOD	<LOD	154.78	367.68	<LOD	358.17	424.62	273.26	302.29	415.47	
Cadmium	90		mg/kg	<LOD	<LOD	<LOD	<LOD	<LOD	<LOD	<LOD	<LOD	<LOD	<LOD	<LOD	<LOD	<LOD	<LOD	<LOD	
Chromium	300	710	mg/kg	<LOD	29.31	<LOD	<LOD	<LOD	<LOD	43.5	34	<LOD	<LOD	29.78	<LOD	<LOD	<LOD	<LOD	
Cobalt	300		mg/kg	<LOD	<LOD	<LOD	<LOD	<LOD	<LOD	<LOD	<LOD	59.07	<LOD	106.91	<LOD	359.16	<LOD	<LOD	
Copper	17000	160	mg/kg	671.96	278.73	<LOD	<LOD	108.61	118.79	469.08	143.61	<LOD	15.55	<LOD	<LOD	19.92	21.29	<LOD	
Iron			mg/kg	15293.54	10816.84	3879.6	6398.13	5769.17	11200.7	12003	10455.26	6090.25	11104	10590.12	10618.45	17052.16	9442.22	11138.6	
Lead	600	1800	mg/kg	1551.24	516.79	<LOD	6.1	184.56	328.74	1190.96	218.99	6.84	42.04	<LOD	7.9	24.88	12.77	9.21	
Manganese	19000		mg/kg	334.84	344.58	90.84	105.28	57.12	211.96	619.73	164.77	66.87	290.54	174.41	168.94	429.12	154.12	115.06	
Mercury	80		mg/kg	<LOD	<LOD	<LOD	<LOD	<LOD	<LOD	<LOD	<LOD	<LOD	<LOD	<LOD	<LOD	<LOD	<LOD	<LOD	
Nickel	1200	340	mg/kg	<LOD	<LOD	<LOD	<LOD	<LOD	<LOD	<LOD	<LOD	<LOD	<LOD	<LOD	<LOD	<LOD	<LOD	30.45	
Zinc	30000	370	mg/kg	4330.75	2606.76	27.36	29.19	3470.43	885.6	2396.76	1097.93	21.8	237.1	36.74	22.89	49.28	24.87	24.85	

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Sample Type:	Soil		Soil		Soil		Soil		Soil		Soil		Soil		Soil		Soil		Soil	
	741737		741826		741827		741866		741293		741254		741295		741300		741308		741329	
	6116547		6116566		6116543		6116540		6115578		6115388		6115598		6115623		6115659		6115710	
	19-03-20		19-03-20		19-03-20		19-03-20		23-03-20		23-03-20		23-03-20		23-03-20		23-03-20		23-03-20	
	XMULWR131		XMULWR141		XMULWR142		XMULWR144		XMULWR18		XMULWR2		XMULWR22-20		XMULWR24		XMULWR28-26		XMULWR36	
Project Name:	Community DSI		Community DSI		Community DSI		Community DSI		Community DSI		Community DSI		Community DSI		Community DSI		Community DSI		Community DSI	
Sampling Method:	XRF		XRF		XRF		XRF		XRF		XRF		XRF		XRF		XRF		XRF	
Analyte grouping/Analyte	Units	LOD																		
Field Portable XRF																				
Arsenic	300	160	mg/kg		6.84	17.5	4.92	<LOD	<LOD	14.91	6.13	<LOD	10.21	17.03	<LOD	<LOD	9.54	<LOD	<LOD	
Barium			mg/kg		486.97	418.3	121.06	205.59	<LOD	<LOD	<LOD	<LOD	126.62	232.14	669.56	339.71	107.74	424.33	303.79	213.26
Cadmium	90		mg/kg		<LOD	<LOD	<LOD	<LOD	<LOD	<LOD	<LOD	<LOD	<LOD	<LOD	<LOD	<LOD	<LOD	<LOD	<LOD	<LOD
Chromium	300	710	mg/kg		34.67	76.98	<LOD	<LOD	30.07	<LOD	<LOD	<LOD	<LOD	<LOD	<LOD	25.67	32.13	27.82	<LOD	
Cobalt	300		mg/kg		<LOD	<LOD	<LOD	<LOD	<LOD	<LOD	<LOD	<LOD	<LOD	<LOD	49.42	<LOD	<LOD	<LOD	<LOD	
Copper	17000	160	mg/kg		<LOD	19.07	16.72	23.84	29.14	153.96	<LOD	24.7	25.84	32.02	<LOD	<LOD	24.05	21.02	26.65	
Iron			mg/kg		11709.37	30145.75	12907.11	7165.08	6741.08	8509.09	9263.39	7038.46	9327.01	9779.12	4731.88	8265.75	9932.57	6417.06	8896.3	
Lead	600	1800	mg/kg		12.92	9.98	<LOD	<LOD	<LOD	171.61	13.07	11.03	10.49	7.3	<LOD	5.77	<LOD	8.09	17.65	
Manganese	19000		mg/kg		156.89	94.46	68.32	136.33	280.17	408.79	517.77	477.37	434.87	243.06	218.65	275.12	251.52	330.31	325.2	
Mercury	80		mg/kg		<LOD	<LOD	<LOD	<LOD	<LOD	<LOD	<LOD	<LOD	<LOD	<LOD	<LOD	<LOD	<LOD	<LOD	<LOD	
Nickel	1200	340	mg/kg		<LOD	<LOD	<LOD	<LOD	<LOD	<LOD	<LOD	<LOD	<LOD	<LOD	<LOD	<LOD	<LOD	33.7	<LOD	
Zinc	30000	370	mg/kg		33.66	35.29	16.16	27.08	73.34	929.36	96.11	69.08	87.4	180.96	18.8	86.47	31.23	36.35	42.55	

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		Sample Type:	Soil	Soil	Soil	Soil	Soil	Soil	Soil	Soil	Soil	Soil	Soil	Soil	Soil	Soil	Soil	Soil	
NEPM 2013 HIL C Open Space	NEPM EIL Commercial / Industrial (site specific)	Easting	741564	741360	741605	741626	741813	742155	742138	742133	741092	741098	741105	741034	741015	741026	741079		
		Northing	6116114	6115565	6116226	6116215	6116016	6116073	6116083	6116093	6115345	6115379	6115408	6115147	6115110	6115169	6115287		
		Sample date:	19-03-20	23-03-20	19-03-20	19-03-20	19-03-20	24-03-20	24-03-20	24-03-20	23-03-20	23-03-20	23-03-20	23-03-20	23-03-20	23-03-20	23-03-20	23-03-20	
		Sample ID:	XMULWR84-82	XMULWR9	XMULWR95	XMULWR96	XMW4_0-0.005	XPSR	XPSR	XPSSP	XROSE21-23	XROSE25	XROSE27-29	XROSER11	XROSER12-10	XROSER14	XROSER17		
		Project Name:	Community DSI	Community DSI	Community DSI	Community DSI	Community DSI	Community DSI	Community DSI	Community DSI	Community DSI	Community DSI	Community DSI	Community DSI	Community DSI	Community DSI	Community DSI	Community DSI	
		Sampling Method:	XRF	XRF	XRF	XRF	XRF	XRF	XRF	XRF	XRF	XRF	XRF	XRF	XRF	XRF	XRF	XRF	
Analyte grouping/Analyte		Units	LOD																
Field Portable XRF																			
Arsenic	300	160	mg/kg	6.16	17.31	6.56	<LOD	204.84	<LOD	<LOD	<LOD	8.81	<LOD	<LOD	13.83	<LOD	<LOD	<LOD	
Barium			mg/kg	200.62	<LOD	303.52	366.58	316.71	<LOD	<LOD	342.49	90.22	<LOD	253.08	312.85	863.96	270.12	<LOD	
Cadmium	90		mg/kg	<LOD	<LOD	<LOD	<LOD	<LOD	<LOD	<LOD	<LOD	<LOD	<LOD	<LOD	<LOD	<LOD	<LOD	<LOD	
Chromium	300	710	mg/kg	<LOD	<LOD	<LOD	<LOD	<LOD	<LOD	<LOD	<LOD	<LOD	<LOD	<LOD	88.83	<LOD	<LOD	25.74	
Cobalt	300		mg/kg	<LOD	<LOD	<LOD	<LOD	<LOD	<LOD	<LOD	<LOD	<LOD	<LOD	<LOD	464.12	<LOD	<LOD	<LOD	
Copper	17000	160	mg/kg	15.19	37.19	17.39	21.65	466.53	51.4	<LOD	<LOD	<LOD	26.22	25.34	<LOD	17.84	14.79	26.9	
Iron			mg/kg	8046.65	9015.72	7020.99	13580.76	20609.84	5719.68	2131.51	1903.78	14391.66	9304.09	13180.12	72358.66	14113.56	9294.64	6353.51	
Lead	600	1800	mg/kg	10.6	56.69	7.07	7.02	2097.97	21.09	<LOD	<LOD	7.99	39.45	132.75	21.35	<LOD	<LOD	14.65	
Manganese	19000		mg/kg	398.52	370.83	392.26	360.07	422.59	370.83	392.26	360.07	422.59	370.83	392.26	360.07	422.59	370.83	392.26	
Mercury	80		mg/kg	<LOD	<LOD	<LOD	<LOD	<LOD	<LOD	<LOD	<LOD	<LOD	<LOD	<LOD	<LOD	<LOD	<LOD	<LOD	
Nickel	1200	340	mg/kg	<LOD	<LOD	<LOD	34.66	42.57	<LOD	<LOD	53.56	<LOD	<LOD	<LOD	<LOD	61.51	<LOD	<LOD	
Zinc	30000	370	mg/kg	36.32	355.43	46.67	85.97	579.74	1595.08	26.14	16.71	91.34	195.47	168.02	57.88	44.36	39.04	135.92	

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NEPM 2013 HIL C Open Space	NEPM EIL Commercial / Industrial (site specific)	Sample Type:	Soil	Soil	Soil	Soil	Soil	Soil	Soil	Soil	Soil	Soil	Soil	Soil	Soil	Soil	Soil	Soil	Soil		
		Easting	741136	741070	741092	740984	741101	740967	741142	741145	741150	741150	741153	741156	741161	741164	741164	740986			
		Northing	6115302	6115313	6115420	6114983	6115484	6114968	6115593	6115614	6115638	6115660	6115673	6115696	6115720	6115734	6115047				
		Sample date:	23-03-20	23-03-20	23-03-20	23-03-20	23-03-20	23-03-20	23-03-20	23-03-20	23-03-20	23-03-20	23-03-20	23-03-20	23-03-20	23-03-20	23-03-20				
		Sample ID:	XROSER19	XROSER20	XROSER26	XROSER3-1	XROSER34	XROSER4-2	XROSER45	XROSER47	XROSER49	XROSER51	XROSER53	XROSER55	XROSER57	XROSER59	XROSER6				
		Project Name:	Community DSI	Community DSI	Community DSI	Community DSI	Community DSI	Community DSI	Community DSI	Community DSI	Community DSI	Community DSI	Community DSI	Community DSI	Community DSI	Community DSI	Community DSI				
Sampling Method:	XRF	XRF	XRF	XRF	XRF	XRF	XRF	XRF	XRF	XRF	XRF	XRF	XRF	XRF	XRF						
Analyte grouping/Analyte		Units	LOD																		
Field Portable XRF																					
Arsenic	300	160	mg/kg	<LOD	<LOD	<LOD	<LOD	<LOD	<LOD	4.75	11.57	8.66	18.08	7.66	<LOD	10.04	15.1	8.54	<LOD		
Barium			mg/kg	198.94	278.03	160.9	714.13	<LOD	91.55	378.43	<LOD	458.57	228.21	411.12	138.1	376.78	293.71	315.34			
Cadmium	90		mg/kg	<LOD	16.37	<LOD	<LOD	<LOD	<LOD	<LOD	<LOD	<LOD	<LOD	<LOD	<LOD	<LOD	<LOD	<LOD	<LOD		
Chromium	300	710	mg/kg	22.7	28.69	<LOD	<LOD	<LOD	<LOD	<LOD	<LOD	<LOD	<LOD	<LOD	<LOD	<LOD	<LOD	<LOD	<LOD		
Cobalt	300		mg/kg	<LOD	<LOD	437.04	<LOD	<LOD	<LOD	<LOD	<LOD	<LOD	<LOD	<LOD	<LOD	<LOD	<LOD	131.5	<LOD		
Copper	17000	160	mg/kg	19.19	<LOD	20.28	20.48	<LOD	<LOD	34.44	17.39	32.39	<LOD	<LOD	16.62	37.74	30.94	<LOD			
Iron			mg/kg	6631.09	17919.29	26978.2	15990.79	4127.69	4231.55	13931.09	7947.66	18843.9	8744.53	6078.16	9396.94	14981.66	12124.38	7301.06			
Lead	600	1800	mg/kg	8.46	<LOD	253.84	33.06	<LOD	<LOD	16.06	24.66	147.9	20.97	10.89	17.88	38.39	27.81	<LOD			
Manganese	19000		mg/kg	274.88	99.6	315.65	257.61	252.62	125.18	297.19	209.17	590.85	340.14	254.36	266	278.31	521.98	106.29			
Mercury	80		mg/kg	<LOD	<LOD	<LOD	<LOD	<LOD	<LOD	<LOD	<LOD	<LOD	<LOD	<LOD	<LOD	<LOD	<LOD	<LOD	<LOD		
Nickel	1200	340	mg/kg	<LOD	<LOD	<LOD	45.66	<LOD	<LOD	<LOD	<LOD	<LOD	<LOD	<LOD	<LOD	<LOD	<LOD	<LOD	<LOD		
Zinc	30000	370	mg/kg	65.58	46.95	152.51	158.7	63.49	16.64	153.86	298.33	227.2	81.12	52.11	70.57	95.96	110.48	27.73			

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	NEPM 2013 HIL C Open Space	NEPM EIL Commercial / Industrial (site specific)	Sample Type:	Soil	Soil	Soil	Soil	Soil	Soil	Soil	Soil	Soil	Soil	Soil	Soil	Soil	Soil	Soil		
			Easting	741163	741030	742264	742230	742181	742168	741807	741810	741817	741436	741445	741460	741468	741484	741393		
			Northing	6115751	6115132	6116059	6116123	6115985	6116115	6116026	6116025	6116019	6115570	6115580	6115605	6115616	6115639	6115501		
			Sample date:	23-03-20	23-03-20	24-03-20	24-03-20	24-03-20	24-03-20	18-03-20	18-03-20	18-03-20	18-03-20	18-03-20	18-03-20	18-03-20	18-03-20	18-03-20		
			Sample ID:	XROSER61	XROSER9	XSG1	XSG2	XSG3	XSGTC-1	XSMC1	XSMC2	XSMC3	XSTEWR10	XSTEWR12	XSTEWR14	XSTEWR16	XSTEWR18	XSTEWR2		
Project Name:	Community DSI	Community DSI	Community DSI	Community DSI	Community DSI	Community DSI	Community DSI	Community DSI	Community DSI	Community DSI	Community DSI	Community DSI	Community DSI	Community DSI	Community DSI	Community DSI	Community DSI	Community DSI		
Sampling Method:	XRF	XRF	XRF	XRF	XRF	XRF	XRF	XRF	XRF	XRF	XRF	XRF	XRF	XRF	XRF	XRF	XRF	XRF		
Analyte grouping/Analyte			Units	LOD																
Field Portable XRF																				
Arsenic	300	160	mg/kg	7.09	11.72	6.76	<LOD	10.76	7.49	10.69	41.57	140.84	16.08	9.48	<LOD	<LOD	16.97	<LOD		
Barium			mg/kg	431.84	251.58	<LOD	165.3	113.15	129.77	393.15	<LOD	<LOD	<LOD	377.3	223.12	433.02	<LOD	<LOD		
Cadmium	90		mg/kg	<LOD	<LOD	<LOD	<LOD	<LOD	<LOD	<LOD	<LOD	<LOD	<LOD	<LOD	<LOD	<LOD	<LOD	<LOD		
Chromium	300	710	mg/kg	31.55	50.4	38.82	<LOD	<LOD	<LOD	28.62	<LOD	53.53	59.01	28.89	<LOD	<LOD	<LOD	<LOD		
Cobalt	300		mg/kg	78.4	186.43	<LOD	<LOD	<LOD	<LOD	<LOD	<LOD	<LOD	<LOD	<LOD	<LOD	59.78	<LOD	<LOD		
Copper	17000	160	mg/kg	20.03	22.07	35.05	23.69	38.66	27.17	87.27	317.68	421.15	78.24	49.43	69.32	32.1	66.34	13.49		
Iron			mg/kg	14076.2	39447.87	14976.71	14969.08	12588.24	10108.22	10358.12	10566.54	24154.72	9690.31	10057.12	10831.61	8602.95	10680.23	5280.17		
Lead	600	1800	mg/kg	9.45	13.21	38.83	56.85	51.98	24.1	332.05	1052.25	1298.2	23.74	72.72	111.63	37.09	238.32	51.5		
Manganese	19000		mg/kg	242.83	225.52	298.71	277.47	188.93	225.73	223.54	179.97	481.43	576.13	135.82	273.35	284.99	446.18	251.75		
Mercury	80		mg/kg	<LOD	<LOD	<LOD	<LOD	<LOD	<LOD	<LOD	<LOD	<LOD	<LOD	<LOD	<LOD	<LOD	<LOD	<LOD		
Nickel	1200	340	mg/kg	<LOD	51.44	<LOD	<LOD	<LOD	<LOD	<LOD	<LOD	<LOD	<LOD	<LOD	<LOD	<LOD	<LOD	<LOD		
Zinc	30000	370	mg/kg	47.91	62.55	131.18	143.01	253.86	363.7	622.1	1866.57	2479.04	345.41	181.16	260.22	284.21	1114.68	435.88		

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NEPM 2013 HIL C Open Space	NEPM EIL Commercial / Industrial (site specific)	Sample Type:	Soil	Soil	Soil	Soil	Soil	Soil	Soil	Soil	Soil	Soil	Soil	Soil	Soil	Soil	Soil	Soil	
		Easting	741496	741416	741431	741991	741971	741946	741868	741909	742047	741991	741976	742019	741954	742056	741918		
		Northing	6115650	6115537	6115560	6116010	6116019	6116025	6116027	6116015	6116001	6115998	6115999	6116009	6116006	6115988	6116030		
		Sample date:	18-03-20	18-03-20	18-03-20	18-03-20	18-03-20	18-03-20	18-03-20	18-03-20	18-03-20	18-03-20	18-03-20	18-03-20	18-03-20	18-03-20	18-03-20		
		Sample ID:	XSTEW20	XSTEW6	XSTEW8	XWALLR10-12	XWALLR14	XWALLR16	XWALLR17	XWALLR17B	XWALLR4-6	XWALLR5	XWALLR7	XWALLR8	XWALLR9	XWALLRLD	XWALLRTH1		
		Project Name:	Community DSI	Community DSI	Community DSI	Community DSI	Community DSI	Community DSI	Community DSI	Community DSI	Community DSI	Community DSI	Community DSI	Community DSI	Community DSI	Community DSI	Community DSI	Community DSI	Community DSI
Sampling Method:	XRF	XRF	XRF	XRF	XRF	XRF	XRF	XRF	XRF	XRF	XRF	XRF	XRF	XRF	XRF	XRF	XRF		
Analyte grouping/Analyte		Units	LOD																
Field Portable XRF																			
Arsenic	300	160	mg/kg	<LOD	<LOD	<LOD	16.86	12.33	10.62	19.55	<LOD	<LOD	<LOD	<LOD	<LOD	9.85	<LOD	12.56	
Barium			mg/kg	282	205.09	<LOD	138.35	45.77	<LOD	<LOD	513.3	354.94	424.19	142.73	<LOD	113.48	536.29	471.4	
Cadmium	90		mg/kg	<LOD	<LOD	<LOD	<LOD	<LOD	<LOD	<LOD	<LOD	11.01	<LOD	<LOD	<LOD	<LOD	10.93	<LOD	
Chromium	300	710	mg/kg	<LOD	<LOD	<LOD	<LOD	22.92	<LOD	<LOD	<LOD	<LOD	28.46	<LOD	28.44	<LOD	24.51	<LOD	
Cobalt	300		mg/kg	<LOD	<LOD	<LOD	<LOD	<LOD	<LOD	<LOD	<LOD	116.12	<LOD	<LOD	<LOD	<LOD	<LOD	<LOD	
Copper	17000	160	mg/kg	24.02	36.43	13.46	71.7	72.39	68.98	57.83	73.39	45.39	77.88	25.29	75.33	65.44	78.97	32.73	
Iron			mg/kg	12293.38	10463.39	6479.15	11760.83	13763.41	15616.68	8419.86	18116.61	11392.98	11943.13	8889.32	12602.05	14734.1	13582.33	8848.4	
Lead	600	1800	mg/kg	44.95	70.01	47.99	217.17	115.57	115.42	174.46	109.75	80.78	191.19	327.32	109.86	131.82	112.49	88.77	
Manganese	19000		mg/kg	429.61	346.2	279.45	223.21	235.01	197.09	377.72	370.03	235.13	229.72	297.04	357.5	388.44	259.45	212.88	
Mercury	80		mg/kg	<LOD	<LOD	<LOD	<LOD	<LOD	<LOD	<LOD	<LOD	<LOD	<LOD	<LOD	<LOD	<LOD	<LOD	<LOD	
Nickel	1200	340	mg/kg	<LOD	<LOD	<LOD	<LOD	<LOD	<LOD	<LOD	<LOD	40.26	<LOD	<LOD	<LOD	<LOD	<LOD	<LOD	
Zinc	30000	370	mg/kg	115.32	165.7	381.74	576.54	504.19	634.35	1089.46	331.29	285.86	364.07	288.75	950.96	529.84	411.16	313.36	

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Analyte grouping/Analyte	Units	LOD			
Field Portable XRF					
Arsenic	300	160	mg/kg	<LOD	17.22
Barium			mg/kg	256.73	380.66
Cadmium	90		mg/kg	<LOD	<LOD
Chromium	300	710	mg/kg	<LOD	<LOD
Cobalt	300		mg/kg	<LOD	<LOD
Copper	17000	160	mg/kg	55.11	115.04
Iron			mg/kg	8748.64	14716.37
Lead	600	1800	mg/kg	177.74	280.67
Manganese	19000		mg/kg	223.04	346.33
Mercury	80		mg/kg	<LOD	<LOD
Nickel	1200	340	mg/kg	<LOD	<LOD
Zinc	30000	370	mg/kg	572.34	894.61

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		Sample Type:	Soil															
		Easting	741874	735784	735783	736459	736444	736766	736754	737278	737273	737431	737415	737588	737573			
		Northing	6116040	6117481	6117462	6116815	6116804	6116302	6116290	6115906	6115896	6115527	6115513	6114952	6114943			
		Sample date:	18-03-20	23-03-20	23-03-20	23-03-20	23-03-20	23-03-20	23-03-20	23-03-20	23-03-20	23-03-20	23-03-20	23-03-20	23-03-20			
		Sample ID:	XBOYD1E	XMR0L	XMR0R	XMR1000L	XMR1000R	XMR1500L	XMR1500R	XMR2200L	XMR2200R	XMR2600L	XMR2600R	XMR3200L	XMR3200R			
		Project Name:	Community DSI	Community DSI	Community DSI	Community DSI	Community DSI	Community DSI	Community DSI	Community DSI	Community DSI	Community DSI	Community DSI	Community DSI	Community DSI			
		Sampling Method:	XRF	XRF	XRF	XRF	XRF	XRF	XRF	XRF	XRF	XRF	XRF	XRF	XRF			
Analyte grouping/Analyte			Units	LOD														
Field Portable XRF																		
Arsenic	300	160	mg/kg	20.94	22.8	78.25	81.27	23.59	33.15	<LOD	24.43	10.88	<LOD	<LOD	21.9	30.29		
Barium			mg/kg	<LOD	721.85	596.43	187.05	<LOD	220.12	360.46	125.07	<LOD	685.83	341.04	<LOD	182.15		
Cadmium	90		mg/kg	<LOD	<LOD	<LOD	<LOD	<LOD	<LOD	<LOD	<LOD	<LOD	<LOD	<LOD	<LOD	<LOD		
Chromium	300	710	mg/kg	<LOD	74.09	84.53	<LOD	<LOD	<LOD	45.71	54.21	<LOD	<LOD	<LOD	<LOD	<LOD		
Cobalt	300		mg/kg	<LOD	<LOD	<LOD	<LOD	<LOD	<LOD	<LOD	<LOD	<LOD	<LOD	<LOD	<LOD	<LOD		
Copper	17000	160	mg/kg	58.24	161.37	362.98	256.24	274.37	108.66	91.56	518.36	56.23	114.57	24.26	102.89	165.29		
Iron			mg/kg	8418.78	29192.75	26219.97	21112.43	10743.8	14098.66	13989.28	21684.43	11107.11	13996.68	7038.58	17821.49	7362.91		
Lead	600	1800	mg/kg	162.1	298.71	541.15	600.23	447.27	411.71	162.91	365.23	145.58	335.06	70.77	196.39	416.37		
Manganese	19000		mg/kg	119.33	598.98	479.41	353.49	141.74	171.29	350.74	1100.3	289.34	246.24	109.48	338.45	86.47		
Mercury	80		mg/kg	<LOD	<LOD	<LOD	<LOD	<LOD	<LOD	<LOD	<LOD	<LOD	<LOD	<LOD	<LOD	<LOD		
Nickel	1200	340	mg/kg	<LOD	71.91	66.36	<LOD	<LOD	<LOD	<LOD	<LOD	<LOD	43.2	<LOD	<LOD	33.68		
Zinc	30000	370	mg/kg	512.36	907.86	1829.7	1206.63	591.55	736.86	886.87	3872.08	752.86	504.14	161.21	776.19	509.72		

LOD = Limit of Detection
 LOD = Limit of Detection
 LOR = Limit of Reporting
 National Environment Protection Council (2013) National Environmental Protection (Assessment of Site Contamination) Amendment Measure 2013 (No. 1) (NEPM).
 Concentration in orange font and grey box exceed the adopted HIL for Commercial Industrial land use
 Concentration in green font and grey box exceed the adopted EIL 'D' for Commercial/Industrial use
 Concentrations in box exceed the screening value >2.5 t
 Where one or more guideline value is exceeded, the highest guideline exceeded will be highlighted
³ Human Health Guideline for Lead adopted from the Human Health Risk Assessment (Ramboll 2019d)

			Sample Type:	Soil	Soil	Soil	Soil	Soil	Soil	Soil	Soil	Soil	Soil	Soil	Soil	Soil	Soil	
	NEPM 2013 HIL D Commercial / Industrial	NEPM EIL Commercial / Industrial (site specific)	Easting	737721	737719	737690	737946	737934	738479	738468	736216	736194	738684	738672	739072	739083		
Northing			6114502	6114486	6114500	6114145	6114136	6113605	6113591	6117190	6117178	6113400	6113378	6113526	6113515			
Sample date:			23-03-20	23-03-20	23-03-20	23-03-20	24-03-20	24-03-20	24-03-20	24-03-20	23-03-20	23-03-20	24-03-20	24-03-20	24-03-20	24-03-20		
Sample ID:			XMR3600L	XMR3600L2	XMR3600R	XMR4100L	XMR4100R	XMR5000L	XMR5000R	XMR500L	XMR500R	XMR5200L	XMR5200R	XMR5500L	XMR5500R			
Project Name:			Community DSI	Community DSI	Community DSI	Community DSI	Community DSI	Community DSI	Community DSI	Community DSI	Community DSI	Community DSI	Community DSI	Community DSI	Community DSI	Community DSI	Community DSI	
Sampling Method:			XRF	XRF	XRF	XRF	XRF	XRF	XRF	XRF	XRF	XRF	XRF	XRF	XRF			
Analyte grouping/Analyte			Units	LOD														
Field Portable XRF																		
Arsenic	300	160	mg/kg	29.17	92.79	17.57	1	1	43.85	74.72	53.78	26.6	25.05	13.04	21.24	14.59		
Barium			mg/kg	<LOD		<LOD	<LOD	106.98	603.99	<LOD	<LOD	433.18	<LOD	<LOD	<LOD	383.37		
Cadmium	90		mg/kg	<LOD		<LOD	<LOD	<LOD	<LOD	<LOD	<LOD	<LOD	<LOD	<LOD	<LOD	<LOD		
Chromium	300	710	mg/kg	<LOD	<LOD	<LOD	<LOD	<LOD	46.14	<LOD	<LOD	125.08	<LOD	33.78	48.91	<LOD		
Cobalt	300		mg/kg	<LOD	<LOD	120.19	<LOD	<LOD	<LOD	<LOD	<LOD	<LOD	<LOD	<LOD	<LOD	<LOD		
Copper	17000	160	mg/kg	193.89	553.64	98.9	159.45	67.35	476.79	379.21	501.54	178.94	96.29	45.39	101.1	106.98		
Iron			mg/kg	17087.65	12959.83	18216.39	12483.51	6489.92	19930.67	17668	19538.44	40800.99	13120.65	8552.05	19528.71	18356.4		
Lead	600	1800	mg/kg	1285.72	1064.81	396.09	756.95	219.37	640.13	1116.03	1527.26	481.13	214.59	99.55	262.81	260.45		
Manganese	19000		mg/kg	583.61	160.66	279.25	470.27	106.25	394.91	179.92	215.19	262.12	92.15	428.61	333.59	255.08		
Mercury	80		mg/kg	<LOD	<LOD	<LOD	<LOD	<LOD	<LOD	<LOD	<LOD	<LOD	<LOD	<LOD	<LOD	<LOD		
Nickel	1200	340	mg/kg	<LOD	<LOD	<LOD	<LOD	<LOD	36.65	<LOD	<LOD	35.15	<LOD	<LOD	<LOD	<LOD		
Zinc	30000	370	mg/kg	3353.21	2047.23	730.26	1349.8	587.41	687.18	1293.95	1556.17	454.57	945.95	1693.07	1247.04	506.69		

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National Environment Protection Council (2013) National Environmental Protection (Assessment of Site Contamination) Amendment Measure 2013 (No. 1) (NEPM).

Concentration in orange font and grey box exceed the adopted HIL for Commercial Industrial land use

Concentration in green font and grey box exceed the adopted EIL 'D' for Commercial/Industrial use

Concentrations in box exceed the screening value >2.5 t

Where one or more guideline value is exceeded, the highest guideline exceeded will be highlighted

^a Human Health Guideline for Lead adopted from the Human Health Risk Assessment (Ramboll 2019d)

		Sample Type:	Soil	Soil	Soil	Soil	
NEPM 2013 HIL D Commercial / Industrial	NEPM EIL Commercial / Industrial (site specific)	Easting	739400	739399	739885	739903	
		Northing	6113723	6113685	6114526	6114515	
		Sample date:	24-03-20	24-03-20	24-03-20	24-03-20	
		Sample ID:	XMR6000L	XMR6000R	XMR7000L	XMR7000R	
		Project Name:	Community DSI	Community DSI	Community DSI	Community DSI	
		Sampling Method:	XRF	XRF	XRF	XRF	
Analyte grouping/Analyte		Units	LOD				
Field Portable XRF							
Arsenic	300	160	mg/kg	45.68	92.3	373.89	208.01
Barium			mg/kg	108.54	593.4	676.95	<LOD
Cadmium	90		mg/kg	<LOD	16.44	35.73	<LOD
Chromium	300	710	mg/kg	32.31	<LOD	63.79	48.55
Cobalt	300		mg/kg	<LOD	<LOD	<LOD	<LOD
Copper	17000	160	mg/kg	189.34	338.64	1943.62	550.08
Iron			mg/kg	17278.38	13235.01	25931.15	22612.94
Lead	600	1800	mg/kg	352.12	1235.66	4320.82	1499.77
Manganese	19000		mg/kg	416.06	342.54	326.78	209.22
Mercury	80		mg/kg	<LOD	<LOD	<LOD	<LOD
Nickel	1200	340	mg/kg	<LOD	<LOD	<LOD	<LOD
Zinc	30000	370	mg/kg	1072.11	3147.89	7624.91	2673.44

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 National Environment Protection Council (2013) National Environmental Protection (Assessment of Site Contamination) Amendment Measure 2013 (No. 1) (NEPM).
 Concentration in orange font and grey box exceed the adopted HIL for Commercial Industrial land use
 Concentration in green font and grey box exceed the adopted EIL 'D' for Commercial/Industrial use
 Concentrations in box exceed the screening value >2.5 t
 Where one or more guideline value is exceeded, the highest guideline exceeded will be highlighted
³ Human Health Guideline for Lead adopted from the Human Health Risk Assessment (Ramboll 2019d)

Table QA1:
 Soil QA/QC



		Sample Type:	Soil	Soil	RPD %	Soil	Soil
		Site:	P30	QA		P30	QA
		Lab Sample number:	S20-Ap09562	S20-Ap16795		S20-Ap09562	ES2012481004
		Sample date:	02-04-20	02-04-20		02-04-20	02-04-20
		Sample ID:	P30_HA05_0.0	D01_020420		P30_HA05_0.0	T01_020420
		Project Name:	Community DSI	Community DSI		Community DSI	Community DSI
		Sampling Method:	Hand Auger	Hand Auger		Hand Auger	Hand Auger
Analyte grouping/Analyte	Sample Description	Units					
LTM-GEN-7080 Moisture							
Moisture Content (dried @ 103°C)	mg/kg		20	21	4.9	20	20.9
LTM-MET-3040 Metals in Waters, Soils & Sediments by ICP-MS							
Lead Concentration	mg/kg		9.3	8	15.0	9.3	7

Table QA1:
 Soil QA/QC



RPD %	Soil	Soil	RPD %	Soil	Soil	RPD %	Soil	Soil
	P28	QA		P28	QA		P26	QA
	S20-Ap09689	S20-Ap16792		S20-Ap09689	ES2012481003		S20-Ap09872	S20-Ap16791
	01-04-20	01-04-20		01-04-20	01-04-20		01-04-20	01-04-20
	P28_HA05_0.0	D03_010420		P28_HA05_0.0	T03_010420		P26_HA02_0.0	D02_010420
	Community DSI	Community DSI		Community DSI	Community DSI		Community DSI	Community DSI
	Hand Auger	Hand Auger		Hand Auger	Hand Auger		Hand Auger	Hand Auger
4.4	12	10	18.2	12	13.7	13.2	10	10
28.2	16	17	6.1	16	18	11.8	32	27

Table QA1:
 Soil QA/QC



RPD %	Soil	Soil	RPD %	Soil	Soil	RPD %	Soil	Soil
	P26	QA		Rail Corridor	QA		Rail Corridor	QA
	S20-Ap09872	ES2012481002		S20-Ap02705	S20-Ap02737		S20-Ap02705	
	01-04-20	01-04-20		31-03-20	31-03-20		31-03-20	31-03-20
	P26_HA02_0.0	T02_010420		TP5_0.0-0.1	D_TP01_310320		TP5_0.0-0.1	T_TP01_310320
	Community DSI	Community DSI		Community DSI	Community DSI		Community DSI	Community DSI
	Hand Auger	Hand Auger		Hand Auger	Hand Auger		Hand Auger	Hand Auger
0.0	10	10.7	6.8	6.5	7.4	12.9	6.5	8.3
16.9	32	29	9.8	51	54	5.7	51	48

Table QA1:
 Soil QA/QC



RPD %	Soil	Soil	RPD %	Soil	Soil	RPD %	Soil	Soil
	Rail Corridor	QA		Rail Corridor	QA		Rail Corridor	QA
	S20-Ap02715	S20-Ap02738		S20-Ap02715	S20-Ap06338		S20-Ap06354	
	31-03-20	31-03-20		31-03-20	31-03-20		01-04-20	01-04-20
	TP8_0.0-0.1	D_TP02_310320		TP8_0.0-0.1	T_TP02_310320		TP15_0.5-0.6	D_TP03_010420
	Community DSI	Community DSI		Community DSI	Community DSI		Community DSI	Community DSI
	Hand Auger	Hand Auger		Hand Auger	Hand Auger		Hand Auger	Hand Auger
24.3	6.9	6.6	4.4	6.9	7.3	5.6	8.4	7
6.1	37	27	31.3	37	21	55.2	17	29

Table QA1:
 Soil QA/QC



RPD %	Soil	Soil	RPD %	Soil	Soil	RPD %	Soil	Soil
	Rail Corridor	QA		Rail Corridor	QA		Rail Corridor	QA
	S20-Ap06338			S20-Ap06351	S20-Ap06355		S20-Ap06351	
	01-04-20	01-04-20		01-04-20	01-04-20		01-04-20	01-04-20
	TP15_0.5-0.6	T_TP03_010420		TP20_0.0-0.1	D_TP04_010420		TP20_0.0-0.1	T_TP04_010420
	Community DSI	Community DSI		Community DSI	Community DSI		Community DSI	Community DSI
	Hand Auger	Hand Auger		Hand Auger	Hand Auger		Hand Auger	Hand Auger
18.2	8.4	5.6	40.0	7.6	7.2	5.4	7.6	6.6
52.2	17	18	5.7	62	69	10.7	62	52

Table QA1:
 Soil QA/QC



RPD %	Soil	Soil	RPD %	Soil	Soil	RPD %	Soil	Soil
	P2	QA		P2	QA		P2	QA
	M20-Ma43662	M20-Ma43479		M20-Ma43662	EM2005270004		M20-Ma43678	M20-Ma43480
	24-03-20	24-03-20		24-03-20	24-03-20		24-03-20	24-03-20
	P2_HA05_0.4	D01_24/3/20		P2_HA05_0.4	T01_240320		P2_HA10_0.0-0.05	D02_24320
	Community DSI	Community DSI		Community DSI	Community DSI		Community DSI	Community DSI
	Hand Auger	Hand Auger		Hand Auger	Hand Auger		Hand Auger	Hand Auger
14.1	15	15	0.0	15	12.1		16	16
17.5	140	170	19.4	140	289	69.5	84	85

Table QA1:
 Soil QA/QC



RPD %	Soil	Soil	RPD %	Soil	Soil	RPD %	Soil	Soil	
	P2	QA		P4	QA		P4	QA	
	M20-Ma43678			M20-Ma43692	M20-Ma43481			M20-Ma43692	EM2005270006
	24-03-20	24-03-20		24-03-20	24-03-20			24-03-20	24-03-20
	P2_HA10_0.0-0.05	T02_24320		P4_HA03_0.3	D03_240320			P4_HA03_0.3	T03_240320
	Community DSI	Community DSI		Community DSI	Community DSI			Community DSI	Community DSI
	Hand Auger	Hand Auger		Hand Auger	Hand Auger			Hand Auger	Hand Auger
	16			11	10		11	9.5	
1.2	84		200.0	5.8	7	18.8	5.8	8	

Table QA1:
 Soil QA/QC



RPD %	Soil	Soil	RPD %	Soil	Soil	RPD %	Soil	Soil
	P10	QA		P10	QA		P12	QA
	S20-Ap16787	S20-Ap02157		S20-Ap16787	ES2012844001		S20-Ma44150	S20-Ap02158
	25-03-20	25-03-20		25-03-20	25-03-20		26-03-20	26-03-20
	P10_HA02_0-0.2	D04_250320		P10_HA02_0-0.2	T04_250320		P12_HA03_0.0_0.05	D01_260320
	Community DSI	Community DSI		Community DSI	Community DSI		Community DSI	Community DSI
	Hand Auger	Hand Auger		Hand Auger	Hand Auger		Hand Auger	Hand Auger
	11			11	12.3		13	
31.9	39	30	26.1	39	44	12.0	260	130

Table QA1:
 Soil QA/QC



RPD %	Soil	Soil	RPD %	Soil	Soil	RPD %	Soil	Soil
	P12	QA		P23	QA		P23	QA
	S20-Ma44150	ES2012844002		S20-Ap03088	S20-Ap03107		S20-Ap03088	
	26-03-20	26-03-20		31-03-20	31-03-20		31-03-20	31-03-20
	P12_HA03_0.0_0.05	T01_260320		P23_HA01_0.0	D04_310320		P23_HA01_0.0	T04_310320
	Community DSI	Community DSI		Community DSI	Community DSI		Community DSI	Community DSI
	Hand Auger	Hand Auger		Hand Auger	Hand Auger		Hand Auger	Hand Auger
	13	9.8		13	13		13	11.7
66.7	260	159	48.2	74	68	8.5	74	61

Table QA1:
 Soil QA/QC



RPD %	Soil	Soil	RPD %	Soil	Soil	RPD %	Soil	Soil
	P21	QA		P21	QA		Rail Corridor	QA
	S20-Ap03005	S20-Ap03106		S20-Ap03005			M20-Ma43466	M20-Ma43476
	31-03-20	31-03-20		31-03-20	31-03-20		20-03-20	20-03-20
	P21_HA02_0.0	D03_310320		P21_HA02_0.0	T03_310320		MW7_0.05	D01_200320
	Community DSI	Community DSI		Community DSI	Community DSI		Community DSI	Community DSI
	Hand Auger	Hand Auger		Hand Auger	Hand Auger		Hand Auger	Hand Auger
	8.9	9		8.9	7.8		7.6	6.5
19.3	16	15	6.5	16	16	0.0	210	230

Table QA1:
 Soil QA/QC



RPD %	Soil	Soil	RPD %	Soil	Soil	RPD %	Soil	Soil
	Rail Corridor	QA		Rail Corridor	QA		Rail Corridor	QA
	M20-Ma43466	EM2005270002		M20-Ma43459	M20-Ma43479		M20-Ma43459	EM2005270005
	20-03-20	20-03-20		19-03-20	20-03-20		19-03-20	20-03-20
	MW7_0.05	T01_200320		MW6_0.05	D02_200320		MW6_0.05	T02_200320
	Community DSI	Community DSI		Community DSI	Community DSI		Community DSI	Community DSI
	Hand Auger	Hand Auger		Hand Auger	Hand Auger		Hand Auger	Hand Auger
	7.6	5.9		14	12		14	12.1
9.1	210	236	11.7	57	55	3.6	57	38

Table QA1:
 Soil QA/QC



RPD %	Soil	Soil	RPD %	Soil	Soil	RPD %
	P16	QA		P16	QA	
	S20-Ap02877			S20-Ap02877	ES2011784001	
	30-03-20	30-03-20		30-03-20	30-03-20	
	P16_HA03_0.0-0.05	D01_300320		P16_HA03_0.0-0.05	T01_300320	
	Community DSI	Community DSI		Community DSI	Community DSI	
	Hand Auger	Hand Auger		Hand Auger	Hand Auger	
	13	12		13	12.4	
40.0	12	13	8.0	12	9	28.6

Table QA2:
 Dust QA/QC



	Sample Type:		Dust	Dust	Dust	Dust
	Site:		Swab Blank	Swab Blank	P5	P6
	Lab Sample number:		S20-My28478	S20-Jn00669	S20-My27001	S20-My27002
	Sample date:		18-05-2020	31-05-2020	18-05-2020	18-05-2020
	Sample ID:		QA02_180520	QA1_200531	DSWAB_2 (PS)	QA01_180520
	Project Name:		Community DSI	Community DSI	Community DSI	Community DSI
	Sampling Method:		QA	QA	QA	QA
Analyte grouping/Analyte	Units	LOR				
LTM-MET-3040 Metals in Waters, Soils & Sediments by ICP-MS						
Total Lead	Total µg	1	< 1	< 1	1.2	2.6

LOR = Limit of Reporting



Sample Type:			Tank Water	Tank Water	
Site:			SMC	SMC	
Lab Sample number:			M20-Ma44098	M20-Ma43586	
Sample date:			24-03-20	24-03-20	
Sample ID:			SMC_TW1	DW01_240320	
Project Name:			Community DSI	Community DSI	
Sampling Method:			Peristaltic/syphon	Peristaltic/syphon	
Sample Description					
Analyte grouping/Anal	Units	LOR			
LTM-MET-3040 Metals in Waters, Soils & Sediments by ICP-MS					
Aluminium	mg/L		--		
Aluminium (filtered)	mg/L		--		
Arsenic	mg/L	0.001	0.001		
Arsenic (filtered)	mg/L	0.001	0.001		
Barium	mg/L		--		
Barium (filtered)	mg/L		--		
Beryllium	mg/L	0.001	0.001		
Beryllium (filtered)	mg/L	0.001	0.001		
Boron	mg/L	0.05	0.05		
Boron (filtered)	mg/L	0.05	0.05		
Cadmium	mg/L	0.0002	0.0002		
Cadmium (filtered)	mg/L	0.0002	0.0002		
Chromium	mg/L	0.001	0.002		
Chromium (filtered)	mg/L	0.001	0.002		
Cobalt	mg/L	0.001	0.001		
Cobalt (filtered)	mg/L	0.001	0.001		
Copper	mg/L	0.001	0.001		
Copper (filtered)	mg/L	0.001	0.001		
Iron	mg/L		--		
Iron (filtered)	mg/L		--		
Lead	mg/L	0.001	0.004	0.003	28.6
Lead (filtered)	mg/L	0.001	0.001		
Manganese	mg/L	0.005	0.005		
Manganese (filtered)	mg/L	0.005	0.007		
Mercury	mg/L	0.0001	0.0001		
Mercury (filtered)	mg/L	0.0001	0.0001		
Nickel	mg/L	0.001	0.002		
Nickel (filtered)	mg/L	0.001	0.002		
Selenium	mg/L	0.001	0.001		
Selenium (filtered)	mg/L	0.001	0.001		
Zinc	mg/L	0.005	0.069		
Zinc (filtered)	mg/L	0.005	0.009		

Table QA3:
 Tank Water QA/QC



Sample Type:			Tank Water	Tank Water	
Site:			SMC	SMC	
Lab Sample number:			M20-Ma44098	M20-Ma43482	
Sample date:			24-03-20	24-03-20	
Sample ID:			SMC_TW1	TW01_240320	
Project Name:			Community DSI	Community DSI	
Sampling Method:			Peristaltic/syphon	Peristaltic/syphon	
Sample Description					
Analyte grouping/Anal	Units	LOR			
LTM-MET-3040 Metals in Waters, Soils & Sediments					
Aluminium	mg/L		--		
Aluminium (filtered)	mg/L		--		
Arsenic	mg/L	0.001	0.001		
Arsenic (filtered)	mg/L	0.001	0.001		
Barium	mg/L		--		
Barium (filtered)	mg/L		--		
Beryllium	mg/L	0.001	0.001		
Beryllium (filtered)	mg/L	0.001	0.001		
Boron	mg/L	0.05	0.05		
Boron (filtered)	mg/L	0.05	0.05		
Cadmium	mg/L	0.0002	0.0002		
Cadmium (filtered)	mg/L	0.0002	0.0002		
Chromium	mg/L	0.001	0.002		
Chromium (filtered)	mg/L	0.001	0.002		
Cobalt	mg/L	0.001	0.001		
Cobalt (filtered)	mg/L	0.001	0.001		
Copper	mg/L	0.001	0.001		
Copper (filtered)	mg/L	0.001	0.001		
Iron	mg/L		--		
Iron (filtered)	mg/L		--		
Lead	mg/L	0.001	0.004	0.003	28.6
Lead (filtered)	mg/L	0.001	0.001		
Manganese	mg/L	0.005	0.005		
Manganese (filtered)	mg/L	0.005	0.007		
Mercury	mg/L	0.0001	0.0001		
Mercury (filtered)	mg/L	0.0001	0.0001		
Nickel	mg/L	0.001	0.002		
Nickel (filtered)	mg/L	0.001	0.002		
Selenium	mg/L	0.001	0.001		
Selenium (filtered)	mg/L	0.001	0.001		
Zinc	mg/L	0.005	0.069		
Zinc (filtered)	mg/L	0.005	0.009		

Table QA3:
 Tank Water QA/QC



Sample Type:			Tank Water	Tank Water
Site:			P10	P10
Lab Sample number:			S20-Ma44401	S20-Ap02124
Sample date:			25-03-20	25-03-20
Sample ID:			P10_TW1	D01_250320
Project Name:			Community DSI	Community DSI
Sampling Method:			Micropurge/ Syphon	Micropurge/ Syphon
Sample Description				
Analyte grouping/Anal	Units	LOR		
LTM-MET-3040 Metals in Waters, Soils & Sediments				
Aluminium	mg/L		--	0.05
Aluminium (filtered)	mg/L		--	0.05
Arsenic	mg/L	0.001	0.001	0.001
Arsenic (filtered)	mg/L	0.001	0.001	0.001
Barium	mg/L		--	0.02
Barium (filtered)	mg/L		--	0.02
Beryllium	mg/L	0.001	0.001	0.001
Beryllium (filtered)	mg/L	0.001	0.001	0.001
Boron	mg/L	0.05	0.06	
Boron (filtered)	mg/L	0.05	0.05	
Cadmium	mg/L	0.0002	0.0002	0.0004
Cadmium (filtered)	mg/L	0.0002	0.0002	0.0002
Chromium	mg/L	0.001	0.001	0.001
Chromium (filtered)	mg/L	0.001	0.001	0.001
Cobalt	mg/L	0.001	0.001	0.001
Cobalt (filtered)	mg/L	0.001	0.001	0.001
Copper	mg/L	0.001	0.001	0.001
Copper (filtered)	mg/L	0.001	0.001	0.001
Iron	mg/L		--	0.05
Iron (filtered)	mg/L		--	0.05
Lead	mg/L	0.001	0.001	0.001
Lead (filtered)	mg/L	0.001	0.001	0.001
Manganese	mg/L	0.005	0.006	0.007
Manganese (filtered)	mg/L	0.005	0.005	0.005
Mercury	mg/L	0.0001	0.0001	0.0001
Mercury (filtered)	mg/L	0.0001	0.0001	0.0001
Nickel	mg/L	0.001	0.001	0.001
Nickel (filtered)	mg/L	0.001	0.001	0.001
Selenium	mg/L	0.001	0.001	
Selenium (filtered)	mg/L	0.001	0.001	
Zinc	mg/L	0.005	0.028	0.026
Zinc (filtered)	mg/L	0.005	0.02	0.018

Client: John Holland Rail
 Job No: 318000780
 Project Name: Tarago Rail Corridor and Tarago Area DSI
 23-07-20

Table QA4:
 Rinsates

	Sample Type:		Rinsate	Rinsate	Rinsate
	Site:		S20-Ap16793	S20-Ap16794	S20-Ap02125
	Lab Sample number:		S20-Ap16793	S20-Ap16794	S20-Ap02125
	Sample date:		1-04-2020	1-04-2020	25-03-2020
	Sample ID:		R01_010420	R02_010420	RB_25/3/2020
	Project Name:		Community DSI	Community DSI	Community DSI
	Sampling Method:		QA	QA	QA
Analyte grouping/Analyte					
	Units	LOR			
LTM-MET-3040 Metals in Waters, Soils & Sediments by ICP-MS					
Total Lead					
LTM-MET-3040 Metals in Waters, Soils & Sediments by ICP-MS					
Aluminium	mg/L	0.05			<0.05
Arsenic	mg/L	0.001			<0.001
Barium	mg/L	0.02			<0.02
Beryllium	mg/L	0.001			<0.001
Cadmium	mg/L	0.001			0.0002
Chromium	mg/L	0.001			<0.001
Cobalt	mg/L	0.001			<0.001
Copper	mg/L	0.001			<0.001
Iron	mg/L	0.05			<0.05
Lead	mg/L	0.001	<0.001	0.002	<0.001
Manganese	mg/L	0.005			<0.005
Mercury	mg/L	0.0001			0.0001
Nickel	mg/L	0.001			<0.001
Zinc	mg/L	0.005			<0.005

Client: John Holland Rail
 Job No: 318000780
 Project Name: Tarago Rail Corridor and Tarago Area DSI
 23-07-20

Table QA4:
 Rinsates

	Sample Type:		Rinsate	Rinsate	Rinsate
	Site:		S20-Ap02126	S20-Ap08931	S20-Ap08932
	Lab Sample number:		S20-Ap02126	S20-Ap08931	S20-Ap08932
	Sample date:		26-03-2020	18-03-2020	20-03-2020
	Sample ID:		RB_26/3/2020	R01_1803200	R01_2003200
	Project Name:		Community DSI	Community DSI	Community DSI
	Sampling Method:		QA	QA	QA
Analyte grouping/Analyte					
	Units	LOR			
LTM-MET-3040 Metals in Waters, Soils & Sediments by I					
Total Lead					
LTM-MET-3040 Metals in Waters, Soils & Sediments by I					
Aluminium	mg/L	0.05	<0.05		
Arsenic	mg/L	0.001	<0.001		
Barium	mg/L	0.02	<0.02		
Beryllium	mg/L	0.001	<0.001		
Cadmium	mg/L	0.001	0.0002		
Chromium	mg/L	0.001	<0.001		
Cobalt	mg/L	0.001	<0.001		
Copper	mg/L	0.001	<0.001		
Iron	mg/L	0.05	<0.05		
Lead	mg/L	0.001	<0.001	<0.001	<0.001
Manganese	mg/L	0.005	<0.005		
Mercury	mg/L	0.0001	0.0001		
Nickel	mg/L	0.001	<0.001		
Zinc	mg/L	0.005	<0.005		

Client: John Holland Rail
 Job No: 318000780
 Project Name: Tarago Rail Corridor and Tarago Area DSI
 23-07-20

Table QA4:
 Rinsates

	Sample Type:	Blank	Blank
	Site:	S20-My28478	S20-Jn00669
	Lab Sample number:	S20-My28478	S20-Jn00669
	Sample date:	18-05-2020	20-05-2020
	Sample ID:	QA02_180520	QA1_200531
	Project Name:	Community DSI	Community DSI
	Sampling Method:	QA	QA
Analyte grouping/Analyte			
	Units	LOR	
LTM-MET-3040 Metals in Waters, Soils & Sediments by I			
Total Lead			< 1
LTM-MET-3040 Metals in Waters, Soils & Sediments by I			
Aluminium	mg/L	0.05	
Arsenic	mg/L	0.001	
Barium	mg/L	0.02	
Beryllium	mg/L	0.001	
Cadmium	mg/L	0.001	
Chromium	mg/L	0.001	
Cobalt	mg/L	0.001	
Copper	mg/L	0.001	
Iron	mg/L	0.05	
Lead	mg/L	0.001	
Manganese	mg/L	0.005	
Mercury	mg/L	0.0001	
Nickel	mg/L	0.001	
Zinc	mg/L	0.005	

Table QA5:
 XRF and Lab Correlation Data

Sample ID	XRF Result								Lab Results				
	Arsenic (mg/kg)	± Error	Copper (mg/kg)	± Error	Lead (mg/kg)	± Error	Zinc (mg/kg)	± Error	Arsenic (mg/kg)	Copper (mg/kg)	Lead - from standard digestion time and extraction mass (ma/ka)	Lead from extended digestion time and reduced extraction mass (ma/ka)	Zinc (mg/kg)
XGOULR12_1	<LOD	19.2	180.16	14.55	628		1880.91	30.93					
XGOULR12_3		24.84	386.06	18.38	1104	21	2752.84	36.92		300		460	1500
XGOULRSED		32.06	788.2	25.81	1667		1090.05	24.82		580		1100	1100
XROSER19		4.75	19.19	9.86	8		65.58	7.25		8.3		19	28
XSMC3	140.84	19.51	421.15	19.97	1298	24	2479.04	36.39	16	180		840	970
XBOYDSTW1	32.27	11.04	281.69	16.99	412	12	1017.64	23.46	15	330		670	580
XBOYDSTW3	57.14	13.43	336.6	16.23	751	16	688.35	17.85	11	270		990	570
XMW5_0.05	92.56	12.98	152.36	13.45	590	15	1118.34	23.54	10	110		120	730
XMW5_0.5	15.35	6.27	71.89	10.7	132	8	220.57	10.76	9.3	95		190	240
XMW5_1.0	7.5	3.65	21.27	10.88	4	4	25.38	6.13	10	16		13	26
XMW5_1.5	7.48	3.47	15.74	9.92	8	4	32.88	6.2	5	5.4		20	10
XMW5_2.5	6.28	3.81		14.85	17	4	38.27	6.47				27	
XMW5_3.5	7.4	3.78	18.89	10.92	12	4	37.37	6.68	9.4	11		22	17
XMW5_4.5	10.36	4.09		16.68	16	5	36.92	6.82	12			28	39
MW6_0.05	16.64	7.61	74.18	11.05	51	5	485.67	15.74	7	25		57	110
MW6_0.5		7.31	15.21	9	26	5	52.92	6.52		13		25	35
MW6_1.0	8.08	3.64		15.48	19	5	48.38	7	9			21	32
MW6_1.5	7.77	3.62	18.29	10.35	18	5	43.78	6.71	12	22		18	38
MW6_2.5		5.35	16.16	10.5	9	4	43.24	6.83		13		14	35
MW6_3.5		5.77	27.12	10.65	16	5	47.79	6.95		12		19	28
MW6_4.5	8.3	3.57		15.16	9	4	36.86	6.51	13			28	48
XMW7_0.05	9.88	4.49	23.5	9.26	200	9	146.82	9.05	6.7	68		210	400
XMW7_0.5	7.85	4.17		15.45	67	6	59.17	7.33	5.7			43	35
XMW7_1.0	11.54	4.25		16.83	10	4	50.2	7.46	8.4			52	45
XMW7_1.5		5.78	17.01	10.27	11	4	51.26	7.01		13		18	40
XMW7_2.5	8.71	3.72	22	11.14	11	4	39.37	6.87	5	16		43	37
XMW7_3.5	8.21	4.27	23.26	12.66	50	5	43.4	7.65	5	14		44	34
XMW7_4.5	9.68	4.01		17.28	4	4	41.47	7.54	9.8			20	20
WINCH N	4122.15	291.98	7719.53	164.26	66400		23143.14	239.28	270	6500		25000	16000
WINCH S*	924.41	118.28	6174.62	122.53	14800	100	96309.18	401.44	50	3200		11000	38000
MW2_1.0	244.42	49.18	1473.84	42.49	5745	61.34	9719.26	89.05				3600	6600

Notes:

Variability was observed in laboratory results for lead in samples that impacted by ore concentrate. Extraction times and extraction sample masses were varied for laboratory analyses of lead to assess accuracy. The correlation between laboratory and XRF data for lead integrates laboratory data from extended digestion and reduced extraction mass.

APPENDIX 4 TEST PIT AND MONITORING WELL LOGS



CLIENT JHR PROJECT NAME Lead Managment Support
 PROJECT NUMBER 318000780 PROJECT LOCATION Tarago Rail Corridor

DATE STARTED 18/3/20 COMPLETED 18/3/20 R.L. SURFACE 689.58 DATUM m
 DRILLING CONTRACTOR _____ SLOPE 90° BEARING ---
 EQUIPMENT Solid Flight Auger HOLE LOCATION 741504.21E, 6115627.04N
 HOLE SIZE 100mm LOGGED BY SM CHECKED BY JB

NOTES

BOREHOLE / TEST PIT 318000780 TARAGO LEAD MANAGMENT.GPJ GINT STD AUSTRALIA.GDT 23/7/20

Method	Water	Well Details	RL (m)	Depth (m)	Graphic Log	Classification Symbol	Material Description	Samples Tests Remarks	Additional Observations
			688	2			Grass overlying CLAY; dry, brown, with some gravel, fine grained, sub angular	MW1_0.5	
			686	4			Gravelly CLAY; brown, dry, sub rounded, coarse gravel, fine-medium	MW1_1.5 MW1_2.5 MW1_3.5	
			684	6			Gravelly CLAY; brown, moist, gravel is sub rounded, fine-medium	MW1_4.5	
			682	8					
			680	10					
			678	12					
							Borehole MW1 terminated at 12m		

CLIENT JHR PROJECT NAME Lead Managment Support
 PROJECT NUMBER 318000780 PROJECT LOCATION Tarago Rail Corridor

DATE STARTED 18/3/20 COMPLETED 18/3/20 R.L. SURFACE 688.25 DATUM m
 DRILLING CONTRACTOR _____ SLOPE 90° BEARING ---
 EQUIPMENT Solid Flight Auger HOLE LOCATION 741765.36E,6116009.7N
 HOLE SIZE 100mm LOGGED BY SM CHECKED BY JB

NOTES

BOREHOLE / TEST PIT 318000780 TARAGO LEAD MANAGMENT.GPJ GINT STD AUSTRALIA.GDT 23/7/20

Method	Water	Well Details	RL (m)	Depth (m)	Graphic Log	Classification Symbol	Material Description	Samples Tests Remarks	Additional Observations
			688				FILL; gravelly CLAY, brown, dry, stiff, gravel is fine-coarse, sub angular, moist from 0.7m	MW2_0.1 MW2_0.5	
				2			FILL; gravelly SAND, black/grey, very dense, dry, gravel is blue, coarse, sub angular	MW2_1.0	
			686				Gravelly CLAY; brown, moist, stiff, gravel is fine, sub angular	MW2_1.5	
				4				MW2_2.5	
			684					MW2_3.5	
				6				MW2_4.5	
			682						
				8					
			680						
				10					
			678						
				12			Borehole MW2 terminated at 11.2m		
			676						



CLIENT JHR PROJECT NAME Lead Managment Support

PROJECT NUMBER 318000780 PROJECT LOCATION Tarago Rail Corridor

DATE STARTED 18/3/20 COMPLETED 18/3/20 R.L. SURFACE 687.33 DATUM m

DRILLING CONTRACTOR _____ SLOPE 90° BEARING ---

EQUIPMENT Solid Flight Auger HOLE LOCATION 741875.76,741875.76N

HOLE SIZE 100mm LOGGED BY SM CHECKED BY JB

NOTES

Method	Water	Well Details	RL (m)	Depth (m)	Graphic Log	Classification Symbol	Material Description	Samples Tests Remarks	Additional Observations
			686	2			FILL; GRAVEL, coarse, angular, blue/grey Gravelly sandy CLAY; brown, moist, stiff	MW3_0.05 MW3_0.5 MW3_1.0 MW3_1.5 MW3_2.5 MW3_3.5 MW3_4.5	
			684	4					
			682	6					
			680	8					
			678						
				10			Borehole MW3 terminated at 9.6m		
			676	12					

BOREHOLE / TEST PIT 318000780 TARAGO LEAD MANAGMENT.GPJ GINT STD AUSTRALIA.GDT 23/7/20



CLIENT JHR PROJECT NAME Lead Managment Support

PROJECT NUMBER 318000780 PROJECT LOCATION Tarago Rail Corridor

DATE STARTED 19/3/20 COMPLETED 19/3/20 R.L. SURFACE 686.56 DATUM m

DRILLING CONTRACTOR _____ SLOPE 90° BEARING ---

EQUIPMENT Solid Flight Auger HOLE LOCATION 741938.29E,6116212.86N

HOLE SIZE 100mm LOGGED BY SM CHECKED BY JB

NOTES

Method	Water	Well Details	RL (m)	Depth (m)	Graphic Log	Classification Symbol	Material Description	Samples Tests Remarks	Additional Observations
			686				FILL; gravelly SAND, brown, dry, medium dense	MW4_0.05	
							Gravelly CLAY; brown, dry, stiff, gravel is fine, sub angular	MW4_0.5	
							CLAY; brown, moist, stiff	MW4_1.0	
				2				MW4_1.5	
			684					MW4_2.5	
							CLAY; yellow/brown, mottled grey, moist, stiff	MW4_3.5	
				4				MW4_4.5	
			682						
				6					
			680				Gravelly CLAY; with some sand		
				8					
			678						
							Borehole MW4 terminated at 9.6m		
				10					
			676						
				12					
			674						

BOREHOLE / TEST PIT 318000780 TARAGO LEAD MANAGMENT.GPJ GINT STD AUSTRALIA.GDT 23/7/20



CLIENT JHR PROJECT NAME Lead Managment Support
 PROJECT NUMBER 318000780 PROJECT LOCATION Tarago Rail Corridor

DATE STARTED 19/3/20 COMPLETED 19/3/20 R.L. SURFACE 687.31 DATUM m
 DRILLING CONTRACTOR _____ SLOPE 90° BEARING ---
 EQUIPMENT Solid Flight Auger HOLE LOCATION 741813.67E, 6116016.97N
 HOLE SIZE 100mm LOGGED BY SM CHECKED BY JB

NOTES

BOREHOLE / TEST PIT 318000780 TARAGO LEAD MANAGMENT.GPJ GINT STD AUSTRALIA.GDT 23/7/20

Method	Water	Well Details	RL (m)	Depth (m)	Graphic Log	Classification Symbol	Material Description	Samples Tests Remarks	Additional Observations
			686	2			FILL; Grass overlying gravelly CLAY, moist, brown	MW5_0.05	
			684	4			Gravelly CLAY; brown, dry, stiff	MW5_0.5 MW5_1.0 MW5_1.5	
			682	6			CLAY; brown, moist, stiff	MW5_2.5 MW5_3.5	
			680	8			CLAY; yellow/brown, mottled grey, moist, stiff	MW5_4.5	
			678	10			Gravelly CLAY; brown, moist, sub rounded gravel, fine-medium		
			676	12			Borehole MW5 terminated at 8.7m		



CLIENT JHR PROJECT NAME Lead Management Support

PROJECT NUMBER 318000780 PROJECT LOCATION Tarago Rail Corridor






DATE STARTED 20/3/20 COMPLETED 20/3/20 R.L. SURFACE 685.96 DATUM m

DRILLING CONTRACTOR _____ SLOPE 90° BEARING ---

EQUIPMENT Solid Flight Auger HOLE LOCATION 741917.7E,6116051.97N

HOLE SIZE 100mm LOGGED BY SM CHECKED BY JB

NOTES

Method	Water	Well Details	RL (m)	Depth (m)	Graphic Log	Classification Symbol	Material Description	Samples Tests Remarks	Additional Observations
							CLAY	MW6_0.05, D02_200320, T02_200320 MW6_0.5	
			684	2			Clayey GRAVEL; coarse gravel - angular cobbles	MW6_1.0 MW6_1.5	
			682	4				MW6_2.5 MW6_3.5	
			680	6				MW6_4.5	
			678	8					
			676	10			Borehole MW6 terminated at 9m		
			674	12					

BOREHOLE / TEST PIT 318000780 TARAGO LEAD MANAGEMENT.GPJ GINT STD AUSTRALIA.GDT 23/7/20



CLIENT JHR PROJECT NAME Lead Management Support

PROJECT NUMBER 318000780 PROJECT LOCATION Tarago Rail Corridor

DATE STARTED 20/3/20 COMPLETED 20/3/20 R.L. SURFACE 682.43 DATUM m

DRILLING CONTRACTOR _____ SLOPE 90° BEARING ---

EQUIPMENT Solid Flight Auger HOLE LOCATION 742268.21E,6115965.68N

HOLE SIZE 100mm LOGGED BY SM CHECKED BY JB

NOTES

Method	Water	Well Details	RL (m)	Depth (m)	Graphic Log	Classification Symbol	Material Description	Samples Tests Remarks	Additional Observations
			682				FILL; GRASS overlying gravelly CLAY, moist, brown, stiff	MW7_0.05, D01_200302, T01_200301	
				2			Gravelly CLAY; brown, dry, stiff	MW7_0.5	
			680					MW7_1.0	
				4				MW7_1.5	
			678					MW7_2.5	
				6				MW7_3.5	
			676					MW7_4.5	
				8					
			674						
				10					
			672						
				12					
			670						
							Borehole MW7 terminated at 8.5m		

BOREHOLE / TEST PIT 318000780 TARAGO LEAD MANAGEMENT.GPJ GINT STD AUSTRALIA.GDT 23/7/20



CLIENT JHR PROJECT NAME Lead Management Support
 PROJECT NUMBER 318000780 PROJECT LOCATION Tarago Rail Corridor

DATE STARTED 31/3/20 COMPLETED 31/3/20 R.L. SURFACE _____ DATUM _____
 EXCAVATION CONTRACTOR _____ SLOPE --- BEARING ---
 EQUIPMENT 2.5T Excavator TEST PIT LOCATION _____
 TEST PIT SIZE 2.0 x 0.3 LOGGED BY TF CHECKED BY SM

NOTES

Method	Water	RL (m)	Depth (m)	Graphic Log	Classification Symbol	Material Description	Samples Tests Remarks	Additional Observations
						FILL; gravelly CLAY, orange-brown, moist, stiff with coarse gravel (ballast, sand/siltstone, sub angular)	TP01_0.0-0.1, D_TP01_310320 T_TP01_310320	No observed contamination
			0.5			FILL; gravelly CLAY, brown, dry-moist, stiff-hard, coarse gravels 9ballast and sand/siltstone)	TP01_0.2-0.3	No observed contamination
			1.0			FILL; gravelly CLAY, grey-brown, dry, stiff, fine-medium gravels present	TP01_1.0-1.1	No observed contamination
			1.5			CLAY; orange-brown with grey mottles, stiff, high plasticity	TP01_1.8-1.9	No observed contamination
			2.0			Borehole TP01 terminated at 2m		
			2.5					
			3.0					

BOREHOLE / TEST PIT 318000780 TARAGO LEAD MANAGEMENT.GPJ GINT STD AUSTRALIA.GDT 23/7/20



CLIENT JHR PROJECT NAME Lead Managment Support

PROJECT NUMBER 318000780 PROJECT LOCATION Tarago Rail Corridor

DATE STARTED 31/3/20 COMPLETED 31/3/20 R.L. SURFACE _____ DATUM _____

EXCAVATION CONTRACTOR _____ SLOPE --- BEARING ---

EQUIPMENT 2.5T Excavator TEST PIT LOCATION _____

TEST PIT SIZE 2.0 x 0.3 LOGGED BY TF CHECKED BY SM

NOTES

Method	Water	RL (m)	Depth (m)	Graphic Log	Classification Symbol	Material Description	Samples Tests Remarks	Additional Observations
			0.5			FILL; gravelly CLAY, orange-brown, dry, stiff, with coarse gravels (ballast, sand/siltstone, sub angular)	TP02_0.0-0.1	No observed contamination
			0.5			FILL; gravelly CLAY, grey-light brown, dry, stiff, with coarse gravel (ballast, sand/siltstone, sub angular)	TP02_0.5-0.8	No observed contamination
			1.0			CLAY; light grey-orange, low plasticity, stiff, dry	TP02_1.0-1.1	No observed contamination
			1.5			Borehole TP02 terminated at 1.3m		
			2.0					
			2.5					
			3.0					

BOREHOLE / TEST PIT 318000780 TARAGO LEAD MANAGMENT.GPJ GINT STD AUSTRALIA.GDT 23/7/20



CLIENT JHR PROJECT NAME Lead Managment Support

PROJECT NUMBER 318000780 PROJECT LOCATION Tarago Rail Corridor

DATE STARTED 31/3/20 COMPLETED 31/3/20 R.L. SURFACE _____ DATUM _____

EXCAVATION CONTRACTOR _____ SLOPE --- BEARING ---

EQUIPMENT 2.5T Excavator TEST PIT LOCATION _____

TEST PIT SIZE 2.0 x 0.3 LOGGED BY TF CHECKED BY SM

NOTES

Method	Water	RL (m)	Depth (m)	Graphic Log	Classification Symbol	Material Description	Samples Tests Remarks	Additional Observations
			0.5			FILL; gravelly CLAY, orange-brown, dry, stiff, with coarse gravels (ballast, sand/siltstone, sub angular)	TP03_0.0-0.1	No observed contamination
						FILL; sandy GRAVEL, grey/black, sub angular, medium grained, silty sand (fine gravel present)	TP03_0.5-0.6	No observed contamination
						FILL; sandy CLAY, white-grey, low plasticity, hard, sand/siltstone cobbles present, minor ballast	TP03_0.6-0.7	No observed contamination
			1.0			CLAY; white-grey, low plasticity, hard, minor sand/siltstone cobbles		No observed contamination
			1.5				TP03_1.5-1.6	
						Borehole TP03 terminated at 1.6m		
			2.0					
			2.5					
			3.0					

BOREHOLE / TEST PIT 318000780 TARAGO LEAD MANAGMENT.GPJ GINT STD AUSTRALIA.GDT 23/7/20



CLIENT JHR PROJECT NAME Lead Managment Support

PROJECT NUMBER 318000780 PROJECT LOCATION Tarago Rail Corridor

DATE STARTED 31/3/20 COMPLETED 31/3/20 R.L. SURFACE _____ DATUM _____

EXCAVATION CONTRACTOR _____ SLOPE --- BEARING ---

EQUIPMENT 2.5T Excavator TEST PIT LOCATION _____

TEST PIT SIZE 2.0 x 0.3 LOGGED BY TF CHECKED BY SM

NOTES

Method	Water	RL (m)	Depth (m)	Graphic Log	Classification Symbol	Material Description	Samples Tests Remarks	Additional Observations
			0.0			FILL; gravelly CLAY, orange-brown, moist, stiff with coarse gravels (ballast, sand/siltstone, sub angular)	TP04_0.0-0.1	No observed contamination
		0.5				FILL; gravelly CLAY, brown, low plasticity with silts, dry, stiff, coarse gravels		No observed contamination
		1.0					TP04_0.5-0.8	
		1.5				FILL; gravelly CLAY, red-brown, low plasticity, with sand, dry, stiff, fine-coarse gravels	TP04_1.0-1.1	No observed contamination
		2.0					TP04_1.9-2.0	
			2.5			Borehole TP04 terminated at 2m		
			3.0					

BOREHOLE / TEST PIT 318000780 TARAGO LEAD MANAGMENT.GPJ GINT STD AUSTRALIA.GDT 23/7/20



CLIENT JHR PROJECT NAME Lead Management Support

PROJECT NUMBER 318000780 PROJECT LOCATION Tarago Rail Corridor

DATE STARTED 31/3/20 COMPLETED 31/3/20 R.L. SURFACE _____ DATUM _____

EXCAVATION CONTRACTOR _____ SLOPE --- BEARING ---

EQUIPMENT 2.5T Excavator TEST PIT LOCATION _____

TEST PIT SIZE 2.0 x 0.3 LOGGED BY TF CHECKED BY SM

NOTES

Method	Water	RL (m)	Depth (m)	Graphic Log	Classification Symbol	Material Description	Samples Tests Remarks	Additional Observations
			0.5			FILL; gravelly CLAY, orange-brown, moist, stiff with coarse gravels (ballast, sand/siltstone, sub angular)	TP05_0.0-0.1, D_TP05_310320, T_TP05_310320	Minor grass on surface, no observed contamination
			1.0			FILL; gravelly CLAY, brown, low plasticity, with sand, dry, stiff, coarse gravels	TP05_0.6-0.7	No observed contamination
			1.5			FILL; gravelly CLAY, red-brown, low plasticity, with sands, dry, stiff, fine-coarse gravels	TP05_1.0-1.1	No observed contamination
			2.0				TP05_1.9-2.0	
			2.5			Borehole TP05 terminated at 2m		
			3.0					

BOREHOLE / TEST PIT 318000780 TARAGO LEAD MANAGEMENT.GPJ GINT STD AUSTRALIA.GDT 23/7/20



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EQUIPMENT 2.5T Excavator TEST PIT LOCATION _____

TEST PIT SIZE 2.0 x 0.3 LOGGED BY TF CHECKED BY SM

NOTES

Method	Water	RL (m)	Depth (m)	Graphic Log	Classification Symbol	Material Description	Samples Tests Remarks	Additional Observations
			0.5			FILL; gravelly CLAY, orange-brown, moist, stiff with coarse gravel (ballast and sand/siltstone, sub angular)	TP06_0.0-0.1	No observed contamination
			1.0			FILL; gravelly CLAY, brown-orange, dry, stiff-hard, coarse gravels/cobbles of siltstone and ballast	TP06_0.5-0.6	No observed contamination
			1.5					
			2.0				TP06_1.9-2.0	
			2.5			Borehole TP06 terminated at 2m		
			3.0					

BOREHOLE / TEST PIT 318000780 TARAGO LEAD MANAGMENT.GPJ GINT STD AUSTRALIA.GDT 23/7/20



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EXCAVATION CONTRACTOR _____ SLOPE --- BEARING ---

EQUIPMENT 2.5T Excavator TEST PIT LOCATION _____

TEST PIT SIZE 2.0 x 0.3 LOGGED BY TF CHECKED BY SM

NOTES

Method	Water	RL (m)	Depth (m)	Graphic Log	Classification Symbol	Material Description	Samples Tests Remarks	Additional Observations
			0.5			FILL; gravelly CLAY, orange-brown, moist, stiff with coarse gravel (ballast and sand/siltstone, sub angular)	TP07_0.0-0.1	No observed contamination
			1.0			FILL; gravelly CLAY, brown, dry, stiff-hard, coarse gravels/cobbles (ballast and siltstone)	TP07_0.5-0.8	No observed contamination
			1.5					
			2.0				TP07_1.9-2.0	
			2.5			Borehole TP07 terminated at 2m		
			3.0					

BOREHOLE / TEST PIT 318000780 TARAGO LEAD MANAGMENT.GPJ GINT STD AUSTRALIA.GDT 23/7/20



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PROJECT NUMBER 318000780 PROJECT LOCATION Tarago Rail Corridor

DATE STARTED 31/3/20 COMPLETED 31/3/20 R.L. SURFACE _____ DATUM _____

EXCAVATION CONTRACTOR _____ SLOPE --- BEARING ---

EQUIPMENT 2.5T Excavator TEST PIT LOCATION _____

TEST PIT SIZE 2.0 x 0.3 LOGGED BY TF CHECKED BY SM

NOTES

Method	Water	RL (m)	Depth (m)	Graphic Log	Classification Symbol	Material Description	Samples Tests Remarks	Additional Observations
			0.5			FILL; Gravelly CLAY, orange-brown, moist, stiff with coarse gravel (ballast and sand/siltstone, sub angular)	TP08_0.0-0.1, D_TP02_310320	No observed contamination
			1.0			FILL; gravelly CLAY, brown, dry, stiff-hard, low plasticity, coarse gravels/cobbles (siltstone)	TP08_0.5-0.6	No observed contamination
			1.0			ASPHALT; black-grey		
			1.5			FILL; gravelly CLAY, brown, fine-medium grained gravels, some cobbles (ballast/siltstone)	TP08_1.1-1.2	No observed contamination
			2.0				TP08_1.9-2.0	
			2.5			Borehole TP08 terminated at 2m		
			3.0					

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DATE STARTED 31/3/20 COMPLETED 31/3/20 R.L. SURFACE _____ DATUM _____

EXCAVATION CONTRACTOR _____ SLOPE --- BEARING ---

EQUIPMENT 2.5T Excavator TEST PIT LOCATION _____

TEST PIT SIZE 2.0 x 0.3 LOGGED BY TF CHECKED BY SM

NOTES _____

Method	Water	RL (m)	Depth (m)	Graphic Log	Classification Symbol	Material Description	Samples Tests Remarks	Additional Observations
			0.0			FILL; gravelly CLAY, orange-brown, moist, stiff with coarse gravel (ballast and sand/siltstone, sub angular)	TP09_0.0-0.1	No observed contamination
			0.5			FILL; gravelly CLAY, brown, dry, stiff-hard, low plasticity, coarse gravels/cobbles, some plastic fragments (minor), steel reo at 1.2m bgs		No observed contamination
			1.0				TP09_0.5-0.8	
			1.2			FILL; clayey GRAVEL, grey-brown, dry, stiff-hard, coarse gravels, large siltstone rock at base likely boulder), refusal	TP09_1.2-1.3	Some minor plastic fragments, steel reo at 1.2, bgs
			1.5			Borehole TP09 terminated at 1.3m		
			2.0					
			2.5					
			3.0					

BOREHOLE / TEST PIT 318000780 TARAGO LEAD MANAGMENT.GPJ GINT STD AUSTRALIA.GDT 23/7/20



CLIENT JHR PROJECT NAME Lead Management Support

PROJECT NUMBER 318000780 PROJECT LOCATION Tarago Rail Corridor

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EXCAVATION CONTRACTOR _____ SLOPE --- BEARING ---

EQUIPMENT 2.5T Excavator TEST PIT LOCATION _____

TEST PIT SIZE 2.0 x 0.3 LOGGED BY TF CHECKED BY SM

NOTES

Method	Water	RL (m)	Depth (m)	Graphic Log	Classification Symbol	Material Description	Samples Tests Remarks	Additional Observations
						BALLAST on surface		
			0.5			FILL; gravelly CLAY, orange-brown, moist, stiff with coarse gravel (ballast and sand/siltstone, sub angular)	TP10_0.05-0.15	No observed contamination
			1.0			FILL; gravelly CLAY, brown, dry, stiff, fine-coarse gravels (siltstone cobbles present)	TP10_0.5-0.8	No observed contamination
			1.5			Sandy CLAY; brown, low plasticity, medium grained sands, dry, firm		No observed contamination
			2.0				TP10_1.5-1.6	
			2.5			Borehole TP10 terminated at 2m		
			3.0					

BOREHOLE / TEST PIT 318000780 TARAGO LEAD MANAGEMENT.GPJ GINT STD AUSTRALIA.GDT 23/7/20



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EXCAVATION CONTRACTOR _____ SLOPE --- BEARING ---

EQUIPMENT 2.5T Excavator TEST PIT LOCATION _____

TEST PIT SIZE 2.0 x 0.3 LOGGED BY TF CHECKED BY SM

NOTES

Method	Water	RL (m)	Depth (m)	Graphic Log	Classification Symbol	Material Description	Samples Tests Remarks	Additional Observations
						Sandy SILT; dark brown, moist, low plasticity, minor gravels, medium grained sands	TP11_0.0-0.1	Grassed culvert nearby No observed contamination
			0.5			CLAY; brown with light brown mottles, moist, high plasticity	TP11_0.5-0.8	
			1.0			Borehole TP11 terminated at 0.8m		
			1.5					
			2.0					
			2.5					
			3.0					

BOREHOLE / TEST PIT 318000780 TARAGO LEAD MANAGMENT.GPJ GINT STD AUSTRALIA.GDT 23/7/20



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EQUIPMENT 2.5T Excavator TEST PIT LOCATION _____

TEST PIT SIZE 2.0 x 0.3 LOGGED BY TF CHECKED BY SM

NOTES _____

Method	Water	RL (m)	Depth (m)	Graphic Log	Classification Symbol	Material Description	Samples Tests Remarks	Additional Observations
						Sandy SILT; brown, moist, low plasticity, medium grained sands, minor organic matter (rootlets)	TP12_0.0-0.1	Minor organic matter (rootlets), no observed contamination
			0.5			CLAY; brown with light brown mottles, high plasticity, moist		No observed contamination
						Borehole TP12 terminated at 0.6m	TP12_0.5-0.6	
			1.0					
			1.5					
			2.0					
			2.5					
			3.0					

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EQUIPMENT 2.5T Excavator TEST PIT LOCATION _____

TEST PIT SIZE 2.0 x 0.3 LOGGED BY TF CHECKED BY SM

NOTES

Method	Water	RL (m)	Depth (m)	Graphic Log	Classification Symbol	Material Description	Samples Tests Remarks	Additional Observations
			0.5			FILL; gravelly CLAY, orange-brown, moist, stiff with coarse gravel (ballast and sand/siltstone, sub angular)	TP13_0.0-0.1	Some ballast on surface
						FILL; gravelly CLAY, grey, hard, dry, coarse gravels/cobbles (siltstone/ballast)	TP13_0.5-0.8	No observed contamination
			1.0			FILL; gravelly CLAY, brown, hard, dry, coarse gravels/cobbles (siltstone/ballast)		No observed contamination
						FILL; gravelly CLAY, light grey, hard, dry, coarse gravels/cobbles (siltstone/ballast), becoming harder	TP13_1.2-1.3	
			1.5					
						Becoming very hard	TP13_1.9-2.0	
			2.0			Borehole TP13 terminated at 2m		
			2.5					
			3.0					

BOREHOLE / TEST PIT 318000780 TARAGO LEAD MANAGMENT.GPJ GINT STD AUSTRALIA.GDT 23/7/20



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EXCAVATION CONTRACTOR _____ SLOPE --- BEARING ---

EQUIPMENT 2.5T Excavator TEST PIT LOCATION _____

TEST PIT SIZE 2.0 x 0.3 LOGGED BY TF CHECKED BY SM

NOTES _____

Method	Water	RL (m)	Depth (m)	Graphic Log	Classification Symbol	Material Description	Samples Tests Remarks	Additional Observations
						FILL; gravelly CLAY, orange-brown, moist, stiff with coarse gravel (ballast and sand/siltstone, sub angular)	TP14_0.0-0.1	No observed contamination
			0.5			FILL; gravelly CLAY, brown, dry, stiff, coarse gravels/cobbles (siltstone)		No observed contamination
							TP14_0.5-0.6	
			1.0			FILL; gravelly CLAY (asphalt at surface), brown-grey, fine gravels, dry, stiff	TP14_0.8-0.9	
						FILL; gravelly CLAY, brown-red, dry, stiff, minor coarse gravels/cobbles		No observed contamination No observed contamination
			1.5					
			2.0				TP14_1.9-2.0	
						Borehole TP14 terminated at 2m		
			2.5					
			3.0					

BOREHOLE / TEST PIT 318000780 TARAGO LEAD MANAGEMENT.GPJ GINT STD AUSTRALIA.GDT 23/7/20



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EQUIPMENT 2.5T Excavator TEST PIT LOCATION _____

TEST PIT SIZE 2.0 x 0.3 LOGGED BY TF CHECKED BY SM

NOTES _____

Method	Water	RL (m)	Depth (m)	Graphic Log	Classification Symbol	Material Description	Samples Tests Remarks	Additional Observations
						FILL; gravelly CLAY, orange-brown, moist, stiff with coarse gravel (ballast and sand/siltstone, sub angular)	TP15_0.0-0.1	Adjacent to capped lead soil stockpile
			0.5			FILL; gravelly CLAY, red-orange, dry, high plasticity, stiff-hard, medium grained sands present, silt and sandstone cobbles	TP15_0.5-0.6, TP03_010420, TP03_010420	No observed contamination
			1.0			FILL; gravelly CLAY, red-brown, dry, high plasticity, stiff-hard, medium grained sands present, silt and sandstone cobbles		No observed contamination
			1.5					
			2.0				TP15_1.9-2.0	
						Borehole TP15 terminated at 2m		
			2.5					
			3.0					

BOREHOLE / TEST PIT 318000780 TARAGO LEAD MANAGMENT.GPJ GINT STD AUSTRALIA.GDT 23/7/20



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EQUIPMENT 2.5T Excavator TEST PIT LOCATION _____

TEST PIT SIZE 2.0 x 0.3 LOGGED BY TF CHECKED BY SM

NOTES _____

Method	Water	RL (m)	Depth (m)	Graphic Log	Classification Symbol	Material Description	Samples Tests Remarks	Additional Observations
						FILL; gravelly CLAY, orange-brown, moist, stiff with coarse gravel (ballast and sand/siltstone, sub angular)	TP16_0.0-0.1	No observed contamination
			0.5			FILL; gravelly CLAY, light brown, dry, high plasticity, hard/stiff, some sands present, cobbles of sand and siltstone	TP16_0.5-0.8	No observed contamination
			1.0			CLAY; brown with light brown mottles, high plasticity, dry, stiff-hard	TP16_1.5-1.6	No observed contamination
			1.5			Borehole TP16 terminated at 1.8m		
			2.0					
			2.5					
			3.0					

BOREHOLE / TEST PIT 318000780 TARAGO LEAD MANAGMENT.GPJ GINT STD AUSTRALIA.GDT 23/7/20



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EQUIPMENT 2.5T Excavator TEST PIT LOCATION _____

TEST PIT SIZE 2.0 x 0.3 LOGGED BY TF CHECKED BY SM

NOTES

Method	Water	RL (m)	Depth (m)	Graphic Log	Classification Symbol	Material Description	Samples Tests Remarks	Additional Observations
						Sandy SILT; brown, moist, low plasticity, medium grained sands, firm	TP17_0.0-0.1	Grass on surface, organics present (rootlets), no observed contamination
			0.5			CLAY; red-brown, becoming lighter orange with depth, dry, low plasticity, minor sands and silts present	TP17_0.5-0.8	No observed contamination
			1.0			Borehole TP17 terminated at 0.8m		
			1.5					
			2.0					
			2.5					
			3.0					

BOREHOLE / TEST PIT 318000780 TARAGO LEAD MANAGMENT.GPJ GINT STD AUSTRALIA.GDT 23/7/20



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EQUIPMENT 2.5T Excavator TEST PIT LOCATION _____

TEST PIT SIZE 2.0 x 0.3 LOGGED BY TF CHECKED BY SM

NOTES _____

Method	Water	RL (m)	Depth (m)	Graphic Log	Classification Symbol	Material Description	Samples Tests Remarks	Additional Observations
						FILL; sandy SILT, brown, low plasticity, minor gravels, medium grained sands	TP18_0.0-0.1	Grass on surface, organics (rootlets)
						FILL; gravelly CLAY, dark brown, low plasticity, dry, firm, medium-coarse gravels, some dark brown-black and grey-white clay chunks		Minor plastic fragments, disconnectd rubber wire, minor asphalt and fines, no observed contamination
			0.5			CLAY; red-brown, dry, low plasticity, minor sands and silts present	TP18_0.5-0.6	
			1.0				TP18_1.0-1.1	No observed contamination
			1.5			Borehole TP18 terminated at 1.5m		
			2.0					
			2.5					
			3.0					

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EQUIPMENT 2.5T Excavator TEST PIT LOCATION _____

TEST PIT SIZE 2.0 x 0.3 LOGGED BY TF CHECKED BY SM

NOTES

Method	Water	RL (m)	Depth (m)	Graphic Log	Classification Symbol	Material Description	Samples Tests Remarks	Additional Observations
						FILL; sandy SILT, brown, low plasticity, minor gravels, medium grained sands, firm	TP19_0.0-0.1	Organic inclusions (rootlets), no observed contamination No observed contamination
						FILL; gravelly CLAY, light brown, low plasticity, dry, stiff, cobbles of siltstone, chunks of white-grey clay	TP19_0.3-0.4	
			0.5			CLAY; brown, dry, low plasticity, firm, minor sands and silts present		No observed contamination
			1.0				TP19_1.0-1.1	
			1.5			Borehole TP19 terminated at 1.2m		
			2.0					
			2.5					
			3.0					

BOREHOLE / TEST PIT 318000780 TARAGO LEAD MANAGMENT.GPJ GINT STD AUSTRALIA.GDT 23/7/20



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EQUIPMENT 2.5T Excavator TEST PIT LOCATION _____

TEST PIT SIZE 2.0 x 0.3 LOGGED BY TF CHECKED BY SM

NOTES

Method	Water	RL (m)	Depth (m)	Graphic Log	Classification Symbol	Material Description	Samples Tests Remarks	Additional Observations
			0.0			FILL; sandy SILT, brown, low plasticity, minor gravels, medium grained sands, firm	TP20_0.0-0.1, D_TP04_010420 T_TP04_010420	No observed contamination
			0.5			FILL; gravelly CLAY, light brown, low plasticity, dry, stiff, cobbles of siltstone, chunks of white-grey clay	TP20_0.5-0.8	
			1.0			CLAY; red-brown, dry, low plasticity, firm minor sands and silts present	TP20_1.2-1.3	No observed contamination
			1.5			Borehole TP20 terminated at 1.3m		No observed contamination
			2.0					
			2.5					
			3.0					

BOREHOLE / TEST PIT 318000780 TARAGO LEAD MANAGEMENT.GPJ GINT STD AUSTRALIA.GDT 23/7/20

APPENDIX 5 FIELD SHEETS



Air-Met Scientific Pty Ltd
1300 137 067

Multi Parameter Water Meter

Instrument **YSI Quatro Pro Plus**
Serial No. **11K101271**

Item	Test	Pass	Comments
Battery	Charge Condition	✓	
	Fuses	✓	
	Capacity	✓	
Switch/keypad	Operation	✓	
Display	Intensity	✓	
	Operation (segments)	✓	
Grill Filter	Condition	✓	
	Seal	✓	
PCB	Condition	✓	
Connectors	Condition	✓	
Sensor	1. pH	✓	
	2. mV	✓	
	3. EC	✓	
	4. D.O	✓	
	5. Temp	✓	
Alarms	Beeper	✓	
	Settings	✓	
Software	Version	✓	
Data logger	Operation	✓	
Download	Operation	✓	
Other tests:			

Certificate of Calibration

This is to certify that the above instrument has been calibrated to the following specifications:

Sensor	Serial no	Standard Solutions	Certified	Solution Bottle Number	Instrument Reading
1. pH 10.00		pH 10.00		324189	pH 9.55
2. pH 7.00		pH 7.00		330737	pH 6.80
3. pH 4.00		pH 4.00		330734	pH 4.07
4. mV		231.8mV		337308/338782	231.5mV
5. EC		2.76mS		333787	2.76mS
6. D.O		0.00 ppm		329994	0.06ppm
7. Temp		21°C		MultiTherm	21.2°C

Calibrated by: _____ **Sarah Lian**

Calibration date: **24/01/2020**

Next calibration due: **22/07/2020**

Oil / Water Interface Meter**airmet**

Air-Met Scientific Pty Ltd
1300 137 067

Instrument **Geotech Interface Meter (30M)**
Serial No. **3983**

Item	Test	Pass	Comments
Battery	Compartment	✓	
	Capacity	✓	
Probe	Cleaned/Decon.	✓	
	Operation	✓	
Connectors	Condition	✓	
		✓	
Tape Check	Cleaned	✓	
Connectors	Checked for cuts	✓	
Instrument Test	At surface level	✓	

Certificate of Calibration

This is to certify that the above instrument has been cleaned and tested.

Calibrated by: _____ **Darcy Keogh**

Calibration date: **22/04/2020**

Next calibration due: **21/06/2020**



Certificate of Calibration

Revision Date: September 2014

Serial Number: 57882 Model: XL31 980 Software: 8.4G Date of O.C.: 23-January-2020
Resolution: Shaping 1 168.77 Escalate: Shaping 1 7.58 Source: Tube Inspector: Rachelle W.
Shaping 4 157.04 Shaping 4 7.59 Calibration type: Empirical

60 second analysis time per filter, all switched on

Elements that are in BLUE BOLD should be detected

Elements not in BLUE BOLD need not be detected but record if present

Table with columns: NIST HIGH 2710, Certified, Low, High, Measured, Err, Pass, <LOD? containing calibration data for various elements like Ba, Ce, Te, Sb, Sn, Cd, Ag, Pd, Mo, Zr, Sr, U, Rb, Th, Pb, Se, As, Hg, Au, Zn, W, Cu, Ni, Co, Fe, Mn, Cr, V, Ti, Sc, Ca, K, S.

Table with columns: SiO2 (Blank), Expected**, Low, High, Measured, Err, Pass, <LOD? containing calibration data for various elements like Ba, Cs, Te, Sb, Sn, Cd, Ag, Pd, Mo, Zr, Sr, U, Rb, Th, Pb, Se, As, Hg, Au, Zn, W, Cu, Ni, Co, Fe, Mn, Cr, V, Ti, Sc, Ca, K, S.

Table with columns: NIST LOW 2709, Certified, Low, High, Measured, Err, Pass, <LOD? containing calibration data for various elements like Ba, Cs, Te, Sb, Sn, Cd, Ag, Pd, Mo, Zr, Sr, U, Rb, Th, Pb, Se, As, Hg, Au, Zn, W, Cu, Ni, Co, Fe, Mn, Cr, V, Ti, Sc, Ca, K, S.

Table with columns: RCRA, Expected**, Low, High, Measured, Err, Pass, <LOD? containing calibration data for various elements like Ba, Cs, Te, Sb, Sn, Cd, Ag, Pd, Mo, Zr, Sr, U, Rb, Th, Pb, Se, As, Hg, Au, Zn, W, Cu, Ni, Co, Fe, Mn, Cr (variable), Sc, Ca, K, S.

Table with columns: GBW 07411, Certified, Low, High, Measured, Err, Pass, <LOD? containing calibration data for various elements like Ba, Cs, Te, Sb, Sn, Cd, Ag, Pd, Mo, Zr, Sr, U, Rb, Th, Pb, Se, As, Hg, Au, Zn, W, Cu, Ni, Co, Fe, Mn, Cr, V, Ti, Sc, Ca, K, S.

Table with columns: DL1a, Certified, Low, High, Measured, Err, Pass, <LOD? containing calibration data for various elements like Ba, Cs, Te, Sb, Sn, Cd, Ag, Pd, Mo, Zr, Sr, U, Rb, Th, Pb, Se, As, Hg, Au, Zn, W, Cu, Ni, Co, Fe, Mn, Cr, V, Ti, Sc, Ca, K, S.



Certificate of Calibration

Revision Date: July 2010

Serial Number: 57882 Model: XL3t 980 Software: 8.4G Date of O.C.: 23-January-2020
Resolution: Shaping 1 168.77 Escalate: Shaping 1 7.58 Source: Tube Inspector: Rachelle W.
Shaping 4 157.04 Shaping 4 7.59 Calibration type: Empirical

60 second analysis time per filter, all switched on

Elements that are in BLUE BOLD should be detected Elements not in BLUE BOLD need not be detected but record if present

Table with columns: TILL4, Certified, Low, High, Measured, Err, Pass, <LOD?. Rows include elements like Ba, Cs, Te, Sb, Sn, Cd, Ag, Pd, Mo, Zr, Sr, U, Rb, Th, Pb, Se, As, Hg, Au, Zn, W, Cu, Ni, Co, Fe, Mn, Cr, V, Ti, Sc, Ca, K, S.

Table with columns: NIST2780, Certified, Low, High, Measured, Err, Pass, <LOD?. Rows include elements like Ba, Cs, Te, Sb, Sn, Cd, Ag, Pd, Mo, Zr, Sr, U, Rb, Th, Pb, Se, As, Hg, Au, Zn, W, Cu, Ni, Co, Fe, Mn, Cr, V, Ti, Sc, Ca, K, S.

This certificate is issued in accordance with Thermo Fisher Scientific factory specifications. The measurements were found to be within specification limits at the time of calibration. This certificate is valid for 2 years from the date of calibration.

Standards are traceable to National Institute of Standards & Technology (NIST) standards.

-- Not Certified

Signed:

Dave Scattergood Service Manager



Certificate of Calibration

Revision Date: September 2014

Serial Number: 73690 Model: XL3t 950 Software: 8.4G Date of O.C.: 30 July 2019
Resolution: Shaping 1 179.09 Escalate: Shaping 1 7.63 Source: Tube Inspector: Dave S
Shaping 4 162.94 Shaping 4 7.62 Calibration type: Empirical

60 second analysis time per filter, all switched on

Elements that are in BLUE BOLD should be detected

Elements not in BLUE BOLD need not be detected but record if present

Table with columns: NIST HIGH 2710, Certified, Low, High, Measured, Err, Pass, <LOD?. Rows include Ba, Ce, Te, Sb, Sn, Cd, Ag, Pd, Mo, Zr, Sr, U, Rb, Th, Pb, Se, As, Hg, Au, Zn, W, Cu, Ni, Co, Fe, Mn, Cr, V, Ti, Sc, Ca, K, S.

Table with columns: SiO2 (Blank), Expected**, Low, High, Measured, Err, Pass, <LOD?. Rows include Ba, Cs, Te, Sb, Sn, Cd, Ag, Pd, Mo, Zr, U, Rb, Th, Pb, Se, As, Hg, Au, Zn, W, Cu, Ni, Co, Fe, Mn, Cr, V, Ti, Sc, Ca, K, S.

Table with columns: NIST LOW 2709, Certified, Low, High, Measured, Err, Pass, <LOD?. Rows include Ba, Cs, Te, Sb, Sn, Cd, Ag, Pd, Mo, Zr, Sr, U, Rb, Th, Pb, Se, As, Hg, Au, Zn, W, Cu, Ni, Co, Fe, Mn, Cr, V, Ti, Sc, Ca, K, S.

Table with columns: RCRA, Expected**, Low, High, Measured, Err, Pass, <LOD?. Rows include Ba, Cs, Te, Sb, Sn, Cd, Ag, Pd, Mo, Zr, Sr, U, Rb, Th, Pb, Se, As, Hg, Au, Zn, W, Cu, Ni, Co, Fe, Mn, Cr (variable), S.

Table with columns: GBW 07411, Certified, Low, High, Measured, Err, Pass, <LOD?. Rows include Ba, Cs, Te, Sb, Sn, Cd, Ag, Pd, Mo, Zr, Sr, U, Rb, Th, Pb, Se, As, Hg, Au, Zn, W, Cu, Ni, Co, Fe, Mn, Cr, V, Ti, Sc, Ca, K, S.

Table with columns: DL1a, Certified, Low, High, Measured, Err, Pass, <LOD?. Rows include Ba, Cs, Te, Sb, Sn, Cd, Ag, Pd, Mo, Zr, Sr, U, Rb, Th, Pb, Se, As, Hg, Au, Zn, W, Cu, Ni, Co, Fe, Mn, Cr, V, Ti, Sc, Ca, K, S.



Certificate of Calibration

Serial Number: 73690 Model: XL3t 950 Software: 8.4G Date of O.C.: 30-July-2019
 Resolution: Shaping 1 179.09 Escalate: Shaping 1 7.63 Source: Tube Inspector: Dave S
 Shaping 4 162.94 Shaping 4 7.62 Calibration type: Empirical

60 second analysis time per filter, all switched on

Elements that are in BLUE BOLD should be detected

Elements not in BLUE BOLD need not be detected but record if present

TILL4	Certified	Low	High	Measured	Err	Pass	<LOD?
Ba	395	195	610	411.85	25.26	OK	
Cs	12	-300	300	34.38	6.34	OK	
Te	NR	-300	300	30.16	17.7	OK	
Sb	1	-100	100	8.11	6.81	OK	< LOD
Sn	NR	-100	100	15.72	6.71	OK	
Cd	NR	-70	70	1.86	4.77	OK	< LOD
Ag	NR	-50	50	-1.13	3.25	OK	< LOD
Pd	NR	-60	60	-6.86	5.36	OK	< LOD
Mo	16	0	30	18.68	1.76	OK	
Zr	385	185	585	383.58	4.18	OK	
Sr	109	50	150	116.99	2.4	OK	
U	5	-20	20	1.15	3.99	OK	< LOD
Rb	161	100	210	160.09	3.32	OK	
Th	17.4	-40	70	44.73	3.18	OK	
Pb	50	28	70	45.76	4.19	OK	
Se	NR	-15	15	-4.14	3.24	OK	< LOD
As	111	80	140	101.42	4.77	OK	
Hg	NR	-15	15	7.8	5.0	OK	
Au	10	-10	10	5.4	3.7	OK	< LOD
Zn	70	45	95	64.83	5.97	OK	
W	204	130	270	161.80	18.58	OK	
Cu	237	200	280	227.28	11.68	OK	
Ni	17	-50	90	42.13	15.43	OK	
Co	8	-300	300	118.6	55.06	OK	
Fe	39700	29700	49700	34345.2	180.08	OK	
Mn	490	300	600	419.7	37.0	OK	
Cr	53	-50	150	46.3	12.3	OK	
V	67	-150	250	98.2	19.3	OK	
Ti	4840	3870	5808	4544.4	66.5	OK	
Sc	10	-150	150	17.9	11.4	OK	
Ca	NR			7830.8	114.6		
K	NR			23763.8	228.8		
S	800	-130000	130000	759.7	231.2	OK	

NIST2780	Certified	Low	High	Measured	Err	Pass	<LOD?
Ba	993	844	1142	980.9	28.78	OK	
Cs	13	-10	100	53.78	6.72	OK	
Te		0	150	78.08	18.69	OK	
Sb	160	100	250	160.27	8.29	OK	
Sn		-20	100	22.46	7.08	OK	
Cd	12.1	5	30	19.98	5.17	OK	
Ag	27	0	120	25.99	3.83	OK	
Pd		-15	15	3.54	5.78	OK	< LOD
Mo	11	0	20	10.21	1.71	OK	
Zr	176	131	220	189.06	3.7	OK	
Sr	217	195	239	230.98	3.64	OK	
U	4	-20	20	7.26	4.91	OK	< LOD
Rb	175	140	210	179.98	3.98	OK	
Th	12	0	55	30.47	8.89	OK	
Pb	5770	4904	6635	5004.14	35.86	OK	
Se	5	-10	10	-10.77	5.67	OK	< LOD
As	48.8	0	90	36.34	27.16	OK	< LOD
Hg		-15	15	-2.6	5.7	OK	< LOD
Au		-20	20	8.7	7.0	OK	< LOD
Zn	2570	1800	3340	2053.24	25.91	OK	
W		-100	100	52.63	20.76	OK	
Cu	215.5	151	280	164.78	11.90	OK	
Ni		-100	100	41.54	17.22	OK	
Co		-200	200	96.43	50.23	OK	
Fe	27840	22272	33408	23864.33	162.91	OK	
Mn	462	415	508	475.6	40.9	OK	
Cr		0	70	55.9	11.4	OK	
V	268	150	350	271.9	21.8	OK	
Ti	6990	6291	7689	6527.3	73.0	OK	
Sc	23	3	33	10.3	6.4	OK	
Ca	1950	1000	3000	1848.1	72.3	OK	
K	33800	30420	37180	31092.6	235.3	OK	
S	12630	5000	15000	11160.9	427.5	OK	

This certificate is issued in accordance with Thermo Fisher Scientific factory specifications. The measurements were found to be within specification limits at the time of calibration. This certificate is valid for 2 years from the date of calibration.

Standards are traceable to National Institute of Standards & Technology (NIST) standards.

-- Not Certified

Signed:

Dave Scattergood
Service Manager

Low Flow Groundwater Sampling Field Parameter Form

Ref. Number: 318000780	Date: 2/4/20
Project: TARAGO RAIL LOOP	Well Number: MW1
Location:	Sampler(s): T. FRANK

Field Measurements

Organic vapours in well:	ppm	Measurement device:
Depth to Groundwater:	6.35 m	Measurement Device: Dip Meter
Correction:	m	
Groundwater Elevation :	m	
Depth to Immiscible Layer:	m	Measurement Device:
Thickness to Immiscible Layer:	m	
Well Depth:	10.70 m	
Thickness to Groundwater Column:	m	

Well Sampling

Method: Micro-Purge Peristaltic Bailer

Start Sampling: _____ End Sampling: _____

Sample Appearance: _____

TIME	TEMP (°C)	SPEC. COND. ^{ms/cm}	pH	DO ^{mg/L}	Redox ^{mV}	TDS ^{g/L}	Comments (appearance, odour, etc)
10:27	16.96	0.730	7.41	0.93	168	0.510	Light brown, med turbidity, N.O./NVC
10:31	17.0	0.737	7.36	1.28	165	0.472	"
10:34	17.06	0.608	7.36	6.09	137	0.439	"
10:37	17.16	0.631	7.45	6.09	128	0.410	"
10:41	17.21	0.674	7.50	6.09	119	0.400	"
10:45	17.24	0.718	7.51	6.10	115	0.450	"
10:48	17.25	0.683	7.53	6.11	115	0.453	"
10:52	17.26	0.682	7.55	6.12	114	0.446	"

Miscellaneous Field Comments

Well Head Integrity: Good

Samples Filtered 1x metals filtered, 1x Not filtered.

Weather Condition: RAIN

Other: \

Low Flow Groundwater Sampling Field Parameter Form

Ref. Number: 318000780	Date: 2/4/2020
Project: TARAGO RAIL LOOP	Well Number: MW2
Location: TARAGO STATION	Sampler(s): T. FRANK

Field Measurements	
Organic vapours in well:	ppm Measurement device:
Depth to Groundwater: 8.59 m	Measurement Device: Dip Meter
Correction:	m
Groundwater Elevation:	m
Depth to Immiscible Layer:	m Measurement Device: Dip Meter
Thickness to Immiscible Layer:	m
Well Depth: 12.66 m	
Thickness to Groundwater Column:	m

Well Sampling

Method: Micro-Purge Peristaltic Bailer

Start Sampling: 8:52⁴ End Sampling: 8:55

Sample Appearance: brown, low turbidity, N.O, NVC

TIME	TEMP (°C)	SPEC COND. (µS/cm)	pH	DO (mg/L)	Redox (mV)	TDS (g/L)	Comments (appearance, odour, etc)
8:34	16.77	0.509	7.13	2.33	-54	0.327	Clear, low turbidity, N.O, NVC.
8:38	17.01	0.507	6.96	2.16	-85	0.324	"
8:42	17.08	0.505	6.94	2.06	-83	0.324	" becoming brown, low turbidity
8:45	17.17	0.504	6.94	1.96	-80	0.323	" ↓
8:48	17.26	0.503	6.95	1.90	-77	0.322	"
8:52	17.24	0.504	6.94	1.84	-72	0.322	" brown, low turbidity, N.O, NVC

Miscellaneous Field Comments
Well Head Integrity: GOOD
Samples Filtered → 1x metals sample filtered, 1x metals not filtered.
Weather Condition: Cloudy, Rainy, cool.
Other:

Low Flow Groundwater Sampling Field Parameter Form

Ref. Number: 318000780				Date: 2/4/20			
Project: TARAGO RAIL LOOP				Well Number: MW3			
Location:				Sampler(s): T. FRANK			
Field Measurements							
Organic vapours in well:		ppm	Measurement device:				
Depth to Groundwater:		6.20	m	Measurement Device: Dip Meter			
Correction:			m				
Groundwater Elevation :			m				
Depth to Immiscible Layer:			m	Measurement Device:			
Thickness to Immiscible Layer:			m				
Well Depth:		9.60	m				
Thickness to Groundwater Column:			m				
Well Sampling							
Method:		<input type="checkbox"/> Micro-Purge		<input checked="" type="checkbox"/> Peristaltic		<input type="checkbox"/> Bailer	
Start Sampling: 9:58				End Sampling: 10:05			
Sample Appearance: light brown, med-high turbidity, N.O, NVC							
TIME	TEMP (°C)	SPEC. COND. $\frac{mS}{cm}$	pH	DO $\frac{mg}{L}$	Redox $\frac{mV}{mV}$	TDS $\frac{g}{L}$	Comments (appearance, odour, etc)
9:39	16.33	1.02	7.05	1.89	-149	0.636	light brown, med-high turbidity, N.O, NVC
9:43	16.35	1.03	6.78	0.31	-145	0.658	"
9:47	16.39	1.03	6.78	0.09	-148	0.657	"
9:51	16.44	1.03	6.78	0.01	-149	0.658	"
9:55	16.46	1.02	6.80	0.00	-153	0.656	"
9:58	16.46	1.02	6.81	0.00	-154	0.655	"
Miscellaneous Field Comments							
Well Head Integrity: Good							
Samples Filtered → 1x metals filtered, 1x Not filtered							
Weather Condition: Rain							
Other: /							

Low Flow Groundwater Sampling Field Parameter Form

Ref. Number: 318000780				Date: 2/4/2020			
Project: TARAGO RAIL LOOP.				Well Number: MW 7			
Location:				Sampler(s): T-FRANK			
Field Measurements							
Organic vapours in well:		ppm		Measurement device:			
Depth to Groundwater:		6.60 m		Measurement Device: Dip Meter.			
Correction:		m					
Groundwater Elevation :		m					
Depth to Immiscible Layer:		m		Measurement Device:			
Thickness to Immiscible Layer:		m					
Well Depth:		12.0 m					
Thickness to Groundwater Column:		m					
Well Sampling							
Method:		<input type="checkbox"/> Micro-Purge		<input checked="" type="checkbox"/> Peristaltic		<input type="checkbox"/> Bailer	
Start Sampling: 11:34				End Sampling: 11:40			
Sample Appearance: light brown, low turbidity, N.O., NVC.							
TIME	TEMP (°C)	SPEC. COND. ^{ms/cm}	pH	DO mg/L	Redox mV	TDS g/L	Comments (appearance, odour, etc)
11:17	16.21	0.603	6.51	2.11	173	0.429	light brown, low turbidity, N.O., NVC.
11:19	16.43	0.611	6.91	2.37	151	0.413	"
11:22	16.51	0.616	6.96	2.54	141	0.401	"
11:26	16.57	0.616	7.02	2.69	126	0.396	"
11:30	16.58	0.615	7.04	2.96	126	0.394	"
11:34	16.60	0.615	7.04	2.97	125	0.393	"
Miscellaneous Field Comments							
Well Head Integrity: GOOD							
Samples Filtered: 1x metals filtered, 1x metals not filtered.							
Weather Condition: RAIN							
Other: \							

Surface Water Sampling Sheet

Project Name: Tarago Community DSI	Ramboll Personnel: <i>J. Kirsch</i>
Project No: 318999780	<i>J. Bourke</i>
Date: <i>27/3/20</i>	
Start time:	Subcontractors: <i>N/A</i>
Finish time:	

Equipment

Water Quality Meter ID:

Water Quality Parameters

Sample ID	<i>MWS (smc)</i>	Actually MW4
Sampling Method	<i>peri-pump</i>	
Time	<i>Start: 9.18 End:</i>	
Intake Depth From Surface (mm)	<i>~ 6m b to c</i>	
Temperature (°C)	<i>9.21 18.0 / 18.0 / 18.1 / 18.1 / 18.1</i>	
Dissolved Oxygen (mg/L)	<i>1.93 / 1.46 / 1.19 / 1.14 / 1.07</i>	
pH	<i>7.22 / 7.05 / 6.95 / 6.91 / 6.86</i>	
Oxido Reduction Potential (mV)	<i>113.4 / 113.2 / 113.0 / 112.9</i>	
TDS	<i>390 / 390 / 390 / 390 / 390</i>	
Specific Conductivity	<i>602 / 603 / 603 / 603 / 601</i>	
Comments	<i>SWL: 4.55 Depth: 7.07. Well head: 4.55</i>	
No. of Contrainers used	<i>2</i>	

QA/QC Checklist

Are air bubbles present in vials?	<input type="checkbox"/> Y <input type="checkbox"/> N <input checked="" type="checkbox"/> N/A	
Was sample for metals field filtered?	<input checked="" type="checkbox"/> Y <input type="checkbox"/> N <input type="checkbox"/> N/A	
Duplicate Samples Collected?	<input checked="" type="checkbox"/> Y <input type="checkbox"/> N	Duplicate Sample ID: <i>DOI-270320 DOI-270320</i>
Rinsate Blank Collected?	<input type="checkbox"/> Y <input type="checkbox"/> N	Primary Sample ID: <i>MWS</i>
		Rinsate Blank ID:

Surface Water Sampling Sheet

Project Name: Tarago Community DSI	Ramboll Personnel: J. Kirsch
Project No: 318999780	J. Bowke.
Date: 27/3/20	
Start time:	
Finish time:	Subcontractors: N/A.

Water Quality Meter ID: _____ **Equipment**

Sample ID _____ **Water Quality Parameters**

Sampling Method	MW7 (recreation area)	MW6 (Hall)
Time	peri-pump	peri-pump
Intake Depth From Surface (mm)	start: 8:31 am End: 8:39.	start: 8:53 am End: 9:10 am.
Temperature (°C)	~ 7.5 mbtoc	~ 7.4 mbtoc
Dissolved Oxygen (mg/L)	15.4/15.7/15.8 / 15.9/16.0/	16.7/16.9/16.9/16.9 / 16.9/16.9/17.0/17.0/17.0
pH	3.29/2.38/1.49 / 1.00/0.75/	3.89/2.96/2.03/1.62 / 1.45/1.38/1.30/1.23/1.14
Oxido Reduction Potential (mV)	7.04/6.91/6.89 / 6.80/6.77/	9.13/8.52/8.14/7.80 / 7.51/7.38/7.20/7.11/7.06
TDS	-69.9/-74.0/-75.5 / -76.7/-70.8	112.2/115.3/116.5/117.2 / 116.3/115.9/115.2/115.5/114.5
Specific Conductivity	297.05/302.9/302.9 / 305.5/308.75	442.0/435.5/435.5/429.0 / 429/422.5/422.5/422.5/416.0
Comments	456.9/298.35/466.8 / 470.5/475.5	676/669/665/660 / 657/659/649/645/643.
No. of Contrainers used	SWL: 1.34 Total depth: 8.52. Well head int: 1.57. Difficult to filter.	SWL: 4.13 Total depth: 8.46 Well head: 4.13 Difficult to filter.
	2.	2 cloudy

QA/QC Checklist

- Are air bubbles present in vials? Y N N/A
- Was sample for metals field filtered? Y N N/A
- Duplicate Samples Collected? Y N
- Rinsate Blank Collected? Y N

Duplicate Sample ID: _____

Primary Sample ID: _____

Rinsate Blank ID: _____

Low Flow Groundwater Sampling Field Parameter Form

Ref. Number: 31B000780				Date: 2/4/20			
Project: TARA ^{GW} RAIL LOOP				Well Number: GW053976			
Location:				Sampler(s): T. FRANK .			
Field Measurements							
Organic vapours in well:		ppm		Measurement device:			
Depth to Groundwater:		4.56 m		Measurement Device: Dip meter .			
Correction:		m					
Groundwater Elevation :		m					
Depth to Immiscible Layer:		m		Measurement Device:			
Thickness to Immiscible Layer:		m					
Well Depth:		m					
Thickness to Groundwater Column:		m					
Well Sampling							
Method: <input type="checkbox"/> Micro-Purge <input checked="" type="checkbox"/> Peristaltic <input type="checkbox"/> Bailer							
Start Sampling: 13:40				End Sampling: 13:45			
Sample Appearance: Clear, No turbidity, N.O. NVL.							
TIME	TEMP (°C)	SPEC. COND.	pH	DO	Redox	TDS	Comments (appearance, odour, etc)
13:40	16.83	0.260	7.57	2.19	126	0.169	clear, No turbidity No colour, NVL.
Miscellaneous Field Comments							
Well Head Integrity: Good							
Samples Filtered 1x metals filtered & 1x metals Not.							
Weather Condition: RAIN .							
Other: \							



Surface Water Sampling Sheet

Project Name: TARA GD	Ramboll Personnel: T. FRANK
Project No: 318 000 780	
Date: 1/4/20	
Start time: 12:40	Subcontractors: N/A
Finish time: 11:58	

Equipment

Water Quality Meter ID:

Water Quality Parameters

Sample ID	SW1	SW1_UP
Sampling Method		
Time	12:45	13:25
Intake Depth From Surface (mm)	100mm	200mm
Temperature (°C)	17.40	19.94
Dissolved Oxygen (mg/L)	5.88 mg/L	4.72 mg/L
pH	6.35	7.05
Oxido Reduction Potential (mV)	115	154
TDS	0.368 g/L	0.374
Specific Conductivity	0.575 mS/cm	0.584
Comments	Clear-brown, Low/no turbidity, minor suspended solids, No odour, No flow	Clear, No turbidity, No odour, No flow
No. of Containers used	7	7

QA/QC Checklist

Are air bubbles present in vials?	<input type="checkbox"/> Y	<input checked="" type="checkbox"/> N	<input type="checkbox"/> N/A	
Was sample for metals field filtered?	<input checked="" type="checkbox"/> Y	<input checked="" type="checkbox"/> N	<input type="checkbox"/> N/A	I was I wasn't
Duplicate Samples Collected?	<input type="checkbox"/> Y	<input checked="" type="checkbox"/> N		Duplicate Sample ID:
Rinsate Blank Collected?	<input type="checkbox"/> Y	<input checked="" type="checkbox"/> N		Primary Sample ID:
				Rinsate Blank ID:

Surface Water Sampling Sheet

Project Name: TARAGO	Ramboll Personnel: T. FRANK
Project No: 318000780	
Date: 1/4/20	
Start time:	Subcontractors: N/A
Finish time:	

Equipment

Water Quality Meter ID:

Water Quality Parameters

Sample ID	SW 2	SW 3
Sampling Method		
Time	13:50	14:20
Intake Depth From Surface (mm)	100mm	100mm
Temperature (°C)	17.54	21.75
Dissolved Oxygen (mg/L)	3.84 mg/L	5.24 mg/L
pH	7.25	6.23
Oxido Reduction Potential (mV)	163	178
TDS	0.233 g/L	0.159 g/L
Specific Conductivity	0.358 mS/cm	0.245 mS/cm
Comments	brown low-med turbidity, Some suspended solids, No odour, No flow	brown-yellow, med turbid. by, Some brown matter on water surface
No. of Containers used	7	7

QA/QC Checklist

Are air bubbles present in vials?	<input type="checkbox"/> Y	<input checked="" type="checkbox"/> N	<input type="checkbox"/> N/A	
Was sample for metals field filtered?	<input checked="" type="checkbox"/> Y	<input checked="" type="checkbox"/> N	<input type="checkbox"/> N/A	1x filtered 1x Not filtered
Duplicate Samples Collected?	<input type="checkbox"/> Y	<input checked="" type="checkbox"/> N		Duplicate Sample ID: 7
Rinsate Blank Collected?	<input type="checkbox"/> Y	<input checked="" type="checkbox"/> N		Primary Sample ID: 7
				Rinsate Blank ID: 1

Surface Water Sampling Sheet

Project Name: TARAGO	Ramboll Personnel: T. FRANK
Project No: 318000780	
Date: 1/4/20	
Start time:	Subcontractors: N/A
Finish time:	

Equipment

Water Quality Meter ID:

Water Quality Parameters

Sample ID	SW4	SWS & SW6
Sampling Method		
Time	15:00	DRY
Intake Depth From Surface (mm)	200mm	
Temperature (°C)	20.33	
Dissolved Oxygen (mg/L)	5.24 mg/L	
pH	6.73	
Oxido Reduction Potential (mV)	168 mV	
TDS	0.193 g/L	
Specific Conductivity	0.297 mS/cm	
Comments	light brown, turbidity No Odour, No flow.	
No. of Containers used	7	

QA/QC Checklist

Are air bubbles present in vials?	<input type="checkbox"/> Y	<input checked="" type="checkbox"/> N	<input type="checkbox"/> N/A	
Was sample for metals field filtered?	<input checked="" type="checkbox"/> Y	<input checked="" type="checkbox"/> N	<input type="checkbox"/> N/A	1x Filtered 1x Not Filtered
Duplicate Samples Collected?	<input type="checkbox"/> Y	<input checked="" type="checkbox"/> N		Duplicate Sample ID:
Rinsate Blank Collected?	<input type="checkbox"/> Y	<input checked="" type="checkbox"/> N		Primary Sample ID:
				Rinsate Blank ID:

Surface Water Sampling Sheet

Project Name: <u>Tarago</u>	Ramboll Personnel: <u>JK + RC</u>
Project No: <u>318000780</u>	
Date: <u>2-4-20</u>	
Start time:	Subcontractors: <u>N/A</u>
Finish time:	RAINING!

Equipment

Water Quality Meter ID:

Water Quality Parameters

Sample ID	SW8 + SED8	SW9 + SED9	
Sampling Method	<u>grab</u>	<u>grab</u>	<u>SW7 / SED7 grab</u>
Time	<u>9:30am</u>		
Intake Depth From Surface (mm)	<u>10</u>	<u>10</u>	<u>10</u>
Temperature (°C)	<u>18.0</u>	<u>18.2</u>	<u>18.1</u>
Dissolved Oxygen (mg/L)	<u>4.39</u>	<u>6.29</u>	<u>4.45</u>
pH	<u>7.23</u>	<u>7.62</u>	<u>7.23</u>
Oxido Reduction Potential (mV)	<u>124.0</u>	<u>124.5</u>	<u>114.2</u>
TDS	<u>276.90</u>	<u>247.65</u>	152.10
Specific Conductivity	<u>425.7 us/cm</u>	<u>381.7 us/cm</u>	<u>234.2 us/cm</u>
Comments	<u>see SW9 + SED9 for comment + create on surface, lots of algae growing on plants</u>	<u>non-turbid, slightly brown, not flowing but full.</u>	<u>Dam highly turbid</u>
No. of Containers used	<u>7</u>	<u>7</u>	<u>7</u>

QA/QC Checklist

Are air bubbles present in vials?	<input type="checkbox"/> Y	<input checked="" type="checkbox"/> N	<input type="checkbox"/> N/A	
Was sample for metals field filtered?	<input checked="" type="checkbox"/> Y	<input type="checkbox"/> N	<input type="checkbox"/> N/A	<u>total + dissolved.</u>
Duplicate Samples Collected?	<input checked="" type="checkbox"/> Y	<input type="checkbox"/> N		Duplicate Sample ID: <u>DOI-020420</u> <u>ROI-020420</u>
Rinsate Blank Collected?	<input checked="" type="checkbox"/> Y	<input checked="" type="checkbox"/> N		Primary Sample ID: <u>SW7 + SED7</u>
				Rinsate Blank ID:

APPENDIX 6 QA / QC REPORT

1. QUALITY ASSURANCE / QUALITY CONTROL PROGRAM

The QA / QC program for the Tarago Rail Corridor and Tarago Area DSI was based on data completeness, comparability, representativeness, precision and accuracy based on field and laboratory considerations, as outlined in NEPM 1999 Amendment (2013) guidelines. These parameters have been considered separately for the following elements of the investigation:

1. Surface water and sediment assessment
2. Groundwater assessment
3. Assessment of soils at the loadout complex
4. In-field XRF analysis of soils in public road reserves
5. Assessment of soils at discrete properties
6. Assessment of water and sediment in rainwater tanks
7. Internal dust assessment
8. Paint assessment

Assessment of the DQIs of completeness, comparability, representativeness, precision and accuracy, which are outlined in Error! Reference source not found., is made in **Table 1-1**.

Table 1-1: QA/QC – Assessment of DQIs

DQI	Ramboll Assessment
Completeness	<p>Completeness is a measure of whether all the data necessary to meet the project objectives was collected.</p> <p>Co-located sampling of surface water and sediment occurred upstream and downstream of the three rail culverts which receive surface water runoff from site contamination and upstream and downstream of the discharge point to the Mulwaree River.</p> <p>Groundwater monitoring occurred across a monitoring well network specifically constructed. To assess conditions upgradient and downgradient of the area of contamination and at three locations between the site and the receiving Mulwaree River. This was supplemented by sampling of nine existing bores within the community.</p> <p>Assessment of local public road reserves occurred systematically and across 199 locations (plus QA).</p> <p>Assessment of discrete properties generally occurred at the request of the community rather than in response to evidence from previous investigations of contaminant migration from the site.</p> <p>All assessment targeted lead as the primary contaminant of concern for human health. Other metals were also broadly assessed to inform consideration of risks to ecological and agricultural receptors.</p> <p>The data is considered to be satisfactorily complete to meet the project objectives.</p>
Comparability	<p>Comparability is a measure of confidence that the data may be considered to be equivalent for each sampling and analysis event.</p> <p>The field investigations were completed by experienced personnel from Ramboll using standard operating procedures.</p>

DQI	Ramboll Assessment
Representativeness	<p>The laboratory analysis was undertaken by NATA registered laboratories using accredited analytical methods.</p> <p>Representativeness is the confidence that the data is representative of each media present at the site.</p> <p>In the field, representativeness was achieved by completing an adequate number of soil, sediment, tank water, surface water and groundwater sampling locations to characterise the site.</p> <p>Sampling densities described in Table 1-2 below are considered adequately representative of potential impacts.</p>
Precision	<p>Precision is a measure of the reproducibility of the data.</p> <p>In the field, Ramboll achieved precision by using standard operating procedures for the collection of soil and water samples and by collecting duplicate and triplicate samples for analysis. As outlined in Section x, RPD results for duplicate samples were acceptable.</p> <p>At the laboratory, precision is assessed using blind duplicate samples and split duplicates. As outlined in Table 1-3, duplicate RPDs were generally acceptable and no detections were made in blank samples.</p>
Accuracy	<p>Accuracy is a measure of the closeness of a measurement to the true parameter value.</p> <p>In the field, Ramboll achieved accuracy by using standard operating procedures for the collection of soil and groundwater samples.</p> <p>At the laboratory, precision is assessed using blind replicate samples and split samples. As outlined in Table 1-3, all results for laboratory control samples and surrogates were acceptable and no detections were made in blank samples.</p>

A quality assurance assessment for sampling methods and field and laboratory QA/QC is presented in **Table 1-2** and **Table 1-3**.

Table 1-2: QA/QC – Sampling and Analysis Methodology Assessment

	Surface water and sediment assessment	Groundwater assessment	The loadout complex	In-field XRF analysis of soils on public roads	Offsite soil sampling for lab analysis	Assessment of water and sediment in tanks	Internal dust assessment	Paint assessment
Sampling Pattern and Locations	A judgmental sampling pattern was developed to target potential impacts downstream of the three culverts that receive run-off from contaminated areas onsite.	A judgmental sampling pattern was developed to target groundwater upgradient and downgradient of the area of contamination (assuming groundwater flowed between the site and the Mulwaree River).	A systematic sampling pattern was developed for assessment of soils in and around the former loadout complex. It included advancement of test pits on a 25 m triangular grid pattern and	A systematic pattern for measurement of metals in surficial soils was developed for local public road reserves. It included one location outside each house in Tarago and, incremental sampling along Boyd Street, Goulburn Street, Braidwood Road and along the haul route between the mine and the corridor. This was supplemented by targeted assessment of roadside drains and areas where elevated lead was measured.	Gird based sampling patterns were developed for soil sampling at each discrete property.	All accessible tanks at each property were sampled.	Targeted sampling plans were developed in accordance with the <i>Guidance for the sampling and analysis of lead in indoor residential dust for use in the integrated exposure uptake biokinetic (IEUBK) model</i> (US EPA 2008) and generally included samples from the main entry, a living area, a child's bedroom and a shelf / window sill.	External paint was sampled from locations where flaking was observed and with permission of the property owner.
Sampling Density	11 locations were selected for co-located surface water and sediment sampling.	Seven locations were selected for groundwater well installation and monitoring. Nine existing wells were also sampled.	20 test pits were advanced and complimented 9 surface soil location and one monitoring well advanced within the same area targeting known contamination.	169 measurements were collected within Tarago. 30 measurements were collected along the remainder of the haul route.	Five sampling locations were generally advanced across each property. A total of 472 primary soil samples were collected and submitted for laboratory analyses	One sample of water and one sample of sediment (where present) were collected from each tank. 66 water tanks were samples and analysed for total and dissolved metals. 43 water tanks contained sediment which was sampled analysed for lead.	A minimum of four samples were generally collected from each property. A total of 171 dust swab and vacuum samples were collected.	A total of 10 paint samples were collected.
Sample depths	Where feasible surface water was sampled upwind, 0.1m below the water surface and 0.1m above the bottom of the waterbody. This was not always achievable due to presence of limited water. Sediment was sampled at surface	Sampling occurred 0.5 – 1.0 m from the base of each well and within the screen interval	Sampling generally occurred in shallow soils (0 – 0.1 m bgl) and from each soil type thereafter.	Surficial soils (0-0.05m) were sampled at each property. Additional samples were generally also collected at greater depth (0.1 – 0.3m) at each location.	Water sampling occurred approximately 0.5 m below the standing water level in each tank. Sediment sampling occurred from the tank base.	NA	NA	NA
Sample Collection Method	Described in Section 8.2.4 of the main report.	Groundwater samples were collected using low flow methods (peristaltic pump). Samples were collected directly into laboratory-supplied bottles. Disposable nitrile gloves were worn during sample collection.	Samples were collected by hand direct from the excavator bucket. Disposable nitrile gloves were worn during sample collection and changed between samples.	The XRF was used in-situ and measurements were taken by placing the XRF directly on the ground surface. The soil surface to be measured was cleared of debris and grass prior to taking the measurement.	Advancement through the soil profile occurred using hand tools (shovel, hand auger etc). Samples were collected by hand direct from the soil profile wherever possible or from spoil were tools were required to dislodge soils. Surface soils were collected from excavation spoil	Tank water samples were collected using dedicated LDPE tubing and a micropurge. The micropurge was used to initiate flow from the tank before being disconnected to allow water to syphon form the tank. Samples were collected directly into laboratory-supplied bottles. Disposable nitrile gloves were worn during sample collection. Tank sediment samples were collected using dedicated LDPE tubing and a micropurge. The micropurge was used to initiate flow from the tank before being disconnected to allow sediment laden water to syphon form the tanks. The stainless steel head of the micropurge was used to disturb settled sediment to aid in extraction. Samples were collected directly into laboratory-supplied jars. Disposable nitrile gloves were worn during sample collection.	Presented in Section 8.2.2.5 of the main report.	Samples were collected directly into laboratory-supplied bottles. Disposable nitrile gloves were worn during sample collection.

	Surface water and sediment assessment	Groundwater assessment	The loadout complex	In-field XRF analysis of soils on public roads	Offsite soil sampling for lab analysis	Assessment of water and sediment in tanks	Internal dust assessment	Paint assessment
Decontamination Procedures	Described in Section 8.2.4 of the main report.	The IP was decontaminated using Decon 90 between locations. Tubing of the peristaltic pump was disposed of between locations	NA – soil samples collected from the bucket of the excavator.	Described in Section 0 below		The micropurge was flushed with clean tank water and the baldder and tubing were changed between sampling locations.	The vacuum was decontaminated using swabs to wipe out the barrel, cyclone and accessible sections of the wand.	Dedicated disposable tubing and a dedicated micropurge bladder was used to collect the groundwater, tank water and tank sediment samples. The hand auger, micropurge head, the water quality meter and IP dipper probe were decontaminated between sampling locations by washing with a solution of Decon90 and potable water.
Sample handling and containers	Soil, sediment and water samples were placed into laboratory-supplied jars / bottles that were prepared preservatives where required. Water samples were placed on ice following collection and during transportation to the laboratory.			NA	Soil, sediment and water samples were placed into laboratory-supplied jars / bottles that were prepared preservatives where required. Water samples were placed on ice following collection and during transportation to the laboratory.	Dust swabs and vacuum samples were collected in zip lock bags	Paint samples were collected in zip lock bags	
Chain of Custody	All samples were transported under chain of custody to laboratories NATA accredited for the analyses requested.			NA	All samples were transported under chain of custody to laboratories NATA accredited for the analyses requested.			
Detailed description of field screening protocols	A water quality meter was used to collect field data for all water samples. For groundwater readings were recorded and sampling occurred once water quality media had stabilised.		Visual inspection occurred for changes in soil type, remnants of historic roads / structures and/or evidence of ore concentrate.	Assessment of measured lead concentrations occurred in the field and informed targeted assessment described above.	Visual inspection occurred for changes in soil type and/or evidence of ore concentrate.	NA	NA	
Calibration of field equipment	The water quality meter and interface probe was hired from a rental company who calibrated the equipment prior to hire. The calibration certificates are included in Appendix 5 .		NA	The XRF was hired from a rental company who calibrated the XRF prior to hire. The calibration certificate is included in Appendix 5 .	NA	NA	NA	
Field reords	Field parameter sheets logged at each location. Locations were logged on an interactive GIS portal using hand held GPS devices.	Field parameter sheets logged depth to water, depth of well, and physico-chemical properties during purging. Locations were logged on an interactive GIS portal using hand held GPS devices.	Recording of logs was conducted in general accordance with AS1726-1993 – Geotechnical Site Investigations. Locations were logged on an interactive GIS portal using hand held GPS devices.	NA – measurements were reported directly onto the instrument. Locations were logged on an interactive GIS portal using hand held GPS devices.	Recording of soil descriptions was conducted in general accordance with the Unified Soil Classification System. Locations were logged on an interactive GIS portal using hand held GPS devices.	Field parameter sheets logged depth to water, depth of well, and physico-chemical properties and presence / absence of sediment. Locations were logged on an interactive GIS portal using hand held GPS devices.	Field sheets logged sample locations relative to building features, sample areas and sample types (vacuum or swab).	Field sheets logged sample locations relative to building features and sample descriptions.

Table 1-3: Assessment of Field and Laboratory Quality Control

Field and Lab QA/QC	Ramboll Comments
Field quality control samples	<p>Groundwater: Intra-laboratory and Inter-laboratory duplicate groundwater samples were analysed at a rate of 10 Four field blanks</p> <p>Intra-laboratory and inter-laboratory duplicate results, field blanks and trip spike/blank are presented in Table 4, Appendix x.</p> <p>Relative Percent Differences (RPDs) were all below the RPD criteria (<=30%) with the exception of:</p> <p>Soil: TP8_0.0-0.1/ D_TP02_310320 (31.3%)</p> <p>TP8_0.0-0.1/ T_TP02_310320 (55.2%)</p> <p>TP15_0.5-0.6/ D_TP03_010420 (52.2%)</p> <p>P2_HA05_0.4/ T01_240320 (69.5%)</p> <p>P4_HA03_0.3/ T03_240320(31.9%)</p> <p>P12_HA03_0.0_0.05/ D01_260320 (66.7%)</p>
Field quality control results	<p>P12_HA03_0.0_0.05/ T01_260320 (48.2%)</p> <p>MW6_0.05/ T02_200320 (40.0%)</p> <p>The RPD exceedances are considered representative of variable lead content within samples rather than sampling error. Variable lead content is considered likely to be a function of a low variability in distribution of highly concentrated lead ore (lead observed at concentrations of up to 18% w/w) rather than higher variability of comparatively low concentrations as commonly drives elevated duplicate RPDs. Uncertainty associated with results at any given location is offset by a high sampling density such that the general characterisation of lead distribution is considered reliable. Lead distribution is characterised by a localised and highly concentrated area of impact within the Woodlawn Siding and immediate surrounds with far less concentrated impacts in other areas of the corridor. Potential uncertainty in assessment of lead concentrations against assessment criteria is considered to be low and limited to the periphery of concentrated impacts where concentrations are within the same order of magnitude as the criteria.No detections were observed in the field blanks</p>
NATA registered laboratory and NATA endorsed methods	<p>Eurofins MGT was used as the primary laboratory and ALS was used as the secondary laboratory. The laboratory certificates are NATA stamped.</p>
Analytical methods	<p>A summary of analytical methods is included in the laboratory test certificates. Through correspondence with the University of South Australia and the primary laboratory engaged for this project (Eurofins MGT) during the HHRA (Ramboll 2019d) it was identified that while the analytical method applied for metals analyses (LTM-MET-3040 Metals in Waters, Soils & Sediments by ICP-MS) is endorsed under the NEPM as appropriate for assessment of lead in soil, application to samples significantly impacted by lead ore concentrate may have underrepresented lead concentrations. Based on previous experience with lead ore concentrate, replicates of samples used in the HHRA were extracted using varying soil masses (1g, 0.2g and 0.1g) and multiplication factors of 1, 5 and 10 respectively were applied to assess potential upper limit capacity of the extraction. Results supported conclusion that concentrations over 10,000 mg/kg may be underrepresented by the standard LTM-MET-3040 extraction. Underrepresentation of concentrated lead concentrations >10,000 mg/kg is not</p>

Field and Lab QA/QC	Ramboll Comments
	<p>considered to negatively impact assessment of risk however as the assessment criteria are significantly lower than 10,000 mg/kg. This finding was supplemented with further assessment integrating 0.5g and 0.2g extraction mass repeat analyses on samples that were also XRF-ed. The concentrations captured in this targeted QA data set ranged from near detection limit through to 66,000mg/kg. The data set is presented in Table QA5, Appendix 3. Lead concentrations showed some variability at concentrations up to around 1,500 mg/ kg. Data points from 6,000 mg/kg on the XRF correlated with significantly lower concentration reported by standard analyses but a close correlation with analyses completed with reduced extraction mass. This indicated that the XRF accurately and reduced extraction mass analyses were the most appropriate methods for assessing lead concentrations over 6,000 mg/kg.</p>
Holding times	Review of the COCs and laboratory certificates indicated that holding times were met
Practical Quantitation Limits (PQLs)	PQLs for all analyses were below the site screening criteria.
Laboratory quality control samples	<p>Laboratory quality control samples including duplicates, laboratory control samples, matrix spikes, surrogate spikes and blanks were undertaken by the laboratories at appropriate frequencies.</p> <p>The results for laboratory duplicates, laboratory control samples, matrix spikes and surrogates were acceptable and no detections were made in blank samples with the exception of the following:</p> <p>Eurofins report:</p> <p>711674-W (cadmium, Selenium Q15)</p> <p>710586—V2 (Manganese Q8)</p> <p>711464-W (Cadmium, Cobalt Q15)</p> <p>710646-W (Zinc Q15)</p> <p>710520-W (Boron(filtered), Cobalt (filtered), Copper (filtered), Nickel (filtered) Q15, manganese filtered (Q02))</p> <p>710643-W (Zinc Q15)</p> <p>710645-W (Zinc Q15)</p> <p>713315-S-V2 (Lead Q15) (RDP 31%)</p> <p>710611-W (Boron(filtered), Cobalt (filtered), Copper (filtered), Nickel (filtered) Q15, manganese filtered (Q02))</p> <p>710631-W (Duplicate: Zinc Q15)</p> <p>711568-W (Chromium Q15)</p> <p>711580-W (Chromium Q15)</p> <p>713315-W (Cadmium, Cobalt Q15)</p> <p>711589-W (Duplicate: Arsenic, Barium, Cadmium, Chromium, Copper, Lead, Mercury, Nickel (Q15))</p> <p>724052-W (Duplicate: Zinc Q15)</p> <p>712462-W (Duplicate: Copper filtered, Zinc(filtered) Q15)</p>
Laboratory quality control results	

Field and Lab QA/QC	Ramboll Comments
	712441-S (Duplicate: Lead Q15)
	725971-S (Duplicate: Cobalt Q15, Manganese Q02)
	712460-W (Copper (filtered), Zinc(filtered) Q15)
	717025-W (Duplicate: Lead Q15)
	717025-S (Duplicate: Arsenic, Chromium, Lead, Nickel Q15, Iron, Barium Q02)
	716878-W (Duplicate: Zinc no qualifying code)
	716865-S (Duplicate: Manganese, Iron Q02)
	717027-W (Duplicate: Lead Q15)
	717027-S (Duplicate: Manganese Q02, Cobalt Q15)
	725969-S (Duplicate: Arsenic, Barium, Cobalt, Copper, Lead, Nickel, Zinc (Q15), Aluminium, Iron Q02)
	720581-S (Duplicate: lead Q15)
	710517-W (Duplicate: Nickel Q15)
	713318-W(Duplicate: Aluminium, Arsenic, Chromium, Copper, Iron Q15)
	713318-S(Duplicate: Arsenic, Cadmium, Chromium, Copper, Nickel, Zinc Q15, Aluminium, Iron, Manganese Q02)

Notes:

Q02 The duplicate %RPD is outside the recommended acceptance criteria. Further analysis indicates sample heterogeneity as the cause

Q08 The matrix spike recovery is outside of the recommended acceptance criteria. An acceptable recovery was obtained for the laboratory control sample indicating a sample matrix interference.

Q15 The RPD reported passes Eurofins Environment Testing's QC - Acceptance Criteria as defined in the Internal Quality Control Review and Glossary page of this report.

1.1 XRF Quality Control

The following was conducted to ensure quality of the data collected:

1. Daily system checks and internal calibration as recommended by the instrument manual.
2. Measurement of blank reference material (silicon dioxide, SiO₂) – this was done at the start of the day and repeated every 10 samples. This ensured that cross-contamination of samples were not occurring. The analyser window was also cleaned regularly to prevent cross-contamination. The SiO₂ analysis results for all measurements was less than limit-of-detection.
3. Certified reference materials were also measured to check instrument response and calibration. This was conducted every 20 samples. The analysis results and relative percent difference is shown in **Table 1-4**. The certificate of analysis for the certified reference material and blank is provided in **Appendix X**.
4. Precision – the precision of the XRF results can be improved by extending the dwell time of the measurement. A dwell of 60 seconds was considered to provide sufficient precision

for the sampling program. The analyser precision was calculated using data from the reference samples. The following equation provided by USEPA (2007) was used:

$$\textit{Precision RSD} = \frac{\textit{Standard Deviation}}{\textit{Mean concentration}} \times 100$$

The precision relative standard deviation (RSD) calculated using reference results was about 2%. Some replicate samples were also taken which further provides an indication of precision and sample heterogeneity (**Table 1-5**).

Table 1-4: Lead concentrations measured in the field compared with expected concentrations for certified reference material

Sample	Certified Reference Material*	Measured (mg/kg)	Expected (mg/kg)	Relative Percent Difference (RPD)
RCRAPP-test	QC Material 180-661 RCRA1	482	500	4
RCRAPP-cal		478	500	5
RCRAPP-2		468	500	7
RCRAPP-3		472	500	6
RCRAPP-4		454	500	10
USGS-1	QC Material 180-673 USGS SAR-M	956	982	3
USGS-2		938	982	5
USGS-3		969	982	1
USGS-4		935	982	5
USGS-5		927	982	6
USGS-6		943	982	4

*was supplied with the XRF

Table 1-5: Results of replicate measurements

Sample Number	Replicate Results Lead (mg/kg)
XBOYD4W	787
	779
XWINCH-S2	8178
	8140
XKINGR2	15
	12
XMULWR84-82	10
	11
XPSR	21
	<LOD

Note: XWINCH-S2 was collected from a known area of high lead within the rail corridor to improve the basis for assessing correlation between XRF and laboratory analyses.

5. Calibration against laboratory results:

Quality control sampling included soil samples collected from approximately 10% of the XRF locations that were sent to laboratory for analysis. The primary laboratory selected was accredited for the assessment of lead in soil by the National Association of Testing Authorities (NATA).

The correlation between field XRF and laboratory results for arsenic, copper, lead and zinc were assessed as an indicator of the quality of the XRF data and are summarised in **Figure 1 - 4** below. Note, three samples were collected from known areas of high lead within the rail corridor to improve the basis for assessing correlation between XRF and laboratory analyses. The results of these analyses are plotted in Figure 1 above though are not considered as part of the primary data set in this assessment (which otherwise excludes the rail corridor).

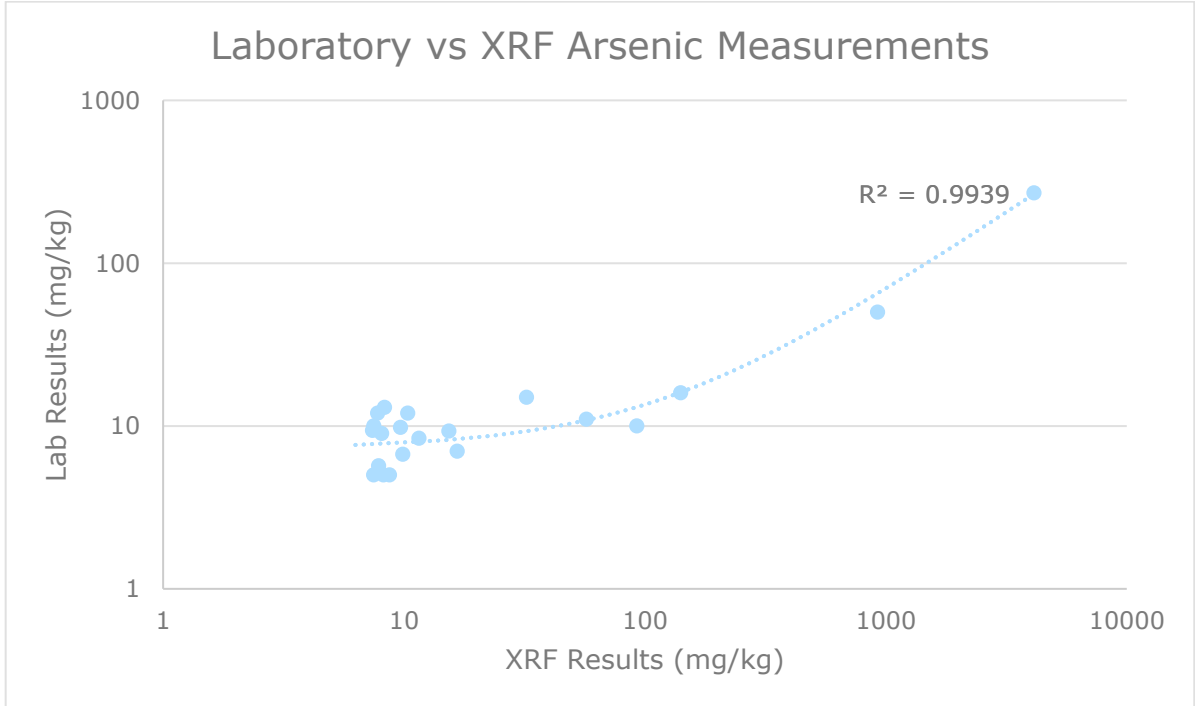


Figure 1: Correlation of arsenic results from portable XRF and laboratory analyses

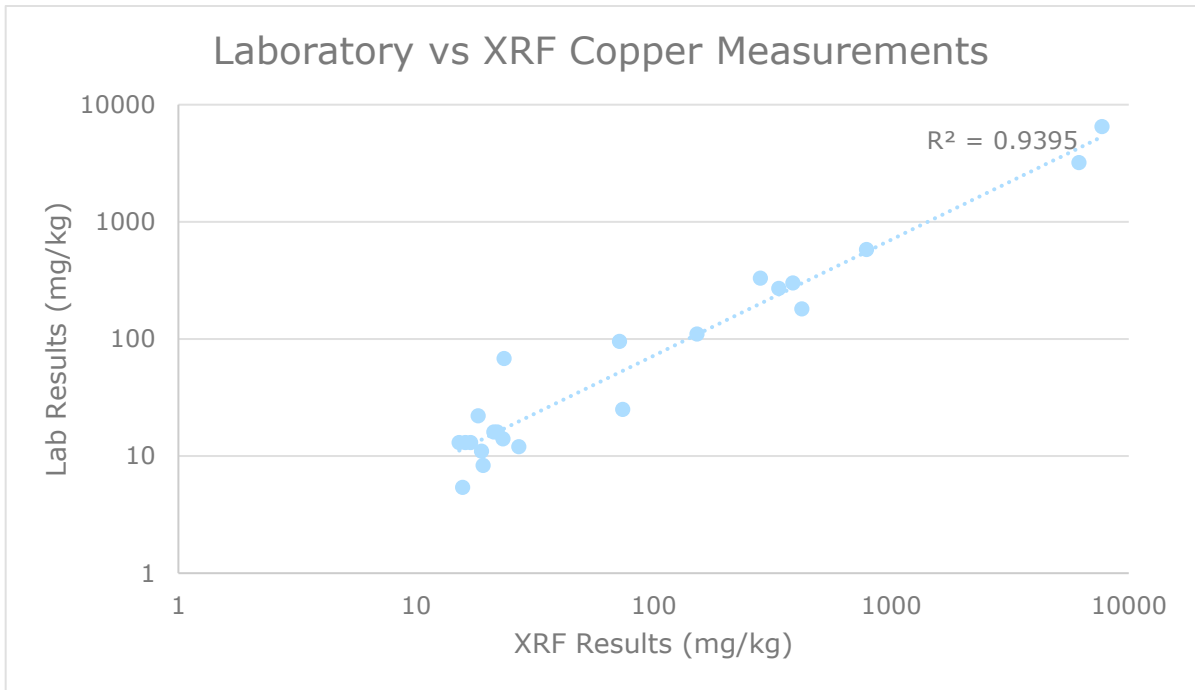


Figure 2: Correlation of copper results from portable XRF and laboratory analyses

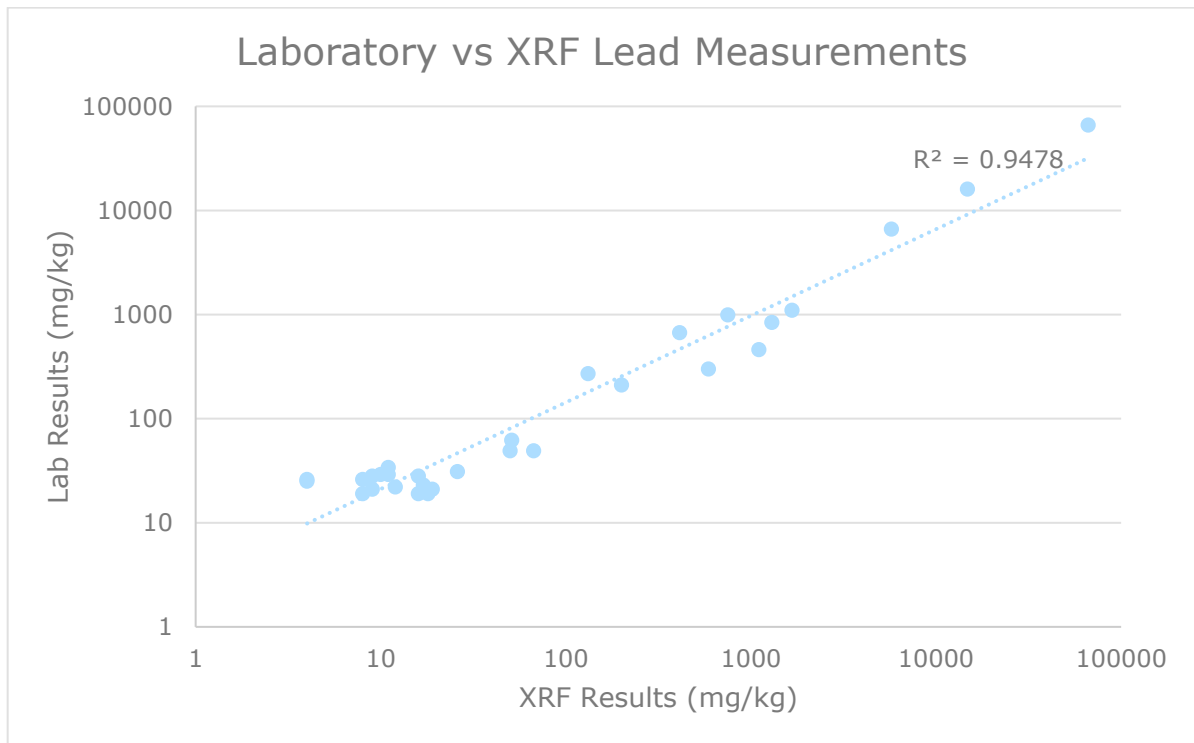


Figure 3: Correlation of lead results from portable XRF and laboratory analyses

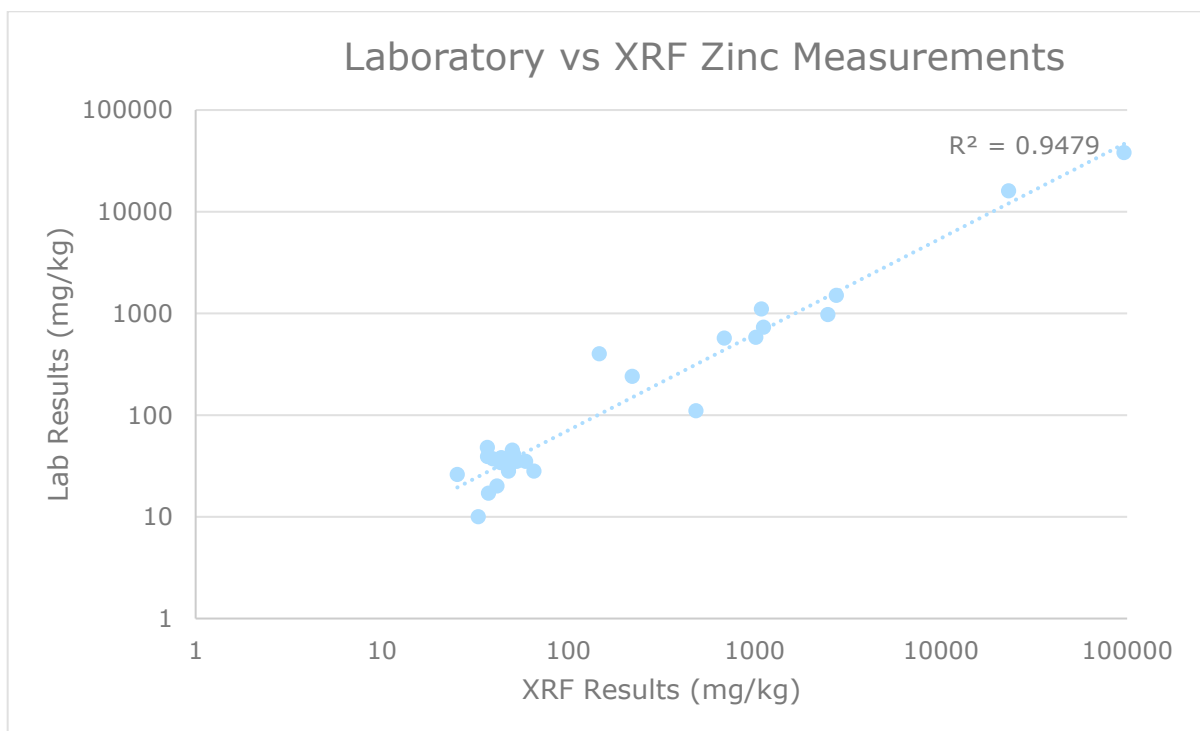


Figure 4: Correlation of zinc results from portable XRF and laboratory analyses

Section 9.7 of the US EPA XRF test method (USEPA 2007) prescribes that the R^2 value for the results should be 0.7 or greater for the field portable XRF data to be considered screening level data. If the R^2 is 0.9 or greater and inferential statistics indicate the field portable XRF data and the confirmatory data are statistically equivalent at a 99 percent confidence level, the data could potentially meet definitive level data criteria. Based on the observed R^2 values of 0.94 – 0.99 the XRF data is considered suitable for use in screening potential risks associated with lead in public surface soils tested

1.2 Uncertainties

The XRF analysis, like analytical techniques, can suffer from a number of interferences and factors that can introduce uncertainties in the results. This can affect the accuracy and precision of the instrument. Some of the important factors that were considered were:

1. Moisture – sample moisture can cause results of the analysis to be under reported. This can be accounted for by measuring the sample moisture content and applying moisture correction to the results. However, as sampling was conducted *insitu* this was not possible. Sample area was chosen that was visually dry and the final XRF results was calibrated against laboratory results that were moisture corrected. While laboratory results only measures acid soluble component, the XRF measures total elemental composition. The final calibration showed very good correlation with laboratory results and therefore moisture effects and relative proportions measured by the two techniques was taken to be having minimal impact.
2. Sample heterogeneity can also a source of uncertainty. A number of samples were taken in close proximity to each other from different residential blocks. This was taken to sufficiently account for natural heterogeneity in surface soil concentrations. 10% of XRF measurement locations were also collected for laboratory analysis. This sampling collected representative samples from the location and given the results of the calibration, it sufficiently accounted for sample heterogeneity. Some replicate samples were also taken which also provides an indication of sample heterogeneity.
3. Inconsistent positioning of the XRF analyser can cause deviations in signal path distances, which can introduce errors. To eliminate this source of error, it was ensured that the XRF positioning was consistent between samples and always in contact with the surface.
4. XRF can also suffer from spectra interferences where spectral lines from different elements can overlap. The Niton analyser uses a 50kV x-ray source to provide sufficient resolution to accurately quantify lead spectral lines.

Overall it is considered that the completed investigation works and the data obtained adequately complied with the requirements of NEPM 1999 Amendment (2013) guidelines. Some uncertainty surrounds the phenol results due to the low surrogate recoveries and the reported concentrations of some PAH and TRH compounds. However it is considered that the data is of suitable quality to meet the project objectives.

APPENDIX 7 LABORATORY REPORTS

CHAIN OF CUSTODY RECORD

Form 10/2019 (Rev. 03/21)

Sydney Laboratory
Unit 13 391F, 16 Mars Rd, Lane Cove West, NSW 2096
02 9590 5400 EnviroSampleSy@enviro.com

Brisbane Laboratory
Unit 1 21 Somwood Pl, Murrum, QLD 4172
07 3902 4630 EnviroSampleQLD@enviro.com

Perth Laboratory
Unit 2 91 Leah Highway, Kewdale, WA 6105
08 9231 9800 EnviroSampleWA@enviro.com

Melbourne Laboratory
2 Kington Town Close, Oakleigh, VIC 3166
03 9584 5000 EnviroSampleVIC@enviro.com

Company	Ramboll	Project No	316000780	Project Manager	Stephen Maxwell	Excel and PDF		Sampler(s)	AC	SM
Address	50 Glabe Road the Junction	Project Name		EDD Format	ES&L, EOU5	Handed over by		Email for Invoice	smaxwell@ramboll.com asi@bac-accounts@ramboll.com	
Contact Name	Stephen Maxwell	Analyses	M13 (Al, As, Ba, Be, Cd, Cr, Co, Cu, Fe, Pb, Mn, Hg, Ni, Zn) dissolved <small>(Note: Where metals are requested, please specify 'Total' or 'Filtered') SUITE code must be used to attract SUITE pricing.</small>							
Phone No		Special Directions								
Purchase Order		Client Sample ID								
Quote ID No	180813RPMAN_1	Sampled Date/Time (dd/mm/yy (hh:mm))								
Matrix (Solid / Water / W)		Matrix (Solid / Water / W)								

No	Client Sample ID	Sampled Date/Time (dd/mm/yy (hh:mm))	Matrix (Solid / Water / W)	Method of Shipment	Carrier / #	Received By	Received By Signature	Date	Time	Temperature	Report No
1	MW05	27/03/20	W	<input type="checkbox"/> Courier / #		<i>[Signature]</i>					
2	MW06	27/03/20	W	<input type="checkbox"/> Hand Delivered		<i>[Signature]</i>					
3	MW07	27/03/20	W	<input type="checkbox"/> Postal		<i>[Signature]</i>					
4	DD1_270320	27/03/20	W	<input type="checkbox"/> Name		<i>[Signature]</i>					
5	T01_270320	27/03/20	W	<input type="checkbox"/> Signature		<i>[Signature]</i>					
6	RB_270320	27/03/20	W	<input type="checkbox"/> Date		<i>[Signature]</i>					
7				<input type="checkbox"/> Time		<i>[Signature]</i>					
8				<input type="checkbox"/> Signature		<i>[Signature]</i>					
9				<input type="checkbox"/> Date		<i>[Signature]</i>					
10				<input type="checkbox"/> Time		<i>[Signature]</i>					
Total Counts					6						

Turnaround Time (TAT)

Requirements (Contact us for Free Test Card)

Overnight (9am)*

1 Day*

2 Day*

3 Day*

5 Day* (Surcharge apply)

Other ()

Sample Comments / Dangerous Goods Hazard Warning

Please send to ALS for analyses

Submission of samples to the laboratory will be deemed as acceptance of Eurofins | mgd Standard Terms and Conditions unless agreed otherwise. A copy of Eurofins | mgd Standard Terms and Conditions is available on request.

Eurofins Environment Testing Australia Pty Ltd trading as Eurofins | mgd

[Handwritten] B-76°C
710517

Melbourne

6 Monterey Road
Dandenong South Vic 3175
Phone : +61 3 8564 5000
NATA # 1261
Site # 1254 & 14271

Sydney

Unit F3, Building F
16 Mars Road
Lane Cove West NSW 2066
Phone : +61 2 9900 8400
NATA # 1261 Site # 18217

Brisbane

1/21 Smallwood Place
Murarrie QLD 4172
Phone : +61 7 3902 4600
NATA # 1261 Site # 20794

Perth

2/91 Leach Highway
Kewdale WA 6105
Phone : +61 8 9251 9600
NATA # 1261 Site # 23736

Sample Receipt Advice

Company name: **Ramboll Australia Pty Ltd**

Contact name: **Stephen Maxwell**

Project ID: **318000780**

COC number: **Not provided**

Turn around time: **Overnight**

Date/Time received: **Mar 27, 2020 3:08 PM**

Eurofins reference: **710517**

Sample information

- A detailed list of analytes logged into our LIMS, is included in the attached summary table.
- All samples have been received as described on the above COC.
- COC has been completed correctly.
- Attempt to chill was evident.
- Appropriately preserved sample containers have been used.
- All samples were received in good condition.
- Samples have been provided with adequate time to commence analysis in accordance with the relevant holding times.
- Appropriate sample containers have been used.
- Sample containers for volatile analysis received with zero headspace.
- Split sample sent to requested external lab.
- Some samples have been subcontracted.
- N/A Custody Seals intact (if used).

Contact notes

If you have any questions with respect to these samples please contact:

Andrew Black on Phone : (+61) 2 9900 8490 or by e.mail: AndrewBlack@eurofins.com

Results will be delivered electronically via e.mail to Stephen Maxwell - smaxwell@ramboll.com.

Note: A copy of these results will also be delivered to the general Ramboll Australia Pty Ltd email address.

Australia

Melbourne
6 Monterey Road
Dandenong South VIC 3175
Phone : +61 3 8564 5000
NATA # 1261
Site # 1254 & 14271

Sydney
Unit F3, Building F
16 Mars Road
Lane Cove West NSW 2066
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NATA # 1261 Site # 20794

Perth
2/91 Leach Highway
Kewdale WA 6105
Phone : +61 8 9251 9600
NATA # 1261
Site # 23736

New Zealand

Auckland
35 O'Rorke Road
Penrose, Auckland 1061
Phone : +64 9 526 45 51
IANZ # 1327

Christchurch
43 Detroit Drive
Rolleston, Christchurch 7675
Phone : 0800 856 450
IANZ # 1290

ABN – 50 005 085 521

web : www.eurofins.com.au

e.mail : EnviroSales@eurofins.com

Company Name: Ramboll Australia Pty Ltd
Address: Level 3/100 Pacific Highway
North Sydney
NSW 2060

Project Name:
Project ID: 318000780

Order No.:
Report #: 710517
Phone: 02 9954 8118
Fax: 02 9954 8150

Received: Mar 27, 2020 3:08 PM
Due: Mar 30, 2020
Priority: Overnight
Contact Name: Stephen Maxwell

Eurofins Analytical Services Manager : Andrew Black

Sample Detail

NEPM 2013 Filtered Metals without Cr6+
(As, Be, B, Cd, Co, Cr, Cu, Hg, Pb, Ni, Mn,
NEPM 2013 Metals without Cr6+ (As, Be, B,
Cd, Co, Cr, Cu, Hg, Pb, Ni, Mn, Se, Zn)

Melbourne Laboratory - NATA Site # 1254 & 14271

Sydney Laboratory - NATA Site # 18217

Brisbane Laboratory - NATA Site # 20794

Perth Laboratory - NATA Site # 23736

External Laboratory

No	Sample ID	Sample Date	Sampling Time	Matrix	LAB ID		
1	MW05	Mar 27, 2020		Water	S20-Ma43288		X
2	MW06	Mar 27, 2020		Water	S20-Ma43289		X
3	MW07	Mar 27, 2020		Water	S20-Ma43290		X
4	DOI_270320	Mar 27, 2020		Water	S20-Ma43291		X
5	RB_270320	Mar 27, 2020		Water	S20-Ma43292	X	
Test Counts						1	4

Ramboll Environ Australia Pty Ltd
 Level 3/100 Pacific Highway
 North Sydney
 NSW 2060



NATA Accredited
Accreditation Number 1261
Site Number 18217

Accredited for compliance with ISO/IEC 17025 – Testing
 The results of the tests, calibrations and/or
 measurements included in this document are traceable
 to Australian/national standards.

Attention: Stephen Maxwell

Report 710517-W
 Project name
 Project ID 318000780
 Received Date Mar 27, 2020

Client Sample ID			MW05 Water	MW06 Water	MW07 Water	DOI_270320 Water
Sample Matrix			S20-Ma43288	S20-Ma43289	S20-Ma43290	S20-Ma43291
Eurofins Sample No.			Mar 27, 2020	Mar 27, 2020	Mar 27, 2020	Mar 27, 2020
Date Sampled						
Test/Reference	LOR	Unit				
Heavy Metals						
Arsenic (filtered)	0.001	mg/L	< 0.001	< 0.001	0.003	< 0.001
Beryllium (filtered)	0.001	mg/L	< 0.001	< 0.001	< 0.001	< 0.001
Boron (filtered)	0.05	mg/L	< 0.05	< 0.05	< 0.05	< 0.05
Cadmium (filtered)	0.0002	mg/L	0.0003	< 0.0002	< 0.0002	0.0003
Chromium (filtered)	0.001	mg/L	< 0.001	< 0.001	< 0.001	< 0.001
Cobalt (filtered)	0.001	mg/L	0.001	< 0.001	0.006	0.001
Copper (filtered)	0.001	mg/L	0.001	< 0.001	< 0.001	0.001
Lead (filtered)	0.001	mg/L	0.002	< 0.001	< 0.001	0.004
Manganese (filtered)	0.005	mg/L	0.085	0.026	1.4	0.083
Mercury (filtered)	0.0001	mg/L	< 0.0001	< 0.0001	< 0.0001	< 0.0001
Nickel (filtered)	0.001	mg/L	0.001	< 0.001	0.002	0.001
Selenium (filtered)	0.001	mg/L	< 0.001	< 0.001	< 0.001	< 0.001
Zinc (filtered)	0.005	mg/L	0.044	0.007	< 0.005	0.044

Client Sample ID			RB_270320 Water
Sample Matrix			S20-Ma43292
Eurofins Sample No.			Mar 27, 2020
Date Sampled			
Test/Reference	LOR	Unit	
Heavy Metals			
Arsenic	0.001	mg/L	< 0.001
Beryllium	0.001	mg/L	< 0.001
Boron	0.05	mg/L	< 0.05
Cadmium	0.0002	mg/L	< 0.0002
Chromium	0.001	mg/L	< 0.001
Cobalt	0.001	mg/L	< 0.001
Copper	0.001	mg/L	< 0.001
Lead	0.001	mg/L	< 0.001
Manganese	0.005	mg/L	< 0.005
Mercury	0.0001	mg/L	< 0.0001
Nickel	0.001	mg/L	< 0.001
Selenium	0.001	mg/L	< 0.001
Zinc	0.005	mg/L	< 0.005

Sample History

Where samples are submitted/analysed over several days, the last date of extraction and analysis is reported.

A recent review of our LIMS has resulted in the correction or clarification of some method identifications. Due to this, some of the method reference information on reports has changed. However, no substantive change has been made to our laboratory methods, and as such there is no change in the validity of current or previous results.

If the date and time of sampling are not provided, the Laboratory will not be responsible for compromised results should testing be performed outside the recommended holding time.

Description

NEPM 2013 Metals without Cr6+ (As, Be, B, Cd, Co, Cr, Cu, Hg, Pb, Ni, Mn, Se, Zn)

- Method: LTM-MET-3040 Metals in Waters, Soils & Sediments by ICP-MS

NEPM 2013 Filtered Metals without Cr6+ (As, Be, B, Cd, Co, Cr, Cu, Hg, Pb, Ni, Mn, Se, Zn)

- Method: LTM-MET-3040 Metals in Waters, Soils & Sediments by ICP-MS

Testing Site	Extracted	Holding Time
Sydney	Mar 27, 2020	180 Days
Sydney	Mar 27, 2020	28 Days

Australia

Melbourne
6 Monterey Road
Dandenong South VIC 3175
Phone : +61 3 8564 5000
NATA # 1261
Site # 1254 & 14271

Sydney
Unit F3, Building F
16 Mars Road
Lane Cove West NSW 2066
Phone : +61 2 9900 8400
NATA # 1261 Site # 18217

Brisbane
1/21 Smallwood Place
Murarrie QLD 4172
Phone : +61 7 3902 4600
NATA # 1261 Site # 20794

Perth
2/91 Leach Highway
Kewdale WA 6105
Phone : +61 8 9251 9600
NATA # 1261
Site # 23736

New Zealand

Auckland
35 O'Rorke Road
Penrose, Auckland 1061
Phone : +64 9 526 45 51
IANZ # 1327

Christchurch
43 Detroit Drive
Rolleston, Christchurch 7675
Phone : 0800 856 450
IANZ # 1290

ABN – 50 005 085 521

web : www.eurofins.com.au

e.mail : EnviroSales@eurofins.com

Company Name: Ramboll Australia Pty Ltd
Address: Level 3/100 Pacific Highway
North Sydney
NSW 2060

Project Name:
Project ID: 318000780

Order No.:
Report #: 710517
Phone: 02 9954 8118
Fax: 02 9954 8150

Received: Mar 27, 2020 3:08 PM
Due: Mar 30, 2020
Priority: Overnight
Contact Name: Stephen Maxwell

Eurofins Analytical Services Manager : Andrew Black

Sample Detail

NEPM 2013 Filtered Metals without Cr6+
(As, Be, B, Cd, Co, Cr, Cu, Hg, Pb, Ni, Mn,
NEPM 2013 Metals without Cr6+ (As, Be, B,
Cd, Co, Cr, Cu, Hg, Pb, Ni, Mn, Se, Zn)

Melbourne Laboratory - NATA Site # 1254 & 14271

Sydney Laboratory - NATA Site # 18217

Brisbane Laboratory - NATA Site # 20794

Perth Laboratory - NATA Site # 23736

External Laboratory

No	Sample ID	Sample Date	Sampling Time	Matrix	LAB ID		
1	MW05	Mar 27, 2020		Water	S20-Ma43288		X
2	MW06	Mar 27, 2020		Water	S20-Ma43289		X
3	MW07	Mar 27, 2020		Water	S20-Ma43290		X
4	DOI_270320	Mar 27, 2020		Water	S20-Ma43291		X
5	RB_270320	Mar 27, 2020		Water	S20-Ma43292	X	
Test Counts						1	4

Internal Quality Control Review and Glossary
General

- Laboratory QC results for Method Blanks, Duplicates, Matrix Spikes, and Laboratory Control Samples follows guidelines delineated in the National Environment Protection (Assessment of Site Contamination) Measure 1999, as amended May 2013 and are included in this QC report where applicable. Additional QC data may be available on request.
- All soil/sediment/solid results are reported on a dry basis, unless otherwise stated.
- All biota/food results are reported on a wet weight basis on the edible portion, unless otherwise stated.
- Actual LORs are matrix dependant. Quoted LORs may be raised where sample extracts are diluted due to interferences.
- Results are uncorrected for matrix spikes or surrogate recoveries except for PFAS compounds.
- SVOC analysis on waters are performed on homogenised, unfiltered samples, unless noted otherwise.
- Samples were analysed on an 'as received' basis.
- Information identified on this report with blue colour, indicates data provided by customer, that may have an impact on the results.
- This report replaces any interim results previously issued.

Holding Times

Please refer to 'Sample Preservation and Container Guide' for holding times (QS3001).

For samples received on the last day of holding time, notification of testing requirements should have been received at least 6 hours prior to sample receipt deadlines as stated on the SRA.

If the Laboratory did not receive the information in the required timeframe, and regardless of any other integrity issues, suitably qualified results may still be reported.

Holding times apply from the date of sampling, therefore compliance to these may be outside the laboratory's control.

For VOCs containing vinyl chloride, styrene and 2-chloroethyl vinyl ether the holding time is 7 days however for all other VOCs such as BTEX or C6-10 TRH then the holding time is 14 days.

****NOTE:** pH duplicates are reported as a range NOT as RPD

Units

mg/kg: milligrams per kilogram

mg/L: milligrams per litre

ug/L: micrograms per litre

ppm: Parts per million

ppb: Parts per billion

%: Percentage

org/100mL: Organisms per 100 millilitres

NTU: Nephelometric Turbidity Units

MPN/100mL: Most Probable Number of organisms per 100 millilitres

Terms

Dry	Where a moisture has been determined on a solid sample the result is expressed on a dry basis.
LOR	Limit of Reporting.
SPIKE	Addition of the analyte to the sample and reported as percentage recovery.
RPD	Relative Percent Difference between two Duplicate pieces of analysis.
LCS	Laboratory Control Sample - reported as percent recovery.
CRM	Certified Reference Material - reported as percent recovery.
Method Blank	In the case of solid samples these are performed on laboratory certified clean sands and in the case of water samples these are performed on de-ionised water.
Surr - Surrogate	The addition of a like compound to the analyte target and reported as percentage recovery.
Duplicate	A second piece of analysis from the same sample and reported in the same units as the result to show comparison.
USEPA	United States Environmental Protection Agency
APHA	American Public Health Association
TCLP	Toxicity Characteristic Leaching Procedure
COC	Chain of Custody
SRA	Sample Receipt Advice
QSM	US Department of Defense Quality Systems Manual Version 5.3
CP	Client Parent - QC was performed on samples pertaining to this report
NCP	Non-Client Parent - QC performed on samples not pertaining to this report, QC is representative of the sequence or batch that client samples were analysed within.
TEQ	Toxic Equivalency Quotient

QC - Acceptance Criteria

RPD Duplicates: Global RPD Duplicates Acceptance Criteria is 30% however the following acceptance guidelines are equally applicable:

Results <10 times the LOR : No Limit

Results between 10-20 times the LOR : RPD must lie between 0-50%

Results >20 times the LOR : RPD must lie between 0-30%

Surrogate Recoveries: Recoveries must lie between 20-130% Phenols & 50-150% PFASs

PFAS field samples that contain surrogate recoveries in excess of the QC limit designated in QSM 5.3 where no positive PFAS results have been reported have been reviewed and no data was affected.

WA DWER (n=10): PFBA, PFPeA, PFHxA, PFHpA, PFOA, PFBS, PFHxS, PFOS, 6:2 FTSA, 8:2 FTSA

QC Data General Comments

- Where a result is reported as a less than (<), higher than the nominated LOR, this is due to either matrix interference, extract dilution required due to interferences or contaminant levels within the sample, high moisture content or insufficient sample provided.
- Duplicate data shown within this report that states the word "BATCH" is a Batch Duplicate from outside of your sample batch, but within the laboratory sample batch at a 1:10 ratio. The Parent and Duplicate data shown is not data from your samples.
- Organochlorine Pesticide analysis - where reporting LCS data, Toxaphene & Chlordane are not added to the LCS.
- Organochlorine Pesticide analysis - where reporting Spike data, Toxaphene is not added to the Spike.
- Total Recoverable Hydrocarbons - where reporting Spike & LCS data, a single spike of commercial Hydrocarbon products in the range of C12-C30 is added and it's Total Recovery is reported in the C10-C14 cell of the Report.
- pH and Free Chlorine analysed in the laboratory - Analysis on this test must begin within 30 minutes of sampling. Therefore laboratory analysis is unlikely to be completed within holding time. Analysis will begin as soon as possible after sample receipt.
- Recovery Data (Spikes & Surrogates) - where chromatographic interference does not allow the determination of Recovery the term "INT" appears against that analyte.
- Polychlorinated Biphenyls are spiked only using Aroclor 1260 in Matrix Spikes and LCS.
- For Matrix Spikes and LCS results a dash " - " in the report means that the specific analyte was not added to the QC sample.
- Duplicate RPDs are calculated from raw analytical data thus it is possible to have two sets of data.

Quality Control Results

Test	Units	Result 1			Acceptance Limits	Pass Limits	Qualifying Code
Method Blank							
Heavy Metals							
Arsenic	mg/L	< 0.001			0.001	Pass	
Arsenic (filtered)	mg/L	< 0.001			0.001	Pass	
Beryllium	mg/L	< 0.001			0.001	Pass	
Beryllium (filtered)	mg/L	< 0.001			0.001	Pass	
Boron	mg/L	< 0.05			0.05	Pass	
Boron (filtered)	mg/L	< 0.05			0.05	Pass	
Cadmium	mg/L	< 0.0002			0.0002	Pass	
Cadmium (filtered)	mg/L	< 0.0002			0.0002	Pass	
Chromium	mg/L	< 0.001			0.001	Pass	
Chromium (filtered)	mg/L	< 0.001			0.001	Pass	
Cobalt	mg/L	< 0.001			0.001	Pass	
Cobalt (filtered)	mg/L	< 0.001			0.001	Pass	
Copper	mg/L	< 0.001			0.001	Pass	
Copper (filtered)	mg/L	< 0.001			0.001	Pass	
Lead	mg/L	< 0.001			0.001	Pass	
Lead (filtered)	mg/L	< 0.001			0.001	Pass	
Manganese	mg/L	< 0.005			0.005	Pass	
Manganese (filtered)	mg/L	< 0.005			0.005	Pass	
Mercury	mg/L	< 0.0001			0.0001	Pass	
Mercury (filtered)	mg/L	< 0.0001			0.0001	Pass	
Nickel	mg/L	< 0.001			0.001	Pass	
Nickel (filtered)	mg/L	< 0.001			0.001	Pass	
Selenium	mg/L	< 0.001			0.001	Pass	
Selenium (filtered)	mg/L	< 0.001			0.001	Pass	
Zinc	mg/L	< 0.005			0.005	Pass	
Zinc (filtered)	mg/L	< 0.005			0.005	Pass	
LCS - % Recovery							
Heavy Metals							
Arsenic	%	95			70-130	Pass	
Arsenic (filtered)	%	101			70-130	Pass	
Beryllium	%	106			70-130	Pass	
Beryllium (filtered)	%	85			70-130	Pass	
Boron	%	102			70-130	Pass	
Boron (filtered)	%	87			70-130	Pass	
Cadmium	%	102			70-130	Pass	
Cadmium (filtered)	%	98			70-130	Pass	
Chromium	%	100			70-130	Pass	
Chromium (filtered)	%	101			70-130	Pass	
Cobalt	%	100			70-130	Pass	
Cobalt (filtered)	%	103			70-130	Pass	
Copper	%	98			70-130	Pass	
Copper (filtered)	%	100			70-130	Pass	
Lead	%	100			70-130	Pass	
Lead (filtered)	%	98			70-130	Pass	
Manganese	%	101			70-130	Pass	
Manganese (filtered)	%	100			70-130	Pass	
Mercury	%	105			70-130	Pass	
Mercury (filtered)	%	103			70-130	Pass	
Nickel	%	99			70-130	Pass	
Nickel (filtered)	%	100			70-130	Pass	

Test		Units	Result 1			Acceptance Limits	Pass Limits	Qualifying Code
Selenium		%	95			70-130	Pass	
Selenium (filtered)		%	98			70-130	Pass	
Zinc		%	101			70-130	Pass	
Zinc (filtered)		%	99			70-130	Pass	
Test	Lab Sample ID	QA Source	Units	Result 1		Acceptance Limits	Pass Limits	Qualifying Code
Spike - % Recovery								
Heavy Metals				Result 1				
Arsenic (filtered)	S20-Ma43631	NCP	%	106		70-130	Pass	
Beryllium (filtered)	S20-Ma43631	NCP	%	117		70-130	Pass	
Cadmium (filtered)	S20-Ma43631	NCP	%	105		70-130	Pass	
Chromium (filtered)	S20-Ma43631	NCP	%	92		70-130	Pass	
Cobalt (filtered)	S20-Ma43631	NCP	%	91		70-130	Pass	
Copper (filtered)	S20-Ma43631	NCP	%	87		70-130	Pass	
Lead (filtered)	S20-Ma43631	NCP	%	90		70-130	Pass	
Manganese (filtered)	S20-Ma43631	NCP	%	87		70-130	Pass	
Mercury (filtered)	S20-Ma43631	NCP	%	98		70-130	Pass	
Nickel (filtered)	S20-Ma43631	NCP	%	86		70-130	Pass	
Selenium (filtered)	S20-Ma43631	NCP	%	98		70-130	Pass	
Zinc (filtered)	S20-Ma43631	NCP	%	87		70-130	Pass	
Spike - % Recovery								
Heavy Metals				Result 1				
Arsenic	S20-Ma34967	NCP	%	95		70-130	Pass	
Beryllium	S20-Ma34967	NCP	%	99		70-130	Pass	
Boron	S20-Ma34967	NCP	%	91		70-130	Pass	
Cadmium	S20-Ma34967	NCP	%	109		70-130	Pass	
Chromium	S20-Ma34967	NCP	%	99		70-130	Pass	
Cobalt	S20-Ma34967	NCP	%	98		70-130	Pass	
Copper	S20-Ma34967	NCP	%	94		70-130	Pass	
Lead	S20-Ma34967	NCP	%	102		70-130	Pass	
Manganese	S20-Ma34967	NCP	%	103		70-130	Pass	
Mercury	S20-Ma34967	NCP	%	102		70-130	Pass	
Nickel	S20-Ma34967	NCP	%	97		70-130	Pass	
Selenium	S20-Ma34967	NCP	%	101		70-130	Pass	
Zinc	S20-Ma34967	NCP	%	100		70-130	Pass	
Test	Lab Sample ID	QA Source	Units	Result 1		Acceptance Limits	Pass Limits	Qualifying Code
Duplicate								
Heavy Metals				Result 1	Result 2	RPD		
Arsenic (filtered)	S20-Ma34252	NCP	mg/L	0.020	0.019	2.0	30%	Pass
Beryllium (filtered)	S20-Ma34252	NCP	mg/L	< 0.001	< 0.001	<1	30%	Pass
Boron (filtered)	S20-Ma34252	NCP	mg/L	0.06	0.06	5.0	30%	Pass
Cadmium (filtered)	S20-Ma34252	NCP	mg/L	< 0.0002	< 0.0002	<1	30%	Pass
Chromium (filtered)	S20-Ma34252	NCP	mg/L	< 0.001	< 0.001	<1	30%	Pass
Cobalt (filtered)	S20-Ma34252	NCP	mg/L	0.002	0.002	<1	30%	Pass
Copper (filtered)	S20-Ma34252	NCP	mg/L	0.002	0.001	6.0	30%	Pass
Lead (filtered)	S20-Ma34252	NCP	mg/L	< 0.001	< 0.001	<1	30%	Pass
Manganese (filtered)	S20-Ma34252	NCP	mg/L	0.25	0.25	<1	30%	Pass
Mercury (filtered)	S20-Ma34252	NCP	mg/L	< 0.0001	< 0.0001	<1	30%	Pass
Nickel (filtered)	S20-Ma34252	NCP	mg/L	0.006	0.006	1.0	30%	Pass
Selenium (filtered)	S20-Ma34252	NCP	mg/L	< 0.001	< 0.001	<1	30%	Pass
Zinc (filtered)	S20-Ma34252	NCP	mg/L	0.015	0.013	12	30%	Pass

Duplicate									
Heavy Metals				Result 1	Result 2	RPD			
Arsenic	S20-Ma42236	NCP	mg/L	0.002	0.003	7.0	30%	Pass	
Beryllium	S20-Ma33640	NCP	mg/L	< 0.001	< 0.001	<1	30%	Pass	
Boron	S20-Ma33640	NCP	mg/L	< 0.05	< 0.05	<1	30%	Pass	
Cadmium	S20-Ma42236	NCP	mg/L	< 0.0002	< 0.0002	<1	30%	Pass	
Cobalt	S20-Ma33640	NCP	mg/L	< 0.001	< 0.001	<1	30%	Pass	
Copper	S20-Ma42236	NCP	mg/L	0.007	0.007	2.0	30%	Pass	
Lead	S20-Ma42236	NCP	mg/L	0.004	0.004	6.0	30%	Pass	
Manganese	S20-Ma33640	NCP	mg/L	< 0.005	< 0.005	<1	30%	Pass	
Mercury	S20-Ma42236	NCP	mg/L	< 0.0001	< 0.0001	<1	30%	Pass	
Nickel	S20-Ma42236	NCP	mg/L	0.001	0.005	120	30%	Fail	Q15
Selenium	S20-Ma33640	NCP	mg/L	< 0.001	< 0.001	<1	30%	Pass	
Zinc	S20-Ma42236	NCP	mg/L	0.026	0.024	9.0	30%	Pass	

Comments
Sample Integrity

Custody Seals Intact (if used)	N/A
Attempt to Chill was evident	No
Sample correctly preserved	Yes
Appropriate sample containers have been used	No
Sample containers for volatile analysis received with minimal headspace	Yes
Samples received within HoldingTime	Yes
Some samples have been subcontracted	No

Qualifier Codes/Comments

Code	Description
Q15	The RPD reported passes Eurofins Environment Testing's QC - Acceptance Criteria as defined in the Internal Quality Control Review and Glossary page of this report.

Authorised By

Andrew Black	Analytical Services Manager
Gabriele Cordero	Senior Analyst-Metal (NSW)


**Glenn Jackson
General Manager**

Final report - this Report replaces any previously issued Report

- Indicates Not Requested

* Indicates NATA accreditation does not cover the performance of this service

Measurement uncertainty of test data is available on request or please [click here](#).

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#AU04_Enviro_Sample_NSW

Subject: FW: 1 DAY: Eurofins Test Results, Invoice - Report 710517 : Site 318000780

From: Stephen Maxwell <SMAXWELL@ramboll.com>

Sent: Tuesday, 31 March 2020 11:46 AM

To: Robert Johnston <RobertJohnston@eurofins.com>

Cc: Joshua Blackwell <JBLACKWELL@ramboll.com>; Rachel Condon <RCONDON@ramboll.com>; Shane Hyde <SHYDE@ramboll.com>

Subject: RE: Eurofins Test Results, Invoice - Report 710517 : Site 318000780

EXTERNAL EMAIL*

Hi Robert

Can we also commission total metals (m13 ex Hex chromium) analyses on samples MW05 – MW07 on fastest available turnaround?

Kind regards

Stephen Maxwell

Lead Consultant

D +61 478658194

M +61 478658194

smaxwell@ramboll.com

Ramboll Australia Pty Ltd.

ACN 095 437 442

ABN 49 095 437 442

From: RobertJohnston@eurofins.com [<mailto:RobertJohnston@eurofins.com>]

Sent: 30 March, 2020 3:12 PM

To: Stephen Maxwell <SMAXWELL@ramboll.com>

Cc: Joshua Blackwell <JBLACKWELL@ramboll.com>; Rachel Condon <RCONDON@ramboll.com>; Shane Hyde <SHYDE@ramboll.com>

Subject: Eurofins Test Results, Invoice - Report 710517 : Site 318000780

Robert Johnston

Analytical Services Manager, WA

Eurofins | Environment Testing

Unit 2, 91 Leach Highway

KEWDALE WA 6105

AUSTRALIA

Phone: +61 (0)8 9251 9605

Mobile: +61 (0)4 2357 9286

Email: RobertJohnston@Eurofins.com

Website: environment.eurofins.com.au

[EnviroNote 1079 - PFAS Fingerprinting](#)

[EnviroNote 1080 - Total Organofluorine Analysis & PFAS Investigations](#)

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Site # 1254 & 14271

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NATA # 1261 Site # 18217

Brisbane
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Murarrie QLD 4172
Phone : +61 7 3902 4600
NATA # 1261 Site # 20794

Perth
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Phone : +61 8 9251 9600
NATA # 1261
Site # 23736

New Zealand

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IANZ # 1327

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Rolleston, Christchurch 7675
Phone : 0800 856 450
IANZ # 1290

ABN – 50 005 085 521

web : www.eurofins.com.au

e.mail : EnviroSales@eurofins.com

Company Name: Ramboll Australia Pty Ltd
Address: Level 3/100 Pacific Highway
North Sydney
NSW 2060

Project Name: ADDITIONAL 318000780
Project ID: 318000780

Order No.:
Report #: 711093
Phone: 02 9954 8118
Fax: 02 9954 8150

Received: Mar 31, 2020 11:46 AM
Due: Apr 1, 2020
Priority: 1 Day
Contact Name: Stephen Maxwell

Eurofins Analytical Services Manager : Andrew Black

Sample Detail

NEPM 2013 Metals without Cr6+ (As, Be, B, Cd, Co, Cr, Cu, Hg, Pb, Ni, Mn, Se, Zn)

Melbourne Laboratory - NATA Site # 1254 & 14271

Sydney Laboratory - NATA Site # 18217

Brisbane Laboratory - NATA Site # 20794

Perth Laboratory - NATA Site # 23736

External Laboratory

No	Sample ID	Sample Date	Sampling Time	Matrix	LAB ID	
1	MW05	Mar 27, 2020		Water	S20-Ma48213	X
2	MW06	Mar 27, 2020		Water	S20-Ma48214	X
3	MW07	Mar 27, 2020		Water	S20-Ma48215	X

Test Counts 3

Ramboll Environ Australia Pty Ltd
 Level 3/100 Pacific Highway
 North Sydney
 NSW 2060



NATA Accredited
Accreditation Number 1261
Site Number 18217

Accredited for compliance with ISO/IEC 17025 – Testing
 The results of the tests, calibrations and/or
 measurements included in this document are traceable
 to Australian/national standards.

Attention: **Stephen Maxwell**

Report **711093-W**
 Project name **ADDITIONAL 318000780**
 Project ID **318000780**
 Received Date **Mar 31, 2020**

Client Sample ID			MW05	MW06	MW07
Sample Matrix			Water	Water	Water
Eurofins Sample No.			S20-Ma48213	S20-Ma48214	S20-Ma48215
Date Sampled			Mar 27, 2020	Mar 27, 2020	Mar 27, 2020
Test/Reference	LOR	Unit			
Heavy Metals					
Arsenic	0.001	mg/L	0.003	0.002	0.008
Beryllium	0.001	mg/L	< 0.001	< 0.001	< 0.001
Boron	0.05	mg/L	< 0.05	< 0.05	< 0.05
Cadmium	0.0002	mg/L	0.0005	< 0.0002	0.0006
Chromium	0.001	mg/L	0.005	0.005	0.012
Cobalt	0.001	mg/L	0.003	0.007	0.011
Copper	0.001	mg/L	0.012	0.004	0.033
Lead	0.001	mg/L	0.038	0.009	0.029
Manganese	0.005	mg/L	0.13	0.18	1.4
Mercury	0.0001	mg/L	< 0.0001	< 0.0001	< 0.0001
Nickel	0.001	mg/L	0.004	0.007	0.010
Selenium	0.001	mg/L	0.001	< 0.001	< 0.001
Zinc	0.005	mg/L	0.079	0.024	0.026

Sample History

Where samples are submitted/analysed over several days, the last date of extraction and analysis is reported.

A recent review of our LIMS has resulted in the correction or clarification of some method identifications. Due to this, some of the method reference information on reports has changed. However, no substantive change has been made to our laboratory methods, and as such there is no change in the validity of current or previous results.

If the date and time of sampling are not provided, the Laboratory will not be responsible for compromised results should testing be performed outside the recommended holding time.

Description

NEPM 2013 Metals without Cr6+ (As, Be, B, Cd, Co, Cr, Cu, Hg, Pb, Ni, Mn, Se, Zn)

Testing Site

Sydney

Extracted

Mar 31, 2020

Holding Time

180 Days

- Method: LTM-MET-3040 Metals in Waters, Soils & Sediments by ICP-MS

Australia

Melbourne
6 Monterey Road
Dandenong South VIC 3175
Phone : +61 3 8564 5000
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Site # 1254 & 14271

Sydney
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Phone : +61 2 9900 8400
NATA # 1261 Site # 18217

Brisbane
1/21 Smallwood Place
Murarrie QLD 4172
Phone : +61 7 3902 4600
NATA # 1261 Site # 20794

Perth
2/91 Leach Highway
Kewdale WA 6105
Phone : +61 8 9251 9600
NATA # 1261
Site # 23736

New Zealand

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Penrose, Auckland 1061
Phone : +64 9 526 45 51
IANZ # 1327

Christchurch
43 Detroit Drive
Rolleston, Christchurch 7675
Phone : 0800 856 450
IANZ # 1290

Company Name: Ramboll Australia Pty Ltd
Address: Level 3/100 Pacific Highway
North Sydney
NSW 2060

Project Name: ADDITIONAL 318000780
Project ID: 318000780

Order No.:
Report #: 711093
Phone: 02 9954 8118
Fax: 02 9954 8150

Received: Mar 31, 2020 11:46 AM
Due: Apr 1, 2020
Priority: 1 Day
Contact Name: Stephen Maxwell

Eurofins Analytical Services Manager : Andrew Black

Sample Detail						NEPM 2013 Metals without Cr6+ (As, Be, B, Cd, Co, Cr, Cu, Hg, Pb, Ni, Mn, Se, Zn)	
Melbourne Laboratory - NATA Site # 1254 & 14271							
Sydney Laboratory - NATA Site # 18217							X
Brisbane Laboratory - NATA Site # 20794							
Perth Laboratory - NATA Site # 23736							
External Laboratory							
No	Sample ID	Sample Date	Sampling Time	Matrix	LAB ID		
1	MW05	Mar 27, 2020		Water	S20-Ma48213		X
2	MW06	Mar 27, 2020		Water	S20-Ma48214		X
3	MW07	Mar 27, 2020		Water	S20-Ma48215		X
Test Counts						3	

Internal Quality Control Review and Glossary

General

- Laboratory QC results for Method Blanks, Duplicates, Matrix Spikes, and Laboratory Control Samples follows guidelines delineated in the National Environment Protection (Assessment of Site Contamination) Measure 1999, as amended May 2013 and are included in this QC report where applicable. Additional QC data may be available on request.
- All soil/sediment/solid results are reported on a dry basis, unless otherwise stated.
- All biota/food results are reported on a wet weight basis on the edible portion, unless otherwise stated.
- Actual LORs are matrix dependant. Quoted LORs may be raised where sample extracts are diluted due to interferences.
- Results are uncorrected for matrix spikes or surrogate recoveries except for PFAS compounds.
- SVOC analysis on waters are performed on homogenised, unfiltered samples, unless noted otherwise.
- Samples were analysed on an 'as received' basis.
- Information identified on this report with blue colour, indicates data provided by customer, that may have an impact on the results.
- This report replaces any interim results previously issued.

Holding Times

Please refer to 'Sample Preservation and Container Guide' for holding times (QS3001).

For samples received on the last day of holding time, notification of testing requirements should have been received at least 6 hours prior to sample receipt deadlines as stated on the SRA.

If the Laboratory did not receive the information in the required timeframe, and regardless of any other integrity issues, suitably qualified results may still be reported.

Holding times apply from the date of sampling, therefore compliance to these may be outside the laboratory's control.

For VOCs containing vinyl chloride, styrene and 2-chloroethyl vinyl ether the holding time is 7 days however for all other VOCs such as BTEX or C6-10 TRH then the holding time is 14 days.

****NOTE:** pH duplicates are reported as a range NOT as RPD

Units

mg/kg: milligrams per kilogram

mg/L: milligrams per litre

ug/L: micrograms per litre

ppm: Parts per million

ppb: Parts per billion

%: Percentage

org/100mL: Organisms per 100 millilitres

NTU: Nephelometric Turbidity Units

MPN/100mL: Most Probable Number of organisms per 100 millilitres

Terms

Dry	Where a moisture has been determined on a solid sample the result is expressed on a dry basis.
LOR	Limit of Reporting.
SPIKE	Addition of the analyte to the sample and reported as percentage recovery.
RPD	Relative Percent Difference between two Duplicate pieces of analysis.
LCS	Laboratory Control Sample - reported as percent recovery.
CRM	Certified Reference Material - reported as percent recovery.
Method Blank	In the case of solid samples these are performed on laboratory certified clean sands and in the case of water samples these are performed on de-ionised water.
Surr - Surrogate	The addition of a like compound to the analyte target and reported as percentage recovery.
Duplicate	A second piece of analysis from the same sample and reported in the same units as the result to show comparison.
USEPA	United States Environmental Protection Agency
APHA	American Public Health Association
TCLP	Toxicity Characteristic Leaching Procedure
COC	Chain of Custody
SRA	Sample Receipt Advice
QSM	US Department of Defense Quality Systems Manual Version 5.3
CP	Client Parent - QC was performed on samples pertaining to this report
NCP	Non-Client Parent - QC performed on samples not pertaining to this report, QC is representative of the sequence or batch that client samples were analysed within.
TEQ	Toxic Equivalency Quotient

QC - Acceptance Criteria

RPD Duplicates: Global RPD Duplicates Acceptance Criteria is 30% however the following acceptance guidelines are equally applicable:

Results <10 times the LOR : No Limit

Results between 10-20 times the LOR : RPD must lie between 0-50%

Results >20 times the LOR : RPD must lie between 0-30%

Surrogate Recoveries: Recoveries must lie between 20-130% Phenols & 50-150% PFASs

PFAS field samples that contain surrogate recoveries in excess of the QC limit designated in QSM 5.3 where no positive PFAS results have been reported have been reviewed and no data was affected.

WA DWER (n=10): PFBA, PFPeA, PFHxA, PFHpA, PFOA, PFBS, PFHxS, PFOS, 6:2 FTSA, 8:2 FTSA

QC Data General Comments

- Where a result is reported as a less than (<), higher than the nominated LOR, this is due to either matrix interference, extract dilution required due to interferences or contaminant levels within the sample, high moisture content or insufficient sample provided.
- Duplicate data shown within this report that states the word "BATCH" is a Batch Duplicate from outside of your sample batch, but within the laboratory sample batch at a 1:10 ratio. The Parent and Duplicate data shown is not data from your samples.
- Organochlorine Pesticide analysis - where reporting LCS data, Toxaphene & Chlordane are not added to the LCS.
- Organochlorine Pesticide analysis - where reporting Spike data, Toxaphene is not added to the Spike.
- Total Recoverable Hydrocarbons - where reporting Spike & LCS data, a single spike of commercial Hydrocarbon products in the range of C12-C30 is added and it's Total Recovery is reported in the C10-C14 cell of the Report.
- pH and Free Chlorine analysed in the laboratory - Analysis on this test must begin within 30 minutes of sampling. Therefore laboratory analysis is unlikely to be completed within holding time. Analysis will begin as soon as possible after sample receipt.
- Recovery Data (Spikes & Surrogates) - where chromatographic interference does not allow the determination of Recovery the term "INT" appears against that analyte.
- Polychlorinated Biphenyls are spiked only using Aroclor 1260 in Matrix Spikes and LCS.
- For Matrix Spikes and LCS results a dash " - " in the report means that the specific analyte was not added to the QC sample.
- Duplicate RPDs are calculated from raw analytical data thus it is possible to have two sets of data.

Quality Control Results

Test	Units	Result 1			Acceptance Limits	Pass Limits	Qualifying Code	
Method Blank								
Heavy Metals								
Arsenic	mg/L	< 0.001			0.001	Pass		
Beryllium	mg/L	< 0.001			0.001	Pass		
Boron	mg/L	< 0.05			0.05	Pass		
Cadmium	mg/L	< 0.0002			0.0002	Pass		
Chromium	mg/L	< 0.001			0.001	Pass		
Cobalt	mg/L	< 0.001			0.001	Pass		
Copper	mg/L	< 0.001			0.001	Pass		
Lead	mg/L	< 0.001			0.001	Pass		
Manganese	mg/L	< 0.005			0.005	Pass		
Mercury	mg/L	< 0.0001			0.0001	Pass		
Nickel	mg/L	< 0.001			0.001	Pass		
Selenium	mg/L	< 0.001			0.001	Pass		
Zinc	mg/L	< 0.005			0.005	Pass		
LCS - % Recovery								
Heavy Metals								
Arsenic	%	98			70-130	Pass		
Beryllium	%	104			70-130	Pass		
Boron	%	111			70-130	Pass		
Cadmium	%	99			70-130	Pass		
Chromium	%	95			70-130	Pass		
Cobalt	%	94			70-130	Pass		
Copper	%	94			70-130	Pass		
Lead	%	100			70-130	Pass		
Manganese	%	93			70-130	Pass		
Mercury	%	92			70-130	Pass		
Nickel	%	93			70-130	Pass		
Selenium	%	103			70-130	Pass		
Zinc	%	93			70-130	Pass		
Test	Lab Sample ID	QA Source	Units	Result 1		Acceptance Limits	Pass Limits	Qualifying Code
Spike - % Recovery								
Heavy Metals				Result 1				
Arsenic	S20-Ma48215	CP	%	95		70-130	Pass	
Beryllium	S20-Ma48215	CP	%	115		70-130	Pass	
Boron	S20-Ma48215	CP	%	98		70-130	Pass	
Cadmium	S20-Ma48215	CP	%	102		70-130	Pass	
Chromium	S20-Ma48215	CP	%	99		70-130	Pass	
Cobalt	S20-Ma48215	CP	%	98		70-130	Pass	
Copper	S20-Ma48215	CP	%	94		70-130	Pass	
Lead	S20-Ma48215	CP	%	103		70-130	Pass	
Manganese	S20-Ma48215	CP	%	106		70-130	Pass	
Mercury	S20-Ma48215	CP	%	98		70-130	Pass	
Nickel	S20-Ma48215	CP	%	96		70-130	Pass	
Selenium	S20-Ma48215	CP	%	106		70-130	Pass	
Zinc	S20-Ma48215	CP	%	97		70-130	Pass	

Test	Lab Sample ID	QA Source	Units	Result 1			Acceptance Limits	Pass Limits	Qualifying Code
Duplicate									
Heavy Metals				Result 1	Result 2	RPD			
Arsenic	S20-Ma39694	NCP	mg/L	0.001	0.001	1.0	30%	Pass	
Beryllium	S20-Ma39694	NCP	mg/L	< 0.001	< 0.001	<1	30%	Pass	
Boron	S20-Ma39694	NCP	mg/L	0.49	0.49	<1	30%	Pass	
Cadmium	S20-Ma39694	NCP	mg/L	< 0.0002	< 0.0002	<1	30%	Pass	
Chromium	S20-Ma39694	NCP	mg/L	< 0.001	< 0.001	<1	30%	Pass	
Cobalt	S20-Ma39694	NCP	mg/L	0.018	0.018	<1	30%	Pass	
Copper	S20-Ma39694	NCP	mg/L	0.009	0.009	<1	30%	Pass	
Lead	S20-Ma39694	NCP	mg/L	< 0.001	< 0.001	<1	30%	Pass	
Manganese	S20-Ma39694	NCP	mg/L	0.44	0.44	<1	30%	Pass	
Mercury	S20-Ma39694	NCP	mg/L	< 0.0001	< 0.0001	<1	30%	Pass	
Nickel	S20-Ma39694	NCP	mg/L	0.006	0.006	<1	30%	Pass	
Selenium	S20-Ma39694	NCP	mg/L	0.002	0.002	15	30%	Pass	
Zinc	S20-Ma39694	NCP	mg/L	0.030	0.029	<1	30%	Pass	

Comments**Sample Integrity**

Custody Seals Intact (if used)	N/A
Attempt to Chill was evident	Yes
Sample correctly preserved	Yes
Appropriate sample containers have been used	Yes
Sample containers for volatile analysis received with minimal headspace	Yes
Samples received within HoldingTime	Yes
Some samples have been subcontracted	No

Authorised By

Andrew Black Analytical Services Manager
Gabriele Cordero Senior Analyst-Metal (NSW)

**Glenn Jackson
General Manager**

Final report - this Report replaces any previously issued Report

- Indicates Not Requested

* Indicates NATA accreditation does not cover the performance of this service

Measurement uncertainty of test data is available on request or please [click here](#).

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CHAIN OF CUSTODY RECORD

Sydney Laboratory
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 02 8900 4400 EnviroSampleNSW@enviro.com

Brisbane Laboratory
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 07 3202 4800 EnviroSampleQLD@enviro.com

Perth Laboratory
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 08 9251 9800 EnviroSampleWA@enviro.com

Melbourne Laboratory
 2 Kingston Town Close, Oakleigh, VIC 3188
 03 9561 5100 EnviroSampleVIC@enviro.com

Company	Ramboll	Project No	318000780
Address	50 Glebe Road the Junction	Project Name	Lead
Contact Name	Stephen Maxwell	Project Manager (ES&I, EOH&S)	Stephen Maxwell
Phone No		Excel and PDF	
Special Directors		Sampler(s)	AC
Purchase Order		Handed over by	SM
Quote ID No	180813FAMN_1	Email for Invoice	smaxwell@ramboll.com asiatac-accounts@ramboll.com
		Email for Results	smaxwell@ramboll.com blackwell@ramboll.com rcondon@ramboll.com shyde@ramboll.com
		T turnaround Time (TAT) Requirements (Default will be 5 days from 8:15:45)	<input type="checkbox"/> Overnight (9am)* <input type="checkbox"/> 1 Day* <input type="checkbox"/> 2 Day* <input type="checkbox"/> 3 Day* <input checked="" type="checkbox"/> 5 Day* <input type="checkbox"/> Other (*Surcharges apply)

No	Client Sample ID	Sampled Date/Time (dd/mm/yy hh:mm)	Matrix (Solid (S) Water (W))	Total metals (Al, As, Ba, Be, Cd, Co, Cr, Cu, Pb, Mn, Ni, Zn, Hg)	Dissolved metals (Al, As, Ba, Be, Cd, Co, Cr, Cu, Pb, Mn, Ni, Zn, Hg)	Name	Signature	Date	Time	Temperature
1	MW1	20/4/20	W	X	X					
2	MW2	20/4/20	W	X	X					
3	MW3	20/4/20	W	X	X					
4	MW4	20/4/20	W	X	X					
5	GW053976	20/4/20	W	X	X					
6	RO1_GW_020420	20/4/20	W	X	X					
7	DO2_020420	20/4/20	S	X						
8	TO2_020420	20/4/20	S	X						
9	RO1_020420	20/4/20	Water	X						
10	RO2_020420	20/4/20	Water	X						
Total Counts				4	6	6				

Method of Shipment	<input checked="" type="checkbox"/> Courier #	<input type="checkbox"/> Hand Delivered	<input type="checkbox"/> Postal	<input type="checkbox"/> Name
Environfmgmt Laboratory Use Only	Received By: <i>Stephen Maxwell</i>	Signature: <i>[Signature]</i>	Date: 21/4/20	Time: 15:30
	Received By: <i>[Signature]</i>	Signature: <i>[Signature]</i>	Date: 21/4/20	Time: 15:30

Submission of samples to the laboratory will be deemed as acceptance of Eurofins | mgmt Standard Terms and Conditions unless agreed otherwise. A copy of Eurofins | mgmt Standard Terms and Conditions is available on request.

Eurofins Environment Testing Australia Pty Ltd trading as Eurofins | mgmt

15.30
15318

CHAIN OF CUSTODY RECORD

LABORATORY USE ONLY

Sydney Laboratory
 Unit F3 Bld F, 16 Mars Rd, Lane Cove West, NSW 2059
 02 9800 8400 EnviroSampleNSW@eurofins.com

Brisbane Laboratory
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Perth Laboratory
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 08 9251 9600 EnviroSampleWA@eurofins.com

Melbourne Laboratory
 2 Kingston Town Close, Cheltenham, VIC 3166
 03 9564 5900 EnviroSampleVIC@eurofins.com

Company	Ramboll	Project No	31900780	Project Manager	Stephen Maxwell	Sampler(s)	AC
Address	50 Glebe Road the Junction	Project Name		EDD Format (SS44, EQUIS)	Excel and PDF	Handed over by	SM
Contact Name	Stephen Maxwell	Analyses	Lead			Email for Invoice	smaxwell@ramboll.com
Phone No						Email for Results	asia@ac-accounts@ramboll.com smaxwell@ramboll.com blackwell@ramboll.com rcondon@ramboll.com shyde@ramboll.com
Special Directions						Turnaround Time (TAT)	Requirements (other will be taken from task)
Purchase Order							<input type="checkbox"/> Overnight (Sam) <input type="checkbox"/> 1 Day* <input type="checkbox"/> 2 Day* <input type="checkbox"/> 3 Day* <input type="checkbox"/> 5 Day* <input type="checkbox"/> Other (*Structures apply)
Quote ID No	1898138AMM_1	Client Sample ID	10/4/20	Sampled Date/Time (dd/mm/yy hh:mm)	Water	Matrix (Solid (S) Water (W))	1L Plastic 250mL Plastic 125mL Plastic 200mL Amber Glass 40mL VOA vial 500mL PFAS Bottle Jar (Glass or HDPE) Other (Asbestos AS4964, WA Guidelines)

No	Client Sample ID	Sampled Date/Time (dd/mm/yy hh:mm)	Matrix (Solid (S) Water (W))	M13 (Al, As, Ba, Be, Cd, Cr, Co, Cu, Fe, Pb, Mn, Hg, Ni, Zn) total	M13 (Al, As, Ba, Be, Cd, Cr, Co, Cu, Fe, Pb, Mn, Hg, Ni, Zn) dissolved
1	001_0104/20	10/4/20	Water	X	X
2	T01_0104/20	10/4/20	Water	X	X
3					
4					
5					
6					
7					
8					
9					
10					
Total Counts				2	2

Method of Shipment	<input type="checkbox"/> Courier #	<input type="checkbox"/> Hand Delivered	<input type="checkbox"/> Postal	<input type="checkbox"/> Name	<input type="checkbox"/> Signature	<input type="checkbox"/> Date	<input type="checkbox"/> Time
Eurofins Ingt Laboratory Use Only	Received By: <i>[Signature]</i>	Received By: <i>[Signature]</i>	Signature: <i>[Signature]</i>	Signature: <i>[Signature]</i>	Date: <i>11/11</i>	Date: <i>11/11</i>	Time: <i>15:58</i>
Submission of samples to the laboratory will be deemed as acceptance of Eurofins Ingt Standard Terms and Conditions unless agreed otherwise. A copy of Eurofins Ingt Standard Terms and Conditions is available on request.							

Eurofins Environment Testing Australia Pty Ltd trading as Eurofins Ingt

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Phone : +61 2 9900 8400
NATA # 1261 Site # 18217

Brisbane

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NATA # 1261 Site # 20794

Perth

2/91 Leach Highway
Kewdale WA 6105
Phone : +61 8 9251 9600
NATA # 1261 Site # 23736

Sample Receipt Advice

Company name: **Ramboll Australia Pty Ltd**

Contact name: Stephen Maxwell

Project ID: 318000780

COC number: Not provided

Turn around time: 5 Day

Date/Time received: Apr 9, 2020 6:14 PM

Eurofins reference: **713318**

Sample information

- A detailed list of analytes logged into our LIMS, is included in the attached summary table.
- All samples have been received as described on the above COC.
- COC has been completed correctly.
- Attempt to chill was evident.
- Appropriately preserved sample containers have been used.
- All samples were received in good condition.
- Samples have been provided with adequate time to commence analysis in accordance with the relevant holding times.
- Appropriate sample containers have been used.
- Sample containers for volatile analysis received with zero headspace.
- Split sample sent to requested external lab.
- Some samples have been subcontracted.
- N/A Custody Seals intact (if used).

Notes

Received only total metals bottle for R01_GW_020420 sample - filtered metals analysis cancelled. Samples; T02_020420 (Jar) and T01_01/04/20 (Metals Bottle) sent to ALS.

Contact notes

If you have any questions with respect to these samples please contact:

Andrew Black on Phone : (+61) 2 9900 8490 or by e.mail: AndrewBlack@eurofins.com

Results will be delivered electronically via e.mail to Stephen Maxwell - smaxwell@ramboll.com.

Note: A copy of these results will also be delivered to the general Ramboll Australia Pty Ltd email address.

Australia

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web : www.eurofins.com.au

e.mail : EnviroSales@eurofins.com

Company Name: Ramboll Australia Pty Ltd
Address: Level 3/100 Pacific Highway
North Sydney
NSW 2060

Order No.:
Report #: 713318
Phone: 02 9954 8118
Fax: 02 9954 8150

Received: Apr 9, 2020 6:14 PM
Due: Apr 20, 2020
Priority: 5 Day
Contact Name: Stephen Maxwell

Project Name:
Project ID: 318000780

Eurofins Analytical Services Manager : Andrew Black

Sample Detail				Aluminium	Aluminium (filtered)	Arsenic	Arsenic (filtered)	Barium	Barium (filtered)	Beryllium	Beryllium (filtered)	Cadmium	Cadmium (filtered)	Chromium	Chromium (filtered)	Cobalt	Cobalt (filtered)	Copper	Copper (filtered)	Lead	Lead (filtered)	Manganese	Manganese (filtered)	Mercury	Mercury (filtered)	Nickel	Nickel (filtered)	Zinc	Zinc (filtered)	Moisture Set
Melbourne Laboratory - NATA Site # 1254 & 14271																														
Sydney Laboratory - NATA Site # 18217				X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X
Brisbane Laboratory - NATA Site # 20794																														
Perth Laboratory - NATA Site # 23736																														
10	D01_01/04/20	Apr 02, 2020	Water	S20-Ap16805	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	
Test Counts				7	6	7	6	7	6	7	6	7	6	7	6	7	6	7	6	10	6	7	6	7	6	7	6	7	6	1

Ramboll Environ Australia Pty Ltd
 Level 3/100 Pacific Highway
 North Sydney
 NSW 2060



NATA Accredited
Accreditation Number 1261
Site Number 18217

Accredited for compliance with ISO/IEC 17025 – Testing
 The results of the tests, calibrations and/or
 measurements included in this document are traceable
 to Australian/national standards.

Attention: **Stephen Maxwell**

Report **713318-S**
 Project name
 Project ID **318000780**
 Received Date **Apr 09, 2020**

Client Sample ID			D02_020420
Sample Matrix			Soil
Eurofins Sample No.			S20-Ap16802
Date Sampled			Apr 02, 2020
Test/Reference	LOR	Unit	
Heavy Metals			
Lead	5	mg/kg	64
% Moisture	1	%	20

Sample History

Where samples are submitted/analysed over several days, the last date of extraction and analysis is reported.

A recent review of our LIMS has resulted in the correction or clarification of some method identifications. Due to this, some of the method reference information on reports has changed. However, no substantive change has been made to our laboratory methods, and as such there is no change in the validity of current or previous results.

If the date and time of sampling are not provided, the Laboratory will not be responsible for compromised results should testing be performed outside the recommended holding time.

Description

Heavy Metals

- Method: LTM-MET-3040 Metals in Waters, Soils & Sediments by ICP-MS

% Moisture

- Method: LTM-GEN-7080 Moisture

Testing Site

Sydney

Sydney

Extracted

Apr 14, 2020

Apr 09, 2020

Holding Time

180 Days

14 Days

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Phone : 0800 856 450
IANZ # 1290

Company Name: Ramboll Australia Pty Ltd
Address: Level 3/100 Pacific Highway
North Sydney
NSW 2060

Order No.:
Report #: 713318
Phone: 02 9954 8118
Fax: 02 9954 8150

Received: Apr 9, 2020 6:14 PM
Due: Apr 20, 2020
Priority: 5 Day
Contact Name: Stephen Maxwell

Project Name:
Project ID: 318000780

Eurofins Analytical Services Manager : Andrew Black

Sample Detail						Aluminium	Aluminium (filtered)	Arsenic	Arsenic (filtered)	Barium	Barium (filtered)	Beryllium	Beryllium (filtered)	Cadmium	Cadmium (filtered)	Chromium	Chromium (filtered)	Cobalt	Cobalt (filtered)	Copper	Copper (filtered)	Lead	Lead (filtered)	Manganese	Manganese (filtered)	Mercury	Mercury (filtered)	Nickel	Nickel (filtered)	Zinc	Zinc (filtered)	Moisture Set		
Melbourne Laboratory - NATA Site # 1254 & 14271																																		
Sydney Laboratory - NATA Site # 18217						X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	
Brisbane Laboratory - NATA Site # 20794																																		
Perth Laboratory - NATA Site # 23736																																		
External Laboratory																																		
No	Sample ID	Sample Date	Sampling Time	Matrix	LAB ID																													
1	MW1	Apr 02, 2020		Water	S20-Ap16796	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X			
2	MW2	Apr 02, 2020		Water	S20-Ap16797	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X			
3	MW3	Apr 02, 2020		Water	S20-Ap16798	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X			
4	MW4	Apr 02, 2020		Water	S20-Ap16799	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X			
5	GW053976	Apr 02, 2020		Water	S20-Ap16800	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X			
6	R01_GW_020420	Apr 02, 2020		Water	S20-Ap16801	X		X		X		X		X		X		X		X		X		X		X		X						
7	D02_020420	Apr 02, 2020		Soil	S20-Ap16802																	X									X			
8	R01_020420	Apr 02, 2020		Water	S20-Ap16803																	X												
9	R02_020420	Apr 02, 2020		Water	S20-Ap16804																	X												

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ABN – 50 005 085 521

web : www.eurofins.com.au

e.mail : EnviroSales@eurofins.com

Company Name: Ramboll Australia Pty Ltd
Address: Level 3/100 Pacific Highway
North Sydney
NSW 2060

Order No.:
Report #: 713318
Phone: 02 9954 8118
Fax: 02 9954 8150

Received: Apr 9, 2020 6:14 PM
Due: Apr 20, 2020
Priority: 5 Day
Contact Name: Stephen Maxwell

Project Name:
Project ID: 318000780

Eurofins Analytical Services Manager : Andrew Black

Sample Detail				Aluminium	Aluminium (filtered)	Arsenic	Arsenic (filtered)	Barium	Barium (filtered)	Beryllium	Beryllium (filtered)	Cadmium	Cadmium (filtered)	Chromium	Chromium (filtered)	Cobalt	Cobalt (filtered)	Copper	Copper (filtered)	Lead	Lead (filtered)	Manganese	Manganese (filtered)	Mercury	Mercury (filtered)	Nickel	Nickel (filtered)	Zinc	Zinc (filtered)	Moisture Set
Melbourne Laboratory - NATA Site # 1254 & 14271																														
Sydney Laboratory - NATA Site # 18217				X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X
Brisbane Laboratory - NATA Site # 20794																														
Perth Laboratory - NATA Site # 23736																														
10	D01_01/04/20	Apr 02, 2020		Water	S20-Ap16805	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	
Test Counts				7	6	7	6	7	6	7	6	7	6	7	6	7	6	7	6	10	6	7	6	7	6	7	6	7	6	1

Internal Quality Control Review and Glossary
General

- Laboratory QC results for Method Blanks, Duplicates, Matrix Spikes, and Laboratory Control Samples follows guidelines delineated in the National Environment Protection (Assessment of Site Contamination) Measure 1999, as amended May 2013 and are included in this QC report where applicable. Additional QC data may be available on request.
- All soil/sediment/solid results are reported on a dry basis, unless otherwise stated.
- All biota/food results are reported on a wet weight basis on the edible portion, unless otherwise stated.
- Actual LORs are matrix dependant. Quoted LORs may be raised where sample extracts are diluted due to interferences.
- Results are uncorrected for matrix spikes or surrogate recoveries except for PFAS compounds.
- SVOC analysis on waters are performed on homogenised, unfiltered samples, unless noted otherwise.
- Samples were analysed on an 'as received' basis.
- Information identified on this report with blue colour, indicates data provided by customer, that may have an impact on the results.
- This report replaces any interim results previously issued.

Holding Times

Please refer to 'Sample Preservation and Container Guide' for holding times (QS3001).

For samples received on the last day of holding time, notification of testing requirements should have been received at least 6 hours prior to sample receipt deadlines as stated on the SRA.

If the Laboratory did not receive the information in the required timeframe, and regardless of any other integrity issues, suitably qualified results may still be reported.

Holding times apply from the date of sampling, therefore compliance to these may be outside the laboratory's control.

For VOCs containing vinyl chloride, styrene and 2-chloroethyl vinyl ether the holding time is 7 days however for all other VOCs such as BTEX or C6-10 TRH then the holding time is 14 days.

****NOTE:** pH duplicates are reported as a range NOT as RPD

Units

mg/kg: milligrams per kilogram

mg/L: milligrams per litre

ug/L: micrograms per litre

ppm: Parts per million

ppb: Parts per billion

%: Percentage

org/100mL: Organisms per 100 millilitres

NTU: Nephelometric Turbidity Units

MPN/100mL: Most Probable Number of organisms per 100 millilitres

Terms

Dry	Where a moisture has been determined on a solid sample the result is expressed on a dry basis.
LOR	Limit of Reporting.
SPIKE	Addition of the analyte to the sample and reported as percentage recovery.
RPD	Relative Percent Difference between two Duplicate pieces of analysis.
LCS	Laboratory Control Sample - reported as percent recovery.
CRM	Certified Reference Material - reported as percent recovery.
Method Blank	In the case of solid samples these are performed on laboratory certified clean sands and in the case of water samples these are performed on de-ionised water.
Surr - Surrogate	The addition of a like compound to the analyte target and reported as percentage recovery.
Duplicate	A second piece of analysis from the same sample and reported in the same units as the result to show comparison.
USEPA	United States Environmental Protection Agency
APHA	American Public Health Association
TCLP	Toxicity Characteristic Leaching Procedure
COC	Chain of Custody
SRA	Sample Receipt Advice
QSM	US Department of Defense Quality Systems Manual Version 5.3
CP	Client Parent - QC was performed on samples pertaining to this report
NCP	Non-Client Parent - QC performed on samples not pertaining to this report, QC is representative of the sequence or batch that client samples were analysed within.
TEQ	Toxic Equivalency Quotient

QC - Acceptance Criteria

RPD Duplicates: Global RPD Duplicates Acceptance Criteria is 30% however the following acceptance guidelines are equally applicable:

Results <10 times the LOR : No Limit

Results between 10-20 times the LOR : RPD must lie between 0-50%

Results >20 times the LOR : RPD must lie between 0-30%

Surrogate Recoveries: Recoveries must lie between 20-130% Phenols & 50-150% PFASs

PFAS field samples that contain surrogate recoveries in excess of the QC limit designated in QSM 5.3 where no positive PFAS results have been reported have been reviewed and no data was affected.

WA DWER (n=10): PFBA, PFPeA, PFHxA, PFHpA, PFOA, PFBS, PFHxS, PFOS, 6:2 FTSA, 8:2 FTSA

QC Data General Comments

- Where a result is reported as a less than (<), higher than the nominated LOR, this is due to either matrix interference, extract dilution required due to interferences or contaminant levels within the sample, high moisture content or insufficient sample provided.
- Duplicate data shown within this report that states the word "BATCH" is a Batch Duplicate from outside of your sample batch, but within the laboratory sample batch at a 1:10 ratio. The Parent and Duplicate data shown is not data from your samples.
- Organochlorine Pesticide analysis - where reporting LCS data, Toxaphene & Chlordane are not added to the LCS.
- Organochlorine Pesticide analysis - where reporting Spike data, Toxaphene is not added to the Spike.
- Total Recoverable Hydrocarbons - where reporting Spike & LCS data, a single spike of commercial Hydrocarbon products in the range of C12-C30 is added and it's Total Recovery is reported in the C10-C14 cell of the Report.
- pH and Free Chlorine analysed in the laboratory - Analysis on this test must begin within 30 minutes of sampling. Therefore laboratory analysis is unlikely to be completed within holding time. Analysis will begin as soon as possible after sample receipt.
- Recovery Data (Spikes & Surrogates) - where chromatographic interference does not allow the determination of Recovery the term "INT" appears against that analyte.
- Polychlorinated Biphenyls are spiked only using Aroclor 1260 in Matrix Spikes and LCS.
- For Matrix Spikes and LCS results a dash " - " in the report means that the specific analyte was not added to the QC sample.
- Duplicate RPDs are calculated from raw analytical data thus it is possible to have two sets of data.

Quality Control Results

Test				Units	Result 1		Acceptance Limits	Pass Limits	Qualifying Code		
Method Blank											
Heavy Metals											
Lead				mg/kg	< 5		5	Pass			
LCS - % Recovery											
Heavy Metals											
Lead				%	98		70-130	Pass			
Test	Lab Sample ID	QA Source	Units	Result 1			Acceptance Limits	Pass Limits	Qualifying Code		
Spike - % Recovery											
Heavy Metals											
Lead				N20-Ap14906	NCP	%	125	70-130	Pass		
Duplicate											
Heavy Metals											
Lead				S20-Ap18561	NCP	mg/kg	64	72	11	30%	Pass
Duplicate											
% Moisture				S20-Ap16538	NCP	%	16	17	6.0	30%	Pass

Comments**Sample Integrity**

Custody Seals Intact (if used)	N/A
Attempt to Chill was evident	No
Sample correctly preserved	Yes
Appropriate sample containers have been used	Yes
Sample containers for volatile analysis received with minimal headspace	Yes
Samples received within HoldingTime	Yes
Some samples have been subcontracted	No

Authorised By

Andrew Black Analytical Services Manager
Gabriele Cordero Senior Analyst-Metal (NSW)

**Glenn Jackson
General Manager**

Final report - this Report replaces any previously issued Report

- Indicates Not Requested

* Indicates NATA accreditation does not cover the performance of this service

Measurement uncertainty of test data is available on request or please [click here](#).

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Ramboll Environ Australia Pty Ltd
 Level 3/100 Pacific Highway
 North Sydney
 NSW 2060



NATA Accredited
Accreditation Number 1261
Site Number 18217

Accredited for compliance with ISO/IEC 17025 – Testing
 The results of the tests, calibrations and/or
 measurements included in this document are traceable
 to Australian/national standards.

Attention: Stephen Maxwell

Report 713318-W
 Project name
 Project ID 318000780
 Received Date Apr 09, 2020

Client Sample ID			MW1 Water S20-Ap16796 Apr 02, 2020	MW2 Water S20-Ap16797 Apr 02, 2020	MW3 Water S20-Ap16798 Apr 02, 2020	MW4 Water S20-Ap16799 Apr 02, 2020
Sample Matrix	LOR	Unit				
Eurofins Sample No.						
Date Sampled						
Test/Reference	LOR	Unit				
Heavy Metals						
Aluminium	0.05	mg/L	2.2	8.6	2.7	2.3
Aluminium (filtered)	0.05	mg/L	< 0.05	< 0.05	< 0.05	< 0.05
Arsenic	0.001	mg/L	0.003	0.010	0.003	0.002
Arsenic (filtered)	0.001	mg/L	< 0.001	< 0.001	< 0.001	< 0.001
Barium	0.02	mg/L	0.17	0.26	0.14	0.13
Barium (filtered)	0.02	mg/L	0.14	0.16	0.08	0.11
Beryllium	0.001	mg/L	< 0.001	< 0.001	0.002	< 0.001
Beryllium (filtered)	0.001	mg/L	< 0.001	< 0.001	< 0.001	< 0.001
Cadmium	0.0002	mg/L	< 0.0002	< 0.0002	0.0006	< 0.0002
Cadmium (filtered)	0.0002	mg/L	< 0.0002	< 0.0002	< 0.0002	< 0.0002
Chromium	0.001	mg/L	0.006	0.019	0.013	0.006
Chromium (filtered)	0.001	mg/L	< 0.001	< 0.001	< 0.001	0.002
Cobalt	0.001	mg/L	0.009	0.014	0.038	0.008
Cobalt (filtered)	0.001	mg/L	0.004	0.006	0.029	0.006
Copper	0.001	mg/L	0.008	0.018	0.015	0.006
Copper (filtered)	0.001	mg/L	< 0.001	< 0.001	< 0.001	< 0.001
Lead	0.001	mg/L	0.011	0.029	0.026	0.006
Lead (filtered)	0.001	mg/L	< 0.001	< 0.001	< 0.001	< 0.001
Manganese	0.005	mg/L	1.1	0.79	2.1	0.71
Manganese (filtered)	0.005	mg/L	0.77	0.60	2.0	0.71
Mercury	0.0001	mg/L	< 0.0001	< 0.0001	< 0.0001	< 0.0001
Mercury (filtered)	0.0001	mg/L	< 0.0001	< 0.0001	< 0.0001	< 0.0001
Nickel	0.001	mg/L	0.006	0.016	0.006	0.008
Nickel (filtered)	0.001	mg/L	0.003	0.003	0.003	0.004
Zinc	0.005	mg/L	0.040	0.15	0.068	0.033
Zinc (filtered)	0.005	mg/L	0.010	0.011	0.022	0.011

Client Sample ID			GW053976	R01_GW_0204 20	R01_020420	R02_020420
Sample Matrix			Water	Water	Water	Water
Eurofins Sample No.			S20-Ap16800	S20-Ap16801	S20-Ap16803	S20-Ap16804
Date Sampled			Apr 02, 2020	Apr 02, 2020	Apr 02, 2020	Apr 02, 2020
Test/Reference	LOR	Unit				
Heavy Metals						
Aluminium	0.05	mg/L	< 0.05	< 0.05	-	-
Aluminium (filtered)	0.05	mg/L	< 0.05	-	-	-
Arsenic	0.001	mg/L	0.006	< 0.001	-	-
Arsenic (filtered)	0.001	mg/L	0.005	-	-	-
Barium	0.02	mg/L	0.05	< 0.02	-	-
Barium (filtered)	0.02	mg/L	0.05	-	-	-
Beryllium	0.001	mg/L	< 0.001	< 0.001	-	-
Beryllium (filtered)	0.001	mg/L	< 0.001	-	-	-
Cadmium	0.0002	mg/L	0.0003	< 0.0002	-	-
Cadmium (filtered)	0.0002	mg/L	0.0002	-	-	-
Chromium	0.001	mg/L	< 0.001	< 0.001	-	-
Chromium (filtered)	0.001	mg/L	< 0.001	-	-	-
Cobalt	0.001	mg/L	< 0.001	< 0.001	-	-
Cobalt (filtered)	0.001	mg/L	< 0.001	-	-	-
Copper	0.001	mg/L	0.004	< 0.001	-	-
Copper (filtered)	0.001	mg/L	0.003	-	-	-
Lead	0.001	mg/L	0.008	< 0.001	< 0.001	< 0.001
Lead (filtered)	0.001	mg/L	0.005	-	-	-
Manganese	0.005	mg/L	0.020	< 0.005	-	-
Manganese (filtered)	0.005	mg/L	0.020	-	-	-
Mercury	0.0001	mg/L	< 0.0001	< 0.0001	-	-
Mercury (filtered)	0.0001	mg/L	< 0.0001	-	-	-
Nickel	0.001	mg/L	< 0.001	< 0.001	-	-
Nickel (filtered)	0.001	mg/L	< 0.001	-	-	-
Zinc	0.005	mg/L	0.29	< 0.005	-	-
Zinc (filtered)	0.005	mg/L	0.27	-	-	-

Client Sample ID			D01_01/04/20
Sample Matrix			Water
Eurofins Sample No.			S20-Ap16805
Date Sampled			Apr 02, 2020
Test/Reference	LOR	Unit	
Heavy Metals			
Aluminium	0.05	mg/L	< 0.05
Aluminium (filtered)	0.05	mg/L	< 0.05
Arsenic	0.001	mg/L	< 0.001
Arsenic (filtered)	0.001	mg/L	< 0.001
Barium	0.02	mg/L	< 0.02
Barium (filtered)	0.02	mg/L	< 0.02
Beryllium	0.001	mg/L	< 0.001
Beryllium (filtered)	0.001	mg/L	< 0.001
Cadmium	0.0002	mg/L	< 0.0002
Cadmium (filtered)	0.0002	mg/L	< 0.0002
Chromium	0.001	mg/L	< 0.001
Chromium (filtered)	0.001	mg/L	< 0.001
Cobalt	0.001	mg/L	< 0.001
Cobalt (filtered)	0.001	mg/L	< 0.001

Client Sample ID			D01_01/04/20
Sample Matrix			Water
Eurofins Sample No.			S20-Ap16805
Date Sampled			Apr 02, 2020
Test/Reference	LOR	Unit	
Heavy Metals			
Copper	0.001	mg/L	< 0.001
Copper (filtered)	0.001	mg/L	< 0.001
Iron	0.05	mg/L	< 0.05
Iron (filtered)	0.05	mg/L	< 0.05
Lead	0.001	mg/L	< 0.001
Lead (filtered)	0.001	mg/L	< 0.001
Manganese	0.005	mg/L	< 0.005
Manganese (filtered)	0.005	mg/L	< 0.005
Mercury	0.0001	mg/L	< 0.0001
Mercury (filtered)	0.0001	mg/L	< 0.0001
Nickel	0.001	mg/L	< 0.001
Nickel (filtered)	0.001	mg/L	< 0.001
Zinc	0.005	mg/L	0.057
Zinc (filtered)	0.005	mg/L	0.048

Sample History

Where samples are submitted/analysed over several days, the last date of extraction and analysis is reported. A recent review of our LIMS has resulted in the correction or clarification of some method identifications. Due to this, some of the method reference information on reports has changed. However, no substantive change has been made to our laboratory methods, and as such there is no change in the validity of current or previous results.

If the date and time of sampling are not provided, the Laboratory will not be responsible for compromised results should testing be performed outside the recommended holding time.

Description	Testing Site	Extracted	Holding Time
Heavy Metals - Method: LTM-MET-3040 Metals in Waters, Soils & Sediments by ICP-MS	Sydney	Apr 15, 2020	180 Days
Heavy Metals (filtered) - Method: LTM-MET-3040 Metals in Waters, Soils & Sediments by ICP-MS	Sydney	Apr 15, 2020	180 Days
Mobil Metals : Metals M15 - Method: LTM-MET-3040 Metals in Waters, Soils & Sediments by ICP-MS	Sydney	Apr 14, 2020	28 Days

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Site # 1254 & 14271

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NATA # 1261 Site # 20794

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Rolleston, Christchurch 7675
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IANZ # 1290

Company Name:	Ramboll Australia Pty Ltd	Order No.:		Received:	Apr 9, 2020 6:14 PM
Address:	Level 3/100 Pacific Highway North Sydney NSW 2060	Report #:	713318	Due:	Apr 20, 2020
Project Name:		Phone:	02 9954 8118	Priority:	5 Day
Project ID:	318000780	Fax:	02 9954 8150	Contact Name:	Stephen Maxwell

Eurofins Analytical Services Manager : Andrew Black

Sample Detail						Aluminium	Aluminium (filtered)	Arsenic	Arsenic (filtered)	Barium	Barium (filtered)	Beryllium	Beryllium (filtered)	Cadmium	Cadmium (filtered)	Chromium	Chromium (filtered)	Cobalt	Cobalt (filtered)	Copper	Copper (filtered)	Lead	Lead (filtered)	Manganese	Manganese (filtered)	Mercury	Mercury (filtered)	Nickel	Nickel (filtered)	Zinc	Zinc (filtered)	Moisture Set	
Melbourne Laboratory - NATA Site # 1254 & 14271																																	
Sydney Laboratory - NATA Site # 18217						X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X
Brisbane Laboratory - NATA Site # 20794																																	
Perth Laboratory - NATA Site # 23736																																	
External Laboratory																																	
No	Sample ID	Sample Date	Sampling Time	Matrix	LAB ID																												
1	MW1	Apr 02, 2020		Water	S20-Ap16796	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X			
2	MW2	Apr 02, 2020		Water	S20-Ap16797	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X			
3	MW3	Apr 02, 2020		Water	S20-Ap16798	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X			
4	MW4	Apr 02, 2020		Water	S20-Ap16799	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X			
5	GW053976	Apr 02, 2020		Water	S20-Ap16800	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X			
6	R01_GW_020420	Apr 02, 2020		Water	S20-Ap16801	X		X		X		X		X		X		X		X		X		X		X		X					
7	D02_020420	Apr 02, 2020		Soil	S20-Ap16802																	X									X		
8	R01_020420	Apr 02, 2020		Water	S20-Ap16803																	X											
9	R02_020420	Apr 02, 2020		Water	S20-Ap16804																	X											

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e.mail : EnviroSales@eurofins.com

Company Name: Ramboll Australia Pty Ltd
Address: Level 3/100 Pacific Highway
North Sydney
NSW 2060

Order No.:
Report #: 713318
Phone: 02 9954 8118
Fax: 02 9954 8150

Received: Apr 9, 2020 6:14 PM
Due: Apr 20, 2020
Priority: 5 Day
Contact Name: Stephen Maxwell

Project Name:
Project ID: 318000780

Eurofins Analytical Services Manager : Andrew Black

Sample Detail				Aluminium	Aluminium (filtered)	Arsenic	Arsenic (filtered)	Barium	Barium (filtered)	Beryllium	Beryllium (filtered)	Cadmium	Cadmium (filtered)	Chromium	Chromium (filtered)	Cobalt	Cobalt (filtered)	Copper	Copper (filtered)	Lead	Lead (filtered)	Manganese	Manganese (filtered)	Mercury	Mercury (filtered)	Nickel	Nickel (filtered)	Zinc	Zinc (filtered)	Moisture Set
Melbourne Laboratory - NATA Site # 1254 & 14271																														
Sydney Laboratory - NATA Site # 18217				X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X
Brisbane Laboratory - NATA Site # 20794																														
Perth Laboratory - NATA Site # 23736																														
10	D01_01/04/20	Apr 02, 2020		Water	S20-Ap16805	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	
Test Counts				7	6	7	6	7	6	7	6	7	6	7	6	7	6	7	6	10	6	7	6	7	6	7	6	7	6	1

Internal Quality Control Review and Glossary
General

- Laboratory QC results for Method Blanks, Duplicates, Matrix Spikes, and Laboratory Control Samples follows guidelines delineated in the National Environment Protection (Assessment of Site Contamination) Measure 1999, as amended May 2013 and are included in this QC report where applicable. Additional QC data may be available on request.
- All soil/sediment/solid results are reported on a dry basis, unless otherwise stated.
- All biota/food results are reported on a wet weight basis on the edible portion, unless otherwise stated.
- Actual LORs are matrix dependant. Quoted LORs may be raised where sample extracts are diluted due to interferences.
- Results are uncorrected for matrix spikes or surrogate recoveries except for PFAS compounds.
- SVOC analysis on waters are performed on homogenised, unfiltered samples, unless noted otherwise.
- Samples were analysed on an 'as received' basis.
- Information identified on this report with blue colour, indicates data provided by customer, that may have an impact on the results.
- This report replaces any interim results previously issued.

Holding Times

Please refer to 'Sample Preservation and Container Guide' for holding times (QS3001).

For samples received on the last day of holding time, notification of testing requirements should have been received at least 6 hours prior to sample receipt deadlines as stated on the SRA.

If the Laboratory did not receive the information in the required timeframe, and regardless of any other integrity issues, suitably qualified results may still be reported.

Holding times apply from the date of sampling, therefore compliance to these may be outside the laboratory's control.

For VOCs containing vinyl chloride, styrene and 2-chloroethyl vinyl ether the holding time is 7 days however for all other VOCs such as BTEX or C6-10 TRH then the holding time is 14 days.

****NOTE:** pH duplicates are reported as a range NOT as RPD

Units

mg/kg: milligrams per kilogram

mg/L: milligrams per litre

ug/L: micrograms per litre

ppm: Parts per million

ppb: Parts per billion

%: Percentage

org/100mL: Organisms per 100 millilitres

NTU: Nephelometric Turbidity Units

MPN/100mL: Most Probable Number of organisms per 100 millilitres

Terms

Dry	Where a moisture has been determined on a solid sample the result is expressed on a dry basis.
LOR	Limit of Reporting.
SPIKE	Addition of the analyte to the sample and reported as percentage recovery.
RPD	Relative Percent Difference between two Duplicate pieces of analysis.
LCS	Laboratory Control Sample - reported as percent recovery.
CRM	Certified Reference Material - reported as percent recovery.
Method Blank	In the case of solid samples these are performed on laboratory certified clean sands and in the case of water samples these are performed on de-ionised water.
Surr - Surrogate	The addition of a like compound to the analyte target and reported as percentage recovery.
Duplicate	A second piece of analysis from the same sample and reported in the same units as the result to show comparison.
USEPA	United States Environmental Protection Agency
APHA	American Public Health Association
TCLP	Toxicity Characteristic Leaching Procedure
COC	Chain of Custody
SRA	Sample Receipt Advice
QSM	US Department of Defense Quality Systems Manual Version 5.3
CP	Client Parent - QC was performed on samples pertaining to this report
NCP	Non-Client Parent - QC performed on samples not pertaining to this report, QC is representative of the sequence or batch that client samples were analysed within.
TEQ	Toxic Equivalency Quotient

QC - Acceptance Criteria

RPD Duplicates: Global RPD Duplicates Acceptance Criteria is 30% however the following acceptance guidelines are equally applicable:

Results <10 times the LOR : No Limit

Results between 10-20 times the LOR : RPD must lie between 0-50%

Results >20 times the LOR : RPD must lie between 0-30%

Surrogate Recoveries: Recoveries must lie between 20-130% Phenols & 50-150% PFASs

PFAS field samples that contain surrogate recoveries in excess of the QC limit designated in QSM 5.3 where no positive PFAS results have been reported have been reviewed and no data was affected.

WA DWER (n=10): PFBA, PFPeA, PFHxA, PFHpA, PFOA, PFBS, PFHxS, PFOS, 6:2 FTSA, 8:2 FTSA

QC Data General Comments

- Where a result is reported as a less than (<), higher than the nominated LOR, this is due to either matrix interference, extract dilution required due to interferences or contaminant levels within the sample, high moisture content or insufficient sample provided.
- Duplicate data shown within this report that states the word "BATCH" is a Batch Duplicate from outside of your sample batch, but within the laboratory sample batch at a 1:10 ratio. The Parent and Duplicate data shown is not data from your samples.
- Organochlorine Pesticide analysis - where reporting LCS data, Toxaphene & Chlordane are not added to the LCS.
- Organochlorine Pesticide analysis - where reporting Spike data, Toxaphene is not added to the Spike.
- Total Recoverable Hydrocarbons - where reporting Spike & LCS data, a single spike of commercial Hydrocarbon products in the range of C12-C30 is added and it's Total Recovery is reported in the C10-C14 cell of the Report.
- pH and Free Chlorine analysed in the laboratory - Analysis on this test must begin within 30 minutes of sampling. Therefore laboratory analysis is unlikely to be completed within holding time. Analysis will begin as soon as possible after sample receipt.
- Recovery Data (Spikes & Surrogates) - where chromatographic interference does not allow the determination of Recovery the term "INT" appears against that analyte.
- Polychlorinated Biphenyls are spiked only using Aroclor 1260 in Matrix Spikes and LCS.
- For Matrix Spikes and LCS results a dash " - " in the report means that the specific analyte was not added to the QC sample.
- Duplicate RPDs are calculated from raw analytical data thus it is possible to have two sets of data.

Quality Control Results

Test	Units	Result 1			Acceptance Limits	Pass Limits	Qualifying Code
Method Blank							
Heavy Metals							
Aluminium	mg/L	< 0.05			0.05	Pass	
Aluminium (filtered)	mg/L	< 0.05			0.05	Pass	
Arsenic	mg/L	< 0.001			0.001	Pass	
Arsenic (filtered)	mg/L	< 0.001			0.001	Pass	
Barium	mg/L	< 0.02			0.02	Pass	
Barium (filtered)	mg/L	< 0.02			0.02	Pass	
Beryllium	mg/L	< 0.001			0.001	Pass	
Beryllium (filtered)	mg/L	< 0.001			0.001	Pass	
Cadmium	mg/L	< 0.0002			0.0002	Pass	
Cadmium (filtered)	mg/L	< 0.0002			0.0002	Pass	
Chromium	mg/L	< 0.001			0.001	Pass	
Chromium (filtered)	mg/L	< 0.001			0.001	Pass	
Cobalt	mg/L	< 0.001			0.001	Pass	
Cobalt (filtered)	mg/L	< 0.001			0.001	Pass	
Copper	mg/L	< 0.001			0.001	Pass	
Copper (filtered)	mg/L	< 0.001			0.001	Pass	
Iron	mg/L	< 0.05			0.05	Pass	
Iron (filtered)	mg/L	< 0.05			0.05	Pass	
Lead	mg/L	< 0.001			0.001	Pass	
Lead (filtered)	mg/L	< 0.001			0.001	Pass	
Manganese	mg/L	< 0.005			0.005	Pass	
Manganese (filtered)	mg/L	< 0.005			0.005	Pass	
Mercury	mg/L	< 0.0001			0.0001	Pass	
Mercury (filtered)	mg/L	< 0.0001			0.0001	Pass	
Nickel	mg/L	< 0.001			0.001	Pass	
Nickel (filtered)	mg/L	< 0.001			0.001	Pass	
Zinc	mg/L	< 0.005			0.005	Pass	
Zinc (filtered)	mg/L	< 0.005			0.005	Pass	
LCS - % Recovery							
Heavy Metals							
Aluminium	%	91			70-130	Pass	
Aluminium (filtered)	%	93			70-130	Pass	
Arsenic	%	105			70-130	Pass	
Arsenic (filtered)	%	109			70-130	Pass	
Barium	%	100			70-130	Pass	
Barium (filtered)	%	102			70-130	Pass	
Beryllium	%	105			70-130	Pass	
Beryllium (filtered)	%	108			70-130	Pass	
Cadmium	%	100			70-130	Pass	
Cadmium (filtered)	%	100			70-130	Pass	
Chromium	%	102			70-130	Pass	
Chromium (filtered)	%	94			70-130	Pass	
Cobalt	%	101			70-130	Pass	
Cobalt (filtered)	%	93			70-130	Pass	
Copper	%	99			70-130	Pass	
Copper (filtered)	%	91			70-130	Pass	
Iron	%	101			70-130	Pass	
Iron (filtered)	%	93			70-130	Pass	
Lead	%	101			70-130	Pass	
Lead (filtered)	%	97			70-130	Pass	

Test			Units	Result 1			Acceptance Limits	Pass Limits	Qualifying Code
Manganese			%	101			70-130	Pass	
Manganese (filtered)			%	96			70-130	Pass	
Mercury			%	111			70-130	Pass	
Mercury (filtered)			%	93			70-130	Pass	
Nickel			%	101			70-130	Pass	
Nickel (filtered)			%	92			70-130	Pass	
Zinc			%	103			70-130	Pass	
Zinc (filtered)			%	97			70-130	Pass	
Test	Lab Sample ID	QA Source	Units	Result 1			Acceptance Limits	Pass Limits	Qualifying Code
Spike - % Recovery									
Heavy Metals				Result 1					
Aluminium	S20-Ap16805	CP	%	86			70-130	Pass	
Aluminium (filtered)	S20-Ap16805	CP	%	94			70-130	Pass	
Arsenic	S20-Ap16805	CP	%	100			70-130	Pass	
Arsenic (filtered)	S20-Ap16805	CP	%	85			70-130	Pass	
Barium	S20-Ap16805	CP	%	96			70-130	Pass	
Barium (filtered)	S20-Ap16805	CP	%	96			70-130	Pass	
Beryllium	S20-Ap16805	CP	%	101			70-130	Pass	
Beryllium (filtered)	S20-Ap16805	CP	%	103			70-130	Pass	
Cadmium	S20-Ap16805	CP	%	97			70-130	Pass	
Cadmium (filtered)	S20-Ap16805	CP	%	100			70-130	Pass	
Chromium	S20-Ap16805	CP	%	96			70-130	Pass	
Chromium (filtered)	S20-Ap16805	CP	%	100			70-130	Pass	
Cobalt	S20-Ap16805	CP	%	96			70-130	Pass	
Cobalt (filtered)	S20-Ap16805	CP	%	103			70-130	Pass	
Copper	S20-Ap16805	CP	%	93			70-130	Pass	
Copper (filtered)	S20-Ap16805	CP	%	99			70-130	Pass	
Iron	S20-Ap16805	CP	%	95			70-130	Pass	
Iron (filtered)	S20-Ap16805	CP	%	90			70-130	Pass	
Lead	S20-Ap16805	CP	%	98			70-130	Pass	
Lead (filtered)	S20-Ap16805	CP	%	102			70-130	Pass	
Manganese	S20-Ap16805	CP	%	96			70-130	Pass	
Manganese (filtered)	S20-Ap16805	CP	%	102			70-130	Pass	
Mercury	S20-Ap16805	CP	%	103			70-130	Pass	
Mercury (filtered)	S20-Ap16805	CP	%	101			70-130	Pass	
Nickel	S20-Ap16805	CP	%	95			70-130	Pass	
Nickel (filtered)	S20-Ap16805	CP	%	103			70-130	Pass	
Zinc	S20-Ap16805	CP	%	97			70-130	Pass	
Zinc (filtered)	S20-Ap16805	CP	%	95			70-130	Pass	
Test	Lab Sample ID	QA Source	Units	Result 1			Acceptance Limits	Pass Limits	Qualifying Code
Duplicate									
Heavy Metals				Result 1	Result 2	RPD			
Aluminium	S20-Ap16796	CP	mg/L	2.2	4.3	64	30%	Fail	Q15
Aluminium (filtered)	S20-Ap09848	NCP	mg/L	< 0.05	< 0.05	<1	30%	Pass	
Arsenic	S20-Ap16796	CP	mg/L	0.003	0.006	70	30%	Fail	Q15
Arsenic (filtered)	S20-Ap09848	NCP	mg/L	< 0.001	< 0.001	<1	30%	Pass	
Barium	S20-Ap16796	CP	mg/L	0.17	0.18	5.0	30%	Pass	
Barium (filtered)	S20-Ap09848	NCP	mg/L	< 0.02	< 0.02	<1	30%	Pass	
Beryllium	S20-Ap16796	CP	mg/L	< 0.001	< 0.001	<1	30%	Pass	
Beryllium (filtered)	S20-Ap09848	NCP	mg/L	< 0.001	< 0.001	<1	30%	Pass	
Cadmium	S20-Ap16796	CP	mg/L	< 0.0002	< 0.0002	<1	30%	Pass	
Cadmium (filtered)	S20-Ap09848	NCP	mg/L	< 0.0002	< 0.0002	<1	30%	Pass	
Chromium	S20-Ap16796	CP	mg/L	0.006	0.009	43	30%	Fail	Q15

Test	Lab Sample ID	QA Source	Units	Result 1	Result 2	RPD	Acceptance Limits	Pass Limits	Qualifying Code
Duplicate									
Heavy Metals				Result 1	Result 2	RPD			
Chromium (filtered)	S20-Ap09848	NCP	mg/L	< 0.001	< 0.001	<1	30%	Pass	
Cobalt	S20-Ap16796	CP	mg/L	0.009	0.010	12	30%	Pass	
Cobalt (filtered)	S20-Ap09848	NCP	mg/L	< 0.001	< 0.001	<1	30%	Pass	
Copper	S20-Ap16796	CP	mg/L	0.008	0.011	33	30%	Fail	Q15
Copper (filtered)	S20-Ap09848	NCP	mg/L	0.002	0.002	1.0	30%	Pass	
Iron	S20-Ap16796	CP	mg/L	4.0	7.7	63	30%	Fail	Q15
Lead	S20-Ap16796	CP	mg/L	0.011	0.014	25	30%	Pass	
Lead (filtered)	S20-Ap09848	NCP	mg/L	< 0.001	< 0.001	<1	30%	Pass	
Manganese	S20-Ap16796	CP	mg/L	1.1	1.1	2.0	30%	Pass	
Manganese (filtered)	S20-Ap09848	NCP	mg/L	0.005	0.005	8.0	30%	Pass	
Mercury	S20-Ap16796	CP	mg/L	< 0.0001	< 0.0001	<1	30%	Pass	
Mercury (filtered)	S20-Ap09848	NCP	mg/L	< 0.0001	< 0.0001	<1	30%	Pass	
Nickel	S20-Ap16796	CP	mg/L	0.006	0.009	28	30%	Pass	
Nickel (filtered)	S20-Ap09848	NCP	mg/L	< 0.001	< 0.001	<1	30%	Pass	
Zinc	S20-Ap16796	CP	mg/L	0.040	0.051	23	30%	Pass	
Zinc (filtered)	S20-Ap09848	NCP	mg/L	0.028	0.030	6.0	30%	Pass	
Duplicate									
Heavy Metals				Result 1	Result 2	RPD			
Aluminium	S20-Ap16800	CP	mg/L	< 0.05	< 0.05	<1	30%	Pass	
Arsenic	S20-Ap16800	CP	mg/L	0.006	0.006	3.0	30%	Pass	
Barium	S20-Ap16800	CP	mg/L	0.05	0.05	3.0	30%	Pass	
Beryllium	S20-Ap16800	CP	mg/L	< 0.001	< 0.001	<1	30%	Pass	
Cadmium	S20-Ap16800	CP	mg/L	0.0003	0.0003	10	30%	Pass	
Chromium	S20-Ap16800	CP	mg/L	< 0.001	< 0.001	<1	30%	Pass	
Cobalt	S20-Ap16800	CP	mg/L	< 0.001	< 0.001	<1	30%	Pass	
Copper	S20-Ap16800	CP	mg/L	0.004	0.004	2.0	30%	Pass	
Iron	S20-Ap16800	CP	mg/L	< 0.05	< 0.05	<1	30%	Pass	
Lead	S20-Ap16800	CP	mg/L	0.008	0.008	3.0	30%	Pass	
Manganese	S20-Ap16800	CP	mg/L	0.020	0.020	1.0	30%	Pass	
Mercury	S20-Ap16800	CP	mg/L	< 0.0001	< 0.0001	<1	30%	Pass	
Nickel	S20-Ap16800	CP	mg/L	< 0.001	< 0.001	<1	30%	Pass	
Zinc	S20-Ap16800	CP	mg/L	0.29	0.27	7.0	30%	Pass	
Duplicate									
Heavy Metals				Result 1	Result 2	RPD			
Iron	S20-Ap10728	NCP	mg/L	0.93	0.94	1.0	30%	Pass	
Iron (filtered)	S20-Ap09848	NCP	mg/L	< 0.05	< 0.05	<1	30%	Pass	

Comments
Sample Integrity

Custody Seals Intact (if used)	N/A
Attempt to Chill was evident	No
Sample correctly preserved	Yes
Appropriate sample containers have been used	Yes
Sample containers for volatile analysis received with minimal headspace	Yes
Samples received within HoldingTime	Yes
Some samples have been subcontracted	No

Qualifier Codes/Comments

Code	Description
Q15	The RPD reported passes Eurofins Environment Testing's QC - Acceptance Criteria as defined in the Internal Quality Control Review and Glossary page of this report.

Authorised By

Andrew Black	Analytical Services Manager
Gabriele Cordero	Senior Analyst-Metal (NSW)


**Glenn Jackson
General Manager**

Final report - this Report replaces any previously issued Report

- Indicates Not Requested

* Indicates NATA accreditation does not cover the performance of this service

Measurement uncertainty of test data is available on request or please [click here](#).

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Sydney Laboratory
 Unit F3 Bld F, 16 Mare Rd, Lane Cove West, NSW 2066
 02 9500 8400 EnviroSampleNSW@eurofins.com

Brisbane Laboratory
 Unit 1, 21 Smallwood Pl, Muramba, QLD 4172
 07 3502 4500 EnviroSampleQLD@eurofins.com

Perth Laboratory
 Unit 2, 91 East Highway, Kewdale WA 6105
 08 9251 9300 EnviroSampleWA@eurofins.com

Melbourne Laboratory
 2 Kingston Town Close, Caledon, VIC 3166
 03 9564 5000 EnviroSampleVIC@eurofins.com

Company Ramboll
Address 50 Glabe Road the Junction
Contact Name Stephen Maxwell
Phone No
Special Directions
Purchase Order
Quote ID No 180813RAMN_1

Project Name 31800780
Project No 31800780
Project Manager Stephen Maxwell
EDD Format (ESdat, EQUIS, Excel and PDF)

Analyses Lead
 (Note: Where metals are requested, please specify "Total" or "Filtered") SUITE code must be used to attract SUITE pricing.

Method of Shipment Courier (#) Hand Delivered Postal
Received By *Calibre* **Signature** *[Signature]* **Date** 21/3/18
Received By **Signature** **Date** **Time** 8:30
Report No 7105371

No	Client Sample ID	Sampled Date/Time (dd/mm/yy hh:mm)	Matrix (Solid (S) Water (W))	Project Name	Project No	Project Manager	Signature	Date	Time
1	MMW01_0.5	18/03/20	Soil	Lead	31800780	Stephen Maxwell			
2	MMW1_1.0	18/03/20	Soil	Lead	31800780	Stephen Maxwell			
3	MMW1_1.5	18/03/20	Soil	Lead	31800780	Stephen Maxwell			
4	MMW1_2.5	18/03/20	Soil	Lead	31800780	Stephen Maxwell			
5	MMW1_3.5	18/03/20	Soil	Lead	31800780	Stephen Maxwell			
8	MMW1_4.5	18/03/20	Soil	Lead	31800780	Stephen Maxwell			
9	MMW2_0-0.05	18/03/20	Soil	Lead	31800780	Stephen Maxwell			
10	MMW2_1.0	18/03/20	Soil	Lead	31800780	Stephen Maxwell			
Total Counts					8				

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 Page 2/4 October 17 Modified by: S. Symons Approved by: T. Calver Approved on: 17 August 2017

Handed over by **AC**
SM
 Email for Invoice: smaxwell@ramboll.com, asiapac-accounts@ramboll.com
 Email for Results: smaxwell@ramboll.com, blackwell@ramboll.com, rcondon@ramboll.com, shvde@ramboll.com
 Turnaround Time (TAT) Requirements (Default will be 5 days if not listed):
 Overnight (3am)*
 1 Day*
 3 Day*
 5 Day*
 Other ()
 *Surcharges apply
 Sample Comments / Dangerous Goods Hazard Warning



CHAIN OF CUSTODY RECORD

AS/NZS 9005:95:921

Sydney Laboratory
 Unit F3 Bldg F, 16 Mars Rd, Lane Cove West, NSW 2096
 02 9900 8200 EnviroSampleNSW@eurofins.com

Brisbane Laboratory
 Unit 1, 21 Smailwood Pl, Murrarie, QLD 4172
 07 3902 4600 EnviroSampleQLD@eurofins.com

Perth Laboratory
 Unit 2, 91 Leach Highway, Kendale WA 6105
 08 9251 9600 EnviroSampleWA@eurofins.com

Melbourne Laboratory
 2 Kingston Town Close, Oakleigh, VIC 3165
 03 8564 3000 EnviroSampleVIC@eurofins.com

Company Ramboll

Address 50 Glebe Road the Junction

Contact Name Stephen Maxwell

Phone No

Special Directions

Purchase Order

Quote ID No 180813RAMN_1

Project No	Project Name	Project Manager	EDD Format (ES&T, EQUIS)	Excel and PDF
318000780		Stephen Maxwell		

Handled over by AC

SM

Sample(s)

Email for Invoice smaxwell@ramboll.com
asiapac-accounts@ramboll.com

Email for Results smaxwell@ramboll.com
jblackwell@ramboll.com
rondon@ramboll.com
shyde@ramboll.com

Turnaround Time (TAT)
 Requirements (client will be 5 days from start)
 Overnight (5am)*
 1 Day*
 3 Day*
 5 Day*
 Other ()
 *Surcharges apply

Sample Comments / Dangerous Goods Hazard Warning

No	Client Sample ID	Sampled Date/Time (dd/mm/yy hh:mm)	Matrix (Soil (S)/Water (W))	Analyses	Project No	Project Name	Project Manager	EDD Format	Excel and PDF	Sample(s)	Handled over by	SM	Sample Comments / Dangerous Goods Hazard Warning
1	MMW2_1.5	18/03/20	Soil	Lead									
2	MMW2_2.5	18/03/20	Soil										
3	MMW2_3.5	18/03/20	Soil										
4	MMW2_4.5	18/03/20	Soil										
5	MMW3_0.0.05	18/03/20	Soil										
8	MMW3_0.5	18/03/20	Soil										
9	MMW3_1.0	18/03/20	Soil										
10	MMW3_1.5	18/03/20	Soil										
Total Counts													
				Lead									

Method of Shipment Courier # Hand Delivered Postal

Received By *Colin* **Signature** *[Signature]* **Date** 21/3/20 **Time** 8:30

Received By **Signature** **Date** **Time** **Temperature** **Report No** 710537

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CHAIN OF CUSTODY RECORD

ABN 50 005 521

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02 9500 8400 EnviroSampleNSW@eurofins.com

Brisbane Laboratory
Unit 1, 21 Smallwood Pl, Murarie, QLD 4172
07 3902 4600 EnviroSampleQLD@eurofins.com

Perth Laboratory
Unit 2, 91 Leach Highway, Kandle WA 6105
08 9251 9600 EnviroSampleWA@eurofins.com

Melbourne Laboratory
2 Kingson Town Close, Oakleigh, VIC 3166
03 8954 5000 EnviroSampleVIC@eurofins.com

Company: **Ramboll** Project No: **318000780** Project Name: **Lead** Project Manager: **Stephen Maxwell** EDD Format: **(ESdat, EQHS)** Excel and PDF: **Stephen Maxwell** Sample(s): **AC** Handed over by: **SM**

Address: **50 Glebe Road the Junction** Project Name: **Lead** EDD Format: **(ESdat, EQHS)** Email for Invoice: **smaxwell@ramboll.com** Email for Results: **asia@pac-accounts@ramboll.com**

Contact Name: **Stephen Maxwell** Analyses: **Lead** Turnaround Time (TAT) Requirements: Overnight (3am)* 1 Day* 2 Day* 3 Day* 5 Day* Other () *Surcharges apply

Phone No: **180813RAMN_1** Quote ID No: **180813RAMN_1** Purchase Order: **180813RAMN_1** Special Directions: **Lead** Client Sample ID: **180813RAMN_1** Sampled Date/Time (dd/mm/yy hh:mm): **18/03/20** Matrix (Soil (S) Water (W)): **Soil**

No	Client Sample ID	Sampled Date/Time (dd/mm/yy hh:mm)	Matrix (Soil (S) Water (W))	Analyses
1	MW3_2.5	18/03/20	Soil	X
2	MW3_3.5	18/03/20	Soil	X
3	MW3_4.5	18/03/20	Soil	X
4	MW4_0-0.05	19/03/20	Soil	X
5	MW4_0.5	19/03/20	Soil	X
8	MW4_1.0	19/03/20	Soil	X
9	MW4_1.5	19/03/20	Soil	X
10	MW4_2.5	19/03/20	Soil	X
Total Counts				8

Method of Shipment: Courier (#) Hand Delivered Postal

Received By: **Cath** Signature: **[Signature]** Date: **27/3** Time: **8:30** Temperature: **710537**

Received By: **[Signature]** Signature: **[Signature]** Date: **27/3** Time: **8:30** Report No: **710537**

Method of Shipment: Courier (#) Hand Delivered Postal

Signature: **[Signature]** Date: **27/3** Time: **8:30** Report No: **710537**



CHAIN OF CUSTODY RECORD

ABN 50 005 085 921

Sydney Laboratory
Unit F3 Bld F, 16 Mars Rd, Lane Cove West, NSW 2066
02 9900 8400 EnviroSampleNSW@eurofins.com

Brisbane Laboratory
Unit 1, 21 Smalwood Pl, Mararie, QLD 4172
07 3902 4600 EnviroSampleQLD@eurofins.com

Perth Laboratory
Unit 2, 91 Leach Highway, Kendale WA 6105
08 9251 9800 EnviroSampleWA@eurofins.com

Melbourne Laboratory
2 Kingston Town Close, Caneleigh VIC 3196
03 8564 5000 EnviroSampleVIC@eurofins.com

Company: Ramboll

Address: 50 Glebe Road the Junction

Contact Name: Stephen Maxwell

Phone No:

Special Directions:

Purchase Order:

Quote ID No: 180813RAMN_1

Project No: 318000780

Project Manager (ES&T, EQUIS):

Stephen Maxwell
Excel and PDF

Sampler(s): AC

SM

Handled over by:

smaxwell@ramboll.com
asiapac-accounts@ramboll.com

Email for Invoice:

smaxwell@ramboll.com
blackwell@ramboll.com
rcondon@ramboll.com
shyde@ramboll.com

blackwell@ramboll.com

Turnaround Time (TAT)
Requirements (results will be 5 days if not listed)

- Overnight (2am)*
- 1 Day* 2 Day*
- 3 Day* 5 Day*
- Other (*Surcharges apply)

Sample Comments / Dangerous Goods Hazard Warning

No	Client Sample ID	Sampled Date/Time (dd/mm/yy hr:mm)	Matrix (Soil (S) Water (W))	Analyses	Project Name	Project Manager (ES&T, EQUIS)	Signature	Date	Time	Temperature
1	MW4_3.5	19/03/20	Soil	Lead						
2	MW4_4.5	19/03/20	Soil							
3	MW5_0.05	19/03/20	Soil							
4	MW5_0.5	19/03/20	Soil							
5	MW5_1.0	19/03/20	Soil							
8	MW5_1.5	19/03/20	Soil							
9	MW5_3.5	19/03/20	Soil							
10	MW5_4.5	19/03/20	Soil							
Total Counts										

Method of Shipment: Courier # Hand Delivered Postal

Received By: *Carl* Signature: *[Signature]* Date: *21/3/20* Time: *8:30* Temperature: *11.0531*

Received By: *[Signature]* Signature: Date: Time: Temperature:

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CHAIN OF CUSTODY RECORD

ABN 50 005 066 521

Sydney Laboratory
Unit F3 Bld F, 16 Mars Rd, Lane Cove West, NSW 2066
02 9900 8400 EnviroSampleNSW@eurofins.com

Brisbane Laboratory
Unit 1, 21 Shalwood Pl, Murrumbidgee, QLD 4172
07 3902 4600 EnviroSampleQLD@eurofins.com

Perth Laboratory
Unit 2, 91 Leach Highway, Kewdale WA 6105
08 9251 9800 EnviroSampleWA@eurofins.com

Melbourne Laboratory
2 Kingston Town Close, Oakleigh, VIC 3166
03 8964 5000 EnviroSampleVIC@eurofins.com

Company Ramboll **Project Name** 318000780

Address 50 Glebe Road the Junction **Project Manager** Stephen Maxwell

Contact Name Stephen Maxwell **EDD Format (ESdat, EQUIS, Excel and PDF)**

Phone No **Analyses** Lead

Special Directions

Purchase Order **Quote ID No** 180813RAMM_1

Client Sample ID **Sampled Date/Time (dd/mm/yy hh:mm)** **Matrix (Solid (S) Water (W))**

No	Client Sample ID	Sampled Date/Time (dd/mm/yy hh:mm)	Matrix (Solid (S) Water (W))
1	MW6_0.0E	19/03/20	Soil
2	MW6_0.5	19/03/20	Soil
3	MW6_1.0	19/03/20	Soil
4	MW6_1.5	19/03/20	Soil
5	MW6_2.5	19/03/20	Soil
8	MW6_3.5	19/03/20	Soil
9	MW6_4.5	19/03/20	Soil
10	MW7_0.0E	20/03/20	Soil
Total Counts			8

Method of Shipment Courier # Hand Delivered Postal **Name** **Signature**

Laboratory Use Only **Received By** **Received By** **Signature** **Date** **Time** **Signature** **Date** **Time** **Report No**

Handed over by **SM**

Email for Invoice smaxwell@ramboll.com
asianac-accounts@ramboll.com

Email for Results |blackwell@ramboll.com
rondon@ramboll.com
shyde@ramboll.com

Turnaround Time (TAT)
Requirements (client will be 8 days if not ticked)

Overnight (Sam)*
 1 Day* 2 Day*
 3 Day* 5 Day*
 Other () * Such charges apply

Sample Comments / Dangerous Goods Hazard Warning

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Page 1 of 3 020310 Modified by: B. Simpson Approved by: J. Lambert Approved on: 17 August 2017



CHAIN OF CUSTODY RECORD

ABN 50 015 065 521

Sydney Laboratory
Unit 13 Bld F, 10 Mars Rd, Lane Cove West, NSW 2066
02 9900 8900 EnviroSampleNSW@eurofins.com

Brisbane Laboratory
Unit 1, 21 Snailwood Pl, Murrarie, QLD 4172
07 3902 4800 EnviroSampleQLD@eurofins.com

Perth Laboratory
Unit 2, 91 Leach Highway, Kewdale WA 6105
08 9251 9600 EnviroSampleWA@eurofins.com

Melbourne Laboratory
2 Kingston Town Close, Oakleigh, VIC 3166
03 8964 5000 EnviroSampleVIC@eurofins.com

Company Ramboll

Address 50 Glebe Road the Junction

Contact Name Stephen Maxwell

Phone No

Special Directions

Purchase Order

Quote ID No 180813RAMM_1

Project No	Project Name	Project Manager (ES&T, EQUIS)	Excel and PDF
318000780			Stephen Maxwell

Analyses
(Note: Where metals are requested, please specify "Total" or "Filtered") SUITE code must be used to attract SUITE pricing

Lead

Sampler(s) AC

Handed over by SIM

Email for Invoice smaxwell@ramboll.com
asiapac-accounts@ramboll.com

Email for Results smaxwell@ramboll.com
jblackwell@ramboll.com
rcondon@ramboll.com
shyde@ramboll.com

Turnaround Time (TAT)
Requirements (clients will be 4 days if not listed)

Overnight (9am)*
 1 Day*
 3 Day*
 5 Day
 Other ()

*Surcharges apply

Sample Comments / Dangerous Goods Hazard Warning

No	Client Sample ID	Sampled Date/Time (dd/mm/yy hh:mm)	Matrix (Soil (S) Water (W))
1	MW7_0.5	20/03/20	Soil
2	MW7_1.0	20/03/20	Soil
3	MW7_1.5	20/03/20	Soil
4	MW7_2.5	20/03/20	Soil
5	MW7_3.5	20/03/20	Soil
8	MW7_4.5	20/03/20	Soil
9	WINCH N	18/03/20	Soil
10	WINCH S	18/03/20	Soil
Total Counts			8

Method of Shipment	Courier #	Hand Delivered	Postal	Name	Signature	Date	Time
<input type="checkbox"/> Courier #		<input type="checkbox"/> Hand Delivered	<input type="checkbox"/> Postal				
Eurofins Ingt	Received By	SVD BNE MEL PER ADL NTL DRW		Signature	Date	Time	Temperature
Laboratory Use Only	Received By	SVD BNE MEL PER ADL NTL DRW		Signature	Date	Time	Report No

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Page 1 of 3 CS2009 Ingt Modified by: Dr. R. Simpson. Approved by: I. Sakarini. Approved on: 17 August 2017



CHAIN OF CUSTODY RECORD

ABN 50 005 685 521

Sydney Laboratory
Unit F3 Bld F, 16 Mars Rd, Lane Cove West, NSW 2066
02 9900 9400 EnviroSampleNSW@eurofins.com

Brisbane Laboratory
Unit 1, 21 Smallwood Pl, Murarie, QLD 4172
07 3902 4500 EnviroSampleQLD@eurofins.com

Perth Laboratory
Unit 2, 91 Leach Highway, Kewdale WA 6105
08 9251 9500 EnviroSampleW@eurofins.com

Melbourne Laboratory
2 Kingston Town Close, Oakleigh, VIC 3166
03 8964 5000 EnviroSampleVic@eurofins.com

Company	Ramboll	Project No	318000780	Project Manager	Stephen Maxwell	Sample(s)	AC
---------	---------	------------	-----------	-----------------	-----------------	-----------	----

Address	50 Globe Road the Junction	Project Name	Lead	EDD Format (Estat, EQUIS)	Excel and PDF	Handed over by	SM
---------	----------------------------	--------------	------	---------------------------	---------------	----------------	----

Contact Name	Stephen Maxwell	Analyses	Lead	Signature	Signature	Email for Invoice	smaxwell@ramboll.com asia@ac-accounts@ramboll.com
--------------	-----------------	----------	------	-----------	-----------	-------------------	--

Phone No		Quote ID No	180813RAMANL_1	Signature	Signature	Email for Results	smaxwell@ramboll.com jblackwell@ramboll.com rcondon@ramboll.com shyde@ramboll.com
----------	--	-------------	----------------	-----------	-----------	-------------------	--

Special Directions		Client Sample ID		Signature	Signature	Turnaround Time (TAT) Requirements (Overall will be 5 days, not tied)	<input type="checkbox"/> Overnight (9am)* <input type="checkbox"/> 1 Day* <input type="checkbox"/> 2 Day* <input checked="" type="checkbox"/> 3 Day* <input type="checkbox"/> 5 Day* <input type="checkbox"/> Other () * Surcharges apply
--------------------	--	------------------	--	-----------	-----------	--	---

Purchase Order		Sampled Date/Time (dd/mm/yy hh:mm)		Signature	Signature	Sample Comments / Dangerous Goods Hazard Warning	
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Quote ID No	180813RAMANL_1	Matrix (Solid (S) Water (W))		Signature	Signature		
-------------	----------------	------------------------------	--	-----------	-----------	--	--

No	Client Sample ID	Sampled Date/Time (dd/mm/yy hh:mm)	Matrix (Solid (S) Water (W))				
----	------------------	------------------------------------	------------------------------	--	--	--	--

1	DD1_190320	19/03/20	Soil	X			
---	------------	----------	------	---	--	--	--

2	DD1_200320	20/03/20	Soil	X			
---	------------	----------	------	---	--	--	--

3	DD1_23/3/20	23/03/20	Soil	X			
---	-------------	----------	------	---	--	--	--

4	DD1_24/3/20	24/03/20	Soil	X			
---	-------------	----------	------	---	--	--	--

5	DD2_200320	20/03/20	Soil	X			
---	------------	----------	------	---	--	--	--

8	DD2_24/3/20	24/3/20	Soil	X			
---	-------------	---------	------	---	--	--	--

9	DD3_24/3/20	24/3/20	Soil	X			
---	-------------	---------	------	---	--	--	--

10	MMW01_0.05	18/3/20	Soil	X			
----	------------	---------	------	---	--	--	--

Total Counts				8			
--------------	--	--	--	---	--	--	--

Method of Shipment	<input type="checkbox"/> Courier #) <input type="checkbox"/> Hand Delivered	<input type="checkbox"/> Postal	Name	Signature	Date	Time	Temperature
--------------------	--	---------------------------------	------	-----------	------	------	-------------

Laboratory Use Only	Received By	Received By	Signature	Signature	Date	Time	Report No
---------------------	-------------	-------------	-----------	-----------	------	------	-----------

Submission of samples to the laboratory will be deemed as acceptance of Eurofins | mgf Standard Terms and Conditions unless agreed otherwise. A copy of Eurofins | mgf Standard Terms and Conditions is available on request.
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 Page 1 of 9 GEN005 3/17 Modified by: J.S. 4/2019 Approved by: J. Lawson Approved Date: 17 August 2017



CHAIN OF CUSTODY RECORD

ABN 50 065 085 521

Sydney Laboratory
Unit F3 Bldg, 16 Mars Rd, Lane Cove West, NSW 2056
02 9900 8400 EnviroSampleNSW@eurofins.com

Brisbane Laboratory
Unit 1, 21 Smallwood Pl, Murarie, QLD 4172
07 3902 4600 EnviroSampleQLD@eurofins.com

Perth Laboratory
Unit 2, 91 Leach Highway, Kendaale WA 6105
08 9251 9800 EnviroSampleWA@eurofins.com

Melbourne Laboratory
2 Kingsley Town Close, Oakleigh, VIC 3166
03 9594 5000 EnviroSampleVic@eurofins.com

Company: **Ramboll** Project Name: **318000780** Project Manager: **Stephen Maxwell** EDD Format: **Excel and PDF** Sampler(s): **AC** Handed over by: **SM**

Address: **50 Glebe Road the Junction** Project Name: **M13 (Al, As, Ba, Be, Cd, Cr, Co, Cu, Fe, Pb, Mn, Hg, Ni, Zn) total** EDD Format: **Excel and PDF** Sampler(s): **AC** Handed over by: **SM**

Contact Name: **Stephen Maxwell** Project Name: **M13 (Al, As, Ba, Be, Cd, Cr, Co, Cu, Fe, Pb, Mn, Hg, Ni, Zn) dissolved** EDD Format: **Excel and PDF** Sampler(s): **AC** Handed over by: **SM**

Phone No: _____ Project Name: _____ EDD Format: _____ Sampler(s): _____ Handed over by: _____

Special Directions: _____ Project Name: _____ EDD Format: _____ Sampler(s): _____ Handed over by: _____

Purchase Order: _____ Project Name: _____ EDD Format: _____ Sampler(s): _____ Handed over by: _____

Quote ID No: **180813RAMM_1** Project Name: _____ EDD Format: _____ Sampler(s): _____ Handed over by: _____

No	Client Sample ID	Sampled Date/Time (dd/mm/yy hh:mm)	Matrix (Solid (S) Water (W))	Analyses
1	T01_190320	19/03/20	Soil	M13 (Al, As, Ba, Be, Cd, Cr, Co, Cu, Fe, Pb, Mn, Hg, Ni, Zn) total
2	T01_200320	20/03/20	Soil	M13 (Al, As, Ba, Be, Cd, Cr, Co, Cu, Fe, Pb, Mn, Hg, Ni, Zn) dissolved
3	T01_230320	23/03/20	Soil	
4	T01_240320	24/03/20	Soil	
5	T02_200320	20/03/20	Soil	
6	T03_240320	24/03/20	Soil	
9	TW01_240320	24/03/20	Soil	
10	XBOYDSTW/3	18/03/20	Soil	

Method of Shipment: Courier # _____ Hand Delivered Postal Name: _____ Signature: _____ Date: _____ Time: _____

Laboratory Use Only: Received By: _____ Signature: _____ Date: _____ Time: _____ Received By: _____ Signature: _____ Date: _____ Time: _____

Blackwell@ramboll.com

Turnaround Time (TAT) Requirements (Order will be 3 days if not listed)

Overnight (9am)*

1 Day* 2 Day*

3 Day* 5 Day* (Surcharges apply)

Other ()

Sample Comments / Dangerous Goods Hazard Warning

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Page 1 of 9 CS3003_07 Modified By: R. Symons Approved By: T. Leland Approved on: 17 August 2017

Melbourne

6 Monterey Road
Dandenong South Vic 3175
Phone : +61 3 8564 5000
NATA # 1261
Site # 1254 & 14271

Sydney

Unit F3, Building F
16 Mars Road
Lane Cove West NSW 2066
Phone : +61 2 9900 8400
NATA # 1261 Site # 18217

Brisbane

1/21 Smallwood Place
Murarrie QLD 4172
Phone : +61 7 3902 4600
NATA # 1261 Site # 20794

Perth

2/91 Leach Highway
Kewdale WA 6105
Phone : +61 8 9251 9600
NATA # 1261 Site # 23736

Sample Receipt Advice

Company name: **Ramboll Australia Pty Ltd**

Contact name: **Stephen Maxwell**

Project name: **318000780**

COC number: **Not provided**

Turn around time: **3 Day**

Date/Time received: **Mar 27, 2020 8:30 AM**

Eurofins reference: **710537**

Sample information

- A detailed list of analytes logged into our LIMS, is included in the attached summary table.
- All samples have been received as described on the above COC.
- COC has been completed correctly.
- Attempt to chill was evident.
- Appropriately preserved sample containers have been used.
- All samples were received in good condition.
- Samples have been provided with adequate time to commence analysis in accordance with the relevant holding times.

- Appropriate sample containers have been used.
- Sample containers for volatile analysis received with zero headspace.
- Split sample sent to requested external lab.
- Some samples have been subcontracted.
- N/A Custody Seals intact (if used).

Notes

Samples MW1_1.0, MW3_0-0.05, XBOYDSTW3 not received. Samples MW2_0.5, MW5_2.5 & DW01 received extra and logged in for PB. T02_240320 received and placed on HOLD

Contact notes

If you have any questions with respect to these samples please contact:

Andrew Black on Phone : (+61) 2 9900 8490 or by e.mail: AndrewBlack@eurofins.com

Results will be delivered electronically via e.mail to Stephen Maxwell - smaxwell@ramboll.com.

Note: A copy of these results will also be delivered to the general Ramboll Australia Pty Ltd email address.

Australia

Melbourne
6 Monterey Road
Dandenong South VIC 3175
Phone : +61 3 8564 5000
NATA # 1261
Site # 1254 & 14271

Sydney
Unit F3, Building F
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Lane Cove West NSW 2066
Phone : +61 2 9900 8400
NATA # 1261 Site # 18217

Brisbane
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New Zealand

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43 Detroit Drive
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Phone : 0800 856 450
IANZ # 1290

Company Name: Ramboll Australia Pty Ltd
Address: Level 3/100 Pacific Highway
North Sydney
NSW 2060
Project Name: 318000780

Order No.:
Report #: 710537
Phone: 02 9954 8118
Fax: 02 9954 8150

Received: Mar 27, 2020 8:30 AM
Due: Apr 1, 2020
Priority: 3 Day
Contact Name: Stephen Maxwell

Eurofins Analytical Services Manager : Andrew Black

Sample Detail						HOLD	Lead	Moisture Set
Melbourne Laboratory - NATA Site # 1254 & 14271						X	X	X
Sydney Laboratory - NATA Site # 18217								
Brisbane Laboratory - NATA Site # 20794								
Perth Laboratory - NATA Site # 23736								
External Laboratory								
No	Sample ID	Sample Date	Sampling Time	Matrix	LAB ID			
1	MW01_0.5	Mar 18, 2020		Soil	M20-Ma43430		X	X
2	MW01_1.5	Mar 18, 2020		Soil	M20-Ma43431		X	X
3	MW01_2.5	Mar 18, 2020		Soil	M20-Ma43432		X	X
4	MW01_3.5	Mar 18, 2020		Soil	M20-Ma43433		X	X
5	MW01_4.5	Mar 18, 2020		Soil	M20-Ma43434		X	X
6	MW2_0-0.05	Mar 18, 2020		Soil	M20-Ma43435		X	X
7	MW2_1.0	Mar 18, 2020		Soil	M20-Ma43436		X	X
8	MW2_1.5	Mar 18, 2020		Soil	M20-Ma43437		X	X
9	MW2_2.5	Mar 18, 2020		Soil	M20-Ma43438		X	X
10	MW2_3.5	Mar 18, 2020		Soil	M20-Ma43439		X	X
11	MW2_4.5	Mar 18, 2020		Soil	M20-Ma43440		X	X

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ABN – 50 005 085 521

web : www.eurofins.com.au

e.mail : EnviroSales@eurofins.com

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Brisbane Laboratory - NATA Site # 20794								
Perth Laboratory - NATA Site # 23736								
12	MW3_0.5	Mar 18, 2020	Soil	M20-Ma43441		X	X	
13	MW3_1.0	Mar 18, 2020	Soil	M20-Ma43442		X	X	
14	MW3_1.5	Mar 18, 2020	Soil	M20-Ma43443		X	X	
15	MW3_2.5	Mar 18, 2020	Soil	M20-Ma43444		X	X	
16	MW3_3.5	Mar 18, 2020	Soil	M20-Ma43445		X	X	
17	MW4_0-0.05	Mar 19, 2020	Soil	M20-Ma43446		X	X	
18	MW4_0.5	Mar 19, 2020	Soil	M20-Ma43447		X	X	
19	MW4_1.0	Mar 19, 2020	Soil	M20-Ma43448		X	X	
20	MW4_1.5	Mar 19, 2020	Soil	M20-Ma43449		X	X	
21	MW4_2.5	Mar 19, 2020	Soil	M20-Ma43450		X	X	
22	MW4_3.5	Mar 19, 2020	Soil	M20-Ma43451		X	X	
23	MW4_4.5	Mar 19, 2020	Soil	M20-Ma43452		X	X	
24	MW5_0.05	Mar 19, 2020	Soil	M20-Ma43453		X	X	

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Sydney Laboratory - NATA Site # 18217								
Brisbane Laboratory - NATA Site # 20794								
Perth Laboratory - NATA Site # 23736								
25	MW5_0.5	Mar 19, 2020	Soil	M20-Ma43454		X	X	
26	MW5_1.0	Mar 19, 2020	Soil	M20-Ma43455		X	X	
27	MW5_1.5	Mar 19, 2020	Soil	M20-Ma43456		X	X	
28	MW5_3.5	Mar 19, 2020	Soil	M20-Ma43457		X	X	
29	MW5_4.5	Mar 19, 2020	Soil	M20-Ma43458		X	X	
30	MW6_0.05	Mar 19, 2020	Soil	M20-Ma43459		X	X	
31	MW6_0.5	Mar 19, 2020	Soil	M20-Ma43460		X	X	
32	MW6_1.0	Mar 19, 2020	Soil	M20-Ma43461		X	X	
33	MW6_1.5	Mar 19, 2020	Soil	M20-Ma43462		X	X	
34	MW6_2.5	Mar 19, 2020	Soil	M20-Ma43463		X	X	
35	MW6_3.5	Mar 19, 2020	Soil	M20-Ma43464		X	X	
36	MW6_4.5	Mar 19, 2020	Soil	M20-Ma43465		X	X	
37	MW7_0.05	Mar 20, 2020	Soil	M20-Ma43466		X	X	

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Brisbane Laboratory - NATA Site # 20794								
Perth Laboratory - NATA Site # 23736								
38	MW7_0.5	Mar 20, 2020	Soil	M20-Ma43467		X	X	
39	MW7_1.0	Mar 20, 2020	Soil	M20-Ma43468		X	X	
40	MW7_1.5	Mar 20, 2020	Soil	M20-Ma43469		X	X	
41	MW7_2.5	Mar 20, 2020	Soil	M20-Ma43470		X	X	
42	MW7_3.5	Mar 20, 2020	Soil	M20-Ma43471		X	X	
43	MW7_4.5	Mar 20, 2020	Soil	M20-Ma43472		X	X	
44	WINCH N	Mar 18, 2020	Soil	M20-Ma43473		X	X	
45	WINCH S	Mar 18, 2020	Soil	M20-Ma43474		X	X	
46	D01_190320	Mar 19, 2020	Soil	M20-Ma43475		X	X	
47	D01_200320	Mar 20, 2020	Soil	M20-Ma43476		X	X	
48	D01_230320	Mar 23, 2020	Soil	M20-Ma43477		X	X	
49	D01_240320	Mar 24, 2020	Soil	M20-Ma43478		X	X	
50	D02_200320	Mar 20, 2020	Soil	M20-Ma43479		X	X	

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Sydney Laboratory - NATA Site # 18217								
Brisbane Laboratory - NATA Site # 20794								
Perth Laboratory - NATA Site # 23736								
51	D02_240320	Mar 24, 2020	Soil	M20-Ma43480		X	X	
52	D03_240320	Mar 24, 2020	Soil	M20-Ma43481		X	X	
53	TW01_240320	Mar 24, 2020	Water	M20-Ma43482		X		
54	MW3_4.5	Mar 18, 2020	Soil	M20-Ma43583		X	X	
55	MW2_0.5	Mar 18, 2020	Soil	M20-Ma43584		X	X	
56	MW5_2.5	Mar 18, 2020	Soil	M20-Ma43585		X	X	
57	DW01_240320	Mar 24, 2020	Water	M20-Ma43586		X		
58	T02_240320	Mar 24, 2020	Soil	M20-Ma43587	X			
Test Counts						1	57	55

Ramboll Environ Australia Pty Ltd
 Level 3/100 Pacific Highway
 North Sydney
 NSW 2060



NATA Accredited
 Accreditation Number 1261
 Site Number 1254

Accredited for compliance with ISO/IEC 17025 – Testing
 The results of the tests, calibrations and/or
 measurements included in this document are traceable
 to Australian/national standards.

Attention: **Stephen Maxwell**

Report **710537-S**
 Project name **318000780**
 Received Date **Mar 27, 2020**

Client Sample ID			MW01_0.5	MW01_1.5	MW01_2.5	MW01_3.5
Sample Matrix			Soil	Soil	Soil	Soil
Eurofins Sample No.			M20-Ma43430	M20-Ma43431	M20-Ma43432	M20-Ma43433
Date Sampled			Mar 18, 2020	Mar 18, 2020	Mar 18, 2020	Mar 18, 2020
Test/Reference	LOR	Unit				
Heavy Metals						
Lead	5	mg/kg	13	16	15	26
% Moisture	1	%	14	12	8.7	7.8

Client Sample ID			MW01_4.5	MW2_0-0.05	MW2_1.0	MW2_1.5
Sample Matrix			Soil	Soil	Soil	Soil
Eurofins Sample No.			M20-Ma43434	M20-Ma43435	M20-Ma43436	M20-Ma43437
Date Sampled			Mar 18, 2020	Mar 18, 2020	Mar 18, 2020	Mar 18, 2020
Test/Reference	LOR	Unit				
Heavy Metals						
Lead	5	mg/kg	24	51	3600	540
% Moisture	1	%	14	< 1	5.5	4.9

Client Sample ID			MW2_2.5	MW2_3.5	MW2_4.5	MW3_0.5
Sample Matrix			Soil	Soil	Soil	Soil
Eurofins Sample No.			M20-Ma43438	M20-Ma43439	M20-Ma43440	M20-Ma43441
Date Sampled			Mar 18, 2020	Mar 18, 2020	Mar 18, 2020	Mar 18, 2020
Test/Reference	LOR	Unit				
Heavy Metals						
Lead	5	mg/kg	200	140	42	25
% Moisture	1	%	4.4	7.0	7.9	9.3

Client Sample ID			MW3_1.0	MW3_1.5	MW3_2.5	MW3_3.5
Sample Matrix			Soil	Soil	Soil	Soil
Eurofins Sample No.			M20-Ma43442	M20-Ma43443	M20-Ma43444	M20-Ma43445
Date Sampled			Mar 18, 2020	Mar 18, 2020	Mar 18, 2020	Mar 18, 2020
Test/Reference	LOR	Unit				
Heavy Metals						
Lead	5	mg/kg	18	16	15	15
% Moisture						
	1	%	8.4	10	9.1	12

Client Sample ID			MW4_0-0.05	MW4_0.5	MW4_1.0	MW4_1.5
Sample Matrix			Soil	Soil	Soil	Soil
Eurofins Sample No.			M20-Ma43446	M20-Ma43447	M20-Ma43448	M20-Ma43449
Date Sampled			Mar 19, 2020	Mar 19, 2020	Mar 19, 2020	Mar 19, 2020
Test/Reference	LOR	Unit				
Heavy Metals						
Lead	5	mg/kg	1200	390	31	19
% Moisture						
	1	%	3.1	6.5	3.6	8.3

Client Sample ID			MW4_2.5	MW4_3.5	MW4_4.5	MW5_0.05
Sample Matrix			Soil	Soil	Soil	Soil
Eurofins Sample No.			M20-Ma43450	M20-Ma43451	M20-Ma43452	M20-Ma43453
Date Sampled			Mar 19, 2020	Mar 19, 2020	Mar 19, 2020	Mar 19, 2020
Test/Reference	LOR	Unit				
Heavy Metals						
Lead	5	mg/kg	21	30	27	120
% Moisture						
	1	%	14	6.6	12	5.1

Client Sample ID			MW5_0.5	MW5_1.0	MW5_1.5	MW5_3.5
Sample Matrix			Soil	Soil	Soil	Soil
Eurofins Sample No.			M20-Ma43454	M20-Ma43455	M20-Ma43456	M20-Ma43457
Date Sampled			Mar 19, 2020	Mar 19, 2020	Mar 19, 2020	Mar 19, 2020
Test/Reference	LOR	Unit				
Heavy Metals						
Lead	5	mg/kg	190	13	20	22
% Moisture						
	1	%	8.1	3.2	4.4	6.2

Client Sample ID			MW5_4.5	MW6_0.05	MW6_0.5	MW6_1.0
Sample Matrix			Soil	Soil	Soil	Soil
Eurofins Sample No.			M20-Ma43458	M20-Ma43459	M20-Ma43460	M20-Ma43461
Date Sampled			Mar 19, 2020	Mar 19, 2020	Mar 19, 2020	Mar 19, 2020
Test/Reference	LOR	Unit				
Heavy Metals						
Lead	5	mg/kg	28	57	25	21
% Moisture						
	1	%	5.3	14	9.0	2.9

Client Sample ID			MW6_1.5	MW6_2.5	MW6_3.5	MW6_4.5
Sample Matrix			Soil	Soil	Soil	Soil
Eurofins Sample No.			M20-Ma43462	M20-Ma43463	M20-Ma43464	M20-Ma43465
Date Sampled			Mar 19, 2020	Mar 19, 2020	Mar 19, 2020	Mar 19, 2020
Test/Reference	LOR	Unit				
Heavy Metals						
Lead	5	mg/kg	18	14	19	28
% Moisture						
	1	%	6.6	4.1	7.5	5.8

Client Sample ID			MW7_0.05	MW7_0.5	MW7_1.0	MW7_1.5
Sample Matrix			Soil	Soil	Soil	Soil
Eurofins Sample No.			M20-Ma43466	M20-Ma43467	M20-Ma43468	M20-Ma43469
Date Sampled			Mar 20, 2020	Mar 20, 2020	Mar 20, 2020	Mar 20, 2020
Test/Reference	LOR	Unit				
Heavy Metals						
Lead	5	mg/kg	210	43	52	18
% Moisture						
	1	%	7.6	8.9	7.2	9.9

Client Sample ID			MW7_2.5	MW7_3.5	MW7_4.5	WINCH N
Sample Matrix			Soil	Soil	Soil	Soil
Eurofins Sample No.			M20-Ma43470	M20-Ma43471	M20-Ma43472	M20-Ma43473
Date Sampled			Mar 20, 2020	Mar 20, 2020	Mar 20, 2020	Mar 18, 2020
Test/Reference	LOR	Unit				
Heavy Metals						
Lead	5	mg/kg	43	44	20	25000
% Moisture						
	1	%	17	13	< 1	1.5

Client Sample ID			WINCH S	D01_190320	D01_200320	D01_230320
Sample Matrix			Soil	Soil	Soil	Soil
Eurofins Sample No.			M20-Ma43474	M20-Ma43475	M20-Ma43476	M20-Ma43477
Date Sampled			Mar 18, 2020	Mar 19, 2020	Mar 20, 2020	Mar 23, 2020
Test/Reference	LOR	Unit				
Heavy Metals						
Lead	5	mg/kg	11000	1400	230	330
% Moisture						
	1	%	1.4	3.0	6.5	13

Client Sample ID			D01_240320	D02_200320	D02_240320	D03_240320
Sample Matrix			Soil	Soil	Soil	Soil
Eurofins Sample No.			M20-Ma43478	M20-Ma43479	M20-Ma43480	M20-Ma43481
Date Sampled			Mar 24, 2020	Mar 20, 2020	Mar 24, 2020	Mar 24, 2020
Test/Reference	LOR	Unit				
Heavy Metals						
Lead	5	mg/kg	170	55	85	7.0
% Moisture						
	1	%	15	12	16	10

Client Sample ID			MW3_4.5	MW2_0.5	MW5_2.5
Sample Matrix			Soil	Soil	Soil
Eurofins Sample No.			M20-Ma43583	M20-Ma43584	M20-Ma43585
Date Sampled			Mar 18, 2020	Mar 18, 2020	Mar 18, 2020
Test/Reference	LOR	Unit			
Heavy Metals					
Lead	5	mg/kg	22	27	21
% Moisture					
	1	%	15	5.5	5.5

Sample History

Where samples are submitted/analysed over several days, the last date of extraction and analysis is reported.

A recent review of our LIMS has resulted in the correction or clarification of some method identifications. Due to this, some of the method reference information on reports has changed. However, no substantive change has been made to our laboratory methods, and as such there is no change in the validity of current or previous results.

If the date and time of sampling are not provided, the Laboratory will not be responsible for compromised results should testing be performed outside the recommended holding time.

Description

Heavy Metals

- Method: LTM-MET-3040 Metals in Waters, Soils & Sediments by ICP-MS

% Moisture

- Method: LTM-GEN-7080 Moisture

Testing Site

Melbourne

Melbourne

Extracted

Mar 27, 2020

Mar 27, 2020

Holding Time

180 Days

14 Days

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External Laboratory								
No	Sample ID	Sample Date	Sampling Time	Matrix	LAB ID			
1	MW01_0.5	Mar 18, 2020		Soil	M20-Ma43430		X	X
2	MW01_1.5	Mar 18, 2020		Soil	M20-Ma43431		X	X
3	MW01_2.5	Mar 18, 2020		Soil	M20-Ma43432		X	X
4	MW01_3.5	Mar 18, 2020		Soil	M20-Ma43433		X	X
5	MW01_4.5	Mar 18, 2020		Soil	M20-Ma43434		X	X
6	MW2_0-0.05	Mar 18, 2020		Soil	M20-Ma43435		X	X
7	MW2_1.0	Mar 18, 2020		Soil	M20-Ma43436		X	X
8	MW2_1.5	Mar 18, 2020		Soil	M20-Ma43437		X	X
9	MW2_2.5	Mar 18, 2020		Soil	M20-Ma43438		X	X
10	MW2_3.5	Mar 18, 2020		Soil	M20-Ma43439		X	X
11	MW2_4.5	Mar 18, 2020		Soil	M20-Ma43440		X	X

Australia

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ABN – 50 005 085 521

web : www.eurofins.com.au

e.mail : EnviroSales@eurofins.com

Company Name: Ramboll Australia Pty Ltd
Address: Level 3/100 Pacific Highway
North Sydney
NSW 2060
Project Name: 318000780

Order No.:
Report #: 710537
Phone: 02 9954 8118
Fax: 02 9954 8150

Received: Mar 27, 2020 8:30 AM
Due: Apr 1, 2020
Priority: 3 Day
Contact Name: Stephen Maxwell

Eurofins Analytical Services Manager : Andrew Black

Sample Detail					HOLD	Lead	Moisture Set
Melbourne Laboratory - NATA Site # 1254 & 14271					X	X	X
Sydney Laboratory - NATA Site # 18217							
Brisbane Laboratory - NATA Site # 20794							
Perth Laboratory - NATA Site # 23736							
12	MW3_0.5	Mar 18, 2020	Soil	M20-Ma43441		X	X
13	MW3_1.0	Mar 18, 2020	Soil	M20-Ma43442		X	X
14	MW3_1.5	Mar 18, 2020	Soil	M20-Ma43443		X	X
15	MW3_2.5	Mar 18, 2020	Soil	M20-Ma43444		X	X
16	MW3_3.5	Mar 18, 2020	Soil	M20-Ma43445		X	X
17	MW4_0-0.05	Mar 19, 2020	Soil	M20-Ma43446		X	X
18	MW4_0.5	Mar 19, 2020	Soil	M20-Ma43447		X	X
19	MW4_1.0	Mar 19, 2020	Soil	M20-Ma43448		X	X
20	MW4_1.5	Mar 19, 2020	Soil	M20-Ma43449		X	X
21	MW4_2.5	Mar 19, 2020	Soil	M20-Ma43450		X	X
22	MW4_3.5	Mar 19, 2020	Soil	M20-Ma43451		X	X
23	MW4_4.5	Mar 19, 2020	Soil	M20-Ma43452		X	X
24	MW5_0.05	Mar 19, 2020	Soil	M20-Ma43453		X	X

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Sydney Laboratory - NATA Site # 18217								
Brisbane Laboratory - NATA Site # 20794								
Perth Laboratory - NATA Site # 23736								
25	MW5_0.5	Mar 19, 2020	Soil	M20-Ma43454		X	X	
26	MW5_1.0	Mar 19, 2020	Soil	M20-Ma43455		X	X	
27	MW5_1.5	Mar 19, 2020	Soil	M20-Ma43456		X	X	
28	MW5_3.5	Mar 19, 2020	Soil	M20-Ma43457		X	X	
29	MW5_4.5	Mar 19, 2020	Soil	M20-Ma43458		X	X	
30	MW6_0.05	Mar 19, 2020	Soil	M20-Ma43459		X	X	
31	MW6_0.5	Mar 19, 2020	Soil	M20-Ma43460		X	X	
32	MW6_1.0	Mar 19, 2020	Soil	M20-Ma43461		X	X	
33	MW6_1.5	Mar 19, 2020	Soil	M20-Ma43462		X	X	
34	MW6_2.5	Mar 19, 2020	Soil	M20-Ma43463		X	X	
35	MW6_3.5	Mar 19, 2020	Soil	M20-Ma43464		X	X	
36	MW6_4.5	Mar 19, 2020	Soil	M20-Ma43465		X	X	
37	MW7_0.05	Mar 20, 2020	Soil	M20-Ma43466		X	X	

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Sydney Laboratory - NATA Site # 18217								
Brisbane Laboratory - NATA Site # 20794								
Perth Laboratory - NATA Site # 23736								
38	MW7_0.5	Mar 20, 2020	Soil	M20-Ma43467		X	X	
39	MW7_1.0	Mar 20, 2020	Soil	M20-Ma43468		X	X	
40	MW7_1.5	Mar 20, 2020	Soil	M20-Ma43469		X	X	
41	MW7_2.5	Mar 20, 2020	Soil	M20-Ma43470		X	X	
42	MW7_3.5	Mar 20, 2020	Soil	M20-Ma43471		X	X	
43	MW7_4.5	Mar 20, 2020	Soil	M20-Ma43472		X	X	
44	WINCH N	Mar 18, 2020	Soil	M20-Ma43473		X	X	
45	WINCH S	Mar 18, 2020	Soil	M20-Ma43474		X	X	
46	D01_190320	Mar 19, 2020	Soil	M20-Ma43475		X	X	
47	D01_200320	Mar 20, 2020	Soil	M20-Ma43476		X	X	
48	D01_230320	Mar 23, 2020	Soil	M20-Ma43477		X	X	
49	D01_240320	Mar 24, 2020	Soil	M20-Ma43478		X	X	
50	D02_200320	Mar 20, 2020	Soil	M20-Ma43479		X	X	

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Brisbane Laboratory - NATA Site # 20794								
Perth Laboratory - NATA Site # 23736								
51	D02_240320	Mar 24, 2020	Soil	M20-Ma43480		X	X	
52	D03_240320	Mar 24, 2020	Soil	M20-Ma43481		X	X	
53	TW01_240320	Mar 24, 2020	Water	M20-Ma43482		X		
54	MW3_4.5	Mar 18, 2020	Soil	M20-Ma43583		X	X	
55	MW2_0.5	Mar 18, 2020	Soil	M20-Ma43584		X	X	
56	MW5_2.5	Mar 18, 2020	Soil	M20-Ma43585		X	X	
57	DW01_240320	Mar 24, 2020	Water	M20-Ma43586		X		
58	T02_240320	Mar 24, 2020	Soil	M20-Ma43587	X			
Test Counts						1	57	55

Internal Quality Control Review and Glossary
General

- Laboratory QC results for Method Blanks, Duplicates, Matrix Spikes, and Laboratory Control Samples follows guidelines delineated in the National Environment Protection (Assessment of Site Contamination) Measure 1999, as amended May 2013 and are included in this QC report where applicable. Additional QC data may be available on request.
- All soil/sediment/solid results are reported on a dry basis, unless otherwise stated.
- All biota/food results are reported on a wet weight basis on the edible portion, unless otherwise stated.
- Actual LORs are matrix dependant. Quoted LORs may be raised where sample extracts are diluted due to interferences.
- Results are uncorrected for matrix spikes or surrogate recoveries except for PFAS compounds.
- SVOC analysis on waters are performed on homogenised, unfiltered samples, unless noted otherwise.
- Samples were analysed on an 'as received' basis.
- Information identified on this report with blue colour, indicates data provided by customer, that may have an impact on the results.
- This report replaces any interim results previously issued.

Holding Times

Please refer to 'Sample Preservation and Container Guide' for holding times (QS3001).

For samples received on the last day of holding time, notification of testing requirements should have been received at least 6 hours prior to sample receipt deadlines as stated on the SRA.

If the Laboratory did not receive the information in the required timeframe, and regardless of any other integrity issues, suitably qualified results may still be reported.

Holding times apply from the date of sampling, therefore compliance to these may be outside the laboratory's control.

For VOCs containing vinyl chloride, styrene and 2-chloroethyl vinyl ether the holding time is 7 days however for all other VOCs such as BTEX or C6-10 TRH then the holding time is 14 days.

****NOTE:** pH duplicates are reported as a range NOT as RPD

Units

mg/kg: milligrams per kilogram

mg/L: milligrams per litre

ug/L: micrograms per litre

ppm: Parts per million

ppb: Parts per billion

%: Percentage

org/100mL: Organisms per 100 millilitres

NTU: Nephelometric Turbidity Units

MPN/100mL: Most Probable Number of organisms per 100 millilitres

Terms

Dry	Where a moisture has been determined on a solid sample the result is expressed on a dry basis.
LOR	Limit of Reporting.
SPIKE	Addition of the analyte to the sample and reported as percentage recovery.
RPD	Relative Percent Difference between two Duplicate pieces of analysis.
LCS	Laboratory Control Sample - reported as percent recovery.
CRM	Certified Reference Material - reported as percent recovery.
Method Blank	In the case of solid samples these are performed on laboratory certified clean sands and in the case of water samples these are performed on de-ionised water.
Surr - Surrogate	The addition of a like compound to the analyte target and reported as percentage recovery.
Duplicate	A second piece of analysis from the same sample and reported in the same units as the result to show comparison.
USEPA	United States Environmental Protection Agency
APHA	American Public Health Association
TCLP	Toxicity Characteristic Leaching Procedure
COC	Chain of Custody
SRA	Sample Receipt Advice
QSM	US Department of Defense Quality Systems Manual Version 5.3
CP	Client Parent - QC was performed on samples pertaining to this report
NCP	Non-Client Parent - QC performed on samples not pertaining to this report, QC is representative of the sequence or batch that client samples were analysed within.
TEQ	Toxic Equivalency Quotient

QC - Acceptance Criteria

RPD Duplicates: Global RPD Duplicates Acceptance Criteria is 30% however the following acceptance guidelines are equally applicable:

Results <10 times the LOR : No Limit

Results between 10-20 times the LOR : RPD must lie between 0-50%

Results >20 times the LOR : RPD must lie between 0-30%

Surrogate Recoveries: Recoveries must lie between 20-130% Phenols & 50-150% PFASs

PFAS field samples that contain surrogate recoveries in excess of the QC limit designated in QSM 5.3 where no positive PFAS results have been reported have been reviewed and no data was affected.

WA DWER (n=10): PFBA, PFPeA, PFHxA, PFHpA, PFOA, PFBS, PFHxS, PFOS, 6:2 FTSA, 8:2 FTSA

QC Data General Comments

- Where a result is reported as a less than (<), higher than the nominated LOR, this is due to either matrix interference, extract dilution required due to interferences or contaminant levels within the sample, high moisture content or insufficient sample provided.
- Duplicate data shown within this report that states the word "BATCH" is a Batch Duplicate from outside of your sample batch, but within the laboratory sample batch at a 1:10 ratio. The Parent and Duplicate data shown is not data from your samples.
- Organochlorine Pesticide analysis - where reporting LCS data, Toxaphene & Chlordane are not added to the LCS.
- Organochlorine Pesticide analysis - where reporting Spike data, Toxaphene is not added to the Spike.
- Total Recoverable Hydrocarbons - where reporting Spike & LCS data, a single spike of commercial Hydrocarbon products in the range of C12-C30 is added and it's Total Recovery is reported in the C10-C14 cell of the Report.
- pH and Free Chlorine analysed in the laboratory - Analysis on this test must begin within 30 minutes of sampling. Therefore laboratory analysis is unlikely to be completed within holding time. Analysis will begin as soon as possible after sample receipt.
- Recovery Data (Spikes & Surrogates) - where chromatographic interference does not allow the determination of Recovery the term "INT" appears against that analyte.
- Polychlorinated Biphenyls are spiked only using Aroclor 1260 in Matrix Spikes and LCS.
- For Matrix Spikes and LCS results a dash " - " in the report means that the specific analyte was not added to the QC sample.
- Duplicate RPDs are calculated from raw analytical data thus it is possible to have two sets of data.

Quality Control Results

Test				Units	Result 1			Acceptance Limits	Pass Limits	Qualifying Code	
Method Blank											
Heavy Metals											
Lead				mg/kg	< 5			5	Pass		
LCS - % Recovery											
Heavy Metals											
Lead				%	108			80-120	Pass		
Test	Lab Sample ID	QA Source	Units	Result 1			Acceptance Limits	Pass Limits	Qualifying Code		
Spike - % Recovery											
Heavy Metals											
Lead				M20-Ma43439	CP	%	INT	75-125	Fail	Q08	
Spike - % Recovery											
Heavy Metals											
Lead				M20-Ma43469	CP	%	123	75-125	Pass		
Test	Lab Sample ID	QA Source	Units	Result 1			Acceptance Limits	Pass Limits	Qualifying Code		
Duplicate											
					Result 1	Result 2	RPD				
% Moisture				M20-Ma43431	CP	%	12	12	<1	30%	Pass
Duplicate											
Heavy Metals											
Lead				M20-Ma43438	CP	mg/kg	200	190	2.0	30%	Pass
Duplicate											
Heavy Metals											
Lead				M20-Ma43439	CP	mg/kg	140	150	2.0	30%	Pass
Duplicate											
					Result 1	Result 2	RPD				
% Moisture				M20-Ma43441	CP	%	9.3	9.2	1.0	30%	Pass
Duplicate											
					Result 1	Result 2	RPD				
% Moisture				M20-Ma43451	CP	%	6.6	6.6	<1	30%	Pass
Duplicate											
Heavy Metals											
Lead				M20-Ma43458	CP	mg/kg	28	29	1.0	30%	Pass
Duplicate											
					Result 1	Result 2	RPD				
% Moisture				M20-Ma43461	CP	%	2.9	2.9	<1	30%	Pass
Duplicate											
Heavy Metals											
Lead				M20-Ma43468	CP	mg/kg	52	51	1.0	30%	Pass
Duplicate											
Heavy Metals											
Lead				M20-Ma43469	CP	mg/kg	18	19	1.0	30%	Pass
Duplicate											
					Result 1	Result 2	RPD				
% Moisture				M20-Ma43471	CP	%	13	12	6.0	30%	Pass
Duplicate											
					Result 1	Result 2	RPD				
% Moisture				M20-Ma43481	CP	%	10	10	<1	30%	Pass

Comments
Sample Integrity

Custody Seals Intact (if used)	N/A
Attempt to Chill was evident	Yes
Sample correctly preserved	Yes
Appropriate sample containers have been used	Yes
Sample containers for volatile analysis received with minimal headspace	Yes
Samples received within HoldingTime	Yes
Some samples have been subcontracted	No

Qualifier Codes/Comments

Code	Description
Q08	The matrix spike recovery is outside of the recommended acceptance criteria. An acceptable recovery was obtained for the laboratory control sample indicating a sample matrix interference.

Authorised By

Andrew Black	Analytical Services Manager
Emily Rosenberg	Senior Analyst-Metal (VIC)


Glenn Jackson
General Manager

Final report - this Report replaces any previously issued Report

- Indicates Not Requested

* Indicates NATA accreditation does not cover the performance of this service

Measurement uncertainty of test data is available on request or please [click here](#).

Eurofins shall not be liable for loss, cost, damages or expenses incurred by the client, or any other person or company, resulting from the use of any information or interpretation given in this report. In no case shall Eurofins be liable for consequential damages including, but not limited to, lost profits, damages for failure to meet deadlines and lost production arising from this report. This document shall not be reproduced except in full and relates only to the items tested. Unless indicated otherwise, the tests were performed on the samples as received.

Ramboll Environ Australia Pty Ltd
 Level 3/100 Pacific Highway
 North Sydney
 NSW 2060



NATA Accredited
Accreditation Number 1261
Site Number 1254

Accredited for compliance with ISO/IEC 17025 – Testing
 The results of the tests, calibrations and/or
 measurements included in this document are traceable
 to Australian/national standards.

Attention: **Stephen Maxwell**

Report **710537-W**
 Project name **318000780**
 Received Date **Mar 27, 2020**

Client Sample ID			TW01_240320	DW01_240320
Sample Matrix			Water	Water
Eurofins Sample No.			M20-Ma43482	M20-Ma43586
Date Sampled			Mar 24, 2020	Mar 24, 2020
Test/Reference	LOR	Unit		
Heavy Metals				
Lead	0.001	mg/L	0.003	0.003

Sample History

Where samples are submitted/analysed over several days, the last date of extraction and analysis is reported.

A recent review of our LIMS has resulted in the correction or clarification of some method identifications. Due to this, some of the method reference information on reports has changed. However, no substantive change has been made to our laboratory methods, and as such there is no change in the validity of current or previous results.

If the date and time of sampling are not provided, the Laboratory will not be responsible for compromised results should testing be performed outside the recommended holding time.

Description

Heavy Metals

Testing Site

Melbourne

Extracted

Mar 27, 2020

Holding Time

180 Days

- Method: LTM-MET-3040 Metals in Waters, Soils & Sediments by ICP-MS

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Sydney Laboratory - NATA Site # 18217								
Brisbane Laboratory - NATA Site # 20794								
Perth Laboratory - NATA Site # 23736								
External Laboratory								
No	Sample ID	Sample Date	Sampling Time	Matrix	LAB ID			
1	MW01_0.5	Mar 18, 2020		Soil	M20-Ma43430		X	X
2	MW01_1.5	Mar 18, 2020		Soil	M20-Ma43431		X	X
3	MW01_2.5	Mar 18, 2020		Soil	M20-Ma43432		X	X
4	MW01_3.5	Mar 18, 2020		Soil	M20-Ma43433		X	X
5	MW01_4.5	Mar 18, 2020		Soil	M20-Ma43434		X	X
6	MW2_0-0.05	Mar 18, 2020		Soil	M20-Ma43435		X	X
7	MW2_1.0	Mar 18, 2020		Soil	M20-Ma43436		X	X
8	MW2_1.5	Mar 18, 2020		Soil	M20-Ma43437		X	X
9	MW2_2.5	Mar 18, 2020		Soil	M20-Ma43438		X	X
10	MW2_3.5	Mar 18, 2020		Soil	M20-Ma43439		X	X
11	MW2_4.5	Mar 18, 2020		Soil	M20-Ma43440		X	X

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12	MW3_0.5	Mar 18, 2020	Soil	M20-Ma43441		X	X	
13	MW3_1.0	Mar 18, 2020	Soil	M20-Ma43442		X	X	
14	MW3_1.5	Mar 18, 2020	Soil	M20-Ma43443		X	X	
15	MW3_2.5	Mar 18, 2020	Soil	M20-Ma43444		X	X	
16	MW3_3.5	Mar 18, 2020	Soil	M20-Ma43445		X	X	
17	MW4_0-0.05	Mar 19, 2020	Soil	M20-Ma43446		X	X	
18	MW4_0.5	Mar 19, 2020	Soil	M20-Ma43447		X	X	
19	MW4_1.0	Mar 19, 2020	Soil	M20-Ma43448		X	X	
20	MW4_1.5	Mar 19, 2020	Soil	M20-Ma43449		X	X	
21	MW4_2.5	Mar 19, 2020	Soil	M20-Ma43450		X	X	
22	MW4_3.5	Mar 19, 2020	Soil	M20-Ma43451		X	X	
23	MW4_4.5	Mar 19, 2020	Soil	M20-Ma43452		X	X	
24	MW5_0.05	Mar 19, 2020	Soil	M20-Ma43453		X	X	

Australia

Melbourne
6 Monterey Road
Dandenong South VIC 3175
Phone : +61 3 8564 5000
NATA # 1261
Site # 1254 & 14271

Sydney
Unit F3, Building F
16 Mars Road
Lane Cove West NSW 2066
Phone : +61 2 9900 8400
NATA # 1261 Site # 18217

Brisbane
1/21 Smallwood Place
Murarrie QLD 4172
Phone : +61 7 3902 4600
NATA # 1261 Site # 20794

Perth
2/91 Leach Highway
Kewdale WA 6105
Phone : +61 8 9251 9600
NATA # 1261
Site # 23736

New Zealand

Auckland
35 O'Rorke Road
Penrose, Auckland 1061
Phone : +64 9 526 45 51
IANZ # 1327

Christchurch
43 Detroit Drive
Rolleston, Christchurch 7675
Phone : 0800 856 450
IANZ # 1290

ABN – 50 005 085 521

web : www.eurofins.com.au

e.mail : EnviroSales@eurofins.com

Company Name: Ramboll Australia Pty Ltd
Address: Level 3/100 Pacific Highway
North Sydney
NSW 2060
Project Name: 318000780

Order No.:
Report #: 710537
Phone: 02 9954 8118
Fax: 02 9954 8150

Received: Mar 27, 2020 8:30 AM
Due: Apr 1, 2020
Priority: 3 Day
Contact Name: Stephen Maxwell

Eurofins Analytical Services Manager : Andrew Black

Sample Detail						HOLD	Lead	Moisture Set
Melbourne Laboratory - NATA Site # 1254 & 14271						X	X	X
Sydney Laboratory - NATA Site # 18217								
Brisbane Laboratory - NATA Site # 20794								
Perth Laboratory - NATA Site # 23736								
25	MW5_0.5	Mar 19, 2020	Soil	M20-Ma43454		X	X	
26	MW5_1.0	Mar 19, 2020	Soil	M20-Ma43455		X	X	
27	MW5_1.5	Mar 19, 2020	Soil	M20-Ma43456		X	X	
28	MW5_3.5	Mar 19, 2020	Soil	M20-Ma43457		X	X	
29	MW5_4.5	Mar 19, 2020	Soil	M20-Ma43458		X	X	
30	MW6_0.05	Mar 19, 2020	Soil	M20-Ma43459		X	X	
31	MW6_0.5	Mar 19, 2020	Soil	M20-Ma43460		X	X	
32	MW6_1.0	Mar 19, 2020	Soil	M20-Ma43461		X	X	
33	MW6_1.5	Mar 19, 2020	Soil	M20-Ma43462		X	X	
34	MW6_2.5	Mar 19, 2020	Soil	M20-Ma43463		X	X	
35	MW6_3.5	Mar 19, 2020	Soil	M20-Ma43464		X	X	
36	MW6_4.5	Mar 19, 2020	Soil	M20-Ma43465		X	X	
37	MW7_0.05	Mar 20, 2020	Soil	M20-Ma43466		X	X	

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Sample Detail						HOLD	Lead	Moisture Set
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Sydney Laboratory - NATA Site # 18217								
Brisbane Laboratory - NATA Site # 20794								
Perth Laboratory - NATA Site # 23736								
38	MW7_0.5	Mar 20, 2020	Soil	M20-Ma43467		X	X	
39	MW7_1.0	Mar 20, 2020	Soil	M20-Ma43468		X	X	
40	MW7_1.5	Mar 20, 2020	Soil	M20-Ma43469		X	X	
41	MW7_2.5	Mar 20, 2020	Soil	M20-Ma43470		X	X	
42	MW7_3.5	Mar 20, 2020	Soil	M20-Ma43471		X	X	
43	MW7_4.5	Mar 20, 2020	Soil	M20-Ma43472		X	X	
44	WINCH N	Mar 18, 2020	Soil	M20-Ma43473		X	X	
45	WINCH S	Mar 18, 2020	Soil	M20-Ma43474		X	X	
46	D01_190320	Mar 19, 2020	Soil	M20-Ma43475		X	X	
47	D01_200320	Mar 20, 2020	Soil	M20-Ma43476		X	X	
48	D01_230320	Mar 23, 2020	Soil	M20-Ma43477		X	X	
49	D01_240320	Mar 24, 2020	Soil	M20-Ma43478		X	X	
50	D02_200320	Mar 20, 2020	Soil	M20-Ma43479		X	X	

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Company Name: Ramboll Australia Pty Ltd
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Order No.:
Report #: 710537
Phone: 02 9954 8118
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Received: Mar 27, 2020 8:30 AM
Due: Apr 1, 2020
Priority: 3 Day
Contact Name: Stephen Maxwell

Eurofins Analytical Services Manager : Andrew Black

Sample Detail						HOLD	Lead	Moisture Set
Melbourne Laboratory - NATA Site # 1254 & 14271						X	X	X
Sydney Laboratory - NATA Site # 18217								
Brisbane Laboratory - NATA Site # 20794								
Perth Laboratory - NATA Site # 23736								
51	D02_240320	Mar 24, 2020	Soil	M20-Ma43480		X	X	
52	D03_240320	Mar 24, 2020	Soil	M20-Ma43481		X	X	
53	TW01_240320	Mar 24, 2020	Water	M20-Ma43482		X		
54	MW3_4.5	Mar 18, 2020	Soil	M20-Ma43583		X	X	
55	MW2_0.5	Mar 18, 2020	Soil	M20-Ma43584		X	X	
56	MW5_2.5	Mar 18, 2020	Soil	M20-Ma43585		X	X	
57	DW01_240320	Mar 24, 2020	Water	M20-Ma43586		X		
58	T02_240320	Mar 24, 2020	Soil	M20-Ma43587	X			
Test Counts						1	57	55

Internal Quality Control Review and Glossary
General

- Laboratory QC results for Method Blanks, Duplicates, Matrix Spikes, and Laboratory Control Samples follows guidelines delineated in the National Environment Protection (Assessment of Site Contamination) Measure 1999, as amended May 2013 and are included in this QC report where applicable. Additional QC data may be available on request.
- All soil/sediment/solid results are reported on a dry basis, unless otherwise stated.
- All biota/food results are reported on a wet weight basis on the edible portion, unless otherwise stated.
- Actual LORs are matrix dependant. Quoted LORs may be raised where sample extracts are diluted due to interferences.
- Results are uncorrected for matrix spikes or surrogate recoveries except for PFAS compounds.
- SVOC analysis on waters are performed on homogenised, unfiltered samples, unless noted otherwise.
- Samples were analysed on an 'as received' basis.
- Information identified on this report with blue colour, indicates data provided by customer, that may have an impact on the results.
- This report replaces any interim results previously issued.

Holding Times

Please refer to 'Sample Preservation and Container Guide' for holding times (QS3001).

For samples received on the last day of holding time, notification of testing requirements should have been received at least 6 hours prior to sample receipt deadlines as stated on the SRA.

If the Laboratory did not receive the information in the required timeframe, and regardless of any other integrity issues, suitably qualified results may still be reported.

Holding times apply from the date of sampling, therefore compliance to these may be outside the laboratory's control.

For VOCs containing vinyl chloride, styrene and 2-chloroethyl vinyl ether the holding time is 7 days however for all other VOCs such as BTEX or C6-10 TRH then the holding time is 14 days.

****NOTE:** pH duplicates are reported as a range NOT as RPD

Units

mg/kg: milligrams per kilogram

mg/L: milligrams per litre

ug/L: micrograms per litre

ppm: Parts per million

ppb: Parts per billion

%: Percentage

org/100mL: Organisms per 100 millilitres

NTU: Nephelometric Turbidity Units

MPN/100mL: Most Probable Number of organisms per 100 millilitres

Terms

Dry	Where a moisture has been determined on a solid sample the result is expressed on a dry basis.
LOR	Limit of Reporting.
SPIKE	Addition of the analyte to the sample and reported as percentage recovery.
RPD	Relative Percent Difference between two Duplicate pieces of analysis.
LCS	Laboratory Control Sample - reported as percent recovery.
CRM	Certified Reference Material - reported as percent recovery.
Method Blank	In the case of solid samples these are performed on laboratory certified clean sands and in the case of water samples these are performed on de-ionised water.
Surr - Surrogate	The addition of a like compound to the analyte target and reported as percentage recovery.
Duplicate	A second piece of analysis from the same sample and reported in the same units as the result to show comparison.
USEPA	United States Environmental Protection Agency
APHA	American Public Health Association
TCLP	Toxicity Characteristic Leaching Procedure
COC	Chain of Custody
SRA	Sample Receipt Advice
QSM	US Department of Defense Quality Systems Manual Version 5.3
CP	Client Parent - QC was performed on samples pertaining to this report
NCP	Non-Client Parent - QC performed on samples not pertaining to this report, QC is representative of the sequence or batch that client samples were analysed within.
TEQ	Toxic Equivalency Quotient

QC - Acceptance Criteria

RPD Duplicates: Global RPD Duplicates Acceptance Criteria is 30% however the following acceptance guidelines are equally applicable:

Results <10 times the LOR : No Limit

Results between 10-20 times the LOR : RPD must lie between 0-50%

Results >20 times the LOR : RPD must lie between 0-30%

Surrogate Recoveries: Recoveries must lie between 20-130% Phenols & 50-150% PFASs

PFAS field samples that contain surrogate recoveries in excess of the QC limit designated in QSM 5.3 where no positive PFAS results have been reported have been reviewed and no data was affected.

WA DWER (n=10): PFBA, PFPeA, PFHxA, PFHpA, PFOA, PFBS, PFHxS, PFOS, 6:2 FTSA, 8:2 FTSA

QC Data General Comments

- Where a result is reported as a less than (<), higher than the nominated LOR, this is due to either matrix interference, extract dilution required due to interferences or contaminant levels within the sample, high moisture content or insufficient sample provided.
- Duplicate data shown within this report that states the word "BATCH" is a Batch Duplicate from outside of your sample batch, but within the laboratory sample batch at a 1:10 ratio. The Parent and Duplicate data shown is not data from your samples.
- Organochlorine Pesticide analysis - where reporting LCS data, Toxaphene & Chlordane are not added to the LCS.
- Organochlorine Pesticide analysis - where reporting Spike data, Toxaphene is not added to the Spike.
- Total Recoverable Hydrocarbons - where reporting Spike & LCS data, a single spike of commercial Hydrocarbon products in the range of C12-C30 is added and it's Total Recovery is reported in the C10-C14 cell of the Report.
- pH and Free Chlorine analysed in the laboratory - Analysis on this test must begin within 30 minutes of sampling. Therefore laboratory analysis is unlikely to be completed within holding time. Analysis will begin as soon as possible after sample receipt.
- Recovery Data (Spikes & Surrogates) - where chromatographic interference does not allow the determination of Recovery the term "INT" appears against that analyte.
- Polychlorinated Biphenyls are spiked only using Aroclor 1260 in Matrix Spikes and LCS.
- For Matrix Spikes and LCS results a dash " - " in the report means that the specific analyte was not added to the QC sample.
- Duplicate RPDs are calculated from raw analytical data thus it is possible to have two sets of data.

Quality Control Results

Test				Units	Result 1		Acceptance Limits	Pass Limits	Qualifying Code	
Method Blank										
Heavy Metals										
Lead				mg/L	< 0.001		0.001	Pass		
LCS - % Recovery										
Heavy Metals										
Lead				%	102		80-120	Pass		
Test	Lab Sample ID	QA Source	Units	Result 1			Acceptance Limits	Pass Limits	Qualifying Code	
Spike - % Recovery										
Heavy Metals										
Lead				M20-Ma37209	NCP	%	99	75-125	Pass	
Duplicate										
Heavy Metals										
Lead				M20-Ma37209	NCP	mg/L	< 0.001	< 0.001	<1	30% Pass

Comments**Sample Integrity**

Custody Seals Intact (if used)	N/A
Attempt to Chill was evident	Yes
Sample correctly preserved	Yes
Appropriate sample containers have been used	Yes
Sample containers for volatile analysis received with minimal headspace	Yes
Samples received within HoldingTime	Yes
Some samples have been subcontracted	No

Authorised By

Andrew Black Analytical Services Manager
Emily Rosenberg Senior Analyst-Metal (VIC)

**Glenn Jackson
General Manager**

Final report - this Report replaces any previously issued Report

- Indicates Not Requested

* Indicates NATA accreditation does not cover the performance of this service

Measurement uncertainty of test data is available on request or please [click here](#).

Eurofins shall not be liable for loss, cost, damages or expenses incurred by the client, or any other person or company, resulting from the use of any information or interpretation given in this report. In no case shall Eurofins be liable for consequential damages including, but not limited to, lost profits, damages for failure to meet deadlines and lost production arising from this report. This document shall not be reproduced except in full and relates only to the items tested. Unless indicated otherwise, the tests were performed on the samples as received.



CHAIN OF CUSTODY RECORD

AMN 90 005 005 521

Sydney Laboratory
Unit F3 Bld F, 16 Mars Rd, Lane Cove West, NSW 2086
02 9902 8400 EnviroSampleNSW@eurofins.com

Brisbane Laboratory
Unit 1, 21 Smallwood Pl, Muramba, QLD 4172
07 3802 4600 EnviroSampleQLD@eurofins.com

Perth Laboratory
Unit 2, 51 Leach Highway, Kewdale WA 6105
08 9251 9900 EnviroSampleWA@eurofins.com

Melbourne Laboratory
2 Kingsdon Town Close, Oakleigh, VIC 3196
03 8564 5000 EnviroSampleVIC@eurofins.com

Company	Ramboll	Project No	318000780
Address	50 Glebe Road the Junction	Project Name	
Contact Name	Stephen Maxwell	Project Manager	Stephen Maxwell
Phone No		EDD Format	(ESdat, EQMS)
Special Directions		Excel and PDF	
Purchase Order		Sampler(s)	JK + RC
Quote ID No	180813RAMN_1	Handed over by	SM
		Email for Invoice	smaxwell@ramboll.com asiabac-accounts@ramboll.com
		Email for Results	smaxwell@ramboll.com rcondon@ramboll.com shyde@ramboll.com

Analyses
(Note: Where metals are requested, please specify "Total" or "Filtered".) SUITE code must be used to attract SUITE pricing.

Lead	
Total Dust	
M13 (Al, As, Ba, Be, Cd, Cr, Co, Cu, Fe, Pb, Mn, Hg, Ni, Zn) total	
M13 (Al, As, Ba, Be, Cd, Cr, Co, Cu, Fe, Pb, Mn, Hg, Ni, Zn) dissolved	

Turnaround Time (TAT) Requirements (initial will be 5 days if not listed)

Overnight (9am)*
 1 Day*
 2 Day*
 3 Day*
 5 Day*
 Other () *Surcharges apply

Sample Comments / Dangerous Goods Hazard Warning

No	Client Sample ID	Sampled Date/Time (dd/mm/yy hh:mm)	Matrix (Solid (S) / Water (W))	Lead	Total Dust	M13 (Al, As, Ba, Be, Cd, Cr, Co, Cu, Fe, Pb, Mn, Hg, Ni, Zn) total	M13 (Al, As, Ba, Be, Cd, Cr, Co, Cu, Fe, Pb, Mn, Hg, Ni, Zn) dissolved
1	D01_25032020	25/03/20	W			X	X
2	T01_25032020	25/03/20	W			X	X
3	RB_25032020	25/03/20	W			X	
4	RB_28032020	28/03/20	W			X	
5	D04_250320	25/03/20	dust	X	X		
6	D01_28032020	28/03/20	dust	X	X		
7	T04_250320	25/03/20	dust	X	X		
8	T01_280320	28/03/20	dust	X	X		
9	DW01_240320	24/03/20	Soil	X			
10	TW01_240320	24/03/20	Soil	X			
Total Counts				6	4	4	2

Method of Shipment

Courier (#)
 Hand Delivered
 Postal

Eurofins | mgf Laboratory Use Only

Received By	Received By	SVD BNE MEL PER ADL MTL DRW	Signature	Signature	Date	Date	Time	Temperature	Report No

Submission of samples to the laboratory will be deemed an acceptance of Eurofins | mgf Standard Terms and Conditions unless agreed otherwise. A copy of Eurofins | mgf Standard Terms and Conditions is available on request.

Crustal Environment Testlab Australia Pty Ltd trading as Eurofins | mgf



CHAIN OF CUSTODY RECORD

ASN 30 095 085 521

Sydney Laboratory
Unit F3 Bldg F, 16 Ware Rd, Lane Cove West, NSW 2066
02 9900 8400 EnviroSampleNSW@eurofins.com

Brisbane Laboratory
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Perth Laboratory
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08 9251 9500 EnviroSampleWA@eurofins.com

Melbourne Laboratory
2 Kingston Town Close, Dandenong, VIC 3166
03 8984 6300 EnviroSampleVIC@eurofins.com

Company	Ramboll	Project No	318000780	Project Manager	Stephen Maxwell	Sampler(s)	JK + RC
Address	50 Globe Road the Junction	EDD Format	(ES&A, EQ&S)	Excel and PDF		Handed over by	SM
Contact Name	Stephen Maxwell	Email for Invoice		Email for Results		smaxwell@ramboll.com asiapac-accounts@ramboll.com jblackwell@ramboll.com rcondon@ramboll.com shvde@ramboll.com	
Phone No		Turnaround Time (TAT)		<input type="checkbox"/> Overnight (9am)* <input type="checkbox"/> 1 Day* <input type="checkbox"/> 2 Day* <input type="checkbox"/> 3 Day* <input checked="" type="checkbox"/> 5 Day* *Surcharge apply			
Special Directions		Requirements (optional will be 5 days/1st ticked)		<input type="checkbox"/> Other () Sample Comments / Dangerous Goods Hazard Warning			
Purchase Order		1L Plastic		<input type="checkbox"/> 1 Day* <input type="checkbox"/> 2 Day* <input type="checkbox"/> 3 Day* <input checked="" type="checkbox"/> 5 Day* *Surcharge apply			
Quote ID No	180813RAMAN_1	250mL Plastic					
		125mL Plastic					
		200mL Amber Glass					
		40mL VOA vial					
		500mL PFAS Bottle					
		Jar (Glass or HDPE)					
		Other (Asbestos AS4964, WA Guidelines)					

No	Client Sample ID	Sampled Date/Time (dd/mm/yy hh:mm)	Matrix (Solid (S) Water (W))	Analyses			Signature	Date	Time
				Lead	Total Dust	M13 (Al, As, Ba, Be, Cd, Cr, Co, Cu, Fe, Pb, Mn, Hg, Ni, Zn) dissolved			
1	RO1_1803200	180320	S	X					
2	RO1_2003200	200220	S	X					
Total Counts				2					

Method of Shipment	<input type="checkbox"/> Courier #	<input type="checkbox"/> Hand Delivered	<input type="checkbox"/> Postal	Name	Signature	Date	Time
Eurofins mgt	Received By	Signature		Date	Time	Temperature	Report No
Laboratory Use Only	Received By	Signature		Date	Time	Temperature	Report No

Administration of samples to the Laboratory will be deemed an acceptance of Eurofins | mgt Standard Terms and Conditions unless agreed otherwise. A copy of Eurofins | mgt Standard Terms and Conditions is available on request.

Eurofins Environment Testing Australia Pty Ltd trading as Eurofins | mgt

#AU04_Enviro_Sample_NSW

To: Joshua Blackwell
Subject: RE: Eurofins Sample Receipt Advice - Report 711464 : Site 318000780

From: Joshua Blackwell [<mailto:JBLACKWELL@ramboll.com>]
Sent: Tuesday, 14 April 2020 11:08 AM
To: #AU04_Enviro_Sample_NSW
Cc: Stephen Maxwell
Subject: RE: Eurofins Sample Receipt Advice - Report 711464 : Site 318000780

Hi there,

Please analyse hold samples as follows:

MULWR10_4 and XSMC3 for lead.
P6_TW1 for M13 total and dissolved.
P6_TWS1 for lead (unfiltered)

Kind regards

Joshua Blackwell
Consultant

D +61 (481) 157565
M +61 (481) 157565
jblackwell@ramboll.com

Ramboll Australia Pty Ltd.
ACN 095 437 442
ABN 49 095 437 442

From: EnviroSampleNSW@eurofins.com <EnviroSampleNSW@eurofins.com>
Sent: Tuesday, April 14, 2020 10:56 AM
To: Stephen Maxwell <SMAXWELL@ramboll.com>
Cc: Joshua Blackwell <JBLACKWELL@ramboll.com>; Rachel Condon <RCONDON@ramboll.com>; Shane Hyde <SHYDE@ramboll.com>
Subject: Eurofins Sample Receipt Advice - Report 711464 : Site 318000780

Dear Valued Client,

UPDATED SRA.
MULWR10_4, P6_TWS1, P6_TW1, XSMC3 samples received extra - analysis on hold.

Please find attached a Sample Receipt Advice (SRA), a Summary Sheet and a scanned copy of your Chain-of-Custody (COC). It is your responsibility to ensure that the details are correct such as the Client Job Number, Turn Around Time, any comments in the report, and the requested analysis. If there are any irregularities then please contact your Eurofins Analytical Services Manager as soon as possible so they can be changed.

Regards

Rupan Virk
Sample Receipt

Eurofins | Environment Testing

Unit F3, Parkview Building
16 Mars Road
LANE COVE WEST NSW 2066
AUSTRALIA

Phone: +61 02 9900 8421

Email: EnviroSampleNSW@eurofins.com

Website: environment.eurofins.com.au

[EnviroNote 1068 - Eurofins Perth Laboratory](#)

[EnviroNote 1069 - Eurofins Overnight TAT](#)

[EnviroNote 1098 - Melbourne PFAS Accreditation](#)

[EnviroNote 1080 - Total Organofluorine Analysis & PFAS Investigations](#)

Click [here](#) to report this email as spam.

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Phone : +61 8 9251 9600
NATA # 1261 Site # 23736

Sample Receipt Advice

Company name: **Ramboll Australia Pty Ltd**

Contact name: Stephen Maxwell

Project ID: 318000780

COC number: Not provided

Turn around time: 5 Day

Date/Time received: Apr 9, 2020 10:10 AM

Eurofins reference: **711464**

Sample information

- A detailed list of analytes logged into our LIMS, is included in the attached summary table.
- All samples have been received as described on the above COC.
- COC has been completed correctly.
- Attempt to chill was evident.
- Appropriately preserved sample containers have been used.
- All samples were received in good condition.
- Samples have been provided with adequate time to commence analysis in accordance with the relevant holding times.

- Appropriate sample containers have been used.
- Sample containers for volatile analysis received with zero headspace.
- Split sample sent to requested external lab.
- Some samples have been subcontracted.
- N/A Custody Seals intact (if used).

Notes

MULWR10_4, P6_TWS1, P6_TW1, XSMC3 samples received extra - analysis on hold. Samples; T01_25/3/2020, T04_250320, T01_260320, TW01_240320.

Contact notes

If you have any questions with respect to these samples please contact:

Andrew Black on Phone : (+61) 2 9900 8490 or by e.mail: AndrewBlack@eurofins.com

Results will be delivered electronically via e.mail to Stephen Maxwell - smaxwell@ramboll.com.

Note: A copy of these results will also be delivered to the general Ramboll Australia Pty Ltd email address.



Environment Testing

Australia

Melbourne
6 Monterey Road
Dandenong South VIC 3175
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web : www.eurofins.com.au

e.mail : EnviroSales@eurofins.com

Company Name: Ramboll Australia Pty Ltd
Address: Level 3/100 Pacific Highway
North Sydney
NSW 2060

Order No.:
Report #: 711464
Phone: 02 9954 8118
Fax: 02 9954 8150

Received: Apr 9, 2020 10:10 AM
Due: Apr 20, 2020
Priority: 5 Day
Contact Name: Stephen Maxwell

Project Name:
Project ID: 318000780

Eurofins Analytical Services Manager : Andrew Black

Sample Detail						Aluminium	Aluminium (filtered)	Arsenic	Arsenic (filtered)	Barium	Barium (filtered)	Beryllium	Beryllium (filtered)	Cadmium	Cadmium (filtered)	Chromium	Chromium (filtered)	Cobalt	Cobalt (filtered)	Copper	Copper (filtered)	Iron	Iron (filtered)	Lead	Lead	Lead (filtered)	Manganese	Manganese (filtered)	Mercury	Mercury (filtered)	Nickel	Nickel (filtered)	Zinc	Zinc (filtered)	Moisture Set			
Melbourne Laboratory - NATA Site # 1254 & 14271																								X														
Sydney Laboratory - NATA Site # 18217						X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X		
Brisbane Laboratory - NATA Site # 20794																																						
Perth Laboratory - NATA Site # 23736																																						
10	DW01_240320	Mar 24, 2020		Water	S20-Ap08929																			X														
11	R01_1803200	Mar 18, 2020		Water	S20-Ap08931																			X														
12	R01_2003200	Mar 18, 2020		Water	S20-Ap08932																			X														
Test Counts						4	2	4	2	4	2	4	2	4	2	4	2	4	2	4	2	4	2	4	2	12	12	2	4	2	4	2	4	2	4	2	1	



CHAIN OF CUSTODY RECORD

ABR 50 095 385 521

Sydney Laboratory
Unit F3 941F, 16 Mars Rd, Lane Cove West, NSW 2056
02 9900 9400 EnviroSamplesNSW@eurofins.com

Brisbane Laboratory
Unit 1, 21 Smalwood Pl, Murrumbidgee, QLD 4172
07 3902 4600 EnviroSamplesQLD@eurofins.com

Perth Laboratory
Unit 2, 91 Leach Highway, Kewdale WA 6105
08 9251 9900 EnviroSamplesWA@eurofins.com

Melbourne Laboratory
2 Kingston Town Close, Cocksfield VIC 3165
03 8554 5000 EnviroSamplesVIC@eurofins.com

Company: Ramboll

Project No: 318000780

Project Manager: EDD Forman (Estat, Equis)

Stephen Maxwell

Sample(s): JB + JAB

SM

Address: 50 Glebe Road the Junction

Project Name

Excel and PDF

Handed over by

SM

Contact Name: Stephen Maxwell

Analyses

Lead

Total Dust

Email for Invoice

smaxwell@ramboll.com
astjacac-accounts@ramboll.com

Phone No

Special Directions

Email for Results

shyde@ramboll.com

Purchase Order

Quote ID No: 180813RAMM_1

Handed over by

shyde@ramboll.com

Turnaround Time (TAT) Requirements (Default will be 5 days if not ticked)

Overnight (9am)*
 1 Day*
 2 Day*
 3 Day*
 5 Day*
 Other ()
*Surcharge apply

Client Sample ID

Sampled Date/Time (dd/mm/yyyy hh:mm)

Matrix (Solid (S) Water (W))

Analyses

Handed over by

shyde@ramboll.com

Sample Comments / Dangerous Goods Hazard Warning

No

Client Sample ID

Sampled Date/Time (dd/mm/yyyy hh:mm)

Matrix (Solid (S) Water (W))

Analyses

Handed over by

Sample Comments / Dangerous Goods Hazard Warning

1

P4_TSW2

1/04/20

soil

Analyses

Handed over by

Sample Comments / Dangerous Goods Hazard Warning

2

GOULR12_3

1/04/20

soil

Analyses

Handed over by

Sample Comments / Dangerous Goods Hazard Warning

3

GOULRSE_1D

1/04/20

soil

Analyses

Handed over by

Sample Comments / Dangerous Goods Hazard Warning

4

ROSER19

1/04/20

soil

Analyses

Handed over by

Sample Comments / Dangerous Goods Hazard Warning

5

DVAC-BE(P)

Dust

Analyses

Handed over by

Sample Comments / Dangerous Goods Hazard Warning

6

XBOIDSTW1

Dust

Analyses

Handed over by

Sample Comments / Dangerous Goods Hazard Warning

7

XBOIDSTW3

Dust

Analyses

Handed over by

Sample Comments / Dangerous Goods Hazard Warning

8

Total Counts

7

3

Analyses

Handed over by

Sample Comments / Dangerous Goods Hazard Warning

9

Total Counts

7

3

Analyses

Handed over by

Sample Comments / Dangerous Goods Hazard Warning

10

Total Counts

7

3

Analyses

Handed over by

Sample Comments / Dangerous Goods Hazard Warning

Method of Shipment

Courier #) Hand Delivered Postal

Name

Signature

Date

Time

Temperature

Received By

Received By

Signature

Date

Time

Temperature

Report No

Method of Shipment

Courier #) Hand Delivered Postal

Name

Signature

Date

Time

Temperature

Received By

Received By

Signature

Date

Time

Temperature

Report No

Received By

Received By

Signature

Date

Time

Temperature

Report No

Received By

Received By

Signature

Date

Time

Temperature

Report No

Submission of samples to the laboratory will be deemed as acceptance of Eurofins Invt Standard Terms and Conditions unless agreed otherwise. A copy of Eurofins Invt Standard Terms and Conditions is available on request.
Eurofins Environment Testing Australia Pty Ltd trading as Eurofins Invt

Melbourne

6 Monterey Road
Dandenong South Vic 3175
Phone : +61 3 8564 5000
NATA # 1261
Site # 1254 & 14271

Sydney

Unit F3, Building F
16 Mars Road
Lane Cove West NSW 2066
Phone : +61 2 9900 8400
NATA # 1261 Site # 18217

Brisbane

1/21 Smallwood Place
Murarrie QLD 4172
Phone : +61 7 3902 4600
NATA # 1261 Site # 20794

Perth

2/91 Leach Highway
Kewdale WA 6105
Phone : +61 8 9251 9600
NATA # 1261 Site # 23736

Sample Receipt Advice

Company name: **Ramboll Australia Pty Ltd**

Contact name: **Stephen Maxwell**

Project ID: **318000780**

COC number: **Not provided**

Turn around time: **5 Day**

Date/Time received: **Apr 9, 2020 10:10 AM**

Eurofins reference: **713210**

Sample information

- A detailed list of analytes logged into our LIMS, is included in the attached summary table.
- All samples have been received as described on the above COC.
- COC has been completed correctly.
- N/A Attempt to chill was evident.
- Appropriately preserved sample containers have been used.
- All samples were received in good condition.
- Samples have been provided with adequate time to commence analysis in accordance with the relevant holding times.
- Appropriate sample containers have been used.
- Sample containers for volatile analysis received with zero headspace.
- Split sample sent to requested external lab.
- Some samples have been subcontracted.
- N/A Custody Seals intact (if used).

Contact notes

If you have any questions with respect to these samples please contact:

Andrew Black on Phone : (+61) 2 9900 8490 or by e.mail: AndrewBlack@eurofins.com

Results will be delivered electronically via e.mail to Stephen Maxwell - smaxwell@ramboll.com.

Note: A copy of these results will also be delivered to the general Ramboll Australia Pty Ltd email address.

Australia

Melbourne
6 Monterey Road
Dandenong South VIC 3175
Phone : +61 3 8564 5000
NATA # 1261
Site # 1254 & 14271

Sydney
Unit F3, Building F
16 Mars Road
Lane Cove West NSW 2066
Phone : +61 2 9900 8400
NATA # 1261 Site # 18217

Brisbane
1/21 Smallwood Place
Murarrie QLD 4172
Phone : +61 7 3902 4600
NATA # 1261 Site # 20794

Perth
2/91 Leach Highway
Kewdale WA 6105
Phone : +61 8 9251 9600
NATA # 1261
Site # 23736

New Zealand

Auckland
35 O'Rorke Road
Penrose, Auckland 1061
Phone : +64 9 526 45 51
IANZ # 1327

Christchurch
43 Detroit Drive
Rolleston, Christchurch 7675
Phone : 0800 856 450
IANZ # 1290

ABN – 50 005 085 521

web : www.eurofins.com.au

e.mail : EnviroSales@eurofins.com

Company Name: Ramboll Australia Pty Ltd
Address: Level 3/100 Pacific Highway
North Sydney
NSW 2060

Project Name:
Project ID: 318000780

Order No.:
Report #: 713210
Phone: 02 9954 8118
Fax: 02 9954 8150

Received: Apr 9, 2020 10:10 AM
Due: Apr 20, 2020
Priority: 5 Day
Contact Name: Stephen Maxwell

Eurofins Analytical Services Manager : Andrew Black

Sample Detail						Lead	Moisture Set
Melbourne Laboratory - NATA Site # 1254 & 14271							
Sydney Laboratory - NATA Site # 18217						X	X
Brisbane Laboratory - NATA Site # 20794							
Perth Laboratory - NATA Site # 23736							
External Laboratory							
No	Sample ID	Sample Date	Sampling Time	Matrix	LAB ID		
1	GOULR12_3	Mar 23, 2020		Soil	S20-Ap02115	X	X
2	GOULRSE_1D	Mar 23, 2020		Soil	S20-Ap02116	X	X
3	ROSER19	Mar 23, 2020		Soil	S20-Ap02117	X	X
4	P4_TWS2	Mar 26, 2020		Water	S20-Ap02119	X	
5	DVAC-BE(PS)	Mar 24, 2020		Dust	S20-Ap02152	X	
6	XBOIDSTW1	Mar 18, 2020		Dust	S20-Ap02155	X	
7	XBOIDSTW3	Mar 18, 2020		Dust	S20-Ap02156	X	
Test Counts						7	3

Ramboll Environ Australia Pty Ltd
 Level 3/100 Pacific Highway
 North Sydney
 NSW 2060



NATA Accredited
Accreditation Number 1261
Site Number 18217

Accredited for compliance with ISO/IEC 17025 – Testing
 The results of the tests, calibrations and/or
 measurements included in this document are traceable
 to Australian/national standards.

Attention: **Stephen Maxwell**

Report **713210-S**
 Project name
 Project ID **318000780**
 Received Date **Apr 09, 2020**

Client Sample ID			GOULR12_3	GOULRSE_1D	ROSER19	DVAC-BE(PS)
Sample Matrix			Soil	Soil	Soil	Dust
Eurofins Sample No.			S20-Ap02115	S20-Ap02116	S20-Ap02117	S20-Ap02152
Date Sampled			Mar 23, 2020	Mar 23, 2020	Mar 23, 2020	Mar 24, 2020
Test/Reference	LOR	Unit				
Heavy Metals						
Lead	5	mg/kg	460	1100	25	52
% Moisture	1	%	< 1	4.5	19	-

Client Sample ID			XBOIDSTW1	XBOIDSTW3
Sample Matrix			Dust	Dust
Eurofins Sample No.			S20-Ap02155	S20-Ap02156
Date Sampled			Mar 18, 2020	Mar 18, 2020
Test/Reference	LOR	Unit		
Heavy Metals				
Lead	5	mg/kg	670	990

Sample History

Where samples are submitted/analysed over several days, the last date of extraction and analysis is reported.

A recent review of our LIMS has resulted in the correction or clarification of some method identifications. Due to this, some of the method reference information on reports has changed. However, no substantive change has been made to our laboratory methods, and as such there is no change in the validity of current or previous results.

If the date and time of sampling are not provided, the Laboratory will not be responsible for compromised results should testing be performed outside the recommended holding time.

Description

Heavy Metals

- Method: LTM-MET-3040 Metals in Waters, Soils & Sediments by ICP-MS

% Moisture

- Method: LTM-GEN-7080 Moisture

Testing Site

Sydney

Sydney

Extracted

Apr 20, 2020

Apr 09, 2020

Holding Time

180 Days

14 Days

Australia

Melbourne
6 Monterey Road
Dandenong South VIC 3175
Phone : +61 3 8564 5000
NATA # 1261
Site # 1254 & 14271

Sydney
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Phone : +61 2 9900 8400
NATA # 1261 Site # 18217

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NATA # 1261 Site # 20794

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NATA # 1261
Site # 23736

New Zealand

Auckland
35 O'Rorke Road
Penrose, Auckland 1061
Phone : +64 9 526 45 51
IANZ # 1327

Christchurch
43 Detroit Drive
Rolleston, Christchurch 7675
Phone : 0800 856 450
IANZ # 1290

Company Name: Ramboll Australia Pty Ltd
Address: Level 3/100 Pacific Highway
North Sydney
NSW 2060

Project Name:
Project ID: 318000780

Order No.:
Report #: 713210
Phone: 02 9954 8118
Fax: 02 9954 8150

Received: Apr 9, 2020 10:10 AM
Due: Apr 20, 2020
Priority: 5 Day
Contact Name: Stephen Maxwell

Eurofins Analytical Services Manager : Andrew Black

Sample Detail						Lead	Moisture Set
Melbourne Laboratory - NATA Site # 1254 & 14271							
Sydney Laboratory - NATA Site # 18217						X	X
Brisbane Laboratory - NATA Site # 20794							
Perth Laboratory - NATA Site # 23736							
External Laboratory							
No	Sample ID	Sample Date	Sampling Time	Matrix	LAB ID		
1	GOULR12_3	Mar 23, 2020		Soil	S20-Ap02115	X	X
2	GOULRSE_1D	Mar 23, 2020		Soil	S20-Ap02116	X	X
3	ROSER19	Mar 23, 2020		Soil	S20-Ap02117	X	X
4	P4_TWS2	Mar 26, 2020		Water	S20-Ap02119	X	
5	DVAC-BE(PS)	Mar 24, 2020		Dust	S20-Ap02152	X	
6	XBOIDSTW1	Mar 18, 2020		Dust	S20-Ap02155	X	
7	XBOIDSTW3	Mar 18, 2020		Dust	S20-Ap02156	X	
Test Counts						7	3

Internal Quality Control Review and Glossary

General

- Laboratory QC results for Method Blanks, Duplicates, Matrix Spikes, and Laboratory Control Samples follows guidelines delineated in the National Environment Protection (Assessment of Site Contamination) Measure 1999, as amended May 2013 and are included in this QC report where applicable. Additional QC data may be available on request.
- All soil/sediment/solid results are reported on a dry basis, unless otherwise stated.
- All biota/food results are reported on a wet weight basis on the edible portion, unless otherwise stated.
- Actual LORs are matrix dependant. Quoted LORs may be raised where sample extracts are diluted due to interferences.
- Results are uncorrected for matrix spikes or surrogate recoveries except for PFAS compounds.
- SVOC analysis on waters are performed on homogenised, unfiltered samples, unless noted otherwise.
- Samples were analysed on an 'as received' basis.
- Information identified on this report with blue colour, indicates data provided by customer, that may have an impact on the results.
- This report replaces any interim results previously issued.

Holding Times

Please refer to 'Sample Preservation and Container Guide' for holding times (QS3001).

For samples received on the last day of holding time, notification of testing requirements should have been received at least 6 hours prior to sample receipt deadlines as stated on the SRA.

If the Laboratory did not receive the information in the required timeframe, and regardless of any other integrity issues, suitably qualified results may still be reported.

Holding times apply from the date of sampling, therefore compliance to these may be outside the laboratory's control.

For VOCs containing vinyl chloride, styrene and 2-chloroethyl vinyl ether the holding time is 7 days however for all other VOCs such as BTEX or C6-10 TRH then the holding time is 14 days.

****NOTE:** pH duplicates are reported as a range NOT as RPD

Units

mg/kg: milligrams per kilogram

mg/L: milligrams per litre

ug/L: micrograms per litre

ppm: Parts per million

ppb: Parts per billion

%: Percentage

org/100mL: Organisms per 100 millilitres

NTU: Nephelometric Turbidity Units

MPN/100mL: Most Probable Number of organisms per 100 millilitres

Terms

Dry	Where a moisture has been determined on a solid sample the result is expressed on a dry basis.
LOR	Limit of Reporting.
SPIKE	Addition of the analyte to the sample and reported as percentage recovery.
RPD	Relative Percent Difference between two Duplicate pieces of analysis.
LCS	Laboratory Control Sample - reported as percent recovery.
CRM	Certified Reference Material - reported as percent recovery.
Method Blank	In the case of solid samples these are performed on laboratory certified clean sands and in the case of water samples these are performed on de-ionised water.
Surr - Surrogate	The addition of a like compound to the analyte target and reported as percentage recovery.
Duplicate	A second piece of analysis from the same sample and reported in the same units as the result to show comparison.
USEPA	United States Environmental Protection Agency
APHA	American Public Health Association
TCLP	Toxicity Characteristic Leaching Procedure
COC	Chain of Custody
SRA	Sample Receipt Advice
QSM	US Department of Defense Quality Systems Manual Version 5.3
CP	Client Parent - QC was performed on samples pertaining to this report
NCP	Non-Client Parent - QC performed on samples not pertaining to this report, QC is representative of the sequence or batch that client samples were analysed within.
TEQ	Toxic Equivalency Quotient

QC - Acceptance Criteria

RPD Duplicates: Global RPD Duplicates Acceptance Criteria is 30% however the following acceptance guidelines are equally applicable:

Results <10 times the LOR : No Limit

Results between 10-20 times the LOR : RPD must lie between 0-50%

Results >20 times the LOR : RPD must lie between 0-30%

Surrogate Recoveries: Recoveries must lie between 20-130% Phenols & 50-150% PFASs

PFAS field samples that contain surrogate recoveries in excess of the QC limit designated in QSM 5.3 where no positive PFAS results have been reported have been reviewed and no data was affected.

WA DWER (n=10): PFBA, PFPeA, PFHxA, PFHpA, PFOA, PFBS, PFHxS, PFOS, 6:2 FTSA, 8:2 FTSA

QC Data General Comments

- Where a result is reported as a less than (<), higher than the nominated LOR, this is due to either matrix interference, extract dilution required due to interferences or contaminant levels within the sample, high moisture content or insufficient sample provided.
- Duplicate data shown within this report that states the word "BATCH" is a Batch Duplicate from outside of your sample batch, but within the laboratory sample batch at a 1:10 ratio. The Parent and Duplicate data shown is not data from your samples.
- Organochlorine Pesticide analysis - where reporting LCS data, Toxaphene & Chlordane are not added to the LCS.
- Organochlorine Pesticide analysis - where reporting Spike data, Toxaphene is not added to the Spike.
- Total Recoverable Hydrocarbons - where reporting Spike & LCS data, a single spike of commercial Hydrocarbon products in the range of C12-C30 is added and it's Total Recovery is reported in the C10-C14 cell of the Report.
- pH and Free Chlorine analysed in the laboratory - Analysis on this test must begin within 30 minutes of sampling. Therefore laboratory analysis is unlikely to be completed within holding time. Analysis will begin as soon as possible after sample receipt.
- Recovery Data (Spikes & Surrogates) - where chromatographic interference does not allow the determination of Recovery the term "INT" appears against that analyte.
- Polychlorinated Biphenyls are spiked only using Aroclor 1260 in Matrix Spikes and LCS.
- For Matrix Spikes and LCS results a dash " - " in the report means that the specific analyte was not added to the QC sample.
- Duplicate RPDs are calculated from raw analytical data thus it is possible to have two sets of data.

Quality Control Results

Test				Units	Result 1		Acceptance Limits	Pass Limits	Qualifying Code		
Method Blank											
Heavy Metals											
Lead				mg/kg	< 5		5	Pass			
LCS - % Recovery											
Heavy Metals											
Lead				%	96		70-130	Pass			
Test	Lab Sample ID	QA Source	Units	Result 1			Acceptance Limits	Pass Limits	Qualifying Code		
Spike - % Recovery											
Heavy Metals											
Lead				S20-Ap21385	NCP	%	109	70-130	Pass		
Test	Lab Sample ID	QA Source	Units	Result 1			Acceptance Limits	Pass Limits	Qualifying Code		
Duplicate											
Heavy Metals											
Lead				S20-Ap16938	NCP	mg/kg	2500	2900	13	30%	Pass
Duplicate											
					Result 1	Result 2	RPD				
% Moisture				S20-Ap14269	NCP	%	20	20	1.0	30%	Pass

Comments**Sample Integrity**

Custody Seals Intact (if used)	N/A
Attempt to Chill was evident	N/A
Sample correctly preserved	Yes
Appropriate sample containers have been used	Yes
Sample containers for volatile analysis received with minimal headspace	Yes
Samples received within HoldingTime	Yes
Some samples have been subcontracted	No

Authorised By

Andrew Black Analytical Services Manager
Gabriele Cordero Senior Analyst-Metal (NSW)

**Glenn Jackson
General Manager**

Final report - this Report replaces any previously issued Report

- Indicates Not Requested

* Indicates NATA accreditation does not cover the performance of this service

Measurement uncertainty of test data is available on request or please [click here](#).

Eurofins shall not be liable for loss, cost, damages or expenses incurred by the client, or any other person or company, resulting from the use of any information or interpretation given in this report. In no case shall Eurofins be liable for consequential damages including, but not limited to, lost profits, damages for failure to meet deadlines and lost production arising from this report. This document shall not be reproduced except in full and relates only to the items tested. Unless indicated otherwise, the tests were performed on the samples as received.

Ramboll Environ Australia Pty Ltd
 Level 3/100 Pacific Highway
 North Sydney
 NSW 2060



NATA Accredited
 Accreditation Number 1261
 Site Number 1254

Accredited for compliance with ISO/IEC 17025 – Testing
 The results of the tests, calibrations and/or
 measurements included in this document are traceable
 to Australian/national standards.

Attention: **Stephen Maxwell**

Report **713740-S-V2**
 Project name **318000780**
 Received Date **Apr 15, 2020**

Client Sample ID			MW2_1.0	XMW5_0.05	XMW5_0.5	XMW5_1.0
Sample Matrix			Soil	Soil	Soil	Soil
Eurofins Sample No.			M20-Ap20283	M20-Ap20284	M20-Ap20285	M20-Ap20286
Date Sampled			Mar 18, 2020	Mar 18, 2020	Mar 18, 2020	Mar 18, 2020
Test/Reference	LOR	Unit				
Heavy Metals						
Lead	5	mg/kg	6600	300	270	26
% Moisture	1	%	5.4	7.0	8.6	3.9

Client Sample ID			XMW5_1.5	XMW5_2.5	XMW6_0.05	XMW6_0.5
Sample Matrix			Soil	Soil	Soil	Soil
Eurofins Sample No.			M20-Ap20287	M20-Ap20288	M20-Ap20289	M20-Ap20290
Date Sampled			Mar 18, 2020	Mar 18, 2020	Mar 18, 2020	Mar 18, 2020
Test/Reference	LOR	Unit				
Heavy Metals						
Lead	5	mg/kg	26	23	62	31
% Moisture	1	%	4.0	4.8	13	6.2

Client Sample ID			XMW6_1.0	XMW6_1.5	XMW6_2.5	XMW7_0.05
Sample Matrix			Soil	Soil	Soil	Soil
Eurofins Sample No.			M20-Ap20291	M20-Ap20292	M20-Ap20293	M20-Ap20294
Date Sampled			Mar 18, 2020	Mar 18, 2020	Mar 18, 2020	Mar 18, 2020
Test/Reference	LOR	Unit				
Heavy Metals						
Lead	5	mg/kg	21	19	21	210
% Moisture	1	%	2.3	6.4	3.4	7.3

Client Sample ID			XMW7_0.5	XMW7_1.0	XMW7_1.5	XMW7_2.5
Sample Matrix			Soil	Soil	Soil	Soil
Eurofins Sample No.			M20-Ap20295	M20-Ap20296	M20-Ap20297	M20-Ap20298
Date Sampled			Mar 18, 2020	Mar 18, 2020	Mar 18, 2020	Mar 18, 2020
Test/Reference	LOR	Unit				
Heavy Metals						
Lead	5	mg/kg	49	29	34	29
% Moisture						
	1	%	8.9	7.9	9.4	14

Client Sample ID			XMW7_3.5	XMW7_4.5	WINCH N	WINCH S
Sample Matrix			Soil	Soil	Soil	Soil
Eurofins Sample No.			M20-Ap20299	M20-Ap20300	M20-Ap20301	M20-Ap20302
Date Sampled			Mar 18, 2020	Mar 18, 2020	Mar 18, 2020	Mar 18, 2020
Test/Reference	LOR	Unit				
Heavy Metals						
Lead	5	mg/kg	49	25	66000	16000
% Moisture						
	1	%	12	9.8	1.9	1.3

Sample History

Where samples are submitted/analysed over several days, the last date of extraction and analysis is reported.

A recent review of our LIMS has resulted in the correction or clarification of some method identifications. Due to this, some of the method reference information on reports has changed. However, no substantive change has been made to our laboratory methods, and as such there is no change in the validity of current or previous results.

If the date and time of sampling are not provided, the Laboratory will not be responsible for compromised results should testing be performed outside the recommended holding time.

Description

Heavy Metals

- Method: LTM-MET-3040 Metals in Waters, Soils & Sediments by ICP-MS

% Moisture

- Method: LTM-GEN-7080 Moisture

Testing Site

Sydney

Melbourne

Extracted

Apr 15, 2020

Apr 15, 2020

Holding Time

180 Days

14 Days

Australia

Melbourne
6 Monterey Road
Dandenong South VIC 3175
Phone : +61 3 8564 5000
NATA # 1261
Site # 1254 & 14271

Sydney
Unit F3, Building F
16 Mars Road
Lane Cove West NSW 2066
Phone : +61 2 9900 8400
NATA # 1261 Site # 18217

Brisbane
1/21 Smallwood Place
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Phone : +61 7 3902 4600
NATA # 1261 Site # 20794

Perth
2/91 Leach Highway
Kewdale WA 6105
Phone : +61 8 9251 9600
NATA # 1261
Site # 23736

New Zealand

Auckland
35 O'Rorke Road
Penrose, Auckland 1061
Phone : +64 9 526 45 51
IANZ # 1327

Christchurch
43 Detroit Drive
Rolleston, Christchurch 7675
Phone : 0800 856 450
IANZ # 1290

Company Name: Ramboll Australia Pty Ltd
Address: Level 3/100 Pacific Highway
North Sydney
NSW 2060
Project Name: 318000780

Order No.:
Report #: 713740
Phone: 02 9954 8118
Fax: 02 9954 8150

Received: Apr 15, 2020 1:37 PM
Due: Apr 20, 2020
Priority: 1 Day
Contact Name: Stephen Maxwell

Eurofins Analytical Services Manager : Andrew Black

Sample Detail						Lead	Moisture Set
Melbourne Laboratory - NATA Site # 1254 & 14271							X
Sydney Laboratory - NATA Site # 18217						X	
Brisbane Laboratory - NATA Site # 20794							
Perth Laboratory - NATA Site # 23736							
External Laboratory							
No	Sample ID	Sample Date	Sampling Time	Matrix	LAB ID		
1	MW2_1.0	Mar 18, 2020		Soil	M20-Ap20283	X	X
2	XMW5_0.05	Mar 18, 2020		Soil	M20-Ap20284	X	X
3	XMW5_0.5	Mar 18, 2020		Soil	M20-Ap20285	X	X
4	XMW5_1.0	Mar 18, 2020		Soil	M20-Ap20286	X	X
5	XMW5_1.5	Mar 18, 2020		Soil	M20-Ap20287	X	X
6	XMW5_2.5	Mar 18, 2020		Soil	M20-Ap20288	X	X
7	XMW6_0.05	Mar 18, 2020		Soil	M20-Ap20289	X	X
8	XMW6_0.5	Mar 18, 2020		Soil	M20-Ap20290	X	X
9	XMW6_1.0	Mar 18, 2020		Soil	M20-Ap20291	X	X
10	XMW6_1.5	Mar 18, 2020		Soil	M20-Ap20292	X	X
11	XMW6_2.5	Mar 18, 2020		Soil	M20-Ap20293	X	X

Australia

Melbourne
 6 Monterey Road
 Dandenong South VIC 3175
 Phone : +61 3 8564 5000
 NATA # 1261
 Site # 1254 & 14271

Sydney
 Unit F3, Building F
 16 Mars Road
 Lane Cove West NSW 2066
 Phone : +61 2 9900 8400
 NATA # 1261 Site # 18217

Brisbane
 1/21 Smallwood Place
 Murarrie QLD 4172
 Phone : +61 7 3902 4600
 NATA # 1261 Site # 20794

Perth
 2/91 Leach Highway
 Kewdale WA 6105
 Phone : +61 8 9251 9600
 NATA # 1261
 Site # 23736

New Zealand

Auckland
 35 O'Rorke Road
 Penrose, Auckland 1061
 Phone : +64 9 526 45 51
 IANZ # 1327

Christchurch
 43 Detroit Drive
 Rolleston, Christchurch 7675
 Phone : 0800 856 450
 IANZ # 1290

ABN – 50 005 085 521

web : www.eurofins.com.au

e.mail : EnviroSales@eurofins.com

Company Name: Ramboll Australia Pty Ltd
Address: Level 3/100 Pacific Highway
 North Sydney
 NSW 2060
Project Name: 318000780

Order No.:
Report #: 713740
Phone: 02 9954 8118
Fax: 02 9954 8150

Received: Apr 15, 2020 1:37 PM
Due: Apr 20, 2020
Priority: 1 Day
Contact Name: Stephen Maxwell

Eurofins Analytical Services Manager : Andrew Black

Sample Detail						Lead	Moisture Set
Melbourne Laboratory - NATA Site # 1254 & 14271							X
Sydney Laboratory - NATA Site # 18217						X	
Brisbane Laboratory - NATA Site # 20794							
Perth Laboratory - NATA Site # 23736							
12	XMW7_0.05	Mar 18, 2020	Soil	M20-Ap20294	X	X	
13	XMW7_0.5	Mar 18, 2020	Soil	M20-Ap20295	X	X	
14	XMW7_1.0	Mar 18, 2020	Soil	M20-Ap20296	X	X	
15	XMW7_1.5	Mar 18, 2020	Soil	M20-Ap20297	X	X	
16	XMW7_2.5	Mar 18, 2020	Soil	M20-Ap20298	X	X	
17	XMW7_3.5	Mar 18, 2020	Soil	M20-Ap20299	X	X	
18	XMW7_4.5	Mar 18, 2020	Soil	M20-Ap20300	X	X	
19	WINCH N	Mar 18, 2020	Soil	M20-Ap20301	X	X	
20	WINCH S	Mar 18, 2020	Soil	M20-Ap20302	X	X	
Test Counts						20	20

Internal Quality Control Review and Glossary

General

- Laboratory QC results for Method Blanks, Duplicates, Matrix Spikes, and Laboratory Control Samples follows guidelines delineated in the National Environment Protection (Assessment of Site Contamination) Measure 1999, as amended May 2013 and are included in this QC report where applicable. Additional QC data may be available on request.
- All soil/sediment/solid results are reported on a dry basis, unless otherwise stated.
- All biota/food results are reported on a wet weight basis on the edible portion, unless otherwise stated.
- Actual LORs are matrix dependant. Quoted LORs may be raised where sample extracts are diluted due to interferences.
- Results are uncorrected for matrix spikes or surrogate recoveries except for PFAS compounds.
- SVOC analysis on waters are performed on homogenised, unfiltered samples, unless noted otherwise.
- Samples were analysed on an 'as received' basis.
- Information identified on this report with blue colour, indicates data provided by customer, that may have an impact on the results.
- This report replaces any interim results previously issued.

Holding Times

Please refer to 'Sample Preservation and Container Guide' for holding times (QS3001).

For samples received on the last day of holding time, notification of testing requirements should have been received at least 6 hours prior to sample receipt deadlines as stated on the SRA.

If the Laboratory did not receive the information in the required timeframe, and regardless of any other integrity issues, suitably qualified results may still be reported.

Holding times apply from the date of sampling, therefore compliance to these may be outside the laboratory's control.

For VOCs containing vinyl chloride, styrene and 2-chloroethyl vinyl ether the holding time is 7 days however for all other VOCs such as BTEX or C6-10 TRH then the holding time is 14 days.

****NOTE:** pH duplicates are reported as a range NOT as RPD

Units

mg/kg: milligrams per kilogram

mg/L: milligrams per litre

ug/L: micrograms per litre

ppm: Parts per million

ppb: Parts per billion

%: Percentage

org/100mL: Organisms per 100 millilitres

NTU: Nephelometric Turbidity Units

MPN/100mL: Most Probable Number of organisms per 100 millilitres

Terms

Dry	Where a moisture has been determined on a solid sample the result is expressed on a dry basis.
LOR	Limit of Reporting.
SPIKE	Addition of the analyte to the sample and reported as percentage recovery.
RPD	Relative Percent Difference between two Duplicate pieces of analysis.
LCS	Laboratory Control Sample - reported as percent recovery.
CRM	Certified Reference Material - reported as percent recovery.
Method Blank	In the case of solid samples these are performed on laboratory certified clean sands and in the case of water samples these are performed on de-ionised water.
Surr - Surrogate	The addition of a like compound to the analyte target and reported as percentage recovery.
Duplicate	A second piece of analysis from the same sample and reported in the same units as the result to show comparison.
USEPA	United States Environmental Protection Agency
APHA	American Public Health Association
TCLP	Toxicity Characteristic Leaching Procedure
COC	Chain of Custody
SRA	Sample Receipt Advice
QSM	US Department of Defense Quality Systems Manual Version 5.3
CP	Client Parent - QC was performed on samples pertaining to this report
NCP	Non-Client Parent - QC performed on samples not pertaining to this report, QC is representative of the sequence or batch that client samples were analysed within.
TEQ	Toxic Equivalency Quotient

QC - Acceptance Criteria

RPD Duplicates: Global RPD Duplicates Acceptance Criteria is 30% however the following acceptance guidelines are equally applicable:

Results <10 times the LOR : No Limit

Results between 10-20 times the LOR : RPD must lie between 0-50%

Results >20 times the LOR : RPD must lie between 0-30%

Surrogate Recoveries: Recoveries must lie between 20-130% Phenols & 50-150% PFASs

PFAS field samples that contain surrogate recoveries in excess of the QC limit designated in QSM 5.3 where no positive PFAS results have been reported have been reviewed and no data was affected.

WA DWER (n=10): PFBA, PFPeA, PFHxA, PFHpA, PFOA, PFBS, PFHxS, PFOS, 6:2 FTSA, 8:2 FTSA

QC Data General Comments

- Where a result is reported as a less than (<), higher than the nominated LOR, this is due to either matrix interference, extract dilution required due to interferences or contaminant levels within the sample, high moisture content or insufficient sample provided.
- Duplicate data shown within this report that states the word "BATCH" is a Batch Duplicate from outside of your sample batch, but within the laboratory sample batch at a 1:10 ratio. The Parent and Duplicate data shown is not data from your samples.
- Organochlorine Pesticide analysis - where reporting LCS data, Toxaphene & Chlordane are not added to the LCS.
- Organochlorine Pesticide analysis - where reporting Spike data, Toxaphene is not added to the Spike.
- Total Recoverable Hydrocarbons - where reporting Spike & LCS data, a single spike of commercial Hydrocarbon products in the range of C12-C30 is added and it's Total Recovery is reported in the C10-C14 cell of the Report.
- pH and Free Chlorine analysed in the laboratory - Analysis on this test must begin within 30 minutes of sampling. Therefore laboratory analysis is unlikely to be completed within holding time. Analysis will begin as soon as possible after sample receipt.
- Recovery Data (Spikes & Surrogates) - where chromatographic interference does not allow the determination of Recovery the term "INT" appears against that analyte.
- Polychlorinated Biphenyls are spiked only using Aroclor 1260 in Matrix Spikes and LCS.
- For Matrix Spikes and LCS results a dash " - " in the report means that the specific analyte was not added to the QC sample.
- Duplicate RPDs are calculated from raw analytical data thus it is possible to have two sets of data.

Quality Control Results

Test				Units	Result 1			Acceptance Limits	Pass Limits	Qualifying Code		
Method Blank												
Heavy Metals												
Lead				mg/kg	< 5			5	Pass			
LCS - % Recovery												
Heavy Metals												
Lead				%	96			80-120	Pass			
Test	Lab Sample ID	QA Source	Units	Result 1			Acceptance Limits	Pass Limits	Qualifying Code			
Spike - % Recovery												
Heavy Metals												
Lead				M20-Ap20287	CP	%	95	75-125	Pass			
Spike - % Recovery												
Heavy Metals												
Lead				M20-Ap20297	CP	%	96	75-125	Pass			
Test	Lab Sample ID	QA Source	Units	Result 1			Acceptance Limits	Pass Limits	Qualifying Code			
Duplicate												
Heavy Metals												
Lead				M20-Ap20283	CP	mg/kg	6600	7500	13	30%	Pass	
Duplicate												
Heavy Metals												
% Moisture				M20-Ap20291	CP	%	2.3	3.1	31	30%	Fail	Q15
Duplicate												
Heavy Metals												
Lead				M20-Ap20293	CP	mg/kg	21	23	14	30%	Pass	
Duplicate												
Heavy Metals												
% Moisture				M20-Ap20301	CP	%	1.9	1.9	<1	30%	Pass	

Comments

New version of retests with special requested Sydney method.

Sample Integrity

Custody Seals Intact (if used)	N/A
Attempt to Chill was evident	Yes
Sample correctly preserved	Yes
Appropriate sample containers have been used	Yes
Sample containers for volatile analysis received with minimal headspace	Yes
Samples received within HoldingTime	Yes
Some samples have been subcontracted	No

Qualifier Codes/Comments

Code	Description
Q15	The RPD reported passes Eurofins Environment Testing's QC - Acceptance Criteria as defined in the Internal Quality Control Review and Glossary page of this report.

Authorised By

Andrew Black	Analytical Services Manager
Gabriele Cordero	Senior Analyst-Metal (NSW)


**Glenn Jackson
General Manager**

Final report - this Report replaces any previously issued Report

- Indicates Not Requested

* Indicates NATA accreditation does not cover the performance of this service

Measurement uncertainty of test data is available on request or please [click here](#).

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CHAIN OF CUSTODY RECORD

02 9392 8000

Sydney Laboratory
Unit F3 Bldg F 18 Kings Rd Lane Cove West NSW 2056
02 9392 8000 EnviroSamplesSYD@eurofins.com

Brisbane Laboratory
Unit 1, 21 Smallwood Pt, Marooch QLD 4772
07 3992 4800 EnviroSamplesBris@eurofins.com

Perth Laboratory
Unit 2, s/r 1 Leach Highway, Kewdale WA 6105
08 9231 8000 EnviroSamplesPer@eurofins.com

Melbourne Laboratory
2 Kingston Town Chem, Oakleigh VIC 3186
03 9564 5000 EnviroSamplesMel@eurofins.com

Company	Ramboll	Project No	318000780	Project Manager	Stephen Maxwell	Sampler(s)	AC
Address	50 Globe Road the Junction	EDD Format	ESDCL, EQUIS	Excel and PDF		Handled over by	SM
Contact Name	Stephen Maxwell	Analyses (Note: Where metals are requested, please specify "Total" or "Filtered") SUITE code must be used to amend SUITE phone. M13 (Al, As, Ba, Be, Cd, Cr, Co, Cu, Fe, Pb, Mn, Hg, Ni, Zn) total (Excluding Cr6+)					
Phone No		1L Plastic 250mL Plastic 125mL Plastic 200mL Amber Glass 40mL VOA vial 500mL PFAS Bottle Jar (Glass or HDPE) Other (Asbestos AS4664, WA Guidelines)					
Special Directions		Turnaround Time (TAT) Requirements (check all that apply from list)					
Purchase Order		<input type="checkbox"/> Overnight (Eam)* <input type="checkbox"/> 1 Day* <input type="checkbox"/> 2 Day* <input checked="" type="checkbox"/> 3 Day* <input type="checkbox"/> 5 Day* <input type="checkbox"/> Other () *Business days					
Quote ID No	180318RAMN_1	Sample Comments / Dangerous Goods Hazard Warning					

No	Client Sample ID	Sampled Date/Time (dd/mm/yyyy)	Matrix (Solid (S) Water (W))	Analyses										Total Counts												
				Al	As	Ba	Be	Cd	Cr	Co	Cu	Fe	Pb		Mn	Hg	Ni	Zn								
1	SW1	1/04/20	W	<input checked="" type="checkbox"/>																						
2	SW1_UP	1/04/20	W	<input checked="" type="checkbox"/>																						
3	SW2	1/04/20	W	<input checked="" type="checkbox"/>																						
4	SW3	1/04/20	W	<input checked="" type="checkbox"/>																						
5	SW4	1/04/20	W	<input checked="" type="checkbox"/>																						
6	SED1	1/04/20	sediment	<input checked="" type="checkbox"/>																						
7	SED_UP	1/04/20	sediment	<input checked="" type="checkbox"/>																						
8	SED2	1/04/20	sediment	<input checked="" type="checkbox"/>																						
9	SED3	1/04/20	sediment	<input checked="" type="checkbox"/>																						
10	SED4	1/04/20	sediment	<input checked="" type="checkbox"/>																						
				Total Counts											10											

Method of Shipment	<input checked="" type="checkbox"/> Courier #	Hand Delivered	<input type="checkbox"/> Postal	Name		Signature		Date	1/4/20	Time	2:59 PM	Temperature	14.50 C
Eurofins Ingt Laboratory Use Only	Received By	Received By	Signature	Signature	Signature	Signature	Signature	Date		Time		Temperature	
Submission of samples to the laboratory will be deemed as acceptance of Eurofins Ingt Standard Terms and Conditions unless agreed otherwise. A copy of Eurofins Ingt Standard Terms and Conditions is available on request.													
Eurofins Environment Testing Australia Pty Ltd trading as Eurofins mgf													

CHAIN OF CUSTODY RECORD

Unit 31 DFE - 15 Xmas Rd, Lameroo, SA 5126
02 9800 8400 EnviroSamples@eurofins.com

Sydney Laboratory
Unit 1 21 Smeadow Rd, Murrumbidgee, NSW 2066
07 2907 4600 EnviroSamplesQLD@eurofins.com

Brisbane Laboratory
Unit 2 811 Leach Highway, Kewdale, WA 6105
08 9251 9500 EnviroSamplesWA@eurofins.com

Perth Laboratory
Unit 2 811 Leach Highway, Kewdale, WA 6105
08 9251 9500 EnviroSamplesWA@eurofins.com

Melbourne Laboratory
2 Kingston Town Close, Oakleigh, VIC 3186
03 9584 5000 EnviroSamplesVIC@eurofins.com

Company: Ramboll
Address: 50 Gable Road the Junction
Contact Name: Stephen Maxwell
Phone No:
Special Directions:
Purchase Order:
Quote ID No: 180815RQAMN_1

Project Name: 318000780
Analyses: M13 (Al, As, Ba, Be, Cd, Cr, Co, Cu, Fe, Pb, Mn, Hg, Ni, Zn) total (Excluding Cr6+)
(Note: Where metals are requested, please specify "Total" or "Filtered") SUITE codes must be listed to attract SLITE pricing

No	Client Sample ID	Sampled Date/Time (dd/mm/yyyy hh:mm)	Matrix (Solid (S) Water (W))	Analysis
1	SED5	10/4/20	sediment	X
2	SED6	10/4/20	sediment	X
3	SW7	20/4/20	W	X
4	SW8	20/4/20	W	X
5	SW9	20/4/20	W	X
6	SED7	20/4/20	sediment	X
7	SED8	20/4/20	sediment	X
8	SED9	20/4/20	sediment	X
9	DO1_020420	20/4/20	W	X
10	TO1_020420	20/4/20	W	X
Total Counts				10

Method of Shipment	Counter #	Hand Delivered	Postal	Name	Signature	Date	Time	Temperature	Report No
<input type="checkbox"/> Courier		<input checked="" type="checkbox"/>	<input type="checkbox"/>						
Laboratory Use Only	Received By	<input type="checkbox"/> BNE <input type="checkbox"/> MEL <input type="checkbox"/> PER <input type="checkbox"/> ADL <input type="checkbox"/> NTL <input type="checkbox"/> DRW		Signature	Date	Time	Temperature	Report No	
	Received By	<input type="checkbox"/> SYD <input type="checkbox"/> BNE <input type="checkbox"/> MEL <input type="checkbox"/> PER <input type="checkbox"/> ADL <input type="checkbox"/> NTL <input type="checkbox"/> DRW		Signature	Date	Time	Temperature	Report No	

Sampler(s): AC
Handed over by: SM
Email for Invoice: smaxwell@ramboll.com, aslavac-accounts@ramboll.com
Email for Results: smaxwell@ramboll.com, blackwell@ramboll.com, rcondon@ramboll.com, shyde@ramboll.com

Label(s): 1L Plastic, 250mL Plastic, 125mL Plastic, 200mL Amber Glass, 40mL VOA vial, 500mL PFAS Bottle, Jar (Glass or HDPE), Other (Asbestos AS4964, WA Guidelines)
Turnaround Time (TAT) Requirements (order by days):
 Overnight (Eam)
 1 Day
 2 Day
 3 Day
 5 Day (Sandwiches apply)
 Other ()
Sample Comments / Dangerous Goods Hazard Warning:

SEND TO ALS FOR ANALYSIS
 14.50°C
 10298

Submission of samples to the laboratory will be deemed as acceptance of Eurofins' Ingot Standard Terms and Conditions unless agreed otherwise. A copy of Eurofins' Ingot Standard Terms and Conditions is available on request.
Eurofins Environment Testing Australia Pty Ltd trading as Eurofins Ingot



CHAIN OF CUSTODY RECORD

Sydney Laboratory
Unit 13 Belfry - 18 Years Rd, Lane Cove West NSW 2266
02 9900 8400 EnviroSampleSydney@eurofins.com

Brisbane Laboratory
Unit 1, 21 Smeethood Pl., Mornings QLD 4172
07 3002 4000 EnviroSampleBrisbane@eurofins.com

Perth Laboratory
Unit 2, 91 Leach Highway, Kewdale WA 6105
08 9251 5000 EnviroSamplePerth@eurofins.com

Melbourne Laboratory
2 Victoria Town Centre, Oakleigh VIC 3166
03 9584 5000 EnviroSampleMel@eurofins.com

Company: **Ramboll** Project Name: **318000780** Project Manager: **Stephen Maxwell** EDD Form: **ESDHL, EQM, EQM** Excel and PDF

Address: **50 Glebe Road the Junction** Project No: **318000780** Project Manager: **Stephen Maxwell** EDD Form: **ESDHL, EQM, EQM** Excel and PDF

Contact Name: **Stephen Maxwell** Analyses: **M13 (Al, As, Ba, Be, Cd, Cr, Co, Cu, Fe, Pb, Mn, Hg, Ni, Zn) total (Excluding Cr6+)**

Phone No: _____

Special Directions: _____

Purchase Order: _____

Quote ID No: **180813RAMAN_1**

Client Sample ID: **DOI_020420_SED** Sampled Date/Time (dd/mm/yyyy): **20/4/20** Matrix Solid (S) Water (W): **sediment**

1 **DOI_020420_SED** **20/4/20** **sediment**

2 **TO1_020420_SED** **20/4/20** **sediment**

3 _____

4 _____

5 _____

6 _____

7 _____

8 _____

9 _____

10 _____

Total Counts: **2**

Method of Shipment: Courier # _____ Hand Delivered _____

Received By: **Lucas D** Received By: **Lucas D** Signature: _____ Signature: _____

Signature: _____ Signature: _____ Date: **02/04/20** Date: **02/04/20** Time: _____ Time: _____

Temperature: **14.50 °C** Report No: **412798**

Submission of samples to the laboratory will be deemed as acceptance of Eurofins' Ingot Standard Terms and Conditions unless agreed otherwise. A copy of Eurofins' Ingot Standard Terms and Conditions is available on request.

Eurofins Environment Testing Australia Pty Ltd trading as Eurofins | Ingot

- Handed over by: **AC** **SM**
- Sampler(s): **AC**
- Requirements (check all that apply):
- Overnight (warm)*
 - 1 Day*
 - 2 Day*
 - 3 Day*
 - 5 Day* (Batch charges apply)
 - Other ()
- Turnaround Time (TAT)
- Requirements (check all that apply):
- 1L Plastic
 - 250mL Plastic
 - 125mL Plastic
 - 200mL Amber Glass
 - 40mL VOA vial
 - 500mL PFAS Bottle
 - Jar (Glass or HDPE)
 - Other (Asbestos AS4964, WA Guidelines)
- Sample Comments / Dangerous Goods Hazard Warning
- SEND TO ALS FOR ANALYSIS

Handed over by: **AC** **SM**

Sampler(s): **AC**

Requirements (check all that apply):

- Overnight (warm)*
- 1 Day*
- 2 Day*
- 3 Day*
- 5 Day* (Batch charges apply)
- Other ()

Turnaround Time (TAT)

Requirements (check all that apply):

- 1L Plastic
- 250mL Plastic
- 125mL Plastic
- 200mL Amber Glass
- 40mL VOA vial
- 500mL PFAS Bottle
- Jar (Glass or HDPE)
- Other (Asbestos AS4964, WA Guidelines)

Sample Comments / Dangerous Goods Hazard Warning

SEND TO ALS FOR ANALYSIS

Handed over by: **AC** **SM**

Sampler(s): **AC**

Requirements (check all that apply):

- Overnight (warm)*
- 1 Day*
- 2 Day*
- 3 Day*
- 5 Day* (Batch charges apply)
- Other ()

Turnaround Time (TAT)

Requirements (check all that apply):

- 1L Plastic
- 250mL Plastic
- 125mL Plastic
- 200mL Amber Glass
- 40mL VOA vial
- 500mL PFAS Bottle
- Jar (Glass or HDPE)
- Other (Asbestos AS4964, WA Guidelines)

Sample Comments / Dangerous Goods Hazard Warning

SEND TO ALS FOR ANALYSIS

Handed over by: **AC** **SM**

Sampler(s): **AC**

Requirements (check all that apply):

- Overnight (warm)*
- 1 Day*
- 2 Day*
- 3 Day*
- 5 Day* (Batch charges apply)
- Other ()

Turnaround Time (TAT)

Requirements (check all that apply):

- 1L Plastic
- 250mL Plastic
- 125mL Plastic
- 200mL Amber Glass
- 40mL VOA vial
- 500mL PFAS Bottle
- Jar (Glass or HDPE)
- Other (Asbestos AS4964, WA Guidelines)

Sample Comments / Dangerous Goods Hazard Warning

SEND TO ALS FOR ANALYSIS

Handed over by: **AC** **SM**

Sampler(s): **AC**

Requirements (check all that apply):

- Overnight (warm)*
- 1 Day*
- 2 Day*
- 3 Day*
- 5 Day* (Batch charges apply)
- Other ()

Turnaround Time (TAT)

Requirements (check all that apply):

- 1L Plastic
- 250mL Plastic
- 125mL Plastic
- 200mL Amber Glass
- 40mL VOA vial
- 500mL PFAS Bottle
- Jar (Glass or HDPE)
- Other (Asbestos AS4964, WA Guidelines)

Sample Comments / Dangerous Goods Hazard Warning

SEND TO ALS FOR ANALYSIS

Handed over by: **AC** **SM**

Sampler(s): **AC**

Requirements (check all that apply):

- Overnight (warm)*
- 1 Day*
- 2 Day*
- 3 Day*
- 5 Day* (Batch charges apply)
- Other ()

Turnaround Time (TAT)

Requirements (check all that apply):

- 1L Plastic
- 250mL Plastic
- 125mL Plastic
- 200mL Amber Glass
- 40mL VOA vial
- 500mL PFAS Bottle
- Jar (Glass or HDPE)
- Other (Asbestos AS4964, WA Guidelines)

Sample Comments / Dangerous Goods Hazard Warning

SEND TO ALS FOR ANALYSIS

Handed over by: **AC** **SM**

Sampler(s): **AC**

Requirements (check all that apply):

- Overnight (warm)*
- 1 Day*
- 2 Day*
- 3 Day*
- 5 Day* (Batch charges apply)
- Other ()

Turnaround Time (TAT)

Requirements (check all that apply):

- 1L Plastic
- 250mL Plastic
- 125mL Plastic
- 200mL Amber Glass
- 40mL VOA vial
- 500mL PFAS Bottle
- Jar (Glass or HDPE)
- Other (Asbestos AS4964, WA Guidelines)

Sample Comments / Dangerous Goods Hazard Warning

SEND TO ALS FOR ANALYSIS

Handed over by: **AC** **SM**

Sampler(s): **AC**

Requirements (check all that apply):

- Overnight (warm)*
- 1 Day*
- 2 Day*
- 3 Day*
- 5 Day* (Batch charges apply)
- Other ()

Turnaround Time (TAT)

Requirements (check all that apply):

- 1L Plastic
- 250mL Plastic
- 125mL Plastic
- 200mL Amber Glass
- 40mL VOA vial
- 500mL PFAS Bottle
- Jar (Glass or HDPE)
- Other (Asbestos AS4964, WA Guidelines)

Sample Comments / Dangerous Goods Hazard Warning

SEND TO ALS FOR ANALYSIS

Handed over by: **AC** **SM**

Sampler(s): **AC**

Requirements (check all that apply):

- Overnight (warm)*
- 1 Day*
- 2 Day*
- 3 Day*
- 5 Day* (Batch charges apply)
- Other ()

Turnaround Time (TAT)

Requirements (check all that apply):

- 1L Plastic
- 250mL Plastic
- 125mL Plastic
- 200mL Amber Glass
- 40mL VOA vial
- 500mL PFAS Bottle
- Jar (Glass or HDPE)
- Other (Asbestos AS4964, WA Guidelines)

Sample Comments / Dangerous Goods Hazard Warning

SEND TO ALS FOR ANALYSIS

Handed over by: **AC** **SM**

Sampler(s): **AC**

Requirements (check all that apply):

- Overnight (warm)*
- 1 Day*
- 2 Day*
- 3 Day*
- 5 Day* (Batch charges apply)
- Other ()

Turnaround Time (TAT)

Requirements (check all that apply):

- 1L Plastic
- 250mL Plastic
- 125mL Plastic
- 200mL Amber Glass
- 40mL VOA vial
- 500mL PFAS Bottle
- Jar (Glass or HDPE)
- Other (Asbestos AS4964, WA Guidelines)

Sample Comments / Dangerous Goods Hazard Warning

SEND TO ALS FOR ANALYSIS

CHAIN OF CUSTODY RECORD

481170-00-000000

Sydney Laboratory
Unit F3 Bldg F 18 Mars Rd Lane Cove West NSW 2056
02 9392 8000 EnviroSamplesSyd@eurofins.com

Brisbane Laboratory
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07 3992 4800 EnviroSamplesBris@eurofins.com

Perth Laboratory
Unit 2, s/r 1 Leach Highway, Kewdale WA 6105
08 9231 8000 EnviroSamplesPerth@eurofins.com

Melbourne Laboratory
2 Kingston Town Chem, Oakleigh VIC 3186
03 9564 5000 EnviroSamplesMel@eurofins.com

Company	Ramboll	Project No	318000780	Project Manager (ES&I, EQ&IS)	Stephen Maxwell	Sampler(s)	AC
Address	50 Globe Road the Junction	Project Name	M13 (Al, As, Ba, Be, Cd, Cr, Co, Cu, Fe, Pb, Mn, Hg, Ni, Zn) total (Excluding Cr6-)			Handed over by	SM
Contact Name	Stephen Maxwell	Analyses	(Note: Where metals are requested, please specify "Total" or "Filtered". SUITE code must be used to amend SUITE phone)			Email for Invoice	smaxwell@ramboll.com asthac-accounts@ramboll.com
Phone No		Special Directions				Email for Results	smaxwell@ramboll.com blackwell@ramboll.com rcondon@ramboll.com shyde@ramboll.com
Purchase Order		Quote ID No	180318RAMM_1			Turnaround Time (TAT)	<input type="checkbox"/> Overnight (Eam)* <input type="checkbox"/> 1 Day* <input type="checkbox"/> 2 Day* <input type="checkbox"/> 3 Day* <input checked="" type="checkbox"/> 5 Day* <input type="checkbox"/> Other () *Saturdays apply
Client Sample ID	SW1	Sampled Date/Time (dd/mm/yyyy)	10/04/20	Matrix (Solid or Water (%)	W	Requirements (check all that apply) (tick box)	
	SW1_UP		10/04/20		W	Sample Comments / Dangerous Goods Hazard Warning	
	SW2		10/04/20		W		
	SW3		10/04/20		W		
	SW4		10/04/20		W		
	SED1		10/04/20		sediment		
	SED1_UP		10/04/20		sediment		
	SED2		10/04/20		sediment		
	SED3		10/04/20		sediment		
	SED4		10/04/20		sediment		
Total Counts			10				

Method of Shipment	Received By	Received By	Signature	Signature	Date	Time	Temperature
<input type="checkbox"/> Courier #	<i>Luca D</i>	<input checked="" type="checkbox"/> S70	<i>Luca D</i>	<i>Luca D</i>	10/04/20	2:59 PM	14.50 C
<input type="checkbox"/> Hand Delivered		<input type="checkbox"/> S70					
<input type="checkbox"/> Postal		<input type="checkbox"/> MEL					
<input type="checkbox"/> Name		<input type="checkbox"/> PER					
<input type="checkbox"/> ADL		<input type="checkbox"/> NTL					
<input type="checkbox"/> ORW		<input type="checkbox"/> ADL					
<input type="checkbox"/> NTL		<input type="checkbox"/> ORW					

Submission of samples to the laboratory will be deemed as acceptance of Eurofins' Ingot Standard Terms and Conditions unless agreed otherwise. A copy of Eurofins' Ingot Standard Terms and Conditions is available on request.

Eurofins Environment Testing Australia Pty Ltd trading as Eurofins | mgf

CHAIN OF CUSTODY RECORD

Unit 31 DFE - 15 Years Rd, Linn Cove West, NSW 2066
02 9900 8400 EnviroSamplesNSW@eurofins.com

Sydney Laboratory
Unit 1 21 Smeadow Rd, Marree QLD 4172
07 2907 4600 EnviroSamplesQLD@eurofins.com

Brisbane Laboratory
Unit 2 811 Leahy Highway, Kewdale WA 6105
08 9251 9500 EnviroSamplesWA@eurofins.com

Perth Laboratory
Unit 2 811 Leahy Highway, Kewdale WA 6105
08 9251 9500 EnviroSamplesWA@eurofins.com

Melbourne Laboratory
2 Kingston Tron, Clack, Cadelagh VIC 3186
03 9584 5000 EnviroSamplesVIC@eurofins.com

Company Ramboll
Address 50 Gable Road the Junction
Contact Name Stephen Maxwell
Phone No
Special Directions
Purchase Order
Quote ID No 180815RQAMN_1

Project Name 318000780
Analyses M13 (Al, As, Ba, Be, Cd, Cr, Co, Cu, Fe, Pb, Mn, Hg, Ni, Zn) total (Excluding Cr6+)
(Note: Where metals are requested, please specify "Total" or "Filtered") SUITE codes must be listed to attract SLITE pricing

No	Client Sample ID	Sampled Date/Time (dd/mm/yyyy hh:mm)	Matrix (Solid (S) Water (W))	Analysis
1	SED5	10/4/20	sediment	X
2	SED6	10/4/20	sediment	X
3	SW7	20/4/20	W	X
4	SW8	20/4/20	W	X
5	SW9	20/4/20	W	X
6	SED7	20/4/20	sediment	X
7	SED8	20/4/20	sediment	X
8	SED9	20/4/20	sediment	X
9	DO1_020420	20/4/20	W	X
10	TO1_020420	20/4/20	W	X
Total Counts				10

Number of Shipments 1
Hand Delivered **Postal**
Received By *Allen D*
Signature *[Signature]*
Date 08/04/20
Time 2:59 pm
Temperature 14.50 °C
Report No 10298

Sample(s) AC
Handed over by SM
Email for Invoice smaxwell@ramboll.com
Email for Results blackwell@ramboll.com
 rcondon@ramboll.com
 shyde@ramboll.com

Label(s) 1L Plastic
 250mL Plastic
 125mL Plastic
 200mL Amber Glass
 40mL VOA vial
 500mL PFAS Bottle
 Jar (Glass or HDPE)
 Other (Asbestos AS4964, WA Guidelines)
Turnaround Time (TAT)
 Requirements (order by day time slot)
 Overnight (Eam)
 1 Day*
 2 Day*
 3 Day*
 5 Day*
 Other ()
 *Sandwiches apply
Sample Comments / Dangerous Goods Hazard Warning

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Eurofins Environment Testing Australia Pty Ltd trading as Eurofins Ingot



CHAIN OF CUSTODY RECORD

Sydney Laboratory
Unit 13 Belfry - 18 Years Rd, Lane Cove West NSW 2266
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Brisbane Laboratory
Unit 1, 21 Stanwood Pl., Mornings QLD 4172
07 3002 4000 EnviroSampleBrisbane@eurofins.com

Perth Laboratory
Unit 2, 91 Leach Highway, Kewdale WA 6105
08 9251 5000 EnviroSamplePerth@eurofins.com

Melbourne Laboratory
2 Victoria Town Centre, Oakleigh VIC 3166
03 9584 5000 EnviroSampleMel@eurofins.com

Company: **Ramboll** Project Name: **318000780** Project Manager: **Stephen Maxwell** EDD Form: **ESDH, EQH, EQS** Sampler(s): **AC** SM

Address: **50 Glebe Road the Junction** Handled over by: **SM**

Contact Name: **Stephen Maxwell** Email for Invoice: **smaxwell@ramboll.com**
asia@ac-accounts@ramboll.com
Email for Results: **smaxwell@ramboll.com**
blackwell@ramboll.com
rondon@ramboll.com
shyde@ramboll.com

Phone No: _____ Turnaround Time (TAT) Requirements (check all that apply):
 Overnight (Eam)*
 1 Day*
 2 Day*
 3 Day*
 5 Day*
 Other (Batching apply)

Special Directions: _____

Purchase Order: _____

Quote ID No: **180813RAMM_1** (Note: Where metals are retested, please specify "Total" or "Filtered") SUITE code must be used to extract SUITE pricing

Analyses: **M13 (Al, As, Ba, Be, Cd, Cr, Co, Cu, Fe, Pb, Mn, Hg, Ni, Zn) total (Excluding Cr6+)**

No	Client Sample ID	Sampled Date/Time (dd/mm/yyyy)	Matrix Solid (S) Water (W)	Method of Shipment	Container #	Hand Delivered	Postal	Name	Signature	Date	Time	Temperature	Report No
1	DOI_020420_SED	20/4/20	sediment										
2	TO1_020420_SED	20/4/20	sediment										
Total Counts						2							

SEND TO ALS FOR ANALYSIS

Method of Shipment: Courier # _____) Hand Delivered Postal

Eurofins Ingt. Received By: *Lucas D* Signature: *[Signature]* Date: *02/04/20* Time: *2:59 pm* Temperature: *14.50 °C*
Laboratory Use Only. Received By: *[Signature]* Signature: *[Signature]* Date: *---* Time: *---* Report No: *412798*

Submission of samples to the laboratory will be deemed as acceptance of Eurofins Ingt Standard Terms and Conditions unless agreed otherwise. A copy of Eurofins Ingt Standard Terms and Conditions is available on request.
Eurofins Environment Testing Australia Pty Ltd trading as Eurofins | Ingt

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Site # 1254 & 14271

Sydney

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Phone : +61 2 9900 8400
NATA # 1261 Site # 18217

Brisbane

1/21 Smallwood Place
Murarrie QLD 4172
Phone : +61 7 3902 4600
NATA # 1261 Site # 20794

Perth

2/91 Leach Highway
Kewdale WA 6105
Phone : +61 8 9251 9600
NATA # 1261 Site # 23736

Sample Receipt Advice

Company name: **Ramboll Australia Pty Ltd**

Contact name: Jordyn Kirsch

Project name: 318000780

COC number: Not provided

Turn around time: 5 Day

Date/Time received: Apr 8, 2020 2:59 PM

Eurofins reference: **712798**

Sample information

- A detailed list of analytes logged into our LIMS, is included in the attached summary table.
- All samples have been received as described on the above COC.
- COC has been completed correctly.
- Attempt to chill was evident.
- Appropriately preserved sample containers have been used.
- All samples were received in good condition.
- Samples have been provided with adequate time to commence analysis in accordance with the relevant holding times.

- Appropriate sample containers have been used.
- Sample containers for volatile analysis received with zero headspace.
- Split sample sent to requested external lab.
- Some samples have been subcontracted.
- N/A Custody Seals intact (if used).

Notes

Samples SED_T01_020420 and T01_020420 forwarded to ALS

Contact notes

If you have any questions with respect to these samples please contact:

Andrew Black on Phone : (+61) 2 9900 8490 or by e.mail: AndrewBlack@eurofins.com

Results will be delivered electronically via e.mail to Jordyn Kirsch - jkirsch@ramboll.com.

Note: A copy of these results will also be delivered to the general Ramboll Australia Pty Ltd email address.

Ramboll Environ Australia Pty Ltd
 Level 3/100 Pacific Highway
 North Sydney
 NSW 2060



NATA Accredited
 Accreditation Number 1261
 Site Number 18217

Accredited for compliance with ISO/IEC 17025 – Testing
 The results of the tests, calibrations and/or
 measurements included in this document are traceable
 to Australian/national standards.

Attention: **Stephen Maxwell**

Report **712798-S**
 Project name **318000780**
 Received Date **Apr 04, 2020**

Client Sample ID			SED1 Sediment	SED1_UP Sediment	SED2 Sediment	SED3 Sediment
Sample Matrix			S20-Ap12274	S20-Ap12275	S20-Ap12276	S20-Ap12277
Eurofins Sample No.			Apr 01, 2020	Apr 01, 2020	Apr 01, 2020	Apr 01, 2020
Date Sampled						
Test/Reference	LOR	Unit				
Heavy Metals						
Aluminium	10	mg/kg	9200	12000	8300	13000
Arsenic	2	mg/kg	19	8.6	18	5.1
Barium	10	mg/kg	120	65	85	200
Beryllium	2	mg/kg	< 2	< 2	< 2	< 2
Cadmium	0.4	mg/kg	2.6	< 0.4	7.2	3.0
Chromium	5	mg/kg	16	20	14	16
Cobalt	5	mg/kg	9.5	5.5	6.1	< 5
Copper	5	mg/kg	200	10	490	58
Iron	20	mg/kg	17000	23000	16000	15000
Lead	5	mg/kg	4700	18	1600	130
Manganese	5	mg/kg	290	56	280	120
Mercury	0.1	mg/kg	< 0.1	< 0.1	0.1	< 0.1
Nickel	5	mg/kg	9.8	8.6	8.7	7.6
Zinc	5	mg/kg	610	20	2400	320

Client Sample ID			SED4 Sediment	SED5 Sediment	SED6 Sediment	SED7 Sediment
Sample Matrix			S20-Ap12278	S20-Ap12279	S20-Ap12280	S20-Ap12281
Eurofins Sample No.			Apr 01, 2020	Apr 01, 2020	Apr 01, 2020	Apr 02, 2020
Date Sampled						
Test/Reference	LOR	Unit				
Heavy Metals						
Aluminium	10	mg/kg	9200	4400	6500	5200
Arsenic	2	mg/kg	37	2.9	10	6.4
Barium	10	mg/kg	150	64	63	60
Beryllium	2	mg/kg	< 2	< 2	< 2	< 2
Cadmium	0.4	mg/kg	5.0	0.6	3.3	4.6
Chromium	5	mg/kg	17	8.3	9.6	8.1
Cobalt	5	mg/kg	< 5	< 5	< 5	< 5
Copper	5	mg/kg	600	14	59	190
Iron	20	mg/kg	17000	6600	9200	7600
Lead	5	mg/kg	2600	39	88	210
Manganese	5	mg/kg	140	280	91	140
Mercury	0.1	mg/kg	0.3	< 0.1	< 0.1	< 0.1
Nickel	5	mg/kg	9.8	< 5	6.9	< 5
Zinc	5	mg/kg	750	100	470	580

Client Sample ID			SED8	SED9	SED_D01_0204 20
Sample Matrix			Sediment	Sediment	Sediment
Eurofins Sample No.			S20-Ap12282	S20-Ap12283	S20-Ap12284
Date Sampled			Apr 02, 2020	Apr 02, 2020	Apr 02, 2020
Test/Reference	LOR	Unit			
Heavy Metals					
Aluminium	10	mg/kg	8500	12000	8300
Arsenic	2	mg/kg	4.8	3.6	8.5
Barium	10	mg/kg	93	96	90
Beryllium	2	mg/kg	< 2	< 2	< 2
Cadmium	0.4	mg/kg	0.4	0.5	8.6
Chromium	5	mg/kg	12	17	10
Cobalt	5	mg/kg	6.3	5.5	< 5
Copper	5	mg/kg	12	13	300
Iron	20	mg/kg	10000	14000	9500
Lead	5	mg/kg	20	19	300
Manganese	5	mg/kg	76	400	210
Mercury	0.1	mg/kg	< 0.1	< 0.1	< 0.1
Nickel	5	mg/kg	6.6	8.4	6.2
Zinc	5	mg/kg	94	140	770

Sample History

Where samples are submitted/analysed over several days, the last date of extraction and analysis is reported.

A recent review of our LIMS has resulted in the correction or clarification of some method identifications. Due to this, some of the method reference information on reports has changed. However, no substantive change has been made to our laboratory methods, and as such there is no change in the validity of current or previous results.

If the date and time of sampling are not provided, the Laboratory will not be responsible for compromised results should testing be performed outside the recommended holding time.

Description

Heavy Metals

Testing Site

Sydney

Extracted

Apr 16, 2020

Holding Time

180 Days

- Method: LTM-MET-3040 Metals in Waters, Soils & Sediments by ICP-MS

Australia

Melbourne
6 Monterey Road
Dandenong South VIC 3175
Phone : +61 3 8564 5000
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Site # 1254 & 14271

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Phone : +61 2 9900 8400
NATA # 1261 Site # 18217

Brisbane
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Murarrie QLD 4172
Phone : +61 7 3902 4600
NATA # 1261 Site # 20794

Perth
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NATA # 1261
Site # 23736

New Zealand

Auckland
35 O'Rorke Road
Penrose, Auckland 1061
Phone : +64 9 526 45 51
IANZ # 1327

Christchurch
43 Detroit Drive
Rolleston, Christchurch 7675
Phone : 0800 856 450
IANZ # 1290

Company Name: Ramboll Australia Pty Ltd
Address: Level 3/100 Pacific Highway
North Sydney
NSW 2060
Project Name: 318000780

Order No.:
Report #: 712798
Phone: 02 9954 8118
Fax: 02 9954 8150

Received: Apr 8, 2020 2:59 PM
Due: Apr 17, 2020
Priority: 5 Day
Contact Name: Jordyn Kirsch

Eurofins Analytical Services Manager : Andrew Black

Sample Detail						Aluminium	Arsenic	Barium	Beryllium	Cadmium	CANCELLED	Chromium	Cobalt	Copper	Iron	Lead	Manganese	Mercury	Nickel	Zinc	
Melbourne Laboratory - NATA Site # 1254 & 14271																					
Sydney Laboratory - NATA Site # 18217						X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X
Brisbane Laboratory - NATA Site # 20794																					
Perth Laboratory - NATA Site # 23736																					
External Laboratory																					
No	Sample ID	Sample Date	Sampling Time	Matrix	LAB ID																
1	SED1	Apr 01, 2020		Sediment	S20-Ap12274	X	X	X	X	X		X	X	X	X	X	X	X	X	X	
2	SED1_UP	Apr 01, 2020		Sediment	S20-Ap12275	X	X	X	X	X		X	X	X	X	X	X	X	X	X	
3	SED2	Apr 01, 2020		Sediment	S20-Ap12276	X	X	X	X	X		X	X	X	X	X	X	X	X	X	
4	SED3	Apr 01, 2020		Sediment	S20-Ap12277	X	X	X	X	X		X	X	X	X	X	X	X	X	X	
5	SED4	Apr 01, 2020		Sediment	S20-Ap12278	X	X	X	X	X		X	X	X	X	X	X	X	X	X	
6	SED5	Apr 01, 2020		Sediment	S20-Ap12279	X	X	X	X	X		X	X	X	X	X	X	X	X	X	
7	SED6	Apr 01, 2020		Sediment	S20-Ap12280	X	X	X	X	X		X	X	X	X	X	X	X	X	X	
8	SED7	Apr 02, 2020		Sediment	S20-Ap12281	X	X	X	X	X		X	X	X	X	X	X	X	X	X	
9	SED8	Apr 02, 2020		Sediment	S20-Ap12282	X	X	X	X	X		X	X	X	X	X	X	X	X	X	
10	SED9	Apr 02, 2020		Sediment	S20-Ap12283	X	X	X	X	X		X	X	X	X	X	X	X	X	X	
11	SED_D01_020	Apr 02, 2020		Sediment	S20-Ap12284	X	X	X	X	X		X	X	X	X	X	X	X	X	X	

Australia

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NATA # 1261 Site # 18217

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NATA # 1261 Site # 20794

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Kewdale WA 6105
Phone : +61 8 9251 9600
NATA # 1261
Site # 23736

New Zealand

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35 O'Rorke Road
Penrose, Auckland 1061
Phone : +64 9 526 45 51
IANZ # 1327

Christchurch
43 Detroit Drive
Rolleston, Christchurch 7675
Phone : 0800 856 450
IANZ # 1290

Company Name:	Ramboll Australia Pty Ltd	Order No.:		Received:	Apr 8, 2020 2:59 PM
Address:	Level 3/100 Pacific Highway North Sydney NSW 2060	Report #:	712798	Due:	Apr 17, 2020
Project Name:	318000780	Phone:	02 9954 8118	Priority:	5 Day
		Fax:	02 9954 8150	Contact Name:	Jordyn Kirsch

Eurofins Analytical Services Manager : Andrew Black

Sample Detail						Aluminium	Arsenic	Barium	Beryllium	Cadmium	CANCELLED	Chromium	Cobalt	Copper	Iron	Lead	Manganese	Mercury	Nickel	Zinc	
Melbourne Laboratory - NATA Site # 1254 & 14271																					
Sydney Laboratory - NATA Site # 18217						X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X
Brisbane Laboratory - NATA Site # 20794																					
Perth Laboratory - NATA Site # 23736																					
	420																				
12	SED_T01_020 420	Apr 02, 2020		Sediment	S20-Ap12285						X										
13	SW1	Apr 01, 2020		Water	S20-Ap12286	X	X	X	X	X		X	X	X	X	X	X	X	X	X	
14	SW1_UP	Apr 01, 2020		Water	S20-Ap12287	X	X	X	X	X		X	X	X	X	X	X	X	X	X	
15	SW2	Apr 01, 2020		Water	S20-Ap12288	X	X	X	X	X		X	X	X	X	X	X	X	X	X	
16	SW3	Apr 01, 2020		Water	S20-Ap12289	X	X	X	X	X		X	X	X	X	X	X	X	X	X	
17	SW4	Apr 01, 2020		Water	S20-Ap12290	X	X	X	X	X		X	X	X	X	X	X	X	X	X	
18	SW7	Apr 02, 2020		Water	S20-Ap12291	X	X	X	X	X		X	X	X	X	X	X	X	X	X	
19	SW8	Apr 01, 2020		Water	S20-Ap12292	X	X	X	X	X		X	X	X	X	X	X	X	X	X	
20	SW9	Apr 01, 2020		Water	S20-Ap12293	X	X	X	X	X		X	X	X	X	X	X	X	X	X	
21	D01_020420	Apr 01, 2020		Water	S20-Ap12294	X	X	X	X	X		X	X	X	X	X	X	X	X	X	
22	T01_020420	Apr 01, 2020		Water	S20-Ap12295						X										
Test Counts						20	20	20	20	20	2	20	20	20	20	20	20	20	20	20	20

Internal Quality Control Review and Glossary

General

- Laboratory QC results for Method Blanks, Duplicates, Matrix Spikes, and Laboratory Control Samples follows guidelines delineated in the National Environment Protection (Assessment of Site Contamination) Measure 1999, as amended May 2013 and are included in this QC report where applicable. Additional QC data may be available on request.
- All soil/sediment/solid results are reported on a dry basis, unless otherwise stated.
- All biota/food results are reported on a wet weight basis on the edible portion, unless otherwise stated.
- Actual LORs are matrix dependant. Quoted LORs may be raised where sample extracts are diluted due to interferences.
- Results are uncorrected for matrix spikes or surrogate recoveries except for PFAS compounds.
- SVOC analysis on waters are performed on homogenised, unfiltered samples, unless noted otherwise.
- Samples were analysed on an 'as received' basis.
- Information identified on this report with blue colour, indicates data provided by customer, that may have an impact on the results.
- This report replaces any interim results previously issued.

Holding Times

Please refer to 'Sample Preservation and Container Guide' for holding times (QS3001).

For samples received on the last day of holding time, notification of testing requirements should have been received at least 6 hours prior to sample receipt deadlines as stated on the SRA.

If the Laboratory did not receive the information in the required timeframe, and regardless of any other integrity issues, suitably qualified results may still be reported.

Holding times apply from the date of sampling, therefore compliance to these may be outside the laboratory's control.

For VOCs containing vinyl chloride, styrene and 2-chloroethyl vinyl ether the holding time is 7 days however for all other VOCs such as BTEX or C6-10 TRH then the holding time is 14 days.

****NOTE:** pH duplicates are reported as a range NOT as RPD

Units

mg/kg: milligrams per kilogram	mg/L: milligrams per litre	ug/L: micrograms per litre
ppm: Parts per million	ppb: Parts per billion	%: Percentage
org/100mL: Organisms per 100 millilitres	NTU: Nephelometric Turbidity Units	MPN/100mL: Most Probable Number of organisms per 100 millilitres

Terms

Dry	Where a moisture has been determined on a solid sample the result is expressed on a dry basis.
LOR	Limit of Reporting.
SPIKE	Addition of the analyte to the sample and reported as percentage recovery.
RPD	Relative Percent Difference between two Duplicate pieces of analysis.
LCS	Laboratory Control Sample - reported as percent recovery.
CRM	Certified Reference Material - reported as percent recovery.
Method Blank	In the case of solid samples these are performed on laboratory certified clean sands and in the case of water samples these are performed on de-ionised water.
Surr - Surrogate	The addition of a like compound to the analyte target and reported as percentage recovery.
Duplicate	A second piece of analysis from the same sample and reported in the same units as the result to show comparison.
USEPA	United States Environmental Protection Agency
APHA	American Public Health Association
TCLP	Toxicity Characteristic Leaching Procedure
COC	Chain of Custody
SRA	Sample Receipt Advice
QSM	US Department of Defense Quality Systems Manual Version 5.3
CP	Client Parent - QC was performed on samples pertaining to this report
NCP	Non-Client Parent - QC performed on samples not pertaining to this report, QC is representative of the sequence or batch that client samples were analysed within.
TEQ	Toxic Equivalency Quotient

QC - Acceptance Criteria

RPD Duplicates: Global RPD Duplicates Acceptance Criteria is 30% however the following acceptance guidelines are equally applicable:

Results <10 times the LOR : No Limit

Results between 10-20 times the LOR : RPD must lie between 0-50%

Results >20 times the LOR : RPD must lie between 0-30%

Surrogate Recoveries: Recoveries must lie between 20-130% Phenols & 50-150% PFASs

PFAS field samples that contain surrogate recoveries in excess of the QC limit designated in QSM 5.3 where no positive PFAS results have been reported have been reviewed and no data was affected.

WA DWER (n=10): PFBA, PFPeA, PFHxA, PFHpA, PFOA, PFBS, PFHxS, PFOS, 6:2 FTSA, 8:2 FTSA

QC Data General Comments

- Where a result is reported as a less than (<), higher than the nominated LOR, this is due to either matrix interference, extract dilution required due to interferences or contaminant levels within the sample, high moisture content or insufficient sample provided.
- Duplicate data shown within this report that states the word "BATCH" is a Batch Duplicate from outside of your sample batch, but within the laboratory sample batch at a 1:10 ratio. The Parent and Duplicate data shown is not data from your samples.
- Organochlorine Pesticide analysis - where reporting LCS data, Toxaphene & Chlordane are not added to the LCS.
- Organochlorine Pesticide analysis - where reporting Spike data, Toxaphene is not added to the Spike.
- Total Recoverable Hydrocarbons - where reporting Spike & LCS data, a single spike of commercial Hydrocarbon products in the range of C12-C30 is added and it's Total Recovery is reported in the C10-C14 cell of the Report.
- pH and Free Chlorine analysed in the laboratory - Analysis on this test must begin within 30 minutes of sampling. Therefore laboratory analysis is unlikely to be completed within holding time. Analysis will begin as soon as possible after sample receipt.
- Recovery Data (Spikes & Surrogates) - where chromatographic interference does not allow the determination of Recovery the term "INT" appears against that analyte.
- Polychlorinated Biphenyls are spiked only using Aroclor 1260 in Matrix Spikes and LCS.
- For Matrix Spikes and LCS results a dash " - " in the report means that the specific analyte was not added to the QC sample.
- Duplicate RPDs are calculated from raw analytical data thus it is possible to have two sets of data.

Quality Control Results

Test			Units	Result 1		Acceptance Limits	Pass Limits	Qualifying Code
Method Blank								
Heavy Metals								
Aluminium			mg/kg	< 10		10	Pass	
Arsenic			mg/kg	< 2		2	Pass	
Barium			mg/kg	< 10		10	Pass	
Beryllium			mg/kg	< 2		2	Pass	
Cadmium			mg/kg	< 0.4		0.4	Pass	
Chromium			mg/kg	< 5		5	Pass	
Cobalt			mg/kg	< 5		5	Pass	
Copper			mg/kg	< 5		5	Pass	
Iron			mg/kg	< 20		20	Pass	
Lead			mg/kg	< 5		5	Pass	
Manganese			mg/kg	< 5		5	Pass	
Mercury			mg/kg	< 0.1		0.1	Pass	
Nickel			mg/kg	< 5		5	Pass	
Zinc			mg/kg	< 5		5	Pass	
LCS - % Recovery								
Heavy Metals								
Aluminium			%	83		70-130	Pass	
Arsenic			%	95		70-130	Pass	
Barium			%	101		70-130	Pass	
Beryllium			%	100		70-130	Pass	
Cadmium			%	94		70-130	Pass	
Chromium			%	91		70-130	Pass	
Cobalt			%	90		70-130	Pass	
Copper			%	88		70-130	Pass	
Iron			%	85		70-130	Pass	
Lead			%	89		70-130	Pass	
Manganese			%	92		70-130	Pass	
Mercury			%	90		70-130	Pass	
Nickel			%	89		70-130	Pass	
Zinc			%	89		70-130	Pass	
Test	Lab Sample ID	QA Source	Units	Result 1		Acceptance Limits	Pass Limits	Qualifying Code
Spike - % Recovery								
Heavy Metals				Result 1				
Arsenic	S20-Ap20511	NCP	%	106		70-130	Pass	
Barium	S20-Ap20511	NCP	%	86		70-130	Pass	
Beryllium	S20-Ap20511	NCP	%	94		70-130	Pass	
Cadmium	S20-Ap20511	NCP	%	110		70-130	Pass	
Chromium	S20-Ap20511	NCP	%	102		70-130	Pass	
Cobalt	S20-Ap20511	NCP	%	100		70-130	Pass	
Copper	S20-Ap20511	NCP	%	117		70-130	Pass	
Lead	S20-Ap20511	NCP	%	87		70-130	Pass	
Manganese	S20-Ap20511	NCP	%	89		70-130	Pass	
Mercury	S20-Ap20511	NCP	%	107		70-130	Pass	
Nickel	S20-Ap20511	NCP	%	98		70-130	Pass	
Zinc	S20-Ap17231	NCP	%	90		70-130	Pass	

Test	Lab Sample ID	QA Source	Units	Result 1			Acceptance Limits	Pass Limits	Qualifying Code
Duplicate									
Heavy Metals				Result 1	Result 2	RPD			
Aluminium	S20-Ap22929	NCP	mg/kg	10000	11000	4.0	30%	Pass	
Arsenic	S20-Ap22929	NCP	mg/kg	10	10	4.0	30%	Pass	
Barium	S20-Ap22929	NCP	mg/kg	260	270	<1	30%	Pass	
Beryllium	S20-Ap22929	NCP	mg/kg	< 2	< 2	<1	30%	Pass	
Cadmium	S20-Ap22929	NCP	mg/kg	< 0.4	< 0.4	<1	30%	Pass	
Chromium	S20-Ap22929	NCP	mg/kg	27	29	4.0	30%	Pass	
Cobalt	S20-Ap22929	NCP	mg/kg	19	20	2.0	30%	Pass	
Copper	S20-Ap22929	NCP	mg/kg	38	39	3.0	30%	Pass	
Iron	S20-Ap22929	NCP	mg/kg	36000	37000	4.0	30%	Pass	
Lead	S20-Ap22929	NCP	mg/kg	25	26	5.0	30%	Pass	
Manganese	S20-Ap22929	NCP	mg/kg	560	580	3.0	30%	Pass	
Mercury	S20-Ap22929	NCP	mg/kg	< 0.1	< 0.1	<1	30%	Pass	
Nickel	S20-Ap22929	NCP	mg/kg	26	26	2.0	30%	Pass	
Zinc	S20-Ap22929	NCP	mg/kg	140	140	3.0	30%	Pass	

Comments**Sample Integrity**

Custody Seals Intact (if used)	N/A
Attempt to Chill was evident	Yes
Sample correctly preserved	Yes
Appropriate sample containers have been used	Yes
Sample containers for volatile analysis received with minimal headspace	Yes
Samples received within HoldingTime	Yes
Some samples have been subcontracted	No

Authorised By

Andrew Black Analytical Services Manager
Gabriele Cordero Senior Analyst-Metal (NSW)

**Glenn Jackson
General Manager**

Final report - this Report replaces any previously issued Report

- Indicates Not Requested

* Indicates NATA accreditation does not cover the performance of this service

Measurement uncertainty of test data is available on request or please [click here](#).

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Ramboll Environ Australia Pty Ltd
 Level 3/100 Pacific Highway
 North Sydney
 NSW 2060



NATA Accredited
 Accreditation Number 1261
 Site Number 18217

Accredited for compliance with ISO/IEC 17025 – Testing
 The results of the tests, calibrations and/or
 measurements included in this document are traceable
 to Australian/national standards.

Attention: **Stephen Maxwell**

Report **712798-W**
 Project name **318000780**
 Received Date **Apr 04, 2020**

Client Sample ID			SW1 Water	SW1_UP Water	SW2 Water	SW3 Water
Sample Matrix			S20-Ap12286	S20-Ap12287	S20-Ap12288	S20-Ap12289
Eurofins Sample No.			Apr 01, 2020	Apr 01, 2020	Apr 01, 2020	Apr 01, 2020
Date Sampled						
Test/Reference	LOR	Unit				
Heavy Metals						
Aluminium	0.05	mg/L	0.13	< 0.05	0.08	0.92
Arsenic	0.001	mg/L	0.004	< 0.001	0.002	0.004
Barium	0.02	mg/L	0.15	0.10	0.10	0.10
Beryllium	0.001	mg/L	< 0.001	< 0.001	< 0.001	< 0.001
Cadmium	0.0002	mg/L	0.0013	< 0.0002	0.0019	0.021
Chromium	0.001	mg/L	< 0.001	< 0.001	0.001	0.002
Cobalt	0.001	mg/L	0.014	< 0.001	0.004	0.006
Copper	0.001	mg/L	0.019	< 0.001	0.023	0.18
Iron	0.05	mg/L	4.5	0.26	0.94	1.8
Lead	0.001	mg/L	0.056	< 0.001	0.020	0.17
Manganese	0.005	mg/L	0.76	0.044	0.41	0.52
Mercury	0.0001	mg/L	< 0.0001	< 0.0001	< 0.0001	< 0.0001
Nickel	0.001	mg/L	0.003	< 0.001	0.002	0.036
Zinc	0.005	mg/L	0.20	0.011	0.35	4.0

Client Sample ID			SW4 Water	SW7 Water	SW8 Water	SW9 Water
Sample Matrix			S20-Ap12290	S20-Ap12291	S20-Ap12292	S20-Ap12293
Eurofins Sample No.			Apr 01, 2020	Apr 02, 2020	Apr 01, 2020	Apr 01, 2020
Date Sampled						
Test/Reference	LOR	Unit				
Heavy Metals						
Aluminium	0.05	mg/L	0.18	0.21	< 0.05	0.05
Arsenic	0.001	mg/L	0.002	0.003	0.001	0.001
Barium	0.02	mg/L	0.07	0.08	0.12	0.08
Beryllium	0.001	mg/L	< 0.001	< 0.001	< 0.001	< 0.001
Cadmium	0.0002	mg/L	0.019	0.0009	< 0.0002	< 0.0002
Chromium	0.001	mg/L	< 0.001	0.001	< 0.001	< 0.001
Cobalt	0.001	mg/L	0.005	0.002	0.003	< 0.001
Copper	0.001	mg/L	0.13	0.022	< 0.001	0.001
Iron	0.05	mg/L	0.68	4.2	3.2	0.54
Lead	0.001	mg/L	0.055	0.020	< 0.001	< 0.001
Manganese	0.005	mg/L	0.42	0.41	1.9	0.33
Mercury	0.0001	mg/L	< 0.0001	< 0.0001	< 0.0001	< 0.0001
Nickel	0.001	mg/L	0.037	0.006	0.002	0.002
Zinc	0.005	mg/L	3.2	0.15	0.022	0.015

Client Sample ID			D01_020420
Sample Matrix			Water
Eurofins Sample No.			S20-Ap12294
Date Sampled			Apr 01, 2020
Test/Reference	LOR	Unit	
Heavy Metals			
Aluminium	0.05	mg/L	0.17
Arsenic	0.001	mg/L	0.004
Barium	0.02	mg/L	0.08
Beryllium	0.001	mg/L	< 0.001
Cadmium	0.0002	mg/L	0.0009
Chromium	0.001	mg/L	< 0.001
Cobalt	0.001	mg/L	0.002
Copper	0.001	mg/L	0.018
Iron	0.05	mg/L	4.2
Lead	0.001	mg/L	0.017
Manganese	0.005	mg/L	0.41
Mercury	0.0001	mg/L	< 0.0001
Nickel	0.001	mg/L	0.005
Zinc	0.005	mg/L	0.13

Sample History

Where samples are submitted/analysed over several days, the last date of extraction and analysis is reported.

A recent review of our LIMS has resulted in the correction or clarification of some method identifications. Due to this, some of the method reference information on reports has changed. However, no substantive change has been made to our laboratory methods, and as such there is no change in the validity of current or previous results.

If the date and time of sampling are not provided, the Laboratory will not be responsible for compromised results should testing be performed outside the recommended holding time.

Description

Heavy Metals

Testing Site

Sydney

Extracted

Apr 09, 2020

Holding Time

180 Days

- Method: LTM-MET-3040 Metals in Waters, Soils & Sediments by ICP-MS

Australia

Melbourne
6 Monterey Road
Dandenong South VIC 3175
Phone : +61 3 8564 5000
NATA # 1261
Site # 1254 & 14271

Sydney
Unit F3, Building F
16 Mars Road
Lane Cove West NSW 2066
Phone : +61 2 9900 8400
NATA # 1261 Site # 18217

Brisbane
1/21 Smallwood Place
Murarrie QLD 4172
Phone : +61 7 3902 4600
NATA # 1261 Site # 20794

Perth
2/91 Leach Highway
Kewdale WA 6105
Phone : +61 8 9251 9600
NATA # 1261
Site # 23736

New Zealand

Auckland
35 O'Rorke Road
Penrose, Auckland 1061
Phone : +64 9 526 45 51
IANZ # 1327

Christchurch
43 Detroit Drive
Rolleston, Christchurch 7675
Phone : 0800 856 450
IANZ # 1290

Company Name:	Ramboll Australia Pty Ltd	Order No.:		Received:	Apr 8, 2020 2:59 PM
Address:	Level 3/100 Pacific Highway North Sydney NSW 2060	Report #:	712798	Due:	Apr 17, 2020
Project Name:	318000780	Phone:	02 9954 8118	Priority:	5 Day
		Fax:	02 9954 8150	Contact Name:	Jordyn Kirsch

Eurofins Analytical Services Manager : Andrew Black

Sample Detail						Aluminium	Arsenic	Barium	Beryllium	Cadmium	CANCELLED	Chromium	Cobalt	Copper	Iron	Lead	Manganese	Mercury	Nickel	Zinc	
Melbourne Laboratory - NATA Site # 1254 & 14271																					
Sydney Laboratory - NATA Site # 18217						X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X
Brisbane Laboratory - NATA Site # 20794																					
Perth Laboratory - NATA Site # 23736																					
External Laboratory																					
No	Sample ID	Sample Date	Sampling Time	Matrix	LAB ID																
1	SED1	Apr 01, 2020		Sediment	S20-Ap12274	X	X	X	X	X		X	X	X	X	X	X	X	X	X	
2	SED1_UP	Apr 01, 2020		Sediment	S20-Ap12275	X	X	X	X	X		X	X	X	X	X	X	X	X	X	
3	SED2	Apr 01, 2020		Sediment	S20-Ap12276	X	X	X	X	X		X	X	X	X	X	X	X	X	X	
4	SED3	Apr 01, 2020		Sediment	S20-Ap12277	X	X	X	X	X		X	X	X	X	X	X	X	X	X	
5	SED4	Apr 01, 2020		Sediment	S20-Ap12278	X	X	X	X	X		X	X	X	X	X	X	X	X	X	
6	SED5	Apr 01, 2020		Sediment	S20-Ap12279	X	X	X	X	X		X	X	X	X	X	X	X	X	X	
7	SED6	Apr 01, 2020		Sediment	S20-Ap12280	X	X	X	X	X		X	X	X	X	X	X	X	X	X	
8	SED7	Apr 02, 2020		Sediment	S20-Ap12281	X	X	X	X	X		X	X	X	X	X	X	X	X	X	
9	SED8	Apr 02, 2020		Sediment	S20-Ap12282	X	X	X	X	X		X	X	X	X	X	X	X	X	X	
10	SED9	Apr 02, 2020		Sediment	S20-Ap12283	X	X	X	X	X		X	X	X	X	X	X	X	X	X	
11	SED_D01_020	Apr 02, 2020		Sediment	S20-Ap12284	X	X	X	X	X		X	X	X	X	X	X	X	X	X	

Australia

Melbourne
6 Monterey Road
Dandenong South VIC 3175
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Project Name:	318000780	Phone:	02 9954 8118	Priority:	5 Day
		Fax:	02 9954 8150	Contact Name:	Jordyn Kirsch

Eurofins Analytical Services Manager : Andrew Black

Sample Detail					Aluminium	Arsenic	Barium	Beryllium	Cadmium	CANCELLED	Chromium	Cobalt	Copper	Iron	Lead	Manganese	Mercury	Nickel	Zinc
Melbourne Laboratory - NATA Site # 1254 & 14271																			
Sydney Laboratory - NATA Site # 18217					X	X	X	X	X	X	X	X	X	X	X	X	X	X	X
Brisbane Laboratory - NATA Site # 20794																			
Perth Laboratory - NATA Site # 23736																			
	420																		
12	SED_T01_020 420	Apr 02, 2020		Sediment	S20-Ap12285					X									
13	SW1	Apr 01, 2020		Water	S20-Ap12286	X	X	X	X		X	X	X	X	X	X	X	X	X
14	SW1_UP	Apr 01, 2020		Water	S20-Ap12287	X	X	X	X		X	X	X	X	X	X	X	X	X
15	SW2	Apr 01, 2020		Water	S20-Ap12288	X	X	X	X		X	X	X	X	X	X	X	X	X
16	SW3	Apr 01, 2020		Water	S20-Ap12289	X	X	X	X		X	X	X	X	X	X	X	X	X
17	SW4	Apr 01, 2020		Water	S20-Ap12290	X	X	X	X		X	X	X	X	X	X	X	X	X
18	SW7	Apr 02, 2020		Water	S20-Ap12291	X	X	X	X		X	X	X	X	X	X	X	X	X
19	SW8	Apr 01, 2020		Water	S20-Ap12292	X	X	X	X		X	X	X	X	X	X	X	X	X
20	SW9	Apr 01, 2020		Water	S20-Ap12293	X	X	X	X		X	X	X	X	X	X	X	X	X
21	D01_020420	Apr 01, 2020		Water	S20-Ap12294	X	X	X	X		X	X	X	X	X	X	X	X	X
22	T01_020420	Apr 01, 2020		Water	S20-Ap12295					X									
Test Counts					20	20	20	20	20	2	20	20	20	20	20	20	20	20	20

Internal Quality Control Review and Glossary

General

- Laboratory QC results for Method Blanks, Duplicates, Matrix Spikes, and Laboratory Control Samples follows guidelines delineated in the National Environment Protection (Assessment of Site Contamination) Measure 1999, as amended May 2013 and are included in this QC report where applicable. Additional QC data may be available on request.
- All soil/sediment/solid results are reported on a dry basis, unless otherwise stated.
- All biota/food results are reported on a wet weight basis on the edible portion, unless otherwise stated.
- Actual LORs are matrix dependant. Quoted LORs may be raised where sample extracts are diluted due to interferences.
- Results are uncorrected for matrix spikes or surrogate recoveries except for PFAS compounds.
- SVOC analysis on waters are performed on homogenised, unfiltered samples, unless noted otherwise.
- Samples were analysed on an 'as received' basis.
- Information identified on this report with blue colour, indicates data provided by customer, that may have an impact on the results.
- This report replaces any interim results previously issued.

Holding Times

Please refer to 'Sample Preservation and Container Guide' for holding times (QS3001).

For samples received on the last day of holding time, notification of testing requirements should have been received at least 6 hours prior to sample receipt deadlines as stated on the SRA.

If the Laboratory did not receive the information in the required timeframe, and regardless of any other integrity issues, suitably qualified results may still be reported.

Holding times apply from the date of sampling, therefore compliance to these may be outside the laboratory's control.

For VOCs containing vinyl chloride, styrene and 2-chloroethyl vinyl ether the holding time is 7 days however for all other VOCs such as BTEX or C6-10 TRH then the holding time is 14 days.

****NOTE:** pH duplicates are reported as a range NOT as RPD

Units

mg/kg: milligrams per kilogram	mg/L: milligrams per litre	ug/L: micrograms per litre
ppm: Parts per million	ppb: Parts per billion	%: Percentage
org/100mL: Organisms per 100 millilitres	NTU: Nephelometric Turbidity Units	MPN/100mL: Most Probable Number of organisms per 100 millilitres

Terms

Dry	Where a moisture has been determined on a solid sample the result is expressed on a dry basis.
LOR	Limit of Reporting.
SPIKE	Addition of the analyte to the sample and reported as percentage recovery.
RPD	Relative Percent Difference between two Duplicate pieces of analysis.
LCS	Laboratory Control Sample - reported as percent recovery.
CRM	Certified Reference Material - reported as percent recovery.
Method Blank	In the case of solid samples these are performed on laboratory certified clean sands and in the case of water samples these are performed on de-ionised water.
Surr - Surrogate	The addition of a like compound to the analyte target and reported as percentage recovery.
Duplicate	A second piece of analysis from the same sample and reported in the same units as the result to show comparison.
USEPA	United States Environmental Protection Agency
APHA	American Public Health Association
TCLP	Toxicity Characteristic Leaching Procedure
COC	Chain of Custody
SRA	Sample Receipt Advice
QSM	US Department of Defense Quality Systems Manual Version 5.3
CP	Client Parent - QC was performed on samples pertaining to this report
NCP	Non-Client Parent - QC performed on samples not pertaining to this report, QC is representative of the sequence or batch that client samples were analysed within.
TEQ	Toxic Equivalency Quotient

QC - Acceptance Criteria

RPD Duplicates: Global RPD Duplicates Acceptance Criteria is 30% however the following acceptance guidelines are equally applicable:

Results <10 times the LOR : No Limit

Results between 10-20 times the LOR : RPD must lie between 0-50%

Results >20 times the LOR : RPD must lie between 0-30%

Surrogate Recoveries: Recoveries must lie between 20-130% Phenols & 50-150% PFASs

PFAS field samples that contain surrogate recoveries in excess of the QC limit designated in QSM 5.3 where no positive PFAS results have been reported have been reviewed and no data was affected.

WA DWER (n=10): PFBA, PFPeA, PFHxA, PFHpA, PFOA, PFBS, PFHxS, PFOS, 6:2 FTSA, 8:2 FTSA

QC Data General Comments

- Where a result is reported as a less than (<), higher than the nominated LOR, this is due to either matrix interference, extract dilution required due to interferences or contaminant levels within the sample, high moisture content or insufficient sample provided.
- Duplicate data shown within this report that states the word "BATCH" is a Batch Duplicate from outside of your sample batch, but within the laboratory sample batch at a 1:10 ratio. The Parent and Duplicate data shown is not data from your samples.
- Organochlorine Pesticide analysis - where reporting LCS data, Toxaphene & Chlordane are not added to the LCS.
- Organochlorine Pesticide analysis - where reporting Spike data, Toxaphene is not added to the Spike.
- Total Recoverable Hydrocarbons - where reporting Spike & LCS data, a single spike of commercial Hydrocarbon products in the range of C12-C30 is added and it's Total Recovery is reported in the C10-C14 cell of the Report.
- pH and Free Chlorine analysed in the laboratory - Analysis on this test must begin within 30 minutes of sampling. Therefore laboratory analysis is unlikely to be completed within holding time. Analysis will begin as soon as possible after sample receipt.
- Recovery Data (Spikes & Surrogates) - where chromatographic interference does not allow the determination of Recovery the term "INT" appears against that analyte.
- Polychlorinated Biphenyls are spiked only using Aroclor 1260 in Matrix Spikes and LCS.
- For Matrix Spikes and LCS results a dash " - " in the report means that the specific analyte was not added to the QC sample.
- Duplicate RPDs are calculated from raw analytical data thus it is possible to have two sets of data.

Quality Control Results

Test			Units	Result 1		Acceptance Limits	Pass Limits	Qualifying Code
Method Blank								
Heavy Metals								
Aluminium			mg/L	< 0.05		0.05	Pass	
Arsenic			mg/L	< 0.001		0.001	Pass	
Barium			mg/L	< 0.02		0.02	Pass	
Beryllium			mg/L	< 0.001		0.001	Pass	
Cadmium			mg/L	< 0.0002		0.0002	Pass	
Chromium			mg/L	< 0.001		0.001	Pass	
Cobalt			mg/L	< 0.001		0.001	Pass	
Copper			mg/L	< 0.001		0.001	Pass	
Iron			mg/L	< 0.05		0.05	Pass	
Lead			mg/L	< 0.001		0.001	Pass	
Manganese			mg/L	< 0.005		0.005	Pass	
Mercury			mg/L	< 0.0001		0.0001	Pass	
Nickel			mg/L	< 0.001		0.001	Pass	
Zinc			mg/L	< 0.005		0.005	Pass	
LCS - % Recovery								
Heavy Metals								
Aluminium			%	93		70-130	Pass	
Arsenic			%	96		70-130	Pass	
Barium			%	98		70-130	Pass	
Beryllium			%	88		70-130	Pass	
Cadmium			%	90		70-130	Pass	
Chromium			%	99		70-130	Pass	
Cobalt			%	100		70-130	Pass	
Copper			%	98		70-130	Pass	
Iron			%	96		70-130	Pass	
Lead			%	98		70-130	Pass	
Manganese			%	100		70-130	Pass	
Mercury			%	101		70-130	Pass	
Nickel			%	100		70-130	Pass	
Zinc			%	96		70-130	Pass	
Test	Lab Sample ID	QA Source	Units	Result 1		Acceptance Limits	Pass Limits	Qualifying Code
Spike - % Recovery								
Heavy Metals								
				Result 1				
Aluminium	S20-Ap12294	CP	%	99		70-130	Pass	
Arsenic	S20-Ap12294	CP	%	98		70-130	Pass	
Barium	S20-Ap12294	CP	%	98		70-130	Pass	
Beryllium	S20-Ap12294	CP	%	91		70-130	Pass	
Cadmium	S20-Ap12294	CP	%	95		70-130	Pass	
Chromium	S20-Ap12294	CP	%	98		70-130	Pass	
Cobalt	S20-Ap12294	CP	%	99		70-130	Pass	
Copper	S20-Ap12294	CP	%	99		70-130	Pass	
Iron	S20-Ap12294	CP	%	109		70-130	Pass	
Lead	S20-Ap12294	CP	%	101		70-130	Pass	
Manganese	S20-Ap12294	CP	%	95		70-130	Pass	
Mercury	S20-Ap12294	CP	%	105		70-130	Pass	
Nickel	S20-Ap12294	CP	%	100		70-130	Pass	
Zinc	S20-Ap12294	CP	%	98		70-130	Pass	

Test	Lab Sample ID	QA Source	Units	Result 1			Acceptance Limits	Pass Limits	Qualifying Code
Duplicate									
Heavy Metals				Result 1	Result 2	RPD			
Aluminium	S20-Ap12286	CP	mg/L	0.13	0.15	11	30%	Pass	
Arsenic	S20-Ap12286	CP	mg/L	0.004	0.004	2.0	30%	Pass	
Barium	S20-Ap12286	CP	mg/L	0.15	0.15	4.0	30%	Pass	
Beryllium	S20-Ap12286	CP	mg/L	< 0.001	< 0.001	<1	30%	Pass	
Cadmium	S20-Ap12286	CP	mg/L	0.0013	0.0013	3.0	30%	Pass	
Chromium	S20-Ap12286	CP	mg/L	< 0.001	< 0.001	<1	30%	Pass	
Cobalt	S20-Ap12286	CP	mg/L	0.014	0.014	1.0	30%	Pass	
Copper	S20-Ap12286	CP	mg/L	0.019	0.018	5.0	30%	Pass	
Iron	S20-Ap12286	CP	mg/L	4.5	4.5	<1	30%	Pass	
Lead	S20-Ap12286	CP	mg/L	0.056	0.055	1.0	30%	Pass	
Manganese	S20-Ap12286	CP	mg/L	0.76	0.75	<1	30%	Pass	
Mercury	S20-Ap12286	CP	mg/L	< 0.0001	< 0.0001	<1	30%	Pass	
Nickel	S20-Ap12286	CP	mg/L	0.003	0.002	21	30%	Pass	
Zinc	S20-Ap12286	CP	mg/L	0.20	0.19	3.0	30%	Pass	
Duplicate									
Heavy Metals				Result 1	Result 2	RPD			
Aluminium	S20-Ap12290	CP	mg/L	0.18	0.20	14	30%	Pass	
Arsenic	S20-Ap12290	CP	mg/L	0.002	0.003	15	30%	Pass	
Barium	S20-Ap12290	CP	mg/L	0.07	0.07	1.0	30%	Pass	
Beryllium	S20-Ap12290	CP	mg/L	< 0.001	< 0.001	<1	30%	Pass	
Cadmium	S20-Ap12290	CP	mg/L	0.019	0.020	7.0	30%	Pass	
Chromium	S20-Ap12290	CP	mg/L	< 0.001	< 0.001	<1	30%	Pass	
Cobalt	S20-Ap12290	CP	mg/L	0.005	0.006	3.0	30%	Pass	
Copper	S20-Ap12290	CP	mg/L	0.13	0.13	1.0	30%	Pass	
Iron	S20-Ap12290	CP	mg/L	0.68	0.71	5.0	30%	Pass	
Lead	S20-Ap12290	CP	mg/L	0.055	0.057	3.0	30%	Pass	
Manganese	S20-Ap12290	CP	mg/L	0.42	0.42	1.0	30%	Pass	
Mercury	S20-Ap12290	CP	mg/L	< 0.0001	< 0.0001	<1	30%	Pass	
Nickel	S20-Ap12290	CP	mg/L	0.037	0.038	4.0	30%	Pass	
Zinc	S20-Ap12290	CP	mg/L	3.2	3.2	1.0	30%	Pass	

Comments**Sample Integrity**

Custody Seals Intact (if used)	N/A
Attempt to Chill was evident	Yes
Sample correctly preserved	Yes
Appropriate sample containers have been used	Yes
Sample containers for volatile analysis received with minimal headspace	Yes
Samples received within HoldingTime	Yes
Some samples have been subcontracted	No

Authorised By

Andrew Black Analytical Services Manager
Gabriele Cordero Senior Analyst-Metal (NSW)

**Glenn Jackson
General Manager**

Final report - this Report replaces any previously issued Report

- Indicates Not Requested

* Indicates NATA accreditation does not cover the performance of this service

Measurement uncertainty of test data is available on request or please [click here](#).

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CHAIN OF CUSTODY RECORD

ABN 50 005 085 521

Sydney Laboratory
Unit F3 Bld F, 16 Mars Rd, Lane Cove West, NSW 2066
02 9900 8400 EnviroSampleNSW@eurofins.com

Brisbane Laboratory
Unit 1, 21 Smallwood Pl, Murarie, QLD 4172
07 3902 4600 EnviroSampleQLD@eurofins.com

Perth Laboratory
Unit 2, 91 Leach Highway, Kewdale WA 6105
08 9251 9600 EnviroSampleWA@eurofins.com

Melbourne Laboratory
2 Kingston Town Close, Oakleigh, VIC 3166
03 8564 5000 EnviroSampleVic@eurofins.com

Company	Ramboll		Project No	318000780		Project Manager	Stephen Maxwell		Sampler(s)	JB, TJ, JK					
Address	50 Glebe Road the Junction		Project Name	Public Spaces		EDD Format (ESdat, EQuIS, Custom)	Excel and PDF		Handed over by	Jordyn Kirsch					
Contact Name	Stephen Maxwell		Analyses (Note: Where include are requested, also specify "Tenth" or "Filterer") SUITE code must be used by project SUITE priority. M13 (Al, As, Ba, Be, Cd, Cr, Co, Cu, Fe, Pb, Mn, Hg, Ni, Zn Excluding hexavalent chromium)									Email for Invoice	smaxwell@ramboll.com asiapac-accounts@ramboll.com		
Phone No	0478 658 194											Email for Results	smaxwell@ramboll.com jblackwell@ramboll.com		
Special Directions												Containers		Turnaround Time (TAT) Requirements (Default will be 5 days if not ticked)	
Purchase Order												1L Plastic		<input type="checkbox"/> Overnight (9am)*	
Quote ID No	180813RAMN_1											250mL Plastic		<input type="checkbox"/> 1 Day*	<input type="checkbox"/> 2 Day*
No	Client Sample ID	Sampled Date/Time (dd/mm/yy hh:mm)	Matrix (Solid (S) Water (W))									125mL Plastic		<input type="checkbox"/> 3 Day*	<input checked="" type="checkbox"/> 5 Day
1	BR_SED1	28/04/20	S									200mL Amber Glass		<input type="checkbox"/> Other ()	* Surcharges apply
2	BR_SED2	28/04/20	S									40mL VOA Vial		Sample Comments / Dangerous Goods Hazard Warning	
3	SW2	30/04/20	W									500mL PFAS Bottle			
4	SW4	30/04/20	W									Jar (Glass or HDPE)			
5												Other (Asbestos AS4384, WA Guidelines)			
6															
7															
8															
9															
10															
Total Counts			4												
Method of Shipment		<input type="checkbox"/> Courier (#) <input checked="" type="checkbox"/> Hand Delivered <input type="checkbox"/> Postal		Name		Signature		Date		Time					
Eurofins mgt Laboratory Use Only		Received By	Anson Lee	SYD BNE MEL PER ADL NTL DRW		Signature		Date		Time					
		Received By		SYD BNE MEL PER ADL NTL DRW		Signature		Date		Time					
								18/20		12:00 PM					
										Temperature 14.00°C					
										Report No #717000					

Submission of samples to the laboratory will be deemed as acceptance of Eurofins | mgt Standard Terms and Conditions unless agreed otherwise. A copy of Eurofins | mgt Standard Terms and Conditions is available on request.

Eurofins Environment Testing Australia Pty Ltd trading as Eurofins | mgt

Melbourne

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NATA # 1261
Site # 1254 & 14271

Sydney

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Phone : +61 2 9900 8400
NATA # 1261 Site # 18217

Brisbane

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Murarrie QLD 4172
Phone : +61 7 3902 4600
NATA # 1261 Site # 20794

Perth

2/91 Leach Highway
Kewdale WA 6105
Phone : +61 8 9251 9600
NATA # 1261 Site # 23736

Sample Receipt Advice

Company name: **Ramboll Australia Pty Ltd**
Contact name: **Stephen Maxwell**
Project name: **PUBLIC SPACES**
Project ID: **318000780**
COC number: **Not provided**
Turn around time: **5 Day**
Date/Time received: **May 1, 2020 12:00 PM**
Eurofins reference: **717000**

Sample information

- A detailed list of analytes logged into our LIMS, is included in the attached summary table.
- All samples have been received as described on the above COC.
- COC has been completed correctly.
- Attempt to chill was evident.
- Appropriately preserved sample containers have been used.
- All samples were received in good condition.
- Samples have been provided with adequate time to commence analysis in accordance with the relevant holding times.
- Appropriate sample containers have been used.
- Sample containers for volatile analysis received with zero headspace.
- Split sample sent to requested external lab.
- Some samples have been subcontracted.
- N/A Custody Seals intact (if used).

Contact notes

If you have any questions with respect to these samples please contact:

Andrew Black on Phone : (+61) 2 9900 8490 or by e.mail: AndrewBlack@eurofins.com

Results will be delivered electronically via e.mail to Stephen Maxwell - smaxwell@ramboll.com.

Note: A copy of these results will also be delivered to the general Ramboll Australia Pty Ltd email address.

Ramboll Environ Australia Pty Ltd
 Level 3/100 Pacific Highway
 North Sydney
 NSW 2060



NATA Accredited
Accreditation Number 1261
Site Number 18217

Accredited for compliance with ISO/IEC 17025 – Testing
 The results of the tests, calibrations and/or
 measurements included in this document are traceable
 to Australian/national standards.

Attention: **Stephen Maxwell**

Report **717000-S**
 Project name **PUBLIC SPACES**
 Project ID **318000780**
 Received Date **May 01, 2020**

Client Sample ID			BR_SED1	BR_SED2
Sample Matrix			Soil	Soil
Eurofins Sample No.			S20-My01339	S20-My01340
Date Sampled			Apr 28, 2020	Apr 28, 2020
Test/Reference	LOR	Unit		
Heavy Metals				
Aluminium	10	mg/kg	7000	10000
Arsenic	2	mg/kg	8.4	9.0
Barium	10	mg/kg	64	100
Beryllium	2	mg/kg	< 2	< 2
Cadmium	0.4	mg/kg	0.5	1.1
Chromium	5	mg/kg	18	16
Cobalt	5	mg/kg	5.9	6.3
Copper	5	mg/kg	49	84
Iron	20	mg/kg	14000	15000
Lead	5	mg/kg	78	120
Manganese	5	mg/kg	230	360
Mercury	0.1	mg/kg	< 0.1	< 0.1
Nickel	5	mg/kg	16	11
Zinc	5	mg/kg	210	490
% Moisture				
	1	%	5.9	51

Sample History

Where samples are submitted/analysed over several days, the last date of extraction and analysis is reported. A recent review of our LIMS has resulted in the correction or clarification of some method identifications. Due to this, some of the method reference information on reports has changed. However, no substantive change has been made to our laboratory methods, and as such there is no change in the validity of current or previous results.

If the date and time of sampling are not provided, the Laboratory will not be responsible for compromised results should testing be performed outside the recommended holding time.

Description	Testing Site	Extracted	Holding Time
Heavy Metals - Method: LTM-MET-3040 Metals in Waters, Soils & Sediments by ICP-MS	Sydney	May 07, 2020	180 Days
% Moisture - Method: LTM-GEN-7080 Moisture	Sydney	May 01, 2020	14 Days

Australia

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Penrose, Auckland 1061
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43 Detroit Drive
Rolleston, Christchurch 7675
Phone : 0800 856 450
IANZ # 1290

Company Name: Ramboll Australia Pty Ltd
Address: Level 3/100 Pacific Highway
North Sydney
NSW 2060

Order No.:
Report #: 717000
Phone: 02 9954 8118
Fax: 02 9954 8150

Received: May 1, 2020 12:00 PM
Due: May 8, 2020
Priority: 5 Day
Contact Name: Stephen Maxwell

Project Name: PUBLIC SPACES
Project ID: 318000780

Eurofins Analytical Services Manager : Andrew Black

Sample Detail						Aluminium	Arsenic	Barium	Beryllium	Cadmium	Chromium	Cobalt	Copper	Iron	Lead	Manganese	Mercury	Nickel	Zinc	Moisture Set	
Melbourne Laboratory - NATA Site # 1254 & 14271																					
Sydney Laboratory - NATA Site # 18217						X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X
Brisbane Laboratory - NATA Site # 20794																					
Perth Laboratory - NATA Site # 23736																					
External Laboratory																					
No	Sample ID	Sample Date	Sampling Time	Matrix	LAB ID																
1	BR_SED1	Apr 28, 2020		Soil	S20-My01339	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	
2	BR_SED2	Apr 28, 2020		Soil	S20-My01340	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	
3	SW2	Apr 30, 2020		Water	S20-My01341	X	X	X	X	X	X	X	X	X	X	X	X	X	X		
4	SW4	Apr 30, 2020		Water	S20-My01342	X	X	X	X	X	X	X	X	X	X	X	X	X	X		
Test Counts						4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	2

Internal Quality Control Review and Glossary

General

- Laboratory QC results for Method Blanks, Duplicates, Matrix Spikes, and Laboratory Control Samples follows guidelines delineated in the National Environment Protection (Assessment of Site Contamination) Measure 1999, as amended May 2013 and are included in this QC report where applicable. Additional QC data may be available on request.
- All soil/sediment/solid results are reported on a dry basis, unless otherwise stated.
- All biota/food results are reported on a wet weight basis on the edible portion, unless otherwise stated.
- Actual LORs are matrix dependant. Quoted LORs may be raised where sample extracts are diluted due to interferences.
- Results are uncorrected for matrix spikes or surrogate recoveries except for PFAS compounds.
- SVOC analysis on waters are performed on homogenised, unfiltered samples, unless noted otherwise.
- Samples were analysed on an 'as received' basis.
- Information identified on this report with blue colour, indicates data provided by customer, that may have an impact on the results.
- This report replaces any interim results previously issued.

Holding Times

Please refer to 'Sample Preservation and Container Guide' for holding times (QS3001).

For samples received on the last day of holding time, notification of testing requirements should have been received at least 6 hours prior to sample receipt deadlines as stated on the SRA.

If the Laboratory did not receive the information in the required timeframe, and regardless of any other integrity issues, suitably qualified results may still be reported.

Holding times apply from the date of sampling, therefore compliance to these may be outside the laboratory's control.

For VOCs containing vinyl chloride, styrene and 2-chloroethyl vinyl ether the holding time is 7 days however for all other VOCs such as BTEX or C6-10 TRH then the holding time is 14 days.

****NOTE:** pH duplicates are reported as a range NOT as RPD

Units

mg/kg: milligrams per kilogram

mg/L: milligrams per litre

ug/L: micrograms per litre

ppm: Parts per million

ppb: Parts per billion

%: Percentage

org/100mL: Organisms per 100 millilitres

NTU: Nephelometric Turbidity Units

MPN/100mL: Most Probable Number of organisms per 100 millilitres

Terms

Dry	Where a moisture has been determined on a solid sample the result is expressed on a dry basis.
LOR	Limit of Reporting.
SPIKE	Addition of the analyte to the sample and reported as percentage recovery.
RPD	Relative Percent Difference between two Duplicate pieces of analysis.
LCS	Laboratory Control Sample - reported as percent recovery.
CRM	Certified Reference Material - reported as percent recovery.
Method Blank	In the case of solid samples these are performed on laboratory certified clean sands and in the case of water samples these are performed on de-ionised water.
Surr - Surrogate	The addition of a like compound to the analyte target and reported as percentage recovery.
Duplicate	A second piece of analysis from the same sample and reported in the same units as the result to show comparison.
USEPA	United States Environmental Protection Agency
APHA	American Public Health Association
TCLP	Toxicity Characteristic Leaching Procedure
COC	Chain of Custody
SRA	Sample Receipt Advice
QSM	US Department of Defense Quality Systems Manual Version 5.3
CP	Client Parent - QC was performed on samples pertaining to this report
NCP	Non-Client Parent - QC performed on samples not pertaining to this report, QC is representative of the sequence or batch that client samples were analysed within.
TEQ	Toxic Equivalency Quotient

QC - Acceptance Criteria

RPD Duplicates: Global RPD Duplicates Acceptance Criteria is 30% however the following acceptance guidelines are equally applicable:

Results <10 times the LOR : No Limit

Results between 10-20 times the LOR : RPD must lie between 0-50%

Results >20 times the LOR : RPD must lie between 0-30%

Surrogate Recoveries: Recoveries must lie between 20-130% Phenols & 50-150% PFASs

PFAS field samples that contain surrogate recoveries in excess of the QC limit designated in QSM 5.3 where no positive PFAS results have been reported have been reviewed and no data was affected.

WA DWER (n=10): PFBA, PFPeA, PFHxA, PFHpA, PFOA, PFBS, PFHxS, PFOS, 6:2 FTSA, 8:2 FTSA

QC Data General Comments

- Where a result is reported as a less than (<), higher than the nominated LOR, this is due to either matrix interference, extract dilution required due to interferences or contaminant levels within the sample, high moisture content or insufficient sample provided.
- Duplicate data shown within this report that states the word "BATCH" is a Batch Duplicate from outside of your sample batch, but within the laboratory sample batch at a 1:10 ratio. The Parent and Duplicate data shown is not data from your samples.
- Organochlorine Pesticide analysis - where reporting LCS data, Toxaphene & Chlordane are not added to the LCS.
- Organochlorine Pesticide analysis - where reporting Spike data, Toxaphene is not added to the Spike.
- Total Recoverable Hydrocarbons - where reporting Spike & LCS data, a single spike of commercial Hydrocarbon products in the range of C12-C30 is added and it's Total Recovery is reported in the C10-C14 cell of the Report.
- pH and Free Chlorine analysed in the laboratory - Analysis on this test must begin within 30 minutes of sampling. Therefore laboratory analysis is unlikely to be completed within holding time. Analysis will begin as soon as possible after sample receipt.
- Recovery Data (Spikes & Surrogates) - where chromatographic interference does not allow the determination of Recovery the term "INT" appears against that analyte.
- Polychlorinated Biphenyls are spiked only using Aroclor 1260 in Matrix Spikes and LCS.
- For Matrix Spikes and LCS results a dash " - " in the report means that the specific analyte was not added to the QC sample.
- Duplicate RPDs are calculated from raw analytical data thus it is possible to have two sets of data.

Quality Control Results

Test		Units	Result 1			Acceptance Limits	Pass Limits	Qualifying Code
Method Blank								
Heavy Metals								
Aluminium		mg/kg	< 10			10	Pass	
Arsenic		mg/kg	< 2			2	Pass	
Barium		mg/kg	< 10			10	Pass	
Beryllium		mg/kg	< 2			2	Pass	
Cadmium		mg/kg	< 0.4			0.4	Pass	
Chromium		mg/kg	< 5			5	Pass	
Cobalt		mg/kg	< 5			5	Pass	
Copper		mg/kg	< 5			5	Pass	
Iron		mg/kg	< 20			20	Pass	
Lead		mg/kg	< 5			5	Pass	
Manganese		mg/kg	< 5			5	Pass	
Mercury		mg/kg	< 0.1			0.1	Pass	
Nickel		mg/kg	< 5			5	Pass	
Zinc		mg/kg	< 5			5	Pass	
LCS - % Recovery								
Heavy Metals								
Aluminium		%	92			70-130	Pass	
Arsenic		%	91			70-130	Pass	
Barium		%	92			70-130	Pass	
Beryllium		%	98			70-130	Pass	
Cadmium		%	90			70-130	Pass	
Chromium		%	89			70-130	Pass	
Cobalt		%	88			70-130	Pass	
Copper		%	87			70-130	Pass	
Iron		%	88			70-130	Pass	
Lead		%	92			70-130	Pass	
Manganese		%	89			70-130	Pass	
Mercury		%	105			70-130	Pass	
Nickel		%	89			70-130	Pass	
Zinc		%	86			70-130	Pass	
Test	Lab Sample ID	QA Source	Units	Result 1		Acceptance Limits	Pass Limits	Qualifying Code
Spike - % Recovery								
Heavy Metals								
Aluminium		S20-My00562	NCP	%	110			
Beryllium		S20-My00562	NCP	%	84			
Iron		S20-My05865	NCP	%	111			
Manganese		S20-My00562	NCP	%	112			
Zinc		S20-My00562	NCP	%	90			
Spike - % Recovery								
Heavy Metals								
Arsenic		S20-My01340	CP	%	108			
Barium		S20-My01340	CP	%	113			
Cadmium		S20-My01340	CP	%	109			
Chromium		S20-My01340	CP	%	112			
Cobalt		S20-My01340	CP	%	104			
Copper		S20-My01340	CP	%	124			
Lead		S20-My01340	CP	%	119			
Mercury		S20-My01340	CP	%	112			
Nickel		S20-My01340	CP	%	107			

Test	Lab Sample ID	QA Source	Units	Result 1			Acceptance Limits	Pass Limits	Qualifying Code
Duplicate									
Heavy Metals				Result 1	Result 2	RPD			
Aluminium	S20-My01339	CP	mg/kg	7000	11000	48	30%	Fail	Q02
Arsenic	S20-My01339	CP	mg/kg	8.4	13	43	30%	Fail	Q15
Barium	S20-My01339	CP	mg/kg	64	100	44	30%	Fail	Q02
Beryllium	S20-My01339	CP	mg/kg	< 2	< 2	<1	30%	Pass	
Cadmium	S20-My01339	CP	mg/kg	0.5	0.7	38	30%	Fail	Q15
Chromium	S20-My01339	CP	mg/kg	18	25	36	30%	Fail	Q15
Cobalt	S20-My01339	CP	mg/kg	5.9	8.4	35	30%	Fail	Q15
Copper	S20-My01339	CP	mg/kg	49	74	39	30%	Fail	Q15
Iron	S20-My01339	CP	mg/kg	14000	21000	40	30%	Fail	Q02
Lead	S20-My01339	CP	mg/kg	78	110	30	30%	Pass	
Manganese	S20-My01339	CP	mg/kg	230	320	31	30%	Fail	Q02
Mercury	S20-My01339	CP	mg/kg	< 0.1	< 0.1	<1	30%	Pass	
Nickel	S20-My01339	CP	mg/kg	16	22	35	30%	Fail	Q15
Zinc	S20-My01339	CP	mg/kg	210	290	31	30%	Fail	Q15
Duplicate									
				Result 1	Result 2	RPD			
% Moisture	S20-My01317	NCP	%	18	18	1.0	30%	Pass	

Comments
Sample Integrity

Custody Seals Intact (if used)	N/A
Attempt to Chill was evident	No
Sample correctly preserved	Yes
Appropriate sample containers have been used	Yes
Sample containers for volatile analysis received with minimal headspace	Yes
Samples received within HoldingTime	Yes
Some samples have been subcontracted	No

Qualifier Codes/Comments

Code	Description
Q02	The duplicate %RPD is outside the recommended acceptance criteria. Further analysis indicates sample heterogeneity as the cause
Q15	The RPD reported passes Eurofins Environment Testing's QC - Acceptance Criteria as defined in the Internal Quality Control Review and Glossary page of this report.

Authorised By

Andrew Black	Analytical Services Manager
Gabriele Cordero	Senior Analyst-Metal (NSW)


**Glenn Jackson
General Manager**

Final report - this Report replaces any previously issued Report

- Indicates Not Requested

* Indicates NATA accreditation does not cover the performance of this service

Measurement uncertainty of test data is available on request or please [click here](#).

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Accreditation Number 1261
Site Number 18217

Accredited for compliance with ISO/IEC 17025 – Testing
 The results of the tests, calibrations and/or
 measurements included in this document are traceable
 to Australian/national standards.

Attention: **Stephen Maxwell**

Report **717000-W**
 Project name **PUBLIC SPACES**
 Project ID **318000780**
 Received Date **May 01, 2020**

Client Sample ID			SW2	SW4
Sample Matrix			Water	Water
Eurofins Sample No.			S20-My01341	S20-My01342
Date Sampled			Apr 30, 2020	Apr 30, 2020
Test/Reference	LOR	Unit		
Heavy Metals				
Aluminium	0.05	mg/L	0.06	0.49
Arsenic	0.001	mg/L	< 0.001	0.002
Barium	0.02	mg/L	0.08	0.07
Beryllium	0.001	mg/L	< 0.001	< 0.001
Cadmium	0.0002	mg/L	0.0004	0.040
Chromium	0.001	mg/L	< 0.001	0.001
Cobalt	0.001	mg/L	0.002	0.009
Copper	0.001	mg/L	0.006	0.31
Iron	0.05	mg/L	0.75	0.83
Lead	0.001	mg/L	0.006	0.13
Manganese	0.005	mg/L	0.26	0.63
Mercury	0.0001	mg/L	< 0.0001	< 0.0001
Nickel	0.001	mg/L	< 0.001	0.12
Zinc	0.005	mg/L	0.16	7.0

Sample History

Where samples are submitted/analysed over several days, the last date of extraction and analysis is reported.

A recent review of our LIMS has resulted in the correction or clarification of some method identifications. Due to this, some of the method reference information on reports has changed. However, no substantive change has been made to our laboratory methods, and as such there is no change in the validity of current or previous results.

If the date and time of sampling are not provided, the Laboratory will not be responsible for compromised results should testing be performed outside the recommended holding time.

Description

Heavy Metals

Testing Site

Sydney

Extracted

May 05, 2020

Holding Time

180 Days

- Method: LTM-MET-3040 Metals in Waters, Soils & Sediments by ICP-MS

Australia

Melbourne
6 Monterey Road
Dandenong South VIC 3175
Phone : +61 3 8564 5000
NATA # 1261
Site # 1254 & 14271

Sydney
Unit F3, Building F
16 Mars Road
Lane Cove West NSW 2066
Phone : +61 2 9900 8400
NATA # 1261 Site # 18217

Brisbane
1/21 Smallwood Place
Murarrie QLD 4172
Phone : +61 7 3902 4600
NATA # 1261 Site # 20794

Perth
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Kewdale WA 6105
Phone : +61 8 9251 9600
NATA # 1261
Site # 23736

New Zealand

Auckland
35 O'Rorke Road
Penrose, Auckland 1061
Phone : +64 9 526 45 51
IANZ # 1327

Christchurch
43 Detroit Drive
Rolleston, Christchurch 7675
Phone : 0800 856 450
IANZ # 1290

Company Name: Ramboll Australia Pty Ltd
Address: Level 3/100 Pacific Highway
North Sydney
NSW 2060

Order No.:
Report #: 717000
Phone: 02 9954 8118
Fax: 02 9954 8150

Received: May 1, 2020 12:00 PM
Due: May 8, 2020
Priority: 5 Day
Contact Name: Stephen Maxwell

Project Name: PUBLIC SPACES
Project ID: 318000780

Eurofins Analytical Services Manager : Andrew Black

Sample Detail						Aluminium	Arsenic	Barium	Beryllium	Cadmium	Chromium	Cobalt	Copper	Iron	Lead	Manganese	Mercury	Nickel	Zinc	Moisture Set	
Melbourne Laboratory - NATA Site # 1254 & 14271																					
Sydney Laboratory - NATA Site # 18217						X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X
Brisbane Laboratory - NATA Site # 20794																					
Perth Laboratory - NATA Site # 23736																					
External Laboratory																					
No	Sample ID	Sample Date	Sampling Time	Matrix	LAB ID																
1	BR_SED1	Apr 28, 2020		Soil	S20-My01339	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	
2	BR_SED2	Apr 28, 2020		Soil	S20-My01340	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	
3	SW2	Apr 30, 2020		Water	S20-My01341	X	X	X	X	X	X	X	X	X	X	X	X	X	X		
4	SW4	Apr 30, 2020		Water	S20-My01342	X	X	X	X	X	X	X	X	X	X	X	X	X	X		
Test Counts						4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	2

Internal Quality Control Review and Glossary
General

- Laboratory QC results for Method Blanks, Duplicates, Matrix Spikes, and Laboratory Control Samples follows guidelines delineated in the National Environment Protection (Assessment of Site Contamination) Measure 1999, as amended May 2013 and are included in this QC report where applicable. Additional QC data may be available on request.
- All soil/sediment/solid results are reported on a dry basis, unless otherwise stated.
- All biota/food results are reported on a wet weight basis on the edible portion, unless otherwise stated.
- Actual LORs are matrix dependant. Quoted LORs may be raised where sample extracts are diluted due to interferences.
- Results are uncorrected for matrix spikes or surrogate recoveries except for PFAS compounds.
- SVOC analysis on waters are performed on homogenised, unfiltered samples, unless noted otherwise.
- Samples were analysed on an 'as received' basis.
- Information identified on this report with blue colour, indicates data provided by customer, that may have an impact on the results.
- This report replaces any interim results previously issued.

Holding Times

Please refer to 'Sample Preservation and Container Guide' for holding times (QS3001).

For samples received on the last day of holding time, notification of testing requirements should have been received at least 6 hours prior to sample receipt deadlines as stated on the SRA.

If the Laboratory did not receive the information in the required timeframe, and regardless of any other integrity issues, suitably qualified results may still be reported.

Holding times apply from the date of sampling, therefore compliance to these may be outside the laboratory's control.

For VOCs containing vinyl chloride, styrene and 2-chloroethyl vinyl ether the holding time is 7 days however for all other VOCs such as BTEX or C6-10 TRH then the holding time is 14 days.

****NOTE:** pH duplicates are reported as a range NOT as RPD

Units

mg/kg: milligrams per kilogram

mg/L: milligrams per litre

ug/L: micrograms per litre

ppm: Parts per million

ppb: Parts per billion

%: Percentage

org/100mL: Organisms per 100 millilitres

NTU: Nephelometric Turbidity Units

MPN/100mL: Most Probable Number of organisms per 100 millilitres

Terms

Dry	Where a moisture has been determined on a solid sample the result is expressed on a dry basis.
LOR	Limit of Reporting.
SPIKE	Addition of the analyte to the sample and reported as percentage recovery.
RPD	Relative Percent Difference between two Duplicate pieces of analysis.
LCS	Laboratory Control Sample - reported as percent recovery.
CRM	Certified Reference Material - reported as percent recovery.
Method Blank	In the case of solid samples these are performed on laboratory certified clean sands and in the case of water samples these are performed on de-ionised water.
Surr - Surrogate	The addition of a like compound to the analyte target and reported as percentage recovery.
Duplicate	A second piece of analysis from the same sample and reported in the same units as the result to show comparison.
USEPA	United States Environmental Protection Agency
APHA	American Public Health Association
TCLP	Toxicity Characteristic Leaching Procedure
COC	Chain of Custody
SRA	Sample Receipt Advice
QSM	US Department of Defense Quality Systems Manual Version 5.3
CP	Client Parent - QC was performed on samples pertaining to this report
NCP	Non-Client Parent - QC performed on samples not pertaining to this report, QC is representative of the sequence or batch that client samples were analysed within.
TEQ	Toxic Equivalency Quotient

QC - Acceptance Criteria

RPD Duplicates: Global RPD Duplicates Acceptance Criteria is 30% however the following acceptance guidelines are equally applicable:

Results <10 times the LOR : No Limit

Results between 10-20 times the LOR : RPD must lie between 0-50%

Results >20 times the LOR : RPD must lie between 0-30%

Surrogate Recoveries: Recoveries must lie between 20-130% Phenols & 50-150% PFASs

PFAS field samples that contain surrogate recoveries in excess of the QC limit designated in QSM 5.3 where no positive PFAS results have been reported have been reviewed and no data was affected.

WA DWER (n=10): PFBA, PFPeA, PFHxA, PFHpA, PFOA, PFBS, PFHxS, PFOS, 6:2 FTSA, 8:2 FTSA

QC Data General Comments

- Where a result is reported as a less than (<), higher than the nominated LOR, this is due to either matrix interference, extract dilution required due to interferences or contaminant levels within the sample, high moisture content or insufficient sample provided.
- Duplicate data shown within this report that states the word "BATCH" is a Batch Duplicate from outside of your sample batch, but within the laboratory sample batch at a 1:10 ratio. The Parent and Duplicate data shown is not data from your samples.
- Organochlorine Pesticide analysis - where reporting LCS data, Toxaphene & Chlordane are not added to the LCS.
- Organochlorine Pesticide analysis - where reporting Spike data, Toxaphene is not added to the Spike.
- Total Recoverable Hydrocarbons - where reporting Spike & LCS data, a single spike of commercial Hydrocarbon products in the range of C12-C30 is added and it's Total Recovery is reported in the C10-C14 cell of the Report.
- pH and Free Chlorine analysed in the laboratory - Analysis on this test must begin within 30 minutes of sampling. Therefore laboratory analysis is unlikely to be completed within holding time. Analysis will begin as soon as possible after sample receipt.
- Recovery Data (Spikes & Surrogates) - where chromatographic interference does not allow the determination of Recovery the term "INT" appears against that analyte.
- Polychlorinated Biphenyls are spiked only using Aroclor 1260 in Matrix Spikes and LCS.
- For Matrix Spikes and LCS results a dash " - " in the report means that the specific analyte was not added to the QC sample.
- Duplicate RPDs are calculated from raw analytical data thus it is possible to have two sets of data.

Quality Control Results

Test		Units	Result 1			Acceptance Limits	Pass Limits	Qualifying Code
Method Blank								
Heavy Metals								
Aluminium		mg/L	< 0.05			0.05	Pass	
Arsenic		mg/L	< 0.001			0.001	Pass	
Barium		mg/L	< 0.02			0.02	Pass	
Beryllium		mg/L	< 0.001			0.001	Pass	
Cadmium		mg/L	< 0.0002			0.0002	Pass	
Chromium		mg/L	< 0.001			0.001	Pass	
Cobalt		mg/L	< 0.001			0.001	Pass	
Copper		mg/L	< 0.001			0.001	Pass	
Iron		mg/L	< 0.05			0.05	Pass	
Lead		mg/L	< 0.001			0.001	Pass	
Manganese		mg/L	< 0.005			0.005	Pass	
Mercury		mg/L	< 0.0001			0.0001	Pass	
Nickel		mg/L	< 0.001			0.001	Pass	
Zinc		mg/L	< 0.005			0.005	Pass	
LCS - % Recovery								
Heavy Metals								
Aluminium		%	99			70-130	Pass	
Arsenic		%	97			70-130	Pass	
Barium		%	90			70-130	Pass	
Beryllium		%	91			70-130	Pass	
Cadmium		%	93			70-130	Pass	
Chromium		%	98			70-130	Pass	
Cobalt		%	98			70-130	Pass	
Copper		%	97			70-130	Pass	
Iron		%	98			70-130	Pass	
Lead		%	100			70-130	Pass	
Manganese		%	95			70-130	Pass	
Mercury		%	109			70-130	Pass	
Nickel		%	98			70-130	Pass	
Zinc		%	93			70-130	Pass	
Test	Lab Sample ID	QA Source	Units	Result 1		Acceptance Limits	Pass Limits	Qualifying Code
Spike - % Recovery								
Heavy Metals				Result 1				
Aluminium	S20-My01516	NCP	%	98		70-130	Pass	
Arsenic	S20-My01516	NCP	%	98		70-130	Pass	
Barium	S20-My01516	NCP	%	92		70-130	Pass	
Beryllium	S20-My01516	NCP	%	91		70-130	Pass	
Cadmium	S20-My01516	NCP	%	95		70-130	Pass	
Chromium	S20-My01516	NCP	%	101		70-130	Pass	
Cobalt	S20-My01516	NCP	%	101		70-130	Pass	
Copper	S20-My01516	NCP	%	100		70-130	Pass	
Iron	S20-My01516	NCP	%	99		70-130	Pass	
Lead	S20-My01516	NCP	%	104		70-130	Pass	
Manganese	S20-My01516	NCP	%	97		70-130	Pass	
Mercury	S20-My01516	NCP	%	115		70-130	Pass	
Nickel	S20-My01516	NCP	%	102		70-130	Pass	
Zinc	S20-My01516	NCP	%	97		70-130	Pass	

Test	Lab Sample ID	QA Source	Units	Result 1			Acceptance Limits	Pass Limits	Qualifying Code
Duplicate									
Heavy Metals				Result 1	Result 2	RPD			
Aluminium	S20-My01341	CP	mg/L	0.06	0.06	1.0	30%	Pass	
Arsenic	S20-My01341	CP	mg/L	< 0.001	0.001	25	30%	Pass	
Barium	S20-My01341	CP	mg/L	0.08	0.09	6.0	30%	Pass	
Beryllium	S20-My01341	CP	mg/L	< 0.001	< 0.001	<1	30%	Pass	
Cadmium	S20-My01341	CP	mg/L	0.0004	0.0004	<1	30%	Pass	
Chromium	S20-My01341	CP	mg/L	< 0.001	< 0.001	<1	30%	Pass	
Cobalt	S20-My01341	CP	mg/L	0.002	0.002	11	30%	Pass	
Copper	S20-My01341	CP	mg/L	0.006	0.006	2.0	30%	Pass	
Iron	S20-My01341	CP	mg/L	0.75	0.75	<1	30%	Pass	
Lead	S20-My01341	CP	mg/L	0.006	0.006	<1	30%	Pass	
Manganese	S20-My01341	CP	mg/L	0.26	0.26	<1	30%	Pass	
Mercury	S20-My01341	CP	mg/L	< 0.0001	< 0.0001	<1	30%	Pass	
Nickel	S20-My01341	CP	mg/L	< 0.001	< 0.001	<1	30%	Pass	
Zinc	S20-My01341	CP	mg/L	0.16	0.16	4.0	30%	Pass	

Comments**Sample Integrity**

Custody Seals Intact (if used)	N/A
Attempt to Chill was evident	No
Sample correctly preserved	Yes
Appropriate sample containers have been used	Yes
Sample containers for volatile analysis received with minimal headspace	Yes
Samples received within HoldingTime	Yes
Some samples have been subcontracted	No

Authorised By

Andrew Black Analytical Services Manager
Gabriele Cordero Senior Analyst-Metal (NSW)

**Glenn Jackson
General Manager**

Final report - this Report replaces any previously issued Report

- Indicates Not Requested

* Indicates NATA accreditation does not cover the performance of this service

Measurement uncertainty of test data is available on request or please [click here](#).

Eurofins shall not be liable for loss, cost, damages or expenses incurred by the client, or any other person or company, resulting from the use of any information or interpretation given in this report. In no case shall Eurofins be liable for consequential damages including, but not limited to, lost profits, damages for failure to meet deadlines and lost production arising from this report. This document shall not be reproduced except in full and relates only to the items tested. Unless indicated otherwise, the tests were performed on the samples as received.



CHAIN OF CUSTODY RECORD

ABN 50 005 066 821

Sydney Laboratory
Unit F3 Bld F, 16 Mares Rd, Lane Cove West, NSW 2066
02 9900 8400 EnviroSampleNSW@eurofins.com

Brisbane Laboratory
Unit 1, 21 Sraithwood Pl, Murarie, QLD 4172
07 3902 4600 EnviroSampleQLD@eurofins.com

Perth Laboratory
Unit 2, 91 Leach Highway, Kewdale WA 6105
08 9251 9600 EnviroSampleWA@eurofins.com

Melbourne Laboratory
2 Kingston Town Close, Oakleigh, VIC 3166
03 9554 5000 EnviroSampleVIC@eurofins.com

Company: **Ramboll** Project Name: **318000780** Project Manager: **Stephen Maxwell** EDD Format (ES&at, EQUIS): **Excel and PDF** Sampler(s): **AC** Handed over by: **SM**

Address: **50 Glebe Road the Junction** Project No: **318000780** Email for Invoice: **smaxwell@ramboll.com** Email for Results: **asia@ac-accounts@ramboll.com**

Contact Name: **Stephen Maxwell** Analyses: **Total Lead, Lead, Total Dust** Email for Results: **smaxwell@ramboll.com, blackwell@ramboll.com, rondon@ramboll.com, shyde@ramboll.com**

Phone No: Special Directions: Purchase Order: Quote ID No: **180813RAMM_1** Turnaround Time (TAT) Requirements (default will be 5 days if not ticked):

Overnight (9am)* 2 Day*
 1 Day* 5 Day*
 3 Day* *Surcharges apply
 Other ()

No	Client Sample ID	Sampled Date/Time (dd/mm/yy hh:mm)	Matrix (Soils (S) Water (W))	Total Counts			Signature	Date	Time
				4	1	1			
1	DSWAB_SE_FE (TS)	25/03/20	Dust	X					
2	DSWAB_SE (TS)	25/03/20	Dust	X					
3	DSWAB_FE (TS)	25/03/20	Dust	X					
4	DSWAB_PP(TS)	25/03/20	Dust	X					
5	DVAC_OR(TS)	25/03/20	Dust		X	X			
8									
9									
10									

Method of Shipment: Courier # Hand Delivered Postal Name: _____ Signature: _____
 Laboratory Use Only: Received By: *[Signature]* Received By: *[Signature]* Signature: _____
 Date: *9/4/2020* Date: *9/4/2020* Time: _____ Time: _____
 Report No: *763198*

Submission of samples to the laboratory will be deemed as acceptance of Eurofins | mgI Standard Terms and Conditions unless agreed otherwise. A copy of Eurofins | mgI Standard Terms and Conditions is available on request.
Eurofins Environment Testing Australia Pty Ltd trading as Eurofins | mgI

Melbourne

6 Monterey Road
Dandenong South Vic 3175
Phone : +61 3 8564 5000
NATA # 1261
Site # 1254 & 14271

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NATA # 1261 Site # 20794

Perth

2/91 Leach Highway
Kewdale WA 6105
Phone : +61 8 9251 9600
NATA # 1261 Site # 23736

Sample Receipt Advice

Company name: **Ramboll Australia Pty Ltd**

Contact name: **Stephen Maxwell**

Project ID: **318000780**

COC number: **Not provided**

Turn around time: **5 Day**

Date/Time received: **Apr 9, 2020 10:10 AM**

Eurofins reference: **713198**

Sample information

- A detailed list of analytes logged into our LIMS, is included in the attached summary table.
- All samples have been received as described on the above COC.
- COC has been completed correctly.
- N/A Attempt to chill was evident.
- Appropriately preserved sample containers have been used.
- All samples were received in good condition.
- Samples have been provided with adequate time to commence analysis in accordance with the relevant holding times.
- Appropriate sample containers have been used.
- Split sample sent to requested external lab.
- Some samples have been subcontracted.
- N/A Custody Seals intact (if used).

Contact notes

If you have any questions with respect to these samples please contact:

Andrew Black on Phone : (+61) 2 9900 8490 or by e.mail: AndrewBlack@eurofins.com

Results will be delivered electronically via e.mail to Stephen Maxwell - smaxwell@ramboll.com.

Note: A copy of these results will also be delivered to the general Ramboll Australia Pty Ltd email address.

Australia

Melbourne
6 Monterey Road
Dandenong South VIC 3175
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IANZ # 1327

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Rolleston, Christchurch 7675
Phone : 0800 856 450
IANZ # 1290

Company Name: Ramboll Australia Pty Ltd
Address: Level 3/100 Pacific Highway
North Sydney
NSW 2060

Project Name:
Project ID: 318000780

Order No.:
Report #: 713198
Phone: 02 9954 8118
Fax: 02 9954 8150

Received: Apr 9, 2020 10:10 AM
Due: Apr 20, 2020
Priority: 5 Day
Contact Name: Stephen Maxwell

Eurofins Analytical Services Manager : Andrew Black

Sample Detail						Lead
Melbourne Laboratory - NATA Site # 1254 & 14271						
Sydney Laboratory - NATA Site # 18217						X
Brisbane Laboratory - NATA Site # 20794						
Perth Laboratory - NATA Site # 23736						
External Laboratory						
No	Sample ID	Sample Date	Sampling Time	Matrix	LAB ID	
1	DSWAB_SE_F E (TS)	Mar 25, 2020		Wipes	S20-Ap02132	X
2	DSWAB_SE (TS)	Mar 25, 2020		Wipes	S20-Ap02134	X
3	DSWAB_FE (TS)	Mar 25, 2020		Wipes	S20-Ap02135	X
4	DSWAB_FP (TS)	Mar 25, 2020		Wipes	S20-Ap02136	X
5	DVAC_CR(TS)	Mar 25, 2020		Dust	S20-Ap02147	X
Test Counts						5

Ramboll Environ Australia Pty Ltd
 Level 3/100 Pacific Highway
 North Sydney
 NSW 2060



NATA Accredited
Accreditation Number 1261
Site Number 18217

Accredited for compliance with ISO/IEC 17025 – Testing
 The results of the tests, calibrations and/or
 measurements included in this document are traceable
 to Australian/national standards.

Attention: **Stephen Maxwell**

Report **713198-A**
 Project name
 Project ID **318000780**
 Received Date **Apr 09, 2020**

Client Sample ID			DSWAB_SE_F E (TS)	DSWAB_SE (TS)	DSWAB_FE (TS)	DSWAB_FP (TS)
Sample Matrix			Wipes	Wipes	Wipes	Wipes
Eurofins Sample No.			S20-Ap02132	S20-Ap02134	S20-Ap02135	S20-Ap02136
Date Sampled			Mar 25, 2020	Mar 25, 2020	Mar 25, 2020	Mar 25, 2020
Test/Reference	LOR	Unit				
Heavy Metals						
Lead	1	Total ug	300	1300	1300	770

Sample History

Where samples are submitted/analysed over several days, the last date of extraction and analysis is reported.

A recent review of our LIMS has resulted in the correction or clarification of some method identifications. Due to this, some of the method reference information on reports has changed. However, no substantive change has been made to our laboratory methods, and as such there is no change in the validity of current or previous results.

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Description

Heavy Metals

Testing Site

Sydney

Extracted

Apr 20, 2020

Holding Time

180 Days

- Method: LTM-MET-3040 Metals in Waters, Soils & Sediments by ICP-MS

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NATA # 1261
Site # 23736

New Zealand

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35 O'Rorke Road
Penrose, Auckland 1061
Phone : +64 9 526 45 51
IANZ # 1327

Christchurch
43 Detroit Drive
Rolleston, Christchurch 7675
Phone : 0800 856 450
IANZ # 1290

Company Name: Ramboll Australia Pty Ltd
Address: Level 3/100 Pacific Highway
North Sydney
NSW 2060

Order No.:
Report #: 713198
Phone: 02 9954 8118
Fax: 02 9954 8150

Received: Apr 9, 2020 10:10 AM
Due: Apr 20, 2020
Priority: 5 Day
Contact Name: Stephen Maxwell

Project Name:
Project ID: 318000780

Eurofins Analytical Services Manager : Andrew Black

Lead

Sample Detail

Melbourne Laboratory - NATA Site # 1254 & 14271

Sydney Laboratory - NATA Site # 18217

Brisbane Laboratory - NATA Site # 20794

Perth Laboratory - NATA Site # 23736

External Laboratory

No	Sample ID	Sample Date	Sampling Time	Matrix	LAB ID	
1	DSWAB_SE_F E (TS)	Mar 25, 2020		Wipes	S20-Ap02132	X
2	DSWAB_SE (TS)	Mar 25, 2020		Wipes	S20-Ap02134	X
3	DSWAB_FE (TS)	Mar 25, 2020		Wipes	S20-Ap02135	X
4	DSWAB_FP (TS)	Mar 25, 2020		Wipes	S20-Ap02136	X
5	DVAC_CR(TS)	Mar 25, 2020		Dust	S20-Ap02147	X

Test Counts 5

Internal Quality Control Review and Glossary
General

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Holding Times

Please refer to 'Sample Preservation and Container Guide' for holding times (QS3001).

For samples received on the last day of holding time, notification of testing requirements should have been received at least 6 hours prior to sample receipt deadlines as stated on the SRA.

If the Laboratory did not receive the information in the required timeframe, and regardless of any other integrity issues, suitably qualified results may still be reported.

Holding times apply from the date of sampling, therefore compliance to these may be outside the laboratory's control.

For VOCs containing vinyl chloride, styrene and 2-chloroethyl vinyl ether the holding time is 7 days however for all other VOCs such as BTEX or C6-10 TRH then the holding time is 14 days.

****NOTE:** pH duplicates are reported as a range NOT as RPD

Units

mg/kg: milligrams per kilogram

mg/L: milligrams per litre

ug/L: micrograms per litre

ppm: Parts per million

ppb: Parts per billion

%: Percentage

org/100mL: Organisms per 100 millilitres

NTU: Nephelometric Turbidity Units

MPN/100mL: Most Probable Number of organisms per 100 millilitres

Terms

Dry	Where a moisture has been determined on a solid sample the result is expressed on a dry basis.
LOR	Limit of Reporting.
SPIKE	Addition of the analyte to the sample and reported as percentage recovery.
RPD	Relative Percent Difference between two Duplicate pieces of analysis.
LCS	Laboratory Control Sample - reported as percent recovery.
CRM	Certified Reference Material - reported as percent recovery.
Method Blank	In the case of solid samples these are performed on laboratory certified clean sands and in the case of water samples these are performed on de-ionised water.
Surr - Surrogate	The addition of a like compound to the analyte target and reported as percentage recovery.
Duplicate	A second piece of analysis from the same sample and reported in the same units as the result to show comparison.
USEPA	United States Environmental Protection Agency
APHA	American Public Health Association
TCLP	Toxicity Characteristic Leaching Procedure
COC	Chain of Custody
SRA	Sample Receipt Advice
QSM	US Department of Defense Quality Systems Manual Version 5.3
CP	Client Parent - QC was performed on samples pertaining to this report
NCP	Non-Client Parent - QC performed on samples not pertaining to this report, QC is representative of the sequence or batch that client samples were analysed within.
TEQ	Toxic Equivalency Quotient

QC - Acceptance Criteria

RPD Duplicates: Global RPD Duplicates Acceptance Criteria is 30% however the following acceptance guidelines are equally applicable:

Results <10 times the LOR : No Limit

Results between 10-20 times the LOR : RPD must lie between 0-50%

Results >20 times the LOR : RPD must lie between 0-30%

Surrogate Recoveries: Recoveries must lie between 20-130% Phenols & 50-150% PFASs

PFAS field samples that contain surrogate recoveries in excess of the QC limit designated in QSM 5.3 where no positive PFAS results have been reported have been reviewed and no data was affected.

WA DWER (n=10): PFBA, PFPeA, PFHxA, PFHpA, PFOA, PFBS, PFHxS, PFOS, 6:2 FTSA, 8:2 FTSA

QC Data General Comments

- Where a result is reported as a less than (<), higher than the nominated LOR, this is due to either matrix interference, extract dilution required due to interferences or contaminant levels within the sample, high moisture content or insufficient sample provided.
- Duplicate data shown within this report that states the word "BATCH" is a Batch Duplicate from outside of your sample batch, but within the laboratory sample batch at a 1:10 ratio. The Parent and Duplicate data shown is not data from your samples.
- Organochlorine Pesticide analysis - where reporting LCS data, Toxaphene & Chlordane are not added to the LCS.
- Organochlorine Pesticide analysis - where reporting Spike data, Toxaphene is not added to the Spike.
- Total Recoverable Hydrocarbons - where reporting Spike & LCS data, a single spike of commercial Hydrocarbon products in the range of C12-C30 is added and it's Total Recovery is reported in the C10-C14 cell of the Report.
- pH and Free Chlorine analysed in the laboratory - Analysis on this test must begin within 30 minutes of sampling. Therefore laboratory analysis is unlikely to be completed within holding time. Analysis will begin as soon as possible after sample receipt.
- Recovery Data (Spikes & Surrogates) - where chromatographic interference does not allow the determination of Recovery the term "INT" appears against that analyte.
- Polychlorinated Biphenyls are spiked only using Aroclor 1260 in Matrix Spikes and LCS.
- For Matrix Spikes and LCS results a dash " - " in the report means that the specific analyte was not added to the QC sample.
- Duplicate RPDs are calculated from raw analytical data thus it is possible to have two sets of data.

Quality Control Results

Comments
Sample Integrity

Custody Seals Intact (if used)	N/A
Attempt to Chill was evident	N/A
Sample correctly preserved	Yes
Appropriate sample containers have been used	Yes
Sample containers for volatile analysis received with minimal headspace	Yes
Samples received within HoldingTime	Yes
Some samples have been subcontracted	No

Authorised By

Andrew Black	Analytical Services Manager
Gabriele Cordero	Senior Analyst-Metal (NSW)



Glenn Jackson
General Manager

Final report - this Report replaces any previously issued Report

- Indicates Not Requested

* Indicates NATA accreditation does not cover the performance of this service

Measurement uncertainty of test data is available on request or please [click here](#).

Eurofins shall not be liable for loss, cost, damages or expenses incurred by the client, or any other person or company, resulting from the use of any information or interpretation given in this report. In no case shall Eurofins be liable for consequential damages including, but not limited to, lost profits, damages for failure to meet deadlines and lost production arising from this report. This document shall not be reproduced except in full and relates only to the items tested. Unless indicated otherwise, the tests were performed on the samples as received.

Ramboll Environ Australia Pty Ltd
 Level 3/100 Pacific Highway
 North Sydney
 NSW 2060



NATA Accredited
Accreditation Number 1261
Site Number 18217

Accredited for compliance with ISO/IEC 17025 – Testing
 The results of the tests, calibrations and/or
 measurements included in this document are traceable
 to Australian/national standards.

Attention: **Stephen Maxwell**

Report **713198-S**
 Project name
 Project ID **318000780**
 Received Date **Apr 09, 2020**

Client Sample ID			DVAC_CR(TS)
Sample Matrix			Dust
Eurofins Sample No.			S20-Ap02147
Date Sampled			Mar 25, 2020
Test/Reference	LOR	Unit	
Heavy Metals			
Lead	5	mg/kg	1100

Sample History

Where samples are submitted/analysed over several days, the last date of extraction and analysis is reported.

A recent review of our LIMS has resulted in the correction or clarification of some method identifications. Due to this, some of the method reference information on reports has changed. However, no substantive change has been made to our laboratory methods, and as such there is no change in the validity of current or previous results.

If the date and time of sampling are not provided, the Laboratory will not be responsible for compromised results should testing be performed outside the recommended holding time.

Description

Heavy Metals

Testing Site

Sydney

Extracted

Apr 16, 2020

Holding Time

180 Days

- Method: LTM-MET-3040 Metals in Waters, Soils & Sediments by ICP-MS

Australia

Melbourne
 6 Monterey Road
 Dandenong South VIC 3175
 Phone : +61 3 8564 5000
 NATA # 1261
 Site # 1254 & 14271

Sydney
 Unit F3, Building F
 16 Mars Road
 Lane Cove West NSW 2066
 Phone : +61 2 9900 8400
 NATA # 1261 Site # 18217

Brisbane
 1/21 Smallwood Place
 Murarrie QLD 4172
 Phone : +61 7 3902 4600
 NATA # 1261 Site # 20794

Perth
 2/91 Leach Highway
 Kewdale WA 6105
 Phone : +61 8 9251 9600
 NATA # 1261
 Site # 23736

New Zealand

Auckland
 35 O'Rorke Road
 Penrose, Auckland 1061
 Phone : +64 9 526 45 51
 IANZ # 1327

Christchurch
 43 Detroit Drive
 Rolleston, Christchurch 7675
 Phone : 0800 856 450
 IANZ # 1290

Company Name: Ramboll Australia Pty Ltd
Address: Level 3/100 Pacific Highway
 North Sydney
 NSW 2060

Order No.:
Report #: 713198
Phone: 02 9954 8118
Fax: 02 9954 8150

Received: Apr 9, 2020 10:10 AM
Due: Apr 20, 2020
Priority: 5 Day
Contact Name: Stephen Maxwell

Project Name:
Project ID: 318000780

Eurofins Analytical Services Manager : Andrew Black

Sample Detail	Lead
---------------	------

Melbourne Laboratory - NATA Site # 1254 & 14271						
Sydney Laboratory - NATA Site # 18217						X
Brisbane Laboratory - NATA Site # 20794						
Perth Laboratory - NATA Site # 23736						
External Laboratory						
No	Sample ID	Sample Date	Sampling Time	Matrix	LAB ID	
1	DSWAB_SE_F E (TS)	Mar 25, 2020		Wipes	S20-Ap02132	X
2	DSWAB_SE (TS)	Mar 25, 2020		Wipes	S20-Ap02134	X
3	DSWAB_FE (TS)	Mar 25, 2020		Wipes	S20-Ap02135	X
4	DSWAB_FP (TS)	Mar 25, 2020		Wipes	S20-Ap02136	X
5	DVAC_CR(TS)	Mar 25, 2020		Dust	S20-Ap02147	X
Test Counts						5

Internal Quality Control Review and Glossary

General

- Laboratory QC results for Method Blanks, Duplicates, Matrix Spikes, and Laboratory Control Samples follows guidelines delineated in the National Environment Protection (Assessment of Site Contamination) Measure 1999, as amended May 2013 and are included in this QC report where applicable. Additional QC data may be available on request.
- All soil/sediment/solid results are reported on a dry basis, unless otherwise stated.
- All biota/food results are reported on a wet weight basis on the edible portion, unless otherwise stated.
- Actual LORs are matrix dependant. Quoted LORs may be raised where sample extracts are diluted due to interferences.
- Results are uncorrected for matrix spikes or surrogate recoveries except for PFAS compounds.
- SVOC analysis on waters are performed on homogenised, unfiltered samples, unless noted otherwise.
- Samples were analysed on an 'as received' basis.
- Information identified on this report with blue colour, indicates data provided by customer, that may have an impact on the results.
- This report replaces any interim results previously issued.

Holding Times

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Quality Control Results

Test				Units	Result 1		Acceptance Limits	Pass Limits	Qualifying Code	
Method Blank										
Heavy Metals										
Lead				mg/kg	< 5		5	Pass		
LCS - % Recovery										
Heavy Metals										
Lead				%	96		70-130	Pass		
Test	Lab Sample ID	QA Source	Units	Result 1			Acceptance Limits	Pass Limits	Qualifying Code	
Spike - % Recovery										
Heavy Metals										
Lead				S20-Ap14719	NCP	%	118	70-130	Pass	
Duplicate										
Heavy Metals										
Lead				S20-Ap14271	NCP	mg/kg	12	11	11	30% Pass

Comments**Sample Integrity**

Custody Seals Intact (if used)	N/A
Attempt to Chill was evident	N/A
Sample correctly preserved	Yes
Appropriate sample containers have been used	Yes
Sample containers for volatile analysis received with minimal headspace	Yes
Samples received within HoldingTime	Yes
Some samples have been subcontracted	No

Authorised By

Andrew Black Analytical Services Manager
Gabriele Cordero Senior Analyst-Metal (NSW)

**Glenn Jackson
General Manager**

Final report - this Report replaces any previously issued Report

- Indicates Not Requested

* Indicates NATA accreditation does not cover the performance of this service

Measurement uncertainty of test data is available on request or please [click here](#).

Eurofins shall not be liable for loss, cost, damages or expenses incurred by the client, or any other person or company, resulting from the use of any information or interpretation given in this report. In no case shall Eurofins be liable for consequential damages including, but not limited to, lost profits, damages for failure to meet deadlines and lost production arising from this report. This document shall not be reproduced except in full and relates only to the items tested. Unless indicated otherwise, the tests were performed on the samples as received.

CHAIN OF CUSTODY RECORD

Form EN107 (Rev 0/21)

Sydney Laboratory
Unit 13 391F, 16 Mars Rd, Lane Cove West, NSW 2096
02 9590 5400 EnviroSampleSy@enviro.com

Brisbane Laboratory
Unit 1, 21 Somwood Pl, Murrum, QLD 4172
07 3902 4630 EnviroSampleQLD@enviro.com

Perth Laboratory
Unit 2, 91 Leah Highway, Kewdale, WA 6105
08 9231 9800 EnviroSampleWA@enviro.com

Melbourne Laboratory
2 Koppin Town Close, Oakleigh, VIC 3166
03 9581 5000 EnviroSampleVIC@enviro.com

Company	Ramboll	Project No	316000780	Project Manager	Stephen Maxwell	Sampler(s)	AC	SM
Address	50 Glabe Road the Junction	EOD Format	ESTAT, EOU5	Excel and PDF		Handed over by		
Contact Name	Stephen Maxwell	Analyses	M13 (Al, As, Ba, Be, Cd, Cr, Co, Cu, Fe, Pb, Mn, Hg, Ni, Zn) dissolved					
Phone No		Special Directions						
Purchase Order		Client Sample ID						
Order ID No	180813F3PAMN_1	Sampled Date/Time (dd/mm/yy (hh:mm))						
Matrix (Solid / Water / W)		Matrix (Solid / Water / W)						

No	Client Sample ID	Sampled Date/Time (dd/mm/yy (hh:mm))	Matrix (Solid / Water / W)	Method of Shipment	Received By	Received By Signature	Date	Time	Temperature	Report No
1	MW05	27/03/20	W	<input type="checkbox"/> Courier / #						
2	MW06	27/03/20	W	<input type="checkbox"/> Hand Delivered						
3	MW07	27/03/20	W	<input type="checkbox"/> Postal						
4	DD1_270320	27/03/20	W	<input type="checkbox"/> Name						
5	T01_270320	27/03/20	W	<input type="checkbox"/> Signature						
6	RB_270320	27/03/20	W	<input type="checkbox"/> Date						
7				<input type="checkbox"/> Time						
8				<input type="checkbox"/> Signature						
9				<input type="checkbox"/> Date						
10				<input type="checkbox"/> Time						
Total Counts				6						

Handed over by

SM

Turnaround Time (TAT)

Requirements (check what is being tested)

Overnight (9am)*

1 Day*

2 Day*

3 Day*

5 Day* (Surcharge apply)

Other ()

Sample(s)

AC

Handed over by

SM

Email for Invoice

smaxwell@ramboll.com

asia@ac-accounts@ramboll.com

Email for Results

smaxwell@ramboll.com

blackwell@ramboll.com

recondon@ramboll.com

shyde@ramboll.com

Submission of samples to the laboratory will be deemed as acceptance of Eurofins | mgf Standard Terms and Conditions unless agreed otherwise. A copy of Eurofins | mgf Standard Terms and Conditions is available on request.

Eurofins Environment Testing Australia Pty Ltd trading as Eurofins | mgf

B.76°C
710517

Melbourne

6 Monterey Road
Dandenong South Vic 3175
Phone : +61 3 8564 5000
NATA # 1261
Site # 1254 & 14271

Sydney

Unit F3, Building F
16 Mars Road
Lane Cove West NSW 2066
Phone : +61 2 9900 8400
NATA # 1261 Site # 18217

Brisbane

1/21 Smallwood Place
Murarrie QLD 4172
Phone : +61 7 3902 4600
NATA # 1261 Site # 20794

Perth

2/91 Leach Highway
Kewdale WA 6105
Phone : +61 8 9251 9600
NATA # 1261 Site # 23736

Sample Receipt Advice

Company name: **Ramboll Australia Pty Ltd**

Contact name: **Stephen Maxwell**

Project ID: **318000780**

COC number: **Not provided**

Turn around time: **Overnight**

Date/Time received: **Mar 27, 2020 3:08 PM**

Eurofins reference: **710517**

Sample information

- A detailed list of analytes logged into our LIMS, is included in the attached summary table.
- All samples have been received as described on the above COC.
- COC has been completed correctly.
- Attempt to chill was evident.
- Appropriately preserved sample containers have been used.
- All samples were received in good condition.
- Samples have been provided with adequate time to commence analysis in accordance with the relevant holding times.
- Appropriate sample containers have been used.
- Sample containers for volatile analysis received with zero headspace.
- Split sample sent to requested external lab.
- Some samples have been subcontracted.
- N/A Custody Seals intact (if used).

Contact notes

If you have any questions with respect to these samples please contact:

Andrew Black on Phone : (+61) 2 9900 8490 or by e.mail: AndrewBlack@eurofins.com

Results will be delivered electronically via e.mail to Stephen Maxwell - smaxwell@ramboll.com.

Note: A copy of these results will also be delivered to the general Ramboll Australia Pty Ltd email address.

Australia

Melbourne
 6 Monterey Road
 Dandenong South VIC 3175
 Phone : +61 3 8564 5000
 NATA # 1261
 Site # 1254 & 14271

Sydney
 Unit F3, Building F
 16 Mars Road
 Lane Cove West NSW 2066
 Phone : +61 2 9900 8400
 NATA # 1261 Site # 18217

Brisbane
 1/21 Smallwood Place
 Murarrie QLD 4172
 Phone : +61 7 3902 4600
 NATA # 1261 Site # 20794

Perth
 2/91 Leach Highway
 Kewdale WA 6105
 Phone : +61 8 9251 9600
 NATA # 1261
 Site # 23736

New Zealand

Auckland
 35 O'Rorke Road
 Penrose, Auckland 1061
 Phone : +64 9 526 45 51
 IANZ # 1327

Christchurch
 43 Detroit Drive
 Rolleston, Christchurch 7675
 Phone : 0800 856 450
 IANZ # 1290

ABN – 50 005 085 521

web : www.eurofins.com.au

e.mail : EnviroSales@eurofins.com

Company Name: Ramboll Australia Pty Ltd
Address: Level 3/100 Pacific Highway
 North Sydney
 NSW 2060

Order No.:
Report #: 710517
Phone: 02 9954 8118
Fax: 02 9954 8150

Received: Mar 27, 2020 3:08 PM
Due: Mar 30, 2020
Priority: Overnight
Contact Name: Stephen Maxwell

Project Name:
Project ID: 318000780

Eurofins Analytical Services Manager : Andrew Black

Sample Detail

NEPM 2013 Filtered Metals without Cr6+
 (As, Be, B, Cd, Co, Cr, Cu, Hg, Pb, Ni, Mn,
 NEPM 2013 Metals without Cr6+ (As, Be, B,
 Cd, Co, Cr, Cu, Hg, Pb, Ni, Mn, Se, Zn)

Melbourne Laboratory - NATA Site # 1254 & 14271

Sydney Laboratory - NATA Site # 18217

Brisbane Laboratory - NATA Site # 20794

Perth Laboratory - NATA Site # 23736

External Laboratory

No	Sample ID	Sample Date	Sampling Time	Matrix	LAB ID		
1	MW05	Mar 27, 2020		Water	S20-Ma43288		X
2	MW06	Mar 27, 2020		Water	S20-Ma43289		X
3	MW07	Mar 27, 2020		Water	S20-Ma43290		X
4	DOI_270320	Mar 27, 2020		Water	S20-Ma43291		X
5	RB_270320	Mar 27, 2020		Water	S20-Ma43292	X	
Test Counts						1	4

Ramboll Environ Australia Pty Ltd
 Level 3/100 Pacific Highway
 North Sydney
 NSW 2060



NATA Accredited
 Accreditation Number 1261
 Site Number 18217

Accredited for compliance with ISO/IEC 17025 – Testing
 The results of the tests, calibrations and/or
 measurements included in this document are traceable
 to Australian/national standards.

Attention: Stephen Maxwell

Report 710517-W
 Project name
 Project ID 318000780
 Received Date Mar 27, 2020

Client Sample ID			MW05 Water	MW06 Water	MW07 Water	DOI_270320 Water
Sample Matrix			S20-Ma43288	S20-Ma43289	S20-Ma43290	S20-Ma43291
Eurofins Sample No.			Mar 27, 2020	Mar 27, 2020	Mar 27, 2020	Mar 27, 2020
Date Sampled						
Test/Reference	LOR	Unit				
Heavy Metals						
Arsenic (filtered)	0.001	mg/L	< 0.001	< 0.001	0.003	< 0.001
Beryllium (filtered)	0.001	mg/L	< 0.001	< 0.001	< 0.001	< 0.001
Boron (filtered)	0.05	mg/L	< 0.05	< 0.05	< 0.05	< 0.05
Cadmium (filtered)	0.0002	mg/L	0.0003	< 0.0002	< 0.0002	0.0003
Chromium (filtered)	0.001	mg/L	< 0.001	< 0.001	< 0.001	< 0.001
Cobalt (filtered)	0.001	mg/L	0.001	< 0.001	0.006	0.001
Copper (filtered)	0.001	mg/L	0.001	< 0.001	< 0.001	0.001
Lead (filtered)	0.001	mg/L	0.002	< 0.001	< 0.001	0.004
Manganese (filtered)	0.005	mg/L	0.085	0.026	1.4	0.083
Mercury (filtered)	0.0001	mg/L	< 0.0001	< 0.0001	< 0.0001	< 0.0001
Nickel (filtered)	0.001	mg/L	0.001	< 0.001	0.002	0.001
Selenium (filtered)	0.001	mg/L	< 0.001	< 0.001	< 0.001	< 0.001
Zinc (filtered)	0.005	mg/L	0.044	0.007	< 0.005	0.044

Client Sample ID			RB_270320 Water
Sample Matrix			S20-Ma43292
Eurofins Sample No.			Mar 27, 2020
Date Sampled			
Test/Reference	LOR	Unit	
Heavy Metals			
Arsenic	0.001	mg/L	< 0.001
Beryllium	0.001	mg/L	< 0.001
Boron	0.05	mg/L	< 0.05
Cadmium	0.0002	mg/L	< 0.0002
Chromium	0.001	mg/L	< 0.001
Cobalt	0.001	mg/L	< 0.001
Copper	0.001	mg/L	< 0.001
Lead	0.001	mg/L	< 0.001
Manganese	0.005	mg/L	< 0.005
Mercury	0.0001	mg/L	< 0.0001
Nickel	0.001	mg/L	< 0.001
Selenium	0.001	mg/L	< 0.001
Zinc	0.005	mg/L	< 0.005

Sample History

Where samples are submitted/analysed over several days, the last date of extraction and analysis is reported.

A recent review of our LIMS has resulted in the correction or clarification of some method identifications. Due to this, some of the method reference information on reports has changed. However, no substantive change has been made to our laboratory methods, and as such there is no change in the validity of current or previous results.

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Description

NEPM 2013 Metals without Cr6+ (As, Be, B, Cd, Co, Cr, Cu, Hg, Pb, Ni, Mn, Se, Zn)

- Method: LTM-MET-3040 Metals in Waters, Soils & Sediments by ICP-MS

NEPM 2013 Filtered Metals without Cr6+ (As, Be, B, Cd, Co, Cr, Cu, Hg, Pb, Ni, Mn, Se, Zn)

- Method: LTM-MET-3040 Metals in Waters, Soils & Sediments by ICP-MS

Testing Site	Extracted	Holding Time
Sydney	Mar 27, 2020	180 Days
Sydney	Mar 27, 2020	28 Days

Australia

Melbourne
6 Monterey Road
Dandenong South VIC 3175
Phone : +61 3 8564 5000
NATA # 1261
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NATA # 1261 Site # 20794

Perth
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Kewdale WA 6105
Phone : +61 8 9251 9600
NATA # 1261
Site # 23736

New Zealand

Auckland
35 O'Rorke Road
Penrose, Auckland 1061
Phone : +64 9 526 45 51
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Rolleston, Christchurch 7675
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ABN – 50 005 085 521

web : www.eurofins.com.au

e.mail : EnviroSales@eurofins.com

Company Name: Ramboll Australia Pty Ltd
Address: Level 3/100 Pacific Highway
North Sydney
NSW 2060

Project Name:
Project ID: 318000780

Order No.:
Report #: 710517
Phone: 02 9954 8118
Fax: 02 9954 8150

Received: Mar 27, 2020 3:08 PM
Due: Mar 30, 2020
Priority: Overnight
Contact Name: Stephen Maxwell

Eurofins Analytical Services Manager : Andrew Black

Sample Detail

NEPM 2013 Filtered Metals without Cr6+
(As, Be, B, Cd, Co, Cr, Cu, Hg, Pb, Ni, Mn,
NEPM 2013 Metals without Cr6+ (As, Be, B,
Cd, Co, Cr, Cu, Hg, Pb, Ni, Mn, Se, Zn)

Melbourne Laboratory - NATA Site # 1254 & 14271

Sydney Laboratory - NATA Site # 18217

Brisbane Laboratory - NATA Site # 20794

Perth Laboratory - NATA Site # 23736

External Laboratory

No	Sample ID	Sample Date	Sampling Time	Matrix	LAB ID		
1	MW05	Mar 27, 2020		Water	S20-Ma43288		X
2	MW06	Mar 27, 2020		Water	S20-Ma43289		X
3	MW07	Mar 27, 2020		Water	S20-Ma43290		X
4	DOI_270320	Mar 27, 2020		Water	S20-Ma43291		X
5	RB_270320	Mar 27, 2020		Water	S20-Ma43292	X	
Test Counts						1	4

Internal Quality Control Review and Glossary

General

- Laboratory QC results for Method Blanks, Duplicates, Matrix Spikes, and Laboratory Control Samples follows guidelines delineated in the National Environment Protection (Assessment of Site Contamination) Measure 1999, as amended May 2013 and are included in this QC report where applicable. Additional QC data may be available on request.
- All soil/sediment/solid results are reported on a dry basis, unless otherwise stated.
- All biota/food results are reported on a wet weight basis on the edible portion, unless otherwise stated.
- Actual LORs are matrix dependant. Quoted LORs may be raised where sample extracts are diluted due to interferences.
- Results are uncorrected for matrix spikes or surrogate recoveries except for PFAS compounds.
- SVOC analysis on waters are performed on homogenised, unfiltered samples, unless noted otherwise.
- Samples were analysed on an 'as received' basis.
- Information identified on this report with blue colour, indicates data provided by customer, that may have an impact on the results.
- This report replaces any interim results previously issued.

Holding Times

Please refer to 'Sample Preservation and Container Guide' for holding times (QS3001).

For samples received on the last day of holding time, notification of testing requirements should have been received at least 6 hours prior to sample receipt deadlines as stated on the SRA.

If the Laboratory did not receive the information in the required timeframe, and regardless of any other integrity issues, suitably qualified results may still be reported.

Holding times apply from the date of sampling, therefore compliance to these may be outside the laboratory's control.

For VOCs containing vinyl chloride, styrene and 2-chloroethyl vinyl ether the holding time is 7 days however for all other VOCs such as BTEX or C6-10 TRH then the holding time is 14 days.

****NOTE:** pH duplicates are reported as a range NOT as RPD

Units

mg/kg: milligrams per kilogram

mg/L: milligrams per litre

ug/L: micrograms per litre

ppm: Parts per million

ppb: Parts per billion

%: Percentage

org/100mL: Organisms per 100 millilitres

NTU: Nephelometric Turbidity Units

MPN/100mL: Most Probable Number of organisms per 100 millilitres

Terms

Dry	Where a moisture has been determined on a solid sample the result is expressed on a dry basis.
LOR	Limit of Reporting.
SPIKE	Addition of the analyte to the sample and reported as percentage recovery.
RPD	Relative Percent Difference between two Duplicate pieces of analysis.
LCS	Laboratory Control Sample - reported as percent recovery.
CRM	Certified Reference Material - reported as percent recovery.
Method Blank	In the case of solid samples these are performed on laboratory certified clean sands and in the case of water samples these are performed on de-ionised water.
Surr - Surrogate	The addition of a like compound to the analyte target and reported as percentage recovery.
Duplicate	A second piece of analysis from the same sample and reported in the same units as the result to show comparison.
USEPA	United States Environmental Protection Agency
APHA	American Public Health Association
TCLP	Toxicity Characteristic Leaching Procedure
COC	Chain of Custody
SRA	Sample Receipt Advice
QSM	US Department of Defense Quality Systems Manual Version 5.3
CP	Client Parent - QC was performed on samples pertaining to this report
NCP	Non-Client Parent - QC performed on samples not pertaining to this report, QC is representative of the sequence or batch that client samples were analysed within.
TEQ	Toxic Equivalency Quotient

QC - Acceptance Criteria

RPD Duplicates: Global RPD Duplicates Acceptance Criteria is 30% however the following acceptance guidelines are equally applicable:

Results <10 times the LOR : No Limit

Results between 10-20 times the LOR : RPD must lie between 0-50%

Results >20 times the LOR : RPD must lie between 0-30%

Surrogate Recoveries: Recoveries must lie between 20-130% Phenols & 50-150% PFASs

PFAS field samples that contain surrogate recoveries in excess of the QC limit designated in QSM 5.3 where no positive PFAS results have been reported have been reviewed and no data was affected.

WA DWER (n=10): PFBA, PFPeA, PFHxA, PFHpA, PFOA, PFBS, PFHxS, PFOS, 6:2 FTSA, 8:2 FTSA

QC Data General Comments

- Where a result is reported as a less than (<), higher than the nominated LOR, this is due to either matrix interference, extract dilution required due to interferences or contaminant levels within the sample, high moisture content or insufficient sample provided.
- Duplicate data shown within this report that states the word "BATCH" is a Batch Duplicate from outside of your sample batch, but within the laboratory sample batch at a 1:10 ratio. The Parent and Duplicate data shown is not data from your samples.
- Organochlorine Pesticide analysis - where reporting LCS data, Toxaphene & Chlordane are not added to the LCS.
- Organochlorine Pesticide analysis - where reporting Spike data, Toxaphene is not added to the Spike.
- Total Recoverable Hydrocarbons - where reporting Spike & LCS data, a single spike of commercial Hydrocarbon products in the range of C12-C30 is added and it's Total Recovery is reported in the C10-C14 cell of the Report.
- pH and Free Chlorine analysed in the laboratory - Analysis on this test must begin within 30 minutes of sampling. Therefore laboratory analysis is unlikely to be completed within holding time. Analysis will begin as soon as possible after sample receipt.
- Recovery Data (Spikes & Surrogates) - where chromatographic interference does not allow the determination of Recovery the term "INT" appears against that analyte.
- Polychlorinated Biphenyls are spiked only using Aroclor 1260 in Matrix Spikes and LCS.
- For Matrix Spikes and LCS results a dash " - " in the report means that the specific analyte was not added to the QC sample.
- Duplicate RPDs are calculated from raw analytical data thus it is possible to have two sets of data.

Quality Control Results

Test	Units	Result 1			Acceptance Limits	Pass Limits	Qualifying Code
Method Blank							
Heavy Metals							
Arsenic	mg/L	< 0.001			0.001	Pass	
Arsenic (filtered)	mg/L	< 0.001			0.001	Pass	
Beryllium	mg/L	< 0.001			0.001	Pass	
Beryllium (filtered)	mg/L	< 0.001			0.001	Pass	
Boron	mg/L	< 0.05			0.05	Pass	
Boron (filtered)	mg/L	< 0.05			0.05	Pass	
Cadmium	mg/L	< 0.0002			0.0002	Pass	
Cadmium (filtered)	mg/L	< 0.0002			0.0002	Pass	
Chromium	mg/L	< 0.001			0.001	Pass	
Chromium (filtered)	mg/L	< 0.001			0.001	Pass	
Cobalt	mg/L	< 0.001			0.001	Pass	
Cobalt (filtered)	mg/L	< 0.001			0.001	Pass	
Copper	mg/L	< 0.001			0.001	Pass	
Copper (filtered)	mg/L	< 0.001			0.001	Pass	
Lead	mg/L	< 0.001			0.001	Pass	
Lead (filtered)	mg/L	< 0.001			0.001	Pass	
Manganese	mg/L	< 0.005			0.005	Pass	
Manganese (filtered)	mg/L	< 0.005			0.005	Pass	
Mercury	mg/L	< 0.0001			0.0001	Pass	
Mercury (filtered)	mg/L	< 0.0001			0.0001	Pass	
Nickel	mg/L	< 0.001			0.001	Pass	
Nickel (filtered)	mg/L	< 0.001			0.001	Pass	
Selenium	mg/L	< 0.001			0.001	Pass	
Selenium (filtered)	mg/L	< 0.001			0.001	Pass	
Zinc	mg/L	< 0.005			0.005	Pass	
Zinc (filtered)	mg/L	< 0.005			0.005	Pass	
LCS - % Recovery							
Heavy Metals							
Arsenic	%	95			70-130	Pass	
Arsenic (filtered)	%	101			70-130	Pass	
Beryllium	%	106			70-130	Pass	
Beryllium (filtered)	%	85			70-130	Pass	
Boron	%	102			70-130	Pass	
Boron (filtered)	%	87			70-130	Pass	
Cadmium	%	102			70-130	Pass	
Cadmium (filtered)	%	98			70-130	Pass	
Chromium	%	100			70-130	Pass	
Chromium (filtered)	%	101			70-130	Pass	
Cobalt	%	100			70-130	Pass	
Cobalt (filtered)	%	103			70-130	Pass	
Copper	%	98			70-130	Pass	
Copper (filtered)	%	100			70-130	Pass	
Lead	%	100			70-130	Pass	
Lead (filtered)	%	98			70-130	Pass	
Manganese	%	101			70-130	Pass	
Manganese (filtered)	%	100			70-130	Pass	
Mercury	%	105			70-130	Pass	
Mercury (filtered)	%	103			70-130	Pass	
Nickel	%	99			70-130	Pass	
Nickel (filtered)	%	100			70-130	Pass	

Test			Units	Result 1			Acceptance Limits	Pass Limits	Qualifying Code
Selenium			%	95			70-130	Pass	
Selenium (filtered)			%	98			70-130	Pass	
Zinc			%	101			70-130	Pass	
Zinc (filtered)			%	99			70-130	Pass	
Test	Lab Sample ID	QA Source	Units	Result 1			Acceptance Limits	Pass Limits	Qualifying Code
Spike - % Recovery									
Heavy Metals				Result 1					
Arsenic (filtered)	S20-Ma43631	NCP	%	106			70-130	Pass	
Beryllium (filtered)	S20-Ma43631	NCP	%	117			70-130	Pass	
Cadmium (filtered)	S20-Ma43631	NCP	%	105			70-130	Pass	
Chromium (filtered)	S20-Ma43631	NCP	%	92			70-130	Pass	
Cobalt (filtered)	S20-Ma43631	NCP	%	91			70-130	Pass	
Copper (filtered)	S20-Ma43631	NCP	%	87			70-130	Pass	
Lead (filtered)	S20-Ma43631	NCP	%	90			70-130	Pass	
Manganese (filtered)	S20-Ma43631	NCP	%	87			70-130	Pass	
Mercury (filtered)	S20-Ma43631	NCP	%	98			70-130	Pass	
Nickel (filtered)	S20-Ma43631	NCP	%	86			70-130	Pass	
Selenium (filtered)	S20-Ma43631	NCP	%	98			70-130	Pass	
Zinc (filtered)	S20-Ma43631	NCP	%	87			70-130	Pass	
Spike - % Recovery									
Heavy Metals				Result 1					
Arsenic	S20-Ma34967	NCP	%	95			70-130	Pass	
Beryllium	S20-Ma34967	NCP	%	99			70-130	Pass	
Boron	S20-Ma34967	NCP	%	91			70-130	Pass	
Cadmium	S20-Ma34967	NCP	%	109			70-130	Pass	
Chromium	S20-Ma34967	NCP	%	99			70-130	Pass	
Cobalt	S20-Ma34967	NCP	%	98			70-130	Pass	
Copper	S20-Ma34967	NCP	%	94			70-130	Pass	
Lead	S20-Ma34967	NCP	%	102			70-130	Pass	
Manganese	S20-Ma34967	NCP	%	103			70-130	Pass	
Mercury	S20-Ma34967	NCP	%	102			70-130	Pass	
Nickel	S20-Ma34967	NCP	%	97			70-130	Pass	
Selenium	S20-Ma34967	NCP	%	101			70-130	Pass	
Zinc	S20-Ma34967	NCP	%	100			70-130	Pass	
Test	Lab Sample ID	QA Source	Units	Result 1			Acceptance Limits	Pass Limits	Qualifying Code
Duplicate									
Heavy Metals				Result 1	Result 2	RPD			
Arsenic (filtered)	S20-Ma34252	NCP	mg/L	0.020	0.019	2.0	30%	Pass	
Beryllium (filtered)	S20-Ma34252	NCP	mg/L	< 0.001	< 0.001	<1	30%	Pass	
Boron (filtered)	S20-Ma34252	NCP	mg/L	0.06	0.06	5.0	30%	Pass	
Cadmium (filtered)	S20-Ma34252	NCP	mg/L	< 0.0002	< 0.0002	<1	30%	Pass	
Chromium (filtered)	S20-Ma34252	NCP	mg/L	< 0.001	< 0.001	<1	30%	Pass	
Cobalt (filtered)	S20-Ma34252	NCP	mg/L	0.002	0.002	<1	30%	Pass	
Copper (filtered)	S20-Ma34252	NCP	mg/L	0.002	0.001	6.0	30%	Pass	
Lead (filtered)	S20-Ma34252	NCP	mg/L	< 0.001	< 0.001	<1	30%	Pass	
Manganese (filtered)	S20-Ma34252	NCP	mg/L	0.25	0.25	<1	30%	Pass	
Mercury (filtered)	S20-Ma34252	NCP	mg/L	< 0.0001	< 0.0001	<1	30%	Pass	
Nickel (filtered)	S20-Ma34252	NCP	mg/L	0.006	0.006	1.0	30%	Pass	
Selenium (filtered)	S20-Ma34252	NCP	mg/L	< 0.001	< 0.001	<1	30%	Pass	
Zinc (filtered)	S20-Ma34252	NCP	mg/L	0.015	0.013	12	30%	Pass	

Duplicate									
Heavy Metals				Result 1	Result 2	RPD			
Arsenic	S20-Ma42236	NCP	mg/L	0.002	0.003	7.0	30%	Pass	
Beryllium	S20-Ma33640	NCP	mg/L	< 0.001	< 0.001	<1	30%	Pass	
Boron	S20-Ma33640	NCP	mg/L	< 0.05	< 0.05	<1	30%	Pass	
Cadmium	S20-Ma42236	NCP	mg/L	< 0.0002	< 0.0002	<1	30%	Pass	
Cobalt	S20-Ma33640	NCP	mg/L	< 0.001	< 0.001	<1	30%	Pass	
Copper	S20-Ma42236	NCP	mg/L	0.007	0.007	2.0	30%	Pass	
Lead	S20-Ma42236	NCP	mg/L	0.004	0.004	6.0	30%	Pass	
Manganese	S20-Ma33640	NCP	mg/L	< 0.005	< 0.005	<1	30%	Pass	
Mercury	S20-Ma42236	NCP	mg/L	< 0.0001	< 0.0001	<1	30%	Pass	
Nickel	S20-Ma42236	NCP	mg/L	0.001	0.005	120	30%	Fail	Q15
Selenium	S20-Ma33640	NCP	mg/L	< 0.001	< 0.001	<1	30%	Pass	
Zinc	S20-Ma42236	NCP	mg/L	0.026	0.024	9.0	30%	Pass	

Comments
Sample Integrity

Custody Seals Intact (if used)	N/A
Attempt to Chill was evident	No
Sample correctly preserved	Yes
Appropriate sample containers have been used	No
Sample containers for volatile analysis received with minimal headspace	Yes
Samples received within HoldingTime	Yes
Some samples have been subcontracted	No

Qualifier Codes/Comments

Code	Description
Q15	The RPD reported passes Eurofins Environment Testing's QC - Acceptance Criteria as defined in the Internal Quality Control Review and Glossary page of this report.

Authorised By

Andrew Black	Analytical Services Manager
Gabriele Cordero	Senior Analyst-Metal (NSW)


**Glenn Jackson
General Manager**

Final report - this Report replaces any previously issued Report

- Indicates Not Requested

* Indicates NATA accreditation does not cover the performance of this service

Measurement uncertainty of test data is available on request or please [click here](#).

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 02 9900 8400 EnviroSampleNSW@eurofins.com

Brisbane Laboratory
 Unit 1, 21 Smallwood Pl, Muramba, QLD 4172
 07 3502 4500 EnviroSampleQLD@eurofins.com

Perth Laboratory
 Unit 2, 91 East Highway, Kewdale WA 6105
 08 9251 9300 EnviroSampleWA@eurofins.com

Melbourne Laboratory
 2 Kingston Town Coase, Caledon, VIC 3166
 03 9564 5000 EnviroSampleVIC@eurofins.com

Company Ramboll
Address 50 Glabe Road the Junction
Contact Name Stephen Maxwell
Phone No
Special Directions
Purchase Order
Quote ID No 180813RAMN_1

Project Name 31800780
Project No 31800780
Project Manager Stephen Maxwell
EDD Format (ESdat, EQUIS, Excel and PDF)

Analyses Lead
 (Note: Where metals are requested, please specify "Total" or "Filtered") SUITE code must be used to attract SUITE pricing.

Method of Shipment Courier (#) Hand Delivered Postal
Signature *[Signature]*
Date 21/3/18
Time 8:30
Temperature
Report No 7105371

No	Client Sample ID	Sampled Date/Time (dd/mm/yy hh:mm)	Matrix (Solid (S) Water (W))	Project Name	Project No	Project Manager	Signature	Date	Time
1	MMW01_0.5	18/03/20	Soil	Lead	31800780	Stephen Maxwell	<i>[Signature]</i>	21/3/18	8:30
2	MMW1_1.0	18/03/20	Soil	Lead	31800780	Stephen Maxwell	<i>[Signature]</i>	21/3/18	8:30
3	MMW1_1.5	18/03/20	Soil	Lead	31800780	Stephen Maxwell	<i>[Signature]</i>	21/3/18	8:30
4	MMW1_2.5	18/03/20	Soil	Lead	31800780	Stephen Maxwell	<i>[Signature]</i>	21/3/18	8:30
5	MMW1_3.5	18/03/20	Soil	Lead	31800780	Stephen Maxwell	<i>[Signature]</i>	21/3/18	8:30
8	MMW1_4.5	18/03/20	Soil	Lead	31800780	Stephen Maxwell	<i>[Signature]</i>	21/3/18	8:30
9	MMW2_0-0.05	18/03/20	Soil	Lead	31800780	Stephen Maxwell	<i>[Signature]</i>	21/3/18	8:30
10	MMW2_1.0	18/03/20	Soil	Lead	31800780	Stephen Maxwell	<i>[Signature]</i>	21/3/18	8:30
Total Counts					8				

Method of Shipment Courier (#) Hand Delivered Postal
Signature *[Signature]*
Date 21/3/18
Time 8:30
Temperature
Report No 7105371

Submission of samples to the laboratory will be deemed as acceptance of Eurofins | mgt Standard Terms and Conditions unless agreed otherwise. A copy of Eurofins | mgt Standard Terms and Conditions is available on request.
 Eurofins Environment Testing Australia Pty Ltd trading as Eurofins | mgt
 Page 2/4 October 2017 Modified by: S. Symons Approved by: T. Calver Approved on: 17 August 2017



CHAIN OF CUSTODY RECORD

ASN 30 005 955 521

Sydney Laboratory
Unit F3 Bld F, 16 Mars Rd, Lane Cove West, NSW 2066
02 9900 8200 EnviroSampleNSW@eurofins.com

Brisbane Laboratory
Unit 1, 21 Snailwood Pl, Murarie, QLD 4172
07 3902 4600 EnviroSampleQLD@eurofins.com

Perth Laboratory
Unit 2, 91 Leach Highway, Kendale WA 6105
08 9251 9600 EnviroSampleWA@eurofins.com

Melbourne Laboratory
2 Kingston Town Close, Oakleigh, VIC 3165
03 8564 3000 EnviroSampleVIC@eurofins.com

Company Ramboll

Address 50 Glebe Road the Junction

Contact Name Stephen Maxwell

Phone No

Special Directions

Purchase Order

Quote ID No 180813RAMN_1

Project No	Project Name	Project Manager	Excel and PDF
318000780		Stephen Maxwell	
Analyses <small>(Note: Where metals are requested, please specify "Total" or "Filtered") SUITE code must be used to attract SUITE pricing.</small>			
Lead			

Sample(s) AC

Handled over by SM

Email for Invoice smaxwell@ramboll.com
asiapac-accounts@ramboll.com

Email for Results smaxwell@ramboll.com
jblackwell@ramboll.com
rondon@ramboll.com
shyde@ramboll.com

Turnaround Time (TAT)
Requirements (client will be advised if not stated)

Overnight (5am)*
 1 Day*
 3 Day*
 5 Day*
 Other ()
*Surcharges apply

Sample Comments / Dangerous Goods Hazard Warning

No	Client Sample ID	Sampled Date/Time (dd/mm/yy hh:mm)	Matrix (Soil (S)/Water (W))																		
1	MM2_1.5	18/03/20	Soil	X																	
2	MM2_2.5	18/03/20	Soil	X																	
3	MM2_3.5	18/03/20	Soil	X																	
4	MM2_4.5	18/03/20	Soil	X																	
5	MM3_0.0.05	18/03/20	Soil	X																	
8	MM3_0.5	18/03/20	Soil	X																	
9	MM3_1.0	18/03/20	Soil	X																	
10	MM3_1.5	18/03/20	Soil	X																	
Total Counts					8																

Method of Shipment Courier #) Hand Delivered Postal

Received By *Colin* **Signature** *[Signature]* **Date** 21/3/20 **Time** 8:30

Received By **Signature** **Date** **Time** **Temperature** **Report No** 710537

Laboratory Use Only **SVD** | **BNE** | **MEL** | **PER** | **ADL** | **NTL** | **DRW** **Signature** **Date** **Time**

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Page 1 of 3 CS31006_307 Modified by Dr R Simpson Approved by T Luskwood Approved on 17 August 2017

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 02 9500 8400 EnviroSampleNSW@eurofins.com

Brisbane Laboratory
 Unit 1, 21 Smallwood Pl, Murarie, QLD 4172
 07 3902 4600 EnviroSampleQLD@eurofins.com

P Perth Laboratory
 Unit 2, 91 Leach Highway, Kardinle WA 6105
 08 9251 9600 EnviroSampleWA@eurofins.com

Melbourne Laboratory
 2 Kingson Town Close, Oakleigh, VIC 3166
 03 8954 5000 EnviroSampleVIC@eurofins.com

Project Name: **318000780** Project Manager: **Stephen Maxwell** EDD Format: (ESdat, EQHS, Excel and PDF)

Company: **Ramboll** Address: **50 Glebe Road the Junction** Contact Name: **Stephen Maxwell**

Quote ID No: **180813RAMN_1** Project No: **318000780** Project Manager: **Stephen Maxwell**

Analyses: **Lead** (Note: Where metals are requested, please specify "Total" or "Filtered") SUITE code must be used to attract SUITE pricing.

No	Client Sample ID	Sampled Date/Time (dd/mm/yy hh:mm)	Matrix (Soil (S) Water (W))	Lead
1	MW3_2.5	18/03/20	Soil	X
2	MW3_3.5	18/03/20	Soil	X
3	MW3_4.5	18/03/20	Soil	X
4	MW4_0-0.05	19/03/20	Soil	X
5	MW4_0.5	19/03/20	Soil	X
8	MW4_1.0	19/03/20	Soil	X
9	MW4_1.5	19/03/20	Soil	X
10	MW4_2.5	19/03/20	Soil	X
Total Counts				8

Method of Shipment: Courier (#) Hand Delivered Postal

Received By: **Cath** Signature: _____ Date: **27/3/20**

Received By: _____ Signature: _____ Date: ____/____/____

Signature: _____ Date: ____/____/____

Signature: _____ Date: ____/____/____

Signature: _____ Date: ____/____/____

Signature: _____ Date: ____/____/____

Signature: _____ Date: ____/____/____

Submission of samples to the laboratory will be deemed as acceptance of Eurofins | mgf Standard Terms and Conditions unless agreed otherwise. A copy of Eurofins | mgf Standard Terms and Conditions is available on request.

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Page 6 of 9 CS01009_P2 Modified by Dr R Simpson Approved by T. Laidlaw Approved on: 12 August 2019

Sample(s): **AC**

Handled over by: **SM**

Email for Invoice: **smaxwell@ramboll.com**

Email for Results: **asiapac-accounts@ramboll.com**

1L Plastic

250mL Plastic

125mL Plastic

200mL Amber Glass

40mL VOA vial

500mL PFAS Bottle

Jar (Glass or HDPE)

Other (Asbestos AS4964, WA Guidelines)

Turnaround Time (TAT) Requirements (Default will be 5 days (not tested))

Overnight (3am)*

1 Day*

3 Day*

5 Day*

Other (Surcharges apply)

Sample Comments / Dangerous Goods Hazard Warning

Date: ____/____/____

Time: **8:30**

Temperature: _____

Report No: **710537**



CHAIN OF CUSTODY RECORD

ABN 50 005 085 921

Sydney Laboratory
Unit F3 Bld F, 16 Mars Rd, Lane Cove West, NSW 2066
02 9900 8400 EnviroSampleNSW@eurofins.com

Brisbane Laboratory
Unit 1, 21 Smalwood Pt, Mararie, QLD 4172
07 3902 4600 EnviroSampleQLD@eurofins.com

Perth Laboratory
Unit 2, 91 Leach Highway, Kendale WA 6105
08 9251 9800 EnviroSampleWA@eurofins.com

Melbourne Laboratory
2 Kingston Town Close, Caneleigh VIC 3196
03 8564 5000 EnviroSampleVIC@eurofins.com

Company: Ramboll

Address: 50 Glebe Road the Junction

Contact Name: Stephen Maxwell

Phone No:

Special Directions:

Purchase Order:

Quote ID No: 180813RAMN_1

Project No: 318000780

Project Manager (ES&T, EQUIS):

Stephen Maxwell
Excel and PDF

Sampler(s): AC

SM

Handled over by:

smaxwell@ramboll.com
asiapac-accounts@ramboll.com

Email for Invoice:

smaxwell@ramboll.com
blackwell@ramboll.com
rcondon@ramboll.com
shyde@ramboll.com

Email for Results:

Analyses: Lead

(Note: Where metals are requested, please specify "Total" or "Filtered") SUITE code must be used to attract SUITE pricing

Client Sample ID: Sampled Date/Time (dd/mm/yyyy hr:mm) Matrix (Soil (S) Water (W))

No	Client Sample ID	Sampled Date/Time (dd/mm/yyyy hr:mm)	Matrix (Soil (S) Water (W))	Method of Shipment	Received By	Signature	Date	Time	Temperature
1	MW4_3.5	19/03/20	Soil	<input type="checkbox"/> Courier #) <input type="checkbox"/> Hand Delivered	SVL BNE MEL PER ADL NTL DRV				
2	MW4_4.5	19/03/20	Soil	<input type="checkbox"/> Courier #) <input type="checkbox"/> Hand Delivered	SVL BNE MEL PER ADL NTL DRV				
3	MW5_0.05	19/03/20	Soil	<input type="checkbox"/> Courier #) <input type="checkbox"/> Hand Delivered	SVL BNE MEL PER ADL NTL DRV				
4	MW5_0.5	19/03/20	Soil	<input type="checkbox"/> Courier #) <input type="checkbox"/> Hand Delivered	SVL BNE MEL PER ADL NTL DRV				
5	MW5_1.0	19/03/20	Soil	<input type="checkbox"/> Courier #) <input type="checkbox"/> Hand Delivered	SVL BNE MEL PER ADL NTL DRV				
8	MW5_1.5	19/03/20	Soil	<input type="checkbox"/> Courier #) <input type="checkbox"/> Hand Delivered	SVL BNE MEL PER ADL NTL DRV				
9	MW5_3.5	19/03/20	Soil	<input type="checkbox"/> Courier #) <input type="checkbox"/> Hand Delivered	SVL BNE MEL PER ADL NTL DRV				
10	MW5_4.5	19/03/20	Soil	<input type="checkbox"/> Courier #) <input type="checkbox"/> Hand Delivered	SVL BNE MEL PER ADL NTL DRV				
Total Counts				8					

blackwell@ramboll.com

Turnaround Time (TAT) Requirements (results will be 5 days if not listed)

Overnight (2am)*
 1 Day*
 3 Day*
 5 Day*
 Other () *Surcharge apply

Sample Comments / Dangerous Goods Hazard Warning

Submission of samples to the laboratory will be deemed as acceptance of Eurofins | mgmt Standard Terms and Conditions unless agreed otherwise. A copy of Eurofins | mgmt Standard Terms and Conditions is available on request.



CHAIN OF CUSTODY RECORD

ABN 50 005 066 521

Sydney Laboratory
Unit F3 Bld F, 16 Mars Rd, Lane Cove West, NSW 2066
02 9900 8400 EnviroSampleNSW@eurofins.com

Brisbane Laboratory
Unit 1, 21 Shalwood Pl, Murrumbidgee, QLD 4172
07 3902 4600 EnviroSampleQLD@eurofins.com

Perth Laboratory
Unit 2, 91 Leach Highway, Kewdale WA 6105
08 9251 9800 EnviroSampleWA@eurofins.com

Melbourne Laboratory
2 Kingston Town Close, Oakleigh, VIC 3166
03 8964 5000 EnviroSampleVIC@eurofins.com

Company: **Ramboll** Project Name: **318000780** Project Manager: **Stephen Maxwell** EDD Format: **Excel and PDF** Sampler(s): **AC**

Address: **50 Glebe Road the Junction** Project Name: **318000780** EDD Format: **Excel and PDF** Handed over by: **SM**

Contact Name: **Stephen Maxwell** Project Name: **318000780** EDD Format: **Excel and PDF** Email for Invoice: **smaxwell@ramboll.com**
Email for Results: **asianac-accounts@ramboll.com**
smaxwell@ramboll.com
lblackwell@ramboll.com
rcondon@ramboll.com
shyde@ramboll.com

Phone No: _____ Email for Results: **lblackwell@ramboll.com**
rcondon@ramboll.com
shyde@ramboll.com

Special Directions: _____ Turnaround Time (TAT) Requirements (client will be 5 days if not ticked)
 Overnight (Sam)*
 1 Day* 2 Day*
 3 Day* 5 Day*
 Other () * Such changes apply

Purchase Order: _____ Sample Comments / Dangerous Goods Hazard Warning: _____
Quote ID No: **180813RAMM_1**

No	Client Sample ID	Sampled Date/Time (dd/mm/yy hr:mm)	Matrix (Solid (S) Water (W))	Analyses
1	MW6_0.0E	19/03/20	Soil	Lead
2	MW6_0.5	19/03/20	Soil	Lead
3	MW6_1.0	19/03/20	Soil	Lead
4	MW6_1.5	19/03/20	Soil	Lead
5	MW6_2.5	19/03/20	Soil	Lead
8	MW6_3.5	19/03/20	Soil	Lead
9	MW6_4.5	19/03/20	Soil	Lead
10	MW7_0.0E	20/03/20	Soil	Lead
Total Counts				8

Method of Shipment: Courier (#) Hand Delivered Postal Name: _____ Signature: _____ Date: _____ Time: _____

Laboratory Use Only: Received By: **CAIT** Signature: _____ Date: **21/3/20** Time: **8:30**
Received By: _____ Signature: _____ Date: _____ Time: _____
Signature: _____ Date: _____ Time: _____
Report No: **710531**

Submission of samples to the laboratory will be deemed as acceptance of Eurofins | mgf Standard Terms and Conditions unless agreed otherwise. A copy of Eurofins | mgf Standard Terms and Conditions is available on request.
Eurofins Environment Testing Australia Pty Ltd trading as Eurofins | mgf
Page 1 of 3 02/01/17 Modified by: B. Simpson Approved by: J. Lambert Approved on: 17 August 2017



CHAIN OF CUSTODY RECORD

ABN 90 015 066 521

Sydney Laboratory
Unit 13 Bld F, 10 Mars Rd, Lane Cove West, NSW 2066
02 9900 8900 EnviroSampleNSW@eurofins.com

Brisbane Laboratory
Unit 1, 21 Snailwood Pl, Murrarie, QLD 4172
07 3902 4800 EnviroSampleQLD@eurofins.com

Perth Laboratory
Unit 2, 91 Leach Highway, Kewdale WA 6105
08 9251 9600 EnviroSampleWA@eurofins.com

Melbourne Laboratory
2 Kingston Town Close, Oakleigh, VIC 3166
03 8964 5000 EnviroSampleVIC@eurofins.com

Company Ramboll

Address 50 Glebe Road the Junction

Contact Name Stephen Maxwell

Phone No

Special Directions

Purchase Order

Quote ID No 180813RAMM_1

Project No	Project Name	Project Manager (ES&T, EQUIS)	Excel and PDF
318000780			Stephen Maxwell

Analyses
(Note: Where metals are requested, please specify "Total" or "Filtered") SUITE code must be used to attract SUITE pricing

Lead

Sampler(s) AC

Handed over by SIM

Email for Invoice smaxwell@ramboll.com
asiapac-accounts@ramboll.com

Email for Results smaxwell@ramboll.com
jblackwell@ramboll.com
rondon@ramboll.com
shyde@ramboll.com

Turnaround Time (TAT)
Requirements (clients will be 4 days if not listed)

Overnight (9am)*
 1 Day*
 3 Day*
 5 Day*
 Other ()
*Surcharges apply

Sample Comments / Dangerous Goods Hazard Warning

No	Client Sample ID	Sampled Date/Time (dd/mm/yy hh:mm)	Matrix (Soil (S) Water (W))
1	MW7_0.5	20/03/20	Soil
2	MW7_1.0	20/03/20	Soil
3	MW7_1.5	20/03/20	Soil
4	MW7_2.5	20/03/20	Soil
5	MW7_3.5	20/03/20	Soil
8	MW7_4.5	20/03/20	Soil
9	WINCH N	18/03/20	Soil
10	WINCH S	18/03/20	Soil
Total Counts			8

Method of Shipment	Courier #	Hand Delivered	Postal	Name	Signature	Date	Time
<input type="checkbox"/> Courier #		<input type="checkbox"/> Hand Delivered	<input type="checkbox"/> Postal				
Eurofins Ingt	Received By	SVD BNE MEL PER ADL NTL DRW		Signature	Date	Time	Temperature
Laboratory Use Only	Received By	SVD BNE MEL PER ADL NTL DRW		Signature	Date	Time	Report No

Submission of samples to the laboratory will be deemed as acceptance of Eurofins | Ingt Standard Terms and Conditions unless agreed otherwise. A copy of Eurofins | Ingt Standard Terms and Conditions is available on request.

Eurofins Environment Testing Australia Pty Ltd trading as Eurofins | Ingt

Page 1 of 3 CS2009_07 Modified by: Dr. R. Simpson. Approved by: I. Sakarini. Approved on: 17 August 2017



CHAIN OF CUSTODY RECORD

ABN 50 005 685 521

Sydney Laboratory
Unit F3 Bld F, 16 Mars Rd, Lane Cove West, NSW 2066
02 9900 9400 EnviroSampleSW@eurofins.com

Brisbane Laboratory
Unit 1, 21 Smallwood Pl, Murarie, QLD 4172
07 3902 4500 EnviroSampleQLD@eurofins.com

Perth Laboratory
Unit 2, 91 Leach Highway, Kewdale WA 6105
08 9251 9500 EnviroSampleW@eurofins.com

Melbourne Laboratory
2 Kingston Town Close, Oakleigh, VIC 3166
03 8964 5000 EnviroSampleVIC@eurofins.com

Company: Ramboll Project No: 318000780 Project Name: **Lead**

Address: 50 Globe Road the Junction Project Manager: Stephen Maxwell EDD Format (ES/Stat/EQ/IS): Excel and PDF

Contact Name: Stephen Maxwell

Phone No: **Analyses** (Note: Where metals are requested, please specify "Total" or "Filtered") SUITE code must be used to attract SUITE pricing.

Special Directions: **Lead**

Purchase Order: **Analyses**

Quote ID No: 180813RAMANL_1

No	Client Sample ID	Sampled Date/Time (dd/mm/yy hh:mm)	Matrix (Solid (S) Water (W))
1	D01_190320	19/03/20	Soil
2	D01_200320	20/03/20	Soil
3	D01_230320	23/03/20	Soil
4	D01_240320	24/03/20	Soil
5	D02_200320	20/03/20	Soil
8	D02_240320	24/03/20	Soil
9	D03_240320	24/03/20	Soil
10	MMW01_0.05	18/3/20	Soil
Total Counts			8

- Overnight (9am)*
 - 1 Day*
 - 2 Day*
 - 3 Day*
 - 5 Day*
 - Other ()
- * Surcharges apply
- Turnaround Time (TAT)
Requirements (Overall will be 5 days if not ticked)

Sample Comments / Dangerous Goods Hazard Warning

Method of Shipment	Courier #	Hand Delivered	Postal	Name	Signature	Date	Time
<input type="checkbox"/> Courier #		<input type="checkbox"/> Hand Delivered	<input type="checkbox"/> Postal				

Eurofins mgmt	Received By	Signature	Date	Time	Temperature
Laboratory Use Only	Received By				
	Received By				

Submission of samples to the laboratory will be deemed as acceptance of Eurofins | mgmt Standard Terms and Conditions unless agreed otherwise. A copy of Eurofins | mgmt Standard Terms and Conditions is available on request.



CHAIN OF CUSTODY RECORD

Sydney Laboratory
 Unit F3 Bldg, 16 Mars Rd, Lane Cove West, NSW 2066
 02 9900 8400 EnviroSampleNSW@eurofins.com

Brisbane Laboratory
 Unit 1, 21 Smallwood Pl, Murarie, QLD 4172
 07 3902 4600 EnviroSampleQLD@eurofins.com

Perth Laboratory
 Unit 2, 91 Leach Highway, Kendaale WA 6105
 08 9251 9600 EnviroSampleWA@eurofins.com

Melbourne Laboratory
 2 Kingsley Town Close, Cadelagh, VIC 3156
 03 9594 5000 EnviroSampleVic@eurofins.com

Company	Address	Contact Name	Phone No	Special Directions	Purchase Order	Quote ID No	Client Sample ID	Sampled Date/Time (dd/mm/yy hh:mm)	Matrix (Solid (S) Water (W))	Project Name	Analyses			Project Manager	EDD Format (Stat, EOUIS)	Sampler(s)	Handed over by	Email for Invoice	Email for Results	Turnaround Time (TAT) Requirements (Order will be 5 days if not listed)
											Lead	M13 (Al, As, Ba, Be, Cd, Cr, Co, Cu, Fe, Pb, Mn, Hg, Ni, Zn) total	M13 (Al, As, Ba, Be, Cd, Cr, Co, Cu, Fe, Pb, Mn, Hg, Ni, Zn) dissolved							
Ramboll	50 Glebe Road the Junction	Stephen Maxwell				180813RAMN_1				318000780	Stephen Maxwell	Excel and PDF	AC	SM	smaxwell@ramboll.com asiapac-accounts@ramboll.com	smaxwell@ramboll.com blackwell@ramboll.com rcondon@ramboll.com shyde@ramboll.com				
							T01_190320	19/03/20	Soil	X										Please send to ALS for analyses
							T01_200320	20/03/20	Soil	X										Please send to ALS for analyses
							T01_230320	23/03/20	Soil	X										Please send to ALS for analyses
							T01_240320	24/03/20	Soil	X										Please send to ALS for analyses
							T02_200320	20/03/20	Soil	X										Please send to ALS for analyses
							T03_240320	24/03/20	Soil	X	X	X								Please send to ALS for analyses
							TW01_240320	24/03/20	Soil	X										Please send to ALS for analyses
							XBOYDSTW/3	18/03/20	Soil	X										Please send to ALS for analyses
Total Counts										7	1	1								

Submission of samples to the laboratory will be deemed as acceptance of Eurofins | mgf Standard Terms and Conditions unless agreed otherwise. A copy of Eurofins | mgf Standard Terms and Conditions is available on request.

Eurofins | mgf
 Laboratory Use Only
 Received By: _____ Signature: _____ Date: ____/____/____
 Received By: _____ Signature: _____ Date: ____/____/____

Melbourne

6 Monterey Road
Dandenong South Vic 3175
Phone : +61 3 8564 5000
NATA # 1261
Site # 1254 & 14271

Sydney

Unit F3, Building F
16 Mars Road
Lane Cove West NSW 2066
Phone : +61 2 9900 8400
NATA # 1261 Site # 18217

Brisbane

1/21 Smallwood Place
Murarrie QLD 4172
Phone : +61 7 3902 4600
NATA # 1261 Site # 20794

Perth

2/91 Leach Highway
Kewdale WA 6105
Phone : +61 8 9251 9600
NATA # 1261 Site # 23736

Sample Receipt Advice

Company name: **Ramboll Australia Pty Ltd**

Contact name: **Stephen Maxwell**

Project name: **318000780**

COC number: **Not provided**

Turn around time: **3 Day**

Date/Time received: **Mar 27, 2020 8:30 AM**

Eurofins reference: **710537**

Sample information

- A detailed list of analytes logged into our LIMS, is included in the attached summary table.
- All samples have been received as described on the above COC.
- COC has been completed correctly.
- Attempt to chill was evident.
- Appropriately preserved sample containers have been used.
- All samples were received in good condition.
- Samples have been provided with adequate time to commence analysis in accordance with the relevant holding times.

- Appropriate sample containers have been used.
- Sample containers for volatile analysis received with zero headspace.
- Split sample sent to requested external lab.
- Some samples have been subcontracted.
- N/A Custody Seals intact (if used).

Notes

Samples MW1_1.0, MW3_0-0.05, XBOYDSTW3 not received. Samples MW2_0.5, MW5_2.5 & DW01 received extra and logged in for PB. T02_240320 received and placed on HOLD

Contact notes

If you have any questions with respect to these samples please contact:

Andrew Black on Phone : (+61) 2 9900 8490 or by e.mail: AndrewBlack@eurofins.com

Results will be delivered electronically via e.mail to Stephen Maxwell - smaxwell@ramboll.com.

Note: A copy of these results will also be delivered to the general Ramboll Australia Pty Ltd email address.

Australia

Melbourne
6 Monterey Road
Dandenong South VIC 3175
Phone : +61 3 8564 5000
NATA # 1261
Site # 1254 & 14271

Sydney
Unit F3, Building F
16 Mars Road
Lane Cove West NSW 2066
Phone : +61 2 9900 8400
NATA # 1261 Site # 18217

Brisbane
1/21 Smallwood Place
Murarrie QLD 4172
Phone : +61 7 3902 4600
NATA # 1261 Site # 20794

Perth
2/91 Leach Highway
Kewdale WA 6105
Phone : +61 8 9251 9600
NATA # 1261
Site # 23736

New Zealand

Auckland
35 O'Rorke Road
Penrose, Auckland 1061
Phone : +64 9 526 45 51
IANZ # 1327

Christchurch
43 Detroit Drive
Rolleston, Christchurch 7675
Phone : 0800 856 450
IANZ # 1290

Company Name: Ramboll Australia Pty Ltd
Address: Level 3/100 Pacific Highway
North Sydney
NSW 2060

Project Name: 318000780

Order No.:
Report #: 710537
Phone: 02 9954 8118
Fax: 02 9954 8150

Received: Mar 27, 2020 8:30 AM
Due: Apr 1, 2020
Priority: 3 Day
Contact Name: Stephen Maxwell

Eurofins Analytical Services Manager : Andrew Black

Sample Detail						HOLD	Lead	Moisture Set
Melbourne Laboratory - NATA Site # 1254 & 14271						X	X	X
Sydney Laboratory - NATA Site # 18217								
Brisbane Laboratory - NATA Site # 20794								
Perth Laboratory - NATA Site # 23736								
External Laboratory								
No	Sample ID	Sample Date	Sampling Time	Matrix	LAB ID			
1	MW01_0.5	Mar 18, 2020		Soil	M20-Ma43430		X	X
2	MW01_1.5	Mar 18, 2020		Soil	M20-Ma43431		X	X
3	MW01_2.5	Mar 18, 2020		Soil	M20-Ma43432		X	X
4	MW01_3.5	Mar 18, 2020		Soil	M20-Ma43433		X	X
5	MW01_4.5	Mar 18, 2020		Soil	M20-Ma43434		X	X
6	MW2_0-0.05	Mar 18, 2020		Soil	M20-Ma43435		X	X
7	MW2_1.0	Mar 18, 2020		Soil	M20-Ma43436		X	X
8	MW2_1.5	Mar 18, 2020		Soil	M20-Ma43437		X	X
9	MW2_2.5	Mar 18, 2020		Soil	M20-Ma43438		X	X
10	MW2_3.5	Mar 18, 2020		Soil	M20-Ma43439		X	X
11	MW2_4.5	Mar 18, 2020		Soil	M20-Ma43440		X	X

Australia

Melbourne
6 Monterey Road
Dandenong South VIC 3175
Phone : +61 3 8564 5000
NATA # 1261
Site # 1254 & 14271

Sydney
Unit F3, Building F
16 Mars Road
Lane Cove West NSW 2066
Phone : +61 2 9900 8400
NATA # 1261 Site # 18217

Brisbane
1/21 Smallwood Place
Murarrie QLD 4172
Phone : +61 7 3902 4600
NATA # 1261 Site # 20794

Perth
2/91 Leach Highway
Kewdale WA 6105
Phone : +61 8 9251 9600
NATA # 1261
Site # 23736

New Zealand

Auckland
35 O'Rorke Road
Penrose, Auckland 1061
Phone : +64 9 526 45 51
IANZ # 1327

Christchurch
43 Detroit Drive
Rolleston, Christchurch 7675
Phone : 0800 856 450
IANZ # 1290

ABN – 50 005 085 521

web : www.eurofins.com.au

e.mail : EnviroSales@eurofins.com

Company Name: Ramboll Australia Pty Ltd
Address: Level 3/100 Pacific Highway
North Sydney
NSW 2060
Project Name: 318000780

Order No.:
Report #: 710537
Phone: 02 9954 8118
Fax: 02 9954 8150

Received: Mar 27, 2020 8:30 AM
Due: Apr 1, 2020
Priority: 3 Day
Contact Name: Stephen Maxwell

Eurofins Analytical Services Manager : Andrew Black

Sample Detail						HOLD	Lead	Moisture Set
Melbourne Laboratory - NATA Site # 1254 & 14271						X	X	X
Sydney Laboratory - NATA Site # 18217								
Brisbane Laboratory - NATA Site # 20794								
Perth Laboratory - NATA Site # 23736								
12	MW3_0.5	Mar 18, 2020	Soil	M20-Ma43441		X	X	
13	MW3_1.0	Mar 18, 2020	Soil	M20-Ma43442		X	X	
14	MW3_1.5	Mar 18, 2020	Soil	M20-Ma43443		X	X	
15	MW3_2.5	Mar 18, 2020	Soil	M20-Ma43444		X	X	
16	MW3_3.5	Mar 18, 2020	Soil	M20-Ma43445		X	X	
17	MW4_0-0.05	Mar 19, 2020	Soil	M20-Ma43446		X	X	
18	MW4_0.5	Mar 19, 2020	Soil	M20-Ma43447		X	X	
19	MW4_1.0	Mar 19, 2020	Soil	M20-Ma43448		X	X	
20	MW4_1.5	Mar 19, 2020	Soil	M20-Ma43449		X	X	
21	MW4_2.5	Mar 19, 2020	Soil	M20-Ma43450		X	X	
22	MW4_3.5	Mar 19, 2020	Soil	M20-Ma43451		X	X	
23	MW4_4.5	Mar 19, 2020	Soil	M20-Ma43452		X	X	
24	MW5_0.05	Mar 19, 2020	Soil	M20-Ma43453		X	X	

Australia

Melbourne
6 Monterey Road
Dandenong South VIC 3175
Phone : +61 3 8564 5000
NATA # 1261
Site # 1254 & 14271

Sydney
Unit F3, Building F
16 Mars Road
Lane Cove West NSW 2066
Phone : +61 2 9900 8400
NATA # 1261 Site # 18217

Brisbane
1/21 Smallwood Place
Murarrie QLD 4172
Phone : +61 7 3902 4600
NATA # 1261 Site # 20794

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2/91 Leach Highway
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Phone : +61 8 9251 9600
NATA # 1261
Site # 23736

New Zealand

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35 O'Rorke Road
Penrose, Auckland 1061
Phone : +64 9 526 45 51
IANZ # 1327

Christchurch
43 Detroit Drive
Rolleston, Christchurch 7675
Phone : 0800 856 450
IANZ # 1290

ABN – 50 005 085 521

web : www.eurofins.com.au

e.mail : EnviroSales@eurofins.com

Company Name: Ramboll Australia Pty Ltd
Address: Level 3/100 Pacific Highway
North Sydney
NSW 2060
Project Name: 318000780

Order No.:
Report #: 710537
Phone: 02 9954 8118
Fax: 02 9954 8150

Received: Mar 27, 2020 8:30 AM
Due: Apr 1, 2020
Priority: 3 Day
Contact Name: Stephen Maxwell

Eurofins Analytical Services Manager : Andrew Black

Sample Detail						HOLD	Lead	Moisture Set
Melbourne Laboratory - NATA Site # 1254 & 14271						X	X	X
Sydney Laboratory - NATA Site # 18217								
Brisbane Laboratory - NATA Site # 20794								
Perth Laboratory - NATA Site # 23736								
25	MW5_0.5	Mar 19, 2020	Soil	M20-Ma43454		X	X	
26	MW5_1.0	Mar 19, 2020	Soil	M20-Ma43455		X	X	
27	MW5_1.5	Mar 19, 2020	Soil	M20-Ma43456		X	X	
28	MW5_3.5	Mar 19, 2020	Soil	M20-Ma43457		X	X	
29	MW5_4.5	Mar 19, 2020	Soil	M20-Ma43458		X	X	
30	MW6_0.05	Mar 19, 2020	Soil	M20-Ma43459		X	X	
31	MW6_0.5	Mar 19, 2020	Soil	M20-Ma43460		X	X	
32	MW6_1.0	Mar 19, 2020	Soil	M20-Ma43461		X	X	
33	MW6_1.5	Mar 19, 2020	Soil	M20-Ma43462		X	X	
34	MW6_2.5	Mar 19, 2020	Soil	M20-Ma43463		X	X	
35	MW6_3.5	Mar 19, 2020	Soil	M20-Ma43464		X	X	
36	MW6_4.5	Mar 19, 2020	Soil	M20-Ma43465		X	X	
37	MW7_0.05	Mar 20, 2020	Soil	M20-Ma43466		X	X	

Australia

Melbourne
6 Monterey Road
Dandenong South VIC 3175
Phone : +61 3 8564 5000
NATA # 1261
Site # 1254 & 14271

Sydney
Unit F3, Building F
16 Mars Road
Lane Cove West NSW 2066
Phone : +61 2 9900 8400
NATA # 1261 Site # 18217

Brisbane
1/21 Smallwood Place
Murarrie QLD 4172
Phone : +61 7 3902 4600
NATA # 1261 Site # 20794

Perth
2/91 Leach Highway
Kewdale WA 6105
Phone : +61 8 9251 9600
NATA # 1261
Site # 23736

New Zealand

Auckland
35 O'Rorke Road
Penrose, Auckland 1061
Phone : +64 9 526 45 51
IANZ # 1327

Christchurch
43 Detroit Drive
Rolleston, Christchurch 7675
Phone : 0800 856 450
IANZ # 1290

Company Name: Ramboll Australia Pty Ltd
Address: Level 3/100 Pacific Highway
North Sydney
NSW 2060
Project Name: 318000780

Order No.:
Report #: 710537
Phone: 02 9954 8118
Fax: 02 9954 8150

Received: Mar 27, 2020 8:30 AM
Due: Apr 1, 2020
Priority: 3 Day
Contact Name: Stephen Maxwell

Eurofins Analytical Services Manager : Andrew Black

Sample Detail						HOLD	Lead	Moisture Set
Melbourne Laboratory - NATA Site # 1254 & 14271						X	X	X
Sydney Laboratory - NATA Site # 18217								
Brisbane Laboratory - NATA Site # 20794								
Perth Laboratory - NATA Site # 23736								
38	MW7_0.5	Mar 20, 2020	Soil	M20-Ma43467		X	X	
39	MW7_1.0	Mar 20, 2020	Soil	M20-Ma43468		X	X	
40	MW7_1.5	Mar 20, 2020	Soil	M20-Ma43469		X	X	
41	MW7_2.5	Mar 20, 2020	Soil	M20-Ma43470		X	X	
42	MW7_3.5	Mar 20, 2020	Soil	M20-Ma43471		X	X	
43	MW7_4.5	Mar 20, 2020	Soil	M20-Ma43472		X	X	
44	WINCH N	Mar 18, 2020	Soil	M20-Ma43473		X	X	
45	WINCH S	Mar 18, 2020	Soil	M20-Ma43474		X	X	
46	D01_190320	Mar 19, 2020	Soil	M20-Ma43475		X	X	
47	D01_200320	Mar 20, 2020	Soil	M20-Ma43476		X	X	
48	D01_230320	Mar 23, 2020	Soil	M20-Ma43477		X	X	
49	D01_240320	Mar 24, 2020	Soil	M20-Ma43478		X	X	
50	D02_200320	Mar 20, 2020	Soil	M20-Ma43479		X	X	

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Company Name: Ramboll Australia Pty Ltd
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 NSW 2060
Project Name: 318000780

Order No.:
Report #: 710537
Phone: 02 9954 8118
Fax: 02 9954 8150

Received: Mar 27, 2020 8:30 AM
Due: Apr 1, 2020
Priority: 3 Day
Contact Name: Stephen Maxwell

Eurofins Analytical Services Manager : Andrew Black

Sample Detail						HOLD	Lead	Moisture Set
Melbourne Laboratory - NATA Site # 1254 & 14271						X	X	X
Sydney Laboratory - NATA Site # 18217								
Brisbane Laboratory - NATA Site # 20794								
Perth Laboratory - NATA Site # 23736								
51	D02_240320	Mar 24, 2020	Soil	M20-Ma43480		X	X	
52	D03_240320	Mar 24, 2020	Soil	M20-Ma43481		X	X	
53	TW01_240320	Mar 24, 2020	Water	M20-Ma43482		X		
54	MW3_4.5	Mar 18, 2020	Soil	M20-Ma43583		X	X	
55	MW2_0.5	Mar 18, 2020	Soil	M20-Ma43584		X	X	
56	MW5_2.5	Mar 18, 2020	Soil	M20-Ma43585		X	X	
57	DW01_240320	Mar 24, 2020	Water	M20-Ma43586		X		
58	T02_240320	Mar 24, 2020	Soil	M20-Ma43587	X			
Test Counts						1	57	55

Ramboll Environ Australia Pty Ltd
 Level 3/100 Pacific Highway
 North Sydney
 NSW 2060



NATA Accredited
 Accreditation Number 1261
 Site Number 1254

Accredited for compliance with ISO/IEC 17025 – Testing
 The results of the tests, calibrations and/or
 measurements included in this document are traceable
 to Australian/national standards.

Attention: **Stephen Maxwell**

Report **710537-S**
 Project name **318000780**
 Received Date **Mar 27, 2020**

Client Sample ID			MW01_0.5	MW01_1.5	MW01_2.5	MW01_3.5
Sample Matrix			Soil	Soil	Soil	Soil
Eurofins Sample No.			M20-Ma43430	M20-Ma43431	M20-Ma43432	M20-Ma43433
Date Sampled			Mar 18, 2020	Mar 18, 2020	Mar 18, 2020	Mar 18, 2020
Test/Reference	LOR	Unit				
Heavy Metals						
Lead	5	mg/kg	13	16	15	26
% Moisture	1	%	14	12	8.7	7.8

Client Sample ID			MW01_4.5	MW2_0-0.05	MW2_1.0	MW2_1.5
Sample Matrix			Soil	Soil	Soil	Soil
Eurofins Sample No.			M20-Ma43434	M20-Ma43435	M20-Ma43436	M20-Ma43437
Date Sampled			Mar 18, 2020	Mar 18, 2020	Mar 18, 2020	Mar 18, 2020
Test/Reference	LOR	Unit				
Heavy Metals						
Lead	5	mg/kg	24	51	3600	540
% Moisture	1	%	14	< 1	5.5	4.9

Client Sample ID			MW2_2.5	MW2_3.5	MW2_4.5	MW3_0.5
Sample Matrix			Soil	Soil	Soil	Soil
Eurofins Sample No.			M20-Ma43438	M20-Ma43439	M20-Ma43440	M20-Ma43441
Date Sampled			Mar 18, 2020	Mar 18, 2020	Mar 18, 2020	Mar 18, 2020
Test/Reference	LOR	Unit				
Heavy Metals						
Lead	5	mg/kg	200	140	42	25
% Moisture	1	%	4.4	7.0	7.9	9.3

Client Sample ID			MW3_1.0	MW3_1.5	MW3_2.5	MW3_3.5
Sample Matrix			Soil	Soil	Soil	Soil
Eurofins Sample No.			M20-Ma43442	M20-Ma43443	M20-Ma43444	M20-Ma43445
Date Sampled			Mar 18, 2020	Mar 18, 2020	Mar 18, 2020	Mar 18, 2020
Test/Reference	LOR	Unit				
Heavy Metals						
Lead	5	mg/kg	18	16	15	15
% Moisture						
	1	%	8.4	10	9.1	12

Client Sample ID			MW4_0-0.05	MW4_0.5	MW4_1.0	MW4_1.5
Sample Matrix			Soil	Soil	Soil	Soil
Eurofins Sample No.			M20-Ma43446	M20-Ma43447	M20-Ma43448	M20-Ma43449
Date Sampled			Mar 19, 2020	Mar 19, 2020	Mar 19, 2020	Mar 19, 2020
Test/Reference	LOR	Unit				
Heavy Metals						
Lead	5	mg/kg	1200	390	31	19
% Moisture						
	1	%	3.1	6.5	3.6	8.3

Client Sample ID			MW4_2.5	MW4_3.5	MW4_4.5	MW5_0.05
Sample Matrix			Soil	Soil	Soil	Soil
Eurofins Sample No.			M20-Ma43450	M20-Ma43451	M20-Ma43452	M20-Ma43453
Date Sampled			Mar 19, 2020	Mar 19, 2020	Mar 19, 2020	Mar 19, 2020
Test/Reference	LOR	Unit				
Heavy Metals						
Lead	5	mg/kg	21	30	27	120
% Moisture						
	1	%	14	6.6	12	5.1

Client Sample ID			MW5_0.5	MW5_1.0	MW5_1.5	MW5_3.5
Sample Matrix			Soil	Soil	Soil	Soil
Eurofins Sample No.			M20-Ma43454	M20-Ma43455	M20-Ma43456	M20-Ma43457
Date Sampled			Mar 19, 2020	Mar 19, 2020	Mar 19, 2020	Mar 19, 2020
Test/Reference	LOR	Unit				
Heavy Metals						
Lead	5	mg/kg	190	13	20	22
% Moisture						
	1	%	8.1	3.2	4.4	6.2

Client Sample ID			MW5_4.5	MW6_0.05	MW6_0.5	MW6_1.0
Sample Matrix			Soil	Soil	Soil	Soil
Eurofins Sample No.			M20-Ma43458	M20-Ma43459	M20-Ma43460	M20-Ma43461
Date Sampled			Mar 19, 2020	Mar 19, 2020	Mar 19, 2020	Mar 19, 2020
Test/Reference	LOR	Unit				
Heavy Metals						
Lead	5	mg/kg	28	57	25	21
% Moisture						
	1	%	5.3	14	9.0	2.9

Client Sample ID			MW6_1.5	MW6_2.5	MW6_3.5	MW6_4.5
Sample Matrix			Soil	Soil	Soil	Soil
Eurofins Sample No.			M20-Ma43462	M20-Ma43463	M20-Ma43464	M20-Ma43465
Date Sampled			Mar 19, 2020	Mar 19, 2020	Mar 19, 2020	Mar 19, 2020
Test/Reference	LOR	Unit				
Heavy Metals						
Lead	5	mg/kg	18	14	19	28
% Moisture						
	1	%	6.6	4.1	7.5	5.8

Client Sample ID			MW7_0.05	MW7_0.5	MW7_1.0	MW7_1.5
Sample Matrix			Soil	Soil	Soil	Soil
Eurofins Sample No.			M20-Ma43466	M20-Ma43467	M20-Ma43468	M20-Ma43469
Date Sampled			Mar 20, 2020	Mar 20, 2020	Mar 20, 2020	Mar 20, 2020
Test/Reference	LOR	Unit				
Heavy Metals						
Lead	5	mg/kg	210	43	52	18
% Moisture						
	1	%	7.6	8.9	7.2	9.9

Client Sample ID			MW7_2.5	MW7_3.5	MW7_4.5	WINCH N
Sample Matrix			Soil	Soil	Soil	Soil
Eurofins Sample No.			M20-Ma43470	M20-Ma43471	M20-Ma43472	M20-Ma43473
Date Sampled			Mar 20, 2020	Mar 20, 2020	Mar 20, 2020	Mar 18, 2020
Test/Reference	LOR	Unit				
Heavy Metals						
Lead	5	mg/kg	43	44	20	25000
% Moisture						
	1	%	17	13	< 1	1.5

Client Sample ID			WINCH S	D01_190320	D01_200320	D01_230320
Sample Matrix			Soil	Soil	Soil	Soil
Eurofins Sample No.			M20-Ma43474	M20-Ma43475	M20-Ma43476	M20-Ma43477
Date Sampled			Mar 18, 2020	Mar 19, 2020	Mar 20, 2020	Mar 23, 2020
Test/Reference	LOR	Unit				
Heavy Metals						
Lead	5	mg/kg	11000	1400	230	330
% Moisture						
	1	%	1.4	3.0	6.5	13

Client Sample ID			D01_240320	D02_200320	D02_240320	D03_240320
Sample Matrix			Soil	Soil	Soil	Soil
Eurofins Sample No.			M20-Ma43478	M20-Ma43479	M20-Ma43480	M20-Ma43481
Date Sampled			Mar 24, 2020	Mar 20, 2020	Mar 24, 2020	Mar 24, 2020
Test/Reference	LOR	Unit				
Heavy Metals						
Lead	5	mg/kg	170	55	85	7.0
% Moisture						
	1	%	15	12	16	10

Client Sample ID			MW3_4.5	MW2_0.5	MW5_2.5
Sample Matrix			Soil	Soil	Soil
Eurofins Sample No.			M20-Ma43583	M20-Ma43584	M20-Ma43585
Date Sampled			Mar 18, 2020	Mar 18, 2020	Mar 18, 2020
Test/Reference	LOR	Unit			
Heavy Metals					
Lead	5	mg/kg	22	27	21
% Moisture					
	1	%	15	5.5	5.5

Sample History

Where samples are submitted/analysed over several days, the last date of extraction and analysis is reported.

A recent review of our LIMS has resulted in the correction or clarification of some method identifications. Due to this, some of the method reference information on reports has changed. However, no substantive change has been made to our laboratory methods, and as such there is no change in the validity of current or previous results.

If the date and time of sampling are not provided, the Laboratory will not be responsible for compromised results should testing be performed outside the recommended holding time.

Description

Heavy Metals

- Method: LTM-MET-3040 Metals in Waters, Soils & Sediments by ICP-MS

% Moisture

- Method: LTM-GEN-7080 Moisture

Testing Site

Melbourne

Melbourne

Extracted

Mar 27, 2020

Mar 27, 2020

Holding Time

180 Days

14 Days

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Company Name: Ramboll Australia Pty Ltd
Address: Level 3/100 Pacific Highway
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NSW 2060
Project Name: 318000780

Order No.:
Report #: 710537
Phone: 02 9954 8118
Fax: 02 9954 8150

Received: Mar 27, 2020 8:30 AM
Due: Apr 1, 2020
Priority: 3 Day
Contact Name: Stephen Maxwell

Eurofins Analytical Services Manager : Andrew Black

Sample Detail						HOLD	Lead	Moisture Set
Melbourne Laboratory - NATA Site # 1254 & 14271						X	X	X
Sydney Laboratory - NATA Site # 18217								
Brisbane Laboratory - NATA Site # 20794								
Perth Laboratory - NATA Site # 23736								
External Laboratory								
No	Sample ID	Sample Date	Sampling Time	Matrix	LAB ID			
1	MW01_0.5	Mar 18, 2020		Soil	M20-Ma43430		X	X
2	MW01_1.5	Mar 18, 2020		Soil	M20-Ma43431		X	X
3	MW01_2.5	Mar 18, 2020		Soil	M20-Ma43432		X	X
4	MW01_3.5	Mar 18, 2020		Soil	M20-Ma43433		X	X
5	MW01_4.5	Mar 18, 2020		Soil	M20-Ma43434		X	X
6	MW2_0-0.05	Mar 18, 2020		Soil	M20-Ma43435		X	X
7	MW2_1.0	Mar 18, 2020		Soil	M20-Ma43436		X	X
8	MW2_1.5	Mar 18, 2020		Soil	M20-Ma43437		X	X
9	MW2_2.5	Mar 18, 2020		Soil	M20-Ma43438		X	X
10	MW2_3.5	Mar 18, 2020		Soil	M20-Ma43439		X	X
11	MW2_4.5	Mar 18, 2020		Soil	M20-Ma43440		X	X

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Sydney Laboratory - NATA Site # 18217							
Brisbane Laboratory - NATA Site # 20794							
Perth Laboratory - NATA Site # 23736							
12	MW3_0.5	Mar 18, 2020	Soil	M20-Ma43441		X	X
13	MW3_1.0	Mar 18, 2020	Soil	M20-Ma43442		X	X
14	MW3_1.5	Mar 18, 2020	Soil	M20-Ma43443		X	X
15	MW3_2.5	Mar 18, 2020	Soil	M20-Ma43444		X	X
16	MW3_3.5	Mar 18, 2020	Soil	M20-Ma43445		X	X
17	MW4_0-0.05	Mar 19, 2020	Soil	M20-Ma43446		X	X
18	MW4_0.5	Mar 19, 2020	Soil	M20-Ma43447		X	X
19	MW4_1.0	Mar 19, 2020	Soil	M20-Ma43448		X	X
20	MW4_1.5	Mar 19, 2020	Soil	M20-Ma43449		X	X
21	MW4_2.5	Mar 19, 2020	Soil	M20-Ma43450		X	X
22	MW4_3.5	Mar 19, 2020	Soil	M20-Ma43451		X	X
23	MW4_4.5	Mar 19, 2020	Soil	M20-Ma43452		X	X
24	MW5_0.05	Mar 19, 2020	Soil	M20-Ma43453		X	X

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Melbourne Laboratory - NATA Site # 1254 & 14271						X	X	X
Sydney Laboratory - NATA Site # 18217								
Brisbane Laboratory - NATA Site # 20794								
Perth Laboratory - NATA Site # 23736								
25	MW5_0.5	Mar 19, 2020	Soil	M20-Ma43454		X	X	
26	MW5_1.0	Mar 19, 2020	Soil	M20-Ma43455		X	X	
27	MW5_1.5	Mar 19, 2020	Soil	M20-Ma43456		X	X	
28	MW5_3.5	Mar 19, 2020	Soil	M20-Ma43457		X	X	
29	MW5_4.5	Mar 19, 2020	Soil	M20-Ma43458		X	X	
30	MW6_0.05	Mar 19, 2020	Soil	M20-Ma43459		X	X	
31	MW6_0.5	Mar 19, 2020	Soil	M20-Ma43460		X	X	
32	MW6_1.0	Mar 19, 2020	Soil	M20-Ma43461		X	X	
33	MW6_1.5	Mar 19, 2020	Soil	M20-Ma43462		X	X	
34	MW6_2.5	Mar 19, 2020	Soil	M20-Ma43463		X	X	
35	MW6_3.5	Mar 19, 2020	Soil	M20-Ma43464		X	X	
36	MW6_4.5	Mar 19, 2020	Soil	M20-Ma43465		X	X	
37	MW7_0.05	Mar 20, 2020	Soil	M20-Ma43466		X	X	

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39	MW7_1.0	Mar 20, 2020	Soil	M20-Ma43468		X	X	
40	MW7_1.5	Mar 20, 2020	Soil	M20-Ma43469		X	X	
41	MW7_2.5	Mar 20, 2020	Soil	M20-Ma43470		X	X	
42	MW7_3.5	Mar 20, 2020	Soil	M20-Ma43471		X	X	
43	MW7_4.5	Mar 20, 2020	Soil	M20-Ma43472		X	X	
44	WINCH N	Mar 18, 2020	Soil	M20-Ma43473		X	X	
45	WINCH S	Mar 18, 2020	Soil	M20-Ma43474		X	X	
46	D01_190320	Mar 19, 2020	Soil	M20-Ma43475		X	X	
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50	D02_200320	Mar 20, 2020	Soil	M20-Ma43479		X	X	

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52	D03_240320	Mar 24, 2020	Soil	M20-Ma43481		X	X	
53	TW01_240320	Mar 24, 2020	Water	M20-Ma43482		X		
54	MW3_4.5	Mar 18, 2020	Soil	M20-Ma43583		X	X	
55	MW2_0.5	Mar 18, 2020	Soil	M20-Ma43584		X	X	
56	MW5_2.5	Mar 18, 2020	Soil	M20-Ma43585		X	X	
57	DW01_240320	Mar 24, 2020	Water	M20-Ma43586		X		
58	T02_240320	Mar 24, 2020	Soil	M20-Ma43587	X			
Test Counts						1	57	55

Internal Quality Control Review and Glossary
General

- Laboratory QC results for Method Blanks, Duplicates, Matrix Spikes, and Laboratory Control Samples follows guidelines delineated in the National Environment Protection (Assessment of Site Contamination) Measure 1999, as amended May 2013 and are included in this QC report where applicable. Additional QC data may be available on request.
- All soil/sediment/solid results are reported on a dry basis, unless otherwise stated.
- All biota/food results are reported on a wet weight basis on the edible portion, unless otherwise stated.
- Actual LORs are matrix dependant. Quoted LORs may be raised where sample extracts are diluted due to interferences.
- Results are uncorrected for matrix spikes or surrogate recoveries except for PFAS compounds.
- SVOC analysis on waters are performed on homogenised, unfiltered samples, unless noted otherwise.
- Samples were analysed on an 'as received' basis.
- Information identified on this report with blue colour, indicates data provided by customer, that may have an impact on the results.
- This report replaces any interim results previously issued.

Holding Times

Please refer to 'Sample Preservation and Container Guide' for holding times (QS3001).

For samples received on the last day of holding time, notification of testing requirements should have been received at least 6 hours prior to sample receipt deadlines as stated on the SRA.

If the Laboratory did not receive the information in the required timeframe, and regardless of any other integrity issues, suitably qualified results may still be reported.

Holding times apply from the date of sampling, therefore compliance to these may be outside the laboratory's control.

For VOCs containing vinyl chloride, styrene and 2-chloroethyl vinyl ether the holding time is 7 days however for all other VOCs such as BTEX or C6-10 TRH then the holding time is 14 days.

****NOTE:** pH duplicates are reported as a range NOT as RPD

Units

mg/kg: milligrams per kilogram

mg/L: milligrams per litre

ug/L: micrograms per litre

ppm: Parts per million

ppb: Parts per billion

%: Percentage

org/100mL: Organisms per 100 millilitres

NTU: Nephelometric Turbidity Units

MPN/100mL: Most Probable Number of organisms per 100 millilitres

Terms

Dry	Where a moisture has been determined on a solid sample the result is expressed on a dry basis.
LOR	Limit of Reporting.
SPIKE	Addition of the analyte to the sample and reported as percentage recovery.
RPD	Relative Percent Difference between two Duplicate pieces of analysis.
LCS	Laboratory Control Sample - reported as percent recovery.
CRM	Certified Reference Material - reported as percent recovery.
Method Blank	In the case of solid samples these are performed on laboratory certified clean sands and in the case of water samples these are performed on de-ionised water.
Surr - Surrogate	The addition of a like compound to the analyte target and reported as percentage recovery.
Duplicate	A second piece of analysis from the same sample and reported in the same units as the result to show comparison.
USEPA	United States Environmental Protection Agency
APHA	American Public Health Association
TCLP	Toxicity Characteristic Leaching Procedure
COC	Chain of Custody
SRA	Sample Receipt Advice
QSM	US Department of Defense Quality Systems Manual Version 5.3
CP	Client Parent - QC was performed on samples pertaining to this report
NCP	Non-Client Parent - QC performed on samples not pertaining to this report, QC is representative of the sequence or batch that client samples were analysed within.
TEQ	Toxic Equivalency Quotient

QC - Acceptance Criteria

RPD Duplicates: Global RPD Duplicates Acceptance Criteria is 30% however the following acceptance guidelines are equally applicable:

Results <10 times the LOR : No Limit

Results between 10-20 times the LOR : RPD must lie between 0-50%

Results >20 times the LOR : RPD must lie between 0-30%

Surrogate Recoveries: Recoveries must lie between 20-130% Phenols & 50-150% PFASs

PFAS field samples that contain surrogate recoveries in excess of the QC limit designated in QSM 5.3 where no positive PFAS results have been reported have been reviewed and no data was affected.

WA DWER (n=10): PFBA, PFPeA, PFHxA, PFHpA, PFOA, PFBS, PFHxS, PFOS, 6:2 FTSA, 8:2 FTSA

QC Data General Comments

- Where a result is reported as a less than (<), higher than the nominated LOR, this is due to either matrix interference, extract dilution required due to interferences or contaminant levels within the sample, high moisture content or insufficient sample provided.
- Duplicate data shown within this report that states the word "BATCH" is a Batch Duplicate from outside of your sample batch, but within the laboratory sample batch at a 1:10 ratio. The Parent and Duplicate data shown is not data from your samples.
- Organochlorine Pesticide analysis - where reporting LCS data, Toxaphene & Chlordane are not added to the LCS.
- Organochlorine Pesticide analysis - where reporting Spike data, Toxaphene is not added to the Spike.
- Total Recoverable Hydrocarbons - where reporting Spike & LCS data, a single spike of commercial Hydrocarbon products in the range of C12-C30 is added and it's Total Recovery is reported in the C10-C14 cell of the Report.
- pH and Free Chlorine analysed in the laboratory - Analysis on this test must begin within 30 minutes of sampling. Therefore laboratory analysis is unlikely to be completed within holding time. Analysis will begin as soon as possible after sample receipt.
- Recovery Data (Spikes & Surrogates) - where chromatographic interference does not allow the determination of Recovery the term "INT" appears against that analyte.
- Polychlorinated Biphenyls are spiked only using Aroclor 1260 in Matrix Spikes and LCS.
- For Matrix Spikes and LCS results a dash " - " in the report means that the specific analyte was not added to the QC sample.
- Duplicate RPDs are calculated from raw analytical data thus it is possible to have two sets of data.

Quality Control Results

Test				Units	Result 1			Acceptance Limits	Pass Limits	Qualifying Code	
Method Blank											
Heavy Metals											
Lead				mg/kg	< 5			5	Pass		
LCS - % Recovery											
Heavy Metals											
Lead				%	108			80-120	Pass		
Test	Lab Sample ID	QA Source	Units	Result 1			Acceptance Limits	Pass Limits	Qualifying Code		
Spike - % Recovery											
Heavy Metals											
Lead				M20-Ma43439	CP	%	INT	75-125	Fail	Q08	
Spike - % Recovery											
Heavy Metals											
Lead				M20-Ma43469	CP	%	123	75-125	Pass		
Test	Lab Sample ID	QA Source	Units	Result 1			Acceptance Limits	Pass Limits	Qualifying Code		
Duplicate											
					Result 1	Result 2	RPD				
% Moisture				M20-Ma43431	CP	%	12	12	<1	30%	Pass
Duplicate											
Heavy Metals											
Lead				M20-Ma43438	CP	mg/kg	200	190	2.0	30%	Pass
Duplicate											
Heavy Metals											
Lead				M20-Ma43439	CP	mg/kg	140	150	2.0	30%	Pass
Duplicate											
					Result 1	Result 2	RPD				
% Moisture				M20-Ma43441	CP	%	9.3	9.2	1.0	30%	Pass
Duplicate											
					Result 1	Result 2	RPD				
% Moisture				M20-Ma43451	CP	%	6.6	6.6	<1	30%	Pass
Duplicate											
Heavy Metals											
Lead				M20-Ma43458	CP	mg/kg	28	29	1.0	30%	Pass
Duplicate											
					Result 1	Result 2	RPD				
% Moisture				M20-Ma43461	CP	%	2.9	2.9	<1	30%	Pass
Duplicate											
Heavy Metals											
Lead				M20-Ma43468	CP	mg/kg	52	51	1.0	30%	Pass
Duplicate											
Heavy Metals											
Lead				M20-Ma43469	CP	mg/kg	18	19	1.0	30%	Pass
Duplicate											
					Result 1	Result 2	RPD				
% Moisture				M20-Ma43471	CP	%	13	12	6.0	30%	Pass
Duplicate											
					Result 1	Result 2	RPD				
% Moisture				M20-Ma43481	CP	%	10	10	<1	30%	Pass

Comments
Sample Integrity

Custody Seals Intact (if used)	N/A
Attempt to Chill was evident	Yes
Sample correctly preserved	Yes
Appropriate sample containers have been used	Yes
Sample containers for volatile analysis received with minimal headspace	Yes
Samples received within HoldingTime	Yes
Some samples have been subcontracted	No

Qualifier Codes/Comments

Code	Description
Q08	The matrix spike recovery is outside of the recommended acceptance criteria. An acceptable recovery was obtained for the laboratory control sample indicating a sample matrix interference.

Authorised By

Andrew Black	Analytical Services Manager
Emily Rosenberg	Senior Analyst-Metal (VIC)


Glenn Jackson
General Manager

Final report - this Report replaces any previously issued Report

- Indicates Not Requested

* Indicates NATA accreditation does not cover the performance of this service

Measurement uncertainty of test data is available on request or please [click here](#).

Eurofins shall not be liable for loss, cost, damages or expenses incurred by the client, or any other person or company, resulting from the use of any information or interpretation given in this report. In no case shall Eurofins be liable for consequential damages including, but not limited to, lost profits, damages for failure to meet deadlines and lost production arising from this report. This document shall not be reproduced except in full and relates only to the items tested. Unless indicated otherwise, the tests were performed on the samples as received.

Ramboll Environ Australia Pty Ltd
 Level 3/100 Pacific Highway
 North Sydney
 NSW 2060



NATA Accredited
Accreditation Number 1261
Site Number 1254

Accredited for compliance with ISO/IEC 17025 – Testing
 The results of the tests, calibrations and/or
 measurements included in this document are traceable
 to Australian/national standards.

Attention: **Stephen Maxwell**

Report **710537-W**
 Project name **318000780**
 Received Date **Mar 27, 2020**

Client Sample ID			TW01_240320	DW01_240320
Sample Matrix			Water	Water
Eurofins Sample No.			M20-Ma43482	M20-Ma43586
Date Sampled			Mar 24, 2020	Mar 24, 2020
Test/Reference	LOR	Unit		
Heavy Metals				
Lead	0.001	mg/L	0.003	0.003

Sample History

Where samples are submitted/analysed over several days, the last date of extraction and analysis is reported.

A recent review of our LIMS has resulted in the correction or clarification of some method identifications. Due to this, some of the method reference information on reports has changed. However, no substantive change has been made to our laboratory methods, and as such there is no change in the validity of current or previous results.

If the date and time of sampling are not provided, the Laboratory will not be responsible for compromised results should testing be performed outside the recommended holding time.

Description

Heavy Metals

Testing Site

Melbourne

Extracted

Mar 27, 2020

Holding Time

180 Days

- Method: LTM-MET-3040 Metals in Waters, Soils & Sediments by ICP-MS

Australia

Melbourne
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Phone : 0800 856 450
IANZ # 1290

Company Name: Ramboll Australia Pty Ltd
Address: Level 3/100 Pacific Highway
North Sydney
NSW 2060
Project Name: 318000780

Order No.:
Report #: 710537
Phone: 02 9954 8118
Fax: 02 9954 8150

Received: Mar 27, 2020 8:30 AM
Due: Apr 1, 2020
Priority: 3 Day
Contact Name: Stephen Maxwell

Eurofins Analytical Services Manager : Andrew Black

Sample Detail						HOLD	Lead	Moisture Set
Melbourne Laboratory - NATA Site # 1254 & 14271						X	X	X
Sydney Laboratory - NATA Site # 18217								
Brisbane Laboratory - NATA Site # 20794								
Perth Laboratory - NATA Site # 23736								
External Laboratory								
No	Sample ID	Sample Date	Sampling Time	Matrix	LAB ID			
1	MW01_0.5	Mar 18, 2020		Soil	M20-Ma43430		X	X
2	MW01_1.5	Mar 18, 2020		Soil	M20-Ma43431		X	X
3	MW01_2.5	Mar 18, 2020		Soil	M20-Ma43432		X	X
4	MW01_3.5	Mar 18, 2020		Soil	M20-Ma43433		X	X
5	MW01_4.5	Mar 18, 2020		Soil	M20-Ma43434		X	X
6	MW2_0-0.05	Mar 18, 2020		Soil	M20-Ma43435		X	X
7	MW2_1.0	Mar 18, 2020		Soil	M20-Ma43436		X	X
8	MW2_1.5	Mar 18, 2020		Soil	M20-Ma43437		X	X
9	MW2_2.5	Mar 18, 2020		Soil	M20-Ma43438		X	X
10	MW2_3.5	Mar 18, 2020		Soil	M20-Ma43439		X	X
11	MW2_4.5	Mar 18, 2020		Soil	M20-Ma43440		X	X

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Sydney Laboratory - NATA Site # 18217								
Brisbane Laboratory - NATA Site # 20794								
Perth Laboratory - NATA Site # 23736								
12	MW3_0.5	Mar 18, 2020	Soil	M20-Ma43441		X	X	
13	MW3_1.0	Mar 18, 2020	Soil	M20-Ma43442		X	X	
14	MW3_1.5	Mar 18, 2020	Soil	M20-Ma43443		X	X	
15	MW3_2.5	Mar 18, 2020	Soil	M20-Ma43444		X	X	
16	MW3_3.5	Mar 18, 2020	Soil	M20-Ma43445		X	X	
17	MW4_0-0.05	Mar 19, 2020	Soil	M20-Ma43446		X	X	
18	MW4_0.5	Mar 19, 2020	Soil	M20-Ma43447		X	X	
19	MW4_1.0	Mar 19, 2020	Soil	M20-Ma43448		X	X	
20	MW4_1.5	Mar 19, 2020	Soil	M20-Ma43449		X	X	
21	MW4_2.5	Mar 19, 2020	Soil	M20-Ma43450		X	X	
22	MW4_3.5	Mar 19, 2020	Soil	M20-Ma43451		X	X	
23	MW4_4.5	Mar 19, 2020	Soil	M20-Ma43452		X	X	
24	MW5_0.05	Mar 19, 2020	Soil	M20-Ma43453		X	X	

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Sydney Laboratory - NATA Site # 18217								
Brisbane Laboratory - NATA Site # 20794								
Perth Laboratory - NATA Site # 23736								
25	MW5_0.5	Mar 19, 2020	Soil	M20-Ma43454		X	X	
26	MW5_1.0	Mar 19, 2020	Soil	M20-Ma43455		X	X	
27	MW5_1.5	Mar 19, 2020	Soil	M20-Ma43456		X	X	
28	MW5_3.5	Mar 19, 2020	Soil	M20-Ma43457		X	X	
29	MW5_4.5	Mar 19, 2020	Soil	M20-Ma43458		X	X	
30	MW6_0.05	Mar 19, 2020	Soil	M20-Ma43459		X	X	
31	MW6_0.5	Mar 19, 2020	Soil	M20-Ma43460		X	X	
32	MW6_1.0	Mar 19, 2020	Soil	M20-Ma43461		X	X	
33	MW6_1.5	Mar 19, 2020	Soil	M20-Ma43462		X	X	
34	MW6_2.5	Mar 19, 2020	Soil	M20-Ma43463		X	X	
35	MW6_3.5	Mar 19, 2020	Soil	M20-Ma43464		X	X	
36	MW6_4.5	Mar 19, 2020	Soil	M20-Ma43465		X	X	
37	MW7_0.05	Mar 20, 2020	Soil	M20-Ma43466		X	X	

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Sydney Laboratory - NATA Site # 18217								
Brisbane Laboratory - NATA Site # 20794								
Perth Laboratory - NATA Site # 23736								
38	MW7_0.5	Mar 20, 2020	Soil	M20-Ma43467		X	X	
39	MW7_1.0	Mar 20, 2020	Soil	M20-Ma43468		X	X	
40	MW7_1.5	Mar 20, 2020	Soil	M20-Ma43469		X	X	
41	MW7_2.5	Mar 20, 2020	Soil	M20-Ma43470		X	X	
42	MW7_3.5	Mar 20, 2020	Soil	M20-Ma43471		X	X	
43	MW7_4.5	Mar 20, 2020	Soil	M20-Ma43472		X	X	
44	WINCH N	Mar 18, 2020	Soil	M20-Ma43473		X	X	
45	WINCH S	Mar 18, 2020	Soil	M20-Ma43474		X	X	
46	D01_190320	Mar 19, 2020	Soil	M20-Ma43475		X	X	
47	D01_200320	Mar 20, 2020	Soil	M20-Ma43476		X	X	
48	D01_230320	Mar 23, 2020	Soil	M20-Ma43477		X	X	
49	D01_240320	Mar 24, 2020	Soil	M20-Ma43478		X	X	
50	D02_200320	Mar 20, 2020	Soil	M20-Ma43479		X	X	

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51	D02_240320	Mar 24, 2020	Soil	M20-Ma43480		X	X	
52	D03_240320	Mar 24, 2020	Soil	M20-Ma43481		X	X	
53	TW01_240320	Mar 24, 2020	Water	M20-Ma43482		X		
54	MW3_4.5	Mar 18, 2020	Soil	M20-Ma43583		X	X	
55	MW2_0.5	Mar 18, 2020	Soil	M20-Ma43584		X	X	
56	MW5_2.5	Mar 18, 2020	Soil	M20-Ma43585		X	X	
57	DW01_240320	Mar 24, 2020	Water	M20-Ma43586		X		
58	T02_240320	Mar 24, 2020	Soil	M20-Ma43587	X			
Test Counts						1	57	55

Internal Quality Control Review and Glossary
General

- Laboratory QC results for Method Blanks, Duplicates, Matrix Spikes, and Laboratory Control Samples follows guidelines delineated in the National Environment Protection (Assessment of Site Contamination) Measure 1999, as amended May 2013 and are included in this QC report where applicable. Additional QC data may be available on request.
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- All biota/food results are reported on a wet weight basis on the edible portion, unless otherwise stated.
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Results between 10-20 times the LOR : RPD must lie between 0-50%

Results >20 times the LOR : RPD must lie between 0-30%

Surrogate Recoveries: Recoveries must lie between 20-130% Phenols & 50-150% PFASs

PFAS field samples that contain surrogate recoveries in excess of the QC limit designated in QSM 5.3 where no positive PFAS results have been reported have been reviewed and no data was affected.

WA DWER (n=10): PFBA, PFPeA, PFHxA, PFHpA, PFOA, PFBS, PFHxS, PFOS, 6:2 FTSA, 8:2 FTSA

QC Data General Comments

- Where a result is reported as a less than (<), higher than the nominated LOR, this is due to either matrix interference, extract dilution required due to interferences or contaminant levels within the sample, high moisture content or insufficient sample provided.
- Duplicate data shown within this report that states the word "BATCH" is a Batch Duplicate from outside of your sample batch, but within the laboratory sample batch at a 1:10 ratio. The Parent and Duplicate data shown is not data from your samples.
- Organochlorine Pesticide analysis - where reporting LCS data, Toxaphene & Chlordane are not added to the LCS.
- Organochlorine Pesticide analysis - where reporting Spike data, Toxaphene is not added to the Spike.
- Total Recoverable Hydrocarbons - where reporting Spike & LCS data, a single spike of commercial Hydrocarbon products in the range of C12-C30 is added and it's Total Recovery is reported in the C10-C14 cell of the Report.
- pH and Free Chlorine analysed in the laboratory - Analysis on this test must begin within 30 minutes of sampling. Therefore laboratory analysis is unlikely to be completed within holding time. Analysis will begin as soon as possible after sample receipt.
- Recovery Data (Spikes & Surrogates) - where chromatographic interference does not allow the determination of Recovery the term "INT" appears against that analyte.
- Polychlorinated Biphenyls are spiked only using Aroclor 1260 in Matrix Spikes and LCS.
- For Matrix Spikes and LCS results a dash " - " in the report means that the specific analyte was not added to the QC sample.
- Duplicate RPDs are calculated from raw analytical data thus it is possible to have two sets of data.

Quality Control Results

Test				Units	Result 1		Acceptance Limits	Pass Limits	Qualifying Code	
Method Blank										
Heavy Metals										
Lead				mg/L	< 0.001		0.001	Pass		
LCS - % Recovery										
Heavy Metals										
Lead				%	102		80-120	Pass		
Test	Lab Sample ID	QA Source	Units	Result 1			Acceptance Limits	Pass Limits	Qualifying Code	
Spike - % Recovery										
Heavy Metals										
Lead				M20-Ma37209	NCP	%	99	75-125	Pass	
Duplicate										
Heavy Metals										
Lead				M20-Ma37209	NCP	mg/L	< 0.001	< 0.001	<1	30% Pass

Comments**Sample Integrity**

Custody Seals Intact (if used)	N/A
Attempt to Chill was evident	Yes
Sample correctly preserved	Yes
Appropriate sample containers have been used	Yes
Sample containers for volatile analysis received with minimal headspace	Yes
Samples received within HoldingTime	Yes
Some samples have been subcontracted	No

Authorised By

Andrew Black Analytical Services Manager
Emily Rosenberg Senior Analyst-Metal (VIC)

**Glenn Jackson
General Manager**

Final report - this Report replaces any previously issued Report

- Indicates Not Requested

* Indicates NATA accreditation does not cover the performance of this service

Measurement uncertainty of test data is available on request or please [click here](#).

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CHAIN OF CUSTODY RECORD

9811 50 055 056 571

Sydney Laboratory
Unit 13 Bldg F, 16 Mars Rd, Lane Cove West, NSW 2066
02 9900 8400 EurofinsSampleSW@eurofins.com

Brisbane Laboratory
Unit 1, 21 Smallwood Pl, Maranoa, QLD 4172
07 3902 4800 EurofinsSampleQLD@eurofins.com

Perth Laboratory
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08 9251 9800 EurofinsSampleWA@eurofins.com

Melbourne Laboratory
2 Kingston Town Close, Oakleigh VIC 3166
03 8564 5000 EurofinsSampleVIC@eurofins.com

Company	Ramboll	Project No	318000780	Project Manager	Stephen Maxwell	Sampler(s)	JK + RC
Address	50 Glebe Road the Junction	Project Name		EDD Format (ES&T, EQUS)	Excel and PDF	Handed over by	SM
Contact Name	Stephen Maxwell	Analyses	Lead			Email for Invoice	smaxwell@ramboll.com asiabac-accounts@ramboll.com
Phone No		Special Directions				Email for Results	smaxwell@ramboll.com blackwell@ramboll.com rcondon@ramboll.com shyde@ramboll.com
Purchase Order		Quote ID No	180813RAMAN_1			Turnaround Time (TAT)	Requirements (output with 8 days from receipt) <input type="checkbox"/> Overnight (Eam)* <input type="checkbox"/> 1 Day* <input type="checkbox"/> 2 Day* <input type="checkbox"/> 3 Day* <input checked="" type="checkbox"/> 5 Day* <input type="checkbox"/> Other () * Surcharges apply

No	Client Sample ID	Sampled Date/Time (dd/mm/yy hh:mm)	Matrix (Solid (S) Water (W))						
1	D01_300320	30/03/20	S	X					
2	D02_310320	31/03/20	S	X					
3	D03_310320	31/03/20	S	X					
4	D04_310320	31/03/20	S	X					
5	T01_300320	30/03/20	S	X					Please send to ALS for analysis
6	T02_310320	31/03/20	S	X					Please send to ALS for analysis
7	T03_310320	31/03/20	S	X					Please send to ALS for analysis
8	T04_310320	31/03/20	S	X					Please send to ALS for analysis
9									
10									
Total Counts				8					

Method of Shipment	<input type="checkbox"/> Courier #	<input type="checkbox"/> Hand Delivered	<input type="checkbox"/> Postal	Name		Signature		Date	03/04/20	Time	12:13 PM	Temperature	15.8 °C
Laboratory Use Only	Received By	Received By		Signature		Signature		Date	03/04/20	Time	12:13 PM	Temperature	15.8 °C
				Signature		Signature		Date	03/04/20	Time	12:13 PM	Temperature	15.8 °C

Submission of samples to the laboratory will be deemed as acceptance of Eurofins (mg) Standard Terms and Conditions unless agreed otherwise. A copy of Eurofins (mg) Standard Terms and Conditions is available on request.

Eurofins Environment Testing Australia Pty Ltd trading as Eurofins (mg)

Melbourne

6 Monterey Road
Dandenong South Vic 3175
Phone : +61 3 8564 5000
NATA # 1261
Site # 1254 & 14271

Sydney

Unit F3, Building F
16 Mars Road
Lane Cove West NSW 2066
Phone : +61 2 9900 8400
NATA # 1261 Site # 18217

Brisbane

1/21 Smallwood Place
Murarrie QLD 4172
Phone : +61 7 3902 4600
NATA # 1261 Site # 20794

Perth

2/91 Leach Highway
Kewdale WA 6105
Phone : +61 8 9251 9600
NATA # 1261 Site # 23736

Sample Receipt Advice

Company name: **Ramboll Australia Pty Ltd**

Contact name: Stephen Maxwell

Project ID: 318000780

COC number: Not provided

Turn around time: 5 Day

Date/Time received: Apr 1, 2020 11:04 AM

Eurofins reference: **712107**

Sample information

- A detailed list of analytes logged into our LIMS, is included in the attached summary table.
- All samples have been received as described on the above COC.
- COC has been completed correctly.
- Attempt to chill was evident.
- Appropriately preserved sample containers have been used.
- All samples were received in good condition.
- Samples have been provided with adequate time to commence analysis in accordance with the relevant holding times.
- Appropriate sample containers have been used.
- Split sample sent to requested external lab.
- Some samples have been subcontracted.
- N/A Custody Seals intact (if used).

Notes

Splits sent to ALS

Contact notes

If you have any questions with respect to these samples please contact:

Andrew Black on Phone : (+61) 2 9900 8490 or by e.mail: AndrewBlack@eurofins.com

Results will be delivered electronically via e.mail to Stephen Maxwell - smaxwell@ramboll.com.

Note: A copy of these results will also be delivered to the general Ramboll Australia Pty Ltd email address.

Australia

Melbourne
6 Monterey Road
Dandenong South VIC 3175
Phone : +61 3 8564 5000
NATA # 1261
Site # 1254 & 14271

Sydney
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16 Mars Road
Lane Cove West NSW 2066
Phone : +61 2 9900 8400
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NATA # 1261 Site # 20794

Perth
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Kewdale WA 6105
Phone : +61 8 9251 9600
NATA # 1261
Site # 23736

New Zealand

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Penrose, Auckland 1061
Phone : +64 9 526 45 51
IANZ # 1327

Christchurch
43 Detroit Drive
Rolleston, Christchurch 7675
Phone : 0800 856 450
IANZ # 1290

Company Name: Ramboll Australia Pty Ltd
Address: Level 3/100 Pacific Highway
North Sydney
NSW 2060

Order No.:
Report #: 712107
Phone: 02 9954 8118
Fax: 02 9954 8150

Received: Apr 1, 2020 11:04 AM
Due: Apr 15, 2020
Priority: 5 Day
Contact Name: Stephen Maxwell

Project Name:
Project ID: 318000780

Eurofins Analytical Services Manager : Andrew Black

Sample Detail						CANCELLED	Lead	Moisture Set
Melbourne Laboratory - NATA Site # 1254 & 14271								
Sydney Laboratory - NATA Site # 18217						X	X	X
Brisbane Laboratory - NATA Site # 20794								
Perth Laboratory - NATA Site # 23736								
External Laboratory								
No	Sample ID	Sample Date	Sampling Time	Matrix	LAB ID			
1	D01_300320	Mar 30, 2020		Soil	S20-Ap03104		X	X
2	D02_310320	Mar 31, 2020		Soil	S20-Ap03105		X	X
3	D03_310320	Mar 31, 2020		Soil	S20-Ap03106		X	X
4	D04_310320	Mar 31, 2020		Soil	S20-Ap03107		X	X
5	T01_300320	Mar 30, 2020		Soil	S20-Ap03108	X		
6	T02_310320	Mar 31, 2020		Soil	S20-Ap03109	X		
7	T03_310320	Mar 31, 2020		Soil	S20-Ap03110	X		
8	T04_310320	Mar 31, 2020		Soil	S20-Ap03111	X		
Test Counts						4	4	4

Ramboll Environ Australia Pty Ltd
 Level 3/100 Pacific Highway
 North Sydney
 NSW 2060



NATA Accredited
Accreditation Number 1261
Site Number 18217

Accredited for compliance with ISO/IEC 17025 – Testing
 The results of the tests, calibrations and/or
 measurements included in this document are traceable
 to Australian/national standards.

Attention: **Stephen Maxwell**

Report **712107-S**
 Project name
 Project ID **318000780**
 Received Date **Apr 01, 2020**

Client Sample ID			D01_300320	D02_310320	D03_310320	D04_310320
Sample Matrix			Soil	Soil	Soil	Soil
Eurofins Sample No.			S20-Ap03104	S20-Ap03105	S20-Ap03106	S20-Ap03107
Date Sampled			Mar 30, 2020	Mar 31, 2020	Mar 31, 2020	Mar 31, 2020
Test/Reference	LOR	Unit				
Heavy Metals						
Lead	5	mg/kg	13	31	15	68
% Moisture	1	%	12	9.1	9.0	13

Sample History

Where samples are submitted/analysed over several days, the last date of extraction and analysis is reported.

A recent review of our LIMS has resulted in the correction or clarification of some method identifications. Due to this, some of the method reference information on reports has changed. However, no substantive change has been made to our laboratory methods, and as such there is no change in the validity of current or previous results.

If the date and time of sampling are not provided, the Laboratory will not be responsible for compromised results should testing be performed outside the recommended holding time.

Description

Heavy Metals

- Method: LTM-MET-3040 Metals in Waters, Soils & Sediments by ICP-MS

% Moisture

- Method: LTM-GEN-7080 Moisture

Testing Site

Sydney

Sydney

Extracted

Apr 08, 2020

Apr 04, 2020

Holding Time

180 Days

14 Days

Australia

Melbourne
6 Monterey Road
Dandenong South VIC 3175
Phone : +61 3 8564 5000
NATA # 1261
Site # 1254 & 14271

Sydney
Unit F3, Building F
16 Mars Road
Lane Cove West NSW 2066
Phone : +61 2 9900 8400
NATA # 1261 Site # 18217

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NATA # 1261 Site # 20794

Perth
2/91 Leach Highway
Kewdale WA 6105
Phone : +61 8 9251 9600
NATA # 1261
Site # 23736

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Penrose, Auckland 1061
Phone : +64 9 526 45 51
IANZ # 1327

Christchurch
43 Detroit Drive
Rolleston, Christchurch 7675
Phone : 0800 856 450
IANZ # 1290

Company Name: Ramboll Australia Pty Ltd
Address: Level 3/100 Pacific Highway
North Sydney
NSW 2060

Order No.:
Report #: 712107
Phone: 02 9954 8118
Fax: 02 9954 8150

Received: Apr 1, 2020 11:04 AM
Due: Apr 15, 2020
Priority: 5 Day
Contact Name: Stephen Maxwell

Project Name:
Project ID: 318000780

Eurofins Analytical Services Manager : Andrew Black

Sample Detail						CANCELLED	Lead	Moisture Set
Melbourne Laboratory - NATA Site # 1254 & 14271								
Sydney Laboratory - NATA Site # 18217						X	X	X
Brisbane Laboratory - NATA Site # 20794								
Perth Laboratory - NATA Site # 23736								
External Laboratory								
No	Sample ID	Sample Date	Sampling Time	Matrix	LAB ID			
1	D01_300320	Mar 30, 2020		Soil	S20-Ap03104		X	X
2	D02_310320	Mar 31, 2020		Soil	S20-Ap03105		X	X
3	D03_310320	Mar 31, 2020		Soil	S20-Ap03106		X	X
4	D04_310320	Mar 31, 2020		Soil	S20-Ap03107		X	X
5	T01_300320	Mar 30, 2020		Soil	S20-Ap03108	X		
6	T02_310320	Mar 31, 2020		Soil	S20-Ap03109	X		
7	T03_310320	Mar 31, 2020		Soil	S20-Ap03110	X		
8	T04_310320	Mar 31, 2020		Soil	S20-Ap03111	X		
Test Counts						4	4	4

Internal Quality Control Review and Glossary
General

- Laboratory QC results for Method Blanks, Duplicates, Matrix Spikes, and Laboratory Control Samples follows guidelines delineated in the National Environment Protection (Assessment of Site Contamination) Measure 1999, as amended May 2013 and are included in this QC report where applicable. Additional QC data may be available on request.
- All soil/sediment/solid results are reported on a dry basis, unless otherwise stated.
- All biota/food results are reported on a wet weight basis on the edible portion, unless otherwise stated.
- Actual LORs are matrix dependant. Quoted LORs may be raised where sample extracts are diluted due to interferences.
- Results are uncorrected for matrix spikes or surrogate recoveries except for PFAS compounds.
- SVOC analysis on waters are performed on homogenised, unfiltered samples, unless noted otherwise.
- Samples were analysed on an 'as received' basis.
- Information identified on this report with blue colour, indicates data provided by customer, that may have an impact on the results.
- This report replaces any interim results previously issued.

Holding Times

Please refer to 'Sample Preservation and Container Guide' for holding times (QS3001).

For samples received on the last day of holding time, notification of testing requirements should have been received at least 6 hours prior to sample receipt deadlines as stated on the SRA.

If the Laboratory did not receive the information in the required timeframe, and regardless of any other integrity issues, suitably qualified results may still be reported.

Holding times apply from the date of sampling, therefore compliance to these may be outside the laboratory's control.

For VOCs containing vinyl chloride, styrene and 2-chloroethyl vinyl ether the holding time is 7 days however for all other VOCs such as BTEX or C6-10 TRH then the holding time is 14 days.

****NOTE:** pH duplicates are reported as a range NOT as RPD

Units

mg/kg: milligrams per kilogram

mg/L: milligrams per litre

ug/L: micrograms per litre

ppm: Parts per million

ppb: Parts per billion

%: Percentage

org/100mL: Organisms per 100 millilitres

NTU: Nephelometric Turbidity Units

MPN/100mL: Most Probable Number of organisms per 100 millilitres

Terms

Dry	Where a moisture has been determined on a solid sample the result is expressed on a dry basis.
LOR	Limit of Reporting.
SPIKE	Addition of the analyte to the sample and reported as percentage recovery.
RPD	Relative Percent Difference between two Duplicate pieces of analysis.
LCS	Laboratory Control Sample - reported as percent recovery.
CRM	Certified Reference Material - reported as percent recovery.
Method Blank	In the case of solid samples these are performed on laboratory certified clean sands and in the case of water samples these are performed on de-ionised water.
Surr - Surrogate	The addition of a like compound to the analyte target and reported as percentage recovery.
Duplicate	A second piece of analysis from the same sample and reported in the same units as the result to show comparison.
USEPA	United States Environmental Protection Agency
APHA	American Public Health Association
TCLP	Toxicity Characteristic Leaching Procedure
COC	Chain of Custody
SRA	Sample Receipt Advice
QSM	US Department of Defense Quality Systems Manual Version 5.3
CP	Client Parent - QC was performed on samples pertaining to this report
NCP	Non-Client Parent - QC performed on samples not pertaining to this report, QC is representative of the sequence or batch that client samples were analysed within.
TEQ	Toxic Equivalency Quotient

QC - Acceptance Criteria

RPD Duplicates: Global RPD Duplicates Acceptance Criteria is 30% however the following acceptance guidelines are equally applicable:

Results <10 times the LOR : No Limit

Results between 10-20 times the LOR : RPD must lie between 0-50%

Results >20 times the LOR : RPD must lie between 0-30%

Surrogate Recoveries: Recoveries must lie between 20-130% Phenols & 50-150% PFASs

PFAS field samples that contain surrogate recoveries in excess of the QC limit designated in QSM 5.3 where no positive PFAS results have been reported have been reviewed and no data was affected.

WA DWER (n=10): PFBA, PFPeA, PFHxA, PFHpA, PFOA, PFBS, PFHxS, PFOS, 6:2 FTSA, 8:2 FTSA

QC Data General Comments

- Where a result is reported as a less than (<), higher than the nominated LOR, this is due to either matrix interference, extract dilution required due to interferences or contaminant levels within the sample, high moisture content or insufficient sample provided.
- Duplicate data shown within this report that states the word "BATCH" is a Batch Duplicate from outside of your sample batch, but within the laboratory sample batch at a 1:10 ratio. The Parent and Duplicate data shown is not data from your samples.
- Organochlorine Pesticide analysis - where reporting LCS data, Toxaphene & Chlordane are not added to the LCS.
- Organochlorine Pesticide analysis - where reporting Spike data, Toxaphene is not added to the Spike.
- Total Recoverable Hydrocarbons - where reporting Spike & LCS data, a single spike of commercial Hydrocarbon products in the range of C12-C30 is added and it's Total Recovery is reported in the C10-C14 cell of the Report.
- pH and Free Chlorine analysed in the laboratory - Analysis on this test must begin within 30 minutes of sampling. Therefore laboratory analysis is unlikely to be completed within holding time. Analysis will begin as soon as possible after sample receipt.
- Recovery Data (Spikes & Surrogates) - where chromatographic interference does not allow the determination of Recovery the term "INT" appears against that analyte.
- Polychlorinated Biphenyls are spiked only using Aroclor 1260 in Matrix Spikes and LCS.
- For Matrix Spikes and LCS results a dash " - " in the report means that the specific analyte was not added to the QC sample.
- Duplicate RPDs are calculated from raw analytical data thus it is possible to have two sets of data.

Quality Control Results

Test				Units	Result 1		Acceptance Limits	Pass Limits	Qualifying Code			
Method Blank												
Heavy Metals												
Lead				mg/kg	< 5		5	Pass				
LCS - % Recovery												
Heavy Metals												
Lead				%	98		70-130	Pass				
Test	Lab Sample ID	QA Source	Units	Result 1			Acceptance Limits	Pass Limits	Qualifying Code			
Spike - % Recovery												
Heavy Metals												
Lead				S20-Ap09574	NCP	%	109	70-130	Pass			
Test	Lab Sample ID	QA Source	Units	Result 1			Acceptance Limits	Pass Limits	Qualifying Code			
Duplicate												
Heavy Metals												
Lead				S20-Ap09573	NCP	mg/kg	190	110	49	30%	Fail	Q15
Duplicate												
					Result 1	Result 2	RPD					
% Moisture				S20-Ap03106	CP	%	9.0	8.9	1.0	30%	Pass	

Comments
Sample Integrity

Custody Seals Intact (if used)	N/A
Attempt to Chill was evident	Yes
Sample correctly preserved	Yes
Appropriate sample containers have been used	Yes
Sample containers for volatile analysis received with minimal headspace	Yes
Samples received within HoldingTime	Yes
Some samples have been subcontracted	No

Qualifier Codes/Comments

Code	Description
Q15	The RPD reported passes Eurofins Environment Testing's QC - Acceptance Criteria as defined in the Internal Quality Control Review and Glossary page of this report.

Authorised By

Andrew Black	Analytical Services Manager
Gabriele Cordero	Senior Analyst-Metal (NSW)


**Glenn Jackson
General Manager**

Final report - this Report replaces any previously issued Report

- Indicates Not Requested

* Indicates NATA accreditation does not cover the performance of this service

Measurement uncertainty of test data is available on request or please [click here](#).

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CHAIN OF CUSTODY RECORD

ASB 50 065 085 021

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02 9900 8400 EnviroSampleNSW@eurofins.com

Brisbane Laboratory
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07 3902 4500 EnviroSampleQLD@eurofins.com

Perth Laboratory
Unit 2, 91 Leach Highway, Kewdale WA 6105
08 9251 8600 EnviroSampleWA@eurofins.com

Melbourne Laboratory
2 Kingsbin Town Close, Okeage, VIC 3166
03 8564 5000 EnviroSampleVIC@eurofins.com

Company		Ramboll		Project No		318000780		Project Manager		Stephen Maxwell		Sampler(s)		JB, T.J, JK													
Address		50 Glebe Road the Junction		Project Name		QA/QC		EDD Format (ESoft, ESoft/S, Custom)		Excel and PDF		Handed over by		Jordyn Kirsch													
Contact Name		Stephen Maxwell		<small>Analysis</small> <small>Notes: Please make an appointment to view samples. To call in, please ring 1300 363 627.</small> <small>Analysis</small> <small>Notes: Please make an appointment to view samples. To call in, please ring 1300 363 627.</small>		<small>Total Lead (µg/L)</small> <small>Total Lead (mg/kg)</small> <small>Mn, Ni, As, B, Ba, Be, Bi, Br, Cd, Cr, Co, Cu, Fe, Pb, Pt, Hg, Ni, Zn Excluding hexavalent chromium) Total</small>								<small>Handed over by</small> <small>Email for Invoice</small> <small>Email for Results</small>		<small>amaxwell@ramboll.com</small> <small>gsipac-accounts@ramboll.com</small> <small>smaxwell@ramboll.com</small> <small>blackwell@ramboll.com</small>											
Phone No		0478 658 194														<small>Containers</small> <small>Requirements (TAT)</small> <small>Requirements (TAT)</small>		<small>1L Plastic</small> <small>200mL Plastic</small> <small>150mL Plastic</small> <small>200mL Amber Glass</small> <small>40mL VOA Vial</small> <small>500mL PFAS Duffle</small> <small>Jar (Glass or HDPE)</small> <small>Other (Specify AS/NZS: 4550:2001)</small>		<small>Overnight (8am)*</small> <small>1 Day*</small> <small>2 Day*</small> <small>3 Day*</small> <small>5 Day</small> <small>Surcharge apply</small> <small>Other ()</small>							
Special Directions																<small>Sample Comments / Dangerous Goods Hazard Warning</small>											
Purchase Order																											
Quote ID No		180813RAMM_1																									
#	Client Sample ID	Sampled Date/Time (dd/mm/yyyy hh:mm)	Matrix (S) Water (W)																								
1	D01_280420	28/04/20	S																								
2	D02_280420	28/04/20	W		X																						
3	D03_280420	28/04/20	S			X																					
4	D04_290420	29/04/20	S			X																					
5	D05_290420	29/04/20	S			X																					
6	D06_290420	29/04/20	S												HOLD												
7	D07_300420	30/04/20	S			X																					
8	D08_300420	30/04/20	S			X																					
9	D09_300420	30/04/20	W		X																						
10	D10_300420	30/04/20	S		X																						
Total Counts					3	6																					
Method of Shipment		<input checked="" type="checkbox"/> Courier (#)		<input type="checkbox"/> Hand Delivered		<input type="checkbox"/> Postal		Name		Signature		Date		Time													
Eurofins mgt Laboratory Use Only		Received By <i>Signature</i>		BY MEL PER ADL NTL DRW		Signature <i>Signature</i>		Date <i>4/5/2020</i>		Temperature <i>14.0°C</i>		Report No <i>717031</i>															

Submission of samples to the laboratory will be deemed as acceptance of Eurofins | mgt Standard Terms and Conditions unless agreed otherwise. A copy of Eurofins | mgt Standard Terms and Conditions is available on request. Eurofins Environment Testing Australia Pty Ltd trading as Eurofins | mgt

CHAIN OF CUSTODY RECORD

16/04/2021

Sydney Laboratory
Unit F3 Bldg. 16 Mars Rd Lane Cove NSW 2066
02 950 8400 EnviroSampleSyd@eurofins.com

Brisbane Laboratory
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07 562 8600 EnviroSampleBris@eurofins.com

Perth Laboratory
Unit 2, 91 Leahy Highway, Kewdale WA 6105
08 951 9600 EnviroSamplePer@eurofins.com

Melbourne Laboratory
2 Kingston Train Plaza, Oakleigh VIC 3166
03 854 5900 EnviroSampleMel@eurofins.com

Company Ramboll **Project No** 318000780 **Project Name** QA/QC **Project Manager** (ES&I, EQ&S, Custom) **Excel and PDF** Stephen Maxwell **Sample(s)** JB-1J, JK **Handled over by** Jordan Kirach

Address 50 Glebe Road the Junction **Contact Name** Stephen Maxwell **Phone No** 0478 658 194 **Handed over by** Email for invoice: smaxwell@ramboll.com
Email for Results: asianac-accounts@ramboll.com
smaxwell@ramboll.com
blackwell@ramboll.com

Special Directions **Analysis** (Note: Where metals are requested, please specify 'Total' or 'Filtered')
SUIE code must be used to attract SUIE pricing.
Total Lead (µg/L) **Total Lead (mg/kg)** **Turnaround Time (TAT)** Requirements (insert in the drop down menu)
Overnight (9am*)
1 Day* 2 Day*
3 Day* 5 Day*
Other (*charges apply)

Quote ID No 1808339AMN_1 **Client Sample ID** **Sampled Date/Time (dd/mm/yy hh:mm)** **Matrix (Solid (S) Water (W))** **M13 (Al, As, Ba, Be, Cd, Cr, Co, Cu, Fe, Pb, Mn, Hg, Ni, Zn Excluding hexavalent chromium) Total**

No	Client Sample ID	Sampled Date/Time (dd/mm/yy hh:mm)	Matrix (Solid (S) Water (W))	M13 (Al, As, Ba, Be, Cd, Cr, Co, Cu, Fe, Pb, Mn, Hg, Ni, Zn Excluding hexavalent chromium) Total	Total Lead (µg/L)	Total Lead (mg/kg)
1	D11_300320	30/04/20	W	X		
2	T01_290420	29/04/20	S	X		
3	T02_290420	29/04/20	W	X		
4	T03_290420	29/04/20	S	X		
5	T04_290420	29/04/00	S	X		
6	T06_290420	29/04/00	S	X		
7	T07_300420	30/04/20	S	X		
8	T08_300420	30/04/20	S	X		
9	T09_300420	30/04/20	W	X		
10	T11_300320	30/04/20	W	X		
				Total Counts	4	6

Method of Shipment Courier (H) Hand Delivered (D) **Signature** **Date** **Time** **Temperature** **Report No**

Signature **Date** **Time** **Temperature** **Report No**

Signature **Date** **Time** **Temperature** **Report No**

Signature **Date** **Time** **Temperature** **Report No**

Signature **Date** **Time** **Temperature** **Report No**

Stationing of samples to the laboratory will be deemed as acceptance of Eurofins [mg] Standard Terms and Conditions unless agreed otherwise. A copy of Eurofins [mg] Standard Terms and Conditions is available on request.

Eurofins Environment Testing Australia Pty Ltd trading as Eurofins [mg]

Signature: [Signature] Date: 16/04/2021 Time: 12:00PM Temperature: 4.03°C Report No: 717031

Melbourne

6 Monterey Road
Dandenong South Vic 3175
Phone : +61 3 8564 5000
NATA # 1261
Site # 1254 & 14271

Sydney

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Phone : +61 2 9900 8400
NATA # 1261 Site # 18217

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NATA # 1261 Site # 20794

Perth

2/91 Leach Highway
Kewdale WA 6105
Phone : +61 8 9251 9600
NATA # 1261 Site # 23736

ABN – 50 005 085 521

e.mail : EnviroSales@eurofins.com

web : www.eurofins.com.au

Sample Receipt Advice

Company name: **Ramboll Australia Pty Ltd**
Contact name: **Stephen Maxwell**
Project name: **QA/QC**
Project ID: **318000780**
COC number: **Not provided**
Turn around time: **5 Day**
Date/Time received: **May 1, 2020 12:00 PM**
Eurofins reference: **717031**

Sample information

- A detailed list of analytes logged into our LIMS, is included in the attached summary table.
- All samples have been received as described on the above COC.
- COC has been completed correctly.
- Attempt to chill was evident.
- Appropriately preserved sample containers have been used.
- All samples were received in good condition.
- Samples have been provided with adequate time to commence analysis in accordance with the relevant holding times.
- Appropriate sample containers have been used.
- Sample containers for volatile analysis received with zero headspace.
- Split sample sent to requested external lab.
- Some samples have been subcontracted.
- N/A Custody Seals intact (if used).

Notes

Soil Jar Samples; D09_300420 (Jar) T09_300420 received extra - analysis on hold. Samples sent to ALS; T01_280420 (Jar), T02_280420 (metals bottle), T03_280420 (Jar), T04_290420 (Jar), T05_290420 (Jar), T07_300420 (Jar), T08_300420 (Jar), T09_300420 (metals bottle), and T11_300420 (metals bottle).

Contact notes

If you have any questions with respect to these samples please contact:

Andrew Black on Phone : (+61) 2 9900 8490 or by e.mail: AndrewBlack@eurofins.com

Results will be delivered electronically via e.mail to Stephen Maxwell - smaxwell@ramboll.com.

Note: A copy of these results will also be delivered to the general Ramboll Australia Pty Ltd email address.

Australia

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43 Detroit Drive
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Phone : 0800 856 450
IANZ # 1290

Company Name: Ramboll Australia Pty Ltd
Address: Level 3/100 Pacific Highway
North Sydney
NSW 2060

Order No.:
Report #: 717031
Phone: 02 9954 8118
Fax: 02 9954 8150

Received: May 1, 2020 12:00 PM
Due: May 8, 2020
Priority: 5 Day
Contact Name: Stephen Maxwell

Project Name: QA/QC
Project ID: 318000780

Eurofins Analytical Services Manager : Andrew Black

Sample Detail						Aluminium	Arsenic	Barium	Beryllium	Cadmium	Chromium	Cobalt	Copper	HOLD	Iron	Lead	Manganese	Mercury	Nickel	Zinc	Moisture Set	
Melbourne Laboratory - NATA Site # 1254 & 14271																						
Sydney Laboratory - NATA Site # 18217						X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X
Brisbane Laboratory - NATA Site # 20794																						
Perth Laboratory - NATA Site # 23736																						
External Laboratory																						
No	Sample ID	Sample Date	Sampling Time	Matrix	LAB ID																	
1	D01_280420	Apr 28, 2020		Soil	S20-My01818											X					X	
2	D02_280420	Apr 28, 2020		Water	S20-My01819	X	X	X	X	X	X	X	X		X	X	X	X	X	X		
3	D03_280420	Apr 28, 2020		Soil	S20-My01820											X					X	
4	D04_290420	Apr 28, 2020		Soil	S20-My01821											X					X	
5	D05_290420	Apr 28, 2020		Soil	S20-My01822											X					X	
6	D07_300420	Apr 30, 2020		Soil	S20-My01823											X					X	
7	D08_300420	Apr 30, 2020		Soil	S20-My01824											X					X	
8	D09_300420	Apr 30, 2020		Water	S20-My01825	X	X	X	X	X	X	X	X		X	X	X	X	X	X		
9	D10_300420	Apr 30, 2020		Soil	S20-My01826	X	X	X	X	X	X	X	X		X	X	X	X	X	X	X	
10	D11_300420	Apr 30, 2020		Water	S20-My01827	X	X	X	X	X	X	X	X		X	X	X	X	X	X		

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e.mail : EnviroSales@eurofins.com

Company Name: Ramboll Australia Pty Ltd
Address: Level 3/100 Pacific Highway
North Sydney
NSW 2060

Project Name: QA/QC
Project ID: 318000780

Order No.:
Report #: 717031
Phone: 02 9954 8118
Fax: 02 9954 8150

Received: May 1, 2020 12:00 PM
Due: May 8, 2020
Priority: 5 Day
Contact Name: Stephen Maxwell

Eurofins Analytical Services Manager : Andrew Black

Sample Detail						Aluminium	Arsenic	Barium	Beryllium	Cadmium	Chromium	Cobalt	Copper	HOLD	Iron	Lead	Manganese	Mercury	Nickel	Zinc	Moisture Set	
Melbourne Laboratory - NATA Site # 1254 & 14271																						
Sydney Laboratory - NATA Site # 18217						X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X
Brisbane Laboratory - NATA Site # 20794																						
Perth Laboratory - NATA Site # 23736																						
11	D06_290420	Apr 29, 2020		Soil	S20-My01828									X								
12	D09_300420	Apr 29, 2020		Soil	S20-My01829									X								
13	T09_300420	Apr 29, 2020		Soil	S20-My01830									X								
Test Counts						4	4	4	4	4	4	4	4	3	4	10	4	4	4	4	7	

Ramboll Environ Australia Pty Ltd
 Level 3/100 Pacific Highway
 North Sydney
 NSW 2060



NATA Accredited
 Accreditation Number 1261
 Site Number 18217

Accredited for compliance with ISO/IEC 17025 – Testing
 The results of the tests, calibrations and/or
 measurements included in this document are traceable
 to Australian/national standards.

Attention: Stephen Maxwell

Report 717031-S
 Project name QA/QC
 Project ID 318000780
 Received Date May 01, 2020

Client Sample ID			D01_280420	D03_280420	D04_290420	D05_290420
Sample Matrix			Soil	Soil	Soil	Soil
Eurofins Sample No.			S20-My01818	S20-My01820	S20-My01821	S20-My01822
Date Sampled			Apr 28, 2020	Apr 28, 2020	Apr 28, 2020	Apr 28, 2020
Test/Reference	LOR	Unit				
Heavy Metals						
Lead	5	mg/kg	7.9	11	29	14
% Moisture	1	%	8.2	8.7	8.3	6.2

Client Sample ID			D07_300420	D08_300420	D10_300420
Sample Matrix			Soil	Soil	Soil
Eurofins Sample No.			S20-My01823	S20-My01824	S20-My01826
Date Sampled			Apr 30, 2020	Apr 30, 2020	Apr 30, 2020
Test/Reference	LOR	Unit			
Heavy Metals					
Aluminium	10	mg/kg	-	-	6900
Arsenic	2	mg/kg	-	-	7.3
Barium	10	mg/kg	-	-	100
Beryllium	2	mg/kg	-	-	< 2
Cadmium	0.4	mg/kg	-	-	4.8
Chromium	5	mg/kg	-	-	9.0
Cobalt	5	mg/kg	-	-	< 5
Copper	5	mg/kg	-	-	200
Iron	20	mg/kg	-	-	9400
Lead	5	mg/kg	52	19	390
Manganese	5	mg/kg	-	-	270
Mercury	0.1	mg/kg	-	-	< 0.1
Nickel	5	mg/kg	-	-	7.3
Zinc	5	mg/kg	-	-	2000
% Moisture	1	%	15	9.1	30

Sample History

Where samples are submitted/analysed over several days, the last date of extraction and analysis is reported. A recent review of our LIMS has resulted in the correction or clarification of some method identifications. Due to this, some of the method reference information on reports has changed. However, no substantive change has been made to our laboratory methods, and as such there is no change in the validity of current or previous results.

If the date and time of sampling are not provided, the Laboratory will not be responsible for compromised results should testing be performed outside the recommended holding time.

Description

Heavy Metals

- Method: LTM-MET-3040 Metals in Waters, Soils & Sediments by ICP-MS

% Moisture

- Method: LTM-GEN-7080 Moisture

Testing Site

Sydney

Sydney

Extracted

May 07, 2020

May 01, 2020

Holding Time

180 Days

14 Days

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Address:	Level 3/100 Pacific Highway North Sydney NSW 2060	Report #:	717031	Due:	May 8, 2020
Project Name:	QA/QC	Phone:	02 9954 8118	Priority:	5 Day
Project ID:	318000780	Fax:	02 9954 8150	Contact Name:	Stephen Maxwell

Eurofins Analytical Services Manager : Andrew Black

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Melbourne Laboratory - NATA Site # 1254 & 14271																						
Sydney Laboratory - NATA Site # 18217						X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X
Brisbane Laboratory - NATA Site # 20794																						
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No	Sample ID	Sample Date	Sampling Time	Matrix	LAB ID																	
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2	D02_280420	Apr 28, 2020		Water	S20-My01819	X	X	X	X	X	X	X	X		X	X	X	X	X	X		
3	D03_280420	Apr 28, 2020		Soil	S20-My01820											X					X	
4	D04_290420	Apr 28, 2020		Soil	S20-My01821											X					X	
5	D05_290420	Apr 28, 2020		Soil	S20-My01822											X					X	
6	D07_300420	Apr 30, 2020		Soil	S20-My01823											X					X	
7	D08_300420	Apr 30, 2020		Soil	S20-My01824											X					X	
8	D09_300420	Apr 30, 2020		Water	S20-My01825	X	X	X	X	X	X	X	X		X	X	X	X	X	X		
9	D10_300420	Apr 30, 2020		Soil	S20-My01826	X	X	X	X	X	X	X	X		X	X	X	X	X	X	X	
10	D11_300420	Apr 30, 2020		Water	S20-My01827	X	X	X	X	X	X	X	X		X	X	X	X	X	X		

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Received: May 1, 2020 12:00 PM
Due: May 8, 2020
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Contact Name: Stephen Maxwell

Eurofins Analytical Services Manager : Andrew Black

Sample Detail						Aluminium	Arsenic	Barium	Beryllium	Cadmium	Chromium	Cobalt	Copper	HOLD	Iron	Lead	Manganese	Mercury	Nickel	Zinc	Moisture Set	
Melbourne Laboratory - NATA Site # 1254 & 14271																						
Sydney Laboratory - NATA Site # 18217						X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X
Brisbane Laboratory - NATA Site # 20794																						
Perth Laboratory - NATA Site # 23736																						
11	D06_290420	Apr 29, 2020		Soil	S20-My01828									X								
12	D09_300420	Apr 29, 2020		Soil	S20-My01829									X								
13	T09_300420	Apr 29, 2020		Soil	S20-My01830									X								
Test Counts						4	4	4	4	4	4	4	4	3	4	10	4	4	4	4	4	7

Internal Quality Control Review and Glossary
General

- Laboratory QC results for Method Blanks, Duplicates, Matrix Spikes, and Laboratory Control Samples follows guidelines delineated in the National Environment Protection (Assessment of Site Contamination) Measure 1999, as amended May 2013 and are included in this QC report where applicable. Additional QC data may be available on request.
- All soil/sediment/solid results are reported on a dry basis, unless otherwise stated.
- All biota/food results are reported on a wet weight basis on the edible portion, unless otherwise stated.
- Actual LORs are matrix dependant. Quoted LORs may be raised where sample extracts are diluted due to interferences.
- Results are uncorrected for matrix spikes or surrogate recoveries except for PFAS compounds.
- SVOC analysis on waters are performed on homogenised, unfiltered samples, unless noted otherwise.
- Samples were analysed on an 'as received' basis.
- Information identified on this report with blue colour, indicates data provided by customer, that may have an impact on the results.
- This report replaces any interim results previously issued.

Holding Times

Please refer to 'Sample Preservation and Container Guide' for holding times (QS3001).

For samples received on the last day of holding time, notification of testing requirements should have been received at least 6 hours prior to sample receipt deadlines as stated on the SRA.

If the Laboratory did not receive the information in the required timeframe, and regardless of any other integrity issues, suitably qualified results may still be reported.

Holding times apply from the date of sampling, therefore compliance to these may be outside the laboratory's control.

For VOCs containing vinyl chloride, styrene and 2-chloroethyl vinyl ether the holding time is 7 days however for all other VOCs such as BTEX or C6-10 TRH then the holding time is 14 days.

****NOTE:** pH duplicates are reported as a range NOT as RPD

Units

mg/kg: milligrams per kilogram

mg/L: milligrams per litre

ug/L: micrograms per litre

ppm: Parts per million

ppb: Parts per billion

%: Percentage

org/100mL: Organisms per 100 millilitres

NTU: Nephelometric Turbidity Units

MPN/100mL: Most Probable Number of organisms per 100 millilitres

Terms

Dry	Where a moisture has been determined on a solid sample the result is expressed on a dry basis.
LOR	Limit of Reporting.
SPIKE	Addition of the analyte to the sample and reported as percentage recovery.
RPD	Relative Percent Difference between two Duplicate pieces of analysis.
LCS	Laboratory Control Sample - reported as percent recovery.
CRM	Certified Reference Material - reported as percent recovery.
Method Blank	In the case of solid samples these are performed on laboratory certified clean sands and in the case of water samples these are performed on de-ionised water.
Surr - Surrogate	The addition of a like compound to the analyte target and reported as percentage recovery.
Duplicate	A second piece of analysis from the same sample and reported in the same units as the result to show comparison.
USEPA	United States Environmental Protection Agency
APHA	American Public Health Association
TCLP	Toxicity Characteristic Leaching Procedure
COC	Chain of Custody
SRA	Sample Receipt Advice
QSM	US Department of Defense Quality Systems Manual Version 5.3
CP	Client Parent - QC was performed on samples pertaining to this report
NCP	Non-Client Parent - QC performed on samples not pertaining to this report, QC is representative of the sequence or batch that client samples were analysed within.
TEQ	Toxic Equivalency Quotient

QC - Acceptance Criteria

RPD Duplicates: Global RPD Duplicates Acceptance Criteria is 30% however the following acceptance guidelines are equally applicable:

Results <10 times the LOR : No Limit

Results between 10-20 times the LOR : RPD must lie between 0-50%

Results >20 times the LOR : RPD must lie between 0-30%

Surrogate Recoveries: Recoveries must lie between 20-130% Phenols & 50-150% PFASs

PFAS field samples that contain surrogate recoveries in excess of the QC limit designated in QSM 5.3 where no positive PFAS results have been reported have been reviewed and no data was affected.

WA DWER (n=10): PFBA, PFPeA, PFHxA, PFHpA, PFOA, PFBS, PFHxS, PFOS, 6:2 FTSA, 8:2 FTSA

QC Data General Comments

- Where a result is reported as a less than (<), higher than the nominated LOR, this is due to either matrix interference, extract dilution required due to interferences or contaminant levels within the sample, high moisture content or insufficient sample provided.
- Duplicate data shown within this report that states the word "BATCH" is a Batch Duplicate from outside of your sample batch, but within the laboratory sample batch at a 1:10 ratio. The Parent and Duplicate data shown is not data from your samples.
- Organochlorine Pesticide analysis - where reporting LCS data, Toxaphene & Chlordane are not added to the LCS.
- Organochlorine Pesticide analysis - where reporting Spike data, Toxaphene is not added to the Spike.
- Total Recoverable Hydrocarbons - where reporting Spike & LCS data, a single spike of commercial Hydrocarbon products in the range of C12-C30 is added and it's Total Recovery is reported in the C10-C14 cell of the Report.
- pH and Free Chlorine analysed in the laboratory - Analysis on this test must begin within 30 minutes of sampling. Therefore laboratory analysis is unlikely to be completed within holding time. Analysis will begin as soon as possible after sample receipt.
- Recovery Data (Spikes & Surrogates) - where chromatographic interference does not allow the determination of Recovery the term "INT" appears against that analyte.
- Polychlorinated Biphenyls are spiked only using Aroclor 1260 in Matrix Spikes and LCS.
- For Matrix Spikes and LCS results a dash " - " in the report means that the specific analyte was not added to the QC sample.
- Duplicate RPDs are calculated from raw analytical data thus it is possible to have two sets of data.

Quality Control Results

Test		Units	Result 1			Acceptance Limits	Pass Limits	Qualifying Code
Method Blank								
Heavy Metals								
Aluminium		mg/kg	< 10			10	Pass	
Arsenic		mg/kg	< 2			2	Pass	
Barium		mg/kg	< 10			10	Pass	
Beryllium		mg/kg	< 2			2	Pass	
Cadmium		mg/kg	< 0.4			0.4	Pass	
Chromium		mg/kg	< 5			5	Pass	
Cobalt		mg/kg	< 5			5	Pass	
Copper		mg/kg	< 5			5	Pass	
Iron		mg/kg	< 20			20	Pass	
Lead		mg/kg	< 5			5	Pass	
Manganese		mg/kg	< 5			5	Pass	
Mercury		mg/kg	< 0.1			0.1	Pass	
Nickel		mg/kg	< 5			5	Pass	
Zinc		mg/kg	< 5			5	Pass	
LCS - % Recovery								
Heavy Metals								
Aluminium		%	96			70-130	Pass	
Arsenic		%	102			70-130	Pass	
Barium		%	99			70-130	Pass	
Beryllium		%	99			70-130	Pass	
Cadmium		%	105			70-130	Pass	
Chromium		%	103			70-130	Pass	
Cobalt		%	104			70-130	Pass	
Copper		%	103			70-130	Pass	
Iron		%	99			70-130	Pass	
Lead		%	104			70-130	Pass	
Manganese		%	103			70-130	Pass	
Mercury		%	104			70-130	Pass	
Nickel		%	102			70-130	Pass	
Zinc		%	101			70-130	Pass	
Test	Lab Sample ID	QA Source	Units	Result 1		Acceptance Limits	Pass Limits	Qualifying Code
Spike - % Recovery								
Heavy Metals								
Lead	S20-My00969	NCP	%	90		70-130	Pass	
Spike - % Recovery								
Heavy Metals								
Aluminium	S20-My01797	NCP	%	94		70-130	Pass	
Arsenic	S20-My08642	NCP	%	75		70-130	Pass	
Barium	S20-My00969	NCP	%	82		70-130	Pass	
Beryllium	S20-My08642	NCP	%	75		70-130	Pass	
Cadmium	S20-My08642	NCP	%	81		70-130	Pass	
Chromium	S20-My08642	NCP	%	74		70-130	Pass	
Cobalt	S20-My08642	NCP	%	78		70-130	Pass	
Copper	S20-My08642	NCP	%	78		70-130	Pass	
Iron	S20-My05865	NCP	%	111		70-130	Pass	
Manganese	S20-My00969	NCP	%	94		70-130	Pass	
Mercury	S20-My08642	NCP	%	80		70-130	Pass	
Nickel	S20-My08642	NCP	%	77		70-130	Pass	
Zinc	S20-My00969	NCP	%	78		70-130	Pass	

Test	Lab Sample ID	QA Source	Units	Result 1	Result 2	RPD	Acceptance Limits	Pass Limits	Qualifying Code
Duplicate									
				Result 1	Result 2	RPD			
% Moisture	S20-My09867	NCP	%	13	13	2.0	30%	Pass	
Duplicate									
Heavy Metals									
				Result 1	Result 2	RPD			
Aluminium	S20-My01826	CP	mg/kg	6900	6500	7.0	30%	Pass	
Arsenic	S20-My01826	CP	mg/kg	7.3	7.3	1.0	30%	Pass	
Barium	S20-My01826	CP	mg/kg	100	100	2.0	30%	Pass	
Beryllium	S20-My01826	CP	mg/kg	< 2	< 2	<1	30%	Pass	
Cadmium	S20-My01826	CP	mg/kg	4.8	4.1	14	30%	Pass	
Chromium	S20-My01826	CP	mg/kg	9.0	8.6	5.0	30%	Pass	
Cobalt	S20-My01826	CP	mg/kg	< 5	< 5	<1	30%	Pass	
Copper	S20-My01826	CP	mg/kg	200	200	3.0	30%	Pass	
Iron	S20-My01826	CP	mg/kg	9400	9300	1.0	30%	Pass	
Lead	S20-My01826	CP	mg/kg	390	410	5.0	30%	Pass	
Manganese	S20-My01826	CP	mg/kg	270	260	2.0	30%	Pass	
Mercury	S20-My01826	CP	mg/kg	< 0.1	< 0.1	<1	30%	Pass	
Nickel	S20-My01826	CP	mg/kg	7.3	6.3	15	30%	Pass	
Zinc	S20-My01826	CP	mg/kg	2000	2800	32	30%	Fail	Q02

Comments
Sample Integrity

Custody Seals Intact (if used)	N/A
Attempt to Chill was evident	No
Sample correctly preserved	Yes
Appropriate sample containers have been used	Yes
Sample containers for volatile analysis received with minimal headspace	Yes
Samples received within HoldingTime	Yes
Some samples have been subcontracted	No

Qualifier Codes/Comments

Code	Description
Q02	The duplicate %RPD is outside the recommended acceptance criteria. Further analysis indicates sample heterogeneity as the cause

Authorised By

Andrew Black	Analytical Services Manager
Gabriele Cordero	Senior Analyst-Metal (NSW)


**Glenn Jackson
General Manager**

Final report - this Report replaces any previously issued Report

- Indicates Not Requested

* Indicates NATA accreditation does not cover the performance of this service

Measurement uncertainty of test data is available on request or please [click here](#).

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Ramboll Environ Australia Pty Ltd
 Level 3/100 Pacific Highway
 North Sydney
 NSW 2060



NATA Accredited
Accreditation Number 1261
Site Number 18217

Accredited for compliance with ISO/IEC 17025 – Testing
 The results of the tests, calibrations and/or
 measurements included in this document are traceable
 to Australian/national standards.

Attention: **Stephen Maxwell**

Report **717031-W**
 Project name **QA/QC**
 Project ID **318000780**
 Received Date **May 01, 2020**

Client Sample ID			D02_280420	D09_300420	D11_300420
Sample Matrix			Water	Water	Water
Eurofins Sample No.			S20-My01819	S20-My01825	S20-My01827
Date Sampled			Apr 28, 2020	Apr 30, 2020	Apr 30, 2020
Test/Reference	LOR	Unit			
Heavy Metals					
Aluminium	0.05	mg/L	< 0.05	< 0.05	< 0.05
Arsenic	0.001	mg/L	< 0.001	< 0.001	< 0.001
Barium	0.02	mg/L	< 0.02	< 0.02	< 0.02
Beryllium	0.001	mg/L	< 0.001	< 0.001	< 0.001
Cadmium	0.0002	mg/L	< 0.0002	< 0.0002	< 0.0002
Chromium	0.001	mg/L	< 0.001	< 0.001	< 0.001
Cobalt	0.001	mg/L	< 0.001	< 0.001	< 0.001
Copper	0.001	mg/L	< 0.001	0.007	< 0.001
Iron	0.05	mg/L	< 0.05	< 0.05	< 0.05
Lead	0.001	mg/L	< 0.001	< 0.001	< 0.001
Manganese	0.005	mg/L	< 0.005	< 0.005	0.022
Mercury	0.0001	mg/L	< 0.0001	< 0.0001	< 0.0001
Nickel	0.001	mg/L	< 0.001	< 0.001	< 0.001
Zinc	0.005	mg/L	0.016	0.12	0.044

Sample History

Where samples are submitted/analysed over several days, the last date of extraction and analysis is reported.

A recent review of our LIMS has resulted in the correction or clarification of some method identifications. Due to this, some of the method reference information on reports has changed. However, no substantive change has been made to our laboratory methods, and as such there is no change in the validity of current or previous results.

If the date and time of sampling are not provided, the Laboratory will not be responsible for compromised results should testing be performed outside the recommended holding time.

Description

Heavy Metals

Testing Site

Sydney

Extracted

May 05, 2020

Holding Time

180 Days

- Method: LTM-MET-3040 Metals in Waters, Soils & Sediments by ICP-MS

Australia

Melbourne
6 Monterey Road
Dandenong South VIC 3175
Phone : +61 3 8564 5000
NATA # 1261
Site # 1254 & 14271

Sydney
Unit F3, Building F
16 Mars Road
Lane Cove West NSW 2066
Phone : +61 2 9900 8400
NATA # 1261 Site # 18217

Brisbane
1/21 Smallwood Place
Murarrie QLD 4172
Phone : +61 7 3902 4600
NATA # 1261 Site # 20794

Perth
2/91 Leach Highway
Kewdale WA 6105
Phone : +61 8 9251 9600
NATA # 1261
Site # 23736

New Zealand

Auckland
35 O'Rorke Road
Penrose, Auckland 1061
Phone : +64 9 526 45 51
IANZ # 1327

Christchurch
43 Detroit Drive
Rolleston, Christchurch 7675
Phone : 0800 856 450
IANZ # 1290

Company Name: Ramboll Australia Pty Ltd
Address: Level 3/100 Pacific Highway
North Sydney
NSW 2060

Project Name: QA/QC
Project ID: 318000780

Order No.:
Report #: 717031
Phone: 02 9954 8118
Fax: 02 9954 8150

Received: May 1, 2020 12:00 PM
Due: May 8, 2020
Priority: 5 Day
Contact Name: Stephen Maxwell

Eurofins Analytical Services Manager : Andrew Black

Sample Detail						Aluminium	Arsenic	Barium	Beryllium	Cadmium	Chromium	Cobalt	Copper	HOLD	Iron	Lead	Manganese	Mercury	Nickel	Zinc	Moisture Set	
Melbourne Laboratory - NATA Site # 1254 & 14271																						
Sydney Laboratory - NATA Site # 18217						X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X
Brisbane Laboratory - NATA Site # 20794																						
Perth Laboratory - NATA Site # 23736																						
External Laboratory																						
No	Sample ID	Sample Date	Sampling Time	Matrix	LAB ID																	
1	D01_280420	Apr 28, 2020		Soil	S20-My01818											X					X	
2	D02_280420	Apr 28, 2020		Water	S20-My01819	X	X	X	X	X	X	X	X		X	X	X	X	X	X		
3	D03_280420	Apr 28, 2020		Soil	S20-My01820											X					X	
4	D04_290420	Apr 28, 2020		Soil	S20-My01821											X					X	
5	D05_290420	Apr 28, 2020		Soil	S20-My01822											X					X	
6	D07_300420	Apr 30, 2020		Soil	S20-My01823											X					X	
7	D08_300420	Apr 30, 2020		Soil	S20-My01824											X					X	
8	D09_300420	Apr 30, 2020		Water	S20-My01825	X	X	X	X	X	X	X	X		X	X	X	X	X	X		
9	D10_300420	Apr 30, 2020		Soil	S20-My01826	X	X	X	X	X	X	X	X		X	X	X	X	X	X	X	
10	D11_300420	Apr 30, 2020		Water	S20-My01827	X	X	X	X	X	X	X	X		X	X	X	X	X	X		

Australia

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ABN – 50 005 085 521

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e.mail : EnviroSales@eurofins.com

Company Name: Ramboll Australia Pty Ltd
Address: Level 3/100 Pacific Highway
North Sydney
NSW 2060

Project Name: QA/QC
Project ID: 318000780

Order No.:
Report #: 717031
Phone: 02 9954 8118
Fax: 02 9954 8150

Received: May 1, 2020 12:00 PM
Due: May 8, 2020
Priority: 5 Day
Contact Name: Stephen Maxwell

Eurofins Analytical Services Manager : Andrew Black

Sample Detail						Aluminium	Arsenic	Barium	Beryllium	Cadmium	Chromium	Cobalt	Copper	HOLD	Iron	Lead	Manganese	Mercury	Nickel	Zinc	Moisture Set	
Melbourne Laboratory - NATA Site # 1254 & 14271																						
Sydney Laboratory - NATA Site # 18217						X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X
Brisbane Laboratory - NATA Site # 20794																						
Perth Laboratory - NATA Site # 23736																						
11	D06_290420	Apr 29, 2020		Soil	S20-My01828									X								
12	D09_300420	Apr 29, 2020		Soil	S20-My01829									X								
13	T09_300420	Apr 29, 2020		Soil	S20-My01830									X								
Test Counts						4	4	4	4	4	4	4	4	3	4	10	4	4	4	4	7	

Internal Quality Control Review and Glossary
General

- Laboratory QC results for Method Blanks, Duplicates, Matrix Spikes, and Laboratory Control Samples follows guidelines delineated in the National Environment Protection (Assessment of Site Contamination) Measure 1999, as amended May 2013 and are included in this QC report where applicable. Additional QC data may be available on request.
- All soil/sediment/solid results are reported on a dry basis, unless otherwise stated.
- All biota/food results are reported on a wet weight basis on the edible portion, unless otherwise stated.
- Actual LORs are matrix dependant. Quoted LORs may be raised where sample extracts are diluted due to interferences.
- Results are uncorrected for matrix spikes or surrogate recoveries except for PFAS compounds.
- SVOC analysis on waters are performed on homogenised, unfiltered samples, unless noted otherwise.
- Samples were analysed on an 'as received' basis.
- Information identified on this report with blue colour, indicates data provided by customer, that may have an impact on the results.
- This report replaces any interim results previously issued.

Holding Times

Please refer to 'Sample Preservation and Container Guide' for holding times (QS3001).

For samples received on the last day of holding time, notification of testing requirements should have been received at least 6 hours prior to sample receipt deadlines as stated on the SRA.

If the Laboratory did not receive the information in the required timeframe, and regardless of any other integrity issues, suitably qualified results may still be reported.

Holding times apply from the date of sampling, therefore compliance to these may be outside the laboratory's control.

For VOCs containing vinyl chloride, styrene and 2-chloroethyl vinyl ether the holding time is 7 days however for all other VOCs such as BTEX or C6-10 TRH then the holding time is 14 days.

****NOTE:** pH duplicates are reported as a range NOT as RPD

Units

mg/kg: milligrams per kilogram

mg/L: milligrams per litre

ug/L: micrograms per litre

ppm: Parts per million

ppb: Parts per billion

%: Percentage

org/100mL: Organisms per 100 millilitres

NTU: Nephelometric Turbidity Units

MPN/100mL: Most Probable Number of organisms per 100 millilitres

Terms

Dry	Where a moisture has been determined on a solid sample the result is expressed on a dry basis.
LOR	Limit of Reporting.
SPIKE	Addition of the analyte to the sample and reported as percentage recovery.
RPD	Relative Percent Difference between two Duplicate pieces of analysis.
LCS	Laboratory Control Sample - reported as percent recovery.
CRM	Certified Reference Material - reported as percent recovery.
Method Blank	In the case of solid samples these are performed on laboratory certified clean sands and in the case of water samples these are performed on de-ionised water.
Surr - Surrogate	The addition of a like compound to the analyte target and reported as percentage recovery.
Duplicate	A second piece of analysis from the same sample and reported in the same units as the result to show comparison.
USEPA	United States Environmental Protection Agency
APHA	American Public Health Association
TCLP	Toxicity Characteristic Leaching Procedure
COC	Chain of Custody
SRA	Sample Receipt Advice
QSM	US Department of Defense Quality Systems Manual Version 5.3
CP	Client Parent - QC was performed on samples pertaining to this report
NCP	Non-Client Parent - QC performed on samples not pertaining to this report, QC is representative of the sequence or batch that client samples were analysed within.
TEQ	Toxic Equivalency Quotient

QC - Acceptance Criteria

RPD Duplicates: Global RPD Duplicates Acceptance Criteria is 30% however the following acceptance guidelines are equally applicable:

Results <10 times the LOR : No Limit

Results between 10-20 times the LOR : RPD must lie between 0-50%

Results >20 times the LOR : RPD must lie between 0-30%

Surrogate Recoveries: Recoveries must lie between 20-130% Phenols & 50-150% PFASs

PFAS field samples that contain surrogate recoveries in excess of the QC limit designated in QSM 5.3 where no positive PFAS results have been reported have been reviewed and no data was affected.

WA DWER (n=10): PFBA, PFPeA, PFHxA, PFHpA, PFOA, PFBS, PFHxS, PFOS, 6:2 FTSA, 8:2 FTSA

QC Data General Comments

- Where a result is reported as a less than (<), higher than the nominated LOR, this is due to either matrix interference, extract dilution required due to interferences or contaminant levels within the sample, high moisture content or insufficient sample provided.
- Duplicate data shown within this report that states the word "BATCH" is a Batch Duplicate from outside of your sample batch, but within the laboratory sample batch at a 1:10 ratio. The Parent and Duplicate data shown is not data from your samples.
- Organochlorine Pesticide analysis - where reporting LCS data, Toxaphene & Chlordane are not added to the LCS.
- Organochlorine Pesticide analysis - where reporting Spike data, Toxaphene is not added to the Spike.
- Total Recoverable Hydrocarbons - where reporting Spike & LCS data, a single spike of commercial Hydrocarbon products in the range of C12-C30 is added and it's Total Recovery is reported in the C10-C14 cell of the Report.
- pH and Free Chlorine analysed in the laboratory - Analysis on this test must begin within 30 minutes of sampling. Therefore laboratory analysis is unlikely to be completed within holding time. Analysis will begin as soon as possible after sample receipt.
- Recovery Data (Spikes & Surrogates) - where chromatographic interference does not allow the determination of Recovery the term "INT" appears against that analyte.
- Polychlorinated Biphenyls are spiked only using Aroclor 1260 in Matrix Spikes and LCS.
- For Matrix Spikes and LCS results a dash " - " in the report means that the specific analyte was not added to the QC sample.
- Duplicate RPDs are calculated from raw analytical data thus it is possible to have two sets of data.

Quality Control Results

Test	Lab Sample ID	QA Source	Units	Result 1			Acceptance Limits	Pass Limits	Qualifying Code
Spike - % Recovery									
Heavy Metals				Result 1					
Aluminium	S20-My01814	NCP	%	79			70-130	Pass	
Arsenic	S20-My01814	NCP	%	94			70-130	Pass	
Barium	S20-My01814	NCP	%	93			70-130	Pass	
Beryllium	S20-My01814	NCP	%	86			70-130	Pass	
Cadmium	S20-My01814	NCP	%	92			70-130	Pass	
Chromium	S20-My01814	NCP	%	77			70-130	Pass	
Cobalt	S20-My01814	NCP	%	78			70-130	Pass	
Copper	S20-My01814	NCP	%	77			70-130	Pass	
Iron	S20-My01814	NCP	%	83			70-130	Pass	
Lead	S20-My01814	NCP	%	91			70-130	Pass	
Manganese	S20-My01814	NCP	%	78			70-130	Pass	
Mercury	S20-My01814	NCP	%	88			70-130	Pass	
Nickel	S20-My01814	NCP	%	77			70-130	Pass	
Zinc	S20-My01814	NCP	%	75			70-130	Pass	
Test	Lab Sample ID	QA Source	Units	Result 1			Acceptance Limits	Pass Limits	Qualifying Code
Duplicate									
Heavy Metals				Result 1	Result 2	RPD			
Aluminium	S20-My00614	NCP	mg/L	< 0.05	< 0.05	<1	30%	Pass	
Arsenic	S20-My00614	NCP	mg/L	< 0.001	< 0.001	<1	30%	Pass	
Barium	S20-My00614	NCP	mg/L	0.04	0.03	6.0	30%	Pass	
Beryllium	S20-My00614	NCP	mg/L	< 0.001	< 0.001	<1	30%	Pass	
Cadmium	S20-My00614	NCP	mg/L	< 0.0002	< 0.0002	<1	30%	Pass	
Chromium	S20-My00614	NCP	mg/L	< 0.001	< 0.001	<1	30%	Pass	
Cobalt	S20-My00614	NCP	mg/L	< 0.001	< 0.001	<1	30%	Pass	
Copper	S20-My00614	NCP	mg/L	< 0.001	< 0.001	<1	30%	Pass	
Iron	S20-My00614	NCP	mg/L	< 0.05	< 0.05	<1	30%	Pass	
Lead	S20-My00614	NCP	mg/L	< 0.001	< 0.001	<1	30%	Pass	
Manganese	S20-My00614	NCP	mg/L	< 0.005	< 0.005	<1	30%	Pass	
Mercury	S20-My00614	NCP	mg/L	< 0.0001	< 0.0001	<1	30%	Pass	
Nickel	S20-My00614	NCP	mg/L	< 0.001	< 0.001	<1	30%	Pass	
Zinc	S20-My00614	NCP	mg/L	< 0.005	0.006	36	30%	Fail	Q15

Comments**Sample Integrity**

Custody Seals Intact (if used)	N/A
Attempt to Chill was evident	No
Sample correctly preserved	Yes
Appropriate sample containers have been used	Yes
Sample containers for volatile analysis received with minimal headspace	Yes
Samples received within HoldingTime	Yes
Some samples have been subcontracted	No

Qualifier Codes/Comments

Code	Description
Q15	The RPD reported passes Eurofins Environment Testing's QC - Acceptance Criteria as defined in the Internal Quality Control Review and Glossary page of this report.

Authorised By

Andrew Black Analytical Services Manager
Gabriele Cordero Senior Analyst-Metal (NSW)

**Glenn Jackson
General Manager**

Final report - this Report replaces any previously issued Report

- Indicates Not Requested

* Indicates NATA accreditation does not cover the performance of this service

Measurement uncertainty of test data is available on request or please [click here](#).

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CHAIN OF CUSTODY RECORD

ABN 50 005 085 521

Sydney Laboratory
Unit F3 Bld F, 16 Mars Rd, Lane Cove West, NSW 2066
02 9900 8400 EnviroSampleNSW@eurofins.com

Brisbane Laboratory
Unit 1, 21 Smallwood Pl., Murarie, QLD 4172
07 3902 4600 EnviroSampleQLD@eurofins.com

Perth Laboratory
Unit 2, 91 Leach Highway, Kewdale WA 6105
08 9251 9600 EnviroSampleWA@eurofins.com

Melbourne Laboratory
2 Kingston Town Close, Oakleigh, VIC 3186
03 8564 5000 EnviroSampleVic@eurofins.com

Company		Project No		Project Manager		Sampler(s)		
Ramboll		318000780		Stephen Maxwell		JB, TJ, JK		
Address		Project Name		EDD Format (ESdat, EQulS, Custom)		Handed over by		
50 Glebe Road the Junction		QA/QC		Excel and PDF		Jordyn Kirsch		
Contact Name		Analyses		Email for Invoice		Email for Results		
Stephen Maxwell		<small>(Note: Where multiple analyses are requested, please specify in 'Client Sample ID' or 'Special Directions') BUT E codes must be used to identify the primary</small> Total Lead (ug/L) M13 (Al, As, Ba, Be, Cd, Cr, Co, Cu, Fe, Pb, Mn, Hg, Ni, Zn Excluding hexavalent chromium) Total Total Lead (mg/kg)		smaxwell@ramboll.com asiapac-accounts@ramboll.com		smaxwell@ramboll.com jblackwell@ramboll.com		
Phone No				Containers		Turnaround Time (TAT) Requirements (Default will be 5 days if not ticked)		
0478 658 194				1L Plastic 250mL Plastic 125mL Plastic 200mL Amber Glass 40mL VOA vial 500mL PFAS bottle Jar (Glass or HDPE) Chair (Aluminum AS1684, WA Guidelines)		Overnight (9am)* 1 Day* 2 Day* <input type="checkbox"/> 3 Day* 5 Day* * Surcharges apply <input type="checkbox"/> Other ()		
Special Directions				<input type="checkbox"/> Sample Comments / Dangerous Goods Hazard Warning				
Purchase Order								
Quote ID No		180813RAMN_1						
No	Client Sample ID	Sampled Date/Time (dd/mm/yy hh:mm)	Matrix (Solid (S) Water (W))					
1	DSWAB_BLANK1(W)	28/04/20	S	X				
2	DSWAB_BLANK1(G)	28/04/20	S	X				
3	DSWAB_BLANK2(W)	29/04/20	S	X				
4	DSWAB_BLANK2(G)	29/04/20	S	X				
5	DSWAB_BLANK3(G)	30/04/20	S	X				
6	DSWAB_BLANK3(W)	30/04/20	S	X				
7	R01_270420	27/04/20	W	X				
8	R02_280420	28/04/20	W	X				
9	R03_290420	29/04/00	W	X				
10	R04_290420	29/04/00	W	X				
Total Counts				6	4			
Method of Shipment		Courier (#)	Hand Delivered	Postal	Name	Signature	Date	Time
Eurofins mgt		Received By	Lee	SYD BNE MEL PER ADL NTL DRW	Signature	Date	15/20	Time
Laboratory Use Only		Received By		SYD BNE MEL PER ADL NTL DRW	Signature	Date		Time
								Temperature 14.00°C
								Report No #717021

Submission of samples to the laboratory will be deemed as acceptance of Eurofins | mgt Standard Terms and Conditions unless agreed otherwise. A copy of Eurofins | mgt Standard Terms and Conditions is available on request.
Eurofins Environment Testing Australia Pty Ltd trading as Eurofins | mgt

CHAIN OF CUSTODY RECORD

ABN 50 005 965 521

Sydney Laboratory
Unit F3 Bld F, 16 Mars Rd, Lane Cove West, NSW 2066
02 9600 8400 EnviroSampleNSW@eurofins.com

Brisbane Laboratory
Unit 1, 21 Smallwood Pl., Murarie, QLD 4172
07 3902 4600 EnviroSampleQLD@eurofins.com

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Unit 2, 91 Leach Highway, Kewdale WA 6105
08 9251 9600 EnviroSampleWA@eurofins.com

Melbourne Laboratory
2 Kingston Town Close, Oakleigh, VIC 3166
03 8564 5000 EnviroSampleVic@eurofins.com

Company		Ramboll		Project No	318000780			Project Manager	Stephen Maxwell			Sampler(s)	JB, TJ, JK					
Address		50 Glebe Road the Junction		Project Name	QA/QC			EDD Format (ESdat, EQUIS, Custom)	Excel and PDF			Handed over by	Jordyn Kirsch					
Contact Name		Stephen Maxwell		Analysis <small>(Note: Where multiple are requested, please specify 'Total' or 'E' (lead)) SUI/E code must be used in ambient/SUI/E groups</small>	Total Lead (µg/L)	M13 (Al, As, Ba, Be, Cd, Cr, Co, Cu, Fe, Pb, Mn, Hg, Ni, Zn Excluding hexavalent chromium) Total	Total Lead (mg/kg)						Email for Invoice					
Phone No		0478 658 194											smaxwell@ramboll.com		asiapac-accounts@ramboll.com			
Special Directions													Email for Results		smaxwell@ramboll.com		jblackwell@ramboll.com	
Purchase Order																		
Quote ID No		180813RAMN_1										Turnaround Time (TAT) Requirements (default will be 5 days if not ticked)						
No	Client Sample ID	Sampled Date/Time (dd/mm/yy hh:mm)	Matrix (Solid (S) Water (W))										Containers		Turnaround Time (TAT) Requirements (default will be 5 days if not ticked)			
													1L Plastic	250mL Plastic	125mL Plastic	200mL Amber Glass	40mL VOA vial	500mL PFAS bottles
																	Sample Comments / Dangerous Goods Hazard Warning	
1	R05_300420	30/04/20	W		X													
2	R06_290420	30/04/20	W		X													
3	R07_290420	30/04/20	W		X													
4																		
5																		
6																		
7																		
8																		
9																		
10																		
Total Counts					3													

Method of Shipment	Courier (#)	Hand Delivered	Postal	Name	Signature	Date	Time
<input type="checkbox"/> Eurofins mgt	Received By	<i>Anwar Lee</i>	SYD BNE MEL PER ADL NTL DRW	Signature	<i>[Signature]</i>	Date	15/20
<input type="checkbox"/> Laboratory Use Only	Received By		SYD BNE MEL PER ADL NTL DRW	Signature		Date	
						Time	12:00pm
						Temperature	14°C
						Report No	#717021

Submission of samples to the laboratory will be deemed as acceptance of Eurofins | mgt Standard Terms and Conditions unless agreed otherwise. A copy of Eurofins | mgt Standard Terms and Conditions is available on request.

Melbourne

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Perth

2/91 Leach Highway
Kewdale WA 6105
Phone : +61 8 9251 9600
NATA # 1261 Site # 23736

ABN – 50 005 085 521

e.mail : EnviroSales@eurofins.com

web : www.eurofins.com.au

Sample Receipt Advice

Company name: **Ramboll Australia Pty Ltd**
Contact name: Stephen Maxwell
Project name: QA/QC
Project ID: 318000780
COC number: Not provided
Turn around time: 5 Day
Date/Time received: May 1, 2020 12:00 PM
Eurofins reference: **717021**

Sample information

- A detailed list of analytes logged into our LIMS, is included in the attached summary table.
- All samples have been received as described on the above COC.
- COC has been completed correctly.
- Attempt to chill was evident.
- Appropriately preserved sample containers have been used.
- All samples were received in good condition.
- Samples have been provided with adequate time to commence analysis in accordance with the relevant holding times.

- Appropriate sample containers have been used.
- Sample containers for volatile analysis received with zero headspace.
- Split sample sent to requested external lab.
- Some samples have been subcontracted.
- N/A Custody Seals intact (if used).

Notes

Swab samples DSWAB_BLANK3(W) and DSWAB_BLANK3(G) sampled on 29/4/20 received extra.

Contact notes

If you have any questions with respect to these samples please contact:

Andrew Black on Phone : (+61) 2 9900 8490 or by e.mail: AndrewBlack@eurofins.com

Results will be delivered electronically via e.mail to Stephen Maxwell - smaxwell@ramboll.com.

Note: A copy of these results will also be delivered to the general Ramboll Australia Pty Ltd email address.

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43 Detroit Drive
Rolleston, Christchurch 7675
Phone : 0800 856 450
IANZ # 1290

Company Name: Ramboll Australia Pty Ltd
Address: Level 3/100 Pacific Highway
North Sydney
NSW 2060

Order No.:
Report #: 717021
Phone: 02 9954 8118
Fax: 02 9954 8150

Received: May 1, 2020 12:00 PM
Due: May 8, 2020
Priority: 5 Day
Contact Name: Stephen Maxwell

Project Name: QA/QC
Project ID: 318000780

Eurofins Analytical Services Manager : Andrew Black

Sample Detail						Aluminium	Arsenic	Barium	Beryllium	Cadmium	Chromium	Cobalt	Copper	HOLD	Iron	Lead	Manganese	Mercury	Nickel	Zinc	
Melbourne Laboratory - NATA Site # 1254 & 14271																					
Sydney Laboratory - NATA Site # 18217						X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X
Brisbane Laboratory - NATA Site # 20794																					
Perth Laboratory - NATA Site # 23736																					
External Laboratory																					
No	Sample ID	Sample Date	Sampling Time	Matrix	LAB ID																
1	DSWAB_BLA NK1(W)	Apr 28, 2020		Wipes	S20-My01504											X					
2	DSWAB_BLA NK1(G)	Apr 28, 2020		Wipes	S20-My01505											X					
3	DSWAB_BLA NK2(W)	Apr 29, 2020		Wipes	S20-My01506											X					
4	DSWAB_BLA NK2(G)	Apr 29, 2020		Wipes	S20-My01507											X					
5	DSWAB_BLA NK3(G)	Apr 30, 2020		Wipes	S20-My01508											X					
6	DSWAB_BLA NK3(W)	Apr 30, 2020		Wipes	S20-My01509											X					

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Received: May 1, 2020 12:00 PM
Due: May 8, 2020
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Contact Name: Stephen Maxwell

Eurofins Analytical Services Manager : Andrew Black

Sample Detail						Aluminium	Arsenic	Barium	Beryllium	Cadmium	Chromium	Cobalt	Copper	HOLD	Iron	Lead	Manganese	Mercury	Nickel	Zinc	
Melbourne Laboratory - NATA Site # 1254 & 14271																					
Sydney Laboratory - NATA Site # 18217						X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X
Brisbane Laboratory - NATA Site # 20794																					
Perth Laboratory - NATA Site # 23736																					
7	R01_270420	Apr 27, 2020		Water	S20-My01510	X	X	X	X	X	X	X	X		X	X	X	X	X	X	
8	R02_280420	Apr 28, 2020		Water	S20-My01511	X	X	X	X	X	X	X	X		X	X	X	X	X	X	
9	R03_290420	Apr 29, 2020		Water	S20-My01512	X	X	X	X	X	X	X	X		X	X	X	X	X	X	
10	R04_290420	Apr 29, 2020		Water	S20-My01513	X	X	X	X	X	X	X	X		X	X	X	X	X	X	
11	R05_300420	Apr 30, 2020		Water	S20-My01514	X	X	X	X	X	X	X	X		X	X	X	X	X	X	
12	R06_290420	Apr 30, 2020		Water	S20-My01515	X	X	X	X	X	X	X	X		X	X	X	X	X	X	
13	R07_290420	Apr 30, 2020		Water	S20-My01516	X	X	X	X	X	X	X	X		X	X	X	X	X	X	
14	DSWAB_BLA NK3(W)	Apr 29, 2020		Wipes	S20-My01742									X							
15	DSWAB_BLA NK3(G)	Apr 29, 2020		Wipes	S20-My01743									X							
Test Counts						7	7	7	7	7	7	7	7	2	7	13	7	7	7	7	

Ramboll Environ Australia Pty Ltd
 Level 3/100 Pacific Highway
 North Sydney
 NSW 2060



NATA Accredited
Accreditation Number 1261
Site Number 18217

Accredited for compliance with ISO/IEC 17025 – Testing
 The results of the tests, calibrations and/or
 measurements included in this document are traceable
 to Australian/national standards.

Attention: **Stephen Maxwell**

Report **717021-A**
 Project name **QA/QC**
 Project ID **318000780**
 Received Date **May 01, 2020**

Client Sample ID			DSWAB_BLAN K1(W)	DSWAB_BLAN K1(G)	DSWAB_BLAN K2(W)	DSWAB_BLAN K2(G)
Sample Matrix			Wipes	Wipes	Wipes	Wipes
Eurofins Sample No.			S20-My01504	S20-My01505	S20-My01506	S20-My01507
Date Sampled			Apr 28, 2020	Apr 28, 2020	Apr 29, 2020	Apr 29, 2020
Test/Reference	LOR	Unit				
Heavy Metals						
Lead	1	Total ug	2.3	< 1	< 1	< 1

Client Sample ID			DSWAB_BLAN K3(G)	DSWAB_BLAN K3(W)
Sample Matrix			Wipes	Wipes
Eurofins Sample No.			S20-My01508	S20-My01509
Date Sampled			Apr 30, 2020	Apr 30, 2020
Test/Reference	LOR	Unit		
Heavy Metals				
Lead	1	Total ug	< 1	< 1

Sample History

Where samples are submitted/analysed over several days, the last date of extraction and analysis is reported.

A recent review of our LIMS has resulted in the correction or clarification of some method identifications. Due to this, some of the method reference information on reports has changed. However, no substantive change has been made to our laboratory methods, and as such there is no change in the validity of current or previous results.

If the date and time of sampling are not provided, the Laboratory will not be responsible for compromised results should testing be performed outside the recommended holding time.

Description

Heavy Metals

Testing Site

Sydney

Extracted

May 07, 2020

Holding Time

180 Days

- Method: LTM-MET-3040 Metals in Waters, Soils & Sediments by ICP-MS

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NSW 2060

Order No.:
Report #: 717021
Phone: 02 9954 8118
Fax: 02 9954 8150

Received: May 1, 2020 12:00 PM
Due: May 8, 2020
Priority: 5 Day
Contact Name: Stephen Maxwell

Project Name: QA/QC
Project ID: 318000780

Eurofins Analytical Services Manager : Andrew Black

Sample Detail						Aluminium	Arsenic	Barium	Beryllium	Cadmium	Chromium	Cobalt	Copper	HOLD	Iron	Lead	Manganese	Mercury	Nickel	Zinc	
Melbourne Laboratory - NATA Site # 1254 & 14271																					
Sydney Laboratory - NATA Site # 18217						X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X
Brisbane Laboratory - NATA Site # 20794																					
Perth Laboratory - NATA Site # 23736																					
External Laboratory																					
No	Sample ID	Sample Date	Sampling Time	Matrix	LAB ID																
1	DSWAB_BLA NK1(W)	Apr 28, 2020		Wipes	S20-My01504											X					
2	DSWAB_BLA NK1(G)	Apr 28, 2020		Wipes	S20-My01505											X					
3	DSWAB_BLA NK2(W)	Apr 29, 2020		Wipes	S20-My01506											X					
4	DSWAB_BLA NK2(G)	Apr 29, 2020		Wipes	S20-My01507											X					
5	DSWAB_BLA NK3(G)	Apr 30, 2020		Wipes	S20-My01508											X					
6	DSWAB_BLA NK3(W)	Apr 30, 2020		Wipes	S20-My01509											X					

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Received: May 1, 2020 12:00 PM
Due: May 8, 2020
Priority: 5 Day
Contact Name: Stephen Maxwell

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Melbourne Laboratory - NATA Site # 1254 & 14271																					
Sydney Laboratory - NATA Site # 18217						X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X
Brisbane Laboratory - NATA Site # 20794																					
Perth Laboratory - NATA Site # 23736																					
7	R01_270420	Apr 27, 2020		Water	S20-My01510	X	X	X	X	X	X	X	X		X	X	X	X	X	X	
8	R02_280420	Apr 28, 2020		Water	S20-My01511	X	X	X	X	X	X	X	X		X	X	X	X	X	X	
9	R03_290420	Apr 29, 2020		Water	S20-My01512	X	X	X	X	X	X	X	X		X	X	X	X	X	X	
10	R04_290420	Apr 29, 2020		Water	S20-My01513	X	X	X	X	X	X	X	X		X	X	X	X	X	X	
11	R05_300420	Apr 30, 2020		Water	S20-My01514	X	X	X	X	X	X	X	X		X	X	X	X	X	X	
12	R06_290420	Apr 30, 2020		Water	S20-My01515	X	X	X	X	X	X	X	X		X	X	X	X	X	X	
13	R07_290420	Apr 30, 2020		Water	S20-My01516	X	X	X	X	X	X	X	X		X	X	X	X	X	X	
14	DSWAB_BLA NK3(W)	Apr 29, 2020		Wipes	S20-My01742									X							
15	DSWAB_BLA NK3(G)	Apr 29, 2020		Wipes	S20-My01743									X							
Test Counts						7	7	7	7	7	7	7	7	2	7	13	7	7	7	7	

Internal Quality Control Review and Glossary
General

- Laboratory QC results for Method Blanks, Duplicates, Matrix Spikes, and Laboratory Control Samples follows guidelines delineated in the National Environment Protection (Assessment of Site Contamination) Measure 1999, as amended May 2013 and are included in this QC report where applicable. Additional QC data may be available on request.
- All soil/sediment/solid results are reported on a dry basis, unless otherwise stated.
- All biota/food results are reported on a wet weight basis on the edible portion, unless otherwise stated.
- Actual LORs are matrix dependant. Quoted LORs may be raised where sample extracts are diluted due to interferences.
- Results are uncorrected for matrix spikes or surrogate recoveries except for PFAS compounds.
- SVOC analysis on waters are performed on homogenised, unfiltered samples, unless noted otherwise.
- Samples were analysed on an 'as received' basis.
- Information identified on this report with blue colour, indicates data provided by customer, that may have an impact on the results.
- This report replaces any interim results previously issued.

Holding Times

Please refer to 'Sample Preservation and Container Guide' for holding times (QS3001).

For samples received on the last day of holding time, notification of testing requirements should have been received at least 6 hours prior to sample receipt deadlines as stated on the SRA.

If the Laboratory did not receive the information in the required timeframe, and regardless of any other integrity issues, suitably qualified results may still be reported.

Holding times apply from the date of sampling, therefore compliance to these may be outside the laboratory's control.

For VOCs containing vinyl chloride, styrene and 2-chloroethyl vinyl ether the holding time is 7 days however for all other VOCs such as BTEX or C6-10 TRH then the holding time is 14 days.

****NOTE:** pH duplicates are reported as a range NOT as RPD

Units

mg/kg: milligrams per kilogram	mg/L: milligrams per litre	ug/L: micrograms per litre
ppm: Parts per million	ppb: Parts per billion	%: Percentage
org/100mL: Organisms per 100 millilitres	NTU: Nephelometric Turbidity Units	MPN/100mL: Most Probable Number of organisms per 100 millilitres

Terms

Dry	Where a moisture has been determined on a solid sample the result is expressed on a dry basis.
LOR	Limit of Reporting.
SPIKE	Addition of the analyte to the sample and reported as percentage recovery.
RPD	Relative Percent Difference between two Duplicate pieces of analysis.
LCS	Laboratory Control Sample - reported as percent recovery.
CRM	Certified Reference Material - reported as percent recovery.
Method Blank	In the case of solid samples these are performed on laboratory certified clean sands and in the case of water samples these are performed on de-ionised water.
Surr - Surrogate	The addition of a like compound to the analyte target and reported as percentage recovery.
Duplicate	A second piece of analysis from the same sample and reported in the same units as the result to show comparison.
USEPA	United States Environmental Protection Agency
APHA	American Public Health Association
TCLP	Toxicity Characteristic Leaching Procedure
COC	Chain of Custody
SRA	Sample Receipt Advice
QSM	US Department of Defense Quality Systems Manual Version 5.3
CP	Client Parent - QC was performed on samples pertaining to this report
NCP	Non-Client Parent - QC performed on samples not pertaining to this report, QC is representative of the sequence or batch that client samples were analysed within.
TEQ	Toxic Equivalency Quotient

QC - Acceptance Criteria

RPD Duplicates: Global RPD Duplicates Acceptance Criteria is 30% however the following acceptance guidelines are equally applicable:

Results <10 times the LOR : No Limit

Results between 10-20 times the LOR : RPD must lie between 0-50%

Results >20 times the LOR : RPD must lie between 0-30%

Surrogate Recoveries: Recoveries must lie between 20-130% Phenols & 50-150% PFASs

PFAS field samples that contain surrogate recoveries in excess of the QC limit designated in QSM 5.3 where no positive PFAS results have been reported have been reviewed and no data was affected.

WA DWER (n=10): PFBA, PFPeA, PFHxA, PFHpA, PFOA, PFBS, PFHxS, PFOS, 6:2 FTSA, 8:2 FTSA

QC Data General Comments

- Where a result is reported as a less than (<), higher than the nominated LOR, this is due to either matrix interference, extract dilution required due to interferences or contaminant levels within the sample, high moisture content or insufficient sample provided.
- Duplicate data shown within this report that states the word "BATCH" is a Batch Duplicate from outside of your sample batch, but within the laboratory sample batch at a 1:10 ratio. The Parent and Duplicate data shown is not data from your samples.
- Organochlorine Pesticide analysis - where reporting LCS data, Toxaphene & Chlordane are not added to the LCS.
- Organochlorine Pesticide analysis - where reporting Spike data, Toxaphene is not added to the Spike.
- Total Recoverable Hydrocarbons - where reporting Spike & LCS data, a single spike of commercial Hydrocarbon products in the range of C12-C30 is added and it's Total Recovery is reported in the C10-C14 cell of the Report.
- pH and Free Chlorine analysed in the laboratory - Analysis on this test must begin within 30 minutes of sampling. Therefore laboratory analysis is unlikely to be completed within holding time. Analysis will begin as soon as possible after sample receipt.
- Recovery Data (Spikes & Surrogates) - where chromatographic interference does not allow the determination of Recovery the term "INT" appears against that analyte.
- Polychlorinated Biphenyls are spiked only using Aroclor 1260 in Matrix Spikes and LCS.
- For Matrix Spikes and LCS results a dash " - " in the report means that the specific analyte was not added to the QC sample.
- Duplicate RPDs are calculated from raw analytical data thus it is possible to have two sets of data.

Quality Control Results

Comments**Sample Integrity**

Custody Seals Intact (if used)	N/A
Attempt to Chill was evident	No
Sample correctly preserved	Yes
Appropriate sample containers have been used	Yes
Sample containers for volatile analysis received with minimal headspace	Yes
Samples received within HoldingTime	Yes
Some samples have been subcontracted	No

Authorised By

Andrew Black Analytical Services Manager
Gabriele Cordero Senior Analyst-Metal (NSW)

**Glenn Jackson
General Manager**

Final report - this Report replaces any previously issued Report

- Indicates Not Requested

* Indicates NATA accreditation does not cover the performance of this service

Measurement uncertainty of test data is available on request or please [click here](#).

Eurofins shall not be liable for loss, cost, damages or expenses incurred by the client, or any other person or company, resulting from the use of any information or interpretation given in this report. In no case shall Eurofins be liable for consequential damages including, but not limited to, lost profits, damages for failure to meet deadlines and lost production arising from this report. This document shall not be reproduced except in full and relates only to the items tested. Unless indicated otherwise, the tests were performed on the samples as received.

Ramboll Environ Australia Pty Ltd
 Level 3/100 Pacific Highway
 North Sydney
 NSW 2060



NATA Accredited
 Accreditation Number 1261
 Site Number 18217

Accredited for compliance with ISO/IEC 17025 – Testing
 The results of the tests, calibrations and/or
 measurements included in this document are traceable
 to Australian/national standards.

Attention: Stephen Maxwell

Report 717021-W
 Project name QA/QC
 Project ID 318000780
 Received Date May 01, 2020

Client Sample ID			R01_270420	R02_280420	R03_290420	R04_290420
Sample Matrix			Water	Water	Water	Water
Eurofins Sample No.			S20-My01510	S20-My01511	S20-My01512	S20-My01513
Date Sampled			Apr 27, 2020	Apr 28, 2020	Apr 29, 2020	Apr 29, 2020
Test/Reference	LOR	Unit				
Heavy Metals						
Aluminium	0.05	mg/L	0.20	0.50	0.13	< 0.05
Arsenic	0.001	mg/L	< 0.001	< 0.001	< 0.001	< 0.001
Barium	0.02	mg/L	< 0.02	< 0.02	< 0.02	< 0.02
Beryllium	0.001	mg/L	< 0.001	< 0.001	< 0.001	< 0.001
Cadmium	0.0002	mg/L	< 0.0002	< 0.0002	< 0.0002	< 0.0002
Chromium	0.001	mg/L	0.001	0.002	0.002	0.001
Cobalt	0.001	mg/L	< 0.001	< 0.001	< 0.001	< 0.001
Copper	0.001	mg/L	0.014	0.005	0.002	< 0.001
Iron	0.05	mg/L	0.43	0.59	0.26	< 0.05
Lead	0.001	mg/L	0.002	0.003	0.002	< 0.001
Manganese	0.005	mg/L	0.008	0.074	0.018	< 0.005
Mercury	0.0001	mg/L	< 0.0001	< 0.0001	< 0.0001	< 0.0001
Nickel	0.001	mg/L	< 0.001	< 0.001	< 0.001	< 0.001
Zinc	0.005	mg/L	0.011	0.009	0.015	0.012

Client Sample ID			R05_300420	R06_290420	R07_290420
Sample Matrix			Water	Water	Water
Eurofins Sample No.			S20-My01514	S20-My01515	S20-My01516
Date Sampled			Apr 30, 2020	Apr 30, 2020	Apr 30, 2020
Test/Reference	LOR	Unit			
Heavy Metals					
Aluminium	0.05	mg/L	0.31	< 0.05	< 0.05
Arsenic	0.001	mg/L	< 0.001	< 0.001	< 0.001
Barium	0.02	mg/L	< 0.02	< 0.02	< 0.02
Beryllium	0.001	mg/L	< 0.001	< 0.001	< 0.001
Cadmium	0.0002	mg/L	0.0002	< 0.0002	< 0.0002
Chromium	0.001	mg/L	0.001	< 0.001	< 0.001
Cobalt	0.001	mg/L	< 0.001	< 0.001	< 0.001
Copper	0.001	mg/L	0.009	< 0.001	< 0.001
Iron	0.05	mg/L	0.29	< 0.05	< 0.05
Lead	0.001	mg/L	0.010	< 0.001	< 0.001
Manganese	0.005	mg/L	0.031	< 0.005	< 0.005
Mercury	0.0001	mg/L	< 0.0001	< 0.0001	< 0.0001
Nickel	0.001	mg/L	0.001	< 0.001	< 0.001
Zinc	0.005	mg/L	0.10	< 0.005	< 0.005

Sample History

Where samples are submitted/analysed over several days, the last date of extraction and analysis is reported.

A recent review of our LIMS has resulted in the correction or clarification of some method identifications. Due to this, some of the method reference information on reports has changed. However, no substantive change has been made to our laboratory methods, and as such there is no change in the validity of current or previous results.

If the date and time of sampling are not provided, the Laboratory will not be responsible for compromised results should testing be performed outside the recommended holding time.

Description	Testing Site	Extracted	Holding Time
Heavy Metals - Method: LTM-MET-3040 Metals in Waters, Soils & Sediments by ICP-MS	Sydney	May 05, 2020	180 Days
Mercury - Method: LTM-MET-3040 Metals in Waters, Soils & Sediments by ICP-MS	Sydney	May 05, 2020	28 Days

Australia

Melbourne
6 Monterey Road
Dandenong South VIC 3175
Phone : +61 3 8564 5000
NATA # 1261
Site # 1254 & 14271

Sydney
Unit F3, Building F
16 Mars Road
Lane Cove West NSW 2066
Phone : +61 2 9900 8400
NATA # 1261 Site # 18217

Brisbane
1/21 Smallwood Place
Murarie QLD 4172
Phone : +61 7 3902 4600
NATA # 1261 Site # 20794

Perth
2/91 Leach Highway
Kewdale WA 6105
Phone : +61 8 9251 9600
NATA # 1261
Site # 23736

New Zealand

Auckland
35 O'Rorke Road
Penrose, Auckland 1061
Phone : +64 9 526 45 51
IANZ # 1327

Christchurch
43 Detroit Drive
Rolleston, Christchurch 7675
Phone : 0800 856 450
IANZ # 1290

Company Name: Ramboll Australia Pty Ltd
Address: Level 3/100 Pacific Highway
North Sydney
NSW 2060

Order No.:
Report #: 717021
Phone: 02 9954 8118
Fax: 02 9954 8150

Received: May 1, 2020 12:00 PM
Due: May 8, 2020
Priority: 5 Day
Contact Name: Stephen Maxwell

Project Name: QA/QC
Project ID: 318000780

Eurofins Analytical Services Manager : Andrew Black

Sample Detail						Aluminium	Arsenic	Barium	Beryllium	Cadmium	Chromium	Cobalt	Copper	HOLD	Iron	Lead	Manganese	Mercury	Nickel	Zinc	
Melbourne Laboratory - NATA Site # 1254 & 14271																					
Sydney Laboratory - NATA Site # 18217						X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X
Brisbane Laboratory - NATA Site # 20794																					
Perth Laboratory - NATA Site # 23736																					
External Laboratory																					
No	Sample ID	Sample Date	Sampling Time	Matrix	LAB ID																
1	DSWAB_BLA NK1(W)	Apr 28, 2020		Wipes	S20-My01504											X					
2	DSWAB_BLA NK1(G)	Apr 28, 2020		Wipes	S20-My01505											X					
3	DSWAB_BLA NK2(W)	Apr 29, 2020		Wipes	S20-My01506											X					
4	DSWAB_BLA NK2(G)	Apr 29, 2020		Wipes	S20-My01507											X					
5	DSWAB_BLA NK3(G)	Apr 30, 2020		Wipes	S20-My01508											X					
6	DSWAB_BLA NK3(W)	Apr 30, 2020		Wipes	S20-My01509											X					

Australia

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NATA # 1261 Site # 20794

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Kewdale WA 6105
Phone : +61 8 9251 9600
NATA # 1261
Site # 23736

New Zealand

Auckland
35 O'Rorke Road
Penrose, Auckland 1061
Phone : +64 9 526 45 51
IANZ # 1327

Christchurch
43 Detroit Drive
Rolleston, Christchurch 7675
Phone : 0800 856 450
IANZ # 1290

Company Name: Ramboll Australia Pty Ltd
Address: Level 3/100 Pacific Highway
North Sydney
NSW 2060

Project Name: QA/QC
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Received: May 1, 2020 12:00 PM
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Contact Name: Stephen Maxwell

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Sample Detail						Aluminium	Arsenic	Barium	Beryllium	Cadmium	Chromium	Cobalt	Copper	HOLD	Iron	Lead	Manganese	Mercury	Nickel	Zinc	
Melbourne Laboratory - NATA Site # 1254 & 14271																					
Sydney Laboratory - NATA Site # 18217						X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X
Brisbane Laboratory - NATA Site # 20794																					
Perth Laboratory - NATA Site # 23736																					
7	R01_270420	Apr 27, 2020		Water	S20-My01510	X	X	X	X	X	X	X	X		X	X	X	X	X	X	
8	R02_280420	Apr 28, 2020		Water	S20-My01511	X	X	X	X	X	X	X	X		X	X	X	X	X	X	
9	R03_290420	Apr 29, 2020		Water	S20-My01512	X	X	X	X	X	X	X	X		X	X	X	X	X	X	
10	R04_290420	Apr 29, 2020		Water	S20-My01513	X	X	X	X	X	X	X	X		X	X	X	X	X	X	
11	R05_300420	Apr 30, 2020		Water	S20-My01514	X	X	X	X	X	X	X	X		X	X	X	X	X	X	
12	R06_290420	Apr 30, 2020		Water	S20-My01515	X	X	X	X	X	X	X	X		X	X	X	X	X	X	
13	R07_290420	Apr 30, 2020		Water	S20-My01516	X	X	X	X	X	X	X	X		X	X	X	X	X	X	
14	DSWAB_BLA NK3(W)	Apr 29, 2020		Wipes	S20-My01742									X							
15	DSWAB_BLA NK3(G)	Apr 29, 2020		Wipes	S20-My01743									X							
Test Counts						7	7	7	7	7	7	7	7	2	7	13	7	7	7	7	

Internal Quality Control Review and Glossary
General

- Laboratory QC results for Method Blanks, Duplicates, Matrix Spikes, and Laboratory Control Samples follows guidelines delineated in the National Environment Protection (Assessment of Site Contamination) Measure 1999, as amended May 2013 and are included in this QC report where applicable. Additional QC data may be available on request.
- All soil/sediment/solid results are reported on a dry basis, unless otherwise stated.
- All biota/food results are reported on a wet weight basis on the edible portion, unless otherwise stated.
- Actual LORs are matrix dependant. Quoted LORs may be raised where sample extracts are diluted due to interferences.
- Results are uncorrected for matrix spikes or surrogate recoveries except for PFAS compounds.
- SVOC analysis on waters are performed on homogenised, unfiltered samples, unless noted otherwise.
- Samples were analysed on an 'as received' basis.
- Information identified on this report with blue colour, indicates data provided by customer, that may have an impact on the results.
- This report replaces any interim results previously issued.

Holding Times

Please refer to 'Sample Preservation and Container Guide' for holding times (QS3001).

For samples received on the last day of holding time, notification of testing requirements should have been received at least 6 hours prior to sample receipt deadlines as stated on the SRA.

If the Laboratory did not receive the information in the required timeframe, and regardless of any other integrity issues, suitably qualified results may still be reported.

Holding times apply from the date of sampling, therefore compliance to these may be outside the laboratory's control.

For VOCs containing vinyl chloride, styrene and 2-chloroethyl vinyl ether the holding time is 7 days however for all other VOCs such as BTEX or C6-10 TRH then the holding time is 14 days.

****NOTE:** pH duplicates are reported as a range NOT as RPD

Units

mg/kg: milligrams per kilogram

mg/L: milligrams per litre

ug/L: micrograms per litre

ppm: Parts per million

ppb: Parts per billion

%: Percentage

org/100mL: Organisms per 100 millilitres

NTU: Nephelometric Turbidity Units

MPN/100mL: Most Probable Number of organisms per 100 millilitres

Terms

Dry	Where a moisture has been determined on a solid sample the result is expressed on a dry basis.
LOR	Limit of Reporting.
SPIKE	Addition of the analyte to the sample and reported as percentage recovery.
RPD	Relative Percent Difference between two Duplicate pieces of analysis.
LCS	Laboratory Control Sample - reported as percent recovery.
CRM	Certified Reference Material - reported as percent recovery.
Method Blank	In the case of solid samples these are performed on laboratory certified clean sands and in the case of water samples these are performed on de-ionised water.
Surr - Surrogate	The addition of a like compound to the analyte target and reported as percentage recovery.
Duplicate	A second piece of analysis from the same sample and reported in the same units as the result to show comparison.
USEPA	United States Environmental Protection Agency
APHA	American Public Health Association
TCLP	Toxicity Characteristic Leaching Procedure
COC	Chain of Custody
SRA	Sample Receipt Advice
QSM	US Department of Defense Quality Systems Manual Version 5.3
CP	Client Parent - QC was performed on samples pertaining to this report
NCP	Non-Client Parent - QC performed on samples not pertaining to this report, QC is representative of the sequence or batch that client samples were analysed within.
TEQ	Toxic Equivalency Quotient

QC - Acceptance Criteria

RPD Duplicates: Global RPD Duplicates Acceptance Criteria is 30% however the following acceptance guidelines are equally applicable:

Results <10 times the LOR : No Limit

Results between 10-20 times the LOR : RPD must lie between 0-50%

Results >20 times the LOR : RPD must lie between 0-30%

Surrogate Recoveries: Recoveries must lie between 20-130% Phenols & 50-150% PFASs

PFAS field samples that contain surrogate recoveries in excess of the QC limit designated in QSM 5.3 where no positive PFAS results have been reported have been reviewed and no data was affected.

WA DWER (n=10): PFBA, PFPeA, PFHxA, PFHpA, PFOA, PFBS, PFHxS, PFOS, 6:2 FTSA, 8:2 FTSA

QC Data General Comments

- Where a result is reported as a less than (<), higher than the nominated LOR, this is due to either matrix interference, extract dilution required due to interferences or contaminant levels within the sample, high moisture content or insufficient sample provided.
- Duplicate data shown within this report that states the word "BATCH" is a Batch Duplicate from outside of your sample batch, but within the laboratory sample batch at a 1:10 ratio. The Parent and Duplicate data shown is not data from your samples.
- Organochlorine Pesticide analysis - where reporting LCS data, Toxaphene & Chlordane are not added to the LCS.
- Organochlorine Pesticide analysis - where reporting Spike data, Toxaphene is not added to the Spike.
- Total Recoverable Hydrocarbons - where reporting Spike & LCS data, a single spike of commercial Hydrocarbon products in the range of C12-C30 is added and it's Total Recovery is reported in the C10-C14 cell of the Report.
- pH and Free Chlorine analysed in the laboratory - Analysis on this test must begin within 30 minutes of sampling. Therefore laboratory analysis is unlikely to be completed within holding time. Analysis will begin as soon as possible after sample receipt.
- Recovery Data (Spikes & Surrogates) - where chromatographic interference does not allow the determination of Recovery the term "INT" appears against that analyte.
- Polychlorinated Biphenyls are spiked only using Aroclor 1260 in Matrix Spikes and LCS.
- For Matrix Spikes and LCS results a dash " - " in the report means that the specific analyte was not added to the QC sample.
- Duplicate RPDs are calculated from raw analytical data thus it is possible to have two sets of data.

Quality Control Results

Test	Units	Result 1			Acceptance Limits	Pass Limits	Qualifying Code	
Method Blank								
Heavy Metals								
Aluminium	mg/L	< 0.05			0.05	Pass		
Arsenic	mg/L	< 0.001			0.001	Pass		
Barium	mg/L	< 0.02			0.02	Pass		
Beryllium	mg/L	< 0.001			0.001	Pass		
Cadmium	mg/L	< 0.0002			0.0002	Pass		
Chromium	mg/L	< 0.001			0.001	Pass		
Cobalt	mg/L	< 0.001			0.001	Pass		
Copper	mg/L	< 0.001			0.001	Pass		
Iron	mg/L	< 0.05			0.05	Pass		
Lead	mg/L	< 0.001			0.001	Pass		
Manganese	mg/L	< 0.005			0.005	Pass		
Mercury	mg/L	< 0.0001			0.0001	Pass		
Nickel	mg/L	< 0.001			0.001	Pass		
Zinc	mg/L	< 0.005			0.005	Pass		
LCS - % Recovery								
Heavy Metals								
Aluminium	%	99			70-130	Pass		
Arsenic	%	97			70-130	Pass		
Barium	%	90			70-130	Pass		
Beryllium	%	91			70-130	Pass		
Cadmium	%	93			70-130	Pass		
Chromium	%	98			70-130	Pass		
Cobalt	%	98			70-130	Pass		
Copper	%	97			70-130	Pass		
Iron	%	98			70-130	Pass		
Lead	%	100			70-130	Pass		
Manganese	%	95			70-130	Pass		
Mercury	%	109			70-130	Pass		
Nickel	%	98			70-130	Pass		
Zinc	%	93			70-130	Pass		
Test	Lab Sample ID	QA Source	Units	Result 1		Acceptance Limits	Pass Limits	Qualifying Code
Spike - % Recovery								
Heavy Metals								
				Result 1				
Aluminium	S20-My01516	CP	%	98		70-130	Pass	
Arsenic	S20-My01516	CP	%	98		70-130	Pass	
Barium	S20-My01516	CP	%	92		70-130	Pass	
Beryllium	S20-My01516	CP	%	91		70-130	Pass	
Cadmium	S20-My01516	CP	%	95		70-130	Pass	
Chromium	S20-My01516	CP	%	101		70-130	Pass	
Cobalt	S20-My01516	CP	%	101		70-130	Pass	
Copper	S20-My01516	CP	%	100		70-130	Pass	
Iron	S20-My01516	CP	%	99		70-130	Pass	
Lead	S20-My01516	CP	%	104		70-130	Pass	
Manganese	S20-My01516	CP	%	97		70-130	Pass	
Mercury	S20-My01516	CP	%	115		70-130	Pass	
Nickel	S20-My01516	CP	%	102		70-130	Pass	
Zinc	S20-My01516	CP	%	97		70-130	Pass	

Test	Lab Sample ID	QA Source	Units	Result 1			Acceptance Limits	Pass Limits	Qualifying Code
Duplicate									
Heavy Metals				Result 1	Result 2	RPD			
Aluminium	S20-My01341	NCP	mg/L	0.06	0.06	1.0	30%	Pass	
Arsenic	S20-My01341	NCP	mg/L	< 0.001	0.001	25	30%	Pass	
Barium	S20-My01341	NCP	mg/L	0.08	0.09	6.0	30%	Pass	
Beryllium	S20-My01341	NCP	mg/L	< 0.001	< 0.001	<1	30%	Pass	
Cadmium	S20-My01341	NCP	mg/L	0.0004	0.0004	<1	30%	Pass	
Chromium	S20-My01341	NCP	mg/L	< 0.001	< 0.001	<1	30%	Pass	
Cobalt	S20-My01341	NCP	mg/L	0.002	0.002	11	30%	Pass	
Copper	S20-My01341	NCP	mg/L	0.006	0.006	2.0	30%	Pass	
Iron	S20-My01341	NCP	mg/L	0.75	0.75	<1	30%	Pass	
Lead	S20-My01341	NCP	mg/L	0.006	0.006	<1	30%	Pass	
Manganese	S20-My01341	NCP	mg/L	0.26	0.26	<1	30%	Pass	
Mercury	S20-My01341	NCP	mg/L	< 0.0001	< 0.0001	<1	30%	Pass	
Nickel	S20-My01341	NCP	mg/L	< 0.001	< 0.001	<1	30%	Pass	
Zinc	S20-My01341	NCP	mg/L	0.16	0.16	4.0	30%	Pass	

Comments**Sample Integrity**

Custody Seals Intact (if used)	N/A
Attempt to Chill was evident	No
Sample correctly preserved	Yes
Appropriate sample containers have been used	Yes
Sample containers for volatile analysis received with minimal headspace	Yes
Samples received within HoldingTime	Yes
Some samples have been subcontracted	No

Authorised By

Andrew Black Analytical Services Manager
Gabriele Cordero Senior Analyst-Metal (NSW)

**Glenn Jackson
General Manager**

Final report - this Report replaces any previously issued Report

- Indicates Not Requested

* Indicates NATA accreditation does not cover the performance of this service

Measurement uncertainty of test data is available on request or please [click here](#).

Eurofins shall not be liable for loss, cost, damages or expenses incurred by the client, or any other person or company, resulting from the use of any information or interpretation given in this report. In no case shall Eurofins be liable for consequential damages including, but not limited to, lost profits, damages for failure to meet deadlines and lost production arising from this report. This document shall not be reproduced except in full and relates only to the items tested. Unless indicated otherwise, the tests were performed on the samples as received.

CHAIN OF CUSTODY RECORD

Unit 3 Bldg 1 - 16 Mans Rd, Lane Cove West, NSW 2066
07 9820 9400 EurofinsSampleSW@eurofins.com

Sydney Laboratory
Unit 3 Bldg 1 - 16 Mans Rd, Lane Cove West, NSW 2066
07 9820 9400 EurofinsSampleSW@eurofins.com

Brisbane Laboratory
Unit 1, 21 Simwood St, Murrumbidgee, QLD 4172
07 3902 4800 EurofinsSampleB@eurofins.com

Perth Laboratory
Unit 2 of 1 Leach Highway, Kewdale, WA 6105
08 9211 9800 EurofinsSampleWA@eurofins.com

Melbourne Laboratory
2 Kington Town Close, Oakleigh, VIC 3166
03 8564 5100 EurofinsSampleVIC@eurofins.com

Company	Ramboll	Project No	318000780	Project Manager	Stephen Maxwell	Sampler(s)	AC	Handed over by	SM
Address	50 Globe Road the Junction	EOD Format	(E3dA, EQU5)	Excel and PDF		Email for Invoice	smaxwell@ramboll.com asiapac-accounts@ramboll.com		
Contact Name	Stephen Maxwell	Email for Results					smaxwell@ramboll.com blackwell@ramboll.com rondon@ramboll.com shyde@ramboll.com		
Phone No									
Special Directions		Analysis	Lead						
Purchase Order		(Note: Where metals are requested, please specify 'Total' or 'Filtered'. SUTE code must be used to allow SUTE pricing)							
Quote ID No	193913R3AMNL1								

No	Client Sample ID	Sampled Date/Time (dd/mm/yyyy (S) Year (M))	Matrix (Soil (S) Water (W))	Method of Shipment	Counter #	Hand Delivered	Postal	Name	Signature	Date	Time	Report No
1	D01_010420	1/04/20	S	<input checked="" type="checkbox"/>								
2	T01_010420	1/04/20	S	<input checked="" type="checkbox"/>								
3	D02_010420	1/04/20	S	<input checked="" type="checkbox"/>								
4	T02_010420	1/04/20	Soil	<input checked="" type="checkbox"/>								
5	D03_010420	1/04/20	Soil	<input checked="" type="checkbox"/>								
6	T03_010420	1/04/20	Soil	<input checked="" type="checkbox"/>								
7	RO1_010420	1/04/20	Water	<input checked="" type="checkbox"/>								
8	RO2_010420	1/04/20	Water	<input checked="" type="checkbox"/>								
9	D01_020420	2/04/20	S	<input checked="" type="checkbox"/>								
10	T01_020420	2/04/20	S	<input checked="" type="checkbox"/>								
		Total Counts			10							

Method of Shipment	<input type="checkbox"/> Courier #	<input type="checkbox"/> Hand Delivered	<input type="checkbox"/> Postal	Signature	Date	Time
Eurofins mgf Laboratory Use Only	Received By	Signature	Signature	Date	Time	Temperature
	Received By	Signature	Signature	Date	Time	Report No

Submission of samples to the laboratory will be deemed an acceptance of Eurofins | mgf Standard Terms and Conditions unless agreed otherwise. A copy of Eurofins | mgf Standard Terms and Conditions is available on request.
Eurofins Environment Testing Australia Pty Ltd trading as Eurofins | mgf

25.50°C
11:32.6

Melbourne

6 Monterey Road
Dandenong South Vic 3175
Phone : +61 3 8564 5000
NATA # 1261
Site # 1254 & 14271

Sydney

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NATA # 1261 Site # 20794

Perth

2/91 Leach Highway
Kewdale WA 6105
Phone : +61 8 9251 9600
NATA # 1261 Site # 23736

Sample Receipt Advice

Company name: **Ramboll Australia Pty Ltd**

Contact name: **Stephen Maxwell**

Project name: **318000780**

COC number: **Not provided**

Turn around time: **5 Day**

Date/Time received: **Apr 9, 2020 6:14 PM**

Eurofins reference: **713316**

Sample information

- A detailed list of analytes logged into our LIMS, is included in the attached summary table.
- All samples have been received as described on the above COC.
- COC has been completed correctly.
- Attempt to chill was evident.
- Appropriately preserved sample containers have been used.
- All samples were received in good condition.
- Samples have been provided with adequate time to commence analysis in accordance with the relevant holding times.

- Appropriate sample containers have been used.
- Sample containers for volatile analysis received with zero headspace.
- Split sample sent to requested external lab.
- Some samples have been subcontracted.
- N/A Custody Seals intact (if used).

Notes

Samples; T01_010420 (Jar), T02_010420 (Jar), T03_010420 (Jar), T01_020420 (Jar) sent to ALS.

Contact notes

If you have any questions with respect to these samples please contact:

Andrew Black on Phone : (+61) 2 9900 8490 or by e.mail: AndrewBlack@eurofins.com

Results will be delivered electronically via e.mail to Stephen Maxwell - smaxwell@ramboll.com.

Note: A copy of these results will also be delivered to the general Ramboll Australia Pty Ltd email address.

Australia

Melbourne
6 Monterey Road
Dandenong South VIC 3175
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Site # 1254 & 14271

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NATA # 1261 Site # 20794

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NATA # 1261
Site # 23736

New Zealand

Auckland
35 O'Rorke Road
Penrose, Auckland 1061
Phone : +64 9 526 45 51
IANZ # 1327

Christchurch
43 Detroit Drive
Rolleston, Christchurch 7675
Phone : 0800 856 450
IANZ # 1290

Company Name: Ramboll Australia Pty Ltd
Address: Level 3/100 Pacific Highway
North Sydney
NSW 2060
Project Name: 318000780

Order No.:
Report #: 713316
Phone: 02 9954 8118
Fax: 02 9954 8150

Received: Apr 9, 2020 6:14 PM
Due: Apr 20, 2020
Priority: 5 Day
Contact Name: Stephen Maxwell

Eurofins Analytical Services Manager : Andrew Black

Sample Detail						Lead	Moisture Set
Melbourne Laboratory - NATA Site # 1254 & 14271							
Sydney Laboratory - NATA Site # 18217						X	X
Brisbane Laboratory - NATA Site # 20794							
Perth Laboratory - NATA Site # 23736							
External Laboratory							
No	Sample ID	Sample Date	Sampling Time	Matrix	LAB ID		
1	D01_010420	Apr 01, 2020		Soil	S20-Ap16790	X	X
2	D02_010420	Apr 01, 2020		Soil	S20-Ap16791	X	X
3	D03_010420	Apr 01, 2020		Soil	S20-Ap16792	X	X
4	R01_010420	Apr 01, 2020		Water	S20-Ap16793	X	
5	R02_010420	Apr 01, 2020		Water	S20-Ap16794	X	
6	D01_020420	Apr 01, 2020		Soil	S20-Ap16795	X	X
Test Counts						6	4

Ramboll Environ Australia Pty Ltd
 Level 3/100 Pacific Highway
 North Sydney
 NSW 2060



NATA Accredited
Accreditation Number 1261
Site Number 18217

Accredited for compliance with ISO/IEC 17025 – Testing
 The results of the tests, calibrations and/or
 measurements included in this document are traceable
 to Australian/national standards.

Attention: **Stephen Maxwell**

Report **713316-S**
 Project name **318000780**
 Received Date **Apr 09, 2020**

Client Sample ID			D01_010420	D02_010420	D03_010420	D01_020420
Sample Matrix			Soil	Soil	Soil	Soil
Eurofins Sample No.			S20-Ap16790	S20-Ap16791	S20-Ap16792	S20-Ap16795
Date Sampled			Apr 01, 2020	Apr 01, 2020	Apr 01, 2020	Apr 01, 2020
Test/Reference	LOR	Unit				
Heavy Metals						
Lead	5	mg/kg	17	27	17	8.0
% Moisture	1	%	12	10	10	21

Sample History

Where samples are submitted/analysed over several days, the last date of extraction and analysis is reported.

A recent review of our LIMS has resulted in the correction or clarification of some method identifications. Due to this, some of the method reference information on reports has changed. However, no substantive change has been made to our laboratory methods, and as such there is no change in the validity of current or previous results.

If the date and time of sampling are not provided, the Laboratory will not be responsible for compromised results should testing be performed outside the recommended holding time.

Description

Heavy Metals

- Method: LTM-MET-3040 Metals in Waters, Soils & Sediments by ICP-MS

% Moisture

- Method: LTM-GEN-7080 Moisture

Testing Site

Sydney

Sydney

Extracted

Apr 17, 2020

Apr 09, 2020

Holding Time

180 Days

14 Days

Australia

Melbourne
6 Monterey Road
Dandenong South VIC 3175
Phone : +61 3 8564 5000
NATA # 1261
Site # 1254 & 14271

Sydney
Unit F3, Building F
16 Mars Road
Lane Cove West NSW 2066
Phone : +61 2 9900 8400
NATA # 1261 Site # 18217

Brisbane
1/21 Smallwood Place
Murarrie QLD 4172
Phone : +61 7 3902 4600
NATA # 1261 Site # 20794

Perth
2/91 Leach Highway
Kewdale WA 6105
Phone : +61 8 9251 9600
NATA # 1261
Site # 23736

New Zealand

Auckland
35 O'Rorke Road
Penrose, Auckland 1061
Phone : +64 9 526 45 51
IANZ # 1327

Christchurch
43 Detroit Drive
Rolleston, Christchurch 7675
Phone : 0800 856 450
IANZ # 1290

Company Name: Ramboll Australia Pty Ltd
Address: Level 3/100 Pacific Highway
North Sydney
NSW 2060
Project Name: 318000780

Order No.:
Report #: 713316
Phone: 02 9954 8118
Fax: 02 9954 8150

Received: Apr 9, 2020 6:14 PM
Due: Apr 20, 2020
Priority: 5 Day
Contact Name: Stephen Maxwell

Eurofins Analytical Services Manager : Andrew Black

Sample Detail						Lead	Moisture Set
Melbourne Laboratory - NATA Site # 1254 & 14271							
Sydney Laboratory - NATA Site # 18217						X	X
Brisbane Laboratory - NATA Site # 20794							
Perth Laboratory - NATA Site # 23736							
External Laboratory							
No	Sample ID	Sample Date	Sampling Time	Matrix	LAB ID		
1	D01_010420	Apr 01, 2020		Soil	S20-Ap16790	X	X
2	D02_010420	Apr 01, 2020		Soil	S20-Ap16791	X	X
3	D03_010420	Apr 01, 2020		Soil	S20-Ap16792	X	X
4	R01_010420	Apr 01, 2020		Water	S20-Ap16793	X	
5	R02_010420	Apr 01, 2020		Water	S20-Ap16794	X	
6	D01_020420	Apr 01, 2020		Soil	S20-Ap16795	X	X
Test Counts						6	4

Internal Quality Control Review and Glossary

General

- Laboratory QC results for Method Blanks, Duplicates, Matrix Spikes, and Laboratory Control Samples follows guidelines delineated in the National Environment Protection (Assessment of Site Contamination) Measure 1999, as amended May 2013 and are included in this QC report where applicable. Additional QC data may be available on request.
- All soil/sediment/solid results are reported on a dry basis, unless otherwise stated.
- All biota/food results are reported on a wet weight basis on the edible portion, unless otherwise stated.
- Actual LORs are matrix dependant. Quoted LORs may be raised where sample extracts are diluted due to interferences.
- Results are uncorrected for matrix spikes or surrogate recoveries except for PFAS compounds.
- SVOC analysis on waters are performed on homogenised, unfiltered samples, unless noted otherwise.
- Samples were analysed on an 'as received' basis.
- Information identified on this report with blue colour, indicates data provided by customer, that may have an impact on the results.
- This report replaces any interim results previously issued.

Holding Times

Please refer to 'Sample Preservation and Container Guide' for holding times (QS3001).

For samples received on the last day of holding time, notification of testing requirements should have been received at least 6 hours prior to sample receipt deadlines as stated on the SRA.

If the Laboratory did not receive the information in the required timeframe, and regardless of any other integrity issues, suitably qualified results may still be reported.

Holding times apply from the date of sampling, therefore compliance to these may be outside the laboratory's control.

For VOCs containing vinyl chloride, styrene and 2-chloroethyl vinyl ether the holding time is 7 days however for all other VOCs such as BTEX or C6-10 TRH then the holding time is 14 days.

****NOTE:** pH duplicates are reported as a range NOT as RPD

Units

mg/kg: milligrams per kilogram

mg/L: milligrams per litre

ug/L: micrograms per litre

ppm: Parts per million

ppb: Parts per billion

%: Percentage

org/100mL: Organisms per 100 millilitres

NTU: Nephelometric Turbidity Units

MPN/100mL: Most Probable Number of organisms per 100 millilitres

Terms

Dry	Where a moisture has been determined on a solid sample the result is expressed on a dry basis.
LOR	Limit of Reporting.
SPIKE	Addition of the analyte to the sample and reported as percentage recovery.
RPD	Relative Percent Difference between two Duplicate pieces of analysis.
LCS	Laboratory Control Sample - reported as percent recovery.
CRM	Certified Reference Material - reported as percent recovery.
Method Blank	In the case of solid samples these are performed on laboratory certified clean sands and in the case of water samples these are performed on de-ionised water.
Surr - Surrogate	The addition of a like compound to the analyte target and reported as percentage recovery.
Duplicate	A second piece of analysis from the same sample and reported in the same units as the result to show comparison.
USEPA	United States Environmental Protection Agency
APHA	American Public Health Association
TCLP	Toxicity Characteristic Leaching Procedure
COC	Chain of Custody
SRA	Sample Receipt Advice
QSM	US Department of Defense Quality Systems Manual Version 5.3
CP	Client Parent - QC was performed on samples pertaining to this report
NCP	Non-Client Parent - QC performed on samples not pertaining to this report, QC is representative of the sequence or batch that client samples were analysed within.
TEQ	Toxic Equivalency Quotient

QC - Acceptance Criteria

RPD Duplicates: Global RPD Duplicates Acceptance Criteria is 30% however the following acceptance guidelines are equally applicable:

Results <10 times the LOR : No Limit

Results between 10-20 times the LOR : RPD must lie between 0-50%

Results >20 times the LOR : RPD must lie between 0-30%

Surrogate Recoveries: Recoveries must lie between 20-130% Phenols & 50-150% PFASs

PFAS field samples that contain surrogate recoveries in excess of the QC limit designated in QSM 5.3 where no positive PFAS results have been reported have been reviewed and no data was affected.

WA DWER (n=10): PFBA, PFPeA, PFHxA, PFHpA, PFOA, PFBS, PFHxS, PFOS, 6:2 FTSA, 8:2 FTSA

QC Data General Comments

- Where a result is reported as a less than (<), higher than the nominated LOR, this is due to either matrix interference, extract dilution required due to interferences or contaminant levels within the sample, high moisture content or insufficient sample provided.
- Duplicate data shown within this report that states the word "BATCH" is a Batch Duplicate from outside of your sample batch, but within the laboratory sample batch at a 1:10 ratio. The Parent and Duplicate data shown is not data from your samples.
- Organochlorine Pesticide analysis - where reporting LCS data, Toxaphene & Chlordane are not added to the LCS.
- Organochlorine Pesticide analysis - where reporting Spike data, Toxaphene is not added to the Spike.
- Total Recoverable Hydrocarbons - where reporting Spike & LCS data, a single spike of commercial Hydrocarbon products in the range of C12-C30 is added and it's Total Recovery is reported in the C10-C14 cell of the Report.
- pH and Free Chlorine analysed in the laboratory - Analysis on this test must begin within 30 minutes of sampling. Therefore laboratory analysis is unlikely to be completed within holding time. Analysis will begin as soon as possible after sample receipt.
- Recovery Data (Spikes & Surrogates) - where chromatographic interference does not allow the determination of Recovery the term "INT" appears against that analyte.
- Polychlorinated Biphenyls are spiked only using Aroclor 1260 in Matrix Spikes and LCS.
- For Matrix Spikes and LCS results a dash " - " in the report means that the specific analyte was not added to the QC sample.
- Duplicate RPDs are calculated from raw analytical data thus it is possible to have two sets of data.

Quality Control Results

Test				Units	Result 1		Acceptance Limits	Pass Limits	Qualifying Code	
Method Blank										
Heavy Metals										
Lead				mg/kg	< 5		5	Pass		
LCS - % Recovery										
Heavy Metals										
Lead				%	114		70-130	Pass		
Test	Lab Sample ID	QA Source	Units	Result 1			Acceptance Limits	Pass Limits	Qualifying Code	
Spike - % Recovery										
Heavy Metals										
Lead				S20-Ap16792	CP	%	118	70-130	Pass	
Test	Lab Sample ID	QA Source	Units	Result 1			Acceptance Limits	Pass Limits	Qualifying Code	
Duplicate										
Heavy Metals										
Lead				S20-Ap23765	NCP	mg/kg	49	36	31	30% Fail Q15
Duplicate										
					Result 1	Result 2	RPD			
% Moisture				S20-Ap16879	NCP	%	13	13	1.0	30% Pass

Comments
Sample Integrity

Custody Seals Intact (if used)	N/A
Attempt to Chill was evident	No
Sample correctly preserved	Yes
Appropriate sample containers have been used	Yes
Sample containers for volatile analysis received with minimal headspace	Yes
Samples received within HoldingTime	Yes
Some samples have been subcontracted	No

Qualifier Codes/Comments

Code	Description
Q15	The RPD reported passes Eurofins Environment Testing's QC - Acceptance Criteria as defined in the Internal Quality Control Review and Glossary page of this report.

Authorised By

Andrew Black	Analytical Services Manager
Gabriele Cordero	Senior Analyst-Metal (NSW)


**Glenn Jackson
General Manager**

Final report - this Report replaces any previously issued Report

- Indicates Not Requested

* Indicates NATA accreditation does not cover the performance of this service

Measurement uncertainty of test data is available on request or please [click here](#).

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Ramboll Environ Australia Pty Ltd
 Level 3/100 Pacific Highway
 North Sydney
 NSW 2060



NATA Accredited
Accreditation Number 1261
Site Number 18217

Accredited for compliance with ISO/IEC 17025 – Testing
 The results of the tests, calibrations and/or
 measurements included in this document are traceable
 to Australian/national standards.

Attention: **Stephen Maxwell**

Report **713316-W**
 Project name **318000780**
 Received Date **Apr 09, 2020**

Client Sample ID			R01_010420	R02_010420
Sample Matrix			Water	Water
Eurofins Sample No.			S20-Ap16793	S20-Ap16794
Date Sampled			Apr 01, 2020	Apr 01, 2020
Test/Reference	LOR	Unit		
Heavy Metals				
Lead	0.001	mg/L	< 0.001	0.002

Sample History

Where samples are submitted/analysed over several days, the last date of extraction and analysis is reported.

A recent review of our LIMS has resulted in the correction or clarification of some method identifications. Due to this, some of the method reference information on reports has changed. However, no substantive change has been made to our laboratory methods, and as such there is no change in the validity of current or previous results.

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Description

Heavy Metals

Testing Site

Sydney

Extracted

Apr 14, 2020

Holding Time

180 Days

- Method: LTM-MET-3040 Metals in Waters, Soils & Sediments by ICP-MS

Australia

Melbourne
6 Monterey Road
Dandenong South VIC 3175
Phone : +61 3 8564 5000
NATA # 1261
Site # 1254 & 14271

Sydney
Unit F3, Building F
16 Mars Road
Lane Cove West NSW 2066
Phone : +61 2 9900 8400
NATA # 1261 Site # 18217

Brisbane
1/21 Smallwood Place
Murarrie QLD 4172
Phone : +61 7 3902 4600
NATA # 1261 Site # 20794

Perth
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Kewdale WA 6105
Phone : +61 8 9251 9600
NATA # 1261
Site # 23736

New Zealand

Auckland
35 O'Rorke Road
Penrose, Auckland 1061
Phone : +64 9 526 45 51
IANZ # 1327

Christchurch
43 Detroit Drive
Rolleston, Christchurch 7675
Phone : 0800 856 450
IANZ # 1290

Company Name: Ramboll Australia Pty Ltd
Address: Level 3/100 Pacific Highway
North Sydney
NSW 2060
Project Name: 318000780

Order No.:
Report #: 713316
Phone: 02 9954 8118
Fax: 02 9954 8150

Received: Apr 9, 2020 6:14 PM
Due: Apr 20, 2020
Priority: 5 Day
Contact Name: Stephen Maxwell

Eurofins Analytical Services Manager : Andrew Black

Sample Detail						Lead	Moisture Set
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6	D01_020420	Apr 01, 2020		Soil	S20-Ap16795	X	X
Test Counts						6	4

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QC Data General Comments

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- Organochlorine Pesticide analysis - where reporting Spike data, Toxaphene is not added to the Spike.
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- Recovery Data (Spikes & Surrogates) - where chromatographic interference does not allow the determination of Recovery the term "INT" appears against that analyte.
- Polychlorinated Biphenyls are spiked only using Aroclor 1260 in Matrix Spikes and LCS.
- For Matrix Spikes and LCS results a dash " - " in the report means that the specific analyte was not added to the QC sample.
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Quality Control Results

Test				Units	Result 1			Acceptance Limits	Pass Limits	Qualifying Code	
Method Blank											
Heavy Metals											
Lead				mg/L	< 0.001			0.001	Pass		
LCS - % Recovery											
Heavy Metals											
Lead				%	95			70-130	Pass		
Test	Lab Sample ID	QA Source	Units	Result 1			Acceptance Limits	Pass Limits	Qualifying Code		
Spike - % Recovery											
Heavy Metals											
Lead				S20-Ap02122	NCP	%	103	70-130	Pass		
Duplicate											
Heavy Metals											
Lead				S20-Ap02120	NCP	mg/L	1.0	0.79	23	30%	Pass

Comments**Sample Integrity**

Custody Seals Intact (if used)	N/A
Attempt to Chill was evident	No
Sample correctly preserved	Yes
Appropriate sample containers have been used	Yes
Sample containers for volatile analysis received with minimal headspace	Yes
Samples received within HoldingTime	Yes
Some samples have been subcontracted	No

Authorised By

Andrew Black Analytical Services Manager
Gabriele Cordero Senior Analyst-Metal (NSW)

**Glenn Jackson
General Manager**

Final report - this Report replaces any previously issued Report

- Indicates Not Requested

* Indicates NATA accreditation does not cover the performance of this service

Measurement uncertainty of test data is available on request or please [click here](#).

Eurofins shall not be liable for loss, cost, damages or expenses incurred by the client, or any other person or company, resulting from the use of any information or interpretation given in this report. In no case shall Eurofins be liable for consequential damages including, but not limited to, lost profits, damages for failure to meet deadlines and lost production arising from this report. This document shall not be reproduced except in full and relates only to the items tested. Unless indicated otherwise, the tests were performed on the samples as received.



CHAIN OF CUSTODY RECORD

AMN 90 005 005 521

Sydney Laboratory
Unit F3 Bld F, 16 Mars Rd, Lane Cove West, NSW 2086
02 9902 8400 EnviroSampleNSW@eurofins.com

Brisbane Laboratory
Unit 1, 21 Smallwood Pl, Muramba, QLD 4172
07 3802 4600 EnviroSampleQLD@eurofins.com

Perth Laboratory
Unit 2, 51 Leach Highway, Kewdale WA 6105
08 9251 9900 EnviroSampleWA@eurofins.com

Melbourne Laboratory
2 Kingsdon Town Close, Oakleigh, VIC 3166
03 8564 5000 EnviroSampleVIC@eurofins.com

Company	Ramboll	Project No	318000780
Address	50 Glebe Road the Junction	Project Name	
Contact Name	Stephen Maxwell	Project Manager	Stephen Maxwell
Phone No		EDD Format	(ESdat, EQMS)
Special Directions		Excel and PDF	
Purchase Order		Sampler(s)	JK + RC
Quote ID No	180813RAMN_1	Handed over by	SM
		Email for Invoice	smaxwell@ramboll.com asiabac-accounts@ramboll.com
		Email for Results	smaxwell@ramboll.com rcondon@ramboll.com shyde@ramboll.com

Analyses
(Note: Where metals are requested, please specify "Total" or "Filtered".) SUITE code must be used to attract SUITE pricing.

Lead	
Total Dust	
M13 (Al, As, Ba, Be, Cd, Cr, Co, Cu, Fe, Pb, Mn, Hg, Ni, Zn) total	
M13 (Al, As, Ba, Be, Cd, Cr, Co, Cu, Fe, Pb, Mn, Hg, Ni, Zn) dissolved	

Turnaround Time (TAT)
Requirements (order will be 5 days if not listed)

Overnight (9am)*
 1 Day*
 2 Day*
 3 Day*
 5 Day*
 Other () *Surcharges apply

Sample Comments / Dangerous Goods Hazard Warning

No	Client Sample ID	Sampled Date/Time (dd/mm/yy hh:mm)	Matrix (Solid (S) / Water (W))	Lead	Total Dust	M13 (Al, As, Ba, Be, Cd, Cr, Co, Cu, Fe, Pb, Mn, Hg, Ni, Zn) total	M13 (Al, As, Ba, Be, Cd, Cr, Co, Cu, Fe, Pb, Mn, Hg, Ni, Zn) dissolved
1	D01_25032020	25/03/20	w			X	X
2	T01_25032020	25/03/20	w			X	X
3	RB_25032020	25/03/20	w			X	
4	RB_28032020	28/03/20	w			X	
5	D04_250320	25/03/20	dust			X	
6	D01_28032020	28/03/20	dust			X	
7	T04_250320	25/03/20	dust			X	
8	T01_280320	28/03/20	dust			X	
9	DW01_240320	24/03/20	Soil			X	
10	TW01_240320	24/03/20	Soil			X	
Total Counts				6	4	4	2

Method of Shipment
 Courier (#)
 Hand Delivered
 Postal

Eurofins | mgf Laboratory Use Only

Received By	Received By	SVD BNE MEL PER ADL MTL DRW	Signature	Signature	Date	Date	Time	Temperature	Report No

Submission of samples to the laboratory will be deemed an acceptance of Eurofins | mgf Standard Terms and Conditions unless agreed otherwise. A copy of Eurofins | mgf Standard Terms and Conditions is available on request.

Crustal Environment Testlab Australia Pty Ltd trading as Eurofins | mgf



CHAIN OF CUSTODY RECORD

ASN 30 095 095 521

Sydney Laboratory
Unit F3 Bldg F, 16 Mare Rd, Lane Cove West, NSW 2066
02 9900 8400 EnviroSampleNSW@eurofins.com

Brisbane Laboratory
Unit 1, 21 Smallwood Pl, Murrim, QLD 4172
07 3302 4800 EnviroSampleQLD@eurofins.com

Perth Laboratory
Unit 2, 91 Leach Highway, Kendaie WA 6105
08 9251 9500 EnviroSampleWA@eurofins.com

Melbourne Laboratory
2 Kingston Town Close, Dingleigh, VIC 3166
03 8954 6300 EnviroSampleVIC@eurofins.com

Company: **Ramboll** Project Name: **318000780** Project Manager: **Stephen Maxwell** EDD Format: **Excel and PDF** Sampler(s): **JK + RC** SM

Address: **50 Globe Road the Junction** Project Name: **318000780** EDD Format: **Excel and PDF** Email for Invoice: **smaxwell@ramboll.com**

Contact Name: **Stephen Maxwell** Project Name: **318000780** Email for Results: **smaxwell@ramboll.com**

Phone No: [] Project Name: **318000780** Email for Results: **blackwell@ramboll.com**

Special Directions: [] Project Name: **318000780** Email for Results: **rondon@ramboll.com**

Purchase Order: [] Project Name: **318000780** Email for Results: **shyde@ramboll.com**

Quote ID No: **180813RAMAN_1** Project Name: **318000780** Email for Results: []

Analyses: **Lead**
Total Dust
M13 (Al, As, Ba, Be, Cd, Cr, Co, Cu, Fe, Pb, Mn, Hg, Ni, Zn) total
M13 (Al, As, Ba, Be, Cd, Cr, Co, Cu, Fe, Pb, Mn, Hg, Ni, Zn) dissolved

Client Sample ID: **R01_1803200** Sampled Date/Time (dd/mm/yy hh:mm): **18/03/20** Matrix (Solid (S) Water (W)): **S**

No: **1** Sampled Date/Time (dd/mm/yy hh:mm): [] Matrix (Solid (S) Water (W)): []

No: **2** Sampled Date/Time (dd/mm/yy hh:mm): **20/02/20** Matrix (Solid (S) Water (W)): **S**

No: [] Sampled Date/Time (dd/mm/yy hh:mm): [] Matrix (Solid (S) Water (W)): []

No: [] Sampled Date/Time (dd/mm/yy hh:mm): [] Matrix (Solid (S) Water (W)): []

No: [] Sampled Date/Time (dd/mm/yy hh:mm): [] Matrix (Solid (S) Water (W)): []

No: [] Sampled Date/Time (dd/mm/yy hh:mm): [] Matrix (Solid (S) Water (W)): []

No: [] Sampled Date/Time (dd/mm/yy hh:mm): [] Matrix (Solid (S) Water (W)): []

No: [] Sampled Date/Time (dd/mm/yy hh:mm): [] Matrix (Solid (S) Water (W)): []

No: [] Sampled Date/Time (dd/mm/yy hh:mm): [] Matrix (Solid (S) Water (W)): []

No: [] Sampled Date/Time (dd/mm/yy hh:mm): [] Matrix (Solid (S) Water (W)): []

No: [] Sampled Date/Time (dd/mm/yy hh:mm): [] Matrix (Solid (S) Water (W)): []

No: [] Sampled Date/Time (dd/mm/yy hh:mm): [] Matrix (Solid (S) Water (W)): []

No: [] Sampled Date/Time (dd/mm/yy hh:mm): [] Matrix (Solid (S) Water (W)): []

No: [] Sampled Date/Time (dd/mm/yy hh:mm): [] Matrix (Solid (S) Water (W)): []

No: [] Sampled Date/Time (dd/mm/yy hh:mm): [] Matrix (Solid (S) Water (W)): []

No: [] Sampled Date/Time (dd/mm/yy hh:mm): [] Matrix (Solid (S) Water (W)): []

No: [] Sampled Date/Time (dd/mm/yy hh:mm): [] Matrix (Solid (S) Water (W)): []

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No: [] Sampled Date/Time (dd/mm/yy hh:mm): [] Matrix (Solid (S) Water (W)): []

No: [] Sampled Date/Time (dd/mm/yy hh:mm): [] Matrix (Solid (S) Water (W)): []

No: [] Sampled Date/Time (dd/mm/yy hh:mm): [] Matrix (Solid (S) Water (W)): []

Handed over by: [] Signature: [] Date: []

Turnaround Time (TAT) Requirements (orders will be 5 days/1st week)

Overnight (9am)* 1 Day* 2 Day* 3 Day* 5 Day* (Surcharge apply)

Sample Comments / Dangerous Goods Hazard Warning: []

Method of Shipment: Courier # [] Hand Delivered Postal

Signature: [] Date: []

Administration of samples to the Laboratory will be deemed an acceptance of Eurofins | mgmt Standard Terms and Conditions unless agreed otherwise. A copy of Eurofins | mgmt Standard Terms and Conditions is available on request.

Eurofins | mgmt Laboratory Use Only

Received By: **[Signature]** Date: **18/03/20** Signature: **[Signature]** Date: **18/03/20**

Received By: **[Signature]** Date: **18/03/20** Signature: **[Signature]** Date: **18/03/20**

SYD | BNE | MEL | PER | ADL | NTL | DRW

Eurofins Environment Testing Australia Pty Ltd trading as Eurofins | mgmt

#AU04_Enviro_Sample_NSW

To: Joshua Blackwell
Subject: RE: Eurofins Sample Receipt Advice - Report 711464 : Site 318000780

From: Joshua Blackwell [<mailto:JBLACKWELL@ramboll.com>]
Sent: Tuesday, 14 April 2020 11:08 AM
To: #AU04_Enviro_Sample_NSW
Cc: Stephen Maxwell
Subject: RE: Eurofins Sample Receipt Advice - Report 711464 : Site 318000780

Hi there,

Please analyse hold samples as follows:

MULWR10_4 and XSMC3 for lead.
P6_TW1 for M13 total and dissolved.
P6_TWS1 for lead (unfiltered)

Kind regards

Joshua Blackwell
Consultant

D +61 (481) 157565
M +61 (481) 157565
jblackwell@ramboll.com

Ramboll Australia Pty Ltd.
ACN 095 437 442
ABN 49 095 437 442

From: EnviroSampleNSW@eurofins.com <EnviroSampleNSW@eurofins.com>
Sent: Tuesday, April 14, 2020 10:56 AM
To: Stephen Maxwell <SMAXWELL@ramboll.com>
Cc: Joshua Blackwell <JBLACKWELL@ramboll.com>; Rachel Condon <RCONDON@ramboll.com>; Shane Hyde <SHYDE@ramboll.com>
Subject: Eurofins Sample Receipt Advice - Report 711464 : Site 318000780

Dear Valued Client,

UPDATED SRA.
MULWR10_4, P6_TWS1, P6_TW1, XSMC3 samples received extra - analysis on hold.

Please find attached a Sample Receipt Advice (SRA), a Summary Sheet and a scanned copy of your Chain-of-Custody (COC). It is your responsibility to ensure that the details are correct such as the Client Job Number, Turn Around Time, any comments in the report, and the requested analysis. If there are any irregularities then please contact your Eurofins Analytical Services Manager as soon as possible so they can be changed.

Regards

Rupan Virk
Sample Receipt

Eurofins | Environment Testing

Unit F3, Parkview Building
16 Mars Road
LANE COVE WEST NSW 2066
AUSTRALIA

Phone: +61 02 9900 8421

Email: EnviroSampleNSW@eurofins.com

Website: environment.eurofins.com.au

[EnviroNote 1068 - Eurofins Perth Laboratory](#)

[EnviroNote 1069 - Eurofins Overnight TAT](#)

[EnviroNote 1098 - Melbourne PFAS Accreditation](#)

[EnviroNote 1080 - Total Organofluorine Analysis & PFAS Investigations](#)

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Site # 1254 & 14271

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Phone : +61 2 9900 8400
NATA # 1261 Site # 18217

Brisbane

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Phone : +61 7 3902 4600
NATA # 1261 Site # 20794

Perth

2/91 Leach Highway
Kewdale WA 6105
Phone : +61 8 9251 9600
NATA # 1261 Site # 23736

Sample Receipt Advice

Company name: **Ramboll Australia Pty Ltd**

Contact name: Stephen Maxwell

Project ID: 318000780

COC number: Not provided

Turn around time: 5 Day

Date/Time received: Apr 9, 2020 10:10 AM

Eurofins reference: **711464**

Sample information

- A detailed list of analytes logged into our LIMS, is included in the attached summary table.
- All samples have been received as described on the above COC.
- COC has been completed correctly.
- Attempt to chill was evident.
- Appropriately preserved sample containers have been used.
- All samples were received in good condition.
- Samples have been provided with adequate time to commence analysis in accordance with the relevant holding times.
- Appropriate sample containers have been used.
- Sample containers for volatile analysis received with zero headspace.
- Split sample sent to requested external lab.
- Some samples have been subcontracted.
- N/A Custody Seals intact (if used).

Notes

MULWR10_4, P6_TWS1, P6_TW1, XSMC3 samples received extra - analysis on hold. Samples; T01_25/3/2020, T04_250320, T01_260320, TW01_240320.

Contact notes

If you have any questions with respect to these samples please contact:

Andrew Black on Phone : (+61) 2 9900 8490 or by e.mail: AndrewBlack@eurofins.com

Results will be delivered electronically via e.mail to Stephen Maxwell - smaxwell@ramboll.com.

Note: A copy of these results will also be delivered to the general Ramboll Australia Pty Ltd email address.

Australia

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Phone : 0800 856 450
IANZ # 1290

ABN – 50 005 085 521

web : www.eurofins.com.au

e.mail : EnviroSales@eurofins.com

Company Name: Ramboll Australia Pty Ltd
Address: Level 3/100 Pacific Highway
North Sydney
NSW 2060

Order No.:
Report #: 711464
Phone: 02 9954 8118
Fax: 02 9954 8150

Received: Apr 9, 2020 10:10 AM
Due: Apr 20, 2020
Priority: 5 Day
Contact Name: Stephen Maxwell

Project Name:
Project ID: 318000780

Eurofins Analytical Services Manager : Andrew Black

Sample Detail						Aluminium	Aluminium (filtered)	Arsenic	Arsenic (filtered)	Barium	Barium (filtered)	Beryllium	Beryllium (filtered)	Cadmium	Cadmium (filtered)	Chromium	Chromium (filtered)	Cobalt	Cobalt (filtered)	Copper	Copper (filtered)	Iron	Iron (filtered)	Lead	Lead	Lead (filtered)	Manganese	Manganese (filtered)	Mercury	Mercury (filtered)	Nickel	Nickel (filtered)	Zinc	Zinc (filtered)	Moisture Set			
Melbourne Laboratory - NATA Site # 1254 & 14271																								X														
Sydney Laboratory - NATA Site # 18217						X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	
Brisbane Laboratory - NATA Site # 20794																																						
Perth Laboratory - NATA Site # 23736																																						
10	DW01_240320	Mar 24, 2020		Water	S20-Ap08929																			X														
11	R01_1803200	Mar 18, 2020		Water	S20-Ap08931																			X														
12	R01_2003200	Mar 18, 2020		Water	S20-Ap08932																			X														
Test Counts						4	2	4	2	4	2	4	2	4	2	4	2	4	2	4	2	4	2	4	2	12	12	2	4	2	4	2	4	2	4	2	1	

Ramboll Environ Australia Pty Ltd
 Level 3/100 Pacific Highway
 North Sydney
 NSW 2060



NATA Accredited
Accreditation Number 1261
Site Number 18217

Accredited for compliance with ISO/IEC 17025 – Testing
 The results of the tests, calibrations and/or
 measurements included in this document are traceable
 to Australian/national standards.

Attention: **Stephen Maxwell**

Report **711464-S**
 Project name
 Project ID **318000780**
 Received Date **Mar 27, 2020**

Client Sample ID			MULWR10_4	XSMC3	DO4_250320	D01_260320
Sample Matrix			Soil	Dust	Dust	Dust
Eurofins Sample No.			S20-Ap02114	S20-Ap02154	S20-Ap02157	S20-Ap02158
Date Sampled			Mar 23, 2020	Mar 18, 2020	Mar 25, 2020	Mar 26, 2020
Test/Reference	LOR	Unit				
Heavy Metals						
Lead	5	mg/kg	2100	840	30	130
% Moisture	1	%	26	-	-	-

Sample History

Where samples are submitted/analysed over several days, the last date of extraction and analysis is reported.

A recent review of our LIMS has resulted in the correction or clarification of some method identifications. Due to this, some of the method reference information on reports has changed. However, no substantive change has been made to our laboratory methods, and as such there is no change in the validity of current or previous results.

If the date and time of sampling are not provided, the Laboratory will not be responsible for compromised results should testing be performed outside the recommended holding time.

Description

Heavy Metals

- Method: LTM-MET-3040 Metals in Waters, Soils & Sediments by ICP-MS

% Moisture

- Method: LTM-GEN-7080 Moisture

Testing Site

Sydney

Sydney

Extracted

Apr 20, 2020

Apr 14, 2020

Holding Time

180 Days

14 Days

Australia

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6 Monterey Road
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IANZ # 1327

Christchurch
43 Detroit Drive
Rolleston, Christchurch 7675
Phone : 0800 856 450
IANZ # 1290

Company Name: Ramboll Australia Pty Ltd
Address: Level 3/100 Pacific Highway
North Sydney
NSW 2060

Order No.:
Report #: 711464
Phone: 02 9954 8118
Fax: 02 9954 8150

Received: Apr 9, 2020 10:10 AM
Due: Apr 20, 2020
Priority: 5 Day
Contact Name: Stephen Maxwell

Project Name:
Project ID: 318000780

Eurofins Analytical Services Manager : Andrew Black

Sample Detail						Aluminium	Aluminium (filtered)	Arsenic	Arsenic (filtered)	Barium	Barium (filtered)	Beryllium	Beryllium (filtered)	Cadmium	Cadmium (filtered)	Chromium	Chromium (filtered)	Cobalt	Cobalt (filtered)	Copper	Copper (filtered)	Iron	Iron (filtered)	Lead	Lead (filtered)	Manganese	Manganese (filtered)	Mercury	Mercury (filtered)	Nickel	Nickel (filtered)	Zinc	Zinc (filtered)	Moisture Set		
Melbourne Laboratory - NATA Site # 1254 & 14271																							X													
Sydney Laboratory - NATA Site # 18217						X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	
Brisbane Laboratory - NATA Site # 20794																																				
Perth Laboratory - NATA Site # 23736																																				
External Laboratory																																				
No	Sample ID	Sample Date	Sampling Time	Matrix	LAB ID																															
1	MULWR10_4	Mar 23, 2020		Soil	S20-Ap02114																		X										X			
2	P6_TWS1	Mar 26, 2020		Water	S20-Ap02120																		X													
3	P6_TW1	Mar 26, 2020		Water	S20-Ap02122	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X			
4	D01_25/3/2020	Mar 25, 2020		Water	S20-Ap02124	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X			
5	RB_25/3/2020	Mar 25, 2020		Water	S20-Ap02125	X		X		X		X		X		X		X		X		X		X		X		X		X						
6	RB_26/3/2020	Mar 26, 2020		Water	S20-Ap02126	X		X		X		X		X		X		X		X		X		X		X		X		X						
7	XSMC3	Mar 18, 2020		Dust	S20-Ap02154																		X													
8	DO4_250320	Mar 25, 2020		Dust	S20-Ap02157																		X													
9	D01_260320	Mar 26, 2020		Dust	S20-Ap02158																		X													

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ABN – 50 005 085 521

web : www.eurofins.com.au

e.mail : EnviroSales@eurofins.com

Company Name:	Ramboll Australia Pty Ltd	Order No.:		Received:	Apr 9, 2020 10:10 AM
Address:	Level 3/100 Pacific Highway North Sydney NSW 2060	Report #:	711464	Due:	Apr 20, 2020
Project Name:		Phone:	02 9954 8118	Priority:	5 Day
Project ID:	318000780	Fax:	02 9954 8150	Contact Name:	Stephen Maxwell

Eurofins Analytical Services Manager : Andrew Black

Sample Detail						Aluminium	Aluminium (filtered)	Arsenic	Arsenic (filtered)	Barium	Barium (filtered)	Beryllium	Beryllium (filtered)	Cadmium	Cadmium (filtered)	Chromium	Chromium (filtered)	Cobalt	Cobalt (filtered)	Copper	Copper (filtered)	Iron	Iron (filtered)	Lead	Lead (filtered)	Manganese	Manganese (filtered)	Mercury	Mercury (filtered)	Nickel	Nickel (filtered)	Zinc	Zinc (filtered)	Moisture Set			
Melbourne Laboratory - NATA Site # 1254 & 14271																								X													
Sydney Laboratory - NATA Site # 18217						X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	
Brisbane Laboratory - NATA Site # 20794																																					
Perth Laboratory - NATA Site # 23736																																					
10	DW01_240320	Mar 24, 2020		Water	S20-Ap08929																		X														
11	R01_1803200	Mar 18, 2020		Water	S20-Ap08931																		X														
12	R01_2003200	Mar 18, 2020		Water	S20-Ap08932																		X														
Test Counts						4	2	4	2	4	2	4	2	4	2	4	2	4	2	4	2	4	2	4	2	12	12	2	4	2	4	2	4	2	4	2	1

Internal Quality Control Review and Glossary
General

- Laboratory QC results for Method Blanks, Duplicates, Matrix Spikes, and Laboratory Control Samples follows guidelines delineated in the National Environment Protection (Assessment of Site Contamination) Measure 1999, as amended May 2013 and are included in this QC report where applicable. Additional QC data may be available on request.
- All soil/sediment/solid results are reported on a dry basis, unless otherwise stated.
- All biota/food results are reported on a wet weight basis on the edible portion, unless otherwise stated.
- Actual LORs are matrix dependant. Quoted LORs may be raised where sample extracts are diluted due to interferences.
- Results are uncorrected for matrix spikes or surrogate recoveries except for PFAS compounds.
- SVOC analysis on waters are performed on homogenised, unfiltered samples, unless noted otherwise.
- Samples were analysed on an 'as received' basis.
- Information identified on this report with blue colour, indicates data provided by customer, that may have an impact on the results.
- This report replaces any interim results previously issued.

Holding Times

Please refer to 'Sample Preservation and Container Guide' for holding times (QS3001).

For samples received on the last day of holding time, notification of testing requirements should have been received at least 6 hours prior to sample receipt deadlines as stated on the SRA.

If the Laboratory did not receive the information in the required timeframe, and regardless of any other integrity issues, suitably qualified results may still be reported.

Holding times apply from the date of sampling, therefore compliance to these may be outside the laboratory's control.

For VOCs containing vinyl chloride, styrene and 2-chloroethyl vinyl ether the holding time is 7 days however for all other VOCs such as BTEX or C6-10 TRH then the holding time is 14 days.

****NOTE:** pH duplicates are reported as a range NOT as RPD

Units

mg/kg: milligrams per kilogram

mg/L: milligrams per litre

ug/L: micrograms per litre

ppm: Parts per million

ppb: Parts per billion

%: Percentage

org/100mL: Organisms per 100 millilitres

NTU: Nephelometric Turbidity Units

MPN/100mL: Most Probable Number of organisms per 100 millilitres

Terms

Dry	Where a moisture has been determined on a solid sample the result is expressed on a dry basis.
LOR	Limit of Reporting.
SPIKE	Addition of the analyte to the sample and reported as percentage recovery.
RPD	Relative Percent Difference between two Duplicate pieces of analysis.
LCS	Laboratory Control Sample - reported as percent recovery.
CRM	Certified Reference Material - reported as percent recovery.
Method Blank	In the case of solid samples these are performed on laboratory certified clean sands and in the case of water samples these are performed on de-ionised water.
Surr - Surrogate	The addition of a like compound to the analyte target and reported as percentage recovery.
Duplicate	A second piece of analysis from the same sample and reported in the same units as the result to show comparison.
USEPA	United States Environmental Protection Agency
APHA	American Public Health Association
TCLP	Toxicity Characteristic Leaching Procedure
COC	Chain of Custody
SRA	Sample Receipt Advice
QSM	US Department of Defense Quality Systems Manual Version 5.3
CP	Client Parent - QC was performed on samples pertaining to this report
NCP	Non-Client Parent - QC performed on samples not pertaining to this report, QC is representative of the sequence or batch that client samples were analysed within.
TEQ	Toxic Equivalency Quotient

QC - Acceptance Criteria

RPD Duplicates: Global RPD Duplicates Acceptance Criteria is 30% however the following acceptance guidelines are equally applicable:

Results <10 times the LOR : No Limit

Results between 10-20 times the LOR : RPD must lie between 0-50%

Results >20 times the LOR : RPD must lie between 0-30%

Surrogate Recoveries: Recoveries must lie between 20-130% Phenols & 50-150% PFASs

PFAS field samples that contain surrogate recoveries in excess of the QC limit designated in QSM 5.3 where no positive PFAS results have been reported have been reviewed and no data was affected.

WA DWER (n=10): PFBA, PFPeA, PFHxA, PFHpA, PFOA, PFBS, PFHxS, PFOS, 6:2 FTSA, 8:2 FTSA

QC Data General Comments

- Where a result is reported as a less than (<), higher than the nominated LOR, this is due to either matrix interference, extract dilution required due to interferences or contaminant levels within the sample, high moisture content or insufficient sample provided.
- Duplicate data shown within this report that states the word "BATCH" is a Batch Duplicate from outside of your sample batch, but within the laboratory sample batch at a 1:10 ratio. The Parent and Duplicate data shown is not data from your samples.
- Organochlorine Pesticide analysis - where reporting LCS data, Toxaphene & Chlordane are not added to the LCS.
- Organochlorine Pesticide analysis - where reporting Spike data, Toxaphene is not added to the Spike.
- Total Recoverable Hydrocarbons - where reporting Spike & LCS data, a single spike of commercial Hydrocarbon products in the range of C12-C30 is added and it's Total Recovery is reported in the C10-C14 cell of the Report.
- pH and Free Chlorine analysed in the laboratory - Analysis on this test must begin within 30 minutes of sampling. Therefore laboratory analysis is unlikely to be completed within holding time. Analysis will begin as soon as possible after sample receipt.
- Recovery Data (Spikes & Surrogates) - where chromatographic interference does not allow the determination of Recovery the term "INT" appears against that analyte.
- Polychlorinated Biphenyls are spiked only using Aroclor 1260 in Matrix Spikes and LCS.
- For Matrix Spikes and LCS results a dash " - " in the report means that the specific analyte was not added to the QC sample.
- Duplicate RPDs are calculated from raw analytical data thus it is possible to have two sets of data.

Quality Control Results

Test				Units	Result 1		Acceptance Limits	Pass Limits	Qualifying Code			
Method Blank												
Heavy Metals												
Lead				mg/kg	< 5		5	Pass				
LCS - % Recovery												
Heavy Metals												
Lead				%	114		70-130	Pass				
Test	Lab Sample ID	QA Source	Units	Result 1			Acceptance Limits	Pass Limits	Qualifying Code			
Spike - % Recovery												
Heavy Metals												
Lead				S20-Ap21404	NCP	%	77	70-130	Pass			
Lead				S20-Ap23765	NCP	mg/kg	49	30%	Fail	Q15		
Duplicate												
Heavy Metals												
Lead				S20-Ap23765	NCP	mg/kg	49	36	31	30%	Fail	Q15

Comments**Sample Integrity**

Custody Seals Intact (if used)	N/A
Attempt to Chill was evident	Yes
Sample correctly preserved	Yes
Appropriate sample containers have been used	Yes
Sample containers for volatile analysis received with minimal headspace	Yes
Samples received within HoldingTime	Yes
Some samples have been subcontracted	No

Qualifier Codes/Comments

Code	Description
Q15	The RPD reported passes Eurofins Environment Testing's QC - Acceptance Criteria as defined in the Internal Quality Control Review and Glossary page of this report.

Authorised By

Andrew Black	Analytical Services Manager
Gabriele Cordero	Senior Analyst-Metal (NSW)

**Glenn Jackson****General Manager**

Final report - this Report replaces any previously issued Report

- Indicates Not Requested

* Indicates NATA accreditation does not cover the performance of this service

Measurement uncertainty of test data is available on request or please [click here](#).

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Ramboll Environ Australia Pty Ltd
 Level 3/100 Pacific Highway
 North Sydney
 NSW 2060



NATA Accredited
 Accreditation Number 1261
 Site Number 18217

Accredited for compliance with ISO/IEC 17025 – Testing
 The results of the tests, calibrations and/or
 measurements included in this document are traceable
 to Australian/national standards.

Attention: Stephen Maxwell

Report 711464-W
 Project name
 Project ID 318000780
 Received Date Mar 27, 2020

Client Sample ID			P6_TWS1	P6_TW1	D01_25/3/2020	RB_25/3/2020
Sample Matrix			Water	Water	Water	Water
Eurofins Sample No.			S20-Ap02120	S20-Ap02122	S20-Ap02124	S20-Ap02125
Date Sampled			Mar 26, 2020	Mar 26, 2020	Mar 25, 2020	Mar 25, 2020
Test/Reference	LOR	Unit				
Heavy Metals						
Aluminium	0.05	mg/L	-	0.08	< 0.05	< 0.05
Aluminium (filtered)	0.05	mg/L	-	< 0.05	< 0.05	-
Arsenic	0.001	mg/L	-	< 0.001	< 0.001	< 0.001
Arsenic (filtered)	0.001	mg/L	-	< 0.001	< 0.001	-
Barium	0.02	mg/L	-	< 0.02	< 0.02	< 0.02
Barium (filtered)	0.02	mg/L	-	< 0.02	< 0.02	-
Beryllium	0.001	mg/L	-	< 0.001	< 0.001	< 0.001
Beryllium (filtered)	0.001	mg/L	-	< 0.001	< 0.001	-
Cadmium	0.0002	mg/L	-	0.0003	0.0004	< 0.0002
Cadmium (filtered)	0.0002	mg/L	-	< 0.0002	< 0.0002	-
Chromium	0.001	mg/L	-	< 0.001	< 0.001	< 0.001
Chromium (filtered)	0.001	mg/L	-	< 0.001	< 0.001	-
Cobalt	0.001	mg/L	-	< 0.001	< 0.001	< 0.001
Cobalt (filtered)	0.001	mg/L	-	< 0.001	< 0.001	-
Copper	0.001	mg/L	-	0.027	0.001	< 0.001
Copper (filtered)	0.001	mg/L	-	0.027	< 0.001	-
Iron	0.05	mg/L	-	< 0.05	< 0.05	< 0.05
Iron (filtered)	0.05	mg/L	-	< 0.05	< 0.05	-
Lead	0.001	mg/L	1.00	< 0.001	< 0.001	< 0.001
Lead (filtered)	0.001	mg/L	-	< 0.001	< 0.001	-
Manganese	0.005	mg/L	-	0.024	0.007	< 0.005
Manganese (filtered)	0.005	mg/L	-	0.022	< 0.005	-
Mercury	0.0001	mg/L	-	< 0.0001	< 0.0001	< 0.0001
Mercury (filtered)	0.0001	mg/L	-	< 0.0001	< 0.0001	-
Nickel	0.001	mg/L	-	< 0.001	< 0.001	< 0.001
Nickel (filtered)	0.001	mg/L	-	< 0.001	< 0.001	-
Zinc	0.005	mg/L	-	0.071	0.026	< 0.005
Zinc (filtered)	0.005	mg/L	-	0.067	0.018	-

Client Sample ID			RB_26/3/2020	DW01_240320	R01_1803200	R01_2003200
Sample Matrix			Water	Water	Water	Water
Eurofins Sample No.			S20-Ap02126	S20-Ap08929	S20-Ap08931	S20-Ap08932
Date Sampled			Mar 26, 2020	Mar 24, 2020	Mar 18, 2020	Mar 18, 2020
Test/Reference	LOR	Unit				
Heavy Metals						
Aluminium	0.05	mg/L	< 0.05	-	-	-
Arsenic	0.001	mg/L	< 0.001	-	-	-
Barium	0.02	mg/L	< 0.02	-	-	-
Beryllium	0.001	mg/L	< 0.001	-	-	-
Cadmium	0.0002	mg/L	< 0.0002	-	-	-
Chromium	0.001	mg/L	< 0.001	-	-	-
Cobalt	0.001	mg/L	< 0.001	-	-	-
Copper	0.001	mg/L	< 0.001	-	-	-
Iron	0.05	mg/L	< 0.05	-	-	-
Lead	0.001	mg/L	< 0.001	0.005	< 0.001	< 0.001
Manganese	0.005	mg/L	< 0.005	-	-	-
Mercury	0.0001	mg/L	< 0.0001	-	-	-
Nickel	0.001	mg/L	< 0.001	-	-	-
Zinc	0.005	mg/L	< 0.005	-	-	-

Sample History

Where samples are submitted/analysed over several days, the last date of extraction and analysis is reported. A recent review of our LIMS has resulted in the correction or clarification of some method identifications. Due to this, some of the method reference information on reports has changed. However, no substantive change has been made to our laboratory methods, and as such there is no change in the validity of current or previous results.

If the date and time of sampling are not provided, the Laboratory will not be responsible for compromised results should testing be performed outside the recommended holding time.

Description	Testing Site	Extracted	Holding Time
Heavy Metals - Method: LTM-MET-3040 Metals in Waters, Soils & Sediments by ICP-MS	Sydney	Apr 20, 2020	180 Days
Heavy Metals (filtered) - Method: LTM-MET-3040 Metals in Waters, Soils & Sediments by ICP-MS	Sydney	Apr 20, 2020	180 Days
Mobil Metals : Metals M15 - Method: LTM-MET-3040 Metals in Waters, Soils & Sediments by ICP-MS	Sydney	Apr 15, 2020	28 Days

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IANZ # 1290

Company Name:	Ramboll Australia Pty Ltd	Order No.:		Received:	Apr 9, 2020 10:10 AM
Address:	Level 3/100 Pacific Highway North Sydney NSW 2060	Report #:	711464	Due:	Apr 20, 2020
Project Name:		Phone:	02 9954 8118	Priority:	5 Day
Project ID:	318000780	Fax:	02 9954 8150	Contact Name:	Stephen Maxwell

Eurofins Analytical Services Manager : Andrew Black

Sample Detail						Aluminium	Aluminium (filtered)	Arsenic	Arsenic (filtered)	Barium	Barium (filtered)	Beryllium	Beryllium (filtered)	Cadmium	Cadmium (filtered)	Chromium	Chromium (filtered)	Cobalt	Cobalt (filtered)	Copper	Copper (filtered)	Iron	Iron (filtered)	Lead	Lead (filtered)	Manganese	Manganese (filtered)	Mercury	Mercury (filtered)	Nickel	Nickel (filtered)	Zinc	Zinc (filtered)	Moisture Set		
Melbourne Laboratory - NATA Site # 1254 & 14271																							X													
Sydney Laboratory - NATA Site # 18217						X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	
Brisbane Laboratory - NATA Site # 20794																																				
Perth Laboratory - NATA Site # 23736																																				
External Laboratory																																				
No	Sample ID	Sample Date	Sampling Time	Matrix	LAB ID																															
1	MULWR10_4	Mar 23, 2020		Soil	S20-Ap02114																		X										X			
2	P6_TWS1	Mar 26, 2020		Water	S20-Ap02120																		X													
3	P6_TW1	Mar 26, 2020		Water	S20-Ap02122	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X			
4	D01_25/3/2020	Mar 25, 2020		Water	S20-Ap02124	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X			
5	RB_25/3/2020	Mar 25, 2020		Water	S20-Ap02125	X		X		X		X		X		X		X		X		X		X		X		X		X						
6	RB_26/3/2020	Mar 26, 2020		Water	S20-Ap02126	X		X		X		X		X		X		X		X		X		X		X		X		X						
7	XSMC3	Mar 18, 2020		Dust	S20-Ap02154																		X													
8	DO4_250320	Mar 25, 2020		Dust	S20-Ap02157																		X													
9	D01_260320	Mar 26, 2020		Dust	S20-Ap02158																		X													

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Company Name:	Ramboll Australia Pty Ltd	Order No.:		Received:	Apr 9, 2020 10:10 AM
Address:	Level 3/100 Pacific Highway North Sydney NSW 2060	Report #:	711464	Due:	Apr 20, 2020
Project Name:		Phone:	02 9954 8118	Priority:	5 Day
Project ID:	318000780	Fax:	02 9954 8150	Contact Name:	Stephen Maxwell

Eurofins Analytical Services Manager : Andrew Black

Sample Detail						Aluminium	Aluminium (filtered)	Arsenic	Arsenic (filtered)	Barium	Barium (filtered)	Beryllium	Beryllium (filtered)	Cadmium	Cadmium (filtered)	Chromium	Chromium (filtered)	Cobalt	Cobalt (filtered)	Copper	Copper (filtered)	Iron	Iron (filtered)	Lead	Lead (filtered)	Manganese	Manganese (filtered)	Mercury	Mercury (filtered)	Nickel	Nickel (filtered)	Zinc	Zinc (filtered)	Moisture Set			
Melbourne Laboratory - NATA Site # 1254 & 14271																								X													
Sydney Laboratory - NATA Site # 18217						X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	
Brisbane Laboratory - NATA Site # 20794																																					
Perth Laboratory - NATA Site # 23736																																					
10	DW01_240320	Mar 24, 2020		Water	S20-Ap08929																			X													
11	R01_1803200	Mar 18, 2020		Water	S20-Ap08931																			X													
12	R01_2003200	Mar 18, 2020		Water	S20-Ap08932																			X													
Test Counts						4	2	4	2	4	2	4	2	4	2	4	2	4	2	4	2	4	2	4	2	12	12	2	4	2	4	2	4	2	4	2	1

Internal Quality Control Review and Glossary
General

1. Laboratory QC results for Method Blanks, Duplicates, Matrix Spikes, and Laboratory Control Samples follows guidelines delineated in the National Environment Protection (Assessment of Site Contamination) Measure 1999, as amended May 2013 and are included in this QC report where applicable. Additional QC data may be available on request.
2. All soil/sediment/solid results are reported on a dry basis, unless otherwise stated.
3. All biota/food results are reported on a wet weight basis on the edible portion, unless otherwise stated.
4. Actual LORs are matrix dependant. Quoted LORs may be raised where sample extracts are diluted due to interferences.
5. Results are uncorrected for matrix spikes or surrogate recoveries except for PFAS compounds.
6. SVOC analysis on waters are performed on homogenised, unfiltered samples, unless noted otherwise.
7. Samples were analysed on an 'as received' basis.
8. Information identified on this report with blue colour, indicates data provided by customer, that may have an impact on the results.
9. This report replaces any interim results previously issued.

Holding Times

Please refer to 'Sample Preservation and Container Guide' for holding times (QS3001).

For samples received on the last day of holding time, notification of testing requirements should have been received at least 6 hours prior to sample receipt deadlines as stated on the SRA.

If the Laboratory did not receive the information in the required timeframe, and regardless of any other integrity issues, suitably qualified results may still be reported.

Holding times apply from the date of sampling, therefore compliance to these may be outside the laboratory's control.

For VOCs containing vinyl chloride, styrene and 2-chloroethyl vinyl ether the holding time is 7 days however for all other VOCs such as BTEX or C6-10 TRH then the holding time is 14 days.

****NOTE:** pH duplicates are reported as a range NOT as RPD

Units

mg/kg: milligrams per kilogram

mg/L: milligrams per litre

ug/L: micrograms per litre

ppm: Parts per million

ppb: Parts per billion

%: Percentage

org/100mL: Organisms per 100 millilitres

NTU: Nephelometric Turbidity Units

MPN/100mL: Most Probable Number of organisms per 100 millilitres

Terms

Dry	Where a moisture has been determined on a solid sample the result is expressed on a dry basis.
LOR	Limit of Reporting.
SPIKE	Addition of the analyte to the sample and reported as percentage recovery.
RPD	Relative Percent Difference between two Duplicate pieces of analysis.
LCS	Laboratory Control Sample - reported as percent recovery.
CRM	Certified Reference Material - reported as percent recovery.
Method Blank	In the case of solid samples these are performed on laboratory certified clean sands and in the case of water samples these are performed on de-ionised water.
Surr - Surrogate	The addition of a like compound to the analyte target and reported as percentage recovery.
Duplicate	A second piece of analysis from the same sample and reported in the same units as the result to show comparison.
USEPA	United States Environmental Protection Agency
APHA	American Public Health Association
TCLP	Toxicity Characteristic Leaching Procedure
COC	Chain of Custody
SRA	Sample Receipt Advice
QSM	US Department of Defense Quality Systems Manual Version 5.3
CP	Client Parent - QC was performed on samples pertaining to this report
NCP	Non-Client Parent - QC performed on samples not pertaining to this report, QC is representative of the sequence or batch that client samples were analysed within.
TEQ	Toxic Equivalency Quotient

QC - Acceptance Criteria

RPD Duplicates: Global RPD Duplicates Acceptance Criteria is 30% however the following acceptance guidelines are equally applicable:

Results <10 times the LOR : No Limit

Results between 10-20 times the LOR : RPD must lie between 0-50%

Results >20 times the LOR : RPD must lie between 0-30%

Surrogate Recoveries: Recoveries must lie between 20-130% Phenols & 50-150% PFASs

PFAS field samples that contain surrogate recoveries in excess of the QC limit designated in QSM 5.3 where no positive PFAS results have been reported have been reviewed and no data was affected.

WA DWER (n=10): PFBA, PFPeA, PFHxA, PFHpA, PFOA, PFBS, PFHxS, PFOS, 6:2 FTSA, 8:2 FTSA

QC Data General Comments

1. Where a result is reported as a less than (<), higher than the nominated LOR, this is due to either matrix interference, extract dilution required due to interferences or contaminant levels within the sample, high moisture content or insufficient sample provided.
2. Duplicate data shown within this report that states the word "BATCH" is a Batch Duplicate from outside of your sample batch, but within the laboratory sample batch at a 1:10 ratio. The Parent and Duplicate data shown is not data from your samples.
3. Organochlorine Pesticide analysis - where reporting LCS data, Toxaphene & Chlordane are not added to the LCS.
4. Organochlorine Pesticide analysis - where reporting Spike data, Toxaphene is not added to the Spike.
5. Total Recoverable Hydrocarbons - where reporting Spike & LCS data, a single spike of commercial Hydrocarbon products in the range of C12-C30 is added and it's Total Recovery is reported in the C10-C14 cell of the Report.
6. pH and Free Chlorine analysed in the laboratory - Analysis on this test must begin within 30 minutes of sampling. Therefore laboratory analysis is unlikely to be completed within holding time. Analysis will begin as soon as possible after sample receipt.
7. Recovery Data (Spikes & Surrogates) - where chromatographic interference does not allow the determination of Recovery the term "INT" appears against that analyte.
8. Polychlorinated Biphenyls are spiked only using Aroclor 1260 in Matrix Spikes and LCS.
9. For Matrix Spikes and LCS results a dash " - " in the report means that the specific analyte was not added to the QC sample.
10. Duplicate RPDs are calculated from raw analytical data thus it is possible to have two sets of data.

Quality Control Results

Test	Units	Result 1			Acceptance Limits	Pass Limits	Qualifying Code
Method Blank							
Heavy Metals							
Aluminium	mg/L	< 0.05			0.05	Pass	
Aluminium (filtered)	mg/L	< 0.05			0.05	Pass	
Arsenic	mg/L	< 0.001			0.001	Pass	
Arsenic (filtered)	mg/L	< 0.001			0.001	Pass	
Barium	mg/L	< 0.02			0.02	Pass	
Barium (filtered)	mg/L	< 0.02			0.02	Pass	
Beryllium	mg/L	< 0.001			0.001	Pass	
Beryllium (filtered)	mg/L	< 0.001			0.001	Pass	
Chromium	mg/L	< 0.001			0.001	Pass	
Chromium (filtered)	mg/L	< 0.001			0.001	Pass	
Cobalt	mg/L	< 0.001			0.001	Pass	
Cobalt (filtered)	mg/L	< 0.001			0.001	Pass	
Copper	mg/L	< 0.001			0.001	Pass	
Copper (filtered)	mg/L	< 0.001			0.001	Pass	
Iron	mg/L	< 0.05			0.05	Pass	
Iron (filtered)	mg/L	< 0.05			0.05	Pass	
Lead	mg/L	< 0.001			0.001	Pass	
Lead (filtered)	mg/L	< 0.001			0.001	Pass	
Manganese	mg/L	< 0.005			0.005	Pass	
Manganese (filtered)	mg/L	< 0.005			0.005	Pass	
Mercury	mg/L	< 0.0001			0.0001	Pass	
Mercury (filtered)	mg/L	< 0.0001			0.0001	Pass	
Nickel	mg/L	< 0.001			0.001	Pass	
Nickel (filtered)	mg/L	< 0.001			0.001	Pass	
Zinc	mg/L	< 0.005			0.005	Pass	
Zinc (filtered)	mg/L	< 0.005			0.005	Pass	
LCS - % Recovery							
Heavy Metals							
Aluminium	%	95			70-130	Pass	
Aluminium (filtered)	%	103			70-130	Pass	
Arsenic	%	120			70-130	Pass	
Arsenic (filtered)	%	95			70-130	Pass	
Barium	%	101			70-130	Pass	
Barium (filtered)	%	104			70-130	Pass	
Beryllium	%	101			70-130	Pass	
Beryllium (filtered)	%	112			70-130	Pass	
Cadmium	%	99			70-130	Pass	
Cadmium (filtered)	%	99			70-130	Pass	
Chromium	%	98			70-130	Pass	
Chromium (filtered)	%	103			70-130	Pass	
Cobalt	%	94			70-130	Pass	
Cobalt (filtered)	%	103			70-130	Pass	
Copper	%	87			70-130	Pass	
Copper (filtered)	%	105			70-130	Pass	
Iron	%	94			70-130	Pass	
Iron (filtered)	%	107			70-130	Pass	
Lead	%	95			70-130	Pass	
Lead (filtered)	%	103			70-130	Pass	
Manganese	%	96			70-130	Pass	
Manganese (filtered)	%	107			70-130	Pass	

Test			Units	Result 1		Acceptance Limits	Pass Limits	Qualifying Code
Mercury			%	99		70-130	Pass	
Mercury (filtered)			%	105		70-130	Pass	
Nickel			%	90		70-130	Pass	
Nickel (filtered)			%	106		70-130	Pass	
Zinc			%	92		70-130	Pass	
Zinc (filtered)			%	107		70-130	Pass	
Test	Lab Sample ID	QA Source	Units	Result 1		Acceptance Limits	Pass Limits	Qualifying Code
Spike - % Recovery								
Heavy Metals				Result 1				
Aluminium	S20-Ap02122	CP	%	102		70-130	Pass	
Aluminium (filtered)	S20-Ap24358	NCP	%	88		70-130	Pass	
Arsenic	S20-Ap02122	CP	%	120		70-130	Pass	
Arsenic (filtered)	S20-Ap24358	NCP	%	84		70-130	Pass	
Barium	S20-Ap02122	CP	%	108		70-130	Pass	
Barium (filtered)	S20-Ap24358	NCP	%	79		70-130	Pass	
Beryllium	S20-Ap02122	CP	%	108		70-130	Pass	
Cadmium	S20-Ap02122	CP	%	106		70-130	Pass	
Cadmium (filtered)	S20-Ap24358	NCP	%	87		70-130	Pass	
Chromium	S20-Ap02122	CP	%	105		70-130	Pass	
Chromium (filtered)	S20-Ap24358	NCP	%	90		70-130	Pass	
Cobalt	S20-Ap02122	CP	%	101		70-130	Pass	
Cobalt (filtered)	S20-Ap24358	NCP	%	89		70-130	Pass	
Copper	S20-Ap02122	CP	%	95		70-130	Pass	
Copper (filtered)	S20-Ap24358	NCP	%	87		70-130	Pass	
Iron	S20-Ap02122	CP	%	100		70-130	Pass	
Iron (filtered)	S20-Ap24358	NCP	%	86		70-130	Pass	
Lead	S20-Ap02122	CP	%	103		70-130	Pass	
Lead (filtered)	S20-Ap24358	NCP	%	84		70-130	Pass	
Manganese	S20-Ap02122	CP	%	104		70-130	Pass	
Mercury	S20-Ap02122	CP	%	103		70-130	Pass	
Mercury (filtered)	S20-Ap24358	NCP	%	76		70-130	Pass	
Nickel	S20-Ap02122	CP	%	97		70-130	Pass	
Nickel (filtered)	S20-Ap24358	NCP	%	89		70-130	Pass	
Zinc	S20-Ap02122	CP	%	97		70-130	Pass	
Zinc (filtered)	S20-Ap24358	NCP	%	86		70-130	Pass	
Spike - % Recovery								
Heavy Metals				Result 1				
Aluminium	S20-Ap08929	CP	%	103		75-125	Pass	
Arsenic	S20-Ap08929	CP	%	106		75-125	Pass	
Barium	S20-Ap08929	CP	%	99		75-125	Pass	
Beryllium	S20-Ap08929	CP	%	103		75-125	Pass	
Cadmium	S20-Ap08929	CP	%	112		75-125	Pass	
Chromium	S20-Ap08929	CP	%	108		75-125	Pass	
Cobalt	S20-Ap08929	CP	%	110		75-125	Pass	
Copper	S20-Ap08929	CP	%	109		75-125	Pass	
Iron	S20-Ap08929	CP	%	108		75-125	Pass	
Lead	S20-Ap08929	CP	%	107		75-125	Pass	
Manganese	S20-Ap08929	CP	%	106		75-125	Pass	
Mercury	S20-Ap08929	CP	%	105		70-130	Pass	
Nickel	S20-Ap08929	CP	%	110		75-125	Pass	
Zinc	S20-Ap08929	CP	%	102		75-125	Pass	

Test	Lab Sample ID	QA Source	Units	Result 1	Result 2	RPD	Acceptance Limits	Pass Limits	Qualifying Code
Duplicate									
Heavy Metals				Result 1	Result 2	RPD			
Aluminium	S20-Ap02120	CP	mg/L	95	81	16	30%	Pass	
Arsenic	S20-Ap02120	CP	mg/L	0.057	0.047	20	30%	Pass	
Barium	S20-Ap02120	CP	mg/L	0.33	0.30	10	30%	Pass	
Beryllium	S20-Ap02120	CP	mg/L	0.003	0.003	14	30%	Pass	
Cadmium	S20-Ap02120	CP	mg/L	0.0038	0.0064	52	30%	Fail	Q15
Chromium	S20-Ap02120	CP	mg/L	0.29	0.24	18	30%	Pass	
Cobalt	S20-Ap02120	CP	mg/L	0.023	0.034	38	30%	Fail	Q15
Copper	S20-Ap02120	CP	mg/L	2.6	2.1	24	30%	Pass	
Lead	S20-Ap02120	CP	mg/L	1.00	0.79	23	30%	Pass	
Manganese	S20-Ap02120	CP	mg/L	1.0	0.81	21	30%	Pass	
Mercury	S20-Ap02120	CP	mg/L	0.0017	0.0014	18	30%	Pass	
Nickel	S20-Ap02120	CP	mg/L	0.084	0.079	6.0	30%	Pass	
Zinc	S20-Ap02120	CP	mg/L	1.4	1.5	3.0	30%	Pass	
Duplicate									
Heavy Metals				Result 1	Result 2	RPD			
Aluminium (filtered)	S20-Ap24357	NCP	mg/L	0.07	0.07	6.0	30%	Pass	
Arsenic (filtered)	S20-Ap24357	NCP	mg/L	< 0.001	< 0.001	<1	30%	Pass	
Barium (filtered)	S20-Ap24357	NCP	mg/L	0.15	0.14	9.0	30%	Pass	
Cadmium (filtered)	S20-Ap24357	NCP	mg/L	< 0.0002	< 0.0002	<1	30%	Pass	
Chromium (filtered)	S20-Ap24357	NCP	mg/L	0.003	0.003	4.0	30%	Pass	
Cobalt (filtered)	S20-Ap24357	NCP	mg/L	< 0.001	< 0.001	<1	30%	Pass	
Copper (filtered)	S20-Ap24357	NCP	mg/L	0.008	0.008	5.0	30%	Pass	
Iron (filtered)	S20-Ap24357	NCP	mg/L	dil15	dil15	5.0	30%	Pass	
Lead (filtered)	S20-Ap24357	NCP	mg/L	< 0.001	< 0.001	<1	30%	Pass	
Manganese (filtered)	S20-Ap24357	NCP	mg/L	0.19	0.18	4.0	30%	Pass	
Mercury (filtered)	S20-Ap24357	NCP	mg/L	< 0.0001	< 0.0001	<1	30%	Pass	
Nickel (filtered)	S20-Ap24357	NCP	mg/L	0.003	0.003	7.0	30%	Pass	
Zinc (filtered)	S20-Ap24357	NCP	mg/L	0.011	0.009	12	30%	Pass	
Duplicate									
Heavy Metals				Result 1	Result 2	RPD			
Aluminium	S20-Ap08929	CP	mg/L	0.13	0.12	3.0	30%	Pass	
Arsenic	S20-Ap08929	CP	mg/L	< 0.001	< 0.001	<1	30%	Pass	
Barium	S20-Ap08929	CP	mg/L	0.02	0.02	2.0	30%	Pass	
Beryllium	S20-Ap08929	CP	mg/L	< 0.001	< 0.001	<1	30%	Pass	
Cadmium	S20-Ap08929	CP	mg/L	< 0.0002	< 0.0002	<1	30%	Pass	
Chromium	S20-Ap08929	CP	mg/L	0.001	0.001	1.0	30%	Pass	
Cobalt	S20-Ap08929	CP	mg/L	< 0.001	< 0.001	<1	30%	Pass	
Copper	S20-Ap08929	CP	mg/L	0.002	0.002	1.0	30%	Pass	
Iron	S20-Ap08929	CP	mg/L	< 0.05	< 0.05	<1	30%	Pass	
Lead	S20-Ap08929	CP	mg/L	0.005	0.005	3.0	30%	Pass	
Manganese	S20-Ap08929	CP	mg/L	< 0.005	< 0.005	<1	30%	Pass	
Mercury	S20-Ap08929	CP	mg/L	< 0.0001	< 0.0001	<1	30%	Pass	
Nickel	S20-Ap08929	CP	mg/L	< 0.001	< 0.001	<1	30%	Pass	
Zinc	S20-Ap08929	CP	mg/L	0.077	0.078	1.0	30%	Pass	

Comments
Sample Integrity

Custody Seals Intact (if used)	N/A
Attempt to Chill was evident	Yes
Sample correctly preserved	Yes
Appropriate sample containers have been used	Yes
Sample containers for volatile analysis received with minimal headspace	Yes
Samples received within HoldingTime	Yes
Some samples have been subcontracted	No

Qualifier Codes/Comments

Code	Description
Q15	The RPD reported passes Eurofins Environment Testing's QC - Acceptance Criteria as defined in the Internal Quality Control Review and Glossary page of this report.

Authorised By

Andrew Black	Analytical Services Manager
Emily Rosenberg	Senior Analyst-Metal (VIC)
Gabriele Cordero	Senior Analyst-Metal (NSW)


Glenn Jackson
General Manager

Final report - this Report replaces any previously issued Report

- Indicates Not Requested

* Indicates NATA accreditation does not cover the performance of this service

Measurement uncertainty of test data is available on request or please [click here](#).

Eurofins shall not be liable for loss, cost, damages or expenses incurred by the client, or any other person or company, resulting from the use of any information or interpretation given in this report. In no case shall Eurofins be liable for consequential damages including, but not limited to, lost profits, damages for failure to meet deadlines and lost production arising from this report. This document shall not be reproduced except in full and relates only to the items tested. Unless indicated otherwise, the tests were performed on the samples as received.



CHAIN OF CUSTODY RECORD

ARN 50 005 065 321

Sydney Laboratory
Unit F3 Bld F, 16 Mars Rd, Lane Cove West, NSW 2086
02 9800 8400 EnviroSampleNSW@eurofins.com

Brisbane Laboratory
Unit 11, 21 Smallwood Pl., Murarie, QLD 4172
07 3902 4600 EnviroSampleQLD@eurofins.com

Perth Laboratory
Unit 2, 91 Leach Highway, Kewdale WA 6105
08 9251 9900 EnviroSampleWA@eurofins.com

Melbourne Laboratory
2 Kingston Town Chase, Oakleigh, VIC 3186
03 8664 5000 EnviroSampleVIC@eurofins.com

Company		Ramboll		Project No	318000780		Project Manager	Stephen Maxwell		Sampler(s)	AC		
Address		50 Glebe Road the Junction		Project Name	M13 (Al, As, Ba, Be, Cd, Cr, Co, Cu, Fe, Pb, Mn, Hg, Ni, Zn) total		EDD Format (ESdat, EQUIS)	Excel and PDF		Handed over by			
Contact Name		Stephen Maxwell		Analyses	M13 (Al, As, Ba, Be, Cd, Cr, Co, Cu, Fe, Pb, Mn, Hg, Ni, Zn) dissolved		Other (Asbestos AS4984, WA Guidelines)	Lead		SM			
Phone No		180813RAMIN_1		Special Directions	(Note: Where methods are requested, please specify "Total" or "Filterable" / BUTTE code must be used to attract SURT pricing.)							Turnaround Time (TAT) Requirements (Default will be 5 days if not ticked)	
Purchase Order				Client Sample ID	Sampled Date/Time (dd/mm/yyyy hh:mm)	Matrix (Solid (\$), Water (W))	Method	Volume	Container	Material	Quantity	Notes	
No													
1	P1-TW1		24/03/20		Water	Water				1L Plastic	250mL Plastic	250mL Plastic	
2	P1-TW2		24/03/20		Water	Water				125mL Plastic	200mL Amber Glass	40mL VOA Vial	
3	P1_TW3		24/03/20		Water	Water				500mL PFAS Bottle	500mL PFAS Bottle	Jar (Glass or HDPE)	
4	P1-GW1		24/03/20		Water	Water							
5	P1BH1_0.05				Soil	Soil							
6	P1BH1_0.2				Soil	Soil							
7	P1BH1_0.5				Soil	Soil							
8	P1BH2_0.05				Soil	Soil							
9	P1BH2_0.2				Soil	Soil							
10	P1BH2_0.5				Soil	Soil							
Method of Shipment				<input type="checkbox"/> Courier (#)	<input type="checkbox"/> Hand Delivered	<input type="checkbox"/> Postal	Total Counts		4	4	6		
Eurofins mgt Laboratory Use Only		Received By		Signature		Date		Time		Date		Time	
		Jake		<i>[Signature]</i>		21/3/20		3:56		21/3/20		7:16:74	

Submission of samples to the laboratory will be deemed as acceptance of Eurofins | mgt Standard Terms and Conditions unless agreed otherwise. A copy of Eurofins | mgt Standard Terms and Conditions is available on request.

Company	Ramboll	Project No	318000780	Project Manager	Stephen Maxwell	Sampler(s)	AC
Address	50 Glebe Road the Junction	Project Name		EDD Format	Excel and PDF	Handed over by	SM
Contact Name	Stephen Maxwell	Analyses	M13 (Al, As, Ba, Cd, Cr, Co, Cu, Fe, Pb, Mn, Hg, Ni, Zn) total M13 (Al, As, Ba, Cd, Cr, Co, Cu, Fe, Pb, Mn, Hg, Ni, Zn) dissolved Lead	Email for Invoice		Email for Invoice	asia@ac-accounts@ramboll.com smaxwell@ramboll.com
Phone No		Special Directions		Email for Results		Email for Results	blackwell@ramboll.com blackwell@ramboll.com rcondon@ramboll.com shyde@ramboll.com
Purchase Order		Client Sample ID		Turnaround Time (TAT)		Turnaround Time (TAT)	Requirements (specify with days if not listed) <input checked="" type="checkbox"/> Overnight (8am)* <input type="checkbox"/> 1 Day* <input type="checkbox"/> 2 Day* <input type="checkbox"/> 3 Day* <input type="checkbox"/> 5 Day* <input type="checkbox"/> Other () *Exchange apply
Quote ID No	180813RAMNL_1	Sampled Date/Time (dd/mm/yyyy hh:mm)		Other (specify AS1964, WA Guidelines)		Other (specify AS1964, WA Guidelines)	
No		Matrix (Solid (S) Water (W))		Sample Comments / Dangerous Goods Hazard Warning		Sample Comments / Dangerous Goods Hazard Warning	
1	P1BH3_0.05	Soil					
2	P1BH3_0.05 0-2	Soil	X				
3	P1BH3_0.05 0-5	Soil	X				
4	P1BH4_0.05	Soil	X				
5	P1BH4_0.2	Soil	X				
6	P1BH4_0.5	Soil	X				
7	P1BH5_0.05	Soil	X				
8	P1BH5_0.2	Soil	X				
9	P1BH5_0.5	Soil	X				
10							
Method of Shipment		Total Counts	9	Signature		Date	Time
Eurofins mgrt Laboratory Use Only		Received By		Signature		Date	Time
		Received By		Signature		Date	Time

#AU_CAU001_EnviroSampleVic

From: Nibha Vaidya
Sent: Thursday, 2 April 2020 3:56 PM
To: #AU04_Enviro_Sample_NSW; #AU_CAU001_EnviroSampleVic
Cc: Andrew Black
Subject: OVERNIGHT - FW: FW: 318000780 COCs
Attachments: 260320 - P1.xlsx; FW: FW: 318000780 COCs

Importance: High

Hi all – These P1 samples would have been sent from Newcastle on the 26th for delivery on the 27th (along with the rest in the attached email). Can you please urgently check your respective departments for these samples (P1)?
Overnight TAT.

Kind Regards

Nibha

Nibha Vaidya
Phone : +61 2 9900 8415
Mobile : +61 499 900 805
Email : NibhaVaidya@eurofins.com

From: Stephen Maxwell [<mailto:SMAXWELL@ramboll.com>]
Sent: Thursday, 2 April 2020 3:39 PM
To: Nibha Vaidya
Cc: #AU04_Enviro_Sample_NSW
Subject: FW: FW: 318000780 COCs

EXTERNAL EMAIL*

Hi Nibha

Please find attached a COC for our ref P1. Please note we are requesting overnight TAT if at all possible (as I missed sending this COC through with the samples). Ill work through the rest tonight. Thanks for the work you and the rest of the team are doing!

Kind regards
Stephen Maxwell
Lead Consultant

D +61 478658194
M +61 478658194
smaxwell@ramboll.com

Ramboll Australia Pty Ltd.
ACN 095 437 442
ABN 49 095 437 442

From: Stephen Maxwell
Sent: 26 March, 2020 10:10 PM
To: Nibha Vaidya <NibhaVaidya@eurofins.com>
Subject: FW: FW: 318000780 COCs

Hi Nibha

Can you have a look at this one and confirm if we are on track for overnight analyses that we have requested?



CHAIN OF CUSTODY RECORD

ABN 50 005 085 521

Sydney Laboratory

Unit F3 Bld.F, 16 Mars Rd, Lane Cove West, NSW 2066
02 9902 8400 EnviroSampleNSW@eurofins.com

Brisbane Laboratory

Unit 1, 21 Smallwood Pl., Murarrie, QLD 4172
07 3902 4600 EnviroSampleQLD@eurofins.com

Perth Laboratory

Unit 2, 91 Leach Highway, Kewdale WA 6105
08 9251 9600 EnviroSampleWA@eurofins.com

Melbourne Laboratory

2 Kingston Town Close, Oakleigh, VIC 3166
03 8564 5000 EnviroSampleVic@eurofins.com

Company		Ramboll		Project No	318000780				Project Manager	Stephen Maxwell				Sampler(s)	AC			
Address		50 Glebe Road the Junction		Project Name					EDD Format (ESdat, EQuIS,	Excel and PDF				Handed over by	SM			
Contact Name		Stephen Maxwell		<small>Analyses</small> <small>(Note: Where metals are requested, please specify "Total" or "Filtered". SUITE codes must be used to attach SUITE pricing.)</small> MT3 (Al, As, Ba, Be, Cd, Cr, Co, Cu, Fe, Pb, Mn, Hg, Ni, Zn) total MT3 (Al, As, Ba, Be, Cd, Cr, Co, Cu, Fe, Pb, Mn, Hg, Ni, Zn) dissolved Lead Total Dust									Email for Invoice	smaxwell@ramboll.com asiapac-accounts@ramboll.com				
Phone No													Email for Results	smaxwell@ramboll.com iblackwell@ramboll.com rcondon@ramboll.com shyde@ramboll.com				
Special Directions													iblackwell@ramboll.com	Turnaround Time (TAT) Requirements (Default will be 5 days if not ticked) <input checked="" type="checkbox"/> Overnight (9am)* <input type="checkbox"/> 1 Day* <input type="checkbox"/> 2 Day* <input type="checkbox"/> 3 Day* <input type="checkbox"/> 5 Day* <input type="checkbox"/> Other () *Surcharges apply				
Purchase Order													Sample Comments / Dangerous Goods Hazard Warning					
Quote ID No		180813RAMN_1																
No	Client Sample ID	Sampled Date/Time (dd/mm/yy hh:mm)	Matrix (Solid (S) Water (W))	MT3 (Al, As, Ba, Be, Cd, Cr, Co, Cu, Fe, Pb, Mn, Hg, Ni, Zn) total	MT3 (Al, As, Ba, Be, Cd, Cr, Co, Cu, Fe, Pb, Mn, Hg, Ni, Zn) dissolved	Lead	Total Dust											
1	DGrab-MH(17W)	Dust	Dust			X	X											
2	DGrab-MH2(17W)	Dust	Dust			X	X											
3	DSwab-BE(17W)	Dust	Dust			X												
4	DSwab-DA(17W)	Dust	Dust			X												
5	DSwab-FW(17W)	Dust	Dust			X												
6	DSwab-TV(17W)	Dust	Dust			X												
7	DVAC-BR1(17W)	Dust	Dust			X	X											
8	DVAC-LR(17W)	Dust	Dust			X	X											
9																		
10																		
Total Counts						8	4											
Method of Shipment	<input type="checkbox"/> Courier (#) <input type="checkbox"/> Hand Delivered			<input type="checkbox"/> Postal	Name	Signature			Date	___/___/___	Time	___:___						
Eurofins mgt Laboratory Use Only	Received By	SYD BNE MEL PER ADL NTL DRW			Signature	Date			___/___/___	Time	___:___	Temperature						
	Received By	SYD BNE MEL PER ADL NTL DRW			Signature	Date			___/___/___	Time	___:___	Report No						

Submission of samples to the laboratory will be deemed as acceptance of Eurofins | mgt Standard Terms and Conditions unless agreed otherwise. A copy of Eurofins | mgt Standard Terms and Conditions is available on request.

Eurofins Environment Testing Australia Pty Ltd trading as Eurofins | mgt

Melbourne

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NATA # 1261 Site # 20794

Perth

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Kewdale WA 6105
Phone : +61 8 9251 9600
NATA # 1261 Site # 23736

Sample Receipt Advice

Company name: **Ramboll Australia Pty Ltd**

Contact name: **Stephen Maxwell**

Project ID: **318000780**

COC number: **Not provided**

Turn around time: **1 Day**

Date/Time received: **Apr 2, 2020 3:56 PM**

Eurofins reference: **711674**

Sample information

- A detailed list of analytes logged into our LIMS, is included in the attached summary table.
- All samples have been received as described on the above COC.
- COC has been completed correctly.
- Attempt to chill was evident.
- Appropriately preserved sample containers have been used.
- All samples were received in good condition.
- Samples have been provided with adequate time to commence analysis in accordance with the relevant holding times.

- Appropriate sample containers have been used.
- Sample containers for volatile analysis received with zero headspace.
- Split sample sent to requested external lab.
- Some samples have been subcontracted.
- N/A Custody Seals intact (if used).

Notes

Total Dust analysis cancelled as the samples are loose dust.

Contact notes

If you have any questions with respect to these samples please contact:

Andrew Black on Phone : (+61) 2 9900 8490 or by e.mail: AndrewBlack@eurofins.com

Results will be delivered electronically via e.mail to Stephen Maxwell - smaxwell@ramboll.com.

Note: A copy of these results will also be delivered to the general Ramboll Australia Pty Ltd email address.

Australia

Melbourne
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Phone : +61 3 8564 5000
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NATA # 1261
Site # 23736

New Zealand

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Phone : +64 9 526 45 51
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Christchurch
43 Detroit Drive
Rolleston, Christchurch 7675
Phone : 0800 856 450
IANZ # 1290

ABN – 50 005 085 521

web : www.eurofins.com.au

e.mail : EnviroSales@eurofins.com

Company Name: Ramboll Australia Pty Ltd
Address: Level 3/100 Pacific Highway
North Sydney
NSW 2060

Order No.:
Report #: 711674
Phone: 02 9954 8118
Fax: 02 9954 8150

Received: Apr 2, 2020 3:56 PM
Due: Apr 3, 2020
Priority: 1 Day
Contact Name: Stephen Maxwell

Project Name:
Project ID: 318000780

Eurofins Analytical Services Manager : Andrew Black

Sample Detail						Lead	Lead	Moisture Set	NEPM 2013 Metals without Cr6+ (As, Be, B, Cd, Co, Cr, Cu, Hg, Pb, Ni, Mn, Cd, Co, Cr, Cu, Hg, Pb, Ni, Mn, Se, Zn)	NEPM 2013 Filtered Metals without Cr6+ (As, Be, B, Cd, Co, Cr, Cu, Hg, Pb, Ni, Mn, NEPM 2013 Metals without Cr6+ (As, Be, B, Cd, Co, Cr, Cu, Hg, Pb, Ni, Mn, Se, Zn))
Melbourne Laboratory - NATA Site # 1254 & 14271						X		X	X	X
Sydney Laboratory - NATA Site # 18217							X			
Brisbane Laboratory - NATA Site # 20794										
Perth Laboratory - NATA Site # 23736										
External Laboratory										
No	Sample ID	Sample Date	Sampling Time	Matrix	LAB ID					
1	P1-TW1	Mar 24, 2020		Water	M20-Ap03653				X	X
2	P1-TW2	Mar 24, 2020		Water	M20-Ap03654				X	X
3	P1_TW3	Mar 24, 2020		Water	M20-Ap03655				X	X
4	P1-GW1	Mar 24, 2020		Water	M20-Ap03656				X	X
5	P1BH1_0.05	Mar 19, 2020		Soil	M20-Ap03657	X	X			
6	P1BH1_0.2	Mar 19, 2020		Soil	M20-Ap03658	X	X			
7	P1BH1_0.5	Mar 19, 2020		Soil	M20-Ap03659	X	X			
8	P1BH2_0.05	Mar 19, 2020		Soil	M20-Ap03660	X	X			
9	P1BH2_0.2	Mar 19, 2020		Soil	M20-Ap03661	X	X			
10	P1BH2_0.5	Mar 19, 2020		Soil	M20-Ap03662	X	X			

Australia

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Site # 1254 & 14271

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NATA # 1261 Site # 18217

Brisbane
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NATA # 1261 Site # 20794

Perth
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Phone : +61 8 9251 9600
NATA # 1261
Site # 23736

New Zealand

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IANZ # 1327

Christchurch
43 Detroit Drive
Rolleston, Christchurch 7675
Phone : 0800 856 450
IANZ # 1290

Company Name: Ramboll Australia Pty Ltd
Address: Level 3/100 Pacific Highway
North Sydney
NSW 2060

Project Name:
Project ID: 318000780

Order No.:
Report #: 711674
Phone: 02 9954 8118
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Received: Apr 2, 2020 3:56 PM
Due: Apr 3, 2020
Priority: 1 Day
Contact Name: Stephen Maxwell

Eurofins Analytical Services Manager : Andrew Black

Sample Detail						Lead	Lead	Moisture Set	NEPM 2013 Metals without Cr6+ (As, Be, B, Cd, Co, Cr, Cu, Hg, Pb, Ni, Mn, Cd, Co, Cr, Cu, Hg, Pb, Ni, Mn, Se, Zn)	NEPM 2013 Filtered Metals without Cr6+ (As, Be, B, Cd, Co, Cr, Cu, Hg, Pb, Ni, Mn, Se, Zn)
Melbourne Laboratory - NATA Site # 1254 & 14271						X		X	X	X
Sydney Laboratory - NATA Site # 18217							X			
Brisbane Laboratory - NATA Site # 20794										
Perth Laboratory - NATA Site # 23736										
11	P1BH3_0.05	Mar 19, 2020		Soil	M20-Ap03663	X		X		
12	P1BH3_0.2	Mar 19, 2020		Soil	M20-Ap03664	X		X		
13	P1BH3_0.5	Mar 19, 2020		Soil	M20-Ap03665	X		X		
14	P1BH4_0.05	Mar 19, 2020		Soil	M20-Ap03666	X		X		
15	P1BH4_0.2	Mar 19, 2020		Soil	M20-Ap03667	X		X		
16	P1BH4_0.5	Mar 19, 2020		Soil	M20-Ap03668	X		X		
17	P1BH5_0.05	Mar 19, 2020		Soil	M20-Ap03669	X		X		
18	P1BH5_0.2	Mar 19, 2020		Soil	M20-Ap03670	X		X		
19	P1BH5_0.5	Mar 19, 2020		Soil	M20-Ap03671	X		X		
20	DGrab-MH(17W)	Mar 24, 2020		Dust	M20-Ap03788		X			
21	DGrab-MH2(17W)	Mar 24, 2020		Dust	M20-Ap03789		X			

Australia

Melbourne
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NATA # 1261 Site # 20794

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Phone : +64 9 526 45 51
IANZ # 1327

Christchurch
43 Detroit Drive
Rolleston, Christchurch 7675
Phone : 0800 856 450
IANZ # 1290

Company Name: Ramboll Australia Pty Ltd
Address: Level 3/100 Pacific Highway
North Sydney
NSW 2060

Project Name:
Project ID: 318000780

Order No.:
Report #: 711674
Phone: 02 9954 8118
Fax: 02 9954 8150

Received: Apr 2, 2020 3:56 PM
Due: Apr 3, 2020
Priority: 1 Day
Contact Name: Stephen Maxwell

Eurofins Analytical Services Manager : Andrew Black

Sample Detail						Lead	Lead	Moisture Set	NEPM 2013 Metals without Cr6+ (As, Be, B, Cd, Co, Cr, Cu, Hg, Pb, Ni, Mn, Cd, Co, Cr, Cu, Hg, Pb, Ni, Mn, Se, Zn)	NEPM 2013 Filtered Metals without Cr6+ (As, Be, B, Cd, Co, Cr, Cu, Hg, Pb, Ni, Mn, Cd, Co, Cr, Cu, Hg, Pb, Ni, Mn, Se, Zn)
Melbourne Laboratory - NATA Site # 1254 & 14271						X		X	X	X
Sydney Laboratory - NATA Site # 18217							X			
Brisbane Laboratory - NATA Site # 20794										
Perth Laboratory - NATA Site # 23736										
22	DSwab-BE(17W)	Mar 24, 2020		Wipes	M20-Ap03790		X			
23	DSwab-DA(17W)	Mar 24, 2020		Wipes	M20-Ap03791		X			
24	DSwab-FW(17W)	Mar 24, 2020		Wipes	M20-Ap03792		X			
25	DSwab-TV(17W)	Mar 24, 2020		Wipes	M20-Ap03793		X			
26	DVAC-BR1(17W)	Mar 24, 2020		Dust	M20-Ap03794		X			
27	DVAC-LR(17W)	Mar 24, 2020		Dust	M20-Ap03795		X			
Test Counts						23	23	15	4	4

Ramboll Environ Australia Pty Ltd
Level 3/100 Pacific Highway
North Sydney
NSW 2060



NATA Accredited
Accreditation Number 1261
Site Number 1254

Accredited for compliance with ISO/IEC 17025 – Testing
 The results of the tests, calibrations and/or
 measurements included in this document are traceable
 to Australian/national standards.

Attention: **Stephen Maxwell**

Report **711674-A**
 Project name
 Project ID **318000780**
 Received Date **Apr 02, 2020**

Client Sample ID			DSwab- BE(17W)	DSwab- DA(17W)	DSwab- FW(17W)	DSwab- TV(17W)
Sample Matrix			Wipes	Wipes	Wipes	Wipes
Eurofins Sample No.			M20-Ap03790	M20-Ap03791	M20-Ap03792	M20-Ap03793
Date Sampled			Mar 24, 2020	Mar 24, 2020	Mar 24, 2020	Mar 24, 2020
Test/Reference	LOR	Unit				
Heavy Metals						
Lead	1	Total ug	4.6	2.3	520	2.2

Sample History

Where samples are submitted/analysed over several days, the last date of extraction and analysis is reported.

A recent review of our LIMS has resulted in the correction or clarification of some method identifications. Due to this, some of the method reference information on reports has changed. However, no substantive change has been made to our laboratory methods, and as such there is no change in the validity of current or previous results.

If the date and time of sampling are not provided, the Laboratory will not be responsible for compromised results should testing be performed outside the recommended holding time.

Description

Heavy Metals

Testing Site

Sydney

Extracted

Apr 02, 2020

Holding Time

180 Days

- Method: LTM-MET-3040 Metals in Waters, Soils & Sediments by ICP-MS

Australia

Melbourne
6 Monterey Road
Dandenong South VIC 3175
Phone : +61 3 8564 5000
NATA # 1261
Site # 1254 & 14271

Sydney
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16 Mars Road
Lane Cove West NSW 2066
Phone : +61 2 9900 8400
NATA # 1261 Site # 18217

Brisbane
1/21 Smallwood Place
Murarie QLD 4172
Phone : +61 7 3902 4600
NATA # 1261 Site # 20794

Perth
2/91 Leach Highway
Kewdale WA 6105
Phone : +61 8 9251 9600
NATA # 1261
Site # 23736

New Zealand

Auckland
35 O'Rorke Road
Penrose, Auckland 1061
Phone : +64 9 526 45 51
IANZ # 1327

Christchurch
43 Detroit Drive
Rolleston, Christchurch 7675
Phone : 0800 856 450
IANZ # 1290

Company Name: Ramboll Australia Pty Ltd
Address: Level 3/100 Pacific Highway
North Sydney
NSW 2060

Order No.:
Report #: 711674
Phone: 02 9954 8118
Fax: 02 9954 8150

Received: Apr 2, 2020 3:56 PM
Due: Apr 3, 2020
Priority: 1 Day
Contact Name: Stephen Maxwell

Project Name:
Project ID: 318000780

Eurofins Analytical Services Manager : Andrew Black

Sample Detail						Lead	Lead	Moisture Set	NEPM 2013 Filtered Metals without Cr6+ (As, Be, B, Cd, Co, Cr, Cu, Hg, Pb, Ni, Mn, Cd, Co, Cr, Cu, Hg, Pb, Ni, Mn, Se, Zn)	NEPM 2013 Metals without Cr6+ (As, Be, B, Cd, Co, Cr, Cu, Hg, Pb, Ni, Mn, Se, Zn)
Melbourne Laboratory - NATA Site # 1254 & 14271						X		X	X	X
Sydney Laboratory - NATA Site # 18217							X			
Brisbane Laboratory - NATA Site # 20794										
Perth Laboratory - NATA Site # 23736										
External Laboratory										
No	Sample ID	Sample Date	Sampling Time	Matrix	LAB ID					
1	P1-TW1	Mar 24, 2020		Water	M20-Ap03653				X	X
2	P1-TW2	Mar 24, 2020		Water	M20-Ap03654				X	X
3	P1_TW3	Mar 24, 2020		Water	M20-Ap03655				X	X
4	P1-GW1	Mar 24, 2020		Water	M20-Ap03656				X	X
5	P1BH1_0.05	Mar 19, 2020		Soil	M20-Ap03657	X	X			
6	P1BH1_0.2	Mar 19, 2020		Soil	M20-Ap03658	X	X			
7	P1BH1_0.5	Mar 19, 2020		Soil	M20-Ap03659	X	X			
8	P1BH2_0.05	Mar 19, 2020		Soil	M20-Ap03660	X	X			
9	P1BH2_0.2	Mar 19, 2020		Soil	M20-Ap03661	X	X			
10	P1BH2_0.5	Mar 19, 2020		Soil	M20-Ap03662	X	X			

Australia

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Company Name: Ramboll Australia Pty Ltd
Address: Level 3/100 Pacific Highway
North Sydney
NSW 2060

Project Name:
Project ID: 318000780

Order No.:
Report #: 711674
Phone: 02 9954 8118
Fax: 02 9954 8150

Received: Apr 2, 2020 3:56 PM
Due: Apr 3, 2020
Priority: 1 Day
Contact Name: Stephen Maxwell

Eurofins Analytical Services Manager : Andrew Black

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12	P1BH3_0.2	Mar 19, 2020		Soil	M20-Ap03664	X		X		
13	P1BH3_0.5	Mar 19, 2020		Soil	M20-Ap03665	X		X		
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17	P1BH5_0.05	Mar 19, 2020		Soil	M20-Ap03669	X		X		
18	P1BH5_0.2	Mar 19, 2020		Soil	M20-Ap03670	X		X		
19	P1BH5_0.5	Mar 19, 2020		Soil	M20-Ap03671	X		X		
20	DGrab-MH(17W)	Mar 24, 2020		Dust	M20-Ap03788		X			
21	DGrab-MH2(17W)	Mar 24, 2020		Dust	M20-Ap03789		X			

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Perth Laboratory - NATA Site # 23736										
22	DSwab-BE(17W)	Mar 24, 2020		Wipes	M20-Ap03790		X			
23	DSwab-DA(17W)	Mar 24, 2020		Wipes	M20-Ap03791		X			
24	DSwab-FW(17W)	Mar 24, 2020		Wipes	M20-Ap03792		X			
25	DSwab-TV(17W)	Mar 24, 2020		Wipes	M20-Ap03793		X			
26	DVAC-BR1(17W)	Mar 24, 2020		Dust	M20-Ap03794		X			
27	DVAC-LR(17W)	Mar 24, 2020		Dust	M20-Ap03795		X			
Test Counts						23	23	15	4	4

Internal Quality Control Review and Glossary

General

- Laboratory QC results for Method Blanks, Duplicates, Matrix Spikes, and Laboratory Control Samples follows guidelines delineated in the National Environment Protection (Assessment of Site Contamination) Measure 1999, as amended May 2013 and are included in this QC report where applicable. Additional QC data may be available on request.
- All soil/sediment/solid results are reported on a dry basis, unless otherwise stated.
- All biota/food results are reported on a wet weight basis on the edible portion, unless otherwise stated.
- Actual LORs are matrix dependant. Quoted LORs may be raised where sample extracts are diluted due to interferences.
- Results are uncorrected for matrix spikes or surrogate recoveries except for PFAS compounds.
- SVOC analysis on waters are performed on homogenised, unfiltered samples, unless noted otherwise.
- Samples were analysed on an 'as received' basis.
- Information identified on this report with blue colour, indicates data provided by customer, that may have an impact on the results.
- This report replaces any interim results previously issued.

Holding Times

Please refer to 'Sample Preservation and Container Guide' for holding times (QS3001).

For samples received on the last day of holding time, notification of testing requirements should have been received at least 6 hours prior to sample receipt deadlines as stated on the SRA.

If the Laboratory did not receive the information in the required timeframe, and regardless of any other integrity issues, suitably qualified results may still be reported.

Holding times apply from the date of sampling, therefore compliance to these may be outside the laboratory's control.

For VOCs containing vinyl chloride, styrene and 2-chloroethyl vinyl ether the holding time is 7 days however for all other VOCs such as BTEX or C6-10 TRH then the holding time is 14 days.

****NOTE:** pH duplicates are reported as a range NOT as RPD

Units

mg/kg: milligrams per kilogram

mg/L: milligrams per litre

ug/L: micrograms per litre

ppm: Parts per million

ppb: Parts per billion

%: Percentage

org/100mL: Organisms per 100 millilitres

NTU: Nephelometric Turbidity Units

MPN/100mL: Most Probable Number of organisms per 100 millilitres

Terms

Dry	Where a moisture has been determined on a solid sample the result is expressed on a dry basis.
LOR	Limit of Reporting.
SPIKE	Addition of the analyte to the sample and reported as percentage recovery.
RPD	Relative Percent Difference between two Duplicate pieces of analysis.
LCS	Laboratory Control Sample - reported as percent recovery.
CRM	Certified Reference Material - reported as percent recovery.
Method Blank	In the case of solid samples these are performed on laboratory certified clean sands and in the case of water samples these are performed on de-ionised water.
Surr - Surrogate	The addition of a like compound to the analyte target and reported as percentage recovery.
Duplicate	A second piece of analysis from the same sample and reported in the same units as the result to show comparison.
USEPA	United States Environmental Protection Agency
APHA	American Public Health Association
TCLP	Toxicity Characteristic Leaching Procedure
COC	Chain of Custody
SRA	Sample Receipt Advice
QSM	US Department of Defense Quality Systems Manual Version 5.3
CP	Client Parent - QC was performed on samples pertaining to this report
NCP	Non-Client Parent - QC performed on samples not pertaining to this report, QC is representative of the sequence or batch that client samples were analysed within.
TEQ	Toxic Equivalency Quotient

QC - Acceptance Criteria

RPD Duplicates: Global RPD Duplicates Acceptance Criteria is 30% however the following acceptance guidelines are equally applicable:

Results <10 times the LOR : No Limit

Results between 10-20 times the LOR : RPD must lie between 0-50%

Results >20 times the LOR : RPD must lie between 0-30%

Surrogate Recoveries: Recoveries must lie between 20-130% Phenols & 50-150% PFASs

PFAS field samples that contain surrogate recoveries in excess of the QC limit designated in QSM 5.3 where no positive PFAS results have been reported have been reviewed and no data was affected.

WA DWER (n=10): PFBA, PFPeA, PFHxA, PFHpA, PFOA, PFBS, PFHxS, PFOS, 6:2 FTSA, 8:2 FTSA

QC Data General Comments

- Where a result is reported as a less than (<), higher than the nominated LOR, this is due to either matrix interference, extract dilution required due to interferences or contaminant levels within the sample, high moisture content or insufficient sample provided.
- Duplicate data shown within this report that states the word "BATCH" is a Batch Duplicate from outside of your sample batch, but within the laboratory sample batch at a 1:10 ratio. The Parent and Duplicate data shown is not data from your samples.
- Organochlorine Pesticide analysis - where reporting LCS data, Toxaphene & Chlordane are not added to the LCS.
- Organochlorine Pesticide analysis - where reporting Spike data, Toxaphene is not added to the Spike.
- Total Recoverable Hydrocarbons - where reporting Spike & LCS data, a single spike of commercial Hydrocarbon products in the range of C12-C30 is added and it's Total Recovery is reported in the C10-C14 cell of the Report.
- pH and Free Chlorine analysed in the laboratory - Analysis on this test must begin within 30 minutes of sampling. Therefore laboratory analysis is unlikely to be completed within holding time. Analysis will begin as soon as possible after sample receipt.
- Recovery Data (Spikes & Surrogates) - where chromatographic interference does not allow the determination of Recovery the term "INT" appears against that analyte.
- Polychlorinated Biphenyls are spiked only using Aroclor 1260 in Matrix Spikes and LCS.
- For Matrix Spikes and LCS results a dash " - " in the report means that the specific analyte was not added to the QC sample.
- Duplicate RPDs are calculated from raw analytical data thus it is possible to have two sets of data.

Quality Control Results

Comments**Sample Integrity**

Custody Seals Intact (if used)	N/A
Attempt to Chill was evident	Yes
Sample correctly preserved	Yes
Appropriate sample containers have been used	Yes
Sample containers for volatile analysis received with minimal headspace	Yes
Samples received within HoldingTime	Yes
Some samples have been subcontracted	No

Authorised By

Andrew Black Analytical Services Manager
Gabriele Cordero Senior Analyst-Metal (NSW)

**Glenn Jackson
General Manager**

Final report - this Report replaces any previously issued Report

- Indicates Not Requested

* Indicates NATA accreditation does not cover the performance of this service

Measurement uncertainty of test data is available on request or please [click here](#).

Eurofins shall not be liable for loss, cost, damages or expenses incurred by the client, or any other person or company, resulting from the use of any information or interpretation given in this report. In no case shall Eurofins be liable for consequential damages including, but not limited to, lost profits, damages for failure to meet deadlines and lost production arising from this report. This document shall not be reproduced except in full and relates only to the items tested. Unless indicated otherwise, the tests were performed on the samples as received.

Ramboll Environ Australia Pty Ltd
 Level 3/100 Pacific Highway
 North Sydney
 NSW 2060



NATA Accredited
 Accreditation Number 1261
 Site Number 1254

Accredited for compliance with ISO/IEC 17025 – Testing
 The results of the tests, calibrations and/or
 measurements included in this document are traceable
 to Australian/national standards.

Attention: Stephen Maxwell

Report 711674-S
 Project name
 Project ID 318000780
 Received Date Apr 02, 2020

Client Sample ID			P1BH1_0.05	P1BH1_0.2	P1BH1_0.5	P1BH2_0.05
Sample Matrix			Soil	Soil	Soil	Soil
Eurofins Sample No.			M20-Ap03657	M20-Ap03658	M20-Ap03659	M20-Ap03660
Date Sampled			Mar 19, 2020	Mar 19, 2020	Mar 19, 2020	Mar 19, 2020
Test/Reference	LOR	Unit				
Heavy Metals						
Lead	5	mg/kg	44	54	47	330
% Moisture	1	%	7.7	9.5	14	9.2

Client Sample ID			P1BH2_0.2	P1BH2_0.5	P1BH3_0.05	P1BH3_0.2
Sample Matrix			Soil	Soil	Soil	Soil
Eurofins Sample No.			M20-Ap03661	M20-Ap03662	M20-Ap03663	M20-Ap03664
Date Sampled			Mar 19, 2020	Mar 19, 2020	Mar 19, 2020	Mar 19, 2020
Test/Reference	LOR	Unit				
Heavy Metals						
Lead	5	mg/kg	240	40	160	46
% Moisture	1	%	8.9	9.9	20	18

Client Sample ID			P1BH3_0.5	P1BH4_0.05	P1BH4_0.2	P1BH4_0.5
Sample Matrix			Soil	Soil	Soil	Soil
Eurofins Sample No.			M20-Ap03665	M20-Ap03666	M20-Ap03667	M20-Ap03668
Date Sampled			Mar 19, 2020	Mar 19, 2020	Mar 19, 2020	Mar 19, 2020
Test/Reference	LOR	Unit				
Heavy Metals						
Lead	5	mg/kg	30	110	85	93
% Moisture	1	%	17	23	13	11

Client Sample ID			P1BH5_0.05	P1BH5_0.2	P1BH5_0.5	DGrab-MH(17W)
Sample Matrix			Soil	Soil	Soil	Dust
Eurofins Sample No.			M20-Ap03669	M20-Ap03670	M20-Ap03671	M20-Ap03788
Date Sampled			Mar 19, 2020	Mar 19, 2020	Mar 19, 2020	Mar 24, 2020
Test/Reference	LOR	Unit				
Heavy Metals						
Lead	5	mg/kg	45	41	26	230
% Moisture						
% Moisture	1	%	14	14	9.4	-

Client Sample ID			DGrab-MH2(17W)	DVAC-BR1(17W)	DVAC-LR(17W)
Sample Matrix			Dust	Dust	Dust
Eurofins Sample No.			M20-Ap03789	M20-Ap03794	M20-Ap03795
Date Sampled			Mar 24, 2020	Mar 24, 2020	Mar 24, 2020
Test/Reference	LOR	Unit			
Heavy Metals					
Lead	5	mg/kg	240	89	24

Sample History

Where samples are submitted/analysed over several days, the last date of extraction and analysis is reported.

A recent review of our LIMS has resulted in the correction or clarification of some method identifications. Due to this, some of the method reference information on reports has changed. However, no substantive change has been made to our laboratory methods, and as such there is no change in the validity of current or previous results.

If the date and time of sampling are not provided, the Laboratory will not be responsible for compromised results should testing be performed outside the recommended holding time.

Description

Heavy Metals

- Method: LTM-MET-3040 Metals in Waters, Soils & Sediments by ICP-MS

% Moisture

- Method: LTM-GEN-7080 Moisture

Testing Site

Sydney

Melbourne

Extracted

Apr 03, 2020

Apr 02, 2020

Holding Time

180 Days

14 Days

Australia

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Report #: 711674
Phone: 02 9954 8118
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Received: Apr 2, 2020 3:56 PM
Due: Apr 3, 2020
Priority: 1 Day
Contact Name: Stephen Maxwell

Project Name:
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Eurofins Analytical Services Manager : Andrew Black

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Melbourne Laboratory - NATA Site # 1254 & 14271						X		X	X	X
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- Samples were analysed on an 'as received' basis.
- Information identified on this report with blue colour, indicates data provided by customer, that may have an impact on the results.
- This report replaces any interim results previously issued.

Holding Times

Please refer to 'Sample Preservation and Container Guide' for holding times (QS3001).

For samples received on the last day of holding time, notification of testing requirements should have been received at least 6 hours prior to sample receipt deadlines as stated on the SRA.

If the Laboratory did not receive the information in the required timeframe, and regardless of any other integrity issues, suitably qualified results may still be reported.

Holding times apply from the date of sampling, therefore compliance to these may be outside the laboratory's control.

For VOCs containing vinyl chloride, styrene and 2-chloroethyl vinyl ether the holding time is 7 days however for all other VOCs such as BTEX or C6-10 TRH then the holding time is 14 days.

****NOTE:** pH duplicates are reported as a range NOT as RPD

Units

mg/kg: milligrams per kilogram

mg/L: milligrams per litre

ug/L: micrograms per litre

ppm: Parts per million

ppb: Parts per billion

%: Percentage

org/100mL: Organisms per 100 millilitres

NTU: Nephelometric Turbidity Units

MPN/100mL: Most Probable Number of organisms per 100 millilitres

Terms

Dry	Where a moisture has been determined on a solid sample the result is expressed on a dry basis.
LOR	Limit of Reporting.
SPIKE	Addition of the analyte to the sample and reported as percentage recovery.
RPD	Relative Percent Difference between two Duplicate pieces of analysis.
LCS	Laboratory Control Sample - reported as percent recovery.
CRM	Certified Reference Material - reported as percent recovery.
Method Blank	In the case of solid samples these are performed on laboratory certified clean sands and in the case of water samples these are performed on de-ionised water.
Surr - Surrogate	The addition of a like compound to the analyte target and reported as percentage recovery.
Duplicate	A second piece of analysis from the same sample and reported in the same units as the result to show comparison.
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APHA	American Public Health Association
TCLP	Toxicity Characteristic Leaching Procedure
COC	Chain of Custody
SRA	Sample Receipt Advice
QSM	US Department of Defense Quality Systems Manual Version 5.3
CP	Client Parent - QC was performed on samples pertaining to this report
NCP	Non-Client Parent - QC performed on samples not pertaining to this report, QC is representative of the sequence or batch that client samples were analysed within.
TEQ	Toxic Equivalency Quotient

QC - Acceptance Criteria

RPD Duplicates: Global RPD Duplicates Acceptance Criteria is 30% however the following acceptance guidelines are equally applicable:

Results <10 times the LOR : No Limit

Results between 10-20 times the LOR : RPD must lie between 0-50%

Results >20 times the LOR : RPD must lie between 0-30%

Surrogate Recoveries: Recoveries must lie between 20-130% Phenols & 50-150% PFASs

PFAS field samples that contain surrogate recoveries in excess of the QC limit designated in QSM 5.3 where no positive PFAS results have been reported have been reviewed and no data was affected.

WA DWER (n=10): PFBA, PFPeA, PFHxA, PFHpA, PFOA, PFBS, PFHxS, PFOS, 6:2 FTSA, 8:2 FTSA

QC Data General Comments

- Where a result is reported as a less than (<), higher than the nominated LOR, this is due to either matrix interference, extract dilution required due to interferences or contaminant levels within the sample, high moisture content or insufficient sample provided.
- Duplicate data shown within this report that states the word "BATCH" is a Batch Duplicate from outside of your sample batch, but within the laboratory sample batch at a 1:10 ratio. The Parent and Duplicate data shown is not data from your samples.
- Organochlorine Pesticide analysis - where reporting LCS data, Toxaphene & Chlordane are not added to the LCS.
- Organochlorine Pesticide analysis - where reporting Spike data, Toxaphene is not added to the Spike.
- Total Recoverable Hydrocarbons - where reporting Spike & LCS data, a single spike of commercial Hydrocarbon products in the range of C12-C30 is added and it's Total Recovery is reported in the C10-C14 cell of the Report.
- pH and Free Chlorine analysed in the laboratory - Analysis on this test must begin within 30 minutes of sampling. Therefore laboratory analysis is unlikely to be completed within holding time. Analysis will begin as soon as possible after sample receipt.
- Recovery Data (Spikes & Surrogates) - where chromatographic interference does not allow the determination of Recovery the term "INT" appears against that analyte.
- Polychlorinated Biphenyls are spiked only using Aroclor 1260 in Matrix Spikes and LCS.
- For Matrix Spikes and LCS results a dash " - " in the report means that the specific analyte was not added to the QC sample.
- Duplicate RPDs are calculated from raw analytical data thus it is possible to have two sets of data.

Quality Control Results

Test				Units	Result 1			Acceptance Limits	Pass Limits	Qualifying Code
LCS - % Recovery										
Heavy Metals										
Lead				%	88			80-120	Pass	
Test	Lab Sample ID	QA Source	Units	Result 1			Acceptance Limits	Pass Limits	Qualifying Code	
Spike - % Recovery										
Heavy Metals										
Lead				%	123			75-125	Pass	
Test	Lab Sample ID	QA Source	Units	Result 1			Acceptance Limits	Pass Limits	Qualifying Code	
Duplicate										
Heavy Metals										
Lead				mg/kg	44	52	16	30%	Pass	
Duplicate										
Heavy Metals										
Lead				mg/kg	54	55	1.0	30%	Pass	
Duplicate										
Heavy Metals										
% Moisture				%	8.9	10	11	30%	Pass	
Duplicate										
Heavy Metals										
% Moisture				%	9.4	9.4	<1	30%	Pass	

Comments**Sample Integrity**

Custody Seals Intact (if used)	N/A
Attempt to Chill was evident	Yes
Sample correctly preserved	Yes
Appropriate sample containers have been used	Yes
Sample containers for volatile analysis received with minimal headspace	Yes
Samples received within HoldingTime	Yes
Some samples have been subcontracted	No

Authorised By

Andrew Black	Analytical Services Manager
Emily Rosenberg	Senior Analyst-Metal (VIC)
Gabriele Cordero	Senior Analyst-Metal (NSW)

**Glenn Jackson**
General Manager

Final report - this Report replaces any previously issued Report

- Indicates Not Requested

* Indicates NATA accreditation does not cover the performance of this service

Measurement uncertainty of test data is available on request or please [click here](#).

Eurofins shall not be liable for loss, cost, damages or expenses incurred by the client, or any other person or company, resulting from the use of any information or interpretation given in this report. In no case shall Eurofins be liable for consequential damages including, but not limited to, lost profits, damages for failure to meet deadlines and lost production arising from this report. This document shall not be reproduced except in full and relates only to the items tested. Unless indicated otherwise, the tests were performed on the samples as received.

Ramboll Environ Australia Pty Ltd
 Level 3/100 Pacific Highway
 North Sydney
 NSW 2060



NATA Accredited
 Accreditation Number 1261
 Site Number 1254

Accredited for compliance with ISO/IEC 17025 – Testing
 The results of the tests, calibrations and/or
 measurements included in this document are traceable
 to Australian/national standards.

Attention: Stephen Maxwell

Report 711674-W
 Project name
 Project ID 318000780
 Received Date Apr 02, 2020

Client Sample ID			P1-TW1 Water M20-Ap03653 Mar 24, 2020	P1-TW2 Water M20-Ap03654 Mar 24, 2020	P1_TW3 Water M20-Ap03655 Mar 24, 2020	P1-GW1 Water M20-Ap03656 Mar 24, 2020
Sample Matrix	LOR	Unit				
Eurofins Sample No.						
Date Sampled						
Test/Reference	LOR	Unit				
Heavy Metals						
Arsenic	0.001	mg/L	< 0.001	< 0.001	< 0.001	< 0.001
Arsenic (filtered)	0.001	mg/L	< 0.001	< 0.001	< 0.001	< 0.001
Beryllium	0.001	mg/L	< 0.001	< 0.001	< 0.001	< 0.001
Beryllium (filtered)	0.001	mg/L	< 0.001	< 0.001	< 0.001	< 0.001
Boron	0.05	mg/L	< 0.05	< 0.05	< 0.05	< 0.05
Boron (filtered)	0.05	mg/L	< 0.05	< 0.05	< 0.05	< 0.05
Cadmium	0.0002	mg/L	< 0.0002	< 0.0002	< 0.0002	< 0.0002
Cadmium (filtered)	0.0002	mg/L	< 0.0002	< 0.0002	< 0.0002	< 0.0002
Chromium	0.001	mg/L	< 0.001	< 0.001	0.001	< 0.001
Chromium (filtered)	0.001	mg/L	< 0.001	< 0.001	< 0.001	< 0.001
Cobalt	0.001	mg/L	< 0.001	< 0.001	< 0.001	< 0.001
Cobalt (filtered)	0.001	mg/L	< 0.001	< 0.001	< 0.001	< 0.001
Copper	0.001	mg/L	0.003	0.011	< 0.001	0.031
Copper (filtered)	0.001	mg/L	0.003	0.010	< 0.001	0.020
Lead	0.001	mg/L	< 0.001	0.001	< 0.001	< 0.001
Lead (filtered)	0.001	mg/L	< 0.001	< 0.001	< 0.001	< 0.001
Manganese	0.005	mg/L	0.006	0.033	< 0.005	< 0.005
Manganese (filtered)	0.005	mg/L	0.005	0.032	< 0.005	< 0.005
Mercury	0.0001	mg/L	< 0.0001	< 0.0001	< 0.0001	< 0.0001
Mercury (filtered)	0.0001	mg/L	< 0.0001	< 0.0001	< 0.0001	< 0.0001
Nickel	0.001	mg/L	< 0.001	0.002	< 0.001	< 0.001
Nickel (filtered)	0.001	mg/L	< 0.001	< 0.001	< 0.001	< 0.001
Selenium	0.001	mg/L	< 0.001	< 0.001	< 0.001	< 0.001
Selenium (filtered)	0.001	mg/L	< 0.001	< 0.001	< 0.001	< 0.001
Zinc	0.005	mg/L	0.12	0.45	0.12	0.022
Zinc (filtered)	0.005	mg/L	0.12	0.44	0.12	0.015

Sample History

Where samples are submitted/analysed over several days, the last date of extraction and analysis is reported.

A recent review of our LIMS has resulted in the correction or clarification of some method identifications. Due to this, some of the method reference information on reports has changed. However, no substantive change has been made to our laboratory methods, and as such there is no change in the validity of current or previous results.

If the date and time of sampling are not provided, the Laboratory will not be responsible for compromised results should testing be performed outside the recommended holding time.

Description

NEPM 2013 Metals without Cr6+ (As, Be, B, Cd, Co, Cr, Cu, Hg, Pb, Ni, Mn, Se, Zn)

- Method: LTM-MET-3040 Metals in Waters, Soils & Sediments by ICP-MS

NEPM 2013 Filtered Metals without Cr6+ (As, Be, B, Cd, Co, Cr, Cu, Hg, Pb, Ni, Mn, Se, Zn)

- Method: LTM-MET-3040 Metals in Waters, Soils & Sediments by ICP-MS

Testing Site	Extracted	Holding Time
Melbourne	Apr 02, 2020	180 Days
Melbourne	Apr 02, 2020	28 Days

Australia

Melbourne
6 Monterey Road
Dandenong South VIC 3175
Phone : +61 3 8564 5000
NATA # 1261
Site # 1254 & 14271

Sydney
Unit F3, Building F
16 Mars Road
Lane Cove West NSW 2066
Phone : +61 2 9900 8400
NATA # 1261 Site # 18217

Brisbane
1/21 Smallwood Place
Murarrie QLD 4172
Phone : +61 7 3902 4600
NATA # 1261 Site # 20794

Perth
2/91 Leach Highway
Kewdale WA 6105
Phone : +61 8 9251 9600
NATA # 1261
Site # 23736

New Zealand

Auckland
35 O'Rorke Road
Penrose, Auckland 1061
Phone : +64 9 526 45 51
IANZ # 1327

Christchurch
43 Detroit Drive
Rolleston, Christchurch 7675
Phone : 0800 856 450
IANZ # 1290

Company Name: Ramboll Australia Pty Ltd
Address: Level 3/100 Pacific Highway
North Sydney
NSW 2060

Order No.:
Report #: 711674
Phone: 02 9954 8118
Fax: 02 9954 8150

Received: Apr 2, 2020 3:56 PM
Due: Apr 3, 2020
Priority: 1 Day
Contact Name: Stephen Maxwell

Project Name:
Project ID: 318000780

Eurofins Analytical Services Manager : Andrew Black

Sample Detail						Lead	Lead	Moisture Set	NEPM 2013 Metals without Cr6+ (As, Be, B, Cd, Co, Cr, Cu, Hg, Pb, Ni, Mn, Ni, Ni, Mn, Se, Zn)	NEPM 2013 Filtered Metals without Cr6+ (As, Be, B, Cd, Co, Cr, Cu, Hg, Pb, Ni, Mn, Ni, Ni, Mn, Se, Zn)
Melbourne Laboratory - NATA Site # 1254 & 14271						X		X	X	X
Sydney Laboratory - NATA Site # 18217							X			
Brisbane Laboratory - NATA Site # 20794										
Perth Laboratory - NATA Site # 23736										
External Laboratory										
No	Sample ID	Sample Date	Sampling Time	Matrix	LAB ID					
1	P1-TW1	Mar 24, 2020		Water	M20-Ap03653				X	X
2	P1-TW2	Mar 24, 2020		Water	M20-Ap03654				X	X
3	P1_TW3	Mar 24, 2020		Water	M20-Ap03655				X	X
4	P1-GW1	Mar 24, 2020		Water	M20-Ap03656				X	X
5	P1BH1_0.05	Mar 19, 2020		Soil	M20-Ap03657	X		X		
6	P1BH1_0.2	Mar 19, 2020		Soil	M20-Ap03658	X		X		
7	P1BH1_0.5	Mar 19, 2020		Soil	M20-Ap03659	X		X		
8	P1BH2_0.05	Mar 19, 2020		Soil	M20-Ap03660	X		X		
9	P1BH2_0.2	Mar 19, 2020		Soil	M20-Ap03661	X		X		
10	P1BH2_0.5	Mar 19, 2020		Soil	M20-Ap03662	X		X		

Australia

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NATA # 1261
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Phone : +61 7 3902 4600
NATA # 1261 Site # 20794

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Kewdale WA 6105
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NATA # 1261
Site # 23736

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Melbourne Laboratory - NATA Site # 1254 & 14271						X		X	X	X
Sydney Laboratory - NATA Site # 18217							X			
Brisbane Laboratory - NATA Site # 20794										
Perth Laboratory - NATA Site # 23736										
11	P1BH3_0.05	Mar 19, 2020		Soil	M20-Ap03663	X		X		
12	P1BH3_0.2	Mar 19, 2020		Soil	M20-Ap03664	X		X		
13	P1BH3_0.5	Mar 19, 2020		Soil	M20-Ap03665	X		X		
14	P1BH4_0.05	Mar 19, 2020		Soil	M20-Ap03666	X		X		
15	P1BH4_0.2	Mar 19, 2020		Soil	M20-Ap03667	X		X		
16	P1BH4_0.5	Mar 19, 2020		Soil	M20-Ap03668	X		X		
17	P1BH5_0.05	Mar 19, 2020		Soil	M20-Ap03669	X		X		
18	P1BH5_0.2	Mar 19, 2020		Soil	M20-Ap03670	X		X		
19	P1BH5_0.5	Mar 19, 2020		Soil	M20-Ap03671	X		X		
20	DGrab-MH(17W)	Mar 24, 2020		Dust	M20-Ap03788		X			
21	DGrab-MH2(17W)	Mar 24, 2020		Dust	M20-Ap03789		X			

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ABN – 50 005 085 521

web : www.eurofins.com.au

e.mail : EnviroSales@eurofins.com

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Sydney Laboratory - NATA Site # 18217							X			
Brisbane Laboratory - NATA Site # 20794										
Perth Laboratory - NATA Site # 23736										
22	DSwab-BE(17W)	Mar 24, 2020		Wipes	M20-Ap03790		X			
23	DSwab-DA(17W)	Mar 24, 2020		Wipes	M20-Ap03791		X			
24	DSwab-FW(17W)	Mar 24, 2020		Wipes	M20-Ap03792		X			
25	DSwab-TV(17W)	Mar 24, 2020		Wipes	M20-Ap03793		X			
26	DVAC-BR1(17W)	Mar 24, 2020		Dust	M20-Ap03794		X			
27	DVAC-LR(17W)	Mar 24, 2020		Dust	M20-Ap03795		X			
Test Counts						23	23	15	4	4

Internal Quality Control Review and Glossary
General

- Laboratory QC results for Method Blanks, Duplicates, Matrix Spikes, and Laboratory Control Samples follows guidelines delineated in the National Environment Protection (Assessment of Site Contamination) Measure 1999, as amended May 2013 and are included in this QC report where applicable. Additional QC data may be available on request.
- All soil/sediment/solid results are reported on a dry basis, unless otherwise stated.
- All biota/food results are reported on a wet weight basis on the edible portion, unless otherwise stated.
- Actual LORs are matrix dependant. Quoted LORs may be raised where sample extracts are diluted due to interferences.
- Results are uncorrected for matrix spikes or surrogate recoveries except for PFAS compounds.
- SVOC analysis on waters are performed on homogenised, unfiltered samples, unless noted otherwise.
- Samples were analysed on an 'as received' basis.
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Terms

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RPD	Relative Percent Difference between two Duplicate pieces of analysis.
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CRM	Certified Reference Material - reported as percent recovery.
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Surr - Surrogate	The addition of a like compound to the analyte target and reported as percentage recovery.
Duplicate	A second piece of analysis from the same sample and reported in the same units as the result to show comparison.
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Results <10 times the LOR : No Limit

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Results >20 times the LOR : RPD must lie between 0-30%

Surrogate Recoveries: Recoveries must lie between 20-130% Phenols & 50-150% PFASs

PFAS field samples that contain surrogate recoveries in excess of the QC limit designated in QSM 5.3 where no positive PFAS results have been reported have been reviewed and no data was affected.

WA DWER (n=10): PFBA, PFPeA, PFHxA, PFHpA, PFOA, PFBS, PFHxS, PFOS, 6:2 FTSA, 8:2 FTSA

QC Data General Comments

- Where a result is reported as a less than (<), higher than the nominated LOR, this is due to either matrix interference, extract dilution required due to interferences or contaminant levels within the sample, high moisture content or insufficient sample provided.
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- Organochlorine Pesticide analysis - where reporting LCS data, Toxaphene & Chlordane are not added to the LCS.
- Organochlorine Pesticide analysis - where reporting Spike data, Toxaphene is not added to the Spike.
- Total Recoverable Hydrocarbons - where reporting Spike & LCS data, a single spike of commercial Hydrocarbon products in the range of C12-C30 is added and it's Total Recovery is reported in the C10-C14 cell of the Report.
- pH and Free Chlorine analysed in the laboratory - Analysis on this test must begin within 30 minutes of sampling. Therefore laboratory analysis is unlikely to be completed within holding time. Analysis will begin as soon as possible after sample receipt.
- Recovery Data (Spikes & Surrogates) - where chromatographic interference does not allow the determination of Recovery the term "INT" appears against that analyte.
- Polychlorinated Biphenyls are spiked only using Aroclor 1260 in Matrix Spikes and LCS.
- For Matrix Spikes and LCS results a dash " - " in the report means that the specific analyte was not added to the QC sample.
- Duplicate RPDs are calculated from raw analytical data thus it is possible to have two sets of data.

Quality Control Results

Test			Units	Result 1		Acceptance Limits	Pass Limits	Qualifying Code
Method Blank								
Heavy Metals								
Arsenic			mg/L	< 0.001		0.001	Pass	
Arsenic (filtered)			mg/L	< 0.001		0.001	Pass	
Beryllium			mg/L	< 0.001		0.001	Pass	
Beryllium (filtered)			mg/L	< 0.001		0.001	Pass	
Boron			mg/L	< 0.05		0.05	Pass	
Boron (filtered)			mg/L	< 0.05		0.05	Pass	
Cadmium			mg/L	< 0.0002		0.0002	Pass	
Cadmium (filtered)			mg/L	< 0.0002		0.0002	Pass	
Chromium			mg/L	< 0.001		0.001	Pass	
Chromium (filtered)			mg/L	< 0.001		0.001	Pass	
Cobalt			mg/L	< 0.001		0.001	Pass	
Cobalt (filtered)			mg/L	< 0.001		0.001	Pass	
Copper			mg/L	< 0.001		0.001	Pass	
Copper (filtered)			mg/L	< 0.001		0.001	Pass	
Lead			mg/L	< 0.001		0.001	Pass	
Lead (filtered)			mg/L	< 0.001		0.001	Pass	
Manganese			mg/L	< 0.005		0.005	Pass	
Manganese (filtered)			mg/L	< 0.005		0.005	Pass	
Mercury			mg/L	< 0.0001		0.0001	Pass	
Mercury (filtered)			mg/L	< 0.0001		0.0001	Pass	
Nickel			mg/L	< 0.001		0.001	Pass	
Nickel (filtered)			mg/L	< 0.001		0.001	Pass	
Selenium			mg/L	< 0.001		0.001	Pass	
Selenium (filtered)			mg/L	< 0.001		0.001	Pass	
Zinc			mg/L	< 0.005		0.005	Pass	
Zinc (filtered)			mg/L	< 0.005		0.005	Pass	
LCS - % Recovery								
Heavy Metals								
Arsenic			%	99		80-120	Pass	
Beryllium			%	94		80-120	Pass	
Boron			%	90		80-120	Pass	
Cadmium			%	104		80-120	Pass	
Chromium			%	100		80-120	Pass	
Cobalt			%	102		80-120	Pass	
Copper			%	102		80-120	Pass	
Lead			%	100		80-120	Pass	
Manganese			%	103		80-120	Pass	
Mercury			%	95		75-125	Pass	
Nickel			%	101		80-120	Pass	
Selenium			%	87		80-120	Pass	
Zinc			%	103		80-120	Pass	
Test	Lab Sample ID	QA Source	Units	Result 1		Acceptance Limits	Pass Limits	Qualifying Code
Spike - % Recovery								
Heavy Metals								
				Result 1				
Arsenic			M20-Ap01765	NCP	%	98	75-125	Pass
Arsenic (filtered)			M20-Ap01752	NCP	%	110	70-130	Pass
Beryllium			M20-Ap01765	NCP	%	91	75-125	Pass
Beryllium (filtered)			M20-Ap01752	NCP	%	92	75-125	Pass
Boron			M20-Ap01765	NCP	%	84	75-125	Pass

Test	Lab Sample ID	QA Source	Units	Result 1			Acceptance Limits	Pass Limits	Qualifying Code
Boron (filtered)	M20-Ap01752	NCP	%	42			75-125	Fail	Q08
Cadmium	M20-Ap01765	NCP	%	101			75-125	Pass	
Cadmium (filtered)	M20-Ap01752	NCP	%	100			70-130	Pass	
Chromium	M20-Ap01765	NCP	%	97			75-125	Pass	
Chromium (filtered)	M20-Ap01752	NCP	%	98			70-130	Pass	
Cobalt	M20-Ap01765	NCP	%	98			75-125	Pass	
Cobalt (filtered)	M20-Ap01752	NCP	%	97			75-125	Pass	
Copper	M20-Ap01765	NCP	%	99			75-125	Pass	
Copper (filtered)	M20-Ap01752	NCP	%	96			70-130	Pass	
Lead	M20-Ap01765	NCP	%	97			75-125	Pass	
Lead (filtered)	M20-Ap01752	NCP	%	95			70-130	Pass	
Manganese	M20-Ap01765	NCP	%	100			75-125	Pass	
Manganese (filtered)	M20-Ap01752	NCP	%	68			70-130	Fail	Q08
Mercury	M20-Ap01765	NCP	%	92			70-130	Pass	
Mercury (filtered)	M20-Ap01752	NCP	%	76			70-130	Pass	
Nickel	M20-Ap01765	NCP	%	98			75-125	Pass	
Nickel (filtered)	M20-Ap01752	NCP	%	95			70-130	Pass	
Selenium	M20-Ap01765	NCP	%	94			75-125	Pass	
Selenium (filtered)	M20-Ap01752	NCP	%	124			70-130	Pass	
Zinc	M20-Ap01765	NCP	%	99			75-125	Pass	
Zinc (filtered)	M20-Ap01752	NCP	%	94			70-130	Pass	
Test	Lab Sample ID	QA Source	Units	Result 1			Acceptance Limits	Pass Limits	Qualifying Code
Duplicate									
Heavy Metals				Result 1	Result 2	RPD			
Arsenic	M20-Ap01765	NCP	mg/L	< 0.001	< 0.001	<1	30%	Pass	
Arsenic (filtered)	M20-Ap01752	NCP	mg/L	0.026	0.026	<1	30%	Pass	
Beryllium	M20-Ap01765	NCP	mg/L	< 0.001	< 0.001	<1	30%	Pass	
Beryllium (filtered)	M20-Ap01752	NCP	mg/L	< 0.001	< 0.001	<1	30%	Pass	
Boron	M20-Ap01765	NCP	mg/L	< 0.05	< 0.05	<1	30%	Pass	
Boron (filtered)	M20-Ap01752	NCP	mg/L	0.99	1.0	4.0	30%	Pass	
Cadmium	M20-Ap01765	NCP	mg/L	< 0.0002	< 0.0002	<1	30%	Pass	
Cadmium (filtered)	M20-Ap01752	NCP	mg/L	< 0.0002	0.0002	170	30%	Fail	Q15
Chromium	M20-Ap01765	NCP	mg/L	< 0.001	< 0.001	<1	30%	Pass	
Chromium (filtered)	M20-Ap01752	NCP	mg/L	0.006	0.006	2.0	30%	Pass	
Cobalt	M20-Ap01765	NCP	mg/L	< 0.001	< 0.001	<1	30%	Pass	
Cobalt (filtered)	M20-Ap01752	NCP	mg/L	0.004	0.004	1.0	30%	Pass	
Copper	M20-Ap01765	NCP	mg/L	< 0.001	< 0.001	<1	30%	Pass	
Copper (filtered)	M20-Ap01752	NCP	mg/L	< 0.001	< 0.001	<1	30%	Pass	
Lead	M20-Ap01765	NCP	mg/L	< 0.001	< 0.001	<1	30%	Pass	
Lead (filtered)	M20-Ap01752	NCP	mg/L	< 0.001	< 0.001	<1	30%	Pass	
Manganese	M20-Ap01765	NCP	mg/L	< 0.005	< 0.005	<1	30%	Pass	
Manganese (filtered)	M20-Ap01752	NCP	mg/L	0.32	0.32	2.0	30%	Pass	
Mercury	M20-Ap01765	NCP	mg/L	< 0.0001	< 0.0001	<1	30%	Pass	
Mercury (filtered)	M20-Ap01752	NCP	mg/L	< 0.0001	< 0.0001	<1	30%	Pass	
Nickel	M20-Ap01765	NCP	mg/L	< 0.001	< 0.001	<1	30%	Pass	
Nickel (filtered)	M20-Ap01752	NCP	mg/L	0.023	0.023	2.0	30%	Pass	
Selenium	M20-Ap01765	NCP	mg/L	< 0.001	< 0.001	<1	30%	Pass	
Selenium (filtered)	M20-Ap01752	NCP	mg/L	0.002	0.002	37	30%	Fail	Q15
Zinc	M20-Ap01765	NCP	mg/L	< 0.005	< 0.005	<1	30%	Pass	
Zinc (filtered)	M20-Ap01752	NCP	mg/L	0.020	0.022	11	30%	Pass	

Comments
Sample Integrity

Custody Seals Intact (if used)	N/A
Attempt to Chill was evident	Yes
Sample correctly preserved	Yes
Appropriate sample containers have been used	Yes
Sample containers for volatile analysis received with minimal headspace	Yes
Samples received within HoldingTime	Yes
Some samples have been subcontracted	No

Qualifier Codes/Comments

Code	Description
Q08	The matrix spike recovery is outside of the recommended acceptance criteria. An acceptable recovery was obtained for the laboratory control sample indicating a sample matrix interference.
Q15	The RPD reported passes Eurofins Environment Testing's QC - Acceptance Criteria as defined in the Internal Quality Control Review and Glossary page of this report.

Authorised By

Andrew Black	Analytical Services Manager
Emily Rosenberg	Senior Analyst-Metal (VIC)


**Glenn Jackson
General Manager**

Final report - this Report replaces any previously issued Report

- Indicates Not Requested

* Indicates NATA accreditation does not cover the performance of this service

Measurement uncertainty of test data is available on request or please [click here](#).

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CHAIN OF CUSTODY RECORD

Sydney Laboratory Unit F3 Bld F-16, Mare Rd, Lane Cove West, NSW 2066 02 9900 8400 EnviroSamplesSW@eurofins.com
 Brisbane Laboratory Unit 1, 21, Smallwood Pl, Murarie, QLD 4172 07 3902 4900 EnviroSamplesQLD@eurofins.com
 Perth Laboratory Unit 2, 97, Leach Highway, Kewdale WA 6105 08 9251 9900 EnviroSamplesWA@eurofins.com
 Melbourne Laboratory 2 Kingston Town Close, Oakleigh, VIC 3166 03 8564 5000 EnviroSamplesVIC@eurofins.com

Company Ramboll
Address 50 Glebe Road the Junction
Contact Name Stephen Maxwell
Phone No 0478 658 194
Project No 318000780
Project Name P1
Project Manager EDD Format (Estat, EDMS, Custom)
Sampler(s) SM
Handed over by Stephen Maxwell
SM

Analyses M13 (ex hex chromium)
(Note: Where metals are requested, please specify "Total" or "Filtered") SUITE code must be used to attract SUITE pricing.

Containers
 Overnight (9am)*
 1 Day*
 3 Day*
 5 Day*
 Other ()
*Surcharges apply

Turnaround Time (TAT)
Requirements (confirm will be done if not listed)

No	Client Sample ID	Sampled Date/Time (dd/mm/yy hh:mm)	Matrix (Solid (s) Water (W))																
1	P1_TISED	31/09/20	W	X															
Total Counts										1									

Method of Shipment Courier (#) Hand Delivered Postal
Eurofins / mgf Laboratory Use Only Received By: LATHY N
 Signature: [Signature] Date: 16/10/20
 Received By: [Signature] Date: 11/10/20
 Signature: [Signature] Date: 11/10/20

Submission of samples to the laboratory will be deemed as acceptance of Eurofins | mgf Standard Terms and Conditions unless agreed otherwise. A copy of Eurofins | mgf Standard Terms and Conditions is available on request.
Eurofins Environment Testing Australia Pty Ltd trading as Eurofins | mgf
 # 722842

Melbourne

6 Monterey Road
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Phone : +61 3 8564 5000
NATA # 1261
Site # 1254 & 14271

Sydney

Unit F3, Building F
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Lane Cove West NSW 2066
Phone : +61 2 9900 8400
NATA # 1261 Site # 18217

Brisbane

1/21 Smallwood Place
Murarrie QLD 4172
Phone : +61 7 3902 4600
NATA # 1261 Site # 20794

Perth

2/91 Leach Highway
Kewdale WA 6105
Phone : +61 8 9251 9600
NATA # 1261 Site # 23736

Sample Receipt Advice

Company name: **Ramboll Australia Pty Ltd**
Contact name: Stephen Maxwell
Project name: P1
Project ID: 318000780
COC number: Not provided
Turn around time: 3 Day
Date/Time received: Jun 1, 2020 11:13 AM
Eurofins reference: **722842**

Sample information

- A detailed list of analytes logged into our LIMS, is included in the attached summary table.
- All samples have been received as described on the above COC.
- COC has been completed correctly.
- Attempt to chill was evident.
- Appropriately preserved sample containers have been used.
- All samples were received in good condition.
- Samples have been provided with adequate time to commence analysis in accordance with the relevant holding times.

- Appropriate sample containers have been used.
- Sample containers for volatile analysis received with zero headspace.
- Split sample sent to requested external lab.
- Some samples have been subcontracted.
- N/A Custody Seals intact (if used).

Contact notes

If you have any questions with respect to these samples please contact:

Andrew Black on Phone : (+61) 2 9900 8490 or by e.mail: AndrewBlack@eurofins.com

Results will be delivered electronically via e.mail to Stephen Maxwell - smaxwell@ramboll.com.

Note: A copy of these results will also be delivered to the general Ramboll Australia Pty Ltd email address.

Ramboll Environ Australia Pty Ltd
 Level 3/100 Pacific Highway
 North Sydney
 NSW 2060



NATA Accredited
Accreditation Number 1261
Site Number 18217

Accredited for compliance with ISO/IEC 17025 – Testing
 The results of the tests, calibrations and/or
 measurements included in this document are traceable
 to Australian/national standards.

Attention: **Stephen Maxwell**

Report **722842-S**
 Project name **P1**
 Project ID **318000780**
 Received Date **Jun 01, 2020**

Client Sample ID			P1_T1SED
Sample Matrix			Sediment
Eurofins Sample No.			S20-Jn00670
Date Sampled			May 31, 2020
Test/Reference	LOR	Unit	
Heavy Metals			
Arsenic	2	mg/kg	410
Beryllium	2	mg/kg	17
Boron	10	mg/kg	460
Cadmium	0.4	mg/kg	31
Cobalt	5	mg/kg	170
Copper	5	mg/kg	4900
Lead	5	mg/kg	8700
Manganese	5	mg/kg	6100
Mercury	0.1	mg/kg	5.9
Nickel	5	mg/kg	500
Selenium	2	mg/kg	45
Zinc	5	mg/kg	16000

Sample History

Where samples are submitted/analysed over several days, the last date of extraction and analysis is reported.

A recent review of our LIMS has resulted in the correction or clarification of some method identifications. Due to this, some of the method reference information on reports has changed. However, no substantive change has been made to our laboratory methods, and as such there is no change in the validity of current or previous results.

If the date and time of sampling are not provided, the Laboratory will not be responsible for compromised results should testing be performed outside the recommended holding time.

Description

Heavy Metals

Testing Site

Sydney

Extracted

Jun 02, 2020

Holding Time

180 Days

- Method: LTM-MET-3040 Metals in Waters, Soils & Sediments by ICP-MS

Australia

Melbourne
6 Monterey Road
Dandenong South VIC 3175
Phone : +61 3 8564 5000
NATA # 1261
Site # 1254 & 14271

Sydney
Unit F3, Building F
16 Mars Road
Lane Cove West NSW 2066
Phone : +61 2 9900 8400
NATA # 1261 Site # 18217

Brisbane
1/21 Smallwood Place
Murarrie QLD 4172
Phone : +61 7 3902 4600
NATA # 1261 Site # 20794

Perth
2/91 Leach Highway
Kewdale WA 6105
Phone : +61 8 9251 9600
NATA # 1261
Site # 23736

New Zealand

Auckland
35 O'Rorke Road
Penrose, Auckland 1061
Phone : +64 9 526 45 51
IANZ # 1327

Christchurch
43 Detroit Drive
Rolleston, Christchurch 7675
Phone : 0800 856 450
IANZ # 1290

Company Name: Ramboll Australia Pty Ltd
Address: Level 3/100 Pacific Highway
North Sydney
NSW 2060

Project Name: P1
Project ID: 318000780

Order No.:
Report #: 722842
Phone: 02 9954 8118
Fax: 02 9954 8150

Received: Jun 1, 2020 11:13 AM
Due: Jun 4, 2020
Priority: 3 Day
Contact Name: Stephen Maxwell

Eurofins Analytical Services Manager : Andrew Black

Sample Detail						Arsenic	Beryllium	Boron	Cadmium	Cobalt	Copper	Lead	Manganese	Mercury	Nickel	Selenium	Zinc
Melbourne Laboratory - NATA Site # 1254 & 14271																	
Sydney Laboratory - NATA Site # 18217						X	X	X	X	X	X	X	X	X	X	X	X
Brisbane Laboratory - NATA Site # 20794																	
Perth Laboratory - NATA Site # 23736																	
External Laboratory																	
No	Sample ID	Sample Date	Sampling Time	Matrix	LAB ID												
1	P1_T1SED	May 31, 2020		Water	S20-Jn00670	X	X	X	X	X	X	X	X	X	X	X	X
Test Counts						1	1	1	1	1	1	1	1	1	1	1	1

Internal Quality Control Review and Glossary

General

- Laboratory QC results for Method Blanks, Duplicates, Matrix Spikes, and Laboratory Control Samples follows guidelines delineated in the National Environment Protection (Assessment of Site Contamination) Measure 1999, as amended May 2013 and are included in this QC report where applicable. Additional QC data may be available on request.
- All soil/sediment/solid results are reported on a dry basis, unless otherwise stated.
- All biota/food results are reported on a wet weight basis on the edible portion, unless otherwise stated.
- Actual LORs are matrix dependant. Quoted LORs may be raised where sample extracts are diluted due to interferences.
- Results are uncorrected for matrix spikes or surrogate recoveries except for PFAS compounds.
- SVOC analysis on waters are performed on homogenised, unfiltered samples, unless noted otherwise.
- Samples were analysed on an 'as received' basis.
- Information identified on this report with blue colour, indicates data provided by customer, that may have an impact on the results.
- This report replaces any interim results previously issued.

Holding Times

Please refer to 'Sample Preservation and Container Guide' for holding times (QS3001).

For samples received on the last day of holding time, notification of testing requirements should have been received at least 6 hours prior to sample receipt deadlines as stated on the SRA.

If the Laboratory did not receive the information in the required timeframe, and regardless of any other integrity issues, suitably qualified results may still be reported.

Holding times apply from the date of sampling, therefore compliance to these may be outside the laboratory's control.

For VOCs containing vinyl chloride, styrene and 2-chloroethyl vinyl ether the holding time is 7 days however for all other VOCs such as BTEX or C6-10 TRH then the holding time is 14 days.

****NOTE:** pH duplicates are reported as a range NOT as RPD

Units

mg/kg: milligrams per kilogram

mg/L: milligrams per litre

ug/L: micrograms per litre

ppm: Parts per million

ppb: Parts per billion

%: Percentage

org/100mL: Organisms per 100 millilitres

NTU: Nephelometric Turbidity Units

MPN/100mL: Most Probable Number of organisms per 100 millilitres

Terms

Dry	Where a moisture has been determined on a solid sample the result is expressed on a dry basis.
LOR	Limit of Reporting.
SPIKE	Addition of the analyte to the sample and reported as percentage recovery.
RPD	Relative Percent Difference between two Duplicate pieces of analysis.
LCS	Laboratory Control Sample - reported as percent recovery.
CRM	Certified Reference Material - reported as percent recovery.
Method Blank	In the case of solid samples these are performed on laboratory certified clean sands and in the case of water samples these are performed on de-ionised water.
Surr - Surrogate	The addition of a like compound to the analyte target and reported as percentage recovery.
Duplicate	A second piece of analysis from the same sample and reported in the same units as the result to show comparison.
USEPA	United States Environmental Protection Agency
APHA	American Public Health Association
TCLP	Toxicity Characteristic Leaching Procedure
COC	Chain of Custody
SRA	Sample Receipt Advice
QSM	US Department of Defense Quality Systems Manual Version 5.3
CP	Client Parent - QC was performed on samples pertaining to this report
NCP	Non-Client Parent - QC performed on samples not pertaining to this report, QC is representative of the sequence or batch that client samples were analysed within.
TEQ	Toxic Equivalency Quotient

QC - Acceptance Criteria

RPD Duplicates: Global RPD Duplicates Acceptance Criteria is 30% however the following acceptance guidelines are equally applicable:

Results <10 times the LOR : No Limit

Results between 10-20 times the LOR : RPD must lie between 0-50%

Results >20 times the LOR : RPD must lie between 0-30%

Surrogate Recoveries: Recoveries must lie between 20-130% Phenols & 50-150% PFASs

PFAS field samples that contain surrogate recoveries in excess of the QC limit designated in QSM 5.3 where no positive PFAS results have been reported have been reviewed and no data was affected.

WA DWER (n=10): PFBA, PFPeA, PFHxA, PFHpA, PFOA, PFBS, PFHxS, PFOS, 6:2 FTSA, 8:2 FTSA

QC Data General Comments

- Where a result is reported as a less than (<), higher than the nominated LOR, this is due to either matrix interference, extract dilution required due to interferences or contaminant levels within the sample, high moisture content or insufficient sample provided.
- Duplicate data shown within this report that states the word "BATCH" is a Batch Duplicate from outside of your sample batch, but within the laboratory sample batch at a 1:10 ratio. The Parent and Duplicate data shown is not data from your samples.
- Organochlorine Pesticide analysis - where reporting LCS data, Toxaphene & Chlordane are not added to the LCS.
- Organochlorine Pesticide analysis - where reporting Spike data, Toxaphene is not added to the Spike.
- Total Recoverable Hydrocarbons - where reporting Spike & LCS data, a single spike of commercial Hydrocarbon products in the range of C12-C30 is added and it's Total Recovery is reported in the C10-C14 cell of the Report.
- pH and Free Chlorine analysed in the laboratory - Analysis on this test must begin within 30 minutes of sampling. Therefore laboratory analysis is unlikely to be completed within holding time. Analysis will begin as soon as possible after sample receipt.
- Recovery Data (Spikes & Surrogates) - where chromatographic interference does not allow the determination of Recovery the term "INT" appears against that analyte.
- Polychlorinated Biphenyls are spiked only using Aroclor 1260 in Matrix Spikes and LCS.
- For Matrix Spikes and LCS results a dash " - " in the report means that the specific analyte was not added to the QC sample.
- Duplicate RPDs are calculated from raw analytical data thus it is possible to have two sets of data.

Quality Control Results

Test		Units	Result 1			Acceptance Limits	Pass Limits	Qualifying Code
Method Blank								
Heavy Metals								
Arsenic		mg/kg	< 2			2	Pass	
Beryllium		mg/kg	< 2			2	Pass	
Boron		mg/kg	< 10			10	Pass	
Cadmium		mg/kg	< 0.4			0.4	Pass	
Cobalt		mg/kg	< 5			5	Pass	
Copper		mg/kg	< 5			5	Pass	
Lead		mg/kg	< 5			5	Pass	
Manganese		mg/kg	< 5			5	Pass	
Mercury		mg/kg	< 0.1			0.1	Pass	
Nickel		mg/kg	< 5			5	Pass	
Selenium		mg/kg	< 2			2	Pass	
Zinc		mg/kg	< 5			5	Pass	
LCS - % Recovery								
Heavy Metals								
Arsenic		%	110			70-130	Pass	
Beryllium		%	106			70-130	Pass	
Boron		%	97			70-130	Pass	
Cadmium		%	112			70-130	Pass	
Cobalt		%	102			70-130	Pass	
Copper		%	97			70-130	Pass	
Lead		%	106			70-130	Pass	
Manganese		%	99			70-130	Pass	
Mercury		%	101			70-130	Pass	
Nickel		%	97			70-130	Pass	
Selenium		%	99			70-130	Pass	
Zinc		%	96			70-130	Pass	
Test	Lab Sample ID	QA Source	Units	Result 1		Acceptance Limits	Pass Limits	Qualifying Code
Spike - % Recovery								
Heavy Metals				Result 1				
Arsenic	S20-Jn06448	NCP	%	103		70-130	Pass	
Beryllium	S20-Jn06448	NCP	%	100		70-130	Pass	
Boron	S20-Jn06448	NCP	%	81		70-130	Pass	
Cadmium	S20-Jn06448	NCP	%	98		70-130	Pass	
Cobalt	S20-Jn06448	NCP	%	94		70-130	Pass	
Copper	S20-Jn06448	NCP	%	87		70-130	Pass	
Lead	S20-Jn06448	NCP	%	101		70-130	Pass	
Manganese	S20-Jn06448	NCP	%	93		70-130	Pass	
Mercury	S20-Jn06448	NCP	%	97		70-130	Pass	
Nickel	S20-Jn06448	NCP	%	88		70-130	Pass	
Selenium	S20-Jn06448	NCP	%	90		70-130	Pass	
Zinc	S20-Jn06448	NCP	%	86		70-130	Pass	

Comments**Sample Integrity**

Custody Seals Intact (if used)	N/A
Attempt to Chill was evident	No
Sample correctly preserved	Yes
Appropriate sample containers have been used	Yes
Sample containers for volatile analysis received with minimal headspace	Yes
Samples received within HoldingTime	Yes
Some samples have been subcontracted	No

Authorised By

Andrew Black Analytical Services Manager
Gabriele Cordero Senior Analyst-Metal (NSW)

**Glenn Jackson
General Manager**

Final report - this Report replaces any previously issued Report

- Indicates Not Requested

* Indicates NATA accreditation does not cover the performance of this service

Measurement uncertainty of test data is available on request or please [click here](#).

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CHAIN OF CUSTODY RECORD

ABN 50 005 066 571

Sydney Laboratory
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07 3902 4500 EnviroSampleQLD@eurofins.com

Perth Laboratory
Unit 2, 91 Leach Highway, Kewdale WA 6105
08 9251 9600 EnviroSampleW@eurofins.com

Melbourne Laboratory
2 Kingsdon Town Close, Oakleigh, VIC 3166
03 8554 5000 EnviroSampleVIC@eurofins.com

Company	Ramboll	Project No	318000780	Project Name	Lead	Project Manager	Stephen Maxwell	Sampler(s)	AC
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Address	50 Glebe Road the Junction	Project Name	Lead	Project Manager (Estat, Equis)	Excel and PDF	Handed over by	SIM
---------	----------------------------	--------------	------	--------------------------------	---------------	----------------	-----

Contact Name	Stephen Maxwell	Analyses	Lead	Handed over by	SIM	Email for Invoice	smaxwell@ramboll.com
Phone No		(Note: Where metals are requested, please specify "Total" or "Filtered") SUITE code must be used to attract SUITE pricing.		Email for Results		aslapac-accounts@ramboll.com	
Special Directions						smaxwell@ramboll.com	
Purchase Order						blackwell@ramboll.com	
Quote ID No	180813RAMMNL_1					rcondon@ramboll.com	
						shyde@ramboll.com	

No	Client Sample ID	Sampled Date/Time (dd/mm/yy hh:mm)	Matrix (Solid (S) Water (W))	Analyses	Signature	Date	Time	Temperature
1	P2_HA01_0.05	24/03/20	Soil	X				
2	P2_HA01_0.2	24/03/20	Soil	X				
3	P2_HA01_0.4	24/03/20	Soil	X				
4	P2_HA02_0.0-0.05	24/03/20	Soil	X				
5	P2_HA02_0.2	24/03/20	Soil	X				
8	P2_HA02_0.4	24/03/20	Soil	X				
9	P2_HA03_0.0-0.05	24/03/20	Soil	X				
10	P2_HA03_0.0-0.05	24/03/20	Soil	X				
Total Counts				8				

Method of Shipment	<input type="checkbox"/> Courier #) <input type="checkbox"/> Hand Delivered	<input type="checkbox"/> Postal	Name	Signature	Date	Time	Temperature
Eurofins mgf	Received By						
Laboratory Use Only	Received By						

1L Plastic
250mL Plastic
125mL Plastic
200mL Amber Glass
40mL VOA vial
500mL PFAS Bottle
Jar (Glass or HDPE)
Other (Asbestos AS4964, WA Guidelines)

Turnaround Time (TAT)
Requirements (default will be 5 days if not ticked)

Overnight (9am)*
 1 Day* 2 Day*
 3 Day* 5 Day*
 Other ()
*Surcharges apply

Sample Comments / Dangerous Goods Hazard Warning

Submission of samples to the laboratory will be deemed as acceptance of Eurofins | mgf Standard Terms and Conditions unless agreed otherwise. A copy of Eurofins | mgf Standard Terms and Conditions is available on request.

Eurofins Environment Testing Australia Pty Ltd trading as Eurofins | mgf

Page 16/5
CAS009_201 Modified by: R330mm Approved by: J.Lawson Approved on: 17 August 2019



CHAIN OF CUSTODY RECORD

ABN 50 005 066 521

Sydney Laboratory
Unit E3 Bld E, 16 Mars Rd, Lane Cove West, NSW 2036
02 9900 8400 EnviroSamplesNSW@eurofins.com

Brisbane Laboratory
Unit 1, 21 Snareswood Pl, Murrumbidgee QLD 4172
07 3002 4600 EnviroSampleQLD@eurofins.com

Perth Laboratory
Unit 2, 91 Leach Highway, Kewdale WA 6105
08 9251 9800 EnviroSamplesWA@eurofins.com

Melbourne Laboratory
2 Kingston Town Close, Oakleigh, VIC 3166
03 9564 5000 EnviroSamplesVIC@eurofins.com

Company

Ramboll

Project No

318000780

Project Manager

Stephen Maxwell

Sampler(s)

AC

Address

50 Glebe Road the Junction

Project Name

EDD Format (ES&at, EQUIS)

Excel and PDF

Handed over by

SM

Contact Name

Stephen Maxwell

Analyses

Lead
M13 (Al, As, Ba, Be, Cd, Cr, Co, Cu, Fe, Pb, Mn, Hg, Ni, Zn) total
M13 (Al, As, Ba, Be, Cd, Cr, Co, Cu, Fe, Pb, Mn, Hg, Ni, Zn) dissolved

Handed over by

SM

Email for Invoice

SM

smaxwell@ramboll.com
astlapac-accounts@ramboll.com

Phone No

Analyses

Lead

Handed over by

SM

Email for Results

SM

smaxwell@ramboll.com
blackwell@ramboll.com
rcondon@ramboll.com
shyde@ramboll.com

Special Directions

Analyses

Lead

Handed over by

SM

Handed over by

SM

smaxwell@ramboll.com
blackwell@ramboll.com
rcondon@ramboll.com
shyde@ramboll.com

Purchase Order

180813RAMMN_1

Analyses

Lead

Handed over by

SM

Handed over by

SM

smaxwell@ramboll.com
blackwell@ramboll.com
rcondon@ramboll.com
shyde@ramboll.com

Quote ID No

180813RAMMN_1

Analyses

Lead

Handed over by

SM

Handed over by

SM

smaxwell@ramboll.com
blackwell@ramboll.com
rcondon@ramboll.com
shyde@ramboll.com

Client Sample ID

Sampled Date/Time (dd/mm/yy hh:mm)

Matrix (Solid (S) Water (W))

M13 (Al, As, Ba, Be, Cd, Cr, Co, Cu, Fe, Pb, Mn, Hg, Ni, Zn) total

M13 (Al, As, Ba, Be, Cd, Cr, Co, Cu, Fe, Pb, Mn, Hg, Ni, Zn) dissolved

Handed over by

SM

Handed over by

SM

smaxwell@ramboll.com
blackwell@ramboll.com
rcondon@ramboll.com
shyde@ramboll.com

No	Client Sample ID	Sampled Date/Time (dd/mm/yy hh:mm)	Matrix (Solid (S) Water (W))	Analysis	Method of Shipment	Received By	Signature	Date	Time	Temperature	Report No
1	P2_HA03_0.2	24/03/20	Soil	X	<input type="checkbox"/> Courier #) <input type="checkbox"/> Hand Delivered <input type="checkbox"/> Postal	SVY BNE MEL PER ADL NTL DRW					
2	P2_HA04_0.0-0.05	24/03/20	Soil	X		SVY BNE MEL PER ADL NTL DRW					
3	P2_HA04_0.2	24/03/20	Soil	X		SVY BNE MEL PER ADL NTL DRW					
4	P2_HA04_0.5	24/03/20	Soil	X		SVY BNE MEL PER ADL NTL DRW					
5	P2_HA05_0.4	24/03/20	Soil	X		SVY BNE MEL PER ADL NTL DRW					
8	P2_HA05_0.7	24/03/20	Soil	X		SVY BNE MEL PER ADL NTL DRW					
9	P2_HA06_0.05	24/03/20	Soil	X		SVY BNE MEL PER ADL NTL DRW					
10	P2_HA06_0.2	24/03/20	Soil	X		SVY BNE MEL PER ADL NTL DRW					
Total Counts				8							

Method of Shipment: Courier #) Hand Delivered Postal

Received By: CELESTE Signature: _____ Date: 24/3/20 Time: 8:30 Temperature: _____

Received By: _____ Signature: _____ Date: _____ Time: _____ Temperature: _____

Submission of samples to the laboratory will be deemed as acceptance of Eurofins | mgmt Standard Terms and Conditions unless agreed otherwise. A copy of Eurofins | mgmt Standard Terms and Conditions is available on request.

Eurofins Environment Testing Australia Pty Ltd trading as Eurofins | mgmt

Page 2 of 3 QCS006 PF Modified for the Signature Approved by T. Lashburn Approved on 17 August 2017



CHAIN OF CUSTODY RECORD

ABN 50 05 056 521

Sydney Laboratory
Unit F3 Bldg, 16 Mars Rd, Lane Cove West, NSW 2066
02 9900 8400 EnviroSampleNSW@eurofins.com

Brisbane Laboratory
Unit 1, 21 Smallwood Pl, Muramba, QLD 4172
07 3902 4600 EnviroSampleQLD@eurofins.com

Perth Laboratory
Unit 2, 91 Leach Highway, Kewdale WA 6105
08 9251 9800 EnviroSampleWA@eurofins.com

Melbourne Laboratory
2 Kingsport Town Close, Oakleigh, VIC 3166
03 8864 5000 EnviroSampleVIC@eurofins.com

Company **Ramboll**

Project Name **318000780**

Project Manager **Stephen Maxwell**

Excel and PDF

Sampler(s) **AC**

Handed over by **SM**

Email for Invoice **smaxwell@ramboll.com**
Email for Results **astapecc-accounts@ramboll.com**
smaxwell@ramboll.com
blackwell@ramboll.com
rcondon@ramboll.com
shyde@ramboll.com

Address **50 Glebe Road the Junction**

Analyses **Lead**

M13 (Al, As, Ba, Be, Cd, Cr, Co, Cu, Fe, Pb, Mn, Hg, Ni, Zn) total

M13 (Al, As, Ba, Be, Cd, Cr, Co, Cu, Fe, Pb, Mn, Hg, Ni, Zn) dissolved

Contact Name **Stephen Maxwell**

Phone No

Special Directions

Purchase Order

Quote ID No **180813RAWN_1**

No	Client Sample ID	Sampled Date/Time (dd/mm/yy hh:mm)	Matrix (Solid (S) Water (W))
1	P2_HA06_0.4	24/03/20	Soil
2	P2_HA07_0.0-0.05	24/03/20	Soil
3	P2_HA07_0.2	24/03/20	Soil
4	P2_HA07_0.4	24/03/20	Soil
5	P2_HA08_0.05	24/03/20	Soil
8	P2_HA08_0.2	24/03/20	Soil
9	P2_HA08_0.4	24/03/20	Soil
10	P2_HA09_0.0-0.05	24/03/20	Soil

Method of Shipment

Courier (#) Hand Delivered Postal

Name

Signature

Date

Time

Laboratory Use Only

Received By **COLLETT**

Signature

Signature

Date

Date **22/3/20**

Time

Time **8:20**

Report No **710562**

Lead

M13 (Al, As, Ba, Be, Cd, Cr, Co, Cu, Fe, Pb, Mn, Hg, Ni, Zn) total

M13 (Al, As, Ba, Be, Cd, Cr, Co, Cu, Fe, Pb, Mn, Hg, Ni, Zn) dissolved

- Overnight (9am)*
- 1 Day*
- 2 Day*
- 3 Day*
- 5 Day*
- Other ()

Turnaround Time (TAT) Requirements (clients will be 5 days if not ticked)
Sample Comments / Dangerous Goods Hazard Warning

Submission of samples to the laboratory will be deemed as acceptance of Eurofins | mgf Standard Terms and Conditions unless agreed otherwise. A copy of Eurofins | mgf Standard Terms and Conditions is available on request.
Eurofins Environmental Testing Australia Pty Ltd trading as Eurofins | mgf
Page 1 of 5 OHS1001-01 Modified by Dr. S. Spence Approved by T. Lambert Approved on 11 August 2017

ABN 50 005 005 521

Pydney Laboratory
 Unit F3 Bldg F, 16 Mars Rd, Lane Cove West, NSW 2056
 02 9900 8400 EnviroSampleNSW@eurofins.com

Brisbane Laboratory
 Unit 1, 21 Smallwood Pl, Murarie QLD 4172
 07 3802 4600 EnviroSampleQLD@eurofins.com

Perth Laboratory
 Unit 2 31 Leach Highway, Kewdale WA 6105
 08 9251 9800 EnviroSampleWA@eurofins.com

Melbourne Laboratory
 2 Kingston Town Close, Oakleigh, VIC 3166
 03 8864 5000 EnviroSampleVIC@eurofins.com

Company	Ramboll		Project No	318000780	
Address	50 Glebe Road the Junction		Project Name	Lead	
Contact Name	Stephen Maxwell		Project Manager	Stephen Maxwell	
Phone No			EDD Format (ESdat, ESQuis)		
Special Directions			Excel and PDF		
Purchase Order			Sampler(s)	AC	
Quote ID No	180813RAMM_1		Handed over by	SMI	
Client Sample ID	Sampled Date/Time (dd/mm/yy hh:mm)	Matrix (Solid (S) Water (W))	Email for Invoice	smaxwell@ramboll.com	
Analyses			Email for Results	simaxwell@ramboll.com	
(Note: Where metals are requested, please specify "Total" or "Filtered") SUITE code must be used to attract SUITE pricing.			Turnaround Time (TAT) Requirements (orders will be 5 days from here)	<input type="checkbox"/> Overnight (9am)* <input type="checkbox"/> 1 Day* <input type="checkbox"/> 2 Day* <input type="checkbox"/> 3 Day* <input checked="" type="checkbox"/> 5 Day* <input type="checkbox"/> Other (*Surcharges apply)	
Sample No	Client Sample ID	Sampled Date/Time (dd/mm/yy hh:mm)	Matrix (Solid (S) Water (W))	Project Name	Analyses
1	P2_HA09_0.2	24/03/20	Soil	M13 (Al, As, Ba, Be, Cd, Cr, Co, Cu, Fe, Pb, Mn, Hg, Ni, Zn) total	
2	P2_HA09_0.4	24/03/20	Soil	M13 (Al, As, Ba, Be, Cd, Cr, Co, Cu, Fe, Pb, Mn, Hg, Ni, Zn) dissolved	
3	P2_HA10_0.2	24/03/20	Soil		
4	P2_HA10_0.4	24/03/20	Soil		
5	P2_HA10_0.05	24/03/20	Soil		
8	P2_HA11_0.05	24/03/20	Soil		
9	P2_HA11_0.2	24/03/20	Soil		
10	P2_HA11_0.4	24/03/20	Soil		
Total Counts			8		
Method of Shipment	<input type="checkbox"/> Courier #	<input type="checkbox"/> Hand Delivered	<input type="checkbox"/> Postal	Name	Signature
Eurofins mgt	Received By	Signature	Date	Time	Temperature
Eurofins mgt	Received By	Signature	Date	Time	Report No



CHAIN OF CUSTODY RECORD

ABN 50 005 885 521

Sydney Laboratory
Unit F3 Bld F, 16 Mars Rd, Lane Cove West, NSW 2086
02 9500 8400 EnviroSampleNSW@eurofins.com

Brisbane Laboratory
Unit 1, 21 Smallwood Pl, Murarie, QLD 4172
07 3902 4600 EnviroSampleQLD@eurofins.com

Perth Laboratory
Unit 2, 91 Leach Highway, Kewdale WA 6105
08 9251 9800 EnviroSampleWA@eurofins.com

Melbourne Laboratory
2 Kingson Town Close, Cadelagh, VIC 3196
03 9554 5000 EnviroSampleVIC@eurofins.com

Company
Ramboll

Project Name
318900780

Project Manager
Stephen Maxwell

Excel and PDF

Handled over by
AC

SM

Address
50 Glebe Road the Junction

Handed over by
smaxwell@ramboll.com
asiarac-accounts@ramboll.com

Contact Name
Stephen Maxwell

Email for Invoice
smaxwell@ramboll.com
asiarac-accounts@ramboll.com

Email for Results
blackwell@ramboll.com
rcondon@ramboll.com
shyde@ramboll.com

Turnaround Time (TAT)
Requirements (order will be done from ticked)

Overnight (9am)*

1 Day* 2 Day*

3 Day* 5 Day*

Other ()

Sample Comments / Dangerous Goods Hazard Warning

- 1L Plastic
- 250mL Plastic
- 125mL Plastic
- 200mL Amber Glass
- 40mL VOA vial
- 500mL PFAS Bottle
- Jar (Glass or HDPE)
- Other (Asbestos AS4964, WA Guidelines)

Analyses
(Note: Where metals are requested, please specify "Total" or "Filtered") SUITE code must be used to attract SUITE pricing.

Lead
M13 (Al, As, Ba, Be, Cd, Cr, Co, Cu, Fe, Pb, Mn, Hg, Ni, Zn) total
M13 (Al, As, Ba, Be, Cd, Cr, Co, Cu, Fe, Pb, Mn, Hg, Ni, Zn) dissolved

M13 (Al, As, Ba, Be, Cd, Cr, Co, Cu, Fe, Pb, Mn, Hg, Ni, Zn) total
M13 (Al, As, Ba, Be, Cd, Cr, Co, Cu, Fe, Pb, Mn, Hg, Ni, Zn) dissolved

Turnaround Time (TAT)
Requirements (order will be done from ticked)

No	Client Sample ID	Sampled Date/Time (dd/mm/yy hh:mm)	Matrix (Solid (S) Water (W))
1	P2_TW1	24/03/20	Soil
2	P2_TW2	24/03/20	Soil
3	P2_TWS1	24/03/20	Soil
4			
5			
6			
7			
8			
9			
10			

Method of Shipment		Project Name		Project Manager		Sampler(s)		Date		Time	
<input type="checkbox"/> Courier (#)	<input type="checkbox"/> Hand Delivered	Lead	M13 (Al, As, Ba, Be, Cd, Cr, Co, Cu, Fe, Pb, Mn, Hg, Ni, Zn) total	M13 (Al, As, Ba, Be, Cd, Cr, Co, Cu, Fe, Pb, Mn, Hg, Ni, Zn) dissolved	Stephen Maxwell	Excel and PDF	AC	SM	Date	Time	Temperature
									22/21	8:30	710564
Total Counts		3	2								

Eurofins mgt Laboratory Use Only		Eurofins mgt Laboratory Use Only		Signature		Date		Time	
Received By	Received By	Signature	Signature	Date	Time	Date	Time	Report No	Report No
Colleen				22/21	8:30			710564	

Submission of samples to the laboratory will be deemed as acceptance of Eurofins | mgt Standard Terms and Conditions unless agreed otherwise. A copy of Eurofins | mgt Standard Terms and Conditions is available on request.
Eurofins Environment Testing Australia Pty Ltd trading as Eurofins | mgt
Page 5 of 5 | 23/009 87 | Modified by: Dr. G. Simons | Approved by: T. Lakeland | Approved on: 17 August 2017

Melbourne

6 Monterey Road
Dandenong South Vic 3175
Phone : +61 3 8564 5000
NATA # 1261
Site # 1254 & 14271

Sydney

Unit F3, Building F
16 Mars Road
Lane Cove West NSW 2066
Phone : +61 2 9900 8400
NATA # 1261 Site # 18217

Brisbane

1/21 Smallwood Place
Murarrie QLD 4172
Phone : +61 7 3902 4600
NATA # 1261 Site # 20794

Perth

2/91 Leach Highway
Kewdale WA 6105
Phone : +61 8 9251 9600
NATA # 1261 Site # 23736

Sample Receipt Advice

Company name: **Ramboll Australia Pty Ltd**

Contact name: **Stephen Maxwell**

Project name: **318000780**

COC number: **Not provided**

Turn around time: **5 Day**

Date/Time received: **Mar 27, 2020 8:30 AM**

Eurofins reference: **710562**

Sample information

- A detailed list of analytes logged into our LIMS, is included in the attached summary table.
- All samples have been received as described on the above COC.
- COC has been completed correctly.
- Attempt to chill was evident.
- Appropriately preserved sample containers have been used.
- All samples were received in good condition.
- Samples have been provided with adequate time to commence analysis in accordance with the relevant holding times.

- Appropriate sample containers have been used.
- Sample containers for volatile analysis received with zero headspace.
- Split sample sent to requested external lab.
- Some samples have been subcontracted.
- N/A Custody Seals intact (if used).

Notes

SAMPLE P2_HA05_0.0-0.5 RECEIVED EXTRA AND LOGGED IN FOR PB.

Contact notes

If you have any questions with respect to these samples please contact:

Andrew Black on Phone : (+61) 2 9900 8490 or by e.mail: AndrewBlack@eurofins.com

Results will be delivered electronically via e.mail to Stephen Maxwell - smaxwell@ramboll.com.

Note: A copy of these results will also be delivered to the general Ramboll Australia Pty Ltd email address.

Australia

Melbourne
6 Monterey Road
Dandenong South VIC 3175
Phone : +61 3 8564 5000
NATA # 1261
Site # 1254 & 14271

Sydney
Unit F3, Building F
16 Mars Road
Lane Cove West NSW 2066
Phone : +61 2 9900 8400
NATA # 1261 Site # 18217

Brisbane
1/21 Smallwood Place
Murarrie QLD 4172
Phone : +61 7 3902 4600
NATA # 1261 Site # 20794

Perth
2/91 Leach Highway
Kewdale WA 6105
Phone : +61 8 9251 9600
NATA # 1261
Site # 23736

New Zealand

Auckland
35 O'Rorke Road
Penrose, Auckland 1061
Phone : +64 9 526 45 51
IANZ # 1327

Christchurch
43 Detroit Drive
Rolleston, Christchurch 7675
Phone : 0800 856 450
IANZ # 1290

ABN – 50 005 085 521

web : www.eurofins.com.au

e.mail : EnviroSales@eurofins.com

Company Name: Ramboll Australia Pty Ltd
Address: Level 3/100 Pacific Highway
North Sydney
NSW 2060
Project Name: 318000780

Order No.:
Report #: 710562
Phone: 02 9954 8118
Fax: 02 9954 8150

Received: Mar 27, 2020 8:30 AM
Due: Apr 3, 2020
Priority: 5 Day
Contact Name: Stephen Maxwell

Eurofins Analytical Services Manager : Andrew Black

Sample Detail						Lead	Moisture Set	NEPM 2013 Filtered Metals without Cr6+ (As, Be, B, Cd, Co, Cr, Cu, Hg, Pb, Ni, Mn, NEPM 2013 Metals without Cr6+ (As, Be, B, Cd, Co, Cr, Cu, Hg, Pb, Ni, Mn, Se, Zn))	NEPM 2013 Filtered Metals without Cr6+ (As, Be, B, Cd, Co, Cr, Cu, Hg, Pb, Ni, Mn, NEPM 2013 Metals without Cr6+ (As, Be, B, Cd, Co, Cr, Cu, Hg, Pb, Ni, Mn, Se, Zn))
Melbourne Laboratory - NATA Site # 1254 & 14271						X	X	X	X
Sydney Laboratory - NATA Site # 18217									
Brisbane Laboratory - NATA Site # 20794									
Perth Laboratory - NATA Site # 23736									
External Laboratory									
No	Sample ID	Sample Date	Sampling Time	Matrix	LAB ID				
1	P2_HA01_0.05	Mar 24, 2020		Soil	M20-Ma43651	X	X		
2	P2_HA01_0.2	Mar 24, 2020		Soil	M20-Ma43652	X	X		
3	P2_HA01_0.4	Mar 24, 2020		Soil	M20-Ma43653	X	X		
4	P2_HA02_0.0-0.05	Mar 24, 2020		Soil	M20-Ma43654	X	X		
5	P2_HA02_0.2	Mar 24, 2020		Soil	M20-Ma43655	X	X		
6	P2_HA02_0.4	Mar 24, 2020		Soil	M20-Ma43656	X	X		
7	P2_HA03_0.0-0.05	Mar 24, 2020		Soil	M20-Ma43657	X	X		
8	P2_HA03_0.2	Mar 24, 2020		Soil	M20-Ma43658	X	X		
9	P2_HA04_0.0-	Mar 24, 2020		Soil	M20-Ma43659	X	X		

Australia

Melbourne
6 Monterey Road
Dandenong South VIC 3175
Phone : +61 3 8564 5000
NATA # 1261
Site # 1254 & 14271

Sydney
Unit F3, Building F
16 Mars Road
Lane Cove West NSW 2066
Phone : +61 2 9900 8400
NATA # 1261 Site # 18217

Brisbane
1/21 Smallwood Place
Murarrie QLD 4172
Phone : +61 7 3902 4600
NATA # 1261 Site # 20794

Perth
2/91 Leach Highway
Kewdale WA 6105
Phone : +61 8 9251 9600
NATA # 1261
Site # 23736

New Zealand

Auckland
35 O'Rorke Road
Penrose, Auckland 1061
Phone : +64 9 526 45 51
IANZ # 1327

Christchurch
43 Detroit Drive
Rolleston, Christchurch 7675
Phone : 0800 856 450
IANZ # 1290

Company Name: Ramboll Australia Pty Ltd
Address: Level 3/100 Pacific Highway
North Sydney
NSW 2060
Project Name: 318000780

Order No.:
Report #: 710562
Phone: 02 9954 8118
Fax: 02 9954 8150

Received: Mar 27, 2020 8:30 AM
Due: Apr 3, 2020
Priority: 5 Day
Contact Name: Stephen Maxwell

Eurofins Analytical Services Manager : Andrew Black

Sample Detail						Lead	Moisture Set	NEPM 2013 Filtered Metals without Cr6+ (As, Be, B, Cd, Co, Cr, Cu, Hg, Pb, Ni, Mn, NEPM 2013 Metals without Cr6+ (As, Be, B, Cd, Co, Cr, Cu, Hg, Pb, Ni, Mn, Se, Zn))	NEPM 2013 Filtered Metals without Cr6+ (As, Be, B, Cd, Co, Cr, Cu, Hg, Pb, Ni, Mn, NEPM 2013 Metals without Cr6+ (As, Be, B, Cd, Co, Cr, Cu, Hg, Pb, Ni, Mn, Se, Zn))
Melbourne Laboratory - NATA Site # 1254 & 14271						X	X	X	X
Sydney Laboratory - NATA Site # 18217									
Brisbane Laboratory - NATA Site # 20794									
Perth Laboratory - NATA Site # 23736									
	0.05								
10	P2_HA04_0.2	Mar 24, 2020		Soil	M20-Ma43660	X	X		
11	P2_HA04_0.5	Mar 24, 2020		Soil	M20-Ma43661	X	X		
12	P2_HA05_0.4	Mar 24, 2020		Soil	M20-Ma43662	X	X		
13	P2_HA05_0.7	Mar 24, 2020		Soil	M20-Ma43663	X	X		
14	P2_HA06_0.05	Mar 24, 2020		Soil	M20-Ma43664	X	X		
15	P2_HA06_0.2	Mar 24, 2020		Soil	M20-Ma43665	X	X		
16	P2_HA06_0.4	Mar 24, 2020		Soil	M20-Ma43666	X	X		
17	P2_HA07_0.0-0.05	Mar 24, 2020		Soil	M20-Ma43667	X	X		
18	P2_HA07_0.2	Mar 24, 2020		Soil	M20-Ma43668	X	X		
19	P2_HA07_0.4	Mar 24, 2020		Soil	M20-Ma43669	X	X		
20	P2_HA08_0.0	Mar 24, 2020		Soil	M20-Ma43670	X	X		

Australia

Melbourne
6 Monterey Road
Dandenong South VIC 3175
Phone : +61 3 8564 5000
NATA # 1261
Site # 1254 & 14271

Sydney
Unit F3, Building F
16 Mars Road
Lane Cove West NSW 2066
Phone : +61 2 9900 8400
NATA # 1261 Site # 18217

Brisbane
1/21 Smallwood Place
Murarrie QLD 4172
Phone : +61 7 3902 4600
NATA # 1261 Site # 20794

Perth
2/91 Leach Highway
Kewdale WA 6105
Phone : +61 8 9251 9600
NATA # 1261
Site # 23736

New Zealand

Auckland
35 O'Rorke Road
Penrose, Auckland 1061
Phone : +64 9 526 45 51
IANZ # 1327

Christchurch
43 Detroit Drive
Rolleston, Christchurch 7675
Phone : 0800 856 450
IANZ # 1290

Company Name: Ramboll Australia Pty Ltd
Address: Level 3/100 Pacific Highway
North Sydney
NSW 2060
Project Name: 318000780

Order No.:
Report #: 710562
Phone: 02 9954 8118
Fax: 02 9954 8150

Received: Mar 27, 2020 8:30 AM
Due: Apr 3, 2020
Priority: 5 Day
Contact Name: Stephen Maxwell

Eurofins Analytical Services Manager : Andrew Black

Sample Detail						Lead	Moisture Set	NEPM 2013 Filtered Metals without Cr6+ (As, Be, B, Cd, Co, Cr, Cu, Hg, Pb, Ni, Mn, NEPM 2013 Metals without Cr6+ (As, Be, B, Cd, Co, Cr, Cu, Hg, Pb, Ni, Mn, Se, Zn))	NEPM 2013 Filtered Metals without Cr6+ (As, Be, B, Cd, Co, Cr, Cu, Hg, Pb, Ni, Mn, NEPM 2013 Metals without Cr6+ (As, Be, B, Cd, Co, Cr, Cu, Hg, Pb, Ni, Mn, Se, Zn))
Melbourne Laboratory - NATA Site # 1254 & 14271						X	X	X	X
Sydney Laboratory - NATA Site # 18217									
Brisbane Laboratory - NATA Site # 20794									
Perth Laboratory - NATA Site # 23736									
	5								
21	P2_HA08_0.2	Mar 24, 2020		Soil	M20-Ma43671	X	X		
22	P2_HA08_0.4	Mar 24, 2020		Soil	M20-Ma43672	X	X		
23	P2_HA09_0.0-0.05	Mar 24, 2020		Soil	M20-Ma43673	X	X		
24	P2_HA09_0.2	Mar 24, 2020		Soil	M20-Ma43674	X	X		
25	P2_HA09_0.4	Mar 24, 2020		Soil	M20-Ma43675	X	X		
26	P2_HA10_0.2	Mar 24, 2020		Soil	M20-Ma43676	X	X		
27	P2_HA10_0.4	Mar 24, 2020		Soil	M20-Ma43677	X	X		
28	P2_HA10_0.0-0.05	Mar 24, 2020		Soil	M20-Ma43678	X	X		
29	P2_HA11_0.0	Mar 24, 2020		Soil	M20-Ma43679	X	X		
30	P2_HA11_0.2	Mar 24, 2020		Soil	M20-Ma43680	X	X		

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e.mail : EnviroSales@eurofins.com

Company Name: Ramboll Australia Pty Ltd
Address: Level 3/100 Pacific Highway
North Sydney
NSW 2060
Project Name: 318000780

Order No.:
Report #: 710562
Phone: 02 9954 8118
Fax: 02 9954 8150

Received: Mar 27, 2020 8:30 AM
Due: Apr 3, 2020
Priority: 5 Day
Contact Name: Stephen Maxwell

Eurofins Analytical Services Manager : Andrew Black

Sample Detail						Lead	Moisture Set	NEPM 2013 Filtered Metals without Cr6+ (As, Be, B, Cd, Co, Cr, Cu, Hg, Pb, Ni, Mn, NEPM 2013 Metals without Cr6+ (As, Be, B, Cd, Co, Cr, Cu, Hg, Pb, Ni, Mn, Se, Zn))	NEPM 2013 Filtered Metals without Cr6+ (As, Be, B, Cd, Co, Cr, Cu, Hg, Pb, Ni, Mn, NEPM 2013 Metals without Cr6+ (As, Be, B, Cd, Co, Cr, Cu, Hg, Pb, Ni, Mn, Se, Zn))
Melbourne Laboratory - NATA Site # 1254 & 14271						X	X	X	X
Sydney Laboratory - NATA Site # 18217									
Brisbane Laboratory - NATA Site # 20794									
Perth Laboratory - NATA Site # 23736									
31	P2_HA11_0.4	Mar 24, 2020	Soil	M20-Ma43681	X	X			
32	P2_TW1	Mar 24, 2020	Water	M20-Ma43682			X	X	
33	P2_TW2	Mar 24, 2020	Water	M20-Ma43683			X	X	
34	P2_TWS1	Mar 24, 2020	Water	M20-Ma43684	X				
35	P2_HA05_0.0-0.5	Mar 24, 2020	Soil	M20-Ma43706	X	X			
Test Counts						33	32	2	2

Ramboll Environ Australia Pty Ltd
 Level 3/100 Pacific Highway
 North Sydney
 NSW 2060



NATA Accredited
 Accreditation Number 1261
 Site Number 1254

Accredited for compliance with ISO/IEC 17025 – Testing
 The results of the tests, calibrations and/or
 measurements included in this document are traceable
 to Australian/national standards.

Attention: **Stephen Maxwell**

Report **710562-S**
 Project name **318000780**
 Received Date **Mar 27, 2020**

Client Sample ID			P2_HA01_0.05	P2_HA01_0.2	P2_HA01_0.4	P2_HA02_0.0-0.05
Sample Matrix			Soil	Soil	Soil	Soil
Eurofins Sample No.			M20-Ma43651	M20-Ma43652	M20-Ma43653	M20-Ma43654
Date Sampled			Mar 24, 2020	Mar 24, 2020	Mar 24, 2020	Mar 24, 2020
Test/Reference	LOR	Unit				
Heavy Metals						
Lead	5	mg/kg	28	94	12	46
% Moisture	1	%	1.1	3.7	5.6	1.3

Client Sample ID			P2_HA02_0.2	P2_HA02_0.4	P2_HA03_0.0-0.05	P2_HA03_0.2
Sample Matrix			Soil	Soil	Soil	Soil
Eurofins Sample No.			M20-Ma43655	M20-Ma43656	M20-Ma43657	M20-Ma43658
Date Sampled			Mar 24, 2020	Mar 24, 2020	Mar 24, 2020	Mar 24, 2020
Test/Reference	LOR	Unit				
Heavy Metals						
Lead	5	mg/kg	150	33	25	220
% Moisture	1	%	8.4	7.8	1.1	4.3

Client Sample ID			P2_HA04_0.0-0.05	P2_HA04_0.2	P2_HA04_0.5	P2_HA05_0.4
Sample Matrix			Soil	Soil	Soil	Soil
Eurofins Sample No.			M20-Ma43659	M20-Ma43660	M20-Ma43661	M20-Ma43662
Date Sampled			Mar 24, 2020	Mar 24, 2020	Mar 24, 2020	Mar 24, 2020
Test/Reference	LOR	Unit				
Heavy Metals						
Lead	5	mg/kg	140	470	100	140
% Moisture	1	%	2.4	14	12	15

Client Sample ID			P2_HA05_0.7	P2_HA06_0.05	P2_HA06_0.2	P2_HA06_0.4
Sample Matrix			Soil	Soil	Soil	Soil
Eurofins Sample No.			M20-Ma43663	M20-Ma43664	M20-Ma43665	M20-Ma43666
Date Sampled			Mar 24, 2020	Mar 24, 2020	Mar 24, 2020	Mar 24, 2020
Test/Reference	LOR	Unit				
Heavy Metals						
Lead	5	mg/kg	46	1500	440	63
% Moisture						
	1	%	17	12	8.1	9.9

Client Sample ID			P2_HA07_0.0-0.05	P2_HA07_0.2	P2_HA07_0.4	P2_HA08_0.05
Sample Matrix			Soil	Soil	Soil	Soil
Eurofins Sample No.			M20-Ma43667	M20-Ma43668	M20-Ma43669	M20-Ma43670
Date Sampled			Mar 24, 2020	Mar 24, 2020	Mar 24, 2020	Mar 24, 2020
Test/Reference	LOR	Unit				
Heavy Metals						
Lead	5	mg/kg	150	61	26	100
% Moisture						
	1	%	19	16	16	18

Client Sample ID			P2_HA08_0.2	P2_HA08_0.4	P2_HA09_0.0-0.05	P2_HA09_0.2
Sample Matrix			Soil	Soil	Soil	Soil
Eurofins Sample No.			M20-Ma43671	M20-Ma43672	M20-Ma43673	M20-Ma43674
Date Sampled			Mar 24, 2020	Mar 24, 2020	Mar 24, 2020	Mar 24, 2020
Test/Reference	LOR	Unit				
Heavy Metals						
Lead	5	mg/kg	74	23	99	74
% Moisture						
	1	%	14	18	16	16

Client Sample ID			P2_HA09_0.4	P2_HA10_0.2	P2_HA10_0.4	P2_HA10_0.0-0.05
Sample Matrix			Soil	Soil	Soil	Soil
Eurofins Sample No.			M20-Ma43675	M20-Ma43676	M20-Ma43677	M20-Ma43678
Date Sampled			Mar 24, 2020	Mar 24, 2020	Mar 24, 2020	Mar 24, 2020
Test/Reference	LOR	Unit				
Heavy Metals						
Lead	5	mg/kg	26	58	30	84
% Moisture						
	1	%	18	15	17	16

Client Sample ID			P2_HA11_0.05	P2_HA11_0.2	P2_HA11_0.4	P2_HA05_0.0-0.5
Sample Matrix			Soil	Soil	Soil	Soil
Eurofins Sample No.			M20-Ma43679	M20-Ma43680	M20-Ma43681	M20-Ma43706
Date Sampled			Mar 24, 2020	Mar 24, 2020	Mar 24, 2020	Mar 24, 2020
Test/Reference	LOR	Unit				
Heavy Metals						
Lead	5	mg/kg	89	76	28	32
% Moisture						
% Moisture	1	%	16	16	17	2.4

Sample History

Where samples are submitted/analysed over several days, the last date of extraction and analysis is reported.

A recent review of our LIMS has resulted in the correction or clarification of some method identifications. Due to this, some of the method reference information on reports has changed. However, no substantive change has been made to our laboratory methods, and as such there is no change in the validity of current or previous results.

If the date and time of sampling are not provided, the Laboratory will not be responsible for compromised results should testing be performed outside the recommended holding time.

Description

Heavy Metals

- Method: LTM-MET-3040 Metals in Waters, Soils & Sediments by ICP-MS

% Moisture

- Method: LTM-GEN-7080 Moisture

Testing Site

Melbourne

Melbourne

Extracted

Mar 30, 2020

Mar 27, 2020

Holding Time

180 Days

14 Days

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Project Name: 318000780

Order No.:
Report #: 710562
Phone: 02 9954 8118
Fax: 02 9954 8150

Received: Mar 27, 2020 8:30 AM
Due: Apr 3, 2020
Priority: 5 Day
Contact Name: Stephen Maxwell

Eurofins Analytical Services Manager : Andrew Black

Sample Detail						Lead	Moisture Set	NEPM 2013 Metals without Cr6+ (As, Be, B, Cd, Co, Cr, Cu, Hg, Pb, Ni, Mn, Cd, Co, Cr, Cu, Hg, Pb, Ni, Mn, Se, Zn)	NEPM 2013 Filtered Metals without Cr6+ (As, Be, B, Cd, Co, Cr, Cu, Hg, Pb, Ni, Mn, Se, Zn)
Melbourne Laboratory - NATA Site # 1254 & 14271						X	X	X	X
Sydney Laboratory - NATA Site # 18217									
Brisbane Laboratory - NATA Site # 20794									
Perth Laboratory - NATA Site # 23736									
External Laboratory									
No	Sample ID	Sample Date	Sampling Time	Matrix	LAB ID				
1	P2_HA01_0.05	Mar 24, 2020		Soil	M20-Ma43651	X	X		
2	P2_HA01_0.2	Mar 24, 2020		Soil	M20-Ma43652	X	X		
3	P2_HA01_0.4	Mar 24, 2020		Soil	M20-Ma43653	X	X		
4	P2_HA02_0.0-0.05	Mar 24, 2020		Soil	M20-Ma43654	X	X		
5	P2_HA02_0.2	Mar 24, 2020		Soil	M20-Ma43655	X	X		
6	P2_HA02_0.4	Mar 24, 2020		Soil	M20-Ma43656	X	X		
7	P2_HA03_0.0-0.05	Mar 24, 2020		Soil	M20-Ma43657	X	X		
8	P2_HA03_0.2	Mar 24, 2020		Soil	M20-Ma43658	X	X		
9	P2_HA04_0.0-	Mar 24, 2020		Soil	M20-Ma43659	X	X		

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Melbourne Laboratory - NATA Site # 1254 & 14271						X	X	X	X
Sydney Laboratory - NATA Site # 18217									
Brisbane Laboratory - NATA Site # 20794									
Perth Laboratory - NATA Site # 23736									
	0.05								
10	P2_HA04_0.2	Mar 24, 2020		Soil	M20-Ma43660	X	X		
11	P2_HA04_0.5	Mar 24, 2020		Soil	M20-Ma43661	X	X		
12	P2_HA05_0.4	Mar 24, 2020		Soil	M20-Ma43662	X	X		
13	P2_HA05_0.7	Mar 24, 2020		Soil	M20-Ma43663	X	X		
14	P2_HA06_0.05	Mar 24, 2020		Soil	M20-Ma43664	X	X		
15	P2_HA06_0.2	Mar 24, 2020		Soil	M20-Ma43665	X	X		
16	P2_HA06_0.4	Mar 24, 2020		Soil	M20-Ma43666	X	X		
17	P2_HA07_0.0-0.05	Mar 24, 2020		Soil	M20-Ma43667	X	X		
18	P2_HA07_0.2	Mar 24, 2020		Soil	M20-Ma43668	X	X		
19	P2_HA07_0.4	Mar 24, 2020		Soil	M20-Ma43669	X	X		
20	P2_HA08_0.0	Mar 24, 2020		Soil	M20-Ma43670	X	X		

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Melbourne Laboratory - NATA Site # 1254 & 14271						X	X	X	X
Sydney Laboratory - NATA Site # 18217									
Brisbane Laboratory - NATA Site # 20794									
Perth Laboratory - NATA Site # 23736									
	5								
21	P2_HA08_0.2	Mar 24, 2020		Soil	M20-Ma43671	X	X		
22	P2_HA08_0.4	Mar 24, 2020		Soil	M20-Ma43672	X	X		
23	P2_HA09_0.0-0.05	Mar 24, 2020		Soil	M20-Ma43673	X	X		
24	P2_HA09_0.2	Mar 24, 2020		Soil	M20-Ma43674	X	X		
25	P2_HA09_0.4	Mar 24, 2020		Soil	M20-Ma43675	X	X		
26	P2_HA10_0.2	Mar 24, 2020		Soil	M20-Ma43676	X	X		
27	P2_HA10_0.4	Mar 24, 2020		Soil	M20-Ma43677	X	X		
28	P2_HA10_0.0-0.05	Mar 24, 2020		Soil	M20-Ma43678	X	X		
29	P2_HA11_0.0	Mar 24, 2020		Soil	M20-Ma43679	X	X		
30	P2_HA11_0.2	Mar 24, 2020		Soil	M20-Ma43680	X	X		

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Melbourne Laboratory - NATA Site # 1254 & 14271						X	X	X	X
Sydney Laboratory - NATA Site # 18217									
Brisbane Laboratory - NATA Site # 20794									
Perth Laboratory - NATA Site # 23736									
31	P2_HA11_0.4	Mar 24, 2020	Soil	M20-Ma43681	X	X			
32	P2_TW1	Mar 24, 2020	Water	M20-Ma43682			X	X	
33	P2_TW2	Mar 24, 2020	Water	M20-Ma43683			X	X	
34	P2_TWS1	Mar 24, 2020	Water	M20-Ma43684	X				
35	P2_HA05_0.0-0.5	Mar 24, 2020	Soil	M20-Ma43706	X	X			
Test Counts						33	32	2	2

Internal Quality Control Review and Glossary
General

- Laboratory QC results for Method Blanks, Duplicates, Matrix Spikes, and Laboratory Control Samples follows guidelines delineated in the National Environment Protection (Assessment of Site Contamination) Measure 1999, as amended May 2013 and are included in this QC report where applicable. Additional QC data may be available on request.
- All soil/sediment/solid results are reported on a dry basis, unless otherwise stated.
- All biota/food results are reported on a wet weight basis on the edible portion, unless otherwise stated.
- Actual LORs are matrix dependant. Quoted LORs may be raised where sample extracts are diluted due to interferences.
- Results are uncorrected for matrix spikes or surrogate recoveries except for PFAS compounds.
- SVOC analysis on waters are performed on homogenised, unfiltered samples, unless noted otherwise.
- Samples were analysed on an 'as received' basis.
- Information identified on this report with blue colour, indicates data provided by customer, that may have an impact on the results.
- This report replaces any interim results previously issued.

Holding Times

Please refer to 'Sample Preservation and Container Guide' for holding times (QS3001).

For samples received on the last day of holding time, notification of testing requirements should have been received at least 6 hours prior to sample receipt deadlines as stated on the SRA.

If the Laboratory did not receive the information in the required timeframe, and regardless of any other integrity issues, suitably qualified results may still be reported.

Holding times apply from the date of sampling, therefore compliance to these may be outside the laboratory's control.

For VOCs containing vinyl chloride, styrene and 2-chloroethyl vinyl ether the holding time is 7 days however for all other VOCs such as BTEX or C6-10 TRH then the holding time is 14 days.

****NOTE:** pH duplicates are reported as a range NOT as RPD

Units

mg/kg: milligrams per kilogram

mg/L: milligrams per litre

ug/L: micrograms per litre

ppm: Parts per million

ppb: Parts per billion

%: Percentage

org/100mL: Organisms per 100 millilitres

NTU: Nephelometric Turbidity Units

MPN/100mL: Most Probable Number of organisms per 100 millilitres

Terms

Dry	Where a moisture has been determined on a solid sample the result is expressed on a dry basis.
LOR	Limit of Reporting.
SPIKE	Addition of the analyte to the sample and reported as percentage recovery.
RPD	Relative Percent Difference between two Duplicate pieces of analysis.
LCS	Laboratory Control Sample - reported as percent recovery.
CRM	Certified Reference Material - reported as percent recovery.
Method Blank	In the case of solid samples these are performed on laboratory certified clean sands and in the case of water samples these are performed on de-ionised water.
Surr - Surrogate	The addition of a like compound to the analyte target and reported as percentage recovery.
Duplicate	A second piece of analysis from the same sample and reported in the same units as the result to show comparison.
USEPA	United States Environmental Protection Agency
APHA	American Public Health Association
TCLP	Toxicity Characteristic Leaching Procedure
COC	Chain of Custody
SRA	Sample Receipt Advice
QSM	US Department of Defense Quality Systems Manual Version 5.3
CP	Client Parent - QC was performed on samples pertaining to this report
NCP	Non-Client Parent - QC performed on samples not pertaining to this report, QC is representative of the sequence or batch that client samples were analysed within.
TEQ	Toxic Equivalency Quotient

QC - Acceptance Criteria

RPD Duplicates: Global RPD Duplicates Acceptance Criteria is 30% however the following acceptance guidelines are equally applicable:

Results <10 times the LOR : No Limit

Results between 10-20 times the LOR : RPD must lie between 0-50%

Results >20 times the LOR : RPD must lie between 0-30%

Surrogate Recoveries: Recoveries must lie between 20-130% Phenols & 50-150% PFASs

PFAS field samples that contain surrogate recoveries in excess of the QC limit designated in QSM 5.3 where no positive PFAS results have been reported have been reviewed and no data was affected.

WA DWER (n=10): PFBA, PFPeA, PFHxA, PFHpA, PFOA, PFBS, PFHxS, PFOS, 6:2 FTSA, 8:2 FTSA

QC Data General Comments

- Where a result is reported as a less than (<), higher than the nominated LOR, this is due to either matrix interference, extract dilution required due to interferences or contaminant levels within the sample, high moisture content or insufficient sample provided.
- Duplicate data shown within this report that states the word "BATCH" is a Batch Duplicate from outside of your sample batch, but within the laboratory sample batch at a 1:10 ratio. The Parent and Duplicate data shown is not data from your samples.
- Organochlorine Pesticide analysis - where reporting LCS data, Toxaphene & Chlordane are not added to the LCS.
- Organochlorine Pesticide analysis - where reporting Spike data, Toxaphene is not added to the Spike.
- Total Recoverable Hydrocarbons - where reporting Spike & LCS data, a single spike of commercial Hydrocarbon products in the range of C12-C30 is added and it's Total Recovery is reported in the C10-C14 cell of the Report.
- pH and Free Chlorine analysed in the laboratory - Analysis on this test must begin within 30 minutes of sampling. Therefore laboratory analysis is unlikely to be completed within holding time. Analysis will begin as soon as possible after sample receipt.
- Recovery Data (Spikes & Surrogates) - where chromatographic interference does not allow the determination of Recovery the term "INT" appears against that analyte.
- Polychlorinated Biphenyls are spiked only using Aroclor 1260 in Matrix Spikes and LCS.
- For Matrix Spikes and LCS results a dash " - " in the report means that the specific analyte was not added to the QC sample.
- Duplicate RPDs are calculated from raw analytical data thus it is possible to have two sets of data.

Quality Control Results

Test				Units	Result 1			Acceptance Limits	Pass Limits	Qualifying Code	
Method Blank											
Heavy Metals											
Lead				mg/kg	< 5			5	Pass		
LCS - % Recovery											
Heavy Metals											
Lead				%	93			80-120	Pass		
Test	Lab Sample ID	QA Source	Units	Result 1			Acceptance Limits	Pass Limits	Qualifying Code		
Spike - % Recovery											
Heavy Metals											
Lead				M20-Ma43661	CP	%	121	75-125	Pass		
Spike - % Recovery											
Heavy Metals											
Lead				M20-Ma43671	CP	%	100	75-125	Pass		
Spike - % Recovery											
Heavy Metals											
Lead				M20-Ma43681	CP	%	86	75-125	Pass		
Test	Lab Sample ID	QA Source	Units	Result 1			Acceptance Limits	Pass Limits	Qualifying Code		
Duplicate											
					Result 1	Result 2	RPD				
% Moisture				M20-Ma43655	CP	%	8.4	8.7	3.0	30%	Pass
Duplicate											
Heavy Metals											
Lead				M20-Ma43660	CP	mg/kg	470	490	4.0	30%	Pass
Duplicate											
Heavy Metals											
Lead				M20-Ma43661	CP	mg/kg	100	99	1.0	30%	Pass
Duplicate											
					Result 1	Result 2	RPD				
% Moisture				M20-Ma43665	CP	%	8.1	8.6	6.0	30%	Pass
Duplicate											
Heavy Metals											
Lead				M20-Ma43670	CP	mg/kg	100	110	4.0	30%	Pass
Duplicate											
Heavy Metals											
Lead				M20-Ma43671	CP	mg/kg	74	75	1.0	30%	Pass
Duplicate											
					Result 1	Result 2	RPD				
% Moisture				M20-Ma43675	CP	%	18	18	2.0	30%	Pass
Duplicate											
Heavy Metals											
Lead				M20-Ma43680	CP	mg/kg	76	74	3.0	30%	Pass
Duplicate											
Heavy Metals											
Lead				M20-Ma43681	CP	mg/kg	28	29	1.0	30%	Pass

Comments**Sample Integrity**

Custody Seals Intact (if used)	N/A
Attempt to Chill was evident	Yes
Sample correctly preserved	Yes
Appropriate sample containers have been used	Yes
Sample containers for volatile analysis received with minimal headspace	Yes
Samples received within HoldingTime	Yes
Some samples have been subcontracted	No

Authorised By

Andrew Black	Analytical Services Manager
Emily Rosenberg	Senior Analyst-Metal (VIC)

**Glenn Jackson
General Manager**

Final report - this Report replaces any previously issued Report

- Indicates Not Requested

* Indicates NATA accreditation does not cover the performance of this service

Measurement uncertainty of test data is available on request or please [click here](#).

Eurofins shall not be liable for loss, cost, damages or expenses incurred by the client, or any other person or company, resulting from the use of any information or interpretation given in this report. In no case shall Eurofins be liable for consequential damages including, but not limited to, lost profits, damages for failure to meet deadlines and lost production arising from this report. This document shall not be reproduced except in full and relates only to the items tested. Unless indicated otherwise, the tests were performed on the samples as received.



CHAIN OF CUSTODY RECORD

ASN 50 005 085 821

Sydney Laboratory
Unit F3 Bld 1, 16 Mars Rd, Lane Cove West, NSW 2066
02 9902 8400 EnviroSampleNSW@eurofins.com

Brisbane Laboratory
Unit 1, 21 Smallwood Pl., Marano, QLD 4172
07 3902 4800 EnviroSampleQLD@eurofins.com

Perth Laboratory
Unit 2, 81 Leach Highway, Kewdale WA 6105
08 9251 9600 EnviroSampleWA@eurofins.com

Melbourne Laboratory
2 Kingston Town Close, Caulfield, VIC 3166
03 8564 5000 EnviroSampleVIC@eurofins.com

Company	Ramboll	Project No	318000780	Project Manager	Stephen Maxwell	Sampler(s)	JB, TJ, JK
Address	50 Glebe Road the Junction	Project Name	P2	EDD Format (Estal, EQuis, Custom)	Excel and PDF	Handed over by	Jordyn Kirsch
Contact Name	Stephen Maxwell	Email for Invoice: smaxwell@ramboll.com Email for Results: smaxwell@ramboll.com Email for Results: jblackwell@ramboll.com					
Phone No	0478 658 194	Containers: 1L Plastic, 250mL Plastic, 125mL Plastic, 200mL Amber Glass, 40mL VOA vial, 500mL PFAS Bottle, Jar (Glass or HDPE), Other (Asbestos AS4984, WA Guidelines)					
Special Directions		Turnaround Time (TAT) Requirements (submit with 5 day TAT)					
Purchase Order		<input type="checkbox"/> Overnight (9am)* <input type="checkbox"/> 1 Day* <input type="checkbox"/> 2 Day* <input type="checkbox"/> 3 Day* <input checked="" type="checkbox"/> 5 Day* <input type="checkbox"/> Other () *Surcharges apply					
Quote ID No	180813RAMM_1	Sample Comments / Dangerous Goods Hazard Warning					

No	Client Sample ID	Sampled Date/Time (dd/mm/yy hh:mm)	Matrix (Solid (s) / Water (W))	M13 (Al, As, Ba, Be, Cd, Cr, Co, Cu, Fe, Pb, Mn, Hg, Ni, Zn) Total (excluding hexavalent chromium)	M13 (Al, As, Ba, Be, Cd, Cr, Co, Cu, Fe, Pb, Mn, Hg, Ni, Zn) Dissolved (excluding hexavalent chromium)
1	P2_GWBORE	30/04/20	S	X	X
2					
3					
4					
5					
6					
7					
8					
9					
10					
Total Counts				1	1

Method of Shipment	<input type="checkbox"/> Courier #	<input checked="" type="checkbox"/> Hand Delivered	<input type="checkbox"/> Postal	Name	Signature	Date	Time	Temperature
Eurofins mgf Laboratory Use Only	Received By	Received By	Signature	Signature	Signature	Date	Time	Report No
						01/05/20	12:00 pm	14.03 °C
								76892

Submission of samples to this laboratory will be deemed as acceptance of Eurofins | mgf Standard Terms and Conditions unless agreed otherwise. A copy of Eurofins | mgf Standard Terms and Conditions is available on request.

Eurofins Environment Testing Australia Pty Ltd trading as Eurofins | mgf

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NATA # 1261
Site # 1254 & 14271

Sydney

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Phone : +61 2 9900 8400
NATA # 1261 Site # 18217

Brisbane

1/21 Smallwood Place
Murarrie QLD 4172
Phone : +61 7 3902 4600
NATA # 1261 Site # 20794

Perth

2/91 Leach Highway
Kewdale WA 6105
Phone : +61 8 9251 9600
NATA # 1261 Site # 23736

Sample Receipt Advice

Company name: **Ramboll Australia Pty Ltd**
Contact name: Stephen Maxwell
Project name: P2
Project ID: 318000780
COC number: Not provided
Turn around time: 5 Day
Date/Time received: May 1, 2020 12:00 PM
Eurofins reference: **716892**

Sample information

- A detailed list of analytes logged into our LIMS, is included in the attached summary table.
- All samples have been received as described on the above COC.
- COC has been completed correctly.
- Attempt to chill was evident.
- Appropriately preserved sample containers have been used.
- All samples were received in good condition.
- Samples have been provided with adequate time to commence analysis in accordance with the relevant holding times.
- Appropriate sample containers have been used.
- Sample containers for volatile analysis received with zero headspace.
- Split sample sent to requested external lab.
- Some samples have been subcontracted.
- N/A Custody Seals intact (if used).

Contact notes

If you have any questions with respect to these samples please contact:

Andrew Black on Phone : (+61) 2 9900 8490 or by e.mail: AndrewBlack@eurofins.com

Results will be delivered electronically via e.mail to Stephen Maxwell - smaxwell@ramboll.com.

Note: A copy of these results will also be delivered to the general Ramboll Australia Pty Ltd email address.

Ramboll Environ Australia Pty Ltd
 Level 3/100 Pacific Highway
 North Sydney
 NSW 2060



NATA Accredited
Accreditation Number 1261
Site Number 18217

Accredited for compliance with ISO/IEC 17025 – Testing
 The results of the tests, calibrations and/or
 measurements included in this document are traceable
 to Australian/national standards.

Attention: **Stephen Maxwell**

Report **716892-W**
 Project name **P2**
 Project ID **318000780**
 Received Date **May 01, 2020**

Client Sample ID			P2_GWBORE
Sample Matrix			Water
Eurofins Sample No.			S20-My00680
Date Sampled			Apr 30, 2020
Test/Reference	LOR	Unit	
Heavy Metals			
Aluminium	0.05	mg/L	< 0.05
Aluminium (filtered)	0.05	mg/L	< 0.05
Arsenic	0.001	mg/L	< 0.001
Arsenic (filtered)	0.001	mg/L	< 0.001
Barium	0.02	mg/L	0.13
Barium (filtered)	0.02	mg/L	0.12
Beryllium	0.001	mg/L	< 0.001
Beryllium (filtered)	0.001	mg/L	< 0.001
Cadmium	0.0002	mg/L	< 0.0002
Cadmium (filtered)	0.0002	mg/L	< 0.0002
Chromium	0.001	mg/L	< 0.001
Chromium (filtered)	0.001	mg/L	< 0.001
Cobalt	0.001	mg/L	< 0.001
Cobalt (filtered)	0.001	mg/L	< 0.001
Copper	0.001	mg/L	< 0.001
Copper (filtered)	0.001	mg/L	< 0.001
Iron	0.05	mg/L	3.4
Iron (filtered)	0.05	mg/L	< 0.05
Lead	0.001	mg/L	< 0.001
Lead (filtered)	0.001	mg/L	< 0.001
Manganese	0.005	mg/L	0.15
Manganese (filtered)	0.005	mg/L	0.007
Mercury	0.0001	mg/L	< 0.0001
Mercury (filtered)	0.0001	mg/L	< 0.0001
Nickel	0.001	mg/L	< 0.001
Nickel (filtered)	0.001	mg/L	< 0.001
Zinc	0.005	mg/L	< 0.005
Zinc (filtered)	0.005	mg/L	< 0.005

Sample History

Where samples are submitted/analysed over several days, the last date of extraction and analysis is reported. A recent review of our LIMS has resulted in the correction or clarification of some method identifications. Due to this, some of the method reference information on reports has changed. However, no substantive change has been made to our laboratory methods, and as such there is no change in the validity of current or previous results.

If the date and time of sampling are not provided, the Laboratory will not be responsible for compromised results should testing be performed outside the recommended holding time.

Description	Testing Site	Extracted	Holding Time
Heavy Metals - Method: LTM-MET-3040 Metals in Waters, Soils & Sediments by ICP-MS	Sydney	May 05, 2020	180 Days
Heavy Metals (filtered) - Method: LTM-MET-3040 Metals in Waters, Soils & Sediments by ICP-MS	Sydney	May 05, 2020	180 Days
Mercury - Method: LTM-MET-3040 Metals in Waters, Soils & Sediments by ICP-MS	Sydney	May 05, 2020	28 Days
Mercury (filtered) - Method: LTM-MET-3040 Metals in Waters, Soils & Sediments by ICP-MS	Sydney	May 05, 2020	28 Days

Australia

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NATA # 1261 Site # 18217

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NATA # 1261 Site # 20794

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Phone : +64 9 526 45 51
IANZ # 1327

Christchurch
43 Detroit Drive
Rolleston, Christchurch 7675
Phone : 0800 856 450
IANZ # 1290

Company Name: Ramboll Australia Pty Ltd
Address: Level 3/100 Pacific Highway
North Sydney
NSW 2060

Order No.:
Report #: 716892
Phone: 02 9954 8118
Fax: 02 9954 8150

Received: May 1, 2020 12:00 PM
Due: May 8, 2020
Priority: 5 Day
Contact Name: Stephen Maxwell

Project Name: P2
Project ID: 318000780

Eurofins Analytical Services Manager : Andrew Black

Sample Detail						Aluminium	Aluminium (filtered)	Arsenic	Arsenic (filtered)	Barium	Barium (filtered)	Beryllium	Beryllium (filtered)	Cadmium	Cadmium (filtered)	Chromium	Chromium (filtered)	Cobalt	Cobalt (filtered)	Copper	Copper (filtered)	Iron	Iron (filtered)	Lead	Lead (filtered)	Manganese	Manganese (filtered)	Mercury	Mercury (filtered)	Nickel	Nickel (filtered)	Zinc	Zinc (filtered)	
Melbourne Laboratory - NATA Site # 1254 & 14271																																		
Sydney Laboratory - NATA Site # 18217						X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X
Brisbane Laboratory - NATA Site # 20794																																		
Perth Laboratory - NATA Site # 23736																																		
External Laboratory																																		
No	Sample ID	Sample Date	Sampling Time	Matrix	LAB ID																													
1	P2_GWBORE	Apr 30, 2020		Water	S20-My00680	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X		
Test Counts						1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	

Internal Quality Control Review and Glossary

General

- Laboratory QC results for Method Blanks, Duplicates, Matrix Spikes, and Laboratory Control Samples follows guidelines delineated in the National Environment Protection (Assessment of Site Contamination) Measure 1999, as amended May 2013 and are included in this QC report where applicable. Additional QC data may be available on request.
- All soil/sediment/solid results are reported on a dry basis, unless otherwise stated.
- All biota/food results are reported on a wet weight basis on the edible portion, unless otherwise stated.
- Actual LORs are matrix dependant. Quoted LORs may be raised where sample extracts are diluted due to interferences.
- Results are uncorrected for matrix spikes or surrogate recoveries except for PFAS compounds.
- SVOC analysis on waters are performed on homogenised, unfiltered samples, unless noted otherwise.
- Samples were analysed on an 'as received' basis.
- Information identified on this report with blue colour, indicates data provided by customer, that may have an impact on the results.
- This report replaces any interim results previously issued.

Holding Times

Please refer to 'Sample Preservation and Container Guide' for holding times (QS3001).

For samples received on the last day of holding time, notification of testing requirements should have been received at least 6 hours prior to sample receipt deadlines as stated on the SRA.

If the Laboratory did not receive the information in the required timeframe, and regardless of any other integrity issues, suitably qualified results may still be reported.

Holding times apply from the date of sampling, therefore compliance to these may be outside the laboratory's control.

For VOCs containing vinyl chloride, styrene and 2-chloroethyl vinyl ether the holding time is 7 days however for all other VOCs such as BTEX or C6-10 TRH then the holding time is 14 days.

****NOTE:** pH duplicates are reported as a range NOT as RPD

Units

mg/kg: milligrams per kilogram

mg/L: milligrams per litre

ug/L: micrograms per litre

ppm: Parts per million

ppb: Parts per billion

%: Percentage

org/100mL: Organisms per 100 millilitres

NTU: Nephelometric Turbidity Units

MPN/100mL: Most Probable Number of organisms per 100 millilitres

Terms

Dry	Where a moisture has been determined on a solid sample the result is expressed on a dry basis.
LOR	Limit of Reporting.
SPIKE	Addition of the analyte to the sample and reported as percentage recovery.
RPD	Relative Percent Difference between two Duplicate pieces of analysis.
LCS	Laboratory Control Sample - reported as percent recovery.
CRM	Certified Reference Material - reported as percent recovery.
Method Blank	In the case of solid samples these are performed on laboratory certified clean sands and in the case of water samples these are performed on de-ionised water.
Surr - Surrogate	The addition of a like compound to the analyte target and reported as percentage recovery.
Duplicate	A second piece of analysis from the same sample and reported in the same units as the result to show comparison.
USEPA	United States Environmental Protection Agency
APHA	American Public Health Association
TCLP	Toxicity Characteristic Leaching Procedure
COC	Chain of Custody
SRA	Sample Receipt Advice
QSM	US Department of Defense Quality Systems Manual Version 5.3
CP	Client Parent - QC was performed on samples pertaining to this report
NCP	Non-Client Parent - QC performed on samples not pertaining to this report, QC is representative of the sequence or batch that client samples were analysed within.
TEQ	Toxic Equivalency Quotient

QC - Acceptance Criteria

RPD Duplicates: Global RPD Duplicates Acceptance Criteria is 30% however the following acceptance guidelines are equally applicable:

Results <10 times the LOR : No Limit

Results between 10-20 times the LOR : RPD must lie between 0-50%

Results >20 times the LOR : RPD must lie between 0-30%

Surrogate Recoveries: Recoveries must lie between 20-130% Phenols & 50-150% PFASs

PFAS field samples that contain surrogate recoveries in excess of the QC limit designated in QSM 5.3 where no positive PFAS results have been reported have been reviewed and no data was affected.

WA DWER (n=10): PFBA, PFPeA, PFHxA, PFHpA, PFOA, PFBS, PFHxS, PFOS, 6:2 FTSA, 8:2 FTSA

QC Data General Comments

- Where a result is reported as a less than (<), higher than the nominated LOR, this is due to either matrix interference, extract dilution required due to interferences or contaminant levels within the sample, high moisture content or insufficient sample provided.
- Duplicate data shown within this report that states the word "BATCH" is a Batch Duplicate from outside of your sample batch, but within the laboratory sample batch at a 1:10 ratio. The Parent and Duplicate data shown is not data from your samples.
- Organochlorine Pesticide analysis - where reporting LCS data, Toxaphene & Chlordane are not added to the LCS.
- Organochlorine Pesticide analysis - where reporting Spike data, Toxaphene is not added to the Spike.
- Total Recoverable Hydrocarbons - where reporting Spike & LCS data, a single spike of commercial Hydrocarbon products in the range of C12-C30 is added and it's Total Recovery is reported in the C10-C14 cell of the Report.
- pH and Free Chlorine analysed in the laboratory - Analysis on this test must begin within 30 minutes of sampling. Therefore laboratory analysis is unlikely to be completed within holding time. Analysis will begin as soon as possible after sample receipt.
- Recovery Data (Spikes & Surrogates) - where chromatographic interference does not allow the determination of Recovery the term "INT" appears against that analyte.
- Polychlorinated Biphenyls are spiked only using Aroclor 1260 in Matrix Spikes and LCS.
- For Matrix Spikes and LCS results a dash " - " in the report means that the specific analyte was not added to the QC sample.
- Duplicate RPDs are calculated from raw analytical data thus it is possible to have two sets of data.

Quality Control Results

Test	Units	Result 1			Acceptance Limits	Pass Limits	Qualifying Code
Method Blank							
Heavy Metals							
Aluminium	mg/L	< 0.05			0.05	Pass	
Aluminium (filtered)	mg/L	< 0.05			0.05	Pass	
Arsenic	mg/L	< 0.001			0.001	Pass	
Arsenic (filtered)	mg/L	< 0.001			0.001	Pass	
Barium	mg/L	< 0.02			0.02	Pass	
Barium (filtered)	mg/L	< 0.02			0.02	Pass	
Beryllium	mg/L	< 0.001			0.001	Pass	
Beryllium (filtered)	mg/L	< 0.001			0.001	Pass	
Cadmium	mg/L	< 0.0002			0.0002	Pass	
Cadmium (filtered)	mg/L	< 0.0002			0.0002	Pass	
Chromium	mg/L	< 0.001			0.001	Pass	
Chromium (filtered)	mg/L	< 0.001			0.001	Pass	
Cobalt	mg/L	< 0.001			0.001	Pass	
Cobalt (filtered)	mg/L	< 0.001			0.001	Pass	
Copper	mg/L	< 0.001			0.001	Pass	
Copper (filtered)	mg/L	< 0.001			0.001	Pass	
Iron	mg/L	< 0.05			0.05	Pass	
Iron (filtered)	mg/L	< 0.05			0.05	Pass	
Lead	mg/L	< 0.001			0.001	Pass	
Lead (filtered)	mg/L	< 0.001			0.001	Pass	
Manganese	mg/L	< 0.005			0.005	Pass	
Manganese (filtered)	mg/L	< 0.005			0.005	Pass	
Mercury	mg/L	< 0.0001			0.0001	Pass	
Mercury (filtered)	mg/L	< 0.0001			0.0001	Pass	
Nickel	mg/L	< 0.001			0.001	Pass	
Nickel (filtered)	mg/L	< 0.001			0.001	Pass	
Zinc	mg/L	< 0.005			0.005	Pass	
Zinc (filtered)	mg/L	< 0.005			0.005	Pass	
LCS - % Recovery							
Heavy Metals							
Aluminium	%	99			70-130	Pass	
Aluminium (filtered)	%	94			70-130	Pass	
Arsenic	%	97			70-130	Pass	
Arsenic (filtered)	%	98			70-130	Pass	
Barium	%	90			70-130	Pass	
Barium (filtered)	%	99			70-130	Pass	
Beryllium	%	91			70-130	Pass	
Beryllium (filtered)	%	90			70-130	Pass	
Cadmium	%	93			70-130	Pass	
Cadmium (filtered)	%	89			70-130	Pass	
Chromium	%	98			70-130	Pass	
Chromium (filtered)	%	93			70-130	Pass	
Cobalt	%	98			70-130	Pass	
Cobalt (filtered)	%	95			70-130	Pass	
Copper	%	97			70-130	Pass	
Copper (filtered)	%	93			70-130	Pass	
Iron	%	98			70-130	Pass	
Iron (filtered)	%	95			70-130	Pass	
Lead	%	100			70-130	Pass	
Lead (filtered)	%	93			70-130	Pass	

Test			Units	Result 1			Acceptance Limits	Pass Limits	Qualifying Code
Manganese			%	95			70-130	Pass	
Manganese (filtered)			%	97			70-130	Pass	
Mercury			%	109			70-130	Pass	
Mercury (filtered)			%	101			70-130	Pass	
Nickel			%	98			70-130	Pass	
Nickel (filtered)			%	94			70-130	Pass	
Zinc			%	93			70-130	Pass	
Zinc (filtered)			%	97			70-130	Pass	
Test	Lab Sample ID	QA Source	Units	Result 1			Acceptance Limits	Pass Limits	Qualifying Code
Spike - % Recovery									
Heavy Metals				Result 1					
Aluminium	S20-My01516	NCP	%	98			70-130	Pass	
Aluminium (filtered)	S20-My01255	NCP	%	85			70-130	Pass	
Arsenic	S20-My01516	NCP	%	98			70-130	Pass	
Arsenic (filtered)	S20-My06202	NCP	%	117			70-130	Pass	
Barium	S20-My01516	NCP	%	92			70-130	Pass	
Barium (filtered)	S20-My06202	NCP	%	92			70-130	Pass	
Beryllium	S20-My01516	NCP	%	91			70-130	Pass	
Beryllium (filtered)	S20-My06202	NCP	%	93			70-130	Pass	
Cadmium	S20-My01516	NCP	%	95			70-130	Pass	
Cadmium (filtered)	S20-My06202	NCP	%	91			70-130	Pass	
Chromium	S20-My01516	NCP	%	101			70-130	Pass	
Chromium (filtered)	S20-My06202	NCP	%	83			70-130	Pass	
Cobalt	S20-My01516	NCP	%	101			70-130	Pass	
Cobalt (filtered)	S20-My06202	NCP	%	80			70-130	Pass	
Copper	S20-My01516	NCP	%	100			70-130	Pass	
Copper (filtered)	S20-My01255	NCP	%	81			70-130	Pass	
Iron	S20-My01516	NCP	%	99			70-130	Pass	
Iron (filtered)	S20-My06202	NCP	%	83			70-130	Pass	
Lead	S20-My01516	NCP	%	104			70-130	Pass	
Lead (filtered)	S20-My06202	NCP	%	83			70-130	Pass	
Manganese	S20-My01516	NCP	%	97			70-130	Pass	
Manganese (filtered)	S20-My06202	NCP	%	87			70-130	Pass	
Mercury	S20-My01516	NCP	%	115			70-130	Pass	
Mercury (filtered)	S20-My06202	NCP	%	91			70-130	Pass	
Nickel	S20-My01516	NCP	%	102			70-130	Pass	
Nickel (filtered)	S20-My06202	NCP	%	77			70-130	Pass	
Zinc	S20-My01516	NCP	%	97			70-130	Pass	
Zinc (filtered)	S20-My06202	NCP	%	76			70-130	Pass	
Test	Lab Sample ID	QA Source	Units	Result 1			Acceptance Limits	Pass Limits	Qualifying Code
Duplicate									
Heavy Metals				Result 1	Result 2	RPD			
Aluminium	S20-My00643	NCP	mg/L	< 0.05	< 0.05	<1	30%	Pass	
Aluminium (filtered)	S20-My01252	NCP	mg/L	< 0.05	< 0.05	<1	30%	Pass	
Arsenic	S20-My00643	NCP	mg/L	< 0.001	< 0.001	<1	30%	Pass	
Arsenic (filtered)	S20-My06198	NCP	mg/L	0.003	0.003	9.0	30%	Pass	
Barium	S20-My00643	NCP	mg/L	< 0.02	< 0.02	<1	30%	Pass	
Barium (filtered)	S20-My06198	NCP	mg/L	0.05	0.05	2.0	30%	Pass	
Beryllium	S20-My00643	NCP	mg/L	< 0.001	< 0.001	<1	30%	Pass	
Beryllium (filtered)	S20-My06198	NCP	mg/L	< 0.001	< 0.001	<1	30%	Pass	
Cadmium	S20-My00643	NCP	mg/L	< 0.0002	< 0.0002	<1	30%	Pass	
Cadmium (filtered)	S20-My06198	NCP	mg/L	< 0.0002	< 0.0002	<1	30%	Pass	
Chromium	S20-My00643	NCP	mg/L	0.001	< 0.001	18	30%	Pass	

Test	Lab Sample ID	QA Source	Units	Result 1			Acceptance Limits	Pass Limits	Qualifying Code
Duplicate									
Heavy Metals				Result 1	Result 2	RPD			
Chromium (filtered)	S20-My06198	NCP	mg/L	0.006	0.005	3.0	30%	Pass	
Cobalt	S20-My00643	NCP	mg/L	< 0.001	< 0.001	<1	30%	Pass	
Cobalt (filtered)	S20-My06198	NCP	mg/L	< 0.001	< 0.001	<1	30%	Pass	
Copper	S20-My00643	NCP	mg/L	< 0.001	< 0.001	<1	30%	Pass	
Copper (filtered)	S20-My06198	NCP	mg/L	0.009	0.009	1.0	30%	Pass	
Iron	S20-My00643	NCP	mg/L	< 0.05	< 0.05	<1	30%	Pass	
Iron (filtered)	S20-My06198	NCP	mg/L	< 0.05	< 0.05	<1	30%	Pass	
Lead	S20-My00643	NCP	mg/L	< 0.001	< 0.001	<1	30%	Pass	
Lead (filtered)	S20-My06198	NCP	mg/L	< 0.001	< 0.001	<1	30%	Pass	
Manganese	S20-My00643	NCP	mg/L	< 0.005	< 0.005	<1	30%	Pass	
Manganese (filtered)	S20-My06198	NCP	mg/L	< 0.005	< 0.005	<1	30%	Pass	
Mercury	S20-My00643	NCP	mg/L	< 0.0001	< 0.0001	<1	30%	Pass	
Mercury (filtered)	S20-My06198	NCP	mg/L	< 0.0001	< 0.0001	<1	30%	Pass	
Nickel	S20-My00643	NCP	mg/L	< 0.001	< 0.001	<1	30%	Pass	
Nickel (filtered)	S20-My06198	NCP	mg/L	0.004	0.004	4.0	30%	Pass	
Zinc	S20-My00643	NCP	mg/L	0.035	0.033	7.0	30%	Pass	
Zinc (filtered)	S20-My06198	NCP	mg/L	0.052	0.052	<1	30%	Pass	

Comments**Sample Integrity**

Custody Seals Intact (if used)	N/A
Attempt to Chill was evident	Yes
Sample correctly preserved	Yes
Appropriate sample containers have been used	Yes
Sample containers for volatile analysis received with minimal headspace	Yes
Samples received within HoldingTime	Yes
Some samples have been subcontracted	No

Authorised By

Andrew Black Analytical Services Manager
Gabriele Cordero Senior Analyst-Metal (NSW)

**Glenn Jackson
General Manager**

Final report - this Report replaces any previously issued Report

- Indicates Not Requested

* Indicates NATA accreditation does not cover the performance of this service

Measurement uncertainty of test data is available on request or please [click here](#).

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CHAIN OF CUSTODY RECORD

ABN 51 005 065 571

Sydney Laboratory
Unit F3 Bld F, 16 Mars Rd, Lane Cove West, NSW 2056
02 9900 9400 EnviroSampleNSW@eurofins.com

Brisbane Laboratory
Unit 1, 21 Smallwood Pl., Murarie, QLD 4172
07 3902 4600 EnviroSampleQLD@eurofins.com

Perth Laboratory
Unit 2, 311 Leach Highway, Kewdale WA 6105
08 9251 9800 EnviroSampleWA@eurofins.com

Melbourne Laboratory
2 Kingston Town Close, Oakleigh, VIC 3186
03 8564 5300 EnviroSampleVic@eurofins.com

Company	Ramboll	Project No	318000780	Project Manager	Stephen Maxwell	Sampler(s)	AC
Address	50 Giebe Road the Junction	Project Name		EDD Format (ESlat, EQuis,)	Excel and PDF	Handed over by	SM
Contact Name	Stephen Maxwell	Analyses				Email for Invoice	smaxwell@ramboll.com asiapac-accounts@ramboll.com
Phone No		Client Sample ID	180813RAMM_1			Email for Results	smaxwell@ramboll.com jblackwell@ramboll.com rondon@ramboll.com shyde@ramboll.com
Special Directions		Sampled Date Time (dd/mm/yy hh:mm)				Turnaround Time (TAT) Requirements (Default will be 5 days if not ticked)	<input type="checkbox"/> Overnight (9am) <input type="checkbox"/> 1 Day* <input type="checkbox"/> 2 Day* <input type="checkbox"/> 3 Day* <input checked="" type="checkbox"/> 5 Day* <input type="checkbox"/> Other () *Surcharges apply
Purchase Order		Matrix (Solid (S) Water (W))				1L Plastic	Sample Comments / Dangerous Goods Hazard Warning
Quote ID No		Lead				250mL Plastic	
No		Matrix (Solid (S) Water (W))				125mL Amber Glass	
1	P4_HA01_0-0.05	Soil	24/03/20	X		40mL VOA vial	
2	P4_HA01_0.2	Soil	24/03/20	X		500mL PFAS Bottle	
3	P4_HA01_0.4	Soil	24/03/20	X		Jar (Glass or HDPE)	
4	P4_HA02_0-0.05	Soil	24/03/20	X		Other (Asbestos AS4984, WA Guidelines)	
5	P4_HA02_0.2	Soil	24/03/20	X			
6	P4_HA02_0.35	Soil	24/03/20	X			
7	P4_HA03_0-0.05	Soil	24/03/20	X			
8	P4_HA03_0.3	Soil	24/03/20	X			
9							
10							
Method of Shipment		Total Counts	8				
<input type="checkbox"/> Courier (#		<input type="checkbox"/> Hand Delivered					
Eurofins mgt Laboratory Use Only	Received By	Signature	Date	Signature	Date	Date	Time
	<i>Roane</i>		21/3/20		21/3/20	8:30am	13.2
							7:05:56

Submission of samples to the laboratory will be deemed as acceptance of Eurofins | mgt Standard Terms and Conditions unless agreed otherwise. A copy of Eurofins | mgt Standard Terms and Conditions is available on request.

Eurofins Environment Testing Australia Pty Ltd trading as Eurofins | mgt



CHAIN OF CUSTODY RECORD

ASN 50 005 985 521

Sydney Laboratory
Unit F3 Bld F, 16 Mars Rd, Lane Cove West, NSW 2056
02 9500 8400 EnviroSampleNSW@eurofins.com

Brisbane Laboratory
Unit 1, 21 Smallwood Pl, Murarie, QLD 4172
07 3902 4600 EnviroSampleQLD@eurofins.com

Perth Laboratory
Unit 2, 91 Leach Highway, Kewdale WA 6105
08 9251 9800 EnviroSampleWA@eurofins.com

Melbourne Laboratory
2 Kingson Town Close, Cocksleigh, VIC 3165
03 8564 5000 EnviroSampleVic@eurofins.com

Company		Ramboll	Project No	318000780	Project Manager	Stephen Maxwell	Sampler(s)	AC
Address		50 Giebe Road the Junction	Project Name		EDD Format (ESdat, EQuls,	Excel and PDF	Handed over by	SM
Contact Name		Stephen Maxwell	Analyses	M13 (Al, As, Ba, Be, Cd, Cr, Co, Cu, Fe, Pb, Mn, Hg, Ni, Zn) total M13 (Al, As, Ba, Be, Cd, Cr, Co, Cu, Fe, Pb, Mn, Hg, Ni, Zn) dissolved	Lead		Email for Invoice	smaxwell@ramboll.com asiapac-accounts@ramboll.com
Phone No			Client Sample ID	180813RAMN_1	Matrix (Solid (S) Water (W))		Email for Results	smaxwell@ramboll.com jblackwell@ramboll.com rondon@ramboll.com shyde@ramboll.com
Special Directions			Sampled Date/Time (dd/mm/yy hh:mm)		Total Counts	6	Turnaround Time (TAT) Requirements (default will be 5 days if not ticked)	<input type="checkbox"/> Overnight (9am)* <input type="checkbox"/> 1 Day* <input type="checkbox"/> 2 Day* <input type="checkbox"/> 3 Day* <input checked="" type="checkbox"/> 5 Day* <input type="checkbox"/> Other () *Surcharges apply
Purchase Order			Method of Shipment	<input type="checkbox"/> Courier (#) <input type="checkbox"/> Hand Delivered <input type="checkbox"/> Postal	Signature		1L Plastic	
Quote ID No			Received By		Date		250mL Plastic	
No		Client Sample ID	Received By		Date		125mL Plastic	
1		P4_HA04_0-0.05	Signature		Date		40mL VOA vial	
2		P4_HA04_0.2	Signature		Date		200mL Amber Glass	
3		P4_HA04_0.3	Signature		Date		500mL PFS Bottle	
4		P4_HA05_0-0.05	Signature		Date		1L Plastic	
5		P4_HA05_0.2	Signature		Date		Sample Comments / Dangerous Goods Hazard Warning	
8		P4_HA05_0.4	Signature		Date		Other (Asbestos AS4984, WA Guidelines)	
9			Signature		Date		Sample Comments / Dangerous Goods Hazard Warning	
10			Signature		Date		Sample Comments / Dangerous Goods Hazard Warning	

Method of Shipment		Courier (#)	Hand Delivered	Postal	Name	Signature	Date	Temperature
Eurofins mgt								
Laboratory Use Only								
Received By								
Received By								
Report No								710561

Submission of samples to the laboratory will be deemed as acceptance of Eurofins | mgt Standard Terms and Conditions unless agreed otherwise. A copy of Eurofins | mgt Standard Terms and Conditions is available on request.

Eurofins Environment Testing Australia Pty Ltd trading as Eurofins | mgt

Melbourne

6 Monterey Road
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NATA # 1261
Site # 1254 & 14271

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NATA # 1261 Site # 18217

Brisbane

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Phone : +61 7 3902 4600
NATA # 1261 Site # 20794

Perth

2/91 Leach Highway
Kewdale WA 6105
Phone : +61 8 9251 9600
NATA # 1261 Site # 23736

Sample Receipt Advice

Company name: **Ramboll Australia Pty Ltd**

Contact name: **Stephen Maxwell**

Project ID: **318000780**

COC number: **Not provided**

Turn around time: **5 Day**

Date/Time received: **Mar 27, 2020 8:30 AM**

Eurofins reference: **710561**

Sample information

- A detailed list of analytes logged into our LIMS, is included in the attached summary table.
- All samples have been received as described on the above COC.
- COC has been completed correctly.
- Attempt to chill was evident.
- Appropriately preserved sample containers have been used.
- All samples were received in good condition.
- Samples have been provided with adequate time to commence analysis in accordance with the relevant holding times.
- Appropriate sample containers have been used.
- Split sample sent to requested external lab.
- Some samples have been subcontracted.
- N/A Custody Seals intact (if used).

Contact notes

If you have any questions with respect to these samples please contact:

Andrew Black on Phone : (+61) 2 9900 8490 or by e.mail: AndrewBlack@eurofins.com

Results will be delivered electronically via e.mail to Stephen Maxwell - smaxwell@ramboll.com.

Note: A copy of these results will also be delivered to the general Ramboll Australia Pty Ltd email address.

Australia

Melbourne
6 Monterey Road
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43 Detroit Drive
Rolleston, Christchurch 7675
Phone : 0800 856 450
IANZ # 1290

Company Name: Ramboll Australia Pty Ltd
Address: Level 3/100 Pacific Highway
North Sydney
NSW 2060

Order No.:
Report #: 710561
Phone: 02 9954 8118
Fax: 02 9954 8150

Received: Mar 27, 2020 8:30 AM
Due: Apr 3, 2020
Priority: 5 Day
Contact Name: Stephen Maxwell

Project Name:
Project ID: 318000780

Eurofins Analytical Services Manager : Andrew Black

Sample Detail						Lead	Moisture Set
Melbourne Laboratory - NATA Site # 1254 & 14271						X	X
Sydney Laboratory - NATA Site # 18217							
Brisbane Laboratory - NATA Site # 20794							
Perth Laboratory - NATA Site # 23736							
External Laboratory							
No	Sample ID	Sample Date	Sampling Time	Matrix	LAB ID		
1	P4_HA01_0-0.05	Mar 24, 2020		Soil	M20-Ma43685	X	X
2	P4_HA01_0-0.2	Mar 24, 2020		Soil	M20-Ma43686	X	X
3	P4_HA01_0-0.4	Mar 24, 2020		Soil	M20-Ma43687	X	X
4	P4_HA02_0-0.05	Mar 24, 2020		Soil	M20-Ma43688	X	X
5	P4_HA02_0-0.2	Mar 24, 2020		Soil	M20-Ma43689	X	X
6	P4_HA02_0-0.35	Mar 24, 2020		Soil	M20-Ma43690	X	X

Australia

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Melbourne Laboratory - NATA Site # 1254 & 14271						X	X
Sydney Laboratory - NATA Site # 18217							
Brisbane Laboratory - NATA Site # 20794							
Perth Laboratory - NATA Site # 23736							
7	P4_HA03_0-0.05	Mar 24, 2020		Soil	M20-Ma43691	X	X
8	P4_HA03_0-0.3	Mar 24, 2020		Soil	M20-Ma43692	X	X
9	P4_HA04_0-0.05	Mar 24, 2020		Soil	M20-Ma43693	X	X
10	P4_HA04_0-0.2	Mar 24, 2020		Soil	M20-Ma43694	X	X
11	P4_HA04_0-0.4	Mar 24, 2020		Soil	M20-Ma43695	X	X
12	P4_HA05_0-0.05	Mar 24, 2020		Soil	M20-Ma43696	X	X
13	P4_HA05_0-0.2	Mar 24, 2020		Soil	M20-Ma43697	X	X
14	P4_HA05_0-	Mar 24, 2020		Soil	M20-Ma43698	X	X



Environment Testing

Australia

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ABN – 50 005 085 521

web : www.eurofins.com.au

e.mail : EnviroSales@eurofins.com

Company Name: Ramboll Australia Pty Ltd
Address: Level 3/100 Pacific Highway
 North Sydney
 NSW 2060

Order No.:
Report #: 710561
Phone: 02 9954 8118
Fax: 02 9954 8150

Received: Mar 27, 2020 8:30 AM
Due: Apr 3, 2020
Priority: 5 Day
Contact Name: Stephen Maxwell

Project Name:
Project ID: 318000780

Eurofins Analytical Services Manager : Andrew Black

Sample Detail					Lead	Moisture Set
Melbourne Laboratory - NATA Site # 1254 & 14271					X	X
Sydney Laboratory - NATA Site # 18217						
Brisbane Laboratory - NATA Site # 20794						
Perth Laboratory - NATA Site # 23736						
0.4						
Test Counts					14	14

Ramboll Environ Australia Pty Ltd
 Level 3/100 Pacific Highway
 North Sydney
 NSW 2060



NATA Accredited
 Accreditation Number 1261
 Site Number 1254

Accredited for compliance with ISO/IEC 17025 – Testing
 The results of the tests, calibrations and/or
 measurements included in this document are traceable
 to Australian/national standards.

Attention: Stephen Maxwell

Report 710561-S
 Project name
 Project ID 318000780
 Received Date Mar 27, 2020

Client Sample ID			P4_HA01_0-0.05	P4_HA01_0-0.2	P4_HA01_0-0.4	P4_HA02_0-0.05
Sample Matrix			Soil	Soil	Soil	Soil
Eurofins Sample No.			M20-Ma43685	M20-Ma43686	M20-Ma43687	M20-Ma43688
Date Sampled			Mar 24, 2020	Mar 24, 2020	Mar 24, 2020	Mar 24, 2020
Test/Reference	LOR	Unit				
Heavy Metals						
Lead	5	mg/kg	32	13	< 5	29
% Moisture						
	1	%	11	9.9	8.7	13

Client Sample ID			P4_HA02_0-0.2	P4_HA02_0-0.35	P4_HA03_0-0.05	P4_HA03_0-0.3
Sample Matrix			Soil	Soil	Soil	Soil
Eurofins Sample No.			M20-Ma43689	M20-Ma43690	M20-Ma43691	M20-Ma43692
Date Sampled			Mar 24, 2020	Mar 24, 2020	Mar 24, 2020	Mar 24, 2020
Test/Reference	LOR	Unit				
Heavy Metals						
Lead	5	mg/kg	17	5.8	540	5.8
% Moisture						
	1	%	11	9.1	10	11

Client Sample ID			P4_HA04_0-0.05	P4_HA04_0-0.2	P4_HA04_0-0.4	P4_HA05_0-0.05
Sample Matrix			Soil	Soil	Soil	Soil
Eurofins Sample No.			M20-Ma43693	M20-Ma43694	M20-Ma43695	M20-Ma43696
Date Sampled			Mar 24, 2020	Mar 24, 2020	Mar 24, 2020	Mar 24, 2020
Test/Reference	LOR	Unit				
Heavy Metals						
Lead	5	mg/kg	19	7.9	5.4	23
% Moisture						
	1	%	15	9.7	9.6	18

Client Sample ID			P4_HA05_0-0.2	P4_HA05_0-0.4
Sample Matrix			Soil	Soil
Eurofins Sample No.			M20-Ma43697	M20-Ma43698
Date Sampled			Mar 24, 2020	Mar 24, 2020
Test/Reference	LOR	Unit		
Heavy Metals				
Lead	5	mg/kg	13	5.2
% Moisture	1	%	12	9.3

Sample History

Where samples are submitted/analysed over several days, the last date of extraction and analysis is reported.

A recent review of our LIMS has resulted in the correction or clarification of some method identifications. Due to this, some of the method reference information on reports has changed. However, no substantive change has been made to our laboratory methods, and as such there is no change in the validity of current or previous results.

If the date and time of sampling are not provided, the Laboratory will not be responsible for compromised results should testing be performed outside the recommended holding time.

Description

Heavy Metals

- Method: LTM-MET-3040 Metals in Waters, Soils & Sediments by ICP-MS

% Moisture

- Method: LTM-GEN-7080 Moisture

Testing Site

Melbourne

Melbourne

Extracted

Mar 30, 2020

Mar 27, 2020

Holding Time

180 Days

14 Days

Australia

Melbourne
6 Monterey Road
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43 Detroit Drive
Rolleston, Christchurch 7675
Phone : 0800 856 450
IANZ # 1290

Company Name: Ramboll Australia Pty Ltd
Address: Level 3/100 Pacific Highway
North Sydney
NSW 2060

Order No.:
Report #: 710561
Phone: 02 9954 8118
Fax: 02 9954 8150

Received: Mar 27, 2020 8:30 AM
Due: Apr 3, 2020
Priority: 5 Day
Contact Name: Stephen Maxwell

Project Name:
Project ID: 318000780

Eurofins Analytical Services Manager : Andrew Black

Sample Detail						Lead	Moisture Set
Melbourne Laboratory - NATA Site # 1254 & 14271						X	X
Sydney Laboratory - NATA Site # 18217							
Brisbane Laboratory - NATA Site # 20794							
Perth Laboratory - NATA Site # 23736							
External Laboratory							
No	Sample ID	Sample Date	Sampling Time	Matrix	LAB ID		
1	P4_HA01_0-0.05	Mar 24, 2020		Soil	M20-Ma43685	X	X
2	P4_HA01_0-0.2	Mar 24, 2020		Soil	M20-Ma43686	X	X
3	P4_HA01_0-0.4	Mar 24, 2020		Soil	M20-Ma43687	X	X
4	P4_HA02_0-0.05	Mar 24, 2020		Soil	M20-Ma43688	X	X
5	P4_HA02_0-0.2	Mar 24, 2020		Soil	M20-Ma43689	X	X
6	P4_HA02_0-0.35	Mar 24, 2020		Soil	M20-Ma43690	X	X

Australia

Melbourne
6 Monterey Road
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Sample Detail						Lead	Moisture Set
Melbourne Laboratory - NATA Site # 1254 & 14271						X	X
Sydney Laboratory - NATA Site # 18217							
Brisbane Laboratory - NATA Site # 20794							
Perth Laboratory - NATA Site # 23736							
7	P4_HA03_0-0.05	Mar 24, 2020		Soil	M20-Ma43691	X	X
8	P4_HA03_0-0.3	Mar 24, 2020		Soil	M20-Ma43692	X	X
9	P4_HA04_0-0.05	Mar 24, 2020		Soil	M20-Ma43693	X	X
10	P4_HA04_0-0.2	Mar 24, 2020		Soil	M20-Ma43694	X	X
11	P4_HA04_0-0.4	Mar 24, 2020		Soil	M20-Ma43695	X	X
12	P4_HA05_0-0.05	Mar 24, 2020		Soil	M20-Ma43696	X	X
13	P4_HA05_0-0.2	Mar 24, 2020		Soil	M20-Ma43697	X	X
14	P4_HA05_0-	Mar 24, 2020		Soil	M20-Ma43698	X	X

Australia

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ABN – 50 005 085 521

web : www.eurofins.com.au

e.mail : EnviroSales@eurofins.com

Company Name: Ramboll Australia Pty Ltd
Address: Level 3/100 Pacific Highway
 North Sydney
 NSW 2060

Order No.:
Report #: 710561
Phone: 02 9954 8118
Fax: 02 9954 8150

Received: Mar 27, 2020 8:30 AM
Due: Apr 3, 2020
Priority: 5 Day
Contact Name: Stephen Maxwell

Project Name:
Project ID: 318000780

Eurofins Analytical Services Manager : Andrew Black

Sample Detail					Lead	Moisture Set
Melbourne Laboratory - NATA Site # 1254 & 14271					X	X
Sydney Laboratory - NATA Site # 18217						
Brisbane Laboratory - NATA Site # 20794						
Perth Laboratory - NATA Site # 23736						
0.4						
Test Counts					14	14

Internal Quality Control Review and Glossary
General

- Laboratory QC results for Method Blanks, Duplicates, Matrix Spikes, and Laboratory Control Samples follows guidelines delineated in the National Environment Protection (Assessment of Site Contamination) Measure 1999, as amended May 2013 and are included in this QC report where applicable. Additional QC data may be available on request.
- All soil/sediment/solid results are reported on a dry basis, unless otherwise stated.
- All biota/food results are reported on a wet weight basis on the edible portion, unless otherwise stated.
- Actual LORs are matrix dependant. Quoted LORs may be raised where sample extracts are diluted due to interferences.
- Results are uncorrected for matrix spikes or surrogate recoveries except for PFAS compounds.
- SVOC analysis on waters are performed on homogenised, unfiltered samples, unless noted otherwise.
- Samples were analysed on an 'as received' basis.
- Information identified on this report with blue colour, indicates data provided by customer, that may have an impact on the results.
- This report replaces any interim results previously issued.

Holding Times

Please refer to 'Sample Preservation and Container Guide' for holding times (QS3001).

For samples received on the last day of holding time, notification of testing requirements should have been received at least 6 hours prior to sample receipt deadlines as stated on the SRA.

If the Laboratory did not receive the information in the required timeframe, and regardless of any other integrity issues, suitably qualified results may still be reported.

Holding times apply from the date of sampling, therefore compliance to these may be outside the laboratory's control.

For VOCs containing vinyl chloride, styrene and 2-chloroethyl vinyl ether the holding time is 7 days however for all other VOCs such as BTEX or C6-10 TRH then the holding time is 14 days.

****NOTE:** pH duplicates are reported as a range NOT as RPD

Units

mg/kg: milligrams per kilogram

mg/L: milligrams per litre

ug/L: micrograms per litre

ppm: Parts per million

ppb: Parts per billion

%: Percentage

org/100mL: Organisms per 100 millilitres

NTU: Nephelometric Turbidity Units

MPN/100mL: Most Probable Number of organisms per 100 millilitres

Terms

Dry	Where a moisture has been determined on a solid sample the result is expressed on a dry basis.
LOR	Limit of Reporting.
SPIKE	Addition of the analyte to the sample and reported as percentage recovery.
RPD	Relative Percent Difference between two Duplicate pieces of analysis.
LCS	Laboratory Control Sample - reported as percent recovery.
CRM	Certified Reference Material - reported as percent recovery.
Method Blank	In the case of solid samples these are performed on laboratory certified clean sands and in the case of water samples these are performed on de-ionised water.
Surr - Surrogate	The addition of a like compound to the analyte target and reported as percentage recovery.
Duplicate	A second piece of analysis from the same sample and reported in the same units as the result to show comparison.
USEPA	United States Environmental Protection Agency
APHA	American Public Health Association
TCLP	Toxicity Characteristic Leaching Procedure
COC	Chain of Custody
SRA	Sample Receipt Advice
QSM	US Department of Defense Quality Systems Manual Version 5.3
CP	Client Parent - QC was performed on samples pertaining to this report
NCP	Non-Client Parent - QC performed on samples not pertaining to this report, QC is representative of the sequence or batch that client samples were analysed within.
TEQ	Toxic Equivalency Quotient

QC - Acceptance Criteria

RPD Duplicates: Global RPD Duplicates Acceptance Criteria is 30% however the following acceptance guidelines are equally applicable:

Results <10 times the LOR : No Limit

Results between 10-20 times the LOR : RPD must lie between 0-50%

Results >20 times the LOR : RPD must lie between 0-30%

Surrogate Recoveries: Recoveries must lie between 20-130% Phenols & 50-150% PFASs

PFAS field samples that contain surrogate recoveries in excess of the QC limit designated in QSM 5.3 where no positive PFAS results have been reported have been reviewed and no data was affected.

WA DWER (n=10): PFBA, PFPeA, PFHxA, PFHpA, PFOA, PFBS, PFHxS, PFOS, 6:2 FTSA, 8:2 FTSA

QC Data General Comments

- Where a result is reported as a less than (<), higher than the nominated LOR, this is due to either matrix interference, extract dilution required due to interferences or contaminant levels within the sample, high moisture content or insufficient sample provided.
- Duplicate data shown within this report that states the word "BATCH" is a Batch Duplicate from outside of your sample batch, but within the laboratory sample batch at a 1:10 ratio. The Parent and Duplicate data shown is not data from your samples.
- Organochlorine Pesticide analysis - where reporting LCS data, Toxaphene & Chlordane are not added to the LCS.
- Organochlorine Pesticide analysis - where reporting Spike data, Toxaphene is not added to the Spike.
- Total Recoverable Hydrocarbons - where reporting Spike & LCS data, a single spike of commercial Hydrocarbon products in the range of C12-C30 is added and it's Total Recovery is reported in the C10-C14 cell of the Report.
- pH and Free Chlorine analysed in the laboratory - Analysis on this test must begin within 30 minutes of sampling. Therefore laboratory analysis is unlikely to be completed within holding time. Analysis will begin as soon as possible after sample receipt.
- Recovery Data (Spikes & Surrogates) - where chromatographic interference does not allow the determination of Recovery the term "INT" appears against that analyte.
- Polychlorinated Biphenyls are spiked only using Aroclor 1260 in Matrix Spikes and LCS.
- For Matrix Spikes and LCS results a dash " - " in the report means that the specific analyte was not added to the QC sample.
- Duplicate RPDs are calculated from raw analytical data thus it is possible to have two sets of data.

Quality Control Results

Test				Units	Result 1		Acceptance Limits	Pass Limits	Qualifying Code		
Method Blank											
Heavy Metals											
Lead				mg/kg	< 5		5	Pass			
LCS - % Recovery											
Heavy Metals											
Lead				%	98		80-120	Pass			
Test	Lab Sample ID	QA Source	Units	Result 1			Acceptance Limits	Pass Limits	Qualifying Code		
Spike - % Recovery											
Heavy Metals											
Lead				M20-Ma43609	NCP	%	109	75-125	Pass		
Test	Lab Sample ID	QA Source	Units	Result 1			Acceptance Limits	Pass Limits	Qualifying Code		
Duplicate											
Heavy Metals											
Lead				M20-Ma43688	CP	mg/kg	29	30	3.0	30%	Pass
Duplicate											
Heavy Metals											
% Moisture				M20-Ma43693	CP	%	15	15	1.0	30%	Pass
Duplicate											
Heavy Metals											
Lead				M20-Ma43698	CP	mg/kg	5.2	5.1	1.0	30%	Pass

Comments**Sample Integrity**

Custody Seals Intact (if used)	N/A
Attempt to Chill was evident	Yes
Sample correctly preserved	Yes
Appropriate sample containers have been used	Yes
Sample containers for volatile analysis received with minimal headspace	Yes
Samples received within HoldingTime	Yes
Some samples have been subcontracted	No

Authorised By

Andrew Black	Analytical Services Manager
Emily Rosenberg	Senior Analyst-Metal (VIC)

**Glenn Jackson
General Manager**

Final report - this Report replaces any previously issued Report

- Indicates Not Requested

* Indicates NATA accreditation does not cover the performance of this service

Measurement uncertainty of test data is available on request or please [click here](#).

Eurofins shall not be liable for loss, cost, damages or expenses incurred by the client, or any other person or company, resulting from the use of any information or interpretation given in this report. In no case shall Eurofins be liable for consequential damages including, but not limited to, lost profits, damages for failure to meet deadlines and lost production arising from this report. This document shall not be reproduced except in full and relates only to the items tested. Unless indicated otherwise, the tests were performed on the samples as received.

Ramboll Environ Australia Pty Ltd
 Level 3/100 Pacific Highway
 North Sydney
 NSW 2060



NATA Accredited
Accreditation Number 1261
Site Number 18217

Accredited for compliance with ISO/IEC 17025 – Testing
 The results of the tests, calibrations and/or
 measurements included in this document are traceable
 to Australian/national standards.

Attention: **Stephen Maxwell**

Report **713878-S-V4**

Project name

Project ID **318000780**

Received Date **Apr 15, 2020**

Client Sample ID			P4_TWS2
Sample Matrix			Solid
Eurofins Sample No.			S20-Ap21434
Date Sampled			Mar 24, 2020
Test/Reference	LOR	Unit	
Heavy Metals			
Lead	1	mg/kg	360

Sample History

Where samples are submitted/analysed over several days, the last date of extraction and analysis is reported.

A recent review of our LIMS has resulted in the correction or clarification of some method identifications. Due to this, some of the method reference information on reports has changed. However, no substantive change has been made to our laboratory methods, and as such there is no change in the validity of current or previous results.

If the date and time of sampling are not provided, the Laboratory will not be responsible for compromised results should testing be performed outside the recommended holding time.

Description

Heavy Metals

Testing Site

Sydney

Extracted

Apr 16, 2020

Holding Time

180 Days

- Method: LTM-MET-3040 Metals in Waters, Soils & Sediments by ICP-MS

Australia

Melbourne
6 Monterey Road
Dandenong South VIC 3175
Phone : +61 3 8564 5000
NATA # 1261
Site # 1254 & 14271

Sydney
Unit F3, Building F
16 Mars Road
Lane Cove West NSW 2066
Phone : +61 2 9900 8400
NATA # 1261 Site # 18217

Brisbane
1/21 Smallwood Place
Murarrie QLD 4172
Phone : +61 7 3902 4600
NATA # 1261 Site # 20794

Perth
2/91 Leach Highway
Kewdale WA 6105
Phone : +61 8 9251 9600
NATA # 1261
Site # 23736

New Zealand

Auckland
35 O'Rorke Road
Penrose, Auckland 1061
Phone : +64 9 526 45 51
IANZ # 1327

Christchurch
43 Detroit Drive
Rolleston, Christchurch 7675
Phone : 0800 856 450
IANZ # 1290

Company Name: Ramboll Australia Pty Ltd
Address: Level 3/100 Pacific Highway
North Sydney
NSW 2060

Order No.:
Report #: 713878
Phone: 02 9954 8118
Fax: 02 9954 8150

Received: Apr 15, 2020 1:37 PM
Due: Apr 20, 2020
Priority: 3 Day
Contact Name: Stephen Maxwell

Project Name:
Project ID: 318000780

Eurofins Analytical Services Manager : Andrew Black

Sample Detail						Lead	Moisture Set
Melbourne Laboratory - NATA Site # 1254 & 14271							
Sydney Laboratory - NATA Site # 18217						X	X
Brisbane Laboratory - NATA Site # 20794							
Perth Laboratory - NATA Site # 23736							
External Laboratory							
No	Sample ID	Sample Date	Sampling Time	Matrix	LAB ID		
1	P3_TWS2	Mar 26, 2020		Solid	S20-Ap21433	X	X
2	P4_TWS2	Mar 24, 2020		Solid	S20-Ap21434	X	X
3	P7_TWS2	Mar 25, 2020		Solid	S20-Ap21435	X	X
4	SMCTS1	Mar 24, 2020		Solid	S20-Ap21436	X	X
5	P11_TWS1	Mar 26, 2020		Solid	S20-Ap21437	X	X
6	P11_TWS2	Mar 26, 2020		Solid	S20-Ap21438	X	X
7	P12_TWS1	Mar 26, 2020		Solid	S20-Ap21439	X	X
8	P12_TWS2	Mar 26, 2020		Solid	S20-Ap21440	X	X
9	P14_TWS3	Mar 26, 2020		Solid	S20-Ap21441	X	X
10	P18_TWS1	Mar 31, 2020		Solid	S20-Ap21442	X	X

Australia

Melbourne
 6 Monterey Road
 Dandenong South VIC 3175
 Phone : +61 3 8564 5000
 NATA # 1261
 Site # 1254 & 14271

Sydney
 Unit F3, Building F
 16 Mars Road
 Lane Cove West NSW 2066
 Phone : +61 2 9900 8400
 NATA # 1261 Site # 18217

Brisbane
 1/21 Smallwood Place
 Murarrie QLD 4172
 Phone : +61 7 3902 4600
 NATA # 1261 Site # 20794

Perth
 2/91 Leach Highway
 Kewdale WA 6105
 Phone : +61 8 9251 9600
 NATA # 1261
 Site # 23736

New Zealand

Auckland
 35 O'Rorke Road
 Penrose, Auckland 1061
 Phone : +64 9 526 45 51
 IANZ # 1327

Christchurch
 43 Detroit Drive
 Rolleston, Christchurch 7675
 Phone : 0800 856 450
 IANZ # 1290

Company Name: Ramboll Australia Pty Ltd
Address: Level 3/100 Pacific Highway
 North Sydney
 NSW 2060

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Eurofins Analytical Services Manager : Andrew Black

Sample Detail						Lead	Moisture Set
Melbourne Laboratory - NATA Site # 1254 & 14271							
Sydney Laboratory - NATA Site # 18217						X	X
Brisbane Laboratory - NATA Site # 20794							
Perth Laboratory - NATA Site # 23736							
11	P18_TWS2	Mar 31, 2020		Solid	S20-Ap21443	X	X
12	P21_TWS1	Mar 31, 2020		Solid	S20-Ap21444	X	X
13	P21_TWS2	Mar 31, 2020		Solid	S20-Ap21445	X	X
14	P23_TWS1	Mar 31, 2020		Solid	S20-Ap21446	X	X
Test Counts						14	14

Internal Quality Control Review and Glossary
General

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For VOCs containing vinyl chloride, styrene and 2-chloroethyl vinyl ether the holding time is 7 days however for all other VOCs such as BTEX or C6-10 TRH then the holding time is 14 days.

****NOTE:** pH duplicates are reported as a range NOT as RPD

Units

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MPN/100mL: Most Probable Number of organisms per 100 millilitres

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QC - Acceptance Criteria

RPD Duplicates: Global RPD Duplicates Acceptance Criteria is 30% however the following acceptance guidelines are equally applicable:

Results <10 times the LOR : No Limit

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Surrogate Recoveries: Recoveries must lie between 20-130% Phenols & 50-150% PFASs

PFAS field samples that contain surrogate recoveries in excess of the QC limit designated in QSM 5.3 where no positive PFAS results have been reported have been reviewed and no data was affected.

WA DWER (n=10): PFBA, PFPeA, PFHxA, PFHpA, PFOA, PFBS, PFHxS, PFOS, 6:2 FTSA, 8:2 FTSA

QC Data General Comments

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- Organochlorine Pesticide analysis - where reporting LCS data, Toxaphene & Chlordane are not added to the LCS.
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- Recovery Data (Spikes & Surrogates) - where chromatographic interference does not allow the determination of Recovery the term "INT" appears against that analyte.
- Polychlorinated Biphenyls are spiked only using Aroclor 1260 in Matrix Spikes and LCS.
- For Matrix Spikes and LCS results a dash " - " in the report means that the specific analyte was not added to the QC sample.
- Duplicate RPDs are calculated from raw analytical data thus it is possible to have two sets of data.

Quality Control Results

Test				Units	Result 1			Acceptance Limits	Pass Limits	Qualifying Code	
Method Blank											
Heavy Metals											
Lead				mg/kg	< 1			1	Pass		
LCS - % Recovery											
Heavy Metals											
Lead				%	96			70-130	Pass		
Test	Lab Sample ID	QA Source	Units	Result 1				Acceptance Limits	Pass Limits	Qualifying Code	
Spike - % Recovery											
Heavy Metals											
Lead				B20-Ap16161	NCP	%	89		70-130	Pass	
Spike - % Recovery											
Heavy Metals											
Lead				B20-Ap16161	NCP	%	89		70-130	Pass	
Spike - % Recovery											
Heavy Metals											
Lead				S20-Ap21444	CP	%	87		70-130	Pass	
Test	Lab Sample ID	QA Source	Units	Result 1				Acceptance Limits	Pass Limits	Qualifying Code	
Duplicate											
Heavy Metals											
Lead				S20-Ap17051	NCP	mg/kg	29	35	19	30%	Pass
Duplicate											
Heavy Metals											
Lead				S20-Ap17051	NCP	mg/kg	29	**	19	30%	Pass
Duplicate											
Heavy Metals											
Lead				S20-Ap21444	CP	mg/kg	70	69	2.0	30%	Pass

Comments

New version to split samples.

Sample Integrity

Custody Seals Intact (if used)	N/A
Attempt to Chill was evident	N/A
Sample correctly preserved	Yes
Appropriate sample containers have been used	Yes
Sample containers for volatile analysis received with minimal headspace	Yes
Samples received within HoldingTime	Yes
Some samples have been subcontracted	No

Authorised By

Andrew Black Analytical Services Manager
Gabriele Cordero Senior Analyst-Metal (NSW)



Glenn Jackson
General Manager

Final report - this Report replaces any previously issued Report

- Indicates Not Requested

* Indicates NATA accreditation does not cover the performance of this service

Measurement uncertainty of test data is available on request or please [click here](#).

Eurofins shall not be liable for loss, cost, damages or expenses incurred by the client, or any other person or company, resulting from the use of any information or interpretation given in this report. In no case shall Eurofins be liable for consequential damages including, but not limited to, lost profits, damages for failure to meet deadlines and lost production arising from this report. This document shall not be reproduced except in full and relates only to the items tested. Unless indicated otherwise, the tests were performed on the samples as received.



CHAIN OF CUSTODY RECORD

ABN 50 005 066 571

Sydney Laboratory
Unit F3 Bldg F, 16 Mars Rd, Lane Cove West, NSW 2086
02 9900 9400 EnviroSamplesNSW@eurofins.com

Brisbane Laboratory
Unit 1, 21 Smallwood Pl, Murarie, QLD 4172
07 3902 4500 EnviroSamplesQLD@eurofins.com

Perth Laboratory
Unit 2, 91 Leach Highway, Kewdale WA 6105
08 9251 9600 EnviroSamplesW@eurofins.com

Melbourne Laboratory
2 Kingsdon Town Close, Oakleigh, VIC 3166
03 8554 5000 EnviroSamplesVIC@eurofins.com

Company	Ramboll	Project No	318800780	Project Name		Project Manager	Stephen Maxwell	Sampler(s)	AC
Address	50 Glebe Road the Junction	Project Name		EDD Format (Estat, EQUS)		Excel and PDF		Handed over by	SM
Contact Name	Stephen Maxwell	Analyses	Lead					Email for Invoice	smaxwell@ramboll.com
Phone No								Email for Results	asiapac-accounts@ramboll.com
Special Directions									smaxwell@ramboll.com
Purchase Order									blackwell@ramboll.com
Quote ID No	180813RAMMNL_1								rcondon@ramboll.com
									shyde@ramboll.com

Analyses
(Note: Where metals are requested, please specify "Total" or "Filtered") SUITE code must be used to attract SUITE pricing.

No	Client Sample ID	Sampled Date/Time (dd/mm/yy hh:mm)	Matrix (Solid (S) Water (W))	Lead
1	P2_HA01_0.05	24/03/20	Soil	X
2	P2_HA01_0.2	24/03/20	Soil	X
3	P2_HA01_0.4	24/03/20	Soil	X
4	P2_HA02_0.0-0.05	24/03/20	Soil	X
5	P2_HA02_0.2	24/03/20	Soil	X
8	P2_HA02_0.4	24/03/20	Soil	X
9	P2_HA03_0.0-0.05	24/03/20	Soil	X
10	P2_HA03_0.0-0.05	24/03/20	Soil	X
Total Counts				8

Method of Shipment: Courier #) Hand Delivered Postal

Signature: _____ Date: ____/____/____ Time: ____:____

Signature: _____ Date: 22/03/20 Time: 8:20

Signature: _____ Date: ____/____/____ Time: ____:____

Signature: _____ Date: ____/____/____ Time: ____:____

Submission of samples to the laboratory will be deemed as acceptance of Eurofins | mgf Standard Terms and Conditions unless agreed otherwise. A copy of Eurofins | mgf Standard Terms and Conditions is available on request.

Eurofins Environment Testing Australia Pty Ltd trading as Eurofins | mgf

Page 16/8 CAS009_201 Modified by: K.Simons Approved by: J. Lambert Approved on: 17 August 2017

1L Plastic
250mL Plastic
125mL Plastic
200mL Amber Glass
40mL VOA vial
500mL PFAS Bottle
Jar (Glass or HDPE)
Other (Asbestos AS4964, WA Guidelines)

Turnaround Time (TAT)
Requirements (default will be 5 days if not ticked)

Overnight (9am)*
 1 Day* 2 Day*
 3 Day* 5 Day*
 Other () *Surcharges apply

Sample Comments / Dangerous Goods Hazard Warning



CHAIN OF CUSTODY RECORD

ABN 50 005 066 571

Sydney Laboratory
Unit F3 Bld E, 16 Mars Rd, Lane Cove West, NSW 2036
02 9900 8400 EnviroSamplesW@eurofins.com

Brisbane Laboratory
Unit 1, 21 Snareswood Pl, Murrumbidgee QLD 4172
07 3002 4600 EnviroSampleQLD@eurofins.com

Perth Laboratory
Unit 2, 91 Leach Highway, Kewdale WA 6105
08 9251 9800 EnviroSamplesW@eurofins.com

Melbourne Laboratory
2 Kingston Town Close, Oakleigh, VIC 3166
03 9564 5000 EnviroSamplesV@eurofins.com

Company: Ramboll

Address: 50 Glebe Road the Junction

Contact Name: Stephen Maxwell

Phone No:

Special Directions:

Purchase Order:

Quote ID No: 180813RAMM_1

Project No: 318000780

Project Manager: EDD Forman (ES&T, EQUIS)

Stephen Maxwell
Excel and PDF

Sampler(s): AC
Handed over by: SM
Email for Invoice: smaxwell@ramboll.com
Email for Results: aslapac-accounts@ramboll.com
smaxwell@ramboll.com
blackwell@ramboll.com
rcondon@ramboll.com
shyde@ramboll.com

Analyses

(Note: Where metals are requested, please specify "Total" or "Filtered") SUITE code must be used to attract SUITE pricing

Lead

M13 (Al, As, Ba, Be, Cd, Cr, Co, Cu, Fe, Pb, Mn, Hg, Ni, Zn) total

M13 (Al, As, Ba, Be, Cd, Cr, Co, Cu, Fe, Pb, Mn, Hg, Ni, Zn) dissolved

No	Client Sample ID	Sampled Date/Time (dd/mm/yy hh:mm)	Matrix (Solid (S) Water (W))	Analysis
1	P2_HA03_0.2	24/03/20	Soil	X
2	P2_HA04_0.0-0.05	24/03/20	Soil	X
3	P2_HA04_0.2	24/03/20	Soil	X
4	P2_HA04_0.5	24/03/20	Soil	X
5	P2_HA05_0.4	24/03/20	Soil	X
8	P2_HA05_0.7	24/03/20	Soil	X
9	P2_HA06_0.05	24/03/20	Soil	X
10	P2_HA06_0.2	24/03/20	Soil	X
Total Counts			8	

1L Plastic
250mL Plastic
125mL Plastic
200mL Amber Glass
40mL VOA vial
500mL PFAS Bottle
Jar (Glass or HDPE)
Other (Asbestos AS4964, WA Guidelines)

Turnaround Time (TAT) Requirements (each will be 5 days if not ticked)

Overnight (9am)*
 1 Day* 2 Day*
 3 Day* 5 Day*
 Other () *Surcharges apply

Sample Comments / Dangerous Goods Hazard Warning

Method of Shipment: Courier # Hand Delivered Postal

Name: _____ Signature: _____ Date: ____/____/____ Time: ____:____

Received By: CELESTE Signature: _____ Date: 22/3/20 Time: 9:30

Received By: _____ Signature: _____ Date: ____/____/____ Time: ____:____

Submission of samples to the laboratory will be deemed as acceptance of Eurofins | mgmt Standard Terms and Conditions unless agreed otherwise. A copy of Eurofins | mgmt Standard Terms and Conditions is available on request.

Eurofins Environment Testing Australia Pty Ltd trading as Eurofins | mgmt

Page 2 of 3 QCS3006 PF Modified for the Signature Approved by T. Lashburn Approved on 17 August 2017



CHAIN OF CUSTODY RECORD

ABN 50 05 056 521

Sydney Laboratory
Unit F3 Bldg, 16 Mars Rd, Lane Cove West, NSW 2066
02 9900 8400 EnviroSampleNSW@eurofins.com

Brisbane Laboratory
Unit 1, 21 Smallwood Pl, Muramba, QLD 4172
07 3902 4600 EnviroSampleQLD@eurofins.com

Perth Laboratory
Unit 2, 91 Leach Highway, Kewdale WA 6105
08 9251 9800 EnviroSampleWA@eurofins.com

Melbourne Laboratory
2 Kingsport Town Close, Oakleigh, VIC 3166
03 8864 5000 EnviroSampleVIC@eurofins.com

Company	Ramboll	Project No	318000780	Project Name	Lead	Project Manager	Stephen Maxwell	Sampler(s)	AC
Address	50 Glebe Road the Junction	Project Name				Handed over by	SM	SM	
Contact Name	Stephen Maxwell	Project Name				Email for Invoice	smaxwell@ramboll.com	SM	
Phone No		Project Name				Email for Results	aslapac-accounts@ramboll.com	SM	
Special Directions		Project Name				Email for Results	smaxwell@ramboll.com	SM	
Purchase Order		Project Name				Email for Results	blackwell@ramboll.com	SM	
Quote ID No	180813RAWN_1	Project Name				Email for Results	rcondon@ramboll.com	SM	
Special Directions		Project Name				Email for Results	shyde@ramboll.com	SM	

No	Client Sample ID	Sampled Date/Time (dd/mm/yy hh:mm)	Matrix (Solid (S) Water (W))	Analyses
1	P2_HA06_0.4	24/03/20	Soil	M13 (Al, As, Ba, Be, Cd, Cr, Co, Cu, Fe, Pb, Mn, Hg, Ni, Zn) total
2	P2_HA07_0.0-0.05	24/03/20	Soil	M13 (Al, As, Ba, Be, Cd, Cr, Co, Cu, Fe, Pb, Mn, Hg, Ni, Zn) dissolved
3	P2_HA07_0.2	24/03/20	Soil	
4	P2_HA07_0.4	24/03/20	Soil	
5	P2_HA08_0.05	24/03/20	Soil	
8	P2_HA08_0.2	24/03/20	Soil	
9	P2_HA08_0.4	24/03/20	Soil	
10	P2_HA09_0.0-0.05	24/03/20	Soil	

Method of Shipment	<input type="checkbox"/> Courier (#) <input type="checkbox"/> Hand Delivered <input type="checkbox"/> Postal	Name		Signature		Date		Time	
Laboratory Use Only	Received By	Signature	Date	Time	Temperature	Report No			
	Received By: <i>COLLETT</i>	Signature: <i>[Signature]</i>	Date: <i>22/3/20</i>	Time: <i>8:20</i>	Temperature: <i>710562</i>	Report No: <i>710562</i>			

Submission of samples to the laboratory will be deemed as acceptance of Eurofins | mgf Standard Terms and Conditions unless agreed otherwise. A copy of Eurofins | mgf Standard Terms and Conditions is available on request.

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Page 1 of 5 OHS1001-01 Modified by Dr. S. Spence Approved by T. Lambert Approved on 11 August 2017



CHAIN OF CUSTODY RECORD

ABN 50 005 005 321

Sydney Laboratory
Unit F3 Bld F, 18 Mars Rd, Lane Cove West, NSW 2056
02 9900 9400 EnviroSampleNSW@eurofins.com

Brisbane Laboratory
Unit 1, 21 Smallwood Pk, Murarie, QLD 4172
07 3802 4600 EnviroSampleQLD@eurofins.com

Perth Laboratory
Unit 2, 91 Leach Highway, Kewdale, WA 6105
08 9251 9800 EnviroSampleWA@eurofins.com

Melbourne Laboratory
2 Kingston Town Close, Oakleigh, VIC 3166
03 8864 5000 EnviroSampleVIC@eurofins.com

Company	Ramboll	Project No	318000780	Project Manager	Stephen Maxwell	Sampler(s)	AC
Address	50 Glebe Road the Junction	Project Name	Lead	EDD Format (ESdat, ESQUS)		Handed over by	SIM
Contact Name	Stephen Maxwell	Analyses	M13 (Al, As, Ba, Be, Cd, Cr, Co, Cu, Fe, Pb, Mn, Hg, Ni, Zn) total M13 (Al, As, Ba, Be, Cd, Cr, Co, Cu, Fe, Pb, Mn, Hg, Ni, Zn) dissolved	Excel and PDF		Email for Invoice	smaxwell@ramboll.com asiapac-accounts@ramboll.com
Phone No		Lead				Email for Results	smaxwell@ramboll.com jblackwell@ramboll.com rcondon@ramboll.com shyde@ramboll.com
Special Directions		Analyses (Note: Where metals are requested, please specify "Total" or "Filtered") SUITE code must be used to attract SUITE pricing.					
Purchase Order							
Quote ID No	180813RAMM_1						

No	Client Sample ID	Sampled Date/Time (dd/mm/yy hh:mm)	Matrix (Solid (S) Water (W))	Method of Shipment	Received By	Signature	Date	Time	Temperature
1	P2_HA09_0.2	24/03/20	Soil	<input checked="" type="checkbox"/> Courier #) <input type="checkbox"/> Hand Delivered	<i>Carlene</i>	<i>[Signature]</i>	24/03/20	8:15	71056
2	P2_HA09_0.4	24/03/20	Soil	<input checked="" type="checkbox"/> Courier #) <input type="checkbox"/> Hand Delivered					
3	P2_HA10_0.2	24/03/20	Soil	<input checked="" type="checkbox"/> Courier #) <input type="checkbox"/> Hand Delivered					
4	P2_HA10_0.4	24/03/20	Soil	<input checked="" type="checkbox"/> Courier #) <input type="checkbox"/> Hand Delivered					
5	P2_HA10_0.05	24/03/20	Soil	<input checked="" type="checkbox"/> Courier #) <input type="checkbox"/> Hand Delivered					
8	P2_HA11_0.05	24/03/20	Soil	<input checked="" type="checkbox"/> Courier #) <input type="checkbox"/> Hand Delivered					
9	P2_HA11_0.2	24/03/20	Soil	<input checked="" type="checkbox"/> Courier #) <input type="checkbox"/> Hand Delivered					
10	P2_HA11_0.4	24/03/20	Soil	<input checked="" type="checkbox"/> Courier #) <input type="checkbox"/> Hand Delivered					
Total Counts				8					

Method of Shipment	<input type="checkbox"/> Courier #) <input type="checkbox"/> Hand Delivered	<input type="checkbox"/> Postal	Name	Signature	Date	Time	Temperature
Eurofins mgt	Received By	Signature	Signature	Date	Time	Temperature	Report No
Eurofins mgt	Received By	Signature	Signature	Date	Time	Temperature	Report No

Submission of samples to the laboratory will be deemed as acceptance of Eurofins | mgt Standard Terms and Conditions unless agreed otherwise. A copy of Eurofins | mgt Standard Terms and Conditions is available on request.

Eurofins Environment Testing Australia Pty Ltd trading as Eurofins | mgt

Page 6 of 3 (Revision 01 - Modified by R Symons Approved by T Labeaud Approved on 17 August 2017)

CHAIN OF CUSTODY RECORD

ABN 50 005 885 521

Sydney Laboratory
 Unit F3 Bld F, 16 Mars Rd, Lane Cove West, NSW 2096
 02 9500 8400 EnviroSampleNSW@eurofins.com

Brisbane Laboratory
 Unit 1, 21 Smallwood Pl, Murarie, QLD 4172
 07 3902 4800 EnviroSampleQLD@eurofins.com

Perth Laboratory
 Unit 2, 91 Leah Highway, Kewdale WA 6105
 08 9251 9800 EnviroSampleWA@eurofins.com

Melbourne Laboratory
 2 Kingson Town Close, Oakleigh, VIC 3196
 03 9594 5000 EnviroSampleVIC@eurofins.com

Company Ramboll		Project Name 318800780		Project Manager Stephen Maxwell		Sampler(s) AC	
Address 50 Glebe Road the Junction		Project Name		EDD Format (ESDat, EQUIS)		Handed over by SM	
Contact Name Stephen Maxwell		Lead		Excel and PDF		Email for Invoice smaxwell@ramboll.com asiarac-accounts@ramboll.com	
Phone No		Analyses Lead <small>(Note: Where metals are requested, please specify "Total" or "Filtered". SUITE code must be used to attract SUITE pricing.)</small>				Email for Results smaxwell@ramboll.com blackwell@ramboll.com rcondon@ramboll.com shyde@ramboll.com	
Purchase Order		M13 (Al, As, Ba, Be, Cd, Cr, Co, Cu, Fe, Pb, Mn, Hg, Ni, Zn) total				Turnaround Time (TAT) Requirements (turnin will be 5 days from ticked)	
Quote ID No 180813RAMN_1		M13 (Al, As, Ba, Be, Cd, Cr, Co, Cu, Fe, Pb, Mn, Hg, Ni, Zn) dissolved				<input checked="" type="checkbox"/> Overnight (9am)* <input type="checkbox"/> 1 Day* <input type="checkbox"/> 2 Day* <input type="checkbox"/> 3 Day* <input checked="" type="checkbox"/> 5 Day* <input type="checkbox"/> Other () *Surcharges apply	
Special Directions		Matrix (Solid (S) Water (W))		Sample Comments / Dangerous Goods Hazard Warning			
Client Sample ID		Sampled Date/Time (dd/mm/yy hh:mm)					
No							
1		P2_TW1 24/03/20 Soil		<input checked="" type="checkbox"/>		<input checked="" type="checkbox"/>	
2		P2_TW2 24/03/20 Soil		<input checked="" type="checkbox"/>		<input checked="" type="checkbox"/>	
3		P2_TWS1 24/03/20 Soil		<input checked="" type="checkbox"/>		<input checked="" type="checkbox"/>	
4							
5							
6							
7							
8							
9							
10							
Method of Shipment		Total Counts					
<input type="checkbox"/> Courier (#)		<input type="checkbox"/> Hand Delivered					
<input type="checkbox"/> Postal		Name		Signature		Date	
Eurofins mgt		Received By		Signature		Date	
Laboratory Use Only		Received By		Signature		Date	

Submission of samples to the laboratory will be deemed as acceptance of Eurofins | mgt Standard Terms and Conditions unless agreed otherwise. A copy of Eurofins | mgt Standard Terms and Conditions is available on request.
 Eurofins Environment Testing Australia Pty Ltd trading as Eurofins | mgt
 Page 5 of 5 CS3009 B7 Modified by Dr. S. Simons Approved by T. Laker Approved on 17 August 2017

Temperature
710564

Melbourne

6 Monterey Road
Dandenong South Vic 3175
Phone : +61 3 8564 5000
NATA # 1261
Site # 1254 & 14271

Sydney

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Brisbane

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Phone : +61 7 3902 4600
NATA # 1261 Site # 20794

Perth

2/91 Leach Highway
Kewdale WA 6105
Phone : +61 8 9251 9600
NATA # 1261 Site # 23736

Sample Receipt Advice

Company name: **Ramboll Australia Pty Ltd**

Contact name: **Stephen Maxwell**

Project name: **318000780**

COC number: **Not provided**

Turn around time: **5 Day**

Date/Time received: **Mar 27, 2020 8:30 AM**

Eurofins reference: **710562**

Sample information

- A detailed list of analytes logged into our LIMS, is included in the attached summary table.
- All samples have been received as described on the above COC.
- COC has been completed correctly.
- Attempt to chill was evident.
- Appropriately preserved sample containers have been used.
- All samples were received in good condition.
- Samples have been provided with adequate time to commence analysis in accordance with the relevant holding times.

- Appropriate sample containers have been used.
- Sample containers for volatile analysis received with zero headspace.
- Split sample sent to requested external lab.
- Some samples have been subcontracted.
- N/A Custody Seals intact (if used).

Notes

SAMPLE P2_HA05_0.0-0.5 RECEIVED EXTRA AND LOGGED IN FOR PB.

Contact notes

If you have any questions with respect to these samples please contact:

Andrew Black on Phone : (+61) 2 9900 8490 or by e.mail: AndrewBlack@eurofins.com

Results will be delivered electronically via e.mail to Stephen Maxwell - smaxwell@ramboll.com.

Note: A copy of these results will also be delivered to the general Ramboll Australia Pty Ltd email address.

Australia

Melbourne
6 Monterey Road
Dandenong South VIC 3175
Phone : +61 3 8564 5000
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Site # 1254 & 14271

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NATA # 1261 Site # 18217

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NATA # 1261 Site # 20794

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NATA # 1261
Site # 23736

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Penrose, Auckland 1061
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IANZ # 1327

Christchurch
43 Detroit Drive
Rolleston, Christchurch 7675
Phone : 0800 856 450
IANZ # 1290

Company Name: Ramboll Australia Pty Ltd
Address: Level 3/100 Pacific Highway
North Sydney
NSW 2060
Project Name: 318000780

Order No.:
Report #: 710562
Phone: 02 9954 8118
Fax: 02 9954 8150

Received: Mar 27, 2020 8:30 AM
Due: Apr 3, 2020
Priority: 5 Day
Contact Name: Stephen Maxwell

Eurofins Analytical Services Manager : Andrew Black

Sample Detail						Lead	Moisture Set	NEPM 2013 Metals without Cr6+ (As, Be, B, Cd, Co, Cr, Cu, Hg, Pb, Ni, Mn, Se, Zn)	NEPM 2013 Filtered Metals without Cr6+ (As, Be, B, Cd, Co, Cr, Cu, Hg, Pb, Ni, Mn, Se, Zn)
Melbourne Laboratory - NATA Site # 1254 & 14271						X	X	X	X
Sydney Laboratory - NATA Site # 18217									
Brisbane Laboratory - NATA Site # 20794									
Perth Laboratory - NATA Site # 23736									
External Laboratory									
No	Sample ID	Sample Date	Sampling Time	Matrix	LAB ID				
1	P2_HA01_0.05	Mar 24, 2020		Soil	M20-Ma43651	X	X		
2	P2_HA01_0.2	Mar 24, 2020		Soil	M20-Ma43652	X	X		
3	P2_HA01_0.4	Mar 24, 2020		Soil	M20-Ma43653	X	X		
4	P2_HA02_0.0-0.05	Mar 24, 2020		Soil	M20-Ma43654	X	X		
5	P2_HA02_0.2	Mar 24, 2020		Soil	M20-Ma43655	X	X		
6	P2_HA02_0.4	Mar 24, 2020		Soil	M20-Ma43656	X	X		
7	P2_HA03_0.0-0.05	Mar 24, 2020		Soil	M20-Ma43657	X	X		
8	P2_HA03_0.2	Mar 24, 2020		Soil	M20-Ma43658	X	X		
9	P2_HA04_0.0-	Mar 24, 2020		Soil	M20-Ma43659	X	X		

Australia

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Phone : +61 2 9900 8400
NATA # 1261 Site # 18217

Brisbane
1/21 Smallwood Place
Murarrie QLD 4172
Phone : +61 7 3902 4600
NATA # 1261 Site # 20794

Perth
2/91 Leach Highway
Kewdale WA 6105
Phone : +61 8 9251 9600
NATA # 1261
Site # 23736

New Zealand

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35 O'Rorke Road
Penrose, Auckland 1061
Phone : +64 9 526 45 51
IANZ # 1327

Christchurch
43 Detroit Drive
Rolleston, Christchurch 7675
Phone : 0800 856 450
IANZ # 1290

Company Name: Ramboll Australia Pty Ltd
Address: Level 3/100 Pacific Highway
North Sydney
NSW 2060
Project Name: 318000780

Order No.:
Report #: 710562
Phone: 02 9954 8118
Fax: 02 9954 8150

Received: Mar 27, 2020 8:30 AM
Due: Apr 3, 2020
Priority: 5 Day
Contact Name: Stephen Maxwell

Eurofins Analytical Services Manager : Andrew Black

Sample Detail						Lead	Moisture Set	NEPM 2013 Filtered Metals without Cr6+ (As, Be, B, Cd, Co, Cr, Cu, Hg, Pb, Ni, Mn, NEPM 2013 Metals without Cr6+ (As, Be, B, Cd, Co, Cr, Cu, Hg, Pb, Ni, Mn, Se, Zn))	NEPM 2013 Filtered Metals without Cr6+ (As, Be, B, Cd, Co, Cr, Cu, Hg, Pb, Ni, Mn, NEPM 2013 Metals without Cr6+ (As, Be, B, Cd, Co, Cr, Cu, Hg, Pb, Ni, Mn, Se, Zn))
Melbourne Laboratory - NATA Site # 1254 & 14271						X	X	X	X
Sydney Laboratory - NATA Site # 18217									
Brisbane Laboratory - NATA Site # 20794									
Perth Laboratory - NATA Site # 23736									
	0.05								
10	P2_HA04_0.2	Mar 24, 2020		Soil	M20-Ma43660	X	X		
11	P2_HA04_0.5	Mar 24, 2020		Soil	M20-Ma43661	X	X		
12	P2_HA05_0.4	Mar 24, 2020		Soil	M20-Ma43662	X	X		
13	P2_HA05_0.7	Mar 24, 2020		Soil	M20-Ma43663	X	X		
14	P2_HA06_0.05	Mar 24, 2020		Soil	M20-Ma43664	X	X		
15	P2_HA06_0.2	Mar 24, 2020		Soil	M20-Ma43665	X	X		
16	P2_HA06_0.4	Mar 24, 2020		Soil	M20-Ma43666	X	X		
17	P2_HA07_0.0-0.05	Mar 24, 2020		Soil	M20-Ma43667	X	X		
18	P2_HA07_0.2	Mar 24, 2020		Soil	M20-Ma43668	X	X		
19	P2_HA07_0.4	Mar 24, 2020		Soil	M20-Ma43669	X	X		
20	P2_HA08_0.0	Mar 24, 2020		Soil	M20-Ma43670	X	X		

Australia

Melbourne
6 Monterey Road
Dandenong South VIC 3175
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Site # 1254 & 14271

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16 Mars Road
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NATA # 1261 Site # 18217

Brisbane
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Murarrie QLD 4172
Phone : +61 7 3902 4600
NATA # 1261 Site # 20794

Perth
2/91 Leach Highway
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NATA # 1261
Site # 23736

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IANZ # 1327

Christchurch
43 Detroit Drive
Rolleston, Christchurch 7675
Phone : 0800 856 450
IANZ # 1290

ABN – 50 005 085 521

web : www.eurofins.com.au

e.mail : EnviroSales@eurofins.com

Company Name: Ramboll Australia Pty Ltd
Address: Level 3/100 Pacific Highway
North Sydney
NSW 2060
Project Name: 318000780

Order No.:
Report #: 710562
Phone: 02 9954 8118
Fax: 02 9954 8150

Received: Mar 27, 2020 8:30 AM
Due: Apr 3, 2020
Priority: 5 Day
Contact Name: Stephen Maxwell

Eurofins Analytical Services Manager : Andrew Black

Sample Detail						Lead	Moisture Set	NEPM 2013 Filtered Metals without Cr6+ (As, Be, B, Cd, Co, Cr, Cu, Hg, Pb, Ni, Mn, NEPM 2013 Metals without Cr6+ (As, Be, B, Cd, Co, Cr, Cu, Hg, Pb, Ni, Mn, Se, Zn))	NEPM 2013 Filtered Metals without Cr6+ (As, Be, B, Cd, Co, Cr, Cu, Hg, Pb, Ni, Mn, NEPM 2013 Metals without Cr6+ (As, Be, B, Cd, Co, Cr, Cu, Hg, Pb, Ni, Mn, Se, Zn))
Melbourne Laboratory - NATA Site # 1254 & 14271						X	X	X	X
Sydney Laboratory - NATA Site # 18217									
Brisbane Laboratory - NATA Site # 20794									
Perth Laboratory - NATA Site # 23736									
	5								
21	P2_HA08_0.2	Mar 24, 2020		Soil	M20-Ma43671	X	X		
22	P2_HA08_0.4	Mar 24, 2020		Soil	M20-Ma43672	X	X		
23	P2_HA09_0.0-0.05	Mar 24, 2020		Soil	M20-Ma43673	X	X		
24	P2_HA09_0.2	Mar 24, 2020		Soil	M20-Ma43674	X	X		
25	P2_HA09_0.4	Mar 24, 2020		Soil	M20-Ma43675	X	X		
26	P2_HA10_0.2	Mar 24, 2020		Soil	M20-Ma43676	X	X		
27	P2_HA10_0.4	Mar 24, 2020		Soil	M20-Ma43677	X	X		
28	P2_HA10_0.0-0.05	Mar 24, 2020		Soil	M20-Ma43678	X	X		
29	P2_HA11_0.0	Mar 24, 2020		Soil	M20-Ma43679	X	X		
30	P2_HA11_0.2	Mar 24, 2020		Soil	M20-Ma43680	X	X		

Australia

Melbourne
6 Monterey Road
Dandenong South VIC 3175
Phone : +61 3 8564 5000
NATA # 1261
Site # 1254 & 14271

Sydney
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NATA # 1261 Site # 20794

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NATA # 1261
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43 Detroit Drive
Rolleston, Christchurch 7675
Phone : 0800 856 450
IANZ # 1290

ABN – 50 005 085 521

web : www.eurofins.com.au

e.mail : EnviroSales@eurofins.com

Company Name: Ramboll Australia Pty Ltd
Address: Level 3/100 Pacific Highway
North Sydney
NSW 2060
Project Name: 318000780

Order No.:
Report #: 710562
Phone: 02 9954 8118
Fax: 02 9954 8150

Received: Mar 27, 2020 8:30 AM
Due: Apr 3, 2020
Priority: 5 Day
Contact Name: Stephen Maxwell

Eurofins Analytical Services Manager : Andrew Black

Sample Detail						Lead	Moisture Set	NEPM 2013 Filtered Metals without Cr6+ (As, Be, B, Cd, Co, Cr, Cu, Hg, Pb, Ni, Mn, NEPM 2013 Metals without Cr6+ (As, Be, B, Cd, Co, Cr, Cu, Hg, Pb, Ni, Mn, Se, Zn)	NEPM 2013 Filtered Metals without Cr6+ (As, Be, B, Cd, Co, Cr, Cu, Hg, Pb, Ni, Mn, Se, Zn)
Melbourne Laboratory - NATA Site # 1254 & 14271						X	X	X	X
Sydney Laboratory - NATA Site # 18217									
Brisbane Laboratory - NATA Site # 20794									
Perth Laboratory - NATA Site # 23736									
31	P2_HA11_0.4	Mar 24, 2020	Soil	M20-Ma43681	X	X			
32	P2_TW1	Mar 24, 2020	Water	M20-Ma43682			X	X	
33	P2_TW2	Mar 24, 2020	Water	M20-Ma43683			X	X	
34	P2_TWS1	Mar 24, 2020	Water	M20-Ma43684	X				
35	P2_HA05_0.0-0.5	Mar 24, 2020	Soil	M20-Ma43706	X	X			
Test Counts						33	32	2	2

Ramboll Environ Australia Pty Ltd
 Level 3/100 Pacific Highway
 North Sydney
 NSW 2060



NATA Accredited
 Accreditation Number 1261
 Site Number 1254

Accredited for compliance with ISO/IEC 17025 – Testing
 The results of the tests, calibrations and/or
 measurements included in this document are traceable
 to Australian/national standards.

Attention: **Stephen Maxwell**

Report **710562-W**
 Project name **318000780**
 Received Date **Mar 27, 2020**

Client Sample ID			P2_TW1	P2_TW2	P2_TWS1
Sample Matrix			Water	Water	Water
Eurofins Sample No.			M20-Ma43682	M20-Ma43683	M20-Ma43684
Date Sampled			Mar 24, 2020	Mar 24, 2020	Mar 24, 2020
Test/Reference	LOR	Unit			
Heavy Metals					
Arsenic	0.001	mg/L	< 0.001	< 0.001	-
Arsenic (filtered)	0.001	mg/L	< 0.001	< 0.001	-
Beryllium	0.001	mg/L	< 0.001	< 0.001	-
Beryllium (filtered)	0.001	mg/L	< 0.001	< 0.001	-
Boron	0.05	mg/L	< 0.05	< 0.05	-
Boron (filtered)	0.05	mg/L	< 0.05	< 0.05	-
Cadmium	0.0002	mg/L	< 0.0002	< 0.0002	-
Cadmium (filtered)	0.0002	mg/L	< 0.0002	< 0.0002	-
Chromium	0.001	mg/L	0.001	< 0.001	-
Chromium (filtered)	0.001	mg/L	< 0.001	< 0.001	-
Cobalt	0.001	mg/L	< 0.001	< 0.001	-
Cobalt (filtered)	0.001	mg/L	< 0.001	< 0.001	-
Copper	0.001	mg/L	< 0.001	< 0.001	-
Copper (filtered)	0.001	mg/L	< 0.001	< 0.001	-
Lead	0.001	mg/L	< 0.001	< 0.001	3.3
Lead (filtered)	0.001	mg/L	< 0.001	< 0.001	-
Manganese	0.005	mg/L	< 0.005	< 0.005	-
Manganese (filtered)	0.005	mg/L	< 0.005	< 0.005	-
Mercury	0.0001	mg/L	< 0.0001	< 0.0001	-
Mercury (filtered)	0.0001	mg/L	< 0.0001	< 0.0001	-
Nickel	0.001	mg/L	< 0.001	< 0.001	-
Nickel (filtered)	0.001	mg/L	< 0.001	< 0.001	-
Selenium	0.001	mg/L	< 0.001	< 0.001	-
Selenium (filtered)	0.001	mg/L	< 0.001	< 0.001	-
Zinc	0.005	mg/L	< 0.005	< 0.005	-
Zinc (filtered)	0.005	mg/L	< 0.005	< 0.005	-

Sample History

Where samples are submitted/analysed over several days, the last date of extraction and analysis is reported. A recent review of our LIMS has resulted in the correction or clarification of some method identifications. Due to this, some of the method reference information on reports has changed. However, no substantive change has been made to our laboratory methods, and as such there is no change in the validity of current or previous results.

If the date and time of sampling are not provided, the Laboratory will not be responsible for compromised results should testing be performed outside the recommended holding time.

Description	Testing Site	Extracted	Holding Time
NEPM 2013 Metals without Cr6+ (As, Be, B, Cd, Co, Cr, Cu, Hg, Pb, Ni, Mn, Se, Zn) - Method: LTM-MET-3040 Metals in Waters, Soils & Sediments by ICP-MS	Melbourne	Mar 31, 2020	180 Days
NEPM 2013 Filtered Metals without Cr6+ (As, Be, B, Cd, Co, Cr, Cu, Hg, Pb, Ni, Mn, Se, Zn) - Method: LTM-MET-3040 Metals in Waters, Soils & Sediments by ICP-MS	Melbourne	Mar 27, 2020	28 Days
Heavy Metals - Method: LTM-MET-3040 Metals in Waters, Soils & Sediments by ICP-MS	Melbourne	Mar 31, 2020	180 Days

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Company Name: Ramboll Australia Pty Ltd
Address: Level 3/100 Pacific Highway
North Sydney
NSW 2060
Project Name: 318000780

Order No.:
Report #: 710562
Phone: 02 9954 8118
Fax: 02 9954 8150

Received: Mar 27, 2020 8:30 AM
Due: Apr 3, 2020
Priority: 5 Day
Contact Name: Stephen Maxwell

Eurofins Analytical Services Manager : Andrew Black

Sample Detail						Lead	Moisture Set	NEPM 2013 Metals without Cr6+ (As, Be, B, Cd, Co, Cr, Cu, Hg, Pb, Ni, Mn, Cd, Co, Cr, Cu, Hg, Pb, Ni, Mn, Se, Zn)	NEPM 2013 Filtered Metals without Cr6+ (As, Be, B, Cd, Co, Cr, Cu, Hg, Pb, Ni, Mn, Se, Zn)
Melbourne Laboratory - NATA Site # 1254 & 14271						X	X	X	X
Sydney Laboratory - NATA Site # 18217									
Brisbane Laboratory - NATA Site # 20794									
Perth Laboratory - NATA Site # 23736									
External Laboratory									
No	Sample ID	Sample Date	Sampling Time	Matrix	LAB ID				
1	P2_HA01_0.05	Mar 24, 2020		Soil	M20-Ma43651	X	X		
2	P2_HA01_0.2	Mar 24, 2020		Soil	M20-Ma43652	X	X		
3	P2_HA01_0.4	Mar 24, 2020		Soil	M20-Ma43653	X	X		
4	P2_HA02_0.0-0.05	Mar 24, 2020		Soil	M20-Ma43654	X	X		
5	P2_HA02_0.2	Mar 24, 2020		Soil	M20-Ma43655	X	X		
6	P2_HA02_0.4	Mar 24, 2020		Soil	M20-Ma43656	X	X		
7	P2_HA03_0.0-0.05	Mar 24, 2020		Soil	M20-Ma43657	X	X		
8	P2_HA03_0.2	Mar 24, 2020		Soil	M20-Ma43658	X	X		
9	P2_HA04_0.0-	Mar 24, 2020		Soil	M20-Ma43659	X	X		

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Melbourne Laboratory - NATA Site # 1254 & 14271						X	X	X	X
Sydney Laboratory - NATA Site # 18217									
Brisbane Laboratory - NATA Site # 20794									
Perth Laboratory - NATA Site # 23736									
	0.05								
10	P2_HA04_0.2	Mar 24, 2020		Soil	M20-Ma43660	X	X		
11	P2_HA04_0.5	Mar 24, 2020		Soil	M20-Ma43661	X	X		
12	P2_HA05_0.4	Mar 24, 2020		Soil	M20-Ma43662	X	X		
13	P2_HA05_0.7	Mar 24, 2020		Soil	M20-Ma43663	X	X		
14	P2_HA06_0.05	Mar 24, 2020		Soil	M20-Ma43664	X	X		
15	P2_HA06_0.2	Mar 24, 2020		Soil	M20-Ma43665	X	X		
16	P2_HA06_0.4	Mar 24, 2020		Soil	M20-Ma43666	X	X		
17	P2_HA07_0.0-0.05	Mar 24, 2020		Soil	M20-Ma43667	X	X		
18	P2_HA07_0.2	Mar 24, 2020		Soil	M20-Ma43668	X	X		
19	P2_HA07_0.4	Mar 24, 2020		Soil	M20-Ma43669	X	X		
20	P2_HA08_0.0	Mar 24, 2020		Soil	M20-Ma43670	X	X		

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Melbourne Laboratory - NATA Site # 1254 & 14271						X	X	X	X
Sydney Laboratory - NATA Site # 18217									
Brisbane Laboratory - NATA Site # 20794									
Perth Laboratory - NATA Site # 23736									
	5								
21	P2_HA08_0.2	Mar 24, 2020		Soil	M20-Ma43671	X	X		
22	P2_HA08_0.4	Mar 24, 2020		Soil	M20-Ma43672	X	X		
23	P2_HA09_0.0-0.05	Mar 24, 2020		Soil	M20-Ma43673	X	X		
24	P2_HA09_0.2	Mar 24, 2020		Soil	M20-Ma43674	X	X		
25	P2_HA09_0.4	Mar 24, 2020		Soil	M20-Ma43675	X	X		
26	P2_HA10_0.2	Mar 24, 2020		Soil	M20-Ma43676	X	X		
27	P2_HA10_0.4	Mar 24, 2020		Soil	M20-Ma43677	X	X		
28	P2_HA10_0.0-0.05	Mar 24, 2020		Soil	M20-Ma43678	X	X		
29	P2_HA11_0.0	Mar 24, 2020		Soil	M20-Ma43679	X	X		
30	P2_HA11_0.2	Mar 24, 2020		Soil	M20-Ma43680	X	X		

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Melbourne Laboratory - NATA Site # 1254 & 14271						X	X	X	X
Sydney Laboratory - NATA Site # 18217									
Brisbane Laboratory - NATA Site # 20794									
Perth Laboratory - NATA Site # 23736									
31	P2_HA11_0.4	Mar 24, 2020	Soil	M20-Ma43681	X	X			
32	P2_TW1	Mar 24, 2020	Water	M20-Ma43682			X	X	
33	P2_TW2	Mar 24, 2020	Water	M20-Ma43683			X	X	
34	P2_TWS1	Mar 24, 2020	Water	M20-Ma43684	X				
35	P2_HA05_0.0-0.5	Mar 24, 2020	Soil	M20-Ma43706	X	X			
Test Counts						33	32	2	2

Internal Quality Control Review and Glossary

General

- Laboratory QC results for Method Blanks, Duplicates, Matrix Spikes, and Laboratory Control Samples follows guidelines delineated in the National Environment Protection (Assessment of Site Contamination) Measure 1999, as amended May 2013 and are included in this QC report where applicable. Additional QC data may be available on request.
- All soil/sediment/solid results are reported on a dry basis, unless otherwise stated.
- All biota/food results are reported on a wet weight basis on the edible portion, unless otherwise stated.
- Actual LORs are matrix dependant. Quoted LORs may be raised where sample extracts are diluted due to interferences.
- Results are uncorrected for matrix spikes or surrogate recoveries except for PFAS compounds.
- SVOC analysis on waters are performed on homogenised, unfiltered samples, unless noted otherwise.
- Samples were analysed on an 'as received' basis.
- Information identified on this report with blue colour, indicates data provided by customer, that may have an impact on the results.
- This report replaces any interim results previously issued.

Holding Times

Please refer to 'Sample Preservation and Container Guide' for holding times (QS3001).

For samples received on the last day of holding time, notification of testing requirements should have been received at least 6 hours prior to sample receipt deadlines as stated on the SRA.

If the Laboratory did not receive the information in the required timeframe, and regardless of any other integrity issues, suitably qualified results may still be reported.

Holding times apply from the date of sampling, therefore compliance to these may be outside the laboratory's control.

For VOCs containing vinyl chloride, styrene and 2-chloroethyl vinyl ether the holding time is 7 days however for all other VOCs such as BTEX or C6-10 TRH then the holding time is 14 days.

****NOTE:** pH duplicates are reported as a range NOT as RPD

Units

mg/kg: milligrams per kilogram

mg/L: milligrams per litre

ug/L: micrograms per litre

ppm: Parts per million

ppb: Parts per billion

%: Percentage

org/100mL: Organisms per 100 millilitres

NTU: Nephelometric Turbidity Units

MPN/100mL: Most Probable Number of organisms per 100 millilitres

Terms

Dry	Where a moisture has been determined on a solid sample the result is expressed on a dry basis.
LOR	Limit of Reporting.
SPIKE	Addition of the analyte to the sample and reported as percentage recovery.
RPD	Relative Percent Difference between two Duplicate pieces of analysis.
LCS	Laboratory Control Sample - reported as percent recovery.
CRM	Certified Reference Material - reported as percent recovery.
Method Blank	In the case of solid samples these are performed on laboratory certified clean sands and in the case of water samples these are performed on de-ionised water.
Surr - Surrogate	The addition of a like compound to the analyte target and reported as percentage recovery.
Duplicate	A second piece of analysis from the same sample and reported in the same units as the result to show comparison.
USEPA	United States Environmental Protection Agency
APHA	American Public Health Association
TCLP	Toxicity Characteristic Leaching Procedure
COC	Chain of Custody
SRA	Sample Receipt Advice
QSM	US Department of Defense Quality Systems Manual Version 5.3
CP	Client Parent - QC was performed on samples pertaining to this report
NCP	Non-Client Parent - QC performed on samples not pertaining to this report, QC is representative of the sequence or batch that client samples were analysed within.
TEQ	Toxic Equivalency Quotient

QC - Acceptance Criteria

RPD Duplicates: Global RPD Duplicates Acceptance Criteria is 30% however the following acceptance guidelines are equally applicable:

Results <10 times the LOR : No Limit

Results between 10-20 times the LOR : RPD must lie between 0-50%

Results >20 times the LOR : RPD must lie between 0-30%

Surrogate Recoveries: Recoveries must lie between 20-130% Phenols & 50-150% PFASs

PFAS field samples that contain surrogate recoveries in excess of the QC limit designated in QSM 5.3 where no positive PFAS results have been reported have been reviewed and no data was affected.

WA DWER (n=10): PFBA, PFPeA, PFHxA, PFHpA, PFOA, PFBS, PFHxS, PFOS, 6:2 FTSA, 8:2 FTSA

QC Data General Comments

- Where a result is reported as a less than (<), higher than the nominated LOR, this is due to either matrix interference, extract dilution required due to interferences or contaminant levels within the sample, high moisture content or insufficient sample provided.
- Duplicate data shown within this report that states the word "BATCH" is a Batch Duplicate from outside of your sample batch, but within the laboratory sample batch at a 1:10 ratio. The Parent and Duplicate data shown is not data from your samples.
- Organochlorine Pesticide analysis - where reporting LCS data, Toxaphene & Chlordane are not added to the LCS.
- Organochlorine Pesticide analysis - where reporting Spike data, Toxaphene is not added to the Spike.
- Total Recoverable Hydrocarbons - where reporting Spike & LCS data, a single spike of commercial Hydrocarbon products in the range of C12-C30 is added and it's Total Recovery is reported in the C10-C14 cell of the Report.
- pH and Free Chlorine analysed in the laboratory - Analysis on this test must begin within 30 minutes of sampling. Therefore laboratory analysis is unlikely to be completed within holding time. Analysis will begin as soon as possible after sample receipt.
- Recovery Data (Spikes & Surrogates) - where chromatographic interference does not allow the determination of Recovery the term "INT" appears against that analyte.
- Polychlorinated Biphenyls are spiked only using Aroclor 1260 in Matrix Spikes and LCS.
- For Matrix Spikes and LCS results a dash " - " in the report means that the specific analyte was not added to the QC sample.
- Duplicate RPDs are calculated from raw analytical data thus it is possible to have two sets of data.

Quality Control Results

Test			Units	Result 1		Acceptance Limits	Pass Limits	Qualifying Code
Method Blank								
Heavy Metals								
Arsenic			mg/L	< 0.001		0.001	Pass	
Arsenic (filtered)			mg/L	< 0.001		0.001	Pass	
Beryllium			mg/L	< 0.001		0.001	Pass	
Beryllium (filtered)			mg/L	< 0.001		0.001	Pass	
Boron			mg/L	< 0.05		0.05	Pass	
Boron (filtered)			mg/L	< 0.05		0.05	Pass	
Cadmium			mg/L	< 0.0002		0.0002	Pass	
Cadmium (filtered)			mg/L	< 0.0002		0.0002	Pass	
Chromium			mg/L	< 0.001		0.001	Pass	
Chromium (filtered)			mg/L	< 0.001		0.001	Pass	
Cobalt			mg/L	< 0.001		0.001	Pass	
Cobalt (filtered)			mg/L	< 0.001		0.001	Pass	
Copper			mg/L	< 0.001		0.001	Pass	
Copper (filtered)			mg/L	< 0.001		0.001	Pass	
Lead			mg/L	< 0.001		0.001	Pass	
Lead (filtered)			mg/L	< 0.001		0.001	Pass	
Manganese			mg/L	< 0.005		0.005	Pass	
Manganese (filtered)			mg/L	< 0.005		0.005	Pass	
Mercury			mg/L	< 0.0001		0.0001	Pass	
Mercury (filtered)			mg/L	< 0.0001		0.0001	Pass	
Nickel			mg/L	< 0.001		0.001	Pass	
Nickel (filtered)			mg/L	< 0.001		0.001	Pass	
Selenium			mg/L	< 0.001		0.001	Pass	
Selenium (filtered)			mg/L	< 0.001		0.001	Pass	
Zinc			mg/L	< 0.005		0.005	Pass	
Zinc (filtered)			mg/L	< 0.005		0.005	Pass	
LCS - % Recovery								
Heavy Metals								
Arsenic			%	99		80-120	Pass	
Beryllium			%	104		80-120	Pass	
Boron			%	89		80-120	Pass	
Cadmium			%	105		80-120	Pass	
Chromium			%	103		80-120	Pass	
Cobalt			%	102		80-120	Pass	
Copper			%	101		80-120	Pass	
Lead			%	106		80-120	Pass	
Manganese			%	102		80-120	Pass	
Mercury			%	103		75-125	Pass	
Nickel			%	103		80-120	Pass	
Selenium			%	98		80-120	Pass	
Zinc			%	101		80-120	Pass	
Test	Lab Sample ID	QA Source	Units	Result 1		Acceptance Limits	Pass Limits	Qualifying Code
Spike - % Recovery								
Heavy Metals								
				Result 1				
Arsenic			P20-Ma43710	NCP	%	95	75-125	Pass
Arsenic (filtered)			M20-Ma43682	CP	%	93	70-130	Pass
Beryllium			P20-Ma43710	NCP	%	95	75-125	Pass
Beryllium (filtered)			M20-Ma43682	CP	%	94	75-125	Pass
Boron			P20-Ma43710	NCP	%	96	75-125	Pass

Test	Lab Sample ID	QA Source	Units	Result 1			Acceptance Limits	Pass Limits	Qualifying Code
Boron (filtered)	M20-Ma43682	CP	%	76			75-125	Pass	
Cadmium	P20-Ma43710	NCP	%	94			75-125	Pass	
Cadmium (filtered)	M20-Ma43682	CP	%	96			70-130	Pass	
Chromium	P20-Ma43710	NCP	%	91			75-125	Pass	
Chromium (filtered)	M20-Ma43682	CP	%	93			70-130	Pass	
Cobalt	P20-Ma43710	NCP	%	90			75-125	Pass	
Cobalt (filtered)	M20-Ma43682	CP	%	93			75-125	Pass	
Copper	P20-Ma43710	NCP	%	93			75-125	Pass	
Copper (filtered)	M20-Ma43682	CP	%	93			70-130	Pass	
Lead	P20-Ma43710	NCP	%	95			75-125	Pass	
Lead (filtered)	M20-Ma43682	CP	%	96			70-130	Pass	
Manganese	P20-Ma43710	NCP	%	71			75-125	Fail	Q08
Manganese (filtered)	M20-Ma43682	CP	%	95			70-130	Pass	
Mercury	P20-Ma43710	NCP	%	100			70-130	Pass	
Mercury (filtered)	M20-Ma43682	CP	%	92			70-130	Pass	
Nickel	P20-Ma43710	NCP	%	92			75-125	Pass	
Nickel (filtered)	M20-Ma43682	CP	%	95			70-130	Pass	
Selenium	P20-Ma43710	NCP	%	89			75-125	Pass	
Selenium (filtered)	M20-Ma43682	CP	%	93			70-130	Pass	
Zinc	P20-Ma43710	NCP	%	89			75-125	Pass	
Zinc (filtered)	M20-Ma43682	CP	%	101			70-130	Pass	
Test	Lab Sample ID	QA Source	Units	Result 1			Acceptance Limits	Pass Limits	Qualifying Code
Duplicate									
Heavy Metals				Result 1	Result 2	RPD			
Arsenic	P20-Ma43710	NCP	mg/L	0.004	0.004	7.0	30%	Pass	
Arsenic (filtered)	M20-Ma43682	CP	mg/L	< 0.001	< 0.001	<1	30%	Pass	
Beryllium	P20-Ma43710	NCP	mg/L	0.002	0.002	3.0	30%	Pass	
Beryllium (filtered)	M20-Ma43682	CP	mg/L	< 0.001	< 0.001	<1	30%	Pass	
Boron	P20-Ma43710	NCP	mg/L	0.06	0.07	8.0	30%	Pass	
Boron (filtered)	M20-Ma43682	CP	mg/L	< 0.05	< 0.05	<1	30%	Pass	
Cadmium	P20-Ma43710	NCP	mg/L	< 0.0002	< 0.0002	<1	30%	Pass	
Cadmium (filtered)	M20-Ma43682	CP	mg/L	< 0.0002	< 0.0002	<1	30%	Pass	
Chromium	P20-Ma43710	NCP	mg/L	0.039	0.042	8.0	30%	Pass	
Chromium (filtered)	M20-Ma43682	CP	mg/L	< 0.001	< 0.001	<1	30%	Pass	
Cobalt	P20-Ma43710	NCP	mg/L	0.034	0.037	7.0	30%	Pass	
Cobalt (filtered)	M20-Ma43682	CP	mg/L	< 0.001	< 0.001	<1	30%	Pass	
Copper	P20-Ma43710	NCP	mg/L	0.035	0.038	8.0	30%	Pass	
Copper (filtered)	M20-Ma43682	CP	mg/L	< 0.001	< 0.001	<1	30%	Pass	
Lead	P20-Ma43710	NCP	mg/L	0.034	0.037	8.0	30%	Pass	
Lead (filtered)	M20-Ma43682	CP	mg/L	< 0.001	< 0.001	<1	30%	Pass	
Manganese	P20-Ma43710	NCP	mg/L	0.34	0.36	7.0	30%	Pass	
Manganese (filtered)	M20-Ma43682	CP	mg/L	< 0.005	< 0.005	<1	30%	Pass	
Mercury	P20-Ma43710	NCP	mg/L	< 0.0001	< 0.0001	<1	30%	Pass	
Mercury (filtered)	M20-Ma43682	CP	mg/L	< 0.0001	< 0.0001	<1	30%	Pass	
Nickel	P20-Ma43710	NCP	mg/L	0.016	0.017	8.0	30%	Pass	
Nickel (filtered)	M20-Ma43682	CP	mg/L	< 0.001	< 0.001	<1	30%	Pass	
Selenium	P20-Ma43710	NCP	mg/L	0.001	0.001	7.0	30%	Pass	
Selenium (filtered)	M20-Ma43682	CP	mg/L	< 0.001	< 0.001	<1	30%	Pass	
Zinc	P20-Ma43710	NCP	mg/L	0.023	0.026	14	30%	Pass	
Zinc (filtered)	M20-Ma43682	CP	mg/L	< 0.005	< 0.005	<1	30%	Pass	

Comments
Sample Integrity

Custody Seals Intact (if used)	N/A
Attempt to Chill was evident	Yes
Sample correctly preserved	Yes
Appropriate sample containers have been used	Yes
Sample containers for volatile analysis received with minimal headspace	Yes
Samples received within HoldingTime	Yes
Some samples have been subcontracted	No

Qualifier Codes/Comments

Code	Description
Q08	The matrix spike recovery is outside of the recommended acceptance criteria. An acceptable recovery was obtained for the laboratory control sample indicating a sample matrix interference.

Authorised By

Andrew Black	Analytical Services Manager
Emily Rosenberg	Senior Analyst-Metal (VIC)


Glenn Jackson
General Manager

Final report - this Report replaces any previously issued Report

- Indicates Not Requested

* Indicates NATA accreditation does not cover the performance of this service

Measurement uncertainty of test data is available on request or please [click here](#).

Eurofins shall not be liable for loss, cost, damages or expenses incurred by the client, or any other person or company, resulting from the use of any information or interpretation given in this report. In no case shall Eurofins be liable for consequential damages including, but not limited to, lost profits, damages for failure to meet deadlines and lost production arising from this report. This document shall not be reproduced except in full and relates only to the items tested. Unless indicated otherwise, the tests were performed on the samples as received.



CHAIN OF CUSTODY RECORD

ABN 50 005 085 521

Sydney Laboratory
Unit F3 Bld F, 16 Mars Rd, Lane Cove West, NSW 2066
02 9900 8400 EnviroSampleNSW@eurofins.com

Brisbane Laboratory
Unit 1, 21 Smallwood Pl, Murarrie, QLD 4172
07 3902 4600 EnviroSampleQLD@eurofins.com

Perth Laboratory
Unit 2, 91 Leach Highway, Kewdale WA 6105
08 9251 9600 EnviroSampleWA@eurofins.com

Melbourne Laboratory
2 Kingston Town Close, Oakleigh, VIC 3166
03 8564 5000 EnviroSampleVic@eurofins.com

Company	Ramboll			Project No	318000780				Project Manager	Stephen Maxwell				Sampler(s)	JB, TJ, JK								
Address	50 Glebe Road the Junction			Project Name	P4				EDD Format (ESdat, EQulS, Custom)	Excel and PDF				Handed over by	Jordyn Kirsch								
Contact Name	Stephen Maxwell			Analyses <small>(Note: Where multiple analyses are requested, please specify 'Total' or 'Filtered' / SUITE code must be used for ambient SUITE pricing)</small>	Total Lead (mg/kg)	Total Sample Mass	Total Lead (ug/L)									Email for Invoice	smaxwell@ramboll.com asiapac-accounts@ramboll.com						
Phone No	0478 658 194															Email for Results	smaxwell@ramboll.com jblackwell@ramboll.com						
Special Directions																				Containers		Turnaround Time (TAT) Requirements (Default will be 5 days if not ticked)	
Purchase Order																				1L Plastic 250mL Plastic 125mL Plastic 200mL Amber Glass 40mL VOA vial 500mL PFAS Bottle Jar (Glass or HDPE) <small>Other (Quarantone AS4654, WA Guidelines)</small>		<input type="checkbox"/> Overnight (9am)* <input type="checkbox"/> 1 Day* <input type="checkbox"/> 2 Day* <input type="checkbox"/> 3 Day* <input checked="" type="checkbox"/> 5 Day* <input type="checkbox"/> Other () * Surcharges apply	
Quote ID No	180813RAMN_1																						
No	Client Sample ID	Sampled Date/Time (dd/mm/yy hh:mm)	Matrix (Solid (S) Water (W))													Sample Comments / Dangerous Goods Hazard Warning							
1	DVAC_LR(P4)	29/04/20	S	X	X										1								
2	DVAC_KB(P4)	29/04/20	S	X	X										1								
3	DSWAB_BE(P4)	29/04/20	S			X									1								
4	DSWAB_FE(P4)	29/04/20	S			X									1								
5	DSWAB_MH(P4)	29/04/20	S			X									1								
6	DSWAB_WIN(P4)	29/04/20	S			X									1								
7	P4_HA06_0-0.05	29/04/20	S	X											1								
8	P4_HA06_0.2	29/04/20	S												1	HOLD							
9	P4_HA07_0-0.05	29/04/20	S	X											1								
10	P4_HA07_0.2	29/04/20	S												1	HOLD							
Total Counts				4	2	4									4	6							
Method of Shipment	<input type="checkbox"/> Courier (#) <input type="checkbox"/> Hand Delivered <input type="checkbox"/> Postal			Name				Signature				Date		Time									
Eurofins mgt Laboratory Use Only	Received By	Anon La		SYD BNE MEL PER ADL NTL DRW				Signature				Date		Temperature									
	Received By			SYD BNE MEL PER ADL NTL DRW				Signature				Date		Report No									

Submission of samples to the laboratory will be deemed as acceptance of Eurofins | mgt Standard Terms and Conditions unless agreed otherwise. A copy of Eurofins | mgt Standard Terms and Conditions is available on request.

Eurofins Environment Testing Australia Pty Ltd trading as Eurofins | mgt

Melbourne

6 Monterey Road
Dandenong South Vic 3175
Phone : +61 3 8564 5000
NATA # 1261
Site # 1254 & 14271

Sydney

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16 Mars Road
Lane Cove West NSW 2066
Phone : +61 2 9900 8400
NATA # 1261 Site # 18217

Brisbane

1/21 Smallwood Place
Murarrie QLD 4172
Phone : +61 7 3902 4600
NATA # 1261 Site # 20794

Perth

2/91 Leach Highway
Kewdale WA 6105
Phone : +61 8 9251 9600
NATA # 1261 Site # 23736

Sample Receipt Advice

Company name: **Ramboll Australia Pty Ltd**
Contact name: **Stephen Maxwell**
Project name: **P4**
Project ID: **318000780**
COC number: **Not provided**
Turn around time: **5 Day**
Date/Time received: **May 1, 2020 12:00 PM**
Eurofins reference: **717007**

Sample information

- A detailed list of analytes logged into our LIMS, is included in the attached summary table.
- All samples have been received as described on the above COC.
- COC has been completed correctly.
- Attempt to chill was evident.
- Appropriately preserved sample containers have been used.
- All samples were received in good condition.
- Samples have been provided with adequate time to commence analysis in accordance with the relevant holding times.
- Appropriate sample containers have been used.
- Split sample sent to requested external lab.
- Some samples have been subcontracted.
- N/A Custody Seals intact (if used).

Contact notes

If you have any questions with respect to these samples please contact:

Andrew Black on Phone : (+61) 2 9900 8490 or by e.mail: AndrewBlack@eurofins.com

Results will be delivered electronically via e.mail to Stephen Maxwell - smaxwell@ramboll.com.

Note: A copy of these results will also be delivered to the general Ramboll Australia Pty Ltd email address.

Australia

Melbourne
6 Monterey Road
Dandenong South VIC 3175
Phone : +61 3 8564 5000
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NATA # 1261
Site # 23736

New Zealand

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35 O'Rorke Road
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IANZ # 1327

Christchurch
43 Detroit Drive
Rolleston, Christchurch 7675
Phone : 0800 856 450
IANZ # 1290

Company Name: Ramboll Australia Pty Ltd
Address: Level 3/100 Pacific Highway
North Sydney
NSW 2060

Project Name: P4
Project ID: 318000780

Order No.:
Report #: 717007
Phone: 02 9954 8118
Fax: 02 9954 8150

Received: May 1, 2020 12:00 PM
Due: May 8, 2020
Priority: 5 Day
Contact Name: Stephen Maxwell

Eurofins Analytical Services Manager : Andrew Black

Sample Detail						HOLD	Lead	Mass of sample*	Moisture Set
Melbourne Laboratory - NATA Site # 1254 & 14271									
Sydney Laboratory - NATA Site # 18217						X	X	X	X
Brisbane Laboratory - NATA Site # 20794									
Perth Laboratory - NATA Site # 23736									
External Laboratory									
No	Sample ID	Sample Date	Sampling Time	Matrix	LAB ID				
1	DVAC_LR(P4)	Apr 29, 2020		Dust	S20-My01433		X	X	
2	DVAC_KB(P4)	Apr 29, 2020		Dust	S20-My01434		X	X	
3	DSWAB_BE(P4)	Apr 29, 2020		Wipes	S20-My01435		X		
4	DSWAB_FE(P4)	Apr 29, 2020		Wipes	S20-My01436		X		
5	DSWAB_MH(P4)	Apr 29, 2020		Wipes	S20-My01437		X		
6	DSWAB_WIN(P4)	Apr 29, 2020		Wipes	S20-My01438		X		
7	P4_HA06_0-0.05	Apr 29, 2020		Soil	S20-My01439		X		X



Environment Testing

Australia

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 NATA # 1261
 Site # 23736

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Christchurch
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 IANZ # 1290

ABN – 50 005 085 521

web : www.eurofins.com.au

e.mail : EnviroSales@eurofins.com

Company Name: Ramboll Australia Pty Ltd
Address: Level 3/100 Pacific Highway
 North Sydney
 NSW 2060

Project Name: P4
Project ID: 318000780

Order No.:
Report #: 717007
Phone: 02 9954 8118
Fax: 02 9954 8150

Received: May 1, 2020 12:00 PM
Due: May 8, 2020
Priority: 5 Day
Contact Name: Stephen Maxwell

Eurofins Analytical Services Manager : Andrew Black

Sample Detail						HOLD	Lead	Mass of sample*	Moisture Set
Melbourne Laboratory - NATA Site # 1254 & 14271									
Sydney Laboratory - NATA Site # 18217						X	X	X	X
Brisbane Laboratory - NATA Site # 20794									
Perth Laboratory - NATA Site # 23736									
8	P4_HA07_0-0.05	Apr 29, 2020		Soil	S20-My01440		X		X
9	P4_HA06_0.2	Apr 29, 2020		Soil	S20-My01441	X			
10	P4_HA07_0.2	Apr 29, 2020		Soil	S20-My01442	X			
Test Counts						2	8	2	2

Ramboll Environ Australia Pty Ltd
 Level 3/100 Pacific Highway
 North Sydney
 NSW 2060



NATA Accredited
Accreditation Number 1261
Site Number 18217

Accredited for compliance with ISO/IEC 17025 – Testing
 The results of the tests, calibrations and/or
 measurements included in this document are traceable
 to Australian/national standards.

Attention: **Stephen Maxwell**

Report **717007-A**
 Project name **P4**
 Project ID **318000780**
 Received Date **May 01, 2020**

Client Sample ID			DSWAB_BE(P4)	DSWAB_FE(P4)	DSWAB_MH(P4)	DSWAB_WIN(P4)
Sample Matrix			Wipes	Wipes	Wipes	Wipes
Eurofins Sample No.			S20-My01435	S20-My01436	S20-My01437	S20-My01438
Date Sampled			Apr 29, 2020	Apr 29, 2020	Apr 29, 2020	Apr 29, 2020
Test/Reference	LOR	Unit				
Heavy Metals						
Lead	1	Total ug	4.8	3.2	120	60

Sample History

Where samples are submitted/analysed over several days, the last date of extraction and analysis is reported.

A recent review of our LIMS has resulted in the correction or clarification of some method identifications. Due to this, some of the method reference information on reports has changed. However, no substantive change has been made to our laboratory methods, and as such there is no change in the validity of current or previous results.

If the date and time of sampling are not provided, the Laboratory will not be responsible for compromised results should testing be performed outside the recommended holding time.

Description

Heavy Metals

Testing Site

Sydney

Extracted

May 07, 2020

Holding Time

180 Days

- Method: LTM-MET-3040 Metals in Waters, Soils & Sediments by ICP-MS

Australia

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Company Name: Ramboll Australia Pty Ltd
Address: Level 3/100 Pacific Highway
North Sydney
NSW 2060

Project Name: P4
Project ID: 318000780

Order No.:
Report #: 717007
Phone: 02 9954 8118
Fax: 02 9954 8150

Received: May 1, 2020 12:00 PM
Due: May 8, 2020
Priority: 5 Day
Contact Name: Stephen Maxwell

Eurofins Analytical Services Manager : Andrew Black

Sample Detail						HOLD	Lead	Mass of sample*	Moisture Set
Melbourne Laboratory - NATA Site # 1254 & 14271									
Sydney Laboratory - NATA Site # 18217						X	X	X	X
Brisbane Laboratory - NATA Site # 20794									
Perth Laboratory - NATA Site # 23736									
External Laboratory									
No	Sample ID	Sample Date	Sampling Time	Matrix	LAB ID				
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3	DSWAB_BE(P4)	Apr 29, 2020		Wipes	S20-My01435		X		
4	DSWAB_FE(P4)	Apr 29, 2020		Wipes	S20-My01436		X		
5	DSWAB_MH(P4)	Apr 29, 2020		Wipes	S20-My01437		X		
6	DSWAB_WIN(P4)	Apr 29, 2020		Wipes	S20-My01438		X		
7	P4_HA06_0-0.05	Apr 29, 2020		Soil	S20-My01439		X		X

Australia

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web : www.eurofins.com.au

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Company Name: Ramboll Australia Pty Ltd
Address: Level 3/100 Pacific Highway
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Sample Detail						HOLD	Lead	Mass of sample*	Moisture Set
Melbourne Laboratory - NATA Site # 1254 & 14271									
Sydney Laboratory - NATA Site # 18217						X	X	X	X
Brisbane Laboratory - NATA Site # 20794									
Perth Laboratory - NATA Site # 23736									
8	P4_HA07_0-0.05	Apr 29, 2020		Soil	S20-My01440		X		X
9	P4_HA06_0.2	Apr 29, 2020		Soil	S20-My01441	X			
10	P4_HA07_0.2	Apr 29, 2020		Soil	S20-My01442	X			
Test Counts						2	8	2	2

Internal Quality Control Review and Glossary

General

- Laboratory QC results for Method Blanks, Duplicates, Matrix Spikes, and Laboratory Control Samples follows guidelines delineated in the National Environment Protection (Assessment of Site Contamination) Measure 1999, as amended May 2013 and are included in this QC report where applicable. Additional QC data may be available on request.
- All soil/sediment/solid results are reported on a dry basis, unless otherwise stated.
- All biota/food results are reported on a wet weight basis on the edible portion, unless otherwise stated.
- Actual LORs are matrix dependant. Quoted LORs may be raised where sample extracts are diluted due to interferences.
- Results are uncorrected for matrix spikes or surrogate recoveries except for PFAS compounds.
- SVOC analysis on waters are performed on homogenised, unfiltered samples, unless noted otherwise.
- Samples were analysed on an 'as received' basis.
- Information identified on this report with blue colour, indicates data provided by customer, that may have an impact on the results.
- This report replaces any interim results previously issued.

Holding Times

Please refer to 'Sample Preservation and Container Guide' for holding times (QS3001).

For samples received on the last day of holding time, notification of testing requirements should have been received at least 6 hours prior to sample receipt deadlines as stated on the SRA.

If the Laboratory did not receive the information in the required timeframe, and regardless of any other integrity issues, suitably qualified results may still be reported.

Holding times apply from the date of sampling, therefore compliance to these may be outside the laboratory's control.

For VOCs containing vinyl chloride, styrene and 2-chloroethyl vinyl ether the holding time is 7 days however for all other VOCs such as BTEX or C6-10 TRH then the holding time is 14 days.

****NOTE:** pH duplicates are reported as a range NOT as RPD

Units

mg/kg: milligrams per kilogram

mg/L: milligrams per litre

ug/L: micrograms per litre

ppm: Parts per million

ppb: Parts per billion

%: Percentage

org/100mL: Organisms per 100 millilitres

NTU: Nephelometric Turbidity Units

MPN/100mL: Most Probable Number of organisms per 100 millilitres

Terms

Dry	Where a moisture has been determined on a solid sample the result is expressed on a dry basis.
LOR	Limit of Reporting.
SPIKE	Addition of the analyte to the sample and reported as percentage recovery.
RPD	Relative Percent Difference between two Duplicate pieces of analysis.
LCS	Laboratory Control Sample - reported as percent recovery.
CRM	Certified Reference Material - reported as percent recovery.
Method Blank	In the case of solid samples these are performed on laboratory certified clean sands and in the case of water samples these are performed on de-ionised water.
Surr - Surrogate	The addition of a like compound to the analyte target and reported as percentage recovery.
Duplicate	A second piece of analysis from the same sample and reported in the same units as the result to show comparison.
USEPA	United States Environmental Protection Agency
APHA	American Public Health Association
TCLP	Toxicity Characteristic Leaching Procedure
COC	Chain of Custody
SRA	Sample Receipt Advice
QSM	US Department of Defense Quality Systems Manual Version 5.3
CP	Client Parent - QC was performed on samples pertaining to this report
NCP	Non-Client Parent - QC performed on samples not pertaining to this report, QC is representative of the sequence or batch that client samples were analysed within.
TEQ	Toxic Equivalency Quotient

QC - Acceptance Criteria

RPD Duplicates: Global RPD Duplicates Acceptance Criteria is 30% however the following acceptance guidelines are equally applicable:

Results <10 times the LOR : No Limit

Results between 10-20 times the LOR : RPD must lie between 0-50%

Results >20 times the LOR : RPD must lie between 0-30%

Surrogate Recoveries: Recoveries must lie between 20-130% Phenols & 50-150% PFASs

PFAS field samples that contain surrogate recoveries in excess of the QC limit designated in QSM 5.3 where no positive PFAS results have been reported have been reviewed and no data was affected.

WA DWER (n=10): PFBA, PFPeA, PFHxA, PFHpA, PFOA, PFBS, PFHxS, PFOS, 6:2 FTSA, 8:2 FTSA

QC Data General Comments

- Where a result is reported as a less than (<), higher than the nominated LOR, this is due to either matrix interference, extract dilution required due to interferences or contaminant levels within the sample, high moisture content or insufficient sample provided.
- Duplicate data shown within this report that states the word "BATCH" is a Batch Duplicate from outside of your sample batch, but within the laboratory sample batch at a 1:10 ratio. The Parent and Duplicate data shown is not data from your samples.
- Organochlorine Pesticide analysis - where reporting LCS data, Toxaphene & Chlordane are not added to the LCS.
- Organochlorine Pesticide analysis - where reporting Spike data, Toxaphene is not added to the Spike.
- Total Recoverable Hydrocarbons - where reporting Spike & LCS data, a single spike of commercial Hydrocarbon products in the range of C12-C30 is added and it's Total Recovery is reported in the C10-C14 cell of the Report.
- pH and Free Chlorine analysed in the laboratory - Analysis on this test must begin within 30 minutes of sampling. Therefore laboratory analysis is unlikely to be completed within holding time. Analysis will begin as soon as possible after sample receipt.
- Recovery Data (Spikes & Surrogates) - where chromatographic interference does not allow the determination of Recovery the term "INT" appears against that analyte.
- Polychlorinated Biphenyls are spiked only using Aroclor 1260 in Matrix Spikes and LCS.
- For Matrix Spikes and LCS results a dash " - " in the report means that the specific analyte was not added to the QC sample.
- Duplicate RPDs are calculated from raw analytical data thus it is possible to have two sets of data.

Quality Control Results

Comments**Sample Integrity**

Custody Seals Intact (if used)	N/A
Attempt to Chill was evident	No
Sample correctly preserved	Yes
Appropriate sample containers have been used	Yes
Sample containers for volatile analysis received with minimal headspace	Yes
Samples received within HoldingTime	Yes
Some samples have been subcontracted	No

Authorised By

Andrew Black Analytical Services Manager
Gabriele Cordero Senior Analyst-Metal (NSW)

**Glenn Jackson
General Manager**

Final report - this Report replaces any previously issued Report

- Indicates Not Requested

* Indicates NATA accreditation does not cover the performance of this service

Measurement uncertainty of test data is available on request or please [click here](#).

Eurofins shall not be liable for loss, cost, damages or expenses incurred by the client, or any other person or company, resulting from the use of any information or interpretation given in this report. In no case shall Eurofins be liable for consequential damages including, but not limited to, lost profits, damages for failure to meet deadlines and lost production arising from this report. This document shall not be reproduced except in full and relates only to the items tested. Unless indicated otherwise, the tests were performed on the samples as received.

Ramboll Environ Australia Pty Ltd
 Level 3/100 Pacific Highway
 North Sydney
 NSW 2060



NATA Accredited
Accreditation Number 1261
Site Number 18217

Accredited for compliance with ISO/IEC 17025 – Testing
 The results of the tests, calibrations and/or
 measurements included in this document are traceable
 to Australian/national standards.

Attention: **Stephen Maxwell**

Report **717007-S**
 Project name **P4**
 Project ID **318000780**
 Received Date **May 01, 2020**

Client Sample ID			DVAC_LR(P4)	DVAC_KB(P4)	P4_HA06_0-0.05	P4_HA07_0-0.05
Sample Matrix			Dust	Dust	Soil	Soil
Eurofins Sample No.			S20-My01433	S20-My01434	S20-My01439	S20-My01440
Date Sampled			Apr 29, 2020	Apr 29, 2020	Apr 29, 2020	Apr 29, 2020
Test/Reference	LOR	Unit				
Heavy Metals						
Lead	5	mg/kg	11	53	37	19
% Moisture	1	%	-	-	20	14

Sample History

Where samples are submitted/analysed over several days, the last date of extraction and analysis is reported.

A recent review of our LIMS has resulted in the correction or clarification of some method identifications. Due to this, some of the method reference information on reports has changed. However, no substantive change has been made to our laboratory methods, and as such there is no change in the validity of current or previous results.

If the date and time of sampling are not provided, the Laboratory will not be responsible for compromised results should testing be performed outside the recommended holding time.

Description

Heavy Metals

- Method: LTM-MET-3040 Metals in Waters, Soils & Sediments by ICP-MS

% Moisture

- Method: LTM-GEN-7080 Moisture

Testing Site

Sydney

Sydney

Extracted

May 07, 2020

May 01, 2020

Holding Time

180 Days

14 Days

Australia

Melbourne
6 Monterey Road
Dandenong South VIC 3175
Phone : +61 3 8564 5000
NATA # 1261
Site # 1254 & 14271

Sydney
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Company Name: Ramboll Australia Pty Ltd
Address: Level 3/100 Pacific Highway
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Project Name: P4
Project ID: 318000780

Order No.:
Report #: 717007
Phone: 02 9954 8118
Fax: 02 9954 8150

Received: May 1, 2020 12:00 PM
Due: May 8, 2020
Priority: 5 Day
Contact Name: Stephen Maxwell

Eurofins Analytical Services Manager : Andrew Black

Sample Detail						HOLD	Lead	Mass of sample*	Moisture Set
Melbourne Laboratory - NATA Site # 1254 & 14271									
Sydney Laboratory - NATA Site # 18217						X	X	X	X
Brisbane Laboratory - NATA Site # 20794									
Perth Laboratory - NATA Site # 23736									
External Laboratory									
No	Sample ID	Sample Date	Sampling Time	Matrix	LAB ID				
1	DVAC_LR(P4)	Apr 29, 2020		Dust	S20-My01433		X	X	
2	DVAC_KB(P4)	Apr 29, 2020		Dust	S20-My01434		X	X	
3	DSWAB_BE(P4)	Apr 29, 2020		Wipes	S20-My01435		X		
4	DSWAB_FE(P4)	Apr 29, 2020		Wipes	S20-My01436		X		
5	DSWAB_MH(P4)	Apr 29, 2020		Wipes	S20-My01437		X		
6	DSWAB_WIN(P4)	Apr 29, 2020		Wipes	S20-My01438		X		
7	P4_HA06_0-0.05	Apr 29, 2020		Soil	S20-My01439		X		X

Australia

Melbourne
6 Monterey Road
Dandenong South VIC 3175
Phone : +61 3 8564 5000
NATA # 1261
Site # 1254 & 14271

Sydney
Unit F3, Building F
16 Mars Road
Lane Cove West NSW 2066
Phone : +61 2 9900 8400
NATA # 1261 Site # 18217

Brisbane
1/21 Smallwood Place
Murarie QLD 4172
Phone : +61 7 3902 4600
NATA # 1261 Site # 20794

Perth
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Kewdale WA 6105
Phone : +61 8 9251 9600
NATA # 1261
Site # 23736

New Zealand

Auckland
35 O'Rorke Road
Penrose, Auckland 1061
Phone : +64 9 526 45 51
IANZ # 1327

Christchurch
43 Detroit Drive
Rolleston, Christchurch 7675
Phone : 0800 856 450
IANZ # 1290

ABN – 50 005 085 521

web : www.eurofins.com.au

e.mail : EnviroSales@eurofins.com

Company Name: Ramboll Australia Pty Ltd
Address: Level 3/100 Pacific Highway
North Sydney
NSW 2060

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Project ID: 318000780

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Sydney Laboratory - NATA Site # 18217						X	X	X	X
Brisbane Laboratory - NATA Site # 20794									
Perth Laboratory - NATA Site # 23736									
8	P4_HA07_0-0.05	Apr 29, 2020		Soil	S20-My01440		X		X
9	P4_HA06_0.2	Apr 29, 2020		Soil	S20-My01441	X			
10	P4_HA07_0.2	Apr 29, 2020		Soil	S20-My01442	X			
Test Counts						2	8	2	2

Internal Quality Control Review and Glossary

General

- Laboratory QC results for Method Blanks, Duplicates, Matrix Spikes, and Laboratory Control Samples follows guidelines delineated in the National Environment Protection (Assessment of Site Contamination) Measure 1999, as amended May 2013 and are included in this QC report where applicable. Additional QC data may be available on request.
- All soil/sediment/solid results are reported on a dry basis, unless otherwise stated.
- All biota/food results are reported on a wet weight basis on the edible portion, unless otherwise stated.
- Actual LORs are matrix dependant. Quoted LORs may be raised where sample extracts are diluted due to interferences.
- Results are uncorrected for matrix spikes or surrogate recoveries except for PFAS compounds.
- SVOC analysis on waters are performed on homogenised, unfiltered samples, unless noted otherwise.
- Samples were analysed on an 'as received' basis.
- Information identified on this report with blue colour, indicates data provided by customer, that may have an impact on the results.
- This report replaces any interim results previously issued.

Holding Times

Please refer to 'Sample Preservation and Container Guide' for holding times (QS3001).

For samples received on the last day of holding time, notification of testing requirements should have been received at least 6 hours prior to sample receipt deadlines as stated on the SRA.

If the Laboratory did not receive the information in the required timeframe, and regardless of any other integrity issues, suitably qualified results may still be reported.

Holding times apply from the date of sampling, therefore compliance to these may be outside the laboratory's control.

For VOCs containing vinyl chloride, styrene and 2-chloroethyl vinyl ether the holding time is 7 days however for all other VOCs such as BTEX or C6-10 TRH then the holding time is 14 days.

****NOTE:** pH duplicates are reported as a range NOT as RPD

Units

mg/kg: milligrams per kilogram

mg/L: milligrams per litre

ug/L: micrograms per litre

ppm: Parts per million

ppb: Parts per billion

%: Percentage

org/100mL: Organisms per 100 millilitres

NTU: Nephelometric Turbidity Units

MPN/100mL: Most Probable Number of organisms per 100 millilitres

Terms

Dry	Where a moisture has been determined on a solid sample the result is expressed on a dry basis.
LOR	Limit of Reporting.
SPIKE	Addition of the analyte to the sample and reported as percentage recovery.
RPD	Relative Percent Difference between two Duplicate pieces of analysis.
LCS	Laboratory Control Sample - reported as percent recovery.
CRM	Certified Reference Material - reported as percent recovery.
Method Blank	In the case of solid samples these are performed on laboratory certified clean sands and in the case of water samples these are performed on de-ionised water.
Surr - Surrogate	The addition of a like compound to the analyte target and reported as percentage recovery.
Duplicate	A second piece of analysis from the same sample and reported in the same units as the result to show comparison.
USEPA	United States Environmental Protection Agency
APHA	American Public Health Association
TCLP	Toxicity Characteristic Leaching Procedure
COC	Chain of Custody
SRA	Sample Receipt Advice
QSM	US Department of Defense Quality Systems Manual Version 5.3
CP	Client Parent - QC was performed on samples pertaining to this report
NCP	Non-Client Parent - QC performed on samples not pertaining to this report, QC is representative of the sequence or batch that client samples were analysed within.
TEQ	Toxic Equivalency Quotient

QC - Acceptance Criteria

RPD Duplicates: Global RPD Duplicates Acceptance Criteria is 30% however the following acceptance guidelines are equally applicable:

Results <10 times the LOR : No Limit

Results between 10-20 times the LOR : RPD must lie between 0-50%

Results >20 times the LOR : RPD must lie between 0-30%

Surrogate Recoveries: Recoveries must lie between 20-130% Phenols & 50-150% PFASs

PFAS field samples that contain surrogate recoveries in excess of the QC limit designated in QSM 5.3 where no positive PFAS results have been reported have been reviewed and no data was affected.

WA DWER (n=10): PFBA, PFPeA, PFHxA, PFHpA, PFOA, PFBS, PFHxS, PFOS, 6:2 FTSA, 8:2 FTSA

QC Data General Comments

- Where a result is reported as a less than (<), higher than the nominated LOR, this is due to either matrix interference, extract dilution required due to interferences or contaminant levels within the sample, high moisture content or insufficient sample provided.
- Duplicate data shown within this report that states the word "BATCH" is a Batch Duplicate from outside of your sample batch, but within the laboratory sample batch at a 1:10 ratio. The Parent and Duplicate data shown is not data from your samples.
- Organochlorine Pesticide analysis - where reporting LCS data, Toxaphene & Chlordane are not added to the LCS.
- Organochlorine Pesticide analysis - where reporting Spike data, Toxaphene is not added to the Spike.
- Total Recoverable Hydrocarbons - where reporting Spike & LCS data, a single spike of commercial Hydrocarbon products in the range of C12-C30 is added and it's Total Recovery is reported in the C10-C14 cell of the Report.
- pH and Free Chlorine analysed in the laboratory - Analysis on this test must begin within 30 minutes of sampling. Therefore laboratory analysis is unlikely to be completed within holding time. Analysis will begin as soon as possible after sample receipt.
- Recovery Data (Spikes & Surrogates) - where chromatographic interference does not allow the determination of Recovery the term "INT" appears against that analyte.
- Polychlorinated Biphenyls are spiked only using Aroclor 1260 in Matrix Spikes and LCS.
- For Matrix Spikes and LCS results a dash " - " in the report means that the specific analyte was not added to the QC sample.
- Duplicate RPDs are calculated from raw analytical data thus it is possible to have two sets of data.

Quality Control Results

Test				Units	Result 1		Acceptance Limits	Pass Limits	Qualifying Code		
Method Blank											
Heavy Metals											
Lead				mg/kg	< 5		5	Pass			
LCS - % Recovery											
Heavy Metals											
Lead				%	92		70-130	Pass			
Test	Lab Sample ID	QA Source	Units	Result 1			Acceptance Limits	Pass Limits	Qualifying Code		
Spike - % Recovery											
Heavy Metals											
Lead				S20-My01340	NCP	%	119	70-130	Pass		
Test	Lab Sample ID	QA Source	Units	Result 1			Acceptance Limits	Pass Limits	Qualifying Code		
Duplicate											
Heavy Metals											
Lead				S20-My01339	NCP	mg/kg	78	110	30	30%	Pass
Duplicate											
					Result 1	Result 2	RPD				
% Moisture				S20-My01439	CP	%	20	20	2.0	30%	Pass

Comments**Sample Integrity**

Custody Seals Intact (if used)	N/A
Attempt to Chill was evident	No
Sample correctly preserved	Yes
Appropriate sample containers have been used	Yes
Sample containers for volatile analysis received with minimal headspace	Yes
Samples received within HoldingTime	Yes
Some samples have been subcontracted	No

Authorised By

Andrew Black Analytical Services Manager
Gabriele Cordero Senior Analyst-Metal (NSW)

**Glenn Jackson
General Manager**

Final report - this Report replaces any previously issued Report

- Indicates Not Requested

* Indicates NATA accreditation does not cover the performance of this service

Measurement uncertainty of test data is available on request or please [click here](#).

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CHAIN OF CUSTODY RECORD

ABN 50 005 085 521

Sydney Laboratory
Unit F3 Bld F, 16 Mars Rd, Lane Cove West, NSW 2066
02 9900 8400 EnviroSampleNSW@eurofins.com

Brisbane Laboratory
Unit 1, 21 Smallwood Pl, Murarie, QLD 4172
07 3902 4600 EnviroSampleQLD@eurofins.com

Perth Laboratory
Unit 2, 91 Leach Highway, Kewdale WA 6105
08 9251 9600 EnviroSampleWA@eurofins.com

Melbourne Laboratory
2 Kingston Town Close, Oakleigh, VIC 3166
03 8564 5000 EnviroSampleVic@eurofins.com

Company		Ramboll		Project No		318000780		Project Manager		Stephen Maxwell		Sampler(s)		JB, TJ, JK					
Address		50 Glebe Road the Junction		Project Name		P4		EDD Format (ESdat, EQUIS, Custom)		Excel and PDF		Handed over by		Jordyn Kirsch					
Contact Name		Stephen Maxwell		<small>Analytes</small> <small>(Note: Where multiple are requested, please specify "Total", "Filtered" or "Filtered" + "SUITE" code must be used for filtered SUITE pricing)</small> Total Lead (mg/kg) Total Sample Mass Total Lead (µg/L)										Email for Invoice		smaxwell@ramboll.com asiapac-accounts@ramboll.com			
Phone No		0478 658 194												Email for Results		smaxwell@ramboll.com jblackwell@ramboll.com			
Special Directions														Turnaround Time (TAT)		Requirements (Default will be 5 Days if not ticked)		<input type="checkbox"/> Overnight (9am)* <input type="checkbox"/> 1 Day* <input type="checkbox"/> 2 Day* <input type="checkbox"/> 3 Day* <input checked="" type="checkbox"/> 5 Day * Surcharges apply <input type="checkbox"/> Other ()	
Purchase Order														Containers		1L Plastic 250mL Plastic 125mL Plastic 200mL Amber Glass 40mL VOA vial 500mL PFAS Bottle Jar (Glass or HDPE) <small>Other (Asbestos AS4554, WA Guidelines)</small>		Sample Comments / Dangerous Goods Hazard Warning	
Quote ID No		180813RAMN_1																	
No	Client Sample ID	Sampled Date/Time (dd/mm/yy hh:mm)	Matrix (Solid (S) Water (W))																
1	P4_HA08_0-0.05	29/04/20	S	X															
2	P4_HA08_0.2	29/04/20	S												HOLD				
3	P4_HA09_0-0.05	29/04/20	S	X															
4	P4_HA09_0.2	29/04/20	S												HOLD				
5	P4_HA10_0-0.05	29/04/20	S	X															
6	P4_HA10_0.2	29/04/20	S												HOLD				
7	P4_HA11_0-0.05	29/04/20	S	X															
8	P4_HA11_0.2	29/04/20	S												HOLD				
9	P4_HA12_0-0.05	29/04/20	S	X															
10	P4_HA12_0.2	29/04/20	S												HOLD				
Total Counts				5										10					
Method of Shipment		<input type="checkbox"/> Courier (#) <input checked="" type="checkbox"/> Hand Delivered <input type="checkbox"/> Postal		Name		Signature		Date		Time		Date		Time					
Eurofins mgt Laboratory Use Only		Received By <i>Arson Lee</i>		SYD BNE MEL PER ADL NTL DRW		Signature <i>[Signature]</i>		Date <i>15/20</i>		Time <i>12:00pm</i>		Temperature <i>14.0°C</i>		Report No <i>#716992</i>					
		Received By		SYD BNE MEL PER ADL NTL DRW		Signature		Date		Time		Report No							

Submission of samples to the laboratory will be deemed as acceptance of Eurofins | mgt Standard Terms and Conditions unless agreed otherwise. A copy of Eurofins | mgt Standard Terms and Conditions is available on request.

Eurofins Environment Testing Australia Pty Ltd trading as Eurofins | mgt



CHAIN OF CUSTODY RECORD

ABN 50 005 085 521

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02 9900 8400 EnviroSampleNSW@eurofins.com

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08 9251 9600 EnviroSampleWA@eurofins.com

Melbourne Laboratory
2 Kingston Town Close, Oakleigh, VIC 3166
03 8564 5000 EnviroSampleVic@eurofins.com

Company		Ramboll		Project No		318000780		Project Manager		Stephen Maxwell		Sampler(s)		JB, T.J, JK	
Address		50 Globe Road the Junction		Project Name		P4		EDD Format (ESdat, EQUIS, Custom)		Excel and PDF		Handed over by		Jordyn Kirsch	
Contact Name		Stephen Maxwell		Analyses <small>(Note: Where multiple analyses are requested please specify "Soil" or "Water") DATE: Cook should be used to amend SUTS printing.</small>		Total Lead (mg/kg)		Total Sample Mass		Total Lead (µg/L)		Containers		Turnaround Time (TAT)	
Phone No		0478 658 194												Requirements (Default will be 5 days if not specified)	
Special Directions														<input type="checkbox"/> Overnight (9am)* <input type="checkbox"/> 1 Day* <input type="checkbox"/> 2 Day* <input type="checkbox"/> 3 Day* <input checked="" type="checkbox"/> 5 Day* <input type="checkbox"/> Other () *Surcharges apply	
Purchase Order														Sample Comments / Dangerous Goods Hazard Warning	
Quote ID No		180813RAMN_1													
No	Client Sample ID	Sampled Date/Time (dd/mm/yy hh:mm)	Matrix (Solid (S) Water (W))												
1	P4_HA13_0-0.05	29/04/20	S	X										1	
2	P4_HA13_0.2	29/04/20	S											1	HOLD
3	P4_HA14_0-0.05	29/04/20	S	X										1	
4	P4_HA14_0.2	29/04/20	S											1	HOLD
5	P4_HA15_0-0.05	29/04/20	S	X										1	
6	P4_HA15_0.2	29/04/20	S											1	HOLD
7															
8															
9															
10															
Total Counts				3										6	
Method of Shipment		<input type="checkbox"/> Courier (#) <input type="checkbox"/> Hand Delivered <input type="checkbox"/> Postal		Name		Signature		Date		Time		Date		Time	
Eurofins mgt Laboratory Use Only		Received By <i>Ansa Lu</i>		SYD BNE MEL PER ADL NTL DRW		<i>[Signature]</i>		Date <i>15/20</i>		Time <i>12:00 PM</i>		Temperature <i>14.0°C</i>		Report No <i>#716992</i>	
		Received By		SYD BNE MEL PER ADL NTL DRW		Signature		Date		Time					

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Eurofins Environment Testing Australia Pty Ltd trading as Eurofins | mgt

Melbourne

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NATA # 1261
Site # 1254 & 14271

Sydney

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NATA # 1261 Site # 18217

Brisbane

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Phone : +61 7 3902 4600
NATA # 1261 Site # 20794

Perth

2/91 Leach Highway
Kewdale WA 6105
Phone : +61 8 9251 9600
NATA # 1261 Site # 23736

Sample Receipt Advice

Company name: **Ramboll Australia Pty Ltd**
Contact name: Stephen Maxwell
Project name: P4
Project ID: 318000780
COC number: Not provided
Turn around time: 5 Day
Date/Time received: May 1, 2020 12:00 PM
Eurofins reference: **716992**

Sample information

- A detailed list of analytes logged into our LIMS, is included in the attached summary table.
- All samples have been received as described on the above COC.
- COC has been completed correctly.
- Attempt to chill was evident.
- Appropriately preserved sample containers have been used.
- All samples were received in good condition.
- Samples have been provided with adequate time to commence analysis in accordance with the relevant holding times.
- Appropriate sample containers have been used.
- Split sample sent to requested external lab.
- Some samples have been subcontracted.
- N/A Custody Seals intact (if used).

Contact notes

If you have any questions with respect to these samples please contact:

Andrew Black on Phone : (+61) 2 9900 8490 or by e.mail: AndrewBlack@eurofins.com

Results will be delivered electronically via e.mail to Stephen Maxwell - smaxwell@ramboll.com.

Note: A copy of these results will also be delivered to the general Ramboll Australia Pty Ltd email address.

Australia

Melbourne
6 Monterey Road
Dandenong South VIC 3175
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Site # 1254 & 14271

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Christchurch
43 Detroit Drive
Rolleston, Christchurch 7675
Phone : 0800 856 450
IANZ # 1290

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Address: Level 3/100 Pacific Highway
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NSW 2060

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Project ID: 318000780

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Eurofins Analytical Services Manager : Andrew Black

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Brisbane Laboratory - NATA Site # 20794								
Perth Laboratory - NATA Site # 23736								
External Laboratory								
No	Sample ID	Sample Date	Sampling Time	Matrix	LAB ID			
1	P4_HA08_0.0-0.05	Apr 29, 2020		Soil	S20-My01311		X	X
2	P4_HA09_0.0-0.05	Apr 29, 2020		Soil	S20-My01312		X	X
3	P4_HA10_0.0-0.05	Apr 29, 2020		Soil	S20-My01313		X	X
4	P4_HA11_0.0-0.05	Apr 29, 2020		Soil	S20-My01314		X	X
5	P4_HA12_0.0-0.05	Apr 29, 2020		Soil	S20-My01315		X	X
6	P4_HA13_0.0-0.05	Apr 29, 2020		Soil	S20-My01316		X	X

Australia

Melbourne
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New Zealand

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Penrose, Auckland 1061
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43 Detroit Drive
Rolleston, Christchurch 7675
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Melbourne Laboratory - NATA Site # 1254 & 14271								
Sydney Laboratory - NATA Site # 18217						X	X	X
Brisbane Laboratory - NATA Site # 20794								
Perth Laboratory - NATA Site # 23736								
7	P4_HA14_0.0-0.05	Apr 29, 2020		Soil	S20-My01317		X	X
8	P4_HA15_0.0-0.05	Apr 29, 2020		Soil	S20-My01318		X	X
9	P4_HA08_0.2	Apr 29, 2020		Soil	S20-My01319	X		
10	P4_HA09_0.2	Apr 29, 2020		Soil	S20-My01320	X		
11	P4_HA10_0.2	Apr 29, 2020		Soil	S20-My01321	X		
12	P4_HA11_0.2	Apr 29, 2020		Soil	S20-My01322	X		
13	P4_HA12_0.2	Apr 29, 2020		Soil	S20-My01323	X		
14	P4_HA13_0.2	Apr 29, 2020		Soil	S20-My01324	X		
15	P4_HA14_0.2	Apr 29, 2020		Soil	S20-My01325	X		
16	P4_HA15_0.2	Apr 29, 2020		Soil	S20-My01326	X		
Test Counts						8	8	8

Ramboll Environ Australia Pty Ltd
 Level 3/100 Pacific Highway
 North Sydney
 NSW 2060



NATA Accredited
 Accreditation Number 1261
 Site Number 18217

Accredited for compliance with ISO/IEC 17025 – Testing
 The results of the tests, calibrations and/or
 measurements included in this document are traceable
 to Australian/national standards.

Attention: Stephen Maxwell

Report 716992-S
 Project name P4
 Project ID 318000780
 Received Date May 01, 2020

Client Sample ID			P4_HA08_0.0-0.05	P4_HA09_0.0-0.05	P4_HA10_0.0-0.05	P4_HA11_0.0-0.05
Sample Matrix			Soil	Soil	Soil	Soil
Eurofins Sample No.			S20-My01311	S20-My01312	S20-My01313	S20-My01314
Date Sampled			Apr 29, 2020	Apr 29, 2020	Apr 29, 2020	Apr 29, 2020
Test/Reference	LOR	Unit				
Heavy Metals						
Lead	5	mg/kg	24	20	22	23
% Moisture	1	%	20	25	20	7.4

Client Sample ID			P4_HA12_0.0-0.05	P4_HA13_0.0-0.05	P4_HA14_0.0-0.05	P4_HA15_0.0-0.05
Sample Matrix			Soil	Soil	Soil	Soil
Eurofins Sample No.			S20-My01315	S20-My01316	S20-My01317	S20-My01318
Date Sampled			Apr 29, 2020	Apr 29, 2020	Apr 29, 2020	Apr 29, 2020
Test/Reference	LOR	Unit				
Heavy Metals						
Lead	5	mg/kg	19	25	20	21
% Moisture	1	%	17	4.6	18	13

Sample History

Where samples are submitted/analysed over several days, the last date of extraction and analysis is reported.

A recent review of our LIMS has resulted in the correction or clarification of some method identifications. Due to this, some of the method reference information on reports has changed. However, no substantive change has been made to our laboratory methods, and as such there is no change in the validity of current or previous results.

If the date and time of sampling are not provided, the Laboratory will not be responsible for compromised results should testing be performed outside the recommended holding time.

Description

Heavy Metals

- Method: LTM-MET-3040 Metals in Waters, Soils & Sediments by ICP-MS

% Moisture

- Method: LTM-GEN-7080 Moisture

Testing Site

Sydney

Sydney

Extracted

May 07, 2020

May 01, 2020

Holding Time

180 Days

14 Days

Australia

Melbourne
6 Monterey Road
Dandenong South VIC 3175
Phone : +61 3 8564 5000
NATA # 1261
Site # 1254 & 14271

Sydney
Unit F3, Building F
16 Mars Road
Lane Cove West NSW 2066
Phone : +61 2 9900 8400
NATA # 1261 Site # 18217

Brisbane
1/21 Smallwood Place
Murarrie QLD 4172
Phone : +61 7 3902 4600
NATA # 1261 Site # 20794

Perth
2/91 Leach Highway
Kewdale WA 6105
Phone : +61 8 9251 9600
NATA # 1261
Site # 23736

New Zealand

Auckland
35 O'Rorke Road
Penrose, Auckland 1061
Phone : +64 9 526 45 51
IANZ # 1327

Christchurch
43 Detroit Drive
Rolleston, Christchurch 7675
Phone : 0800 856 450
IANZ # 1290

Company Name: Ramboll Australia Pty Ltd
Address: Level 3/100 Pacific Highway
North Sydney
NSW 2060

Project Name: P4
Project ID: 318000780

Order No.:
Report #: 716992
Phone: 02 9954 8118
Fax: 02 9954 8150

Received: May 1, 2020 12:00 PM
Due: May 8, 2020
Priority: 5 Day
Contact Name: Stephen Maxwell

Eurofins Analytical Services Manager : Andrew Black

Sample Detail						HOLD	Lead	Moisture Set
Melbourne Laboratory - NATA Site # 1254 & 14271								
Sydney Laboratory - NATA Site # 18217						X	X	X
Brisbane Laboratory - NATA Site # 20794								
Perth Laboratory - NATA Site # 23736								
External Laboratory								
No	Sample ID	Sample Date	Sampling Time	Matrix	LAB ID			
1	P4_HA08_0.0-0.05	Apr 29, 2020		Soil	S20-My01311		X	X
2	P4_HA09_0.0-0.05	Apr 29, 2020		Soil	S20-My01312		X	X
3	P4_HA10_0.0-0.05	Apr 29, 2020		Soil	S20-My01313		X	X
4	P4_HA11_0.0-0.05	Apr 29, 2020		Soil	S20-My01314		X	X
5	P4_HA12_0.0-0.05	Apr 29, 2020		Soil	S20-My01315		X	X
6	P4_HA13_0.0-0.05	Apr 29, 2020		Soil	S20-My01316		X	X

Australia

Melbourne
6 Monterey Road
Dandenong South VIC 3175
Phone : +61 3 8564 5000
NATA # 1261
Site # 1254 & 14271

Sydney
Unit F3, Building F
16 Mars Road
Lane Cove West NSW 2066
Phone : +61 2 9900 8400
NATA # 1261 Site # 18217

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NATA # 1261 Site # 20794

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Phone : +64 9 526 45 51
IANZ # 1327

Christchurch
43 Detroit Drive
Rolleston, Christchurch 7675
Phone : 0800 856 450
IANZ # 1290

ABN – 50 005 085 521

web : www.eurofins.com.au

e.mail : EnviroSales@eurofins.com

Company Name: Ramboll Australia Pty Ltd
Address: Level 3/100 Pacific Highway
North Sydney
NSW 2060

Order No.:
Report #: 716992
Phone: 02 9954 8118
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Received: May 1, 2020 12:00 PM
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Contact Name: Stephen Maxwell

Project Name: P4
Project ID: 318000780

Eurofins Analytical Services Manager : Andrew Black

Sample Detail						HOLD	Lead	Moisture Set
Melbourne Laboratory - NATA Site # 1254 & 14271								
Sydney Laboratory - NATA Site # 18217						X	X	X
Brisbane Laboratory - NATA Site # 20794								
Perth Laboratory - NATA Site # 23736								
7	P4_HA14_0.0-0.05	Apr 29, 2020		Soil	S20-My01317		X	X
8	P4_HA15_0.0-0.05	Apr 29, 2020		Soil	S20-My01318		X	X
9	P4_HA08_0.2	Apr 29, 2020		Soil	S20-My01319	X		
10	P4_HA09_0.2	Apr 29, 2020		Soil	S20-My01320	X		
11	P4_HA10_0.2	Apr 29, 2020		Soil	S20-My01321	X		
12	P4_HA11_0.2	Apr 29, 2020		Soil	S20-My01322	X		
13	P4_HA12_0.2	Apr 29, 2020		Soil	S20-My01323	X		
14	P4_HA13_0.2	Apr 29, 2020		Soil	S20-My01324	X		
15	P4_HA14_0.2	Apr 29, 2020		Soil	S20-My01325	X		
16	P4_HA15_0.2	Apr 29, 2020		Soil	S20-My01326	X		
Test Counts						8	8	8

Internal Quality Control Review and Glossary

General

- Laboratory QC results for Method Blanks, Duplicates, Matrix Spikes, and Laboratory Control Samples follows guidelines delineated in the National Environment Protection (Assessment of Site Contamination) Measure 1999, as amended May 2013 and are included in this QC report where applicable. Additional QC data may be available on request.
- All soil/sediment/solid results are reported on a dry basis, unless otherwise stated.
- All biota/food results are reported on a wet weight basis on the edible portion, unless otherwise stated.
- Actual LORs are matrix dependant. Quoted LORs may be raised where sample extracts are diluted due to interferences.
- Results are uncorrected for matrix spikes or surrogate recoveries except for PFAS compounds.
- SVOC analysis on waters are performed on homogenised, unfiltered samples, unless noted otherwise.
- Samples were analysed on an 'as received' basis.
- Information identified on this report with blue colour, indicates data provided by customer, that may have an impact on the results.
- This report replaces any interim results previously issued.

Holding Times

Please refer to 'Sample Preservation and Container Guide' for holding times (QS3001).

For samples received on the last day of holding time, notification of testing requirements should have been received at least 6 hours prior to sample receipt deadlines as stated on the SRA.

If the Laboratory did not receive the information in the required timeframe, and regardless of any other integrity issues, suitably qualified results may still be reported.

Holding times apply from the date of sampling, therefore compliance to these may be outside the laboratory's control.

For VOCs containing vinyl chloride, styrene and 2-chloroethyl vinyl ether the holding time is 7 days however for all other VOCs such as BTEX or C6-10 TRH then the holding time is 14 days.

****NOTE:** pH duplicates are reported as a range NOT as RPD

Units

mg/kg: milligrams per kilogram

mg/L: milligrams per litre

ug/L: micrograms per litre

ppm: Parts per million

ppb: Parts per billion

%: Percentage

org/100mL: Organisms per 100 millilitres

NTU: Nephelometric Turbidity Units

MPN/100mL: Most Probable Number of organisms per 100 millilitres

Terms

Dry	Where a moisture has been determined on a solid sample the result is expressed on a dry basis.
LOR	Limit of Reporting.
SPIKE	Addition of the analyte to the sample and reported as percentage recovery.
RPD	Relative Percent Difference between two Duplicate pieces of analysis.
LCS	Laboratory Control Sample - reported as percent recovery.
CRM	Certified Reference Material - reported as percent recovery.
Method Blank	In the case of solid samples these are performed on laboratory certified clean sands and in the case of water samples these are performed on de-ionised water.
Surr - Surrogate	The addition of a like compound to the analyte target and reported as percentage recovery.
Duplicate	A second piece of analysis from the same sample and reported in the same units as the result to show comparison.
USEPA	United States Environmental Protection Agency
APHA	American Public Health Association
TCLP	Toxicity Characteristic Leaching Procedure
COC	Chain of Custody
SRA	Sample Receipt Advice
QSM	US Department of Defense Quality Systems Manual Version 5.3
CP	Client Parent - QC was performed on samples pertaining to this report
NCP	Non-Client Parent - QC performed on samples not pertaining to this report, QC is representative of the sequence or batch that client samples were analysed within.
TEQ	Toxic Equivalency Quotient

QC - Acceptance Criteria

RPD Duplicates: Global RPD Duplicates Acceptance Criteria is 30% however the following acceptance guidelines are equally applicable:

Results <10 times the LOR : No Limit

Results between 10-20 times the LOR : RPD must lie between 0-50%

Results >20 times the LOR : RPD must lie between 0-30%

Surrogate Recoveries: Recoveries must lie between 20-130% Phenols & 50-150% PFASs

PFAS field samples that contain surrogate recoveries in excess of the QC limit designated in QSM 5.3 where no positive PFAS results have been reported have been reviewed and no data was affected.

WA DWER (n=10): PFBA, PFPeA, PFHxA, PFHpA, PFOA, PFBS, PFHxS, PFOS, 6:2 FTSA, 8:2 FTSA

QC Data General Comments

- Where a result is reported as a less than (<), higher than the nominated LOR, this is due to either matrix interference, extract dilution required due to interferences or contaminant levels within the sample, high moisture content or insufficient sample provided.
- Duplicate data shown within this report that states the word "BATCH" is a Batch Duplicate from outside of your sample batch, but within the laboratory sample batch at a 1:10 ratio. The Parent and Duplicate data shown is not data from your samples.
- Organochlorine Pesticide analysis - where reporting LCS data, Toxaphene & Chlordane are not added to the LCS.
- Organochlorine Pesticide analysis - where reporting Spike data, Toxaphene is not added to the Spike.
- Total Recoverable Hydrocarbons - where reporting Spike & LCS data, a single spike of commercial Hydrocarbon products in the range of C12-C30 is added and it's Total Recovery is reported in the C10-C14 cell of the Report.
- pH and Free Chlorine analysed in the laboratory - Analysis on this test must begin within 30 minutes of sampling. Therefore laboratory analysis is unlikely to be completed within holding time. Analysis will begin as soon as possible after sample receipt.
- Recovery Data (Spikes & Surrogates) - where chromatographic interference does not allow the determination of Recovery the term "INT" appears against that analyte.
- Polychlorinated Biphenyls are spiked only using Aroclor 1260 in Matrix Spikes and LCS.
- For Matrix Spikes and LCS results a dash " - " in the report means that the specific analyte was not added to the QC sample.
- Duplicate RPDs are calculated from raw analytical data thus it is possible to have two sets of data.

Quality Control Results

Test				Units	Result 1		Acceptance Limits	Pass Limits	Qualifying Code		
Method Blank											
Heavy Metals											
Lead				mg/kg	< 5		5	Pass			
LCS - % Recovery											
Heavy Metals											
Lead				%	92		70-130	Pass			
Test	Lab Sample ID	QA Source	Units	Result 1			Acceptance Limits	Pass Limits	Qualifying Code		
Spike - % Recovery											
Heavy Metals											
Lead				S20-My01340	NCP	%	119	70-130	Pass		
Test	Lab Sample ID	QA Source	Units	Result 1			Acceptance Limits	Pass Limits	Qualifying Code		
Duplicate											
Heavy Metals											
Lead				S20-My01339	NCP	mg/kg	78	110	30	30%	Pass
Duplicate											
					Result 1	Result 2	RPD				
% Moisture				S20-My01317	CP	%	18	18	1.0	30%	Pass

Comments**Sample Integrity**

Custody Seals Intact (if used)	N/A
Attempt to Chill was evident	No
Sample correctly preserved	Yes
Appropriate sample containers have been used	Yes
Sample containers for volatile analysis received with minimal headspace	Yes
Samples received within HoldingTime	Yes
Some samples have been subcontracted	No

Authorised By

Andrew Black Analytical Services Manager
Gabriele Cordero Senior Analyst-Metal (NSW)

**Glenn Jackson
General Manager**

Final report - this Report replaces any previously issued Report

- Indicates Not Requested

* Indicates NATA accreditation does not cover the performance of this service

Measurement uncertainty of test data is available on request or please [click here](#).

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CHAIN OF CUSTODY RECORD

ABN 50 006 085 521

Sydney Laboratory
Unit F3 Bld F, 18 Mare Rd, Lane Cove West, NSW 2066
02 9900 9400 EnviroSampleNSW@eurofins.com

Brisbane Laboratory
Unit 1, 21 Smallwood Pl, Murrumbidgee, QLD 4172
07 3902 4600 EnviroSampleBris@eurofins.com

Perth Laboratory
Unit 2, 91 Leach Highway, Kewdale WA 6105
08 9251 9500 EnviroSampleWA@eurofins.com

Melbourne Laboratory
2 Kingston Court, Chelsea, VIC 3196
03 8564 5000 EnviroSampleVic@eurofins.com

Company	Ramboll	Project No	318000780	Project Manager	Stephen Maxwell	Sampler(s)	AC
Address	50 Glebe Road the Junction	Project Name		EDD Format	Excel and PDF	Handed over by	SM
Contact Name	Stephen Maxwell					Email for Invoice	smaxwell@ramboll.com asiaaac-accounts@ramboll.com
Phone No						Email for Results	smaxwell@ramboll.com jblackwell@ramboll.com rcondon@ramboll.com shyde@ramboll.com

Special Directions		Analyses	Lead				
Purchase Order		(Note: Where metals are requested, please specify "Total" or "Filtered") SUITE code must be used to attract RUTIE pricing	M13 (Al, As, Ba, Be, Cd, Cr, Co, Cu, Fe, Pb, Mn, Hg, Ni, Zn) total	M13 (Al, As, Ba, Be, Cd, Cr, Co, Cu, Fe, Pb, Mn, Hg, Ni, Zn) dissolved			
Quote ID No	180813RAMM_1						

No	Client Sample ID	Sampled Date/Time (dd/mm/yy hh:mm)	Matrix (Solid (S) Water (W))											
1	P7_TW1	25/03/20	W		X	X								
2	P7_TW2	25/03/20	W		X	X								
3	P7_HA01_0.0-0.05	25/03/20	S		X									
4	P7_HA01_0.2	25/03/20	S		X									
5	P7_HA02_0.0-0.05	25/03/20	S		X									
6	P7_HA02_0.25	25/03/20	S		X									
7	P7_HA03_0.0-0.05	25/03/20	S		X									
8	P7_HA03_0.0-0.05	25/03/20	S		X									
9	P7_HA04_0.0-0.05	25/03/20	S		X									
10	P7_HA04_0.25	25/03/20	S		X									
Total Counts					8	2	2							

Method of Shipment	<input type="checkbox"/> Courier (#) <input type="checkbox"/> Hand Delivered <input type="checkbox"/> Postal	Name	Signature	Date	Time
Eurofins Ingt Laboratory Use Only	Received By: <i>[Signature]</i>	Signature	<i>[Signature]</i>	Date: 25/03/20	Time: 18:16
	Received By: <i>[Signature]</i>	Signature	<i>[Signature]</i>	Date: 25/03/20	Time: 18:16

Substitution of samples to the laboratory will be deemed as acceptance of Eurofins | Ingt Standard Terms and Conditions unless agreed otherwise. A copy of Eurofins | Ingt Standard Terms and Conditions is available on request.

Eurofins Environment Testing Australia Pty Ltd trading as Eurofins | Ingt



CHAIN OF CUSTODY RECORD

ABN 59 005 096 371

Sydney Laboratory
 Unit F3, Bldg 7, 16 Mars Rd, Lane Cove West, NSW 2086
 02 9900 8400 EnviroSampleNSW@eurofins.com

Brisbane Laboratory
 Unit 1, 21 Smallwood Pl., Marano, QLD 4172
 07 3802 4800 EnviroSampleQLD@eurofins.com

Perth Laboratory
 Unit 2, 91 Leach Highway, Kewdale WA 6105
 08 9251 9800 EnviroSampleWA@eurofins.com

Melbourne Laboratory
 2 Kingson Town Close, Camleigh VIC 3166
 03 8584 5000 EnviroSampleVIC@eurofins.com

Company: **Ramboll** Project No: **318000780** Project Name: **Lead**

Address: **50 Glebe Road the Junction** Project Manager: **Stephen Maxwell** EDD Form: **(ESdnt, EQUIS)** Excel and PDF

Contact Name: **Stephen Maxwell** Sampler(s): **AC** Handled over by: **SM**

Phone No: **1808133RAMN_1** Email for Invoice: **smaxwell@ramboll.com** Email for Results: **smaxwell@ramboll.com**
blackwell@ramboll.com
rcondon@ramboll.com
shyde@ramboll.com

Special Directions: **Analyses**
 (Note: Where metals are requested, please specify "Total" or "Filtered") SUITE code must be used to attract SUITE pricing.

Purchase Order: **1808133RAMN_1** M13 (Al, As, Ba, Be, Cd, Cr, Co, Cu, Fe, Pb, Mn, Hg, Ni, Zn) total
 M13 (Al, As, Ba, Be, Cd, Cr, Co, Cu, Fe, Pb, Mn, Hg, Ni, Zn) dissolved

No	Client Sample ID	Sampled Date/Time (dd/mm/yy hh:mm)	Matrix (Solid (S) Water (W))	Method of Shipment	Received By	Signature	Date	Temperature	Report No
1	P7_HA05_0.0-0.05	25/03/20	S	<input type="checkbox"/> Courier (#) <input type="checkbox"/> Hand Delivered	<i>[Signature]</i>	<i>[Signature]</i>	<i>[Date]</i>	<i>[Temp]</i>	<i>[Report]</i>
2	P7_HA05_0.25	25/03/20	S	<input type="checkbox"/> Courier (#) <input type="checkbox"/> Hand Delivered	<i>[Signature]</i>	<i>[Signature]</i>	<i>[Date]</i>	<i>[Temp]</i>	<i>[Report]</i>
3	P7_TWS2	25/03/20	S	<input type="checkbox"/> Courier (#) <input type="checkbox"/> Hand Delivered	<i>[Signature]</i>	<i>[Signature]</i>	<i>[Date]</i>	<i>[Temp]</i>	<i>[Report]</i>
4				<input type="checkbox"/> Courier (#) <input type="checkbox"/> Hand Delivered					
5				<input type="checkbox"/> Courier (#) <input type="checkbox"/> Hand Delivered					
6				<input type="checkbox"/> Courier (#) <input type="checkbox"/> Hand Delivered					
7				<input type="checkbox"/> Courier (#) <input type="checkbox"/> Hand Delivered					
8				<input type="checkbox"/> Courier (#) <input type="checkbox"/> Hand Delivered					
9				<input type="checkbox"/> Courier (#) <input type="checkbox"/> Hand Delivered					
10				<input type="checkbox"/> Courier (#) <input type="checkbox"/> Hand Delivered					
Total Counts									

Method of Shipment: Courier (#) Hand Delivered

Signature: *[Signature]* Date: *[Date]* Temperature: *[Temp]* Report No: *[Report]*

Signature: *[Signature]* Date: *[Date]* Temperature: *[Temp]* Report No: *[Report]*

Signature: *[Signature]* Date: *[Date]* Temperature: *[Temp]* Report No: *[Report]*

Submission of samples to the laboratory will be deemed as acceptance of Eurofins | mgmt Standard Terms and Conditions unless agreed otherwise. A copy of Eurofins | mgmt Standard Terms and Conditions is available on request.

Eurofins Environment Testing Australia Pty Ltd trading as Eurofins | mgmt

[Handwritten: 18.76°C]
[Handwritten: 710646]

#AU04_Enviro_Sample_NSW

To: Stephen Maxwell
Subject: RE: ATTENTION:Eurofins Sample Receipt Advice - Report 710646 : Site 318000780

From: Stephen Maxwell [<mailto:SMAXWELL@ramboll.com>]
Sent: Saturday, 28 March 2020 8:34 AM
To: #AU04_Enviro_Sample_NSW
Cc: Joshua Blackwell; Rachel Condon; Shane Hyde
Subject: RE: ATTENTION:Eurofins Sample Receipt Advice - Report 710646 : Site 318000780

Hi

Please dry TWS2 and analyse a sediment sample.

Kind regards
Stephen Maxwell
Lead Consultant

D +61 478658194
M +61 478658194
smaxwell@ramboll.com

Ramboll Australia Pty Ltd.
ACN 095 437 442
ABN 49 095 437 442

From: EnviroSampleNSW@eurofins.com <EnviroSampleNSW@eurofins.com>
Sent: 27 March, 2020 10:48 PM
To: Stephen Maxwell <SMAXWELL@ramboll.com>
Cc: Joshua Blackwell <JBLACKWELL@ramboll.com>; Rachel Condon <RCONDON@ramboll.com>; Shane Hyde <SHYDE@ramboll.com>
Subject: ATTENTION:Eurofins Sample Receipt Advice - Report 710646 : Site 318000780

Dear Valued Client,

Sample ID; P7_HA03_0.0-0.05 mentioned twice on line 7 and 8 of the COC - line 8 logged as P7_HA03_0.3. Sample; P7_TW3

Please find attached a Sample Receipt Advice (SRA), a Summary Sheet and a scanned copy of your Chain-of-Custody. Please review this documentation to ensure that the details are correct such as the Client Job Number, Turn Around Time, any comments

numbers as well as the requested analysis. If there are any irregularities then please contact your Eurofins | mgt Ana possible to make certain that they get changed.

Regards

Suzanne Ford

Sample Receipt

Eurofins | Environment Testing

Unit F3, Parkview Building

16 Mars Road

LANE COVE WEST NSW 2066

AUSTRALIA

Phone: +61 02 9900 8421

Email: EnviroSampleNSW@eurofins.com

Website: environment.eurofins.com.au

[EnviroNote 1079 - PFAS Fingerprinting](#)

[EnviroNote 1080 - Total Organofluorine Analysis & PFAS Investigations](#)

[EnviroNote 1079 - PFAS Fingerprinting](#)

[EnviroNote 1080 - Total Organofluorine Analysis & PFAS Investigations](#)

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Site # 1254 & 14271

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NATA # 1261 Site # 18217

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NATA # 1261 Site # 20794

Perth

2/91 Leach Highway
Kewdale WA 6105
Phone : +61 8 9251 9600
NATA # 1261 Site # 23736

Sample Receipt Advice

Company name: **Ramboll Australia Pty Ltd**

Contact name: Stephen Maxwell

Project ID: 318000780

COC number: Not provided

Turn around time: 5 Day

Date/Time received: Mar 27, 2020 2:57 PM

Eurofins reference: **710646**

Sample information

- A detailed list of analytes logged into our LIMS, is included in the attached summary table.
- All samples have been received as described on the above COC.
- COC has been completed correctly.
- Attempt to chill was evident.
- Appropriately preserved sample containers have been used.
- All samples were received in good condition.
- Samples have been provided with adequate time to commence analysis in accordance with the relevant holding times.

- Appropriate sample containers have been used.
- Sample containers for volatile analysis received with zero headspace.
- Split sample sent to requested external lab.
- Some samples have been subcontracted.
- N/A Custody Seals intact (if used).

Notes

Sample ID; P7_HA03_0.0-0.05 mentioned twice on line 7 and 8 of the COC - line 8 logged as P7_HA03_0.3.

Contact notes

If you have any questions with respect to these samples please contact:

Andrew Black on Phone : (+61) 2 9900 8490 or by e.mail: AndrewBlack@eurofins.com

Results will be delivered electronically via e.mail to Stephen Maxwell - smaxwell@ramboll.com.

Note: A copy of these results will also be delivered to the general Ramboll Australia Pty Ltd email address.

Australia

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Site # 1254 & 14271

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Rolleston, Christchurch 7675
Phone : 0800 856 450
IANZ # 1290

Company Name: Ramboll Australia Pty Ltd
Address: Level 3/100 Pacific Highway
North Sydney
NSW 2060

Order No.:
Report #: 710646
Phone: 02 9954 8118
Fax: 02 9954 8150

Received: Mar 27, 2020 2:57 PM
Due: Apr 3, 2020
Priority: 5 Day
Contact Name: Stephen Maxwell

Project Name:
Project ID: 318000780

Eurofins Analytical Services Manager : Andrew Black

Sample Detail						Lead	Moisture Set	NEPM 2013 Metals without Cr6+ (As, Be, B, Cd, Co, Cr, Cu, Hg, Pb, Ni, Mn, Cd, Co, Cr, Cu, Hg, Pb, Ni, Mn, Se, Zn)	NEPM 2013 Filtered Metals without Cr6+ (As, Be, B, Cd, Co, Cr, Cu, Hg, Pb, Ni, Mn, Se, Zn)
Melbourne Laboratory - NATA Site # 1254 & 14271									
Sydney Laboratory - NATA Site # 18217						X	X	X	X
Brisbane Laboratory - NATA Site # 20794									
Perth Laboratory - NATA Site # 23736									
External Laboratory									
No	Sample ID	Sample Date	Sampling Time	Matrix	LAB ID				
1	P7_TW1	Mar 25, 2020		Water	S20-Ma44414			X	X
2	P7_TW2	Mar 25, 2020		Water	S20-Ma44415			X	X
3	P7_HA01_0.0-0.05	Mar 25, 2020		Soil	S20-Ma44416	X	X		
4	P7_HA01_0.2	Mar 25, 2020		Soil	S20-Ma44417	X	X		
5	P7_HA02_0.0-0.05	Mar 25, 2020		Soil	S20-Ma44418	X	X		
6	P7_HA02_0.2	Mar 25, 2020		Soil	S20-Ma44419	X	X		
7	P7_HA03_0.0-0.05	Mar 25, 2020		Soil	S20-Ma44420	X	X		

Australia

Melbourne
6 Monterey Road
Dandenong South VIC 3175
Phone : +61 3 8564 5000
NATA # 1261
Site # 1254 & 14271

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Phone : +61 2 9900 8400
NATA # 1261 Site # 18217

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Phone : +61 7 3902 4600
NATA # 1261 Site # 20794

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NATA # 1261
Site # 23736

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Auckland
35 O'Rorke Road
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Phone : +64 9 526 45 51
IANZ # 1327

Christchurch
43 Detroit Drive
Rolleston, Christchurch 7675
Phone : 0800 856 450
IANZ # 1290

Company Name: Ramboll Australia Pty Ltd
Address: Level 3/100 Pacific Highway
North Sydney
NSW 2060

Order No.:
Report #: 710646
Phone: 02 9954 8118
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Received: Mar 27, 2020 2:57 PM
Due: Apr 3, 2020
Priority: 5 Day
Contact Name: Stephen Maxwell

Project Name:
Project ID: 318000780

Eurofins Analytical Services Manager : Andrew Black

Sample Detail						Lead	Moisture Set	NEPM 2013 Filtered Metals without Cr6+ (As, Be, B, Cd, Co, Cr, Cu, Hg, Pb, Ni, Mn, NEPM 2013 Metals without Cr6+ (As, Be, B, Cd, Co, Cr, Cu, Hg, Pb, Ni, Mn, Se, Zn))	
Melbourne Laboratory - NATA Site # 1254 & 14271									
Sydney Laboratory - NATA Site # 18217						X	X	X	X
Brisbane Laboratory - NATA Site # 20794									
Perth Laboratory - NATA Site # 23736									
8	P7_HA03_0.3	Mar 25, 2020		Soil	S20-Ma44421	X	X		
9	P7_HA04_0.0-0.05	Mar 25, 2020		Soil	S20-Ma44422	X	X		
10	P7_HA04_0.25	Mar 25, 2020		Soil	S20-Ma44423	X	X		
11	P7_HA05_0.0-0.05	Mar 25, 2020		Soil	S20-Ma44424	X	X		
12	P7_HA05_0.25	Mar 25, 2020		Soil	S20-Ma44425	X	X		
13	P7_TWS2	Mar 25, 2020		Sediment	S20-Ma44426	X	X		
Test Counts						11	11	2	2

Ramboll Environ Australia Pty Ltd
 Level 3/100 Pacific Highway
 North Sydney
 NSW 2060



NATA Accredited
 Accreditation Number 1261
 Site Number 18217

Accredited for compliance with ISO/IEC 17025 – Testing
 The results of the tests, calibrations and/or
 measurements included in this document are traceable
 to Australian/national standards.

Attention: Stephen Maxwell

Report 710646-S
 Project name
 Project ID 318000780
 Received Date Mar 27, 2020

Client Sample ID			P7_HA01_0.0-0.05	P7_HA01_0.2	P7_HA02_0.0-0.05	P7_HA02_0.25
Sample Matrix			Soil	Soil	Soil	Soil
Eurofins Sample No.			S20-Ma44416	S20-Ma44417	S20-Ma44418	S20-Ma44419
Date Sampled			Mar 25, 2020	Mar 25, 2020	Mar 25, 2020	Mar 25, 2020
Test/Reference	LOR	Unit				
Heavy Metals						
Lead	5	mg/kg	17	16	23	20
% Moisture						
	1	%	17	6.1	8.8	9.8

Client Sample ID			P7_HA03_0.0-0.05	P7_HA03_0.3	P7_HA04_0.0-0.05	P7_HA04_0.25
Sample Matrix			Soil	Soil	Soil	Soil
Eurofins Sample No.			S20-Ma44420	S20-Ma44421	S20-Ma44422	S20-Ma44423
Date Sampled			Mar 25, 2020	Mar 25, 2020	Mar 25, 2020	Mar 25, 2020
Test/Reference	LOR	Unit				
Heavy Metals						
Lead	5	mg/kg	19	11	16	8.6
% Moisture						
	1	%	7.5	19	11	14

Client Sample ID			P7_HA05_0.0-0.05	P7_HA05_0.25
Sample Matrix			Soil	Soil
Eurofins Sample No.			S20-Ma44424	S20-Ma44425
Date Sampled			Mar 25, 2020	Mar 25, 2020
Test/Reference	LOR	Unit		
Heavy Metals				
Lead	5	mg/kg	11	14
% Moisture				
	1	%	9.5	9.7

Sample History

Where samples are submitted/analysed over several days, the last date of extraction and analysis is reported.

A recent review of our LIMS has resulted in the correction or clarification of some method identifications. Due to this, some of the method reference information on reports has changed. However, no substantive change has been made to our laboratory methods, and as such there is no change in the validity of current or previous results.

If the date and time of sampling are not provided, the Laboratory will not be responsible for compromised results should testing be performed outside the recommended holding time.

Description

Heavy Metals

- Method: LTM-MET-3040 Metals in Waters, Soils & Sediments by ICP-MS

% Moisture

- Method: LTM-GEN-7080 Moisture

Testing Site

Sydney

Sydney

Extracted

Apr 01, 2020

Mar 27, 2020

Holding Time

180 Days

14 Days

Australia

Melbourne
6 Monterey Road
Dandenong South VIC 3175
Phone : +61 3 8564 5000
NATA # 1261
Site # 1254 & 14271

Sydney
Unit F3, Building F
16 Mars Road
Lane Cove West NSW 2066
Phone : +61 2 9900 8400
NATA # 1261 Site # 18217

Brisbane
1/21 Smallwood Place
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NATA # 1261
Site # 23736

New Zealand

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Penrose, Auckland 1061
Phone : +64 9 526 45 51
IANZ # 1327

Christchurch
43 Detroit Drive
Rolleston, Christchurch 7675
Phone : 0800 856 450
IANZ # 1290

Company Name: Ramboll Australia Pty Ltd
Address: Level 3/100 Pacific Highway
North Sydney
NSW 2060

Order No.:
Report #: 710646
Phone: 02 9954 8118
Fax: 02 9954 8150

Received: Mar 27, 2020 2:57 PM
Due: Apr 3, 2020
Priority: 5 Day
Contact Name: Stephen Maxwell

Project Name:
Project ID: 318000780

Eurofins Analytical Services Manager : Andrew Black

Sample Detail						Lead	Moisture Set	NEPM 2013 Filtered Metals without Cr6+ (As, Be, B, Cd, Co, Cr, Cu, Hg, Pb, Ni, Mn, NEPM 2013 Metals without Cr6+ (As, Be, B, Cd, Co, Cr, Cu, Hg, Pb, Ni, Mn, Se, Zn))	
Melbourne Laboratory - NATA Site # 1254 & 14271									
Sydney Laboratory - NATA Site # 18217						X	X	X	X
Brisbane Laboratory - NATA Site # 20794									
Perth Laboratory - NATA Site # 23736									
External Laboratory									
No	Sample ID	Sample Date	Sampling Time	Matrix	LAB ID				
1	P7_TW1	Mar 25, 2020		Water	S20-Ma44414			X	X
2	P7_TW2	Mar 25, 2020		Water	S20-Ma44415			X	X
3	P7_HA01_0.0-0.05	Mar 25, 2020		Soil	S20-Ma44416	X	X		
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6	P7_HA02_0.2	Mar 25, 2020		Soil	S20-Ma44419	X	X		
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11	P7_HA05_0.0-0.05	Mar 25, 2020		Soil	S20-Ma44424	X	X		
12	P7_HA05_0.25	Mar 25, 2020		Soil	S20-Ma44425	X	X		
13	P7_TWS2	Mar 25, 2020		Sediment	S20-Ma44426	X	X		
Test Counts						11	11	2	2

Internal Quality Control Review and Glossary

General

- Laboratory QC results for Method Blanks, Duplicates, Matrix Spikes, and Laboratory Control Samples follows guidelines delineated in the National Environment Protection (Assessment of Site Contamination) Measure 1999, as amended May 2013 and are included in this QC report where applicable. Additional QC data may be available on request.
- All soil/sediment/solid results are reported on a dry basis, unless otherwise stated.
- All biota/food results are reported on a wet weight basis on the edible portion, unless otherwise stated.
- Actual LORs are matrix dependant. Quoted LORs may be raised where sample extracts are diluted due to interferences.
- Results are uncorrected for matrix spikes or surrogate recoveries except for PFAS compounds.
- SVOC analysis on waters are performed on homogenised, unfiltered samples, unless noted otherwise.
- Samples were analysed on an 'as received' basis.
- Information identified on this report with blue colour, indicates data provided by customer, that may have an impact on the results.
- This report replaces any interim results previously issued.

Holding Times

Please refer to 'Sample Preservation and Container Guide' for holding times (QS3001).

For samples received on the last day of holding time, notification of testing requirements should have been received at least 6 hours prior to sample receipt deadlines as stated on the SRA.

If the Laboratory did not receive the information in the required timeframe, and regardless of any other integrity issues, suitably qualified results may still be reported.

Holding times apply from the date of sampling, therefore compliance to these may be outside the laboratory's control.

For VOCs containing vinyl chloride, styrene and 2-chloroethyl vinyl ether the holding time is 7 days however for all other VOCs such as BTEX or C6-10 TRH then the holding time is 14 days.

****NOTE:** pH duplicates are reported as a range NOT as RPD

Units

mg/kg: milligrams per kilogram

mg/L: milligrams per litre

ug/L: micrograms per litre

ppm: Parts per million

ppb: Parts per billion

%: Percentage

org/100mL: Organisms per 100 millilitres

NTU: Nephelometric Turbidity Units

MPN/100mL: Most Probable Number of organisms per 100 millilitres

Terms

Dry	Where a moisture has been determined on a solid sample the result is expressed on a dry basis.
LOR	Limit of Reporting.
SPIKE	Addition of the analyte to the sample and reported as percentage recovery.
RPD	Relative Percent Difference between two Duplicate pieces of analysis.
LCS	Laboratory Control Sample - reported as percent recovery.
CRM	Certified Reference Material - reported as percent recovery.
Method Blank	In the case of solid samples these are performed on laboratory certified clean sands and in the case of water samples these are performed on de-ionised water.
Surr - Surrogate	The addition of a like compound to the analyte target and reported as percentage recovery.
Duplicate	A second piece of analysis from the same sample and reported in the same units as the result to show comparison.
USEPA	United States Environmental Protection Agency
APHA	American Public Health Association
TCLP	Toxicity Characteristic Leaching Procedure
COC	Chain of Custody
SRA	Sample Receipt Advice
QSM	US Department of Defense Quality Systems Manual Version 5.3
CP	Client Parent - QC was performed on samples pertaining to this report
NCP	Non-Client Parent - QC performed on samples not pertaining to this report, QC is representative of the sequence or batch that client samples were analysed within.
TEQ	Toxic Equivalency Quotient

QC - Acceptance Criteria

RPD Duplicates: Global RPD Duplicates Acceptance Criteria is 30% however the following acceptance guidelines are equally applicable:

Results <10 times the LOR : No Limit

Results between 10-20 times the LOR : RPD must lie between 0-50%

Results >20 times the LOR : RPD must lie between 0-30%

Surrogate Recoveries: Recoveries must lie between 20-130% Phenols & 50-150% PFASs

PFAS field samples that contain surrogate recoveries in excess of the QC limit designated in QSM 5.3 where no positive PFAS results have been reported have been reviewed and no data was affected.

WA DWER (n=10): PFBA, PFPeA, PFHxA, PFHpA, PFOA, PFBS, PFHxS, PFOS, 6:2 FTSA, 8:2 FTSA

QC Data General Comments

- Where a result is reported as a less than (<), higher than the nominated LOR, this is due to either matrix interference, extract dilution required due to interferences or contaminant levels within the sample, high moisture content or insufficient sample provided.
- Duplicate data shown within this report that states the word "BATCH" is a Batch Duplicate from outside of your sample batch, but within the laboratory sample batch at a 1:10 ratio. The Parent and Duplicate data shown is not data from your samples.
- Organochlorine Pesticide analysis - where reporting LCS data, Toxaphene & Chlordane are not added to the LCS.
- Organochlorine Pesticide analysis - where reporting Spike data, Toxaphene is not added to the Spike.
- Total Recoverable Hydrocarbons - where reporting Spike & LCS data, a single spike of commercial Hydrocarbon products in the range of C12-C30 is added and it's Total Recovery is reported in the C10-C14 cell of the Report.
- pH and Free Chlorine analysed in the laboratory - Analysis on this test must begin within 30 minutes of sampling. Therefore laboratory analysis is unlikely to be completed within holding time. Analysis will begin as soon as possible after sample receipt.
- Recovery Data (Spikes & Surrogates) - where chromatographic interference does not allow the determination of Recovery the term "INT" appears against that analyte.
- Polychlorinated Biphenyls are spiked only using Aroclor 1260 in Matrix Spikes and LCS.
- For Matrix Spikes and LCS results a dash " - " in the report means that the specific analyte was not added to the QC sample.
- Duplicate RPDs are calculated from raw analytical data thus it is possible to have two sets of data.

Quality Control Results

Test				Units	Result 1		Acceptance Limits	Pass Limits	Qualifying Code			
Method Blank												
Heavy Metals												
Lead				mg/kg	< 5		5	Pass				
LCS - % Recovery												
Heavy Metals												
Lead				%	101		70-130	Pass				
Test	Lab Sample ID	QA Source	Units	Result 1			Acceptance Limits	Pass Limits	Qualifying Code			
Spike - % Recovery												
Heavy Metals												
Lead				S20-Ma44417	CP	%	104	70-130	Pass			
Test	Lab Sample ID	QA Source	Units	Result 1			Acceptance Limits	Pass Limits	Qualifying Code			
Duplicate												
Heavy Metals												
Lead				S20-Ma44416	CP	mg/kg	17	20	16	30%	Pass	
Duplicate												
% Moisture				S20-Ma44416	CP	%	17	19	10	30%	Pass	
Duplicate												
Heavy Metals												
Lead				S20-Ma44425	CP	mg/kg	14	20	32	30%	Fail	Q15

Comments
Sample Integrity

Custody Seals Intact (if used)	N/A
Attempt to Chill was evident	Yes
Sample correctly preserved	Yes
Appropriate sample containers have been used	Yes
Sample containers for volatile analysis received with minimal headspace	Yes
Samples received within HoldingTime	Yes
Some samples have been subcontracted	No

Qualifier Codes/Comments

Code	Description
Q15	The RPD reported passes Eurofins Environment Testing's QC - Acceptance Criteria as defined in the Internal Quality Control Review and Glossary page of this report.

Authorised By

Andrew Black	Analytical Services Manager
Gabriele Cordero	Senior Analyst-Metal (NSW)


**Glenn Jackson
General Manager**

Final report - this Report replaces any previously issued Report

- Indicates Not Requested

* Indicates NATA accreditation does not cover the performance of this service

Measurement uncertainty of test data is available on request or please [click here](#).

Eurofins shall not be liable for loss, cost, damages or expenses incurred by the client, or any other person or company, resulting from the use of any information or interpretation given in this report. In no case shall Eurofins be liable for consequential damages including, but not limited to, lost profits, damages for failure to meet deadlines and lost production arising from this report. This document shall not be reproduced except in full and relates only to the items tested. Unless indicated otherwise, the tests were performed on the samples as received.

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 Level 3/100 Pacific Highway
 North Sydney
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Attention: Stephen Maxwell

Report 710646-W
 Project name
 Project ID 318000780
 Received Date Mar 27, 2020

Client Sample ID			P7_TW1	P7_TW2	P7_TWS2
Sample Matrix			Water	Water	Water
Eurofins Sample No.			S20-Ma44414	S20-Ma44415	S20-Ma44426
Date Sampled			Mar 25, 2020	Mar 25, 2020	Mar 25, 2020
Test/Reference	LOR	Unit			
Heavy Metals					
Arsenic	0.001	mg/L	< 0.001	< 0.001	-
Arsenic (filtered)	0.001	mg/L	< 0.001	< 0.001	-
Beryllium	0.001	mg/L	< 0.001	< 0.001	-
Beryllium (filtered)	0.001	mg/L	< 0.001	< 0.001	-
Boron	0.05	mg/L	< 0.05	< 0.05	-
Boron (filtered)	0.05	mg/L	< 0.05	< 0.05	-
Cadmium	0.0002	mg/L	< 0.0002	< 0.0002	-
Cadmium (filtered)	0.0002	mg/L	< 0.0002	< 0.0002	-
Chromium	0.001	mg/L	< 0.001	0.009	-
Chromium (filtered)	0.001	mg/L	< 0.001	0.008	-
Cobalt	0.001	mg/L	< 0.001	< 0.001	-
Cobalt (filtered)	0.001	mg/L	< 0.001	< 0.001	-
Copper	0.001	mg/L	0.023	< 0.001	-
Copper (filtered)	0.001	mg/L	0.023	< 0.001	-
Lead	0.001	mg/L	0.002	< 0.001	4.7
Lead (filtered)	0.001	mg/L	< 0.001	< 0.001	-
Manganese	0.005	mg/L	0.026	< 0.005	-
Manganese (filtered)	0.005	mg/L	0.024	< 0.005	-
Mercury	0.0001	mg/L	< 0.0001	< 0.0001	-
Mercury (filtered)	0.0001	mg/L	< 0.0001	< 0.0001	-
Nickel	0.001	mg/L	< 0.001	< 0.001	-
Nickel (filtered)	0.001	mg/L	< 0.001	< 0.001	-
Selenium	0.001	mg/L	< 0.001	< 0.001	-
Selenium (filtered)	0.001	mg/L	< 0.001	< 0.001	-
Zinc	0.005	mg/L	0.31	0.082	-
Zinc (filtered)	0.005	mg/L	0.29	0.079	-

Sample History

Where samples are submitted/analysed over several days, the last date of extraction and analysis is reported. A recent review of our LIMS has resulted in the correction or clarification of some method identifications. Due to this, some of the method reference information on reports has changed. However, no substantive change has been made to our laboratory methods, and as such there is no change in the validity of current or previous results.

If the date and time of sampling are not provided, the Laboratory will not be responsible for compromised results should testing be performed outside the recommended holding time.

Description	Testing Site	Extracted	Holding Time
NEPM 2013 Metals without Cr6+ (As, Be, B, Cd, Co, Cr, Cu, Hg, Pb, Ni, Mn, Se, Zn) - Method: LTM-MET-3040 Metals in Waters, Soils & Sediments by ICP-MS	Sydney	Apr 03, 2020	180 Days
NEPM 2013 Filtered Metals without Cr6+ (As, Be, B, Cd, Co, Cr, Cu, Hg, Pb, Ni, Mn, Se, Zn) - Method: LTM-MET-3040 Metals in Waters, Soils & Sediments by ICP-MS	Sydney	Mar 27, 2020	28 Days
Heavy Metals - Method: LTM-MET-3040 Metals in Waters, Soils & Sediments by ICP-MS	Sydney	Apr 03, 2020	180 Days

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Sydney Laboratory - NATA Site # 18217						X	X	X	X
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5	P7_HA02_0.0-0.05	Mar 25, 2020		Soil	S20-Ma44418	X	X		
6	P7_HA02_0.2	Mar 25, 2020		Soil	S20-Ma44419	X	X		
7	P7_HA03_0.0-0.05	Mar 25, 2020		Soil	S20-Ma44420	X	X		

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- This report replaces any interim results previously issued.

Holding Times

Please refer to 'Sample Preservation and Container Guide' for holding times (QS3001).

For samples received on the last day of holding time, notification of testing requirements should have been received at least 6 hours prior to sample receipt deadlines as stated on the SRA.

If the Laboratory did not receive the information in the required timeframe, and regardless of any other integrity issues, suitably qualified results may still be reported.

Holding times apply from the date of sampling, therefore compliance to these may be outside the laboratory's control.

For VOCs containing vinyl chloride, styrene and 2-chloroethyl vinyl ether the holding time is 7 days however for all other VOCs such as BTEX or C6-10 TRH then the holding time is 14 days.

****NOTE:** pH duplicates are reported as a range NOT as RPD

Units

mg/kg: milligrams per kilogram

mg/L: milligrams per litre

ug/L: micrograms per litre

ppm: Parts per million

ppb: Parts per billion

%: Percentage

org/100mL: Organisms per 100 millilitres

NTU: Nephelometric Turbidity Units

MPN/100mL: Most Probable Number of organisms per 100 millilitres

Terms

Dry	Where a moisture has been determined on a solid sample the result is expressed on a dry basis.
LOR	Limit of Reporting.
SPIKE	Addition of the analyte to the sample and reported as percentage recovery.
RPD	Relative Percent Difference between two Duplicate pieces of analysis.
LCS	Laboratory Control Sample - reported as percent recovery.
CRM	Certified Reference Material - reported as percent recovery.
Method Blank	In the case of solid samples these are performed on laboratory certified clean sands and in the case of water samples these are performed on de-ionised water.
Surr - Surrogate	The addition of a like compound to the analyte target and reported as percentage recovery.
Duplicate	A second piece of analysis from the same sample and reported in the same units as the result to show comparison.
USEPA	United States Environmental Protection Agency
APHA	American Public Health Association
TCLP	Toxicity Characteristic Leaching Procedure
COC	Chain of Custody
SRA	Sample Receipt Advice
QSM	US Department of Defense Quality Systems Manual Version 5.3
CP	Client Parent - QC was performed on samples pertaining to this report
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TEQ	Toxic Equivalency Quotient

QC - Acceptance Criteria

RPD Duplicates: Global RPD Duplicates Acceptance Criteria is 30% however the following acceptance guidelines are equally applicable:

Results <10 times the LOR : No Limit

Results between 10-20 times the LOR : RPD must lie between 0-50%

Results >20 times the LOR : RPD must lie between 0-30%

Surrogate Recoveries: Recoveries must lie between 20-130% Phenols & 50-150% PFASs

PFAS field samples that contain surrogate recoveries in excess of the QC limit designated in QSM 5.3 where no positive PFAS results have been reported have been reviewed and no data was affected.

WA DWER (n=10): PFBA, PFPeA, PFHxA, PFHpA, PFOA, PFBS, PFHxS, PFOS, 6:2 FTSA, 8:2 FTSA

QC Data General Comments

- Where a result is reported as a less than (<), higher than the nominated LOR, this is due to either matrix interference, extract dilution required due to interferences or contaminant levels within the sample, high moisture content or insufficient sample provided.
- Duplicate data shown within this report that states the word "BATCH" is a Batch Duplicate from outside of your sample batch, but within the laboratory sample batch at a 1:10 ratio. The Parent and Duplicate data shown is not data from your samples.
- Organochlorine Pesticide analysis - where reporting LCS data, Toxaphene & Chlordane are not added to the LCS.
- Organochlorine Pesticide analysis - where reporting Spike data, Toxaphene is not added to the Spike.
- Total Recoverable Hydrocarbons - where reporting Spike & LCS data, a single spike of commercial Hydrocarbon products in the range of C12-C30 is added and it's Total Recovery is reported in the C10-C14 cell of the Report.
- pH and Free Chlorine analysed in the laboratory - Analysis on this test must begin within 30 minutes of sampling. Therefore laboratory analysis is unlikely to be completed within holding time. Analysis will begin as soon as possible after sample receipt.
- Recovery Data (Spikes & Surrogates) - where chromatographic interference does not allow the determination of Recovery the term "INT" appears against that analyte.
- Polychlorinated Biphenyls are spiked only using Aroclor 1260 in Matrix Spikes and LCS.
- For Matrix Spikes and LCS results a dash " - " in the report means that the specific analyte was not added to the QC sample.
- Duplicate RPDs are calculated from raw analytical data thus it is possible to have two sets of data.

Quality Control Results

Test	Units	Result 1			Acceptance Limits	Pass Limits	Qualifying Code
Method Blank							
Heavy Metals							
Arsenic	mg/L	< 0.001			0.001	Pass	
Arsenic (filtered)	mg/L	< 0.001			0.001	Pass	
Beryllium	mg/L	< 0.001			0.001	Pass	
Beryllium (filtered)	mg/L	< 0.001			0.001	Pass	
Boron	mg/L	< 0.05			0.05	Pass	
Boron (filtered)	mg/L	< 0.05			0.05	Pass	
Cadmium	mg/L	< 0.0002			0.0002	Pass	
Cadmium (filtered)	mg/L	< 0.0002			0.0002	Pass	
Chromium	mg/L	< 0.001			0.001	Pass	
Chromium (filtered)	mg/L	< 0.001			0.001	Pass	
Cobalt	mg/L	< 0.001			0.001	Pass	
Cobalt (filtered)	mg/L	< 0.001			0.001	Pass	
Copper	mg/L	< 0.001			0.001	Pass	
Copper (filtered)	mg/L	< 0.001			0.001	Pass	
Lead	mg/L	< 0.001			0.001	Pass	
Lead (filtered)	mg/L	< 0.001			0.001	Pass	
Manganese	mg/L	< 0.005			0.005	Pass	
Manganese (filtered)	mg/L	< 0.005			0.005	Pass	
Mercury	mg/L	< 0.0001			0.0001	Pass	
Mercury (filtered)	mg/L	< 0.0001			0.0001	Pass	
Nickel	mg/L	< 0.001			0.001	Pass	
Nickel (filtered)	mg/L	< 0.001			0.001	Pass	
Selenium	mg/L	< 0.001			0.001	Pass	
Selenium (filtered)	mg/L	< 0.001			0.001	Pass	
Zinc	mg/L	< 0.005			0.005	Pass	
Zinc (filtered)	mg/L	< 0.005			0.005	Pass	
LCS - % Recovery							
Heavy Metals							
Arsenic	%	103			70-130	Pass	
Arsenic (filtered)	%	87			70-130	Pass	
Beryllium	%	101			70-130	Pass	
Beryllium (filtered)	%	85			70-130	Pass	
Boron	%	100			70-130	Pass	
Boron (filtered)	%	83			70-130	Pass	
Cadmium	%	101			70-130	Pass	
Cadmium (filtered)	%	84			70-130	Pass	
Chromium	%	99			70-130	Pass	
Chromium (filtered)	%	85			70-130	Pass	
Cobalt	%	99			70-130	Pass	
Cobalt (filtered)	%	85			70-130	Pass	
Copper	%	96			70-130	Pass	
Copper (filtered)	%	84			70-130	Pass	
Lead	%	103			70-130	Pass	
Lead (filtered)	%	86			70-130	Pass	
Manganese	%	99			70-130	Pass	
Manganese (filtered)	%	84			70-130	Pass	
Mercury	%	112			70-130	Pass	
Mercury (filtered)	%	80			70-130	Pass	
Nickel	%	98			70-130	Pass	
Nickel (filtered)	%	86			70-130	Pass	

Test		Units	Result 1			Acceptance Limits	Pass Limits	Qualifying Code
Selenium		%	103			70-130	Pass	
Selenium (filtered)		%	84			70-130	Pass	
Zinc		%	100			70-130	Pass	
Zinc (filtered)		%	85			70-130	Pass	
Test	Lab Sample ID	QA Source	Units	Result 1		Acceptance Limits	Pass Limits	Qualifying Code
Spike - % Recovery								
Heavy Metals				Result 1				
Arsenic	S20-Ma44415	CP	%	104		70-130	Pass	
Arsenic (filtered)	S20-Ma44415	CP	%	96		70-130	Pass	
Beryllium	S20-Ma44415	CP	%	103		70-130	Pass	
Beryllium (filtered)	S20-Ma44415	CP	%	93		70-130	Pass	
Boron	S20-Ma44415	CP	%	93		70-130	Pass	
Cadmium	S20-Ma44415	CP	%	99		70-130	Pass	
Cadmium (filtered)	S20-Ma44415	CP	%	102		70-130	Pass	
Chromium	S20-Ma44415	CP	%	99		70-130	Pass	
Chromium (filtered)	S20-Ma44415	CP	%	93		70-130	Pass	
Cobalt	S20-Ma44415	CP	%	101		70-130	Pass	
Cobalt (filtered)	S20-Ma44415	CP	%	97		70-130	Pass	
Copper	S20-Ma44415	CP	%	96		70-130	Pass	
Copper (filtered)	S20-Ma44415	CP	%	94		70-130	Pass	
Lead	S20-Ma44415	CP	%	104		70-130	Pass	
Lead (filtered)	S20-Ma44415	CP	%	97		70-130	Pass	
Manganese	S20-Ma44415	CP	%	100		70-130	Pass	
Manganese (filtered)	S20-Ma44415	CP	%	97		70-130	Pass	
Mercury	S20-Ma44415	CP	%	103		70-130	Pass	
Mercury (filtered)	S20-Ma44415	CP	%	95		70-130	Pass	
Nickel	S20-Ma44415	CP	%	99		70-130	Pass	
Nickel (filtered)	S20-Ma44415	CP	%	95		70-130	Pass	
Selenium	S20-Ma44415	CP	%	101		70-130	Pass	
Selenium (filtered)	S20-Ma44415	CP	%	100		70-130	Pass	
Zinc	S20-Ma44415	CP	%	101		70-130	Pass	
Zinc (filtered)	S20-Ma44415	CP	%	84		70-130	Pass	
Spike - % Recovery								
Heavy Metals				Result 1				
Cadmium	S20-Ma44426	CP	%	108		70-130	Pass	
Cobalt	S20-Ma44426	CP	%	80		70-130	Pass	
Copper	S20-Ma44426	CP	%	116		70-130	Pass	
Lead	S20-Ma44426	CP	%	80		70-130	Pass	
Mercury	S20-Ma44426	CP	%	83		70-130	Pass	
Nickel	S20-Ma44426	CP	%	91		70-130	Pass	
Zinc	S20-Ma44426	CP	%	117		70-130	Pass	
Test	Lab Sample ID	QA Source	Units	Result 1		Acceptance Limits	Pass Limits	Qualifying Code
Duplicate								
Heavy Metals				Result 1	Result 2	RPD		
Arsenic	S20-Ma44158	NCP	mg/L	< 0.001	< 0.001	<1	30%	Pass
Arsenic (filtered)	S20-Ma44142	NCP	mg/L	< 0.001	< 0.001	<1	30%	Pass
Beryllium	S20-Ma44158	NCP	mg/L	< 0.001	< 0.001	<1	30%	Pass
Beryllium (filtered)	S20-Ma44142	NCP	mg/L	< 0.001	< 0.001	<1	30%	Pass
Boron	S20-Ma44158	NCP	mg/L	< 0.05	< 0.05	<1	30%	Pass
Boron (filtered)	S20-Ma44142	NCP	mg/L	< 0.05	< 0.05	<1	30%	Pass
Cadmium	S20-Ma44158	NCP	mg/L	< 0.0002	< 0.0002	<1	30%	Pass
Cadmium (filtered)	S20-Ma44142	NCP	mg/L	0.0005	0.0003	30	30%	Pass
Chromium	S20-Ma44158	NCP	mg/L	< 0.001	< 0.001	<1	30%	Pass

Test	Lab Sample ID	QA Source	Units	Result 1			Acceptance Limits	Pass Limits	Qualifying Code
Duplicate									
Heavy Metals				Result 1	Result 2	RPD			
Chromium (filtered)	S20-Ma44142	NCP	mg/L	0.002	0.002	2.0	30%	Pass	
Cobalt	S20-Ma44158	NCP	mg/L	< 0.001	< 0.001	<1	30%	Pass	
Cobalt (filtered)	S20-Ma44142	NCP	mg/L	< 0.001	< 0.001	<1	30%	Pass	
Copper	S20-Ma44158	NCP	mg/L	0.002	0.002	6.0	30%	Pass	
Copper (filtered)	S20-Ma44142	NCP	mg/L	0.001	< 0.001	28	30%	Pass	
Lead	S20-Ma44158	NCP	mg/L	< 0.001	< 0.001	<1	30%	Pass	
Lead (filtered)	S20-Ma44142	NCP	mg/L	< 0.001	< 0.001	<1	30%	Pass	
Manganese	S20-Ma44158	NCP	mg/L	0.066	0.066	<1	30%	Pass	
Manganese (filtered)	S20-Ma44142	NCP	mg/L	< 0.005	< 0.005	<1	30%	Pass	
Mercury	S20-Ma44158	NCP	mg/L	< 0.0001	< 0.0001	<1	30%	Pass	
Mercury (filtered)	S20-Ma44142	NCP	mg/L	< 0.0001	< 0.0001	<1	30%	Pass	
Nickel	S20-Ma44158	NCP	mg/L	0.003	0.004	9.0	30%	Pass	
Nickel (filtered)	S20-Ma44142	NCP	mg/L	< 0.001	< 0.001	<1	30%	Pass	
Selenium	S20-Ma44158	NCP	mg/L	< 0.001	< 0.001	<1	30%	Pass	
Selenium (filtered)	S20-Ma44142	NCP	mg/L	< 0.001	< 0.001	<1	30%	Pass	
Zinc	S20-Ma44158	NCP	mg/L	0.018	0.011	53	30%	Fail	Q15
Zinc (filtered)	S20-Ma44142	NCP	mg/L	1.6	1.6	2.0	30%	Pass	

Comments
Sample Integrity

Custody Seals Intact (if used)	N/A
Attempt to Chill was evident	Yes
Sample correctly preserved	Yes
Appropriate sample containers have been used	Yes
Sample containers for volatile analysis received with minimal headspace	Yes
Samples received within HoldingTime	Yes
Some samples have been subcontracted	No

Qualifier Codes/Comments

Code	Description
Q15	The RPD reported passes Eurofins Environment Testing's QC - Acceptance Criteria as defined in the Internal Quality Control Review and Glossary page of this report.

Authorised By

Andrew Black	Analytical Services Manager
Gabriele Cordero	Senior Analyst-Metal (NSW)


**Glenn Jackson
General Manager**

Final report - this Report replaces any previously issued Report

- Indicates Not Requested

* Indicates NATA accreditation does not cover the performance of this service

Measurement uncertainty of test data is available on request or please [click here](#).

Eurofins shall not be liable for loss, cost, damages or expenses incurred by the client, or any other person or company, resulting from the use of any information or interpretation given in this report. In no case shall Eurofins be liable for consequential damages including, but not limited to, lost profits, damages for failure to meet deadlines and lost production arising from this report. This document shall not be reproduced except in full and relates only to the items tested. Unless indicated otherwise, the tests were performed on the samples as received.

Ramboll Environ Australia Pty Ltd
 Level 3/100 Pacific Highway
 North Sydney
 NSW 2060



NATA Accredited
Accreditation Number 1261
Site Number 18217

Accredited for compliance with ISO/IEC 17025 – Testing
 The results of the tests, calibrations and/or
 measurements included in this document are traceable
 to Australian/national standards.

Attention: **Stephen Maxwell**

Report **713878-S-V6**

Project name

Project ID **318000780**

Received Date **Apr 15, 2020**

Client Sample ID			P7_TWS2
Sample Matrix			Solid
Eurofins Sample No.			S20-Ap21435
Date Sampled			Mar 25, 2020
Test/Reference	LOR	Unit	
Heavy Metals			
Lead	1	mg/kg	100

Sample History

Where samples are submitted/analysed over several days, the last date of extraction and analysis is reported.

A recent review of our LIMS has resulted in the correction or clarification of some method identifications. Due to this, some of the method reference information on reports has changed. However, no substantive change has been made to our laboratory methods, and as such there is no change in the validity of current or previous results.

If the date and time of sampling are not provided, the Laboratory will not be responsible for compromised results should testing be performed outside the recommended holding time.

Description

Heavy Metals

Testing Site

Sydney

Extracted

Apr 16, 2020

Holding Time

180 Days

- Method: LTM-MET-3040 Metals in Waters, Soils & Sediments by ICP-MS

Australia

Melbourne
6 Monterey Road
Dandenong South VIC 3175
Phone : +61 3 8564 5000
NATA # 1261
Site # 1254 & 14271

Sydney
Unit F3, Building F
16 Mars Road
Lane Cove West NSW 2066
Phone : +61 2 9900 8400
NATA # 1261 Site # 18217

Brisbane
1/21 Smallwood Place
Murarrie QLD 4172
Phone : +61 7 3902 4600
NATA # 1261 Site # 20794

Perth
2/91 Leach Highway
Kewdale WA 6105
Phone : +61 8 9251 9600
NATA # 1261
Site # 23736

New Zealand

Auckland
35 O'Rorke Road
Penrose, Auckland 1061
Phone : +64 9 526 45 51
IANZ # 1327

Christchurch
43 Detroit Drive
Rolleston, Christchurch 7675
Phone : 0800 856 450
IANZ # 1290

Company Name: Ramboll Australia Pty Ltd
Address: Level 3/100 Pacific Highway
North Sydney
NSW 2060

Order No.:
Report #: 713878
Phone: 02 9954 8118
Fax: 02 9954 8150

Received: Apr 15, 2020 1:37 PM
Due: Apr 20, 2020
Priority: 3 Day
Contact Name: Stephen Maxwell

Project Name:
Project ID: 318000780

Eurofins Analytical Services Manager : Andrew Black

Sample Detail						Lead	Moisture Set
Melbourne Laboratory - NATA Site # 1254 & 14271							
Sydney Laboratory - NATA Site # 18217						X	X
Brisbane Laboratory - NATA Site # 20794							
Perth Laboratory - NATA Site # 23736							
External Laboratory							
No	Sample ID	Sample Date	Sampling Time	Matrix	LAB ID		
1	P3_TWS2	Mar 26, 2020		Solid	S20-Ap21433	X	X
2	P4_TWS2	Mar 24, 2020		Solid	S20-Ap21434	X	X
3	P7_TWS2	Mar 25, 2020		Solid	S20-Ap21435	X	X
4	SMCTS1	Mar 24, 2020		Solid	S20-Ap21436	X	X
5	P11_TWS1	Mar 26, 2020		Solid	S20-Ap21437	X	X
6	P11_TWS2	Mar 26, 2020		Solid	S20-Ap21438	X	X
7	P12_TWS1	Mar 26, 2020		Solid	S20-Ap21439	X	X
8	P12_TWS2	Mar 26, 2020		Solid	S20-Ap21440	X	X
9	P14_TWS3	Mar 26, 2020		Solid	S20-Ap21441	X	X
10	P18_TWS1	Mar 31, 2020		Solid	S20-Ap21442	X	X

Australia

Melbourne
 6 Monterey Road
 Dandenong South VIC 3175
 Phone : +61 3 8564 5000
 NATA # 1261
 Site # 1254 & 14271

Sydney
 Unit F3, Building F
 16 Mars Road
 Lane Cove West NSW 2066
 Phone : +61 2 9900 8400
 NATA # 1261 Site # 18217

Brisbane
 1/21 Smallwood Place
 Murarrie QLD 4172
 Phone : +61 7 3902 4600
 NATA # 1261 Site # 20794

Perth
 2/91 Leach Highway
 Kewdale WA 6105
 Phone : +61 8 9251 9600
 NATA # 1261
 Site # 23736

New Zealand

Auckland
 35 O'Rorke Road
 Penrose, Auckland 1061
 Phone : +64 9 526 45 51
 IANZ # 1327

Christchurch
 43 Detroit Drive
 Rolleston, Christchurch 7675
 Phone : 0800 856 450
 IANZ # 1290

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Address: Level 3/100 Pacific Highway
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Brisbane Laboratory - NATA Site # 20794							
Perth Laboratory - NATA Site # 23736							
11	P18_TWS2	Mar 31, 2020		Solid	S20-Ap21443	X	X
12	P21_TWS1	Mar 31, 2020		Solid	S20-Ap21444	X	X
13	P21_TWS2	Mar 31, 2020		Solid	S20-Ap21445	X	X
14	P23_TWS1	Mar 31, 2020		Solid	S20-Ap21446	X	X
Test Counts						14	14

Internal Quality Control Review and Glossary
General

- Laboratory QC results for Method Blanks, Duplicates, Matrix Spikes, and Laboratory Control Samples follows guidelines delineated in the National Environment Protection (Assessment of Site Contamination) Measure 1999, as amended May 2013 and are included in this QC report where applicable. Additional QC data may be available on request.
- All soil/sediment/solid results are reported on a dry basis, unless otherwise stated.
- All biota/food results are reported on a wet weight basis on the edible portion, unless otherwise stated.
- Actual LORs are matrix dependant. Quoted LORs may be raised where sample extracts are diluted due to interferences.
- Results are uncorrected for matrix spikes or surrogate recoveries except for PFAS compounds.
- SVOC analysis on waters are performed on homogenised, unfiltered samples, unless noted otherwise.
- Samples were analysed on an 'as received' basis.
- Information identified on this report with blue colour, indicates data provided by customer, that may have an impact on the results.
- This report replaces any interim results previously issued.

Holding Times

Please refer to 'Sample Preservation and Container Guide' for holding times (QS3001).

For samples received on the last day of holding time, notification of testing requirements should have been received at least 6 hours prior to sample receipt deadlines as stated on the SRA.

If the Laboratory did not receive the information in the required timeframe, and regardless of any other integrity issues, suitably qualified results may still be reported.

Holding times apply from the date of sampling, therefore compliance to these may be outside the laboratory's control.

For VOCs containing vinyl chloride, styrene and 2-chloroethyl vinyl ether the holding time is 7 days however for all other VOCs such as BTEX or C6-10 TRH then the holding time is 14 days.

****NOTE:** pH duplicates are reported as a range NOT as RPD

Units

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Surrogate Recoveries: Recoveries must lie between 20-130% Phenols & 50-150% PFASs

PFAS field samples that contain surrogate recoveries in excess of the QC limit designated in QSM 5.3 where no positive PFAS results have been reported have been reviewed and no data was affected.

WA DWER (n=10): PFBA, PFPeA, PFHxA, PFHpA, PFOA, PFBS, PFHxS, PFOS, 6:2 FTSA, 8:2 FTSA

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- Where a result is reported as a less than (<), higher than the nominated LOR, this is due to either matrix interference, extract dilution required due to interferences or contaminant levels within the sample, high moisture content or insufficient sample provided.
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- Organochlorine Pesticide analysis - where reporting LCS data, Toxaphene & Chlordane are not added to the LCS.
- Organochlorine Pesticide analysis - where reporting Spike data, Toxaphene is not added to the Spike.
- Total Recoverable Hydrocarbons - where reporting Spike & LCS data, a single spike of commercial Hydrocarbon products in the range of C12-C30 is added and it's Total Recovery is reported in the C10-C14 cell of the Report.
- pH and Free Chlorine analysed in the laboratory - Analysis on this test must begin within 30 minutes of sampling. Therefore laboratory analysis is unlikely to be completed within holding time. Analysis will begin as soon as possible after sample receipt.
- Recovery Data (Spikes & Surrogates) - where chromatographic interference does not allow the determination of Recovery the term "INT" appears against that analyte.
- Polychlorinated Biphenyls are spiked only using Aroclor 1260 in Matrix Spikes and LCS.
- For Matrix Spikes and LCS results a dash " - " in the report means that the specific analyte was not added to the QC sample.
- Duplicate RPDs are calculated from raw analytical data thus it is possible to have two sets of data.

Quality Control Results

Test				Units	Result 1		Acceptance Limits	Pass Limits	Qualifying Code		
Method Blank											
Heavy Metals											
Lead				mg/kg	< 1		1	Pass			
LCS - % Recovery											
Heavy Metals											
Lead				%	96		70-130	Pass			
Test	Lab Sample ID	QA Source	Units	Result 1			Acceptance Limits	Pass Limits	Qualifying Code		
Spike - % Recovery											
Heavy Metals					Result 1						
Lead				B20-Ap16161	NCP	%	89	70-130	Pass		
Spike - % Recovery											
Heavy Metals					Result 1						
Lead				B20-Ap16161	NCP	%	89	70-130	Pass		
Spike - % Recovery											
Heavy Metals					Result 1						
Lead				B20-Ap16161	NCP	%	89	70-130	Pass		
Spike - % Recovery											
Heavy Metals					Result 1						
Lead				S20-Ap21444	CP	%	87	70-130	Pass		
Test	Lab Sample ID	QA Source	Units	Result 1			Acceptance Limits	Pass Limits	Qualifying Code		
Duplicate											
Heavy Metals					Result 1	Result 2	RPD				
Lead				S20-Ap17051	NCP	mg/kg	29	35	19	30%	Pass
Duplicate											
Heavy Metals					Result 1	Result 2	RPD				
Lead				S20-Ap17051	NCP	mg/kg	29	**	19	30%	Pass
Duplicate											
Heavy Metals					Result 1	Result 2	RPD				
Lead				S20-Ap17051	NCP	mg/kg	29	**	19	30%	Pass
Duplicate											
Heavy Metals					Result 1	Result 2	RPD				
Lead				S20-Ap21444	CP	mg/kg	70	69	2.0	30%	Pass

Comments

New version to split samples.

Sample Integrity

Custody Seals Intact (if used)	N/A
Attempt to Chill was evident	N/A
Sample correctly preserved	Yes
Appropriate sample containers have been used	Yes
Sample containers for volatile analysis received with minimal headspace	Yes
Samples received within HoldingTime	Yes
Some samples have been subcontracted	No

Authorised By

Andrew Black Analytical Services Manager
Gabriele Cordero Senior Analyst-Metal (NSW)



Glenn Jackson
General Manager

Final report - this Report replaces any previously issued Report

- Indicates Not Requested

* Indicates NATA accreditation does not cover the performance of this service

Measurement uncertainty of test data is available on request or please [click here](#).

Eurofins shall not be liable for loss, cost, damages or expenses incurred by the client, or any other person or company, resulting from the use of any information or interpretation given in this report. In no case shall Eurofins be liable for consequential damages including, but not limited to, lost profits, damages for failure to meet deadlines and lost production arising from this report. This document shall not be reproduced except in full and relates only to the items tested. Unless indicated otherwise, the tests were performed on the samples as received.

#AU04_Enviro_Sample_NSW

Subject: FW: 1 and 2 day TAT ADDITIONALS: FW: 318000780 - extra analyses

From: Stephen Maxwell [<mailto:SMAXWELL@ramboll.com>]

Sent: Wednesday, 15 April 2020 12:58 PM

To: Andrew Black

Cc: Joshua Blackwell

Subject: 318000780 - extra analyses

EXTERNAL EMAIL*

Hi Andrew

Thanks for the work you and the Eurofins team are doing on 318000780 – the scale and schedule for these works are challenging but has real value for stakeholders and is very much appreciated.

I'm writing to request some additional analyses on two fronts (both on fastest available TAT).

The first is toward demonstrating the accuracy of in-field XRF testing that we have been completing. We have completed lab analyses for approximately 10% of the samples where XRF testing was undertaken and generally see good correlation. Previously though where high lead concentrations were observed we observed some discrepancies drove decrease in sample masses and increase in digestion times. See email attached for further info. We are keen to explore this further with samples across the range of lead concentrations we have observed in XRF testing. Can Eurofins complete additional testing per that described in the attached email for the following samples from Eurofins ref: 710537?

Sample
MW2_1.0
XMW5_0.05
XMW5_0.5
XMW5_1.0
XMW5_1.5
XMW5_2.5
MW6_0.05
MW6_0.5
MW6_1.0
MW6_1.5
MW6_2.5
XMW7_0.05
XMW7_0.5
XMW7_1.0
XMW7_1.5
XMW7_2.5
XMW7_3.5
XMW7_4.5
WINCH N
WINCH S*

The second relates to our assessment of sediment laden water from rainwater tanks. We have collected samples of sediment laden water, homogenised (shaken them up) at the lab, analysed and reported lead in mg/L. There is no generic criteria for assessing tank sediment though and this leaves options to compare against soil criteria or water criteria. We are currently debating which way to go and would like to have the data for sediment concentrations to support our consideration. To help with this can you dry out the following samples and analyse trace level lead (mg/kg)?

Eurofins Ref	Sample ID
711781	P3_TWS2
710562	P2_TWS1
710646	P7_TWS2
710628	SMCTS1
710611	P11_TWS1
710611	P11_TWS2
710631	P12_TWS1
710631	P12_TWS2
710616	P14_TWS3
711570	P18_TWS1
711570	P18_TWS2
711580	P21_TWS1
711580	P21_TWS2
711589	P23_TWS1

For this one we can receive one consolidated report at the outset though may come back to you requesting amendment of each of the original reports.

Please give me a call to discuss any of the above.

Kind regards
Stephen Maxwell

Lead Consultant
3182675 - Hunter

D +61 478658194
M +61 478658194
smaxwell@ramboll.com

Connect with us 

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ACN 095 437 442
ABN 49 095 437 442

Click [here](#) to report this email as spam.

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Melbourne

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Site # 1254 & 14271

Sydney

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NATA # 1261 Site # 18217

Brisbane

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Phone : +61 7 3902 4600
NATA # 1261 Site # 20794

Perth

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Kewdale WA 6105
Phone : +61 8 9251 9600
NATA # 1261 Site # 23736

Sample Receipt Advice

Company name: **Ramboll Australia Pty Ltd**

Contact name: **Stephen Maxwell**

Project ID: **318000780**

COC number: **Not provided**

Turn around time: **2 Day**

Date/Time received: **Apr 15, 2020 1:37 PM**

Eurofins reference: **713878**

Sample information

- A detailed list of analytes logged into our LIMS, is included in the attached summary table.
- All samples have been received as described on the above COC.
- COC has been completed correctly.
- N/A Attempt to chill was evident.
- Appropriately preserved sample containers have been used.
- All samples were received in good condition.
- Samples have been provided with adequate time to commence analysis in accordance with the relevant holding times.
- Appropriate sample containers have been used.
- Split sample sent to requested external lab.
- Some samples have been subcontracted.
- N/A Custody Seals intact (if used).

Contact notes

If you have any questions with respect to these samples please contact:

Andrew Black on Phone : (+61) 2 9900 8490 or by e.mail: AndrewBlack@eurofins.com

Results will be delivered electronically via e.mail to Stephen Maxwell - smaxwell@ramboll.com.

Note: A copy of these results will also be delivered to the general Ramboll Australia Pty Ltd email address.

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 IANZ # 1290

Company Name: Ramboll Australia Pty Ltd
Address: Level 3/100 Pacific Highway
 North Sydney
 NSW 2060

Order No.:
Report #: 713878
Phone: 02 9954 8118
Fax: 02 9954 8150

Received: Apr 15, 2020 1:37 PM
Due: Apr 17, 2020
Priority: 2 Day
Contact Name: Stephen Maxwell

Project Name:
Project ID: 318000780

Eurofins Analytical Services Manager : Andrew Black

Sample Detail						Lead	Moisture Set
Melbourne Laboratory - NATA Site # 1254 & 14271							
Sydney Laboratory - NATA Site # 18217						X	X
Brisbane Laboratory - NATA Site # 20794							
Perth Laboratory - NATA Site # 23736							
External Laboratory							
No	Sample ID	Sample Date	Sampling Time	Matrix	LAB ID		
1	P3_TWS2	Mar 26, 2020		Solid	S20-Ap21433	X	X
2	P2_TWS1	Mar 24, 2020		Solid	S20-Ap21434	X	X
3	P7_TWS2	Mar 25, 2020		Solid	S20-Ap21435	X	X
4	SMCTS1	Mar 24, 2020		Solid	S20-Ap21436	X	X
5	P11_TWS1	Mar 26, 2020		Solid	S20-Ap21437	X	X
6	P11_TWS2	Mar 26, 2020		Solid	S20-Ap21438	X	X
7	P12_TWS1	Mar 26, 2020		Solid	S20-Ap21439	X	X
8	P12_TWS2	Mar 26, 2020		Solid	S20-Ap21440	X	X
9	P14_TWS3	Mar 26, 2020		Solid	S20-Ap21441	X	X
10	P18_TWS1	Mar 31, 2020		Solid	S20-Ap21442	X	X

Australia

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ABN – 50 005 085 521

web : www.eurofins.com.au

e.mail : EnviroSales@eurofins.com

Company Name: Ramboll Australia Pty Ltd
Address: Level 3/100 Pacific Highway
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 NSW 2060

Project Name:
Project ID: 318000780

Order No.:
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Phone: 02 9954 8118
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Received: Apr 15, 2020 1:37 PM
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Contact Name: Stephen Maxwell

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Sample Detail						Lead	Moisture Set
Melbourne Laboratory - NATA Site # 1254 & 14271							
Sydney Laboratory - NATA Site # 18217						X	X
Brisbane Laboratory - NATA Site # 20794							
Perth Laboratory - NATA Site # 23736							
11	P18_TWS2	Mar 31, 2020		Solid	S20-Ap21443	X	X
12	P21_TWS1	Mar 31, 2020		Solid	S20-Ap21444	X	X
13	P21_TWS2	Mar 31, 2020		Solid	S20-Ap21445	X	X
14	P23_TWS1	Mar 31, 2020		Solid	S20-Ap21446	X	X
Test Counts						14	14

Ramboll Environ Australia Pty Ltd
 Level 3/100 Pacific Highway
 North Sydney
 NSW 2060



NATA Accredited
 Accreditation Number 1261
 Site Number 18217

Accredited for compliance with ISO/IEC 17025 – Testing
 The results of the tests, calibrations and/or
 measurements included in this document are traceable
 to Australian/national standards.

Attention: Stephen Maxwell

Report 713878-S
 Project name
 Project ID 318000780
 Received Date Apr 15, 2020

Client Sample ID			P3_TWS2	P2_TWS1	P7_TWS2	SMCTS1
Sample Matrix			Solid	Solid	Solid	Solid
Eurofins Sample No.			S20-Ap21433	S20-Ap21434	S20-Ap21435	S20-Ap21436
Date Sampled			Mar 26, 2020	Mar 24, 2020	Mar 25, 2020	Mar 24, 2020
Test/Reference	LOR	Unit				
Heavy Metals						
Lead	1	mg/kg	450	360	100	240

Client Sample ID			P11_TWS1	P11_TWS2	P12_TWS1	P12_TWS2
Sample Matrix			Solid	Solid	Solid	Solid
Eurofins Sample No.			S20-Ap21437	S20-Ap21438	S20-Ap21439	S20-Ap21440
Date Sampled			Mar 26, 2020	Mar 26, 2020	Mar 26, 2020	Mar 26, 2020
Test/Reference	LOR	Unit				
Heavy Metals						
Lead	1	mg/kg	590	47	68	220

Client Sample ID			P14_TWS3	P18_TWS1	P18_TWS2	P21_TWS1
Sample Matrix			Solid	Solid	Solid	Solid
Eurofins Sample No.			S20-Ap21441	S20-Ap21442	S20-Ap21443	S20-Ap21444
Date Sampled			Mar 26, 2020	Mar 31, 2020	Mar 31, 2020	Mar 31, 2020
Test/Reference	LOR	Unit				
Heavy Metals						
Lead	1	mg/kg	82	280	110	70

Client Sample ID			P21_TWS2	P23_TWS1
Sample Matrix			Solid	Solid
Eurofins Sample No.			S20-Ap21445	S20-Ap21446
Date Sampled			Mar 31, 2020	Mar 31, 2020
Test/Reference	LOR	Unit		
Heavy Metals				
Lead	1	mg/kg	32	500

Sample History

Where samples are submitted/analysed over several days, the last date of extraction and analysis is reported.

A recent review of our LIMS has resulted in the correction or clarification of some method identifications. Due to this, some of the method reference information on reports has changed. However, no substantive change has been made to our laboratory methods, and as such there is no change in the validity of current or previous results.

If the date and time of sampling are not provided, the Laboratory will not be responsible for compromised results should testing be performed outside the recommended holding time.

Description

Heavy Metals

Testing Site

Sydney

Extracted

Apr 16, 2020

Holding Time

180 Days

- Method: LTM-MET-3040 Metals in Waters, Soils & Sediments by ICP-MS

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Company Name: Ramboll Australia Pty Ltd
Address: Level 3/100 Pacific Highway
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NSW 2060

Order No.:
Report #: 713878
Phone: 02 9954 8118
Fax: 02 9954 8150

Received: Apr 15, 2020 1:37 PM
Due: Apr 17, 2020
Priority: 2 Day
Contact Name: Stephen Maxwell

Project Name:
Project ID: 318000780

Eurofins Analytical Services Manager : Andrew Black

Sample Detail						Lead	Moisture Set
Melbourne Laboratory - NATA Site # 1254 & 14271							
Sydney Laboratory - NATA Site # 18217						X	X
Brisbane Laboratory - NATA Site # 20794							
Perth Laboratory - NATA Site # 23736							
External Laboratory							
No	Sample ID	Sample Date	Sampling Time	Matrix	LAB ID		
1	P3_TWS2	Mar 26, 2020		Solid	S20-Ap21433	X	X
2	P2_TWS1	Mar 24, 2020		Solid	S20-Ap21434	X	X
3	P7_TWS2	Mar 25, 2020		Solid	S20-Ap21435	X	X
4	SMCTS1	Mar 24, 2020		Solid	S20-Ap21436	X	X
5	P11_TWS1	Mar 26, 2020		Solid	S20-Ap21437	X	X
6	P11_TWS2	Mar 26, 2020		Solid	S20-Ap21438	X	X
7	P12_TWS1	Mar 26, 2020		Solid	S20-Ap21439	X	X
8	P12_TWS2	Mar 26, 2020		Solid	S20-Ap21440	X	X
9	P14_TWS3	Mar 26, 2020		Solid	S20-Ap21441	X	X
10	P18_TWS1	Mar 31, 2020		Solid	S20-Ap21442	X	X

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Company Name: Ramboll Australia Pty Ltd
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Project Name:
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Order No.:
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Contact Name: Stephen Maxwell

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Sample Detail						Lead	Moisture Set
Melbourne Laboratory - NATA Site # 1254 & 14271							
Sydney Laboratory - NATA Site # 18217						X	X
Brisbane Laboratory - NATA Site # 20794							
Perth Laboratory - NATA Site # 23736							
11	P18_TWS2	Mar 31, 2020		Solid	S20-Ap21443	X	X
12	P21_TWS1	Mar 31, 2020		Solid	S20-Ap21444	X	X
13	P21_TWS2	Mar 31, 2020		Solid	S20-Ap21445	X	X
14	P23_TWS1	Mar 31, 2020		Solid	S20-Ap21446	X	X
Test Counts						14	14

Internal Quality Control Review and Glossary

General

- Laboratory QC results for Method Blanks, Duplicates, Matrix Spikes, and Laboratory Control Samples follows guidelines delineated in the National Environment Protection (Assessment of Site Contamination) Measure 1999, as amended May 2013 and are included in this QC report where applicable. Additional QC data may be available on request.
- All soil/sediment/solid results are reported on a dry basis, unless otherwise stated.
- All biota/food results are reported on a wet weight basis on the edible portion, unless otherwise stated.
- Actual LORs are matrix dependant. Quoted LORs may be raised where sample extracts are diluted due to interferences.
- Results are uncorrected for matrix spikes or surrogate recoveries except for PFAS compounds.
- SVOC analysis on waters are performed on homogenised, unfiltered samples, unless noted otherwise.
- Samples were analysed on an 'as received' basis.
- Information identified on this report with blue colour, indicates data provided by customer, that may have an impact on the results.
- This report replaces any interim results previously issued.

Holding Times

Please refer to 'Sample Preservation and Container Guide' for holding times (QS3001).

For samples received on the last day of holding time, notification of testing requirements should have been received at least 6 hours prior to sample receipt deadlines as stated on the SRA.

If the Laboratory did not receive the information in the required timeframe, and regardless of any other integrity issues, suitably qualified results may still be reported.

Holding times apply from the date of sampling, therefore compliance to these may be outside the laboratory's control.

For VOCs containing vinyl chloride, styrene and 2-chloroethyl vinyl ether the holding time is 7 days however for all other VOCs such as BTEX or C6-10 TRH then the holding time is 14 days.

****NOTE:** pH duplicates are reported as a range NOT as RPD

Units

mg/kg: milligrams per kilogram

mg/L: milligrams per litre

ug/L: micrograms per litre

ppm: Parts per million

ppb: Parts per billion

%: Percentage

org/100mL: Organisms per 100 millilitres

NTU: Nephelometric Turbidity Units

MPN/100mL: Most Probable Number of organisms per 100 millilitres

Terms

Dry	Where a moisture has been determined on a solid sample the result is expressed on a dry basis.
LOR	Limit of Reporting.
SPIKE	Addition of the analyte to the sample and reported as percentage recovery.
RPD	Relative Percent Difference between two Duplicate pieces of analysis.
LCS	Laboratory Control Sample - reported as percent recovery.
CRM	Certified Reference Material - reported as percent recovery.
Method Blank	In the case of solid samples these are performed on laboratory certified clean sands and in the case of water samples these are performed on de-ionised water.
Surr - Surrogate	The addition of a like compound to the analyte target and reported as percentage recovery.
Duplicate	A second piece of analysis from the same sample and reported in the same units as the result to show comparison.
USEPA	United States Environmental Protection Agency
APHA	American Public Health Association
TCLP	Toxicity Characteristic Leaching Procedure
COC	Chain of Custody
SRA	Sample Receipt Advice
QSM	US Department of Defense Quality Systems Manual Version 5.3
CP	Client Parent - QC was performed on samples pertaining to this report
NCP	Non-Client Parent - QC performed on samples not pertaining to this report, QC is representative of the sequence or batch that client samples were analysed within.
TEQ	Toxic Equivalency Quotient

QC - Acceptance Criteria

RPD Duplicates: Global RPD Duplicates Acceptance Criteria is 30% however the following acceptance guidelines are equally applicable:

Results <10 times the LOR : No Limit

Results between 10-20 times the LOR : RPD must lie between 0-50%

Results >20 times the LOR : RPD must lie between 0-30%

Surrogate Recoveries: Recoveries must lie between 20-130% Phenols & 50-150% PFASs

PFAS field samples that contain surrogate recoveries in excess of the QC limit designated in QSM 5.3 where no positive PFAS results have been reported have been reviewed and no data was affected.

WA DWER (n=10): PFBA, PFPeA, PFHxA, PFHpA, PFOA, PFBS, PFHxS, PFOS, 6:2 FTSA, 8:2 FTSA

QC Data General Comments

- Where a result is reported as a less than (<), higher than the nominated LOR, this is due to either matrix interference, extract dilution required due to interferences or contaminant levels within the sample, high moisture content or insufficient sample provided.
- Duplicate data shown within this report that states the word "BATCH" is a Batch Duplicate from outside of your sample batch, but within the laboratory sample batch at a 1:10 ratio. The Parent and Duplicate data shown is not data from your samples.
- Organochlorine Pesticide analysis - where reporting LCS data, Toxaphene & Chlordane are not added to the LCS.
- Organochlorine Pesticide analysis - where reporting Spike data, Toxaphene is not added to the Spike.
- Total Recoverable Hydrocarbons - where reporting Spike & LCS data, a single spike of commercial Hydrocarbon products in the range of C12-C30 is added and it's Total Recovery is reported in the C10-C14 cell of the Report.
- pH and Free Chlorine analysed in the laboratory - Analysis on this test must begin within 30 minutes of sampling. Therefore laboratory analysis is unlikely to be completed within holding time. Analysis will begin as soon as possible after sample receipt.
- Recovery Data (Spikes & Surrogates) - where chromatographic interference does not allow the determination of Recovery the term "INT" appears against that analyte.
- Polychlorinated Biphenyls are spiked only using Aroclor 1260 in Matrix Spikes and LCS.
- For Matrix Spikes and LCS results a dash " - " in the report means that the specific analyte was not added to the QC sample.
- Duplicate RPDs are calculated from raw analytical data thus it is possible to have two sets of data.

Quality Control Results

Test				Units	Result 1		Acceptance Limits	Pass Limits	Qualifying Code		
Method Blank											
Heavy Metals											
Lead				mg/kg	< 1		1	Pass			
LCS - % Recovery											
Heavy Metals											
Lead				%	96		70-130	Pass			
Test	Lab Sample ID	QA Source	Units	Result 1			Acceptance Limits	Pass Limits	Qualifying Code		
Spike - % Recovery											
Heavy Metals											
Lead				S20-Ap21444	CP	%	87	70-130	Pass		
Lead				S20-Ap21444	CP	mg/kg	70	69	2.0	30%	Pass
Duplicate											
Heavy Metals											
Lead				S20-Ap21444	CP	mg/kg	70	69	2.0	30%	Pass

Comments**Sample Integrity**

Custody Seals Intact (if used)	N/A
Attempt to Chill was evident	N/A
Sample correctly preserved	Yes
Appropriate sample containers have been used	Yes
Sample containers for volatile analysis received with minimal headspace	Yes
Samples received within HoldingTime	Yes
Some samples have been subcontracted	No

Authorised By

Andrew Black Analytical Services Manager
Gabriele Cordero Senior Analyst-Metal (NSW)

**Glenn Jackson
General Manager**

Final report - this Report replaces any previously issued Report

- Indicates Not Requested

* Indicates NATA accreditation does not cover the performance of this service

Measurement uncertainty of test data is available on request or please [click here](#).

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CHAIN OF CUSTODY RECORD

ABN 50 905 066 521

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Melbourne Laboratory
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Company: Ramboll Project No: 318000780 Project Manager: Stephen Maxwell
Address: 50 Glebe Road the Junction Project Name: P7
Contact Name: Stephen Maxwell
Phone No: 0478 658 194

Quote ID No: 180813RAMNL_1
Analyses: (Note: Where metals are requested, please specify "Total" or "Filtered") SUITE code must be used to attract SUITE pricing.
Total Lead (mg/kg)
Total Sample Mass
Total Lead (µg/L)

Special Directions: Handed over by: Jordyn Kirsch
Email for Invoice: smaxwell@ramboll.com
Email for Results: smaxwell@ramboll.com, jblackwell@ramboll.com

Purchase Order: Containers: 1L Plastic, 250mL Plastic, 125mL Plastic, 200mL Amber Glass, 40mL VOA vial, 500mL PFAS Bottle, Jar (Glass or HDPE), Other (Asbestos AS4364, WA Guidelines)
Turnaround Time (TAT) Requirements (Default will be 5 days if not included):
 Overnight (9am)*
 1 Day*
 2 Day*
 3 Day*
 5 Day*
 Other ()
*Surcharges apply

Sample Comments / Dangerous Goods Hazard Warning

No	Client Sample ID	Sampled Date/Time (dd/mm/yy hh:mm)	Matrix (Solid (S) Water (W))	Method of Shipment	Counter (#)	Hand Delivered	Postal	Name	Signature	Date	Time	Report No
1	DVAC_LR(P7)	29/04/20	S			<input checked="" type="checkbox"/>	<input type="checkbox"/>					
2	DVAC_KB(P7)	29/04/20	S			<input checked="" type="checkbox"/>	<input type="checkbox"/>					
3	DSWAB_BE(P7)	29/04/20	S			<input type="checkbox"/>	<input checked="" type="checkbox"/>					
4	DSWAB_FE(P7)	29/04/20	S			<input type="checkbox"/>	<input checked="" type="checkbox"/>					
5	DGRAB_MH(P7)	29/04/20	S			<input type="checkbox"/>	<input checked="" type="checkbox"/>					
6												
7												
8												
9												
10												
Total Counts					2	2	3					

Method of Shipment: Courier (#) Hand Delivered
Eurofins Ingt: Received By: [Signature] Signature: [Signature] Date: 10/05/20 Time: 11:11
Laboratory Use Only: Received By: [Signature] Signature: [Signature] Date: 11/05/20 Time: 11:11 Report No: 716962

Submission of samples to the laboratory will be deemed as acceptance of Eurofins Ingt Standard Terms and Conditions unless agreed otherwise. A copy of Eurofins Ingt Standard Terms and Conditions is available on request.
Eurofins Australia Pty Ltd trading as Eurofins Ingt

Melbourne

6 Monterey Road
Dandenong South Vic 3175
Phone : +61 3 8564 5000
NATA # 1261
Site # 1254 & 14271

Sydney

Unit F3, Building F
16 Mars Road
Lane Cove West NSW 2066
Phone : +61 2 9900 8400
NATA # 1261 Site # 18217

Brisbane

1/21 Smallwood Place
Murarrie QLD 4172
Phone : +61 7 3902 4600
NATA # 1261 Site # 20794

Perth

2/91 Leach Highway
Kewdale WA 6105
Phone : +61 8 9251 9600
NATA # 1261 Site # 23736

Sample Receipt Advice

Company name: **Ramboll Australia Pty Ltd**
Contact name: Stephen Maxwell
Project name: P7
Project ID: 31800780
COC number: Not provided
Turn around time: 5 Day
Date/Time received: May 1, 2020 12:00 PM
Eurofins reference: **716962**

Sample information

- A detailed list of analytes logged into our LIMS, is included in the attached summary table.
- All samples have been received as described on the above COC.
- COC has been completed correctly.
- N/A Attempt to chill was evident.
- Appropriately preserved sample containers have been used.
- All samples were received in good condition.
- Samples have been provided with adequate time to commence analysis in accordance with the relevant holding times.
- Appropriate sample containers have been used.
- Split sample sent to requested external lab.
- Some samples have been subcontracted.
- N/A Custody Seals intact (if used).

Contact notes

If you have any questions with respect to these samples please contact:

Andrew Black on Phone : (+61) 2 9900 8490 or by e.mail: AndrewBlack@eurofins.com

Results will be delivered electronically via e.mail to Stephen Maxwell - smaxwell@ramboll.com.

Note: A copy of these results will also be delivered to the general Ramboll Australia Pty Ltd email address.

Australia

Melbourne
6 Monterey Road
Dandenong South VIC 3175
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Site # 1254 & 14271

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NATA # 1261
Site # 23736

New Zealand

Auckland
35 O'Rorke Road
Penrose, Auckland 1061
Phone : +64 9 526 45 51
IANZ # 1327

Christchurch
43 Detroit Drive
Rolleston, Christchurch 7675
Phone : 0800 856 450
IANZ # 1290

Company Name: Ramboll Australia Pty Ltd
Address: Level 3/100 Pacific Highway
North Sydney
NSW 2060

Project Name: P7
Project ID: 31800780

Order No.:
Report #: 716962
Phone: 02 9954 8118
Fax: 02 9954 8150

Received: May 1, 2020 12:00 PM
Due: May 8, 2020
Priority: 5 Day
Contact Name: Stephen Maxwell

Eurofins Analytical Services Manager : Andrew Black

Sample Detail						Lead	Mass of sample*
Melbourne Laboratory - NATA Site # 1254 & 14271							
Sydney Laboratory - NATA Site # 18217						X	X
Brisbane Laboratory - NATA Site # 20794							
Perth Laboratory - NATA Site # 23736							
External Laboratory							
No	Sample ID	Sample Date	Sampling Time	Matrix	LAB ID		
1	DVAC_LR(P7)	Apr 29, 2020		Dust	S20-My01117	X	X
2	DVAC_KB(P7)	Apr 29, 2020		Dust	S20-My01118	X	X
3	DSWAB_BE(P7)	Apr 29, 2020		Wipes	S20-My01119	X	
4	DSWAB_FE(P7)	Apr 29, 2020		Wipes	S20-My01120	X	
5	DSWAB_MH(P7)	Apr 29, 2020		Dust	S20-My01121	X	
Test Counts						5	2

Ramboll Environ Australia Pty Ltd
 Level 3/100 Pacific Highway
 North Sydney
 NSW 2060



NATA Accredited
Accreditation Number 1261
Site Number 18217

Accredited for compliance with ISO/IEC 17025 – Testing
 The results of the tests, calibrations and/or
 measurements included in this document are traceable
 to Australian/national standards.

Attention: **Stephen Maxwell**

Report **716962-A**
 Project name **P7**
 Project ID **31800780**
 Received Date **May 01, 2020**

Client Sample ID			DSWAB_BE(P7)	DSWAB_FE(P7)
Sample Matrix			Wipes	Wipes
Eurofins Sample No.			S20-My01119	S20-My01120
Date Sampled			Apr 29, 2020	Apr 29, 2020
Test/Reference	LOR	Unit		
Heavy Metals				
Lead	1	Total ug	2.6	1.2

Sample History

Where samples are submitted/analysed over several days, the last date of extraction and analysis is reported.

A recent review of our LIMS has resulted in the correction or clarification of some method identifications. Due to this, some of the method reference information on reports has changed. However, no substantive change has been made to our laboratory methods, and as such there is no change in the validity of current or previous results.

If the date and time of sampling are not provided, the Laboratory will not be responsible for compromised results should testing be performed outside the recommended holding time.

Description

Heavy Metals

Testing Site

Sydney

Extracted

May 07, 2020

Holding Time

180 Days

- Method: LTM-MET-3040 Metals in Waters, Soils & Sediments by ICP-MS

Australia

Melbourne
6 Monterey Road
Dandenong South VIC 3175
Phone : +61 3 8564 5000
NATA # 1261
Site # 1254 & 14271

Sydney
Unit F3, Building F
16 Mars Road
Lane Cove West NSW 2066
Phone : +61 2 9900 8400
NATA # 1261 Site # 18217

Brisbane
1/21 Smallwood Place
Murarrie QLD 4172
Phone : +61 7 3902 4600
NATA # 1261 Site # 20794

Perth
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Kewdale WA 6105
Phone : +61 8 9251 9600
NATA # 1261
Site # 23736

New Zealand

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Penrose, Auckland 1061
Phone : +64 9 526 45 51
IANZ # 1327

Christchurch
43 Detroit Drive
Rolleston, Christchurch 7675
Phone : 0800 856 450
IANZ # 1290

Company Name: Ramboll Australia Pty Ltd
Address: Level 3/100 Pacific Highway
North Sydney
NSW 2060

Project Name: P7
Project ID: 31800780

Order No.:
Report #: 716962
Phone: 02 9954 8118
Fax: 02 9954 8150

Received: May 1, 2020 12:00 PM
Due: May 8, 2020
Priority: 5 Day
Contact Name: Stephen Maxwell

Eurofins Analytical Services Manager : Andrew Black

Sample Detail						Lead	Mass of sample*
Melbourne Laboratory - NATA Site # 1254 & 14271							
Sydney Laboratory - NATA Site # 18217						X	X
Brisbane Laboratory - NATA Site # 20794							
Perth Laboratory - NATA Site # 23736							
External Laboratory							
No	Sample ID	Sample Date	Sampling Time	Matrix	LAB ID		
1	DVAC_LR(P7)	Apr 29, 2020		Dust	S20-My01117	X	X
2	DVAC_KB(P7)	Apr 29, 2020		Dust	S20-My01118	X	X
3	DSWAB_BE(P7)	Apr 29, 2020		Wipes	S20-My01119	X	
4	DSWAB_FE(P7)	Apr 29, 2020		Wipes	S20-My01120	X	
5	DSWAB_MH(P7)	Apr 29, 2020		Dust	S20-My01121	X	
Test Counts						5	2

Internal Quality Control Review and Glossary
General

- Laboratory QC results for Method Blanks, Duplicates, Matrix Spikes, and Laboratory Control Samples follows guidelines delineated in the National Environment Protection (Assessment of Site Contamination) Measure 1999, as amended May 2013 and are included in this QC report where applicable. Additional QC data may be available on request.
- All soil/sediment/solid results are reported on a dry basis, unless otherwise stated.
- All biota/food results are reported on a wet weight basis on the edible portion, unless otherwise stated.
- Actual LORs are matrix dependant. Quoted LORs may be raised where sample extracts are diluted due to interferences.
- Results are uncorrected for matrix spikes or surrogate recoveries except for PFAS compounds.
- SVOC analysis on waters are performed on homogenised, unfiltered samples, unless noted otherwise.
- Samples were analysed on an 'as received' basis.
- Information identified on this report with blue colour, indicates data provided by customer, that may have an impact on the results.
- This report replaces any interim results previously issued.

Holding Times

Please refer to 'Sample Preservation and Container Guide' for holding times (QS3001).

For samples received on the last day of holding time, notification of testing requirements should have been received at least 6 hours prior to sample receipt deadlines as stated on the SRA.

If the Laboratory did not receive the information in the required timeframe, and regardless of any other integrity issues, suitably qualified results may still be reported.

Holding times apply from the date of sampling, therefore compliance to these may be outside the laboratory's control.

For VOCs containing vinyl chloride, styrene and 2-chloroethyl vinyl ether the holding time is 7 days however for all other VOCs such as BTEX or C6-10 TRH then the holding time is 14 days.

****NOTE:** pH duplicates are reported as a range NOT as RPD

Units

mg/kg: milligrams per kilogram

mg/L: milligrams per litre

ug/L: micrograms per litre

ppm: Parts per million

ppb: Parts per billion

%: Percentage

org/100mL: Organisms per 100 millilitres

NTU: Nephelometric Turbidity Units

MPN/100mL: Most Probable Number of organisms per 100 millilitres

Terms

Dry	Where a moisture has been determined on a solid sample the result is expressed on a dry basis.
LOR	Limit of Reporting.
SPIKE	Addition of the analyte to the sample and reported as percentage recovery.
RPD	Relative Percent Difference between two Duplicate pieces of analysis.
LCS	Laboratory Control Sample - reported as percent recovery.
CRM	Certified Reference Material - reported as percent recovery.
Method Blank	In the case of solid samples these are performed on laboratory certified clean sands and in the case of water samples these are performed on de-ionised water.
Surr - Surrogate	The addition of a like compound to the analyte target and reported as percentage recovery.
Duplicate	A second piece of analysis from the same sample and reported in the same units as the result to show comparison.
USEPA	United States Environmental Protection Agency
APHA	American Public Health Association
TCLP	Toxicity Characteristic Leaching Procedure
COC	Chain of Custody
SRA	Sample Receipt Advice
QSM	US Department of Defense Quality Systems Manual Version 5.3
CP	Client Parent - QC was performed on samples pertaining to this report
NCP	Non-Client Parent - QC performed on samples not pertaining to this report, QC is representative of the sequence or batch that client samples were analysed within.
TEQ	Toxic Equivalency Quotient

QC - Acceptance Criteria

RPD Duplicates: Global RPD Duplicates Acceptance Criteria is 30% however the following acceptance guidelines are equally applicable:

Results <10 times the LOR : No Limit

Results between 10-20 times the LOR : RPD must lie between 0-50%

Results >20 times the LOR : RPD must lie between 0-30%

Surrogate Recoveries: Recoveries must lie between 20-130% Phenols & 50-150% PFASs

PFAS field samples that contain surrogate recoveries in excess of the QC limit designated in QSM 5.3 where no positive PFAS results have been reported have been reviewed and no data was affected.

WA DWER (n=10): PFBA, PFPeA, PFHxA, PFHpA, PFOA, PFBS, PFHxS, PFOS, 6:2 FTSA, 8:2 FTSA

QC Data General Comments

- Where a result is reported as a less than (<), higher than the nominated LOR, this is due to either matrix interference, extract dilution required due to interferences or contaminant levels within the sample, high moisture content or insufficient sample provided.
- Duplicate data shown within this report that states the word "BATCH" is a Batch Duplicate from outside of your sample batch, but within the laboratory sample batch at a 1:10 ratio. The Parent and Duplicate data shown is not data from your samples.
- Organochlorine Pesticide analysis - where reporting LCS data, Toxaphene & Chlordane are not added to the LCS.
- Organochlorine Pesticide analysis - where reporting Spike data, Toxaphene is not added to the Spike.
- Total Recoverable Hydrocarbons - where reporting Spike & LCS data, a single spike of commercial Hydrocarbon products in the range of C12-C30 is added and it's Total Recovery is reported in the C10-C14 cell of the Report.
- pH and Free Chlorine analysed in the laboratory - Analysis on this test must begin within 30 minutes of sampling. Therefore laboratory analysis is unlikely to be completed within holding time. Analysis will begin as soon as possible after sample receipt.
- Recovery Data (Spikes & Surrogates) - where chromatographic interference does not allow the determination of Recovery the term "INT" appears against that analyte.
- Polychlorinated Biphenyls are spiked only using Aroclor 1260 in Matrix Spikes and LCS.
- For Matrix Spikes and LCS results a dash " - " in the report means that the specific analyte was not added to the QC sample.
- Duplicate RPDs are calculated from raw analytical data thus it is possible to have two sets of data.

Comments**Sample Integrity**

Custody Seals Intact (if used)	N/A
Attempt to Chill was evident	N/A
Sample correctly preserved	Yes
Appropriate sample containers have been used	Yes
Sample containers for volatile analysis received with minimal headspace	Yes
Samples received within HoldingTime	Yes
Some samples have been subcontracted	No

Authorised By

Andrew Black Analytical Services Manager
Gabriele Cordero Senior Analyst-Metal (NSW)

**Glenn Jackson
General Manager**

Final report - this Report replaces any previously issued Report

- Indicates Not Requested

* Indicates NATA accreditation does not cover the performance of this service

Measurement uncertainty of test data is available on request or please [click here](#).

Eurofins shall not be liable for loss, cost, damages or expenses incurred by the client, or any other person or company, resulting from the use of any information or interpretation given in this report. In no case shall Eurofins be liable for consequential damages including, but not limited to, lost profits, damages for failure to meet deadlines and lost production arising from this report. This document shall not be reproduced except in full and relates only to the items tested. Unless indicated otherwise, the tests were performed on the samples as received.

Ramboll Environ Australia Pty Ltd
 Level 3/100 Pacific Highway
 North Sydney
 NSW 2060



NATA Accredited
Accreditation Number 1261
Site Number 18217

Accredited for compliance with ISO/IEC 17025 – Testing
 The results of the tests, calibrations and/or
 measurements included in this document are traceable
 to Australian/national standards.

Attention: **Stephen Maxwell**

Report **716962-S**
 Project name **P7**
 Project ID **31800780**
 Received Date **May 01, 2020**

Client Sample ID			DVAC_LR(P7)	DVAC_KB(P7)	DSWAB_MH(P7)
Sample Matrix			Dust	Dust	Dust
Eurofins Sample No.			S20-My01117	S20-My01118	S20-My01121
Date Sampled			Apr 29, 2020	Apr 29, 2020	Apr 29, 2020
Test/Reference	LOR	Unit			
Heavy Metals					
Lead	5	mg/kg	41	25	61

Sample History

Where samples are submitted/analysed over several days, the last date of extraction and analysis is reported.

A recent review of our LIMS has resulted in the correction or clarification of some method identifications. Due to this, some of the method reference information on reports has changed. However, no substantive change has been made to our laboratory methods, and as such there is no change in the validity of current or previous results.

If the date and time of sampling are not provided, the Laboratory will not be responsible for compromised results should testing be performed outside the recommended holding time.

Description

Heavy Metals

Testing Site

Sydney

Extracted

May 06, 2020

Holding Time

180 Days

- Method: LTM-MET-3040 Metals in Waters, Soils & Sediments by ICP-MS

Australia

Melbourne
6 Monterey Road
Dandenong South VIC 3175
Phone : +61 3 8564 5000
NATA # 1261
Site # 1254 & 14271

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IANZ # 1327

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Phone : 0800 856 450
IANZ # 1290

Company Name: Ramboll Australia Pty Ltd
Address: Level 3/100 Pacific Highway
North Sydney
NSW 2060

Project Name: P7
Project ID: 31800780

Order No.:
Report #: 716962
Phone: 02 9954 8118
Fax: 02 9954 8150

Received: May 1, 2020 12:00 PM
Due: May 8, 2020
Priority: 5 Day
Contact Name: Stephen Maxwell

Eurofins Analytical Services Manager : Andrew Black

Sample Detail						Lead	Mass of sample*
Melbourne Laboratory - NATA Site # 1254 & 14271							
Sydney Laboratory - NATA Site # 18217						X	X
Brisbane Laboratory - NATA Site # 20794							
Perth Laboratory - NATA Site # 23736							
External Laboratory							
No	Sample ID	Sample Date	Sampling Time	Matrix	LAB ID		
1	DVAC_LR(P7)	Apr 29, 2020		Dust	S20-My01117	X	X
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4	DSWAB_FE(P7)	Apr 29, 2020		Wipes	S20-My01120	X	
5	DSWAB_MH(P7)	Apr 29, 2020		Dust	S20-My01121	X	
Test Counts						5	2

Internal Quality Control Review and Glossary

General

- Laboratory QC results for Method Blanks, Duplicates, Matrix Spikes, and Laboratory Control Samples follows guidelines delineated in the National Environment Protection (Assessment of Site Contamination) Measure 1999, as amended May 2013 and are included in this QC report where applicable. Additional QC data may be available on request.
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****NOTE:** pH duplicates are reported as a range NOT as RPD

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Results between 10-20 times the LOR : RPD must lie between 0-50%

Results >20 times the LOR : RPD must lie between 0-30%

Surrogate Recoveries: Recoveries must lie between 20-130% Phenols & 50-150% PFASs

PFAS field samples that contain surrogate recoveries in excess of the QC limit designated in QSM 5.3 where no positive PFAS results have been reported have been reviewed and no data was affected.

WA DWER (n=10): PFBA, PFPeA, PFHxA, PFHpA, PFOA, PFBS, PFHxS, PFOS, 6:2 FTSA, 8:2 FTSA

QC Data General Comments

- Where a result is reported as a less than (<), higher than the nominated LOR, this is due to either matrix interference, extract dilution required due to interferences or contaminant levels within the sample, high moisture content or insufficient sample provided.
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- Organochlorine Pesticide analysis - where reporting LCS data, Toxaphene & Chlordane are not added to the LCS.
- Organochlorine Pesticide analysis - where reporting Spike data, Toxaphene is not added to the Spike.
- Total Recoverable Hydrocarbons - where reporting Spike & LCS data, a single spike of commercial Hydrocarbon products in the range of C12-C30 is added and it's Total Recovery is reported in the C10-C14 cell of the Report.
- pH and Free Chlorine analysed in the laboratory - Analysis on this test must begin within 30 minutes of sampling. Therefore laboratory analysis is unlikely to be completed within holding time. Analysis will begin as soon as possible after sample receipt.
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- Duplicate RPDs are calculated from raw analytical data thus it is possible to have two sets of data.

Comments**Sample Integrity**

Custody Seals Intact (if used)	N/A
Attempt to Chill was evident	N/A
Sample correctly preserved	Yes
Appropriate sample containers have been used	Yes
Sample containers for volatile analysis received with minimal headspace	Yes
Samples received within HoldingTime	Yes
Some samples have been subcontracted	No

Authorised By

Andrew Black Analytical Services Manager
Gabriele Cordero Senior Analyst-Metal (NSW)

**Glenn Jackson
General Manager**

Final report - this Report replaces any previously issued Report

- Indicates Not Requested

* Indicates NATA accreditation does not cover the performance of this service

Measurement uncertainty of test data is available on request or please [click here](#).

Eurofins shall not be liable for loss, cost, damages or expenses incurred by the client, or any other person or company, resulting from the use of any information or interpretation given in this report. In no case shall Eurofins be liable for consequential damages including, but not limited to, lost profits, damages for failure to meet deadlines and lost production arising from this report. This document shall not be reproduced except in full and relates only to the items tested. Unless indicated otherwise, the tests were performed on the samples as received.



CHAIN OF CUSTODY RECORD

ABN: 50 025 085 521

Sydney Laboratory
Unit F3 3rd Fl, 18 Mars Rd, Lane Cove West, NSW 2086
02 9500 8400 EnviroSampleNSW@eurofins.com

Brisbane Laboratory
Unit 1, 21 Smallwood Pl., Murarie, QLD 4172
07 3502 4800 EnviroSampleQLD@eurofins.com

Perth Laboratory
Unit 2, 97 Leach Highway, Kewdale WA 6105
08 9251 9800 EnviroSampleWA@eurofins.com

Melbourne Laboratory
2 Kingston Town Close, Cadelagh, VIC 3168
03 8584 5000 EnviroSampleVIC@eurofins.com

Company	Ramboll	Project Name	318000780	Project Manager	Stephen Maxwell	Sampler(s)	TJRC
Address	50 Glebe Road the Junction	Project Name		ES&I, EQUS,	Excel and PDF	Handled over by	SM
Contact Name	Stephen Maxwell	Analyses	Lead			Email for Invoice	smaxwell@ramboll.com asianac-accounts@ramboll.com
Phone No		Analyses	M13 (Al, As, Ba, Be, Cd, Cr, Co, Cu, Fe, Pb, Mn, Hg, Ni, Zn) total			Email for Results	smaxwell@ramboll.com blackwell@ramboll.com rcondon@ramboll.com shyde@ramboll.com
Special Directions		Analyses	M13 (Al, As, Ba, Be, Cd, Cr, Co, Cu, Fe, Pb, Mn, Hg, Ni, Zn) dissolved			Turnaround Time (TAT)	Requirements (Client will be advised if not listed) <input type="checkbox"/> Overnight (9am)* <input type="checkbox"/> 1 Day* <input type="checkbox"/> 2 Day* <input type="checkbox"/> 3 Day* <input type="checkbox"/> Other () <input checked="" type="checkbox"/> 5 Day* *Surcharges apply
Purchase Order		Quote ID No	180813RAMM_1			1L Plastic	
Client Sample ID		Sampled Date/Time (dd/mm/yy hh:mm)		Matrix (Solid (S) Water (W))		250mL Plastic	
1	P10_BORE	25/03/20	W			125mL Plastic	
2	P10_TW1	25/03/20	W	X		200mL Amber Glass	
3	P10_TW2	25/03/20	W	X	X	40mL VOA vial	
4	P10_HA01_0.0-0.05	25/03/20	Soil	X	X	500mL PFAS Bottle	
5	P10_HA01_0.2	25/03/20	Soil	X	X	Jar (Glass or HDPE)	
8	P10_HA01_0.4	25/03/20	Soil	X	X	Other (Asbestos AS4964, WA Guidelines)	
9	P10_HA02_0.0-0.1	25/03/20	Soil	X	X	Sample Comments / Dangerous Goods Hazard Warning	
10	P10_HA02_0.3	25/03/20	Soil	X	X	Total Counts	5 3 3

Method of Shipment: Courier (#) Hand Delivered Postal

Signature: _____

Date: 25/03/20

Time: 18:26

Report No: 710645

Signature: _____

Date: 25/03/20

Time: 18:26

Report No: 710645

Submission of samples to the laboratory will be deemed as acceptance of Eurofins | mgmt Standard Terms and Conditions unless agreed otherwise. A copy of Eurofins | mgmt Standard Terms and Conditions is available on request.

Eurofins Environment Testing Australia Pty Ltd trading as Eurofins | mgmt

Page 1 of 1 | QCS2008-RT Modified by: Dr. R. Simons, Approved by: T. Lakeland, Approved on: 11 August 2011

CHAIN OF CUSTODY RECORD

01/01/2024 10:32

Sydney Laboratory
Unit 13 3rd Fl, 16 Mars Rd, Lane Cove West, NSW 2086
02 9900 6500 EnviroSamples@eurofins.com

Brisbane Laboratory
Unit 1, 21 Squalor Rd, Murrumbidgee, QLD 4172
07 3922 4900 EnviroSamples@eurofins.com

Perth Laboratory
Unit 2, 91 Leach Highway, Kewdale, WA 6105
08 9251 9800 EnviroSamples@eurofins.com

Melbourne Laboratory
2/Keppon Term Case, Oakleigh, VIC 3186
03 8594 5000 EnviroSamples@eurofins.com

Company	Ramboll	Project Name	318000780	Project Manager	Stephen Maxwell	Sampler(s)	TJRC
Address	50 Glebe Road the Junction	EDD Format	(ESdat, EQIS)	Excel and PDF		Handed over by	SM
Contact Name	Stephen Maxwell	Analyses	Lead M13 (Al, As, Ba, Be, Cd, Cr, Co, Cu, Fe, Pb, Mn, Hg, Ni, Zn) total M13 (Al, As, Ba, Be, Cd, Cr, Co, Cu, Fe, Pb, Mn, Hg, Ni, Zn) dissolved	Email for Invoice		Email for Results	smaxwell@ramboll.com asiatic-ac@ramboll.com smaxwell@ramboll.com blackwell@ramboll.com rondon@ramboll.com shyde@ramboll.com
Phone No		Special Directions		Turnaround Time (TAT)		Requirements	<input type="checkbox"/> Overnight (9am) <input type="checkbox"/> 1 Day* <input type="checkbox"/> 2 Day* <input type="checkbox"/> 3 Day* <input type="checkbox"/> 5 Day* <input type="checkbox"/> Other (*Estimates apply)
Purchase Order		Quote ID No	1809130XANN_1	1L Plastic		250mL Plastic	
Client Sample ID		Sampled Date/Time (dd/mm/yyyy hh:mm)		125mL Plastic		200mL Amber Glass	
Matrix (Soil (S) Water (W))		Match (Soil (S) Water (W))		40mL VOA vial		500mL PFAS Bottle	
Sample ID	P10_HA03_0.0-0.05	Soil	X	Jar (Glass or HDPE)		Other (Asbestos AS4934, WA Guidelines)	
Sample ID	P10_HA03_0.3	Soil	X	Sample Comments / Dangerous Goods Hazard Warning			
Sample ID	P10_HA04_0.0-0.05	Soil	X				
Sample ID	P10_HA04_0.3	Soil	X				
Sample ID	P10_HA05_0.0-0.05	Soil	X				
Sample ID	P10_HA05_0.2	Soil	X				
Total Counts			6				

No	Client Sample ID	Sampled Date/Time (dd/mm/yyyy hh:mm)	Match (Soil (S) Water (W))	Method of Shipment	Counter #	Hand Delivered	Postal	Name	Signature	Signature	Date	Date	Time	Time	Report No
1	P10_HA03_0.0-0.05	25/03/20	Soil	<input type="checkbox"/>		<input type="checkbox"/>									
2	P10_HA03_0.3	25/03/20	Soil	<input type="checkbox"/>		<input type="checkbox"/>									
3	P10_HA04_0.0-0.05	25/03/20	Soil	<input type="checkbox"/>		<input type="checkbox"/>									
4	P10_HA04_0.3	25/03/20	Soil	<input type="checkbox"/>		<input type="checkbox"/>									
5	P10_HA05_0.0-0.05	25/03/20	Soil	<input type="checkbox"/>		<input type="checkbox"/>									
6	P10_HA05_0.2	25/03/20	Soil	<input type="checkbox"/>		<input type="checkbox"/>									
7															
8															
9															
10															

Submission of samples to the laboratory will be deemed as acceptance of Eurofins | mgf Standard Terms and Conditions unless agreed otherwise. A copy of Eurofins | mgf Standard Terms and Conditions is available on request.

Eurofins | mgf Laboratory Use Only

Received By: *[Signature]* Received By: *[Signature]*

SVD | BNE | MEL | PER | AQL | NTL | DRW Signature: *[Signature]* Signature: *[Signature]*

Date: *21/3/2024* Date: *20/3/24*

Time: *11:11* Time: *11:00*

Report No: *110645*

B.76°C

Melbourne

6 Monterey Road
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Site # 1254 & 14271

Sydney

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Phone : +61 2 9900 8400
NATA # 1261 Site # 18217

Brisbane

1/21 Smallwood Place
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Phone : +61 7 3902 4600
NATA # 1261 Site # 20794

Perth

2/91 Leach Highway
Kewdale WA 6105
Phone : +61 8 9251 9600
NATA # 1261 Site # 23736

Sample Receipt Advice

Company name: **Ramboll Australia Pty Ltd**

Contact name: **Stephen Maxwell**

Project ID: **318000780**

COC number: **Not provided**

Turn around time: **5 Day**

Date/Time received: **Mar 27, 2020 2:57 PM**

Eurofins reference: **710645**

Sample information

- A detailed list of analytes logged into our LIMS, is included in the attached summary table.
- All samples have been received as described on the above COC.
- COC has been completed correctly.
- Attempt to chill was evident.
- Appropriately preserved sample containers have been used.
- All samples were received in good condition.
- Samples have been provided with adequate time to commence analysis in accordance with the relevant holding times.

- Appropriate sample containers have been used.
- Sample containers for volatile analysis received with zero headspace.
- Split sample sent to requested external lab.
- Some samples have been subcontracted.
- N/A Custody Seals intact (if used).

Notes

P10_HA02_0.0-0.1 sample not received - analysis cancelled.

Contact notes

If you have any questions with respect to these samples please contact:

Andrew Black on Phone : (+61) 2 9900 8490 or by e.mail: AndrewBlack@eurofins.com

Results will be delivered electronically via e.mail to Stephen Maxwell - smaxwell@ramboll.com.

Note: A copy of these results will also be delivered to the general Ramboll Australia Pty Ltd email address.

Australia

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IANZ # 1290

ABN – 50 005 085 521

web : www.eurofins.com.au

e.mail : EnviroSales@eurofins.com

Company Name: Ramboll Australia Pty Ltd
Address: Level 3/100 Pacific Highway
North Sydney
NSW 2060

Order No.:
Report #: 710645
Phone: 02 9954 8118
Fax: 02 9954 8150

Received: Mar 27, 2020 2:57 PM
Due: Apr 3, 2020
Priority: 5 Day
Contact Name: Stephen Maxwell

Project Name:
Project ID: 318000780

Eurofins Analytical Services Manager : Andrew Black

Sample Detail						CANCELLED	Lead	Moisture Set	NEPM 2013 Metals without Cr6+ (As, Be, B, Cd, Co, Cr, Cu, Hg, Pb, Ni, Mn, Cd, Co, Cr, Cu, Hg, Pb, Ni, Mn, Se, Zn)	NEPM 2013 Filtered Metals without Cr6+ (As, Be, B, Cd, Co, Cr, Cu, Hg, Pb, Ni, Mn, Se, Zn)
Melbourne Laboratory - NATA Site # 1254 & 14271										
Sydney Laboratory - NATA Site # 18217						X	X	X	X	X
Brisbane Laboratory - NATA Site # 20794										
Perth Laboratory - NATA Site # 23736										
External Laboratory										
No	Sample ID	Sample Date	Sampling Time	Matrix	LAB ID					
1	P10_BORE	Mar 25, 2020		Water	S20-Ma44400				X	X
2	P10_TW1	Mar 25, 2020		Water	S20-Ma44401				X	X
3	P10_TW2	Mar 25, 2020		Water	S20-Ma44402				X	X
4	P10_HA01_0.0-0.05	Mar 25, 2020		Soil	S20-Ma44403		X	X		
5	P10_HA01_0.2	Mar 25, 2020		Soil	S20-Ma44404		X	X		
6	P10_HA01_0.4	Mar 25, 2020		Soil	S20-Ma44405		X	X		
7	P10_HA02_0.0-0.1	Mar 25, 2020		Soil	S20-Ma44406	X				

Australia

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NATA # 1261
Site # 23736

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Christchurch
43 Detroit Drive
Rolleston, Christchurch 7675
Phone : 0800 856 450
IANZ # 1290

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Eurofins Analytical Services Manager : Andrew Black

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Melbourne Laboratory - NATA Site # 1254 & 14271										
Sydney Laboratory - NATA Site # 18217						X	X	X	X	X
Brisbane Laboratory - NATA Site # 20794										
Perth Laboratory - NATA Site # 23736										
8	P10_HA02_0_3	Mar 25, 2020		Soil	S20-Ma44407		X	X		
9	P10_HA03_0_0-0.05	Mar 25, 2020		Soil	S20-Ma44408		X	X		
10	P10_HA03_0_3	Mar 25, 2020		Soil	S20-Ma44409		X	X		
11	P10_HA04_0_0-0.05	Mar 25, 2020		Soil	S20-Ma44410		X	X		
12	P10_HA04_0_3	Mar 25, 2020		Soil	S20-Ma44411		X	X		
13	P10_HA05_0_0-0.05	Mar 25, 2020		Soil	S20-Ma44412		X	X		
14	P10_HA05_0_2	Mar 25, 2020		Soil	S20-Ma44413		X	X		
Test Counts						1	10	10	3	3

Ramboll Environ Australia Pty Ltd
 Level 3/100 Pacific Highway
 North Sydney
 NSW 2060



NATA Accredited
 Accreditation Number 1261
 Site Number 18217

Accredited for compliance with ISO/IEC 17025 – Testing
 The results of the tests, calibrations and/or
 measurements included in this document are traceable
 to Australian/national standards.

Attention: Stephen Maxwell

Report 710645-S
 Project name
 Project ID 318000780
 Received Date Mar 27, 2020

Client Sample ID			P10_HA01_0.0-0.05	P10_HA01_0.2	P10_HA01_0.4	P10_HA02_0.3
Sample Matrix			Soil	Soil	Soil	Soil
Eurofins Sample No.			S20-Ma44403	S20-Ma44404	S20-Ma44405	S20-Ma44407
Date Sampled			Mar 25, 2020	Mar 25, 2020	Mar 25, 2020	Mar 25, 2020
Test/Reference	LOR	Unit				
Heavy Metals						
Lead	5	mg/kg	62	54	17	34
% Moisture						
	1	%	17	12	12	11

Client Sample ID			P10_HA03_0.0-0.05	P10_HA03_0.3	P10_HA04_0.0-0.05	P10_HA04_0.3
Sample Matrix			Soil	Soil	Soil	Soil
Eurofins Sample No.			S20-Ma44408	S20-Ma44409	S20-Ma44410	S20-Ma44411
Date Sampled			Mar 25, 2020	Mar 25, 2020	Mar 25, 2020	Mar 25, 2020
Test/Reference	LOR	Unit				
Heavy Metals						
Lead	5	mg/kg	25	7.3	87	17
% Moisture						
	1	%	13	11	11	12

Client Sample ID			P10_HA05_0.0-0.05	P10_HA05_0.2
Sample Matrix			Soil	Soil
Eurofins Sample No.			S20-Ma44412	S20-Ma44413
Date Sampled			Mar 25, 2020	Mar 25, 2020
Test/Reference	LOR	Unit		
Heavy Metals				
Lead	5	mg/kg	130	58
% Moisture				
	1	%	8.6	7.3

Sample History

Where samples are submitted/analysed over several days, the last date of extraction and analysis is reported.

A recent review of our LIMS has resulted in the correction or clarification of some method identifications. Due to this, some of the method reference information on reports has changed. However, no substantive change has been made to our laboratory methods, and as such there is no change in the validity of current or previous results.

If the date and time of sampling are not provided, the Laboratory will not be responsible for compromised results should testing be performed outside the recommended holding time.

Description

Heavy Metals

- Method: LTM-MET-3040 Metals in Waters, Soils & Sediments by ICP-MS

% Moisture

- Method: LTM-GEN-7080 Moisture

Testing Site

Sydney

Sydney

Extracted

Apr 02, 2020

Mar 27, 2020

Holding Time

180 Days

14 Days

Australia

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NSW 2060

Order No.:
Report #: 710645
Phone: 02 9954 8118
Fax: 02 9954 8150

Received: Mar 27, 2020 2:57 PM
Due: Apr 3, 2020
Priority: 5 Day
Contact Name: Stephen Maxwell

Project Name:
Project ID: 318000780

Eurofins Analytical Services Manager : Andrew Black

Sample Detail						CANCELLED	Lead	Moisture Set	NEPM 2013 Metals without Cr6+ (As, Be, B, Cd, Co, Cr, Cu, Hg, Pb, Ni, Mn, Cd, Co, Cr, Cu, Hg, Pb, Ni, Mn, Se, Zn)	NEPM 2013 Filtered Metals without Cr6+ (As, Be, B, Cd, Co, Cr, Cu, Hg, Pb, Ni, Mn, Se, Zn)
Melbourne Laboratory - NATA Site # 1254 & 14271										
Sydney Laboratory - NATA Site # 18217						X	X	X	X	X
Brisbane Laboratory - NATA Site # 20794										
Perth Laboratory - NATA Site # 23736										
External Laboratory										
No	Sample ID	Sample Date	Sampling Time	Matrix	LAB ID					
1	P10_BORE	Mar 25, 2020		Water	S20-Ma44400				X	X
2	P10_TW1	Mar 25, 2020		Water	S20-Ma44401				X	X
3	P10_TW2	Mar 25, 2020		Water	S20-Ma44402				X	X
4	P10_HA01_0.0-0.05	Mar 25, 2020		Soil	S20-Ma44403		X	X		
5	P10_HA01_0.2	Mar 25, 2020		Soil	S20-Ma44404		X	X		
6	P10_HA01_0.4	Mar 25, 2020		Soil	S20-Ma44405		X	X		
7	P10_HA02_0.0-0.1	Mar 25, 2020		Soil	S20-Ma44406	X				

Australia

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ABN – 50 005 085 521

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e.mail : EnviroSales@eurofins.com

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Contact Name: Stephen Maxwell

Project Name:
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Eurofins Analytical Services Manager : Andrew Black

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Melbourne Laboratory - NATA Site # 1254 & 14271										
Sydney Laboratory - NATA Site # 18217						X	X	X	X	X
Brisbane Laboratory - NATA Site # 20794										
Perth Laboratory - NATA Site # 23736										
8	P10_HA02_0_3	Mar 25, 2020		Soil	S20-Ma44407		X	X		
9	P10_HA03_0_0-0.05	Mar 25, 2020		Soil	S20-Ma44408		X	X		
10	P10_HA03_0_3	Mar 25, 2020		Soil	S20-Ma44409		X	X		
11	P10_HA04_0_0-0.05	Mar 25, 2020		Soil	S20-Ma44410		X	X		
12	P10_HA04_0_3	Mar 25, 2020		Soil	S20-Ma44411		X	X		
13	P10_HA05_0_0-0.05	Mar 25, 2020		Soil	S20-Ma44412		X	X		
14	P10_HA05_0_2	Mar 25, 2020		Soil	S20-Ma44413		X	X		
Test Counts						1	10	10	3	3

Internal Quality Control Review and Glossary
General

- Laboratory QC results for Method Blanks, Duplicates, Matrix Spikes, and Laboratory Control Samples follows guidelines delineated in the National Environment Protection (Assessment of Site Contamination) Measure 1999, as amended May 2013 and are included in this QC report where applicable. Additional QC data may be available on request.
- All soil/sediment/solid results are reported on a dry basis, unless otherwise stated.
- All biota/food results are reported on a wet weight basis on the edible portion, unless otherwise stated.
- Actual LORs are matrix dependant. Quoted LORs may be raised where sample extracts are diluted due to interferences.
- Results are uncorrected for matrix spikes or surrogate recoveries except for PFAS compounds.
- SVOC analysis on waters are performed on homogenised, unfiltered samples, unless noted otherwise.
- Samples were analysed on an 'as received' basis.
- Information identified on this report with blue colour, indicates data provided by customer, that may have an impact on the results.
- This report replaces any interim results previously issued.

Holding Times

Please refer to 'Sample Preservation and Container Guide' for holding times (QS3001).

For samples received on the last day of holding time, notification of testing requirements should have been received at least 6 hours prior to sample receipt deadlines as stated on the SRA.

If the Laboratory did not receive the information in the required timeframe, and regardless of any other integrity issues, suitably qualified results may still be reported.

Holding times apply from the date of sampling, therefore compliance to these may be outside the laboratory's control.

For VOCs containing vinyl chloride, styrene and 2-chloroethyl vinyl ether the holding time is 7 days however for all other VOCs such as BTEX or C6-10 TRH then the holding time is 14 days.

****NOTE:** pH duplicates are reported as a range NOT as RPD

Units

mg/kg: milligrams per kilogram

mg/L: milligrams per litre

ug/L: micrograms per litre

ppm: Parts per million

ppb: Parts per billion

%: Percentage

org/100mL: Organisms per 100 millilitres

NTU: Nephelometric Turbidity Units

MPN/100mL: Most Probable Number of organisms per 100 millilitres

Terms

Dry	Where a moisture has been determined on a solid sample the result is expressed on a dry basis.
LOR	Limit of Reporting.
SPIKE	Addition of the analyte to the sample and reported as percentage recovery.
RPD	Relative Percent Difference between two Duplicate pieces of analysis.
LCS	Laboratory Control Sample - reported as percent recovery.
CRM	Certified Reference Material - reported as percent recovery.
Method Blank	In the case of solid samples these are performed on laboratory certified clean sands and in the case of water samples these are performed on de-ionised water.
Surr - Surrogate	The addition of a like compound to the analyte target and reported as percentage recovery.
Duplicate	A second piece of analysis from the same sample and reported in the same units as the result to show comparison.
USEPA	United States Environmental Protection Agency
APHA	American Public Health Association
TCLP	Toxicity Characteristic Leaching Procedure
COC	Chain of Custody
SRA	Sample Receipt Advice
QSM	US Department of Defense Quality Systems Manual Version 5.3
CP	Client Parent - QC was performed on samples pertaining to this report
NCP	Non-Client Parent - QC performed on samples not pertaining to this report, QC is representative of the sequence or batch that client samples were analysed within.
TEQ	Toxic Equivalency Quotient

QC - Acceptance Criteria

RPD Duplicates: Global RPD Duplicates Acceptance Criteria is 30% however the following acceptance guidelines are equally applicable:

Results <10 times the LOR : No Limit

Results between 10-20 times the LOR : RPD must lie between 0-50%

Results >20 times the LOR : RPD must lie between 0-30%

Surrogate Recoveries: Recoveries must lie between 20-130% Phenols & 50-150% PFASs

PFAS field samples that contain surrogate recoveries in excess of the QC limit designated in QSM 5.3 where no positive PFAS results have been reported have been reviewed and no data was affected.

WA DWER (n=10): PFBA, PFPeA, PFHxA, PFHpA, PFOA, PFBS, PFHxS, PFOS, 6:2 FTSA, 8:2 FTSA

QC Data General Comments

- Where a result is reported as a less than (<), higher than the nominated LOR, this is due to either matrix interference, extract dilution required due to interferences or contaminant levels within the sample, high moisture content or insufficient sample provided.
- Duplicate data shown within this report that states the word "BATCH" is a Batch Duplicate from outside of your sample batch, but within the laboratory sample batch at a 1:10 ratio. The Parent and Duplicate data shown is not data from your samples.
- Organochlorine Pesticide analysis - where reporting LCS data, Toxaphene & Chlordane are not added to the LCS.
- Organochlorine Pesticide analysis - where reporting Spike data, Toxaphene is not added to the Spike.
- Total Recoverable Hydrocarbons - where reporting Spike & LCS data, a single spike of commercial Hydrocarbon products in the range of C12-C30 is added and it's Total Recovery is reported in the C10-C14 cell of the Report.
- pH and Free Chlorine analysed in the laboratory - Analysis on this test must begin within 30 minutes of sampling. Therefore laboratory analysis is unlikely to be completed within holding time. Analysis will begin as soon as possible after sample receipt.
- Recovery Data (Spikes & Surrogates) - where chromatographic interference does not allow the determination of Recovery the term "INT" appears against that analyte.
- Polychlorinated Biphenyls are spiked only using Aroclor 1260 in Matrix Spikes and LCS.
- For Matrix Spikes and LCS results a dash " - " in the report means that the specific analyte was not added to the QC sample.
- Duplicate RPDs are calculated from raw analytical data thus it is possible to have two sets of data.

Quality Control Results

Test				Units	Result 1		Acceptance Limits	Pass Limits	Qualifying Code		
Method Blank											
Heavy Metals											
Lead				mg/kg	< 5		5	Pass			
LCS - % Recovery											
Heavy Metals											
Lead				%	104		70-130	Pass			
Test	Lab Sample ID	QA Source	Units	Result 1			Acceptance Limits	Pass Limits	Qualifying Code		
Spike - % Recovery											
Heavy Metals											
Lead				S20-Ma44404	CP	%	109	70-130	Pass		
Test	Lab Sample ID	QA Source	Units	Result 1			Acceptance Limits	Pass Limits	Qualifying Code		
Duplicate											
Heavy Metals											
Lead				S20-Ma44403	CP	mg/kg	62	76	20	30%	Pass
Duplicate											
					Result 1	Result 2	RPD				
% Moisture				S20-Ma44385	NCP	%	9.3	10	10	30%	Pass

Comments**Sample Integrity**

Custody Seals Intact (if used)	N/A
Attempt to Chill was evident	Yes
Sample correctly preserved	Yes
Appropriate sample containers have been used	Yes
Sample containers for volatile analysis received with minimal headspace	Yes
Samples received within HoldingTime	Yes
Some samples have been subcontracted	No

Authorised By

Andrew Black Analytical Services Manager
Gabriele Cordero Senior Analyst-Metal (NSW)

**Glenn Jackson
General Manager**

Final report - this Report replaces any previously issued Report

- Indicates Not Requested

* Indicates NATA accreditation does not cover the performance of this service

Measurement uncertainty of test data is available on request or please [click here](#).

Eurofins shall not be liable for loss, cost, damages or expenses incurred by the client, or any other person or company, resulting from the use of any information or interpretation given in this report. In no case shall Eurofins be liable for consequential damages including, but not limited to, lost profits, damages for failure to meet deadlines and lost production arising from this report. This document shall not be reproduced except in full and relates only to the items tested. Unless indicated otherwise, the tests were performed on the samples as received.

Ramboll Environ Australia Pty Ltd
 Level 3/100 Pacific Highway
 North Sydney
 NSW 2060



NATA Accredited
Accreditation Number 1261
Site Number 18217

Accredited for compliance with ISO/IEC 17025 – Testing
 The results of the tests, calibrations and/or
 measurements included in this document are traceable
 to Australian/national standards.

Attention: Stephen Maxwell

Report 710645-W
 Project name
 Project ID 318000780
 Received Date Mar 27, 2020

Client Sample ID			P10_BORE	P10_TW1	P10_TW2
Sample Matrix			Water	Water	Water
Eurofins Sample No.			S20-Ma44400	S20-Ma44401	S20-Ma44402
Date Sampled			Mar 25, 2020	Mar 25, 2020	Mar 25, 2020
Test/Reference	LOR	Unit			
Heavy Metals					
Arsenic	0.001	mg/L	0.053	< 0.001	< 0.001
Arsenic (filtered)	0.001	mg/L	< 0.001	< 0.001	< 0.001
Beryllium	0.001	mg/L	0.010	< 0.001	< 0.001
Beryllium (filtered)	0.001	mg/L	< 0.001	< 0.001	< 0.001
Boron	0.05	mg/L	< 0.05	0.06	0.59
Boron (filtered)	0.05	mg/L	< 0.05	< 0.05	0.51
Cadmium	0.0002	mg/L	0.0003	< 0.0002	< 0.0002
Cadmium (filtered)	0.0002	mg/L	< 0.0002	< 0.0002	< 0.0002
Chromium	0.001	mg/L	0.055	< 0.001	< 0.001
Chromium (filtered)	0.001	mg/L	< 0.001	< 0.001	< 0.001
Cobalt	0.001	mg/L	0.052	< 0.001	< 0.001
Cobalt (filtered)	0.001	mg/L	< 0.001	< 0.001	< 0.001
Copper	0.001	mg/L	0.098	< 0.001	0.002
Copper (filtered)	0.001	mg/L	< 0.001	< 0.001	0.002
Lead	0.001	mg/L	0.13	< 0.001	< 0.001
Lead (filtered)	0.001	mg/L	< 0.001	< 0.001	< 0.001
Manganese	0.005	mg/L	0.92	0.006	< 0.005
Manganese (filtered)	0.005	mg/L	0.19	< 0.005	< 0.005
Mercury	0.0001	mg/L	0.0001	< 0.0001	< 0.0001
Mercury (filtered)	0.0001	mg/L	< 0.0001	< 0.0001	< 0.0001
Nickel	0.001	mg/L	0.061	< 0.001	< 0.001
Nickel (filtered)	0.001	mg/L	< 0.001	< 0.001	< 0.001
Selenium	0.001	mg/L	0.002	< 0.001	< 0.001
Selenium (filtered)	0.001	mg/L	< 0.001	< 0.001	< 0.001
Zinc	0.005	mg/L	0.19	0.028	0.047
Zinc (filtered)	0.005	mg/L	< 0.005	0.020	0.040

Sample History

Where samples are submitted/analysed over several days, the last date of extraction and analysis is reported.

A recent review of our LIMS has resulted in the correction or clarification of some method identifications. Due to this, some of the method reference information on reports has changed. However, no substantive change has been made to our laboratory methods, and as such there is no change in the validity of current or previous results.

If the date and time of sampling are not provided, the Laboratory will not be responsible for compromised results should testing be performed outside the recommended holding time.

Description

NEPM 2013 Metals without Cr6+ (As, Be, B, Cd, Co, Cr, Cu, Hg, Pb, Ni, Mn, Se, Zn)

- Method: LTM-MET-3040 Metals in Waters, Soils & Sediments by ICP-MS

NEPM 2013 Filtered Metals without Cr6+ (As, Be, B, Cd, Co, Cr, Cu, Hg, Pb, Ni, Mn, Se, Zn)

- Method: LTM-MET-3040 Metals in Waters, Soils & Sediments by ICP-MS

Testing Site	Extracted	Holding Time
Sydney	Apr 03, 2020	180 Days
Sydney	Mar 27, 2020	28 Days

Australia

Melbourne
6 Monterey Road
Dandenong South VIC 3175
Phone : +61 3 8564 5000
NATA # 1261
Site # 1254 & 14271

Sydney
Unit F3, Building F
16 Mars Road
Lane Cove West NSW 2066
Phone : +61 2 9900 8400
NATA # 1261 Site # 18217

Brisbane
1/21 Smallwood Place
Murarrie QLD 4172
Phone : +61 7 3902 4600
NATA # 1261 Site # 20794

Perth
2/91 Leach Highway
Kewdale WA 6105
Phone : +61 8 9251 9600
NATA # 1261
Site # 23736

New Zealand

Auckland
35 O'Rorke Road
Penrose, Auckland 1061
Phone : +64 9 526 45 51
IANZ # 1327

Christchurch
43 Detroit Drive
Rolleston, Christchurch 7675
Phone : 0800 856 450
IANZ # 1290

Company Name: Ramboll Australia Pty Ltd
Address: Level 3/100 Pacific Highway
North Sydney
NSW 2060

Order No.:
Report #: 710645
Phone: 02 9954 8118
Fax: 02 9954 8150

Received: Mar 27, 2020 2:57 PM
Due: Apr 3, 2020
Priority: 5 Day
Contact Name: Stephen Maxwell

Project Name:
Project ID: 318000780

Eurofins Analytical Services Manager : Andrew Black

Sample Detail						CANCELLED	Lead	Moisture Set	NEPM 2013 Metals without Cr6+ (As, Be, B, Cd, Co, Cr, Cu, Hg, Pb, Ni, Mn, NEPM 2013 Metals without Cr6+ (As, Be, B, Cd, Co, Cr, Cu, Hg, Pb, Ni, Mn, Se, Zn)	NEPM 2013 Filtered Metals without Cr6+ (As, Be, B, Cd, Co, Cr, Cu, Hg, Pb, Ni, Mn, Se, Zn)
Melbourne Laboratory - NATA Site # 1254 & 14271										
Sydney Laboratory - NATA Site # 18217						X	X	X	X	X
Brisbane Laboratory - NATA Site # 20794										
Perth Laboratory - NATA Site # 23736										
External Laboratory										
No	Sample ID	Sample Date	Sampling Time	Matrix	LAB ID					
1	P10_BORE	Mar 25, 2020		Water	S20-Ma44400				X	X
2	P10_TW1	Mar 25, 2020		Water	S20-Ma44401				X	X
3	P10_TW2	Mar 25, 2020		Water	S20-Ma44402				X	X
4	P10_HA01_0.0-0.05	Mar 25, 2020		Soil	S20-Ma44403		X	X		
5	P10_HA01_0.2	Mar 25, 2020		Soil	S20-Ma44404		X	X		
6	P10_HA01_0.4	Mar 25, 2020		Soil	S20-Ma44405		X	X		
7	P10_HA02_0.0-0.1	Mar 25, 2020		Soil	S20-Ma44406	X				

Australia

Melbourne
6 Monterey Road
Dandenong South VIC 3175
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Lane Cove West NSW 2066
Phone : +61 2 9900 8400
NATA # 1261 Site # 18217

Brisbane
1/21 Smallwood Place
Murarrie QLD 4172
Phone : +61 7 3902 4600
NATA # 1261 Site # 20794

Perth
2/91 Leach Highway
Kewdale WA 6105
Phone : +61 8 9251 9600
NATA # 1261
Site # 23736

New Zealand

Auckland
35 O'Rorke Road
Penrose, Auckland 1061
Phone : +64 9 526 45 51
IANZ # 1327

Christchurch
43 Detroit Drive
Rolleston, Christchurch 7675
Phone : 0800 856 450
IANZ # 1290

ABN – 50 005 085 521

web : www.eurofins.com.au

e.mail : EnviroSales@eurofins.com

Company Name: Ramboll Australia Pty Ltd
Address: Level 3/100 Pacific Highway
North Sydney
NSW 2060

Order No.:
Report #: 710645
Phone: 02 9954 8118
Fax: 02 9954 8150

Received: Mar 27, 2020 2:57 PM
Due: Apr 3, 2020
Priority: 5 Day
Contact Name: Stephen Maxwell

Project Name:
Project ID: 318000780

Eurofins Analytical Services Manager : Andrew Black

Sample Detail						CANCELLED	Lead	Moisture Set	NEPM 2013 Metals without Cr6+ (As, Be, B, Cd, Co, Cr, Cu, Hg, Pb, Ni, Mn, NEPM 2013 Metals without Cr6+ (As, Be, B, Cd, Co, Cr, Cu, Hg, Pb, Ni, Mn, Se, Zn)	NEPM 2013 Filtered Metals without Cr6+ (As, Be, B, Cd, Co, Cr, Cu, Hg, Pb, Ni, Mn, Se, Zn)
Melbourne Laboratory - NATA Site # 1254 & 14271										
Sydney Laboratory - NATA Site # 18217						X	X	X	X	X
Brisbane Laboratory - NATA Site # 20794										
Perth Laboratory - NATA Site # 23736										
8	P10_HA02_0_3	Mar 25, 2020		Soil	S20-Ma44407		X	X		
9	P10_HA03_0_0-0.05	Mar 25, 2020		Soil	S20-Ma44408		X	X		
10	P10_HA03_0_3	Mar 25, 2020		Soil	S20-Ma44409		X	X		
11	P10_HA04_0_0-0.05	Mar 25, 2020		Soil	S20-Ma44410		X	X		
12	P10_HA04_0_3	Mar 25, 2020		Soil	S20-Ma44411		X	X		
13	P10_HA05_0_0-0.05	Mar 25, 2020		Soil	S20-Ma44412		X	X		
14	P10_HA05_0_2	Mar 25, 2020		Soil	S20-Ma44413		X	X		
Test Counts						1	10	10	3	3

Internal Quality Control Review and Glossary
General

1. Laboratory QC results for Method Blanks, Duplicates, Matrix Spikes, and Laboratory Control Samples follows guidelines delineated in the National Environment Protection (Assessment of Site Contamination) Measure 1999, as amended May 2013 and are included in this QC report where applicable. Additional QC data may be available on request.
2. All soil/sediment/solid results are reported on a dry basis, unless otherwise stated.
3. All biota/food results are reported on a wet weight basis on the edible portion, unless otherwise stated.
4. Actual LORs are matrix dependant. Quoted LORs may be raised where sample extracts are diluted due to interferences.
5. Results are uncorrected for matrix spikes or surrogate recoveries except for PFAS compounds.
6. SVOC analysis on waters are performed on homogenised, unfiltered samples, unless noted otherwise.
7. Samples were analysed on an 'as received' basis.
8. Information identified on this report with blue colour, indicates data provided by customer, that may have an impact on the results.
9. This report replaces any interim results previously issued.

Holding Times

Please refer to 'Sample Preservation and Container Guide' for holding times (QS3001).

For samples received on the last day of holding time, notification of testing requirements should have been received at least 6 hours prior to sample receipt deadlines as stated on the SRA.

If the Laboratory did not receive the information in the required timeframe, and regardless of any other integrity issues, suitably qualified results may still be reported.

Holding times apply from the date of sampling, therefore compliance to these may be outside the laboratory's control.

For VOCs containing vinyl chloride, styrene and 2-chloroethyl vinyl ether the holding time is 7 days however for all other VOCs such as BTEX or C6-10 TRH then the holding time is 14 days.

****NOTE:** pH duplicates are reported as a range NOT as RPD

Units

mg/kg: milligrams per kilogram

mg/L: milligrams per litre

ug/L: micrograms per litre

ppm: Parts per million

ppb: Parts per billion

%: Percentage

org/100mL: Organisms per 100 millilitres

NTU: Nephelometric Turbidity Units

MPN/100mL: Most Probable Number of organisms per 100 millilitres

Terms

Dry	Where a moisture has been determined on a solid sample the result is expressed on a dry basis.
LOR	Limit of Reporting.
SPIKE	Addition of the analyte to the sample and reported as percentage recovery.
RPD	Relative Percent Difference between two Duplicate pieces of analysis.
LCS	Laboratory Control Sample - reported as percent recovery.
CRM	Certified Reference Material - reported as percent recovery.
Method Blank	In the case of solid samples these are performed on laboratory certified clean sands and in the case of water samples these are performed on de-ionised water.
Surr - Surrogate	The addition of a like compound to the analyte target and reported as percentage recovery.
Duplicate	A second piece of analysis from the same sample and reported in the same units as the result to show comparison.
USEPA	United States Environmental Protection Agency
APHA	American Public Health Association
TCLP	Toxicity Characteristic Leaching Procedure
COC	Chain of Custody
SRA	Sample Receipt Advice
QSM	US Department of Defense Quality Systems Manual Version 5.3
CP	Client Parent - QC was performed on samples pertaining to this report
NCP	Non-Client Parent - QC performed on samples not pertaining to this report, QC is representative of the sequence or batch that client samples were analysed within.
TEQ	Toxic Equivalency Quotient

QC - Acceptance Criteria

RPD Duplicates: Global RPD Duplicates Acceptance Criteria is 30% however the following acceptance guidelines are equally applicable:

Results <10 times the LOR : No Limit

Results between 10-20 times the LOR : RPD must lie between 0-50%

Results >20 times the LOR : RPD must lie between 0-30%

Surrogate Recoveries: Recoveries must lie between 20-130% Phenols & 50-150% PFASs

PFAS field samples that contain surrogate recoveries in excess of the QC limit designated in QSM 5.3 where no positive PFAS results have been reported have been reviewed and no data was affected.

WA DWER (n=10): PFBA, PFPeA, PFHxA, PFHpA, PFOA, PFBS, PFHxS, PFOS, 6:2 FTSA, 8:2 FTSA

QC Data General Comments

1. Where a result is reported as a less than (<), higher than the nominated LOR, this is due to either matrix interference, extract dilution required due to interferences or contaminant levels within the sample, high moisture content or insufficient sample provided.
2. Duplicate data shown within this report that states the word "BATCH" is a Batch Duplicate from outside of your sample batch, but within the laboratory sample batch at a 1:10 ratio. The Parent and Duplicate data shown is not data from your samples.
3. Organochlorine Pesticide analysis - where reporting LCS data, Toxaphene & Chlordane are not added to the LCS.
4. Organochlorine Pesticide analysis - where reporting Spike data, Toxaphene is not added to the Spike.
5. Total Recoverable Hydrocarbons - where reporting Spike & LCS data, a single spike of commercial Hydrocarbon products in the range of C12-C30 is added and it's Total Recovery is reported in the C10-C14 cell of the Report.
6. pH and Free Chlorine analysed in the laboratory - Analysis on this test must begin within 30 minutes of sampling. Therefore laboratory analysis is unlikely to be completed within holding time. Analysis will begin as soon as possible after sample receipt.
7. Recovery Data (Spikes & Surrogates) - where chromatographic interference does not allow the determination of Recovery the term "INT" appears against that analyte.
8. Polychlorinated Biphenyls are spiked only using Aroclor 1260 in Matrix Spikes and LCS.
9. For Matrix Spikes and LCS results a dash " - " in the report means that the specific analyte was not added to the QC sample.
10. Duplicate RPDs are calculated from raw analytical data thus it is possible to have two sets of data.

Quality Control Results

Test	Units	Result 1			Acceptance Limits	Pass Limits	Qualifying Code
Method Blank							
Heavy Metals							
Arsenic	mg/L	< 0.001			0.001	Pass	
Arsenic (filtered)	mg/L	< 0.001			0.001	Pass	
Beryllium	mg/L	< 0.001			0.001	Pass	
Beryllium (filtered)	mg/L	< 0.001			0.001	Pass	
Boron	mg/L	< 0.05			0.05	Pass	
Boron (filtered)	mg/L	< 0.05			0.05	Pass	
Cadmium	mg/L	< 0.0002			0.0002	Pass	
Cadmium (filtered)	mg/L	< 0.0002			0.0002	Pass	
Chromium	mg/L	< 0.001			0.001	Pass	
Chromium (filtered)	mg/L	< 0.001			0.001	Pass	
Cobalt	mg/L	< 0.001			0.001	Pass	
Cobalt (filtered)	mg/L	< 0.001			0.001	Pass	
Copper	mg/L	< 0.001			0.001	Pass	
Copper (filtered)	mg/L	< 0.001			0.001	Pass	
Lead	mg/L	< 0.001			0.001	Pass	
Lead (filtered)	mg/L	< 0.001			0.001	Pass	
Manganese	mg/L	< 0.005			0.005	Pass	
Manganese (filtered)	mg/L	< 0.005			0.005	Pass	
Mercury	mg/L	< 0.0001			0.0001	Pass	
Mercury (filtered)	mg/L	< 0.0001			0.0001	Pass	
Nickel	mg/L	< 0.001			0.001	Pass	
Nickel (filtered)	mg/L	< 0.001			0.001	Pass	
Selenium	mg/L	< 0.001			0.001	Pass	
Selenium (filtered)	mg/L	< 0.001			0.001	Pass	
Zinc	mg/L	< 0.005			0.005	Pass	
Zinc (filtered)	mg/L	< 0.005			0.005	Pass	
LCS - % Recovery							
Heavy Metals							
Arsenic	%	103			70-130	Pass	
Arsenic (filtered)	%	87			70-130	Pass	
Beryllium	%	101			70-130	Pass	
Beryllium (filtered)	%	85			70-130	Pass	
Boron	%	100			70-130	Pass	
Boron (filtered)	%	83			70-130	Pass	
Cadmium	%	101			70-130	Pass	
Cadmium (filtered)	%	84			70-130	Pass	
Chromium	%	99			70-130	Pass	
Chromium (filtered)	%	85			70-130	Pass	
Cobalt	%	99			70-130	Pass	
Cobalt (filtered)	%	85			70-130	Pass	
Copper	%	96			70-130	Pass	
Copper (filtered)	%	84			70-130	Pass	
Lead	%	103			70-130	Pass	
Lead (filtered)	%	86			70-130	Pass	
Manganese	%	99			70-130	Pass	
Manganese (filtered)	%	84			70-130	Pass	
Mercury	%	112			70-130	Pass	
Mercury (filtered)	%	80			70-130	Pass	
Nickel	%	98			70-130	Pass	
Nickel (filtered)	%	86			70-130	Pass	

Test			Units	Result 1			Acceptance Limits	Pass Limits	Qualifying Code
Selenium			%	103			70-130	Pass	
Selenium (filtered)			%	84			70-130	Pass	
Zinc			%	100			70-130	Pass	
Zinc (filtered)			%	85			70-130	Pass	
Test	Lab Sample ID	QA Source	Units	Result 1			Acceptance Limits	Pass Limits	Qualifying Code
Spike - % Recovery									
Heavy Metals				Result 1					
Arsenic	S20-Ma44415	NCP	%	104			70-130	Pass	
Arsenic (filtered)	S20-Ma44415	NCP	%	96			70-130	Pass	
Beryllium	S20-Ma44415	NCP	%	103			70-130	Pass	
Beryllium (filtered)	S20-Ma44415	NCP	%	93			70-130	Pass	
Boron	S20-Ma44415	NCP	%	93			70-130	Pass	
Cadmium	S20-Ma44415	NCP	%	99			70-130	Pass	
Cadmium (filtered)	S20-Ma44415	NCP	%	102			70-130	Pass	
Chromium	S20-Ma44415	NCP	%	99			70-130	Pass	
Chromium (filtered)	S20-Ma44415	NCP	%	93			70-130	Pass	
Cobalt	S20-Ma44415	NCP	%	101			70-130	Pass	
Cobalt (filtered)	S20-Ma44415	NCP	%	97			70-130	Pass	
Copper	S20-Ma44415	NCP	%	96			70-130	Pass	
Copper (filtered)	S20-Ma44415	NCP	%	94			70-130	Pass	
Lead	S20-Ma44415	NCP	%	104			70-130	Pass	
Lead (filtered)	S20-Ma44415	NCP	%	97			70-130	Pass	
Manganese	S20-Ma44415	NCP	%	100			70-130	Pass	
Manganese (filtered)	S20-Ma44415	NCP	%	97			70-130	Pass	
Mercury	S20-Ma44415	NCP	%	103			70-130	Pass	
Mercury (filtered)	S20-Ma44415	NCP	%	95			70-130	Pass	
Nickel	S20-Ma44415	NCP	%	99			70-130	Pass	
Nickel (filtered)	S20-Ma44415	NCP	%	95			70-130	Pass	
Selenium	S20-Ma44415	NCP	%	101			70-130	Pass	
Selenium (filtered)	S20-Ma44415	NCP	%	100			70-130	Pass	
Zinc	S20-Ma44415	NCP	%	101			70-130	Pass	
Zinc (filtered)	S20-Ma44415	NCP	%	84			70-130	Pass	
Test	Lab Sample ID	QA Source	Units	Result 1			Acceptance Limits	Pass Limits	Qualifying Code
Duplicate									
Heavy Metals				Result 1	Result 2	RPD			
Arsenic	S20-Ma44158	NCP	mg/L	< 0.001	< 0.001	<1	30%	Pass	
Arsenic (filtered)	S20-Ma44142	NCP	mg/L	< 0.001	< 0.001	<1	30%	Pass	
Beryllium	S20-Ma44158	NCP	mg/L	< 0.001	< 0.001	<1	30%	Pass	
Beryllium (filtered)	S20-Ma44142	NCP	mg/L	< 0.001	< 0.001	<1	30%	Pass	
Boron	S20-Ma44158	NCP	mg/L	< 0.05	< 0.05	<1	30%	Pass	
Boron (filtered)	S20-Ma44142	NCP	mg/L	< 0.05	< 0.05	<1	30%	Pass	
Cadmium	S20-Ma44158	NCP	mg/L	< 0.0002	< 0.0002	<1	30%	Pass	
Cadmium (filtered)	S20-Ma44142	NCP	mg/L	0.0005	0.0003	30	30%	Pass	
Chromium	S20-Ma44158	NCP	mg/L	< 0.001	< 0.001	<1	30%	Pass	
Chromium (filtered)	S20-Ma44142	NCP	mg/L	0.002	0.002	2.0	30%	Pass	
Cobalt	S20-Ma44158	NCP	mg/L	< 0.001	< 0.001	<1	30%	Pass	
Cobalt (filtered)	S20-Ma44142	NCP	mg/L	< 0.001	< 0.001	<1	30%	Pass	
Copper	S20-Ma44158	NCP	mg/L	0.002	0.002	6.0	30%	Pass	
Copper (filtered)	S20-Ma44142	NCP	mg/L	0.001	< 0.001	28	30%	Pass	
Lead	S20-Ma44158	NCP	mg/L	< 0.001	< 0.001	<1	30%	Pass	
Lead (filtered)	S20-Ma44142	NCP	mg/L	< 0.001	< 0.001	<1	30%	Pass	
Manganese	S20-Ma44158	NCP	mg/L	0.066	0.066	<1	30%	Pass	
Manganese (filtered)	S20-Ma44142	NCP	mg/L	< 0.005	< 0.005	<1	30%	Pass	

Test	Lab Sample ID	QA Source	Units	Result 1			Acceptance Limits	Pass Limits	Qualifying Code
Duplicate									
Heavy Metals				Result 1	Result 2	RPD			
Mercury	S20-Ma44158	NCP	mg/L	< 0.0001	< 0.0001	<1	30%	Pass	
Mercury (filtered)	S20-Ma44142	NCP	mg/L	< 0.0001	< 0.0001	<1	30%	Pass	
Nickel	S20-Ma44158	NCP	mg/L	0.003	0.004	9.0	30%	Pass	
Nickel (filtered)	S20-Ma44142	NCP	mg/L	< 0.001	< 0.001	<1	30%	Pass	
Selenium	S20-Ma44158	NCP	mg/L	< 0.001	< 0.001	<1	30%	Pass	
Selenium (filtered)	S20-Ma44142	NCP	mg/L	< 0.001	< 0.001	<1	30%	Pass	
Zinc	S20-Ma44158	NCP	mg/L	0.018	0.011	53	30%	Fail	Q15
Zinc (filtered)	S20-Ma44142	NCP	mg/L	1.6	1.6	2.0	30%	Pass	

Comments
Sample Integrity

Custody Seals Intact (if used)	N/A
Attempt to Chill was evident	Yes
Sample correctly preserved	Yes
Appropriate sample containers have been used	Yes
Sample containers for volatile analysis received with minimal headspace	Yes
Samples received within HoldingTime	Yes
Some samples have been subcontracted	No

Qualifier Codes/Comments

Code	Description
Q15	The RPD reported passes Eurofins Environment Testing's QC - Acceptance Criteria as defined in the Internal Quality Control Review and Glossary page of this report.

Authorised By

Andrew Black	Analytical Services Manager
Gabriele Cordero	Senior Analyst-Metal (NSW)


**Glenn Jackson
General Manager**

Final report - this Report replaces any previously issued Report

- Indicates Not Requested

* Indicates NATA accreditation does not cover the performance of this service

Measurement uncertainty of test data is available on request or please [click here](#).

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CHAIN OF CUSTODY RECORD

ASN 50 065 065 521

Sydney Laboratory
Unit F3 Bld F, 16 Mare Rd, Lane Cove West, NSW 2066
02 9500 8400 EnviroSamplesNSW@eurofins.com

Brisbane Laboratory
Unit 1, 21 Smallwood Pl, Murarie, QLD 4172
07 3802 4600 EnviroSamplesQLD@eurofins.com

Perth Laboratory
Unit 2, 91 Leach Highway, Kewdale WA 6105
08 9251 9500 EnviroSamplesWA@eurofins.com

Melbourne Laboratory
2 Kingston Town Close, Oakleigh, VIC 3166
03 8594 5000 EnviroSamplesVIC@eurofins.com

Company	Ramboll	Project No	318000780	Project Manager	Stephen Maxwell	Sampler(s)	SM
Address	50 Glebe Road the Junction	Project Name	P10	Handed over by	Excel and PDF	SM	

Contact Name	Stephen Maxwell	Analyses	M13 (ex hex chromium)
Phone No	0478 638 194	<small>(Note: Where metals are requested, please specify "Total" or "Filtered" SUITE code must be used to attract SUITE pricing.)</small>	
Special Directions			
Purchase Order			
Quote ID No	180813RAMAN_1		

Client Sample ID	P10_T1SED	Sampled Date/Time (dd/mm/yy hh:mm)	31/05/20	Matrix (Solid (S)/Water (W))	W	Analyses	M13 (ex hex chromium)
	P10_T2SED		31/05/20		W		

No	Client Sample ID	Sampled Date/Time (dd/mm/yy hh:mm)	Matrix (Solid (S)/Water (W))	Analyses
1	P10_T1SED	31/05/20	W	X
2	P10_T2SED	31/05/20	W	X
3				
4				
5				
6				
7				
8				
9				
10				
Total Counts				2

Method of Shipment	<input type="checkbox"/> Courier #	<input checked="" type="checkbox"/> Hand Delivered	<input type="checkbox"/> Postal	Name		Signature	
Eurofins mgt Laboratory Use Only	Received By	Received By	Signature	Signature	Date	Date	Time
	KATHY	KATHY		<i>[Signature]</i>	1/6/20	11/13	4:45

Containers

1L Plastic

250mL Plastic

125mL Plastic

200mL Amber Glass

40mL VOA vial

500mL PFAS Bottle

Jar (Glass or HDPE)

Other (Asbestos AS4984, WA Guidelines)

Turnaround Time (TAT)

Requirements (obtain will be 4 days if not listed)

Overnight (9am)*

1 Day*

3 Day*

5 Day*

Other () *Surcharge apply

Please dry out and analyse as a solid sediment reporting metals in mg/kg
Please dry out and analyse as a solid sediment reporting metals in mg/kg

Submission of samples to the laboratory will be deemed as acceptance of Eurofins | mg Standard Terms and Conditions unless agreed otherwise. A copy of Eurofins | mg Standard Terms and Conditions is available on request.

Eurofins Environment Testing Australia Pty Ltd trading as Eurofins | mgt

20200721 Modified by: D. Robinson Approved by: L. Williams Approved by: V. Chapman

#722845

Melbourne

6 Monterey Road
Dandenong South Vic 3175
Phone : +61 3 8564 5000
NATA # 1261
Site # 1254 & 14271

Sydney

Unit F3, Building F
16 Mars Road
Lane Cove West NSW 2066
Phone : +61 2 9900 8400
NATA # 1261 Site # 18217

Brisbane

1/21 Smallwood Place
Murarrie QLD 4172
Phone : +61 7 3902 4600
NATA # 1261 Site # 20794

Perth

2/91 Leach Highway
Kewdale WA 6105
Phone : +61 8 9251 9600
NATA # 1261 Site # 23736

Sample Receipt Advice

Company name: **Ramboll Australia Pty Ltd**
Contact name: Stephen Maxwell
Project name: P10
Project ID: 31800780
COC number: Not provided
Turn around time: 3 Day
Date/Time received: Jun 1, 2020 11:13 AM
Eurofins reference: **722845**

Sample information

- A detailed list of analytes logged into our LIMS, is included in the attached summary table.
- All samples have been received as described on the above COC.
- COC has been completed correctly.
- Attempt to chill was evident.
- Appropriately preserved sample containers have been used.
- All samples were received in good condition.
- Samples have been provided with adequate time to commence analysis in accordance with the relevant holding times.
- Appropriate sample containers have been used.
- Sample containers for volatile analysis received with zero headspace.
- Split sample sent to requested external lab.
- Some samples have been subcontracted.
- N/A Custody Seals intact (if used).

Contact notes

If you have any questions with respect to these samples please contact:

Andrew Black on Phone : (+61) 2 9900 8490 or by e.mail: AndrewBlack@eurofins.com

Results will be delivered electronically via e.mail to Stephen Maxwell - smaxwell@ramboll.com.

Note: A copy of these results will also be delivered to the general Ramboll Australia Pty Ltd email address.

Ramboll Environ Australia Pty Ltd
 Level 3/100 Pacific Highway
 North Sydney
 NSW 2060



NATA Accredited
Accreditation Number 1261
Site Number 18217

Accredited for compliance with ISO/IEC 17025 – Testing
 The results of the tests, calibrations and/or
 measurements included in this document are traceable
 to Australian/national standards.

Attention: **Stephen Maxwell**

Report **722845-S**
 Project name **P10**
 Project ID **31800780**
 Received Date **Jun 01, 2020**

Client Sample ID			P10_T1SED	P10_T2SED
Sample Matrix			Sediment	Sediment
Eurofins Sample No.			S20-Jn00675	S20-Jn00676
Date Sampled			May 31, 2020	May 31, 2020
Test/Reference	LOR	Unit		
Heavy Metals				
Arsenic	2	mg/kg	3.6	3.4
Beryllium	2	mg/kg	< 2	< 2
Boron	10	mg/kg	12	34
Cadmium	0.4	mg/kg	< 0.4	< 0.4
Cobalt	5	mg/kg	< 5	< 5
Copper	5	mg/kg	7.6	30
Lead	5	mg/kg	11	64
Manganese	5	mg/kg	180	70
Mercury	0.1	mg/kg	< 0.1	< 0.1
Nickel	5	mg/kg	< 5	< 5
Selenium	2	mg/kg	< 2	< 2
Zinc	5	mg/kg	62	220

Sample History

Where samples are submitted/analysed over several days, the last date of extraction and analysis is reported.

A recent review of our LIMS has resulted in the correction or clarification of some method identifications. Due to this, some of the method reference information on reports has changed. However, no substantive change has been made to our laboratory methods, and as such there is no change in the validity of current or previous results.

If the date and time of sampling are not provided, the Laboratory will not be responsible for compromised results should testing be performed outside the recommended holding time.

Description

Heavy Metals

Testing Site

Sydney

Extracted

Jun 02, 2020

Holding Time

180 Days

- Method: LTM-MET-3040 Metals in Waters, Soils & Sediments by ICP-MS

Australia

Melbourne
6 Monterey Road
Dandenong South VIC 3175
Phone : +61 3 8564 5000
NATA # 1261
Site # 1254 & 14271

Sydney
Unit F3, Building F
16 Mars Road
Lane Cove West NSW 2066
Phone : +61 2 9900 8400
NATA # 1261 Site # 18217

Brisbane
1/21 Smallwood Place
Murarie QLD 4172
Phone : +61 7 3902 4600
NATA # 1261 Site # 20794

Perth
2/91 Leach Highway
Kewdale WA 6105
Phone : +61 8 9251 9600
NATA # 1261
Site # 23736

New Zealand

Auckland
35 O'Rorke Road
Penrose, Auckland 1061
Phone : +64 9 526 45 51
IANZ # 1327

Christchurch
43 Detroit Drive
Rolleston, Christchurch 7675
Phone : 0800 856 450
IANZ # 1290

Company Name: Ramboll Australia Pty Ltd
Address: Level 3/100 Pacific Highway
North Sydney
NSW 2060

Project Name: P10
Project ID: 31800780

Order No.:
Report #: 722845
Phone: 02 9954 8118
Fax: 02 9954 8150

Received: Jun 1, 2020 11:13 AM
Due: Jun 4, 2020
Priority: 3 Day
Contact Name: Stephen Maxwell

Eurofins Analytical Services Manager : Andrew Black

Sample Detail						Arsenic	Beryllium	Boron	Cadmium	Cobalt	Copper	Lead	Manganese	Mercury	Nickel	Selenium	Zinc
Melbourne Laboratory - NATA Site # 1254 & 14271																	
Sydney Laboratory - NATA Site # 18217						X	X	X	X	X	X	X	X	X	X	X	X
Brisbane Laboratory - NATA Site # 20794																	
Perth Laboratory - NATA Site # 23736																	
External Laboratory																	
No	Sample ID	Sample Date	Sampling Time	Matrix	LAB ID												
1	P10_T1SED	May 31, 2020		Water	S20-Jn00675	X	X	X	X	X	X	X	X	X	X	X	X
2	P10_T2SED	May 31, 2020		Water	S20-Jn00676	X	X	X	X	X	X	X	X	X	X	X	X
Test Counts						2	2	2	2	2	2	2	2	2	2	2	2

Internal Quality Control Review and Glossary
General

- Laboratory QC results for Method Blanks, Duplicates, Matrix Spikes, and Laboratory Control Samples follows guidelines delineated in the National Environment Protection (Assessment of Site Contamination) Measure 1999, as amended May 2013 and are included in this QC report where applicable. Additional QC data may be available on request.
- All soil/sediment/solid results are reported on a dry basis, unless otherwise stated.
- All biota/food results are reported on a wet weight basis on the edible portion, unless otherwise stated.
- Actual LORs are matrix dependant. Quoted LORs may be raised where sample extracts are diluted due to interferences.
- Results are uncorrected for matrix spikes or surrogate recoveries except for PFAS compounds.
- SVOC analysis on waters are performed on homogenised, unfiltered samples, unless noted otherwise.
- Samples were analysed on an 'as received' basis.
- Information identified on this report with blue colour, indicates data provided by customer, that may have an impact on the results.
- This report replaces any interim results previously issued.

Holding Times

Please refer to 'Sample Preservation and Container Guide' for holding times (QS3001).

For samples received on the last day of holding time, notification of testing requirements should have been received at least 6 hours prior to sample receipt deadlines as stated on the SRA.

If the Laboratory did not receive the information in the required timeframe, and regardless of any other integrity issues, suitably qualified results may still be reported.

Holding times apply from the date of sampling, therefore compliance to these may be outside the laboratory's control.

For VOCs containing vinyl chloride, styrene and 2-chloroethyl vinyl ether the holding time is 7 days however for all other VOCs such as BTEX or C6-10 TRH then the holding time is 14 days.

****NOTE:** pH duplicates are reported as a range NOT as RPD

Units

mg/kg: milligrams per kilogram

mg/L: milligrams per litre

ug/L: micrograms per litre

ppm: Parts per million

ppb: Parts per billion

%: Percentage

org/100mL: Organisms per 100 millilitres

NTU: Nephelometric Turbidity Units

MPN/100mL: Most Probable Number of organisms per 100 millilitres

Terms

Dry	Where a moisture has been determined on a solid sample the result is expressed on a dry basis.
LOR	Limit of Reporting.
SPIKE	Addition of the analyte to the sample and reported as percentage recovery.
RPD	Relative Percent Difference between two Duplicate pieces of analysis.
LCS	Laboratory Control Sample - reported as percent recovery.
CRM	Certified Reference Material - reported as percent recovery.
Method Blank	In the case of solid samples these are performed on laboratory certified clean sands and in the case of water samples these are performed on de-ionised water.
Surr - Surrogate	The addition of a like compound to the analyte target and reported as percentage recovery.
Duplicate	A second piece of analysis from the same sample and reported in the same units as the result to show comparison.
USEPA	United States Environmental Protection Agency
APHA	American Public Health Association
TCLP	Toxicity Characteristic Leaching Procedure
COC	Chain of Custody
SRA	Sample Receipt Advice
QSM	US Department of Defense Quality Systems Manual Version 5.3
CP	Client Parent - QC was performed on samples pertaining to this report
NCP	Non-Client Parent - QC performed on samples not pertaining to this report, QC is representative of the sequence or batch that client samples were analysed within.
TEQ	Toxic Equivalency Quotient

QC - Acceptance Criteria

RPD Duplicates: Global RPD Duplicates Acceptance Criteria is 30% however the following acceptance guidelines are equally applicable:

Results <10 times the LOR : No Limit

Results between 10-20 times the LOR : RPD must lie between 0-50%

Results >20 times the LOR : RPD must lie between 0-30%

Surrogate Recoveries: Recoveries must lie between 20-130% Phenols & 50-150% PFASs

PFAS field samples that contain surrogate recoveries in excess of the QC limit designated in QSM 5.3 where no positive PFAS results have been reported have been reviewed and no data was affected.

WA DWER (n=10): PFBA, PFPeA, PFHxA, PFHpA, PFOA, PFBS, PFHxS, PFOS, 6:2 FTSA, 8:2 FTSA

QC Data General Comments

- Where a result is reported as a less than (<), higher than the nominated LOR, this is due to either matrix interference, extract dilution required due to interferences or contaminant levels within the sample, high moisture content or insufficient sample provided.
- Duplicate data shown within this report that states the word "BATCH" is a Batch Duplicate from outside of your sample batch, but within the laboratory sample batch at a 1:10 ratio. The Parent and Duplicate data shown is not data from your samples.
- Organochlorine Pesticide analysis - where reporting LCS data, Toxaphene & Chlordane are not added to the LCS.
- Organochlorine Pesticide analysis - where reporting Spike data, Toxaphene is not added to the Spike.
- Total Recoverable Hydrocarbons - where reporting Spike & LCS data, a single spike of commercial Hydrocarbon products in the range of C12-C30 is added and it's Total Recovery is reported in the C10-C14 cell of the Report.
- pH and Free Chlorine analysed in the laboratory - Analysis on this test must begin within 30 minutes of sampling. Therefore laboratory analysis is unlikely to be completed within holding time. Analysis will begin as soon as possible after sample receipt.
- Recovery Data (Spikes & Surrogates) - where chromatographic interference does not allow the determination of Recovery the term "INT" appears against that analyte.
- Polychlorinated Biphenyls are spiked only using Aroclor 1260 in Matrix Spikes and LCS.
- For Matrix Spikes and LCS results a dash " - " in the report means that the specific analyte was not added to the QC sample.
- Duplicate RPDs are calculated from raw analytical data thus it is possible to have two sets of data.

Quality Control Results

Test		Units	Result 1			Acceptance Limits	Pass Limits	Qualifying Code
Method Blank								
Heavy Metals								
Arsenic		mg/kg	< 2			2	Pass	
Beryllium		mg/kg	< 2			2	Pass	
Boron		mg/kg	< 10			10	Pass	
Cadmium		mg/kg	< 0.4			0.4	Pass	
Cobalt		mg/kg	< 5			5	Pass	
Copper		mg/kg	< 5			5	Pass	
Lead		mg/kg	< 5			5	Pass	
Manganese		mg/kg	< 5			5	Pass	
Mercury		mg/kg	< 0.1			0.1	Pass	
Nickel		mg/kg	< 5			5	Pass	
Selenium		mg/kg	< 2			2	Pass	
Zinc		mg/kg	< 5			5	Pass	
LCS - % Recovery								
Heavy Metals								
Arsenic		%	110			70-130	Pass	
Beryllium		%	106			70-130	Pass	
Boron		%	97			70-130	Pass	
Cadmium		%	112			70-130	Pass	
Cobalt		%	102			70-130	Pass	
Copper		%	97			70-130	Pass	
Lead		%	106			70-130	Pass	
Manganese		%	99			70-130	Pass	
Mercury		%	101			70-130	Pass	
Nickel		%	97			70-130	Pass	
Selenium		%	99			70-130	Pass	
Zinc		%	96			70-130	Pass	
Test	Lab Sample ID	QA Source	Units	Result 1		Acceptance Limits	Pass Limits	Qualifying Code
Spike - % Recovery								
Heavy Metals				Result 1				
Arsenic	S20-Jn06448	NCP	%	103		70-130	Pass	
Beryllium	S20-Jn06448	NCP	%	100		70-130	Pass	
Boron	S20-Jn06448	NCP	%	81		70-130	Pass	
Cadmium	S20-Jn06448	NCP	%	98		70-130	Pass	
Cobalt	S20-Jn06448	NCP	%	94		70-130	Pass	
Copper	S20-Jn06448	NCP	%	87		70-130	Pass	
Lead	S20-Jn06448	NCP	%	101		70-130	Pass	
Manganese	S20-Jn06448	NCP	%	93		70-130	Pass	
Mercury	S20-Jn06448	NCP	%	97		70-130	Pass	
Nickel	S20-Jn06448	NCP	%	88		70-130	Pass	
Selenium	S20-Jn06448	NCP	%	90		70-130	Pass	
Zinc	S20-Jn06448	NCP	%	86		70-130	Pass	

Comments**Sample Integrity**

Custody Seals Intact (if used)	N/A
Attempt to Chill was evident	No
Sample correctly preserved	Yes
Appropriate sample containers have been used	Yes
Sample containers for volatile analysis received with minimal headspace	Yes
Samples received within HoldingTime	Yes
Some samples have been subcontracted	No

Authorised By

Andrew Black Analytical Services Manager
Gabriele Cordero Senior Analyst-Metal (NSW)

**Glenn Jackson
General Manager**

Final report - this Report replaces any previously issued Report

- Indicates Not Requested

* Indicates NATA accreditation does not cover the performance of this service

Measurement uncertainty of test data is available on request or please [click here](#).

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CHAIN OF CUSTODY RECORD

ABN 50 005 085 321

Dynasty Laboratory
Unit F3 Bld F, 16 Mars Rd, Lane Cove West, NSW 2066
02 9900 8400 EnviroSampleNSW@eurofins.com

Brisbane Laboratory
Unit 1, 21 Sandwood Pl., Murrumbidgee, QLD 4172
07 3502 4600 EnviroSampleQLD@eurofins.com

Perth Laboratory
Unit 2, 91 Leach Highway, Kewdale WA 6105
08 9251 9900 EnviroSampleWA@eurofins.com

Melbourne Laboratory
2 Kingston Town Close, Oakleigh, VIC 3166
03 9564 5000 EnviroSampleVIC@eurofins.com

Company Ramboll

Address 50 Glebe Road the Junction

Contact Name Stephen Maxwell

Phone No 0479 638 194

Project No 318000760

Project Name P27

Project Manager EDD Format (ES&I, EQUIS, Custom)

Sampler(s) JB, T.J, JK

Handed over by Jordyn Kirsch

Turnaround Time (TAT)
Requirements (Default will be 2 days if not ticked)
 Overnight (9am)*
 1 Day*
 2 Day*
 3 Day*
 5 Day
 *Surcharges apply

Analyses
(Note: Where metals are requested, please specify "Total" or "Filtered". SUITE code must be used to attract SUITE pricing)

Total Lead (mg/kg)

Total Sample Mass

Total Lead (µg/L)

M13 (Al, As, Ba, Be, Cd, Cr, Co, Cu, Fe, Pb, Mn, Hg, Ni, Zn) Excluding hexavalent chromium Total

M13 (Al, As, Ba, Be, Cd, Cr, Co, Cu, Fe, Pb, Mn, Hg, Ni, Zn) Excluding hexavalent chromium Dissolved

Containers
 1L Plastic
 250mL Plastic
 125mL Plastic
 200mL Amber Glass
 40mL VOA vial
 500mL PFAS Bottle
 Jar (Glass or HDPE)
 Other (Asbestos AS4964, WA Guidelines)

Sample Comments / Dangerous Goods Hazard Warning

No	Client Sample ID	Sampled Date/Time (dd/mm/yyyy hh:mm)	Matrix (Solid (S) Water (W))	Total Lead (mg/kg)	Total Sample Mass	Total Lead (µg/L)	M13 (Al, As, Ba, Be, Cd, Cr, Co, Cu, Fe, Pb, Mn, Hg, Ni, Zn) Excluding hexavalent chromium Total	M13 (Al, As, Ba, Be, Cd, Cr, Co, Cu, Fe, Pb, Mn, Hg, Ni, Zn) Excluding hexavalent chromium Dissolved
1	DSWAB_MH(P-10)	28/04/20	S			X		
2	DSWAB_LR(P-10)	28/04/20	S		X			
3	DSWAB_BE(P-10)	28/04/20	S		X			
4	DSWAB_FE(P-10)	28/04/20	S		X			
5	DVAC_KB(P-10)	28/04/20	S	X	X			
6	DVAC_MBR(P-10)	28/04/20	S	X	X			
7	P10_BORETANK	28/04/20	W			X	X	
8	P10_BORETANKSED	28/04/20	S			X		
9								
10								
Total Counts				2	2	4	2	1

Method of Shipment
 Courier #) Hand Delivered Postal

Eurofins | mgt
 Received By: *[Signature]* Date: *14.05.20*
 Received By: *[Signature]* Date: *14.05.20*

Signature
 Signature: *[Signature]* Date: *14.05.20*

Signature
 Signature: *[Signature]* Date: *14.05.20*

Date *14.05.20* **Time** *16:48*

Submission of samples to the laboratory will be deemed as acceptance of Eurofins | mgt Standard Terms and Conditions unless agreed otherwise. A copy of Eurofins | mgt Standard Terms and Conditions is available on request.

Eurofins Environment Testing Australia Pty Ltd trading as Eurofins | mgt

Sample Receipt Advice

Company name: **Ramboll Australia Pty Ltd**
Contact name: Stephen Maxwell
Project name: P10
Project ID: 318000780
COC number: Not provided
Turn around time: 5 Day
Date/Time received: May 1, 2020 12:00 PM
Eurofins reference: **716988**

Sample information

- A detailed list of analytes logged into our LIMS, is included in the attached summary table.
- All samples have been received as described on the above COC.
- COC has been completed correctly.
- Attempt to chill was evident.
- Appropriately preserved sample containers have been used.
- All samples were received in good condition.
- Samples have been provided with adequate time to commence analysis in accordance with the relevant holding times.
- Appropriate sample containers have been used.
- Sample containers for volatile analysis received with zero headspace.
- Split sample sent to requested external lab.
- Some samples have been subcontracted.
- N/A Custody Seals intact (if used).

Notes

DSWAB_LR(P10) mentioned on COC, received DVAC_LR(P10) instead - logged as per ID on sample.
DVAC_MBR(P10) mentioned on COC received DSWAB_MBR instead - logged as per ID on sample. Project name on COC is P27, name changed to P10 as samples are P10 samples.

Contact notes

If you have any questions with respect to these samples please contact:

Andrew Black on Phone : (+61) 2 9900 8490 or by e.mail: AndrewBlack@eurofins.com

Results will be delivered electronically via e.mail to Stephen Maxwell - smaxwell@ramboll.com.

Note: A copy of these results will also be delivered to the general Ramboll Australia Pty Ltd email address.

Australia

Melbourne
6 Monterey Road
Dandenong South VIC 3175
Phone : +61 3 8564 5000
NATA # 1261
Site # 1254 & 14271

Sydney
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Lane Cove West NSW 2066
Phone : +61 2 9900 8400
NATA # 1261 Site # 18217

Brisbane
1/21 Smallwood Place
Murarrie QLD 4172
Phone : +61 7 3902 4600
NATA # 1261 Site # 20794

Perth
2/91 Leach Highway
Kewdale WA 6105
Phone : +61 8 9251 9600
NATA # 1261
Site # 23736

New Zealand

Auckland
35 O'Rorke Road
Penrose, Auckland 1061
Phone : +64 9 526 45 51
IANZ # 1327

Christchurch
43 Detroit Drive
Rolleston, Christchurch 7675
Phone : 0800 856 450
IANZ # 1290

Company Name: Ramboll Australia Pty Ltd
Address: Level 3/100 Pacific Highway
North Sydney
NSW 2060

Order No.:
Report #: 716988
Phone: 02 9954 8118
Fax: 02 9954 8150

Received: May 1, 2020 12:00 PM
Due: May 8, 2020
Priority: 5 Day
Contact Name: Stephen Maxwell

Project Name: P10
Project ID: 318000780

Eurofins Analytical Services Manager : Andrew Black

Sample Detail						Aluminium	Aluminium (filtered)	Arsenic	Arsenic (filtered)	Barium	Barium (filtered)	Beryllium	Beryllium (filtered)	Cadmium	Cadmium (filtered)	Chromium	Chromium (filtered)	Cobalt	Cobalt (filtered)	Copper	Copper (filtered)	Iron	Iron (filtered)	Lead	Lead (filtered)	Manganese	Manganese (filtered)	Mass of sample*	Mercury	Mercury (filtered)	Nickel	Nickel (filtered)	Zinc	Zinc (filtered)	Moisture Set		
Melbourne Laboratory - NATA Site # 1254 & 14271																																					
Sydney Laboratory - NATA Site # 18217						X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	
Brisbane Laboratory - NATA Site # 20794																																					
Perth Laboratory - NATA Site # 23736																																					
7	P10_BORETA NK	Apr 28, 2020		Water	S20-My01303	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X		X	X	X	X	X	X				
8	P10_BORETA NKSED	Apr 28, 2020		Sediment	S20-My01304	X		X		X		X		X		X		X		X		X		X		X		X		X		X		X			
Test Counts						2	1	2	1	2	1	2	1	2	1	2	1	2	1	2	1	2	1	2	1	8	1	2	1	2	2	1	2	1	1		

Ramboll Environ Australia Pty Ltd
 Level 3/100 Pacific Highway
 North Sydney
 NSW 2060



NATA Accredited
Accreditation Number 1261
Site Number 18217

Accredited for compliance with ISO/IEC 17025 – Testing
 The results of the tests, calibrations and/or
 measurements included in this document are traceable
 to Australian/national standards.

Attention: **Stephen Maxwell**

Report **716988-A**
 Project name **P10**
 Project ID **318000780**
 Received Date **May 01, 2020**

Client Sample ID			DSWAB_MH(P10)	DSWAB_BE(P10)	DSWAB_FE(P10)	DSWAB_MBR(P10)
Sample Matrix			Wipes	Wipes	Wipes	Wipes
Eurofins Sample No.			S20-My01297	S20-My01299	S20-My01300	S20-My01302
Date Sampled			Apr 28, 2020	Apr 28, 2020	Apr 28, 2020	Apr 28, 2020
Test/Reference	LOR	Unit				
Heavy Metals						
Lead	1	Total ug	11	2.1	1.9	8.3

Sample History

Where samples are submitted/analysed over several days, the last date of extraction and analysis is reported.

A recent review of our LIMS has resulted in the correction or clarification of some method identifications. Due to this, some of the method reference information on reports has changed. However, no substantive change has been made to our laboratory methods, and as such there is no change in the validity of current or previous results.

If the date and time of sampling are not provided, the Laboratory will not be responsible for compromised results should testing be performed outside the recommended holding time.

Description

Heavy Metals

Testing Site

Sydney

Extracted

May 07, 2020

Holding Time

180 Days

- Method: LTM-MET-3040 Metals in Waters, Soils & Sediments by ICP-MS

Australia

Melbourne
6 Monterey Road
Dandenong South VIC 3175
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NATA # 1261
Site # 1254 & 14271

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IANZ # 1327

Christchurch
43 Detroit Drive
Rolleston, Christchurch 7675
Phone : 0800 856 450
IANZ # 1290

Company Name: Ramboll Australia Pty Ltd
Address: Level 3/100 Pacific Highway
North Sydney
NSW 2060

Order No.:
Report #: 716988
Phone: 02 9954 8118
Fax: 02 9954 8150

Received: May 1, 2020 12:00 PM
Due: May 8, 2020
Priority: 5 Day
Contact Name: Stephen Maxwell

Project Name: P10
Project ID: 318000780

Eurofins Analytical Services Manager : Andrew Black

Sample Detail						Aluminium	Aluminium (filtered)	Arsenic	Arsenic (filtered)	Barium	Barium (filtered)	Beryllium	Beryllium (filtered)	Cadmium	Cadmium (filtered)	Chromium	Chromium (filtered)	Cobalt	Cobalt (filtered)	Copper	Copper (filtered)	Iron	Iron (filtered)	Lead	Lead (filtered)	Manganese	Manganese (filtered)	Mass of sample*	Mercury	Mercury (filtered)	Nickel	Nickel (filtered)	Zinc	Zinc (filtered)	Moisture Set		
Melbourne Laboratory - NATA Site # 1254 & 14271																																					
Sydney Laboratory - NATA Site # 18217						X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	
Brisbane Laboratory - NATA Site # 20794																																					
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External Laboratory																																					
No	Sample ID	Sample Date	Sampling Time	Matrix	LAB ID																																
1	DSWAB_MH(P10)	Apr 28, 2020		Wipes	S20-My01297																			X													
2	DVAC_LR(P10)	Apr 28, 2020		Dust	S20-My01298																			X			X										
3	DSWAB_BE(P10)	Apr 28, 2020		Wipes	S20-My01299																			X													
4	DSWAB_FE(P10)	Apr 28, 2020		Wipes	S20-My01300																			X													
5	DVAC_KB(P10)	Apr 28, 2020		Dust	S20-My01301																			X			X										
6	DSWAB_MBR(P10)	Apr 28, 2020		Wipes	S20-My01302																			X													

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ABN – 50 005 085 521

web : www.eurofins.com.au

e.mail : EnviroSales@eurofins.com

Company Name: Ramboll Australia Pty Ltd
Address: Level 3/100 Pacific Highway
North Sydney
NSW 2060

Order No.:
Report #: 716988
Phone: 02 9954 8118
Fax: 02 9954 8150

Received: May 1, 2020 12:00 PM
Due: May 8, 2020
Priority: 5 Day
Contact Name: Stephen Maxwell

Project Name: P10
Project ID: 318000780

Eurofins Analytical Services Manager : Andrew Black

Sample Detail						Aluminium	Aluminium (filtered)	Arsenic	Arsenic (filtered)	Barium	Barium (filtered)	Beryllium	Beryllium (filtered)	Cadmium	Cadmium (filtered)	Chromium	Chromium (filtered)	Cobalt	Cobalt (filtered)	Copper	Copper (filtered)	Iron	Iron (filtered)	Lead	Lead (filtered)	Manganese	Manganese (filtered)	Mass of sample*	Mercury	Mercury (filtered)	Nickel	Nickel (filtered)	Zinc	Zinc (filtered)	Moisture Set		
Melbourne Laboratory - NATA Site # 1254 & 14271																																					
Sydney Laboratory - NATA Site # 18217						X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	
Brisbane Laboratory - NATA Site # 20794																																					
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7	P10_BORETA NK	Apr 28, 2020		Water	S20-My01303	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X		X	X	X	X	X	X				
8	P10_BORETA NKSED	Apr 28, 2020		Sediment	S20-My01304	X		X		X		X		X		X		X		X		X		X		X		X		X		X		X			
Test Counts						2	1	2	1	2	1	2	1	2	1	2	1	2	1	2	1	2	1	2	1	8	1	2	1	2	2	1	2	1	1		

Internal Quality Control Review and Glossary
General

- Laboratory QC results for Method Blanks, Duplicates, Matrix Spikes, and Laboratory Control Samples follows guidelines delineated in the National Environment Protection (Assessment of Site Contamination) Measure 1999, as amended May 2013 and are included in this QC report where applicable. Additional QC data may be available on request.
- All soil/sediment/solid results are reported on a dry basis, unless otherwise stated.
- All biota/food results are reported on a wet weight basis on the edible portion, unless otherwise stated.
- Actual LORs are matrix dependant. Quoted LORs may be raised where sample extracts are diluted due to interferences.
- Results are uncorrected for matrix spikes or surrogate recoveries except for PFAS compounds.
- SVOC analysis on waters are performed on homogenised, unfiltered samples, unless noted otherwise.
- Samples were analysed on an 'as received' basis.
- Information identified on this report with blue colour, indicates data provided by customer, that may have an impact on the results.
- This report replaces any interim results previously issued.

Holding Times

Please refer to 'Sample Preservation and Container Guide' for holding times (QS3001).

For samples received on the last day of holding time, notification of testing requirements should have been received at least 6 hours prior to sample receipt deadlines as stated on the SRA.

If the Laboratory did not receive the information in the required timeframe, and regardless of any other integrity issues, suitably qualified results may still be reported.

Holding times apply from the date of sampling, therefore compliance to these may be outside the laboratory's control.

For VOCs containing vinyl chloride, styrene and 2-chloroethyl vinyl ether the holding time is 7 days however for all other VOCs such as BTEX or C6-10 TRH then the holding time is 14 days.

****NOTE:** pH duplicates are reported as a range NOT as RPD

Units

mg/kg: milligrams per kilogram

mg/L: milligrams per litre

ug/L: micrograms per litre

ppm: Parts per million

ppb: Parts per billion

%: Percentage

org/100mL: Organisms per 100 millilitres

NTU: Nephelometric Turbidity Units

MPN/100mL: Most Probable Number of organisms per 100 millilitres

Terms

Dry	Where a moisture has been determined on a solid sample the result is expressed on a dry basis.
LOR	Limit of Reporting.
SPIKE	Addition of the analyte to the sample and reported as percentage recovery.
RPD	Relative Percent Difference between two Duplicate pieces of analysis.
LCS	Laboratory Control Sample - reported as percent recovery.
CRM	Certified Reference Material - reported as percent recovery.
Method Blank	In the case of solid samples these are performed on laboratory certified clean sands and in the case of water samples these are performed on de-ionised water.
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Duplicate	A second piece of analysis from the same sample and reported in the same units as the result to show comparison.
USEPA	United States Environmental Protection Agency
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TCLP	Toxicity Characteristic Leaching Procedure
COC	Chain of Custody
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CP	Client Parent - QC was performed on samples pertaining to this report
NCP	Non-Client Parent - QC performed on samples not pertaining to this report, QC is representative of the sequence or batch that client samples were analysed within.
TEQ	Toxic Equivalency Quotient

QC - Acceptance Criteria

RPD Duplicates: Global RPD Duplicates Acceptance Criteria is 30% however the following acceptance guidelines are equally applicable:

Results <10 times the LOR : No Limit

Results between 10-20 times the LOR : RPD must lie between 0-50%

Results >20 times the LOR : RPD must lie between 0-30%

Surrogate Recoveries: Recoveries must lie between 20-130% Phenols & 50-150% PFASs

PFAS field samples that contain surrogate recoveries in excess of the QC limit designated in QSM 5.3 where no positive PFAS results have been reported have been reviewed and no data was affected.

WA DWER (n=10): PFBA, PFPeA, PFHxA, PFHpA, PFOA, PFBS, PFHxS, PFOS, 6:2 FTSA, 8:2 FTSA

QC Data General Comments

- Where a result is reported as a less than (<), higher than the nominated LOR, this is due to either matrix interference, extract dilution required due to interferences or contaminant levels within the sample, high moisture content or insufficient sample provided.
- Duplicate data shown within this report that states the word "BATCH" is a Batch Duplicate from outside of your sample batch, but within the laboratory sample batch at a 1:10 ratio. The Parent and Duplicate data shown is not data from your samples.
- Organochlorine Pesticide analysis - where reporting LCS data, Toxaphene & Chlordane are not added to the LCS.
- Organochlorine Pesticide analysis - where reporting Spike data, Toxaphene is not added to the Spike.
- Total Recoverable Hydrocarbons - where reporting Spike & LCS data, a single spike of commercial Hydrocarbon products in the range of C12-C30 is added and it's Total Recovery is reported in the C10-C14 cell of the Report.
- pH and Free Chlorine analysed in the laboratory - Analysis on this test must begin within 30 minutes of sampling. Therefore laboratory analysis is unlikely to be completed within holding time. Analysis will begin as soon as possible after sample receipt.
- Recovery Data (Spikes & Surrogates) - where chromatographic interference does not allow the determination of Recovery the term "INT" appears against that analyte.
- Polychlorinated Biphenyls are spiked only using Aroclor 1260 in Matrix Spikes and LCS.
- For Matrix Spikes and LCS results a dash " - " in the report means that the specific analyte was not added to the QC sample.
- Duplicate RPDs are calculated from raw analytical data thus it is possible to have two sets of data.

Quality Control Results

Comments**Sample Integrity**

Custody Seals Intact (if used)	N/A
Attempt to Chill was evident	No
Sample correctly preserved	Yes
Appropriate sample containers have been used	Yes
Sample containers for volatile analysis received with minimal headspace	Yes
Samples received within HoldingTime	Yes
Some samples have been subcontracted	No

Authorised By

Andrew Black Analytical Services Manager
Gabriele Cordero Senior Analyst-Metal (NSW)

**Glenn Jackson
General Manager**

Final report - this Report replaces any previously issued Report

- Indicates Not Requested

* Indicates NATA accreditation does not cover the performance of this service

Measurement uncertainty of test data is available on request or please [click here](#).

Eurofins shall not be liable for loss, cost, damages or expenses incurred by the client, or any other person or company, resulting from the use of any information or interpretation given in this report. In no case shall Eurofins be liable for consequential damages including, but not limited to, lost profits, damages for failure to meet deadlines and lost production arising from this report. This document shall not be reproduced except in full and relates only to the items tested. Unless indicated otherwise, the tests were performed on the samples as received.

Ramboll Environ Australia Pty Ltd
 Level 3/100 Pacific Highway
 North Sydney
 NSW 2060



NATA Accredited
Accreditation Number 1261
Site Number 18217

Accredited for compliance with ISO/IEC 17025 – Testing
 The results of the tests, calibrations and/or
 measurements included in this document are traceable
 to Australian/national standards.

Attention: **Stephen Maxwell**

Report **716988-S**
 Project name **P10**
 Project ID **318000780**
 Received Date **May 01, 2020**

Client Sample ID			DVAC_LR(P10)	DVAC_KB(P10)	P10_BORETA NKSED
Sample Matrix			Dust	Dust	Sediment
Eurofins Sample No.			S20-My01298	S20-My01301	S20-My01304
Date Sampled			Apr 28, 2020	Apr 28, 2020	Apr 28, 2020
Test/Reference	LOR	Unit			
Heavy Metals					
Aluminium	10	mg/kg	-	-	12000
Arsenic	2	mg/kg	-	-	26
Barium	10	mg/kg	-	-	82
Beryllium	2	mg/kg	-	-	2.7
Cadmium	0.4	mg/kg	-	-	< 0.4
Chromium	5	mg/kg	-	-	44
Cobalt	5	mg/kg	-	-	13
Copper	5	mg/kg	-	-	54
Iron	20	mg/kg	-	-	26000
Lead	5	mg/kg	46	21	47
Manganese	5	mg/kg	-	-	550
Mercury	0.1	mg/kg	-	-	< 0.1
Nickel	5	mg/kg	-	-	20
Zinc	5	mg/kg	-	-	83

Sample History

Where samples are submitted/analysed over several days, the last date of extraction and analysis is reported.

A recent review of our LIMS has resulted in the correction or clarification of some method identifications. Due to this, some of the method reference information on reports has changed. However, no substantive change has been made to our laboratory methods, and as such there is no change in the validity of current or previous results.

If the date and time of sampling are not provided, the Laboratory will not be responsible for compromised results should testing be performed outside the recommended holding time.

Description

Heavy Metals

Testing Site

Sydney

Extracted

May 08, 2020

Holding Time

180 Days

- Method: LTM-MET-3040 Metals in Waters, Soils & Sediments by ICP-MS

Australia

Melbourne
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Christchurch
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Rolleston, Christchurch 7675
Phone : 0800 856 450
IANZ # 1290

Company Name:	Ramboll Australia Pty Ltd	Order No.:		Received:	May 1, 2020 12:00 PM
Address:	Level 3/100 Pacific Highway North Sydney NSW 2060	Report #:	716988	Due:	May 8, 2020
Project Name:	P10	Phone:	02 9954 8118	Priority:	5 Day
Project ID:	318000780	Fax:	02 9954 8150	Contact Name:	Stephen Maxwell

Eurofins Analytical Services Manager : Andrew Black

Sample Detail						Aluminium	Aluminium (filtered)	Arsenic	Arsenic (filtered)	Barium	Barium (filtered)	Beryllium	Beryllium (filtered)	Cadmium	Cadmium (filtered)	Chromium	Chromium (filtered)	Cobalt	Cobalt (filtered)	Copper	Copper (filtered)	Iron	Iron (filtered)	Lead	Lead (filtered)	Manganese	Manganese (filtered)	Mass of sample*	Mercury	Mercury (filtered)	Nickel	Nickel (filtered)	Zinc	Zinc (filtered)	Moisture Set		
Melbourne Laboratory - NATA Site # 1254 & 14271																																					
Sydney Laboratory - NATA Site # 18217						X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	
Brisbane Laboratory - NATA Site # 20794																																					
Perth Laboratory - NATA Site # 23736																																					
External Laboratory																																					
No	Sample ID	Sample Date	Sampling Time	Matrix	LAB ID																																
1	DSWAB_MH(P10)	Apr 28, 2020		Wipes	S20-My01297																			X													
2	DVAC_LR(P10)	Apr 28, 2020		Dust	S20-My01298																			X			X										
3	DSWAB_BE(P10)	Apr 28, 2020		Wipes	S20-My01299																			X													
4	DSWAB_FE(P10)	Apr 28, 2020		Wipes	S20-My01300																			X													
5	DVAC_KB(P10)	Apr 28, 2020		Dust	S20-My01301																			X			X										
6	DSWAB_MBR(P10)	Apr 28, 2020		Wipes	S20-My01302																			X													

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e.mail : EnviroSales@eurofins.com

Company Name: Ramboll Australia Pty Ltd
Address: Level 3/100 Pacific Highway
North Sydney
NSW 2060

Order No.:
Report #: 716988
Phone: 02 9954 8118
Fax: 02 9954 8150

Received: May 1, 2020 12:00 PM
Due: May 8, 2020
Priority: 5 Day
Contact Name: Stephen Maxwell

Project Name: P10
Project ID: 318000780

Eurofins Analytical Services Manager : Andrew Black

Sample Detail						Aluminium	Aluminium (filtered)	Arsenic	Arsenic (filtered)	Barium	Barium (filtered)	Beryllium	Beryllium (filtered)	Cadmium	Cadmium (filtered)	Chromium	Chromium (filtered)	Cobalt	Cobalt (filtered)	Copper	Copper (filtered)	Iron	Iron (filtered)	Lead	Lead (filtered)	Manganese	Manganese (filtered)	Mass of sample*	Mercury	Mercury (filtered)	Nickel	Nickel (filtered)	Zinc	Zinc (filtered)	Moisture Set			
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Brisbane Laboratory - NATA Site # 20794																																						
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7	P10_BORETA NK	Apr 28, 2020		Water	S20-My01303	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X		X	X	X	X	X	X				
8	P10_BORETA NKSED	Apr 28, 2020		Sediment	S20-My01304	X		X		X		X		X		X		X		X		X		X		X		X		X		X		X				
Test Counts						2	1	2	1	2	1	2	1	2	1	2	1	2	1	2	1	2	1	2	1	8	1	2	1	2	2	1	2	1	2	1	1	

Internal Quality Control Review and Glossary

General

- Laboratory QC results for Method Blanks, Duplicates, Matrix Spikes, and Laboratory Control Samples follows guidelines delineated in the National Environment Protection (Assessment of Site Contamination) Measure 1999, as amended May 2013 and are included in this QC report where applicable. Additional QC data may be available on request.
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- SVOC analysis on waters are performed on homogenised, unfiltered samples, unless noted otherwise.
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Holding times apply from the date of sampling, therefore compliance to these may be outside the laboratory's control.

For VOCs containing vinyl chloride, styrene and 2-chloroethyl vinyl ether the holding time is 7 days however for all other VOCs such as BTEX or C6-10 TRH then the holding time is 14 days.

****NOTE:** pH duplicates are reported as a range NOT as RPD

Units

mg/kg: milligrams per kilogram	mg/L: milligrams per litre	ug/L: micrograms per litre
ppm: Parts per million	ppb: Parts per billion	%: Percentage
org/100mL: Organisms per 100 millilitres	NTU: Nephelometric Turbidity Units	MPN/100mL: Most Probable Number of organisms per 100 millilitres

Terms

Dry	Where a moisture has been determined on a solid sample the result is expressed on a dry basis.
LOR	Limit of Reporting.
SPIKE	Addition of the analyte to the sample and reported as percentage recovery.
RPD	Relative Percent Difference between two Duplicate pieces of analysis.
LCS	Laboratory Control Sample - reported as percent recovery.
CRM	Certified Reference Material - reported as percent recovery.
Method Blank	In the case of solid samples these are performed on laboratory certified clean sands and in the case of water samples these are performed on de-ionised water.
Surr - Surrogate	The addition of a like compound to the analyte target and reported as percentage recovery.
Duplicate	A second piece of analysis from the same sample and reported in the same units as the result to show comparison.
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RPD Duplicates: Global RPD Duplicates Acceptance Criteria is 30% however the following acceptance guidelines are equally applicable:

Results <10 times the LOR : No Limit

Results between 10-20 times the LOR : RPD must lie between 0-50%

Results >20 times the LOR : RPD must lie between 0-30%

Surrogate Recoveries: Recoveries must lie between 20-130% Phenols & 50-150% PFASs

PFAS field samples that contain surrogate recoveries in excess of the QC limit designated in QSM 5.3 where no positive PFAS results have been reported have been reviewed and no data was affected.

WA DWER (n=10): PFBA, PFPeA, PFHxA, PFHpA, PFOA, PFBS, PFHxS, PFOS, 6:2 FTSA, 8:2 FTSA

QC Data General Comments

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- Duplicate data shown within this report that states the word "BATCH" is a Batch Duplicate from outside of your sample batch, but within the laboratory sample batch at a 1:10 ratio. The Parent and Duplicate data shown is not data from your samples.
- Organochlorine Pesticide analysis - where reporting LCS data, Toxaphene & Chlordane are not added to the LCS.
- Organochlorine Pesticide analysis - where reporting Spike data, Toxaphene is not added to the Spike.
- Total Recoverable Hydrocarbons - where reporting Spike & LCS data, a single spike of commercial Hydrocarbon products in the range of C12-C30 is added and it's Total Recovery is reported in the C10-C14 cell of the Report.
- pH and Free Chlorine analysed in the laboratory - Analysis on this test must begin within 30 minutes of sampling. Therefore laboratory analysis is unlikely to be completed within holding time. Analysis will begin as soon as possible after sample receipt.
- Recovery Data (Spikes & Surrogates) - where chromatographic interference does not allow the determination of Recovery the term "INT" appears against that analyte.
- Polychlorinated Biphenyls are spiked only using Aroclor 1260 in Matrix Spikes and LCS.
- For Matrix Spikes and LCS results a dash " - " in the report means that the specific analyte was not added to the QC sample.
- Duplicate RPDs are calculated from raw analytical data thus it is possible to have two sets of data.

Quality Control Results

Test			Units	Result 1		Acceptance Limits	Pass Limits	Qualifying Code
Method Blank								
Heavy Metals								
Aluminium			mg/kg	< 10		10	Pass	
Arsenic			mg/kg	< 2		2	Pass	
Barium			mg/kg	< 10		10	Pass	
Beryllium			mg/kg	< 2		2	Pass	
Cadmium			mg/kg	< 0.4		0.4	Pass	
Chromium			mg/kg	< 5		5	Pass	
Cobalt			mg/kg	< 5		5	Pass	
Copper			mg/kg	< 5		5	Pass	
Iron			mg/kg	< 20		20	Pass	
Lead			mg/kg	< 5		5	Pass	
Manganese			mg/kg	< 5		5	Pass	
Mercury			mg/kg	< 0.1		0.1	Pass	
Nickel			mg/kg	< 5		5	Pass	
Zinc			mg/kg	< 5		5	Pass	
LCS - % Recovery								
Heavy Metals								
Aluminium			%	100		70-130	Pass	
Arsenic			%	97		70-130	Pass	
Barium			%	100		70-130	Pass	
Beryllium			%	94		70-130	Pass	
Cadmium			%	100		70-130	Pass	
Chromium			%	97		70-130	Pass	
Cobalt			%	99		70-130	Pass	
Copper			%	96		70-130	Pass	
Iron			%	94		70-130	Pass	
Lead			%	98		70-130	Pass	
Manganese			%	98		70-130	Pass	
Mercury			%	94		70-130	Pass	
Nickel			%	100		70-130	Pass	
Zinc			%	98		70-130	Pass	
Test	Lab Sample ID	QA Source	Units	Result 1		Acceptance Limits	Pass Limits	Qualifying Code
Spike - % Recovery								
Heavy Metals				Result 1				
Aluminium	S20-My01747	NCP	%	75		70-130	Pass	
Arsenic	S20-My08558	NCP	%	90		70-130	Pass	
Barium	S20-My08558	NCP	%	86		70-130	Pass	
Beryllium	S20-My08558	NCP	%	91		70-130	Pass	
Cadmium	S20-My08558	NCP	%	97		70-130	Pass	
Chromium	S20-My08558	NCP	%	94		70-130	Pass	
Cobalt	S20-My08558	NCP	%	93		70-130	Pass	
Copper	S20-My08558	NCP	%	95		70-130	Pass	
Iron	S20-My08558	NCP	%	94		70-130	Pass	
Lead	S20-My08558	NCP	%	93		70-130	Pass	
Manganese	S20-My08558	NCP	%	84		70-130	Pass	
Mercury	S20-My08558	NCP	%	97		70-130	Pass	
Nickel	S20-My08558	NCP	%	91		70-130	Pass	
Zinc	S20-My08558	NCP	%	98		70-130	Pass	

Test	Lab Sample ID	QA Source	Units	Result 1			Acceptance Limits	Pass Limits	Qualifying Code
Duplicate									
Heavy Metals				Result 1	Result 2	RPD			
Aluminium	S20-Ap45275	NCP	mg/kg	5200	5400	3.0	30%	Pass	
Arsenic	S20-Ap45275	NCP	mg/kg	2.9	3.5	19	30%	Pass	
Barium	S20-Ap45275	NCP	mg/kg	61	57	7.0	30%	Pass	
Beryllium	S20-Ap45275	NCP	mg/kg	< 2	< 2	<1	30%	Pass	
Cadmium	S20-Ap45275	NCP	mg/kg	< 0.4	< 0.4	<1	30%	Pass	
Chromium	S20-Ap45275	NCP	mg/kg	7.4	7.1	4.0	30%	Pass	
Cobalt	S20-Ap45275	NCP	mg/kg	5.5	< 5	38	30%	Fail	
Copper	S20-Ap45275	NCP	mg/kg	7.1	14	65	30%	Fail	
Iron	S20-Ap45275	NCP	mg/kg	14000	22000	45	30%	Fail	
Lead	S20-Ap45275	NCP	mg/kg	34	26	26	30%	Pass	
Manganese	S20-Ap45275	NCP	mg/kg	240	92	90	30%	Fail	
Mercury	S20-Ap45275	NCP	mg/kg	< 0.1	< 0.1	<1	30%	Pass	
Nickel	S20-Ap45275	NCP	mg/kg	< 5	< 5	<1	30%	Pass	
Zinc	S20-Ap45275	NCP	mg/kg	20	28	35	30%	Fail	

Comments
Sample Integrity

Custody Seals Intact (if used)	N/A
Attempt to Chill was evident	No
Sample correctly preserved	Yes
Appropriate sample containers have been used	Yes
Sample containers for volatile analysis received with minimal headspace	Yes
Samples received within HoldingTime	Yes
Some samples have been subcontracted	No

Qualifier Codes/Comments

Code	Description
Q02	The duplicate %RPD is outside the recommended acceptance criteria. Further analysis indicates sample heterogeneity as the cause
Q15	The RPD reported passes Eurofins Environment Testing's QC - Acceptance Criteria as defined in the Internal Quality Control Review and Glossary page of this report.

Authorised By

Andrew Black	Analytical Services Manager
Gabriele Cordero	Senior Analyst-Metal (NSW)


**Glenn Jackson
General Manager**

Final report - this Report replaces any previously issued Report

- Indicates Not Requested

* Indicates NATA accreditation does not cover the performance of this service

Measurement uncertainty of test data is available on request or please [click here](#).

Eurofins shall not be liable for loss, cost, damages or expenses incurred by the client, or any other person or company, resulting from the use of any information or interpretation given in this report. In no case shall Eurofins be liable for consequential damages including, but not limited to, lost profits, damages for failure to meet deadlines and lost production arising from this report. This document shall not be reproduced except in full and relates only to the items tested. Unless indicated otherwise, the tests were performed on the samples as received.

Ramboll Environ Australia Pty Ltd
 Level 3/100 Pacific Highway
 North Sydney
 NSW 2060



NATA Accredited
Accreditation Number 1261
Site Number 18217

Accredited for compliance with ISO/IEC 17025 – Testing
 The results of the tests, calibrations and/or
 measurements included in this document are traceable
 to Australian/national standards.

Attention: **Stephen Maxwell**

Report **716988-W**
 Project name **P10**
 Project ID **318000780**
 Received Date **May 01, 2020**

Client Sample ID			P10_BORETA NK
Sample Matrix			Water
Eurofins Sample No.			S20-My01303
Date Sampled			Apr 28, 2020
Test/Reference	LOR	Unit	
Heavy Metals			
Aluminium	0.05	mg/L	< 0.05
Aluminium (filtered)	0.05	mg/L	< 0.05
Arsenic	0.001	mg/L	0.001
Arsenic (filtered)	0.001	mg/L	0.001
Barium	0.02	mg/L	0.05
Barium (filtered)	0.02	mg/L	0.05
Beryllium	0.001	mg/L	< 0.001
Beryllium (filtered)	0.001	mg/L	< 0.001
Cadmium	0.0002	mg/L	< 0.0002
Cadmium (filtered)	0.0002	mg/L	< 0.0002
Chromium	0.001	mg/L	< 0.001
Chromium (filtered)	0.001	mg/L	< 0.001
Cobalt	0.001	mg/L	< 0.001
Cobalt (filtered)	0.001	mg/L	< 0.001
Copper	0.001	mg/L	< 0.001
Copper (filtered)	0.001	mg/L	< 0.001
Iron	0.05	mg/L	< 0.05
Iron (filtered)	0.05	mg/L	< 0.05
Lead	0.001	mg/L	< 0.001
Lead (filtered)	0.001	mg/L	< 0.001
Manganese	0.005	mg/L	0.032
Manganese (filtered)	0.005	mg/L	0.026
Mercury	0.0001	mg/L	< 0.0001
Mercury (filtered)	0.0001	mg/L	< 0.0001
Nickel	0.001	mg/L	< 0.001
Nickel (filtered)	0.001	mg/L	< 0.001
Zinc	0.005	mg/L	0.007
Zinc (filtered)	0.005	mg/L	< 0.005

Sample History

Where samples are submitted/analysed over several days, the last date of extraction and analysis is reported.

A recent review of our LIMS has resulted in the correction or clarification of some method identifications. Due to this, some of the method reference information on reports has changed. However, no substantive change has been made to our laboratory methods, and as such there is no change in the validity of current or previous results.

If the date and time of sampling are not provided, the Laboratory will not be responsible for compromised results should testing be performed outside the recommended holding time.

Description	Testing Site	Extracted	Holding Time
Heavy Metals - Method: LTM-MET-3040 Metals in Waters, Soils & Sediments by ICP-MS	Sydney	May 05, 2020	180 Days
Heavy Metals (filtered) - Method: LTM-MET-3040 Metals in Waters, Soils & Sediments by ICP-MS	Sydney	May 05, 2020	180 Days
Mobil Metals : Metals M15 - Method: LTM-MET-3040 Metals in Waters, Soils & Sediments by ICP-MS	Sydney	May 05, 2020	28 Days

Australia

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6 Monterey Road
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NATA # 1261
Site # 1254 & 14271

Sydney
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Lane Cove West NSW 2066
Phone : +61 2 9900 8400
NATA # 1261 Site # 18217

Brisbane
1/21 Smallwood Place
Murarie QLD 4172
Phone : +61 7 3902 4600
NATA # 1261 Site # 20794

Perth
2/91 Leach Highway
Kewdale WA 6105
Phone : +61 8 9251 9600
NATA # 1261
Site # 23736

New Zealand

Auckland
35 O'Rorke Road
Penrose, Auckland 1061
Phone : +64 9 526 45 51
IANZ # 1327

Christchurch
43 Detroit Drive
Rolleston, Christchurch 7675
Phone : 0800 856 450
IANZ # 1290

Company Name: Ramboll Australia Pty Ltd
Address: Level 3/100 Pacific Highway
North Sydney
NSW 2060

Order No.:
Report #: 716988
Phone: 02 9954 8118
Fax: 02 9954 8150

Received: May 1, 2020 12:00 PM
Due: May 8, 2020
Priority: 5 Day
Contact Name: Stephen Maxwell

Project Name: P10
Project ID: 318000780

Eurofins Analytical Services Manager : Andrew Black

Sample Detail						Aluminium	Aluminium (filtered)	Arsenic	Arsenic (filtered)	Barium	Barium (filtered)	Beryllium	Beryllium (filtered)	Cadmium	Cadmium (filtered)	Chromium	Chromium (filtered)	Cobalt	Cobalt (filtered)	Copper	Copper (filtered)	Iron	Iron (filtered)	Lead	Lead (filtered)	Manganese	Manganese (filtered)	Mass of sample*	Mercury	Mercury (filtered)	Nickel	Nickel (filtered)	Zinc	Zinc (filtered)	Moisture Set		
Melbourne Laboratory - NATA Site # 1254 & 14271																																					
Sydney Laboratory - NATA Site # 18217						X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	
Brisbane Laboratory - NATA Site # 20794																																					
Perth Laboratory - NATA Site # 23736																																					
External Laboratory																																					
No	Sample ID	Sample Date	Sampling Time	Matrix	LAB ID																																
1	DSWAB_MH(P10)	Apr 28, 2020		Wipes	S20-My01297																			X													
2	DVAC_LR(P10)	Apr 28, 2020		Dust	S20-My01298																			X			X										
3	DSWAB_BE(P10)	Apr 28, 2020		Wipes	S20-My01299																			X													
4	DSWAB_FE(P10)	Apr 28, 2020		Wipes	S20-My01300																			X													
5	DVAC_KB(P10)	Apr 28, 2020		Dust	S20-My01301																			X			X										
6	DSWAB_MBR(P10)	Apr 28, 2020		Wipes	S20-My01302																			X													

Australia

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Christchurch
43 Detroit Drive
Rolleston, Christchurch 7675
Phone : 0800 856 450
IANZ # 1290

Company Name: Ramboll Australia Pty Ltd
Address: Level 3/100 Pacific Highway
North Sydney
NSW 2060

Order No.:
Report #: 716988
Phone: 02 9954 8118
Fax: 02 9954 8150

Received: May 1, 2020 12:00 PM
Due: May 8, 2020
Priority: 5 Day
Contact Name: Stephen Maxwell

Project Name: P10
Project ID: 318000780

Eurofins Analytical Services Manager : Andrew Black

Sample Detail						Aluminium	Aluminium (filtered)	Arsenic	Arsenic (filtered)	Barium	Barium (filtered)	Beryllium	Beryllium (filtered)	Cadmium	Cadmium (filtered)	Chromium	Chromium (filtered)	Cobalt	Cobalt (filtered)	Copper	Copper (filtered)	Iron	Iron (filtered)	Lead	Lead (filtered)	Manganese	Manganese (filtered)	Mass of sample*	Mercury	Mercury (filtered)	Nickel	Nickel (filtered)	Zinc	Zinc (filtered)	Moisture Set		
Melbourne Laboratory - NATA Site # 1254 & 14271																																					
Sydney Laboratory - NATA Site # 18217						X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	
Brisbane Laboratory - NATA Site # 20794																																					
Perth Laboratory - NATA Site # 23736																																					
7	P10_BORETA NK	Apr 28, 2020		Water	S20-My01303	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X		X	X	X	X	X	X				
8	P10_BORETA NKSED	Apr 28, 2020		Sediment	S20-My01304	X		X		X		X		X		X		X		X		X		X		X		X		X		X		X			
Test Counts						2	1	2	1	2	1	2	1	2	1	2	1	2	1	2	1	2	1	2	1	8	1	2	1	2	2	1	2	1	1		

Internal Quality Control Review and Glossary
General

1. Laboratory QC results for Method Blanks, Duplicates, Matrix Spikes, and Laboratory Control Samples follows guidelines delineated in the National Environment Protection (Assessment of Site Contamination) Measure 1999, as amended May 2013 and are included in this QC report where applicable. Additional QC data may be available on request.
2. All soil/sediment/solid results are reported on a dry basis, unless otherwise stated.
3. All biota/food results are reported on a wet weight basis on the edible portion, unless otherwise stated.
4. Actual LORs are matrix dependant. Quoted LORs may be raised where sample extracts are diluted due to interferences.
5. Results are uncorrected for matrix spikes or surrogate recoveries except for PFAS compounds.
6. SVOC analysis on waters are performed on homogenised, unfiltered samples, unless noted otherwise.
7. Samples were analysed on an 'as received' basis.
8. Information identified on this report with blue colour, indicates data provided by customer, that may have an impact on the results.
9. This report replaces any interim results previously issued.

Holding Times

Please refer to 'Sample Preservation and Container Guide' for holding times (QS3001).

For samples received on the last day of holding time, notification of testing requirements should have been received at least 6 hours prior to sample receipt deadlines as stated on the SRA.

If the Laboratory did not receive the information in the required timeframe, and regardless of any other integrity issues, suitably qualified results may still be reported.

Holding times apply from the date of sampling, therefore compliance to these may be outside the laboratory's control.

For VOCs containing vinyl chloride, styrene and 2-chloroethyl vinyl ether the holding time is 7 days however for all other VOCs such as BTEX or C6-10 TRH then the holding time is 14 days.

****NOTE:** pH duplicates are reported as a range NOT as RPD

Units

mg/kg: milligrams per kilogram

mg/L: milligrams per litre

ug/L: micrograms per litre

ppm: Parts per million

ppb: Parts per billion

%: Percentage

org/100mL: Organisms per 100 millilitres

NTU: Nephelometric Turbidity Units

MPN/100mL: Most Probable Number of organisms per 100 millilitres

Terms

Dry	Where a moisture has been determined on a solid sample the result is expressed on a dry basis.
LOR	Limit of Reporting.
SPIKE	Addition of the analyte to the sample and reported as percentage recovery.
RPD	Relative Percent Difference between two Duplicate pieces of analysis.
LCS	Laboratory Control Sample - reported as percent recovery.
CRM	Certified Reference Material - reported as percent recovery.
Method Blank	In the case of solid samples these are performed on laboratory certified clean sands and in the case of water samples these are performed on de-ionised water.
Surr - Surrogate	The addition of a like compound to the analyte target and reported as percentage recovery.
Duplicate	A second piece of analysis from the same sample and reported in the same units as the result to show comparison.
USEPA	United States Environmental Protection Agency
APHA	American Public Health Association
TCLP	Toxicity Characteristic Leaching Procedure
COC	Chain of Custody
SRA	Sample Receipt Advice
QSM	US Department of Defense Quality Systems Manual Version 5.3
CP	Client Parent - QC was performed on samples pertaining to this report
NCP	Non-Client Parent - QC performed on samples not pertaining to this report, QC is representative of the sequence or batch that client samples were analysed within.
TEQ	Toxic Equivalency Quotient

QC - Acceptance Criteria

RPD Duplicates: Global RPD Duplicates Acceptance Criteria is 30% however the following acceptance guidelines are equally applicable:

Results <10 times the LOR : No Limit

Results between 10-20 times the LOR : RPD must lie between 0-50%

Results >20 times the LOR : RPD must lie between 0-30%

Surrogate Recoveries: Recoveries must lie between 20-130% Phenols & 50-150% PFASs

PFAS field samples that contain surrogate recoveries in excess of the QC limit designated in QSM 5.3 where no positive PFAS results have been reported have been reviewed and no data was affected.

WA DWER (n=10): PFBA, PFPeA, PFHxA, PFHpA, PFOA, PFBS, PFHxS, PFOS, 6:2 FTSA, 8:2 FTSA

QC Data General Comments

1. Where a result is reported as a less than (<), higher than the nominated LOR, this is due to either matrix interference, extract dilution required due to interferences or contaminant levels within the sample, high moisture content or insufficient sample provided.
2. Duplicate data shown within this report that states the word "BATCH" is a Batch Duplicate from outside of your sample batch, but within the laboratory sample batch at a 1:10 ratio. The Parent and Duplicate data shown is not data from your samples.
3. Organochlorine Pesticide analysis - where reporting LCS data, Toxaphene & Chlordane are not added to the LCS.
4. Organochlorine Pesticide analysis - where reporting Spike data, Toxaphene is not added to the Spike.
5. Total Recoverable Hydrocarbons - where reporting Spike & LCS data, a single spike of commercial Hydrocarbon products in the range of C12-C30 is added and it's Total Recovery is reported in the C10-C14 cell of the Report.
6. pH and Free Chlorine analysed in the laboratory - Analysis on this test must begin within 30 minutes of sampling. Therefore laboratory analysis is unlikely to be completed within holding time. Analysis will begin as soon as possible after sample receipt.
7. Recovery Data (Spikes & Surrogates) - where chromatographic interference does not allow the determination of Recovery the term "INT" appears against that analyte.
8. Polychlorinated Biphenyls are spiked only using Aroclor 1260 in Matrix Spikes and LCS.
9. For Matrix Spikes and LCS results a dash " - " in the report means that the specific analyte was not added to the QC sample.
10. Duplicate RPDs are calculated from raw analytical data thus it is possible to have two sets of data.

Quality Control Results

Test	Units	Result 1			Acceptance Limits	Pass Limits	Qualifying Code
Method Blank							
Heavy Metals							
Aluminium	mg/L	< 0.05			0.05	Pass	
Aluminium (filtered)	mg/L	< 0.05			0.05	Pass	
Arsenic	mg/L	< 0.001			0.001	Pass	
Arsenic (filtered)	mg/L	< 0.001			0.001	Pass	
Barium	mg/L	< 0.02			0.02	Pass	
Barium (filtered)	mg/L	< 0.02			0.02	Pass	
Beryllium	mg/L	< 0.001			0.001	Pass	
Beryllium (filtered)	mg/L	< 0.001			0.001	Pass	
Cadmium	mg/L	< 0.0002			0.0002	Pass	
Cadmium (filtered)	mg/L	< 0.0002			0.0002	Pass	
Chromium	mg/L	< 0.001			0.001	Pass	
Chromium (filtered)	mg/L	< 0.001			0.001	Pass	
Cobalt	mg/L	< 0.001			0.001	Pass	
Cobalt (filtered)	mg/L	< 0.001			0.001	Pass	
Copper	mg/L	< 0.001			0.001	Pass	
Copper (filtered)	mg/L	< 0.001			0.001	Pass	
Iron	mg/L	< 0.05			0.05	Pass	
Iron (filtered)	mg/L	< 0.05			0.05	Pass	
Lead	mg/L	< 0.001			0.001	Pass	
Lead (filtered)	mg/L	< 0.001			0.001	Pass	
Manganese	mg/L	< 0.005			0.005	Pass	
Manganese (filtered)	mg/L	< 0.005			0.005	Pass	
Mercury	mg/L	< 0.0001			0.0001	Pass	
Mercury (filtered)	mg/L	< 0.0001			0.0001	Pass	
Nickel	mg/L	< 0.001			0.001	Pass	
Nickel (filtered)	mg/L	< 0.001			0.001	Pass	
Zinc	mg/L	< 0.005			0.005	Pass	
Zinc (filtered)	mg/L	< 0.005			0.005	Pass	
LCS - % Recovery							
Heavy Metals							
Aluminium	%	99			70-130	Pass	
Aluminium (filtered)	%	94			70-130	Pass	
Arsenic	%	97			70-130	Pass	
Arsenic (filtered)	%	98			70-130	Pass	
Barium	%	90			70-130	Pass	
Barium (filtered)	%	99			70-130	Pass	
Beryllium	%	91			70-130	Pass	
Beryllium (filtered)	%	90			70-130	Pass	
Cadmium	%	93			70-130	Pass	
Cadmium (filtered)	%	89			70-130	Pass	
Chromium	%	98			70-130	Pass	
Chromium (filtered)	%	93			70-130	Pass	
Cobalt	%	98			70-130	Pass	
Cobalt (filtered)	%	95			70-130	Pass	
Copper	%	97			70-130	Pass	
Copper (filtered)	%	93			70-130	Pass	
Iron	%	98			70-130	Pass	
Iron (filtered)	%	95			70-130	Pass	
Lead	%	100			70-130	Pass	
Lead (filtered)	%	93			70-130	Pass	

Test			Units	Result 1			Acceptance Limits	Pass Limits	Qualifying Code
Manganese			%	95			70-130	Pass	
Manganese (filtered)			%	97			70-130	Pass	
Mercury			%	109			70-130	Pass	
Mercury (filtered)			%	101			70-130	Pass	
Nickel			%	98			70-130	Pass	
Nickel (filtered)			%	94			70-130	Pass	
Zinc			%	93			70-130	Pass	
Zinc (filtered)			%	97			70-130	Pass	
Test	Lab Sample ID	QA Source	Units	Result 1			Acceptance Limits	Pass Limits	Qualifying Code
Spike - % Recovery									
Heavy Metals				Result 1					
Aluminium	S20-My01516	NCP	%	98			70-130	Pass	
Aluminium (filtered)	S20-My01255	NCP	%	85			70-130	Pass	
Arsenic	S20-My01516	NCP	%	98			70-130	Pass	
Arsenic (filtered)	S20-My06202	NCP	%	117			70-130	Pass	
Barium	S20-My01516	NCP	%	92			70-130	Pass	
Barium (filtered)	S20-My06202	NCP	%	92			70-130	Pass	
Beryllium	S20-My01516	NCP	%	91			70-130	Pass	
Beryllium (filtered)	S20-My06202	NCP	%	93			70-130	Pass	
Cadmium	S20-My01516	NCP	%	95			70-130	Pass	
Cadmium (filtered)	S20-My06202	NCP	%	91			70-130	Pass	
Chromium	S20-My01516	NCP	%	101			70-130	Pass	
Chromium (filtered)	S20-My06202	NCP	%	83			70-130	Pass	
Cobalt	S20-My01516	NCP	%	101			70-130	Pass	
Cobalt (filtered)	S20-My06202	NCP	%	80			70-130	Pass	
Copper	S20-My01516	NCP	%	100			70-130	Pass	
Copper (filtered)	S20-My01255	NCP	%	81			70-130	Pass	
Iron	S20-My01516	NCP	%	99			70-130	Pass	
Iron (filtered)	S20-My06202	NCP	%	83			70-130	Pass	
Lead	S20-My01516	NCP	%	104			70-130	Pass	
Lead (filtered)	S20-My06202	NCP	%	83			70-130	Pass	
Manganese	S20-My01516	NCP	%	97			70-130	Pass	
Manganese (filtered)	S20-My06202	NCP	%	87			70-130	Pass	
Mercury	S20-My01516	NCP	%	115			70-130	Pass	
Mercury (filtered)	S20-My06202	NCP	%	91			70-130	Pass	
Nickel	S20-My01516	NCP	%	102			70-130	Pass	
Nickel (filtered)	S20-My06202	NCP	%	77			70-130	Pass	
Zinc	S20-My01516	NCP	%	97			70-130	Pass	
Zinc (filtered)	S20-My06202	NCP	%	76			70-130	Pass	
Test	Lab Sample ID	QA Source	Units	Result 1			Acceptance Limits	Pass Limits	Qualifying Code
Duplicate									
Heavy Metals				Result 1	Result 2	RPD			
Aluminium	S20-My01341	NCP	mg/L	0.06	0.06	1.0	30%	Pass	
Aluminium (filtered)	S20-My01252	NCP	mg/L	< 0.05	< 0.05	<1	30%	Pass	
Arsenic	S20-My01341	NCP	mg/L	< 0.001	0.001	25	30%	Pass	
Arsenic (filtered)	S20-My06198	NCP	mg/L	0.003	0.003	9.0	30%	Pass	
Barium	S20-My01341	NCP	mg/L	0.08	0.09	6.0	30%	Pass	
Barium (filtered)	S20-My06198	NCP	mg/L	0.05	0.05	2.0	30%	Pass	
Beryllium	S20-My01341	NCP	mg/L	< 0.001	< 0.001	<1	30%	Pass	
Beryllium (filtered)	S20-My06198	NCP	mg/L	< 0.001	< 0.001	<1	30%	Pass	
Cadmium	S20-My01341	NCP	mg/L	0.0004	0.0004	<1	30%	Pass	
Cadmium (filtered)	S20-My06198	NCP	mg/L	< 0.0002	< 0.0002	<1	30%	Pass	
Chromium	S20-My01341	NCP	mg/L	< 0.001	< 0.001	<1	30%	Pass	

Test	Lab Sample ID	QA Source	Units	Result 1			Acceptance Limits	Pass Limits	Qualifying Code
Duplicate									
Heavy Metals				Result 1	Result 2	RPD			
Chromium (filtered)	S20-My06198	NCP	mg/L	0.006	0.005	3.0	30%	Pass	
Cobalt	S20-My01341	NCP	mg/L	0.002	0.002	11	30%	Pass	
Cobalt (filtered)	S20-My06198	NCP	mg/L	< 0.001	< 0.001	<1	30%	Pass	
Copper	S20-My01341	NCP	mg/L	0.006	0.006	2.0	30%	Pass	
Copper (filtered)	S20-My06198	NCP	mg/L	0.009	0.009	1.0	30%	Pass	
Iron	S20-My01341	NCP	mg/L	0.75	0.75	<1	30%	Pass	
Iron (filtered)	S20-My06198	NCP	mg/L	< 0.05	< 0.05	<1	30%	Pass	
Lead	S20-My01341	NCP	mg/L	0.006	0.006	<1	30%	Pass	
Lead (filtered)	S20-My06198	NCP	mg/L	< 0.001	< 0.001	<1	30%	Pass	
Manganese	S20-My01341	NCP	mg/L	0.26	0.26	<1	30%	Pass	
Manganese (filtered)	S20-My06198	NCP	mg/L	< 0.005	< 0.005	<1	30%	Pass	
Mercury	S20-My01341	NCP	mg/L	< 0.0001	< 0.0001	<1	30%	Pass	
Mercury (filtered)	S20-My06198	NCP	mg/L	< 0.0001	< 0.0001	<1	30%	Pass	
Nickel	S20-My01341	NCP	mg/L	< 0.001	< 0.001	<1	30%	Pass	
Nickel (filtered)	S20-My06198	NCP	mg/L	0.004	0.004	4.0	30%	Pass	
Zinc	S20-My01341	NCP	mg/L	0.16	0.16	4.0	30%	Pass	
Zinc (filtered)	S20-My06198	NCP	mg/L	0.052	0.052	<1	30%	Pass	

Comments**Sample Integrity**

Custody Seals Intact (if used)	N/A
Attempt to Chill was evident	No
Sample correctly preserved	Yes
Appropriate sample containers have been used	Yes
Sample containers for volatile analysis received with minimal headspace	Yes
Samples received within HoldingTime	Yes
Some samples have been subcontracted	No

Authorised By

Andrew Black Analytical Services Manager
Gabriele Cordero Senior Analyst-Metal (NSW)

**Glenn Jackson
General Manager**

Final report - this Report replaces any previously issued Report

- Indicates Not Requested

* Indicates NATA accreditation does not cover the performance of this service

Measurement uncertainty of test data is available on request or please [click here](#).

Eurofins shall not be liable for loss, cost, damages or expenses incurred by the client, or any other person or company, resulting from the use of any information or interpretation given in this report. In no case shall Eurofins be liable for consequential damages including, but not limited to, lost profits, damages for failure to meet deadlines and lost production arising from this report. This document shall not be reproduced except in full and relates only to the items tested. Unless indicated otherwise, the tests were performed on the samples as received.

#AU04_Enviro_Sample_NSW

Subject: FW: 5 DAY TAT ADDITIONAL ANALYSIS: FW: Eurofins Test Results, Invoice - Report 711589 : Site 318000780

From: Joshua Blackwell [<mailto:JBLACKWELL@ramboll.com>]
Sent: Thursday, 9 April 2020 9:54 AM
To: Andrew Black
Subject: RE: Eurofins Test Results, Invoice - Report 711589 : Site 318000780

EXTERNAL EMAIL*

Hi Andrew,

Regarding samples on hold. Could we please get the following analysed;

P18_BORE for M13 Total + Dissolved as part of report 713017
RB_300320 for M13 Total
P10_HA02_0-0.2 for lead
P22_HA05_0.2 (from 711584) for lead

Kind regards
Joshua Blackwell
Consultant

D +61 (481) 157565
M +61 (481) 157565
jblackwell@ramboll.com

Ramboll Australia Pty Ltd.
ACN 095 437 442
ABN 49 095 437 442

From: AndrewBlack@eurofins.com <AndrewBlack@eurofins.com>
Sent: Thursday, April 9, 2020 8:54 AM
To: Stephen Maxwell <SMAXWELL@ramboll.com>
Cc: Joshua Blackwell <JBLACKWELL@ramboll.com>; Rachel Condon <RCONDON@ramboll.com>; Shane Hyde <SHYDE@ramboll.com>
Subject: Eurofins Test Results, Invoice - Report 711589 : Site 318000780

Regards

Andrew Black
Analytical Services Manager

Eurofins | Environment Testing
Unit 7
7 Friesian Close
SANDGATE NSW 2304
AUSTRALIA
Phone: +61 299 008 490
Mobile: +61 410 220 750
Email: AndrewBlack@eurofins.com
Website: environment.eurofins.com.au
[EnviroNote 1098 - Melbourne PFAS Accreditation](#)
[EnviroNote 1080 - Total Organofluorine Analysis & PFAS Investigations](#)

Click [here](#) to report this email as spam.

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Australia

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Site # 1254 & 14271

Sydney
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Lane Cove West NSW 2066
Phone : +61 2 9900 8400
NATA # 1261 Site # 18217

Brisbane
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Murarie QLD 4172
Phone : +61 7 3902 4600
NATA # 1261 Site # 20794

Perth
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Kewdale WA 6105
Phone : +61 8 9251 9600
NATA # 1261
Site # 23736

New Zealand

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Penrose, Auckland 1061
Phone : +64 9 526 45 51
IANZ # 1327

Christchurch
43 Detroit Drive
Rolleston, Christchurch 7675
Phone : 0800 856 450
IANZ # 1290

Company Name: Ramboll Australia Pty Ltd
Address: Level 3/100 Pacific Highway
North Sydney
NSW 2060

Project Name: ADDITIONAL 318000780
Project ID: 15.80

Order No.:
Report #: 713315
Phone: 02 9954 8118
Fax: 02 9954 8150

Received: Apr 9, 2020 9:54 AM
Due: Apr 20, 2020
Priority: 5 Day
Contact Name: Joshua Blackwell

Eurofins Analytical Services Manager : Andrew Black

Sample Detail						Aluminium	Arsenic	Barium	Beryllium	Cadmium	Chromium	Cobalt	Copper	Iron	Lead	Manganese	Mercury	Nickel	Zinc	Moisture Set	
Melbourne Laboratory - NATA Site # 1254 & 14271																					
Sydney Laboratory - NATA Site # 18217						X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X
Brisbane Laboratory - NATA Site # 20794																					
Perth Laboratory - NATA Site # 23736																					
External Laboratory																					
No	Sample ID	Sample Date	Sampling Time	Matrix	LAB ID																
1	P10_HA02_0-0.2	Mar 25, 2020		Soil	S20-Ap16787										X					X	
2	RB_300320	Mar 25, 2020		Water	S20-Ap16788	X	X	X	X	X	X	X	X	X	X	X	X	X	X		
3	P22_HA05_0.2	Mar 31, 2020		Soil	S20-Ap16789										X					X	
Test Counts						1	1	1	1	1	1	1	1	1	3	1	1	1	1	1	2

Ramboll Environ Australia Pty Ltd
 Level 3/100 Pacific Highway
 North Sydney
 NSW 2060



NATA Accredited
Accreditation Number 1261
Site Number 18217

Accredited for compliance with ISO/IEC 17025 – Testing
 The results of the tests, calibrations and/or
 measurements included in this document are traceable
 to Australian/national standards.

Attention: **Joshua Blackwell**

Report **713315-S-V2**
 Project name **ADDITIONAL 318000780**
 Project ID **15.80**
 Received Date **Apr 09, 2020**

Client Sample ID			P10_HA02_0-0.2
Sample Matrix			Soil
Eurofins Sample No.			S20-Ap16787
Date Sampled			Mar 25, 2020
Test/Reference	LOR	Unit	
Heavy Metals			
Lead	5	mg/kg	39
% Moisture	1	%	11

Sample History

Where samples are submitted/analysed over several days, the last date of extraction and analysis is reported.

A recent review of our LIMS has resulted in the correction or clarification of some method identifications. Due to this, some of the method reference information on reports has changed. However, no substantive change has been made to our laboratory methods, and as such there is no change in the validity of current or previous results.

If the date and time of sampling are not provided, the Laboratory will not be responsible for compromised results should testing be performed outside the recommended holding time.

Description

Heavy Metals

- Method: LTM-MET-3040 Metals in Waters, Soils & Sediments by ICP-MS

% Moisture

- Method: LTM-GEN-7080 Moisture

Testing Site

Sydney

Sydney

Extracted

Apr 17, 2020

Apr 09, 2020

Holding Time

180 Days

14 Days

Australia

Melbourne
6 Monterey Road
Dandenong South VIC 3175
Phone : +61 3 8564 5000
NATA # 1261
Site # 1254 & 14271

Sydney
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16 Mars Road
Lane Cove West NSW 2066
Phone : +61 2 9900 8400
NATA # 1261 Site # 18217

Brisbane
1/21 Smallwood Place
Murarie QLD 4172
Phone : +61 7 3902 4600
NATA # 1261 Site # 20794

Perth
2/91 Leach Highway
Kewdale WA 6105
Phone : +61 8 9251 9600
NATA # 1261
Site # 23736

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Penrose, Auckland 1061
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IANZ # 1327

Christchurch
43 Detroit Drive
Rolleston, Christchurch 7675
Phone : 0800 856 450
IANZ # 1290

Company Name: Ramboll Australia Pty Ltd
Address: Level 3/100 Pacific Highway
North Sydney
NSW 2060

Order No.:
Report #: 713315
Phone: 02 9954 8118
Fax: 02 9954 8150

Received: Apr 9, 2020 9:54 AM
Due: Apr 20, 2020
Priority: 5 Day
Contact Name: Joshua Blackwell

Project Name: ADDITIONAL 318000780
Project ID: 15.80

Eurofins Analytical Services Manager : Andrew Black

Sample Detail						Aluminium	Arsenic	Barium	Beryllium	Cadmium	Chromium	Cobalt	Copper	Iron	Lead	Manganese	Mercury	Nickel	Zinc	Moisture Set	
Melbourne Laboratory - NATA Site # 1254 & 14271																					
Sydney Laboratory - NATA Site # 18217						X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X
Brisbane Laboratory - NATA Site # 20794																					
Perth Laboratory - NATA Site # 23736																					
External Laboratory																					
No	Sample ID	Sample Date	Sampling Time	Matrix	LAB ID																
1	P10_HA02_0-0.2	Mar 25, 2020		Soil	S20-Ap16787										X					X	
2	RB_300320	Mar 25, 2020		Water	S20-Ap16788	X	X	X	X	X	X	X	X	X	X	X	X	X	X		
3	P22_HA05_0.2	Mar 31, 2020		Soil	S20-Ap16789										X					X	
Test Counts						1	1	1	1	1	1	1	1	1	3	1	1	1	1	2	

Internal Quality Control Review and Glossary
General

- Laboratory QC results for Method Blanks, Duplicates, Matrix Spikes, and Laboratory Control Samples follows guidelines delineated in the National Environment Protection (Assessment of Site Contamination) Measure 1999, as amended May 2013 and are included in this QC report where applicable. Additional QC data may be available on request.
- All soil/sediment/solid results are reported on a dry basis, unless otherwise stated.
- All biota/food results are reported on a wet weight basis on the edible portion, unless otherwise stated.
- Actual LORs are matrix dependant. Quoted LORs may be raised where sample extracts are diluted due to interferences.
- Results are uncorrected for matrix spikes or surrogate recoveries except for PFAS compounds.
- SVOC analysis on waters are performed on homogenised, unfiltered samples, unless noted otherwise.
- Samples were analysed on an 'as received' basis.
- Information identified on this report with blue colour, indicates data provided by customer, that may have an impact on the results.
- This report replaces any interim results previously issued.

Holding Times

Please refer to 'Sample Preservation and Container Guide' for holding times (QS3001).

For samples received on the last day of holding time, notification of testing requirements should have been received at least 6 hours prior to sample receipt deadlines as stated on the SRA.

If the Laboratory did not receive the information in the required timeframe, and regardless of any other integrity issues, suitably qualified results may still be reported.

Holding times apply from the date of sampling, therefore compliance to these may be outside the laboratory's control.

For VOCs containing vinyl chloride, styrene and 2-chloroethyl vinyl ether the holding time is 7 days however for all other VOCs such as BTEX or C6-10 TRH then the holding time is 14 days.

****NOTE:** pH duplicates are reported as a range NOT as RPD

Units

mg/kg: milligrams per kilogram

mg/L: milligrams per litre

ug/L: micrograms per litre

ppm: Parts per million

ppb: Parts per billion

%: Percentage

org/100mL: Organisms per 100 millilitres

NTU: Nephelometric Turbidity Units

MPN/100mL: Most Probable Number of organisms per 100 millilitres

Terms

Dry	Where a moisture has been determined on a solid sample the result is expressed on a dry basis.
LOR	Limit of Reporting.
SPIKE	Addition of the analyte to the sample and reported as percentage recovery.
RPD	Relative Percent Difference between two Duplicate pieces of analysis.
LCS	Laboratory Control Sample - reported as percent recovery.
CRM	Certified Reference Material - reported as percent recovery.
Method Blank	In the case of solid samples these are performed on laboratory certified clean sands and in the case of water samples these are performed on de-ionised water.
Surr - Surrogate	The addition of a like compound to the analyte target and reported as percentage recovery.
Duplicate	A second piece of analysis from the same sample and reported in the same units as the result to show comparison.
USEPA	United States Environmental Protection Agency
APHA	American Public Health Association
TCLP	Toxicity Characteristic Leaching Procedure
COC	Chain of Custody
SRA	Sample Receipt Advice
QSM	US Department of Defense Quality Systems Manual Version 5.3
CP	Client Parent - QC was performed on samples pertaining to this report
NCP	Non-Client Parent - QC performed on samples not pertaining to this report, QC is representative of the sequence or batch that client samples were analysed within.
TEQ	Toxic Equivalency Quotient

QC - Acceptance Criteria

RPD Duplicates: Global RPD Duplicates Acceptance Criteria is 30% however the following acceptance guidelines are equally applicable:

Results <10 times the LOR : No Limit

Results between 10-20 times the LOR : RPD must lie between 0-50%

Results >20 times the LOR : RPD must lie between 0-30%

Surrogate Recoveries: Recoveries must lie between 20-130% Phenols & 50-150% PFASs

PFAS field samples that contain surrogate recoveries in excess of the QC limit designated in QSM 5.3 where no positive PFAS results have been reported have been reviewed and no data was affected.

WA DWER (n=10): PFBA, PFPeA, PFHxA, PFHpA, PFOA, PFBS, PFHxS, PFOS, 6:2 FTSA, 8:2 FTSA

QC Data General Comments

- Where a result is reported as a less than (<), higher than the nominated LOR, this is due to either matrix interference, extract dilution required due to interferences or contaminant levels within the sample, high moisture content or insufficient sample provided.
- Duplicate data shown within this report that states the word "BATCH" is a Batch Duplicate from outside of your sample batch, but within the laboratory sample batch at a 1:10 ratio. The Parent and Duplicate data shown is not data from your samples.
- Organochlorine Pesticide analysis - where reporting LCS data, Toxaphene & Chlordane are not added to the LCS.
- Organochlorine Pesticide analysis - where reporting Spike data, Toxaphene is not added to the Spike.
- Total Recoverable Hydrocarbons - where reporting Spike & LCS data, a single spike of commercial Hydrocarbon products in the range of C12-C30 is added and it's Total Recovery is reported in the C10-C14 cell of the Report.
- pH and Free Chlorine analysed in the laboratory - Analysis on this test must begin within 30 minutes of sampling. Therefore laboratory analysis is unlikely to be completed within holding time. Analysis will begin as soon as possible after sample receipt.
- Recovery Data (Spikes & Surrogates) - where chromatographic interference does not allow the determination of Recovery the term "INT" appears against that analyte.
- Polychlorinated Biphenyls are spiked only using Aroclor 1260 in Matrix Spikes and LCS.
- For Matrix Spikes and LCS results a dash " - " in the report means that the specific analyte was not added to the QC sample.
- Duplicate RPDs are calculated from raw analytical data thus it is possible to have two sets of data.

Quality Control Results

Test				Units	Result 1		Acceptance Limits	Pass Limits	Qualifying Code	
Method Blank										
Heavy Metals										
Lead				mg/kg	< 5		5	Pass		
LCS - % Recovery										
Heavy Metals										
Lead				%	114		70-130	Pass		
Test	Lab Sample ID	QA Source	Units	Result 1			Acceptance Limits	Pass Limits	Qualifying Code	
Spike - % Recovery										
Heavy Metals										
Lead				S20-Ap23188	NCP	%	100	70-130	Pass	
Test	Lab Sample ID	QA Source	Units	Result 1			Acceptance Limits	Pass Limits	Qualifying Code	
Duplicate										
Heavy Metals										
Lead				S20-Ap23765	NCP	mg/kg	49	36	31	30% Fail Q15
Duplicate										
					Result 1	Result 2	RPD			
% Moisture				S20-Ap16879	NCP	%	13	13	1.0	30% Pass

Comments

New version to split report.

Sample Integrity

Custody Seals Intact (if used)	N/A
Attempt to Chill was evident	Yes
Sample correctly preserved	Yes
Appropriate sample containers have been used	Yes
Sample containers for volatile analysis received with minimal headspace	Yes
Samples received within HoldingTime	Yes
Some samples have been subcontracted	No

Qualifier Codes/Comments

Code	Description
Q15	The RPD reported passes Eurofins Environment Testing's QC - Acceptance Criteria as defined in the Internal Quality Control Review and Glossary page of this report.

Authorised By

Andrew Black	Analytical Services Manager
Gabriele Cordero	Senior Analyst-Metal (NSW)


**Glenn Jackson
General Manager**

Final report - this Report replaces any previously issued Report

- Indicates Not Requested

* Indicates NATA accreditation does not cover the performance of this service

Measurement uncertainty of test data is available on request or please [click here](#).

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CHAIN OF CUSTODY RECORD

ABN 50 005 956 121

Sydney Laboratory
Unit F3 Bld F, 16 Mars Rd, Lane Cove West, NSW 2086
02 9920 8400 EnviroSampleSW@eurofins.com

Brisbane Laboratory
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08 9251 9600 EnviroSampleWA@eurofins.com

Melbourne Laboratory
2 Kingston Town Close, Oakleigh, VIC 3166
03 8564 5000 EnviroSampleVIC@eurofins.com

Company	Ramboll	Project No	318000780	Project Manager	Stephen Maxwell	Sampler(s)	AC
Address	50 Glebe Road the Junction	Project Name		EDD Format (ESdat, EQUIS)	Excel and PDF	Handed over by	SM
Contact Name	Stephen Maxwell	Analyses	Lead			Email for Invoice	smaxwell@ramboll.com asianpac-accounts@ramboll.com
Phone No			M13 (Al, As, Ba, Be, Cd, Cr, Co, Cu, Fe, Pb, Mn, Hg, Ni, Zn) total			Email for Results	smaxwell@ramboll.com blackwell@ramboll.com rcondon@ramboll.com shyde@ramboll.com
Special Directions			M13 (Al, As, Ba, Be, Cd, Cr, Co, Cu, Fe, Pb, Mn, Hg, Ni, Zn) dissolved			Turnaround Time (TAT)	Requirements Detail will be 4 days if not needed
Purchase Order						1 Day* <input type="checkbox"/>	2 Day* <input type="checkbox"/>
Quote ID No	180813RAMM_1					3 Day* <input type="checkbox"/>	5 Day* <input type="checkbox"/>
						Other (<input type="checkbox"/>)	*Surcharges apply

No	Client Sample ID	Sampled Date/Time (dd/mm/yy hr:mm)	Matrix (Solid (S) Water (W))	Lead	M13 (Al, As, Ba, Be, Cd, Cr, Co, Cu, Fe, Pb, Mn, Hg, Ni, Zn) total	M13 (Al, As, Ba, Be, Cd, Cr, Co, Cu, Fe, Pb, Mn, Hg, Ni, Zn) dissolved
1	P12_TW1	26/03/20	W		X	X
2	P12_TW2	26/03/20	W		X	X
3	P12_TWS1	26/03/20	S		X	
4	P12_TWS2	26/03/20	S		X	
5	P12_HA01_0.0	26/03/20	S		X	
6	P12_HA01_0.2	26/03/20	S		X	
7	P12_HA01_0.3	26/03/20	S		X	
8	P12_HA02_0.0, 0.05	26/03/20	S		X	
9	P12_HA02_0.2	26/03/20	S		X	
10	P12_HA03_0.0, 0.05	26/03/20	S		X	
Total Counts				8	2	2

Method of Shipment	<input type="checkbox"/> Courier #) <input type="checkbox"/> Hand Delivered	<input type="checkbox"/> Postal	Name	Signature	Date	Time
Eurofins mgt	Received By	Signature	Date	Time	Signature	Time
Laboratory Use Only	Received By	Signature	Date	Time	Signature	Time

Submission of samples to the laboratory will be deemed as acceptance of Eurofins | mgt Standard Terms and Conditions unless agreed otherwise. A copy of Eurofins | mgt Standard Terms and Conditions is available on request.

Eurofins Environment Testing Australia Pty Ltd trading as Eurofins | mgt



CHAIN OF CUSTODY RECORD

AN 50 005 005 521

Pydney Laboratory
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Brisbane Laboratory
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Perth Laboratory
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08 9251 9500 EnviroSampleWA@eurofins.com

Melbourne Laboratory
2 Kingspan Team Clear, Oakleigh, VIC 3166
03 8864 5000 EnviroSampleVIC@eurofins.com

Company	Ramboll	Project No	318000780	Project Manager	Stephen Maxwell	Sampler(s)	AC
Address	50 Glebe Road the Junction	Project Name	Lead	EDD Format (ESDat, EQUIS)	Excel and PDF	Handed over by	SM
Contact Name	Stephen Maxwell	Analyses	M13 (Al, As, Ba, Be, Cd, Cr, Co, Cu, Fe, Pb, Mn, Hg, Ni, Zn) total M13 (Al, As, Ba, Be, Cd, Cr, Co, Cu, Fe, Pb, Mn, Hg, Ni, Zn) dissolved			Email for Invoices	smaxwell@ramboll.com asia-pac-accounts@ramboll.com
Phone No		Special Directions				Email for Results	smaxwell@ramboll.com blackwell@ramboll.com rcondon@ramboll.com shyde@ramboll.com
Purchase Order		Quote ID No	180813RAMM_1			blackwell@ramboll.com	

No	Client Sample ID	Sampled Date/Time (dd/mm/yy (h:mm))	Matrix (Solid (S) Water (W))	Lead	M13 (Al, As, Ba, Be, Cd, Cr, Co, Cu, Fe, Pb, Mn, Hg, Ni, Zn) total	M13 (Al, As, Ba, Be, Cd, Cr, Co, Cu, Fe, Pb, Mn, Hg, Ni, Zn) dissolved	Signature	Date	Time
1	P12_HA03_0.0_0.05	26/03/20	S	X					
2	D01_260320	26/03/20	S	X					
3	T01_260320	26/03/20	S	X					
4	P12_HA03_2.0	26/03/20	S	X					
5	P12_HA04_0.0	26/03/20	S	X					
6	P12_HA04_0.3	26/03/20	S	X					
7	P12_HA05_0.0	26/03/20	S	X					
8	P12_HA05_2.0	26/03/20	S	X					
9	P12_BORE	26/03/20	W		X	X			
10	P12_PAINT1	26/03/20	S	X					
Total Counts				9	1	1			

Method of Shipment	<input type="checkbox"/> Courier (#) <input type="checkbox"/> Hand Delivered <input type="checkbox"/> Postal	Name		Signature		Date	11	Time	11
Eurofins Ingt Laboratory Use Only	Received By <i>Stephen Maxwell</i>	Signature	<i>Stephen Maxwell</i>	Date	11	Time	11	Temperature	18.76°C
	Received By <i>Stephen Maxwell</i>	Signature	<i>Stephen Maxwell</i>	Date	11	Time	11	Report No	710631

Turnaround Time (TAT)
Requirements listed will be a days if not listed

Overnight (5am)*
 1 Day* 2 Day*
 3 Day* 5 Day*
 Other () *Surcharge apply

Sample Comments / Dangerous Goods Hazard Warning

1L Plastic
250mL Plastic
125mL Plastic
200mL Amber Glass
40mL VOA vial
600mL PFAS Bottle
Jar (Glass or HDPE)
Other (Asbestos AS4964, WA Guidelines)

Submission of samples to the laboratory will be deemed as acceptance of Eurofins | Ingt Standard Terms and Conditions unless agreed otherwise. A copy of Eurofins | Ingt Standard Terms and Conditions is available on request.

Eurofins Environment Testing Australia Pty Ltd trading as Eurofins | Ingt

#AU04_Enviro_Sample_NSW

To: Stephen Maxwell
Subject: RE: ATTENTION:Eurofins Sample Receipt Advice - Report 710631 : Site 318000780

From: Stephen Maxwell [<mailto:SMAXWELL@ramboll.com>]
Sent: Saturday, 28 March 2020 8:33 AM
To: #AU04_Enviro_Sample_NSW
Cc: Rachel Condon; Shane Hyde; Joshua Blackwell
Subject: RE: ATTENTION:Eurofins Sample Receipt Advice - Report 710631 : Site 318000780

...TWS1 and ...TWS2 are sediment samples. Please dry and analyse as sediment samples.

Kind regards
Stephen Maxwell
Lead Consultant

D +61 478658194
M +61 478658194
smaxwell@ramboll.com

Ramboll Australia Pty Ltd.
ACN 095 437 442
ABN 49 095 437 442

From: EnviroSampleNSW@eurofins.com <EnviroSampleNSW@eurofins.com>
Sent: 27 March, 2020 9:40 PM
To: Stephen Maxwell <SMAXWELL@ramboll.com>
Cc: Joshua Blackwell <JBLACKWELL@ramboll.com>; Rachel Condon <RCONDON@ramboll.com>; Shane Hyde <SHYDE@ramboll.com>
Subject: ATTENTION:Eurofins Sample Receipt Advice - Report 710631 : Site 318000780

Dear Valued Client,

Samples; P12_TWS1 and P12_TWS2 subsampled into metals bottle. Samples; P12_HA05_2.0 and P12_HA03_2.0 received as per label on bag.

Please find attached a Sample Receipt Advice (SRA), a Summary Sheet and a scanned copy of your Chain-of-Custody. Please review this documentation to ensure that the details are correct such as the Client Job Number, Turn Around Time, any comments

numbers as well as the requested analysis. If there are any irregularities then please contact your Eurofins | mgt Ana possible to make certain that they get changed.

Regards

Suzanne Ford

Sample Receipt

Eurofins | Environment Testing

Unit F3, Parkview Building

16 Mars Road

LANE COVE WEST NSW 2066

AUSTRALIA

Phone: +61 02 9900 8421

Email: EnviroSampleNSW@eurofins.com

Website: environment.eurofins.com.au

[EnviroNote 1079 - PFAS Fingerprinting](#)

[EnviroNote 1080 - Total Organofluorine Analysis & PFAS Investigations](#)

[EnviroNote 1079 - PFAS Fingerprinting](#)

[EnviroNote 1080 - Total Organofluorine Analysis & PFAS Investigations](#)

Click [here](#) to report this email as spam.

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NATA # 1261 Site # 20794

Perth

2/91 Leach Highway
Kewdale WA 6105
Phone : +61 8 9251 9600
NATA # 1261 Site # 23736

Sample Receipt Advice

Company name: **Ramboll Australia Pty Ltd**

Contact name: **Stephen Maxwell**

Project ID: **318000780**

COC number: **Not provided**

Turn around time: **5 Day**

Date/Time received: **Mar 27, 2020 2:58 PM**

Eurofins reference: **710631**

Sample information

- A detailed list of analytes logged into our LIMS, is included in the attached summary table.
- All samples have been received as described on the above COC.
- COC has been completed correctly.
- Attempt to chill was evident.
- Appropriately preserved sample containers have been used.
- All samples were received in good condition.
- Samples have been provided with adequate time to commence analysis in accordance with the relevant holding times.
- Appropriate sample containers have been used.
- Sample containers for volatile analysis received with zero headspace.
- Split sample sent to requested external lab.
- Some samples have been subcontracted.
- N/A Custody Seals intact (if used).

Notes

Samples; P12_HA05_2.0 and P12_HA03_2.0 received as P12_HA03_0.2 and P12_HA05_0.2 - logged as per label on bag.

Contact notes

If you have any questions with respect to these samples please contact:

Andrew Black on Phone : (+61) 2 9900 8490 or by e.mail: AndrewBlack@eurofins.com

Results will be delivered electronically via e.mail to Stephen Maxwell - smaxwell@ramboll.com.

Note: A copy of these results will also be delivered to the general Ramboll Australia Pty Ltd email address.

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Christchurch
43 Detroit Drive
Rolleston, Christchurch 7675
Phone : 0800 856 450
IANZ # 1290

Company Name: Ramboll Australia Pty Ltd
Address: Level 3/100 Pacific Highway
North Sydney
NSW 2060

Order No.:
Report #: 710631
Phone: 02 9954 8118
Fax: 02 9954 8150

Received: Mar 27, 2020 2:58 PM
Due: Apr 3, 2020
Priority: 5 Day
Contact Name: Stephen Maxwell

Project Name:
Project ID: 318000780

Eurofins Analytical Services Manager : Andrew Black

Sample Detail						Lead	Lead (% w/w)	Moisture Set	NEPM 2013 Filtered Metals without Cr6+ (As, Be, B, Cd, Co, Cr, Cu, Hg, Pb, Ni, Mn, NEPM 2013 Metals without Cr6+ (As, Be, B, Cd, Co, Cr, Cu, Hg, Pb, Ni, Mn, Se, Zn)	NEPM 2013 Filtered Metals without Cr6+ (As, Be, B, Cd, Co, Cr, Cu, Hg, Pb, Ni, Mn, Se, Zn)
Melbourne Laboratory - NATA Site # 1254 & 14271										
Sydney Laboratory - NATA Site # 18217						X	X	X	X	X
Brisbane Laboratory - NATA Site # 20794										
Perth Laboratory - NATA Site # 23736										
External Laboratory										
No	Sample ID	Sample Date	Sampling Time	Matrix	LAB ID					
1	P12_TW1	Mar 26, 2020		Water	S20-Ma44141				X	X
2	P12_TW2	Mar 26, 2020		Water	S20-Ma44142				X	X
3	P12_TWS1	Mar 26, 2020		Sediment	S20-Ma44143	X	X			
4	P12_TWS2	Mar 26, 2020		Sediment	S20-Ma44144	X	X			
5	P12_HA01_0_0	Mar 26, 2020		Soil	S20-Ma44145	X	X			
6	P12_HA01_0_2	Mar 26, 2020		Soil	S20-Ma44146	X	X			
7	P12_HA01_0_3	Mar 26, 2020		Soil	S20-Ma44147	X	X			
8	P12_HA02_0_0	Mar 26, 2020		Soil	S20-Ma44148	X	X			

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Melbourne Laboratory - NATA Site # 1254 & 14271										
Sydney Laboratory - NATA Site # 18217						X	X	X	X	X
Brisbane Laboratory - NATA Site # 20794										
Perth Laboratory - NATA Site # 23736										
	0_0.05									
9	P12_HA02_0_2	Mar 26, 2020		Soil	S20-Ma44149	X		X		
10	P12_HA03_0_0.05	Mar 26, 2020		Soil	S20-Ma44150	X		X		
11	D01_260320	Mar 26, 2020		Water	S20-Ma44151	X				
12	T01_260320	Mar 26, 2020		Soil	S20-Ma44152	X		X		
13	P12_HA03_0_2	Mar 26, 2020		Soil	S20-Ma44153	X		X		
14	P12_HA04_0_0	Mar 26, 2020		Soil	S20-Ma44154	X		X		
15	P12_HA04_0_3	Mar 26, 2020		Soil	S20-Ma44155	X		X		
16	P12_HA05_0_0	Mar 26, 2020		Soil	S20-Ma44156	X		X		

Australia

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Fax: 02 9954 8150

Received: Mar 27, 2020 2:58 PM
Due: Apr 3, 2020
Priority: 5 Day
Contact Name: Stephen Maxwell

Project Name:
Project ID: 318000780

Eurofins Analytical Services Manager : Andrew Black

Sample Detail						Lead	Lead (% w/w)	Moisture Set	NEPM 2013 Metals without Cr6+ (As, Be, B, Cd, Co, Cr, Cu, Hg, Pb, Ni, Mn, Cd, Co, Cr, Cu, Hg, Pb, Ni, Mn, Se, Zn)	NEPM 2013 Filtered Metals without Cr6+ (As, Be, B, Cd, Co, Cr, Cu, Hg, Pb, Ni, Mn)
Melbourne Laboratory - NATA Site # 1254 & 14271										
Sydney Laboratory - NATA Site # 18217						X	X	X	X	X
Brisbane Laboratory - NATA Site # 20794										
Perth Laboratory - NATA Site # 23736										
17	P12_HA05_0.2	Mar 26, 2020		Soil	S20-Ma44157	X		X		
18	P12_BORE	Mar 26, 2020		Water	S20-Ma44158				X	X
19	P12_PAINT1	Mar 26, 2020		Paint	S20-Ma44159		X			
Test Counts						15	1	14	3	3

Ramboll Environ Australia Pty Ltd
 Level 3/100 Pacific Highway
 North Sydney
 NSW 2060



NATA Accredited
 Accreditation Number 1261
 Site Number 18217

Accredited for compliance with ISO/IEC 17025 – Testing
 The results of the tests, calibrations and/or
 measurements included in this document are traceable
 to Australian/national standards.

Attention: Stephen Maxwell

Report 710631-S
 Project name
 Project ID 318000780
 Received Date Mar 27, 2020

Client Sample ID			P12_HA01_0.0	P12_HA01_0.2	P12_HA01_0.3	P12_HA02_0.0_0.05
Sample Matrix			Soil	Soil	Soil	Soil
Eurofins Sample No.			S20-Ma44145	S20-Ma44146	S20-Ma44147	S20-Ma44148
Date Sampled			Mar 26, 2020	Mar 26, 2020	Mar 26, 2020	Mar 26, 2020
Test/Reference	LOR	Unit				
% Moisture	1	%	9.0	9.6	9.3	11
Heavy Metals						
Lead	5	mg/kg	130	20	9.3	85

Client Sample ID			P12_HA02_0.2	P12_HA03_0.0_0.05	P12_HA03_0.2	P12_HA04_0.0
Sample Matrix			Soil	Soil	Soil	Soil
Eurofins Sample No.			S20-Ma44149	S20-Ma44150	S20-Ma44153	S20-Ma44154
Date Sampled			Mar 26, 2020	Mar 26, 2020	Mar 26, 2020	Mar 26, 2020
Test/Reference	LOR	Unit				
% Moisture	1	%	13	13	12	11
Heavy Metals						
Lead	5	mg/kg	110	260	200	170

Client Sample ID			P12_HA04_0.3	P12_HA05_0.0	P12_HA05_0.2	P12_PAINT1
Sample Matrix			Soil	Soil	Soil	Paint
Eurofins Sample No.			S20-Ma44155	S20-Ma44156	S20-Ma44157	S20-Ma44159
Date Sampled			Mar 26, 2020	Mar 26, 2020	Mar 26, 2020	Mar 26, 2020
Test/Reference	LOR	Unit				
Lead (% w/w)	0.01	%	-	-	-	0.44
% Moisture	1	%	9.9	14	5.4	-
Heavy Metals						
Lead	5	mg/kg	25	190	45	-

Sample History

Where samples are submitted/analysed over several days, the last date of extraction and analysis is reported.

A recent review of our LIMS has resulted in the correction or clarification of some method identifications. Due to this, some of the method reference information on reports has changed. However, no substantive change has been made to our laboratory methods, and as such there is no change in the validity of current or previous results.

If the date and time of sampling are not provided, the Laboratory will not be responsible for compromised results should testing be performed outside the recommended holding time.

Description	Testing Site	Extracted	Holding Time
Lead (% w/w) - Method: E022.5 - ACID EXTRACTABLE METALS IN PAINT IN LIQUID AND POWDERED FORM BY ICP-MS ANALYSIS	Sydney	Apr 03, 2020	6 Month
Heavy Metals - Method: LTM-MET-3040 Metals in Waters, Soils & Sediments by ICP-MS	Sydney	Apr 01, 2020	180 Days
% Moisture - Method: LTM-GEN-7080 Moisture	Sydney	Mar 27, 2020	14 Days

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Company Name: Ramboll Australia Pty Ltd
Address: Level 3/100 Pacific Highway
North Sydney
NSW 2060

Order No.:
Report #: 710631
Phone: 02 9954 8118
Fax: 02 9954 8150

Received: Mar 27, 2020 2:58 PM
Due: Apr 3, 2020
Priority: 5 Day
Contact Name: Stephen Maxwell

Project Name:
Project ID: 318000780

Eurofins Analytical Services Manager : Andrew Black

Sample Detail						Lead	Lead (% w/w)	Moisture Set	NEPM 2013 Metals without Cr6+ (As, Be, B, Cd, Co, Cr, Cu, Hg, Pb, Ni, Mn, Cd, Co, Cr, Cu, Hg, Pb, Ni, Mn, Se, Zn)	NEPM 2013 Filtered Metals without Cr6+ (As, Be, B, Cd, Co, Cr, Cu, Hg, Pb, Ni, Mn, Se, Zn)
Melbourne Laboratory - NATA Site # 1254 & 14271										
Sydney Laboratory - NATA Site # 18217						X	X	X	X	X
Brisbane Laboratory - NATA Site # 20794										
Perth Laboratory - NATA Site # 23736										
External Laboratory										
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2	P12_TW2	Mar 26, 2020		Water	S20-Ma44142				X	X
3	P12_TWS1	Mar 26, 2020		Sediment	S20-Ma44143	X		X		
4	P12_TWS2	Mar 26, 2020		Sediment	S20-Ma44144	X		X		
5	P12_HA01_0_0	Mar 26, 2020		Soil	S20-Ma44145	X		X		
6	P12_HA01_0_2	Mar 26, 2020		Soil	S20-Ma44146	X		X		
7	P12_HA01_0_3	Mar 26, 2020		Soil	S20-Ma44147	X		X		
8	P12_HA02_0_0	Mar 26, 2020		Soil	S20-Ma44148	X		X		

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ABN – 50 005 085 521

web : www.eurofins.com.au

e.mail : EnviroSales@eurofins.com

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Brisbane Laboratory - NATA Site # 20794										
Perth Laboratory - NATA Site # 23736										
	0_0.05									
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10	P12_HA03_0_0.05	Mar 26, 2020		Soil	S20-Ma44150	X		X		
11	D01_260320	Mar 26, 2020		Water	S20-Ma44151	X				
12	T01_260320	Mar 26, 2020		Soil	S20-Ma44152	X		X		
13	P12_HA03_0_2	Mar 26, 2020		Soil	S20-Ma44153	X		X		
14	P12_HA04_0_0	Mar 26, 2020		Soil	S20-Ma44154	X		X		
15	P12_HA04_0_3	Mar 26, 2020		Soil	S20-Ma44155	X		X		
16	P12_HA05_0_0	Mar 26, 2020		Soil	S20-Ma44156	X		X		

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Melbourne Laboratory - NATA Site # 1254 & 14271										
Sydney Laboratory - NATA Site # 18217						X	X	X	X	X
Brisbane Laboratory - NATA Site # 20794										
Perth Laboratory - NATA Site # 23736										
17	P12_HA05_0.2	Mar 26, 2020		Soil	S20-Ma44157	X		X		
18	P12_BORE	Mar 26, 2020		Water	S20-Ma44158				X	X
19	P12_PAINT1	Mar 26, 2020		Paint	S20-Ma44159		X			
Test Counts						15	1	14	3	3

Internal Quality Control Review and Glossary
General

- Laboratory QC results for Method Blanks, Duplicates, Matrix Spikes, and Laboratory Control Samples follows guidelines delineated in the National Environment Protection (Assessment of Site Contamination) Measure 1999, as amended May 2013 and are included in this QC report where applicable. Additional QC data may be available on request.
- All soil/sediment/solid results are reported on a dry basis, unless otherwise stated.
- All biota/food results are reported on a wet weight basis on the edible portion, unless otherwise stated.
- Actual LORs are matrix dependant. Quoted LORs may be raised where sample extracts are diluted due to interferences.
- Results are uncorrected for matrix spikes or surrogate recoveries except for PFAS compounds.
- SVOC analysis on waters are performed on homogenised, unfiltered samples, unless noted otherwise.
- Samples were analysed on an 'as received' basis.
- Information identified on this report with blue colour, indicates data provided by customer, that may have an impact on the results.
- This report replaces any interim results previously issued.

Holding Times

Please refer to 'Sample Preservation and Container Guide' for holding times (QS3001).

For samples received on the last day of holding time, notification of testing requirements should have been received at least 6 hours prior to sample receipt deadlines as stated on the SRA.

If the Laboratory did not receive the information in the required timeframe, and regardless of any other integrity issues, suitably qualified results may still be reported.

Holding times apply from the date of sampling, therefore compliance to these may be outside the laboratory's control.

For VOCs containing vinyl chloride, styrene and 2-chloroethyl vinyl ether the holding time is 7 days however for all other VOCs such as BTEX or C6-10 TRH then the holding time is 14 days.

****NOTE:** pH duplicates are reported as a range NOT as RPD

Units

mg/kg: milligrams per kilogram

mg/L: milligrams per litre

ug/L: micrograms per litre

ppm: Parts per million

ppb: Parts per billion

%: Percentage

org/100mL: Organisms per 100 millilitres

NTU: Nephelometric Turbidity Units

MPN/100mL: Most Probable Number of organisms per 100 millilitres

Terms

Dry	Where a moisture has been determined on a solid sample the result is expressed on a dry basis.
LOR	Limit of Reporting.
SPIKE	Addition of the analyte to the sample and reported as percentage recovery.
RPD	Relative Percent Difference between two Duplicate pieces of analysis.
LCS	Laboratory Control Sample - reported as percent recovery.
CRM	Certified Reference Material - reported as percent recovery.
Method Blank	In the case of solid samples these are performed on laboratory certified clean sands and in the case of water samples these are performed on de-ionised water.
Surr - Surrogate	The addition of a like compound to the analyte target and reported as percentage recovery.
Duplicate	A second piece of analysis from the same sample and reported in the same units as the result to show comparison.
USEPA	United States Environmental Protection Agency
APHA	American Public Health Association
TCLP	Toxicity Characteristic Leaching Procedure
COC	Chain of Custody
SRA	Sample Receipt Advice
QSM	US Department of Defense Quality Systems Manual Version 5.3
CP	Client Parent - QC was performed on samples pertaining to this report
NCP	Non-Client Parent - QC performed on samples not pertaining to this report, QC is representative of the sequence or batch that client samples were analysed within.
TEQ	Toxic Equivalency Quotient

QC - Acceptance Criteria

RPD Duplicates: Global RPD Duplicates Acceptance Criteria is 30% however the following acceptance guidelines are equally applicable:

Results <10 times the LOR : No Limit

Results between 10-20 times the LOR : RPD must lie between 0-50%

Results >20 times the LOR : RPD must lie between 0-30%

Surrogate Recoveries: Recoveries must lie between 20-130% Phenols & 50-150% PFASs

PFAS field samples that contain surrogate recoveries in excess of the QC limit designated in QSM 5.3 where no positive PFAS results have been reported have been reviewed and no data was affected.

WA DWER (n=10): PFBA, PFPeA, PFHxA, PFHpA, PFOA, PFBS, PFHxS, PFOS, 6:2 FTSA, 8:2 FTSA

QC Data General Comments

- Where a result is reported as a less than (<), higher than the nominated LOR, this is due to either matrix interference, extract dilution required due to interferences or contaminant levels within the sample, high moisture content or insufficient sample provided.
- Duplicate data shown within this report that states the word "BATCH" is a Batch Duplicate from outside of your sample batch, but within the laboratory sample batch at a 1:10 ratio. The Parent and Duplicate data shown is not data from your samples.
- Organochlorine Pesticide analysis - where reporting LCS data, Toxaphene & Chlordane are not added to the LCS.
- Organochlorine Pesticide analysis - where reporting Spike data, Toxaphene is not added to the Spike.
- Total Recoverable Hydrocarbons - where reporting Spike & LCS data, a single spike of commercial Hydrocarbon products in the range of C12-C30 is added and it's Total Recovery is reported in the C10-C14 cell of the Report.
- pH and Free Chlorine analysed in the laboratory - Analysis on this test must begin within 30 minutes of sampling. Therefore laboratory analysis is unlikely to be completed within holding time. Analysis will begin as soon as possible after sample receipt.
- Recovery Data (Spikes & Surrogates) - where chromatographic interference does not allow the determination of Recovery the term "INT" appears against that analyte.
- Polychlorinated Biphenyls are spiked only using Aroclor 1260 in Matrix Spikes and LCS.
- For Matrix Spikes and LCS results a dash " - " in the report means that the specific analyte was not added to the QC sample.
- Duplicate RPDs are calculated from raw analytical data thus it is possible to have two sets of data.

Quality Control Results

Test				Units	Result 1		Acceptance Limits	Pass Limits	Qualifying Code		
Method Blank											
Heavy Metals											
Lead				mg/kg	< 5		5	Pass			
LCS - % Recovery											
Heavy Metals											
Lead				%	98		70-130	Pass			
Test	Lab Sample ID	QA Source	Units	Result 1			Acceptance Limits	Pass Limits	Qualifying Code		
Spike - % Recovery											
Heavy Metals											
Lead				S20-Ma44054	NCP	%	90	70-130	Pass		
Test	Lab Sample ID	QA Source	Units	Result 1			Acceptance Limits	Pass Limits	Qualifying Code		
Duplicate											
				Result 1	Result 2	RPD					
% Moisture				S20-Ma44145	CP	%	9.0	9.1	1.0	30%	Pass
Duplicate											
Heavy Metals											
Lead				S20-Ma45357	NCP	mg/kg	22	24	6.0	30%	Pass
Duplicate											
				Result 1	Result 2	RPD					
% Moisture				S20-Ma44156	CP	%	14	15	6.0	30%	Pass

Comments**Sample Integrity**

Custody Seals Intact (if used)	N/A
Attempt to Chill was evident	Yes
Sample correctly preserved	Yes
Appropriate sample containers have been used	No
Sample containers for volatile analysis received with minimal headspace	Yes
Samples received within HoldingTime	Yes
Some samples have been subcontracted	No

Authorised By

Andrew Black Analytical Services Manager
Gabriele Cordero Senior Analyst-Metal (NSW)

**Glenn Jackson
General Manager**

Final report - this Report replaces any previously issued Report

- Indicates Not Requested

* Indicates NATA accreditation does not cover the performance of this service

Measurement uncertainty of test data is available on request or please [click here](#).

Eurofins shall not be liable for loss, cost, damages or expenses incurred by the client, or any other person or company, resulting from the use of any information or interpretation given in this report. In no case shall Eurofins be liable for consequential damages including, but not limited to, lost profits, damages for failure to meet deadlines and lost production arising from this report. This document shall not be reproduced except in full and relates only to the items tested. Unless indicated otherwise, the tests were performed on the samples as received.

Ramboll Environ Australia Pty Ltd
 Level 3/100 Pacific Highway
 North Sydney
 NSW 2060



NATA Accredited
 Accreditation Number 1261
 Site Number 18217

Accredited for compliance with ISO/IEC 17025 – Testing
 The results of the tests, calibrations and/or
 measurements included in this document are traceable
 to Australian/national standards.

Attention: Stephen Maxwell

Report 710631-W
 Project name
 Project ID 318000780
 Received Date Mar 27, 2020

Client Sample ID			P12_TW1	P12_TW2	P12_TWS1	P12_TWS2
Sample Matrix			Water	Water	Water	Water
Eurofins Sample No.			S20-Ma44141	S20-Ma44142	S20-Ma44143	S20-Ma44144
Date Sampled			Mar 26, 2020	Mar 26, 2020	Mar 26, 2020	Mar 26, 2020
Test/Reference	LOR	Unit				
Heavy Metals						
Arsenic	0.001	mg/L	< 0.001	< 0.001	-	-
Arsenic (filtered)	0.001	mg/L	< 0.001	< 0.001	-	-
Beryllium	0.001	mg/L	< 0.001	< 0.001	-	-
Beryllium (filtered)	0.001	mg/L	< 0.001	< 0.001	-	-
Boron	0.05	mg/L	< 0.05	< 0.05	-	-
Boron (filtered)	0.05	mg/L	< 0.05	< 0.05	-	-
Cadmium	0.0002	mg/L	< 0.0002	0.0005	-	-
Cadmium (filtered)	0.0002	mg/L	< 0.0002	0.0005	-	-
Chromium	0.001	mg/L	< 0.001	0.002	-	-
Chromium (filtered)	0.001	mg/L	< 0.001	0.002	-	-
Cobalt	0.001	mg/L	< 0.001	< 0.001	-	-
Cobalt (filtered)	0.001	mg/L	< 0.001	< 0.001	-	-
Copper	0.001	mg/L	0.004	0.001	-	-
Copper (filtered)	0.001	mg/L	0.004	0.001	-	-
Lead	0.001	mg/L	0.002	< 0.001	0.18	2.8
Lead (filtered)	0.001	mg/L	< 0.001	< 0.001	-	-
Manganese	0.005	mg/L	< 0.005	< 0.005	-	-
Manganese (filtered)	0.005	mg/L	< 0.005	< 0.005	-	-
Mercury	0.0001	mg/L	< 0.0001	< 0.0001	-	-
Mercury (filtered)	0.0001	mg/L	< 0.0001	< 0.0001	-	-
Nickel	0.001	mg/L	< 0.001	< 0.001	-	-
Nickel (filtered)	0.001	mg/L	< 0.001	< 0.001	-	-
Selenium	0.001	mg/L	< 0.001	< 0.001	-	-
Selenium (filtered)	0.001	mg/L	< 0.001	< 0.001	-	-
Zinc	0.005	mg/L	0.007	1.6	-	-
Zinc (filtered)	0.005	mg/L	< 0.005	1.6	-	-

Client Sample ID			D01_260320	T01_260320	P12_BORE
Sample Matrix			Water	Water	Water
Eurofins Sample No.			S20-Ma44151	S20-Ma44152	S20-Ma44158
Date Sampled			Mar 26, 2020	Mar 26, 2020	Mar 26, 2020
Test/Reference	LOR	Unit			
Heavy Metals					
Arsenic	0.001	mg/L	-	-	< 0.001
Arsenic (filtered)	0.001	mg/L	-	-	< 0.001
Beryllium	0.001	mg/L	-	-	< 0.001
Beryllium (filtered)	0.001	mg/L	-	-	< 0.001
Boron	0.05	mg/L	-	-	< 0.05
Boron (filtered)	0.05	mg/L	-	-	< 0.05
Cadmium	0.0002	mg/L	-	-	< 0.0002
Cadmium (filtered)	0.0002	mg/L	-	-	< 0.0002
Chromium	0.001	mg/L	-	-	< 0.001
Chromium (filtered)	0.001	mg/L	-	-	< 0.001
Cobalt	0.001	mg/L	-	-	< 0.001
Cobalt (filtered)	0.001	mg/L	-	-	< 0.001
Copper	0.001	mg/L	-	-	0.002
Copper (filtered)	0.001	mg/L	-	-	0.001
Lead	0.001	mg/L	< 0.001	< 0.001	< 0.001
Lead (filtered)	0.001	mg/L	-	-	< 0.001
Manganese	0.005	mg/L	-	-	0.066
Manganese (filtered)	0.005	mg/L	-	-	0.063
Mercury	0.0001	mg/L	-	-	< 0.0001
Mercury (filtered)	0.0001	mg/L	-	-	< 0.0001
Nickel	0.001	mg/L	-	-	0.003
Nickel (filtered)	0.001	mg/L	-	-	0.004
Selenium	0.001	mg/L	-	-	< 0.001
Selenium (filtered)	0.001	mg/L	-	-	< 0.001
Zinc	0.005	mg/L	-	-	0.018
Zinc (filtered)	0.005	mg/L	-	-	0.009

Sample History

Where samples are submitted/analysed over several days, the last date of extraction and analysis is reported. A recent review of our LIMS has resulted in the correction or clarification of some method identifications. Due to this, some of the method reference information on reports has changed. However, no substantive change has been made to our laboratory methods, and as such there is no change in the validity of current or previous results.

If the date and time of sampling are not provided, the Laboratory will not be responsible for compromised results should testing be performed outside the recommended holding time.

Description	Testing Site	Extracted	Holding Time
NEPM 2013 Metals without Cr6+ (As, Be, B, Cd, Co, Cr, Cu, Hg, Pb, Ni, Mn, Se, Zn) - Method: LTM-MET-3040 Metals in Waters, Soils & Sediments by ICP-MS	Sydney	Apr 03, 2020	180 Days
NEPM 2013 Filtered Metals without Cr6+ (As, Be, B, Cd, Co, Cr, Cu, Hg, Pb, Ni, Mn, Se, Zn) - Method: LTM-MET-3040 Metals in Waters, Soils & Sediments by ICP-MS	Sydney	Mar 27, 2020	28 Days
Heavy Metals - Method: LTM-MET-3040 Metals in Waters, Soils & Sediments by ICP-MS	Sydney	Apr 03, 2020	180 Days

Australia

Melbourne
6 Monterey Road
Dandenong South VIC 3175
Phone : +61 3 8564 5000
NATA # 1261
Site # 1254 & 14271

Sydney
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Lane Cove West NSW 2066
Phone : +61 2 9900 8400
NATA # 1261 Site # 18217

Brisbane
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NATA # 1261 Site # 20794

Perth
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Kewdale WA 6105
Phone : +61 8 9251 9600
NATA # 1261
Site # 23736

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IANZ # 1327

Christchurch
43 Detroit Drive
Rolleston, Christchurch 7675
Phone : 0800 856 450
IANZ # 1290

Company Name:	Ramboll Australia Pty Ltd	Order No.:		Received:	Mar 27, 2020 2:58 PM
Address:	Level 3/100 Pacific Highway North Sydney NSW 2060	Report #:	710631	Due:	Apr 3, 2020
Project Name:		Phone:	02 9954 8118	Priority:	5 Day
Project ID:	318000780	Fax:	02 9954 8150	Contact Name:	Stephen Maxwell

Eurofins Analytical Services Manager : Andrew Black

Sample Detail						Lead	Lead (% w/w)	Moisture Set	NEPM 2013 Filtered Metals without Cr6+ (As, Be, B, Cd, Co, Cr, Cu, Hg, Pb, Ni, Mn, NEPM 2013 Metals without Cr6+ (As, Be, B, Cd, Co, Cr, Cu, Hg, Pb, Ni, Mn, Se, Zn)	NEPM 2013 Filtered Metals without Cr6+ (As, Be, B, Cd, Co, Cr, Cu, Hg, Pb, Ni, Mn, Se, Zn)
Melbourne Laboratory - NATA Site # 1254 & 14271										
Sydney Laboratory - NATA Site # 18217						X	X	X	X	X
Brisbane Laboratory - NATA Site # 20794										
Perth Laboratory - NATA Site # 23736										
External Laboratory										
No	Sample ID	Sample Date	Sampling Time	Matrix	LAB ID					
1	P12_TW1	Mar 26, 2020		Water	S20-Ma44141				X	X
2	P12_TW2	Mar 26, 2020		Water	S20-Ma44142				X	X
3	P12_TWS1	Mar 26, 2020		Sediment	S20-Ma44143	X	X			
4	P12_TWS2	Mar 26, 2020		Sediment	S20-Ma44144	X	X			
5	P12_HA01_0_0	Mar 26, 2020		Soil	S20-Ma44145	X	X			
6	P12_HA01_0_2	Mar 26, 2020		Soil	S20-Ma44146	X	X			
7	P12_HA01_0_3	Mar 26, 2020		Soil	S20-Ma44147	X	X			
8	P12_HA02_0_0	Mar 26, 2020		Soil	S20-Ma44148	X	X			

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NATA # 1261
Site # 23736

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Rolleston, Christchurch 7675
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Company Name: Ramboll Australia Pty Ltd
Address: Level 3/100 Pacific Highway
North Sydney
NSW 2060

Order No.:
Report #: 710631
Phone: 02 9954 8118
Fax: 02 9954 8150

Received: Mar 27, 2020 2:58 PM
Due: Apr 3, 2020
Priority: 5 Day
Contact Name: Stephen Maxwell

Project Name:
Project ID: 318000780

Eurofins Analytical Services Manager : Andrew Black

Sample Detail						Lead	Lead (% w/w)	Moisture Set	NEPM 2013 Metals without Cr6+ (As, Be, B, Cd, Co, Cr, Cu, Hg, Pb, Ni, Mn, NEPM 2013 Metals without Cr6+ (As, Be, B, Cd, Co, Cr, Cu, Hg, Pb, Ni, Mn, Se, Zn)	NEPM 2013 Filtered Metals without Cr6+ (As, Be, B, Cd, Co, Cr, Cu, Hg, Pb, Ni, Mn, Se, Zn)
Melbourne Laboratory - NATA Site # 1254 & 14271										
Sydney Laboratory - NATA Site # 18217						X	X	X	X	X
Brisbane Laboratory - NATA Site # 20794										
Perth Laboratory - NATA Site # 23736										
	0_0.05									
9	P12_HA02_0_2	Mar 26, 2020		Soil	S20-Ma44149	X		X		
10	P12_HA03_0_0.05	Mar 26, 2020		Soil	S20-Ma44150	X		X		
11	D01_260320	Mar 26, 2020		Water	S20-Ma44151	X				
12	T01_260320	Mar 26, 2020		Soil	S20-Ma44152	X		X		
13	P12_HA03_0_2	Mar 26, 2020		Soil	S20-Ma44153	X		X		
14	P12_HA04_0_0	Mar 26, 2020		Soil	S20-Ma44154	X		X		
15	P12_HA04_0_3	Mar 26, 2020		Soil	S20-Ma44155	X		X		
16	P12_HA05_0_0	Mar 26, 2020		Soil	S20-Ma44156	X		X		

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ABN – 50 005 085 521

web : www.eurofins.com.au

e.mail : EnviroSales@eurofins.com

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Address: Level 3/100 Pacific Highway
North Sydney
NSW 2060

Order No.:
Report #: 710631
Phone: 02 9954 8118
Fax: 02 9954 8150

Received: Mar 27, 2020 2:58 PM
Due: Apr 3, 2020
Priority: 5 Day
Contact Name: Stephen Maxwell

Project Name:
Project ID: 318000780

Eurofins Analytical Services Manager : Andrew Black

Sample Detail						Lead	Lead (% w/w)	Moisture Set	NEPM 2013 Metals without Cr6+ (As, Be, B, Cd, Co, Cr, Cu, Hg, Pb, Ni, Mn, Cd, Co, Cr, Cu, Hg, Pb, Ni, Mn, Se, Zn)	NEPM 2013 Filtered Metals without Cr6+ (As, Be, B, Cd, Co, Cr, Cu, Hg, Pb, Ni, Mn, NEPM 2013 Metals without Cr6+ (As, Be, B, Cd, Co, Cr, Cu, Hg, Pb, Ni, Mn, Se, Zn))
Melbourne Laboratory - NATA Site # 1254 & 14271										
Sydney Laboratory - NATA Site # 18217						X	X	X	X	X
Brisbane Laboratory - NATA Site # 20794										
Perth Laboratory - NATA Site # 23736										
17	P12_HA05_0.2	Mar 26, 2020		Soil	S20-Ma44157	X		X		
18	P12_BORE	Mar 26, 2020		Water	S20-Ma44158				X	X
19	P12_PAINT1	Mar 26, 2020		Paint	S20-Ma44159		X			
Test Counts						15	1	14	3	3

Internal Quality Control Review and Glossary
General

- Laboratory QC results for Method Blanks, Duplicates, Matrix Spikes, and Laboratory Control Samples follows guidelines delineated in the National Environment Protection (Assessment of Site Contamination) Measure 1999, as amended May 2013 and are included in this QC report where applicable. Additional QC data may be available on request.
- All soil/sediment/solid results are reported on a dry basis, unless otherwise stated.
- All biota/food results are reported on a wet weight basis on the edible portion, unless otherwise stated.
- Actual LORs are matrix dependant. Quoted LORs may be raised where sample extracts are diluted due to interferences.
- Results are uncorrected for matrix spikes or surrogate recoveries except for PFAS compounds.
- SVOC analysis on waters are performed on homogenised, unfiltered samples, unless noted otherwise.
- Samples were analysed on an 'as received' basis.
- Information identified on this report with blue colour, indicates data provided by customer, that may have an impact on the results.
- This report replaces any interim results previously issued.

Holding Times

Please refer to 'Sample Preservation and Container Guide' for holding times (QS3001).

For samples received on the last day of holding time, notification of testing requirements should have been received at least 6 hours prior to sample receipt deadlines as stated on the SRA.

If the Laboratory did not receive the information in the required timeframe, and regardless of any other integrity issues, suitably qualified results may still be reported.

Holding times apply from the date of sampling, therefore compliance to these may be outside the laboratory's control.

For VOCs containing vinyl chloride, styrene and 2-chloroethyl vinyl ether the holding time is 7 days however for all other VOCs such as BTEX or C6-10 TRH then the holding time is 14 days.

****NOTE:** pH duplicates are reported as a range NOT as RPD

Units

mg/kg: milligrams per kilogram

mg/L: milligrams per litre

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ppm: Parts per million

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MPN/100mL: Most Probable Number of organisms per 100 millilitres

Terms

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RPD	Relative Percent Difference between two Duplicate pieces of analysis.
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Duplicate	A second piece of analysis from the same sample and reported in the same units as the result to show comparison.
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TCLP	Toxicity Characteristic Leaching Procedure
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NCP	Non-Client Parent - QC performed on samples not pertaining to this report, QC is representative of the sequence or batch that client samples were analysed within.
TEQ	Toxic Equivalency Quotient

QC - Acceptance Criteria

RPD Duplicates: Global RPD Duplicates Acceptance Criteria is 30% however the following acceptance guidelines are equally applicable:

Results <10 times the LOR : No Limit

Results between 10-20 times the LOR : RPD must lie between 0-50%

Results >20 times the LOR : RPD must lie between 0-30%

Surrogate Recoveries: Recoveries must lie between 20-130% Phenols & 50-150% PFASs

PFAS field samples that contain surrogate recoveries in excess of the QC limit designated in QSM 5.3 where no positive PFAS results have been reported have been reviewed and no data was affected.

WA DWER (n=10): PFBA, PFPeA, PFHxA, PFHpA, PFOA, PFBS, PFHxS, PFOS, 6:2 FTSA, 8:2 FTSA

QC Data General Comments

- Where a result is reported as a less than (<), higher than the nominated LOR, this is due to either matrix interference, extract dilution required due to interferences or contaminant levels within the sample, high moisture content or insufficient sample provided.
- Duplicate data shown within this report that states the word "BATCH" is a Batch Duplicate from outside of your sample batch, but within the laboratory sample batch at a 1:10 ratio. The Parent and Duplicate data shown is not data from your samples.
- Organochlorine Pesticide analysis - where reporting LCS data, Toxaphene & Chlordane are not added to the LCS.
- Organochlorine Pesticide analysis - where reporting Spike data, Toxaphene is not added to the Spike.
- Total Recoverable Hydrocarbons - where reporting Spike & LCS data, a single spike of commercial Hydrocarbon products in the range of C12-C30 is added and it's Total Recovery is reported in the C10-C14 cell of the Report.
- pH and Free Chlorine analysed in the laboratory - Analysis on this test must begin within 30 minutes of sampling. Therefore laboratory analysis is unlikely to be completed within holding time. Analysis will begin as soon as possible after sample receipt.
- Recovery Data (Spikes & Surrogates) - where chromatographic interference does not allow the determination of Recovery the term "INT" appears against that analyte.
- Polychlorinated Biphenyls are spiked only using Aroclor 1260 in Matrix Spikes and LCS.
- For Matrix Spikes and LCS results a dash " - " in the report means that the specific analyte was not added to the QC sample.
- Duplicate RPDs are calculated from raw analytical data thus it is possible to have two sets of data.

Quality Control Results

Test	Units	Result 1			Acceptance Limits	Pass Limits	Qualifying Code
Method Blank							
Heavy Metals							
Arsenic	mg/L	< 0.001			0.001	Pass	
Arsenic (filtered)	mg/L	< 0.001			0.001	Pass	
Beryllium	mg/L	< 0.001			0.001	Pass	
Beryllium (filtered)	mg/L	< 0.001			0.001	Pass	
Boron	mg/L	< 0.05			0.05	Pass	
Boron (filtered)	mg/L	< 0.05			0.05	Pass	
Cadmium	mg/L	< 0.0002			0.0002	Pass	
Cadmium (filtered)	mg/L	< 0.0002			0.0002	Pass	
Chromium	mg/L	< 0.001			0.001	Pass	
Chromium (filtered)	mg/L	< 0.001			0.001	Pass	
Cobalt	mg/L	< 0.001			0.001	Pass	
Cobalt (filtered)	mg/L	< 0.001			0.001	Pass	
Copper	mg/L	< 0.001			0.001	Pass	
Copper (filtered)	mg/L	< 0.001			0.001	Pass	
Lead	mg/L	< 0.001			0.001	Pass	
Lead (filtered)	mg/L	< 0.001			0.001	Pass	
Manganese	mg/L	< 0.005			0.005	Pass	
Manganese (filtered)	mg/L	< 0.005			0.005	Pass	
Mercury	mg/L	< 0.0001			0.0001	Pass	
Mercury (filtered)	mg/L	< 0.0001			0.0001	Pass	
Nickel	mg/L	< 0.001			0.001	Pass	
Nickel (filtered)	mg/L	< 0.001			0.001	Pass	
Selenium	mg/L	< 0.001			0.001	Pass	
Selenium (filtered)	mg/L	< 0.001			0.001	Pass	
Zinc	mg/L	< 0.005			0.005	Pass	
Zinc (filtered)	mg/L	< 0.005			0.005	Pass	
LCS - % Recovery							
Heavy Metals							
Arsenic	%	103			70-130	Pass	
Arsenic (filtered)	%	87			70-130	Pass	
Beryllium	%	101			70-130	Pass	
Beryllium (filtered)	%	85			70-130	Pass	
Boron	%	100			70-130	Pass	
Boron (filtered)	%	83			70-130	Pass	
Cadmium	%	101			70-130	Pass	
Cadmium (filtered)	%	84			70-130	Pass	
Chromium	%	99			70-130	Pass	
Chromium (filtered)	%	85			70-130	Pass	
Cobalt	%	99			70-130	Pass	
Cobalt (filtered)	%	85			70-130	Pass	
Copper	%	96			70-130	Pass	
Copper (filtered)	%	84			70-130	Pass	
Lead	%	103			70-130	Pass	
Lead (filtered)	%	86			70-130	Pass	
Manganese	%	99			70-130	Pass	
Manganese (filtered)	%	84			70-130	Pass	
Mercury	%	112			70-130	Pass	
Mercury (filtered)	%	80			70-130	Pass	
Nickel	%	98			70-130	Pass	
Nickel (filtered)	%	86			70-130	Pass	

Test		Units	Result 1			Acceptance Limits	Pass Limits	Qualifying Code
Selenium		%	103			70-130	Pass	
Selenium (filtered)		%	84			70-130	Pass	
Zinc		%	100			70-130	Pass	
Zinc (filtered)		%	85			70-130	Pass	
Test	Lab Sample ID	QA Source	Units	Result 1		Acceptance Limits	Pass Limits	Qualifying Code
Spike - % Recovery								
Heavy Metals				Result 1				
Arsenic	S20-Ma44415	NCP	%	104		70-130	Pass	
Arsenic (filtered)	S20-Ma44415	NCP	%	96		70-130	Pass	
Beryllium	S20-Ma44415	NCP	%	103		70-130	Pass	
Beryllium (filtered)	S20-Ma44415	NCP	%	93		70-130	Pass	
Boron	S20-Ma44415	NCP	%	93		70-130	Pass	
Cadmium	S20-Ma44415	NCP	%	99		70-130	Pass	
Cadmium (filtered)	S20-Ma44415	NCP	%	102		70-130	Pass	
Chromium	S20-Ma44415	NCP	%	99		70-130	Pass	
Chromium (filtered)	S20-Ma44415	NCP	%	93		70-130	Pass	
Cobalt	S20-Ma44415	NCP	%	101		70-130	Pass	
Cobalt (filtered)	S20-Ma44415	NCP	%	97		70-130	Pass	
Copper	S20-Ma44415	NCP	%	96		70-130	Pass	
Copper (filtered)	S20-Ma44415	NCP	%	94		70-130	Pass	
Lead	S20-Ma44415	NCP	%	104		70-130	Pass	
Lead (filtered)	S20-Ma44415	NCP	%	97		70-130	Pass	
Manganese	S20-Ma44415	NCP	%	100		70-130	Pass	
Manganese (filtered)	S20-Ma44415	NCP	%	97		70-130	Pass	
Mercury	S20-Ma44415	NCP	%	103		70-130	Pass	
Mercury (filtered)	S20-Ma44415	NCP	%	95		70-130	Pass	
Nickel	S20-Ma44415	NCP	%	99		70-130	Pass	
Nickel (filtered)	S20-Ma44415	NCP	%	95		70-130	Pass	
Selenium	S20-Ma44415	NCP	%	101		70-130	Pass	
Selenium (filtered)	S20-Ma44415	NCP	%	100		70-130	Pass	
Zinc	S20-Ma44415	NCP	%	101		70-130	Pass	
Zinc (filtered)	S20-Ma44415	NCP	%	84		70-130	Pass	
Test	Lab Sample ID	QA Source	Units	Result 1		Acceptance Limits	Pass Limits	Qualifying Code
Duplicate								
Heavy Metals				Result 1	Result 2	RPD		
Arsenic (filtered)	S20-Ma44142	CP	mg/L	< 0.001	< 0.001	<1	30%	Pass
Beryllium (filtered)	S20-Ma44142	CP	mg/L	< 0.001	< 0.001	<1	30%	Pass
Boron (filtered)	S20-Ma44142	CP	mg/L	< 0.05	< 0.05	<1	30%	Pass
Cadmium (filtered)	S20-Ma44142	CP	mg/L	0.0005	0.0003	30	30%	Pass
Chromium (filtered)	S20-Ma44142	CP	mg/L	0.002	0.002	2.0	30%	Pass
Cobalt (filtered)	S20-Ma44142	CP	mg/L	< 0.001	< 0.001	<1	30%	Pass
Copper (filtered)	S20-Ma44142	CP	mg/L	0.001	< 0.001	28	30%	Pass
Lead (filtered)	S20-Ma44142	CP	mg/L	< 0.001	< 0.001	<1	30%	Pass
Manganese (filtered)	S20-Ma44142	CP	mg/L	< 0.005	< 0.005	<1	30%	Pass
Mercury (filtered)	S20-Ma44142	CP	mg/L	< 0.0001	< 0.0001	<1	30%	Pass
Nickel (filtered)	S20-Ma44142	CP	mg/L	< 0.001	< 0.001	<1	30%	Pass
Selenium (filtered)	S20-Ma44142	CP	mg/L	< 0.001	< 0.001	<1	30%	Pass
Zinc (filtered)	S20-Ma44142	CP	mg/L	1.6	1.6	2.0	30%	Pass

Duplicate								
Heavy Metals				Result 1	Result 2	RPD		
Arsenic	S20-Ma44158	CP	mg/L	< 0.001	< 0.001	<1	30%	Pass
Beryllium	S20-Ma44158	CP	mg/L	< 0.001	< 0.001	<1	30%	Pass
Boron	S20-Ma44158	CP	mg/L	< 0.05	< 0.05	<1	30%	Pass
Cadmium	S20-Ma44158	CP	mg/L	< 0.0002	< 0.0002	<1	30%	Pass
Chromium	S20-Ma44158	CP	mg/L	< 0.001	< 0.001	<1	30%	Pass
Cobalt	S20-Ma44158	CP	mg/L	< 0.001	< 0.001	<1	30%	Pass
Copper	S20-Ma44158	CP	mg/L	0.002	0.002	6.0	30%	Pass
Lead	S20-Ma44158	CP	mg/L	< 0.001	< 0.001	<1	30%	Pass
Manganese	S20-Ma44158	CP	mg/L	0.066	0.066	<1	30%	Pass
Mercury	S20-Ma44158	CP	mg/L	< 0.0001	< 0.0001	<1	30%	Pass
Nickel	S20-Ma44158	CP	mg/L	0.003	0.004	9.0	30%	Pass
Selenium	S20-Ma44158	CP	mg/L	< 0.001	< 0.001	<1	30%	Pass
Zinc	S20-Ma44158	CP	mg/L	0.018	0.011	53	30%	Fail

Q15

Comments
Sample Integrity

Custody Seals Intact (if used)	N/A
Attempt to Chill was evident	Yes
Sample correctly preserved	Yes
Appropriate sample containers have been used	No
Sample containers for volatile analysis received with minimal headspace	Yes
Samples received within HoldingTime	Yes
Some samples have been subcontracted	No

Qualifier Codes/Comments

Code	Description
Q15	The RPD reported passes Eurofins Environment Testing's QC - Acceptance Criteria as defined in the Internal Quality Control Review and Glossary page of this report.

Authorised By

Andrew Black	Analytical Services Manager
Gabriele Cordero	Senior Analyst-Metal (NSW)


**Glenn Jackson
General Manager**

Final report - this Report replaces any previously issued Report

- Indicates Not Requested

* Indicates NATA accreditation does not cover the performance of this service

Measurement uncertainty of test data is available on request or please [click here](#).

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Ramboll Environ Australia Pty Ltd
 Level 3/100 Pacific Highway
 North Sydney
 NSW 2060



NATA Accredited
Accreditation Number 1261
Site Number 18217

Accredited for compliance with ISO/IEC 17025 – Testing
 The results of the tests, calibrations and/or
 measurements included in this document are traceable
 to Australian/national standards.

Attention: **Stephen Maxwell**

Report **713878-S-V9**

Project name

Project ID **318000780**

Received Date **Apr 15, 2020**

Client Sample ID			P12_TWS1	P12_TWS2
Sample Matrix			Solid	Solid
Eurofins Sample No.			S20-Ap21439	S20-Ap21440
Date Sampled			Mar 26, 2020	Mar 26, 2020
Test/Reference	LOR	Unit		
Heavy Metals				
Lead	1	mg/kg	68	220

Sample History

Where samples are submitted/analysed over several days, the last date of extraction and analysis is reported.

A recent review of our LIMS has resulted in the correction or clarification of some method identifications. Due to this, some of the method reference information on reports has changed. However, no substantive change has been made to our laboratory methods, and as such there is no change in the validity of current or previous results.

If the date and time of sampling are not provided, the Laboratory will not be responsible for compromised results should testing be performed outside the recommended holding time.

Description

Heavy Metals

Testing Site

Sydney

Extracted

Apr 16, 2020

Holding Time

180 Days

- Method: LTM-MET-3040 Metals in Waters, Soils & Sediments by ICP-MS

Australia

Melbourne
6 Monterey Road
Dandenong South VIC 3175
Phone : +61 3 8564 5000
NATA # 1261
Site # 1254 & 14271

Sydney
Unit F3, Building F
16 Mars Road
Lane Cove West NSW 2066
Phone : +61 2 9900 8400
NATA # 1261 Site # 18217

Brisbane
1/21 Smallwood Place
Murarrie QLD 4172
Phone : +61 7 3902 4600
NATA # 1261 Site # 20794

Perth
2/91 Leach Highway
Kewdale WA 6105
Phone : +61 8 9251 9600
NATA # 1261
Site # 23736

New Zealand

Auckland
35 O'Rorke Road
Penrose, Auckland 1061
Phone : +64 9 526 45 51
IANZ # 1327

Christchurch
43 Detroit Drive
Rolleston, Christchurch 7675
Phone : 0800 856 450
IANZ # 1290

Company Name: Ramboll Australia Pty Ltd
Address: Level 3/100 Pacific Highway
North Sydney
NSW 2060

Order No.:
Report #: 713878
Phone: 02 9954 8118
Fax: 02 9954 8150

Received: Apr 15, 2020 1:37 PM
Due: Apr 20, 2020
Priority: 3 Day
Contact Name: Stephen Maxwell

Project Name:
Project ID: 318000780

Eurofins Analytical Services Manager : Andrew Black

Sample Detail						Lead	Moisture Set
Melbourne Laboratory - NATA Site # 1254 & 14271							
Sydney Laboratory - NATA Site # 18217						X	X
Brisbane Laboratory - NATA Site # 20794							
Perth Laboratory - NATA Site # 23736							
External Laboratory							
No	Sample ID	Sample Date	Sampling Time	Matrix	LAB ID		
1	P3_TWS2	Mar 26, 2020		Solid	S20-Ap21433	X	X
2	P4_TWS2	Mar 24, 2020		Solid	S20-Ap21434	X	X
3	P7_TWS2	Mar 25, 2020		Solid	S20-Ap21435	X	X
4	SMCTS1	Mar 24, 2020		Solid	S20-Ap21436	X	X
5	P11_TWS1	Mar 26, 2020		Solid	S20-Ap21437	X	X
6	P11_TWS2	Mar 26, 2020		Solid	S20-Ap21438	X	X
7	P12_TWS1	Mar 26, 2020		Solid	S20-Ap21439	X	X
8	P12_TWS2	Mar 26, 2020		Solid	S20-Ap21440	X	X
9	P14_TWS3	Mar 26, 2020		Solid	S20-Ap21441	X	X
10	P18_TWS1	Mar 31, 2020		Solid	S20-Ap21442	X	X

Australia

Melbourne
 6 Monterey Road
 Dandenong South VIC 3175
 Phone : +61 3 8564 5000
 NATA # 1261
 Site # 1254 & 14271

Sydney
 Unit F3, Building F
 16 Mars Road
 Lane Cove West NSW 2066
 Phone : +61 2 9900 8400
 NATA # 1261 Site # 18217

Brisbane
 1/21 Smallwood Place
 Murarrie QLD 4172
 Phone : +61 7 3902 4600
 NATA # 1261 Site # 20794

Perth
 2/91 Leach Highway
 Kewdale WA 6105
 Phone : +61 8 9251 9600
 NATA # 1261
 Site # 23736

New Zealand

Auckland
 35 O'Rorke Road
 Penrose, Auckland 1061
 Phone : +64 9 526 45 51
 IANZ # 1327

Christchurch
 43 Detroit Drive
 Rolleston, Christchurch 7675
 Phone : 0800 856 450
 IANZ # 1290

Company Name: Ramboll Australia Pty Ltd
Address: Level 3/100 Pacific Highway
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 NSW 2060

Project Name:
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Order No.:
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Received: Apr 15, 2020 1:37 PM
Due: Apr 20, 2020
Priority: 3 Day
Contact Name: Stephen Maxwell

Eurofins Analytical Services Manager : Andrew Black

Sample Detail						Lead	Moisture Set
Melbourne Laboratory - NATA Site # 1254 & 14271							
Sydney Laboratory - NATA Site # 18217						X	X
Brisbane Laboratory - NATA Site # 20794							
Perth Laboratory - NATA Site # 23736							
11	P18_TWS2	Mar 31, 2020		Solid	S20-Ap21443	X	X
12	P21_TWS1	Mar 31, 2020		Solid	S20-Ap21444	X	X
13	P21_TWS2	Mar 31, 2020		Solid	S20-Ap21445	X	X
14	P23_TWS1	Mar 31, 2020		Solid	S20-Ap21446	X	X
Test Counts						14	14

Internal Quality Control Review and Glossary
General

- Laboratory QC results for Method Blanks, Duplicates, Matrix Spikes, and Laboratory Control Samples follows guidelines delineated in the National Environment Protection (Assessment of Site Contamination) Measure 1999, as amended May 2013 and are included in this QC report where applicable. Additional QC data may be available on request.
- All soil/sediment/solid results are reported on a dry basis, unless otherwise stated.
- All biota/food results are reported on a wet weight basis on the edible portion, unless otherwise stated.
- Actual LORs are matrix dependant. Quoted LORs may be raised where sample extracts are diluted due to interferences.
- Results are uncorrected for matrix spikes or surrogate recoveries except for PFAS compounds.
- SVOC analysis on waters are performed on homogenised, unfiltered samples, unless noted otherwise.
- Samples were analysed on an 'as received' basis.
- Information identified on this report with blue colour, indicates data provided by customer, that may have an impact on the results.
- This report replaces any interim results previously issued.

Holding Times

Please refer to 'Sample Preservation and Container Guide' for holding times (QS3001).

For samples received on the last day of holding time, notification of testing requirements should have been received at least 6 hours prior to sample receipt deadlines as stated on the SRA.

If the Laboratory did not receive the information in the required timeframe, and regardless of any other integrity issues, suitably qualified results may still be reported.

Holding times apply from the date of sampling, therefore compliance to these may be outside the laboratory's control.

For VOCs containing vinyl chloride, styrene and 2-chloroethyl vinyl ether the holding time is 7 days however for all other VOCs such as BTEX or C6-10 TRH then the holding time is 14 days.

****NOTE:** pH duplicates are reported as a range NOT as RPD

Units

mg/kg: milligrams per kilogram

mg/L: milligrams per litre

ug/L: micrograms per litre

ppm: Parts per million

ppb: Parts per billion

%: Percentage

org/100mL: Organisms per 100 millilitres

NTU: Nephelometric Turbidity Units

MPN/100mL: Most Probable Number of organisms per 100 millilitres

Terms

Dry	Where a moisture has been determined on a solid sample the result is expressed on a dry basis.
LOR	Limit of Reporting.
SPIKE	Addition of the analyte to the sample and reported as percentage recovery.
RPD	Relative Percent Difference between two Duplicate pieces of analysis.
LCS	Laboratory Control Sample - reported as percent recovery.
CRM	Certified Reference Material - reported as percent recovery.
Method Blank	In the case of solid samples these are performed on laboratory certified clean sands and in the case of water samples these are performed on de-ionised water.
Surr - Surrogate	The addition of a like compound to the analyte target and reported as percentage recovery.
Duplicate	A second piece of analysis from the same sample and reported in the same units as the result to show comparison.
USEPA	United States Environmental Protection Agency
APHA	American Public Health Association
TCLP	Toxicity Characteristic Leaching Procedure
COC	Chain of Custody
SRA	Sample Receipt Advice
QSM	US Department of Defense Quality Systems Manual Version 5.3
CP	Client Parent - QC was performed on samples pertaining to this report
NCP	Non-Client Parent - QC performed on samples not pertaining to this report, QC is representative of the sequence or batch that client samples were analysed within.
TEQ	Toxic Equivalency Quotient

QC - Acceptance Criteria

RPD Duplicates: Global RPD Duplicates Acceptance Criteria is 30% however the following acceptance guidelines are equally applicable:

Results <10 times the LOR : No Limit

Results between 10-20 times the LOR : RPD must lie between 0-50%

Results >20 times the LOR : RPD must lie between 0-30%

Surrogate Recoveries: Recoveries must lie between 20-130% Phenols & 50-150% PFASs

PFAS field samples that contain surrogate recoveries in excess of the QC limit designated in QSM 5.3 where no positive PFAS results have been reported have been reviewed and no data was affected.

WA DWER (n=10): PFBA, PFPeA, PFHxA, PFHpA, PFOA, PFBS, PFHxS, PFOS, 6:2 FTSA, 8:2 FTSA

QC Data General Comments

- Where a result is reported as a less than (<), higher than the nominated LOR, this is due to either matrix interference, extract dilution required due to interferences or contaminant levels within the sample, high moisture content or insufficient sample provided.
- Duplicate data shown within this report that states the word "BATCH" is a Batch Duplicate from outside of your sample batch, but within the laboratory sample batch at a 1:10 ratio. The Parent and Duplicate data shown is not data from your samples.
- Organochlorine Pesticide analysis - where reporting LCS data, Toxaphene & Chlordane are not added to the LCS.
- Organochlorine Pesticide analysis - where reporting Spike data, Toxaphene is not added to the Spike.
- Total Recoverable Hydrocarbons - where reporting Spike & LCS data, a single spike of commercial Hydrocarbon products in the range of C12-C30 is added and it's Total Recovery is reported in the C10-C14 cell of the Report.
- pH and Free Chlorine analysed in the laboratory - Analysis on this test must begin within 30 minutes of sampling. Therefore laboratory analysis is unlikely to be completed within holding time. Analysis will begin as soon as possible after sample receipt.
- Recovery Data (Spikes & Surrogates) - where chromatographic interference does not allow the determination of Recovery the term "INT" appears against that analyte.
- Polychlorinated Biphenyls are spiked only using Aroclor 1260 in Matrix Spikes and LCS.
- For Matrix Spikes and LCS results a dash " - " in the report means that the specific analyte was not added to the QC sample.
- Duplicate RPDs are calculated from raw analytical data thus it is possible to have two sets of data.

Quality Control Results

Test				Units	Result 1		Acceptance Limits	Pass Limits	Qualifying Code		
Method Blank											
Heavy Metals											
Lead				mg/kg	< 1		1	Pass			
LCS - % Recovery											
Heavy Metals											
Lead				%	96		70-130	Pass			
Test	Lab Sample ID	QA Source	Units	Result 1			Acceptance Limits	Pass Limits	Qualifying Code		
Spike - % Recovery											
Heavy Metals					Result 1						
Lead				B20-Ap16161	NCP	%	89	70-130	Pass		
Spike - % Recovery											
Heavy Metals					Result 1						
Lead				B20-Ap16161	NCP	%	89	70-130	Pass		
Spike - % Recovery											
Heavy Metals					Result 1						
Lead				B20-Ap16161	NCP	%	89	70-130	Pass		
Spike - % Recovery											
Heavy Metals					Result 1						
Lead				B20-Ap16161	NCP	%	89	70-130	Pass		
Spike - % Recovery											
Heavy Metals					Result 1						
Lead				B20-Ap16161	NCP	%	89	70-130	Pass		
Spike - % Recovery											
Heavy Metals					Result 1						
Lead				B20-Ap16161	NCP	%	89	70-130	Pass		
Spike - % Recovery											
Heavy Metals					Result 1						
Lead				B20-Ap16161	NCP	%	89	70-130	Pass		
Spike - % Recovery											
Heavy Metals					Result 1						
Lead				S20-Ap21444	CP	%	87	70-130	Pass		
Test	Lab Sample ID	QA Source	Units	Result 1			Acceptance Limits	Pass Limits	Qualifying Code		
Duplicate											
Heavy Metals					Result 1	Result 2	RPD				
Lead				S20-Ap17051	NCP	mg/kg	29	35	19	30%	Pass
Duplicate											
Heavy Metals					Result 1	Result 2	RPD				
Lead				S20-Ap17051	NCP	mg/kg	29	**	19	30%	Pass
Duplicate											
Heavy Metals					Result 1	Result 2	RPD				
Lead				S20-Ap17051	NCP	mg/kg	29	**	19	30%	Pass
Duplicate											
Heavy Metals					Result 1	Result 2	RPD				
Lead				S20-Ap17051	NCP	mg/kg	29	**	19	30%	Pass
Duplicate											
Heavy Metals					Result 1	Result 2	RPD				
Lead				S20-Ap17051	NCP	mg/kg	29	**	19	30%	Pass
Duplicate											
Heavy Metals					Result 1	Result 2	RPD				
Lead				S20-Ap21444	CP	mg/kg	70	69	2.0	30%	Pass

Comments

New version to split samples.

Sample Integrity

Custody Seals Intact (if used)	N/A
Attempt to Chill was evident	N/A
Sample correctly preserved	Yes
Appropriate sample containers have been used	Yes
Sample containers for volatile analysis received with minimal headspace	Yes
Samples received within HoldingTime	Yes
Some samples have been subcontracted	No

Authorised By

Andrew Black Analytical Services Manager
Gabriele Cordero Senior Analyst-Metal (NSW)



Glenn Jackson
General Manager

Final report - this Report replaces any previously issued Report

- Indicates Not Requested

* Indicates NATA accreditation does not cover the performance of this service

Measurement uncertainty of test data is available on request or please [click here](#).

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CHAIN OF CUSTODY RECORD

ABN 50 005 066 521

Brydner Laboratory
Unit F3 Bldg F, 16 Mars Rd, Lane Cove West, NSW 2086
02 9900 8400 EnviroSamplesNSW@eurofins.com

Brisbane Laboratory
Unit 1, 21 Smallwood Pl, Muramba, QLD 4172
07 3902 4800 EnviroSampleQLD@eurofins.com

Perth Laboratory
Unit 2, 91 Leach Highway, Kewdale WA 6105
08 9251 9900 EnviroSampleWA@eurofins.com

Melbourne Laboratory
2 Kingston Town Close, Oakleigh, VIC 3166
03 8564 5000 EnviroSampleVIC@eurofins.com

Company	Ramboll	Project Name	318000780	Project Manager	Stephen Maxwell	Sampler(s)	AC
Address	50 Glebe Road the Junction	Project Name		EDD Format	(ES&I, EQ&IS)	Handed over by	SM
Contact Name	Stephen Maxwell	Analyses	Lead M13 (Al, As, Ba, Be, Cd, Cr, Co, Cu, Fe, Pb, Mn, Hg, Ni, Zn) total M13 (Al, As, Ba, Be, Cd, Cr, Co, Cu, Fe, Pb, Mn, Hg, Ni, Zn) dissolved	Signature		Email for Invoice	smaxwell@ramboll.com asiapac-accounts@ramboll.com
Phone No		Special Directions		Signature		Email for Results	smaxwell@ramboll.com jblackwell@ramboll.com rcondon@ramboll.com shyde@ramboll.com
Purchase Order		Quote ID No	180813RAMM_1	Date		Time	

No	Client Sample ID	Sampled Date/Time (dd/mm/yy hr:mm)	Matrix (Solid (S) Water (W))	Method of Shipment		Name	Signature	Date	Time	Temperature	Report No
				<input type="checkbox"/> Courier (#)	<input type="checkbox"/> Hand Delivered						
1	P13_HA01_0.0_0.05	26/03/20	S	<input checked="" type="checkbox"/>	<input type="checkbox"/>			27/3/20	2:58	18.76	710607
2	P13_HA01_0.2	26/03/20	S	<input checked="" type="checkbox"/>	<input type="checkbox"/>						
3	P13_HA02_0.0_0.05	26/03/20	S	<input checked="" type="checkbox"/>	<input type="checkbox"/>						
4	P13_HA02_0.2	26/03/20	S	<input checked="" type="checkbox"/>	<input type="checkbox"/>						
5	P13_HA03_0.0	26/03/20	S	<input checked="" type="checkbox"/>	<input type="checkbox"/>						
6	P13_HA03_0.3	26/03/20	S	<input checked="" type="checkbox"/>	<input type="checkbox"/>						
7	P13_HA04_0.0	26/03/20	S	<input checked="" type="checkbox"/>	<input type="checkbox"/>						
8	P13_HA04_0.2	26/03/20	S	<input checked="" type="checkbox"/>	<input type="checkbox"/>						
9	P13_HA04_0.3	26/03/20	S	<input checked="" type="checkbox"/>	<input type="checkbox"/>						
10	P13_HA05_0.0	26/03/20	S	<input checked="" type="checkbox"/>	<input type="checkbox"/>						
Total Counts											

Method of Shipment	<input type="checkbox"/> Courier (#)	<input type="checkbox"/> Hand Delivered	<input type="checkbox"/> Postal	Signature	Date	Time	Temperature
Eurofins mgt Laboratory Use Only	Received By	Received By	SVD BNE MEI PER ADL NTL DRW	Signature	Date	Time	Report No
	Grace Turnbull	Grace Turnbull		Grace	27/3/20	2:58	710607

Submission of samples to the laboratory will be deemed as acceptance of Eurofins | mgt Standard Terms and Conditions unless agreed otherwise. A copy of Eurofins | mgt Standard Terms and Conditions is available on request.

Eurofins Environment Testing Australia Pty Ltd trading as Eurofins | mgt

Hydrey Laboratory
 Unit F3 Bld E, 16 Ware Rd, Lorna Cove West, NSW 2056
 02 9900 8400 EnviroSampleNSW@eurofins.com

Brisbane Laboratory
 Unit 1, 21 Smallwood Pl., Murrumbidgee, QLD 4172
 07 3902 4900 EnviroSampleQLD@eurofins.com

Perth Laboratory
 Unit 2, 91 Leach Highway, Kewdale WA 6105
 08 9251 9800 EnviroSampleWA@eurofins.com

Melbourne Laboratory
 2 Kingston Town Close, Oakleigh VIC 3166
 03 9564 5000 EnviroSampleVIC@eurofins.com

Company		Project Name		Project Manager		Sampler(s)	
Ramboll		318000780		Stephen Maxwell		AC	
Address		Project Name		EDD Format (ES&I, EQ&I)		Handed over by	
50 Globe Road the Junction		Lead				SM	
Contact Name		Analyses		Email for Invoice		Email for Results	
Stephen Maxwell		(Note: Where metals are requested, please specify "Total" or "Filtered". SUITE code must be used to attract SUITE pricing.) M13 (Al, As, Ba, Be, Cd, Cr, Co, Cu, Fe, Pb, Mn, Hg, Ni, Zn) total M13 (Al, As, Ba, Be, Cd, Cr, Co, Cu, Fe, Pb, Mn, Hg, Ni, Zn) dissolved		smaxwell@ramboll.com asiapac-accounts@ramboll.com		smaxwell@ramboll.com iblackwell@ramboll.com rcondon@ramboll.com shyde@ramboll.com	
Phone No		Special Directions		Turnaround Time (TAT) Requirements (default will be 8 days if not listed)		Date	
				<input type="checkbox"/> Overnight (9am)* <input type="checkbox"/> 2 Day* <input type="checkbox"/> 1 Day* <input type="checkbox"/> 5 Day* <input type="checkbox"/> 3 Day* * Such ranges apply		21/3/20	
Purchase Order		Sampled Date/Time (dd/mm/yy hr:mm)		Matrix (Solid (S) Water (W))		Time	
180818RAMNL_1		26/03/20		S		18:36	
Quote ID No		Client Sample ID		Method of Shipment		Time	
		P13_HA05_02		<input type="checkbox"/> Courier # <input type="checkbox"/> Hand Delivered <input type="checkbox"/> Postal		2:58	
No		Sampled Date/Time (dd/mm/yy hr:mm)		Matrix (Solid (S) Water (W))		Date	
1		26/03/20		S		21/3/20	
2							
3							
4							
5							
6							
7							
8							
9							
10							
		Total Counts		1			

Submission of samples to the laboratory will be deemed as acceptance of Eurofins | mgt Standard Terms and Conditions unless agreed otherwise. A copy of Eurofins | mgt Standard Terms and Conditions is available on request.

Eurofins | mgt Laboratory Use Only

Received By: *Grant Tuckwell* Received By: *[Signature]*

SVD | BNE | MEL | PER | ADL | MTL | DRW SVD | BNE | MEL | PER | ADL | MTL | DRW

Date: *21/3/20* Date: *21/3/20* Time: *2:58* Time: *18:36*

Report No: *70607*

Melbourne

6 Monterey Road
Dandenong South Vic 3175
Phone : +61 3 8564 5000
NATA # 1261
Site # 1254 & 14271

Sydney

Unit F3, Building F
16 Mars Road
Lane Cove West NSW 2066
Phone : +61 2 9900 8400
NATA # 1261 Site # 18217

Brisbane

1/21 Smallwood Place
Murarrie QLD 4172
Phone : +61 7 3902 4600
NATA # 1261 Site # 20794

Perth

2/91 Leach Highway
Kewdale WA 6105
Phone : +61 8 9251 9600
NATA # 1261 Site # 23736

Sample Receipt Advice

Company name: **Ramboll Australia Pty Ltd**

Contact name: **Stephen Maxwell**

Project ID: **318000780**

COC number: **Not provided**

Turn around time: **5 Day**

Date/Time received: **Mar 27, 2020 2:58 PM**

Eurofins reference: **710607**

Sample information

- A detailed list of analytes logged into our LIMS, is included in the attached summary table.
- All samples have been received as described on the above COC.
- COC has been completed correctly.
- Attempt to chill was evident.
- Appropriately preserved sample containers have been used.
- All samples were received in good condition.
- Samples have been provided with adequate time to commence analysis in accordance with the relevant holding times.
- Appropriate sample containers have been used.
- Split sample sent to requested external lab.
- Some samples have been subcontracted.
- N/A Custody Seals intact (if used).

Contact notes

If you have any questions with respect to these samples please contact:

Andrew Black on Phone : (+61) 2 9900 8490 or by e.mail: AndrewBlack@eurofins.com

Results will be delivered electronically via e.mail to Stephen Maxwell - smaxwell@ramboll.com.

Note: A copy of these results will also be delivered to the general Ramboll Australia Pty Ltd email address.

Australia

Melbourne
6 Monterey Road
Dandenong South VIC 3175
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Site # 1254 & 14271

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Site # 23736

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Phone : +64 9 526 45 51
IANZ # 1327

Christchurch
43 Detroit Drive
Rolleston, Christchurch 7675
Phone : 0800 856 450
IANZ # 1290

Company Name: Ramboll Australia Pty Ltd
Address: Level 3/100 Pacific Highway
North Sydney
NSW 2060

Order No.:
Report #: 710607
Phone: 02 9954 8118
Fax: 02 9954 8150

Received: Mar 27, 2020 2:58 PM
Due: Apr 3, 2020
Priority: 5 Day
Contact Name: Stephen Maxwell

Project Name:
Project ID: 318000780

Eurofins Analytical Services Manager : Andrew Black

Sample Detail						Lead	Moisture Set
Melbourne Laboratory - NATA Site # 1254 & 14271							
Sydney Laboratory - NATA Site # 18217						X	X
Brisbane Laboratory - NATA Site # 20794							
Perth Laboratory - NATA Site # 23736							
External Laboratory							
No	Sample ID	Sample Date	Sampling Time	Matrix	LAB ID		
1	P13_HA01_0_0.05	Mar 26, 2020		Soil	S20-Ma43957	X	X
2	P13_HA01_0_2	Mar 26, 2020		Soil	S20-Ma43958	X	X
3	P13_HA02_0_0.05	Mar 26, 2020		Soil	S20-Ma43959	X	X
4	P13_HA02_0_2	Mar 26, 2020		Soil	S20-Ma43960	X	X
5	P13_HA03_0_0	Mar 26, 2020		Soil	S20-Ma43961	X	X
6	P13_HA03_0_3	Mar 26, 2020		Soil	S20-Ma43962	X	X

Australia

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 35 O'Rorke Road
 Penrose, Auckland 1061
 Phone : +64 9 526 45 51
 IANZ # 1327

Christchurch
 43 Detroit Drive
 Rolleston, Christchurch 7675
 Phone : 0800 856 450
 IANZ # 1290

Company Name: Ramboll Australia Pty Ltd
Address: Level 3/100 Pacific Highway
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 NSW 2060

Project Name:
Project ID: 318000780

Order No.:
Report #: 710607
Phone: 02 9954 8118
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Received: Mar 27, 2020 2:58 PM
Due: Apr 3, 2020
Priority: 5 Day
Contact Name: Stephen Maxwell

Eurofins Analytical Services Manager : Andrew Black

Sample Detail						Lead	Moisture Set
Melbourne Laboratory - NATA Site # 1254 & 14271							
Sydney Laboratory - NATA Site # 18217						X	X
Brisbane Laboratory - NATA Site # 20794							
Perth Laboratory - NATA Site # 23736							
7	P13_HA04_0.	Mar 26, 2020		Soil	S20-Ma43963	X	X
8	P13_HA04_2	Mar 26, 2020		Soil	S20-Ma43964	X	X
9	P13_HA04_3	Mar 26, 2020		Soil	S20-Ma43965	X	X
10	P13_HA05_0.	Mar 26, 2020		Soil	S20-Ma43966	X	X
11	P13_HA05_2	Mar 26, 2020		Soil	S20-Ma43967	X	X
Test Counts						11	11

Ramboll Environ Australia Pty Ltd
 Level 3/100 Pacific Highway
 North Sydney
 NSW 2060



NATA Accredited
 Accreditation Number 1261
 Site Number 18217

Accredited for compliance with ISO/IEC 17025 – Testing
 The results of the tests, calibrations and/or
 measurements included in this document are traceable
 to Australian/national standards.

Attention: Stephen Maxwell

Report 710607-S
 Project name
 Project ID 318000780
 Received Date Mar 27, 2020

Client Sample ID			P13_HA01_0.0 _0.05	P13_HA01_0.2	P13_HA02_0.0 _0.05	P13_HA02_0.2
Sample Matrix			Soil	Soil	Soil	Soil
Eurofins Sample No.			S20-Ma43957	S20-Ma43958	S20-Ma43959	S20-Ma43960
Date Sampled			Mar 26, 2020	Mar 26, 2020	Mar 26, 2020	Mar 26, 2020
Test/Reference	LOR	Unit				
Heavy Metals						
Lead	5	mg/kg	28	23	16	10
% Moisture	1	%	19	13	8.9	8.1

Client Sample ID			P13_HA03_0.0	P13_HA03_0.3	P13_HA04_0.0	P13_HA04_0.2
Sample Matrix			Soil	Soil	Soil	Soil
Eurofins Sample No.			S20-Ma43961	S20-Ma43962	S20-Ma43963	S20-Ma43964
Date Sampled			Mar 26, 2020	Mar 26, 2020	Mar 26, 2020	Mar 26, 2020
Test/Reference	LOR	Unit				
Heavy Metals						
Lead	5	mg/kg	28	13	34	35
% Moisture	1	%	5.7	7.4	13	19

Client Sample ID			P13_HA04_0.3	P13_HA05_0.0	P13_HA05_0.2
Sample Matrix			Soil	Soil	Soil
Eurofins Sample No.			S20-Ma43965	S20-Ma43966	S20-Ma43967
Date Sampled			Mar 26, 2020	Mar 26, 2020	Mar 26, 2020
Test/Reference	LOR	Unit			
Heavy Metals					
Lead	5	mg/kg	37	21	17
% Moisture	1	%	22	16	12

Sample History

Where samples are submitted/analysed over several days, the last date of extraction and analysis is reported.

A recent review of our LIMS has resulted in the correction or clarification of some method identifications. Due to this, some of the method reference information on reports has changed. However, no substantive change has been made to our laboratory methods, and as such there is no change in the validity of current or previous results.

If the date and time of sampling are not provided, the Laboratory will not be responsible for compromised results should testing be performed outside the recommended holding time.

Description

Heavy Metals

- Method: LTM-MET-3040 Metals in Waters, Soils & Sediments by ICP-MS

% Moisture

- Method: LTM-GEN-7080 Moisture

Testing Site

Sydney

Sydney

Extracted

Apr 01, 2020

Mar 27, 2020

Holding Time

180 Days

14 Days

Australia

Melbourne
6 Monterey Road
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IANZ # 1327

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Rolleston, Christchurch 7675
Phone : 0800 856 450
IANZ # 1290

Company Name:	Ramboll Australia Pty Ltd	Order No.:		Received:	Mar 27, 2020 2:58 PM
Address:	Level 3/100 Pacific Highway North Sydney NSW 2060	Report #:	710607	Due:	Apr 3, 2020
Project Name:		Phone:	02 9954 8118	Priority:	5 Day
Project ID:	318000780	Fax:	02 9954 8150	Contact Name:	Stephen Maxwell

Eurofins Analytical Services Manager : Andrew Black

Sample Detail						Lead	Moisture Set
Melbourne Laboratory - NATA Site # 1254 & 14271							
Sydney Laboratory - NATA Site # 18217						X	X
Brisbane Laboratory - NATA Site # 20794							
Perth Laboratory - NATA Site # 23736							
External Laboratory							
No	Sample ID	Sample Date	Sampling Time	Matrix	LAB ID		
1	P13_HA01_0_0.05	Mar 26, 2020		Soil	S20-Ma43957	X	X
2	P13_HA01_0_2	Mar 26, 2020		Soil	S20-Ma43958	X	X
3	P13_HA02_0_0.05	Mar 26, 2020		Soil	S20-Ma43959	X	X
4	P13_HA02_0_2	Mar 26, 2020		Soil	S20-Ma43960	X	X
5	P13_HA03_0_0	Mar 26, 2020		Soil	S20-Ma43961	X	X
6	P13_HA03_0_3	Mar 26, 2020		Soil	S20-Ma43962	X	X

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 IANZ # 1290

ABN – 50 005 085 521

web : www.eurofins.com.au

e.mail : EnviroSales@eurofins.com

Company Name: Ramboll Australia Pty Ltd
Address: Level 3/100 Pacific Highway
 North Sydney
 NSW 2060

Order No.:
Report #: 710607
Phone: 02 9954 8118
Fax: 02 9954 8150

Received: Mar 27, 2020 2:58 PM
Due: Apr 3, 2020
Priority: 5 Day
Contact Name: Stephen Maxwell

Project Name:
Project ID: 318000780

Eurofins Analytical Services Manager : Andrew Black

Sample Detail						Lead	Moisture Set
Melbourne Laboratory - NATA Site # 1254 & 14271							
Sydney Laboratory - NATA Site # 18217						X	X
Brisbane Laboratory - NATA Site # 20794							
Perth Laboratory - NATA Site # 23736							
7	P13_HA04_0.	Mar 26, 2020		Soil	S20-Ma43963	X	X
8	P13_HA04_2	Mar 26, 2020		Soil	S20-Ma43964	X	X
9	P13_HA04_3	Mar 26, 2020		Soil	S20-Ma43965	X	X
10	P13_HA05_0.	Mar 26, 2020		Soil	S20-Ma43966	X	X
11	P13_HA05_2	Mar 26, 2020		Soil	S20-Ma43967	X	X
Test Counts						11	11

Internal Quality Control Review and Glossary
General

- Laboratory QC results for Method Blanks, Duplicates, Matrix Spikes, and Laboratory Control Samples follows guidelines delineated in the National Environment Protection (Assessment of Site Contamination) Measure 1999, as amended May 2013 and are included in this QC report where applicable. Additional QC data may be available on request.
- All soil/sediment/solid results are reported on a dry basis, unless otherwise stated.
- All biota/food results are reported on a wet weight basis on the edible portion, unless otherwise stated.
- Actual LORs are matrix dependant. Quoted LORs may be raised where sample extracts are diluted due to interferences.
- Results are uncorrected for matrix spikes or surrogate recoveries except for PFAS compounds.
- SVOC analysis on waters are performed on homogenised, unfiltered samples, unless noted otherwise.
- Samples were analysed on an 'as received' basis.
- Information identified on this report with blue colour, indicates data provided by customer, that may have an impact on the results.
- This report replaces any interim results previously issued.

Holding Times

Please refer to 'Sample Preservation and Container Guide' for holding times (QS3001).

For samples received on the last day of holding time, notification of testing requirements should have been received at least 6 hours prior to sample receipt deadlines as stated on the SRA.

If the Laboratory did not receive the information in the required timeframe, and regardless of any other integrity issues, suitably qualified results may still be reported.

Holding times apply from the date of sampling, therefore compliance to these may be outside the laboratory's control.

For VOCs containing vinyl chloride, styrene and 2-chloroethyl vinyl ether the holding time is 7 days however for all other VOCs such as BTEX or C6-10 TRH then the holding time is 14 days.

****NOTE:** pH duplicates are reported as a range NOT as RPD

Units

mg/kg: milligrams per kilogram

mg/L: milligrams per litre

ug/L: micrograms per litre

ppm: Parts per million

ppb: Parts per billion

%: Percentage

org/100mL: Organisms per 100 millilitres

NTU: Nephelometric Turbidity Units

MPN/100mL: Most Probable Number of organisms per 100 millilitres

Terms

Dry	Where a moisture has been determined on a solid sample the result is expressed on a dry basis.
LOR	Limit of Reporting.
SPIKE	Addition of the analyte to the sample and reported as percentage recovery.
RPD	Relative Percent Difference between two Duplicate pieces of analysis.
LCS	Laboratory Control Sample - reported as percent recovery.
CRM	Certified Reference Material - reported as percent recovery.
Method Blank	In the case of solid samples these are performed on laboratory certified clean sands and in the case of water samples these are performed on de-ionised water.
Surr - Surrogate	The addition of a like compound to the analyte target and reported as percentage recovery.
Duplicate	A second piece of analysis from the same sample and reported in the same units as the result to show comparison.
USEPA	United States Environmental Protection Agency
APHA	American Public Health Association
TCLP	Toxicity Characteristic Leaching Procedure
COC	Chain of Custody
SRA	Sample Receipt Advice
QSM	US Department of Defense Quality Systems Manual Version 5.3
CP	Client Parent - QC was performed on samples pertaining to this report
NCP	Non-Client Parent - QC performed on samples not pertaining to this report, QC is representative of the sequence or batch that client samples were analysed within.
TEQ	Toxic Equivalency Quotient

QC - Acceptance Criteria

RPD Duplicates: Global RPD Duplicates Acceptance Criteria is 30% however the following acceptance guidelines are equally applicable:

Results <10 times the LOR : No Limit

Results between 10-20 times the LOR : RPD must lie between 0-50%

Results >20 times the LOR : RPD must lie between 0-30%

Surrogate Recoveries: Recoveries must lie between 20-130% Phenols & 50-150% PFASs

PFAS field samples that contain surrogate recoveries in excess of the QC limit designated in QSM 5.3 where no positive PFAS results have been reported have been reviewed and no data was affected.

WA DWER (n=10): PFBA, PFPeA, PFHxA, PFHpA, PFOA, PFBS, PFHxS, PFOS, 6:2 FTSA, 8:2 FTSA

QC Data General Comments

- Where a result is reported as a less than (<), higher than the nominated LOR, this is due to either matrix interference, extract dilution required due to interferences or contaminant levels within the sample, high moisture content or insufficient sample provided.
- Duplicate data shown within this report that states the word "BATCH" is a Batch Duplicate from outside of your sample batch, but within the laboratory sample batch at a 1:10 ratio. The Parent and Duplicate data shown is not data from your samples.
- Organochlorine Pesticide analysis - where reporting LCS data, Toxaphene & Chlordane are not added to the LCS.
- Organochlorine Pesticide analysis - where reporting Spike data, Toxaphene is not added to the Spike.
- Total Recoverable Hydrocarbons - where reporting Spike & LCS data, a single spike of commercial Hydrocarbon products in the range of C12-C30 is added and it's Total Recovery is reported in the C10-C14 cell of the Report.
- pH and Free Chlorine analysed in the laboratory - Analysis on this test must begin within 30 minutes of sampling. Therefore laboratory analysis is unlikely to be completed within holding time. Analysis will begin as soon as possible after sample receipt.
- Recovery Data (Spikes & Surrogates) - where chromatographic interference does not allow the determination of Recovery the term "INT" appears against that analyte.
- Polychlorinated Biphenyls are spiked only using Aroclor 1260 in Matrix Spikes and LCS.
- For Matrix Spikes and LCS results a dash " - " in the report means that the specific analyte was not added to the QC sample.
- Duplicate RPDs are calculated from raw analytical data thus it is possible to have two sets of data.

Quality Control Results

Test				Units	Result 1		Acceptance Limits	Pass Limits	Qualifying Code		
Method Blank											
Heavy Metals											
Lead				mg/kg	< 5		5	Pass			
LCS - % Recovery											
Heavy Metals											
Lead				%	103		70-130	Pass			
Test	Lab Sample ID	QA Source	Units	Result 1			Acceptance Limits	Pass Limits	Qualifying Code		
Spike - % Recovery											
Heavy Metals											
Lead				S20-Ma43958	CP	%	101	70-130	Pass		
Test	Lab Sample ID	QA Source	Units	Result 1			Acceptance Limits	Pass Limits	Qualifying Code		
Duplicate											
Heavy Metals											
Lead				S20-Ma43957	CP	mg/kg	28	27	2.0	30%	Pass
Duplicate											
Heavy Metals											
% Moisture				S20-Ma43957	CP	%	19	20	2.0	30%	Pass
Duplicate											
Heavy Metals											
Lead				S20-Ma43967	CP	mg/kg	17	19	9.0	30%	Pass
Duplicate											
Heavy Metals											
% Moisture				S20-Ma43967	CP	%	12	12	<1	30%	Pass

Comments
Sample Integrity

Custody Seals Intact (if used)	N/A
Attempt to Chill was evident	Yes
Sample correctly preserved	Yes
Appropriate sample containers have been used	Yes
Sample containers for volatile analysis received with minimal headspace	Yes
Samples received within HoldingTime	Yes
Some samples have been subcontracted	No

Authorised By

Andrew Black	Analytical Services Manager
Gabriele Cordero	Senior Analyst-Metal (NSW)


**Glenn Jackson
General Manager**

Final report - this Report replaces any previously issued Report

- Indicates Not Requested

* Indicates NATA accreditation does not cover the performance of this service

Measurement uncertainty of test data is available on request or please [click here](#).

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CHAIN OF CUSTODY RECORD

ASN 50 005 085 571

Sydney Laboratory
 Unit F3 Bld F, 16 Mars Rd, Lane Cove West, NSW 2096
 02 9900 8400 Envirosamplesy@eurofins.com

Brisbane Laboratory
 Unit 1, 21 Smallwood Pl., Maroon, QLD 4172
 07 3902 4800 Envirosamplesb@eurofins.com

Perth Laboratory
 Unit 2, 91 Leach Highway, Kewdale WA 6105
 08 9251 9800 Envirosamplesw@eurofins.com

Melbourne Laboratory
 2 Kingston Town Close, Oakleigh, VIC 3166
 03 9554 5000 Envirosamplesm@eurofins.com

Company: **Ramboll** Project Name: **318000780** Project Manager: **Stephen Maxwell** EDD Format: **Excel and PDF** Sampler(s): **AC** SM

Address: **50 Glebe Road the Junction** Project No: **318000780** EDD Format: **Excel and PDF** Handed over by: **SM** Email for Invoice: **smaxwell@ramboll.com**

Contact Name: **Stephen Maxwell** Email for Results: **smaxwell@ramboll.com**
jblackwell@ramboll.com
rcondon@ramboll.com
shyde@ramboll.com

Phone No: Turnaround Time (TAT) Requirements (please tick as 5 days from lab)
 Overnight (9am)* 1 Day* 2 Day*
 3 Day* 5 Day* *Subtypes apply
 Other ()

Special Directions: Sample Comments / Dangerous Goods Hazard Warning

Purchase Order: 1L Plastic
 250mL Plastic
 125mL Plastic
 200mL Amber Glass
 40mL VOA vial
 500mL PFAS Bottle
 Jar (Glass or HDPE)
 Other (Asbestos AS4684, WA Guidelines)

Queue ID No	Client Sample ID	Sampled Date/Time (dd/mm/yyyy hh:mm)	Matrix (Solid (S) Water (W))	Analyses	Signature	Date	Time
				Lead			
				M13 (Al, As, Ba, Be, Cd, Cr, Co, Cu, Fe, Pb, Mn, Hg, Ni, Zn) total			
				M13 (Al, As, Ba, Be, Cd, Cr, Co, Cu, Fe, Pb, Mn, Hg, Ni, Zn) dissolved			
1	P14_HA01_0.0_0.05	26/03/20	S	X			
2	P14_HA01_0.2	26/03/20	S	X			
3	P14_HA02_0.0_0.05	26/03/20	S	X			
4	P14_HA02_0.3	26/03/20	S	X			
5	P14_HA03_0.0_0.05	26/03/20	S	X			
6	P14_HA03_0.25	26/03/20	S	X			
7	P14_HA04_0.0_0.05	26/03/20	S	X			
8	P14_HA04_0.3	26/03/20	S	X			
9	P14_HA05_0.0_0.05	26/03/20	S	X			
10	P14_HA05_0.2	26/03/20	S	X			
Total Counts				10			

Method of Shipment: Counter (#) Hand Delivered Postal Name: Signature: Date: Time: Temperature: Report No:

Submission of samples to the laboratory will be deemed as acceptance of Eurofins' Ingot Standard Terms and Conditions unless agreed otherwise. A copy of Eurofins' Ingot Standard Terms and Conditions is available on request.
 Eurofins Environmental Testing Australia Pty Ltd trading as Eurofins Ingot



CHAIN OF CUSTODY RECORD

ASX 50 055 985 521

Pydney Laboratory
 Unit F3 Bld F, 16 Mars Rd, Lane Cove West, NSW 2056
 02 9900 8400 EnviroSampleNSW@eurofins.com

Brisbane Laboratory
 Unit 1, 21 Stralwood Pl., Muramba, QLD 4172
 07 3902 4600 EnviroSampleQLD@eurofins.com

Perth Laboratory
 Unit 2, 51 Leach Highway, Kewdale WA 6105
 08 9251 9800 EnviroSampleWA@eurofins.com

Melbourne Laboratory
 2 Kingston Town Close, Caulfield, VIC 3166
 03 9584 5000 EnviroSampleVIC@eurofins.com

Company: **Ramboll** Project No: **318000780** Project Name: **Lead**

Address: **50 Glebe Road the Junction** Project Manager: **Stephen Maxwell** EDD Format: **(ES&H, EQUIS)** Email for Invoice: **smaxwell@ramboll.com**

Contact Name: **Stephen Maxwell** Email for Results: **smaxwell@ramboll.com**
jblackwell@ramboll.com
rcondon@ramboll.com
slhve@ramboll.com

Phone No: _____ Turnaround Time (TAT) Requirements (quote with 5 days/foot noted)
 Overnight (9am)* 1 Day* 2 Day* 5 Day*
 3 Day* Other () *Surcharges apply

Special Directions: _____ Sample Comments / Dangerous Goods Hazard Warning: _____

Purchase Order: _____ 1L Plastic _____ 250mL Plastic _____ 125mL Plastic _____ 200mL Amber Glass _____ 40mL VOA vial _____ 500mL PFAS Bottle _____ Jar (Glass or HDPE) _____ Other (Asbestos AS4964, WA Guidelines) _____

Quote ID No: **180813RAMM_1** Client Sample ID: **P13_HA05_0.3** Sampled Date/Time (dd/mm/yy hh:mm): **28/03/20** Matrix (Solid (S)/Water (W)): **S**

No	Client Sample ID	Sampled Date/Time (dd/mm/yy hh:mm)	Matrix (Solid (S)/Water (W))	Analyses	Lead	M13 (Al, As, Ba, Be, Cd, Cr, Co, Cu, Fe, Pb, Mn, Hg, Ni, Zn) total	M13 (Al, As, Ba, Be, Cd, Cr, Co, Cu, Fe, Pb, Mn, Hg, Ni, Zn) dissolved
1	P13_HA05_0.3	28/03/20	S		X		
2	P14_BORE	28/03/20	W		X	X	X
3	P14_TW1	28/03/20	W		X	X	X
4	P14_TW2	28/03/20	W		X	X	X
5	P14_TW3	28/03/20	W			X	X
6	P14_TWS3	28/03/20	S		X		
7	P14_PAINT1	28/03/20	S		X		
8							
9							
10							
Total Counts					3	4	4

Method of Shipment: Courier (#) Hand Delivered Postal Name: _____ Signature: _____ Date: **28/03/20** Time: **18:26**

Eurofins | mgt Received By: *[Signature]* Signature: _____ Date: _____ Time: _____ Report No: **18766**

Submission of samples to the laboratory will be deemed as acceptance of Eurofins | mgt Standard Terms and Conditions unless signed otherwise. A copy of Eurofins | mgt Standard Terms and Conditions is available on request.

Eurofins | mgt Laboratory Use Only Received By: *[Signature]* Signature: _____ Date: _____ Time: _____ Report No: **18766**

#AU04_Enviro_Sample_NSW

To: Stephen Maxwell
Subject: RE: Eurofins Sample Receipt Advice - Report 710616 : Site 318000780

From: Stephen Maxwell [<mailto:SMAXWELL@ramboll.com>]
Sent: Saturday, 28 March 2020 8:32 AM
To: #AU04_Enviro_Sample_NSW
Subject: RE: Eurofins Sample Receipt Advice - Report 710616 : Site 318000780

This is a sediment sample though note there may have been a lot of water in it. Please dry and analyse as a sediment.

Kind regards
Stephen Maxwell
Lead Consultant

D +61 478658194
M +61 478658194
smaxwell@ramboll.com

Ramboll Australia Pty Ltd.
ACN 095 437 442
ABN 49 095 437 442

From: EnviroSampleNSW@eurofins.com <EnviroSampleNSW@eurofins.com>
Sent: 27 March, 2020 9:32 PM
To: Stephen Maxwell <SMAXWELL@ramboll.com>
Cc: Joshua Blackwell <JBLACKWELL@ramboll.com>; Rachel Condon <RCONDON@ramboll.com>; Shane Hyde <SHYDE@ramboll.com>
Subject: Eurofins Sample Receipt Advice - Report 710616 : Site 318000780

Dear Valued Client,

Sample P14_TWS3 subsampled into metals bottle.

Please find attached a Sample Receipt Advice (SRA), a Summary Sheet and a scanned copy of your Chain-of-Custody. Please review this documentation to ensure that the details are correct such as the Client Job Number, Turn Around Time, any comments and numbers as well as the requested analysis. If there are any irregularities then please contact your Eurofins | mgt Analyst as soon as possible to make certain that they get changed.

Regards

Suzanne Ford

Sample Receipt

Eurofins | Environment Testing

Unit F3, Parkview Building

16 Mars Road

LANE COVE WEST NSW 2066

AUSTRALIA

Phone: +61 02 9900 8421

Email: EnviroSampleNSW@eurofins.com

Website: environment.eurofins.com.au

[EnviroNote 1079 - PFAS Fingerprinting](#)

[EnviroNote 1080 - Total Organofluorine Analysis & PFAS Investigations](#)

[EnviroNote 1079 - PFAS Fingerprinting](#)

[EnviroNote 1080 - Total Organofluorine Analysis & PFAS Investigations](#)

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NATA # 1261 Site # 20794

Perth

2/91 Leach Highway
Kewdale WA 6105
Phone : +61 8 9251 9600
NATA # 1261 Site # 23736

Sample Receipt Advice

Company name: **Ramboll Australia Pty Ltd**

Contact name: **Stephen Maxwell**

Project ID: **318000780**

COC number: **Not provided**

Turn around time: **5 Day**

Date/Time received: **Mar 27, 2020 2:58 PM**

Eurofins reference: **710616**

Sample information

- A detailed list of analytes logged into our LIMS, is included in the attached summary table.
- All samples have been received as described on the above COC.
- COC has been completed correctly.
- Attempt to chill was evident.
- Appropriately preserved sample containers have been used.
- All samples were received in good condition.
- Samples have been provided with adequate time to commence analysis in accordance with the relevant holding times.
- Appropriate sample containers have been used.
- Sample containers for volatile analysis received with zero headspace.
- Split sample sent to requested external lab.
- Some samples have been subcontracted.
- N/A Custody Seals intact (if used).

Contact notes

If you have any questions with respect to these samples please contact:

Andrew Black on Phone : (+61) 2 9900 8490 or by e.mail: AndrewBlack@eurofins.com

Results will be delivered electronically via e.mail to Stephen Maxwell - smaxwell@ramboll.com.

Note: A copy of these results will also be delivered to the general Ramboll Australia Pty Ltd email address.

Australia

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Phone : +64 9 526 45 51
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43 Detroit Drive
Rolleston, Christchurch 7675
Phone : 0800 856 450
IANZ # 1290

Company Name: Ramboll Australia Pty Ltd
Address: Level 3/100 Pacific Highway
North Sydney
NSW 2060

Order No.:
Report #: 710616
Phone: 02 9954 8118
Fax: 02 9954 8150

Received: Mar 27, 2020 2:58 PM
Due: Apr 3, 2020
Priority: 5 Day
Contact Name: Stephen Maxwell

Project Name:
Project ID: 318000780

Eurofins Analytical Services Manager : Andrew Black

Sample Detail						Lead	Lead (% w/w)	Moisture Set	NEPM 2013 Metals without Cr6+ (As, Be, B, Cd, Co, Cr, Cu, Hg, Pb, Ni, Mn, NEPM 2013 Metals without Cr6+ (As, Be, B, Cd, Co, Cr, Cu, Hg, Pb, Ni, Mn, Se, Zn)	NEPM 2013 Filtered Metals without Cr6+ (As, Be, B, Cd, Co, Cr, Cu, Hg, Pb, Ni, Mn, Se, Zn)
Melbourne Laboratory - NATA Site # 1254 & 14271										
Sydney Laboratory - NATA Site # 18217						X	X	X	X	X
Brisbane Laboratory - NATA Site # 20794										
Perth Laboratory - NATA Site # 23736										
External Laboratory										
No	Sample ID	Sample Date	Sampling Time	Matrix	LAB ID					
1	P14_HA01_0_0_05	Mar 26, 2020		Soil	S20-Ma44045	X		X		
2	P14_HA01_0_2	Mar 26, 2020		Soil	S20-Ma44046	X		X		
3	P14_HA02_0_0_05	Mar 26, 2020		Soil	S20-Ma44047	X		X		
4	P14_HA02_0_3	Mar 26, 2020		Soil	S20-Ma44048	X		X		
5	P14_HA03_0_0-0.05	Mar 26, 2020		Soil	S20-Ma44049	X		X		
6	P14_HA03_0_25	Mar 26, 2020		Soil	S20-Ma44050	X		X		

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ABN – 50 005 085 521

web : www.eurofins.com.au

e.mail : EnviroSales@eurofins.com

Company Name: Ramboll Australia Pty Ltd
Address: Level 3/100 Pacific Highway
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Order No.:
Report #: 710616
Phone: 02 9954 8118
Fax: 02 9954 8150

Received: Mar 27, 2020 2:58 PM
Due: Apr 3, 2020
Priority: 5 Day
Contact Name: Stephen Maxwell

Project Name:
Project ID: 318000780

Eurofins Analytical Services Manager : Andrew Black

Sample Detail						Lead	Lead (% w/w)	Moisture Set	NEPM 2013 Filtered Metals without Cr6+ (As, Be, B, Cd, Co, Cr, Cu, Hg, Pb, Ni, Mn, NEPM 2013 Metals without Cr6+ (As, Be, B, Cd, Co, Cr, Cu, Hg, Pb, Ni, Mn, Se, Zn)	NEPM 2013 Filtered Metals without Cr6+ (As, Be, B, Cd, Co, Cr, Cu, Hg, Pb, Ni, Mn, NEPM 2013 Metals without Cr6+ (As, Be, B, Cd, Co, Cr, Cu, Hg, Pb, Ni, Mn, Se, Zn)
Melbourne Laboratory - NATA Site # 1254 & 14271										
Sydney Laboratory - NATA Site # 18217						X	X	X	X	X
Brisbane Laboratory - NATA Site # 20794										
Perth Laboratory - NATA Site # 23736										
7	P14_HA04_0-0.05	Mar 26, 2020		Soil	S20-Ma44051	X		X		
8	P14_HA04_0.3	Mar 26, 2020		Soil	S20-Ma44052	X		X		
9	P14_HA05_0-0.05	Mar 26, 2020		Soil	S20-Ma44053	X		X		
10	P14_HA05_0.2	Mar 26, 2020		Soil	S20-Ma44054	X		X		
11	P13_HA05_0.3	Mar 26, 2020		Soil	S20-Ma44055	X		X		
12	P14_BORE	Mar 26, 2020		Water	S20-Ma44056				X	X
13	P14_TW1	Mar 26, 2020		Water	S20-Ma44057				X	X
14	P14_TW2	Mar 26, 2020		Water	S20-Ma44058				X	X
15	P14_TW3	Mar 26, 2020		Water	S20-Ma44059				X	X

Australia

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Phone : 0800 856 450
IANZ # 1290

Company Name: Ramboll Australia Pty Ltd
Address: Level 3/100 Pacific Highway
North Sydney
NSW 2060

Order No.:
Report #: 710616
Phone: 02 9954 8118
Fax: 02 9954 8150

Received: Mar 27, 2020 2:58 PM
Due: Apr 3, 2020
Priority: 5 Day
Contact Name: Stephen Maxwell

Project Name:
Project ID: 318000780

Eurofins Analytical Services Manager : Andrew Black

Sample Detail						Lead	Lead (% w/w)	Moisture Set	NEPM 2013 Metals without Cr6+ (As, Be, B, Cd, Co, Cr, Cu, Hg, Pb, Ni, Mn, Cd, Co, Cr, Cu, Hg, Pb, Ni, Mn, Se, Zn)	NEPM 2013 Filtered Metals without Cr6+ (As, Be, B, Cd, Co, Cr, Cu, Hg, Pb, Ni, Mn)
Melbourne Laboratory - NATA Site # 1254 & 14271										
Sydney Laboratory - NATA Site # 18217						X	X	X	X	X
Brisbane Laboratory - NATA Site # 20794										
Perth Laboratory - NATA Site # 23736										
16	P14_TWS3	Mar 26, 2020		Sediment	S20-Ma44060	X		X		
17	P14_PAINT1	Mar 26, 2020		Paint	S20-Ma44061		X			
Test Counts						12	1	12	4	4

Ramboll Environ Australia Pty Ltd
 Level 3/100 Pacific Highway
 North Sydney
 NSW 2060



NATA Accredited
 Accreditation Number 1261
 Site Number 18217

Accredited for compliance with ISO/IEC 17025 – Testing
 The results of the tests, calibrations and/or
 measurements included in this document are traceable
 to Australian/national standards.

Attention: Stephen Maxwell

Report 710616-S
 Project name
 Project ID 318000780
 Received Date Mar 27, 2020

Client Sample ID			P14_HA01_0.0-0.05	P14_HA01_0.2	P14_HA02_0.0-0.05	P14_HA02_0.3
Sample Matrix			Soil	Soil	Soil	Soil
Eurofins Sample No.			S20-Ma44045	S20-Ma44046	S20-Ma44047	S20-Ma44048
Date Sampled			Mar 26, 2020	Mar 26, 2020	Mar 26, 2020	Mar 26, 2020
Test/Reference	LOR	Unit				
% Moisture						
	1	%	7.5	8.4	16	14
Heavy Metals						
Lead	5	mg/kg	9.7	14	10	11

Client Sample ID			P14_HA03_0.0-0.05	P14_HA03_0.2-5	P14_HA04_0.0-0.05	P14_HA04_0.3
Sample Matrix			Soil	Soil	Soil	Soil
Eurofins Sample No.			S20-Ma44049	S20-Ma44050	S20-Ma44051	S20-Ma44052
Date Sampled			Mar 26, 2020	Mar 26, 2020	Mar 26, 2020	Mar 26, 2020
Test/Reference	LOR	Unit				
% Moisture						
	1	%	30	13	14	9.0
Heavy Metals						
Lead	5	mg/kg	17	11	19	11

Client Sample ID			P14_HA05_0.0-0.05	P14_HA05_0.2	P13_HA05_0.3	P14_PAINT1
Sample Matrix			Soil	Soil	Soil	Paint
Eurofins Sample No.			S20-Ma44053	S20-Ma44054	S20-Ma44055	S20-Ma44061
Date Sampled			Mar 26, 2020	Mar 26, 2020	Mar 26, 2020	Mar 26, 2020
Test/Reference	LOR	Unit				
Lead (% w/w)						
	0.01	%	-	-	-	< 0.01
% Moisture						
	1	%	25	15	14	-
Heavy Metals						
Lead	5	mg/kg	19	13	13	-

Sample History

Where samples are submitted/analysed over several days, the last date of extraction and analysis is reported.

A recent review of our LIMS has resulted in the correction or clarification of some method identifications. Due to this, some of the method reference information on reports has changed. However, no substantive change has been made to our laboratory methods, and as such there is no change in the validity of current or previous results.

If the date and time of sampling are not provided, the Laboratory will not be responsible for compromised results should testing be performed outside the recommended holding time.

Description	Testing Site	Extracted	Holding Time
Lead (% w/w) - Method: E022.5 - ACID EXTRACTABLE METALS IN PAINT IN LIQUID AND POWDERED FORM BY ICP-MS ANALYSIS	Sydney	Apr 03, 2020	6 Month
Heavy Metals - Method: LTM-MET-3040 Metals in Waters, Soils & Sediments by ICP-MS	Sydney	Apr 01, 2020	180 Days
% Moisture - Method: LTM-GEN-7080 Moisture	Sydney	Mar 27, 2020	14 Days

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Company Name: Ramboll Australia Pty Ltd
Address: Level 3/100 Pacific Highway
North Sydney
NSW 2060

Order No.:
Report #: 710616
Phone: 02 9954 8118
Fax: 02 9954 8150

Received: Mar 27, 2020 2:58 PM
Due: Apr 3, 2020
Priority: 5 Day
Contact Name: Stephen Maxwell

Project Name:
Project ID: 318000780

Eurofins Analytical Services Manager : Andrew Black

Sample Detail						Lead	Lead (% w/w)	Moisture Set	NEPM 2013 Metals without Cr6+ (As, Be, B, Cd, Co, Cr, Cu, Hg, Pb, Ni, Mn, NEPM 2013 Metals without Cr6+ (As, Be, B, Cd, Co, Cr, Cu, Hg, Pb, Ni, Mn, Se, Zn)	NEPM 2013 Filtered Metals without Cr6+ (As, Be, B, Cd, Co, Cr, Cu, Hg, Pb, Ni, Mn, Se, Zn)
Melbourne Laboratory - NATA Site # 1254 & 14271										
Sydney Laboratory - NATA Site # 18217						X	X	X	X	X
Brisbane Laboratory - NATA Site # 20794										
Perth Laboratory - NATA Site # 23736										
External Laboratory										
No	Sample ID	Sample Date	Sampling Time	Matrix	LAB ID					
1	P14_HA01_0_0_0.05	Mar 26, 2020		Soil	S20-Ma44045	X		X		
2	P14_HA01_0_2	Mar 26, 2020		Soil	S20-Ma44046	X		X		
3	P14_HA02_0_0_0.05	Mar 26, 2020		Soil	S20-Ma44047	X		X		
4	P14_HA02_0_3	Mar 26, 2020		Soil	S20-Ma44048	X		X		
5	P14_HA03_0_0-0.05	Mar 26, 2020		Soil	S20-Ma44049	X		X		
6	P14_HA03_0_25	Mar 26, 2020		Soil	S20-Ma44050	X		X		

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Sample Detail						Lead	Lead (% w/w)	Moisture Set	NEPM 2013 Filtered Metals without Cr6+ (As, Be, B, Cd, Co, Cr, Cu, Hg, Pb, Ni, Mn, NEPM 2013 Metals without Cr6+ (As, Be, B, Cd, Co, Cr, Cu, Hg, Pb, Ni, Mn, Se, Zn)	NEPM 2013 Filtered Metals without Cr6+ (As, Be, B, Cd, Co, Cr, Cu, Hg, Pb, Ni, Mn, Se, Zn)
Melbourne Laboratory - NATA Site # 1254 & 14271										
Sydney Laboratory - NATA Site # 18217						X	X	X	X	X
Brisbane Laboratory - NATA Site # 20794										
Perth Laboratory - NATA Site # 23736										
7	P14_HA04_0-0.05	Mar 26, 2020		Soil	S20-Ma44051	X		X		
8	P14_HA04_0.3	Mar 26, 2020		Soil	S20-Ma44052	X		X		
9	P14_HA05_0-0.05	Mar 26, 2020		Soil	S20-Ma44053	X		X		
10	P14_HA05_0.2	Mar 26, 2020		Soil	S20-Ma44054	X		X		
11	P13_HA05_0.3	Mar 26, 2020		Soil	S20-Ma44055	X		X		
12	P14_BORE	Mar 26, 2020		Water	S20-Ma44056				X	X
13	P14_TW1	Mar 26, 2020		Water	S20-Ma44057				X	X
14	P14_TW2	Mar 26, 2020		Water	S20-Ma44058				X	X
15	P14_TW3	Mar 26, 2020		Water	S20-Ma44059				X	X

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Project ID: 318000780

Eurofins Analytical Services Manager : Andrew Black

Sample Detail						Lead	Lead (% w/w)	Moisture Set	NEPM 2013 Metals without Cr6+ (As, Be, B, Cd, Co, Cr, Cu, Hg, Pb, Ni, Mn, Cd, Co, Cr, Cu, Hg, Pb, Ni, Mn, Se, Zn)	NEPM 2013 Filtered Metals without Cr6+ (As, Be, B, Cd, Co, Cr, Cu, Hg, Pb, Ni, Mn, Se, Zn)
Melbourne Laboratory - NATA Site # 1254 & 14271										
Sydney Laboratory - NATA Site # 18217						X	X	X	X	X
Brisbane Laboratory - NATA Site # 20794										
Perth Laboratory - NATA Site # 23736										
16	P14_TWS3	Mar 26, 2020		Sediment	S20-Ma44060	X		X		
17	P14_PAINT1	Mar 26, 2020		Paint	S20-Ma44061		X			
Test Counts						12	1	12	4	4

Internal Quality Control Review and Glossary
General

- Laboratory QC results for Method Blanks, Duplicates, Matrix Spikes, and Laboratory Control Samples follows guidelines delineated in the National Environment Protection (Assessment of Site Contamination) Measure 1999, as amended May 2013 and are included in this QC report where applicable. Additional QC data may be available on request.
- All soil/sediment/solid results are reported on a dry basis, unless otherwise stated.
- All biota/food results are reported on a wet weight basis on the edible portion, unless otherwise stated.
- Actual LORs are matrix dependant. Quoted LORs may be raised where sample extracts are diluted due to interferences.
- Results are uncorrected for matrix spikes or surrogate recoveries except for PFAS compounds.
- SVOC analysis on waters are performed on homogenised, unfiltered samples, unless noted otherwise.
- Samples were analysed on an 'as received' basis.
- Information identified on this report with blue colour, indicates data provided by customer, that may have an impact on the results.
- This report replaces any interim results previously issued.

Holding Times

Please refer to 'Sample Preservation and Container Guide' for holding times (QS3001).

For samples received on the last day of holding time, notification of testing requirements should have been received at least 6 hours prior to sample receipt deadlines as stated on the SRA.

If the Laboratory did not receive the information in the required timeframe, and regardless of any other integrity issues, suitably qualified results may still be reported.

Holding times apply from the date of sampling, therefore compliance to these may be outside the laboratory's control.

For VOCs containing vinyl chloride, styrene and 2-chloroethyl vinyl ether the holding time is 7 days however for all other VOCs such as BTEX or C6-10 TRH then the holding time is 14 days.

****NOTE:** pH duplicates are reported as a range NOT as RPD

Units

mg/kg: milligrams per kilogram

mg/L: milligrams per litre

ug/L: micrograms per litre

ppm: Parts per million

ppb: Parts per billion

%: Percentage

org/100mL: Organisms per 100 millilitres

NTU: Nephelometric Turbidity Units

MPN/100mL: Most Probable Number of organisms per 100 millilitres

Terms

Dry	Where a moisture has been determined on a solid sample the result is expressed on a dry basis.
LOR	Limit of Reporting.
SPIKE	Addition of the analyte to the sample and reported as percentage recovery.
RPD	Relative Percent Difference between two Duplicate pieces of analysis.
LCS	Laboratory Control Sample - reported as percent recovery.
CRM	Certified Reference Material - reported as percent recovery.
Method Blank	In the case of solid samples these are performed on laboratory certified clean sands and in the case of water samples these are performed on de-ionised water.
Surr - Surrogate	The addition of a like compound to the analyte target and reported as percentage recovery.
Duplicate	A second piece of analysis from the same sample and reported in the same units as the result to show comparison.
USEPA	United States Environmental Protection Agency
APHA	American Public Health Association
TCLP	Toxicity Characteristic Leaching Procedure
COC	Chain of Custody
SRA	Sample Receipt Advice
QSM	US Department of Defense Quality Systems Manual Version 5.3
CP	Client Parent - QC was performed on samples pertaining to this report
NCP	Non-Client Parent - QC performed on samples not pertaining to this report, QC is representative of the sequence or batch that client samples were analysed within.
TEQ	Toxic Equivalency Quotient

QC - Acceptance Criteria

RPD Duplicates: Global RPD Duplicates Acceptance Criteria is 30% however the following acceptance guidelines are equally applicable:

Results <10 times the LOR : No Limit

Results between 10-20 times the LOR : RPD must lie between 0-50%

Results >20 times the LOR : RPD must lie between 0-30%

Surrogate Recoveries: Recoveries must lie between 20-130% Phenols & 50-150% PFASs

PFAS field samples that contain surrogate recoveries in excess of the QC limit designated in QSM 5.3 where no positive PFAS results have been reported have been reviewed and no data was affected.

WA DWER (n=10): PFBA, PFPeA, PFHxA, PFHpA, PFOA, PFBS, PFHxS, PFOS, 6:2 FTSA, 8:2 FTSA

QC Data General Comments

- Where a result is reported as a less than (<), higher than the nominated LOR, this is due to either matrix interference, extract dilution required due to interferences or contaminant levels within the sample, high moisture content or insufficient sample provided.
- Duplicate data shown within this report that states the word "BATCH" is a Batch Duplicate from outside of your sample batch, but within the laboratory sample batch at a 1:10 ratio. The Parent and Duplicate data shown is not data from your samples.
- Organochlorine Pesticide analysis - where reporting LCS data, Toxaphene & Chlordane are not added to the LCS.
- Organochlorine Pesticide analysis - where reporting Spike data, Toxaphene is not added to the Spike.
- Total Recoverable Hydrocarbons - where reporting Spike & LCS data, a single spike of commercial Hydrocarbon products in the range of C12-C30 is added and it's Total Recovery is reported in the C10-C14 cell of the Report.
- pH and Free Chlorine analysed in the laboratory - Analysis on this test must begin within 30 minutes of sampling. Therefore laboratory analysis is unlikely to be completed within holding time. Analysis will begin as soon as possible after sample receipt.
- Recovery Data (Spikes & Surrogates) - where chromatographic interference does not allow the determination of Recovery the term "INT" appears against that analyte.
- Polychlorinated Biphenyls are spiked only using Aroclor 1260 in Matrix Spikes and LCS.
- For Matrix Spikes and LCS results a dash " - " in the report means that the specific analyte was not added to the QC sample.
- Duplicate RPDs are calculated from raw analytical data thus it is possible to have two sets of data.

Quality Control Results

Test				Units	Result 1		Acceptance Limits	Pass Limits	Qualifying Code		
Method Blank											
Heavy Metals											
Lead				mg/kg	< 5		5	Pass			
LCS - % Recovery											
Heavy Metals											
Lead				%	100		70-130	Pass			
Test	Lab Sample ID	QA Source	Units	Result 1			Acceptance Limits	Pass Limits	Qualifying Code		
Spike - % Recovery											
Heavy Metals											
Lead				S20-Ma44054	CP	%	90	70-130	Pass		
Test	Lab Sample ID	QA Source	Units	Result 1			Acceptance Limits	Pass Limits	Qualifying Code		
Duplicate											
Heavy Metals											
Lead				S20-Ma44050	CP	mg/kg	11	9.6	14	30%	Pass
Duplicate											
Heavy Metals											
% Moisture				S20-Ma44053	CP	%	25	25	<1	30%	Pass
Duplicate											
Heavy Metals											
Lead				S20-Ma44053	CP	mg/kg	19	19	2.0	30%	Pass

Comments**Sample Integrity**

Custody Seals Intact (if used)	N/A
Attempt to Chill was evident	Yes
Sample correctly preserved	Yes
Appropriate sample containers have been used	Yes
Sample containers for volatile analysis received with minimal headspace	Yes
Samples received within HoldingTime	Yes
Some samples have been subcontracted	No

Authorised By

Andrew Black Analytical Services Manager
Gabriele Cordero Senior Analyst-Metal (NSW)

**Glenn Jackson
General Manager**

Final report - this Report replaces any previously issued Report

- Indicates Not Requested

* Indicates NATA accreditation does not cover the performance of this service

Measurement uncertainty of test data is available on request or please [click here](#).

Eurofins shall not be liable for loss, cost, damages or expenses incurred by the client, or any other person or company, resulting from the use of any information or interpretation given in this report. In no case shall Eurofins be liable for consequential damages including, but not limited to, lost profits, damages for failure to meet deadlines and lost production arising from this report. This document shall not be reproduced except in full and relates only to the items tested. Unless indicated otherwise, the tests were performed on the samples as received.

Ramboll Environ Australia Pty Ltd
 Level 3/100 Pacific Highway
 North Sydney
 NSW 2060



NATA Accredited
 Accreditation Number 1261
 Site Number 18217

Accredited for compliance with ISO/IEC 17025 – Testing
 The results of the tests, calibrations and/or
 measurements included in this document are traceable
 to Australian/national standards.

Attention: Stephen Maxwell

Report 710616-W
 Project name
 Project ID 318000780
 Received Date Mar 27, 2020

Client Sample ID			P14_BORE	P14_TW1	P14_TW2	P14_TW3
Sample Matrix			Water	Water	Water	Water
Eurofins Sample No.			S20-Ma44056	S20-Ma44057	S20-Ma44058	S20-Ma44059
Date Sampled			Mar 26, 2020	Mar 26, 2020	Mar 26, 2020	Mar 26, 2020
Test/Reference	LOR	Unit				
Heavy Metals						
Arsenic	0.001	mg/L	0.002	< 0.001	< 0.001	< 0.001
Arsenic (filtered)	0.001	mg/L	< 0.001	< 0.001	< 0.001	< 0.001
Beryllium	0.001	mg/L	< 0.001	< 0.001	< 0.001	< 0.001
Beryllium (filtered)	0.001	mg/L	< 0.001	< 0.001	< 0.001	< 0.001
Boron	0.05	mg/L	< 0.05	< 0.05	< 0.05	< 0.05
Boron (filtered)	0.05	mg/L	< 0.05	< 0.05	< 0.05	< 0.05
Cadmium	0.0002	mg/L	< 0.0002	< 0.0002	< 0.0002	< 0.0002
Cadmium (filtered)	0.0002	mg/L	< 0.0002	< 0.0002	< 0.0002	< 0.0002
Chromium	0.001	mg/L	< 0.001	0.005	0.004	< 0.001
Chromium (filtered)	0.001	mg/L	< 0.001	0.004	0.003	< 0.001
Cobalt	0.001	mg/L	< 0.001	< 0.001	< 0.001	< 0.001
Cobalt (filtered)	0.001	mg/L	< 0.001	< 0.001	< 0.001	< 0.001
Copper	0.001	mg/L	< 0.001	< 0.001	< 0.001	0.004
Copper (filtered)	0.001	mg/L	< 0.001	< 0.001	< 0.001	0.003
Lead	0.001	mg/L	< 0.001	< 0.001	< 0.001	< 0.001
Lead (filtered)	0.001	mg/L	< 0.001	< 0.001	< 0.001	< 0.001
Manganese	0.005	mg/L	0.13	0.006	< 0.005	< 0.005
Manganese (filtered)	0.005	mg/L	0.13	< 0.005	< 0.005	< 0.005
Mercury	0.0001	mg/L	< 0.0001	< 0.0001	< 0.0001	< 0.0001
Mercury (filtered)	0.0001	mg/L	< 0.0001	< 0.0001	< 0.0001	< 0.0001
Nickel	0.001	mg/L	< 0.001	< 0.001	< 0.001	< 0.001
Nickel (filtered)	0.001	mg/L	< 0.001	< 0.001	< 0.001	< 0.001
Selenium	0.001	mg/L	< 0.001	< 0.001	< 0.001	< 0.001
Selenium (filtered)	0.001	mg/L	< 0.001	< 0.001	< 0.001	< 0.001
Zinc	0.005	mg/L	0.021	0.091	0.050	0.12
Zinc (filtered)	0.005	mg/L	< 0.005	0.083	0.034	0.11

Client Sample ID			P14_TWS3
Sample Matrix			Water
Eurofins Sample No.			S20-Ma44060
Date Sampled			Mar 26, 2020
Test/Reference	LOR	Unit	
Heavy Metals			
Lead	0.001	mg/L	0.13

Sample History

Where samples are submitted/analysed over several days, the last date of extraction and analysis is reported. A recent review of our LIMS has resulted in the correction or clarification of some method identifications. Due to this, some of the method reference information on reports has changed. However, no substantive change has been made to our laboratory methods, and as such there is no change in the validity of current or previous results.

If the date and time of sampling are not provided, the Laboratory will not be responsible for compromised results should testing be performed outside the recommended holding time.

Description	Testing Site	Extracted	Holding Time
NEPM 2013 Metals without Cr6+ (As, Be, B, Cd, Co, Cr, Cu, Hg, Pb, Ni, Mn, Se, Zn) - Method: LTM-MET-3040 Metals in Waters, Soils & Sediments by ICP-MS	Sydney	Apr 03, 2020	180 Days
NEPM 2013 Filtered Metals without Cr6+ (As, Be, B, Cd, Co, Cr, Cu, Hg, Pb, Ni, Mn, Se, Zn) - Method: LTM-MET-3040 Metals in Waters, Soils & Sediments by ICP-MS	Sydney	Mar 27, 2020	28 Days
Heavy Metals - Method: LTM-MET-3040 Metals in Waters, Soils & Sediments by ICP-MS	Sydney	Apr 03, 2020	180 Days

Australia

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6 Monterey Road
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Site # 1254 & 14271

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Phone : +64 9 526 45 51
IANZ # 1327

Christchurch
43 Detroit Drive
Rolleston, Christchurch 7675
Phone : 0800 856 450
IANZ # 1290

Company Name: Ramboll Australia Pty Ltd
Address: Level 3/100 Pacific Highway
North Sydney
NSW 2060

Order No.:
Report #: 710616
Phone: 02 9954 8118
Fax: 02 9954 8150

Received: Mar 27, 2020 2:58 PM
Due: Apr 3, 2020
Priority: 5 Day
Contact Name: Stephen Maxwell

Project Name:
Project ID: 318000780

Eurofins Analytical Services Manager : Andrew Black

Sample Detail						Lead	Lead (% w/w)	Moisture Set	NEPM 2013 Metals without Cr6+ (As, Be, B, Cd, Co, Cr, Cu, Hg, Pb, Ni, Mn, NEPM 2013 Metals without Cr6+ (As, Be, B, Cd, Co, Cr, Cu, Hg, Pb, Ni, Mn, Se, Zn)	NEPM 2013 Filtered Metals without Cr6+ (As, Be, B, Cd, Co, Cr, Cu, Hg, Pb, Ni, Mn,
Melbourne Laboratory - NATA Site # 1254 & 14271										
Sydney Laboratory - NATA Site # 18217						X	X	X	X	X
Brisbane Laboratory - NATA Site # 20794										
Perth Laboratory - NATA Site # 23736										
External Laboratory										
No	Sample ID	Sample Date	Sampling Time	Matrix	LAB ID					
1	P14_HA01_0_0_0.05	Mar 26, 2020		Soil	S20-Ma44045	X		X		
2	P14_HA01_0_2	Mar 26, 2020		Soil	S20-Ma44046	X		X		
3	P14_HA02_0_0_0.05	Mar 26, 2020		Soil	S20-Ma44047	X		X		
4	P14_HA02_0_3	Mar 26, 2020		Soil	S20-Ma44048	X		X		
5	P14_HA03_0_0-0.05	Mar 26, 2020		Soil	S20-Ma44049	X		X		
6	P14_HA03_0_25	Mar 26, 2020		Soil	S20-Ma44050	X		X		

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Perth Laboratory - NATA Site # 23736										
7	P14_HA04_0-0.05	Mar 26, 2020		Soil	S20-Ma44051	X		X		
8	P14_HA04_0.3	Mar 26, 2020		Soil	S20-Ma44052	X		X		
9	P14_HA05_0-0.05	Mar 26, 2020		Soil	S20-Ma44053	X		X		
10	P14_HA05_0.2	Mar 26, 2020		Soil	S20-Ma44054	X		X		
11	P13_HA05_0.3	Mar 26, 2020		Soil	S20-Ma44055	X		X		
12	P14_BORE	Mar 26, 2020		Water	S20-Ma44056				X	X
13	P14_TW1	Mar 26, 2020		Water	S20-Ma44057				X	X
14	P14_TW2	Mar 26, 2020		Water	S20-Ma44058				X	X
15	P14_TW3	Mar 26, 2020		Water	S20-Ma44059				X	X

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web : www.eurofins.com.au

e.mail : EnviroSales@eurofins.com

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Quality Control Results

Test	Units	Result 1			Acceptance Limits	Pass Limits	Qualifying Code
Method Blank							
Heavy Metals							
Arsenic	mg/L	< 0.001			0.001	Pass	
Arsenic (filtered)	mg/L	< 0.001			0.001	Pass	
Beryllium	mg/L	< 0.001			0.001	Pass	
Beryllium (filtered)	mg/L	< 0.001			0.001	Pass	
Boron	mg/L	< 0.05			0.05	Pass	
Boron (filtered)	mg/L	< 0.05			0.05	Pass	
Cadmium	mg/L	< 0.0002			0.0002	Pass	
Cadmium (filtered)	mg/L	< 0.0002			0.0002	Pass	
Chromium	mg/L	< 0.001			0.001	Pass	
Chromium (filtered)	mg/L	< 0.001			0.001	Pass	
Cobalt	mg/L	< 0.001			0.001	Pass	
Cobalt (filtered)	mg/L	< 0.001			0.001	Pass	
Copper	mg/L	< 0.001			0.001	Pass	
Copper (filtered)	mg/L	< 0.001			0.001	Pass	
Lead	mg/L	< 0.001			0.001	Pass	
Lead (filtered)	mg/L	< 0.001			0.001	Pass	
Manganese	mg/L	< 0.005			0.005	Pass	
Manganese (filtered)	mg/L	< 0.005			0.005	Pass	
Mercury	mg/L	< 0.0001			0.0001	Pass	
Mercury (filtered)	mg/L	< 0.0001			0.0001	Pass	
Nickel	mg/L	< 0.001			0.001	Pass	
Nickel (filtered)	mg/L	< 0.001			0.001	Pass	
Selenium	mg/L	< 0.001			0.001	Pass	
Selenium (filtered)	mg/L	< 0.001			0.001	Pass	
Zinc	mg/L	< 0.005			0.005	Pass	
Zinc (filtered)	mg/L	< 0.005			0.005	Pass	
LCS - % Recovery							
Heavy Metals							
Arsenic	%	103			70-130	Pass	
Arsenic (filtered)	%	87			70-130	Pass	
Beryllium	%	101			70-130	Pass	
Beryllium (filtered)	%	85			70-130	Pass	
Boron	%	100			70-130	Pass	
Boron (filtered)	%	83			70-130	Pass	
Cadmium	%	101			70-130	Pass	
Cadmium (filtered)	%	84			70-130	Pass	
Chromium	%	99			70-130	Pass	
Chromium (filtered)	%	85			70-130	Pass	
Cobalt	%	99			70-130	Pass	
Cobalt (filtered)	%	85			70-130	Pass	
Copper	%	96			70-130	Pass	
Copper (filtered)	%	84			70-130	Pass	
Lead	%	103			70-130	Pass	
Lead (filtered)	%	86			70-130	Pass	
Manganese	%	99			70-130	Pass	
Manganese (filtered)	%	84			70-130	Pass	
Mercury	%	112			70-130	Pass	
Mercury (filtered)	%	80			70-130	Pass	
Nickel	%	98			70-130	Pass	
Nickel (filtered)	%	86			70-130	Pass	

Test			Units	Result 1			Acceptance Limits	Pass Limits	Qualifying Code
Selenium			%	103			70-130	Pass	
Selenium (filtered)			%	84			70-130	Pass	
Zinc			%	100			70-130	Pass	
Zinc (filtered)			%	85			70-130	Pass	
Test	Lab Sample ID	QA Source	Units	Result 1			Acceptance Limits	Pass Limits	Qualifying Code
Spike - % Recovery									
Heavy Metals				Result 1					
Arsenic	S20-Ma44415	NCP	%	104			70-130	Pass	
Arsenic (filtered)	S20-Ma44415	NCP	%	96			70-130	Pass	
Beryllium	S20-Ma44415	NCP	%	103			70-130	Pass	
Beryllium (filtered)	S20-Ma44415	NCP	%	93			70-130	Pass	
Boron	S20-Ma44415	NCP	%	93			70-130	Pass	
Cadmium	S20-Ma44415	NCP	%	99			70-130	Pass	
Cadmium (filtered)	S20-Ma44415	NCP	%	102			70-130	Pass	
Chromium	S20-Ma44415	NCP	%	99			70-130	Pass	
Chromium (filtered)	S20-Ma44415	NCP	%	93			70-130	Pass	
Cobalt	S20-Ma44415	NCP	%	101			70-130	Pass	
Cobalt (filtered)	S20-Ma44415	NCP	%	97			70-130	Pass	
Copper	S20-Ma44415	NCP	%	96			70-130	Pass	
Copper (filtered)	S20-Ma44415	NCP	%	94			70-130	Pass	
Lead	S20-Ma44415	NCP	%	104			70-130	Pass	
Lead (filtered)	S20-Ma44415	NCP	%	97			70-130	Pass	
Manganese	S20-Ma44415	NCP	%	100			70-130	Pass	
Manganese (filtered)	S20-Ma44415	NCP	%	97			70-130	Pass	
Mercury	S20-Ma44415	NCP	%	103			70-130	Pass	
Mercury (filtered)	S20-Ma44415	NCP	%	95			70-130	Pass	
Nickel	S20-Ma44415	NCP	%	99			70-130	Pass	
Nickel (filtered)	S20-Ma44415	NCP	%	95			70-130	Pass	
Selenium	S20-Ma44415	NCP	%	101			70-130	Pass	
Selenium (filtered)	S20-Ma44415	NCP	%	100			70-130	Pass	
Zinc	S20-Ma44415	NCP	%	101			70-130	Pass	
Zinc (filtered)	S20-Ma44415	NCP	%	84			70-130	Pass	
Test	Lab Sample ID	QA Source	Units	Result 1			Acceptance Limits	Pass Limits	Qualifying Code
Duplicate									
Heavy Metals				Result 1	Result 2	RPD			
Arsenic	S20-Ma43285	NCP	mg/L	< 0.001	< 0.001	<1	30%	Pass	
Arsenic (filtered)	S20-Ma39694	NCP	mg/L	0.001	0.002	28	30%	Pass	
Beryllium	S20-Ma43285	NCP	mg/L	< 0.001	< 0.001	<1	30%	Pass	
Beryllium (filtered)	S20-Ma39694	NCP	mg/L	< 0.001	< 0.001	<1	30%	Pass	
Boron	S20-Ma43285	NCP	mg/L	< 0.05	< 0.05	<1	30%	Pass	
Boron (filtered)	S20-Ma39694	NCP	mg/L	0.49	0.09	140	30%	Fail	Q15
Cadmium	S20-Ma43285	NCP	mg/L	0.0004	0.0004	3.0	30%	Pass	
Cadmium (filtered)	S20-Ma39694	NCP	mg/L	< 0.0002	< 0.0002	<1	30%	Pass	
Chromium	S20-Ma43285	NCP	mg/L	< 0.001	< 0.001	<1	30%	Pass	
Chromium (filtered)	S20-Ma39694	NCP	mg/L	< 0.001	< 0.001	<1	30%	Pass	
Cobalt	S20-Ma43285	NCP	mg/L	0.002	0.001	3.0	30%	Pass	
Cobalt (filtered)	S20-Ma39694	NCP	mg/L	0.019	0.008	83	30%	Fail	Q15
Copper	S20-Ma43285	NCP	mg/L	< 0.001	< 0.001	<1	30%	Pass	
Copper (filtered)	S20-Ma39694	NCP	mg/L	0.009	0.017	63	30%	Fail	Q15
Lead	S20-Ma43285	NCP	mg/L	< 0.001	< 0.001	<1	30%	Pass	
Lead (filtered)	S20-Ma39694	NCP	mg/L	< 0.001	< 0.001	<1	30%	Pass	
Manganese	S20-Ma43285	NCP	mg/L	0.016	0.016	1.0	30%	Pass	
Manganese (filtered)	S20-Ma39694	NCP	mg/L	0.46	0.70	41	30%	Fail	Q02

Test	Lab Sample ID	QA Source	Units	Result 1			Acceptance Limits	Pass Limits	Qualifying Code
Duplicate									
Heavy Metals				Result 1	Result 2	RPD			
Mercury	S20-Ma43285	NCP	mg/L	< 0.0001	< 0.0001	<1	30%	Pass	
Mercury (filtered)	S20-Ma39694	NCP	mg/L	< 0.0001	< 0.0001	<1	30%	Pass	
Nickel	S20-Ma43285	NCP	mg/L	< 0.001	< 0.001	<1	30%	Pass	
Nickel (filtered)	S20-Ma39694	NCP	mg/L	0.006	0.010	51	30%	Fail	Q15
Selenium	S20-Ma43285	NCP	mg/L	< 0.001	< 0.001	<1	30%	Pass	
Selenium (filtered)	S20-Ma39694	NCP	mg/L	< 0.001	< 0.001	<1	30%	Pass	
Zinc	S20-Ma43285	NCP	mg/L	7.9	7.8	2.0	30%	Pass	
Zinc (filtered)	S20-Ma39694	NCP	mg/L	0.027	0.033	18	30%	Pass	

Comments
Sample Integrity

Custody Seals Intact (if used)	N/A
Attempt to Chill was evident	Yes
Sample correctly preserved	Yes
Appropriate sample containers have been used	Yes
Sample containers for volatile analysis received with minimal headspace	Yes
Samples received within HoldingTime	Yes
Some samples have been subcontracted	No

Qualifier Codes/Comments

Code	Description
Q02	The duplicate %RPD is outside the recommended acceptance criteria. Further analysis indicates sample heterogeneity as the cause
Q15	The RPD reported passes Eurofins Environment Testing's QC - Acceptance Criteria as defined in the Internal Quality Control Review and Glossary page of this report.

Authorised By

Andrew Black	Analytical Services Manager
Gabriele Cordero	Senior Analyst-Metal (NSW)


**Glenn Jackson
General Manager**

Final report - this Report replaces any previously issued Report

- Indicates Not Requested

* Indicates NATA accreditation does not cover the performance of this service

Measurement uncertainty of test data is available on request or please [click here](#).

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Ramboll Environ Australia Pty Ltd
 Level 3/100 Pacific Highway
 North Sydney
 NSW 2060



NATA Accredited
Accreditation Number 1261
Site Number 18217

Accredited for compliance with ISO/IEC 17025 – Testing
 The results of the tests, calibrations and/or
 measurements included in this document are traceable
 to Australian/national standards.

Attention: **Stephen Maxwell**

Report **713878-S-V10**

Project name

Project ID **318000780**

Received Date **Apr 15, 2020**

Client Sample ID			P14_TWS3
Sample Matrix			Solid
Eurofins Sample No.			S20-Ap21441
Date Sampled			Mar 26, 2020
Test/Reference	LOR	Unit	
Heavy Metals			
Lead	1	mg/kg	82

Sample History

Where samples are submitted/analysed over several days, the last date of extraction and analysis is reported.

A recent review of our LIMS has resulted in the correction or clarification of some method identifications. Due to this, some of the method reference information on reports has changed. However, no substantive change has been made to our laboratory methods, and as such there is no change in the validity of current or previous results.

If the date and time of sampling are not provided, the Laboratory will not be responsible for compromised results should testing be performed outside the recommended holding time.

Description

Heavy Metals

Testing Site

Sydney

Extracted

Apr 16, 2020

Holding Time

180 Days

- Method: LTM-MET-3040 Metals in Waters, Soils & Sediments by ICP-MS

Australia

Melbourne
6 Monterey Road
Dandenong South VIC 3175
Phone : +61 3 8564 5000
NATA # 1261
Site # 1254 & 14271

Sydney
Unit F3, Building F
16 Mars Road
Lane Cove West NSW 2066
Phone : +61 2 9900 8400
NATA # 1261 Site # 18217

Brisbane
1/21 Smallwood Place
Murarrie QLD 4172
Phone : +61 7 3902 4600
NATA # 1261 Site # 20794

Perth
2/91 Leach Highway
Kewdale WA 6105
Phone : +61 8 9251 9600
NATA # 1261
Site # 23736

New Zealand

Auckland
35 O'Rorke Road
Penrose, Auckland 1061
Phone : +64 9 526 45 51
IANZ # 1327

Christchurch
43 Detroit Drive
Rolleston, Christchurch 7675
Phone : 0800 856 450
IANZ # 1290

Company Name: Ramboll Australia Pty Ltd
Address: Level 3/100 Pacific Highway
North Sydney
NSW 2060

Order No.:
Report #: 713878
Phone: 02 9954 8118
Fax: 02 9954 8150

Received: Apr 15, 2020 1:37 PM
Due: Apr 20, 2020
Priority: 3 Day
Contact Name: Stephen Maxwell

Project Name:
Project ID: 318000780

Eurofins Analytical Services Manager : Andrew Black

Sample Detail						Lead	Moisture Set
Melbourne Laboratory - NATA Site # 1254 & 14271							
Sydney Laboratory - NATA Site # 18217						X	X
Brisbane Laboratory - NATA Site # 20794							
Perth Laboratory - NATA Site # 23736							
External Laboratory							
No	Sample ID	Sample Date	Sampling Time	Matrix	LAB ID		
1	P3_TWS2	Mar 26, 2020		Solid	S20-Ap21433	X	X
2	P4_TWS2	Mar 24, 2020		Solid	S20-Ap21434	X	X
3	P7_TWS2	Mar 25, 2020		Solid	S20-Ap21435	X	X
4	SMCTS1	Mar 24, 2020		Solid	S20-Ap21436	X	X
5	P11_TWS1	Mar 26, 2020		Solid	S20-Ap21437	X	X
6	P11_TWS2	Mar 26, 2020		Solid	S20-Ap21438	X	X
7	P12_TWS1	Mar 26, 2020		Solid	S20-Ap21439	X	X
8	P12_TWS2	Mar 26, 2020		Solid	S20-Ap21440	X	X
9	P14_TWS3	Mar 26, 2020		Solid	S20-Ap21441	X	X
10	P18_TWS1	Mar 31, 2020		Solid	S20-Ap21442	X	X

Australia

Melbourne
 6 Monterey Road
 Dandenong South VIC 3175
 Phone : +61 3 8564 5000
 NATA # 1261
 Site # 1254 & 14271

Sydney
 Unit F3, Building F
 16 Mars Road
 Lane Cove West NSW 2066
 Phone : +61 2 9900 8400
 NATA # 1261 Site # 18217

Brisbane
 1/21 Smallwood Place
 Murarrie QLD 4172
 Phone : +61 7 3902 4600
 NATA # 1261 Site # 20794

Perth
 2/91 Leach Highway
 Kewdale WA 6105
 Phone : +61 8 9251 9600
 NATA # 1261
 Site # 23736

New Zealand

Auckland
 35 O'Rorke Road
 Penrose, Auckland 1061
 Phone : +64 9 526 45 51
 IANZ # 1327

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 43 Detroit Drive
 Rolleston, Christchurch 7675
 Phone : 0800 856 450
 IANZ # 1290

ABN – 50 005 085 521

web : www.eurofins.com.au

e.mail : EnviroSales@eurofins.com

Company Name:	Ramboll Australia Pty Ltd	Order No.:		Received:	Apr 15, 2020 1:37 PM
Address:	Level 3/100 Pacific Highway North Sydney NSW 2060	Report #:	713878	Due:	Apr 20, 2020
Project Name:		Phone:	02 9954 8118	Priority:	3 Day
Project ID:	318000780	Fax:	02 9954 8150	Contact Name:	Stephen Maxwell

Eurofins Analytical Services Manager : Andrew Black

Sample Detail						Lead	Moisture Set
Melbourne Laboratory - NATA Site # 1254 & 14271							
Sydney Laboratory - NATA Site # 18217						X	X
Brisbane Laboratory - NATA Site # 20794							
Perth Laboratory - NATA Site # 23736							
11	P18_TWS2	Mar 31, 2020		Solid	S20-Ap21443	X	X
12	P21_TWS1	Mar 31, 2020		Solid	S20-Ap21444	X	X
13	P21_TWS2	Mar 31, 2020		Solid	S20-Ap21445	X	X
14	P23_TWS1	Mar 31, 2020		Solid	S20-Ap21446	X	X
Test Counts						14	14

Internal Quality Control Review and Glossary
General

- Laboratory QC results for Method Blanks, Duplicates, Matrix Spikes, and Laboratory Control Samples follows guidelines delineated in the National Environment Protection (Assessment of Site Contamination) Measure 1999, as amended May 2013 and are included in this QC report where applicable. Additional QC data may be available on request.
- All soil/sediment/solid results are reported on a dry basis, unless otherwise stated.
- All biota/food results are reported on a wet weight basis on the edible portion, unless otherwise stated.
- Actual LORs are matrix dependant. Quoted LORs may be raised where sample extracts are diluted due to interferences.
- Results are uncorrected for matrix spikes or surrogate recoveries except for PFAS compounds.
- SVOC analysis on waters are performed on homogenised, unfiltered samples, unless noted otherwise.
- Samples were analysed on an 'as received' basis.
- Information identified on this report with blue colour, indicates data provided by customer, that may have an impact on the results.
- This report replaces any interim results previously issued.

Holding Times

Please refer to 'Sample Preservation and Container Guide' for holding times (QS3001).

For samples received on the last day of holding time, notification of testing requirements should have been received at least 6 hours prior to sample receipt deadlines as stated on the SRA.

If the Laboratory did not receive the information in the required timeframe, and regardless of any other integrity issues, suitably qualified results may still be reported.

Holding times apply from the date of sampling, therefore compliance to these may be outside the laboratory's control.

For VOCs containing vinyl chloride, styrene and 2-chloroethyl vinyl ether the holding time is 7 days however for all other VOCs such as BTEX or C6-10 TRH then the holding time is 14 days.

****NOTE:** pH duplicates are reported as a range NOT as RPD

Units

mg/kg: milligrams per kilogram

mg/L: milligrams per litre

ug/L: micrograms per litre

ppm: Parts per million

ppb: Parts per billion

%: Percentage

org/100mL: Organisms per 100 millilitres

NTU: Nephelometric Turbidity Units

MPN/100mL: Most Probable Number of organisms per 100 millilitres

Terms

Dry	Where a moisture has been determined on a solid sample the result is expressed on a dry basis.
LOR	Limit of Reporting.
SPIKE	Addition of the analyte to the sample and reported as percentage recovery.
RPD	Relative Percent Difference between two Duplicate pieces of analysis.
LCS	Laboratory Control Sample - reported as percent recovery.
CRM	Certified Reference Material - reported as percent recovery.
Method Blank	In the case of solid samples these are performed on laboratory certified clean sands and in the case of water samples these are performed on de-ionised water.
Surr - Surrogate	The addition of a like compound to the analyte target and reported as percentage recovery.
Duplicate	A second piece of analysis from the same sample and reported in the same units as the result to show comparison.
USEPA	United States Environmental Protection Agency
APHA	American Public Health Association
TCLP	Toxicity Characteristic Leaching Procedure
COC	Chain of Custody
SRA	Sample Receipt Advice
QSM	US Department of Defense Quality Systems Manual Version 5.3
CP	Client Parent - QC was performed on samples pertaining to this report
NCP	Non-Client Parent - QC performed on samples not pertaining to this report, QC is representative of the sequence or batch that client samples were analysed within.
TEQ	Toxic Equivalency Quotient

QC - Acceptance Criteria

RPD Duplicates: Global RPD Duplicates Acceptance Criteria is 30% however the following acceptance guidelines are equally applicable:

Results <10 times the LOR : No Limit

Results between 10-20 times the LOR : RPD must lie between 0-50%

Results >20 times the LOR : RPD must lie between 0-30%

Surrogate Recoveries: Recoveries must lie between 20-130% Phenols & 50-150% PFASs

PFAS field samples that contain surrogate recoveries in excess of the QC limit designated in QSM 5.3 where no positive PFAS results have been reported have been reviewed and no data was affected.

WA DWER (n=10): PFBA, PFPeA, PFHxA, PFHpA, PFOA, PFBS, PFHxS, PFOS, 6:2 FTSA, 8:2 FTSA

QC Data General Comments

- Where a result is reported as a less than (<), higher than the nominated LOR, this is due to either matrix interference, extract dilution required due to interferences or contaminant levels within the sample, high moisture content or insufficient sample provided.
- Duplicate data shown within this report that states the word "BATCH" is a Batch Duplicate from outside of your sample batch, but within the laboratory sample batch at a 1:10 ratio. The Parent and Duplicate data shown is not data from your samples.
- Organochlorine Pesticide analysis - where reporting LCS data, Toxaphene & Chlordane are not added to the LCS.
- Organochlorine Pesticide analysis - where reporting Spike data, Toxaphene is not added to the Spike.
- Total Recoverable Hydrocarbons - where reporting Spike & LCS data, a single spike of commercial Hydrocarbon products in the range of C12-C30 is added and it's Total Recovery is reported in the C10-C14 cell of the Report.
- pH and Free Chlorine analysed in the laboratory - Analysis on this test must begin within 30 minutes of sampling. Therefore laboratory analysis is unlikely to be completed within holding time. Analysis will begin as soon as possible after sample receipt.
- Recovery Data (Spikes & Surrogates) - where chromatographic interference does not allow the determination of Recovery the term "INT" appears against that analyte.
- Polychlorinated Biphenyls are spiked only using Aroclor 1260 in Matrix Spikes and LCS.
- For Matrix Spikes and LCS results a dash " - " in the report means that the specific analyte was not added to the QC sample.
- Duplicate RPDs are calculated from raw analytical data thus it is possible to have two sets of data.

Quality Control Results

Test				Units	Result 1			Acceptance Limits	Pass Limits	Qualifying Code	
Method Blank											
Heavy Metals											
Lead				mg/kg	< 1			1	Pass		
LCS - % Recovery											
Heavy Metals											
Lead				%	96			70-130	Pass		
Test	Lab Sample ID	QA Source	Units	Result 1			Acceptance Limits	Pass Limits	Qualifying Code		
Spike - % Recovery											
Heavy Metals					Result 1						
Lead				B20-Ap16161	NCP	%	89	70-130	Pass		
Spike - % Recovery											
Heavy Metals					Result 1						
Lead				B20-Ap16161	NCP	%	89	70-130	Pass		
Spike - % Recovery											
Heavy Metals					Result 1						
Lead				B20-Ap16161	NCP	%	89	70-130	Pass		
Spike - % Recovery											
Heavy Metals					Result 1						
Lead				B20-Ap16161	NCP	%	89	70-130	Pass		
Spike - % Recovery											
Heavy Metals					Result 1						
Lead				B20-Ap16161	NCP	%	89	70-130	Pass		
Spike - % Recovery											
Heavy Metals					Result 1						
Lead				B20-Ap16161	NCP	%	89	70-130	Pass		
Spike - % Recovery											
Heavy Metals					Result 1						
Lead				B20-Ap16161	NCP	%	89	70-130	Pass		
Spike - % Recovery											
Heavy Metals					Result 1						
Lead				B20-Ap16161	NCP	%	89	70-130	Pass		
Spike - % Recovery											
Heavy Metals					Result 1						
Lead				S20-Ap21444	CP	%	87	70-130	Pass		
Test	Lab Sample ID	QA Source	Units	Result 1			Acceptance Limits	Pass Limits	Qualifying Code		
Duplicate											
Heavy Metals					Result 1	Result 2	RPD				
Lead				S20-Ap17051	NCP	mg/kg	29	35	19	30%	Pass
Duplicate											
Heavy Metals					Result 1	Result 2	RPD				
Lead				S20-Ap17051	NCP	mg/kg	29	**	19	30%	Pass
Duplicate											
Heavy Metals					Result 1	Result 2	RPD				
Lead				S20-Ap17051	NCP	mg/kg	29	**	19	30%	Pass
Duplicate											
Heavy Metals					Result 1	Result 2	RPD				
Lead				S20-Ap17051	NCP	mg/kg	29	**	19	30%	Pass
Duplicate											
Heavy Metals					Result 1	Result 2	RPD				
Lead				S20-Ap17051	NCP	mg/kg	29	**	19	30%	Pass

Duplicate								
Heavy Metals				Result 1	Result 2	RPD		
Lead	S20-Ap17051	NCP	mg/kg	29	**	19	30%	Pass
Duplicate								
Heavy Metals				Result 1	Result 2	RPD		
Lead	S20-Ap21444	CP	mg/kg	70	69	2.0	30%	Pass

Comments

New version to split samples.

Sample Integrity

Custody Seals Intact (if used)	N/A
Attempt to Chill was evident	N/A
Sample correctly preserved	Yes
Appropriate sample containers have been used	Yes
Sample containers for volatile analysis received with minimal headspace	Yes
Samples received within HoldingTime	Yes
Some samples have been subcontracted	No

Authorised By

Andrew Black Analytical Services Manager
Gabriele Cordero Senior Analyst-Metal (NSW)



Glenn Jackson
General Manager

Final report - this Report replaces any previously issued Report

- Indicates Not Requested

* Indicates NATA accreditation does not cover the performance of this service

Measurement uncertainty of test data is available on request or please [click here](#).

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CHAIN OF CUSTODY RECORD

ASN 50 006 006 521

Pyriney Laboratory
Unit F3 Bldg F, 16 Mars Rd, Lane Cove West, NSW 2066
02 9900 8400 EnviroSamplesNSW@eurofins.com

Brisbane Laboratory
Unit 1, 21 Smallwood Pl., Murrumbidgee, QLD 4172
07 3002 4800 EnviroSampleQD@eurofins.com

Perth Laboratory
Unit 2, 91 Leach Highway, Kewdale WA 6105
08 9251 9800 EnviroSamplesWA@eurofins.com

Melbourne Laboratory
2 Kingston Town, Close, Oakleigh, VIC 3166
03 8654 5000 EnviroSamplesVIC@eurofins.com

Company	Ramboll	Project No	318000790	Project Manager	Stephen Maxwell	Sampler(s)	JB, TJ, JK
Address	50 Glebe Road the Junction	Project Name	P14	EDD Format (ESdat, EQUS, Custom)	Excel and PDF	Handled over by	Jordyn Kirsch
Contact Name	Stephen Maxwell	Analyses <small>(Note: Where metals are requested, please specify "Total" or "Filtered", SUITE code must be used to attract SUITE pricing.)</small>					
Phone No	0478 658 194	Total Lead (mg/kg)		Total Sample Mass		Total Lead (µg/L)	
Special Directions		<input type="checkbox"/> Overnight (9am)* <input type="checkbox"/> 1 Day* <input type="checkbox"/> 2 Day* <input type="checkbox"/> 3 Day* <input checked="" type="checkbox"/> 5 Day* *Surcharges apply <input type="checkbox"/> Other ()					
Purchase Order		Containers <input type="checkbox"/> 1L Plastic <input type="checkbox"/> 250mL Plastic <input type="checkbox"/> 125mL Plastic <input type="checkbox"/> 200mL Amber Glass <input type="checkbox"/> 40mL VOA vial <input type="checkbox"/> 500mL PFAS Bottle <input type="checkbox"/> Jar (Glass or HDPE) Other (Asbestos AS4964, WA Guidelines)					
Quote ID No	180813RAMN_1	Turnaround Time (TAT) Requirements (Default will be 5 days if not ticked)					

No	Client Sample ID	Sampled Date/Time (dd/mm/yy hh:mm)	Matrix (Solid (S) Water (W))				
1	DVAC_LR(P14)	29/04/20	S	X	X		
2	DVAC_MB(P14)	29/04/20	S	X	X		
3	DSWAB_BE(P14)	29/04/20	S			X	
4	DSWAB_FE(P14)	29/04/20	S			X	
5	DSWAB_MH(P14)	29/04/20	S			X	
6	DSWAB_SE(P14)	29/04/20	S			X	
7							
8							
9							
10							

Method of Shipment	<input type="checkbox"/> Courier (#) <input checked="" type="checkbox"/> Hand Delivered <input type="checkbox"/> Postal	Name		Signature		Date		Time	
Eurofins Ingt Laboratory Use Only	<input checked="" type="checkbox"/> Received By <input checked="" type="checkbox"/> Received By <input type="checkbox"/> SVD BNE MEL PER ADL NTL DRW	Signature		Signature		Date		Time	

Melbourne

6 Monterey Road
Dandenong South Vic 3175
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NATA # 1261
Site # 1254 & 14271

Sydney

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Brisbane

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NATA # 1261 Site # 20794

Perth

2/91 Leach Highway
Kewdale WA 6105
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NATA # 1261 Site # 23736

Sample Receipt Advice

Company name: **Ramboll Australia Pty Ltd**
Contact name: Stephen Maxwell
Project name: P14
Project ID: 318000780
COC number: Not provided
Turn around time: 5 Day
Date/Time received: May 1, 2020 12:00 PM
Eurofins reference: **716938**

Sample information

- A detailed list of analytes logged into our LIMS, is included in the attached summary table.
- All samples have been received as described on the above COC.
- COC has been completed correctly.
- N/A Attempt to chill was evident.
- Appropriately preserved sample containers have been used.
- All samples were received in good condition.
- Samples have been provided with adequate time to commence analysis in accordance with the relevant holding times.
- Appropriate sample containers have been used.
- Split sample sent to requested external lab.
- Some samples have been subcontracted.
- N/A Custody Seals intact (if used).

Contact notes

If you have any questions with respect to these samples please contact:

Andrew Black on Phone : (+61) 2 9900 8490 or by e.mail: AndrewBlack@eurofins.com

Results will be delivered electronically via e.mail to Stephen Maxwell - smaxwell@ramboll.com.

Note: A copy of these results will also be delivered to the general Ramboll Australia Pty Ltd email address.

Australia

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web : www.eurofins.com.au

e.mail : EnviroSales@eurofins.com

Company Name: Ramboll Australia Pty Ltd
Address: Level 3/100 Pacific Highway
North Sydney
NSW 2060

Project Name: P14
Project ID: 318000780

Order No.:
Report #: 716938
Phone: 02 9954 8118
Fax: 02 9954 8150

Received: May 1, 2020 12:00 PM
Due: May 8, 2020
Priority: 5 Day
Contact Name: Stephen Maxwell

Eurofins Analytical Services Manager : Andrew Black

Sample Detail						Lead	Mass of sample*
Melbourne Laboratory - NATA Site # 1254 & 14271							
Sydney Laboratory - NATA Site # 18217						X	X
Brisbane Laboratory - NATA Site # 20794							
Perth Laboratory - NATA Site # 23736							
External Laboratory							
No	Sample ID	Sample Date	Sampling Time	Matrix	LAB ID		
1	DVAC_LR(P14)	Apr 29, 2020		Dust	S20-My00995	X	X
2	DVAC_MB(P14)	Apr 29, 2020		Dust	S20-My00996	X	X
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4	DSWAB_FE(P14)	Apr 29, 2020		Wipes	S20-My00998	X	
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Perth Laboratory - NATA Site # 23736		
Test Counts	6	2

Ramboll Environ Australia Pty Ltd
 Level 3/100 Pacific Highway
 North Sydney
 NSW 2060



NATA Accredited
Accreditation Number 1261
Site Number 18217

Accredited for compliance with ISO/IEC 17025 – Testing
 The results of the tests, calibrations and/or
 measurements included in this document are traceable
 to Australian/national standards.

Attention: **Stephen Maxwell**

Report **716938-A**
 Project name **P14**
 Project ID **318000780**
 Received Date **May 01, 2020**

Client Sample ID			DSWAB_BE(P14)	DSWAB_FE(P14)	DSWAB_MH(P14)	DSWAB_SE(P14)
Sample Matrix			Wipes	Wipes	Wipes	Wipes
Eurofins Sample No.			S20-My00997	S20-My00998	S20-My00999	S20-My01000
Date Sampled			Apr 29, 2020	Apr 29, 2020	Apr 29, 2020	Apr 29, 2020
Test/Reference	LOR	Unit				
Heavy Metals						
Lead	1	Total ug	< 1	1.1	9.9	1.9

Sample History

Where samples are submitted/analysed over several days, the last date of extraction and analysis is reported.

A recent review of our LIMS has resulted in the correction or clarification of some method identifications. Due to this, some of the method reference information on reports has changed. However, no substantive change has been made to our laboratory methods, and as such there is no change in the validity of current or previous results.

If the date and time of sampling are not provided, the Laboratory will not be responsible for compromised results should testing be performed outside the recommended holding time.

Description

Heavy Metals

Testing Site

Sydney

Extracted

May 07, 2020

Holding Time

180 Days

- Method: LTM-MET-3040 Metals in Waters, Soils & Sediments by ICP-MS

Australia

Melbourne
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Company Name: Ramboll Australia Pty Ltd
Address: Level 3/100 Pacific Highway
North Sydney
NSW 2060

Project Name: P14
Project ID: 318000780

Order No.:
Report #: 716938
Phone: 02 9954 8118
Fax: 02 9954 8150

Received: May 1, 2020 12:00 PM
Due: May 8, 2020
Priority: 5 Day
Contact Name: Stephen Maxwell

Eurofins Analytical Services Manager : Andrew Black

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Sydney Laboratory - NATA Site # 18217						X	X
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e.mail : EnviroSales@eurofins.com

Company Name:	Ramboll Australia Pty Ltd	Order No.:		Received:	May 1, 2020 12:00 PM
Address:	Level 3/100 Pacific Highway North Sydney NSW 2060	Report #:	716938	Due:	May 8, 2020
Project Name:	P14	Phone:	02 9954 8118	Priority:	5 Day
Project ID:	318000780	Fax:	02 9954 8150	Contact Name:	Stephen Maxwell
Eurofins Analytical Services Manager : Andrew Black					

Sample Detail	Lead	Mass of sample*
Melbourne Laboratory - NATA Site # 1254 & 14271		
Sydney Laboratory - NATA Site # 18217	X	X
Brisbane Laboratory - NATA Site # 20794		
Perth Laboratory - NATA Site # 23736		
Test Counts	6	2

Internal Quality Control Review and Glossary
General

- Laboratory QC results for Method Blanks, Duplicates, Matrix Spikes, and Laboratory Control Samples follows guidelines delineated in the National Environment Protection (Assessment of Site Contamination) Measure 1999, as amended May 2013 and are included in this QC report where applicable. Additional QC data may be available on request.
- All soil/sediment/solid results are reported on a dry basis, unless otherwise stated.
- All biota/food results are reported on a wet weight basis on the edible portion, unless otherwise stated.
- Actual LORs are matrix dependant. Quoted LORs may be raised where sample extracts are diluted due to interferences.
- Results are uncorrected for matrix spikes or surrogate recoveries except for PFAS compounds.
- SVOC analysis on waters are performed on homogenised, unfiltered samples, unless noted otherwise.
- Samples were analysed on an 'as received' basis.
- Information identified on this report with blue colour, indicates data provided by customer, that may have an impact on the results.
- This report replaces any interim results previously issued.

Holding Times

Please refer to 'Sample Preservation and Container Guide' for holding times (QS3001).

For samples received on the last day of holding time, notification of testing requirements should have been received at least 6 hours prior to sample receipt deadlines as stated on the SRA.

If the Laboratory did not receive the information in the required timeframe, and regardless of any other integrity issues, suitably qualified results may still be reported.

Holding times apply from the date of sampling, therefore compliance to these may be outside the laboratory's control.

For VOCs containing vinyl chloride, styrene and 2-chloroethyl vinyl ether the holding time is 7 days however for all other VOCs such as BTEX or C6-10 TRH then the holding time is 14 days.

****NOTE:** pH duplicates are reported as a range NOT as RPD

Units

mg/kg: milligrams per kilogram

mg/L: milligrams per litre

ug/L: micrograms per litre

ppm: Parts per million

ppb: Parts per billion

%: Percentage

org/100mL: Organisms per 100 millilitres

NTU: Nephelometric Turbidity Units

MPN/100mL: Most Probable Number of organisms per 100 millilitres

Terms

Dry	Where a moisture has been determined on a solid sample the result is expressed on a dry basis.
LOR	Limit of Reporting.
SPIKE	Addition of the analyte to the sample and reported as percentage recovery.
RPD	Relative Percent Difference between two Duplicate pieces of analysis.
LCS	Laboratory Control Sample - reported as percent recovery.
CRM	Certified Reference Material - reported as percent recovery.
Method Blank	In the case of solid samples these are performed on laboratory certified clean sands and in the case of water samples these are performed on de-ionised water.
Surr - Surrogate	The addition of a like compound to the analyte target and reported as percentage recovery.
Duplicate	A second piece of analysis from the same sample and reported in the same units as the result to show comparison.
USEPA	United States Environmental Protection Agency
APHA	American Public Health Association
TCLP	Toxicity Characteristic Leaching Procedure
COC	Chain of Custody
SRA	Sample Receipt Advice
QSM	US Department of Defense Quality Systems Manual Version 5.3
CP	Client Parent - QC was performed on samples pertaining to this report
NCP	Non-Client Parent - QC performed on samples not pertaining to this report, QC is representative of the sequence or batch that client samples were analysed within.
TEQ	Toxic Equivalency Quotient

QC - Acceptance Criteria

RPD Duplicates: Global RPD Duplicates Acceptance Criteria is 30% however the following acceptance guidelines are equally applicable:

Results <10 times the LOR : No Limit

Results between 10-20 times the LOR : RPD must lie between 0-50%

Results >20 times the LOR : RPD must lie between 0-30%

Surrogate Recoveries: Recoveries must lie between 20-130% Phenols & 50-150% PFASs

PFAS field samples that contain surrogate recoveries in excess of the QC limit designated in QSM 5.3 where no positive PFAS results have been reported have been reviewed and no data was affected.

WA DWER (n=10): PFBA, PFPeA, PFHxA, PFHpA, PFOA, PFBS, PFHxS, PFOS, 6:2 FTSA, 8:2 FTSA

QC Data General Comments

- Where a result is reported as a less than (<), higher than the nominated LOR, this is due to either matrix interference, extract dilution required due to interferences or contaminant levels within the sample, high moisture content or insufficient sample provided.
- Duplicate data shown within this report that states the word "BATCH" is a Batch Duplicate from outside of your sample batch, but within the laboratory sample batch at a 1:10 ratio. The Parent and Duplicate data shown is not data from your samples.
- Organochlorine Pesticide analysis - where reporting LCS data, Toxaphene & Chlordane are not added to the LCS.
- Organochlorine Pesticide analysis - where reporting Spike data, Toxaphene is not added to the Spike.
- Total Recoverable Hydrocarbons - where reporting Spike & LCS data, a single spike of commercial Hydrocarbon products in the range of C12-C30 is added and it's Total Recovery is reported in the C10-C14 cell of the Report.
- pH and Free Chlorine analysed in the laboratory - Analysis on this test must begin within 30 minutes of sampling. Therefore laboratory analysis is unlikely to be completed within holding time. Analysis will begin as soon as possible after sample receipt.
- Recovery Data (Spikes & Surrogates) - where chromatographic interference does not allow the determination of Recovery the term "INT" appears against that analyte.
- Polychlorinated Biphenyls are spiked only using Aroclor 1260 in Matrix Spikes and LCS.
- For Matrix Spikes and LCS results a dash " - " in the report means that the specific analyte was not added to the QC sample.
- Duplicate RPDs are calculated from raw analytical data thus it is possible to have two sets of data.

Comments**Sample Integrity**

Custody Seals Intact (if used)	N/A
Attempt to Chill was evident	N/A
Sample correctly preserved	Yes
Appropriate sample containers have been used	Yes
Sample containers for volatile analysis received with minimal headspace	Yes
Samples received within HoldingTime	Yes
Some samples have been subcontracted	No

Authorised By

Andrew Black Analytical Services Manager
Gabriele Cordero Senior Analyst-Metal (NSW)

**Glenn Jackson
General Manager**

Final report - this Report replaces any previously issued Report

- Indicates Not Requested

* Indicates NATA accreditation does not cover the performance of this service

Measurement uncertainty of test data is available on request or please [click here](#).

Eurofins shall not be liable for loss, cost, damages or expenses incurred by the client, or any other person or company, resulting from the use of any information or interpretation given in this report. In no case shall Eurofins be liable for consequential damages including, but not limited to, lost profits, damages for failure to meet deadlines and lost production arising from this report. This document shall not be reproduced except in full and relates only to the items tested. Unless indicated otherwise, the tests were performed on the samples as received.

Ramboll Environ Australia Pty Ltd
 Level 3/100 Pacific Highway
 North Sydney
 NSW 2060



NATA Accredited
Accreditation Number 1261
Site Number 18217

Accredited for compliance with ISO/IEC 17025 – Testing
 The results of the tests, calibrations and/or
 measurements included in this document are traceable
 to Australian/national standards.

Attention: **Stephen Maxwell**

Report **716938-S**
 Project name **P14**
 Project ID **318000780**
 Received Date **May 01, 2020**

Client Sample ID			DVAC_LR(P14)	DVAC_MB(P14)
Sample Matrix			Dust	Dust
Eurofins Sample No.			S20-My00995	S20-My00996
Date Sampled			Apr 29, 2020	Apr 29, 2020
Test/Reference	LOR	Unit		
Heavy Metals				
Lead	5	mg/kg	19	28

Sample History

Where samples are submitted/analysed over several days, the last date of extraction and analysis is reported.

A recent review of our LIMS has resulted in the correction or clarification of some method identifications. Due to this, some of the method reference information on reports has changed. However, no substantive change has been made to our laboratory methods, and as such there is no change in the validity of current or previous results.

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Description

Heavy Metals

Testing Site

Sydney

Extracted

May 05, 2020

Holding Time

180 Days

- Method: LTM-MET-3040 Metals in Waters, Soils & Sediments by ICP-MS

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Company Name: Ramboll Australia Pty Ltd
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NSW 2060

Project Name: P14
Project ID: 318000780

Order No.:
Report #: 716938
Phone: 02 9954 8118
Fax: 02 9954 8150

Received: May 1, 2020 12:00 PM
Due: May 8, 2020
Priority: 5 Day
Contact Name: Stephen Maxwell

Eurofins Analytical Services Manager : Andrew Black

Sample Detail						Lead	Mass of sample*
Melbourne Laboratory - NATA Site # 1254 & 14271							
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General

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Results >20 times the LOR : RPD must lie between 0-30%

Surrogate Recoveries: Recoveries must lie between 20-130% Phenols & 50-150% PFASs

PFAS field samples that contain surrogate recoveries in excess of the QC limit designated in QSM 5.3 where no positive PFAS results have been reported have been reviewed and no data was affected.

WA DWER (n=10): PFBA, PFPeA, PFHxA, PFHpA, PFOA, PFBS, PFHxS, PFOS, 6:2 FTSA, 8:2 FTSA

QC Data General Comments

1. Where a result is reported as a less than (<), higher than the nominated LOR, this is due to either matrix interference, extract dilution required due to interferences or contaminant levels within the sample, high moisture content or insufficient sample provided.
2. Duplicate data shown within this report that states the word "BATCH" is a Batch Duplicate from outside of your sample batch, but within the laboratory sample batch at a 1:10 ratio. The Parent and Duplicate data shown is not data from your samples.
3. Organochlorine Pesticide analysis - where reporting LCS data, Toxaphene & Chlordane are not added to the LCS.
4. Organochlorine Pesticide analysis - where reporting Spike data, Toxaphene is not added to the Spike.
5. Total Recoverable Hydrocarbons - where reporting Spike & LCS data, a single spike of commercial Hydrocarbon products in the range of C12-C30 is added and it's Total Recovery is reported in the C10-C14 cell of the Report.
6. pH and Free Chlorine analysed in the laboratory - Analysis on this test must begin within 30 minutes of sampling. Therefore laboratory analysis is unlikely to be completed within holding time. Analysis will begin as soon as possible after sample receipt.
7. Recovery Data (Spikes & Surrogates) - where chromatographic interference does not allow the determination of Recovery the term "INT" appears against that analyte.
8. Polychlorinated Biphenyls are spiked only using Aroclor 1260 in Matrix Spikes and LCS.
9. For Matrix Spikes and LCS results a dash " - " in the report means that the specific analyte was not added to the QC sample.
10. Duplicate RPDs are calculated from raw analytical data thus it is possible to have two sets of data.

Comments**Sample Integrity**

Custody Seals Intact (if used)	N/A
Attempt to Chill was evident	N/A
Sample correctly preserved	Yes
Appropriate sample containers have been used	Yes
Sample containers for volatile analysis received with minimal headspace	Yes
Samples received within HoldingTime	Yes
Some samples have been subcontracted	No

Authorised By

Andrew Black Analytical Services Manager
Gabriele Cordero Senior Analyst-Metal (NSW)

**Glenn Jackson
General Manager**

Final report - this Report replaces any previously issued Report

- Indicates Not Requested

* Indicates NATA accreditation does not cover the performance of this service

Measurement uncertainty of test data is available on request or please [click here](#).

Eurofins shall not be liable for loss, cost, damages or expenses incurred by the client, or any other person or company, resulting from the use of any information or interpretation given in this report. In no case shall Eurofins be liable for consequential damages including, but not limited to, lost profits, damages for failure to meet deadlines and lost production arising from this report. This document shall not be reproduced except in full and relates only to the items tested. Unless indicated otherwise, the tests were performed on the samples as received.



CHAIN OF CUSTODY RECORD

ABN 50 005 085 521

Sydney Laboratory
Unit F3 Bld F, 16 Mars Rd, Lane Cove West, NSW 2066
02 9900 8400 EnviroSampleNSW@eurofins.com

Brisbane Laboratory
Unit 1, 21 Smallwood Pl., Murarrie, QLD 4172
07 3902 4600 EnviroSampleQLD@eurofins.com

Perth Laboratory
Unit 2, 91 Leach Highway, Kewdale WA 6105
08 9251 9600 EnviroSampleWA@eurofins.com

Melbourne Laboratory
2 Kingston Town Close, Oakleigh, VIC 3166
03 8564 5000 EnviroSampleVic@eurofins.com

Company		Ramboll		Project No		318000780		Project Manager		Stephen Maxwell		Sampler(s)		JK + RC			
Address		50 Glebe Road the Junction		Project Name				EDD Format (ESdat, EQUIS)		Excel and PDF		Handed over by		SM			
Contact Name		Stephen Maxwell		<small>(Please: Where metals are requested, please specify "Total" or "Filtered" / SUITE code must be used to attend SUITE pricing)</small> Analyses Lead M13 (Al, As, Ba, Be, Cd, Cr, Co, Cu, Fe, Pb, Mn, Hg, Ni, Zn) total M13 (Al, As, Ba, Be, Cd, Cr, Co, Cu, Fe, Pb, Mn, Hg, Ni, Zn) dissolved										Email for Invoice		smaxwell@ramboll.com asiapac-accounts@ramboll.com	
Phone No														Email for Results		smaxwell@ramboll.com jblackwell@ramboll.com rcondon@ramboll.com shyde@ramboll.com	
Special Directions														Turnaround Time (TAT) Requirements (default will be 5 days if not ticked)		<input type="checkbox"/> Overnight (9am)* <input type="checkbox"/> 1 Day* <input type="checkbox"/> 2 Day* <input type="checkbox"/> 3 Day* <input checked="" type="checkbox"/> 5 Day* <input type="checkbox"/> Other () * Surcharges apply	
Purchase Order														1L Plastic 250mL Plastic 125mL Plastic 200mL Amber Glass 40mL VOA vial 500mL PFAS Bottle Jar (Glass or HDPE) <small>Other (Asbestos AS4654, WA Galvanneal)</small>		Sample Comments / Dangerous Goods Hazard Warning	
Quote ID No		180813RAMN_1															
No	Client Sample ID	Sampled Date/Time (dd/mm/yy hh:mm)	Matrix (Solid (S) Water (W))														
1	P15_HA01_0.0-0.05	30/03/20	S	X													
2	P15_HA01_0.2	30/03/20	S	X													
3	P15_HA02_0.0	30/03/20	S	X													
4	P15_HA02_0.2	30/03/20	S	X													
5	P15_HA03_0.0-0.05	30/03/20	S	X													
6	P15_HA03_0.2	30/03/20	S	X													
7	P15_HA04_0.0	30/03/20	S	X													
8	P15_HA04_0.2	30/03/20	S	X													
9	P15_HA05_0.0	30/03/20	S	X													
10	P15_HA05_0.2	30/03/20	S	X													
Total Counts				10													
Method of Shipment		<input type="checkbox"/> Courier (#) <input type="checkbox"/> Hand Delivered <input type="checkbox"/> Postal		Name		Signature		Date		Date		Time		Time			
Eurofins mgt Laboratory Use Only		Received By <i>Pujan</i> Received By		SYD BNE MEL PER ADL NTL DRW Signature		Signature Signature		Date 01/04/20 Date		Date Date		Time 11:04 AM Time		Temperature 15.8°C Report No 711563			

Submission of samples to the laboratory will be deemed as acceptance of Eurofins | mgt Standard Terms and Conditions unless agreed otherwise. A copy of Eurofins | mgt Standard Terms and Conditions is available on request.

Eurofins Environment Testing Australia Pty Ltd trading as Eurofins | mgt



CHAIN OF CUSTODY RECORD

ABN 50 005 085 521

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Melbourne Laboratory
 2 Kingston Town Close, Oakleigh, VIC 3166
 03 8564 5000 EnviroSampleVic@eurofins.com

Company		Ramboll		Project No		318000780		Project Manager		Stephen Maxwell		Sampler(s)		JB + JAB			
Address		50 Glebe Road the Junction		Project Name				EDD Format (ESdat, EQUIS,		Excel and PDF		Handed over by		SM			
Contact Name		Stephen Maxwell		Analyses <small>(Note: Where metals are requested, please specify "Total" or "Filtered". SUITE code must be used to attract SUITE pricing)</small> Lead M13 (Al, As, Ba, Be, Cd, Cr, Co, Cu, Fe, Pb, Mn, Hg, Ni, Zn) total M13 (Al, As, Ba, Be, Cd, Cr, Co, Cu, Fe, Pb, Mn, Hg, Ni, Zn) dissolved										Email for Invoice		smaxwell@ramboll.com asiapac-accounts@ramboll.com	
Phone No														Email for Results		smaxwell@ramboll.com jblackwell@ramboll.com rcondon@ramboll.com shyde@ramboll.com	
Special Directions														Turnaround Time (TAT) Requirements (Default will be 5 days if not ticked)		<input type="checkbox"/> Overnight (9am)* <input type="checkbox"/> 1 Day* <input type="checkbox"/> 2 Day* <input type="checkbox"/> 3 Day* <input checked="" type="checkbox"/> 5 Day* <input type="checkbox"/> Other () * Surcharges apply	
Purchase Order														Sample Comments / Dangerous Goods Hazard Warning			
Quote ID No		180813RAMN_1															
No	Client Sample ID	Sampled Date/Time (dd/mm/yy hh:mm)	Matrix (Solid (S) Water (W))														
1	P15_TW1	30/03/20	W	X	X												
2	P15_TW2	30/03/20	W	X	X												
3																	
4																	
5																	
6																	
7																	
8																	
9																	
10																	
Total Counts				2	2												
Method of Shipment		<input type="checkbox"/> Courier (#) <input type="checkbox"/> Hand Delivered <input type="checkbox"/> Postal		Name		Signature		Date		Time		Date		Time			
Eurofins mgt Laboratory Use Only		Received By <i>[Signature]</i>		SYD BNE MEL PER ADL NTL DRW		Signature		Date <i>01/04/20</i>		Time		Date		Temperature			
		Received By		SYD BNE MEL PER ADL NTL DRW		Signature		Date		Time		Date		Report No			

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Eurofins Environment Testing Australia Pty Ltd trading as Eurofins | mgt

Melbourne

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NATA # 1261 Site # 18217

Brisbane

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NATA # 1261 Site # 20794

Perth

2/91 Leach Highway
Kewdale WA 6105
Phone : +61 8 9251 9600
NATA # 1261 Site # 23736

Sample Receipt Advice

Company name: **Ramboll Australia Pty Ltd**

Contact name: **Stephen Maxwell**

Project ID: **318000780**

COC number: **Not provided**

Turn around time: **5 Day**

Date/Time received: **Apr 1, 2020 11:04 AM**

Eurofins reference: **711563**

Sample information

- A detailed list of analytes logged into our LIMS, is included in the attached summary table.
- All samples have been received as described on the above COC.
- COC has been completed correctly.
- Attempt to chill was evident.
- Appropriately preserved sample containers have been used.
- All samples were received in good condition.
- Samples have been provided with adequate time to commence analysis in accordance with the relevant holding times.
- Appropriate sample containers have been used.
- Sample containers for volatile analysis received with zero headspace.
- Split sample sent to requested external lab.
- Some samples have been subcontracted.
- N/A Custody Seals intact (if used).

Contact notes

If you have any questions with respect to these samples please contact:

Andrew Black on Phone : (+61) 2 9900 8490 or by e.mail: AndrewBlack@eurofins.com

Results will be delivered electronically via e.mail to Stephen Maxwell - smaxwell@ramboll.com.

Note: A copy of these results will also be delivered to the general Ramboll Australia Pty Ltd email address.

Australia

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IANZ # 1290

ABN – 50 005 085 521

web : www.eurofins.com.au

e.mail : EnviroSales@eurofins.com

Company Name: Ramboll Australia Pty Ltd
Address: Level 3/100 Pacific Highway
North Sydney
NSW 2060

Order No.:
Report #: 711563
Phone: 02 9954 8118
Fax: 02 9954 8150

Received: Apr 1, 2020 11:04 AM
Due: Apr 8, 2020
Priority: 5 Day
Contact Name: Stephen Maxwell

Project Name:
Project ID: 318000780

Eurofins Analytical Services Manager : Andrew Black

Sample Detail						Lead	NEPM 2013 Metals : Metals M13	NEPM 2013 Metals : Metals M13 filtered	Moisture Set
Melbourne Laboratory - NATA Site # 1254 & 14271									
Sydney Laboratory - NATA Site # 18217						X	X	X	X
Brisbane Laboratory - NATA Site # 20794									
Perth Laboratory - NATA Site # 23736									
External Laboratory									
No	Sample ID	Sample Date	Sampling Time	Matrix	LAB ID				
1	P15_HA01_0.0-0.05	Mar 30, 2020		Soil	S20-Ap02850	X			X
2	P15_HA01_0.2	Mar 30, 2020		Soil	S20-Ap02851	X			X
3	P15_HA02_0.0	Mar 30, 2020		Soil	S20-Ap02852	X			X
4	P15_HA02_0.2	Mar 30, 2020		Soil	S20-Ap02853	X			X
5	P15_HA03_0.0-0.05	Mar 30, 2020		Soil	S20-Ap02854	X			X
6	P15_HA03_0.2	Mar 30, 2020		Soil	S20-Ap02855	X			X

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 Rolleston, Christchurch 7675
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Sydney Laboratory - NATA Site # 18217						X	X	X	X
Brisbane Laboratory - NATA Site # 20794									
Perth Laboratory - NATA Site # 23736									
7	P15_HA04_0	Mar 30, 2020		Soil	S20-Ap02856	X			X
8	P15_HA04_2	Mar 30, 2020		Soil	S20-Ap02857	X			X
9	P15_HA05_0	Mar 30, 2020		Soil	S20-Ap02858	X			X
10	P15_HA05_2	Mar 30, 2020		Soil	S20-Ap02859	X			X
11	P15_TW1	Mar 30, 2020		Water	S20-Ap02860		X	X	
12	P15_TW2	Mar 30, 2020		Water	S20-Ap02861		X	X	
Test Counts						10	2	2	10

Ramboll Environ Australia Pty Ltd
 Level 3/100 Pacific Highway
 North Sydney
 NSW 2060



NATA Accredited
 Accreditation Number 1261
 Site Number 18217

Accredited for compliance with ISO/IEC 17025 – Testing
 The results of the tests, calibrations and/or
 measurements included in this document are traceable
 to Australian/national standards.

Attention: Stephen Maxwell

Report 711563-S

Project name

Project ID 318000780

Received Date Apr 01, 2020

Client Sample ID			P15_HA01_0.0-0.05	P15_HA01_0.2	P15_HA02_0.0	P15_HA02_0.2
Sample Matrix			Soil	Soil	Soil	Soil
Eurofins Sample No.			S20-Ap02850	S20-Ap02851	S20-Ap02852	S20-Ap02853
Date Sampled			Mar 30, 2020	Mar 30, 2020	Mar 30, 2020	Mar 30, 2020
Test/Reference	LOR	Unit				
Heavy Metals						
Lead	5	mg/kg	22	19	24	21
% Moisture	1	%	6.7	7.7	8.8	8.9

Client Sample ID			P15_HA03_0.0-0.05	P15_HA03_0.2	P15_HA04_0.0	P15_HA04_0.2
Sample Matrix			Soil	Soil	Soil	Soil
Eurofins Sample No.			S20-Ap02854	S20-Ap02855	S20-Ap02856	S20-Ap02857
Date Sampled			Mar 30, 2020	Mar 30, 2020	Mar 30, 2020	Mar 30, 2020
Test/Reference	LOR	Unit				
Heavy Metals						
Lead	5	mg/kg	15	9.9	27	38
% Moisture	1	%	7.1	8.2	14	8.8

Client Sample ID			P15_HA05_0.0	P15_HA05_0.2
Sample Matrix			Soil	Soil
Eurofins Sample No.			S20-Ap02858	S20-Ap02859
Date Sampled			Mar 30, 2020	Mar 30, 2020
Test/Reference	LOR	Unit		
Heavy Metals				
Lead	5	mg/kg	20	14
% Moisture	1	%	14	11

Sample History

Where samples are submitted/analysed over several days, the last date of extraction and analysis is reported.

A recent review of our LIMS has resulted in the correction or clarification of some method identifications. Due to this, some of the method reference information on reports has changed. However, no substantive change has been made to our laboratory methods, and as such there is no change in the validity of current or previous results.

If the date and time of sampling are not provided, the Laboratory will not be responsible for compromised results should testing be performed outside the recommended holding time.

Description

Heavy Metals

- Method: LTM-MET-3040 Metals in Waters, Soils & Sediments by ICP-MS

% Moisture

- Method: LTM-GEN-7080 Moisture

Testing Site

Sydney

Sydney

Extracted

Apr 06, 2020

Apr 02, 2020

Holding Time

180 Days

14 Days

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Report #: 711563
Phone: 02 9954 8118
Fax: 02 9954 8150

Received: Apr 1, 2020 11:04 AM
Due: Apr 8, 2020
Priority: 5 Day
Contact Name: Stephen Maxwell

Project Name:
Project ID: 318000780

Eurofins Analytical Services Manager : Andrew Black

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Brisbane Laboratory - NATA Site # 20794									
Perth Laboratory - NATA Site # 23736									
External Laboratory									
No	Sample ID	Sample Date	Sampling Time	Matrix	LAB ID				
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2	P15_HA01_0.2	Mar 30, 2020		Soil	S20-Ap02851	X			X
3	P15_HA02_0.0	Mar 30, 2020		Soil	S20-Ap02852	X			X
4	P15_HA02_0.2	Mar 30, 2020		Soil	S20-Ap02853	X			X
5	P15_HA03_0.0-0.05	Mar 30, 2020		Soil	S20-Ap02854	X			X
6	P15_HA03_0.2	Mar 30, 2020		Soil	S20-Ap02855	X			X

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10	P15_HA05_2	Mar 30, 2020		Soil	S20-Ap02859	X			X
11	P15_TW1	Mar 30, 2020		Water	S20-Ap02860		X	X	
12	P15_TW2	Mar 30, 2020		Water	S20-Ap02861		X	X	
Test Counts						10	2	2	10

Internal Quality Control Review and Glossary

General

- Laboratory QC results for Method Blanks, Duplicates, Matrix Spikes, and Laboratory Control Samples follows guidelines delineated in the National Environment Protection (Assessment of Site Contamination) Measure 1999, as amended May 2013 and are included in this QC report where applicable. Additional QC data may be available on request.
- All soil/sediment/solid results are reported on a dry basis, unless otherwise stated.
- All biota/food results are reported on a wet weight basis on the edible portion, unless otherwise stated.
- Actual LORs are matrix dependant. Quoted LORs may be raised where sample extracts are diluted due to interferences.
- Results are uncorrected for matrix spikes or surrogate recoveries except for PFAS compounds.
- SVOC analysis on waters are performed on homogenised, unfiltered samples, unless noted otherwise.
- Samples were analysed on an 'as received' basis.
- Information identified on this report with blue colour, indicates data provided by customer, that may have an impact on the results.
- This report replaces any interim results previously issued.

Holding Times

Please refer to 'Sample Preservation and Container Guide' for holding times (QS3001).

For samples received on the last day of holding time, notification of testing requirements should have been received at least 6 hours prior to sample receipt deadlines as stated on the SRA.

If the Laboratory did not receive the information in the required timeframe, and regardless of any other integrity issues, suitably qualified results may still be reported.

Holding times apply from the date of sampling, therefore compliance to these may be outside the laboratory's control.

For VOCs containing vinyl chloride, styrene and 2-chloroethyl vinyl ether the holding time is 7 days however for all other VOCs such as BTEX or C6-10 TRH then the holding time is 14 days.

****NOTE:** pH duplicates are reported as a range NOT as RPD

Units

mg/kg: milligrams per kilogram

mg/L: milligrams per litre

ug/L: micrograms per litre

ppm: Parts per million

ppb: Parts per billion

%: Percentage

org/100mL: Organisms per 100 millilitres

NTU: Nephelometric Turbidity Units

MPN/100mL: Most Probable Number of organisms per 100 millilitres

Terms

Dry	Where a moisture has been determined on a solid sample the result is expressed on a dry basis.
LOR	Limit of Reporting.
SPIKE	Addition of the analyte to the sample and reported as percentage recovery.
RPD	Relative Percent Difference between two Duplicate pieces of analysis.
LCS	Laboratory Control Sample - reported as percent recovery.
CRM	Certified Reference Material - reported as percent recovery.
Method Blank	In the case of solid samples these are performed on laboratory certified clean sands and in the case of water samples these are performed on de-ionised water.
Surr - Surrogate	The addition of a like compound to the analyte target and reported as percentage recovery.
Duplicate	A second piece of analysis from the same sample and reported in the same units as the result to show comparison.
USEPA	United States Environmental Protection Agency
APHA	American Public Health Association
TCLP	Toxicity Characteristic Leaching Procedure
COC	Chain of Custody
SRA	Sample Receipt Advice
QSM	US Department of Defense Quality Systems Manual Version 5.3
CP	Client Parent - QC was performed on samples pertaining to this report
NCP	Non-Client Parent - QC performed on samples not pertaining to this report, QC is representative of the sequence or batch that client samples were analysed within.
TEQ	Toxic Equivalency Quotient

QC - Acceptance Criteria

RPD Duplicates: Global RPD Duplicates Acceptance Criteria is 30% however the following acceptance guidelines are equally applicable:

Results <10 times the LOR : No Limit

Results between 10-20 times the LOR : RPD must lie between 0-50%

Results >20 times the LOR : RPD must lie between 0-30%

Surrogate Recoveries: Recoveries must lie between 20-130% Phenols & 50-150% PFASs

PFAS field samples that contain surrogate recoveries in excess of the QC limit designated in QSM 5.3 where no positive PFAS results have been reported have been reviewed and no data was affected.

WA DWER (n=10): PFBA, PFPeA, PFHxA, PFHpA, PFOA, PFBS, PFHxS, PFOS, 6:2 FTSA, 8:2 FTSA

QC Data General Comments

- Where a result is reported as a less than (<), higher than the nominated LOR, this is due to either matrix interference, extract dilution required due to interferences or contaminant levels within the sample, high moisture content or insufficient sample provided.
- Duplicate data shown within this report that states the word "BATCH" is a Batch Duplicate from outside of your sample batch, but within the laboratory sample batch at a 1:10 ratio. The Parent and Duplicate data shown is not data from your samples.
- Organochlorine Pesticide analysis - where reporting LCS data, Toxaphene & Chlordane are not added to the LCS.
- Organochlorine Pesticide analysis - where reporting Spike data, Toxaphene is not added to the Spike.
- Total Recoverable Hydrocarbons - where reporting Spike & LCS data, a single spike of commercial Hydrocarbon products in the range of C12-C30 is added and it's Total Recovery is reported in the C10-C14 cell of the Report.
- pH and Free Chlorine analysed in the laboratory - Analysis on this test must begin within 30 minutes of sampling. Therefore laboratory analysis is unlikely to be completed within holding time. Analysis will begin as soon as possible after sample receipt.
- Recovery Data (Spikes & Surrogates) - where chromatographic interference does not allow the determination of Recovery the term "INT" appears against that analyte.
- Polychlorinated Biphenyls are spiked only using Aroclor 1260 in Matrix Spikes and LCS.
- For Matrix Spikes and LCS results a dash " - " in the report means that the specific analyte was not added to the QC sample.
- Duplicate RPDs are calculated from raw analytical data thus it is possible to have two sets of data.

Quality Control Results

Test				Units	Result 1		Acceptance Limits	Pass Limits	Qualifying Code		
Method Blank											
Heavy Metals											
Lead				mg/kg	< 5		5	Pass			
LCS - % Recovery											
Heavy Metals											
Lead				%	95		70-130	Pass			
Test	Lab Sample ID	QA Source	Units	Result 1			Acceptance Limits	Pass Limits	Qualifying Code		
Spike - % Recovery											
Heavy Metals											
Lead				S20-Ap02851	CP	%	105	70-130	Pass		
Test	Lab Sample ID	QA Source	Units	Result 1			Acceptance Limits	Pass Limits	Qualifying Code		
Duplicate											
Heavy Metals											
Lead				S20-Ap02850	CP	mg/kg	22	19	13	30%	Pass
Duplicate											
					Result 1	Result 2	RPD				
% Moisture				S20-Ap02850	CP	%	6.7	7.2	8.0	30%	Pass

Comments**Sample Integrity**

Custody Seals Intact (if used)	N/A
Attempt to Chill was evident	Yes
Sample correctly preserved	Yes
Appropriate sample containers have been used	Yes
Sample containers for volatile analysis received with minimal headspace	Yes
Samples received within HoldingTime	Yes
Some samples have been subcontracted	No

Authorised By

Andrew Black Analytical Services Manager
Gabriele Cordero Senior Analyst-Metal (NSW)

**Glenn Jackson
General Manager**

Final report - this Report replaces any previously issued Report

- Indicates Not Requested

* Indicates NATA accreditation does not cover the performance of this service

Measurement uncertainty of test data is available on request or please [click here](#).

Eurofins shall not be liable for loss, cost, damages or expenses incurred by the client, or any other person or company, resulting from the use of any information or interpretation given in this report. In no case shall Eurofins be liable for consequential damages including, but not limited to, lost profits, damages for failure to meet deadlines and lost production arising from this report. This document shall not be reproduced except in full and relates only to the items tested. Unless indicated otherwise, the tests were performed on the samples as received.

Ramboll Environ Australia Pty Ltd
 Level 3/100 Pacific Highway
 North Sydney
 NSW 2060



NATA Accredited
 Accreditation Number 1261
 Site Number 18217

Accredited for compliance with ISO/IEC 17025 – Testing
 The results of the tests, calibrations and/or
 measurements included in this document are traceable
 to Australian/national standards.

Attention: Stephen Maxwell

Report 711563-W
 Project name
 Project ID 318000780
 Received Date Apr 01, 2020

Client Sample ID			P15_TW1	P15_TW2
Sample Matrix			Water	Water
Eurofins Sample No.			S20-Ap02860	S20-Ap02861
Date Sampled			Mar 30, 2020	Mar 30, 2020
Test/Reference	LOR	Unit		
Heavy Metals				
Aluminium	0.05	mg/L	< 0.05	< 0.05
Aluminium (filtered)	0.05	mg/L	< 0.05	< 0.05
Arsenic	0.001	mg/L	< 0.001	< 0.001
Arsenic (filtered)	0.001	mg/L	< 0.001	< 0.001
Barium	0.02	mg/L	< 0.02	< 0.02
Barium (filtered)	0.02	mg/L	< 0.02	< 0.02
Beryllium	0.001	mg/L	< 0.001	< 0.001
Beryllium (filtered)	0.001	mg/L	< 0.001	< 0.001
Cadmium	0.0002	mg/L	< 0.0002	< 0.0002
Cadmium (filtered)	0.0002	mg/L	< 0.0002	< 0.0002
Chromium	0.001	mg/L	< 0.001	< 0.001
Chromium (filtered)	0.001	mg/L	< 0.001	< 0.001
Cobalt	0.001	mg/L	< 0.001	< 0.001
Cobalt (filtered)	0.001	mg/L	< 0.001	< 0.001
Copper	0.001	mg/L	< 0.001	0.002
Copper (filtered)	0.001	mg/L	< 0.001	0.002
Iron	0.05	mg/L	< 0.05	< 0.05
Iron (filtered)	0.05	mg/L	< 0.05	< 0.05
Lead	0.001	mg/L	< 0.001	< 0.001
Lead (filtered)	0.001	mg/L	< 0.001	< 0.001
Manganese	0.005	mg/L	< 0.005	< 0.005
Manganese (filtered)	0.005	mg/L	< 0.005	< 0.005
Mercury	0.0001	mg/L	< 0.0001	< 0.0001
Mercury (filtered)	0.0001	mg/L	< 0.0001	< 0.0001
Nickel	0.001	mg/L	< 0.001	< 0.001
Nickel (filtered)	0.001	mg/L	< 0.001	< 0.001
Zinc	0.005	mg/L	0.046	0.039
Zinc (filtered)	0.005	mg/L	0.035	0.024

Sample History

Where samples are submitted/analysed over several days, the last date of extraction and analysis is reported. A recent review of our LIMS has resulted in the correction or clarification of some method identifications. Due to this, some of the method reference information on reports has changed. However, no substantive change has been made to our laboratory methods, and as such there is no change in the validity of current or previous results.

If the date and time of sampling are not provided, the Laboratory will not be responsible for compromised results should testing be performed outside the recommended holding time.

Description	Testing Site	Extracted	Holding Time
Heavy Metals - Method: LTM-MET-3040 Metals in Waters, Soils & Sediments by ICP-MS	Sydney	Apr 08, 2020	180 Days
Heavy Metals (filtered) - Method: LTM-MET-3040 Metals in Waters, Soils & Sediments by ICP-MS	Sydney	Apr 08, 2020	180 Days
Mobil Metals : Metals M15 - Method: LTM-MET-3040 Metals in Waters, Soils & Sediments by ICP-MS	Sydney	Apr 02, 2020	28 Days

Australia

Melbourne
6 Monterey Road
Dandenong South VIC 3175
Phone : +61 3 8564 5000
NATA # 1261
Site # 1254 & 14271

Sydney
Unit F3, Building F
16 Mars Road
Lane Cove West NSW 2066
Phone : +61 2 9900 8400
NATA # 1261 Site # 18217

Brisbane
1/21 Smallwood Place
Murarrie QLD 4172
Phone : +61 7 3902 4600
NATA # 1261 Site # 20794

Perth
2/91 Leach Highway
Kewdale WA 6105
Phone : +61 8 9251 9600
NATA # 1261
Site # 23736

New Zealand

Auckland
35 O'Rorke Road
Penrose, Auckland 1061
Phone : +64 9 526 45 51
IANZ # 1327

Christchurch
43 Detroit Drive
Rolleston, Christchurch 7675
Phone : 0800 856 450
IANZ # 1290

Company Name: Ramboll Australia Pty Ltd
Address: Level 3/100 Pacific Highway
North Sydney
NSW 2060

Order No.:
Report #: 711563
Phone: 02 9954 8118
Fax: 02 9954 8150

Received: Apr 1, 2020 11:04 AM
Due: Apr 8, 2020
Priority: 5 Day
Contact Name: Stephen Maxwell

Project Name:
Project ID: 318000780

Eurofins Analytical Services Manager : Andrew Black

Sample Detail						Lead	NEPM 2013 Metals : Metals M13	NEPM 2013 Metals : Metals M13 filtered	Moisture Set
Melbourne Laboratory - NATA Site # 1254 & 14271									
Sydney Laboratory - NATA Site # 18217						X	X	X	X
Brisbane Laboratory - NATA Site # 20794									
Perth Laboratory - NATA Site # 23736									
External Laboratory									
No	Sample ID	Sample Date	Sampling Time	Matrix	LAB ID				
1	P15_HA01_0.0-0.05	Mar 30, 2020		Soil	S20-Ap02850	X			X
2	P15_HA01_0.2	Mar 30, 2020		Soil	S20-Ap02851	X			X
3	P15_HA02_0.0	Mar 30, 2020		Soil	S20-Ap02852	X			X
4	P15_HA02_0.2	Mar 30, 2020		Soil	S20-Ap02853	X			X
5	P15_HA03_0.0-0.05	Mar 30, 2020		Soil	S20-Ap02854	X			X
6	P15_HA03_0.2	Mar 30, 2020		Soil	S20-Ap02855	X			X

Australia

Melbourne
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Site # 1254 & 14271

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Lane Cove West NSW 2066
Phone : +61 2 9900 8400
NATA # 1261 Site # 18217

Brisbane
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Murarrie QLD 4172
Phone : +61 7 3902 4600
NATA # 1261 Site # 20794

Perth
2/91 Leach Highway
Kewdale WA 6105
Phone : +61 8 9251 9600
NATA # 1261
Site # 23736

New Zealand

Auckland
35 O'Rorke Road
Penrose, Auckland 1061
Phone : +64 9 526 45 51
IANZ # 1327

Christchurch
43 Detroit Drive
Rolleston, Christchurch 7675
Phone : 0800 856 450
IANZ # 1290

Company Name: Ramboll Australia Pty Ltd
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Melbourne Laboratory - NATA Site # 1254 & 14271									
Sydney Laboratory - NATA Site # 18217						X	X	X	X
Brisbane Laboratory - NATA Site # 20794									
Perth Laboratory - NATA Site # 23736									
7	P15_HA04_0	Mar 30, 2020		Soil	S20-Ap02856	X			X
8	P15_HA04_2	Mar 30, 2020		Soil	S20-Ap02857	X			X
9	P15_HA05_0	Mar 30, 2020		Soil	S20-Ap02858	X			X
10	P15_HA05_2	Mar 30, 2020		Soil	S20-Ap02859	X			X
11	P15_TW1	Mar 30, 2020		Water	S20-Ap02860		X	X	
12	P15_TW2	Mar 30, 2020		Water	S20-Ap02861		X	X	
Test Counts						10	2	2	10

Internal Quality Control Review and Glossary
General

- Laboratory QC results for Method Blanks, Duplicates, Matrix Spikes, and Laboratory Control Samples follows guidelines delineated in the National Environment Protection (Assessment of Site Contamination) Measure 1999, as amended May 2013 and are included in this QC report where applicable. Additional QC data may be available on request.
- All soil/sediment/solid results are reported on a dry basis, unless otherwise stated.
- All biota/food results are reported on a wet weight basis on the edible portion, unless otherwise stated.
- Actual LORs are matrix dependant. Quoted LORs may be raised where sample extracts are diluted due to interferences.
- Results are uncorrected for matrix spikes or surrogate recoveries except for PFAS compounds.
- SVOC analysis on waters are performed on homogenised, unfiltered samples, unless noted otherwise.
- Samples were analysed on an 'as received' basis.
- Information identified on this report with blue colour, indicates data provided by customer, that may have an impact on the results.
- This report replaces any interim results previously issued.

Holding Times

Please refer to 'Sample Preservation and Container Guide' for holding times (QS3001).

For samples received on the last day of holding time, notification of testing requirements should have been received at least 6 hours prior to sample receipt deadlines as stated on the SRA.

If the Laboratory did not receive the information in the required timeframe, and regardless of any other integrity issues, suitably qualified results may still be reported.

Holding times apply from the date of sampling, therefore compliance to these may be outside the laboratory's control.

For VOCs containing vinyl chloride, styrene and 2-chloroethyl vinyl ether the holding time is 7 days however for all other VOCs such as BTEX or C6-10 TRH then the holding time is 14 days.

****NOTE:** pH duplicates are reported as a range NOT as RPD

Units

mg/kg: milligrams per kilogram

mg/L: milligrams per litre

ug/L: micrograms per litre

ppm: Parts per million

ppb: Parts per billion

%: Percentage

org/100mL: Organisms per 100 millilitres

NTU: Nephelometric Turbidity Units

MPN/100mL: Most Probable Number of organisms per 100 millilitres

Terms

Dry	Where a moisture has been determined on a solid sample the result is expressed on a dry basis.
LOR	Limit of Reporting.
SPIKE	Addition of the analyte to the sample and reported as percentage recovery.
RPD	Relative Percent Difference between two Duplicate pieces of analysis.
LCS	Laboratory Control Sample - reported as percent recovery.
CRM	Certified Reference Material - reported as percent recovery.
Method Blank	In the case of solid samples these are performed on laboratory certified clean sands and in the case of water samples these are performed on de-ionised water.
Surr - Surrogate	The addition of a like compound to the analyte target and reported as percentage recovery.
Duplicate	A second piece of analysis from the same sample and reported in the same units as the result to show comparison.
USEPA	United States Environmental Protection Agency
APHA	American Public Health Association
TCLP	Toxicity Characteristic Leaching Procedure
COC	Chain of Custody
SRA	Sample Receipt Advice
QSM	US Department of Defense Quality Systems Manual Version 5.3
CP	Client Parent - QC was performed on samples pertaining to this report
NCP	Non-Client Parent - QC performed on samples not pertaining to this report, QC is representative of the sequence or batch that client samples were analysed within.
TEQ	Toxic Equivalency Quotient

QC - Acceptance Criteria

RPD Duplicates: Global RPD Duplicates Acceptance Criteria is 30% however the following acceptance guidelines are equally applicable:

Results <10 times the LOR : No Limit

Results between 10-20 times the LOR : RPD must lie between 0-50%

Results >20 times the LOR : RPD must lie between 0-30%

Surrogate Recoveries: Recoveries must lie between 20-130% Phenols & 50-150% PFASs

PFAS field samples that contain surrogate recoveries in excess of the QC limit designated in QSM 5.3 where no positive PFAS results have been reported have been reviewed and no data was affected.

WA DWER (n=10): PFBA, PFPeA, PFHxA, PFHpA, PFOA, PFBS, PFHxS, PFOS, 6:2 FTSA, 8:2 FTSA

QC Data General Comments

- Where a result is reported as a less than (<), higher than the nominated LOR, this is due to either matrix interference, extract dilution required due to interferences or contaminant levels within the sample, high moisture content or insufficient sample provided.
- Duplicate data shown within this report that states the word "BATCH" is a Batch Duplicate from outside of your sample batch, but within the laboratory sample batch at a 1:10 ratio. The Parent and Duplicate data shown is not data from your samples.
- Organochlorine Pesticide analysis - where reporting LCS data, Toxaphene & Chlordane are not added to the LCS.
- Organochlorine Pesticide analysis - where reporting Spike data, Toxaphene is not added to the Spike.
- Total Recoverable Hydrocarbons - where reporting Spike & LCS data, a single spike of commercial Hydrocarbon products in the range of C12-C30 is added and it's Total Recovery is reported in the C10-C14 cell of the Report.
- pH and Free Chlorine analysed in the laboratory - Analysis on this test must begin within 30 minutes of sampling. Therefore laboratory analysis is unlikely to be completed within holding time. Analysis will begin as soon as possible after sample receipt.
- Recovery Data (Spikes & Surrogates) - where chromatographic interference does not allow the determination of Recovery the term "INT" appears against that analyte.
- Polychlorinated Biphenyls are spiked only using Aroclor 1260 in Matrix Spikes and LCS.
- For Matrix Spikes and LCS results a dash " - " in the report means that the specific analyte was not added to the QC sample.
- Duplicate RPDs are calculated from raw analytical data thus it is possible to have two sets of data.

Quality Control Results

Test	Units	Result 1			Acceptance Limits	Pass Limits	Qualifying Code
Method Blank							
Heavy Metals							
Aluminium	mg/L	< 0.05			0.05	Pass	
Aluminium (filtered)	mg/L	< 0.05			0.05	Pass	
Arsenic	mg/L	< 0.001			0.001	Pass	
Arsenic (filtered)	mg/L	< 0.001			0.001	Pass	
Barium	mg/L	< 0.02			0.02	Pass	
Barium (filtered)	mg/L	< 0.02			0.02	Pass	
Beryllium	mg/L	< 0.001			0.001	Pass	
Beryllium (filtered)	mg/L	< 0.001			0.001	Pass	
Cadmium	mg/L	< 0.0002			0.0002	Pass	
Cadmium (filtered)	mg/L	< 0.0002			0.0002	Pass	
Chromium	mg/L	< 0.001			0.001	Pass	
Chromium (filtered)	mg/L	< 0.001			0.001	Pass	
Cobalt	mg/L	< 0.001			0.001	Pass	
Cobalt (filtered)	mg/L	< 0.001			0.001	Pass	
Copper	mg/L	< 0.001			0.001	Pass	
Copper (filtered)	mg/L	< 0.001			0.001	Pass	
Iron	mg/L	< 0.05			0.05	Pass	
Iron (filtered)	mg/L	< 0.05			0.05	Pass	
Lead	mg/L	< 0.001			0.001	Pass	
Lead (filtered)	mg/L	< 0.001			0.001	Pass	
Manganese	mg/L	< 0.005			0.005	Pass	
Manganese (filtered)	mg/L	< 0.005			0.005	Pass	
Mercury	mg/L	< 0.0001			0.0001	Pass	
Mercury (filtered)	mg/L	< 0.0001			0.0001	Pass	
Nickel	mg/L	< 0.001			0.001	Pass	
Nickel (filtered)	mg/L	< 0.001			0.001	Pass	
Zinc	mg/L	< 0.005			0.005	Pass	
Zinc (filtered)	mg/L	< 0.005			0.005	Pass	
LCS - % Recovery							
Heavy Metals							
Aluminium	%	86			70-130	Pass	
Aluminium (filtered)	%	92			70-130	Pass	
Arsenic	%	87			70-130	Pass	
Arsenic (filtered)	%	91			70-130	Pass	
Barium	%	92			70-130	Pass	
Barium (filtered)	%	87			70-130	Pass	
Beryllium	%	92			70-130	Pass	
Beryllium (filtered)	%	94			70-130	Pass	
Cadmium	%	91			70-130	Pass	
Cadmium (filtered)	%	89			70-130	Pass	
Chromium	%	94			70-130	Pass	
Chromium (filtered)	%	93			70-130	Pass	
Cobalt	%	94			70-130	Pass	
Cobalt (filtered)	%	92			70-130	Pass	
Copper	%	94			70-130	Pass	
Copper (filtered)	%	93			70-130	Pass	
Iron	%	95			70-130	Pass	
Iron (filtered)	%	93			70-130	Pass	
Lead	%	93			70-130	Pass	
Lead (filtered)	%	91			70-130	Pass	

Test			Units	Result 1			Acceptance Limits	Pass Limits	Qualifying Code
Manganese			%	90			70-130	Pass	
Manganese (filtered)			%	92			70-130	Pass	
Mercury			%	92			70-130	Pass	
Mercury (filtered)			%	92			70-130	Pass	
Nickel			%	97			70-130	Pass	
Nickel (filtered)			%	94			70-130	Pass	
Zinc			%	96			70-130	Pass	
Zinc (filtered)			%	95			70-130	Pass	
Test	Lab Sample ID	QA Source	Units	Result 1			Acceptance Limits	Pass Limits	Qualifying Code
Spike - % Recovery									
Heavy Metals				Result 1					
Aluminium	S20-Ap09329	NCP	%	89			70-130	Pass	
Aluminium (filtered)	S20-Ap02189	NCP	%	99			70-130	Pass	
Arsenic	S20-Ap09329	NCP	%	90			70-130	Pass	
Arsenic (filtered)	S20-Ap02189	NCP	%	92			70-130	Pass	
Barium	S20-Ap09329	NCP	%	94			70-130	Pass	
Barium (filtered)	S20-Ap02189	NCP	%	83			70-130	Pass	
Beryllium	S20-Ap09329	NCP	%	107			70-130	Pass	
Beryllium (filtered)	S20-Ap02189	NCP	%	93			70-130	Pass	
Cadmium	S20-Ap09329	NCP	%	95			70-130	Pass	
Cadmium (filtered)	S20-Ap02189	NCP	%	92			70-130	Pass	
Chromium	S20-Ap09329	NCP	%	97			70-130	Pass	
Chromium (filtered)	S20-Ap02189	NCP	%	96			70-130	Pass	
Cobalt	S20-Ap09329	NCP	%	99			70-130	Pass	
Cobalt (filtered)	S20-Ap02189	NCP	%	96			70-130	Pass	
Copper	S20-Ap09329	NCP	%	98			70-130	Pass	
Copper (filtered)	S20-Ap02189	NCP	%	97			70-130	Pass	
Iron	S20-Ap09329	NCP	%	100			70-130	Pass	
Iron (filtered)	S20-Ap02189	NCP	%	94			70-130	Pass	
Lead	S20-Ap09329	NCP	%	96			70-130	Pass	
Lead (filtered)	S20-Ap02189	NCP	%	89			70-130	Pass	
Manganese	S20-Ap09329	NCP	%	93			70-130	Pass	
Manganese (filtered)	S20-Ap02189	NCP	%	87			70-130	Pass	
Mercury	S20-Ap09329	NCP	%	93			70-130	Pass	
Mercury (filtered)	S20-Ap02189	NCP	%	85			70-130	Pass	
Nickel	S20-Ap09329	NCP	%	101			70-130	Pass	
Nickel (filtered)	S20-Ap02189	NCP	%	98			70-130	Pass	
Zinc	S20-Ap09329	NCP	%	101			70-130	Pass	
Zinc (filtered)	S20-Ap02189	NCP	%	93			70-130	Pass	
Test	Lab Sample ID	QA Source	Units	Result 1			Acceptance Limits	Pass Limits	Qualifying Code
Duplicate									
Heavy Metals				Result 1	Result 2	RPD			
Aluminium	S20-Ap09328	NCP	mg/L	< 0.05	< 0.05	<1	30%	Pass	
Aluminium (filtered)	S20-Ap10271	NCP	mg/L	< 0.05	< 0.05	<1	30%	Pass	
Arsenic	S20-Ap09328	NCP	mg/L	< 0.001	< 0.001	<1	30%	Pass	
Arsenic (filtered)	S20-Ap10271	NCP	mg/L	< 0.001	< 0.001	<1	30%	Pass	
Barium	S20-Ap09328	NCP	mg/L	< 0.02	< 0.02	<1	30%	Pass	
Barium (filtered)	S20-Ap10271	NCP	mg/L	0.04	0.04	<1	30%	Pass	
Beryllium	S20-Ap09328	NCP	mg/L	< 0.001	< 0.001	<1	30%	Pass	
Beryllium (filtered)	S20-Ap10271	NCP	mg/L	< 0.001	< 0.001	<1	30%	Pass	
Cadmium	S20-Ap09328	NCP	mg/L	< 0.0002	< 0.0002	<1	30%	Pass	
Cadmium (filtered)	S20-Ap10271	NCP	mg/L	< 0.0002	< 0.0002	<1	30%	Pass	
Chromium	S20-Ap09328	NCP	mg/L	< 0.001	< 0.001	<1	30%	Pass	

Test	Lab Sample ID	QA Source	Units	Result 1			Acceptance Limits	Pass Limits	Qualifying Code
Duplicate									
Heavy Metals				Result 1	Result 2	RPD			
Chromium (filtered)	S20-Ap10271	NCP	mg/L	< 0.001	< 0.001	<1	30%	Pass	
Cobalt	S20-Ap09328	NCP	mg/L	< 0.001	< 0.001	<1	30%	Pass	
Cobalt (filtered)	S20-Ap10271	NCP	mg/L	0.006	0.006	3.0	30%	Pass	
Copper	S20-Ap09328	NCP	mg/L	< 0.001	< 0.001	<1	30%	Pass	
Copper (filtered)	S20-Ap10271	NCP	mg/L	< 0.001	< 0.001	<1	30%	Pass	
Iron	S20-Ap09328	NCP	mg/L	< 0.05	< 0.05	<1	30%	Pass	
Iron (filtered)	S20-Ap10271	NCP	mg/L	4.2	4.3	2.0	30%	Pass	
Lead	S20-Ap09328	NCP	mg/L	< 0.001	< 0.001	<1	30%	Pass	
Lead (filtered)	S20-Ap10271	NCP	mg/L	< 0.001	< 0.001	<1	30%	Pass	
Manganese	S20-Ap09328	NCP	mg/L	< 0.005	< 0.005	<1	30%	Pass	
Manganese (filtered)	S20-Ap10271	NCP	mg/L	0.17	0.17	1.0	30%	Pass	
Mercury	S20-Ap09328	NCP	mg/L	< 0.0001	< 0.0001	<1	30%	Pass	
Mercury (filtered)	S20-Ap10271	NCP	mg/L	< 0.0001	< 0.0001	<1	30%	Pass	
Nickel	S20-Ap09328	NCP	mg/L	< 0.001	< 0.001	<1	30%	Pass	
Nickel (filtered)	S20-Ap10271	NCP	mg/L	0.003	0.003	9.0	30%	Pass	
Zinc	S20-Ap09328	NCP	mg/L	< 0.005	< 0.005	<1	30%	Pass	
Zinc (filtered)	S20-Ap10271	NCP	mg/L	0.082	0.086	5.0	30%	Pass	

Comments**Sample Integrity**

Custody Seals Intact (if used)	N/A
Attempt to Chill was evident	Yes
Sample correctly preserved	Yes
Appropriate sample containers have been used	Yes
Sample containers for volatile analysis received with minimal headspace	Yes
Samples received within HoldingTime	Yes
Some samples have been subcontracted	No

Authorised By

Andrew Black Analytical Services Manager
Gabriele Cordero Senior Analyst-Metal (NSW)

**Glenn Jackson
General Manager**

Final report - this Report replaces any previously issued Report

- Indicates Not Requested

* Indicates NATA accreditation does not cover the performance of this service

Measurement uncertainty of test data is available on request or please [click here](#).

Eurofins shall not be liable for loss, cost, damages or expenses incurred by the client, or any other person or company, resulting from the use of any information or interpretation given in this report. In no case shall Eurofins be liable for consequential damages including, but not limited to, lost profits, damages for failure to meet deadlines and lost production arising from this report. This document shall not be reproduced except in full and relates only to the items tested. Unless indicated otherwise, the tests were performed on the samples as received.



CHAIN OF CUSTODY RECORD

ABN 50 005 085 521

Sydney Laboratory

Unit F3 Bld F, 16 Mars Rd, Lane Cove West, NSW 2066
02 9900 8400 EnviroSampleNSW@eurofins.com

Brisbane Laboratory

Unit 1, 21 Smallwood Pl, Murarrie, QLD 4172
07 3902 4600 EnviroSampleQLD@eurofins.com

Perth Laboratory

Unit 2, 91 Leach Highway, Kewdale WA 6105
08 9251 9600 EnviroSampleWA@eurofins.com

Melbourne Laboratory

2 Kingston Town Close, Oakleigh, VIC 3166
03 8564 5000 EnviroSampleVic@eurofins.com

Company		Ramboll		Project No		318000780		Project Manager		Stephen Maxwell		Sampler(s)		JK + RC			
Address		50 Glebe Road the Junction		Project Name				EDD Format (ESdat, EQUIS,		Excel and PDF		Handed over by		SM			
Contact Name		Stephen Maxwell		<small>Analyses</small> <small>(Note: Where available are requested, please specify "Total" or "Filtered". SUITE code must be used to attract SUITE pricing)</small> Lead M13 (Al, As, Ba, Be, Cd, Cr, Co, Cu, Fe, Pb, Mn, Hg, Ni, Zn) total M13 (Al, As, Ba, Be, Cd, Cr, Co, Cu, Fe, Pb, Mn, Hg, Ni, Zn) dissolved								Email for Invoice		smaxwell@ramboll.com asiapac-accounts@ramboll.com			
Phone No														Email for Results		smaxwell@ramboll.com jblackwell@ramboll.com rcondon@ramboll.com shyde@ramboll.com	
Special Directions														jblackwell@ramboll.com Turnaround Time (TAT) Requirements (default will be 5 days if not ticked)		<input type="checkbox"/> Overnight (9am)* <input type="checkbox"/> 1 Day* <input type="checkbox"/> 2 Day* <input type="checkbox"/> 3 Day* <input checked="" type="checkbox"/> 5 Day* * Surcharges apply <input type="checkbox"/> Other ()	
Purchase Order																	
Quote ID No		180813RAMN_1															
No	Client Sample ID	Sampled Date/Time (dd/mm/yy hh:mm)	Matrix (Solid (S) Water (W))												Sample Comments / Dangerous Goods Hazard Warning		
1	P16_HA01_0.0	30/03/20	S	X													
2	P16_HA01_0.2	30/03/20	S	X													
3	P16_HA02_0.0	30/03/20	S	X													
4	P16_HA02_0.2	30/03/20	S	X													
5	P16_HA03_0.0-0.05	30/03/20	S	X													
6	P16_HA03_0.2	30/03/20	S	X													
7	P16_HA04_0.0	30/03/20	S	X													
8	P16_HA04_0.2	30/03/20	S	X													
9	P16_HA05_0.0	30/03/20	S	X													
10	P16_HA05_0.2	30/03/20	S	X													
Total Counts				10													
Method of Shipment		<input type="checkbox"/> Courier (#) <input type="checkbox"/> Hand Delivered <input type="checkbox"/> Postal		Name		Signature		Date		Time		Date		Time			
Eurofins mgt Laboratory Use Only		Received By: <i>Pupau</i> Received By:		SYD BNE MEL PER ADL NTL DRW Signature:		Date: <i>01/04/20</i> Signature:		Date: <i>11:04 AM</i> Signature:		Date: <i>15.8°C</i> Signature:		Date: <i>711567</i> Signature:		Report No:			

Submission of samples to the laboratory will be deemed as acceptance of Eurofins | mgt Standard Terms and Conditions unless agreed otherwise. A copy of Eurofins | mgt Standard Terms and Conditions is available on request.

Melbourne

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Dandenong South Vic 3175
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Site # 1254 & 14271

Sydney

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NATA # 1261 Site # 18217

Brisbane

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NATA # 1261 Site # 20794

Perth

2/91 Leach Highway
Kewdale WA 6105
Phone : +61 8 9251 9600
NATA # 1261 Site # 23736

Sample Receipt Advice

Company name: **Ramboll Australia Pty Ltd**

Contact name: **Stephen Maxwell**

Project ID: **318000780**

COC number: **Not provided**

Turn around time: **5 Day**

Date/Time received: **Apr 1, 2020 11:04 AM**

Eurofins reference: **711567**

Sample information

- A detailed list of analytes logged into our LIMS, is included in the attached summary table.
- All samples have been received as described on the above COC.
- COC has been completed correctly.
- Attempt to chill was evident.
- Appropriately preserved sample containers have been used.
- All samples were received in good condition.
- Samples have been provided with adequate time to commence analysis in accordance with the relevant holding times.
- Appropriate sample containers have been used.
- Split sample sent to requested external lab.
- Some samples have been subcontracted.
- N/A Custody Seals intact (if used).

Contact notes

If you have any questions with respect to these samples please contact:

Andrew Black on Phone : (+61) 2 9900 8490 or by e.mail: AndrewBlack@eurofins.com

Results will be delivered electronically via e.mail to Stephen Maxwell - smaxwell@ramboll.com.

Note: A copy of these results will also be delivered to the general Ramboll Australia Pty Ltd email address.

Australia

Melbourne
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43 Detroit Drive
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Phone : 0800 856 450
IANZ # 1290

Company Name: Ramboll Australia Pty Ltd
Address: Level 3/100 Pacific Highway
North Sydney
NSW 2060

Order No.:
Report #: 711567
Phone: 02 9954 8118
Fax: 02 9954 8150

Received: Apr 1, 2020 11:04 AM
Due: Apr 8, 2020
Priority: 5 Day
Contact Name: Stephen Maxwell

Project Name:
Project ID: 318000780

Eurofins Analytical Services Manager : Andrew Black

Sample Detail						Lead	Moisture Set
Melbourne Laboratory - NATA Site # 1254 & 14271							
Sydney Laboratory - NATA Site # 18217						X	X
Brisbane Laboratory - NATA Site # 20794							
Perth Laboratory - NATA Site # 23736							
External Laboratory							
No	Sample ID	Sample Date	Sampling Time	Matrix	LAB ID		
1	P16_HA01_0.0	Mar 30, 2020		Soil	S20-Ap02873	X	X
2	P16_HA01_0.2	Mar 30, 2020		Soil	S20-Ap02874	X	X
3	P16_HA02_0.0	Mar 30, 2020		Soil	S20-Ap02875	X	X
4	P16_HA02_0.2	Mar 30, 2020		Soil	S20-Ap02876	X	X
5	P16_HA03_0.0-0.05	Mar 30, 2020		Soil	S20-Ap02877	X	X
6	P16_HA03_0.2	Mar 30, 2020		Soil	S20-Ap02878	X	X



Environment Testing

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Christchurch
 43 Detroit Drive
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 IANZ # 1290

ABN – 50 005 085 521

web : www.eurofins.com.au

e.mail : EnviroSales@eurofins.com

Company Name: Ramboll Australia Pty Ltd
Address: Level 3/100 Pacific Highway
 North Sydney
 NSW 2060

Order No.:
Report #: 711567
Phone: 02 9954 8118
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Priority: 5 Day
Contact Name: Stephen Maxwell

Project Name:
Project ID: 318000780

Eurofins Analytical Services Manager : Andrew Black

Sample Detail						Lead	Moisture Set
Melbourne Laboratory - NATA Site # 1254 & 14271							
Sydney Laboratory - NATA Site # 18217						X	X
Brisbane Laboratory - NATA Site # 20794							
Perth Laboratory - NATA Site # 23736							
7	P16_HA04_0_0	Mar 30, 2020		Soil	S20-Ap02879	X	X
8	P16_HA04_0_2	Mar 30, 2020		Soil	S20-Ap02880	X	X
9	P16_HA05_0_0	Mar 30, 2020		Soil	S20-Ap02881	X	X
10	P16_HA05_0_2	Mar 30, 2020		Soil	S20-Ap02882	X	X
Test Counts						10	10

Ramboll Environ Australia Pty Ltd
 Level 3/100 Pacific Highway
 North Sydney
 NSW 2060



NATA Accredited
Accreditation Number 1261
Site Number 18217

Accredited for compliance with ISO/IEC 17025 – Testing
 The results of the tests, calibrations and/or
 measurements included in this document are traceable
 to Australian/national standards.

Attention: **Stephen Maxwell**

Report **711567-S**
 Project name
 Project ID **318000780**
 Received Date **Apr 01, 2020**

Client Sample ID			P16_HA01_0.0	P16_HA01_0.2	P16_HA02_0.0	P16_HA02_0.2
Sample Matrix			Soil	Soil	Soil	Soil
Eurofins Sample No.			S20-Ap02873	S20-Ap02874	S20-Ap02875	S20-Ap02876
Date Sampled			Mar 30, 2020	Mar 30, 2020	Mar 30, 2020	Mar 30, 2020
Test/Reference	LOR	Unit				
Heavy Metals						
Lead	5	mg/kg	14	13	13	13
% Moisture	1	%	14	13	9.5	10

Client Sample ID			P16_HA03_0.0-0.05	P16_HA03_0.2	P16_HA04_0.0	P16_HA04_0.2
Sample Matrix			Soil	Soil	Soil	Soil
Eurofins Sample No.			S20-Ap02877	S20-Ap02878	S20-Ap02879	S20-Ap02880
Date Sampled			Mar 30, 2020	Mar 30, 2020	Mar 30, 2020	Mar 30, 2020
Test/Reference	LOR	Unit				
Heavy Metals						
Lead	5	mg/kg	12	14	11	11
% Moisture	1	%	13	9.6	11	6.5

Client Sample ID			P16_HA05_0.0	P16_HA05_0.2
Sample Matrix			Soil	Soil
Eurofins Sample No.			S20-Ap02881	S20-Ap02882
Date Sampled			Mar 30, 2020	Mar 30, 2020
Test/Reference	LOR	Unit		
Heavy Metals				
Lead	5	mg/kg	11	12
% Moisture	1	%	14	4.6

Sample History

Where samples are submitted/analysed over several days, the last date of extraction and analysis is reported.

A recent review of our LIMS has resulted in the correction or clarification of some method identifications. Due to this, some of the method reference information on reports has changed. However, no substantive change has been made to our laboratory methods, and as such there is no change in the validity of current or previous results.

If the date and time of sampling are not provided, the Laboratory will not be responsible for compromised results should testing be performed outside the recommended holding time.

Description

Heavy Metals

- Method: LTM-MET-3040 Metals in Waters, Soils & Sediments by ICP-MS

% Moisture

- Method: LTM-GEN-7080 Moisture

Testing Site

Sydney

Sydney

Extracted

Apr 06, 2020

Apr 02, 2020

Holding Time

180 Days

14 Days

Australia

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6 Monterey Road
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IANZ # 1290

Company Name: Ramboll Australia Pty Ltd
Address: Level 3/100 Pacific Highway
North Sydney
NSW 2060

Order No.:
Report #: 711567
Phone: 02 9954 8118
Fax: 02 9954 8150

Received: Apr 1, 2020 11:04 AM
Due: Apr 8, 2020
Priority: 5 Day
Contact Name: Stephen Maxwell

Project Name:
Project ID: 318000780

Eurofins Analytical Services Manager : Andrew Black

Sample Detail						Lead	Moisture Set
Melbourne Laboratory - NATA Site # 1254 & 14271							
Sydney Laboratory - NATA Site # 18217						X	X
Brisbane Laboratory - NATA Site # 20794							
Perth Laboratory - NATA Site # 23736							
External Laboratory							
No	Sample ID	Sample Date	Sampling Time	Matrix	LAB ID		
1	P16_HA01_0.0	Mar 30, 2020		Soil	S20-Ap02873	X	X
2	P16_HA01_0.2	Mar 30, 2020		Soil	S20-Ap02874	X	X
3	P16_HA02_0.0	Mar 30, 2020		Soil	S20-Ap02875	X	X
4	P16_HA02_0.2	Mar 30, 2020		Soil	S20-Ap02876	X	X
5	P16_HA03_0.0-0.05	Mar 30, 2020		Soil	S20-Ap02877	X	X
6	P16_HA03_0.2	Mar 30, 2020		Soil	S20-Ap02878	X	X

Australia

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Melbourne Laboratory - NATA Site # 1254 & 14271							
Sydney Laboratory - NATA Site # 18217						X	X
Brisbane Laboratory - NATA Site # 20794							
Perth Laboratory - NATA Site # 23736							
7	P16_HA04_0_0	Mar 30, 2020		Soil	S20-Ap02879	X	X
8	P16_HA04_0_2	Mar 30, 2020		Soil	S20-Ap02880	X	X
9	P16_HA05_0_0	Mar 30, 2020		Soil	S20-Ap02881	X	X
10	P16_HA05_0_2	Mar 30, 2020		Soil	S20-Ap02882	X	X
Test Counts						10	10

Internal Quality Control Review and Glossary
General

- Laboratory QC results for Method Blanks, Duplicates, Matrix Spikes, and Laboratory Control Samples follows guidelines delineated in the National Environment Protection (Assessment of Site Contamination) Measure 1999, as amended May 2013 and are included in this QC report where applicable. Additional QC data may be available on request.
- All soil/sediment/solid results are reported on a dry basis, unless otherwise stated.
- All biota/food results are reported on a wet weight basis on the edible portion, unless otherwise stated.
- Actual LORs are matrix dependant. Quoted LORs may be raised where sample extracts are diluted due to interferences.
- Results are uncorrected for matrix spikes or surrogate recoveries except for PFAS compounds.
- SVOC analysis on waters are performed on homogenised, unfiltered samples, unless noted otherwise.
- Samples were analysed on an 'as received' basis.
- Information identified on this report with blue colour, indicates data provided by customer, that may have an impact on the results.
- This report replaces any interim results previously issued.

Holding Times

Please refer to 'Sample Preservation and Container Guide' for holding times (QS3001).

For samples received on the last day of holding time, notification of testing requirements should have been received at least 6 hours prior to sample receipt deadlines as stated on the SRA.

If the Laboratory did not receive the information in the required timeframe, and regardless of any other integrity issues, suitably qualified results may still be reported.

Holding times apply from the date of sampling, therefore compliance to these may be outside the laboratory's control.

For VOCs containing vinyl chloride, styrene and 2-chloroethyl vinyl ether the holding time is 7 days however for all other VOCs such as BTEX or C6-10 TRH then the holding time is 14 days.

****NOTE:** pH duplicates are reported as a range NOT as RPD

Units

mg/kg: milligrams per kilogram

mg/L: milligrams per litre

ug/L: micrograms per litre

ppm: Parts per million

ppb: Parts per billion

%: Percentage

org/100mL: Organisms per 100 millilitres

NTU: Nephelometric Turbidity Units

MPN/100mL: Most Probable Number of organisms per 100 millilitres

Terms

Dry	Where a moisture has been determined on a solid sample the result is expressed on a dry basis.
LOR	Limit of Reporting.
SPIKE	Addition of the analyte to the sample and reported as percentage recovery.
RPD	Relative Percent Difference between two Duplicate pieces of analysis.
LCS	Laboratory Control Sample - reported as percent recovery.
CRM	Certified Reference Material - reported as percent recovery.
Method Blank	In the case of solid samples these are performed on laboratory certified clean sands and in the case of water samples these are performed on de-ionised water.
Surr - Surrogate	The addition of a like compound to the analyte target and reported as percentage recovery.
Duplicate	A second piece of analysis from the same sample and reported in the same units as the result to show comparison.
USEPA	United States Environmental Protection Agency
APHA	American Public Health Association
TCLP	Toxicity Characteristic Leaching Procedure
COC	Chain of Custody
SRA	Sample Receipt Advice
QSM	US Department of Defense Quality Systems Manual Version 5.3
CP	Client Parent - QC was performed on samples pertaining to this report
NCP	Non-Client Parent - QC performed on samples not pertaining to this report, QC is representative of the sequence or batch that client samples were analysed within.
TEQ	Toxic Equivalency Quotient

QC - Acceptance Criteria

RPD Duplicates: Global RPD Duplicates Acceptance Criteria is 30% however the following acceptance guidelines are equally applicable:

Results <10 times the LOR : No Limit

Results between 10-20 times the LOR : RPD must lie between 0-50%

Results >20 times the LOR : RPD must lie between 0-30%

Surrogate Recoveries: Recoveries must lie between 20-130% Phenols & 50-150% PFASs

PFAS field samples that contain surrogate recoveries in excess of the QC limit designated in QSM 5.3 where no positive PFAS results have been reported have been reviewed and no data was affected.

WA DWER (n=10): PFBA, PFPeA, PFHxA, PFHpA, PFOA, PFBS, PFHxS, PFOS, 6:2 FTSA, 8:2 FTSA

QC Data General Comments

- Where a result is reported as a less than (<), higher than the nominated LOR, this is due to either matrix interference, extract dilution required due to interferences or contaminant levels within the sample, high moisture content or insufficient sample provided.
- Duplicate data shown within this report that states the word "BATCH" is a Batch Duplicate from outside of your sample batch, but within the laboratory sample batch at a 1:10 ratio. The Parent and Duplicate data shown is not data from your samples.
- Organochlorine Pesticide analysis - where reporting LCS data, Toxaphene & Chlordane are not added to the LCS.
- Organochlorine Pesticide analysis - where reporting Spike data, Toxaphene is not added to the Spike.
- Total Recoverable Hydrocarbons - where reporting Spike & LCS data, a single spike of commercial Hydrocarbon products in the range of C12-C30 is added and it's Total Recovery is reported in the C10-C14 cell of the Report.
- pH and Free Chlorine analysed in the laboratory - Analysis on this test must begin within 30 minutes of sampling. Therefore laboratory analysis is unlikely to be completed within holding time. Analysis will begin as soon as possible after sample receipt.
- Recovery Data (Spikes & Surrogates) - where chromatographic interference does not allow the determination of Recovery the term "INT" appears against that analyte.
- Polychlorinated Biphenyls are spiked only using Aroclor 1260 in Matrix Spikes and LCS.
- For Matrix Spikes and LCS results a dash " - " in the report means that the specific analyte was not added to the QC sample.
- Duplicate RPDs are calculated from raw analytical data thus it is possible to have two sets of data.

Quality Control Results

Test				Units	Result 1		Acceptance Limits	Pass Limits	Qualifying Code		
Method Blank											
Heavy Metals											
Lead				mg/kg	< 5		5	Pass			
LCS - % Recovery											
Heavy Metals											
Lead				%	95		70-130	Pass			
Test	Lab Sample ID	QA Source	Units	Result 1			Acceptance Limits	Pass Limits	Qualifying Code		
Spike - % Recovery											
Heavy Metals											
Lead				S20-Ap02851	NCP	%	105	70-130	Pass		
Duplicate											
Heavy Metals											
Lead				S20-Ap02873	CP	mg/kg	14	12	22	30%	Pass
Duplicate											
					Result 1	Result 2	RPD				
% Moisture				S20-Ap02873	CP	%	14	14	1.0	30%	Pass

Comments**Sample Integrity**

Custody Seals Intact (if used)	N/A
Attempt to Chill was evident	Yes
Sample correctly preserved	Yes
Appropriate sample containers have been used	Yes
Sample containers for volatile analysis received with minimal headspace	Yes
Samples received within HoldingTime	Yes
Some samples have been subcontracted	No

Authorised By

Andrew Black Analytical Services Manager
Gabriele Cordero Senior Analyst-Metal (NSW)

**Glenn Jackson
General Manager**

Final report - this Report replaces any previously issued Report

- Indicates Not Requested

* Indicates NATA accreditation does not cover the performance of this service

Measurement uncertainty of test data is available on request or please [click here](#).

Eurofins shall not be liable for loss, cost, damages or expenses incurred by the client, or any other person or company, resulting from the use of any information or interpretation given in this report. In no case shall Eurofins be liable for consequential damages including, but not limited to, lost profits, damages for failure to meet deadlines and lost production arising from this report. This document shall not be reproduced except in full and relates only to the items tested. Unless indicated otherwise, the tests were performed on the samples as received.



CHAIN OF CUSTODY RECORD

ABN 50 005 085 521

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Melbourne Laboratory
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Company		Ramboll		Project No		318000780		Project Manager		Stephen Maxwell		Sampler(s)		JK + RC					
Address		50 Glebe Road the Junction		Project Name		EDD Format (ESdat, EQulS,		Excel and PDF		Handed over by		SM							
Contact Name		Stephen Maxwell		<small>(Note: Where metals are requested, please specify "total" or "filtered" / SUITE code must be used to attach SUITE priority)</small> Analyses Lead M13 (Al, As, Ba, Be, Cd, Cr, Co, Cu, Fe, Pb, Mn, Hg, Ni, Zn) total M13 (Al, As, Ba, Be, Cd, Cr, Co, Cu, Fe, Pb, Mn, Hg, Ni, Zn) dissolved		Email for Invoice		smaxwell@ramboll.com asiapac-accounts@ramboll.com		Email for Results		smaxwell@ramboll.com jblackwell@ramboll.com rcondon@ramboll.com shyde@ramboll.com		Turnaround Time (TAT) Requirements (default will be 5 days if not ticked)					
Phone No						jblackwell@ramboll.com								<input type="checkbox"/> Overnight (9am)* <input type="checkbox"/> 1 Day* <input type="checkbox"/> 2 Day* <input type="checkbox"/> 3 Day* <input checked="" type="checkbox"/> 5 Day* <input type="checkbox"/> Other () * Surcharges apply					
Special Directions						1L Plastic		250mL Plastic		125mL Plastic		200mL Amber Glass		40mL VOA vial		500mL PFAS Bottle		Jar (Glass or HDPE)	
Purchase Order						Other (Asbestos AS4664, WA Guidelines)													
Quote ID No		180813RAMN_1		Matrix (Solid (S) Water (W))										Sample Comments / Dangerous Goods Hazard Warning					
No	Client Sample ID	Sampled Date/Time (dd/mm/yy hh:mm)	Matrix (Solid (S) Water (W))																
1	P17_HA01_0.0-0.05	30/03/20	S	X															
2	P17_HA01_0.2	30/03/20	S	X															
3	P17_HA02_0.0	30/03/20	S	X															
4	P17_HA02_0.2	30/03/20	S	X															
5	P17_HA03_0.0-0.05	30/03/20	S	X															
6	P17_HA03_0.2	30/03/20	S	X															
7	P17_HA04_0.0	30/03/20	S	X															
8	P17_HA04_0.2	30/03/20	S	X															
9	P17_HA05_0.0	30/03/20	S	X															
10	P17_HA05_0.2	30/03/20	S	X															
Total Counts				10															
Method of Shipment		<input type="checkbox"/> Courier (#) <input type="checkbox"/> Hand Delivered <input type="checkbox"/> Postal		Name		Signature		Date		Time		Date		Time		Temperature			
Eurofins mgt Laboratory Use Only		Received By		SYD BNE MEL PER ADL NTL DRW		Signature		Date		Time		Date		Time		Report No			
		<i>Rupam</i>						01/04/20		11:04 AM						15.8C			

Submission of samples to the laboratory will be deemed as acceptance of Eurofins | mgt Standard Terms and Conditions unless agreed otherwise. A copy of Eurofins | mgt Standard Terms and Conditions is available on request.



CHAIN OF CUSTODY RECORD

ABN 50 005 085 521

Sydney Laboratory
Unit F3 Bld.F, 16 Mars Rd, Lane Cove West, NSW 2066
02 9900 8400 EnviroSampleNSW@eurofins.com

Brisbane Laboratory
Unit 1, 21 Smallwood Pl., Murarie, QLD 4172
07 3902 4600 EnviroSampleQLD@eurofins.com

Perth Laboratory
Unit 2, 91 Leach Highway, Kewdale WA 6105
08 9251 9600 EnviroSampleWA@eurofins.com

Melbourne Laboratory
2 Kingston Town Close, Oakleigh, VIC 3166
03 8564 5000 EnviroSampleVic@eurofins.com

Company		Ramboll		Project No		318000780		Project Manager		Stephen Maxwell		Sampler(s)		JB + JAB			
Address		50 Glebe Road the Junction		Project Name				EDD Format (ESdat, EQUIS,		Excel and PDF		Handed over by		SM			
Contact Name		Stephen Maxwell		Analyses <small>(Note: Where metals are requested, please specify "Total" or "Filtered" - SUITE code must be used to attract SUITE pricing)</small> Lead M13 (Al, As, Ba, Be, Cd, Cr, Co, Cu, Fe, Pb, Mn, Hg, Ni, Zn) total M13 (Al, As, Ba, Be, Cd, Cr, Co, Cu, Fe, Pb, Mn, Hg, Ni, Zn) dissolved										Email for Invoice		smaxwell@ramboll.com asiapac-accounts@ramboll.com	
Phone No						Email for Results										smaxwell@ramboll.com jblackwell@ramboll.com rcondon@ramboll.com shyde@ramboll.com	
Special Directions						Turnaround Time (TAT) Requirements <small>(Default will be 5 days if not ticked)</small>										<input type="checkbox"/> Overnight (9am)* <input type="checkbox"/> 1 Day* <input type="checkbox"/> 2 Day* <input type="checkbox"/> 3 Day* <input checked="" type="checkbox"/> 5 Day* <input type="checkbox"/> Other () <small>* Surcharges apply</small>	
Purchase Order						1L Plastic 250mL Plastic 125mL Plastic 200mL Amber Glass 40mL VOA vial 500mL PFAS Bottle Jar (Glass or HDPE) Other (Asbestos AS4654, WA Guidelines)										Sample Comments / Dangerous Goods Hazard Warning	
Quote ID No		180813RAMN_1															
No	Client Sample ID	Sampled Date/Time (dd/mm/yy hh:mm)	Matrix (Solid (S) Water (W))														
1	P17_TW1	30/03/20	W	X	X												
2	P17_TW2	30/03/20	W	X	X												
3	P17_TWS2	30/03/20	sediment	X											Please dry sediment sample prior to analysis		
4																	
5																	
6																	
7																	
8																	
9																	
10																	
Total Counts				1	2	2											
Method of Shipment		<input type="checkbox"/> Courier (#) <input type="checkbox"/> Hand Delivered <input type="checkbox"/> Postal		Name		Signature		Date		Date		Time		Time			
Eurofins mgt Laboratory Use Only		Received By		SYD BNE MEL PER ADL NTL DRW		Signature		Date		Date		Time		Temperature			
		Received By		SYD BNE MEL PER ADL NTL DRW		Signature		Date		Date		Time		Report No			

Submission of samples to the laboratory will be deemed as acceptance of Eurofins | mgt Standard Terms and Conditions unless agreed otherwise. A copy of Eurofins | mgt Standard Terms and Conditions is available on request.

Melbourne

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Dandenong South Vic 3175
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Site # 1254 & 14271

Sydney

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NATA # 1261 Site # 18217

Brisbane

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Phone : +61 7 3902 4600
NATA # 1261 Site # 20794

Perth

2/91 Leach Highway
Kewdale WA 6105
Phone : +61 8 9251 9600
NATA # 1261 Site # 23736

Sample Receipt Advice

Company name: **Ramboll Australia Pty Ltd**

Contact name: **Stephen Maxwell**

Project ID: **318000780**

COC number: **Not provided**

Turn around time: **5 Day**

Date/Time received: **Apr 1, 2020 11:04 AM**

Eurofins reference: **711568**

Sample information

- A detailed list of analytes logged into our LIMS, is included in the attached summary table.
- All samples have been received as described on the above COC.
- COC has been completed correctly.
- Attempt to chill was evident.
- Appropriately preserved sample containers have been used.
- All samples were received in good condition.
- Samples have been provided with adequate time to commence analysis in accordance with the relevant holding times.
- Appropriate sample containers have been used.
- Sample containers for volatile analysis received with zero headspace.
- Split sample sent to requested external lab.
- Some samples have been subcontracted.
- N/A Custody Seals intact (if used).

Contact notes

If you have any questions with respect to these samples please contact:

Andrew Black on Phone : (+61) 2 9900 8490 or by e.mail: AndrewBlack@eurofins.com

Results will be delivered electronically via e.mail to Stephen Maxwell - smaxwell@ramboll.com.

Note: A copy of these results will also be delivered to the general Ramboll Australia Pty Ltd email address.

Australia

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Christchurch
43 Detroit Drive
Rolleston, Christchurch 7675
Phone : 0800 856 450
IANZ # 1290

Company Name: Ramboll Australia Pty Ltd
Address: Level 3/100 Pacific Highway
North Sydney
NSW 2060

Order No.:
Report #: 711568
Phone: 02 9954 8118
Fax: 02 9954 8150

Received: Apr 1, 2020 11:04 AM
Due: Apr 8, 2020
Priority: 5 Day
Contact Name: Stephen Maxwell

Project Name:
Project ID: 318000780

Eurofins Analytical Services Manager : Andrew Black

Sample Detail						Lead	NEPM 2013 Metals : Metals M13	NEPM 2013 Metals : Metals M13 filtered	Moisture Set
Melbourne Laboratory - NATA Site # 1254 & 14271									
Sydney Laboratory - NATA Site # 18217						X	X	X	X
Brisbane Laboratory - NATA Site # 20794									
Perth Laboratory - NATA Site # 23736									
External Laboratory									
No	Sample ID	Sample Date	Sampling Time	Matrix	LAB ID				
1	P17_HA01_0.0-0.05	Mar 30, 2020		Soil	S20-Ap02883	X			X
2	P17_HA01_0.2	Mar 30, 2020		Soil	S20-Ap02884	X			X
3	P17_HA02_0.0	Mar 30, 2020		Soil	S20-Ap02885	X			X
4	P17_HA02_0.2	Mar 30, 2020		Soil	S20-Ap02886	X			X
5	P17_HA03_0.0-0.05	Mar 30, 2020		Soil	S20-Ap02887	X			X
6	P17_HA03_0.2	Mar 30, 2020		Soil	S20-Ap02888	X			X

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Melbourne Laboratory - NATA Site # 1254 & 14271									
Sydney Laboratory - NATA Site # 18217						X	X	X	X
Brisbane Laboratory - NATA Site # 20794									
Perth Laboratory - NATA Site # 23736									
7	P17_HA04_0	Mar 30, 2020		Soil	S20-Ap02889	X			X
8	P17_HA04_2	Mar 30, 2020		Soil	S20-Ap02890	X			X
9	P17_HA05_0	Mar 30, 2020		Soil	S20-Ap02891	X			X
10	P17_HA05_2	Mar 30, 2020		Soil	S20-Ap02892	X			X
11	P17_TW1	Mar 30, 2020		Water	S20-Ap02893		X	X	
12	P17_TW2	Mar 30, 2020		Water	S20-Ap02894		X	X	
13	P17_TWS2	Mar 30, 2020		Sediment	S20-Ap02895	X			X
Test Counts						11	2	2	11

Ramboll Environ Australia Pty Ltd
 Level 3/100 Pacific Highway
 North Sydney
 NSW 2060



NATA Accredited
 Accreditation Number 1261
 Site Number 18217

Accredited for compliance with ISO/IEC 17025 – Testing
 The results of the tests, calibrations and/or
 measurements included in this document are traceable
 to Australian/national standards.

Attention: Stephen Maxwell

Report 711568-S
 Project name
 Project ID 318000780
 Received Date Apr 01, 2020

Client Sample ID			P17_HA01_0.0-0.05	P17_HA01_0.2	P17_HA02_0.0	P17_HA02_0.2
Sample Matrix			Soil	Soil	Soil	Soil
Eurofins Sample No.			S20-Ap02883	S20-Ap02884	S20-Ap02885	S20-Ap02886
Date Sampled			Mar 30, 2020	Mar 30, 2020	Mar 30, 2020	Mar 30, 2020
Test/Reference	LOR	Unit				
Heavy Metals						
Lead	5	mg/kg	16	19	150	15
% Moisture						
	1	%	13	9.1	13	11

Client Sample ID			P17_HA03_0.0-0.05	P17_HA03_0.2	P17_HA04_0.0	P17_HA04_0.2
Sample Matrix			Soil	Soil	Soil	Soil
Eurofins Sample No.			S20-Ap02887	S20-Ap02888	S20-Ap02889	S20-Ap02890
Date Sampled			Mar 30, 2020	Mar 30, 2020	Mar 30, 2020	Mar 30, 2020
Test/Reference	LOR	Unit				
Heavy Metals						
Lead	5	mg/kg	25	28	9.8	16
% Moisture						
	1	%	11	12	10	12

Client Sample ID			P17_HA05_0.0	P17_HA05_0.2	P17_TWS2
Sample Matrix			Soil	Soil	Sediment
Eurofins Sample No.			S20-Ap02891	S20-Ap02892	S20-Ap02895
Date Sampled			Mar 30, 2020	Mar 30, 2020	Mar 30, 2020
Test/Reference	LOR	Unit			
Heavy Metals					
Lead	5	mg/kg	97	14	87
% Moisture					
	1	%	14	11	70

Sample History

Where samples are submitted/analysed over several days, the last date of extraction and analysis is reported.

A recent review of our LIMS has resulted in the correction or clarification of some method identifications. Due to this, some of the method reference information on reports has changed. However, no substantive change has been made to our laboratory methods, and as such there is no change in the validity of current or previous results.

If the date and time of sampling are not provided, the Laboratory will not be responsible for compromised results should testing be performed outside the recommended holding time.

Description

Heavy Metals

- Method: LTM-MET-3040 Metals in Waters, Soils & Sediments by ICP-MS

% Moisture

- Method: LTM-GEN-7080 Moisture

Testing Site

Sydney

Sydney

Extracted

Apr 06, 2020

Apr 02, 2020

Holding Time

180 Days

14 Days

Australia

Melbourne
6 Monterey Road
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Site # 1254 & 14271

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IANZ # 1290

Company Name: Ramboll Australia Pty Ltd
Address: Level 3/100 Pacific Highway
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NSW 2060

Order No.:
Report #: 711568
Phone: 02 9954 8118
Fax: 02 9954 8150

Received: Apr 1, 2020 11:04 AM
Due: Apr 8, 2020
Priority: 5 Day
Contact Name: Stephen Maxwell

Project Name:
Project ID: 318000780

Eurofins Analytical Services Manager : Andrew Black

Sample Detail						Lead	NEPM 2013 Metals : Metals M13	NEPM 2013 Metals : Metals M13 filtered	Moisture Set
Melbourne Laboratory - NATA Site # 1254 & 14271									
Sydney Laboratory - NATA Site # 18217						X	X	X	X
Brisbane Laboratory - NATA Site # 20794									
Perth Laboratory - NATA Site # 23736									
External Laboratory									
No	Sample ID	Sample Date	Sampling Time	Matrix	LAB ID				
1	P17_HA01_0.0-0.05	Mar 30, 2020		Soil	S20-Ap02883	X			X
2	P17_HA01_0.2	Mar 30, 2020		Soil	S20-Ap02884	X			X
3	P17_HA02_0.0	Mar 30, 2020		Soil	S20-Ap02885	X			X
4	P17_HA02_0.2	Mar 30, 2020		Soil	S20-Ap02886	X			X
5	P17_HA03_0.0-0.05	Mar 30, 2020		Soil	S20-Ap02887	X			X
6	P17_HA03_0.2	Mar 30, 2020		Soil	S20-Ap02888	X			X

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IANZ # 1290

ABN – 50 005 085 521

web : www.eurofins.com.au

e.mail : EnviroSales@eurofins.com

Company Name: Ramboll Australia Pty Ltd
Address: Level 3/100 Pacific Highway
North Sydney
NSW 2060

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Melbourne Laboratory - NATA Site # 1254 & 14271									
Sydney Laboratory - NATA Site # 18217						X	X	X	X
Brisbane Laboratory - NATA Site # 20794									
Perth Laboratory - NATA Site # 23736									
7	P17_HA04_0	Mar 30, 2020		Soil	S20-Ap02889	X			X
8	P17_HA04_2	Mar 30, 2020		Soil	S20-Ap02890	X			X
9	P17_HA05_0	Mar 30, 2020		Soil	S20-Ap02891	X			X
10	P17_HA05_2	Mar 30, 2020		Soil	S20-Ap02892	X			X
11	P17_TW1	Mar 30, 2020		Water	S20-Ap02893		X	X	
12	P17_TW2	Mar 30, 2020		Water	S20-Ap02894		X	X	
13	P17_TWS2	Mar 30, 2020		Sediment	S20-Ap02895	X			X
Test Counts						11	2	2	11

Internal Quality Control Review and Glossary
General

- Laboratory QC results for Method Blanks, Duplicates, Matrix Spikes, and Laboratory Control Samples follows guidelines delineated in the National Environment Protection (Assessment of Site Contamination) Measure 1999, as amended May 2013 and are included in this QC report where applicable. Additional QC data may be available on request.
- All soil/sediment/solid results are reported on a dry basis, unless otherwise stated.
- All biota/food results are reported on a wet weight basis on the edible portion, unless otherwise stated.
- Actual LORs are matrix dependant. Quoted LORs may be raised where sample extracts are diluted due to interferences.
- Results are uncorrected for matrix spikes or surrogate recoveries except for PFAS compounds.
- SVOC analysis on waters are performed on homogenised, unfiltered samples, unless noted otherwise.
- Samples were analysed on an 'as received' basis.
- Information identified on this report with blue colour, indicates data provided by customer, that may have an impact on the results.
- This report replaces any interim results previously issued.

Holding Times

Please refer to 'Sample Preservation and Container Guide' for holding times (QS3001).

For samples received on the last day of holding time, notification of testing requirements should have been received at least 6 hours prior to sample receipt deadlines as stated on the SRA.

If the Laboratory did not receive the information in the required timeframe, and regardless of any other integrity issues, suitably qualified results may still be reported.

Holding times apply from the date of sampling, therefore compliance to these may be outside the laboratory's control.

For VOCs containing vinyl chloride, styrene and 2-chloroethyl vinyl ether the holding time is 7 days however for all other VOCs such as BTEX or C6-10 TRH then the holding time is 14 days.

****NOTE:** pH duplicates are reported as a range NOT as RPD

Units

mg/kg: milligrams per kilogram

mg/L: milligrams per litre

ug/L: micrograms per litre

ppm: Parts per million

ppb: Parts per billion

%: Percentage

org/100mL: Organisms per 100 millilitres

NTU: Nephelometric Turbidity Units

MPN/100mL: Most Probable Number of organisms per 100 millilitres

Terms

Dry	Where a moisture has been determined on a solid sample the result is expressed on a dry basis.
LOR	Limit of Reporting.
SPIKE	Addition of the analyte to the sample and reported as percentage recovery.
RPD	Relative Percent Difference between two Duplicate pieces of analysis.
LCS	Laboratory Control Sample - reported as percent recovery.
CRM	Certified Reference Material - reported as percent recovery.
Method Blank	In the case of solid samples these are performed on laboratory certified clean sands and in the case of water samples these are performed on de-ionised water.
Surr - Surrogate	The addition of a like compound to the analyte target and reported as percentage recovery.
Duplicate	A second piece of analysis from the same sample and reported in the same units as the result to show comparison.
USEPA	United States Environmental Protection Agency
APHA	American Public Health Association
TCLP	Toxicity Characteristic Leaching Procedure
COC	Chain of Custody
SRA	Sample Receipt Advice
QSM	US Department of Defense Quality Systems Manual Version 5.3
CP	Client Parent - QC was performed on samples pertaining to this report
NCP	Non-Client Parent - QC performed on samples not pertaining to this report, QC is representative of the sequence or batch that client samples were analysed within.
TEQ	Toxic Equivalency Quotient

QC - Acceptance Criteria

RPD Duplicates: Global RPD Duplicates Acceptance Criteria is 30% however the following acceptance guidelines are equally applicable:

Results <10 times the LOR : No Limit

Results between 10-20 times the LOR : RPD must lie between 0-50%

Results >20 times the LOR : RPD must lie between 0-30%

Surrogate Recoveries: Recoveries must lie between 20-130% Phenols & 50-150% PFASs

PFAS field samples that contain surrogate recoveries in excess of the QC limit designated in QSM 5.3 where no positive PFAS results have been reported have been reviewed and no data was affected.

WA DWER (n=10): PFBA, PFPeA, PFHxA, PFHpA, PFOA, PFBS, PFHxS, PFOS, 6:2 FTSA, 8:2 FTSA

QC Data General Comments

- Where a result is reported as a less than (<), higher than the nominated LOR, this is due to either matrix interference, extract dilution required due to interferences or contaminant levels within the sample, high moisture content or insufficient sample provided.
- Duplicate data shown within this report that states the word "BATCH" is a Batch Duplicate from outside of your sample batch, but within the laboratory sample batch at a 1:10 ratio. The Parent and Duplicate data shown is not data from your samples.
- Organochlorine Pesticide analysis - where reporting LCS data, Toxaphene & Chlordane are not added to the LCS.
- Organochlorine Pesticide analysis - where reporting Spike data, Toxaphene is not added to the Spike.
- Total Recoverable Hydrocarbons - where reporting Spike & LCS data, a single spike of commercial Hydrocarbon products in the range of C12-C30 is added and it's Total Recovery is reported in the C10-C14 cell of the Report.
- pH and Free Chlorine analysed in the laboratory - Analysis on this test must begin within 30 minutes of sampling. Therefore laboratory analysis is unlikely to be completed within holding time. Analysis will begin as soon as possible after sample receipt.
- Recovery Data (Spikes & Surrogates) - where chromatographic interference does not allow the determination of Recovery the term "INT" appears against that analyte.
- Polychlorinated Biphenyls are spiked only using Aroclor 1260 in Matrix Spikes and LCS.
- For Matrix Spikes and LCS results a dash " - " in the report means that the specific analyte was not added to the QC sample.
- Duplicate RPDs are calculated from raw analytical data thus it is possible to have two sets of data.

Quality Control Results

Test				Units	Result 1		Acceptance Limits	Pass Limits	Qualifying Code		
Method Blank											
Heavy Metals											
Lead				mg/kg	< 5		5	Pass			
LCS - % Recovery											
Heavy Metals											
Lead				%	96		70-130	Pass			
Test	Lab Sample ID	QA Source	Units	Result 1			Acceptance Limits	Pass Limits	Qualifying Code		
Spike - % Recovery											
Heavy Metals											
Lead				S20-Ap02884	CP	%	108	70-130	Pass		
Test	Lab Sample ID	QA Source	Units	Result 1			Acceptance Limits	Pass Limits	Qualifying Code		
Duplicate											
Heavy Metals											
Lead				S20-Ap02883	CP	mg/kg	16	16	4.0	30%	Pass
Duplicate											
Heavy Metals											
% Moisture				S20-Ap02883	CP	%	13	13	3.0	30%	Pass
Duplicate											
Heavy Metals											
Lead				S20-Ap02895	CP	mg/kg	87	80	8.0	30%	Pass
Duplicate											
Heavy Metals											
% Moisture				S20-Ap02895	CP	%	70	68	3.0	30%	Pass

Comments**Sample Integrity**

Custody Seals Intact (if used)	N/A
Attempt to Chill was evident	Yes
Sample correctly preserved	Yes
Appropriate sample containers have been used	Yes
Sample containers for volatile analysis received with minimal headspace	Yes
Samples received within HoldingTime	Yes
Some samples have been subcontracted	No

Authorised By

Andrew Black Analytical Services Manager
Gabriele Cordero Senior Analyst-Metal (NSW)

**Glenn Jackson
General Manager**

Final report - this Report replaces any previously issued Report

- Indicates Not Requested

* Indicates NATA accreditation does not cover the performance of this service

Measurement uncertainty of test data is available on request or please [click here](#).

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Ramboll Environ Australia Pty Ltd
 Level 3/100 Pacific Highway
 North Sydney
 NSW 2060



NATA Accredited
 Accreditation Number 1261
 Site Number 18217

Accredited for compliance with ISO/IEC 17025 – Testing
 The results of the tests, calibrations and/or
 measurements included in this document are traceable
 to Australian/national standards.

Attention: Stephen Maxwell

Report 711568-W-V2

Project name

Project ID 318000780

Received Date Apr 01, 2020

Client Sample ID			P17_TW1	P17_TW2	P17_TWS2
Sample Matrix			Water	Water	Water
Eurofins Sample No.			S20-Ap02893	S20-Ap02894	S20-Ap02895
Date Sampled			Mar 30, 2020	Mar 30, 2020	Mar 30, 2020
Test/Reference	LOR	Unit			
Heavy Metals					
Aluminium	0.05	mg/L	< 0.05	< 0.05	-
Aluminium (filtered)	0.05	mg/L	< 0.05	< 0.05	-
Arsenic	0.001	mg/L	< 0.001	< 0.001	-
Arsenic (filtered)	0.001	mg/L	< 0.001	< 0.001	-
Barium	0.02	mg/L	< 0.02	< 0.02	-
Barium (filtered)	0.02	mg/L	< 0.02	< 0.02	-
Beryllium	0.001	mg/L	< 0.001	< 0.001	-
Beryllium (filtered)	0.001	mg/L	< 0.001	< 0.001	-
Cadmium	0.0002	mg/L	< 0.0002	< 0.0002	-
Cadmium (filtered)	0.0002	mg/L	< 0.0002	< 0.0002	-
Chromium	0.001	mg/L	0.001	< 0.001	-
Chromium (filtered)	0.001	mg/L	< 0.001	< 0.001	-
Cobalt	0.001	mg/L	< 0.001	< 0.001	-
Cobalt (filtered)	0.001	mg/L	< 0.001	< 0.001	-
Copper	0.001	mg/L	0.029	0.004	-
Copper (filtered)	0.001	mg/L	0.028	0.003	-
Iron	0.05	mg/L	< 0.05	< 0.05	-
Iron (filtered)	0.05	mg/L	< 0.05	< 0.05	-
Lead	0.001	mg/L	< 0.001	< 0.001	8.0
Lead (filtered)	0.001	mg/L	< 0.001	< 0.001	-
Manganese	0.005	mg/L	0.036	0.016	-
Manganese (filtered)	0.005	mg/L	0.032	0.015	-
Mercury	0.0001	mg/L	< 0.0001	< 0.0001	-
Mercury (filtered)	0.0001	mg/L	< 0.0001	< 0.0001	-
Nickel	0.001	mg/L	< 0.001	< 0.001	-
Nickel (filtered)	0.001	mg/L	< 0.001	< 0.001	-
Zinc	0.005	mg/L	0.099	0.045	-
Zinc (filtered)	0.005	mg/L	0.086	0.034	-

Sample History

Where samples are submitted/analysed over several days, the last date of extraction and analysis is reported. A recent review of our LIMS has resulted in the correction or clarification of some method identifications. Due to this, some of the method reference information on reports has changed. However, no substantive change has been made to our laboratory methods, and as such there is no change in the validity of current or previous results.

If the date and time of sampling are not provided, the Laboratory will not be responsible for compromised results should testing be performed outside the recommended holding time.

Description	Testing Site	Extracted	Holding Time
Heavy Metals - Method: LTM-MET-3040 Metals in Waters, Soils & Sediments by ICP-MS	Sydney	Apr 08, 2020	180 Days
Heavy Metals (filtered) - Method: LTM-MET-3040 Metals in Waters, Soils & Sediments by ICP-MS	Sydney	Apr 08, 2020	180 Days
Mobil Metals : Metals M15 - Method: LTM-MET-3040 Metals in Waters, Soils & Sediments by ICP-MS	Sydney	Apr 02, 2020	28 Days

Australia

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6 Monterey Road
Dandenong South VIC 3175
Phone : +61 3 8564 5000
NATA # 1261
Site # 1254 & 14271

Sydney
Unit F3, Building F
16 Mars Road
Lane Cove West NSW 2066
Phone : +61 2 9900 8400
NATA # 1261 Site # 18217

Brisbane
1/21 Smallwood Place
Murarrie QLD 4172
Phone : +61 7 3902 4600
NATA # 1261 Site # 20794

Perth
2/91 Leach Highway
Kewdale WA 6105
Phone : +61 8 9251 9600
NATA # 1261
Site # 23736

New Zealand

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35 O'Rorke Road
Penrose, Auckland 1061
Phone : +64 9 526 45 51
IANZ # 1327

Christchurch
43 Detroit Drive
Rolleston, Christchurch 7675
Phone : 0800 856 450
IANZ # 1290

Company Name:	Ramboll Australia Pty Ltd	Order No.:		Received:	Apr 1, 2020 11:04 AM
Address:	Level 3/100 Pacific Highway North Sydney NSW 2060	Report #:	711568	Due:	Apr 8, 2020
Project Name:		Phone:	02 9954 8118	Priority:	5 Day
Project ID:	318000780	Fax:	02 9954 8150	Contact Name:	Stephen Maxwell

Eurofins Analytical Services Manager : Andrew Black

Sample Detail						Lead	NEPM 2013 Metals : Metals M13	NEPM 2013 Metals : Metals M13 filtered	Moisture Set
Melbourne Laboratory - NATA Site # 1254 & 14271									
Sydney Laboratory - NATA Site # 18217						X	X	X	X
Brisbane Laboratory - NATA Site # 20794									
Perth Laboratory - NATA Site # 23736									
External Laboratory									
No	Sample ID	Sample Date	Sampling Time	Matrix	LAB ID				
1	P17_HA01_0.0-0.05	Mar 30, 2020		Soil	S20-Ap02883	X			X
2	P17_HA01_0.2	Mar 30, 2020		Soil	S20-Ap02884	X			X
3	P17_HA02_0.0	Mar 30, 2020		Soil	S20-Ap02885	X			X
4	P17_HA02_0.2	Mar 30, 2020		Soil	S20-Ap02886	X			X
5	P17_HA03_0.0-0.05	Mar 30, 2020		Soil	S20-Ap02887	X			X
6	P17_HA03_0.2	Mar 30, 2020		Soil	S20-Ap02888	X			X

Australia

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Lane Cove West NSW 2066
Phone : +61 2 9900 8400
NATA # 1261 Site # 18217

Brisbane
1/21 Smallwood Place
Murarrie QLD 4172
Phone : +61 7 3902 4600
NATA # 1261 Site # 20794

Perth
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NATA # 1261
Site # 23736

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Rolleston, Christchurch 7675
Phone : 0800 856 450
IANZ # 1290

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web : www.eurofins.com.au

e.mail : EnviroSales@eurofins.com

Company Name: Ramboll Australia Pty Ltd
Address: Level 3/100 Pacific Highway
North Sydney
NSW 2060

Order No.:
Report #: 711568
Phone: 02 9954 8118
Fax: 02 9954 8150

Received: Apr 1, 2020 11:04 AM
Due: Apr 8, 2020
Priority: 5 Day
Contact Name: Stephen Maxwell

Project Name:
Project ID: 318000780

Eurofins Analytical Services Manager : Andrew Black

Sample Detail						Lead	NEPM 2013 Metals : Metals M13	NEPM 2013 Metals : Metals M13 filtered	Moisture Set
Melbourne Laboratory - NATA Site # 1254 & 14271									
Sydney Laboratory - NATA Site # 18217						X	X	X	X
Brisbane Laboratory - NATA Site # 20794									
Perth Laboratory - NATA Site # 23736									
7	P17_HA04_0	Mar 30, 2020		Soil	S20-Ap02889	X			X
8	P17_HA04_2	Mar 30, 2020		Soil	S20-Ap02890	X			X
9	P17_HA05_0	Mar 30, 2020		Soil	S20-Ap02891	X			X
10	P17_HA05_2	Mar 30, 2020		Soil	S20-Ap02892	X			X
11	P17_TW1	Mar 30, 2020		Water	S20-Ap02893		X	X	
12	P17_TW2	Mar 30, 2020		Water	S20-Ap02894		X	X	
13	P17_TWS2	Mar 30, 2020		Sediment	S20-Ap02895	X			X
Test Counts						11	2	2	11

Internal Quality Control Review and Glossary
General

- Laboratory QC results for Method Blanks, Duplicates, Matrix Spikes, and Laboratory Control Samples follows guidelines delineated in the National Environment Protection (Assessment of Site Contamination) Measure 1999, as amended May 2013 and are included in this QC report where applicable. Additional QC data may be available on request.
- All soil/sediment/solid results are reported on a dry basis, unless otherwise stated.
- All biota/food results are reported on a wet weight basis on the edible portion, unless otherwise stated.
- Actual LORs are matrix dependant. Quoted LORs may be raised where sample extracts are diluted due to interferences.
- Results are uncorrected for matrix spikes or surrogate recoveries except for PFAS compounds.
- SVOC analysis on waters are performed on homogenised, unfiltered samples, unless noted otherwise.
- Samples were analysed on an 'as received' basis.
- Information identified on this report with blue colour, indicates data provided by customer, that may have an impact on the results.
- This report replaces any interim results previously issued.

Holding Times

Please refer to 'Sample Preservation and Container Guide' for holding times (QS3001).

For samples received on the last day of holding time, notification of testing requirements should have been received at least 6 hours prior to sample receipt deadlines as stated on the SRA.

If the Laboratory did not receive the information in the required timeframe, and regardless of any other integrity issues, suitably qualified results may still be reported.

Holding times apply from the date of sampling, therefore compliance to these may be outside the laboratory's control.

For VOCs containing vinyl chloride, styrene and 2-chloroethyl vinyl ether the holding time is 7 days however for all other VOCs such as BTEX or C6-10 TRH then the holding time is 14 days.

****NOTE:** pH duplicates are reported as a range NOT as RPD

Units

mg/kg: milligrams per kilogram

mg/L: milligrams per litre

ug/L: micrograms per litre

ppm: Parts per million

ppb: Parts per billion

%: Percentage

org/100mL: Organisms per 100 millilitres

NTU: Nephelometric Turbidity Units

MPN/100mL: Most Probable Number of organisms per 100 millilitres

Terms

Dry	Where a moisture has been determined on a solid sample the result is expressed on a dry basis.
LOR	Limit of Reporting.
SPIKE	Addition of the analyte to the sample and reported as percentage recovery.
RPD	Relative Percent Difference between two Duplicate pieces of analysis.
LCS	Laboratory Control Sample - reported as percent recovery.
CRM	Certified Reference Material - reported as percent recovery.
Method Blank	In the case of solid samples these are performed on laboratory certified clean sands and in the case of water samples these are performed on de-ionised water.
Surr - Surrogate	The addition of a like compound to the analyte target and reported as percentage recovery.
Duplicate	A second piece of analysis from the same sample and reported in the same units as the result to show comparison.
USEPA	United States Environmental Protection Agency
APHA	American Public Health Association
TCLP	Toxicity Characteristic Leaching Procedure
COC	Chain of Custody
SRA	Sample Receipt Advice
QSM	US Department of Defense Quality Systems Manual Version 5.3
CP	Client Parent - QC was performed on samples pertaining to this report
NCP	Non-Client Parent - QC performed on samples not pertaining to this report, QC is representative of the sequence or batch that client samples were analysed within.
TEQ	Toxic Equivalency Quotient

QC - Acceptance Criteria

RPD Duplicates: Global RPD Duplicates Acceptance Criteria is 30% however the following acceptance guidelines are equally applicable:

Results <10 times the LOR : No Limit

Results between 10-20 times the LOR : RPD must lie between 0-50%

Results >20 times the LOR : RPD must lie between 0-30%

Surrogate Recoveries: Recoveries must lie between 20-130% Phenols & 50-150% PFASs

PFAS field samples that contain surrogate recoveries in excess of the QC limit designated in QSM 5.3 where no positive PFAS results have been reported have been reviewed and no data was affected.

WA DWER (n=10): PFBA, PFPeA, PFHxA, PFHpA, PFOA, PFBS, PFHxS, PFOS, 6:2 FTSA, 8:2 FTSA

QC Data General Comments

- Where a result is reported as a less than (<), higher than the nominated LOR, this is due to either matrix interference, extract dilution required due to interferences or contaminant levels within the sample, high moisture content or insufficient sample provided.
- Duplicate data shown within this report that states the word "BATCH" is a Batch Duplicate from outside of your sample batch, but within the laboratory sample batch at a 1:10 ratio. The Parent and Duplicate data shown is not data from your samples.
- Organochlorine Pesticide analysis - where reporting LCS data, Toxaphene & Chlordane are not added to the LCS.
- Organochlorine Pesticide analysis - where reporting Spike data, Toxaphene is not added to the Spike.
- Total Recoverable Hydrocarbons - where reporting Spike & LCS data, a single spike of commercial Hydrocarbon products in the range of C12-C30 is added and it's Total Recovery is reported in the C10-C14 cell of the Report.
- pH and Free Chlorine analysed in the laboratory - Analysis on this test must begin within 30 minutes of sampling. Therefore laboratory analysis is unlikely to be completed within holding time. Analysis will begin as soon as possible after sample receipt.
- Recovery Data (Spikes & Surrogates) - where chromatographic interference does not allow the determination of Recovery the term "INT" appears against that analyte.
- Polychlorinated Biphenyls are spiked only using Aroclor 1260 in Matrix Spikes and LCS.
- For Matrix Spikes and LCS results a dash " - " in the report means that the specific analyte was not added to the QC sample.
- Duplicate RPDs are calculated from raw analytical data thus it is possible to have two sets of data.

Quality Control Results

Test	Units	Result 1			Acceptance Limits	Pass Limits	Qualifying Code
Method Blank							
Heavy Metals							
Aluminium	mg/L	< 0.05			0.05	Pass	
Aluminium (filtered)	mg/L	< 0.05			0.05	Pass	
Arsenic	mg/L	< 0.001			0.001	Pass	
Arsenic (filtered)	mg/L	< 0.001			0.001	Pass	
Barium	mg/L	< 0.02			0.02	Pass	
Barium (filtered)	mg/L	< 0.02			0.02	Pass	
Beryllium	mg/L	< 0.001			0.001	Pass	
Beryllium (filtered)	mg/L	< 0.001			0.001	Pass	
Cadmium	mg/L	< 0.0002			0.0002	Pass	
Cadmium (filtered)	mg/L	< 0.0002			0.0002	Pass	
Chromium	mg/L	< 0.001			0.001	Pass	
Chromium (filtered)	mg/L	< 0.001			0.001	Pass	
Cobalt	mg/L	< 0.001			0.001	Pass	
Cobalt (filtered)	mg/L	< 0.001			0.001	Pass	
Copper	mg/L	< 0.001			0.001	Pass	
Copper (filtered)	mg/L	< 0.001			0.001	Pass	
Iron	mg/L	< 0.05			0.05	Pass	
Iron (filtered)	mg/L	< 0.05			0.05	Pass	
Lead	mg/L	< 0.001			0.001	Pass	
Lead (filtered)	mg/L	< 0.001			0.001	Pass	
Manganese	mg/L	< 0.005			0.005	Pass	
Manganese (filtered)	mg/L	< 0.005			0.005	Pass	
Mercury	mg/L	< 0.0001			0.0001	Pass	
Mercury (filtered)	mg/L	< 0.0001			0.0001	Pass	
Nickel	mg/L	< 0.001			0.001	Pass	
Nickel (filtered)	mg/L	< 0.001			0.001	Pass	
Zinc	mg/L	< 0.005			0.005	Pass	
Zinc (filtered)	mg/L	< 0.005			0.005	Pass	
LCS - % Recovery							
Heavy Metals							
Aluminium	%	89			70-130	Pass	
Aluminium (filtered)	%	92			70-130	Pass	
Arsenic	%	91			70-130	Pass	
Arsenic (filtered)	%	91			70-130	Pass	
Barium	%	90			70-130	Pass	
Barium (filtered)	%	87			70-130	Pass	
Beryllium	%	92			70-130	Pass	
Beryllium (filtered)	%	94			70-130	Pass	
Cadmium	%	86			70-130	Pass	
Cadmium (filtered)	%	89			70-130	Pass	
Chromium	%	90			70-130	Pass	
Chromium (filtered)	%	93			70-130	Pass	
Cobalt	%	90			70-130	Pass	
Cobalt (filtered)	%	92			70-130	Pass	
Copper	%	88			70-130	Pass	
Copper (filtered)	%	93			70-130	Pass	
Iron	%	91			70-130	Pass	
Iron (filtered)	%	93			70-130	Pass	
Lead	%	88			70-130	Pass	
Lead (filtered)	%	91			70-130	Pass	

Test			Units	Result 1			Acceptance Limits	Pass Limits	Qualifying Code
Manganese			%	89			70-130	Pass	
Manganese (filtered)			%	92			70-130	Pass	
Mercury			%	103			70-130	Pass	
Mercury (filtered)			%	92			70-130	Pass	
Nickel			%	90			70-130	Pass	
Nickel (filtered)			%	94			70-130	Pass	
Zinc			%	87			70-130	Pass	
Zinc (filtered)			%	95			70-130	Pass	
Test	Lab Sample ID	QA Source	Units	Result 1			Acceptance Limits	Pass Limits	Qualifying Code
Spike - % Recovery									
Heavy Metals				Result 1					
Aluminium	S20-Ap01271	NCP	%	98			70-130	Pass	
Aluminium (filtered)	S20-Ap02189	NCP	%	99			70-130	Pass	
Arsenic	S20-Ap01271	NCP	%	93			70-130	Pass	
Arsenic (filtered)	S20-Ap02189	NCP	%	92			70-130	Pass	
Barium	S20-Ap01271	NCP	%	96			70-130	Pass	
Barium (filtered)	S20-Ap02189	NCP	%	83			70-130	Pass	
Beryllium	S20-Ap01271	NCP	%	98			70-130	Pass	
Beryllium (filtered)	S20-Ap02189	NCP	%	93			70-130	Pass	
Cadmium	S20-Ap01271	NCP	%	93			70-130	Pass	
Cadmium (filtered)	S20-Ap02189	NCP	%	92			70-130	Pass	
Chromium	S20-Ap01271	NCP	%	102			70-130	Pass	
Chromium (filtered)	S20-Ap02189	NCP	%	96			70-130	Pass	
Cobalt	S20-Ap01271	NCP	%	102			70-130	Pass	
Cobalt (filtered)	S20-Ap02189	NCP	%	96			70-130	Pass	
Copper	S20-Ap01271	NCP	%	101			70-130	Pass	
Copper (filtered)	S20-Ap02189	NCP	%	97			70-130	Pass	
Iron	S20-Ap01271	NCP	%	94			70-130	Pass	
Iron (filtered)	S20-Ap02189	NCP	%	94			70-130	Pass	
Lead	S20-Ap01271	NCP	%	94			70-130	Pass	
Lead (filtered)	S20-Ap02189	NCP	%	89			70-130	Pass	
Manganese	S20-Ap01271	NCP	%	98			70-130	Pass	
Manganese (filtered)	S20-Ap02189	NCP	%	87			70-130	Pass	
Mercury	S20-Ap01271	NCP	%	109			70-130	Pass	
Mercury (filtered)	S20-Ap02189	NCP	%	85			70-130	Pass	
Nickel	S20-Ap01271	NCP	%	101			70-130	Pass	
Nickel (filtered)	S20-Ap02189	NCP	%	98			70-130	Pass	
Zinc	S20-Ap01271	NCP	%	98			70-130	Pass	
Zinc (filtered)	S20-Ap02189	NCP	%	93			70-130	Pass	
Test	Lab Sample ID	QA Source	Units	Result 1			Acceptance Limits	Pass Limits	Qualifying Code
Duplicate									
Heavy Metals				Result 1	Result 2	RPD			
Aluminium	S20-Ap02893	CP	mg/L	< 0.05	< 0.05	<1	30%	Pass	
Aluminium (filtered)	S20-Ap10271	NCP	mg/L	< 0.05	< 0.05	<1	30%	Pass	
Arsenic	S20-Ap02893	CP	mg/L	< 0.001	< 0.001	<1	30%	Pass	
Arsenic (filtered)	S20-Ap10271	NCP	mg/L	< 0.001	< 0.001	<1	30%	Pass	
Barium	S20-Ap02893	CP	mg/L	< 0.02	< 0.02	<1	30%	Pass	
Barium (filtered)	S20-Ap10271	NCP	mg/L	0.04	0.04	<1	30%	Pass	
Beryllium	S20-Ap02893	CP	mg/L	< 0.001	< 0.001	<1	30%	Pass	
Beryllium (filtered)	S20-Ap10271	NCP	mg/L	< 0.001	< 0.001	<1	30%	Pass	
Cadmium	S20-Ap02893	CP	mg/L	< 0.0002	< 0.0002	<1	30%	Pass	
Cadmium (filtered)	S20-Ap10271	NCP	mg/L	< 0.0002	< 0.0002	<1	30%	Pass	
Chromium	S20-Ap02893	CP	mg/L	0.001	< 0.001	48	30%	Fail	Q15

Test	Lab Sample ID	QA Source	Units	Result 1			Acceptance Limits	Pass Limits	Qualifying Code
Duplicate									
Heavy Metals				Result 1	Result 2	RPD			
Chromium (filtered)	S20-Ap10271	NCP	mg/L	< 0.001	< 0.001	<1	30%	Pass	
Cobalt	S20-Ap02893	CP	mg/L	< 0.001	< 0.001	<1	30%	Pass	
Cobalt (filtered)	S20-Ap10271	NCP	mg/L	0.006	0.006	3.0	30%	Pass	
Copper	S20-Ap02893	CP	mg/L	0.029	0.028	3.0	30%	Pass	
Copper (filtered)	S20-Ap10271	NCP	mg/L	< 0.001	< 0.001	<1	30%	Pass	
Iron	S20-Ap02893	CP	mg/L	< 0.05	< 0.05	<1	30%	Pass	
Iron (filtered)	S20-Ap10271	NCP	mg/L	4.2	4.3	2.0	30%	Pass	
Lead	S20-Ap02893	CP	mg/L	< 0.001	< 0.001	<1	30%	Pass	
Lead (filtered)	S20-Ap10271	NCP	mg/L	< 0.001	< 0.001	<1	30%	Pass	
Manganese	S20-Ap02893	CP	mg/L	0.036	0.033	8.0	30%	Pass	
Manganese (filtered)	S20-Ap10271	NCP	mg/L	0.17	0.17	1.0	30%	Pass	
Mercury	S20-Ap02893	CP	mg/L	< 0.0001	< 0.0001	<1	30%	Pass	
Mercury (filtered)	S20-Ap10271	NCP	mg/L	< 0.0001	< 0.0001	<1	30%	Pass	
Nickel	S20-Ap02893	CP	mg/L	< 0.001	< 0.001	<1	30%	Pass	
Nickel (filtered)	S20-Ap10271	NCP	mg/L	0.003	0.003	9.0	30%	Pass	
Zinc	S20-Ap02893	CP	mg/L	0.099	0.088	12	30%	Pass	
Zinc (filtered)	S20-Ap10271	NCP	mg/L	0.082	0.086	5.0	30%	Pass	
Duplicate									
Heavy Metals				Result 1	Result 2	RPD			
Arsenic	S20-Ap02895	CP	mg/L	7.3	7.0	4.0	30%	Pass	
Barium	S20-Ap02895	CP	mg/L	58	57	2.0	30%	Pass	
Cadmium	S20-Ap02895	CP	mg/L	< 0.4	< 0.4	<1	30%	Pass	
Chromium	S20-Ap02895	CP	mg/L	36	33	8.0	30%	Pass	
Cobalt	S20-Ap02895	CP	mg/L	< 5	< 5	<1	30%	Pass	
Copper	S20-Ap02895	CP	mg/L	140	130	10	30%	Pass	
Manganese	S20-Ap02895	CP	mg/L	130	120	10	30%	Pass	
Mercury	S20-Ap02895	CP	mg/L	0.3	0.3	5.0	30%	Pass	
Nickel	S20-Ap02895	CP	mg/L	13	12	7.0	30%	Pass	

Comments

New version to amend matrix to water on the last sample

Sample Integrity

Custody Seals Intact (if used)	N/A
Attempt to Chill was evident	Yes
Sample correctly preserved	Yes
Appropriate sample containers have been used	Yes
Sample containers for volatile analysis received with minimal headspace	Yes
Samples received within HoldingTime	Yes
Some samples have been subcontracted	No

Qualifier Codes/Comments

Code	Description
Q15	The RPD reported passes Eurofins Environment Testing's QC - Acceptance Criteria as defined in the Internal Quality Control Review and Glossary page of this report.

Authorised By

Andrew Black Analytical Services Manager
Gabriele Cordero Senior Analyst-Metal (NSW)

**Glenn Jackson
General Manager**

Final report - this Report replaces any previously issued Report

- Indicates Not Requested

* Indicates NATA accreditation does not cover the performance of this service

Measurement uncertainty of test data is available on request or please [click here](#).

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CHAIN OF CUSTODY RECORD

Bryden Laboratory
Unit F3 Bldg F, 15 Mars Rd, Lane Cove West, NSW 2096
02 9900 9400
EnviroSampleNSW@eurofins.com

Brisbane Laboratory
Unit 1, 21 Smithwood Pl, Maroon, QLD 4172
07 3902 4600
EnviroSampleQLD@eurofins.com

Perth Laboratory
Unit 2, 91 Leach Highway, Kewdale, WA 6105
08 9251 9900
EnviroSampleWA@eurofins.com

Melbourne Laboratory
2 Kingdon Town Close, Oakleigh, VIC 3166
03 8564 5000
EnviroSampleVIC@eurofins.com

ABN 50 005 956 921

Company: **Ramboll** Project Name: **P17** Project Manager: **Stephen Maxwell** EDD Form#: (Est'd, EQUIS, Custom) Sampler(s): **T.J. JB** Handled over by: **Jordyn Kirsch**

Address: **50 Globe Road the Junction** Project Name: **P17** Email for Invoice: **smaxwell@ramboll.com**

Contact Name: **Stephen Maxwell** Email for Results: **smaxwell@ramboll.com**
asia@pac-accounts@ramboll.com
blackwell@ramboll.com

Phone No: **0478 658 194** Turnaround Time (TAT): **Overnight (9am)***
Requirements (identical will be 5 days if not ticked)

Special Directions: **Analyses**
(Note: Where multiple are requested, please specify "Total" or "Filtered" SUITE code must be used to attract SUITE pricing)

Purchase Order: **180813RAMAN_1** Total Lead (mg/kg) **2** Total Sample Mass **2** Total Lead (µg/L) **5**

No	Client Sample ID	Sampled Date/Time (dd/mm/yy hh:mm)	Matrix (Solid (S) Water (W))	Total Lead (mg/kg)	Total Sample Mass	Total Lead (µg/L)
1	DVAC_MBRP17	30/03/20	S	X	X	
2	DVAC_LRIP17	30/03/20	S	X	X	
3	DSWAB_BEIP17	30/03/20	S		X	
4	DSWAB_ACIP17	30/03/20	S		X	
5	DSWAB_WINIP17	30/03/20	S		X	
6	DSWAB_FEIP17	30/03/20	S		X	
7	DSWAB_MHIP17	30/03/20	S		X	
8						
9						
10						

Method of Shipment: Courier (#) Hand Delivered Postal

Received By: *[Signature]* Date: **4/6/2020** Time: **2:00 PM**

Received By: *[Signature]* Date: **4/6/2020** Time: **2:00 PM**

Signature: *[Signature]* Date: **4/6/2020** Time: **2:00 PM**

Signature: *[Signature]* Date: **4/6/2020** Time: **2:00 PM**

Method of Shipment: Courier (#) Hand Delivered Postal

Received By: *[Signature]* Date: **4/6/2020** Time: **2:00 PM**

Received By: *[Signature]* Date: **4/6/2020** Time: **2:00 PM**

Signature: *[Signature]* Date: **4/6/2020** Time: **2:00 PM**

Signature: *[Signature]* Date: **4/6/2020** Time: **2:00 PM**

Submission of samples to the laboratory will be deemed as acceptance of Eurofins | mgt Standard Terms and Conditions unless agreed otherwise. A copy of Eurofins | mgt Standard Terms and Conditions is available on request.

Eurofins Environment Testing Australia Pty Ltd trading as Eurofins | mgt

Melbourne

6 Monterey Road
Dandenong South Vic 3175
Phone : +61 3 8564 5000
NATA # 1261
Site # 1254 & 14271

Sydney

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NATA # 1261 Site # 18217

Brisbane

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Phone : +61 7 3902 4600
NATA # 1261 Site # 20794

Perth

2/91 Leach Highway
Kewdale WA 6105
Phone : +61 8 9251 9600
NATA # 1261 Site # 23736

Sample Receipt Advice

Company name: **Ramboll Australia Pty Ltd**
Contact name: Stephen Maxwell
Project name: P17
Project ID: 318000780
COC number: Not provided
Turn around time: 5 Day
Date/Time received: May 1, 2020 12:00 PM
Eurofins reference: **716932**

Sample information

- A detailed list of analytes logged into our LIMS, is included in the attached summary table.
- All samples have been received as described on the above COC.
- COC has been completed correctly.
- N/A Attempt to chill was evident.
- Appropriately preserved sample containers have been used.
- All samples were received in good condition.
- Samples have been provided with adequate time to commence analysis in accordance with the relevant holding times.
- Appropriate sample containers have been used.
- Split sample sent to requested external lab.
- Some samples have been subcontracted.
- N/A Custody Seals intact (if used).

Contact notes

If you have any questions with respect to these samples please contact:

Andrew Black on Phone : (+61) 2 9900 8490 or by e.mail: AndrewBlack@eurofins.com

Results will be delivered electronically via e.mail to Stephen Maxwell - smaxwell@ramboll.com.

Note: A copy of these results will also be delivered to the general Ramboll Australia Pty Ltd email address.

Australia

Melbourne
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Penrose, Auckland 1061
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IANZ # 1327

Christchurch
43 Detroit Drive
Rolleston, Christchurch 7675
Phone : 0800 856 450
IANZ # 1290

Company Name: Ramboll Australia Pty Ltd
Address: Level 3/100 Pacific Highway
North Sydney
NSW 2060

Project Name: P17
Project ID: 318000780

Order No.:
Report #: 716932
Phone: 02 9954 8118
Fax: 02 9954 8150

Received: May 1, 2020 12:00 PM
Due: May 8, 2020
Priority: 5 Day
Contact Name: Stephen Maxwell

Eurofins Analytical Services Manager : Andrew Black

Sample Detail						Lead	Mass of sample*
Melbourne Laboratory - NATA Site # 1254 & 14271							
Sydney Laboratory - NATA Site # 18217						X	X
Brisbane Laboratory - NATA Site # 20794							
Perth Laboratory - NATA Site # 23736							
External Laboratory							
No	Sample ID	Sample Date	Sampling Time	Matrix	LAB ID		
1	DVAC_MBR(P17)	Mar 30, 2020		Dust	S20-My00953	X	X
2	DVAC_LR(P17)	Mar 30, 2020		Dust	S20-My00954	X	X
3	DSWAB_BE(P17)	Mar 30, 2020		Wipes	S20-My00955	X	
4	DSWAB_AC(P17)	Mar 30, 2020		Wipes	S20-My00956	X	
5	DSWAB_WIN(P17)	Mar 30, 2020		Wipes	S20-My00957	X	
6	DSWAB_FE(P17)	Mar 30, 2020		Wipes	S20-My00958	X	

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ABN – 50 005 085 521

web : www.eurofins.com.au

e.mail : EnviroSales@eurofins.com

Company Name: Ramboll Australia Pty Ltd
Address: Level 3/100 Pacific Highway
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 NSW 2060

Project Name: P17
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Sydney Laboratory - NATA Site # 18217						X	X
Brisbane Laboratory - NATA Site # 20794							
Perth Laboratory - NATA Site # 23736							
7	DSWAB_MH(P17)	Mar 30, 2020		Wipes	S20-My00959	X	
Test Counts						7	2

Ramboll Environ Australia Pty Ltd
 Level 3/100 Pacific Highway
 North Sydney
 NSW 2060



NATA Accredited
Accreditation Number 1261
Site Number 18217

Accredited for compliance with ISO/IEC 17025 – Testing
 The results of the tests, calibrations and/or
 measurements included in this document are traceable
 to Australian/national standards.

Attention: **Stephen Maxwell**

Report **716932-A**
 Project name **P17**
 Project ID **318000780**
 Received Date **May 01, 2020**

Client Sample ID			DSWAB_BE(P17)	DSWAB_AC(P17)	DSWAB_WIN(P17)	DSWAB_FE(P17)
Sample Matrix			Wipes	Wipes	Wipes	Wipes
Eurofins Sample No.			S20-My00955	S20-My00956	S20-My00957	S20-My00958
Date Sampled			Mar 30, 2020	Mar 30, 2020	Mar 30, 2020	Mar 30, 2020
Test/Reference	LOR	Unit				
Heavy Metals						
Lead	1	Total ug	1.6	39	6.0	1.0

Client Sample ID			DSWAB_MH(P17)
Sample Matrix			Wipes
Eurofins Sample No.			S20-My00959
Date Sampled			Mar 30, 2020
Test/Reference	LOR	Unit	
Heavy Metals			
Lead	1	Total ug	12

Sample History

Where samples are submitted/analysed over several days, the last date of extraction and analysis is reported.

A recent review of our LIMS has resulted in the correction or clarification of some method identifications. Due to this, some of the method reference information on reports has changed. However, no substantive change has been made to our laboratory methods, and as such there is no change in the validity of current or previous results.

If the date and time of sampling are not provided, the Laboratory will not be responsible for compromised results should testing be performed outside the recommended holding time.

Description

Heavy Metals

Testing Site

Sydney

Extracted

May 07, 2020

Holding Time

180 Days

- Method: LTM-MET-3040 Metals in Waters, Soils & Sediments by ICP-MS

Australia

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Company Name: Ramboll Australia Pty Ltd
Address: Level 3/100 Pacific Highway
North Sydney
NSW 2060

Project Name: P17
Project ID: 318000780

Order No.:
Report #: 716932
Phone: 02 9954 8118
Fax: 02 9954 8150

Received: May 1, 2020 12:00 PM
Due: May 8, 2020
Priority: 5 Day
Contact Name: Stephen Maxwell

Eurofins Analytical Services Manager : Andrew Black

Sample Detail						Lead	Mass of sample*
Melbourne Laboratory - NATA Site # 1254 & 14271							
Sydney Laboratory - NATA Site # 18217						X	X
Brisbane Laboratory - NATA Site # 20794							
Perth Laboratory - NATA Site # 23736							
External Laboratory							
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Melbourne Laboratory - NATA Site # 1254 & 14271							
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Brisbane Laboratory - NATA Site # 20794							
Perth Laboratory - NATA Site # 23736							
7	DSWAB_MH(P17)	Mar 30, 2020		Wipes	S20-My00959	X	
Test Counts						7	2

Internal Quality Control Review and Glossary
General

- Laboratory QC results for Method Blanks, Duplicates, Matrix Spikes, and Laboratory Control Samples follows guidelines delineated in the National Environment Protection (Assessment of Site Contamination) Measure 1999, as amended May 2013 and are included in this QC report where applicable. Additional QC data may be available on request.
- All soil/sediment/solid results are reported on a dry basis, unless otherwise stated.
- All biota/food results are reported on a wet weight basis on the edible portion, unless otherwise stated.
- Actual LORs are matrix dependant. Quoted LORs may be raised where sample extracts are diluted due to interferences.
- Results are uncorrected for matrix spikes or surrogate recoveries except for PFAS compounds.
- SVOC analysis on waters are performed on homogenised, unfiltered samples, unless noted otherwise.
- Samples were analysed on an 'as received' basis.
- Information identified on this report with blue colour, indicates data provided by customer, that may have an impact on the results.
- This report replaces any interim results previously issued.

Holding Times

Please refer to 'Sample Preservation and Container Guide' for holding times (QS3001).

For samples received on the last day of holding time, notification of testing requirements should have been received at least 6 hours prior to sample receipt deadlines as stated on the SRA.

If the Laboratory did not receive the information in the required timeframe, and regardless of any other integrity issues, suitably qualified results may still be reported.

Holding times apply from the date of sampling, therefore compliance to these may be outside the laboratory's control.

For VOCs containing vinyl chloride, styrene and 2-chloroethyl vinyl ether the holding time is 7 days however for all other VOCs such as BTEX or C6-10 TRH then the holding time is 14 days.

****NOTE:** pH duplicates are reported as a range NOT as RPD

Units

mg/kg: milligrams per kilogram	mg/L: milligrams per litre	ug/L: micrograms per litre
ppm: Parts per million	ppb: Parts per billion	%: Percentage
org/100mL: Organisms per 100 millilitres	NTU: Nephelometric Turbidity Units	MPN/100mL: Most Probable Number of organisms per 100 millilitres

Terms

Dry	Where a moisture has been determined on a solid sample the result is expressed on a dry basis.
LOR	Limit of Reporting.
SPIKE	Addition of the analyte to the sample and reported as percentage recovery.
RPD	Relative Percent Difference between two Duplicate pieces of analysis.
LCS	Laboratory Control Sample - reported as percent recovery.
CRM	Certified Reference Material - reported as percent recovery.
Method Blank	In the case of solid samples these are performed on laboratory certified clean sands and in the case of water samples these are performed on de-ionised water.
Surr - Surrogate	The addition of a like compound to the analyte target and reported as percentage recovery.
Duplicate	A second piece of analysis from the same sample and reported in the same units as the result to show comparison.
USEPA	United States Environmental Protection Agency
APHA	American Public Health Association
TCLP	Toxicity Characteristic Leaching Procedure
COC	Chain of Custody
SRA	Sample Receipt Advice
QSM	US Department of Defense Quality Systems Manual Version 5.3
CP	Client Parent - QC was performed on samples pertaining to this report
NCP	Non-Client Parent - QC performed on samples not pertaining to this report, QC is representative of the sequence or batch that client samples were analysed within.
TEQ	Toxic Equivalency Quotient

QC - Acceptance Criteria

RPD Duplicates: Global RPD Duplicates Acceptance Criteria is 30% however the following acceptance guidelines are equally applicable:

Results <10 times the LOR : No Limit

Results between 10-20 times the LOR : RPD must lie between 0-50%

Results >20 times the LOR : RPD must lie between 0-30%

Surrogate Recoveries: Recoveries must lie between 20-130% Phenols & 50-150% PFASs

PFAS field samples that contain surrogate recoveries in excess of the QC limit designated in QSM 5.3 where no positive PFAS results have been reported have been reviewed and no data was affected.

WA DWER (n=10): PFBA, PFPeA, PFHxA, PFHpA, PFOA, PFBS, PFHxS, PFOS, 6:2 FTSA, 8:2 FTSA

QC Data General Comments

- Where a result is reported as a less than (<), higher than the nominated LOR, this is due to either matrix interference, extract dilution required due to interferences or contaminant levels within the sample, high moisture content or insufficient sample provided.
- Duplicate data shown within this report that states the word "BATCH" is a Batch Duplicate from outside of your sample batch, but within the laboratory sample batch at a 1:10 ratio. The Parent and Duplicate data shown is not data from your samples.
- Organochlorine Pesticide analysis - where reporting LCS data, Toxaphene & Chlordane are not added to the LCS.
- Organochlorine Pesticide analysis - where reporting Spike data, Toxaphene is not added to the Spike.
- Total Recoverable Hydrocarbons - where reporting Spike & LCS data, a single spike of commercial Hydrocarbon products in the range of C12-C30 is added and it's Total Recovery is reported in the C10-C14 cell of the Report.
- pH and Free Chlorine analysed in the laboratory - Analysis on this test must begin within 30 minutes of sampling. Therefore laboratory analysis is unlikely to be completed within holding time. Analysis will begin as soon as possible after sample receipt.
- Recovery Data (Spikes & Surrogates) - where chromatographic interference does not allow the determination of Recovery the term "INT" appears against that analyte.
- Polychlorinated Biphenyls are spiked only using Aroclor 1260 in Matrix Spikes and LCS.
- For Matrix Spikes and LCS results a dash " - " in the report means that the specific analyte was not added to the QC sample.
- Duplicate RPDs are calculated from raw analytical data thus it is possible to have two sets of data.

Quality Control Results

Comments**Sample Integrity**

Custody Seals Intact (if used)	N/A
Attempt to Chill was evident	N/A
Sample correctly preserved	Yes
Appropriate sample containers have been used	Yes
Sample containers for volatile analysis received with minimal headspace	Yes
Samples received within HoldingTime	Yes
Some samples have been subcontracted	No

Authorised By

Andrew Black Analytical Services Manager
Gabriele Cordero Senior Analyst-Metal (NSW)

**Glenn Jackson
General Manager**

Final report - this Report replaces any previously issued Report

- Indicates Not Requested

* Indicates NATA accreditation does not cover the performance of this service

Measurement uncertainty of test data is available on request or please [click here](#).

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Ramboll Environ Australia Pty Ltd
 Level 3/100 Pacific Highway
 North Sydney
 NSW 2060



NATA Accredited
Accreditation Number 1261
Site Number 18217

Accredited for compliance with ISO/IEC 17025 – Testing
 The results of the tests, calibrations and/or
 measurements included in this document are traceable
 to Australian/national standards.

Attention: **Stephen Maxwell**

Report **716932-S**
 Project name **P17**
 Project ID **318000780**
 Received Date **May 01, 2020**

Client Sample ID			DVAC_MBR(P17)	DVAC_LR(P17)
Sample Matrix			Dust	Dust
Eurofins Sample No.			S20-My00953	S20-My00954
Date Sampled			Mar 30, 2020	Mar 30, 2020
Test/Reference	LOR	Unit		
Heavy Metals				
Lead	5	mg/kg	66	77

Sample History

Where samples are submitted/analysed over several days, the last date of extraction and analysis is reported.

A recent review of our LIMS has resulted in the correction or clarification of some method identifications. Due to this, some of the method reference information on reports has changed. However, no substantive change has been made to our laboratory methods, and as such there is no change in the validity of current or previous results.

If the date and time of sampling are not provided, the Laboratory will not be responsible for compromised results should testing be performed outside the recommended holding time.

Description

Heavy Metals

Testing Site

Sydney

Extracted

May 05, 2020

Holding Time

180 Days

- Method: LTM-MET-3040 Metals in Waters, Soils & Sediments by ICP-MS

Australia

Melbourne
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Company Name: Ramboll Australia Pty Ltd
Address: Level 3/100 Pacific Highway
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NSW 2060

Project Name: P17
Project ID: 318000780

Order No.:
Report #: 716932
Phone: 02 9954 8118
Fax: 02 9954 8150

Received: May 1, 2020 12:00 PM
Due: May 8, 2020
Priority: 5 Day
Contact Name: Stephen Maxwell

Eurofins Analytical Services Manager : Andrew Black

Sample Detail						Lead	Mass of sample*
Melbourne Laboratory - NATA Site # 1254 & 14271							
Sydney Laboratory - NATA Site # 18217						X	X
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Perth Laboratory - NATA Site # 23736							
External Laboratory							
No	Sample ID	Sample Date	Sampling Time	Matrix	LAB ID		
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Eurofins Analytical Services Manager : Andrew Black

Sample Detail						Lead	Mass of sample*
Melbourne Laboratory - NATA Site # 1254 & 14271							
Sydney Laboratory - NATA Site # 18217						X	X
Brisbane Laboratory - NATA Site # 20794							
Perth Laboratory - NATA Site # 23736							
7	DSWAB_MH(P17)	Mar 30, 2020		Wipes	S20-My00959	X	
Test Counts						7	2

Internal Quality Control Review and Glossary

General

- Laboratory QC results for Method Blanks, Duplicates, Matrix Spikes, and Laboratory Control Samples follows guidelines delineated in the National Environment Protection (Assessment of Site Contamination) Measure 1999, as amended May 2013 and are included in this QC report where applicable. Additional QC data may be available on request.
- All soil/sediment/solid results are reported on a dry basis, unless otherwise stated.
- All biota/food results are reported on a wet weight basis on the edible portion, unless otherwise stated.
- Actual LORs are matrix dependant. Quoted LORs may be raised where sample extracts are diluted due to interferences.
- Results are uncorrected for matrix spikes or surrogate recoveries except for PFAS compounds.
- SVOC analysis on waters are performed on homogenised, unfiltered samples, unless noted otherwise.
- Samples were analysed on an 'as received' basis.
- Information identified on this report with blue colour, indicates data provided by customer, that may have an impact on the results.
- This report replaces any interim results previously issued.

Holding Times

Please refer to 'Sample Preservation and Container Guide' for holding times (QS3001).

For samples received on the last day of holding time, notification of testing requirements should have been received at least 6 hours prior to sample receipt deadlines as stated on the SRA.

If the Laboratory did not receive the information in the required timeframe, and regardless of any other integrity issues, suitably qualified results may still be reported.

Holding times apply from the date of sampling, therefore compliance to these may be outside the laboratory's control.

For VOCs containing vinyl chloride, styrene and 2-chloroethyl vinyl ether the holding time is 7 days however for all other VOCs such as BTEX or C6-10 TRH then the holding time is 14 days.

****NOTE:** pH duplicates are reported as a range NOT as RPD

Units

mg/kg: milligrams per kilogram

mg/L: milligrams per litre

ug/L: micrograms per litre

ppm: Parts per million

ppb: Parts per billion

%: Percentage

org/100mL: Organisms per 100 millilitres

NTU: Nephelometric Turbidity Units

MPN/100mL: Most Probable Number of organisms per 100 millilitres

Terms

Dry	Where a moisture has been determined on a solid sample the result is expressed on a dry basis.
LOR	Limit of Reporting.
SPIKE	Addition of the analyte to the sample and reported as percentage recovery.
RPD	Relative Percent Difference between two Duplicate pieces of analysis.
LCS	Laboratory Control Sample - reported as percent recovery.
CRM	Certified Reference Material - reported as percent recovery.
Method Blank	In the case of solid samples these are performed on laboratory certified clean sands and in the case of water samples these are performed on de-ionised water.
Surr - Surrogate	The addition of a like compound to the analyte target and reported as percentage recovery.
Duplicate	A second piece of analysis from the same sample and reported in the same units as the result to show comparison.
USEPA	United States Environmental Protection Agency
APHA	American Public Health Association
TCLP	Toxicity Characteristic Leaching Procedure
COC	Chain of Custody
SRA	Sample Receipt Advice
QSM	US Department of Defense Quality Systems Manual Version 5.3
CP	Client Parent - QC was performed on samples pertaining to this report
NCP	Non-Client Parent - QC performed on samples not pertaining to this report, QC is representative of the sequence or batch that client samples were analysed within.
TEQ	Toxic Equivalency Quotient

QC - Acceptance Criteria

RPD Duplicates: Global RPD Duplicates Acceptance Criteria is 30% however the following acceptance guidelines are equally applicable:

Results <10 times the LOR : No Limit

Results between 10-20 times the LOR : RPD must lie between 0-50%

Results >20 times the LOR : RPD must lie between 0-30%

Surrogate Recoveries: Recoveries must lie between 20-130% Phenols & 50-150% PFASs

PFAS field samples that contain surrogate recoveries in excess of the QC limit designated in QSM 5.3 where no positive PFAS results have been reported have been reviewed and no data was affected.

WA DWER (n=10): PFBA, PFPeA, PFHxA, PFHpA, PFOA, PFBS, PFHxS, PFOS, 6:2 FTSA, 8:2 FTSA

QC Data General Comments

- Where a result is reported as a less than (<), higher than the nominated LOR, this is due to either matrix interference, extract dilution required due to interferences or contaminant levels within the sample, high moisture content or insufficient sample provided.
- Duplicate data shown within this report that states the word "BATCH" is a Batch Duplicate from outside of your sample batch, but within the laboratory sample batch at a 1:10 ratio. The Parent and Duplicate data shown is not data from your samples.
- Organochlorine Pesticide analysis - where reporting LCS data, Toxaphene & Chlordane are not added to the LCS.
- Organochlorine Pesticide analysis - where reporting Spike data, Toxaphene is not added to the Spike.
- Total Recoverable Hydrocarbons - where reporting Spike & LCS data, a single spike of commercial Hydrocarbon products in the range of C12-C30 is added and it's Total Recovery is reported in the C10-C14 cell of the Report.
- pH and Free Chlorine analysed in the laboratory - Analysis on this test must begin within 30 minutes of sampling. Therefore laboratory analysis is unlikely to be completed within holding time. Analysis will begin as soon as possible after sample receipt.
- Recovery Data (Spikes & Surrogates) - where chromatographic interference does not allow the determination of Recovery the term "INT" appears against that analyte.
- Polychlorinated Biphenyls are spiked only using Aroclor 1260 in Matrix Spikes and LCS.
- For Matrix Spikes and LCS results a dash " - " in the report means that the specific analyte was not added to the QC sample.
- Duplicate RPDs are calculated from raw analytical data thus it is possible to have two sets of data.

Quality Control Results

Comments**Sample Integrity**

Custody Seals Intact (if used)	N/A
Attempt to Chill was evident	N/A
Sample correctly preserved	Yes
Appropriate sample containers have been used	Yes
Sample containers for volatile analysis received with minimal headspace	Yes
Samples received within HoldingTime	Yes
Some samples have been subcontracted	No

Authorised By

Andrew Black Analytical Services Manager
Gabriele Cordero Senior Analyst-Metal (NSW)

**Glenn Jackson
General Manager**

Final report - this Report replaces any previously issued Report

- Indicates Not Requested

* Indicates NATA accreditation does not cover the performance of this service

Measurement uncertainty of test data is available on request or please [click here](#).

Eurofins shall not be liable for loss, cost, damages or expenses incurred by the client, or any other person or company, resulting from the use of any information or interpretation given in this report. In no case shall Eurofins be liable for consequential damages including, but not limited to, lost profits, damages for failure to meet deadlines and lost production arising from this report. This document shall not be reproduced except in full and relates only to the items tested. Unless indicated otherwise, the tests were performed on the samples as received.



CHAIN OF CUSTODY RECORD

ABN 50 005 085 521

Sydney Laboratory
Unit F3 Bld F, 16 Mars Rd, Lane Cove West, NSW 2066
02 9900 8400 EnviroSampleNSW@eurofins.com

Brisbane Laboratory
Unit 1, 21 Smallwood Pl, Murarrie, QLD 4172
07 3902 4600 EnviroSampleQLD@eurofins.com

Perth Laboratory
Unit 2, 91 Leach Highway, Kewdale WA 6105
08 9251 9600 EnviroSampleWA@eurofins.com

Melbourne Laboratory
2 Kingston Town Close, Oakleigh, VIC 3166
03 8564 5000 EnviroSampleVic@eurofins.com

Company		Ramboll		Project No	318000780				Project Manager	Stephen Maxwell				Sampler(s)	JK + RC				
Address		50 Glebe Road the Junction		Project Name				EDD Format (ESdat, EQuIS,				Excel and PDF				Handed over by	SM		
Contact Name		Stephen Maxwell		Analyses <small>(Note: Where metals are requested, please specify "Total" or "Filterable" - SUITE code must be used to indicate SUITE pricing)</small>	Lead	M13 (Al, As, Ba, Be, Cd, Cr, Co, Cu, Fe, Pb, Mn, Hg, Ni, Zn) total	M13 (Al, As, Ba, Be, Cd, Cr, Co, Cu, Fe, Pb, Mn, Hg, Ni, Zn) dissolved									Email for Invoice			
Phone No																Email for Results		smaxwell@ramboll.com asiapac-accounts@ramboll.com	
Special Directions																Turnaround Time (TAT) Requirements (Default will be 5 days if not ticked)		<input type="checkbox"/> Overnight (9am)* <input type="checkbox"/> 1 Day* <input type="checkbox"/> 2 Day* <input type="checkbox"/> 3 Day* <input checked="" type="checkbox"/> 5 Day* <input type="checkbox"/> Other () * Surcharges apply	
Purchase Order																Sample Comments / Dangerous Goods Hazard Warning			
Quote ID No		180813RAMN_1																	
No	Client Sample ID	Sampled Date/Time (dd/mm/yy hh:mm)	Matrix (Solid (S) Water (W))																
1	P18_HA01_0.0	31/03/20	S	X															
2	P18_HA01_0.2	31/03/20	S	X															
3	P18_HA02_0.0	31/03/20	S	X															
4	P18_HA02_0.2	31/03/20	S	X															
5	P18_HA03_0.0	31/03/20	S	X															
6	P18_HA03_0.2	31/03/20	S	X															
7	P18_HA04_0.0	31/03/20	S	X															
8	P18_HA04_0.2	31/03/20	S	X															
9	P18_HA05_0.0	31/03/20	S	X															
10	P18_HA05_0.2	31/03/20	S	X															
Total Counts				10															
Method of Shipment		<input type="checkbox"/> Courier (#) <input type="checkbox"/> Hand Delivered <input type="checkbox"/> Postal		Name		Signature		Date		Time		Temperature							
Eurofins mgt Laboratory Use Only		Received By	<i>[Signature]</i>	SYD BNE MEL PER ADL NTL DRW		Signature		Date		Time		Temperature							
		Received By	<i>[Signature]</i>	SYD BNE MEL PER ADL NTL DRW		Signature		Date		Time		Report No							

Submission of samples to the laboratory will be deemed as acceptance of Eurofins | mgt Standard Terms and Conditions unless agreed otherwise. A copy of Eurofins | mgt Standard Terms and Conditions is available on request.



CHAIN OF CUSTODY RECORD

ABN 50 005 085 521

Sydney Laboratory
Unit F3 Bld.F, 16 Mars Rd, Lane Cove West, NSW 2066
02 9900 8400 EnviroSampleNSW@eurofins.com

Brisbane Laboratory
Unit 1, 21 Smallwood Pl., Murarie, QLD 4172
07 3902 4600 EnviroSampleQLD@eurofins.com

Perth Laboratory
Unit 2, 91 Leach Highway, Kewdale WA 6105
08 9251 9600 EnviroSampleWA@eurofins.com

Melbourne Laboratory
2 Kingston Town Close, Oakleigh, VIC 3166
03 8564 5000 EnviroSampleVic@eurofins.com

Company		Ramboll		Project No		318000780		Project Manager		Stephen Maxwell		Sampler(s)		JB + JAB			
Address		50 Glebe Road the Junction		Project Name				EDD Format (ESdat, EQUS,		Excel and PDF		Handed over by		SM			
Contact Name		Stephen Maxwell		Analyses <small>(Note: Where metals are requested, please specify "Total" or "Filtered" / SUITE code must be used to amend SUITE pricing)</small> Lead M13 (Al, As, Ba, Be, Cd, Cr, Co, Cu, Fe, Pb, Mn, Hg, Ni, Zn) total M13 (Al, As, Ba, Be, Cd, Cr, Co, Cu, Fe, Pb, Mn, Hg, Ni, Zn) dissolved		Email for Invoice		smaxwell@ramboll.com asiapac-accounts@ramboll.com		Email for Results		smaxwell@ramboll.com jblackwell@ramboll.com rcondon@ramboll.com shyde@ramboll.com		Turnaround Time (TAT) Requirements (Default will be 5 days if not ticked)			
Phone No						1L Plastic				250mL Plastic				<input type="checkbox"/> Overnight (9am)*			
Special Directions						125mL Plastic				200mL Amber Glass				<input type="checkbox"/> 1 Day* <input type="checkbox"/> 2 Day*			
Purchase Order						40mL VOA vial				500mL PFAS Bottle				<input type="checkbox"/> 3 Day* <input checked="" type="checkbox"/> 5 Day*		* Surcharges apply	
Quote ID No		180813RAMN_1		Jar (Glass or HDPE)				Other (Asbestos AS4667, WA Guidelines)				Sample Comments / Dangerous Goods Hazard Warning					
No	Client Sample ID	Sampled Date/Time (dd/mm/yy hh:mm)	Matrix (Solid (S) Water (W))														
1	P18_TW1	31/03/20	W	X	X												
2	P18_TW2	31/03/20	W	X	X												
3	P18_TW3	31/03/20	W	X	X												
4	P18_TW4	31/03/20	W	X	X												
5	P18_TWS1	31/03/20	Sediment	X											Please dry sediment sample prior to analysis		
6	P18_TWS2	31/03/20	Sediment	X											Please dry sediment sample prior to analysis		
7																	
8																	
9																	
10																	
Total Counts				2	4	4											
Method of Shipment		<input type="checkbox"/> Courier (#) <input type="checkbox"/> Hand Delivered <input type="checkbox"/> Postal		Name		Signature		Date		Time		Date		Time			
Eurofins mgt Laboratory Use Only		Received By <i>Rupan</i>		SYD BNE MEL PER ADL NTL DRW		Signature		Date <i>01/04/20</i>		Time		Date		Time			
		Received By		SYD BNE MEL PER ADL NTL DRW		Signature		Date		Time		Date		Time			

Submission of samples to the laboratory will be deemed as acceptance of Eurofins | mgt Standard Terms and Conditions unless agreed otherwise. A copy of Eurofins | mgt Standard Terms and Conditions is available on request.

Melbourne

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Site # 1254 & 14271

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NATA # 1261 Site # 18217

Brisbane

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Phone : +61 7 3902 4600
NATA # 1261 Site # 20794

Perth

2/91 Leach Highway
Kewdale WA 6105
Phone : +61 8 9251 9600
NATA # 1261 Site # 23736

Sample Receipt Advice

Company name: **Ramboll Australia Pty Ltd**

Contact name: **Stephen Maxwell**

Project ID: **318000780**

COC number: **Not provided**

Turn around time: **5 Day**

Date/Time received: **Apr 1, 2020 11:04 AM**

Eurofins reference: **711570**

Sample information

- A detailed list of analytes logged into our LIMS, is included in the attached summary table.
- All samples have been received as described on the above COC.
- COC has been completed correctly.
- Attempt to chill was evident.
- Appropriately preserved sample containers have been used.
- All samples were received in good condition.
- Samples have been provided with adequate time to commence analysis in accordance with the relevant holding times.

- Appropriate sample containers have been used.
- Sample containers for volatile analysis received with zero headspace.
- Split sample sent to requested external lab.
- Some samples have been subcontracted.
- N/A Custody Seals intact (if used).

Notes

EXTRA SAMPLES REC: placed on HOLD.

Contact notes

If you have any questions with respect to these samples please contact:

Andrew Black on Phone : (+61) 2 9900 8490 or by e.mail: AndrewBlack@eurofins.com

Results will be delivered electronically via e.mail to Stephen Maxwell - smaxwell@ramboll.com.

Note: A copy of these results will also be delivered to the general Ramboll Australia Pty Ltd email address.

Australia

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Site # 1254 & 14271

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IANZ # 1327

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43 Detroit Drive
Rolleston, Christchurch 7675
Phone : 0800 856 450
IANZ # 1290

Company Name: Ramboll Australia Pty Ltd
Address: Level 3/100 Pacific Highway
North Sydney
NSW 2060

Order No.:
Report #: 711570
Phone: 02 9954 8118
Fax: 02 9954 8150

Received: Apr 1, 2020 11:04 AM
Due: Apr 8, 2020
Priority: 5 Day
Contact Name: Stephen Maxwell

Project Name:
Project ID: 318000780

Eurofins Analytical Services Manager : Andrew Black

Sample Detail						HOLD	Lead	NEPM 2013 Metals : Metals M13	NEPM 2013 Metals : Metals M13 filtered	Moisture Set
Melbourne Laboratory - NATA Site # 1254 & 14271										
Sydney Laboratory - NATA Site # 18217						X	X	X	X	X
Brisbane Laboratory - NATA Site # 20794										
Perth Laboratory - NATA Site # 23736										
External Laboratory										
No	Sample ID	Sample Date	Sampling Time	Matrix	LAB ID					
1	P18_HA01_0_0	Mar 31, 2020		Soil	S20-Ap02937		X			X
2	P18_HA01_0_2	Mar 31, 2020		Soil	S20-Ap02938		X			X
3	P18_HA02_0_0	Mar 31, 2020		Soil	S20-Ap02939		X			X
4	P18_HA02_0_2	Mar 31, 2020		Soil	S20-Ap02940		X			X
5	P18_HA03_0_0	Mar 31, 2020		Soil	S20-Ap02941		X			X
6	P18_HA03_0_2	Mar 31, 2020		Soil	S20-Ap02942		X			X

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Company Name:	Ramboll Australia Pty Ltd	Order No.:		Received:	Apr 1, 2020 11:04 AM
Address:	Level 3/100 Pacific Highway North Sydney NSW 2060	Report #:	711570	Due:	Apr 8, 2020
Project Name:		Phone:	02 9954 8118	Priority:	5 Day
Project ID:	318000780	Fax:	02 9954 8150	Contact Name:	Stephen Maxwell

Eurofins Analytical Services Manager : Andrew Black

Sample Detail						HOLD	Lead	NEPM 2013 Metals : Metals M13	NEPM 2013 Metals : Metals M13 filtered	Moisture Set
Melbourne Laboratory - NATA Site # 1254 & 14271										
Sydney Laboratory - NATA Site # 18217						X	X	X	X	X
Brisbane Laboratory - NATA Site # 20794										
Perth Laboratory - NATA Site # 23736										
7	P18_HA04_0	Mar 31, 2020		Soil	S20-Ap02943		X			X
8	P18_HA04_2	Mar 31, 2020		Soil	S20-Ap02944		X			X
9	P18_HA05_0	Mar 31, 2020		Soil	S20-Ap02945		X			X
10	P18_HA05_2	Mar 31, 2020		Soil	S20-Ap02946		X			X
11	P18_TW1	Mar 31, 2020		Water	S20-Ap02947			X	X	
12	P18_TW2	Mar 31, 2020		Water	S20-Ap02948			X	X	
13	P18_TW3	Mar 31, 2020		Water	S20-Ap02949			X	X	
14	P18_TW4	Mar 31, 2020		Water	S20-Ap02950			X	X	
15	P18_TWS1	Mar 31, 2020		Sediment	S20-Ap02951		X			X
16	P18_TWS2	Mar 31, 2020		Sediment	S20-Ap02952		X			X



Environment Testing

Australia

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Christchurch
 43 Detroit Drive
 Rolleston, Christchurch 7675
 Phone : 0800 856 450
 IANZ # 1290

ABN – 50 005 085 521

web : www.eurofins.com.au

e.mail : EnviroSales@eurofins.com

Company Name: Ramboll Australia Pty Ltd
Address: Level 3/100 Pacific Highway
 North Sydney
 NSW 2060

Order No.:
Report #: 711570
Phone: 02 9954 8118
Fax: 02 9954 8150

Received: Apr 1, 2020 11:04 AM
Due: Apr 8, 2020
Priority: 5 Day
Contact Name: Stephen Maxwell

Project Name:
Project ID: 318000780

Eurofins Analytical Services Manager : Andrew Black

Sample Detail						HOLD	Lead	NEPM 2013 Metals : Metals M13	NEPM 2013 Metals : Metals M13 filtered	Moisture Set
Melbourne Laboratory - NATA Site # 1254 & 14271										
Sydney Laboratory - NATA Site # 18217						X	X	X	X	X
Brisbane Laboratory - NATA Site # 20794										
Perth Laboratory - NATA Site # 23736										
17	P18_TWS3	Mar 31, 2020		Sediment	S20-Ap02953	X				
18	P18_TWS4	Mar 31, 2020		Sediment	S20-Ap02954	X				
19	P18_PAINT	Mar 31, 2020		Paint	S20-Ap02955	X				
Test Counts						3	12	4	4	12

Ramboll Environ Australia Pty Ltd
 Level 3/100 Pacific Highway
 North Sydney
 NSW 2060



NATA Accredited
 Accreditation Number 1261
 Site Number 18217

Accredited for compliance with ISO/IEC 17025 – Testing
 The results of the tests, calibrations and/or
 measurements included in this document are traceable
 to Australian/national standards.

Attention: **Stephen Maxwell**

Report **711570-S**
 Project name
 Project ID **318000780**
 Received Date **Apr 01, 2020**

Client Sample ID			P18_HA01_0.0	P18_HA01_0.2	P18_HA02_0.0	P18_HA02_0.2
Sample Matrix			Soil	Soil	Soil	Soil
Eurofins Sample No.			S20-Ap02937	S20-Ap02938	S20-Ap02939	S20-Ap02940
Date Sampled			Mar 31, 2020	Mar 31, 2020	Mar 31, 2020	Mar 31, 2020
Test/Reference	LOR	Unit				
Heavy Metals						
Lead	5	mg/kg	28	26	71	73
% Moisture	1	%	18	12	19	21

Client Sample ID			P18_HA03_0.0	P18_HA03_0.2	P18_HA04_0.0	P18_HA04_0.2
Sample Matrix			Soil	Soil	Soil	Soil
Eurofins Sample No.			S20-Ap02941	S20-Ap02942	S20-Ap02943	S20-Ap02944
Date Sampled			Mar 31, 2020	Mar 31, 2020	Mar 31, 2020	Mar 31, 2020
Test/Reference	LOR	Unit				
Heavy Metals						
Lead	5	mg/kg	60	48	15	86
% Moisture	1	%	14	9.8	2.7	15

Client Sample ID			P18_HA05_0.0	P18_HA05_0.2
Sample Matrix			Soil	Soil
Eurofins Sample No.			S20-Ap02945	S20-Ap02946
Date Sampled			Mar 31, 2020	Mar 31, 2020
Test/Reference	LOR	Unit		
Heavy Metals				
Lead	5	mg/kg	160	20
% Moisture	1	%	20	14

Sample History

Where samples are submitted/analysed over several days, the last date of extraction and analysis is reported. A recent review of our LIMS has resulted in the correction or clarification of some method identifications. Due to this, some of the method reference information on reports has changed. However, no substantive change has been made to our laboratory methods, and as such there is no change in the validity of current or previous results.

If the date and time of sampling are not provided, the Laboratory will not be responsible for compromised results should testing be performed outside the recommended holding time.

Description	Testing Site	Extracted	Holding Time
Heavy Metals - Method: LTM-MET-3040 Metals in Waters, Soils & Sediments by ICP-MS	Sydney	Apr 06, 2020	180 Days
% Moisture - Method: LTM-GEN-7080 Moisture	Sydney	Apr 02, 2020	14 Days

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43 Detroit Drive
Rolleston, Christchurch 7675
Phone : 0800 856 450
IANZ # 1290

Company Name:	Ramboll Australia Pty Ltd	Order No.:		Received:	Apr 1, 2020 11:04 AM
Address:	Level 3/100 Pacific Highway North Sydney NSW 2060	Report #:	711570	Due:	Apr 8, 2020
Project Name:		Phone:	02 9954 8118	Priority:	5 Day
Project ID:	318000780	Fax:	02 9954 8150	Contact Name:	Stephen Maxwell

Eurofins Analytical Services Manager : Andrew Black

Sample Detail						HOLD	Lead	NEPM 2013 Metals : Metals M13	NEPM 2013 Metals : Metals M13 filtered	Moisture Set
Melbourne Laboratory - NATA Site # 1254 & 14271										
Sydney Laboratory - NATA Site # 18217						X	X	X	X	X
Brisbane Laboratory - NATA Site # 20794										
Perth Laboratory - NATA Site # 23736										
External Laboratory										
No	Sample ID	Sample Date	Sampling Time	Matrix	LAB ID					
1	P18_HA01_0_0	Mar 31, 2020		Soil	S20-Ap02937		X			X
2	P18_HA01_0_2	Mar 31, 2020		Soil	S20-Ap02938		X			X
3	P18_HA02_0_0	Mar 31, 2020		Soil	S20-Ap02939		X			X
4	P18_HA02_0_2	Mar 31, 2020		Soil	S20-Ap02940		X			X
5	P18_HA03_0_0	Mar 31, 2020		Soil	S20-Ap02941		X			X
6	P18_HA03_0_2	Mar 31, 2020		Soil	S20-Ap02942		X			X

Australia

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Company Name: Ramboll Australia Pty Ltd
Address: Level 3/100 Pacific Highway
North Sydney
NSW 2060

Order No.:
Report #: 711570
Phone: 02 9954 8118
Fax: 02 9954 8150

Received: Apr 1, 2020 11:04 AM
Due: Apr 8, 2020
Priority: 5 Day
Contact Name: Stephen Maxwell

Project Name:
Project ID: 318000780

Eurofins Analytical Services Manager : Andrew Black

Sample Detail						HOLD	Lead	NEPM 2013 Metals : Metals M13	NEPM 2013 Metals : Metals M13 filtered	Moisture Set
Melbourne Laboratory - NATA Site # 1254 & 14271										
Sydney Laboratory - NATA Site # 18217						X	X	X	X	X
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7	P18_HA04_0	Mar 31, 2020		Soil	S20-Ap02943		X			X
8	P18_HA04_2	Mar 31, 2020		Soil	S20-Ap02944		X			X
9	P18_HA05_0	Mar 31, 2020		Soil	S20-Ap02945		X			X
10	P18_HA05_2	Mar 31, 2020		Soil	S20-Ap02946		X			X
11	P18_TW1	Mar 31, 2020		Water	S20-Ap02947			X	X	
12	P18_TW2	Mar 31, 2020		Water	S20-Ap02948			X	X	
13	P18_TW3	Mar 31, 2020		Water	S20-Ap02949			X	X	
14	P18_TW4	Mar 31, 2020		Water	S20-Ap02950			X	X	
15	P18_TWS1	Mar 31, 2020		Sediment	S20-Ap02951		X			X
16	P18_TWS2	Mar 31, 2020		Sediment	S20-Ap02952		X			X

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18	P18_TWS4	Mar 31, 2020		Sediment	S20-Ap02954	X				
19	P18_PAINT	Mar 31, 2020		Paint	S20-Ap02955	X				
Test Counts						3	12	4	4	12

Internal Quality Control Review and Glossary

General

- Laboratory QC results for Method Blanks, Duplicates, Matrix Spikes, and Laboratory Control Samples follows guidelines delineated in the National Environment Protection (Assessment of Site Contamination) Measure 1999, as amended May 2013 and are included in this QC report where applicable. Additional QC data may be available on request.
- All soil/sediment/solid results are reported on a dry basis, unless otherwise stated.
- All biota/food results are reported on a wet weight basis on the edible portion, unless otherwise stated.
- Actual LORs are matrix dependant. Quoted LORs may be raised where sample extracts are diluted due to interferences.
- Results are uncorrected for matrix spikes or surrogate recoveries except for PFAS compounds.
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- Samples were analysed on an 'as received' basis.
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Please refer to 'Sample Preservation and Container Guide' for holding times (QS3001).

For samples received on the last day of holding time, notification of testing requirements should have been received at least 6 hours prior to sample receipt deadlines as stated on the SRA.

If the Laboratory did not receive the information in the required timeframe, and regardless of any other integrity issues, suitably qualified results may still be reported.

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For VOCs containing vinyl chloride, styrene and 2-chloroethyl vinyl ether the holding time is 7 days however for all other VOCs such as BTEX or C6-10 TRH then the holding time is 14 days.

****NOTE:** pH duplicates are reported as a range NOT as RPD

Units

mg/kg: milligrams per kilogram	mg/L: milligrams per litre	ug/L: micrograms per litre
ppm: Parts per million	ppb: Parts per billion	%: Percentage
org/100mL: Organisms per 100 millilitres	NTU: Nephelometric Turbidity Units	MPN/100mL: Most Probable Number of organisms per 100 millilitres

Terms

Dry	Where a moisture has been determined on a solid sample the result is expressed on a dry basis.
LOR	Limit of Reporting.
SPIKE	Addition of the analyte to the sample and reported as percentage recovery.
RPD	Relative Percent Difference between two Duplicate pieces of analysis.
LCS	Laboratory Control Sample - reported as percent recovery.
CRM	Certified Reference Material - reported as percent recovery.
Method Blank	In the case of solid samples these are performed on laboratory certified clean sands and in the case of water samples these are performed on de-ionised water.
Surr - Surrogate	The addition of a like compound to the analyte target and reported as percentage recovery.
Duplicate	A second piece of analysis from the same sample and reported in the same units as the result to show comparison.
USEPA	United States Environmental Protection Agency
APHA	American Public Health Association
TCLP	Toxicity Characteristic Leaching Procedure
COC	Chain of Custody
SRA	Sample Receipt Advice
QSM	US Department of Defense Quality Systems Manual Version 5.3
CP	Client Parent - QC was performed on samples pertaining to this report
NCP	Non-Client Parent - QC performed on samples not pertaining to this report, QC is representative of the sequence or batch that client samples were analysed within.
TEQ	Toxic Equivalency Quotient

QC - Acceptance Criteria

RPD Duplicates: Global RPD Duplicates Acceptance Criteria is 30% however the following acceptance guidelines are equally applicable:

Results <10 times the LOR : No Limit

Results between 10-20 times the LOR : RPD must lie between 0-50%

Results >20 times the LOR : RPD must lie between 0-30%

Surrogate Recoveries: Recoveries must lie between 20-130% Phenols & 50-150% PFASs

PFAS field samples that contain surrogate recoveries in excess of the QC limit designated in QSM 5.3 where no positive PFAS results have been reported have been reviewed and no data was affected.

WA DWER (n=10): PFBA, PFPeA, PFHxA, PFHpA, PFOA, PFBS, PFHxS, PFOS, 6:2 FTSA, 8:2 FTSA

QC Data General Comments

- Where a result is reported as a less than (<), higher than the nominated LOR, this is due to either matrix interference, extract dilution required due to interferences or contaminant levels within the sample, high moisture content or insufficient sample provided.
- Duplicate data shown within this report that states the word "BATCH" is a Batch Duplicate from outside of your sample batch, but within the laboratory sample batch at a 1:10 ratio. The Parent and Duplicate data shown is not data from your samples.
- Organochlorine Pesticide analysis - where reporting LCS data, Toxaphene & Chlordane are not added to the LCS.
- Organochlorine Pesticide analysis - where reporting Spike data, Toxaphene is not added to the Spike.
- Total Recoverable Hydrocarbons - where reporting Spike & LCS data, a single spike of commercial Hydrocarbon products in the range of C12-C30 is added and it's Total Recovery is reported in the C10-C14 cell of the Report.
- pH and Free Chlorine analysed in the laboratory - Analysis on this test must begin within 30 minutes of sampling. Therefore laboratory analysis is unlikely to be completed within holding time. Analysis will begin as soon as possible after sample receipt.
- Recovery Data (Spikes & Surrogates) - where chromatographic interference does not allow the determination of Recovery the term "INT" appears against that analyte.
- Polychlorinated Biphenyls are spiked only using Aroclor 1260 in Matrix Spikes and LCS.
- For Matrix Spikes and LCS results a dash " - " in the report means that the specific analyte was not added to the QC sample.
- Duplicate RPDs are calculated from raw analytical data thus it is possible to have two sets of data.

Quality Control Results

Test				Units	Result 1		Acceptance Limits	Pass Limits	Qualifying Code		
Method Blank											
Heavy Metals											
Lead				mg/kg	< 5		5	Pass			
LCS - % Recovery											
Heavy Metals											
Lead				%	100		70-130	Pass			
Test	Lab Sample ID	QA Source	Units	Result 1			Acceptance Limits	Pass Limits	Qualifying Code		
Spike - % Recovery											
Heavy Metals											
Lead				S20-Ap02884	NCP	%	108	70-130	Pass		
Duplicate											
Heavy Metals											
Lead				S20-Ap02946	CP	mg/kg	20	20	3.0	30%	Pass
Duplicate											
					Result 1	Result 2	RPD				
% Moisture				S20-Ap02946	CP	%	14	13	7.0	30%	Pass

Comments
Sample Integrity

Custody Seals Intact (if used)	N/A
Attempt to Chill was evident	Yes
Sample correctly preserved	Yes
Appropriate sample containers have been used	Yes
Sample containers for volatile analysis received with minimal headspace	Yes
Samples received within HoldingTime	Yes
Some samples have been subcontracted	No

Authorised By

Andrew Black	Analytical Services Manager
Gabriele Cordero	Senior Analyst-Metal (NSW)


**Glenn Jackson
General Manager**

Final report - this Report replaces any previously issued Report

- Indicates Not Requested

* Indicates NATA accreditation does not cover the performance of this service

Measurement uncertainty of test data is available on request or please [click here](#).

Eurofins shall not be liable for loss, cost, damages or expenses incurred by the client, or any other person or company, resulting from the use of any information or interpretation given in this report. In no case shall Eurofins be liable for consequential damages including, but not limited to, lost profits, damages for failure to meet deadlines and lost production arising from this report. This document shall not be reproduced except in full and relates only to the items tested. Unless indicated otherwise, the tests were performed on the samples as received.

Ramboll Environ Australia Pty Ltd
 Level 3/100 Pacific Highway
 North Sydney
 NSW 2060



NATA Accredited
 Accreditation Number 1261
 Site Number 18217

Accredited for compliance with ISO/IEC 17025 – Testing
 The results of the tests, calibrations and/or
 measurements included in this document are traceable
 to Australian/national standards.

Attention: **Stephen Maxwell**

Report **711570-W**
 Project name
 Project ID **318000780**
 Received Date **Apr 01, 2020**

Client Sample ID			P18_TW1	P18_TW2	P18_TW3	P18_TW4
Sample Matrix			Water	Water	Water	Water
Eurofins Sample No.			S20-Ap02947	S20-Ap02948	S20-Ap02949	S20-Ap02950
Date Sampled			Mar 31, 2020	Mar 31, 2020	Mar 31, 2020	Mar 31, 2020
Test/Reference	LOR	Unit				
Heavy Metals						
Aluminium	0.05	mg/L	< 0.05	< 0.05	< 0.05	< 0.05
Aluminium (filtered)	0.05	mg/L	< 0.05	< 0.05	< 0.05	< 0.05
Arsenic	0.001	mg/L	< 0.001	< 0.001	< 0.001	< 0.001
Arsenic (filtered)	0.001	mg/L	< 0.001	< 0.001	< 0.001	< 0.001
Barium	0.02	mg/L	< 0.02	< 0.02	< 0.02	< 0.02
Barium (filtered)	0.02	mg/L	< 0.02	< 0.02	< 0.02	< 0.02
Beryllium	0.001	mg/L	< 0.001	< 0.001	< 0.001	< 0.001
Beryllium (filtered)	0.001	mg/L	< 0.001	< 0.001	< 0.001	< 0.001
Cadmium	0.0002	mg/L	0.0003	< 0.0002	0.0006	< 0.0002
Cadmium (filtered)	0.0002	mg/L	0.0003	0.0003	0.0006	< 0.0002
Chromium	0.001	mg/L	0.002	0.002	< 0.001	0.001
Chromium (filtered)	0.001	mg/L	0.001	0.001	< 0.001	< 0.001
Cobalt	0.001	mg/L	< 0.001	< 0.001	< 0.001	< 0.001
Cobalt (filtered)	0.001	mg/L	< 0.001	< 0.001	< 0.001	< 0.001
Copper	0.001	mg/L	0.001	0.003	0.002	< 0.001
Copper (filtered)	0.001	mg/L	0.001	0.002	0.002	< 0.001
Iron	0.05	mg/L	< 0.05	< 0.05	< 0.05	< 0.05
Iron (filtered)	0.05	mg/L	< 0.05	< 0.05	< 0.05	< 0.05
Lead	0.001	mg/L	< 0.001	< 0.001	< 0.001	< 0.001
Lead (filtered)	0.001	mg/L	< 0.001	< 0.001	< 0.001	< 0.001
Manganese	0.005	mg/L	< 0.005	< 0.005	0.005	0.008
Manganese (filtered)	0.005	mg/L	< 0.005	< 0.005	< 0.005	0.008
Mercury	0.0001	mg/L	< 0.0001	< 0.0001	< 0.0001	< 0.0001
Mercury (filtered)	0.0001	mg/L	< 0.0001	< 0.0001	< 0.0001	< 0.0001
Nickel	0.001	mg/L	< 0.001	< 0.001	< 0.001	< 0.001
Nickel (filtered)	0.001	mg/L	< 0.001	< 0.001	< 0.001	< 0.001
Zinc	0.005	mg/L	0.28	0.37	0.61	0.42
Zinc (filtered)	0.005	mg/L	0.26	0.34	0.57	0.39

Client Sample ID			P18_TWS1	P18_TWS2
Sample Matrix			Water	Water
Eurofins Sample No.			S20-Ap02951	S20-Ap02952
Date Sampled			Mar 31, 2020	Mar 31, 2020
Test/Reference	LOR	Unit		
Heavy Metals				
Lead	0.001	mg/L	7.6	0.44

Sample History

Where samples are submitted/analysed over several days, the last date of extraction and analysis is reported. A recent review of our LIMS has resulted in the correction or clarification of some method identifications. Due to this, some of the method reference information on reports has changed. However, no substantive change has been made to our laboratory methods, and as such there is no change in the validity of current or previous results.

If the date and time of sampling are not provided, the Laboratory will not be responsible for compromised results should testing be performed outside the recommended holding time.

Description	Testing Site	Extracted	Holding Time
Heavy Metals - Method: LTM-MET-3040 Metals in Waters, Soils & Sediments by ICP-MS	Sydney	Apr 08, 2020	180 Days
Heavy Metals (filtered) - Method: LTM-MET-3040 Metals in Waters, Soils & Sediments by ICP-MS	Sydney	Apr 08, 2020	180 Days
Mobil Metals : Metals M15 - Method: LTM-MET-3040 Metals in Waters, Soils & Sediments by ICP-MS	Sydney	Apr 02, 2020	28 Days

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Address:	Level 3/100 Pacific Highway North Sydney NSW 2060	Report #:	711570	Due:	Apr 8, 2020
Project Name:		Phone:	02 9954 8118	Priority:	5 Day
Project ID:	318000780	Fax:	02 9954 8150	Contact Name:	Stephen Maxwell

Eurofins Analytical Services Manager : Andrew Black

Sample Detail						HOLD	Lead	NEPM 2013 Metals : Metals M13	NEPM 2013 Metals : Metals M13 filtered	Moisture Set
Melbourne Laboratory - NATA Site # 1254 & 14271										
Sydney Laboratory - NATA Site # 18217						X	X	X	X	X
Brisbane Laboratory - NATA Site # 20794										
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External Laboratory										
No	Sample ID	Sample Date	Sampling Time	Matrix	LAB ID					
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3	P18_HA02_0_0	Mar 31, 2020		Soil	S20-Ap02939		X			X
4	P18_HA02_0_2	Mar 31, 2020		Soil	S20-Ap02940		X			X
5	P18_HA03_0_0	Mar 31, 2020		Soil	S20-Ap02941		X			X
6	P18_HA03_0_2	Mar 31, 2020		Soil	S20-Ap02942		X			X

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mg/L: milligrams per litre

ug/L: micrograms per litre

ppm: Parts per million

ppb: Parts per billion

%: Percentage

org/100mL: Organisms per 100 millilitres

NTU: Nephelometric Turbidity Units

MPN/100mL: Most Probable Number of organisms per 100 millilitres

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Duplicate	A second piece of analysis from the same sample and reported in the same units as the result to show comparison.
USEPA	United States Environmental Protection Agency
APHA	American Public Health Association
TCLP	Toxicity Characteristic Leaching Procedure
COC	Chain of Custody
SRA	Sample Receipt Advice
QSM	US Department of Defense Quality Systems Manual Version 5.3
CP	Client Parent - QC was performed on samples pertaining to this report
NCP	Non-Client Parent - QC performed on samples not pertaining to this report, QC is representative of the sequence or batch that client samples were analysed within.
TEQ	Toxic Equivalency Quotient

QC - Acceptance Criteria

RPD Duplicates: Global RPD Duplicates Acceptance Criteria is 30% however the following acceptance guidelines are equally applicable:

Results <10 times the LOR : No Limit

Results between 10-20 times the LOR : RPD must lie between 0-50%

Results >20 times the LOR : RPD must lie between 0-30%

Surrogate Recoveries: Recoveries must lie between 20-130% Phenols & 50-150% PFASs

PFAS field samples that contain surrogate recoveries in excess of the QC limit designated in QSM 5.3 where no positive PFAS results have been reported have been reviewed and no data was affected.

WA DWER (n=10): PFBA, PFPeA, PFHxA, PFHpA, PFOA, PFBS, PFHxS, PFOS, 6:2 FTSA, 8:2 FTSA

QC Data General Comments

- Where a result is reported as a less than (<), higher than the nominated LOR, this is due to either matrix interference, extract dilution required due to interferences or contaminant levels within the sample, high moisture content or insufficient sample provided.
- Duplicate data shown within this report that states the word "BATCH" is a Batch Duplicate from outside of your sample batch, but within the laboratory sample batch at a 1:10 ratio. The Parent and Duplicate data shown is not data from your samples.
- Organochlorine Pesticide analysis - where reporting LCS data, Toxaphene & Chlordane are not added to the LCS.
- Organochlorine Pesticide analysis - where reporting Spike data, Toxaphene is not added to the Spike.
- Total Recoverable Hydrocarbons - where reporting Spike & LCS data, a single spike of commercial Hydrocarbon products in the range of C12-C30 is added and it's Total Recovery is reported in the C10-C14 cell of the Report.
- pH and Free Chlorine analysed in the laboratory - Analysis on this test must begin within 30 minutes of sampling. Therefore laboratory analysis is unlikely to be completed within holding time. Analysis will begin as soon as possible after sample receipt.
- Recovery Data (Spikes & Surrogates) - where chromatographic interference does not allow the determination of Recovery the term "INT" appears against that analyte.
- Polychlorinated Biphenyls are spiked only using Aroclor 1260 in Matrix Spikes and LCS.
- For Matrix Spikes and LCS results a dash " - " in the report means that the specific analyte was not added to the QC sample.
- Duplicate RPDs are calculated from raw analytical data thus it is possible to have two sets of data.

Quality Control Results

Test	Units	Result 1			Acceptance Limits	Pass Limits	Qualifying Code
Method Blank							
Heavy Metals							
Aluminium	mg/L	< 0.05			0.05	Pass	
Aluminium (filtered)	mg/L	< 0.05			0.05	Pass	
Arsenic	mg/L	< 0.001			0.001	Pass	
Arsenic (filtered)	mg/L	< 0.001			0.001	Pass	
Barium	mg/L	< 0.02			0.02	Pass	
Barium (filtered)	mg/L	< 0.02			0.02	Pass	
Beryllium	mg/L	< 0.001			0.001	Pass	
Beryllium (filtered)	mg/L	< 0.001			0.001	Pass	
Cadmium	mg/L	< 0.0002			0.0002	Pass	
Cadmium (filtered)	mg/L	< 0.0002			0.0002	Pass	
Chromium	mg/L	< 0.001			0.001	Pass	
Chromium (filtered)	mg/L	< 0.001			0.001	Pass	
Cobalt	mg/L	< 0.001			0.001	Pass	
Cobalt (filtered)	mg/L	< 0.001			0.001	Pass	
Copper	mg/L	< 0.001			0.001	Pass	
Copper (filtered)	mg/L	< 0.001			0.001	Pass	
Iron	mg/L	< 0.05			0.05	Pass	
Iron (filtered)	mg/L	< 0.05			0.05	Pass	
Lead	mg/L	< 0.001			0.001	Pass	
Lead (filtered)	mg/L	< 0.001			0.001	Pass	
Manganese	mg/L	< 0.005			0.005	Pass	
Manganese (filtered)	mg/L	< 0.005			0.005	Pass	
Mercury	mg/L	< 0.0001			0.0001	Pass	
Mercury (filtered)	mg/L	< 0.0001			0.0001	Pass	
Nickel	mg/L	< 0.001			0.001	Pass	
Nickel (filtered)	mg/L	< 0.001			0.001	Pass	
Zinc	mg/L	< 0.005			0.005	Pass	
Zinc (filtered)	mg/L	< 0.005			0.005	Pass	
LCS - % Recovery							
Heavy Metals							
Aluminium	%	89			70-130	Pass	
Aluminium (filtered)	%	92			70-130	Pass	
Arsenic	%	91			70-130	Pass	
Arsenic (filtered)	%	91			70-130	Pass	
Barium	%	90			70-130	Pass	
Barium (filtered)	%	87			70-130	Pass	
Beryllium	%	92			70-130	Pass	
Beryllium (filtered)	%	94			70-130	Pass	
Cadmium	%	86			70-130	Pass	
Cadmium (filtered)	%	89			70-130	Pass	
Chromium	%	90			70-130	Pass	
Chromium (filtered)	%	93			70-130	Pass	
Cobalt	%	90			70-130	Pass	
Cobalt (filtered)	%	92			70-130	Pass	
Copper	%	88			70-130	Pass	
Copper (filtered)	%	93			70-130	Pass	
Iron	%	91			70-130	Pass	
Iron (filtered)	%	93			70-130	Pass	
Lead	%	88			70-130	Pass	
Lead (filtered)	%	91			70-130	Pass	

Test			Units	Result 1			Acceptance Limits	Pass Limits	Qualifying Code
Manganese			%	89			70-130	Pass	
Manganese (filtered)			%	92			70-130	Pass	
Mercury			%	103			70-130	Pass	
Mercury (filtered)			%	92			70-130	Pass	
Nickel			%	90			70-130	Pass	
Nickel (filtered)			%	94			70-130	Pass	
Zinc			%	87			70-130	Pass	
Zinc (filtered)			%	95			70-130	Pass	
Test	Lab Sample ID	QA Source	Units	Result 1			Acceptance Limits	Pass Limits	Qualifying Code
Spike - % Recovery									
Heavy Metals				Result 1					
Aluminium	S20-Ap01271	NCP	%	98			70-130	Pass	
Aluminium (filtered)	S20-Ap02189	NCP	%	99			70-130	Pass	
Arsenic	S20-Ap01271	NCP	%	93			70-130	Pass	
Arsenic (filtered)	S20-Ap02189	NCP	%	92			70-130	Pass	
Barium	S20-Ap01271	NCP	%	96			70-130	Pass	
Barium (filtered)	S20-Ap02189	NCP	%	83			70-130	Pass	
Beryllium	S20-Ap01271	NCP	%	98			70-130	Pass	
Beryllium (filtered)	S20-Ap02189	NCP	%	93			70-130	Pass	
Cadmium	S20-Ap01271	NCP	%	93			70-130	Pass	
Cadmium (filtered)	S20-Ap02189	NCP	%	92			70-130	Pass	
Chromium	S20-Ap01271	NCP	%	102			70-130	Pass	
Chromium (filtered)	S20-Ap02189	NCP	%	96			70-130	Pass	
Cobalt	S20-Ap01271	NCP	%	102			70-130	Pass	
Cobalt (filtered)	S20-Ap02189	NCP	%	96			70-130	Pass	
Copper	S20-Ap01271	NCP	%	101			70-130	Pass	
Copper (filtered)	S20-Ap02189	NCP	%	97			70-130	Pass	
Iron	S20-Ap01271	NCP	%	94			70-130	Pass	
Iron (filtered)	S20-Ap02189	NCP	%	94			70-130	Pass	
Lead	S20-Ap01271	NCP	%	94			70-130	Pass	
Lead (filtered)	S20-Ap02189	NCP	%	89			70-130	Pass	
Manganese	S20-Ap01271	NCP	%	98			70-130	Pass	
Manganese (filtered)	S20-Ap02189	NCP	%	87			70-130	Pass	
Mercury	S20-Ap01271	NCP	%	109			70-130	Pass	
Mercury (filtered)	S20-Ap02189	NCP	%	85			70-130	Pass	
Nickel	S20-Ap01271	NCP	%	101			70-130	Pass	
Nickel (filtered)	S20-Ap02189	NCP	%	98			70-130	Pass	
Zinc	S20-Ap01271	NCP	%	98			70-130	Pass	
Zinc (filtered)	S20-Ap02189	NCP	%	93			70-130	Pass	
Test	Lab Sample ID	QA Source	Units	Result 1			Acceptance Limits	Pass Limits	Qualifying Code
Duplicate									
Heavy Metals				Result 1	Result 2	RPD			
Aluminium	S20-Ap02893	NCP	mg/L	< 0.05	< 0.05	<1	30%	Pass	
Aluminium (filtered)	S20-Ap02981	NCP	mg/L	< 0.05	< 0.05	<1	30%	Pass	
Arsenic	S20-Ap02893	NCP	mg/L	< 0.001	< 0.001	<1	30%	Pass	
Arsenic (filtered)	S20-Ap02981	NCP	mg/L	< 0.001	< 0.001	<1	30%	Pass	
Barium	S20-Ap02893	NCP	mg/L	< 0.02	< 0.02	<1	30%	Pass	
Barium (filtered)	S20-Ap02981	NCP	mg/L	0.05	0.05	9.0	30%	Pass	
Beryllium	S20-Ap02893	NCP	mg/L	< 0.001	< 0.001	<1	30%	Pass	
Beryllium (filtered)	S20-Ap02981	NCP	mg/L	< 0.001	< 0.001	<1	30%	Pass	
Cadmium	S20-Ap02893	NCP	mg/L	< 0.0002	< 0.0002	<1	30%	Pass	
Cadmium (filtered)	S20-Ap02981	NCP	mg/L	< 0.0002	< 0.0002	<1	30%	Pass	
Chromium	S20-Ap02893	NCP	mg/L	0.001	< 0.001	48	30%	Fail	

Test	Lab Sample ID	QA Source	Units	Result 1			Acceptance Limits	Pass Limits	Qualifying Code
Duplicate									
Heavy Metals				Result 1	Result 2	RPD			
Chromium (filtered)	S20-Ap02981	NCP	mg/L	< 0.001	< 0.001	<1	30%	Pass	
Cobalt	S20-Ap02893	NCP	mg/L	< 0.001	< 0.001	<1	30%	Pass	
Cobalt (filtered)	S20-Ap02981	NCP	mg/L	< 0.001	< 0.001	<1	30%	Pass	
Copper	S20-Ap02893	NCP	mg/L	0.029	0.028	3.0	30%	Pass	
Copper (filtered)	S20-Ap02981	NCP	mg/L	< 0.001	< 0.001	<1	30%	Pass	
Iron	S20-Ap02893	NCP	mg/L	< 0.05	< 0.05	<1	30%	Pass	
Iron (filtered)	S20-Ap02981	NCP	mg/L	< 0.05	< 0.05	<1	30%	Pass	
Lead	S20-Ap02893	NCP	mg/L	< 0.001	< 0.001	<1	30%	Pass	
Lead (filtered)	S20-Ap02981	NCP	mg/L	< 0.001	< 0.001	<1	30%	Pass	
Manganese	S20-Ap02893	NCP	mg/L	0.036	0.033	8.0	30%	Pass	
Manganese (filtered)	S20-Ap02981	NCP	mg/L	< 0.005	< 0.005	<1	30%	Pass	
Mercury	S20-Ap02893	NCP	mg/L	< 0.0001	< 0.0001	<1	30%	Pass	
Mercury (filtered)	S20-Ap02981	NCP	mg/L	< 0.0001	< 0.0001	<1	30%	Pass	
Nickel	S20-Ap02893	NCP	mg/L	< 0.001	< 0.001	<1	30%	Pass	
Nickel (filtered)	S20-Ap02981	NCP	mg/L	< 0.001	< 0.001	<1	30%	Pass	
Zinc	S20-Ap02893	NCP	mg/L	0.099	0.088	12	30%	Pass	
Zinc (filtered)	S20-Ap02981	NCP	mg/L	0.017	0.019	13	30%	Pass	

Comments**Sample Integrity**

Custody Seals Intact (if used)	N/A
Attempt to Chill was evident	Yes
Sample correctly preserved	Yes
Appropriate sample containers have been used	Yes
Sample containers for volatile analysis received with minimal headspace	Yes
Samples received within HoldingTime	Yes
Some samples have been subcontracted	No

Authorised By

Andrew Black Analytical Services Manager
Gabriele Cordero Senior Analyst-Metal (NSW)

**Glenn Jackson
General Manager**

Final report - this Report replaces any previously issued Report

- Indicates Not Requested

* Indicates NATA accreditation does not cover the performance of this service

Measurement uncertainty of test data is available on request or please [click here](#).

Eurofins shall not be liable for loss, cost, damages or expenses incurred by the client, or any other person or company, resulting from the use of any information or interpretation given in this report. In no case shall Eurofins be liable for consequential damages including, but not limited to, lost profits, damages for failure to meet deadlines and lost production arising from this report. This document shall not be reproduced except in full and relates only to the items tested. Unless indicated otherwise, the tests were performed on the samples as received.

#AU04_Enviro_Sample_NSW

To: Andrew Black
Subject: RE: 5 DAY TAT ADDITIONAL ANALYSIS: FW: Eurofins Test Results, Invoice - Report 711574 : S

From: Joshua Blackwell [<mailto:JBLACKWELL@ramboll.com>]
Sent: Wednesday, 8 April 2020 5:43 PM
To: Andrew Black
Cc: Stephen Maxwell
Subject: RE: Eurofins Test Results, Invoice - Report 711574 : Site 318000780

EXTERNAL EMAIL*

Hi Andrew,

Could I please get P19_TWS1 analysed for lead.
From report 711570 could I get P18_TWS3 and P18_TWS4 analysed for lead and P18_PAINT for lead (w/w%)

Kind regards
Joshua Blackwell
Consultant

D +61 (481) 157565
M +61 (481) 157565
jblackwell@ramboll.com

Ramboll Australia Pty Ltd.
ACN 095 437 442
ABN 49 095 437 442

From: AndrewBlack@eurofins.com <AndrewBlack@eurofins.com>
Sent: Wednesday, April 8, 2020 5:23 PM
To: Stephen Maxwell <SMAXWELL@ramboll.com>
Cc: Joshua Blackwell <JBLACKWELL@ramboll.com>; Rachel Condon <RCONDON@ramboll.com>; Shane Hyde <SHYDE@ramboll.com>
Subject: Eurofins Test Results, Invoice - Report 711574 : Site 318000780

Regards

Andrew Black
Analytical Services Manager

Eurofins | Environment Testing

Unit 7

7 Friesian Close

SANDGATE NSW 2304

AUSTRALIA

Phone: +61 299 008 490

Mobile: +61 410 220 750

Email: AndrewBlack@eurofins.com

Website: environment.eurofins.com.au

[EnviroNote 1098 - Melbourne PFAS Accreditation](#)

[EnviroNote 1080 - Total Organofluorine Analysis & PFAS Investigations](#)

Click [here](#) to report this email as spam.

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* WARNING - EXTERNAL: This email originated from outside of Eurofins. Do not click any links or open any attachments unless content is safe!

Melbourne

6 Monterey Road
Dandenong South Vic 3175
Phone : +61 3 8564 5000
NATA # 1261
Site # 1254 & 14271

Sydney

Unit F3, Building F
16 Mars Road
Lane Cove West NSW 2066
Phone : +61 2 9900 8400
NATA # 1261 Site # 18217

Brisbane

1/21 Smallwood Place
Murarrie QLD 4172
Phone : +61 7 3902 4600
NATA # 1261 Site # 20794

Perth

2/91 Leach Highway
Kewdale WA 6105
Phone : +61 8 9251 9600
NATA # 1261 Site # 23736

Sample Receipt Advice

Company name: **Ramboll Australia Pty Ltd**
Contact name: **Stephen Maxwell**
Project name: **ADDITIONAL - 318000780**
COC number: **Not provided**
Turn around time: **5 Day**
Date/Time received: **Apr 8, 2020 5:43 PM**
Eurofins reference: **713017**

Sample information

- A detailed list of analytes logged into our LIMS, is included in the attached summary table.
 - All samples have been received as described on the above COC.
 - COC has been completed correctly.
 - Attempt to chill was evident.
 - Appropriately preserved sample containers have been used.
 - All samples were received in good condition.
 - Samples have been provided with adequate time to commence analysis in accordance with the relevant holding times.
 - Appropriate sample containers have been used.
 - Split sample sent to requested external lab.
 - Some samples have been subcontracted.
- N/A Custody Seals intact (if used).

Contact notes

If you have any questions with respect to these samples please contact:

Andrew Black on Phone : (+61) 2 9900 8490 or by e.mail: AndrewBlack@eurofins.com

Results will be delivered electronically via e.mail to Stephen Maxwell - smaxwell@ramboll.com.

Note: A copy of these results will also be delivered to the general Ramboll Australia Pty Ltd email address.

Australia

Melbourne
 6 Monterey Road
 Dandenong South VIC 3175
 Phone : +61 3 8564 5000
 NATA # 1261
 Site # 1254 & 14271

Sydney
 Unit F3, Building F
 16 Mars Road
 Lane Cove West NSW 2066
 Phone : +61 2 9900 8400
 NATA # 1261 Site # 18217

Brisbane
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 Phone : +61 7 3902 4600
 NATA # 1261 Site # 20794

Perth
 2/91 Leach Highway
 Kewdale WA 6105
 Phone : +61 8 9251 9600
 NATA # 1261
 Site # 23736

New Zealand

Auckland
 35 O'Rorke Road
 Penrose, Auckland 1061
 Phone : +64 9 526 45 51
 IANZ # 1327

Christchurch
 43 Detroit Drive
 Rolleston, Christchurch 7675
 Phone : 0800 856 450
 IANZ # 1290

Company Name: Ramboll Australia Pty Ltd
Address: Level 3/100 Pacific Highway
 North Sydney
 NSW 2060
Project Name: ADDITIONAL - 318000780

Order No.:
Report #: 713017
Phone: 02 9954 8118
Fax: 02 9954 8150

Received: Apr 8, 2020 5:43 PM
Due: Apr 17, 2020
Priority: 5 Day
Contact Name: Stephen Maxwell

Eurofins Analytical Services Manager : Andrew Black

Sample Detail						Lead	Lead (% w/w)	Moisture Set
Melbourne Laboratory - NATA Site # 1254 & 14271								
Sydney Laboratory - NATA Site # 18217						X	X	X
Brisbane Laboratory - NATA Site # 20794								
Perth Laboratory - NATA Site # 23736								
External Laboratory								
No	Sample ID	Sample Date	Sampling Time	Matrix	LAB ID			
1	P19_TWS1	Mar 31, 2020		Sediment	S20-Ap13757	X		X
2	P18_TWS3	Mar 31, 2020		Sediment	S20-Ap13758	X		X
3	P18_PAINT	Mar 31, 2020		Paint	S20-Ap13759		X	
Test Counts						2	1	2

Ramboll Environ Australia Pty Ltd
 Level 3/100 Pacific Highway
 North Sydney
 NSW 2060



NATA Accredited
Accreditation Number 1261
Site Number 18217

Accredited for compliance with ISO/IEC 17025 – Testing
 The results of the tests, calibrations and/or
 measurements included in this document are traceable
 to Australian/national standards.

Attention: **Stephen Maxwell**

Report **713017-S**
 Project name **ADDITIONAL - 318000780**
 Received Date **Apr 08, 2020**

Client Sample ID			P18_PAINT
Sample Matrix			Paint
Eurofins Sample No.			S20-Ap13759
Date Sampled			Mar 31, 2020
Test/Reference	LOR	Unit	
Lead (% w/w)	0.01	%	2.8

Sample History

Where samples are submitted/analysed over several days, the last date of extraction and analysis is reported.

A recent review of our LIMS has resulted in the correction or clarification of some method identifications. Due to this, some of the method reference information on reports has changed. However, no substantive change has been made to our laboratory methods, and as such there is no change in the validity of current or previous results.

If the date and time of sampling are not provided, the Laboratory will not be responsible for compromised results should testing be performed outside the recommended holding time.

Description

Lead (% w/w)

Testing Site

Sydney

Extracted

Apr 16, 2020

Holding Time

6 Month

- Method: E022.5 - ACID EXTRACTABLE METALS IN PAINT IN LIQUID AND POWDERED FORM BY ICP-MS ANALYSIS

Australia

Melbourne
6 Monterey Road
Dandenong South VIC 3175
Phone : +61 3 8564 5000
NATA # 1261
Site # 1254 & 14271

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16 Mars Road
Lane Cove West NSW 2066
Phone : +61 2 9900 8400
NATA # 1261 Site # 18217

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Murarie QLD 4172
Phone : +61 7 3902 4600
NATA # 1261 Site # 20794

Perth
2/91 Leach Highway
Kewdale WA 6105
Phone : +61 8 9251 9600
NATA # 1261
Site # 23736

New Zealand

Auckland
35 O'Rorke Road
Penrose, Auckland 1061
Phone : +64 9 526 45 51
IANZ # 1327

Christchurch
43 Detroit Drive
Rolleston, Christchurch 7675
Phone : 0800 856 450
IANZ # 1290

Company Name:	Ramboll Australia Pty Ltd	Order No.:		Received:	Apr 8, 2020 5:43 PM
Address:	Level 3/100 Pacific Highway North Sydney NSW 2060	Report #:	713017	Due:	Apr 17, 2020
Project Name:	ADDITIONAL - 318000780	Phone:	02 9954 8118	Priority:	5 Day
		Fax:	02 9954 8150	Contact Name:	Stephen Maxwell
Eurofins Analytical Services Manager : Andrew Black					

Sample Detail						Lead	Lead (% w/w)	Moisture Set
Melbourne Laboratory - NATA Site # 1254 & 14271								
Sydney Laboratory - NATA Site # 18217						X	X	X
Brisbane Laboratory - NATA Site # 20794								
Perth Laboratory - NATA Site # 23736								
External Laboratory								
No	Sample ID	Sample Date	Sampling Time	Matrix	LAB ID			
1	P19_TWS1	Mar 31, 2020		Sediment	S20-Ap13757	X		X
2	P18_TWS3	Mar 31, 2020		Sediment	S20-Ap13758	X		X
3	P18_PAINT	Mar 31, 2020		Paint	S20-Ap13759		X	
Test Counts						2	1	2

Internal Quality Control Review and Glossary
General

- Laboratory QC results for Method Blanks, Duplicates, Matrix Spikes, and Laboratory Control Samples follows guidelines delineated in the National Environment Protection (Assessment of Site Contamination) Measure 1999, as amended May 2013 and are included in this QC report where applicable. Additional QC data may be available on request.
- All soil/sediment/solid results are reported on a dry basis, unless otherwise stated.
- All biota/food results are reported on a wet weight basis on the edible portion, unless otherwise stated.
- Actual LORs are matrix dependant. Quoted LORs may be raised where sample extracts are diluted due to interferences.
- Results are uncorrected for matrix spikes or surrogate recoveries except for PFAS compounds.
- SVOC analysis on waters are performed on homogenised, unfiltered samples, unless noted otherwise.
- Samples were analysed on an 'as received' basis.
- Information identified on this report with blue colour, indicates data provided by customer, that may have an impact on the results.
- This report replaces any interim results previously issued.

Holding Times

Please refer to 'Sample Preservation and Container Guide' for holding times (QS3001).

For samples received on the last day of holding time, notification of testing requirements should have been received at least 6 hours prior to sample receipt deadlines as stated on the SRA.

If the Laboratory did not receive the information in the required timeframe, and regardless of any other integrity issues, suitably qualified results may still be reported.

Holding times apply from the date of sampling, therefore compliance to these may be outside the laboratory's control.

For VOCs containing vinyl chloride, styrene and 2-chloroethyl vinyl ether the holding time is 7 days however for all other VOCs such as BTEX or C6-10 TRH then the holding time is 14 days.

****NOTE:** pH duplicates are reported as a range NOT as RPD

Units

mg/kg: milligrams per kilogram

mg/L: milligrams per litre

ug/L: micrograms per litre

ppm: Parts per million

ppb: Parts per billion

%: Percentage

org/100mL: Organisms per 100 millilitres

NTU: Nephelometric Turbidity Units

MPN/100mL: Most Probable Number of organisms per 100 millilitres

Terms

Dry	Where a moisture has been determined on a solid sample the result is expressed on a dry basis.
LOR	Limit of Reporting.
SPIKE	Addition of the analyte to the sample and reported as percentage recovery.
RPD	Relative Percent Difference between two Duplicate pieces of analysis.
LCS	Laboratory Control Sample - reported as percent recovery.
CRM	Certified Reference Material - reported as percent recovery.
Method Blank	In the case of solid samples these are performed on laboratory certified clean sands and in the case of water samples these are performed on de-ionised water.
Surr - Surrogate	The addition of a like compound to the analyte target and reported as percentage recovery.
Duplicate	A second piece of analysis from the same sample and reported in the same units as the result to show comparison.
USEPA	United States Environmental Protection Agency
APHA	American Public Health Association
TCLP	Toxicity Characteristic Leaching Procedure
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Results <10 times the LOR : No Limit

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PFAS field samples that contain surrogate recoveries in excess of the QC limit designated in QSM 5.3 where no positive PFAS results have been reported have been reviewed and no data was affected.

WA DWER (n=10): PFBA, PFPeA, PFHxA, PFHpA, PFOA, PFBS, PFHxS, PFOS, 6:2 FTSA, 8:2 FTSA

QC Data General Comments

- Where a result is reported as a less than (<), higher than the nominated LOR, this is due to either matrix interference, extract dilution required due to interferences or contaminant levels within the sample, high moisture content or insufficient sample provided.
- Duplicate data shown within this report that states the word "BATCH" is a Batch Duplicate from outside of your sample batch, but within the laboratory sample batch at a 1:10 ratio. The Parent and Duplicate data shown is not data from your samples.
- Organochlorine Pesticide analysis - where reporting LCS data, Toxaphene & Chlordane are not added to the LCS.
- Organochlorine Pesticide analysis - where reporting Spike data, Toxaphene is not added to the Spike.
- Total Recoverable Hydrocarbons - where reporting Spike & LCS data, a single spike of commercial Hydrocarbon products in the range of C12-C30 is added and it's Total Recovery is reported in the C10-C14 cell of the Report.
- pH and Free Chlorine analysed in the laboratory - Analysis on this test must begin within 30 minutes of sampling. Therefore laboratory analysis is unlikely to be completed within holding time. Analysis will begin as soon as possible after sample receipt.
- Recovery Data (Spikes & Surrogates) - where chromatographic interference does not allow the determination of Recovery the term "INT" appears against that analyte.
- Polychlorinated Biphenyls are spiked only using Aroclor 1260 in Matrix Spikes and LCS.
- For Matrix Spikes and LCS results a dash " - " in the report means that the specific analyte was not added to the QC sample.
- Duplicate RPDs are calculated from raw analytical data thus it is possible to have two sets of data.

Quality Control Results

Comments**Sample Integrity**

Custody Seals Intact (if used)	N/A
Attempt to Chill was evident	Yes
Sample correctly preserved	Yes
Appropriate sample containers have been used	Yes
Sample containers for volatile analysis received with minimal headspace	Yes
Samples received within HoldingTime	Yes
Some samples have been subcontracted	No

Authorised By

Andrew Black Analytical Services Manager
Gabriele Cordero Senior Analyst-Metal (NSW)

**Glenn Jackson
General Manager**

Final report - this Report replaces any previously issued Report

- Indicates Not Requested

* Indicates NATA accreditation does not cover the performance of this service

Measurement uncertainty of test data is available on request or please [click here](#).

Eurofins shall not be liable for loss, cost, damages or expenses incurred by the client, or any other person or company, resulting from the use of any information or interpretation given in this report. In no case shall Eurofins be liable for consequential damages including, but not limited to, lost profits, damages for failure to meet deadlines and lost production arising from this report. This document shall not be reproduced except in full and relates only to the items tested. Unless indicated otherwise, the tests were performed on the samples as received.

Ramboll Environ Australia Pty Ltd
 Level 3/100 Pacific Highway
 North Sydney
 NSW 2060



NATA Accredited
Accreditation Number 1261
Site Number 18217

Accredited for compliance with ISO/IEC 17025 – Testing
 The results of the tests, calibrations and/or
 measurements included in this document are traceable
 to Australian/national standards.

Attention: **Stephen Maxwell**

Report **713017-W**
 Project name **ADDITIONAL - 318000780**
 Received Date **Apr 08, 2020**

Client Sample ID			P19_TWS1	P18_TWS3
Sample Matrix			Water	Water
Eurofins Sample No.			S20-Ap13757	S20-Ap13758
Date Sampled			Mar 31, 2020	Mar 31, 2020
Test/Reference	LOR	Unit		
Heavy Metals				
Lead	0.001	mg/L	0.15	7.1

Sample History

Where samples are submitted/analysed over several days, the last date of extraction and analysis is reported.

A recent review of our LIMS has resulted in the correction or clarification of some method identifications. Due to this, some of the method reference information on reports has changed. However, no substantive change has been made to our laboratory methods, and as such there is no change in the validity of current or previous results.

If the date and time of sampling are not provided, the Laboratory will not be responsible for compromised results should testing be performed outside the recommended holding time.

Description

Heavy Metals

Testing Site

Sydney

Extracted

Apr 16, 2020

Holding Time

180 Days

- Method: LTM-MET-3040 Metals in Waters, Soils & Sediments by ICP-MS

Australia

Melbourne
 6 Monterey Road
 Dandenong South VIC 3175
 Phone : +61 3 8564 5000
 NATA # 1261
 Site # 1254 & 14271

Sydney
 Unit F3, Building F
 16 Mars Road
 Lane Cove West NSW 2066
 Phone : +61 2 9900 8400
 NATA # 1261 Site # 18217

Brisbane
 1/21 Smallwood Place
 Murarrie QLD 4172
 Phone : +61 7 3902 4600
 NATA # 1261 Site # 20794

Perth
 2/91 Leach Highway
 Kewdale WA 6105
 Phone : +61 8 9251 9600
 NATA # 1261
 Site # 23736

New Zealand

Auckland
 35 O'Rorke Road
 Penrose, Auckland 1061
 Phone : +64 9 526 45 51
 IANZ # 1327

Christchurch
 43 Detroit Drive
 Rolleston, Christchurch 7675
 Phone : 0800 856 450
 IANZ # 1290

Company Name: Ramboll Australia Pty Ltd
Address: Level 3/100 Pacific Highway
 North Sydney
 NSW 2060
Project Name: ADDITIONAL - 318000780

Order No.:
Report #: 713017
Phone: 02 9954 8118
Fax: 02 9954 8150

Received: Apr 8, 2020 5:43 PM
Due: Apr 17, 2020
Priority: 5 Day
Contact Name: Stephen Maxwell

Eurofins Analytical Services Manager : Andrew Black

Sample Detail						Lead	Lead (% w/w)	Moisture Set
Melbourne Laboratory - NATA Site # 1254 & 14271								
Sydney Laboratory - NATA Site # 18217						X	X	X
Brisbane Laboratory - NATA Site # 20794								
Perth Laboratory - NATA Site # 23736								
External Laboratory								
No	Sample ID	Sample Date	Sampling Time	Matrix	LAB ID			
1	P19_TWS1	Mar 31, 2020		Sediment	S20-Ap13757	X		X
2	P18_TWS3	Mar 31, 2020		Sediment	S20-Ap13758	X		X
3	P18_PAINT	Mar 31, 2020		Paint	S20-Ap13759		X	
Test Counts						2	1	2

Internal Quality Control Review and Glossary
General

- Laboratory QC results for Method Blanks, Duplicates, Matrix Spikes, and Laboratory Control Samples follows guidelines delineated in the National Environment Protection (Assessment of Site Contamination) Measure 1999, as amended May 2013 and are included in this QC report where applicable. Additional QC data may be available on request.
- All soil/sediment/solid results are reported on a dry basis, unless otherwise stated.
- All biota/food results are reported on a wet weight basis on the edible portion, unless otherwise stated.
- Actual LORs are matrix dependant. Quoted LORs may be raised where sample extracts are diluted due to interferences.
- Results are uncorrected for matrix spikes or surrogate recoveries except for PFAS compounds.
- SVOC analysis on waters are performed on homogenised, unfiltered samples, unless noted otherwise.
- Samples were analysed on an 'as received' basis.
- Information identified on this report with blue colour, indicates data provided by customer, that may have an impact on the results.
- This report replaces any interim results previously issued.

Holding Times

Please refer to 'Sample Preservation and Container Guide' for holding times (QS3001).

For samples received on the last day of holding time, notification of testing requirements should have been received at least 6 hours prior to sample receipt deadlines as stated on the SRA.

If the Laboratory did not receive the information in the required timeframe, and regardless of any other integrity issues, suitably qualified results may still be reported.

Holding times apply from the date of sampling, therefore compliance to these may be outside the laboratory's control.

For VOCs containing vinyl chloride, styrene and 2-chloroethyl vinyl ether the holding time is 7 days however for all other VOCs such as BTEX or C6-10 TRH then the holding time is 14 days.

****NOTE:** pH duplicates are reported as a range NOT as RPD

Units

mg/kg: milligrams per kilogram

mg/L: milligrams per litre

ug/L: micrograms per litre

ppm: Parts per million

ppb: Parts per billion

%: Percentage

org/100mL: Organisms per 100 millilitres

NTU: Nephelometric Turbidity Units

MPN/100mL: Most Probable Number of organisms per 100 millilitres

Terms

Dry	Where a moisture has been determined on a solid sample the result is expressed on a dry basis.
LOR	Limit of Reporting.
SPIKE	Addition of the analyte to the sample and reported as percentage recovery.
RPD	Relative Percent Difference between two Duplicate pieces of analysis.
LCS	Laboratory Control Sample - reported as percent recovery.
CRM	Certified Reference Material - reported as percent recovery.
Method Blank	In the case of solid samples these are performed on laboratory certified clean sands and in the case of water samples these are performed on de-ionised water.
Surr - Surrogate	The addition of a like compound to the analyte target and reported as percentage recovery.
Duplicate	A second piece of analysis from the same sample and reported in the same units as the result to show comparison.
USEPA	United States Environmental Protection Agency
APHA	American Public Health Association
TCLP	Toxicity Characteristic Leaching Procedure
COC	Chain of Custody
SRA	Sample Receipt Advice
QSM	US Department of Defense Quality Systems Manual Version 5.3
CP	Client Parent - QC was performed on samples pertaining to this report
NCP	Non-Client Parent - QC performed on samples not pertaining to this report, QC is representative of the sequence or batch that client samples were analysed within.
TEQ	Toxic Equivalency Quotient

QC - Acceptance Criteria

RPD Duplicates: Global RPD Duplicates Acceptance Criteria is 30% however the following acceptance guidelines are equally applicable:

Results <10 times the LOR : No Limit

Results between 10-20 times the LOR : RPD must lie between 0-50%

Results >20 times the LOR : RPD must lie between 0-30%

Surrogate Recoveries: Recoveries must lie between 20-130% Phenols & 50-150% PFASs

PFAS field samples that contain surrogate recoveries in excess of the QC limit designated in QSM 5.3 where no positive PFAS results have been reported have been reviewed and no data was affected.

WA DWER (n=10): PFBA, PFPeA, PFHxA, PFHpA, PFOA, PFBS, PFHxS, PFOS, 6:2 FTSA, 8:2 FTSA

QC Data General Comments

- Where a result is reported as a less than (<), higher than the nominated LOR, this is due to either matrix interference, extract dilution required due to interferences or contaminant levels within the sample, high moisture content or insufficient sample provided.
- Duplicate data shown within this report that states the word "BATCH" is a Batch Duplicate from outside of your sample batch, but within the laboratory sample batch at a 1:10 ratio. The Parent and Duplicate data shown is not data from your samples.
- Organochlorine Pesticide analysis - where reporting LCS data, Toxaphene & Chlordane are not added to the LCS.
- Organochlorine Pesticide analysis - where reporting Spike data, Toxaphene is not added to the Spike.
- Total Recoverable Hydrocarbons - where reporting Spike & LCS data, a single spike of commercial Hydrocarbon products in the range of C12-C30 is added and it's Total Recovery is reported in the C10-C14 cell of the Report.
- pH and Free Chlorine analysed in the laboratory - Analysis on this test must begin within 30 minutes of sampling. Therefore laboratory analysis is unlikely to be completed within holding time. Analysis will begin as soon as possible after sample receipt.
- Recovery Data (Spikes & Surrogates) - where chromatographic interference does not allow the determination of Recovery the term "INT" appears against that analyte.
- Polychlorinated Biphenyls are spiked only using Aroclor 1260 in Matrix Spikes and LCS.
- For Matrix Spikes and LCS results a dash " - " in the report means that the specific analyte was not added to the QC sample.
- Duplicate RPDs are calculated from raw analytical data thus it is possible to have two sets of data.

Quality Control Results

Test				Units	Result 1		Acceptance Limits	Pass Limits	Qualifying Code	
Method Blank										
Heavy Metals										
Lead				mg/L	< 0.001		0.001	Pass		
LCS - % Recovery										
Heavy Metals										
Lead				%	96		70-130	Pass		
Test	Lab Sample ID	QA Source	Units	Result 1			Acceptance Limits	Pass Limits	Qualifying Code	
Spike - % Recovery										
Heavy Metals										
Lead				S20-Ap12294	NCP	%	101	70-130	Pass	
Duplicate										
Heavy Metals										
Lead				S20-Ap12286	NCP	mg/L	0.056	0.055	1.0	30% Pass

Comments**Sample Integrity**

Custody Seals Intact (if used)	N/A
Attempt to Chill was evident	Yes
Sample correctly preserved	Yes
Appropriate sample containers have been used	Yes
Sample containers for volatile analysis received with minimal headspace	Yes
Samples received within HoldingTime	Yes
Some samples have been subcontracted	No

Authorised By

Andrew Black Analytical Services Manager
Gabriele Cordero Senior Analyst-Metal (NSW)

**Glenn Jackson
General Manager**

Final report - this Report replaces any previously issued Report

- Indicates Not Requested

* Indicates NATA accreditation does not cover the performance of this service

Measurement uncertainty of test data is available on request or please [click here](#).

Eurofins shall not be liable for loss, cost, damages or expenses incurred by the client, or any other person or company, resulting from the use of any information or interpretation given in this report. In no case shall Eurofins be liable for consequential damages including, but not limited to, lost profits, damages for failure to meet deadlines and lost production arising from this report. This document shall not be reproduced except in full and relates only to the items tested. Unless indicated otherwise, the tests were performed on the samples as received.

Ramboll Environ Australia Pty Ltd
 Level 3/100 Pacific Highway
 North Sydney
 NSW 2060



NATA Accredited
Accreditation Number 1261
Site Number 18217

Accredited for compliance with ISO/IEC 17025 – Testing
 The results of the tests, calibrations and/or
 measurements included in this document are traceable
 to Australian/national standards.

Attention: **Stephen Maxwell**

Report **713878-S-V11**

Project name

Project ID **318000780**

Received Date **Apr 15, 2020**

Client Sample ID			P18_TWS1	P18_TWS2
Sample Matrix			Solid	Solid
Eurofins Sample No.			S20-Ap21442	S20-Ap21443
Date Sampled			Mar 31, 2020	Mar 31, 2020
Test/Reference	LOR	Unit		
Heavy Metals				
Lead	1	mg/kg	280	110

Sample History

Where samples are submitted/analysed over several days, the last date of extraction and analysis is reported.

A recent review of our LIMS has resulted in the correction or clarification of some method identifications. Due to this, some of the method reference information on reports has changed. However, no substantive change has been made to our laboratory methods, and as such there is no change in the validity of current or previous results.

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Description

Heavy Metals

Testing Site

Sydney

Extracted

Apr 16, 2020

Holding Time

180 Days

- Method: LTM-MET-3040 Metals in Waters, Soils & Sediments by ICP-MS

Australia

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6 Monterey Road
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NATA # 1261
Site # 1254 & 14271

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Phone : +61 2 9900 8400
NATA # 1261 Site # 18217

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NATA # 1261 Site # 20794

Perth
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Kewdale WA 6105
Phone : +61 8 9251 9600
NATA # 1261
Site # 23736

New Zealand

Auckland
35 O'Rorke Road
Penrose, Auckland 1061
Phone : +64 9 526 45 51
IANZ # 1327

Christchurch
43 Detroit Drive
Rolleston, Christchurch 7675
Phone : 0800 856 450
IANZ # 1290

Company Name: Ramboll Australia Pty Ltd
Address: Level 3/100 Pacific Highway
North Sydney
NSW 2060

Order No.:
Report #: 713878
Phone: 02 9954 8118
Fax: 02 9954 8150

Received: Apr 15, 2020 1:37 PM
Due: Apr 20, 2020
Priority: 3 Day
Contact Name: Stephen Maxwell

Project Name:
Project ID: 318000780

Eurofins Analytical Services Manager : Andrew Black

Sample Detail						Lead	Moisture Set
Melbourne Laboratory - NATA Site # 1254 & 14271							
Sydney Laboratory - NATA Site # 18217						X	X
Brisbane Laboratory - NATA Site # 20794							
Perth Laboratory - NATA Site # 23736							
External Laboratory							
No	Sample ID	Sample Date	Sampling Time	Matrix	LAB ID		
1	P3_TWS2	Mar 26, 2020		Solid	S20-Ap21433	X	X
2	P4_TWS2	Mar 24, 2020		Solid	S20-Ap21434	X	X
3	P7_TWS2	Mar 25, 2020		Solid	S20-Ap21435	X	X
4	SMCTS1	Mar 24, 2020		Solid	S20-Ap21436	X	X
5	P11_TWS1	Mar 26, 2020		Solid	S20-Ap21437	X	X
6	P11_TWS2	Mar 26, 2020		Solid	S20-Ap21438	X	X
7	P12_TWS1	Mar 26, 2020		Solid	S20-Ap21439	X	X
8	P12_TWS2	Mar 26, 2020		Solid	S20-Ap21440	X	X
9	P14_TWS3	Mar 26, 2020		Solid	S20-Ap21441	X	X
10	P18_TWS1	Mar 31, 2020		Solid	S20-Ap21442	X	X

Australia

Melbourne
 6 Monterey Road
 Dandenong South VIC 3175
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 NATA # 1261
 Site # 1254 & 14271

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 NATA # 1261 Site # 20794

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Address: Level 3/100 Pacific Highway
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 NSW 2060

Order No.:
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Phone: 02 9954 8118
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Received: Apr 15, 2020 1:37 PM
Due: Apr 20, 2020
Priority: 3 Day
Contact Name: Stephen Maxwell

Project Name:
Project ID: 318000780

Eurofins Analytical Services Manager : Andrew Black

Sample Detail						Lead	Moisture Set
Melbourne Laboratory - NATA Site # 1254 & 14271							
Sydney Laboratory - NATA Site # 18217						X	X
Brisbane Laboratory - NATA Site # 20794							
Perth Laboratory - NATA Site # 23736							
11	P18_TWS2	Mar 31, 2020		Solid	S20-Ap21443	X	X
12	P21_TWS1	Mar 31, 2020		Solid	S20-Ap21444	X	X
13	P21_TWS2	Mar 31, 2020		Solid	S20-Ap21445	X	X
14	P23_TWS1	Mar 31, 2020		Solid	S20-Ap21446	X	X
Test Counts						14	14

Internal Quality Control Review and Glossary
General

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Holding Times

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Holding times apply from the date of sampling, therefore compliance to these may be outside the laboratory's control.

For VOCs containing vinyl chloride, styrene and 2-chloroethyl vinyl ether the holding time is 7 days however for all other VOCs such as BTEX or C6-10 TRH then the holding time is 14 days.

****NOTE:** pH duplicates are reported as a range NOT as RPD

Units

mg/kg: milligrams per kilogram

mg/L: milligrams per litre

ug/L: micrograms per litre

ppm: Parts per million

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MPN/100mL: Most Probable Number of organisms per 100 millilitres

Terms

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RPD	Relative Percent Difference between two Duplicate pieces of analysis.
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CRM	Certified Reference Material - reported as percent recovery.
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Surr - Surrogate	The addition of a like compound to the analyte target and reported as percentage recovery.
Duplicate	A second piece of analysis from the same sample and reported in the same units as the result to show comparison.
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APHA	American Public Health Association
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CP	Client Parent - QC was performed on samples pertaining to this report
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TEQ	Toxic Equivalency Quotient

QC - Acceptance Criteria

RPD Duplicates: Global RPD Duplicates Acceptance Criteria is 30% however the following acceptance guidelines are equally applicable:

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Results between 10-20 times the LOR : RPD must lie between 0-50%

Results >20 times the LOR : RPD must lie between 0-30%

Surrogate Recoveries: Recoveries must lie between 20-130% Phenols & 50-150% PFASs

PFAS field samples that contain surrogate recoveries in excess of the QC limit designated in QSM 5.3 where no positive PFAS results have been reported have been reviewed and no data was affected.

WA DWER (n=10): PFBA, PFPeA, PFHxA, PFHpA, PFOA, PFBS, PFHxS, PFOS, 6:2 FTSA, 8:2 FTSA

QC Data General Comments

- Where a result is reported as a less than (<), higher than the nominated LOR, this is due to either matrix interference, extract dilution required due to interferences or contaminant levels within the sample, high moisture content or insufficient sample provided.
- Duplicate data shown within this report that states the word "BATCH" is a Batch Duplicate from outside of your sample batch, but within the laboratory sample batch at a 1:10 ratio. The Parent and Duplicate data shown is not data from your samples.
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- Organochlorine Pesticide analysis - where reporting Spike data, Toxaphene is not added to the Spike.
- Total Recoverable Hydrocarbons - where reporting Spike & LCS data, a single spike of commercial Hydrocarbon products in the range of C12-C30 is added and it's Total Recovery is reported in the C10-C14 cell of the Report.
- pH and Free Chlorine analysed in the laboratory - Analysis on this test must begin within 30 minutes of sampling. Therefore laboratory analysis is unlikely to be completed within holding time. Analysis will begin as soon as possible after sample receipt.
- Recovery Data (Spikes & Surrogates) - where chromatographic interference does not allow the determination of Recovery the term "INT" appears against that analyte.
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- For Matrix Spikes and LCS results a dash " - " in the report means that the specific analyte was not added to the QC sample.
- Duplicate RPDs are calculated from raw analytical data thus it is possible to have two sets of data.

Quality Control Results

Test				Units	Result 1			Acceptance Limits	Pass Limits	Qualifying Code	
Method Blank											
Heavy Metals											
Lead				mg/kg	< 1			1	Pass		
LCS - % Recovery											
Heavy Metals											
Lead				%	96			70-130	Pass		
Test	Lab Sample ID	QA Source	Units	Result 1				Acceptance Limits	Pass Limits	Qualifying Code	
Spike - % Recovery											
Heavy Metals											
Lead				B20-Ap16161	NCP	%	89		70-130	Pass	
Spike - % Recovery											
Heavy Metals											
Lead				B20-Ap16161	NCP	%	89		70-130	Pass	
Spike - % Recovery											
Heavy Metals											
Lead				B20-Ap16161	NCP	%	89		70-130	Pass	
Spike - % Recovery											
Heavy Metals											
Lead				B20-Ap16161	NCP	%	89		70-130	Pass	
Spike - % Recovery											
Heavy Metals											
Lead				B20-Ap16161	NCP	%	89		70-130	Pass	
Spike - % Recovery											
Heavy Metals											
Lead				B20-Ap16161	NCP	%	89		70-130	Pass	
Spike - % Recovery											
Heavy Metals											
Lead				B20-Ap16161	NCP	%	89		70-130	Pass	
Spike - % Recovery											
Heavy Metals											
Lead				B20-Ap16161	NCP	%	89		70-130	Pass	
Spike - % Recovery											
Heavy Metals											
Lead				B20-Ap16161	NCP	%	89		70-130	Pass	
Spike - % Recovery											
Heavy Metals											
Lead				B20-Ap16161	NCP	%	89		70-130	Pass	
Spike - % Recovery											
Heavy Metals											
Lead				B20-Ap16161	NCP	%	89		70-130	Pass	
Spike - % Recovery											
Heavy Metals											
Lead				S20-Ap21444	CP	%	87		70-130	Pass	
Test	Lab Sample ID	QA Source	Units	Result 1				Acceptance Limits	Pass Limits	Qualifying Code	
Duplicate											
Heavy Metals											
Lead				S20-Ap17051	NCP	mg/kg	29	35	19	30%	Pass
Duplicate											
Heavy Metals											
Lead				S20-Ap17051	NCP	mg/kg	29	**	19	30%	Pass
Duplicate											
Heavy Metals											
Lead				S20-Ap17051	NCP	mg/kg	29	**	19	30%	Pass
Duplicate											
Heavy Metals											
Lead				S20-Ap17051	NCP	mg/kg	29	**	19	30%	Pass
Duplicate											
Heavy Metals											
Lead				S20-Ap17051	NCP	mg/kg	29	**	19	30%	Pass

Duplicate								
Heavy Metals				Result 1	Result 2	RPD		
Lead	S20-Ap17051	NCP	mg/kg	29	**	19	30%	Pass
Duplicate								
Heavy Metals				Result 1	Result 2	RPD		
Lead	S20-Ap17051	NCP	mg/kg	29	**	19	30%	Pass
Duplicate								
Heavy Metals				Result 1	Result 2	RPD		
Lead	S20-Ap17051	NCP	mg/kg	29	**	19	30%	Pass
Duplicate								
Heavy Metals				Result 1	Result 2	RPD		
Lead	S20-Ap21444	CP	mg/kg	70	69	2.0	30%	Pass

Comments

New version to split samples.

Sample Integrity

Custody Seals Intact (if used)	N/A
Attempt to Chill was evident	N/A
Sample correctly preserved	Yes
Appropriate sample containers have been used	Yes
Sample containers for volatile analysis received with minimal headspace	Yes
Samples received within HoldingTime	Yes
Some samples have been subcontracted	No

Authorised By

Andrew Black Analytical Services Manager
Gabriele Cordero Senior Analyst-Metal (NSW)



Glenn Jackson
General Manager

Final report - this Report replaces any previously issued Report

- Indicates Not Requested

* Indicates NATA accreditation does not cover the performance of this service

Measurement uncertainty of test data is available on request or please [click here](#).

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#AU04_Enviro_Sample_NSW

Subject: FW: 1 and 2 day TAT ADDITIONALS: FW: 318000780 - extra analyses

From: Stephen Maxwell [<mailto:SMAXWELL@ramboll.com>]

Sent: Wednesday, 15 April 2020 12:58 PM

To: Andrew Black

Cc: Joshua Blackwell

Subject: 318000780 - extra analyses

EXTERNAL EMAIL*

Hi Andrew

Thanks for the work you and the Eurofins team are doing on 318000780 – the scale and schedule for these works are challenging but has real value for stakeholders and is very much appreciated.

I'm writing to request some additional analyses on two fronts (both on fastest available TAT).

The first is toward demonstrating the accuracy of in-field XRF testing that we have been completing. We have completed lab analyses for approximately 10% of the samples where XRF testing was undertaken and generally see good correlation. Previously though where high lead concentrations were observed we observed some discrepancies drove decrease in sample masses and increase in digestion times. See email attached for further info. We are keen to explore this further with samples across the range of lead concentrations we have observed in XRF testing. Can Eurofins complete additional testing per that described in the attached email for the following samples from Eurofins ref: 710537?

Sample
MW2_1.0
XMW5_0.05
XMW5_0.5
XMW5_1.0
XMW5_1.5
XMW5_2.5
MW6_0.05
MW6_0.5
MW6_1.0
MW6_1.5
MW6_2.5
XMW7_0.05
XMW7_0.5
XMW7_1.0
XMW7_1.5
XMW7_2.5
XMW7_3.5
XMW7_4.5
WINCH N
WINCH S*

The second relates to our assessment of sediment laden water from rainwater tanks. We have collected samples of sediment laden water, homogenised (shaken them up) at the lab, analysed and reported lead in mg/L. There is no generic criteria for assessing tank sediment though and this leaves options to compare against soil criteria or water criteria. We are currently debating which way to go and would like to have the data for sediment concentrations to support our consideration. To help with this can you dry out the following samples and analyse trace level lead (mg/kg)?

Eurofins Ref	Sample ID
711781	P3_TWS2
710562	P2_TWS1
710646	P7_TWS2
710628	SMCTS1
710611	P11_TWS1
710611	P11_TWS2
710631	P12_TWS1
710631	P12_TWS2
710616	P14_TWS3
711570	P18_TWS1
711570	P18_TWS2
711580	P21_TWS1
711580	P21_TWS2
711589	P23_TWS1

For this one we can receive one consolidated report at the outset though may come back to you requesting amendment of each of the original reports.

Please give me a call to discuss any of the above.

Kind regards
Stephen Maxwell

Lead Consultant
3182675 - Hunter

D +61 478658194
M +61 478658194
smaxwell@ramboll.com

Connect with us 

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ACN 095 437 442
ABN 49 095 437 442

Click [here](#) to report this email as spam.

ScannedByWebsenseForEurofins

*** WARNING - EXTERNAL: This email originated from outside of Eurofins. Do not click any links or open any attachments unless you trust the sender and know that the content is safe!**

Melbourne

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NATA # 1261
Site # 1254 & 14271

Sydney

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Phone : +61 2 9900 8400
NATA # 1261 Site # 18217

Brisbane

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Phone : +61 7 3902 4600
NATA # 1261 Site # 20794

Perth

2/91 Leach Highway
Kewdale WA 6105
Phone : +61 8 9251 9600
NATA # 1261 Site # 23736

Sample Receipt Advice

Company name: **Ramboll Australia Pty Ltd**

Contact name: **Stephen Maxwell**

Project ID: **318000780**

COC number: **Not provided**

Turn around time: **2 Day**

Date/Time received: **Apr 15, 2020 1:37 PM**

Eurofins reference: **713878**

Sample information

- A detailed list of analytes logged into our LIMS, is included in the attached summary table.
- All samples have been received as described on the above COC.
- COC has been completed correctly.
- N/A Attempt to chill was evident.
- Appropriately preserved sample containers have been used.
- All samples were received in good condition.
- Samples have been provided with adequate time to commence analysis in accordance with the relevant holding times.
- Appropriate sample containers have been used.
- Split sample sent to requested external lab.
- Some samples have been subcontracted.
- N/A Custody Seals intact (if used).

Contact notes

If you have any questions with respect to these samples please contact:

Andrew Black on Phone : (+61) 2 9900 8490 or by e.mail: AndrewBlack@eurofins.com

Results will be delivered electronically via e.mail to Stephen Maxwell - smaxwell@ramboll.com.

Note: A copy of these results will also be delivered to the general Ramboll Australia Pty Ltd email address.

Australia

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43 Detroit Drive
Rolleston, Christchurch 7675
Phone : 0800 856 450
IANZ # 1290

ABN – 50 005 085 521

web : www.eurofins.com.au

e.mail : EnviroSales@eurofins.com

Company Name: Ramboll Australia Pty Ltd
Address: Level 3/100 Pacific Highway
North Sydney
NSW 2060

Order No.:
Report #: 713878
Phone: 02 9954 8118
Fax: 02 9954 8150

Received: Apr 15, 2020 1:37 PM
Due: Apr 17, 2020
Priority: 2 Day
Contact Name: Stephen Maxwell

Project Name:
Project ID: 318000780

Eurofins Analytical Services Manager : Andrew Black

Sample Detail						Lead	Moisture Set
Melbourne Laboratory - NATA Site # 1254 & 14271							
Sydney Laboratory - NATA Site # 18217						X	X
Brisbane Laboratory - NATA Site # 20794							
Perth Laboratory - NATA Site # 23736							
External Laboratory							
No	Sample ID	Sample Date	Sampling Time	Matrix	LAB ID		
1	P3_TWS2	Mar 26, 2020		Solid	S20-Ap21433	X	X
2	P2_TWS1	Mar 24, 2020		Solid	S20-Ap21434	X	X
3	P7_TWS2	Mar 25, 2020		Solid	S20-Ap21435	X	X
4	SMCTS1	Mar 24, 2020		Solid	S20-Ap21436	X	X
5	P11_TWS1	Mar 26, 2020		Solid	S20-Ap21437	X	X
6	P11_TWS2	Mar 26, 2020		Solid	S20-Ap21438	X	X
7	P12_TWS1	Mar 26, 2020		Solid	S20-Ap21439	X	X
8	P12_TWS2	Mar 26, 2020		Solid	S20-Ap21440	X	X
9	P14_TWS3	Mar 26, 2020		Solid	S20-Ap21441	X	X
10	P18_TWS1	Mar 31, 2020		Solid	S20-Ap21442	X	X

Australia

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 43 Detroit Drive
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Melbourne Laboratory - NATA Site # 1254 & 14271							
Sydney Laboratory - NATA Site # 18217						X	X
Brisbane Laboratory - NATA Site # 20794							
Perth Laboratory - NATA Site # 23736							
11	P18_TWS2	Mar 31, 2020		Solid	S20-Ap21443	X	X
12	P21_TWS1	Mar 31, 2020		Solid	S20-Ap21444	X	X
13	P21_TWS2	Mar 31, 2020		Solid	S20-Ap21445	X	X
14	P23_TWS1	Mar 31, 2020		Solid	S20-Ap21446	X	X
Test Counts						14	14

Ramboll Environ Australia Pty Ltd
 Level 3/100 Pacific Highway
 North Sydney
 NSW 2060



NATA Accredited
 Accreditation Number 1261
 Site Number 18217

Accredited for compliance with ISO/IEC 17025 – Testing
 The results of the tests, calibrations and/or
 measurements included in this document are traceable
 to Australian/national standards.

Attention: Stephen Maxwell

Report 713878-S
 Project name
 Project ID 318000780
 Received Date Apr 15, 2020

Client Sample ID			P3_TWS2	P2_TWS1	P7_TWS2	SMCTS1
Sample Matrix			Solid	Solid	Solid	Solid
Eurofins Sample No.			S20-Ap21433	S20-Ap21434	S20-Ap21435	S20-Ap21436
Date Sampled			Mar 26, 2020	Mar 24, 2020	Mar 25, 2020	Mar 24, 2020
Test/Reference	LOR	Unit				
Heavy Metals						
Lead	1	mg/kg	450	360	100	240

Client Sample ID			P11_TWS1	P11_TWS2	P12_TWS1	P12_TWS2
Sample Matrix			Solid	Solid	Solid	Solid
Eurofins Sample No.			S20-Ap21437	S20-Ap21438	S20-Ap21439	S20-Ap21440
Date Sampled			Mar 26, 2020	Mar 26, 2020	Mar 26, 2020	Mar 26, 2020
Test/Reference	LOR	Unit				
Heavy Metals						
Lead	1	mg/kg	590	47	68	220

Client Sample ID			P14_TWS3	P18_TWS1	P18_TWS2	P21_TWS1
Sample Matrix			Solid	Solid	Solid	Solid
Eurofins Sample No.			S20-Ap21441	S20-Ap21442	S20-Ap21443	S20-Ap21444
Date Sampled			Mar 26, 2020	Mar 31, 2020	Mar 31, 2020	Mar 31, 2020
Test/Reference	LOR	Unit				
Heavy Metals						
Lead	1	mg/kg	82	280	110	70

Client Sample ID			P21_TWS2	P23_TWS1
Sample Matrix			Solid	Solid
Eurofins Sample No.			S20-Ap21445	S20-Ap21446
Date Sampled			Mar 31, 2020	Mar 31, 2020
Test/Reference	LOR	Unit		
Heavy Metals				
Lead	1	mg/kg	32	500

Sample History

Where samples are submitted/analysed over several days, the last date of extraction and analysis is reported.

A recent review of our LIMS has resulted in the correction or clarification of some method identifications. Due to this, some of the method reference information on reports has changed. However, no substantive change has been made to our laboratory methods, and as such there is no change in the validity of current or previous results.

If the date and time of sampling are not provided, the Laboratory will not be responsible for compromised results should testing be performed outside the recommended holding time.

Description

Heavy Metals

Testing Site

Sydney

Extracted

Apr 16, 2020

Holding Time

180 Days

- Method: LTM-MET-3040 Metals in Waters, Soils & Sediments by ICP-MS

Australia

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Company Name:	Ramboll Australia Pty Ltd	Order No.:		Received:	Apr 15, 2020 1:37 PM
Address:	Level 3/100 Pacific Highway North Sydney NSW 2060	Report #:	713878	Due:	Apr 17, 2020
Project Name:		Phone:	02 9954 8118	Priority:	2 Day
Project ID:	318000780	Fax:	02 9954 8150	Contact Name:	Stephen Maxwell

Eurofins Analytical Services Manager : Andrew Black

Sample Detail						Lead	Moisture Set
Melbourne Laboratory - NATA Site # 1254 & 14271							
Sydney Laboratory - NATA Site # 18217						X	X
Brisbane Laboratory - NATA Site # 20794							
Perth Laboratory - NATA Site # 23736							
External Laboratory							
No	Sample ID	Sample Date	Sampling Time	Matrix	LAB ID		
1	P3_TWS2	Mar 26, 2020		Solid	S20-Ap21433	X	X
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3	P7_TWS2	Mar 25, 2020		Solid	S20-Ap21435	X	X
4	SMCTS1	Mar 24, 2020		Solid	S20-Ap21436	X	X
5	P11_TWS1	Mar 26, 2020		Solid	S20-Ap21437	X	X
6	P11_TWS2	Mar 26, 2020		Solid	S20-Ap21438	X	X
7	P12_TWS1	Mar 26, 2020		Solid	S20-Ap21439	X	X
8	P12_TWS2	Mar 26, 2020		Solid	S20-Ap21440	X	X
9	P14_TWS3	Mar 26, 2020		Solid	S20-Ap21441	X	X
10	P18_TWS1	Mar 31, 2020		Solid	S20-Ap21442	X	X

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Brisbane Laboratory - NATA Site # 20794							
Perth Laboratory - NATA Site # 23736							
11	P18_TWS2	Mar 31, 2020		Solid	S20-Ap21443	X	X
12	P21_TWS1	Mar 31, 2020		Solid	S20-Ap21444	X	X
13	P21_TWS2	Mar 31, 2020		Solid	S20-Ap21445	X	X
14	P23_TWS1	Mar 31, 2020		Solid	S20-Ap21446	X	X
Test Counts						14	14

Internal Quality Control Review and Glossary
General

1. Laboratory QC results for Method Blanks, Duplicates, Matrix Spikes, and Laboratory Control Samples follows guidelines delineated in the National Environment Protection (Assessment of Site Contamination) Measure 1999, as amended May 2013 and are included in this QC report where applicable. Additional QC data may be available on request.
2. All soil/sediment/solid results are reported on a dry basis, unless otherwise stated.
3. All biota/food results are reported on a wet weight basis on the edible portion, unless otherwise stated.
4. Actual LORs are matrix dependant. Quoted LORs may be raised where sample extracts are diluted due to interferences.
5. Results are uncorrected for matrix spikes or surrogate recoveries except for PFAS compounds.
6. SVOC analysis on waters are performed on homogenised, unfiltered samples, unless noted otherwise.
7. Samples were analysed on an 'as received' basis.
8. Information identified on this report with blue colour, indicates data provided by customer, that may have an impact on the results.
9. This report replaces any interim results previously issued.

Holding Times

Please refer to 'Sample Preservation and Container Guide' for holding times (QS3001).

For samples received on the last day of holding time, notification of testing requirements should have been received at least 6 hours prior to sample receipt deadlines as stated on the SRA.

If the Laboratory did not receive the information in the required timeframe, and regardless of any other integrity issues, suitably qualified results may still be reported.

Holding times apply from the date of sampling, therefore compliance to these may be outside the laboratory's control.

For VOCs containing vinyl chloride, styrene and 2-chloroethyl vinyl ether the holding time is 7 days however for all other VOCs such as BTEX or C6-10 TRH then the holding time is 14 days.

****NOTE:** pH duplicates are reported as a range NOT as RPD

Units

mg/kg: milligrams per kilogram

mg/L: milligrams per litre

ug/L: micrograms per litre

ppm: Parts per million

ppb: Parts per billion

%: Percentage

org/100mL: Organisms per 100 millilitres

NTU: Nephelometric Turbidity Units

MPN/100mL: Most Probable Number of organisms per 100 millilitres

Terms

Dry	Where a moisture has been determined on a solid sample the result is expressed on a dry basis.
LOR	Limit of Reporting.
SPIKE	Addition of the analyte to the sample and reported as percentage recovery.
RPD	Relative Percent Difference between two Duplicate pieces of analysis.
LCS	Laboratory Control Sample - reported as percent recovery.
CRM	Certified Reference Material - reported as percent recovery.
Method Blank	In the case of solid samples these are performed on laboratory certified clean sands and in the case of water samples these are performed on de-ionised water.
Surr - Surrogate	The addition of a like compound to the analyte target and reported as percentage recovery.
Duplicate	A second piece of analysis from the same sample and reported in the same units as the result to show comparison.
USEPA	United States Environmental Protection Agency
APHA	American Public Health Association
TCLP	Toxicity Characteristic Leaching Procedure
COC	Chain of Custody
SRA	Sample Receipt Advice
QSM	US Department of Defense Quality Systems Manual Version 5.3
CP	Client Parent - QC was performed on samples pertaining to this report
NCP	Non-Client Parent - QC performed on samples not pertaining to this report, QC is representative of the sequence or batch that client samples were analysed within.
TEQ	Toxic Equivalency Quotient

QC - Acceptance Criteria

RPD Duplicates: Global RPD Duplicates Acceptance Criteria is 30% however the following acceptance guidelines are equally applicable:

Results <10 times the LOR : No Limit

Results between 10-20 times the LOR : RPD must lie between 0-50%

Results >20 times the LOR : RPD must lie between 0-30%

Surrogate Recoveries: Recoveries must lie between 20-130% Phenols & 50-150% PFASs

PFAS field samples that contain surrogate recoveries in excess of the QC limit designated in QSM 5.3 where no positive PFAS results have been reported have been reviewed and no data was affected.

WA DWER (n=10): PFBA, PFPeA, PFHxA, PFHpA, PFOA, PFBS, PFHxS, PFOS, 6:2 FTSA, 8:2 FTSA

QC Data General Comments

1. Where a result is reported as a less than (<), higher than the nominated LOR, this is due to either matrix interference, extract dilution required due to interferences or contaminant levels within the sample, high moisture content or insufficient sample provided.
2. Duplicate data shown within this report that states the word "BATCH" is a Batch Duplicate from outside of your sample batch, but within the laboratory sample batch at a 1:10 ratio. The Parent and Duplicate data shown is not data from your samples.
3. Organochlorine Pesticide analysis - where reporting LCS data, Toxaphene & Chlordane are not added to the LCS.
4. Organochlorine Pesticide analysis - where reporting Spike data, Toxaphene is not added to the Spike.
5. Total Recoverable Hydrocarbons - where reporting Spike & LCS data, a single spike of commercial Hydrocarbon products in the range of C12-C30 is added and it's Total Recovery is reported in the C10-C14 cell of the Report.
6. pH and Free Chlorine analysed in the laboratory - Analysis on this test must begin within 30 minutes of sampling. Therefore laboratory analysis is unlikely to be completed within holding time. Analysis will begin as soon as possible after sample receipt.
7. Recovery Data (Spikes & Surrogates) - where chromatographic interference does not allow the determination of Recovery the term "INT" appears against that analyte.
8. Polychlorinated Biphenyls are spiked only using Aroclor 1260 in Matrix Spikes and LCS.
9. For Matrix Spikes and LCS results a dash " - " in the report means that the specific analyte was not added to the QC sample.
10. Duplicate RPDs are calculated from raw analytical data thus it is possible to have two sets of data.

Quality Control Results

Test				Units	Result 1		Acceptance Limits	Pass Limits	Qualifying Code		
Method Blank											
Heavy Metals											
Lead				mg/kg	< 1		1	Pass			
LCS - % Recovery											
Heavy Metals											
Lead				%	96		70-130	Pass			
Test	Lab Sample ID	QA Source	Units	Result 1			Acceptance Limits	Pass Limits	Qualifying Code		
Spike - % Recovery											
Heavy Metals											
Lead				S20-Ap21444	CP	%	87	70-130	Pass		
Duplicate											
Heavy Metals											
Lead				S20-Ap21444	CP	mg/kg	70	69	2.0	30%	Pass

Comments**Sample Integrity**

Custody Seals Intact (if used)	N/A
Attempt to Chill was evident	N/A
Sample correctly preserved	Yes
Appropriate sample containers have been used	Yes
Sample containers for volatile analysis received with minimal headspace	Yes
Samples received within HoldingTime	Yes
Some samples have been subcontracted	No

Authorised By

Andrew Black Analytical Services Manager
Gabriele Cordero Senior Analyst-Metal (NSW)

**Glenn Jackson
General Manager**

Final report - this Report replaces any previously issued Report

- Indicates Not Requested

* Indicates NATA accreditation does not cover the performance of this service

Measurement uncertainty of test data is available on request or please [click here](#).

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CHAIN OF CUSTODY RECORD

ABN 50 005 856 521

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02 9800 8400 EnviroSamplesNSW@eurofins.com

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Perth Laboratory
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08 9291 1900 EnviroSampleWA@eurofins.com

Melbourne Laboratory
2 Kingston Town Close, Oakleigh, VIC 3166
03 8564 5000 EnviroSampleVIC@eurofins.com

Company Ramboll **Project No** 318000780 **Project Name** P18 **Project Manager** (ES&I, Equis, Custom) **Stephen Maxwell** **Excel and PDF** **Sampler(s)** JB, T.J, JK **Handed over by** Jordyn Kirsch

Address 50 Glebe Road the Junction **Contact Name** Stephen Maxwell **Phone No** 0478 658 194 **Analyses** (Note: Where initials are requested, please specify "Total" or "Filterer") SUITE code must be used to extract SUITE pricing
Total Lead (mg/kg) Total Sample Mass Total Lead (µg/L)

Quote ID No 180813RAMM_1 **Client Sample ID** **Sampled Date/Time** (dd/mm/yy hh:mm) **Matrix** (Solid (S) Water (W))

No	Client Sample ID	Sampled Date/Time (dd/mm/yy hh:mm)	Matrix (Solid (S) Water (W))	Total Lead (mg/kg)	Total Sample Mass	Total Lead (µg/L)
1	DVAC_LR(P18)	30/04/20	S	X	X	
2	DVAC_KP(P18)	30/04/20	S	X	X	
3	DSWAB_BE(P18)	30/04/20	S		X	
4	DSWAB_FE(P18)	30/04/20	S		X	
5	DSWAB_MH(P18)	30/04/20	S		X	
6	DSWAB_AC(P18)	30/04/20	S		X	
7						
8						
9						
10						
Total Counts				2	2	4

Method of Shipment Courier (#) Hand Delivered Postal **Name** **Signature**

Eurofins | mgt Laboratory Use Only **Received By** **Signature** **Date** **Time** **Temperature** **Report No**

Containers
 1L Plastic
 250mL Plastic
 125mL Plastic
 200mL Amber Glass
 40mL VOA vial
 500mL PFAS Bottle
 Jar (Glass or HDPE)
 Other (Asbestos AS4964, WA Guidelines)

Turnaround Time (TAT)
 Requirements (Container will be 5 days if not ticked)
 Overnight (9am)*
 1 Day*
 2 Day*
 3 Day*
 5 Day*
 Other ()
 *Surcharges apply

Sample Comments / Dangerous Goods Hazard Warning

Handed over by Jordyn Kirsch

Sampler(s) JB, T.J, JK

Email for Invoice smaxwell@ramboll.com
aslapac-accounts@ramboll.com

Email for Results smaxwell@ramboll.com
blackwell@ramboll.com

Submission of samples to the laboratory will be deemed as acceptance of Eurofins | mgt Standard Terms and Conditions unless agreed otherwise. A copy of Eurofins | mgt Standard Terms and Conditions is available on request.

Eurofins Environment Testing Australia Pty Ltd trading as Eurofins | mgt

Melbourne

6 Monterey Road
Dandenong South Vic 3175
Phone : +61 3 8564 5000
NATA # 1261
Site # 1254 & 14271

Sydney

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Brisbane

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NATA # 1261 Site # 20794

Perth

2/91 Leach Highway
Kewdale WA 6105
Phone : +61 8 9251 9600
NATA # 1261 Site # 23736

Sample Receipt Advice

Company name: **Ramboll Australia Pty Ltd**
Contact name: Stephen Maxwell
Project name: P18
Project ID: 318000780
COC number: Not provided
Turn around time: 5 Day
Date/Time received: May 1, 2020 12:00 PM
Eurofins reference: **716953**

Sample information

- A detailed list of analytes logged into our LIMS, is included in the attached summary table.
- All samples have been received as described on the above COC.
- COC has been completed correctly.
- N/A Attempt to chill was evident.
- Appropriately preserved sample containers have been used.
- All samples were received in good condition.
- Samples have been provided with adequate time to commence analysis in accordance with the relevant holding times.
- Appropriate sample containers have been used.
- Split sample sent to requested external lab.
- Some samples have been subcontracted.
- N/A Custody Seals intact (if used).

Contact notes

If you have any questions with respect to these samples please contact:

Andrew Black on Phone : (+61) 2 9900 8490 or by e.mail: AndrewBlack@eurofins.com

Results will be delivered electronically via e.mail to Stephen Maxwell - smaxwell@ramboll.com.

Note: A copy of these results will also be delivered to the general Ramboll Australia Pty Ltd email address.

Australia

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Christchurch
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Rolleston, Christchurch 7675
Phone : 0800 856 450
IANZ # 1290

Company Name: Ramboll Australia Pty Ltd
Address: Level 3/100 Pacific Highway
North Sydney
NSW 2060

Project Name: P18
Project ID: 318000780

Order No.:
Report #: 716953
Phone: 02 9954 8118
Fax: 02 9954 8150

Received: May 1, 2020 12:00 PM
Due: May 8, 2020
Priority: 5 Day
Contact Name: Stephen Maxwell

Eurofins Analytical Services Manager : Andrew Black

Sample Detail						Lead	Mass of sample*
Melbourne Laboratory - NATA Site # 1254 & 14271							
Sydney Laboratory - NATA Site # 18217						X	X
Brisbane Laboratory - NATA Site # 20794							
Perth Laboratory - NATA Site # 23736							
External Laboratory							
No	Sample ID	Sample Date	Sampling Time	Matrix	LAB ID		
1	DVAC_LR(P18)	Apr 30, 2020		Dust	S20-My01066	X	X
2	DVAC_KB(P18)	Apr 30, 2020		Dust	S20-My01067	X	X
3	DSWAB_BE(P18)	Apr 30, 2020		Wipes	S20-My01068	X	
4	DSWAB_FE(P18)	Apr 30, 2020		Wipes	S20-My01069	X	
5	DSWAB_MH(P18)	Apr 30, 2020		Wipes	S20-My01070	X	
6	DSWAB_AC(P18)	Apr 30, 2020		Wipes	S20-My01071	X	

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Company Name:	Ramboll Australia Pty Ltd	Order No.:		Received:	May 1, 2020 12:00 PM
Address:	Level 3/100 Pacific Highway North Sydney NSW 2060	Report #:	716953	Due:	May 8, 2020
Project Name:	P18	Phone:	02 9954 8118	Priority:	5 Day
Project ID:	318000780	Fax:	02 9954 8150	Contact Name:	Stephen Maxwell
Eurofins Analytical Services Manager : Andrew Black					

Sample Detail	Lead	Mass of sample*
Melbourne Laboratory - NATA Site # 1254 & 14271		
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Perth Laboratory - NATA Site # 23736		
Test Counts	6	2

Ramboll Environ Australia Pty Ltd
 Level 3/100 Pacific Highway
 North Sydney
 NSW 2060



NATA Accredited
Accreditation Number 1261
Site Number 18217

Accredited for compliance with ISO/IEC 17025 – Testing
 The results of the tests, calibrations and/or
 measurements included in this document are traceable
 to Australian/national standards.

Attention: **Stephen Maxwell**

Report **716953-A**
 Project name **P18**
 Project ID **318000780**
 Received Date **May 01, 2020**

Client Sample ID			DSWAB_BE(P18)	DSWAB_FE(P18)	DSWAB_MH(P18)	DSWAB_AC(P18)
Sample Matrix			Wipes	Wipes	Wipes	Wipes
Eurofins Sample No.			S20-My01068	S20-My01069	S20-My01070	S20-My01071
Date Sampled			Apr 30, 2020	Apr 30, 2020	Apr 30, 2020	Apr 30, 2020
Test/Reference	LOR	Unit				
Heavy Metals						
Lead	1	Total ug	20	13	54	72

Sample History

Where samples are submitted/analysed over several days, the last date of extraction and analysis is reported.

A recent review of our LIMS has resulted in the correction or clarification of some method identifications. Due to this, some of the method reference information on reports has changed. However, no substantive change has been made to our laboratory methods, and as such there is no change in the validity of current or previous results.

If the date and time of sampling are not provided, the Laboratory will not be responsible for compromised results should testing be performed outside the recommended holding time.

Description

Heavy Metals

Testing Site

Sydney

Extracted

May 07, 2020

Holding Time

180 Days

- Method: LTM-MET-3040 Metals in Waters, Soils & Sediments by ICP-MS

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Company Name: Ramboll Australia Pty Ltd
Address: Level 3/100 Pacific Highway
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NSW 2060

Project Name: P18
Project ID: 318000780

Order No.:
Report #: 716953
Phone: 02 9954 8118
Fax: 02 9954 8150

Received: May 1, 2020 12:00 PM
Due: May 8, 2020
Priority: 5 Day
Contact Name: Stephen Maxwell

Eurofins Analytical Services Manager : Andrew Black

Sample Detail						Lead	Mass of sample*
Melbourne Laboratory - NATA Site # 1254 & 14271							
Sydney Laboratory - NATA Site # 18217						X	X
Brisbane Laboratory - NATA Site # 20794							
Perth Laboratory - NATA Site # 23736							
External Laboratory							
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ABN – 50 005 085 521

web : www.eurofins.com.au

e.mail : EnviroSales@eurofins.com

Company Name: Ramboll Australia Pty Ltd
Address: Level 3/100 Pacific Highway
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Project Name: P18
Project ID: 318000780

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Melbourne Laboratory - NATA Site # 1254 & 14271		
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Brisbane Laboratory - NATA Site # 20794		
Perth Laboratory - NATA Site # 23736		
Test Counts	6	2

Internal Quality Control Review and Glossary
General

- Laboratory QC results for Method Blanks, Duplicates, Matrix Spikes, and Laboratory Control Samples follows guidelines delineated in the National Environment Protection (Assessment of Site Contamination) Measure 1999, as amended May 2013 and are included in this QC report where applicable. Additional QC data may be available on request.
- All soil/sediment/solid results are reported on a dry basis, unless otherwise stated.
- All biota/food results are reported on a wet weight basis on the edible portion, unless otherwise stated.
- Actual LORs are matrix dependant. Quoted LORs may be raised where sample extracts are diluted due to interferences.
- Results are uncorrected for matrix spikes or surrogate recoveries except for PFAS compounds.
- SVOC analysis on waters are performed on homogenised, unfiltered samples, unless noted otherwise.
- Samples were analysed on an 'as received' basis.
- Information identified on this report with blue colour, indicates data provided by customer, that may have an impact on the results.
- This report replaces any interim results previously issued.

Holding Times

Please refer to 'Sample Preservation and Container Guide' for holding times (QS3001).

For samples received on the last day of holding time, notification of testing requirements should have been received at least 6 hours prior to sample receipt deadlines as stated on the SRA.

If the Laboratory did not receive the information in the required timeframe, and regardless of any other integrity issues, suitably qualified results may still be reported.

Holding times apply from the date of sampling, therefore compliance to these may be outside the laboratory's control.

For VOCs containing vinyl chloride, styrene and 2-chloroethyl vinyl ether the holding time is 7 days however for all other VOCs such as BTEX or C6-10 TRH then the holding time is 14 days.

****NOTE:** pH duplicates are reported as a range NOT as RPD

Units

mg/kg: milligrams per kilogram

mg/L: milligrams per litre

ug/L: micrograms per litre

ppm: Parts per million

ppb: Parts per billion

%: Percentage

org/100mL: Organisms per 100 millilitres

NTU: Nephelometric Turbidity Units

MPN/100mL: Most Probable Number of organisms per 100 millilitres

Terms

Dry	Where a moisture has been determined on a solid sample the result is expressed on a dry basis.
LOR	Limit of Reporting.
SPIKE	Addition of the analyte to the sample and reported as percentage recovery.
RPD	Relative Percent Difference between two Duplicate pieces of analysis.
LCS	Laboratory Control Sample - reported as percent recovery.
CRM	Certified Reference Material - reported as percent recovery.
Method Blank	In the case of solid samples these are performed on laboratory certified clean sands and in the case of water samples these are performed on de-ionised water.
Surr - Surrogate	The addition of a like compound to the analyte target and reported as percentage recovery.
Duplicate	A second piece of analysis from the same sample and reported in the same units as the result to show comparison.
USEPA	United States Environmental Protection Agency
APHA	American Public Health Association
TCLP	Toxicity Characteristic Leaching Procedure
COC	Chain of Custody
SRA	Sample Receipt Advice
QSM	US Department of Defense Quality Systems Manual Version 5.3
CP	Client Parent - QC was performed on samples pertaining to this report
NCP	Non-Client Parent - QC performed on samples not pertaining to this report, QC is representative of the sequence or batch that client samples were analysed within.
TEQ	Toxic Equivalency Quotient

QC - Acceptance Criteria

RPD Duplicates: Global RPD Duplicates Acceptance Criteria is 30% however the following acceptance guidelines are equally applicable:

Results <10 times the LOR : No Limit

Results between 10-20 times the LOR : RPD must lie between 0-50%

Results >20 times the LOR : RPD must lie between 0-30%

Surrogate Recoveries: Recoveries must lie between 20-130% Phenols & 50-150% PFASs

PFAS field samples that contain surrogate recoveries in excess of the QC limit designated in QSM 5.3 where no positive PFAS results have been reported have been reviewed and no data was affected.

WA DWER (n=10): PFBA, PFPeA, PFHxA, PFHpA, PFOA, PFBS, PFHxS, PFOS, 6:2 FTSA, 8:2 FTSA

QC Data General Comments

- Where a result is reported as a less than (<), higher than the nominated LOR, this is due to either matrix interference, extract dilution required due to interferences or contaminant levels within the sample, high moisture content or insufficient sample provided.
- Duplicate data shown within this report that states the word "BATCH" is a Batch Duplicate from outside of your sample batch, but within the laboratory sample batch at a 1:10 ratio. The Parent and Duplicate data shown is not data from your samples.
- Organochlorine Pesticide analysis - where reporting LCS data, Toxaphene & Chlordane are not added to the LCS.
- Organochlorine Pesticide analysis - where reporting Spike data, Toxaphene is not added to the Spike.
- Total Recoverable Hydrocarbons - where reporting Spike & LCS data, a single spike of commercial Hydrocarbon products in the range of C12-C30 is added and it's Total Recovery is reported in the C10-C14 cell of the Report.
- pH and Free Chlorine analysed in the laboratory - Analysis on this test must begin within 30 minutes of sampling. Therefore laboratory analysis is unlikely to be completed within holding time. Analysis will begin as soon as possible after sample receipt.
- Recovery Data (Spikes & Surrogates) - where chromatographic interference does not allow the determination of Recovery the term "INT" appears against that analyte.
- Polychlorinated Biphenyls are spiked only using Aroclor 1260 in Matrix Spikes and LCS.
- For Matrix Spikes and LCS results a dash " - " in the report means that the specific analyte was not added to the QC sample.
- Duplicate RPDs are calculated from raw analytical data thus it is possible to have two sets of data.

Quality Control Results

Comments**Sample Integrity**

Custody Seals Intact (if used)	N/A
Attempt to Chill was evident	N/A
Sample correctly preserved	Yes
Appropriate sample containers have been used	Yes
Sample containers for volatile analysis received with minimal headspace	Yes
Samples received within HoldingTime	Yes
Some samples have been subcontracted	No

Authorised By

Andrew Black Analytical Services Manager
Gabriele Cordero Senior Analyst-Metal (NSW)

**Glenn Jackson
General Manager**

Final report - this Report replaces any previously issued Report

- Indicates Not Requested

* Indicates NATA accreditation does not cover the performance of this service

Measurement uncertainty of test data is available on request or please [click here](#).

Eurofins shall not be liable for loss, cost, damages or expenses incurred by the client, or any other person or company, resulting from the use of any information or interpretation given in this report. In no case shall Eurofins be liable for consequential damages including, but not limited to, lost profits, damages for failure to meet deadlines and lost production arising from this report. This document shall not be reproduced except in full and relates only to the items tested. Unless indicated otherwise, the tests were performed on the samples as received.

Ramboll Environ Australia Pty Ltd
 Level 3/100 Pacific Highway
 North Sydney
 NSW 2060



NATA Accredited
Accreditation Number 1261
Site Number 18217

Accredited for compliance with ISO/IEC 17025 – Testing
 The results of the tests, calibrations and/or
 measurements included in this document are traceable
 to Australian/national standards.

Attention: **Stephen Maxwell**

Report **716953-S**
 Project name **P18**
 Project ID **318000780**
 Received Date **May 01, 2020**

Client Sample ID			DVAC_LR(P18)	DVAC_KB(P18)
Sample Matrix			Dust	Dust
Eurofins Sample No.			S20-My01066	S20-My01067
Date Sampled			Apr 30, 2020	Apr 30, 2020
Test/Reference	LOR	Unit		
Heavy Metals				
Lead	5	mg/kg	48	83

Sample History

Where samples are submitted/analysed over several days, the last date of extraction and analysis is reported.

A recent review of our LIMS has resulted in the correction or clarification of some method identifications. Due to this, some of the method reference information on reports has changed. However, no substantive change has been made to our laboratory methods, and as such there is no change in the validity of current or previous results.

If the date and time of sampling are not provided, the Laboratory will not be responsible for compromised results should testing be performed outside the recommended holding time.

Description

Heavy Metals

Testing Site

Sydney

Extracted

May 01, 2020

Holding Time

180 Days

- Method: LTM-MET-3040 Metals in Waters, Soils & Sediments by ICP-MS

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Project Name: P18
Project ID: 318000780

Order No.:
Report #: 716953
Phone: 02 9954 8118
Fax: 02 9954 8150

Received: May 1, 2020 12:00 PM
Due: May 8, 2020
Priority: 5 Day
Contact Name: Stephen Maxwell

Eurofins Analytical Services Manager : Andrew Black

Sample Detail						Lead	Mass of sample*
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Project Name: P18
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Test Counts	6	2

Internal Quality Control Review and Glossary
General

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For VOCs containing vinyl chloride, styrene and 2-chloroethyl vinyl ether the holding time is 7 days however for all other VOCs such as BTEX or C6-10 TRH then the holding time is 14 days.

****NOTE:** pH duplicates are reported as a range NOT as RPD

Units

mg/kg: milligrams per kilogram

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ug/L: micrograms per litre

ppm: Parts per million

ppb: Parts per billion

%: Percentage

org/100mL: Organisms per 100 millilitres

NTU: Nephelometric Turbidity Units

MPN/100mL: Most Probable Number of organisms per 100 millilitres

Terms

Dry	Where a moisture has been determined on a solid sample the result is expressed on a dry basis.
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RPD	Relative Percent Difference between two Duplicate pieces of analysis.
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Results >20 times the LOR : RPD must lie between 0-30%

Surrogate Recoveries: Recoveries must lie between 20-130% Phenols & 50-150% PFASs

PFAS field samples that contain surrogate recoveries in excess of the QC limit designated in QSM 5.3 where no positive PFAS results have been reported have been reviewed and no data was affected.

WA DWER (n=10): PFBA, PFPeA, PFHxA, PFHpA, PFOA, PFBS, PFHxS, PFOS, 6:2 FTSA, 8:2 FTSA

QC Data General Comments

- Where a result is reported as a less than (<), higher than the nominated LOR, this is due to either matrix interference, extract dilution required due to interferences or contaminant levels within the sample, high moisture content or insufficient sample provided.
- Duplicate data shown within this report that states the word "BATCH" is a Batch Duplicate from outside of your sample batch, but within the laboratory sample batch at a 1:10 ratio. The Parent and Duplicate data shown is not data from your samples.
- Organochlorine Pesticide analysis - where reporting LCS data, Toxaphene & Chlordane are not added to the LCS.
- Organochlorine Pesticide analysis - where reporting Spike data, Toxaphene is not added to the Spike.
- Total Recoverable Hydrocarbons - where reporting Spike & LCS data, a single spike of commercial Hydrocarbon products in the range of C12-C30 is added and it's Total Recovery is reported in the C10-C14 cell of the Report.
- pH and Free Chlorine analysed in the laboratory - Analysis on this test must begin within 30 minutes of sampling. Therefore laboratory analysis is unlikely to be completed within holding time. Analysis will begin as soon as possible after sample receipt.
- Recovery Data (Spikes & Surrogates) - where chromatographic interference does not allow the determination of Recovery the term "INT" appears against that analyte.
- Polychlorinated Biphenyls are spiked only using Aroclor 1260 in Matrix Spikes and LCS.
- For Matrix Spikes and LCS results a dash " - " in the report means that the specific analyte was not added to the QC sample.
- Duplicate RPDs are calculated from raw analytical data thus it is possible to have two sets of data.

Quality Control Results

Test				Units	Result 1		Acceptance Limits	Pass Limits	Qualifying Code		
Method Blank											
Heavy Metals											
Lead				mg/kg	< 5		5	Pass			
LCS - % Recovery											
Heavy Metals											
Lead				%	85		70-130	Pass			
Test	Lab Sample ID	QA Source	Units	Result 1			Acceptance Limits	Pass Limits	Qualifying Code		
Spike - % Recovery											
Heavy Metals											
Lead				S20-My04094	NCP	%	123	70-130	Pass		
Duplicate											
Heavy Metals											
Lead				S20-My04100	NCP	mg/kg	22	21	5.0	30%	Pass

Comments**Sample Integrity**

Custody Seals Intact (if used)	N/A
Attempt to Chill was evident	N/A
Sample correctly preserved	Yes
Appropriate sample containers have been used	Yes
Sample containers for volatile analysis received with minimal headspace	Yes
Samples received within HoldingTime	Yes
Some samples have been subcontracted	No

Authorised By

Andrew Black Analytical Services Manager
Gabriele Cordero Senior Analyst-Metal (NSW)

**Glenn Jackson
General Manager**

Final report - this Report replaces any previously issued Report

- Indicates Not Requested

* Indicates NATA accreditation does not cover the performance of this service

Measurement uncertainty of test data is available on request or please [click here](#).

Eurofins shall not be liable for loss, cost, damages or expenses incurred by the client, or any other person or company, resulting from the use of any information or interpretation given in this report. In no case shall Eurofins be liable for consequential damages including, but not limited to, lost profits, damages for failure to meet deadlines and lost production arising from this report. This document shall not be reproduced except in full and relates only to the items tested. Unless indicated otherwise, the tests were performed on the samples as received.



CHAIN OF CUSTODY RECORD

ABN 50 005 085 521

Sydney Laboratory
Unit F3 Bld F, 16 Mars Rd, Lane Cove West, NSW 2066
02 9900 8400 EnviroSampleNSW@eurofins.com

Brisbane Laboratory
Unit 1, 21 Smallwood Pl, Murarie, QLD 4172
07 3902 4600 EnviroSampleQLD@eurofins.com

Perth Laboratory
Unit 2, 91 Leach Highway, Kewdale WA 6105
08 9251 9600 EnviroSampleWA@eurofins.com

Melbourne Laboratory
2 Kingston Town Close, Oakleigh, VIC 3166
03 8564 5000 EnviroSampleVic@eurofins.com

Company		Ramboll		Project No		318000780		Project Manager		Stephen Maxwell		Sampler(s)		JK + RC			
Address		50 Glebe Road the Junction		Project Name				EDD Format (ESdat, EQulS,		Excel and PDF		Handed over by		SM			
Contact Name		Stephen Maxwell		<small>(Note: Where metals are requested, please specify "Total" or "Filtered". SUITE code must be added to all test SUITE pricing)</small> Analyses Lead M13 (Al, As, Ba, Be, Cd, Cr, Co, Cu, Fe, Pb, Mn, Hg, Ni, Zn) total M13 (Al, As, Ba, Be, Cd, Cr, Co, Cu, Fe, Pb, Mn, Hg, Ni, Zn) dissolved								Email for Invoice		smaxwell@ramboll.com asiapac-accounts@ramboll.com			
Phone No														Email for Results		smaxwell@ramboll.com jblackwell@ramboll.com rcondon@ramboll.com shyde@ramboll.com	
Special Directions														jblackwell@ramboll.com Turnaround Time (TAT) Requirements (Default will be 5 days if not ticked)		<input type="checkbox"/> Overnight (9am)* <input type="checkbox"/> 1 Day* <input type="checkbox"/> 2 Day* <input type="checkbox"/> 3 Day* <input checked="" type="checkbox"/> 5 Day* <input type="checkbox"/> Other () * Surcharges apply	
Purchase Order																Sample Comments / Dangerous Goods Hazard Warning	
Quote ID No		180813RAMN_1															
No	Client Sample ID	Sampled Date/Time (dd/mm/yy hh:mm)	Matrix (Solid (S) Water (W))														
1	P19_HA01_0.0	31/03/20	S	X													
2	P19_HA01_0.2	31/03/20	S	X													
3	P19_HA02_0.0	31/03/20	S	X													
4	P19_HA02_0.2	31/03/20	S	X													
5	P19_HA03_0.0	31/03/20	S	X													
6	P19_HA03_0.2	31/03/20	S	X													
7	P19_HA04_0.0	31/03/20	S	X													
8	P19_HA04_0.2	31/03/20	S	X													
9	P19_HA05_0.0	31/03/20	S	X													
10	P19_HA05_0.2	31/03/20	S	X													
Total Counts				10													
Method of Shipment		<input type="checkbox"/> Courier (#) <input type="checkbox"/> Hand Delivered <input type="checkbox"/> Postal		Name		Signature		Date		Time		Date		Time			
Eurofins mgt Laboratory Use Only		Received By: <i>[Signature]</i> Received By: <i>[Signature]</i>		SYD BNE MEL PER ADL NTL DRW SYD BNE MEL PER ADL NTL DRW		Signature: _____ Signature: _____		Date: 01/04/20 Date: ____/____/____		Time: 11:04 AM Temperature: 15.8°C		Report No: 711574					

Submission of samples to the laboratory will be deemed as acceptance of Eurofins | mgt Standard Terms and Conditions unless agreed otherwise. A copy of Eurofins | mgt Standard Terms and Conditions is available on request.



CHAIN OF CUSTODY RECORD

ABN 50 005 085 521

Sydney Laboratory

Unit F3 Bld.F, 16 Mars Rd, Lane Cove West, NSW 2066
02 9900 8400 EnviroSampleNSW@eurofins.com

Brisbane Laboratory

Unit 1, 21 Smallwood Pl., Murarie, QLD 4172
07 3902 4600 EnviroSampleQLD@eurofins.com

Perth Laboratory

Unit 2, 91 Leach Highway, Kewdale WA 6105
08 9251 9600 EnviroSampleWA@eurofins.com

Melbourne Laboratory

2 Kingston Town Close, Oakleigh, VIC 3166
03 8564 5000 EnviroSampleVic@eurofins.com

Company		Ramboll		Project No		318000780		Project Manager		Stephen Maxwell		Sampler(s)		JB + JAB			
Address		50 Glebe Road the Junction		Project Name		EDD Format (ESdat, EQulS,		Excel and PDF		Handed over by		SM					
Contact Name		Stephen Maxwell		<small>Analyses</small> <small>(Note: Where metals are requested, please specify "Total" or "Filtered". SUITE code must be used to report SUITE pricing.)</small> Lead M13 (Al, As, Ba, Be, Cd, Cr, Co, Cu, Fe, Pb, Mn, Hg, Ni, Zn) total M13 (Al, As, Ba, Be, Cd, Cr, Co, Cu, Fe, Pb, Mn, Hg, Ni, Zn) dissolved										Email for Invoice		smaxwell@ramboll.com asiapac-accounts@ramboll.com	
Phone No														Email for Results		smaxwell@ramboll.com jblackwell@ramboll.com rcondon@ramboll.com shyde@ramboll.com	
Special Directions														Turnaround Time (TAT) Requirements (Default will be 5 days if not ticked)		<input type="checkbox"/> Overnight (9am)* <input type="checkbox"/> 1 Day* <input type="checkbox"/> 2 Day* <input type="checkbox"/> 3 Day* <input checked="" type="checkbox"/> 5 Day* <input type="checkbox"/> Other () * Surcharges apply	
Purchase Order														jblackwell@ramboll.com 1L Plastic 250mL Plastic 125mL Plastic 200mL Amber Glass 40mL VOA vial 500mL PFAS Bottle Jar (Glass or HDPE) Other (As per AS4664, WA Guidelines)			
Quote ID No		180813RAMN_1		Matrix (Solid (S) Water (W))										Sample Comments / Dangerous Goods Hazard Warning			
No	Client Sample ID	Sampled Date/Time (dd/mm/yy hh:mm)															
1	P19_TW1	31/03/20	W	X	X												
2																	
3																	
4																	
5																	
6																	
7																	
8																	
9																	
10																	
Total Counts				1	1												
Method of Shipment		<input type="checkbox"/> Courier (#) <input type="checkbox"/> Hand Delivered <input type="checkbox"/> Postal		Name		Signature		Date		Time		Date		Time			
Eurofins mgt Laboratory Use Only		Received By: <i>[Signature]</i> Received By:		SYD BNE MEL PER ADL NTL DRW SYD BNE MEL PER ADL NTL DRW		Signature		Date: <i>01/04/20</i>		Time		Date		Time			
														Report No			

Submission of samples to the laboratory will be deemed as acceptance of Eurofins | mgt Standard Terms and Conditions unless agreed otherwise. A copy of Eurofins | mgt Standard Terms and Conditions is available on request.

Eurofins Environment Testing Australia Pty Ltd trading as Eurofins | mgt

Melbourne

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Site # 1254 & 14271

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NATA # 1261 Site # 20794

Perth

2/91 Leach Highway
Kewdale WA 6105
Phone : +61 8 9251 9600
NATA # 1261 Site # 23736

Sample Receipt Advice

Company name: **Ramboll Australia Pty Ltd**

Contact name: Stephen Maxwell

Project ID: 318000780

COC number: Not provided

Turn around time: 5 Day

Date/Time received: Apr 1, 2020 11:04 AM

Eurofins reference: **711574**

Sample information

- A detailed list of analytes logged into our LIMS, is included in the attached summary table.
- All samples have been received as described on the above COC.
- COC has been completed correctly.
- Attempt to chill was evident.
- Appropriately preserved sample containers have been used.
- All samples were received in good condition.
- Samples have been provided with adequate time to commence analysis in accordance with the relevant holding times.

- Appropriate sample containers have been used.
- Sample containers for volatile analysis received with zero headspace.
- Split sample sent to requested external lab.
- Some samples have been subcontracted.
- N/A Custody Seals intact (if used).

Notes

EXTRA SAMPLE REC: P19_TWS1, placed on HOLD.

Contact notes

If you have any questions with respect to these samples please contact:

Andrew Black on Phone : (+61) 2 9900 8490 or by e.mail: AndrewBlack@eurofins.com

Results will be delivered electronically via e.mail to Stephen Maxwell - smaxwell@ramboll.com.

Note: A copy of these results will also be delivered to the general Ramboll Australia Pty Ltd email address.

Australia

Melbourne
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Christchurch
43 Detroit Drive
Rolleston, Christchurch 7675
Phone : 0800 856 450
IANZ # 1290

Company Name: Ramboll Australia Pty Ltd
Address: Level 3/100 Pacific Highway
North Sydney
NSW 2060

Order No.:
Report #: 711574
Phone: 02 9954 8118
Fax: 02 9954 8150

Received: Apr 1, 2020 11:04 AM
Due: Apr 8, 2020
Priority: 5 Day
Contact Name: Stephen Maxwell

Project Name:
Project ID: 318000780

Eurofins Analytical Services Manager : Andrew Black

Sample Detail						HOLD	Lead	NEPM 2013 Metals : Metals M13	NEPM 2013 Metals : Metals M13 filtered	Moisture Set
Melbourne Laboratory - NATA Site # 1254 & 14271										
Sydney Laboratory - NATA Site # 18217						X	X	X	X	X
Brisbane Laboratory - NATA Site # 20794										
Perth Laboratory - NATA Site # 23736										
External Laboratory										
No	Sample ID	Sample Date	Sampling Time	Matrix	LAB ID					
1	P19_HA01_0_0	Mar 31, 2020		Soil	S20-Ap02971		X			X
2	P19_HA01_0_2	Mar 31, 2020		Soil	S20-Ap02972		X			X
3	P19_HA02_0_0	Mar 31, 2020		Soil	S20-Ap02973		X			X
4	P19_HA02_0_2	Mar 31, 2020		Soil	S20-Ap02974		X			X
5	P19_HA03_0_0	Mar 31, 2020		Soil	S20-Ap02975		X			X
6	P19_HA03_0_2	Mar 31, 2020		Soil	S20-Ap02976		X			X

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43 Detroit Drive
Rolleston, Christchurch 7675
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Eurofins Analytical Services Manager : Andrew Black

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Melbourne Laboratory - NATA Site # 1254 & 14271										
Sydney Laboratory - NATA Site # 18217						X	X	X	X	X
Brisbane Laboratory - NATA Site # 20794										
Perth Laboratory - NATA Site # 23736										
7	P19_HA04_0	Mar 31, 2020		Soil	S20-Ap02977		X			X
8	P19_HA04_2	Mar 31, 2020		Soil	S20-Ap02978		X			X
9	P19_HA05_0	Mar 31, 2020		Soil	S20-Ap02979		X			X
10	P19_HA05_2	Mar 31, 2020		Soil	S20-Ap02980		X			X
11	P19_TW1	Mar 31, 2020		Water	S20-Ap02981			X	X	
12	P19_TWS1	Mar 31, 2020		Sediment	S20-Ap02982	X				
Test Counts						1	10	1	1	10

Ramboll Environ Australia Pty Ltd
 Level 3/100 Pacific Highway
 North Sydney
 NSW 2060



NATA Accredited
 Accreditation Number 1261
 Site Number 18217

Accredited for compliance with ISO/IEC 17025 – Testing
 The results of the tests, calibrations and/or
 measurements included in this document are traceable
 to Australian/national standards.

Attention: Stephen Maxwell

Report 711574-S
 Project name
 Project ID 318000780
 Received Date Apr 01, 2020

Client Sample ID			P19_HA01_0.0	P19_HA01_0.2	P19_HA02_0.0	P19_HA02_0.2
Sample Matrix			Soil	Soil	Soil	Soil
Eurofins Sample No.			S20-Ap02971	S20-Ap02972	S20-Ap02973	S20-Ap02974
Date Sampled			Mar 31, 2020	Mar 31, 2020	Mar 31, 2020	Mar 31, 2020
Test/Reference	LOR	Unit				
Heavy Metals						
Lead	5	mg/kg	14	10	13	5.7
% Moisture	1	%	9.4	15	14	11

Client Sample ID			P19_HA03_0.0	P19_HA03_0.2	P19_HA04_0.0	P19_HA04_0.2
Sample Matrix			Soil	Soil	Soil	Soil
Eurofins Sample No.			S20-Ap02975	S20-Ap02976	S20-Ap02977	S20-Ap02978
Date Sampled			Mar 31, 2020	Mar 31, 2020	Mar 31, 2020	Mar 31, 2020
Test/Reference	LOR	Unit				
Heavy Metals						
Lead	5	mg/kg	10	8.1	9.6	5.7
% Moisture	1	%	16	12	5.0	4.5

Client Sample ID			P19_HA05_0.0	P19_HA05_0.2
Sample Matrix			Soil	Soil
Eurofins Sample No.			S20-Ap02979	S20-Ap02980
Date Sampled			Mar 31, 2020	Mar 31, 2020
Test/Reference	LOR	Unit		
Heavy Metals				
Lead	5	mg/kg	21	6.9
% Moisture	1	%	13	7.8

Sample History

Where samples are submitted/analysed over several days, the last date of extraction and analysis is reported.

A recent review of our LIMS has resulted in the correction or clarification of some method identifications. Due to this, some of the method reference information on reports has changed. However, no substantive change has been made to our laboratory methods, and as such there is no change in the validity of current or previous results.

If the date and time of sampling are not provided, the Laboratory will not be responsible for compromised results should testing be performed outside the recommended holding time.

Description	Testing Site	Extracted	Holding Time
Heavy Metals - Method: LTM-MET-3040 Metals in Waters, Soils & Sediments by ICP-MS	Sydney	Apr 06, 2020	180 Days
% Moisture - Method: LTM-GEN-7080 Moisture	Sydney	Apr 02, 2020	14 Days

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IANZ # 1290

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Address: Level 3/100 Pacific Highway
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NSW 2060

Order No.:
Report #: 711574
Phone: 02 9954 8118
Fax: 02 9954 8150

Received: Apr 1, 2020 11:04 AM
Due: Apr 8, 2020
Priority: 5 Day
Contact Name: Stephen Maxwell

Project Name:
Project ID: 318000780

Eurofins Analytical Services Manager : Andrew Black

Sample Detail						HOLD	Lead	NEPM 2013 Metals : Metals M13	NEPM 2013 Metals : Metals M13 filtered	Moisture Set
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Sydney Laboratory - NATA Site # 18217						X	X	X	X	X
Brisbane Laboratory - NATA Site # 20794										
Perth Laboratory - NATA Site # 23736										
External Laboratory										
No	Sample ID	Sample Date	Sampling Time	Matrix	LAB ID					
1	P19_HA01_0.0	Mar 31, 2020		Soil	S20-Ap02971		X			X
2	P19_HA01_0.2	Mar 31, 2020		Soil	S20-Ap02972		X			X
3	P19_HA02_0.0	Mar 31, 2020		Soil	S20-Ap02973		X			X
4	P19_HA02_0.2	Mar 31, 2020		Soil	S20-Ap02974		X			X
5	P19_HA03_0.0	Mar 31, 2020		Soil	S20-Ap02975		X			X
6	P19_HA03_0.2	Mar 31, 2020		Soil	S20-Ap02976		X			X

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Project Name:
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Sample Detail						HOLD	Lead	NEPM 2013 Metals : Metals M13	NEPM 2013 Metals : Metals M13 filtered	Moisture Set
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Sydney Laboratory - NATA Site # 18217						X	X	X	X	X
Brisbane Laboratory - NATA Site # 20794										
Perth Laboratory - NATA Site # 23736										
7	P19_HA04_0	Mar 31, 2020		Soil	S20-Ap02977		X			X
8	P19_HA04_2	Mar 31, 2020		Soil	S20-Ap02978		X			X
9	P19_HA05_0	Mar 31, 2020		Soil	S20-Ap02979		X			X
10	P19_HA05_2	Mar 31, 2020		Soil	S20-Ap02980		X			X
11	P19_TW1	Mar 31, 2020		Water	S20-Ap02981			X	X	
12	P19_TWS1	Mar 31, 2020		Sediment	S20-Ap02982	X				
Test Counts						1	10	1	1	10

Internal Quality Control Review and Glossary
General

- Laboratory QC results for Method Blanks, Duplicates, Matrix Spikes, and Laboratory Control Samples follows guidelines delineated in the National Environment Protection (Assessment of Site Contamination) Measure 1999, as amended May 2013 and are included in this QC report where applicable. Additional QC data may be available on request.
- All soil/sediment/solid results are reported on a dry basis, unless otherwise stated.
- All biota/food results are reported on a wet weight basis on the edible portion, unless otherwise stated.
- Actual LORs are matrix dependant. Quoted LORs may be raised where sample extracts are diluted due to interferences.
- Results are uncorrected for matrix spikes or surrogate recoveries except for PFAS compounds.
- SVOC analysis on waters are performed on homogenised, unfiltered samples, unless noted otherwise.
- Samples were analysed on an 'as received' basis.
- Information identified on this report with blue colour, indicates data provided by customer, that may have an impact on the results.
- This report replaces any interim results previously issued.

Holding Times

Please refer to 'Sample Preservation and Container Guide' for holding times (QS3001).

For samples received on the last day of holding time, notification of testing requirements should have been received at least 6 hours prior to sample receipt deadlines as stated on the SRA.

If the Laboratory did not receive the information in the required timeframe, and regardless of any other integrity issues, suitably qualified results may still be reported.

Holding times apply from the date of sampling, therefore compliance to these may be outside the laboratory's control.

For VOCs containing vinyl chloride, styrene and 2-chloroethyl vinyl ether the holding time is 7 days however for all other VOCs such as BTEX or C6-10 TRH then the holding time is 14 days.

****NOTE:** pH duplicates are reported as a range NOT as RPD

Units

mg/kg: milligrams per kilogram

mg/L: milligrams per litre

ug/L: micrograms per litre

ppm: Parts per million

ppb: Parts per billion

%: Percentage

org/100mL: Organisms per 100 millilitres

NTU: Nephelometric Turbidity Units

MPN/100mL: Most Probable Number of organisms per 100 millilitres

Terms

Dry	Where a moisture has been determined on a solid sample the result is expressed on a dry basis.
LOR	Limit of Reporting.
SPIKE	Addition of the analyte to the sample and reported as percentage recovery.
RPD	Relative Percent Difference between two Duplicate pieces of analysis.
LCS	Laboratory Control Sample - reported as percent recovery.
CRM	Certified Reference Material - reported as percent recovery.
Method Blank	In the case of solid samples these are performed on laboratory certified clean sands and in the case of water samples these are performed on de-ionised water.
Surr - Surrogate	The addition of a like compound to the analyte target and reported as percentage recovery.
Duplicate	A second piece of analysis from the same sample and reported in the same units as the result to show comparison.
USEPA	United States Environmental Protection Agency
APHA	American Public Health Association
TCLP	Toxicity Characteristic Leaching Procedure
COC	Chain of Custody
SRA	Sample Receipt Advice
QSM	US Department of Defense Quality Systems Manual Version 5.3
CP	Client Parent - QC was performed on samples pertaining to this report
NCP	Non-Client Parent - QC performed on samples not pertaining to this report, QC is representative of the sequence or batch that client samples were analysed within.
TEQ	Toxic Equivalency Quotient

QC - Acceptance Criteria

RPD Duplicates: Global RPD Duplicates Acceptance Criteria is 30% however the following acceptance guidelines are equally applicable:

Results <10 times the LOR : No Limit

Results between 10-20 times the LOR : RPD must lie between 0-50%

Results >20 times the LOR : RPD must lie between 0-30%

Surrogate Recoveries: Recoveries must lie between 20-130% Phenols & 50-150% PFASs

PFAS field samples that contain surrogate recoveries in excess of the QC limit designated in QSM 5.3 where no positive PFAS results have been reported have been reviewed and no data was affected.

WA DWER (n=10): PFBA, PFPeA, PFHxA, PFHpA, PFOA, PFBS, PFHxS, PFOS, 6:2 FTSA, 8:2 FTSA

QC Data General Comments

- Where a result is reported as a less than (<), higher than the nominated LOR, this is due to either matrix interference, extract dilution required due to interferences or contaminant levels within the sample, high moisture content or insufficient sample provided.
- Duplicate data shown within this report that states the word "BATCH" is a Batch Duplicate from outside of your sample batch, but within the laboratory sample batch at a 1:10 ratio. The Parent and Duplicate data shown is not data from your samples.
- Organochlorine Pesticide analysis - where reporting LCS data, Toxaphene & Chlordane are not added to the LCS.
- Organochlorine Pesticide analysis - where reporting Spike data, Toxaphene is not added to the Spike.
- Total Recoverable Hydrocarbons - where reporting Spike & LCS data, a single spike of commercial Hydrocarbon products in the range of C12-C30 is added and it's Total Recovery is reported in the C10-C14 cell of the Report.
- pH and Free Chlorine analysed in the laboratory - Analysis on this test must begin within 30 minutes of sampling. Therefore laboratory analysis is unlikely to be completed within holding time. Analysis will begin as soon as possible after sample receipt.
- Recovery Data (Spikes & Surrogates) - where chromatographic interference does not allow the determination of Recovery the term "INT" appears against that analyte.
- Polychlorinated Biphenyls are spiked only using Aroclor 1260 in Matrix Spikes and LCS.
- For Matrix Spikes and LCS results a dash " - " in the report means that the specific analyte was not added to the QC sample.
- Duplicate RPDs are calculated from raw analytical data thus it is possible to have two sets of data.

Quality Control Results

Test				Units	Result 1		Acceptance Limits	Pass Limits	Qualifying Code		
Method Blank											
Heavy Metals											
Lead				mg/kg	< 5		5	Pass			
LCS - % Recovery											
Heavy Metals											
Lead				%	101		70-130	Pass			
Test	Lab Sample ID	QA Source	Units	Result 1			Acceptance Limits	Pass Limits	Qualifying Code		
Spike - % Recovery											
Heavy Metals											
Lead				S20-Ap02979	CP	%	104	70-130	Pass		
Test	Lab Sample ID	QA Source	Units	Result 1			Acceptance Limits	Pass Limits	Qualifying Code		
Duplicate											
Heavy Metals											
Lead				S20-Ap02978	CP	mg/kg	5.7	6.2	8.0	30%	Pass
Duplicate											
					Result 1	Result 2	RPD				
% Moisture				S20-Ap02978	CP	%	4.5	5.1	14	30%	Pass

Comments**Sample Integrity**

Custody Seals Intact (if used)	N/A
Attempt to Chill was evident	Yes
Sample correctly preserved	Yes
Appropriate sample containers have been used	Yes
Sample containers for volatile analysis received with minimal headspace	Yes
Samples received within HoldingTime	Yes
Some samples have been subcontracted	No

Authorised By

Andrew Black Analytical Services Manager
Gabriele Cordero Senior Analyst-Metal (NSW)

**Glenn Jackson
General Manager**

Final report - this Report replaces any previously issued Report

- Indicates Not Requested

* Indicates NATA accreditation does not cover the performance of this service

Measurement uncertainty of test data is available on request or please [click here](#).

Eurofins shall not be liable for loss, cost, damages or expenses incurred by the client, or any other person or company, resulting from the use of any information or interpretation given in this report. In no case shall Eurofins be liable for consequential damages including, but not limited to, lost profits, damages for failure to meet deadlines and lost production arising from this report. This document shall not be reproduced except in full and relates only to the items tested. Unless indicated otherwise, the tests were performed on the samples as received.

Ramboll Environ Australia Pty Ltd
 Level 3/100 Pacific Highway
 North Sydney
 NSW 2060



NATA Accredited
Accreditation Number 1261
Site Number 18217

Accredited for compliance with ISO/IEC 17025 – Testing
 The results of the tests, calibrations and/or
 measurements included in this document are traceable
 to Australian/national standards.

Attention: **Stephen Maxwell**

Report **711574-W**
 Project name
 Project ID **318000780**
 Received Date **Apr 01, 2020**

Client Sample ID			P19_TW1
Sample Matrix			Water
Eurofins Sample No.			S20-Ap02981
Date Sampled			Mar 31, 2020
Test/Reference	LOR	Unit	
Heavy Metals			
Aluminium	0.05	mg/L	< 0.05
Aluminium (filtered)	0.05	mg/L	< 0.05
Arsenic	0.001	mg/L	< 0.001
Arsenic (filtered)	0.001	mg/L	< 0.001
Barium	0.02	mg/L	0.06
Barium (filtered)	0.02	mg/L	0.05
Beryllium	0.001	mg/L	< 0.001
Beryllium (filtered)	0.001	mg/L	< 0.001
Cadmium	0.0002	mg/L	< 0.0002
Cadmium (filtered)	0.0002	mg/L	< 0.0002
Chromium	0.001	mg/L	< 0.001
Chromium (filtered)	0.001	mg/L	< 0.001
Cobalt	0.001	mg/L	< 0.001
Cobalt (filtered)	0.001	mg/L	< 0.001
Copper	0.001	mg/L	< 0.001
Copper (filtered)	0.001	mg/L	< 0.001
Iron	0.05	mg/L	< 0.05
Iron (filtered)	0.05	mg/L	< 0.05
Lead	0.001	mg/L	< 0.001
Lead (filtered)	0.001	mg/L	< 0.001
Manganese	0.005	mg/L	< 0.005
Manganese (filtered)	0.005	mg/L	< 0.005
Mercury	0.0001	mg/L	< 0.0001
Mercury (filtered)	0.0001	mg/L	< 0.0001
Nickel	0.001	mg/L	< 0.001
Nickel (filtered)	0.001	mg/L	< 0.001
Zinc	0.005	mg/L	0.021
Zinc (filtered)	0.005	mg/L	0.017

Sample History

Where samples are submitted/analysed over several days, the last date of extraction and analysis is reported.

A recent review of our LIMS has resulted in the correction or clarification of some method identifications. Due to this, some of the method reference information on reports has changed. However, no substantive change has been made to our laboratory methods, and as such there is no change in the validity of current or previous results.

If the date and time of sampling are not provided, the Laboratory will not be responsible for compromised results should testing be performed outside the recommended holding time.

Description	Testing Site	Extracted	Holding Time
Heavy Metals - Method: LTM-MET-3040 Metals in Waters, Soils & Sediments by ICP-MS	Sydney	Apr 08, 2020	180 Days
Heavy Metals (filtered) - Method: LTM-MET-3040 Metals in Waters, Soils & Sediments by ICP-MS	Sydney	Apr 08, 2020	180 Days
Mobil Metals : Metals M15 - Method: LTM-MET-3040 Metals in Waters, Soils & Sediments by ICP-MS	Sydney	Apr 02, 2020	28 Days

Australia

Melbourne
6 Monterey Road
Dandenong South VIC 3175
Phone : +61 3 8564 5000
NATA # 1261
Site # 1254 & 14271

Sydney
Unit F3, Building F
16 Mars Road
Lane Cove West NSW 2066
Phone : +61 2 9900 8400
NATA # 1261 Site # 18217

Brisbane
1/21 Smallwood Place
Murarrie QLD 4172
Phone : +61 7 3902 4600
NATA # 1261 Site # 20794

Perth
2/91 Leach Highway
Kewdale WA 6105
Phone : +61 8 9251 9600
NATA # 1261
Site # 23736

New Zealand

Auckland
35 O'Rorke Road
Penrose, Auckland 1061
Phone : +64 9 526 45 51
IANZ # 1327

Christchurch
43 Detroit Drive
Rolleston, Christchurch 7675
Phone : 0800 856 450
IANZ # 1290

Company Name: Ramboll Australia Pty Ltd
Address: Level 3/100 Pacific Highway
North Sydney
NSW 2060

Order No.:
Report #: 711574
Phone: 02 9954 8118
Fax: 02 9954 8150

Received: Apr 1, 2020 11:04 AM
Due: Apr 8, 2020
Priority: 5 Day
Contact Name: Stephen Maxwell

Project Name:
Project ID: 318000780

Eurofins Analytical Services Manager : Andrew Black

Sample Detail						HOLD	Lead	NEPM 2013 Metals : Metals M13	NEPM 2013 Metals : Metals M13 filtered	Moisture Set
Melbourne Laboratory - NATA Site # 1254 & 14271										
Sydney Laboratory - NATA Site # 18217						X	X	X	X	X
Brisbane Laboratory - NATA Site # 20794										
Perth Laboratory - NATA Site # 23736										
External Laboratory										
No	Sample ID	Sample Date	Sampling Time	Matrix	LAB ID					
1	P19_HA01_0_0	Mar 31, 2020		Soil	S20-Ap02971		X			X
2	P19_HA01_0_2	Mar 31, 2020		Soil	S20-Ap02972		X			X
3	P19_HA02_0_0	Mar 31, 2020		Soil	S20-Ap02973		X			X
4	P19_HA02_0_2	Mar 31, 2020		Soil	S20-Ap02974		X			X
5	P19_HA03_0_0	Mar 31, 2020		Soil	S20-Ap02975		X			X
6	P19_HA03_0_2	Mar 31, 2020		Soil	S20-Ap02976		X			X

Australia

Melbourne
6 Monterey Road
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Site # 1254 & 14271

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16 Mars Road
Lane Cove West NSW 2066
Phone : +61 2 9900 8400
NATA # 1261 Site # 18217

Brisbane
1/21 Smallwood Place
Murarrie QLD 4172
Phone : +61 7 3902 4600
NATA # 1261 Site # 20794

Perth
2/91 Leach Highway
Kewdale WA 6105
Phone : +61 8 9251 9600
NATA # 1261
Site # 23736

New Zealand

Auckland
35 O'Rorke Road
Penrose, Auckland 1061
Phone : +64 9 526 45 51
IANZ # 1327

Christchurch
43 Detroit Drive
Rolleston, Christchurch 7675
Phone : 0800 856 450
IANZ # 1290

ABN – 50 005 085 521

web : www.eurofins.com.au

e.mail : EnviroSales@eurofins.com

Company Name: Ramboll Australia Pty Ltd
Address: Level 3/100 Pacific Highway
North Sydney
NSW 2060

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Report #: 711574
Phone: 02 9954 8118
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Received: Apr 1, 2020 11:04 AM
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Melbourne Laboratory - NATA Site # 1254 & 14271										
Sydney Laboratory - NATA Site # 18217						X	X	X	X	X
Brisbane Laboratory - NATA Site # 20794										
Perth Laboratory - NATA Site # 23736										
7	P19_HA04_0	Mar 31, 2020		Soil	S20-Ap02977		X			X
8	P19_HA04_2	Mar 31, 2020		Soil	S20-Ap02978		X			X
9	P19_HA05_0	Mar 31, 2020		Soil	S20-Ap02979		X			X
10	P19_HA05_2	Mar 31, 2020		Soil	S20-Ap02980		X			X
11	P19_TW1	Mar 31, 2020		Water	S20-Ap02981			X	X	
12	P19_TWS1	Mar 31, 2020		Sediment	S20-Ap02982	X				
Test Counts						1	10	1	1	10

Internal Quality Control Review and Glossary

General

- Laboratory QC results for Method Blanks, Duplicates, Matrix Spikes, and Laboratory Control Samples follows guidelines delineated in the National Environment Protection (Assessment of Site Contamination) Measure 1999, as amended May 2013 and are included in this QC report where applicable. Additional QC data may be available on request.
- All soil/sediment/solid results are reported on a dry basis, unless otherwise stated.
- All biota/food results are reported on a wet weight basis on the edible portion, unless otherwise stated.
- Actual LORs are matrix dependant. Quoted LORs may be raised where sample extracts are diluted due to interferences.
- Results are uncorrected for matrix spikes or surrogate recoveries except for PFAS compounds.
- SVOC analysis on waters are performed on homogenised, unfiltered samples, unless noted otherwise.
- Samples were analysed on an 'as received' basis.
- Information identified on this report with blue colour, indicates data provided by customer, that may have an impact on the results.
- This report replaces any interim results previously issued.

Holding Times

Please refer to 'Sample Preservation and Container Guide' for holding times (QS3001).

For samples received on the last day of holding time, notification of testing requirements should have been received at least 6 hours prior to sample receipt deadlines as stated on the SRA.

If the Laboratory did not receive the information in the required timeframe, and regardless of any other integrity issues, suitably qualified results may still be reported.

Holding times apply from the date of sampling, therefore compliance to these may be outside the laboratory's control.

For VOCs containing vinyl chloride, styrene and 2-chloroethyl vinyl ether the holding time is 7 days however for all other VOCs such as BTEX or C6-10 TRH then the holding time is 14 days.

****NOTE:** pH duplicates are reported as a range NOT as RPD

Units

mg/kg: milligrams per kilogram

mg/L: milligrams per litre

ug/L: micrograms per litre

ppm: Parts per million

ppb: Parts per billion

%: Percentage

org/100mL: Organisms per 100 millilitres

NTU: Nephelometric Turbidity Units

MPN/100mL: Most Probable Number of organisms per 100 millilitres

Terms

Dry	Where a moisture has been determined on a solid sample the result is expressed on a dry basis.
LOR	Limit of Reporting.
SPIKE	Addition of the analyte to the sample and reported as percentage recovery.
RPD	Relative Percent Difference between two Duplicate pieces of analysis.
LCS	Laboratory Control Sample - reported as percent recovery.
CRM	Certified Reference Material - reported as percent recovery.
Method Blank	In the case of solid samples these are performed on laboratory certified clean sands and in the case of water samples these are performed on de-ionised water.
Surr - Surrogate	The addition of a like compound to the analyte target and reported as percentage recovery.
Duplicate	A second piece of analysis from the same sample and reported in the same units as the result to show comparison.
USEPA	United States Environmental Protection Agency
APHA	American Public Health Association
TCLP	Toxicity Characteristic Leaching Procedure
COC	Chain of Custody
SRA	Sample Receipt Advice
QSM	US Department of Defense Quality Systems Manual Version 5.3
CP	Client Parent - QC was performed on samples pertaining to this report
NCP	Non-Client Parent - QC performed on samples not pertaining to this report, QC is representative of the sequence or batch that client samples were analysed within.
TEQ	Toxic Equivalency Quotient

QC - Acceptance Criteria

RPD Duplicates: Global RPD Duplicates Acceptance Criteria is 30% however the following acceptance guidelines are equally applicable:

Results <10 times the LOR : No Limit

Results between 10-20 times the LOR : RPD must lie between 0-50%

Results >20 times the LOR : RPD must lie between 0-30%

Surrogate Recoveries: Recoveries must lie between 20-130% Phenols & 50-150% PFASs

PFAS field samples that contain surrogate recoveries in excess of the QC limit designated in QSM 5.3 where no positive PFAS results have been reported have been reviewed and no data was affected.

WA DWER (n=10): PFBA, PFPeA, PFHxA, PFHpA, PFOA, PFBS, PFHxS, PFOS, 6:2 FTSA, 8:2 FTSA

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- Where a result is reported as a less than (<), higher than the nominated LOR, this is due to either matrix interference, extract dilution required due to interferences or contaminant levels within the sample, high moisture content or insufficient sample provided.
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- Organochlorine Pesticide analysis - where reporting Spike data, Toxaphene is not added to the Spike.
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- pH and Free Chlorine analysed in the laboratory - Analysis on this test must begin within 30 minutes of sampling. Therefore laboratory analysis is unlikely to be completed within holding time. Analysis will begin as soon as possible after sample receipt.
- Recovery Data (Spikes & Surrogates) - where chromatographic interference does not allow the determination of Recovery the term "INT" appears against that analyte.
- Polychlorinated Biphenyls are spiked only using Aroclor 1260 in Matrix Spikes and LCS.
- For Matrix Spikes and LCS results a dash " - " in the report means that the specific analyte was not added to the QC sample.
- Duplicate RPDs are calculated from raw analytical data thus it is possible to have two sets of data.

Quality Control Results

Test	Units	Result 1			Acceptance Limits	Pass Limits	Qualifying Code
Method Blank							
Heavy Metals							
Aluminium	mg/L	< 0.05			0.05	Pass	
Aluminium (filtered)	mg/L	< 0.05			0.05	Pass	
Arsenic	mg/L	< 0.001			0.001	Pass	
Arsenic (filtered)	mg/L	< 0.001			0.001	Pass	
Barium	mg/L	< 0.02			0.02	Pass	
Barium (filtered)	mg/L	< 0.02			0.02	Pass	
Beryllium	mg/L	< 0.001			0.001	Pass	
Beryllium (filtered)	mg/L	< 0.001			0.001	Pass	
Cadmium	mg/L	< 0.0002			0.0002	Pass	
Cadmium (filtered)	mg/L	< 0.0002			0.0002	Pass	
Chromium	mg/L	< 0.001			0.001	Pass	
Chromium (filtered)	mg/L	< 0.001			0.001	Pass	
Cobalt	mg/L	< 0.001			0.001	Pass	
Cobalt (filtered)	mg/L	< 0.001			0.001	Pass	
Copper	mg/L	< 0.001			0.001	Pass	
Copper (filtered)	mg/L	< 0.001			0.001	Pass	
Iron	mg/L	< 0.05			0.05	Pass	
Iron (filtered)	mg/L	< 0.05			0.05	Pass	
Lead	mg/L	< 0.001			0.001	Pass	
Lead (filtered)	mg/L	< 0.001			0.001	Pass	
Manganese	mg/L	< 0.005			0.005	Pass	
Manganese (filtered)	mg/L	< 0.005			0.005	Pass	
Mercury	mg/L	< 0.0001			0.0001	Pass	
Mercury (filtered)	mg/L	< 0.0001			0.0001	Pass	
Nickel	mg/L	< 0.001			0.001	Pass	
Nickel (filtered)	mg/L	< 0.001			0.001	Pass	
Zinc	mg/L	< 0.005			0.005	Pass	
Zinc (filtered)	mg/L	< 0.005			0.005	Pass	
LCS - % Recovery							
Heavy Metals							
Aluminium	%	86			70-130	Pass	
Aluminium (filtered)	%	92			70-130	Pass	
Arsenic	%	87			70-130	Pass	
Arsenic (filtered)	%	91			70-130	Pass	
Barium	%	92			70-130	Pass	
Barium (filtered)	%	87			70-130	Pass	
Beryllium	%	92			70-130	Pass	
Beryllium (filtered)	%	94			70-130	Pass	
Cadmium	%	91			70-130	Pass	
Cadmium (filtered)	%	89			70-130	Pass	
Chromium	%	94			70-130	Pass	
Chromium (filtered)	%	93			70-130	Pass	
Cobalt	%	94			70-130	Pass	
Cobalt (filtered)	%	92			70-130	Pass	
Copper	%	94			70-130	Pass	
Copper (filtered)	%	93			70-130	Pass	
Iron	%	95			70-130	Pass	
Iron (filtered)	%	93			70-130	Pass	
Lead	%	93			70-130	Pass	
Lead (filtered)	%	91			70-130	Pass	

Test			Units	Result 1			Acceptance Limits	Pass Limits	Qualifying Code
Manganese			%	90			70-130	Pass	
Manganese (filtered)			%	92			70-130	Pass	
Mercury			%	92			70-130	Pass	
Mercury (filtered)			%	92			70-130	Pass	
Nickel			%	97			70-130	Pass	
Nickel (filtered)			%	94			70-130	Pass	
Zinc			%	96			70-130	Pass	
Zinc (filtered)			%	95			70-130	Pass	
Test	Lab Sample ID	QA Source	Units	Result 1			Acceptance Limits	Pass Limits	Qualifying Code
Spike - % Recovery									
Heavy Metals				Result 1					
Aluminium	S20-Ap09329	NCP	%	89			70-130	Pass	
Aluminium (filtered)	S20-Ap02189	NCP	%	99			70-130	Pass	
Arsenic	S20-Ap09329	NCP	%	90			70-130	Pass	
Arsenic (filtered)	S20-Ap02189	NCP	%	92			70-130	Pass	
Barium	S20-Ap09329	NCP	%	94			70-130	Pass	
Barium (filtered)	S20-Ap02189	NCP	%	83			70-130	Pass	
Beryllium	S20-Ap09329	NCP	%	107			70-130	Pass	
Beryllium (filtered)	S20-Ap02189	NCP	%	93			70-130	Pass	
Cadmium	S20-Ap09329	NCP	%	95			70-130	Pass	
Cadmium (filtered)	S20-Ap02189	NCP	%	92			70-130	Pass	
Chromium	S20-Ap09329	NCP	%	97			70-130	Pass	
Chromium (filtered)	S20-Ap02189	NCP	%	96			70-130	Pass	
Cobalt	S20-Ap09329	NCP	%	99			70-130	Pass	
Cobalt (filtered)	S20-Ap02189	NCP	%	96			70-130	Pass	
Copper	S20-Ap09329	NCP	%	98			70-130	Pass	
Copper (filtered)	S20-Ap02189	NCP	%	97			70-130	Pass	
Iron	S20-Ap09329	NCP	%	100			70-130	Pass	
Iron (filtered)	S20-Ap02189	NCP	%	94			70-130	Pass	
Lead	S20-Ap09329	NCP	%	96			70-130	Pass	
Lead (filtered)	S20-Ap02189	NCP	%	89			70-130	Pass	
Manganese	S20-Ap09329	NCP	%	93			70-130	Pass	
Manganese (filtered)	S20-Ap02189	NCP	%	87			70-130	Pass	
Mercury	S20-Ap09329	NCP	%	93			70-130	Pass	
Mercury (filtered)	S20-Ap02189	NCP	%	85			70-130	Pass	
Nickel	S20-Ap09329	NCP	%	101			70-130	Pass	
Nickel (filtered)	S20-Ap02189	NCP	%	98			70-130	Pass	
Zinc	S20-Ap09329	NCP	%	101			70-130	Pass	
Zinc (filtered)	S20-Ap02189	NCP	%	93			70-130	Pass	
Test	Lab Sample ID	QA Source	Units	Result 1			Acceptance Limits	Pass Limits	Qualifying Code
Duplicate									
Heavy Metals				Result 1	Result 2	RPD			
Aluminium	S20-Ap09328	NCP	mg/L	< 0.05	< 0.05	<1	30%	Pass	
Aluminium (filtered)	S20-Ap02981	CP	mg/L	< 0.05	< 0.05	<1	30%	Pass	
Arsenic	S20-Ap09328	NCP	mg/L	< 0.001	< 0.001	<1	30%	Pass	
Arsenic (filtered)	S20-Ap02981	CP	mg/L	< 0.001	< 0.001	<1	30%	Pass	
Barium	S20-Ap09328	NCP	mg/L	< 0.02	< 0.02	<1	30%	Pass	
Barium (filtered)	S20-Ap02981	CP	mg/L	0.05	0.05	9.0	30%	Pass	
Beryllium	S20-Ap09328	NCP	mg/L	< 0.001	< 0.001	<1	30%	Pass	
Beryllium (filtered)	S20-Ap02981	CP	mg/L	< 0.001	< 0.001	<1	30%	Pass	
Cadmium	S20-Ap09328	NCP	mg/L	< 0.0002	< 0.0002	<1	30%	Pass	
Cadmium (filtered)	S20-Ap02981	CP	mg/L	< 0.0002	< 0.0002	<1	30%	Pass	
Chromium	S20-Ap09328	NCP	mg/L	< 0.001	< 0.001	<1	30%	Pass	

Test	Lab Sample ID	QA Source	Units	Result 1			Acceptance Limits	Pass Limits	Qualifying Code
Duplicate									
Heavy Metals				Result 1	Result 2	RPD			
Chromium (filtered)	S20-Ap02981	CP	mg/L	< 0.001	< 0.001	<1	30%	Pass	
Cobalt	S20-Ap09328	NCP	mg/L	< 0.001	< 0.001	<1	30%	Pass	
Cobalt (filtered)	S20-Ap02981	CP	mg/L	< 0.001	< 0.001	<1	30%	Pass	
Copper	S20-Ap09328	NCP	mg/L	< 0.001	< 0.001	<1	30%	Pass	
Copper (filtered)	S20-Ap02981	CP	mg/L	< 0.001	< 0.001	<1	30%	Pass	
Iron	S20-Ap09328	NCP	mg/L	< 0.05	< 0.05	<1	30%	Pass	
Iron (filtered)	S20-Ap02981	CP	mg/L	< 0.05	< 0.05	<1	30%	Pass	
Lead	S20-Ap09328	NCP	mg/L	< 0.001	< 0.001	<1	30%	Pass	
Lead (filtered)	S20-Ap02981	CP	mg/L	< 0.001	< 0.001	<1	30%	Pass	
Manganese	S20-Ap09328	NCP	mg/L	< 0.005	< 0.005	<1	30%	Pass	
Manganese (filtered)	S20-Ap02981	CP	mg/L	< 0.005	< 0.005	<1	30%	Pass	
Mercury	S20-Ap09328	NCP	mg/L	< 0.0001	< 0.0001	<1	30%	Pass	
Mercury (filtered)	S20-Ap02981	CP	mg/L	< 0.0001	< 0.0001	<1	30%	Pass	
Nickel	S20-Ap09328	NCP	mg/L	< 0.001	< 0.001	<1	30%	Pass	
Nickel (filtered)	S20-Ap02981	CP	mg/L	< 0.001	< 0.001	<1	30%	Pass	
Zinc	S20-Ap09328	NCP	mg/L	< 0.005	< 0.005	<1	30%	Pass	
Zinc (filtered)	S20-Ap02981	CP	mg/L	0.017	0.019	13	30%	Pass	

Comments**Sample Integrity**

Custody Seals Intact (if used)	N/A
Attempt to Chill was evident	Yes
Sample correctly preserved	Yes
Appropriate sample containers have been used	Yes
Sample containers for volatile analysis received with minimal headspace	Yes
Samples received within HoldingTime	Yes
Some samples have been subcontracted	No

Authorised By

Andrew Black Analytical Services Manager
Gabriele Cordero Senior Analyst-Metal (NSW)

**Glenn Jackson
General Manager**

Final report - this Report replaces any previously issued Report

- Indicates Not Requested

* Indicates NATA accreditation does not cover the performance of this service

Measurement uncertainty of test data is available on request or please [click here](#).

Eurofins shall not be liable for loss, cost, damages or expenses incurred by the client, or any other person or company, resulting from the use of any information or interpretation given in this report. In no case shall Eurofins be liable for consequential damages including, but not limited to, lost profits, damages for failure to meet deadlines and lost production arising from this report. This document shall not be reproduced except in full and relates only to the items tested. Unless indicated otherwise, the tests were performed on the samples as received.



CHAIN OF CUSTODY RECORD

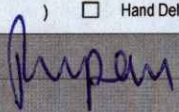
ABN 50 005 085 521

Sydney Laboratory
Unit F3 Bld.F, 16 Mars Rd, Lane Cove West, NSW 2066
02 9900 8400 EnviroSampleNSW@eurofins.com

Brisbane Laboratory
Unit 1, 21 Smallwood Pl, Murarrie, QLD 4172
07 3902 4600 EnviroSampleQLD@eurofins.com

Perth Laboratory
Unit 2, 91 Leach Highway, Kewdale WA 6105
08 9251 9600 EnviroSampleWA@eurofins.com

Melbourne Laboratory
2 Kingston Town Close, Oakleigh, VIC 3166
03 8564 5000 EnviroSampleVic@eurofins.com

Company		Ramboll		Project No	318000780				Project Manager	Stephen Maxwell				Sampler(s)	JB + RC	
Address		50 Glebe Road the Junction		Project Name					EDD Format (ESdat, EQulS,	Excel and PDF				Handed over by	SM	
Contact Name		Stephen Maxwell		<small>Analyses</small> <small>(Note: Where metals are requested, please specify 'Total' or 'Filterer'. SUITE code must be used to attract SUITE pricing)</small> Lead M13 (Al, As, Ba, Be, Cd, Cr, Co, Cu, Fe, Pb, Mn, Hg, Ni, Zn) total M13 (Al, As, Ba, Be, Cd, Cr, Co, Cu, Fe, Pb, Mn, Hg, Ni, Zn) dissolved									Email for Invoice	smaxwell@ramboll.com asiapac-accounts@ramboll.com		
Phone No													Email for Results	smaxwell@ramboll.com jblackwell@ramboll.com rcondon@ramboll.com shyde@ramboll.com		
Special Directions													jblackwell@ramboll.com	Turnaround Time (TAT) Requirements (Default will be 5 days if not ticked) <input type="checkbox"/> Overnight (9am)* <input type="checkbox"/> 1 Day* <input type="checkbox"/> 2 Day* <input type="checkbox"/> 3 Day* <input checked="" type="checkbox"/> 5 Day* <input type="checkbox"/> Other () * Surcharges apply		
Purchase Order													1L Plastic	Sample Comments / Dangerous Goods Hazard Warning		
Quote ID No		180813RAMN_1											250mL Plastic			
													125mL Plastic			
No	Client Sample ID	Sampled Date/Time (dd/mm/yy hh:mm)	Matrix (Solid (S) Water (W))									200mL Amber Glass				
1	P16_HA01_0.0	31/03/20	S									40mL VOA vial				
2	P20_HA01_0.2	31/03/20	S									500mL PFAS Bottle				
3	P20_HA02_0.0	31/03/20	S									Jar (Glass or HDPE)				
4	P20_HA02_0.2	31/03/20	S									Other (Asbestos AS4664, WA Guidelines)				
5	P20_HA03_0.0-0.05	31/03/20	S													
6	P20_HA03_0.2	31/03/20	S													
7	P20_HA04_0.0	31/03/20	S													
8	P20_HA04_0.2	31/03/20	S													
9	P20_HA05_0.0	31/03/20	S													
10	P20_HA05_0.2	31/03/20	S													
Total Counts				10												
Method of Shipment		<input type="checkbox"/> Courier (#) <input type="checkbox"/> Hand Delivered <input type="checkbox"/> Postal		Name				Signature				Date		Time		
Eurofins mgt Laboratory Use Only		Received By: 		SYD BNE MEL PER ADL NTL DRW				Signature				Date: 01/04/20		Time: 11:04 AM		
		Received By:		SYD BNE MEL PER ADL NTL DRW				Signature				Date: ___/___/___		Time: ___:___		
Submission of samples to the laboratory will be deemed as acceptance of Eurofins mgt Standard Terms and Conditions unless agreed otherwise. A copy of Eurofins mgt Standard Terms and Conditions is available on request.																

Report No: 711576

Melbourne

6 Monterey Road
Dandenong South Vic 3175
Phone : +61 3 8564 5000
NATA # 1261
Site # 1254 & 14271

Sydney

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Perth

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Phone : +61 8 9251 9600
NATA # 1261 Site # 23736

Sample Receipt Advice

Company name: **Ramboll Australia Pty Ltd**

Contact name: **Stephen Maxwell**

Project ID: **318000780**

COC number: **Not provided**

Turn around time: **5 Day**

Date/Time received: **Apr 1, 2020 11:04 AM**

Eurofins reference: **711576**

Sample information

- A detailed list of analytes logged into our LIMS, is included in the attached summary table.
- All samples have been received as described on the above COC.
- COC has been completed correctly.
- Attempt to chill was evident.
- Appropriately preserved sample containers have been used.
- All samples were received in good condition.
- Samples have been provided with adequate time to commence analysis in accordance with the relevant holding times.
- Appropriate sample containers have been used.
- Split sample sent to requested external lab.
- Some samples have been subcontracted.
- N/A Custody Seals intact (if used).

Contact notes

If you have any questions with respect to these samples please contact:

Andrew Black on Phone : (+61) 2 9900 8490 or by e.mail: AndrewBlack@eurofins.com

Results will be delivered electronically via e.mail to Stephen Maxwell - smaxwell@ramboll.com.

Note: A copy of these results will also be delivered to the general Ramboll Australia Pty Ltd email address.

Australia

Melbourne
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IANZ # 1290

Company Name: Ramboll Australia Pty Ltd
Address: Level 3/100 Pacific Highway
North Sydney
NSW 2060

Order No.:
Report #: 711576
Phone: 02 9954 8118
Fax: 02 9954 8150

Received: Apr 1, 2020 11:04 AM
Due: Apr 8, 2020
Priority: 5 Day
Contact Name: Stephen Maxwell

Project Name:
Project ID: 318000780

Eurofins Analytical Services Manager : Andrew Black

Sample Detail						Lead	Moisture Set
Melbourne Laboratory - NATA Site # 1254 & 14271							
Sydney Laboratory - NATA Site # 18217						X	X
Brisbane Laboratory - NATA Site # 20794							
Perth Laboratory - NATA Site # 23736							
External Laboratory							
No	Sample ID	Sample Date	Sampling Time	Matrix	LAB ID		
1	P20_HA01_0.0	Mar 31, 2020		Soil	S20-Ap02990	X	X
2	P20_HA01_0.2	Mar 31, 2020		Soil	S20-Ap02991	X	X
3	P20_HA02_0.0	Mar 31, 2020		Soil	S20-Ap02992	X	X
4	P20_HA02_0.2	Mar 31, 2020		Soil	S20-Ap02993	X	X
5	P20_HA03_0.0-0.05	Mar 31, 2020		Soil	S20-Ap02994	X	X
6	P20_HA03_0.2	Mar 31, 2020		Soil	S20-Ap02995	X	X

Australia

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 Rolleston, Christchurch 7675
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 IANZ # 1290

ABN – 50 005 085 521

web : www.eurofins.com.au

e.mail : EnviroSales@eurofins.com

Company Name: Ramboll Australia Pty Ltd
Address: Level 3/100 Pacific Highway
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 NSW 2060

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Received: Apr 1, 2020 11:04 AM
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Eurofins Analytical Services Manager : Andrew Black

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Melbourne Laboratory - NATA Site # 1254 & 14271							
Sydney Laboratory - NATA Site # 18217						X	X
Brisbane Laboratory - NATA Site # 20794							
Perth Laboratory - NATA Site # 23736							
7	P20_HA04_0_0	Mar 31, 2020		Soil	S20-Ap02996	X	X
8	P20_HA04_0_2	Mar 31, 2020		Soil	S20-Ap02997	X	X
9	P20_HA05_0_0	Mar 31, 2020		Soil	S20-Ap02998	X	X
10	P20_HA05_0_2	Mar 31, 2020		Soil	S20-Ap02999	X	X
Test Counts						10	10

Ramboll Environ Australia Pty Ltd
 Level 3/100 Pacific Highway
 North Sydney
 NSW 2060



NATA Accredited
 Accreditation Number 1261
 Site Number 18217

Accredited for compliance with ISO/IEC 17025 – Testing
 The results of the tests, calibrations and/or
 measurements included in this document are traceable
 to Australian/national standards.

Attention: Stephen Maxwell

Report 711576-S
 Project name
 Project ID 318000780
 Received Date Apr 01, 2020

Client Sample ID			P20_HA01_0.0	P20_HA01_0.2	P20_HA02_0.0	P20_HA02_0.2
Sample Matrix			Soil	Soil	Soil	Soil
Eurofins Sample No.			S20-Ap02990	S20-Ap02991	S20-Ap02992	S20-Ap02993
Date Sampled			Mar 31, 2020	Mar 31, 2020	Mar 31, 2020	Mar 31, 2020
Test/Reference	LOR	Unit				
Heavy Metals						
Lead	5	mg/kg	24	33	8.9	7.8
% Moisture	1	%	6.4	7.6	5.8	7.9

Client Sample ID			P20_HA03_0.0-0.05	P20_HA03_0.2	P20_HA04_0.0	P20_HA04_0.2
Sample Matrix			Soil	Soil	Soil	Soil
Eurofins Sample No.			S20-Ap02994	S20-Ap02995	S20-Ap02996	S20-Ap02997
Date Sampled			Mar 31, 2020	Mar 31, 2020	Mar 31, 2020	Mar 31, 2020
Test/Reference	LOR	Unit				
Heavy Metals						
Lead	5	mg/kg	11	5.7	10	14
% Moisture	1	%	7.9	8.8	11	11

Client Sample ID			P20_HA05_0.0	P20_HA05_0.2
Sample Matrix			Soil	Soil
Eurofins Sample No.			S20-Ap02998	S20-Ap02999
Date Sampled			Mar 31, 2020	Mar 31, 2020
Test/Reference	LOR	Unit		
Heavy Metals				
Lead	5	mg/kg	11	10
% Moisture	1	%	4.9	9.7

Sample History

Where samples are submitted/analysed over several days, the last date of extraction and analysis is reported.

A recent review of our LIMS has resulted in the correction or clarification of some method identifications. Due to this, some of the method reference information on reports has changed. However, no substantive change has been made to our laboratory methods, and as such there is no change in the validity of current or previous results.

If the date and time of sampling are not provided, the Laboratory will not be responsible for compromised results should testing be performed outside the recommended holding time.

Description

Heavy Metals

- Method: LTM-MET-3040 Metals in Waters, Soils & Sediments by ICP-MS

% Moisture

- Method: LTM-GEN-7080 Moisture

Testing Site

Sydney

Sydney

Extracted

Apr 06, 2020

Apr 02, 2020

Holding Time

180 Days

14 Days

Australia

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IANZ # 1290

Company Name: Ramboll Australia Pty Ltd
Address: Level 3/100 Pacific Highway
North Sydney
NSW 2060

Order No.:
Report #: 711576
Phone: 02 9954 8118
Fax: 02 9954 8150

Received: Apr 1, 2020 11:04 AM
Due: Apr 8, 2020
Priority: 5 Day
Contact Name: Stephen Maxwell

Project Name:
Project ID: 318000780

Eurofins Analytical Services Manager : Andrew Black

Sample Detail						Lead	Moisture Set
Melbourne Laboratory - NATA Site # 1254 & 14271							
Sydney Laboratory - NATA Site # 18217						X	X
Brisbane Laboratory - NATA Site # 20794							
Perth Laboratory - NATA Site # 23736							
External Laboratory							
No	Sample ID	Sample Date	Sampling Time	Matrix	LAB ID		
1	P20_HA01_0.0	Mar 31, 2020		Soil	S20-Ap02990	X	X
2	P20_HA01_0.2	Mar 31, 2020		Soil	S20-Ap02991	X	X
3	P20_HA02_0.0	Mar 31, 2020		Soil	S20-Ap02992	X	X
4	P20_HA02_0.2	Mar 31, 2020		Soil	S20-Ap02993	X	X
5	P20_HA03_0.0-0.05	Mar 31, 2020		Soil	S20-Ap02994	X	X
6	P20_HA03_0.2	Mar 31, 2020		Soil	S20-Ap02995	X	X

Australia

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Melbourne Laboratory - NATA Site # 1254 & 14271							
Sydney Laboratory - NATA Site # 18217						X	X
Brisbane Laboratory - NATA Site # 20794							
Perth Laboratory - NATA Site # 23736							
7	P20_HA04_0.	Mar 31, 2020		Soil	S20-Ap02996	X	X
8	P20_HA04_2	Mar 31, 2020		Soil	S20-Ap02997	X	X
9	P20_HA05_0.	Mar 31, 2020		Soil	S20-Ap02998	X	X
10	P20_HA05_2	Mar 31, 2020		Soil	S20-Ap02999	X	X
Test Counts						10	10

Internal Quality Control Review and Glossary
General

- Laboratory QC results for Method Blanks, Duplicates, Matrix Spikes, and Laboratory Control Samples follows guidelines delineated in the National Environment Protection (Assessment of Site Contamination) Measure 1999, as amended May 2013 and are included in this QC report where applicable. Additional QC data may be available on request.
- All soil/sediment/solid results are reported on a dry basis, unless otherwise stated.
- All biota/food results are reported on a wet weight basis on the edible portion, unless otherwise stated.
- Actual LORs are matrix dependant. Quoted LORs may be raised where sample extracts are diluted due to interferences.
- Results are uncorrected for matrix spikes or surrogate recoveries except for PFAS compounds.
- SVOC analysis on waters are performed on homogenised, unfiltered samples, unless noted otherwise.
- Samples were analysed on an 'as received' basis.
- Information identified on this report with blue colour, indicates data provided by customer, that may have an impact on the results.
- This report replaces any interim results previously issued.

Holding Times

Please refer to 'Sample Preservation and Container Guide' for holding times (QS3001).

For samples received on the last day of holding time, notification of testing requirements should have been received at least 6 hours prior to sample receipt deadlines as stated on the SRA.

If the Laboratory did not receive the information in the required timeframe, and regardless of any other integrity issues, suitably qualified results may still be reported.

Holding times apply from the date of sampling, therefore compliance to these may be outside the laboratory's control.

For VOCs containing vinyl chloride, styrene and 2-chloroethyl vinyl ether the holding time is 7 days however for all other VOCs such as BTEX or C6-10 TRH then the holding time is 14 days.

****NOTE:** pH duplicates are reported as a range NOT as RPD

Units

mg/kg: milligrams per kilogram

mg/L: milligrams per litre

ug/L: micrograms per litre

ppm: Parts per million

ppb: Parts per billion

%: Percentage

org/100mL: Organisms per 100 millilitres

NTU: Nephelometric Turbidity Units

MPN/100mL: Most Probable Number of organisms per 100 millilitres

Terms

Dry	Where a moisture has been determined on a solid sample the result is expressed on a dry basis.
LOR	Limit of Reporting.
SPIKE	Addition of the analyte to the sample and reported as percentage recovery.
RPD	Relative Percent Difference between two Duplicate pieces of analysis.
LCS	Laboratory Control Sample - reported as percent recovery.
CRM	Certified Reference Material - reported as percent recovery.
Method Blank	In the case of solid samples these are performed on laboratory certified clean sands and in the case of water samples these are performed on de-ionised water.
Surr - Surrogate	The addition of a like compound to the analyte target and reported as percentage recovery.
Duplicate	A second piece of analysis from the same sample and reported in the same units as the result to show comparison.
USEPA	United States Environmental Protection Agency
APHA	American Public Health Association
TCLP	Toxicity Characteristic Leaching Procedure
COC	Chain of Custody
SRA	Sample Receipt Advice
QSM	US Department of Defense Quality Systems Manual Version 5.3
CP	Client Parent - QC was performed on samples pertaining to this report
NCP	Non-Client Parent - QC performed on samples not pertaining to this report, QC is representative of the sequence or batch that client samples were analysed within.
TEQ	Toxic Equivalency Quotient

QC - Acceptance Criteria

RPD Duplicates: Global RPD Duplicates Acceptance Criteria is 30% however the following acceptance guidelines are equally applicable:

Results <10 times the LOR : No Limit

Results between 10-20 times the LOR : RPD must lie between 0-50%

Results >20 times the LOR : RPD must lie between 0-30%

Surrogate Recoveries: Recoveries must lie between 20-130% Phenols & 50-150% PFASs

PFAS field samples that contain surrogate recoveries in excess of the QC limit designated in QSM 5.3 where no positive PFAS results have been reported have been reviewed and no data was affected.

WA DWER (n=10): PFBA, PFPeA, PFHxA, PFHpA, PFOA, PFBS, PFHxS, PFOS, 6:2 FTSA, 8:2 FTSA

QC Data General Comments

- Where a result is reported as a less than (<), higher than the nominated LOR, this is due to either matrix interference, extract dilution required due to interferences or contaminant levels within the sample, high moisture content or insufficient sample provided.
- Duplicate data shown within this report that states the word "BATCH" is a Batch Duplicate from outside of your sample batch, but within the laboratory sample batch at a 1:10 ratio. The Parent and Duplicate data shown is not data from your samples.
- Organochlorine Pesticide analysis - where reporting LCS data, Toxaphene & Chlordane are not added to the LCS.
- Organochlorine Pesticide analysis - where reporting Spike data, Toxaphene is not added to the Spike.
- Total Recoverable Hydrocarbons - where reporting Spike & LCS data, a single spike of commercial Hydrocarbon products in the range of C12-C30 is added and it's Total Recovery is reported in the C10-C14 cell of the Report.
- pH and Free Chlorine analysed in the laboratory - Analysis on this test must begin within 30 minutes of sampling. Therefore laboratory analysis is unlikely to be completed within holding time. Analysis will begin as soon as possible after sample receipt.
- Recovery Data (Spikes & Surrogates) - where chromatographic interference does not allow the determination of Recovery the term "INT" appears against that analyte.
- Polychlorinated Biphenyls are spiked only using Aroclor 1260 in Matrix Spikes and LCS.
- For Matrix Spikes and LCS results a dash " - " in the report means that the specific analyte was not added to the QC sample.
- Duplicate RPDs are calculated from raw analytical data thus it is possible to have two sets of data.

Quality Control Results

Test				Units	Result 1		Acceptance Limits	Pass Limits	Qualifying Code		
Method Blank											
Heavy Metals											
Lead				mg/kg	< 5		5	Pass			
LCS - % Recovery											
Heavy Metals											
Lead				%	102		70-130	Pass			
Test	Lab Sample ID	QA Source	Units	Result 1			Acceptance Limits	Pass Limits	Qualifying Code		
Spike - % Recovery											
Heavy Metals											
Lead				S20-Ap02998	CP	%	105	70-130	Pass		
Test	Lab Sample ID	QA Source	Units	Result 1			Acceptance Limits	Pass Limits	Qualifying Code		
Duplicate											
Heavy Metals											
Lead				S20-Ap02997	CP	mg/kg	14	13	5.0	30%	Pass
Duplicate											
					Result 1	Result 2	RPD				
% Moisture				S20-Ap02997	CP	%	11	9.6	9.0	30%	Pass

Comments**Sample Integrity**

Custody Seals Intact (if used)	N/A
Attempt to Chill was evident	Yes
Sample correctly preserved	Yes
Appropriate sample containers have been used	Yes
Sample containers for volatile analysis received with minimal headspace	Yes
Samples received within HoldingTime	Yes
Some samples have been subcontracted	No

Authorised By

Andrew Black Analytical Services Manager
Gabriele Cordero Senior Analyst-Metal (NSW)

**Glenn Jackson
General Manager**

Final report - this Report replaces any previously issued Report

- Indicates Not Requested

* Indicates NATA accreditation does not cover the performance of this service

Measurement uncertainty of test data is available on request or please [click here](#).

Eurofins shall not be liable for loss, cost, damages or expenses incurred by the client, or any other person or company, resulting from the use of any information or interpretation given in this report. In no case shall Eurofins be liable for consequential damages including, but not limited to, lost profits, damages for failure to meet deadlines and lost production arising from this report. This document shall not be reproduced except in full and relates only to the items tested. Unless indicated otherwise, the tests were performed on the samples as received.



CHAIN OF CUSTODY RECORD

ABN 50 005 085 521

Sydney Laboratory

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03 8564 5000 EnviroSampleVic@eurofins.com

Company		Ramboll		Project No		318000780		Project Manager		Stephen Maxwell		Sampler(s)		JK + RC			
Address		50 Glebe Road the Junction		Project Name				EDD Format		Excel and PDF		Handed over by		SM			
Contact Name		Stephen Maxwell		<small>(Note: Where metals are requested, please specify "Total" or "Filtered" / SUITE code must be used to avoid SUITE priority)</small> Analyses Lead M13 (Al, As, Ba, Be, Cd, Cr, Co, Cu, Fe, Pb, Mn, Hg, Ni, Zn) total M13 (Al, As, Ba, Be, Cd, Cr, Co, Cu, Fe, Pb, Mn, Hg, Ni, Zn) dissolved										Email for Invoice		smaxwell@ramboll.com asiapac-accounts@ramboll.com	
Phone No														Email for Results		smaxwell@ramboll.com jblackwell@ramboll.com rcondon@ramboll.com shyde@ramboll.com	
Special Directions														Turnaround Time (TAT) Requirements (Default will be 5 days if not ticked)		<input type="checkbox"/> Overnight (9am)* <input type="checkbox"/> 1 Day* <input type="checkbox"/> 2 Day* <input type="checkbox"/> 3 Day* <input checked="" type="checkbox"/> 5 Day* <input type="checkbox"/> Other () * Surcharges apply	
Purchase Order														Sample Comments / Dangerous Goods Hazard Warning			
Quote ID No		180613RAMN_1															
No	Client Sample ID	Sampled Date/Time (dd/mm/yy hh:mm)	Matrix (Solid (S) Water (W))														
1	P21_HA01_0.0	31/03/20	S	X													
2	P21_HA01_0.2	31/03/20	S	X													
3	P21_HA02_0.0	31/03/20	S	X													
4	P21_HA02_0.2	31/03/20	S	X													
5	P21_HA03_0.0	31/03/20	S	X													
6	P21_HA04_0.0	31/03/20	S	X													
7	P21_HA04_0.2	31/03/20	S	X													
8	P21_HA05_0.0	31/03/20	S	X													
9	P21_HA05_0.2	31/03/20	S	X													
10	P21_TW1	31/03/20	W		X	X											
Total Counts				9	1	1											
Method of Shipment		<input type="checkbox"/> Courier (#) <input type="checkbox"/> Hand Delivered <input type="checkbox"/> Postal		Name		Signature		Date		Time		Date		Time			
Eurofins mgt Laboratory Use Only		Received By <i>fupen</i>		SYD BNE MEL PER ADL NTL DRW		Signature		Date <i>01/04/20</i>		Time <i>11:04 AM</i>		Temperature <i>15.8°C</i>		Report No <i>711580</i>			

Submission of samples to the laboratory will be deemed as acceptance of Eurofins | mgt Standard Terms and Conditions unless agreed otherwise. A copy of Eurofins | mgt Standard Terms and Conditions is available on request.



CHAIN OF CUSTODY RECORD

ABN 50 005 085 521

Sydney Laboratory

Unit F3 Bld F, 16 Mars Rd, Lane Cove West, NSW 2066
02 9900 8400 EnviroSampleNSW@eurofins.com

Brisbane Laboratory

Unit 1, 21 Smallwood Pl., Murarrie, QLD 4172
07 3902 4600 EnviroSampleQLD@eurofins.com

Perth Laboratory

Unit 2, 91 Leach Highway, Kewdale WA 6105
08 9251 9600 EnviroSampleWA@eurofins.com

Melbourne Laboratory

2 Kingston Town Close, Oakleigh, VIC 3166
03 8564 5000 EnviroSampleVic@eurofins.com

Company		Ramboll			Project No				318000780				Project Manager		Stephen Maxwell				Sampler(s)		JB + JAB				
Address		50 Glebe Road the Junction			Project Name								EDD Format (ESdat, EQulS,		Excel and PDF				Handed over by		SM				
Contact Name		Stephen Maxwell			Analyses <small>(Note: Where metals are requested, check appropriate "Trace" or "Filtered" SUITE code must be used to affect SUITE priority)</small>	Lead								Email for Invoice		smaxwell@ramboll.com asiapac-accounts@ramboll.com				Email for Results		smaxwell@ramboll.com jblackwell@ramboll.com rcondon@ramboll.com shyde@ramboll.com			
Phone No						M13 (Al, As, Ba, Be, Cd, Cr, Co, Cu, Fe, Pb, Mn, Hg, Ni, Zn) total								jblackwell@ramboll.com		Turnaround Time (TAT) Requirements (Default will be 5 days if not ticked)									
Special Directions						M13 (Al, As, Ba, Be, Cd, Cr, Co, Cu, Fe, Pb, Mn, Hg, Ni, Zn) dissolved								1L Plastic		<input type="checkbox"/> Overnight (9am)*									
Purchase Order														250mL Plastic		<input type="checkbox"/> 1 Day* <input type="checkbox"/> 2 Day*									
Quote ID No		180813RAMN_1												125mL Plastic		<input type="checkbox"/> 3 Day* <input checked="" type="checkbox"/> 5 Day*									
Quote ID No													200mL Amber Glass		* Surcharges apply										
Quote ID No													40mL VOA vial		<input type="checkbox"/> Other ()										
Quote ID No													500mL PFAS Bottle		Sample Comments / Dangerous Goods Hazard Warning										
Quote ID No													Jar (Glass or HDPE)												
Quote ID No													Other (Asbestos AS4664, WA Guidelines)												
No	Client Sample ID	Sampled Date/Time (dd/mm/yy hh:mm)	Matrix (Solid (S) Water (W))																						
1	P21_TW2	31/03/20	W		X	X																			
2	P21_TWS1	31/03/20	Sediment	X	X	X													Please dry sediment sample prior to analysis						
3	P21_TWS2	31/03/20	Sediment	X	X	X													Please dry sediment sample prior to analysis						
4																									
5																									
6																									
7																									
8																									
9																									
10																									
Total Counts				2	3	3																			

Method of Shipment		<input type="checkbox"/> Courier (#) <input type="checkbox"/> Hand Delivered <input type="checkbox"/> Postal		Name		Signature		Date		Time	
Eurofins mgt Laboratory Use Only		Received By	<i>[Signature]</i>	SYD BNE MEL PER ADL NTL DRW	Signature	Date	<i>01/04/20</i>	Time	<i>11:04 AM</i>	Temperature	
		Received By		SYD BNE MEL PER ADL NTL DRW	Signature	Date		Time		Report No	

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Melbourne

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Site # 1254 & 14271

Sydney

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Phone : +61 2 9900 8400
NATA # 1261 Site # 18217

Brisbane

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NATA # 1261 Site # 20794

Perth

2/91 Leach Highway
Kewdale WA 6105
Phone : +61 8 9251 9600
NATA # 1261 Site # 23736

Sample Receipt Advice

Company name: **Ramboll Australia Pty Ltd**

Contact name: **Stephen Maxwell**

Project ID: **318000780**

COC number: **Not provided**

Turn around time: **5 Day**

Date/Time received: **Apr 1, 2020 11:04 AM**

Eurofins reference: **711580**

Sample information

- A detailed list of analytes logged into our LIMS, is included in the attached summary table.
- All samples have been received as described on the above COC.
- COC has been completed correctly.
- Attempt to chill was evident.
- Appropriately preserved sample containers have been used.
- All samples were received in good condition.
- Samples have been provided with adequate time to commence analysis in accordance with the relevant holding times.
- Appropriate sample containers have been used.
- Sample containers for volatile analysis received with zero headspace.
- Split sample sent to requested external lab.
- Some samples have been subcontracted.
- N/A Custody Seals intact (if used).

Contact notes

If you have any questions with respect to these samples please contact:

Andrew Black on Phone : (+61) 2 9900 8490 or by e.mail: AndrewBlack@eurofins.com

Results will be delivered electronically via e.mail to Stephen Maxwell - smaxwell@ramboll.com.

Note: A copy of these results will also be delivered to the general Ramboll Australia Pty Ltd email address.

Australia

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Phone : +64 9 526 45 51
IANZ # 1327

Christchurch
43 Detroit Drive
Rolleston, Christchurch 7675
Phone : 0800 856 450
IANZ # 1290

ABN – 50 005 085 521

web : www.eurofins.com.au

e.mail : EnviroSales@eurofins.com

Company Name: Ramboll Australia Pty Ltd
Address: Level 3/100 Pacific Highway
North Sydney
NSW 2060

Order No.:
Report #: 711580
Phone: 02 9954 8118
Fax: 02 9954 8150

Received: Apr 1, 2020 11:04 AM
Due: Apr 8, 2020
Priority: 5 Day
Contact Name: Stephen Maxwell

Project Name:
Project ID: 318000780

Eurofins Analytical Services Manager : Andrew Black

Sample Detail						Lead	NEPM 2013 Metals : Metals M13	NEPM 2013 Metals : Metals M13 filtered	Moisture Set
Melbourne Laboratory - NATA Site # 1254 & 14271									
Sydney Laboratory - NATA Site # 18217						X	X	X	X
Brisbane Laboratory - NATA Site # 20794									
Perth Laboratory - NATA Site # 23736									
External Laboratory									
No	Sample ID	Sample Date	Sampling Time	Matrix	LAB ID				
1	P21_HA01_0.0	Mar 31, 2020		Soil	S20-Ap03003	X			X
2	P21_HA01_0.2	Mar 31, 2020		Soil	S20-Ap03004	X			X
3	P21_HA02_0.0	Mar 31, 2020		Soil	S20-Ap03005	X			X
4	P21_HA02_0.2	Mar 31, 2020		Soil	S20-Ap03006	X			X
5	P21_HA03_0.0	Mar 31, 2020		Soil	S20-Ap03007	X			X
6	P21_HA04_0.0	Mar 31, 2020		Soil	S20-Ap03008	X			X

Australia

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Auckland
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Penrose, Auckland 1061
Phone : +64 9 526 45 51
IANZ # 1327

Christchurch
43 Detroit Drive
Rolleston, Christchurch 7675
Phone : 0800 856 450
IANZ # 1290

Company Name: Ramboll Australia Pty Ltd
Address: Level 3/100 Pacific Highway
North Sydney
NSW 2060

Project Name:
Project ID: 318000780

Order No.:
Report #: 711580
Phone: 02 9954 8118
Fax: 02 9954 8150

Received: Apr 1, 2020 11:04 AM
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Contact Name: Stephen Maxwell

Eurofins Analytical Services Manager : Andrew Black

Sample Detail						Lead	NEPM 2013 Metals : Metals M13	NEPM 2013 Metals : Metals M13 filtered	Moisture Set
Melbourne Laboratory - NATA Site # 1254 & 14271									
Sydney Laboratory - NATA Site # 18217						X	X	X	X
Brisbane Laboratory - NATA Site # 20794									
Perth Laboratory - NATA Site # 23736									
7	P21_HA04_0.2	Mar 31, 2020		Soil	S20-Ap03009	X			X
8	P21_HA05_0.0	Mar 31, 2020		Soil	S20-Ap03010	X			X
9	P21_HA05_0.2	Mar 31, 2020		Soil	S20-Ap03011	X			X
10	P21_TW1	Mar 31, 2020		Water	S20-Ap03012		X	X	
11	P21_TW2	Mar 31, 2020		Water	S20-Ap03013		X	X	
12	P21_TWS1	Mar 31, 2020		Sediment	S20-Ap03014	X			X
13	P21_TWS2	Mar 31, 2020		Sediment	S20-Ap03015	X			X
Test Counts						11	2	2	11

Ramboll Environ Australia Pty Ltd
 Level 3/100 Pacific Highway
 North Sydney
 NSW 2060



NATA Accredited
Accreditation Number 1261
Site Number 18217

Accredited for compliance with ISO/IEC 17025 – Testing
 The results of the tests, calibrations and/or
 measurements included in this document are traceable
 to Australian/national standards.

Attention: Stephen Maxwell

Report 711580-S
 Project name
 Project ID 318000780
 Received Date Apr 01, 2020

Client Sample ID			P21_HA01_0.0	P21_HA01_0.2	P21_HA02_0.0	P21_HA02_0.2
Sample Matrix			Soil	Soil	Soil	Soil
Eurofins Sample No.			S20-Ap03003	S20-Ap03004	S20-Ap03005	S20-Ap03006
Date Sampled			Mar 31, 2020	Mar 31, 2020	Mar 31, 2020	Mar 31, 2020
Test/Reference	LOR	Unit				
Heavy Metals						
Lead	5	mg/kg	24	25	16	11
% Moisture	1	%	8.8	9.3	8.9	8.4

Client Sample ID			P21_HA03_0.0	P21_HA04_0.0	P21_HA04_0.2	P21_HA05_0.0
Sample Matrix			Soil	Soil	Soil	Soil
Eurofins Sample No.			S20-Ap03007	S20-Ap03008	S20-Ap03009	S20-Ap03010
Date Sampled			Mar 31, 2020	Mar 31, 2020	Mar 31, 2020	Mar 31, 2020
Test/Reference	LOR	Unit				
Heavy Metals						
Lead	5	mg/kg	18	33	38	14
% Moisture	1	%	8.2	8.8	10.0	4.8

Client Sample ID			P21_HA05_0.2
Sample Matrix			Soil
Eurofins Sample No.			S20-Ap03011
Date Sampled			Mar 31, 2020
Test/Reference	LOR	Unit	
Heavy Metals			
Lead	5	mg/kg	12
% Moisture	1	%	4.1

Sample History

Where samples are submitted/analysed over several days, the last date of extraction and analysis is reported.

A recent review of our LIMS has resulted in the correction or clarification of some method identifications. Due to this, some of the method reference information on reports has changed. However, no substantive change has been made to our laboratory methods, and as such there is no change in the validity of current or previous results.

If the date and time of sampling are not provided, the Laboratory will not be responsible for compromised results should testing be performed outside the recommended holding time.

Description

Heavy Metals

- Method: LTM-MET-3040 Metals in Waters, Soils & Sediments by ICP-MS

% Moisture

- Method: LTM-GEN-7080 Moisture

Testing Site

Sydney

Sydney

Extracted

Apr 06, 2020

Apr 02, 2020

Holding Time

180 Days

14 Days

Australia

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6 Monterey Road
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IANZ # 1290

Company Name:	Ramboll Australia Pty Ltd	Order No.:		Received:	Apr 1, 2020 11:04 AM
Address:	Level 3/100 Pacific Highway North Sydney NSW 2060	Report #:	711580	Due:	Apr 8, 2020
Project Name:		Phone:	02 9954 8118	Priority:	5 Day
Project ID:	318000780	Fax:	02 9954 8150	Contact Name:	Stephen Maxwell

Eurofins Analytical Services Manager : Andrew Black

Sample Detail						Lead	NEPM 2013 Metals : Metals M13	NEPM 2013 Metals : Metals M13 filtered	Moisture Set
Melbourne Laboratory - NATA Site # 1254 & 14271									
Sydney Laboratory - NATA Site # 18217						X	X	X	X
Brisbane Laboratory - NATA Site # 20794									
Perth Laboratory - NATA Site # 23736									
External Laboratory									
No	Sample ID	Sample Date	Sampling Time	Matrix	LAB ID				
1	P21_HA01_0.0	Mar 31, 2020		Soil	S20-Ap03003	X			X
2	P21_HA01_0.2	Mar 31, 2020		Soil	S20-Ap03004	X			X
3	P21_HA02_0.0	Mar 31, 2020		Soil	S20-Ap03005	X			X
4	P21_HA02_0.2	Mar 31, 2020		Soil	S20-Ap03006	X			X
5	P21_HA03_0.0	Mar 31, 2020		Soil	S20-Ap03007	X			X
6	P21_HA04_0.0	Mar 31, 2020		Soil	S20-Ap03008	X			X

Australia

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Company Name: Ramboll Australia Pty Ltd
Address: Level 3/100 Pacific Highway
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NSW 2060

Order No.:
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Received: Apr 1, 2020 11:04 AM
Due: Apr 8, 2020
Priority: 5 Day
Contact Name: Stephen Maxwell

Project Name:
Project ID: 318000780

Eurofins Analytical Services Manager : Andrew Black

Sample Detail						Lead	NEPM 2013 Metals : Metals M13	NEPM 2013 Metals : Metals M13 filtered	Moisture Set
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Sydney Laboratory - NATA Site # 18217						X	X	X	X
Brisbane Laboratory - NATA Site # 20794									
Perth Laboratory - NATA Site # 23736									
7	P21_HA04_0.2	Mar 31, 2020		Soil	S20-Ap03009	X			X
8	P21_HA05_0.0	Mar 31, 2020		Soil	S20-Ap03010	X			X
9	P21_HA05_0.2	Mar 31, 2020		Soil	S20-Ap03011	X			X
10	P21_TW1	Mar 31, 2020		Water	S20-Ap03012		X	X	
11	P21_TW2	Mar 31, 2020		Water	S20-Ap03013		X	X	
12	P21_TWS1	Mar 31, 2020		Sediment	S20-Ap03014	X			X
13	P21_TWS2	Mar 31, 2020		Sediment	S20-Ap03015	X			X
Test Counts						11	2	2	11

Internal Quality Control Review and Glossary

General

- Laboratory QC results for Method Blanks, Duplicates, Matrix Spikes, and Laboratory Control Samples follows guidelines delineated in the National Environment Protection (Assessment of Site Contamination) Measure 1999, as amended May 2013 and are included in this QC report where applicable. Additional QC data may be available on request.
- All soil/sediment/solid results are reported on a dry basis, unless otherwise stated.
- All biota/food results are reported on a wet weight basis on the edible portion, unless otherwise stated.
- Actual LORs are matrix dependant. Quoted LORs may be raised where sample extracts are diluted due to interferences.
- Results are uncorrected for matrix spikes or surrogate recoveries except for PFAS compounds.
- SVOC analysis on waters are performed on homogenised, unfiltered samples, unless noted otherwise.
- Samples were analysed on an 'as received' basis.
- Information identified on this report with blue colour, indicates data provided by customer, that may have an impact on the results.
- This report replaces any interim results previously issued.

Holding Times

Please refer to 'Sample Preservation and Container Guide' for holding times (QS3001).

For samples received on the last day of holding time, notification of testing requirements should have been received at least 6 hours prior to sample receipt deadlines as stated on the SRA.

If the Laboratory did not receive the information in the required timeframe, and regardless of any other integrity issues, suitably qualified results may still be reported.

Holding times apply from the date of sampling, therefore compliance to these may be outside the laboratory's control.

For VOCs containing vinyl chloride, styrene and 2-chloroethyl vinyl ether the holding time is 7 days however for all other VOCs such as BTEX or C6-10 TRH then the holding time is 14 days.

****NOTE:** pH duplicates are reported as a range NOT as RPD

Units

mg/kg: milligrams per kilogram

mg/L: milligrams per litre

ug/L: micrograms per litre

ppm: Parts per million

ppb: Parts per billion

%: Percentage

org/100mL: Organisms per 100 millilitres

NTU: Nephelometric Turbidity Units

MPN/100mL: Most Probable Number of organisms per 100 millilitres

Terms

Dry	Where a moisture has been determined on a solid sample the result is expressed on a dry basis.
LOR	Limit of Reporting.
SPIKE	Addition of the analyte to the sample and reported as percentage recovery.
RPD	Relative Percent Difference between two Duplicate pieces of analysis.
LCS	Laboratory Control Sample - reported as percent recovery.
CRM	Certified Reference Material - reported as percent recovery.
Method Blank	In the case of solid samples these are performed on laboratory certified clean sands and in the case of water samples these are performed on de-ionised water.
Surr - Surrogate	The addition of a like compound to the analyte target and reported as percentage recovery.
Duplicate	A second piece of analysis from the same sample and reported in the same units as the result to show comparison.
USEPA	United States Environmental Protection Agency
APHA	American Public Health Association
TCLP	Toxicity Characteristic Leaching Procedure
COC	Chain of Custody
SRA	Sample Receipt Advice
QSM	US Department of Defense Quality Systems Manual Version 5.3
CP	Client Parent - QC was performed on samples pertaining to this report
NCP	Non-Client Parent - QC performed on samples not pertaining to this report, QC is representative of the sequence or batch that client samples were analysed within.
TEQ	Toxic Equivalency Quotient

QC - Acceptance Criteria

RPD Duplicates: Global RPD Duplicates Acceptance Criteria is 30% however the following acceptance guidelines are equally applicable:

Results <10 times the LOR : No Limit

Results between 10-20 times the LOR : RPD must lie between 0-50%

Results >20 times the LOR : RPD must lie between 0-30%

Surrogate Recoveries: Recoveries must lie between 20-130% Phenols & 50-150% PFASs

PFAS field samples that contain surrogate recoveries in excess of the QC limit designated in QSM 5.3 where no positive PFAS results have been reported have been reviewed and no data was affected.

WA DWER (n=10): PFBA, PFPeA, PFHxA, PFHpA, PFOA, PFBS, PFHxS, PFOS, 6:2 FTSA, 8:2 FTSA

QC Data General Comments

- Where a result is reported as a less than (<), higher than the nominated LOR, this is due to either matrix interference, extract dilution required due to interferences or contaminant levels within the sample, high moisture content or insufficient sample provided.
- Duplicate data shown within this report that states the word "BATCH" is a Batch Duplicate from outside of your sample batch, but within the laboratory sample batch at a 1:10 ratio. The Parent and Duplicate data shown is not data from your samples.
- Organochlorine Pesticide analysis - where reporting LCS data, Toxaphene & Chlordane are not added to the LCS.
- Organochlorine Pesticide analysis - where reporting Spike data, Toxaphene is not added to the Spike.
- Total Recoverable Hydrocarbons - where reporting Spike & LCS data, a single spike of commercial Hydrocarbon products in the range of C12-C30 is added and it's Total Recovery is reported in the C10-C14 cell of the Report.
- pH and Free Chlorine analysed in the laboratory - Analysis on this test must begin within 30 minutes of sampling. Therefore laboratory analysis is unlikely to be completed within holding time. Analysis will begin as soon as possible after sample receipt.
- Recovery Data (Spikes & Surrogates) - where chromatographic interference does not allow the determination of Recovery the term "INT" appears against that analyte.
- Polychlorinated Biphenyls are spiked only using Aroclor 1260 in Matrix Spikes and LCS.
- For Matrix Spikes and LCS results a dash " - " in the report means that the specific analyte was not added to the QC sample.
- Duplicate RPDs are calculated from raw analytical data thus it is possible to have two sets of data.

Quality Control Results

Test				Units	Result 1		Acceptance Limits	Pass Limits	Qualifying Code		
Method Blank											
Heavy Metals											
Lead				mg/kg	< 5		5	Pass			
LCS - % Recovery											
Heavy Metals											
Lead				%	102		70-130	Pass			
Test	Lab Sample ID	QA Source	Units	Result 1			Acceptance Limits	Pass Limits	Qualifying Code		
Spike - % Recovery											
Heavy Metals											
Lead				S20-Ap02998	NCP	%	105	70-130	Pass		
Duplicate											
Heavy Metals											
Lead				S20-Ap03010	CP	mg/kg	14	14	2.0	30%	Pass
Duplicate											
% Moisture				S20-Ap03010	CP	%	4.8	3.6	27	30%	Pass

Comments**Sample Integrity**

Custody Seals Intact (if used)	N/A
Attempt to Chill was evident	Yes
Sample correctly preserved	Yes
Appropriate sample containers have been used	Yes
Sample containers for volatile analysis received with minimal headspace	Yes
Samples received within HoldingTime	Yes
Some samples have been subcontracted	No

Authorised By

Andrew Black Analytical Services Manager
Gabriele Cordero Senior Analyst-Metal (NSW)

**Glenn Jackson
General Manager**

Final report - this Report replaces any previously issued Report

- Indicates Not Requested

* Indicates NATA accreditation does not cover the performance of this service

Measurement uncertainty of test data is available on request or please [click here](#).

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Ramboll Environ Australia Pty Ltd
 Level 3/100 Pacific Highway
 North Sydney
 NSW 2060



NATA Accredited
 Accreditation Number 1261
 Site Number 18217

Accredited for compliance with ISO/IEC 17025 – Testing
 The results of the tests, calibrations and/or
 measurements included in this document are traceable
 to Australian/national standards.

Attention: Stephen Maxwell

Report 711580-W
 Project name
 Project ID 318000780
 Received Date Apr 01, 2020

Client Sample ID			P21_TW1	P21_TW2	P21_TWS1	P21_TWS2
Sample Matrix			Water	Water	Water	Water
Eurofins Sample No.			S20-Ap03012	S20-Ap03013	S20-Ap03014	S20-Ap03015
Date Sampled			Mar 31, 2020	Mar 31, 2020	Mar 31, 2020	Mar 31, 2020
Test/Reference	LOR	Unit				
Heavy Metals						
Aluminium	0.05	mg/L	< 0.05	< 0.05	-	-
Aluminium (filtered)	0.05	mg/L	< 0.05	< 0.05	-	-
Arsenic	0.001	mg/L	< 0.001	< 0.001	-	-
Arsenic (filtered)	0.001	mg/L	< 0.001	< 0.001	-	-
Barium	0.02	mg/L	< 0.02	< 0.02	-	-
Barium (filtered)	0.02	mg/L	< 0.02	< 0.02	-	-
Beryllium	0.001	mg/L	< 0.001	< 0.001	-	-
Beryllium (filtered)	0.001	mg/L	< 0.001	< 0.001	-	-
Cadmium	0.0002	mg/L	< 0.0002	< 0.0002	-	-
Cadmium (filtered)	0.0002	mg/L	< 0.0002	< 0.0002	-	-
Chromium	0.001	mg/L	< 0.001	< 0.001	-	-
Chromium (filtered)	0.001	mg/L	< 0.001	< 0.001	-	-
Cobalt	0.001	mg/L	< 0.001	< 0.001	-	-
Cobalt (filtered)	0.001	mg/L	< 0.001	< 0.001	-	-
Copper	0.001	mg/L	0.003	< 0.001	-	-
Copper (filtered)	0.001	mg/L	0.002	< 0.001	-	-
Iron	0.05	mg/L	< 0.05	0.05	-	-
Iron (filtered)	0.05	mg/L	< 0.05	< 0.05	-	-
Lead	0.001	mg/L	< 0.001	< 0.001	2.1	0.76
Lead (filtered)	0.001	mg/L	< 0.001	< 0.001	-	-
Manganese	0.005	mg/L	0.020	0.006	-	-
Manganese (filtered)	0.005	mg/L	0.018	< 0.005	-	-
Mercury	0.0001	mg/L	< 0.0001	< 0.0001	-	-
Mercury (filtered)	0.0001	mg/L	< 0.0001	< 0.0001	-	-
Nickel	0.001	mg/L	< 0.001	< 0.001	-	-
Nickel (filtered)	0.001	mg/L	< 0.001	< 0.001	-	-
Zinc	0.005	mg/L	0.046	0.017	-	-
Zinc (filtered)	0.005	mg/L	0.038	0.016	-	-

Sample History

Where samples are submitted/analysed over several days, the last date of extraction and analysis is reported.

A recent review of our LIMS has resulted in the correction or clarification of some method identifications. Due to this, some of the method reference information on reports has changed. However, no substantive change has been made to our laboratory methods, and as such there is no change in the validity of current or previous results.

If the date and time of sampling are not provided, the Laboratory will not be responsible for compromised results should testing be performed outside the recommended holding time.

Description	Testing Site	Extracted	Holding Time
Heavy Metals - Method: LTM-MET-3040 Metals in Waters, Soils & Sediments by ICP-MS	Sydney	Apr 08, 2020	180 Days
Heavy Metals (filtered) - Method: LTM-MET-3040 Metals in Waters, Soils & Sediments by ICP-MS	Sydney	Apr 08, 2020	180 Days
Mobil Metals : Metals M15 - Method: LTM-MET-3040 Metals in Waters, Soils & Sediments by ICP-MS	Sydney	Apr 02, 2020	28 Days

Australia

Melbourne
6 Monterey Road
Dandenong South VIC 3175
Phone : +61 3 8564 5000
NATA # 1261
Site # 1254 & 14271

Sydney
Unit F3, Building F
16 Mars Road
Lane Cove West NSW 2066
Phone : +61 2 9900 8400
NATA # 1261 Site # 18217

Brisbane
1/21 Smallwood Place
Murarrie QLD 4172
Phone : +61 7 3902 4600
NATA # 1261 Site # 20794

Perth
2/91 Leach Highway
Kewdale WA 6105
Phone : +61 8 9251 9600
NATA # 1261
Site # 23736

New Zealand

Auckland
35 O'Rorke Road
Penrose, Auckland 1061
Phone : +64 9 526 45 51
IANZ # 1327

Christchurch
43 Detroit Drive
Rolleston, Christchurch 7675
Phone : 0800 856 450
IANZ # 1290

Company Name: Ramboll Australia Pty Ltd
Address: Level 3/100 Pacific Highway
North Sydney
NSW 2060

Project Name:
Project ID: 318000780

Order No.:
Report #: 711580
Phone: 02 9954 8118
Fax: 02 9954 8150

Received: Apr 1, 2020 11:04 AM
Due: Apr 8, 2020
Priority: 5 Day
Contact Name: Stephen Maxwell

Eurofins Analytical Services Manager : Andrew Black

Sample Detail						Lead	NEPM 2013 Metals : Metals M13	NEPM 2013 Metals : Metals M13 filtered	Moisture Set
Melbourne Laboratory - NATA Site # 1254 & 14271									
Sydney Laboratory - NATA Site # 18217						X	X	X	X
Brisbane Laboratory - NATA Site # 20794									
Perth Laboratory - NATA Site # 23736									
External Laboratory									
No	Sample ID	Sample Date	Sampling Time	Matrix	LAB ID				
1	P21_HA01_0.0	Mar 31, 2020		Soil	S20-Ap03003	X			X
2	P21_HA01_0.2	Mar 31, 2020		Soil	S20-Ap03004	X			X
3	P21_HA02_0.0	Mar 31, 2020		Soil	S20-Ap03005	X			X
4	P21_HA02_0.2	Mar 31, 2020		Soil	S20-Ap03006	X			X
5	P21_HA03_0.0	Mar 31, 2020		Soil	S20-Ap03007	X			X
6	P21_HA04_0.0	Mar 31, 2020		Soil	S20-Ap03008	X			X

Australia

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Site # 1254 & 14271

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Lane Cove West NSW 2066
Phone : +61 2 9900 8400
NATA # 1261 Site # 18217

Brisbane
1/21 Smallwood Place
Murarrie QLD 4172
Phone : +61 7 3902 4600
NATA # 1261 Site # 20794

Perth
2/91 Leach Highway
Kewdale WA 6105
Phone : +61 8 9251 9600
NATA # 1261
Site # 23736

New Zealand

Auckland
35 O'Rorke Road
Penrose, Auckland 1061
Phone : +64 9 526 45 51
IANZ # 1327

Christchurch
43 Detroit Drive
Rolleston, Christchurch 7675
Phone : 0800 856 450
IANZ # 1290

Company Name: Ramboll Australia Pty Ltd
Address: Level 3/100 Pacific Highway
North Sydney
NSW 2060

Order No.:
Report #: 711580
Phone: 02 9954 8118
Fax: 02 9954 8150

Received: Apr 1, 2020 11:04 AM
Due: Apr 8, 2020
Priority: 5 Day
Contact Name: Stephen Maxwell

Project Name:
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Eurofins Analytical Services Manager : Andrew Black

Sample Detail						Lead	NEPM 2013 Metals : Metals M13	NEPM 2013 Metals : Metals M13 filtered	Moisture Set
Melbourne Laboratory - NATA Site # 1254 & 14271									
Sydney Laboratory - NATA Site # 18217						X	X	X	X
Brisbane Laboratory - NATA Site # 20794									
Perth Laboratory - NATA Site # 23736									
7	P21_HA04_0.2	Mar 31, 2020		Soil	S20-Ap03009	X			X
8	P21_HA05_0.0	Mar 31, 2020		Soil	S20-Ap03010	X			X
9	P21_HA05_0.2	Mar 31, 2020		Soil	S20-Ap03011	X			X
10	P21_TW1	Mar 31, 2020		Water	S20-Ap03012		X	X	
11	P21_TW2	Mar 31, 2020		Water	S20-Ap03013		X	X	
12	P21_TWS1	Mar 31, 2020		Sediment	S20-Ap03014	X			X
13	P21_TWS2	Mar 31, 2020		Sediment	S20-Ap03015	X			X
Test Counts						11	2	2	11

Internal Quality Control Review and Glossary

General

- Laboratory QC results for Method Blanks, Duplicates, Matrix Spikes, and Laboratory Control Samples follows guidelines delineated in the National Environment Protection (Assessment of Site Contamination) Measure 1999, as amended May 2013 and are included in this QC report where applicable. Additional QC data may be available on request.
- All soil/sediment/solid results are reported on a dry basis, unless otherwise stated.
- All biota/food results are reported on a wet weight basis on the edible portion, unless otherwise stated.
- Actual LORs are matrix dependant. Quoted LORs may be raised where sample extracts are diluted due to interferences.
- Results are uncorrected for matrix spikes or surrogate recoveries except for PFAS compounds.
- SVOC analysis on waters are performed on homogenised, unfiltered samples, unless noted otherwise.
- Samples were analysed on an 'as received' basis.
- Information identified on this report with blue colour, indicates data provided by customer, that may have an impact on the results.
- This report replaces any interim results previously issued.

Holding Times

Please refer to 'Sample Preservation and Container Guide' for holding times (QS3001).

For samples received on the last day of holding time, notification of testing requirements should have been received at least 6 hours prior to sample receipt deadlines as stated on the SRA.

If the Laboratory did not receive the information in the required timeframe, and regardless of any other integrity issues, suitably qualified results may still be reported.

Holding times apply from the date of sampling, therefore compliance to these may be outside the laboratory's control.

For VOCs containing vinyl chloride, styrene and 2-chloroethyl vinyl ether the holding time is 7 days however for all other VOCs such as BTEX or C6-10 TRH then the holding time is 14 days.

****NOTE:** pH duplicates are reported as a range NOT as RPD

Units

mg/kg: milligrams per kilogram

mg/L: milligrams per litre

ug/L: micrograms per litre

ppm: Parts per million

ppb: Parts per billion

%: Percentage

org/100mL: Organisms per 100 millilitres

NTU: Nephelometric Turbidity Units

MPN/100mL: Most Probable Number of organisms per 100 millilitres

Terms

Dry	Where a moisture has been determined on a solid sample the result is expressed on a dry basis.
LOR	Limit of Reporting.
SPIKE	Addition of the analyte to the sample and reported as percentage recovery.
RPD	Relative Percent Difference between two Duplicate pieces of analysis.
LCS	Laboratory Control Sample - reported as percent recovery.
CRM	Certified Reference Material - reported as percent recovery.
Method Blank	In the case of solid samples these are performed on laboratory certified clean sands and in the case of water samples these are performed on de-ionised water.
Surr - Surrogate	The addition of a like compound to the analyte target and reported as percentage recovery.
Duplicate	A second piece of analysis from the same sample and reported in the same units as the result to show comparison.
USEPA	United States Environmental Protection Agency
APHA	American Public Health Association
TCLP	Toxicity Characteristic Leaching Procedure
COC	Chain of Custody
SRA	Sample Receipt Advice
QSM	US Department of Defense Quality Systems Manual Version 5.3
CP	Client Parent - QC was performed on samples pertaining to this report
NCP	Non-Client Parent - QC performed on samples not pertaining to this report, QC is representative of the sequence or batch that client samples were analysed within.
TEQ	Toxic Equivalency Quotient

QC - Acceptance Criteria

RPD Duplicates: Global RPD Duplicates Acceptance Criteria is 30% however the following acceptance guidelines are equally applicable:

Results <10 times the LOR : No Limit

Results between 10-20 times the LOR : RPD must lie between 0-50%

Results >20 times the LOR : RPD must lie between 0-30%

Surrogate Recoveries: Recoveries must lie between 20-130% Phenols & 50-150% PFASs

PFAS field samples that contain surrogate recoveries in excess of the QC limit designated in QSM 5.3 where no positive PFAS results have been reported have been reviewed and no data was affected.

WA DWER (n=10): PFBA, PFPeA, PFHxA, PFHpA, PFOA, PFBS, PFHxS, PFOS, 6:2 FTSA, 8:2 FTSA

QC Data General Comments

- Where a result is reported as a less than (<), higher than the nominated LOR, this is due to either matrix interference, extract dilution required due to interferences or contaminant levels within the sample, high moisture content or insufficient sample provided.
- Duplicate data shown within this report that states the word "BATCH" is a Batch Duplicate from outside of your sample batch, but within the laboratory sample batch at a 1:10 ratio. The Parent and Duplicate data shown is not data from your samples.
- Organochlorine Pesticide analysis - where reporting LCS data, Toxaphene & Chlordane are not added to the LCS.
- Organochlorine Pesticide analysis - where reporting Spike data, Toxaphene is not added to the Spike.
- Total Recoverable Hydrocarbons - where reporting Spike & LCS data, a single spike of commercial Hydrocarbon products in the range of C12-C30 is added and it's Total Recovery is reported in the C10-C14 cell of the Report.
- pH and Free Chlorine analysed in the laboratory - Analysis on this test must begin within 30 minutes of sampling. Therefore laboratory analysis is unlikely to be completed within holding time. Analysis will begin as soon as possible after sample receipt.
- Recovery Data (Spikes & Surrogates) - where chromatographic interference does not allow the determination of Recovery the term "INT" appears against that analyte.
- Polychlorinated Biphenyls are spiked only using Aroclor 1260 in Matrix Spikes and LCS.
- For Matrix Spikes and LCS results a dash " - " in the report means that the specific analyte was not added to the QC sample.
- Duplicate RPDs are calculated from raw analytical data thus it is possible to have two sets of data.

Quality Control Results

Test	Units	Result 1			Acceptance Limits	Pass Limits	Qualifying Code
Method Blank							
Heavy Metals							
Aluminium	mg/L	< 0.05			0.05	Pass	
Aluminium (filtered)	mg/L	< 0.05			0.05	Pass	
Arsenic	mg/L	< 0.001			0.001	Pass	
Arsenic (filtered)	mg/L	< 0.001			0.001	Pass	
Barium	mg/L	< 0.02			0.02	Pass	
Barium (filtered)	mg/L	< 0.02			0.02	Pass	
Beryllium	mg/L	< 0.001			0.001	Pass	
Beryllium (filtered)	mg/L	< 0.001			0.001	Pass	
Cadmium	mg/L	< 0.0002			0.0002	Pass	
Cadmium (filtered)	mg/L	< 0.0002			0.0002	Pass	
Chromium	mg/L	< 0.001			0.001	Pass	
Chromium (filtered)	mg/L	< 0.001			0.001	Pass	
Cobalt	mg/L	< 0.001			0.001	Pass	
Cobalt (filtered)	mg/L	< 0.001			0.001	Pass	
Copper	mg/L	< 0.001			0.001	Pass	
Copper (filtered)	mg/L	< 0.001			0.001	Pass	
Iron	mg/L	< 0.05			0.05	Pass	
Iron (filtered)	mg/L	< 0.05			0.05	Pass	
Lead	mg/L	< 0.001			0.001	Pass	
Lead (filtered)	mg/L	< 0.001			0.001	Pass	
Manganese	mg/L	< 0.005			0.005	Pass	
Manganese (filtered)	mg/L	< 0.005			0.005	Pass	
Mercury	mg/L	< 0.0001			0.0001	Pass	
Mercury (filtered)	mg/L	< 0.0001			0.0001	Pass	
Nickel	mg/L	< 0.001			0.001	Pass	
Nickel (filtered)	mg/L	< 0.001			0.001	Pass	
Zinc	mg/L	< 0.005			0.005	Pass	
Zinc (filtered)	mg/L	< 0.005			0.005	Pass	
LCS - % Recovery							
Heavy Metals							
Aluminium	%	89			70-130	Pass	
Aluminium (filtered)	%	92			70-130	Pass	
Arsenic	%	91			70-130	Pass	
Arsenic (filtered)	%	91			70-130	Pass	
Barium	%	90			70-130	Pass	
Barium (filtered)	%	87			70-130	Pass	
Beryllium	%	92			70-130	Pass	
Beryllium (filtered)	%	94			70-130	Pass	
Cadmium	%	86			70-130	Pass	
Cadmium (filtered)	%	89			70-130	Pass	
Chromium	%	90			70-130	Pass	
Chromium (filtered)	%	93			70-130	Pass	
Cobalt	%	90			70-130	Pass	
Cobalt (filtered)	%	92			70-130	Pass	
Copper	%	88			70-130	Pass	
Copper (filtered)	%	93			70-130	Pass	
Iron	%	91			70-130	Pass	
Iron (filtered)	%	93			70-130	Pass	
Lead	%	88			70-130	Pass	
Lead (filtered)	%	91			70-130	Pass	

Test			Units	Result 1			Acceptance Limits	Pass Limits	Qualifying Code
Manganese			%	89			70-130	Pass	
Manganese (filtered)			%	92			70-130	Pass	
Mercury			%	103			70-130	Pass	
Mercury (filtered)			%	92			70-130	Pass	
Nickel			%	90			70-130	Pass	
Nickel (filtered)			%	94			70-130	Pass	
Zinc			%	87			70-130	Pass	
Zinc (filtered)			%	95			70-130	Pass	
Test	Lab Sample ID	QA Source	Units	Result 1			Acceptance Limits	Pass Limits	Qualifying Code
Spike - % Recovery									
Heavy Metals				Result 1					
Aluminium	S20-Ap01271	NCP	%	98			70-130	Pass	
Aluminium (filtered)	S20-Ap02189	NCP	%	99			70-130	Pass	
Arsenic	S20-Ap01271	NCP	%	93			70-130	Pass	
Arsenic (filtered)	S20-Ap02189	NCP	%	92			70-130	Pass	
Barium	S20-Ap01271	NCP	%	96			70-130	Pass	
Barium (filtered)	S20-Ap02189	NCP	%	83			70-130	Pass	
Beryllium	S20-Ap01271	NCP	%	98			70-130	Pass	
Beryllium (filtered)	S20-Ap02189	NCP	%	93			70-130	Pass	
Cadmium	S20-Ap01271	NCP	%	93			70-130	Pass	
Cadmium (filtered)	S20-Ap02189	NCP	%	92			70-130	Pass	
Chromium	S20-Ap01271	NCP	%	102			70-130	Pass	
Chromium (filtered)	S20-Ap02189	NCP	%	96			70-130	Pass	
Cobalt	S20-Ap01271	NCP	%	102			70-130	Pass	
Cobalt (filtered)	S20-Ap02189	NCP	%	96			70-130	Pass	
Copper	S20-Ap01271	NCP	%	101			70-130	Pass	
Copper (filtered)	S20-Ap02189	NCP	%	97			70-130	Pass	
Iron	S20-Ap01271	NCP	%	94			70-130	Pass	
Iron (filtered)	S20-Ap02189	NCP	%	94			70-130	Pass	
Lead	S20-Ap01271	NCP	%	94			70-130	Pass	
Lead (filtered)	S20-Ap02189	NCP	%	89			70-130	Pass	
Manganese	S20-Ap01271	NCP	%	98			70-130	Pass	
Manganese (filtered)	S20-Ap02189	NCP	%	87			70-130	Pass	
Mercury	S20-Ap01271	NCP	%	109			70-130	Pass	
Mercury (filtered)	S20-Ap02189	NCP	%	85			70-130	Pass	
Nickel	S20-Ap01271	NCP	%	101			70-130	Pass	
Nickel (filtered)	S20-Ap02189	NCP	%	98			70-130	Pass	
Zinc	S20-Ap01271	NCP	%	98			70-130	Pass	
Zinc (filtered)	S20-Ap02189	NCP	%	93			70-130	Pass	
Test	Lab Sample ID	QA Source	Units	Result 1			Acceptance Limits	Pass Limits	Qualifying Code
Duplicate									
Heavy Metals				Result 1	Result 2	RPD			
Aluminium	S20-Ap02893	NCP	mg/L	< 0.05	< 0.05	<1	30%	Pass	
Aluminium (filtered)	S20-Ap02981	NCP	mg/L	< 0.05	< 0.05	<1	30%	Pass	
Arsenic	S20-Ap02893	NCP	mg/L	< 0.001	< 0.001	<1	30%	Pass	
Arsenic (filtered)	S20-Ap02981	NCP	mg/L	< 0.001	< 0.001	<1	30%	Pass	
Barium	S20-Ap02893	NCP	mg/L	< 0.02	< 0.02	<1	30%	Pass	
Barium (filtered)	S20-Ap02981	NCP	mg/L	0.05	0.05	9.0	30%	Pass	
Beryllium	S20-Ap02893	NCP	mg/L	< 0.001	< 0.001	<1	30%	Pass	
Beryllium (filtered)	S20-Ap02981	NCP	mg/L	< 0.001	< 0.001	<1	30%	Pass	
Cadmium	S20-Ap02893	NCP	mg/L	< 0.0002	< 0.0002	<1	30%	Pass	
Cadmium (filtered)	S20-Ap02981	NCP	mg/L	< 0.0002	< 0.0002	<1	30%	Pass	
Chromium	S20-Ap02893	NCP	mg/L	0.001	< 0.001	48	30%	Fail	Q15

Test	Lab Sample ID	QA Source	Units	Result 1			Acceptance Limits	Pass Limits	Qualifying Code
Duplicate									
Heavy Metals				Result 1	Result 2	RPD			
Chromium (filtered)	S20-Ap02981	NCP	mg/L	< 0.001	< 0.001	<1	30%	Pass	
Cobalt	S20-Ap02893	NCP	mg/L	< 0.001	< 0.001	<1	30%	Pass	
Cobalt (filtered)	S20-Ap02981	NCP	mg/L	< 0.001	< 0.001	<1	30%	Pass	
Copper	S20-Ap02893	NCP	mg/L	0.029	0.028	3.0	30%	Pass	
Copper (filtered)	S20-Ap02981	NCP	mg/L	< 0.001	< 0.001	<1	30%	Pass	
Iron	S20-Ap02893	NCP	mg/L	< 0.05	< 0.05	<1	30%	Pass	
Iron (filtered)	S20-Ap02981	NCP	mg/L	< 0.05	< 0.05	<1	30%	Pass	
Lead	S20-Ap02893	NCP	mg/L	< 0.001	< 0.001	<1	30%	Pass	
Lead (filtered)	S20-Ap02981	NCP	mg/L	< 0.001	< 0.001	<1	30%	Pass	
Manganese	S20-Ap02893	NCP	mg/L	0.036	0.033	8.0	30%	Pass	
Manganese (filtered)	S20-Ap02981	NCP	mg/L	< 0.005	< 0.005	<1	30%	Pass	
Mercury	S20-Ap02893	NCP	mg/L	< 0.0001	< 0.0001	<1	30%	Pass	
Mercury (filtered)	S20-Ap02981	NCP	mg/L	< 0.0001	< 0.0001	<1	30%	Pass	
Nickel	S20-Ap02893	NCP	mg/L	< 0.001	< 0.001	<1	30%	Pass	
Nickel (filtered)	S20-Ap02981	NCP	mg/L	< 0.001	< 0.001	<1	30%	Pass	
Zinc	S20-Ap02893	NCP	mg/L	0.099	0.088	12	30%	Pass	
Zinc (filtered)	S20-Ap02981	NCP	mg/L	0.017	0.019	13	30%	Pass	

Comments
Sample Integrity

Custody Seals Intact (if used)	N/A
Attempt to Chill was evident	Yes
Sample correctly preserved	Yes
Appropriate sample containers have been used	Yes
Sample containers for volatile analysis received with minimal headspace	Yes
Samples received within HoldingTime	Yes
Some samples have been subcontracted	No

Qualifier Codes/Comments

Code	Description
Q15	The RPD reported passes Eurofins Environment Testing's QC - Acceptance Criteria as defined in the Internal Quality Control Review and Glossary page of this report.

Authorised By

Andrew Black	Analytical Services Manager
Gabriele Cordero	Senior Analyst-Metal (NSW)


**Glenn Jackson
General Manager**

Final report - this Report replaces any previously issued Report

- Indicates Not Requested

* Indicates NATA accreditation does not cover the performance of this service

Measurement uncertainty of test data is available on request or please [click here](#).

Eurofins shall not be liable for loss, cost, damages or expenses incurred by the client, or any other person or company, resulting from the use of any information or interpretation given in this report. In no case shall Eurofins be liable for consequential damages including, but not limited to, lost profits, damages for failure to meet deadlines and lost production arising from this report. This document shall not be reproduced except in full and relates only to the items tested. Unless indicated otherwise, the tests were performed on the samples as received.

Ramboll Environ Australia Pty Ltd
Level 3/100 Pacific Highway
North Sydney
NSW 2060



NATA Accredited
Accreditation Number 1261
Site Number 18217

Accredited for compliance with ISO/IEC 17025 – Testing
 The results of the tests, calibrations and/or
 measurements included in this document are traceable
 to Australian/national standards.

Attention: **Stephen Maxwell**

Report **713878-S-V12**

Project name

Project ID **318000780**

Received Date **Apr 15, 2020**

Client Sample ID			P21_TWS1	P21_TWS2
Sample Matrix			Solid	Solid
Eurofins Sample No.			S20-Ap21444	S20-Ap21445
Date Sampled			Mar 31, 2020	Mar 31, 2020
Test/Reference	LOR	Unit		
Heavy Metals				
Lead	1	mg/kg	70	32

Sample History

Where samples are submitted/analysed over several days, the last date of extraction and analysis is reported.

A recent review of our LIMS has resulted in the correction or clarification of some method identifications. Due to this, some of the method reference information on reports has changed. However, no substantive change has been made to our laboratory methods, and as such there is no change in the validity of current or previous results.

If the date and time of sampling are not provided, the Laboratory will not be responsible for compromised results should testing be performed outside the recommended holding time.

Description

Heavy Metals

Testing Site

Sydney

Extracted

Apr 16, 2020

Holding Time

180 Days

- Method: LTM-MET-3040 Metals in Waters, Soils & Sediments by ICP-MS

Australia

Melbourne
6 Monterey Road
Dandenong South VIC 3175
Phone : +61 3 8564 5000
NATA # 1261
Site # 1254 & 14271

Sydney
Unit F3, Building F
16 Mars Road
Lane Cove West NSW 2066
Phone : +61 2 9900 8400
NATA # 1261 Site # 18217

Brisbane
1/21 Smallwood Place
Murarrie QLD 4172
Phone : +61 7 3902 4600
NATA # 1261 Site # 20794

Perth
2/91 Leach Highway
Kewdale WA 6105
Phone : +61 8 9251 9600
NATA # 1261
Site # 23736

New Zealand

Auckland
35 O'Rorke Road
Penrose, Auckland 1061
Phone : +64 9 526 45 51
IANZ # 1327

Christchurch
43 Detroit Drive
Rolleston, Christchurch 7675
Phone : 0800 856 450
IANZ # 1290

Company Name: Ramboll Australia Pty Ltd
Address: Level 3/100 Pacific Highway
North Sydney
NSW 2060

Order No.:
Report #: 713878
Phone: 02 9954 8118
Fax: 02 9954 8150

Received: Apr 15, 2020 1:37 PM
Due: Apr 20, 2020
Priority: 3 Day
Contact Name: Stephen Maxwell

Project Name:
Project ID: 318000780

Eurofins Analytical Services Manager : Andrew Black

Sample Detail						Lead	Moisture Set
Melbourne Laboratory - NATA Site # 1254 & 14271							
Sydney Laboratory - NATA Site # 18217						X	X
Brisbane Laboratory - NATA Site # 20794							
Perth Laboratory - NATA Site # 23736							
External Laboratory							
No	Sample ID	Sample Date	Sampling Time	Matrix	LAB ID		
1	P3_TWS2	Mar 26, 2020		Solid	S20-Ap21433	X	X
2	P4_TWS2	Mar 24, 2020		Solid	S20-Ap21434	X	X
3	P7_TWS2	Mar 25, 2020		Solid	S20-Ap21435	X	X
4	SMCTS1	Mar 24, 2020		Solid	S20-Ap21436	X	X
5	P11_TWS1	Mar 26, 2020		Solid	S20-Ap21437	X	X
6	P11_TWS2	Mar 26, 2020		Solid	S20-Ap21438	X	X
7	P12_TWS1	Mar 26, 2020		Solid	S20-Ap21439	X	X
8	P12_TWS2	Mar 26, 2020		Solid	S20-Ap21440	X	X
9	P14_TWS3	Mar 26, 2020		Solid	S20-Ap21441	X	X
10	P18_TWS1	Mar 31, 2020		Solid	S20-Ap21442	X	X

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 Phone : +64 9 526 45 51
 IANZ # 1327

Christchurch
 43 Detroit Drive
 Rolleston, Christchurch 7675
 Phone : 0800 856 450
 IANZ # 1290

ABN – 50 005 085 521

web : www.eurofins.com.au

e.mail : EnviroSales@eurofins.com

Company Name: Ramboll Australia Pty Ltd
Address: Level 3/100 Pacific Highway
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 NSW 2060

Project Name:
Project ID: 318000780

Order No.:
Report #: 713878
Phone: 02 9954 8118
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Received: Apr 15, 2020 1:37 PM
Due: Apr 20, 2020
Priority: 3 Day
Contact Name: Stephen Maxwell

Eurofins Analytical Services Manager : Andrew Black

Sample Detail						Lead	Moisture Set
Melbourne Laboratory - NATA Site # 1254 & 14271							
Sydney Laboratory - NATA Site # 18217						X	X
Brisbane Laboratory - NATA Site # 20794							
Perth Laboratory - NATA Site # 23736							
11	P18_TWS2	Mar 31, 2020		Solid	S20-Ap21443	X	X
12	P21_TWS1	Mar 31, 2020		Solid	S20-Ap21444	X	X
13	P21_TWS2	Mar 31, 2020		Solid	S20-Ap21445	X	X
14	P23_TWS1	Mar 31, 2020		Solid	S20-Ap21446	X	X
Test Counts						14	14

Internal Quality Control Review and Glossary
General

- Laboratory QC results for Method Blanks, Duplicates, Matrix Spikes, and Laboratory Control Samples follows guidelines delineated in the National Environment Protection (Assessment of Site Contamination) Measure 1999, as amended May 2013 and are included in this QC report where applicable. Additional QC data may be available on request.
- All soil/sediment/solid results are reported on a dry basis, unless otherwise stated.
- All biota/food results are reported on a wet weight basis on the edible portion, unless otherwise stated.
- Actual LORs are matrix dependant. Quoted LORs may be raised where sample extracts are diluted due to interferences.
- Results are uncorrected for matrix spikes or surrogate recoveries except for PFAS compounds.
- SVOC analysis on waters are performed on homogenised, unfiltered samples, unless noted otherwise.
- Samples were analysed on an 'as received' basis.
- Information identified on this report with blue colour, indicates data provided by customer, that may have an impact on the results.
- This report replaces any interim results previously issued.

Holding Times

Please refer to 'Sample Preservation and Container Guide' for holding times (QS3001).

For samples received on the last day of holding time, notification of testing requirements should have been received at least 6 hours prior to sample receipt deadlines as stated on the SRA.

If the Laboratory did not receive the information in the required timeframe, and regardless of any other integrity issues, suitably qualified results may still be reported.

Holding times apply from the date of sampling, therefore compliance to these may be outside the laboratory's control.

For VOCs containing vinyl chloride, styrene and 2-chloroethyl vinyl ether the holding time is 7 days however for all other VOCs such as BTEX or C6-10 TRH then the holding time is 14 days.

****NOTE:** pH duplicates are reported as a range NOT as RPD

Units

mg/kg: milligrams per kilogram

mg/L: milligrams per litre

ug/L: micrograms per litre

ppm: Parts per million

ppb: Parts per billion

%: Percentage

org/100mL: Organisms per 100 millilitres

NTU: Nephelometric Turbidity Units

MPN/100mL: Most Probable Number of organisms per 100 millilitres

Terms

Dry	Where a moisture has been determined on a solid sample the result is expressed on a dry basis.
LOR	Limit of Reporting.
SPIKE	Addition of the analyte to the sample and reported as percentage recovery.
RPD	Relative Percent Difference between two Duplicate pieces of analysis.
LCS	Laboratory Control Sample - reported as percent recovery.
CRM	Certified Reference Material - reported as percent recovery.
Method Blank	In the case of solid samples these are performed on laboratory certified clean sands and in the case of water samples these are performed on de-ionised water.
Surr - Surrogate	The addition of a like compound to the analyte target and reported as percentage recovery.
Duplicate	A second piece of analysis from the same sample and reported in the same units as the result to show comparison.
USEPA	United States Environmental Protection Agency
APHA	American Public Health Association
TCLP	Toxicity Characteristic Leaching Procedure
COC	Chain of Custody
SRA	Sample Receipt Advice
QSM	US Department of Defense Quality Systems Manual Version 5.3
CP	Client Parent - QC was performed on samples pertaining to this report
NCP	Non-Client Parent - QC performed on samples not pertaining to this report, QC is representative of the sequence or batch that client samples were analysed within.
TEQ	Toxic Equivalency Quotient

QC - Acceptance Criteria

RPD Duplicates: Global RPD Duplicates Acceptance Criteria is 30% however the following acceptance guidelines are equally applicable:

Results <10 times the LOR : No Limit

Results between 10-20 times the LOR : RPD must lie between 0-50%

Results >20 times the LOR : RPD must lie between 0-30%

Surrogate Recoveries: Recoveries must lie between 20-130% Phenols & 50-150% PFASs

PFAS field samples that contain surrogate recoveries in excess of the QC limit designated in QSM 5.3 where no positive PFAS results have been reported have been reviewed and no data was affected.

WA DWER (n=10): PFBA, PFPeA, PFHxA, PFHpA, PFOA, PFBS, PFHxS, PFOS, 6:2 FTSA, 8:2 FTSA

QC Data General Comments

- Where a result is reported as a less than (<), higher than the nominated LOR, this is due to either matrix interference, extract dilution required due to interferences or contaminant levels within the sample, high moisture content or insufficient sample provided.
- Duplicate data shown within this report that states the word "BATCH" is a Batch Duplicate from outside of your sample batch, but within the laboratory sample batch at a 1:10 ratio. The Parent and Duplicate data shown is not data from your samples.
- Organochlorine Pesticide analysis - where reporting LCS data, Toxaphene & Chlordane are not added to the LCS.
- Organochlorine Pesticide analysis - where reporting Spike data, Toxaphene is not added to the Spike.
- Total Recoverable Hydrocarbons - where reporting Spike & LCS data, a single spike of commercial Hydrocarbon products in the range of C12-C30 is added and it's Total Recovery is reported in the C10-C14 cell of the Report.
- pH and Free Chlorine analysed in the laboratory - Analysis on this test must begin within 30 minutes of sampling. Therefore laboratory analysis is unlikely to be completed within holding time. Analysis will begin as soon as possible after sample receipt.
- Recovery Data (Spikes & Surrogates) - where chromatographic interference does not allow the determination of Recovery the term "INT" appears against that analyte.
- Polychlorinated Biphenyls are spiked only using Aroclor 1260 in Matrix Spikes and LCS.
- For Matrix Spikes and LCS results a dash " - " in the report means that the specific analyte was not added to the QC sample.
- Duplicate RPDs are calculated from raw analytical data thus it is possible to have two sets of data.

Quality Control Results

Test				Units	Result 1			Acceptance Limits	Pass Limits	Qualifying Code	
Method Blank											
Heavy Metals											
Lead				mg/kg	< 1			1	Pass		
LCS - % Recovery											
Heavy Metals											
Lead				%	96			70-130	Pass		
Test	Lab Sample ID	QA Source	Units	Result 1				Acceptance Limits	Pass Limits	Qualifying Code	
Spike - % Recovery											
Heavy Metals											
Lead				B20-Ap16161	NCP	%	89		70-130	Pass	
Spike - % Recovery											
Heavy Metals											
Lead				B20-Ap16161	NCP	%	89		70-130	Pass	
Spike - % Recovery											
Heavy Metals											
Lead				B20-Ap16161	NCP	%	89		70-130	Pass	
Spike - % Recovery											
Heavy Metals											
Lead				B20-Ap16161	NCP	%	89		70-130	Pass	
Spike - % Recovery											
Heavy Metals											
Lead				B20-Ap16161	NCP	%	89		70-130	Pass	
Spike - % Recovery											
Heavy Metals											
Lead				B20-Ap16161	NCP	%	89		70-130	Pass	
Spike - % Recovery											
Heavy Metals											
Lead				B20-Ap16161	NCP	%	89		70-130	Pass	
Spike - % Recovery											
Heavy Metals											
Lead				B20-Ap16161	NCP	%	89		70-130	Pass	
Spike - % Recovery											
Heavy Metals											
Lead				B20-Ap16161	NCP	%	89		70-130	Pass	
Spike - % Recovery											
Heavy Metals											
Lead				S20-Ap21444	CP	%	87		70-130	Pass	
Test	Lab Sample ID	QA Source	Units	Result 1				Acceptance Limits	Pass Limits	Qualifying Code	
Duplicate											
Heavy Metals											
Lead				S20-Ap17051	NCP	mg/kg	29	35	19	30%	Pass
Duplicate											
Heavy Metals											
Lead				S20-Ap17051	NCP	mg/kg	29	**	19	30%	Pass
Duplicate											
Heavy Metals											
Lead				S20-Ap17051	NCP	mg/kg	29	**	19	30%	Pass
Duplicate											
Heavy Metals											
Lead				S20-Ap17051	NCP	mg/kg	29	**	19	30%	Pass
Duplicate											
Heavy Metals											
Lead				S20-Ap17051	NCP	mg/kg	29	**	19	30%	Pass

Duplicate								
Heavy Metals				Result 1	Result 2	RPD		
Lead	S20-Ap17051	NCP	mg/kg	29	**	19	30%	Pass
Duplicate								
Heavy Metals				Result 1	Result 2	RPD		
Lead	S20-Ap17051	NCP	mg/kg	29	**	19	30%	Pass
Duplicate								
Heavy Metals				Result 1	Result 2	RPD		
Lead	S20-Ap17051	NCP	mg/kg	29	**	19	30%	Pass
Duplicate								
Heavy Metals				Result 1	Result 2	RPD		
Lead	S20-Ap21444	CP	mg/kg	70	69	2.0	30%	Pass

Comments

New version to split samples.

Sample Integrity

Custody Seals Intact (if used)	N/A
Attempt to Chill was evident	N/A
Sample correctly preserved	Yes
Appropriate sample containers have been used	Yes
Sample containers for volatile analysis received with minimal headspace	Yes
Samples received within HoldingTime	Yes
Some samples have been subcontracted	No

Authorised By

Andrew Black Analytical Services Manager
Gabriele Cordero Senior Analyst-Metal (NSW)



Glenn Jackson
General Manager

Final report - this Report replaces any previously issued Report

- Indicates Not Requested

* Indicates NATA accreditation does not cover the performance of this service

Measurement uncertainty of test data is available on request or please [click here](#).

Eurofins shall not be liable for loss, cost, damages or expenses incurred by the client, or any other person or company, resulting from the use of any information or interpretation given in this report. In no case shall Eurofins be liable for consequential damages including, but not limited to, lost profits, damages for failure to meet deadlines and lost production arising from this report. This document shall not be reproduced except in full and relates only to the items tested. Unless indicated otherwise, the tests were performed on the samples as received.



CHAIN OF CUSTODY RECORD

ABN 50 005 085 521

Sydney Laboratory
 Unit F3 Bld.F, 16 Mars Rd, Lane Cove West, NSW 2066
 02 9900 8400 EnviroSampleNSW@eurofins.com

Brisbane Laboratory
 Unit 1, 21 Smallwood Pl., Murarie, QLD 4172
 07 3902 4600 EnviroSampleQLD@eurofins.com

Perth Laboratory
 Unit 2, 91 Leach Highway, Kewdale WA 6105
 08 9251 9600 EnviroSampleWA@eurofins.com

Melbourne Laboratory
 2 Kingston Town Close, Oakleigh, VIC 3166
 03 8564 5000 EnviroSampleVic@eurofins.com

Company		Ramboll		Project No		318000780		Project Manager		Stephen Maxwell		Sampler(s)		JK + RC	
Address		50 Glebe Road the Junction		Project Name				EDD Format (ESdat, EQulS,		Excel and PDF		Handed over by		SM	
Contact Name		Stephen Maxwell		Analyses <small>(Note: Where metals are requested, please specify "Total" or "Filtered". SUITE code must be used to attract SUITE pricing)</small> Lead M13 (Al, As, Ba, Be, Cd, Cr, Co, Cu, Fe, Pb, Mn, Hg, Ni, Zn) total M13 (Al, As, Ba, Be, Cd, Cr, Co, Cu, Fe, Pb, Mn, Hg, Ni, Zn) dissolved		Email for Invoice		smaxwell@ramboll.com asiapac-accounts@ramboll.com		Email for Results		smaxwell@ramboll.com jblackwell@ramboll.com rcondon@ramboll.com shyde@ramboll.com			
Phone No						jblackwell@ramboll.com		Turnaround Time (TAT) Requirements (Default will be 5 days if not ticked)		<input type="checkbox"/> Overnight (9am)* <input type="checkbox"/> 1 Day* <input type="checkbox"/> 2 Day* <input type="checkbox"/> 3 Day* <input checked="" type="checkbox"/> 5 Day* <input type="checkbox"/> Other () * Surcharges apply					
Special Directions						1L Plastic		500mL PFAS Bottle Jar (Glass or HDPE)		Sample Comments / Dangerous Goods Hazard Warning					
Purchase Order						250mL Plastic		125mL Plastic							
Quote ID No		180813RAMN_1		Matrix (Solid (S) Water (W))											
No	Client Sample ID	Sampled Date/Time (dd/mm/yy hh:mm)													
1	P22_HA01_0.0	31/03/20	S	X											
2	P22_HA02_0.0	31/03/20	S	X											
3	P22_HA02_0.2	31/03/20	S	X											
4	P22_HA03_0.0	31/03/20	S	X											
5	P22_HA03_0.2	31/03/20	S	X											
6	P22_HA04_0.0	31/03/20	S	X											
7	P22_HA04_0.2	31/03/20	S	X											
8	P22_HA05_0.0	31/03/20	S	X											
9															
10															
Total Counts				8											
Method of Shipment		<input type="checkbox"/> Courier (#) <input type="checkbox"/> Hand Delivered <input type="checkbox"/> Postal		Name		Signature		Date		Time		Date		Time	
Eurofins mgt Laboratory Use Only		Received By: <i>[Signature]</i> Received By: <i>[Signature]</i>		SYD BNE MEL PER ADL NTL DRW		Signature		Date: 01/04/20		Time: 11:04 AM		Temperature: 15.8°C		Report No: 711584	

Submission of samples to the laboratory will be deemed as acceptance of Eurofins | mgt Standard Terms and Conditions unless agreed otherwise. A copy of Eurofins | mgt Standard Terms and Conditions is available on request.

Eurofins Environment Testing Australia Pty Ltd, trading as Eurofins | mgt

#AU04_Enviro_Sample_NSW

To: Stephen Maxwell
Subject: RE: Eurofins Sample Receipt Advice - Report 711584 : Site 318000780

From: Stephen Maxwell [<mailto:SMAXWELL@ramboll.com>]
Sent: Thursday, 2 April 2020 1:26 PM
To: #AU04_Enviro_Sample_NSW
Cc: Joshua Blackwell; Rachel Condon; Shane Hyde
Subject: RE: Eurofins Sample Receipt Advice - Report 711584 : Site 318000780

Thanks Rupan

Please analyse extra sample for lead

Kind regards
Stephen Maxwell
Lead Consultant

D +61 478658194
M +61 478658194
smaxwell@ramboll.com

Ramboll Australia Pty Ltd.
ACN 095 437 442
ABN 49 095 437 442

From: EnviroSampleNSW@eurofins.com [<mailto:EnviroSampleNSW@eurofins.com>]
Sent: 2 April, 2020 1:00 PM
To: Stephen Maxwell <SMAXWELL@ramboll.com>
Cc: Joshua Blackwell <JBLACKWELL@ramboll.com>; Rachel Condon <RCONDON@ramboll.com>; Shane Hyde <SHYDE@ramboll.com>
Subject: Eurofins Sample Receipt Advice - Report 711584 : Site 318000780

Dear Valued Client,

EXTRA SAMPLE REC: P22_HA05_0.2, placed on HOLD.

Please find attached a Sample Receipt Advice (SRA), a Summary Sheet and a scanned copy of your Chain-of-Custody (COC). It is important that you check this documentation to ensure that the details are correct such as the Client Job Number, Turn Around Time, any comments in the Notes section and sample numbers as well as the requested analysis. If there are any irregularities then please contact your Eurofins Analytical Services Manager as soon as possible to make certain that they get changed.

Regards

Rupan Virk
Sample Receipt

Eurofins | Environment Testing
Unit F3, Parkview Building
16 Mars Road
LANE COVE WEST NSW 2066
AUSTRALIA
Phone: +61 02 9900 8421
Email: EnviroSampleNSW@eurofins.com

Website:environment.eurofins.com.au

[EnviroNote 1068 - Eurofins Perth Laboratory](#)

[EnviroNote 1069 - Eurofins Overnight TAT](#)

[EnviroNote 1079 - PFAS Fingerprinting](#)

[EnviroNote 1080 - Total Organofluorine Analysis & PFAS Investigations](#)

Click [here](#) to report this email as spam.

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Melbourne

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Site # 1254 & 14271

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NATA # 1261 Site # 20794

Perth

2/91 Leach Highway
Kewdale WA 6105
Phone : +61 8 9251 9600
NATA # 1261 Site # 23736

Sample Receipt Advice

Company name: **Ramboll Australia Pty Ltd**

Contact name: Stephen Maxwell

Project ID: 318000780

COC number: Not provided

Turn around time: 5 Day

Date/Time received: Apr 1, 2020 11:04 AM

Eurofins reference: **711584**

Sample information

- A detailed list of analytes logged into our LIMS, is included in the attached summary table.
- All samples have been received as described on the above COC.
- COC has been completed correctly.
- Attempt to chill was evident.
- Appropriately preserved sample containers have been used.
- All samples were received in good condition.
- Samples have been provided with adequate time to commence analysis in accordance with the relevant holding times.
- Appropriate sample containers have been used.
- Split sample sent to requested external lab.
- Some samples have been subcontracted.
- N/A Custody Seals intact (if used).

Notes

EXTRA SAMPLE REC: P22_HA05_0.2, placed on HOLD.

Contact notes

If you have any questions with respect to these samples please contact:

Andrew Black on Phone : (+61) 2 9900 8490 or by e.mail: AndrewBlack@eurofins.com

Results will be delivered electronically via e.mail to Stephen Maxwell - smaxwell@ramboll.com.

Note: A copy of these results will also be delivered to the general Ramboll Australia Pty Ltd email address.

Australia

Melbourne
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Site # 1254 & 14271

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Site # 23736

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IANZ # 1327

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43 Detroit Drive
Rolleston, Christchurch 7675
Phone : 0800 856 450
IANZ # 1290

Company Name: Ramboll Australia Pty Ltd
Address: Level 3/100 Pacific Highway
North Sydney
NSW 2060

Order No.:
Report #: 711584
Phone: 02 9954 8118
Fax: 02 9954 8150

Received: Apr 1, 2020 11:04 AM
Due: Apr 8, 2020
Priority: 5 Day
Contact Name: Stephen Maxwell

Project Name:
Project ID: 318000780

Eurofins Analytical Services Manager : Andrew Black

Sample Detail						HOLD	Lead	Moisture Set
Melbourne Laboratory - NATA Site # 1254 & 14271								
Sydney Laboratory - NATA Site # 18217						X	X	X
Brisbane Laboratory - NATA Site # 20794								
Perth Laboratory - NATA Site # 23736								
External Laboratory								
No	Sample ID	Sample Date	Sampling Time	Matrix	LAB ID			
1	P22_HA01_0_0	Mar 31, 2020		Soil	S20-Ap03057		X	X
2	P22_HA02_0_0	Mar 31, 2020		Soil	S20-Ap03058		X	X
3	P22_HA02_0_2	Mar 31, 2020		Soil	S20-Ap03059		X	X
4	P22_HA03_0_0	Mar 31, 2020		Soil	S20-Ap03060		X	X
5	P22_HA03_0_2	Mar 31, 2020		Soil	S20-Ap03061		X	X
6	P22_HA04_0_0	Mar 31, 2020		Soil	S20-Ap03062		X	X

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 Phone : +61 8 9251 9600
 NATA # 1261
 Site # 23736

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 IANZ # 1327

Christchurch
 43 Detroit Drive
 Rolleston, Christchurch 7675
 Phone : 0800 856 450
 IANZ # 1290

ABN – 50 005 085 521

web : www.eurofins.com.au

e.mail : EnviroSales@eurofins.com

Company Name: Ramboll Australia Pty Ltd
Address: Level 3/100 Pacific Highway
 North Sydney
 NSW 2060

Order No.:
Report #: 711584
Phone: 02 9954 8118
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Received: Apr 1, 2020 11:04 AM
Due: Apr 8, 2020
Priority: 5 Day
Contact Name: Stephen Maxwell

Project Name:
Project ID: 318000780

Eurofins Analytical Services Manager : Andrew Black

Sample Detail						HOLD	Lead	Moisture Set
Melbourne Laboratory - NATA Site # 1254 & 14271								
Sydney Laboratory - NATA Site # 18217						X	X	X
Brisbane Laboratory - NATA Site # 20794								
Perth Laboratory - NATA Site # 23736								
7	P22_HA04_0_2	Mar 31, 2020		Soil	S20-Ap03063		X	X
8	P22_HA05_0_0	Mar 31, 2020		Soil	S20-Ap03064		X	X
9	P22_HA05_0_2	Mar 31, 2020		Soil	S20-Ap03083	X		
Test Counts						1	8	8

Ramboll Environ Australia Pty Ltd
 Level 3/100 Pacific Highway
 North Sydney
 NSW 2060



NATA Accredited
 Accreditation Number 1261
 Site Number 18217

Accredited for compliance with ISO/IEC 17025 – Testing
 The results of the tests, calibrations and/or
 measurements included in this document are traceable
 to Australian/national standards.

Attention: Stephen Maxwell

Report 711584-S
 Project name
 Project ID 318000780
 Received Date Apr 01, 2020

Client Sample ID			P22_HA01_0.0	P22_HA02_0.0	P22_HA02_0.2	P22_HA03_0.0
Sample Matrix			Soil	Soil	Soil	Soil
Eurofins Sample No.			S20-Ap03057	S20-Ap03058	S20-Ap03059	S20-Ap03060
Date Sampled			Mar 31, 2020	Mar 31, 2020	Mar 31, 2020	Mar 31, 2020
Test/Reference	LOR	Unit				
Heavy Metals						
Lead	5	mg/kg	13	12	8.9	18
% Moisture	1	%	4.8	4.2	7.2	6.5

Client Sample ID			P22_HA03_0.2	P22_HA04_0.0	P22_HA04_0.2	P22_HA05_0.0
Sample Matrix			Soil	Soil	Soil	Soil
Eurofins Sample No.			S20-Ap03061	S20-Ap03062	S20-Ap03063	S20-Ap03064
Date Sampled			Mar 31, 2020	Mar 31, 2020	Mar 31, 2020	Mar 31, 2020
Test/Reference	LOR	Unit				
Heavy Metals						
Lead	5	mg/kg	11	< 5	< 5	22
% Moisture	1	%	6.4	5.9	3.9	9.0

Client Sample ID			P22_HA05_0.2
Sample Matrix			Soil
Eurofins Sample No.			S20-Ap03083
Date Sampled			Mar 31, 2020
Test/Reference	LOR	Unit	
Heavy Metals			
Lead	5	mg/kg	9.2
% Moisture	1	%	5.8

Sample History

Where samples are submitted/analysed over several days, the last date of extraction and analysis is reported.

A recent review of our LIMS has resulted in the correction or clarification of some method identifications. Due to this, some of the method reference information on reports has changed. However, no substantive change has been made to our laboratory methods, and as such there is no change in the validity of current or previous results.

If the date and time of sampling are not provided, the Laboratory will not be responsible for compromised results should testing be performed outside the recommended holding time.

Description	Testing Site	Extracted	Holding Time
Heavy Metals - Method: LTM-MET-3040 Metals in Waters, Soils & Sediments by ICP-MS	Sydney	Apr 06, 2020	180 Days
% Moisture - Method: LTM-GEN-7080 Moisture	Sydney	Apr 02, 2020	14 Days

Australia

Melbourne
6 Monterey Road
Dandenong South VIC 3175
Phone : +61 3 8564 5000
NATA # 1261
Site # 1254 & 14271

Sydney
Unit F3, Building F
16 Mars Road
Lane Cove West NSW 2066
Phone : +61 2 9900 8400
NATA # 1261 Site # 18217

Brisbane
1/21 Smallwood Place
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New Zealand

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Penrose, Auckland 1061
Phone : +64 9 526 45 51
IANZ # 1327

Christchurch
43 Detroit Drive
Rolleston, Christchurch 7675
Phone : 0800 856 450
IANZ # 1290

Company Name: Ramboll Australia Pty Ltd
Address: Level 3/100 Pacific Highway
North Sydney
NSW 2060

Order No.:
Report #: 711584
Phone: 02 9954 8118
Fax: 02 9954 8150

Received: Apr 1, 2020 11:04 AM
Due: Apr 8, 2020
Priority: 5 Day
Contact Name: Stephen Maxwell

Project Name:
Project ID: 318000780

Eurofins Analytical Services Manager : Andrew Black

Sample Detail						HOLD	Lead	Moisture Set
Melbourne Laboratory - NATA Site # 1254 & 14271								
Sydney Laboratory - NATA Site # 18217						X	X	X
Brisbane Laboratory - NATA Site # 20794								
Perth Laboratory - NATA Site # 23736								
External Laboratory								
No	Sample ID	Sample Date	Sampling Time	Matrix	LAB ID			
1	P22_HA01_0_0	Mar 31, 2020		Soil	S20-Ap03057		X	X
2	P22_HA02_0_0	Mar 31, 2020		Soil	S20-Ap03058		X	X
3	P22_HA02_0_2	Mar 31, 2020		Soil	S20-Ap03059		X	X
4	P22_HA03_0_0	Mar 31, 2020		Soil	S20-Ap03060		X	X
5	P22_HA03_0_2	Mar 31, 2020		Soil	S20-Ap03061		X	X
6	P22_HA04_0_0	Mar 31, 2020		Soil	S20-Ap03062		X	X

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ABN – 50 005 085 521

web : www.eurofins.com.au

e.mail : EnviroSales@eurofins.com

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Melbourne Laboratory - NATA Site # 1254 & 14271								
Sydney Laboratory - NATA Site # 18217						X	X	X
Brisbane Laboratory - NATA Site # 20794								
Perth Laboratory - NATA Site # 23736								
7	P22_HA04_0_2	Mar 31, 2020		Soil	S20-Ap03063		X	X
8	P22_HA05_0_0	Mar 31, 2020		Soil	S20-Ap03064		X	X
9	P22_HA05_0_2	Mar 31, 2020		Soil	S20-Ap03083	X		
Test Counts						1	8	8

Internal Quality Control Review and Glossary

General

- Laboratory QC results for Method Blanks, Duplicates, Matrix Spikes, and Laboratory Control Samples follows guidelines delineated in the National Environment Protection (Assessment of Site Contamination) Measure 1999, as amended May 2013 and are included in this QC report where applicable. Additional QC data may be available on request.
- All soil/sediment/solid results are reported on a dry basis, unless otherwise stated.
- All biota/food results are reported on a wet weight basis on the edible portion, unless otherwise stated.
- Actual LORs are matrix dependant. Quoted LORs may be raised where sample extracts are diluted due to interferences.
- Results are uncorrected for matrix spikes or surrogate recoveries except for PFAS compounds.
- SVOC analysis on waters are performed on homogenised, unfiltered samples, unless noted otherwise.
- Samples were analysed on an 'as received' basis.
- Information identified on this report with blue colour, indicates data provided by customer, that may have an impact on the results.
- This report replaces any interim results previously issued.

Holding Times

Please refer to 'Sample Preservation and Container Guide' for holding times (QS3001).

For samples received on the last day of holding time, notification of testing requirements should have been received at least 6 hours prior to sample receipt deadlines as stated on the SRA.

If the Laboratory did not receive the information in the required timeframe, and regardless of any other integrity issues, suitably qualified results may still be reported.

Holding times apply from the date of sampling, therefore compliance to these may be outside the laboratory's control.

For VOCs containing vinyl chloride, styrene and 2-chloroethyl vinyl ether the holding time is 7 days however for all other VOCs such as BTEX or C6-10 TRH then the holding time is 14 days.

****NOTE:** pH duplicates are reported as a range NOT as RPD

Units

mg/kg: milligrams per kilogram

mg/L: milligrams per litre

ug/L: micrograms per litre

ppm: Parts per million

ppb: Parts per billion

%: Percentage

org/100mL: Organisms per 100 millilitres

NTU: Nephelometric Turbidity Units

MPN/100mL: Most Probable Number of organisms per 100 millilitres

Terms

Dry	Where a moisture has been determined on a solid sample the result is expressed on a dry basis.
LOR	Limit of Reporting.
SPIKE	Addition of the analyte to the sample and reported as percentage recovery.
RPD	Relative Percent Difference between two Duplicate pieces of analysis.
LCS	Laboratory Control Sample - reported as percent recovery.
CRM	Certified Reference Material - reported as percent recovery.
Method Blank	In the case of solid samples these are performed on laboratory certified clean sands and in the case of water samples these are performed on de-ionised water.
Surr - Surrogate	The addition of a like compound to the analyte target and reported as percentage recovery.
Duplicate	A second piece of analysis from the same sample and reported in the same units as the result to show comparison.
USEPA	United States Environmental Protection Agency
APHA	American Public Health Association
TCLP	Toxicity Characteristic Leaching Procedure
COC	Chain of Custody
SRA	Sample Receipt Advice
QSM	US Department of Defense Quality Systems Manual Version 5.3
CP	Client Parent - QC was performed on samples pertaining to this report
NCP	Non-Client Parent - QC performed on samples not pertaining to this report, QC is representative of the sequence or batch that client samples were analysed within.
TEQ	Toxic Equivalency Quotient

QC - Acceptance Criteria

RPD Duplicates: Global RPD Duplicates Acceptance Criteria is 30% however the following acceptance guidelines are equally applicable:

Results <10 times the LOR : No Limit

Results between 10-20 times the LOR : RPD must lie between 0-50%

Results >20 times the LOR : RPD must lie between 0-30%

Surrogate Recoveries: Recoveries must lie between 20-130% Phenols & 50-150% PFASs

PFAS field samples that contain surrogate recoveries in excess of the QC limit designated in QSM 5.3 where no positive PFAS results have been reported have been reviewed and no data was affected.

WA DWER (n=10): PFBA, PFPeA, PFHxA, PFHpA, PFOA, PFBS, PFHxS, PFOS, 6:2 FTSA, 8:2 FTSA

QC Data General Comments

- Where a result is reported as a less than (<), higher than the nominated LOR, this is due to either matrix interference, extract dilution required due to interferences or contaminant levels within the sample, high moisture content or insufficient sample provided.
- Duplicate data shown within this report that states the word "BATCH" is a Batch Duplicate from outside of your sample batch, but within the laboratory sample batch at a 1:10 ratio. The Parent and Duplicate data shown is not data from your samples.
- Organochlorine Pesticide analysis - where reporting LCS data, Toxaphene & Chlordane are not added to the LCS.
- Organochlorine Pesticide analysis - where reporting Spike data, Toxaphene is not added to the Spike.
- Total Recoverable Hydrocarbons - where reporting Spike & LCS data, a single spike of commercial Hydrocarbon products in the range of C12-C30 is added and it's Total Recovery is reported in the C10-C14 cell of the Report.
- pH and Free Chlorine analysed in the laboratory - Analysis on this test must begin within 30 minutes of sampling. Therefore laboratory analysis is unlikely to be completed within holding time. Analysis will begin as soon as possible after sample receipt.
- Recovery Data (Spikes & Surrogates) - where chromatographic interference does not allow the determination of Recovery the term "INT" appears against that analyte.
- Polychlorinated Biphenyls are spiked only using Aroclor 1260 in Matrix Spikes and LCS.
- For Matrix Spikes and LCS results a dash " - " in the report means that the specific analyte was not added to the QC sample.
- Duplicate RPDs are calculated from raw analytical data thus it is possible to have two sets of data.

Quality Control Results

Test				Units	Result 1		Acceptance Limits	Pass Limits	Qualifying Code		
Method Blank											
Heavy Metals											
Lead				mg/kg	< 5		5	Pass			
LCS - % Recovery											
Heavy Metals											
Lead				%	102		70-130	Pass			
Test	Lab Sample ID	QA Source	Units	Result 1			Acceptance Limits	Pass Limits	Qualifying Code		
Spike - % Recovery											
Heavy Metals											
Lead				S20-Ap03064	CP	%	87	70-130	Pass		
Test	Lab Sample ID	QA Source	Units	Result 1			Acceptance Limits	Pass Limits	Qualifying Code		
Duplicate											
Heavy Metals											
Lead				S20-Ap03063	CP	mg/kg	< 5	< 5	<1	30%	Pass
Duplicate											
					Result 1	Result 2	RPD				
% Moisture				S20-Ap03063	CP	%	3.9	5.3	29	30%	Pass

Comments**Sample Integrity**

Custody Seals Intact (if used)	N/A
Attempt to Chill was evident	Yes
Sample correctly preserved	Yes
Appropriate sample containers have been used	Yes
Sample containers for volatile analysis received with minimal headspace	Yes
Samples received within HoldingTime	Yes
Some samples have been subcontracted	No

Authorised By

Andrew Black Analytical Services Manager
Gabriele Cordero Senior Analyst-Metal (NSW)

**Glenn Jackson
General Manager**

Final report - this Report replaces any previously issued Report

- Indicates Not Requested

* Indicates NATA accreditation does not cover the performance of this service

Measurement uncertainty of test data is available on request or please [click here](#).

Eurofins shall not be liable for loss, cost, damages or expenses incurred by the client, or any other person or company, resulting from the use of any information or interpretation given in this report. In no case shall Eurofins be liable for consequential damages including, but not limited to, lost profits, damages for failure to meet deadlines and lost production arising from this report. This document shall not be reproduced except in full and relates only to the items tested. Unless indicated otherwise, the tests were performed on the samples as received.

#AU04_Enviro_Sample_NSW

Subject: FW: 5 DAY TAT ADDITIONAL ANALYSIS: FW: Eurofins Test Results, Invoice - Report 711589 : Site 318000780

From: Joshua Blackwell [<mailto:JBLACKWELL@ramboll.com>]
Sent: Thursday, 9 April 2020 9:54 AM
To: Andrew Black
Subject: RE: Eurofins Test Results, Invoice - Report 711589 : Site 318000780

EXTERNAL EMAIL*

Hi Andrew,

Regarding samples on hold. Could we please get the following analysed;

P18_BORE for M13 Total + Dissolved as part of report 713017
RB_300320 for M13 Total
P10_HA02_0-0.2 for lead
P22_HA05_0.2 (from 711584) for lead

Kind regards
Joshua Blackwell
Consultant

D +61 (481) 157565
M +61 (481) 157565
jblackwell@ramboll.com

Ramboll Australia Pty Ltd.
ACN 095 437 442
ABN 49 095 437 442

From: AndrewBlack@eurofins.com <AndrewBlack@eurofins.com>
Sent: Thursday, April 9, 2020 8:54 AM
To: Stephen Maxwell <SMAXWELL@ramboll.com>
Cc: Joshua Blackwell <JBLACKWELL@ramboll.com>; Rachel Condon <RCONDON@ramboll.com>; Shane Hyde <SHYDE@ramboll.com>
Subject: Eurofins Test Results, Invoice - Report 711589 : Site 318000780

Regards

Andrew Black
Analytical Services Manager

Eurofins | Environment Testing

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7 Friesian Close
SANDGATE NSW 2304
AUSTRALIA
Phone: +61 299 008 490
Mobile: +61 410 220 750
Email: AndrewBlack@eurofins.com
Website: environment.eurofins.com.au
[EnviroNote 1098 - Melbourne PFAS Accreditation](#)
[EnviroNote 1080 - Total Organofluorine Analysis & PFAS Investigations](#)

Click [here](#) to report this email as spam.

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* WARNING - EXTERNAL: This email originated from outside of Eurofins. Do not click any links or open any attachments unless you trust the sender and know that the content is safe!

Melbourne

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Phone : +61 8 9251 9600
NATA # 1261 Site # 23736

Sample Receipt Advice

Company name: **Ramboll Australia Pty Ltd**
Contact name: Joshua Blackwell
Project name: ADDITIONAL 318000780
Project ID: 15.80
COC number: Not provided
Turn around time: 5 Day
Date/Time received: Apr 9, 2020 9:54 AM
Eurofins reference: **713315**

Sample information

- A detailed list of analytes logged into our LIMS, is included in the attached summary table.
- All samples have been received as described on the above COC.
- COC has been completed correctly.
- Attempt to chill was evident.
- Appropriately preserved sample containers have been used.
- All samples were received in good condition.
- Samples have been provided with adequate time to commence analysis in accordance with the relevant holding times.

- Appropriate sample containers have been used.
- Sample containers for volatile analysis received with zero headspace.
- Split sample sent to requested external lab.
- Some samples have been subcontracted.
- N/A Custody Seals intact (if used).

Contact notes

If you have any questions with respect to these samples please contact:

Andrew Black on Phone : (+61) 2 9900 8490 or by e.mail: AndrewBlack@eurofins.com

Results will be delivered electronically via e.mail to Joshua Blackwell - jblackwell@ramboll.com.

Note: A copy of these results will also be delivered to the general Ramboll Australia Pty Ltd email address.

Australia

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IANZ # 1290

Company Name: Ramboll Australia Pty Ltd
Address: Level 3/100 Pacific Highway
North Sydney
NSW 2060

Project Name: ADDITIONAL 318000780
Project ID: 15.80

Order No.:
Report #: 713315
Phone: 02 9954 8118
Fax: 02 9954 8150

Received: Apr 9, 2020 9:54 AM
Due: Apr 20, 2020
Priority: 5 Day
Contact Name: Joshua Blackwell

Eurofins Analytical Services Manager : Andrew Black

Sample Detail						Aluminium	Arsenic	Barium	Beryllium	Cadmium	Chromium	Cobalt	Copper	Iron	Lead	Manganese	Mercury	Nickel	Zinc	Moisture Set	
Melbourne Laboratory - NATA Site # 1254 & 14271																					
Sydney Laboratory - NATA Site # 18217						X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X
Brisbane Laboratory - NATA Site # 20794																					
Perth Laboratory - NATA Site # 23736																					
External Laboratory																					
No	Sample ID	Sample Date	Sampling Time	Matrix	LAB ID																
1	P10_HA02_0-0.2	Mar 25, 2020		Soil	S20-Ap16787										X					X	
2	RB_300320	Mar 25, 2020		Water	S20-Ap16788	X	X	X	X	X	X	X	X	X	X	X	X	X	X		
3	P22_HA05_0.2	Mar 31, 2020		Soil	S20-Ap16789										X					X	
Test Counts						1	1	1	1	1	1	1	1	1	3	1	1	1	1	1	2

Ramboll Environ Australia Pty Ltd
 Level 3/100 Pacific Highway
 North Sydney
 NSW 2060



NATA Accredited
Accreditation Number 1261
Site Number 18217

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 to Australian/national standards.

Attention: **Joshua Blackwell**

Report **713315-S-V3**
 Project name **ADDITIONAL 318000780**
 Project ID **15.80**
 Received Date **Apr 09, 2020**

Client Sample ID			P22_HA05_0.2
Sample Matrix			Soil
Eurofins Sample No.			S20-Ap16789
Date Sampled			Mar 31, 2020
Test/Reference	LOR	Unit	
Heavy Metals			
Lead	5	mg/kg	22
% Moisture	1	%	4.3

Sample History

Where samples are submitted/analysed over several days, the last date of extraction and analysis is reported.

A recent review of our LIMS has resulted in the correction or clarification of some method identifications. Due to this, some of the method reference information on reports has changed. However, no substantive change has been made to our laboratory methods, and as such there is no change in the validity of current or previous results.

If the date and time of sampling are not provided, the Laboratory will not be responsible for compromised results should testing be performed outside the recommended holding time.

Description

Heavy Metals

- Method: LTM-MET-3040 Metals in Waters, Soils & Sediments by ICP-MS

% Moisture

- Method: LTM-GEN-7080 Moisture

Testing Site

Sydney

Sydney

Extracted

Apr 17, 2020

Apr 09, 2020

Holding Time

180 Days

14 Days

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Test Counts						1	1	1	1	1	1	1	1	1	3	1	1	1	1	2

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****NOTE:** pH duplicates are reported as a range NOT as RPD

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Results <10 times the LOR : No Limit

Results between 10-20 times the LOR : RPD must lie between 0-50%

Results >20 times the LOR : RPD must lie between 0-30%

Surrogate Recoveries: Recoveries must lie between 20-130% Phenols & 50-150% PFASs

PFAS field samples that contain surrogate recoveries in excess of the QC limit designated in QSM 5.3 where no positive PFAS results have been reported have been reviewed and no data was affected.

WA DWER (n=10): PFBA, PFPeA, PFHxA, PFHpA, PFOA, PFBS, PFHxS, PFOS, 6:2 FTSA, 8:2 FTSA

QC Data General Comments

- Where a result is reported as a less than (<), higher than the nominated LOR, this is due to either matrix interference, extract dilution required due to interferences or contaminant levels within the sample, high moisture content or insufficient sample provided.
- Duplicate data shown within this report that states the word "BATCH" is a Batch Duplicate from outside of your sample batch, but within the laboratory sample batch at a 1:10 ratio. The Parent and Duplicate data shown is not data from your samples.
- Organochlorine Pesticide analysis - where reporting LCS data, Toxaphene & Chlordane are not added to the LCS.
- Organochlorine Pesticide analysis - where reporting Spike data, Toxaphene is not added to the Spike.
- Total Recoverable Hydrocarbons - where reporting Spike & LCS data, a single spike of commercial Hydrocarbon products in the range of C12-C30 is added and it's Total Recovery is reported in the C10-C14 cell of the Report.
- pH and Free Chlorine analysed in the laboratory - Analysis on this test must begin within 30 minutes of sampling. Therefore laboratory analysis is unlikely to be completed within holding time. Analysis will begin as soon as possible after sample receipt.
- Recovery Data (Spikes & Surrogates) - where chromatographic interference does not allow the determination of Recovery the term "INT" appears against that analyte.
- Polychlorinated Biphenyls are spiked only using Aroclor 1260 in Matrix Spikes and LCS.
- For Matrix Spikes and LCS results a dash " - " in the report means that the specific analyte was not added to the QC sample.
- Duplicate RPDs are calculated from raw analytical data thus it is possible to have two sets of data.

Quality Control Results

Test				Units	Result 1			Acceptance Limits	Pass Limits	Qualifying Code		
Method Blank												
Heavy Metals												
Lead				mg/kg	< 5			5	Pass			
LCS - % Recovery												
Heavy Metals												
Lead				%	114			70-130	Pass			
Test	Lab Sample ID	QA Source	Units	Result 1			Acceptance Limits	Pass Limits	Qualifying Code			
Spike - % Recovery												
Heavy Metals												
Lead				S20-Ap23188	NCP	%	100	70-130	Pass			
Spike - % Recovery												
Heavy Metals												
Lead				S20-Ap23188	NCP	%	100	70-130	Pass			
Test	Lab Sample ID	QA Source	Units	Result 1			Acceptance Limits	Pass Limits	Qualifying Code			
Duplicate												
Heavy Metals												
Lead				S20-Ap23765	NCP	mg/kg	49	36	31	30%	Fail	Q15
Duplicate												
Heavy Metals												
% Moisture				S20-Ap16879	NCP	%	13	13	1.0	30%	Pass	
Duplicate												
Heavy Metals												
Lead				S20-Ap23765	NCP	mg/kg	49	**	31	30%	Fail	Q15
Duplicate												
Heavy Metals												
% Moisture				S20-Ap16879	NCP	%	13	**	1.0	30%	Pass	

Comments

New version to split report.

Sample Integrity

Custody Seals Intact (if used)	N/A
Attempt to Chill was evident	Yes
Sample correctly preserved	Yes
Appropriate sample containers have been used	Yes
Sample containers for volatile analysis received with minimal headspace	Yes
Samples received within HoldingTime	Yes
Some samples have been subcontracted	No

Qualifier Codes/Comments

Code	Description
Q15	The RPD reported passes Eurofins Environment Testing's QC - Acceptance Criteria as defined in the Internal Quality Control Review and Glossary page of this report.

Authorised By

Andrew Black	Analytical Services Manager
Gabriele Cordero	Senior Analyst-Metal (NSW)


**Glenn Jackson
General Manager**

Final report - this Report replaces any previously issued Report

- Indicates Not Requested

* Indicates NATA accreditation does not cover the performance of this service

Measurement uncertainty of test data is available on request or please [click here](#).

Eurofins shall not be liable for loss, cost, damages or expenses incurred by the client, or any other person or company, resulting from the use of any information or interpretation given in this report. In no case shall Eurofins be liable for consequential damages including, but not limited to, lost profits, damages for failure to meet deadlines and lost production arising from this report. This document shall not be reproduced except in full and relates only to the items tested. Unless indicated otherwise, the tests were performed on the samples as received.

Ramboll Environ Australia Pty Ltd
 Level 3/100 Pacific Highway
 North Sydney
 NSW 2060



NATA Accredited
Accreditation Number 1261
Site Number 18217

Accredited for compliance with ISO/IEC 17025 – Testing
 The results of the tests, calibrations and/or
 measurements included in this document are traceable
 to Australian/national standards.

Attention: **Joshua Blackwell**

Report **713315-W**
 Project name **ADDITIONAL 318000780**
 Project ID **15.80**
 Received Date **Apr 09, 2020**

Client Sample ID			RB_300320
Sample Matrix			Water
Eurofins Sample No.			S20-Ap16788
Date Sampled			Mar 25, 2020
Test/Reference	LOR	Unit	
Heavy Metals			
Aluminium	0.05	mg/L	< 0.05
Arsenic	0.001	mg/L	< 0.001
Barium	0.02	mg/L	< 0.02
Beryllium	0.001	mg/L	< 0.001
Cadmium	0.0002	mg/L	0.0002
Chromium	0.001	mg/L	< 0.001
Cobalt	0.001	mg/L	< 0.001
Copper	0.001	mg/L	< 0.001
Iron	0.05	mg/L	< 0.05
Lead	0.001	mg/L	< 0.001
Manganese	0.005	mg/L	< 0.005
Mercury	0.0001	mg/L	< 0.0001
Nickel	0.001	mg/L	< 0.001
Zinc	0.005	mg/L	< 0.005

Sample History

Where samples are submitted/analysed over several days, the last date of extraction and analysis is reported.

A recent review of our LIMS has resulted in the correction or clarification of some method identifications. Due to this, some of the method reference information on reports has changed. However, no substantive change has been made to our laboratory methods, and as such there is no change in the validity of current or previous results.

If the date and time of sampling are not provided, the Laboratory will not be responsible for compromised results should testing be performed outside the recommended holding time.

Description

Heavy Metals

Testing Site

Sydney

Extracted

Apr 14, 2020

Holding Time

180 Days

- Method: LTM-MET-3040 Metals in Waters, Soils & Sediments by ICP-MS

Australia

Melbourne
6 Monterey Road
Dandenong South VIC 3175
Phone : +61 3 8564 5000
NATA # 1261
Site # 1254 & 14271

Sydney
Unit F3, Building F
16 Mars Road
Lane Cove West NSW 2066
Phone : +61 2 9900 8400
NATA # 1261 Site # 18217

Brisbane
1/21 Smallwood Place
Murarie QLD 4172
Phone : +61 7 3902 4600
NATA # 1261 Site # 20794

Perth
2/91 Leach Highway
Kewdale WA 6105
Phone : +61 8 9251 9600
NATA # 1261
Site # 23736

New Zealand

Auckland
35 O'Rorke Road
Penrose, Auckland 1061
Phone : +64 9 526 45 51
IANZ # 1327

Christchurch
43 Detroit Drive
Rolleston, Christchurch 7675
Phone : 0800 856 450
IANZ # 1290

Company Name: Ramboll Australia Pty Ltd
Address: Level 3/100 Pacific Highway
North Sydney
NSW 2060

Order No.:
Report #: 713315
Phone: 02 9954 8118
Fax: 02 9954 8150

Received: Apr 9, 2020 9:54 AM
Due: Apr 20, 2020
Priority: 5 Day
Contact Name: Joshua Blackwell

Project Name: ADDITIONAL 318000780
Project ID: 15.80

Eurofins Analytical Services Manager : Andrew Black

Sample Detail						Aluminium	Arsenic	Barium	Beryllium	Cadmium	Chromium	Cobalt	Copper	Iron	Lead	Manganese	Mercury	Nickel	Zinc	Moisture Set	
Melbourne Laboratory - NATA Site # 1254 & 14271																					
Sydney Laboratory - NATA Site # 18217						X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X
Brisbane Laboratory - NATA Site # 20794																					
Perth Laboratory - NATA Site # 23736																					
External Laboratory																					
No	Sample ID	Sample Date	Sampling Time	Matrix	LAB ID																
1	P10_HA02_0-0.2	Mar 25, 2020		Soil	S20-Ap16787										X					X	
2	RB_300320	Mar 25, 2020		Water	S20-Ap16788	X	X	X	X	X	X	X	X	X	X	X	X	X	X		
3	P22_HA05_0.2	Mar 31, 2020		Soil	S20-Ap16789										X					X	
Test Counts						1	1	1	1	1	1	1	1	1	3	1	1	1	1	1	2

Internal Quality Control Review and Glossary
General

- Laboratory QC results for Method Blanks, Duplicates, Matrix Spikes, and Laboratory Control Samples follows guidelines delineated in the National Environment Protection (Assessment of Site Contamination) Measure 1999, as amended May 2013 and are included in this QC report where applicable. Additional QC data may be available on request.
- All soil/sediment/solid results are reported on a dry basis, unless otherwise stated.
- All biota/food results are reported on a wet weight basis on the edible portion, unless otherwise stated.
- Actual LORs are matrix dependant. Quoted LORs may be raised where sample extracts are diluted due to interferences.
- Results are uncorrected for matrix spikes or surrogate recoveries except for PFAS compounds.
- SVOC analysis on waters are performed on homogenised, unfiltered samples, unless noted otherwise.
- Samples were analysed on an 'as received' basis.
- Information identified on this report with blue colour, indicates data provided by customer, that may have an impact on the results.
- This report replaces any interim results previously issued.

Holding Times

Please refer to 'Sample Preservation and Container Guide' for holding times (QS3001).

For samples received on the last day of holding time, notification of testing requirements should have been received at least 6 hours prior to sample receipt deadlines as stated on the SRA.

If the Laboratory did not receive the information in the required timeframe, and regardless of any other integrity issues, suitably qualified results may still be reported.

Holding times apply from the date of sampling, therefore compliance to these may be outside the laboratory's control.

For VOCs containing vinyl chloride, styrene and 2-chloroethyl vinyl ether the holding time is 7 days however for all other VOCs such as BTEX or C6-10 TRH then the holding time is 14 days.

****NOTE:** pH duplicates are reported as a range NOT as RPD

Units

mg/kg: milligrams per kilogram

mg/L: milligrams per litre

ug/L: micrograms per litre

ppm: Parts per million

ppb: Parts per billion

%: Percentage

org/100mL: Organisms per 100 millilitres

NTU: Nephelometric Turbidity Units

MPN/100mL: Most Probable Number of organisms per 100 millilitres

Terms

Dry	Where a moisture has been determined on a solid sample the result is expressed on a dry basis.
LOR	Limit of Reporting.
SPIKE	Addition of the analyte to the sample and reported as percentage recovery.
RPD	Relative Percent Difference between two Duplicate pieces of analysis.
LCS	Laboratory Control Sample - reported as percent recovery.
CRM	Certified Reference Material - reported as percent recovery.
Method Blank	In the case of solid samples these are performed on laboratory certified clean sands and in the case of water samples these are performed on de-ionised water.
Surr - Surrogate	The addition of a like compound to the analyte target and reported as percentage recovery.
Duplicate	A second piece of analysis from the same sample and reported in the same units as the result to show comparison.
USEPA	United States Environmental Protection Agency
APHA	American Public Health Association
TCLP	Toxicity Characteristic Leaching Procedure
COC	Chain of Custody
SRA	Sample Receipt Advice
QSM	US Department of Defense Quality Systems Manual Version 5.3
CP	Client Parent - QC was performed on samples pertaining to this report
NCP	Non-Client Parent - QC performed on samples not pertaining to this report, QC is representative of the sequence or batch that client samples were analysed within.
TEQ	Toxic Equivalency Quotient

QC - Acceptance Criteria

RPD Duplicates: Global RPD Duplicates Acceptance Criteria is 30% however the following acceptance guidelines are equally applicable:

Results <10 times the LOR : No Limit

Results between 10-20 times the LOR : RPD must lie between 0-50%

Results >20 times the LOR : RPD must lie between 0-30%

Surrogate Recoveries: Recoveries must lie between 20-130% Phenols & 50-150% PFASs

PFAS field samples that contain surrogate recoveries in excess of the QC limit designated in QSM 5.3 where no positive PFAS results have been reported have been reviewed and no data was affected.

WA DWER (n=10): PFBA, PFPeA, PFHxA, PFHpA, PFOA, PFBS, PFHxS, PFOS, 6:2 FTSA, 8:2 FTSA

QC Data General Comments

- Where a result is reported as a less than (<), higher than the nominated LOR, this is due to either matrix interference, extract dilution required due to interferences or contaminant levels within the sample, high moisture content or insufficient sample provided.
- Duplicate data shown within this report that states the word "BATCH" is a Batch Duplicate from outside of your sample batch, but within the laboratory sample batch at a 1:10 ratio. The Parent and Duplicate data shown is not data from your samples.
- Organochlorine Pesticide analysis - where reporting LCS data, Toxaphene & Chlordane are not added to the LCS.
- Organochlorine Pesticide analysis - where reporting Spike data, Toxaphene is not added to the Spike.
- Total Recoverable Hydrocarbons - where reporting Spike & LCS data, a single spike of commercial Hydrocarbon products in the range of C12-C30 is added and it's Total Recovery is reported in the C10-C14 cell of the Report.
- pH and Free Chlorine analysed in the laboratory - Analysis on this test must begin within 30 minutes of sampling. Therefore laboratory analysis is unlikely to be completed within holding time. Analysis will begin as soon as possible after sample receipt.
- Recovery Data (Spikes & Surrogates) - where chromatographic interference does not allow the determination of Recovery the term "INT" appears against that analyte.
- Polychlorinated Biphenyls are spiked only using Aroclor 1260 in Matrix Spikes and LCS.
- For Matrix Spikes and LCS results a dash " - " in the report means that the specific analyte was not added to the QC sample.
- Duplicate RPDs are calculated from raw analytical data thus it is possible to have two sets of data.

Quality Control Results

Test		Units	Result 1			Acceptance Limits	Pass Limits	Qualifying Code
Method Blank								
Heavy Metals								
Aluminium		mg/L	< 0.05			0.05	Pass	
Arsenic		mg/L	< 0.001			0.001	Pass	
Barium		mg/L	< 0.02			0.02	Pass	
Beryllium		mg/L	< 0.001			0.001	Pass	
Chromium		mg/L	< 0.001			0.001	Pass	
Cobalt		mg/L	< 0.001			0.001	Pass	
Copper		mg/L	< 0.001			0.001	Pass	
Iron		mg/L	< 0.05			0.05	Pass	
Lead		mg/L	< 0.001			0.001	Pass	
Manganese		mg/L	< 0.005			0.005	Pass	
Mercury		mg/L	< 0.0001			0.0001	Pass	
Nickel		mg/L	< 0.001			0.001	Pass	
Zinc		mg/L	< 0.005			0.005	Pass	
LCS - % Recovery								
Heavy Metals								
Aluminium		%	95			70-130	Pass	
Arsenic		%	120			70-130	Pass	
Barium		%	101			70-130	Pass	
Beryllium		%	101			70-130	Pass	
Cadmium		%	99			70-130	Pass	
Chromium		%	98			70-130	Pass	
Cobalt		%	94			70-130	Pass	
Copper		%	87			70-130	Pass	
Iron		%	94			70-130	Pass	
Lead		%	95			70-130	Pass	
Manganese		%	96			70-130	Pass	
Mercury		%	99			70-130	Pass	
Nickel		%	90			70-130	Pass	
Zinc		%	92			70-130	Pass	
Test	Lab Sample ID	QA Source	Units	Result 1		Acceptance Limits	Pass Limits	Qualifying Code
Spike - % Recovery								
Heavy Metals				Result 1				
Aluminium	S20-Ap02122	NCP	%	102		70-130	Pass	
Arsenic	S20-Ap02122	NCP	%	120		70-130	Pass	
Barium	S20-Ap02122	NCP	%	108		70-130	Pass	
Beryllium	S20-Ap02122	NCP	%	108		70-130	Pass	
Cadmium	S20-Ap02122	NCP	%	106		70-130	Pass	
Chromium	S20-Ap02122	NCP	%	105		70-130	Pass	
Cobalt	S20-Ap02122	NCP	%	101		70-130	Pass	
Copper	S20-Ap02122	NCP	%	95		70-130	Pass	
Iron	S20-Ap02122	NCP	%	100		70-130	Pass	
Lead	S20-Ap02122	NCP	%	103		70-130	Pass	
Manganese	S20-Ap02122	NCP	%	104		70-130	Pass	
Mercury	S20-Ap02122	NCP	%	103		70-130	Pass	
Nickel	S20-Ap02122	NCP	%	97		70-130	Pass	
Zinc	S20-Ap02122	NCP	%	97		70-130	Pass	

Test	Lab Sample ID	QA Source	Units	Result 1			Acceptance Limits	Pass Limits	Qualifying Code
Duplicate									
Heavy Metals				Result 1	Result 2	RPD			
Aluminium	S20-Ap02120	NCP	mg/L	95	81	16	30%	Pass	
Arsenic	S20-Ap02120	NCP	mg/L	0.057	0.047	20	30%	Pass	
Barium	S20-Ap02120	NCP	mg/L	0.33	0.30	10	30%	Pass	
Beryllium	S20-Ap02120	NCP	mg/L	0.003	0.003	14	30%	Pass	
Cadmium	S20-Ap02120	NCP	mg/L	0.0038	0.0064	52	30%	Fail	Q15
Chromium	S20-Ap02120	NCP	mg/L	0.29	0.24	18	30%	Pass	
Cobalt	S20-Ap02120	NCP	mg/L	0.023	0.034	38	30%	Fail	Q15
Copper	S20-Ap02120	NCP	mg/L	2.6	2.1	24	30%	Pass	
Iron	S20-Ap02120	NCP	mg/L	dil127	dil107	17	30%	Pass	
Lead	S20-Ap02120	NCP	mg/L	1.0	0.79	23	30%	Pass	
Manganese	S20-Ap02120	NCP	mg/L	1.0	0.81	21	30%	Pass	
Mercury	S20-Ap02120	NCP	mg/L	0.0017	0.0014	18	30%	Pass	
Nickel	S20-Ap02120	NCP	mg/L	0.084	0.079	6.0	30%	Pass	
Zinc	S20-Ap02120	NCP	mg/L	1.4	1.5	3.0	30%	Pass	

Comments**Sample Integrity**

Custody Seals Intact (if used)	N/A
Attempt to Chill was evident	Yes
Sample correctly preserved	Yes
Appropriate sample containers have been used	Yes
Sample containers for volatile analysis received with minimal headspace	Yes
Samples received within HoldingTime	Yes
Some samples have been subcontracted	No

Qualifier Codes/Comments

Code	Description
Q15	The RPD reported passes Eurofins Environment Testing's QC - Acceptance Criteria as defined in the Internal Quality Control Review and Glossary page of this report.

Authorised By

Andrew Black Analytical Services Manager
Gabriele Cordero Senior Analyst-Metal (NSW)

**Glenn Jackson
General Manager**

Final report - this Report replaces any previously issued Report

- Indicates Not Requested

* Indicates NATA accreditation does not cover the performance of this service

Measurement uncertainty of test data is available on request or please [click here](#).

Eurofins shall not be liable for loss, cost, damages or expenses incurred by the client, or any other person or company, resulting from the use of any information or interpretation given in this report. In no case shall Eurofins be liable for consequential damages including, but not limited to, lost profits, damages for failure to meet deadlines and lost production arising from this report. This document shall not be reproduced except in full and relates only to the items tested. Unless indicated otherwise, the tests were performed on the samples as received.



CHAIN OF CUSTODY RECORD

ABN 50 005 085 521

Sydney Laboratory

Unit F3 Bld F, 16 Mars Rd, Lane Cove West, NSW 2066
02 9900 8400 EnviroSampleNSW@eurofins.com

Brisbane Laboratory

Unit 1, 21 Smallwood Pl., Murarie, QLD 4172
07 3902 4600 EnviroSampleQLD@eurofins.com

Perth Laboratory

Unit 2, 91 Leach Highway, Kewdale WA 6105
08 9251 9600 EnviroSampleWA@eurofins.com

Melbourne Laboratory

2 Kingston Town Close, Oakleigh, VIC 3166
03 8564 5000 EnviroSampleVic@eurofins.com

Company		Ramboll		Project No		318000780		Project Manager		Stephen Maxwell		Sampler(s)		JK + RC			
Address		50 Glebe Road the Junction		Project Name				EDD Format		Excel and PDF		Handed over by		SM			
Contact Name		Stephen Maxwell		<small>(Note: Where metals are requested, please specify 'Total' or 'Filtered'. SUITE code must be used to attract SUITE pricing)</small> Analyses Lead M13 (Al, As, Ba, Be, Cd, Cr, Co, Cu, Fe, Pb, Mn, Hg, Ni, Zn) total M13 (Al, As, Ba, Be, Cd, Cr, Co, Cu, Fe, Pb, Mn, Hg, Ni, Zn) dissolved										Email for Invoice		smaxwell@ramboll.com asiapac-accounts@ramboll.com	
Phone No														Email for Results		smaxwell@ramboll.com jblackwell@ramboll.com rcondon@ramboll.com shyde@ramboll.com	
Special Directions														Turnaround Time (TAT) Requirements (default will be 5 days if not ticked)		<input type="checkbox"/> Overnight (9am)* <input type="checkbox"/> 1 Day* <input type="checkbox"/> 2 Day* <input type="checkbox"/> 3 Day* <input checked="" type="checkbox"/> 5 Day* <input type="checkbox"/> Other () * Surcharges apply	
Purchase Order														1L Plastic 250mL Plastic 125mL Plastic 200mL Amber Glass 40mL VOA vial 500mL PFAS Bottle Jar (Glass or HDPE) <small>Other (Asbestos AS4554, WA Calibration)</small>			
Quote ID No		180813RAMN_1		Matrix (Solid (S) Water (W))										Sample Comments / Dangerous Goods Hazard Warning			
No	Client Sample ID	Sampled Date/Time (dd/mm/yy hh:mm)															
1	P23_HA01_0.0	31/03/20	S	X													
2	P23_HA01_0.2	31/03/20	S	X													
3	P23_HA02_0.0	31/03/20	S	X													
4	P23_HA02_0.2	31/03/20	S	X													
5	P23_HA03_0.0	31/03/20	S	X													
6	P23_HA03_0.2	31/03/20	S	X													
7	P23_HA04_0.0	31/03/20	S	X													
8	P23_HA04_0.2	31/03/20	S	X													
9	P23_HA05_0.0	31/03/20	S	X													
10	P23_HA05_0.2	31/03/20	S	X													
Total Counts				10													
Method of Shipment		<input type="checkbox"/> Courier (#) <input type="checkbox"/> Hand Delivered <input type="checkbox"/> Postal		Name		Signature		Date		Time		Date		Time			
Eurofins mgt Laboratory Use Only		Received By		SYD BNE MEL PER ADL NTL DRW		Signature		Date		Time		Date		Time			
		<i>hupan</i>						01/04/20		11:04 AM				15.8C			
		Received By		SYD BNE MEL PER ADL NTL DRW		Signature		Date		Time		Date		Report No			
														711589			

Submission of samples to the laboratory will be deemed as acceptance of Eurofins | mgt Standard Terms and Conditions unless agreed otherwise. A copy of Eurofins | mgt Standard Terms and Conditions is available on request.



CHAIN OF CUSTODY RECORD

ABN 50 005 085 521

Sydney Laboratory
Unit F3 Bld.F, 16 Mars Rd, Lane Cove West, NSW 2066
02 9900 8400 EnviroSampleNSW@eurofins.com

Brisbane Laboratory
Unit 1, 21 Smallwood Pl., Murarie, QLD 4172
07 3902 4600 EnviroSampleQLD@eurofins.com

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Unit 2, 91 Leach Highway, Kewdale WA 6105
08 9251 9600 EnviroSampleWA@eurofins.com

Melbourne Laboratory
2 Kingston Town Close, Oakleigh, VIC 3166
03 8564 5000 EnviroSampleVic@eurofins.com

Company	Ramboll		Project No	318000780			Project Manager	Stephen Maxwell			Sampler(s)	JK + JAB		
Address	50 Glebe Road the Junction		Project Name				EDD Format (ESdat, EQUIS,	Excel and PDF			Handed over by	SM		
Contact Name	Stephen Maxwell		<small>(Note: Where metals are requested, please specify 'Total' or 'Filtered'. SUITE code must be used to attract SUITE pricing)</small> Analyses Lead M13 (Al, As, Ba, Be, Cd, Cr, Co, Cu, Fe, Pb, Mn, Hg, Ni, Zn) total M13 (Al, As, Ba, Be, Cd, Cr, Co, Cu, Fe, Pb, Mn, Hg, Ni, Zn) dissolved				Email for Invoice Email for Results Turnaround Time (TAT) Requirements (Default will be 5 days if not ticked) <input type="checkbox"/> Overnight (9am)* <input type="checkbox"/> 1 Day* <input type="checkbox"/> 2 Day* <input type="checkbox"/> 3 Day* <input checked="" type="checkbox"/> 5 Day* * Surcharges apply <input type="checkbox"/> Other ()	Email for Invoice smaxwell@ramboll.com asiapac-accounts@ramboll.com			Email for Results smaxwell@ramboll.com jblackwell@ramboll.com rcondon@ramboll.com shyde@ramboll.com			
Phone No								blackwell@ramboll.com			Turnaround Time (TAT) Requirements (Default will be 5 days if not ticked) <input type="checkbox"/> Overnight (9am)* <input type="checkbox"/> 1 Day* <input type="checkbox"/> 2 Day* <input type="checkbox"/> 3 Day* <input checked="" type="checkbox"/> 5 Day* * Surcharges apply <input type="checkbox"/> Other ()			
Special Directions								1L Plastic 250mL Plastic 125mL Plastic 200mL Amber Glass 40mL VOA vial 500mL PFAS Bottle Jar (Glass or HDPE) Other (Asbestos AS4664, WA Guidelines)			Sample Comments / Dangerous Goods Hazard Warning			
Purchase Order														
Quote ID No	180813RAMN_1													
No	Client Sample ID	Sampled Date/Time (dd/mm/yy hh:mm)	Matrix (Solid (S) Water (W))											
1	P23_TW1	31/03/20	W	X	X									
2	P23_BORE	31/03/20	W	X	X									
3	P23_TWS1	31/03/20	Sediment	X										Please dry sediment sample prior to analysis
4														
5														
6														
7														
8														
9														
10														
Total Counts				1	2	2								
Method of Shipment	<input type="checkbox"/> Courier (#) <input type="checkbox"/> Hand Delivered <input type="checkbox"/> Postal			Name	Signature			Date	___/___/___	Time	___:___			
Eurofins mgt Laboratory Use Only	Received By	<i>[Signature]</i>			SYD BNE MEL PER ADL NTL DRW	Signature	Date	<i>[Signature]</i>	Time	___:___	Temperature			
	Received By				SYD BNE MEL PER ADL NTL DRW	Signature	Date	___/___/___	Time	___:___	Report No			

Submission of samples to the laboratory will be deemed as acceptance of Eurofins | mgt Standard Terms and Conditions unless agreed otherwise. A copy of Eurofins | mgt Standard Terms and Conditions is available on request.

Eurofins Environment Testing Australia Pty Ltd trading as Eurofins | mgt

Melbourne

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NATA # 1261 Site # 23736

Sample Receipt Advice

Company name: **Ramboll Australia Pty Ltd**

Contact name: **Stephen Maxwell**

Project ID: **318000780**

COC number: **Not provided**

Turn around time: **5 Day**

Date/Time received: **Apr 1, 2020 11:04 AM**

Eurofins reference: **711589**

Sample information

- A detailed list of analytes logged into our LIMS, is included in the attached summary table.
- All samples have been received as described on the above COC.
- COC has been completed correctly.
- Attempt to chill was evident.
- Appropriately preserved sample containers have been used.
- All samples were received in good condition.
- Samples have been provided with adequate time to commence analysis in accordance with the relevant holding times.
- Appropriate sample containers have been used.
- Sample containers for volatile analysis received with zero headspace.
- Split sample sent to requested external lab.
- Some samples have been subcontracted.
- N/A Custody Seals intact (if used).

Contact notes

If you have any questions with respect to these samples please contact:

Andrew Black on Phone : (+61) 2 9900 8490 or by e.mail: AndrewBlack@eurofins.com

Results will be delivered electronically via e.mail to Stephen Maxwell - smaxwell@ramboll.com.

Note: A copy of these results will also be delivered to the general Ramboll Australia Pty Ltd email address.

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Phone : 0800 856 450
IANZ # 1290

Company Name: Ramboll Australia Pty Ltd
Address: Level 3/100 Pacific Highway
North Sydney
NSW 2060

Order No.:
Report #: 711589
Phone: 02 9954 8118
Fax: 02 9954 8150

Received: Apr 1, 2020 11:04 AM
Due: Apr 8, 2020
Priority: 5 Day
Contact Name: Stephen Maxwell

Project Name:
Project ID: 318000780

Eurofins Analytical Services Manager : Andrew Black

Sample Detail						HOLD	Lead	NEPM 2013 Metals : Metals M13	NEPM 2013 Metals : Metals M13 filtered	Moisture Set
Melbourne Laboratory - NATA Site # 1254 & 14271										
Sydney Laboratory - NATA Site # 18217						X	X	X	X	X
Brisbane Laboratory - NATA Site # 20794										
Perth Laboratory - NATA Site # 23736										
External Laboratory										
No	Sample ID	Sample Date	Sampling Time	Matrix	LAB ID					
1	P23_HA01_0_0	Mar 31, 2020		Soil	S20-Ap03088		X			X
2	P23_HA01_0_2	Mar 31, 2020		Soil	S20-Ap03089		X			X
3	P23_HA02_0_0	Mar 31, 2020		Soil	S20-Ap03090		X			X
4	P23_HA02_0_2	Mar 31, 2020		Soil	S20-Ap03091		X			X
5	P23_HA03_0_0	Mar 31, 2020		Soil	S20-Ap03092		X			X
6	P23_HA03_0_2	Mar 31, 2020		Soil	S20-Ap03093		X			X

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9	P23_HA05_0	Mar 31, 2020		Soil	S20-Ap03096		X			X
10	P23_HA05_2	Mar 31, 2020		Soil	S20-Ap03097		X			X
11	P23_TW1	Mar 31, 2020		Water	S20-Ap03098			X	X	
12	P23_BORE	Mar 31, 2020		Water	S20-Ap03099			X	X	
13	P23_TWS1	Mar 31, 2020		Sediment	S20-Ap03100		X			X
14	P18_BORE	Mar 31, 2020		Water	S20-Ap03101	X				
15	RB_300320	Mar 30, 2020		Water	S20-Ap03102	X				
16	P10_HA02_0	Mar 25, 2020		Soil	S20-Ap03103	X				



Environment Testing

Australia

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ABN – 50 005 085 521

web : www.eurofins.com.au

e.mail : EnviroSales@eurofins.com

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Order No.:
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Received: Apr 1, 2020 11:04 AM
Due: Apr 8, 2020
Priority: 5 Day
Contact Name: Stephen Maxwell

Project Name:
Project ID: 318000780

Eurofins Analytical Services Manager : Andrew Black

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Sydney Laboratory - NATA Site # 18217						X	X	X	X	X
Brisbane Laboratory - NATA Site # 20794										
Perth Laboratory - NATA Site # 23736										
0-0.2										
Test Counts						3	11	2	2	11

Ramboll Environ Australia Pty Ltd
 Level 3/100 Pacific Highway
 North Sydney
 NSW 2060



NATA Accredited
 Accreditation Number 1261
 Site Number 18217

Accredited for compliance with ISO/IEC 17025 – Testing
 The results of the tests, calibrations and/or
 measurements included in this document are traceable
 to Australian/national standards.

Attention: Stephen Maxwell

Report 711589-S
 Project name
 Project ID 318000780
 Received Date Apr 01, 2020

Client Sample ID			P23_HA01_0.0	P23_HA01_0.2	P23_HA02_0.0	P23_HA02_0.2
Sample Matrix			Soil	Soil	Soil	Soil
Eurofins Sample No.			S20-Ap03088	S20-Ap03089	S20-Ap03090	S20-Ap03091
Date Sampled			Mar 31, 2020	Mar 31, 2020	Mar 31, 2020	Mar 31, 2020
Test/Reference	LOR	Unit				
Heavy Metals						
Lead	5	mg/kg	74	29	62	35
% Moisture	1	%	13	10	12	8.6

Client Sample ID			P23_HA03_0.0	P23_HA03_0.2	P23_HA04_0.0	P23_HA04_0.2
Sample Matrix			Soil	Soil	Soil	Soil
Eurofins Sample No.			S20-Ap03092	S20-Ap03093	S20-Ap03094	S20-Ap03095
Date Sampled			Mar 31, 2020	Mar 31, 2020	Mar 31, 2020	Mar 31, 2020
Test/Reference	LOR	Unit				
Heavy Metals						
Lead	5	mg/kg	60	39	31	17
% Moisture	1	%	11	7.8	11	7.2

Client Sample ID			P23_HA05_0.0	P23_HA05_0.2
Sample Matrix			Soil	Soil
Eurofins Sample No.			S20-Ap03096	S20-Ap03097
Date Sampled			Mar 31, 2020	Mar 31, 2020
Test/Reference	LOR	Unit		
Heavy Metals				
Lead	5	mg/kg	49	50
% Moisture	1	%	21	13

Sample History

Where samples are submitted/analysed over several days, the last date of extraction and analysis is reported.

A recent review of our LIMS has resulted in the correction or clarification of some method identifications. Due to this, some of the method reference information on reports has changed. However, no substantive change has been made to our laboratory methods, and as such there is no change in the validity of current or previous results.

If the date and time of sampling are not provided, the Laboratory will not be responsible for compromised results should testing be performed outside the recommended holding time.

Description

Heavy Metals

- Method: LTM-MET-3040 Metals in Waters, Soils & Sediments by ICP-MS

% Moisture

- Method: LTM-GEN-7080 Moisture

Testing Site

Sydney

Sydney

Extracted

Apr 06, 2020

Apr 02, 2020

Holding Time

180 Days

14 Days

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Company Name: Ramboll Australia Pty Ltd
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NSW 2060

Order No.:
Report #: 711589
Phone: 02 9954 8118
Fax: 02 9954 8150

Received: Apr 1, 2020 11:04 AM
Due: Apr 8, 2020
Priority: 5 Day
Contact Name: Stephen Maxwell

Project Name:
Project ID: 318000780

Eurofins Analytical Services Manager : Andrew Black

Sample Detail						HOLD	Lead	NEPM 2013 Metals : Metals M13	NEPM 2013 Metals : Metals M13 filtered	Moisture Set
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4	P23_HA02_0_2	Mar 31, 2020		Soil	S20-Ap03091		X			X
5	P23_HA03_0_0	Mar 31, 2020		Soil	S20-Ap03092		X			X
6	P23_HA03_0_2	Mar 31, 2020		Soil	S20-Ap03093		X			X

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12	P23_BORE	Mar 31, 2020		Water	S20-Ap03099			X	X	
13	P23_TWS1	Mar 31, 2020		Sediment	S20-Ap03100		X			X
14	P18_BORE	Mar 31, 2020		Water	S20-Ap03101	X				
15	RB_300320	Mar 30, 2020		Water	S20-Ap03102	X				
16	P10_HA02_0	Mar 25, 2020		Soil	S20-Ap03103	X				

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Perth Laboratory - NATA Site # 23736										
0-0.2										
Test Counts						3	11	2	2	11

Internal Quality Control Review and Glossary
General

- Laboratory QC results for Method Blanks, Duplicates, Matrix Spikes, and Laboratory Control Samples follows guidelines delineated in the National Environment Protection (Assessment of Site Contamination) Measure 1999, as amended May 2013 and are included in this QC report where applicable. Additional QC data may be available on request.
- All soil/sediment/solid results are reported on a dry basis, unless otherwise stated.
- All biota/food results are reported on a wet weight basis on the edible portion, unless otherwise stated.
- Actual LORs are matrix dependant. Quoted LORs may be raised where sample extracts are diluted due to interferences.
- Results are uncorrected for matrix spikes or surrogate recoveries except for PFAS compounds.
- SVOC analysis on waters are performed on homogenised, unfiltered samples, unless noted otherwise.
- Samples were analysed on an 'as received' basis.
- Information identified on this report with blue colour, indicates data provided by customer, that may have an impact on the results.
- This report replaces any interim results previously issued.

Holding Times

Please refer to 'Sample Preservation and Container Guide' for holding times (QS3001).

For samples received on the last day of holding time, notification of testing requirements should have been received at least 6 hours prior to sample receipt deadlines as stated on the SRA.

If the Laboratory did not receive the information in the required timeframe, and regardless of any other integrity issues, suitably qualified results may still be reported.

Holding times apply from the date of sampling, therefore compliance to these may be outside the laboratory's control.

For VOCs containing vinyl chloride, styrene and 2-chloroethyl vinyl ether the holding time is 7 days however for all other VOCs such as BTEX or C6-10 TRH then the holding time is 14 days.

****NOTE:** pH duplicates are reported as a range NOT as RPD

Units

mg/kg: milligrams per kilogram

mg/L: milligrams per litre

ug/L: micrograms per litre

ppm: Parts per million

ppb: Parts per billion

%: Percentage

org/100mL: Organisms per 100 millilitres

NTU: Nephelometric Turbidity Units

MPN/100mL: Most Probable Number of organisms per 100 millilitres

Terms

Dry	Where a moisture has been determined on a solid sample the result is expressed on a dry basis.
LOR	Limit of Reporting.
SPIKE	Addition of the analyte to the sample and reported as percentage recovery.
RPD	Relative Percent Difference between two Duplicate pieces of analysis.
LCS	Laboratory Control Sample - reported as percent recovery.
CRM	Certified Reference Material - reported as percent recovery.
Method Blank	In the case of solid samples these are performed on laboratory certified clean sands and in the case of water samples these are performed on de-ionised water.
Surr - Surrogate	The addition of a like compound to the analyte target and reported as percentage recovery.
Duplicate	A second piece of analysis from the same sample and reported in the same units as the result to show comparison.
USEPA	United States Environmental Protection Agency
APHA	American Public Health Association
TCLP	Toxicity Characteristic Leaching Procedure
COC	Chain of Custody
SRA	Sample Receipt Advice
QSM	US Department of Defense Quality Systems Manual Version 5.3
CP	Client Parent - QC was performed on samples pertaining to this report
NCP	Non-Client Parent - QC performed on samples not pertaining to this report, QC is representative of the sequence or batch that client samples were analysed within.
TEQ	Toxic Equivalency Quotient

QC - Acceptance Criteria

RPD Duplicates: Global RPD Duplicates Acceptance Criteria is 30% however the following acceptance guidelines are equally applicable:

Results <10 times the LOR : No Limit

Results between 10-20 times the LOR : RPD must lie between 0-50%

Results >20 times the LOR : RPD must lie between 0-30%

Surrogate Recoveries: Recoveries must lie between 20-130% Phenols & 50-150% PFASs

PFAS field samples that contain surrogate recoveries in excess of the QC limit designated in QSM 5.3 where no positive PFAS results have been reported have been reviewed and no data was affected.

WA DWER (n=10): PFBA, PFPeA, PFHxA, PFHpA, PFOA, PFBS, PFHxS, PFOS, 6:2 FTSA, 8:2 FTSA

QC Data General Comments

- Where a result is reported as a less than (<), higher than the nominated LOR, this is due to either matrix interference, extract dilution required due to interferences or contaminant levels within the sample, high moisture content or insufficient sample provided.
- Duplicate data shown within this report that states the word "BATCH" is a Batch Duplicate from outside of your sample batch, but within the laboratory sample batch at a 1:10 ratio. The Parent and Duplicate data shown is not data from your samples.
- Organochlorine Pesticide analysis - where reporting LCS data, Toxaphene & Chlordane are not added to the LCS.
- Organochlorine Pesticide analysis - where reporting Spike data, Toxaphene is not added to the Spike.
- Total Recoverable Hydrocarbons - where reporting Spike & LCS data, a single spike of commercial Hydrocarbon products in the range of C12-C30 is added and it's Total Recovery is reported in the C10-C14 cell of the Report.
- pH and Free Chlorine analysed in the laboratory - Analysis on this test must begin within 30 minutes of sampling. Therefore laboratory analysis is unlikely to be completed within holding time. Analysis will begin as soon as possible after sample receipt.
- Recovery Data (Spikes & Surrogates) - where chromatographic interference does not allow the determination of Recovery the term "INT" appears against that analyte.
- Polychlorinated Biphenyls are spiked only using Aroclor 1260 in Matrix Spikes and LCS.
- For Matrix Spikes and LCS results a dash " - " in the report means that the specific analyte was not added to the QC sample.
- Duplicate RPDs are calculated from raw analytical data thus it is possible to have two sets of data.

Quality Control Results

Test				Units	Result 1		Acceptance Limits	Pass Limits	Qualifying Code	
Method Blank										
Heavy Metals										
Lead				mg/kg	< 5		5	Pass		
LCS - % Recovery										
Heavy Metals										
Lead				%	108		70-130	Pass		
Test	Lab Sample ID	QA Source	Units	Result 1			Acceptance Limits	Pass Limits	Qualifying Code	
Spike - % Recovery										
Heavy Metals										
Lead				S20-Ap03064	NCP	%	87	70-130	Pass	
Duplicate										
					Result 1	Result 2	RPD			
% Moisture				S20-Ap03095	CP	%	7.2	7.3	1.0	30% Pass

Comments**Sample Integrity**

Custody Seals Intact (if used)	N/A
Attempt to Chill was evident	Yes
Sample correctly preserved	Yes
Appropriate sample containers have been used	Yes
Sample containers for volatile analysis received with minimal headspace	Yes
Samples received within HoldingTime	Yes
Some samples have been subcontracted	No

Authorised By

Andrew Black Analytical Services Manager
Gabriele Cordero Senior Analyst-Metal (NSW)

**Glenn Jackson
General Manager**

Final report - this Report replaces any previously issued Report

- Indicates Not Requested

* Indicates NATA accreditation does not cover the performance of this service

Measurement uncertainty of test data is available on request or please [click here](#).

Eurofins shall not be liable for loss, cost, damages or expenses incurred by the client, or any other person or company, resulting from the use of any information or interpretation given in this report. In no case shall Eurofins be liable for consequential damages including, but not limited to, lost profits, damages for failure to meet deadlines and lost production arising from this report. This document shall not be reproduced except in full and relates only to the items tested. Unless indicated otherwise, the tests were performed on the samples as received.

Ramboll Environ Australia Pty Ltd
 Level 3/100 Pacific Highway
 North Sydney
 NSW 2060



NATA Accredited
 Accreditation Number 1261
 Site Number 18217

Accredited for compliance with ISO/IEC 17025 – Testing
 The results of the tests, calibrations and/or
 measurements included in this document are traceable
 to Australian/national standards.

Attention: Stephen Maxwell

Report 711589-W
 Project name
 Project ID 318000780
 Received Date Apr 01, 2020

Client Sample ID			P23_TW1	P23_BORE	P23_TWS1
Sample Matrix			Water	Water	Water
Eurofins Sample No.			S20-Ap03098	S20-Ap03099	S20-Ap03100
Date Sampled			Mar 31, 2020	Mar 31, 2020	Mar 31, 2020
Test/Reference	LOR	Unit			
Heavy Metals					
Aluminium	0.05	mg/L	< 0.05	0.34	-
Aluminium (filtered)	0.05	mg/L	< 0.05	< 0.05	-
Arsenic	0.001	mg/L	< 0.001	0.006	-
Arsenic (filtered)	0.001	mg/L	< 0.001	0.005	-
Barium	0.02	mg/L	< 0.02	0.10	-
Barium (filtered)	0.02	mg/L	< 0.02	0.08	-
Beryllium	0.001	mg/L	< 0.001	< 0.001	-
Beryllium (filtered)	0.001	mg/L	< 0.001	< 0.001	-
Cadmium	0.0002	mg/L	< 0.0002	< 0.0002	-
Cadmium (filtered)	0.0002	mg/L	0.0003	< 0.0002	-
Chromium	0.001	mg/L	0.001	0.001	-
Chromium (filtered)	0.001	mg/L	< 0.001	< 0.001	-
Cobalt	0.001	mg/L	< 0.001	0.002	-
Cobalt (filtered)	0.001	mg/L	< 0.001	0.001	-
Copper	0.001	mg/L	0.001	0.007	-
Copper (filtered)	0.001	mg/L	< 0.001	0.003	-
Iron	0.05	mg/L	< 0.05	0.63	-
Iron (filtered)	0.05	mg/L	< 0.05	< 0.05	-
Lead	0.001	mg/L	< 0.001	0.004	1.4
Lead (filtered)	0.001	mg/L	< 0.001	< 0.001	-
Manganese	0.005	mg/L	0.009	0.16	-
Manganese (filtered)	0.005	mg/L	0.008	0.14	-
Mercury	0.0001	mg/L	< 0.0001	< 0.0001	-
Mercury (filtered)	0.0001	mg/L	< 0.0001	< 0.0001	-
Nickel	0.001	mg/L	< 0.001	0.001	-
Nickel (filtered)	0.001	mg/L	< 0.001	0.001	-
Zinc	0.005	mg/L	1.9	0.048	-
Zinc (filtered)	0.005	mg/L	1.9	0.034	-

Sample History

Where samples are submitted/analysed over several days, the last date of extraction and analysis is reported.

A recent review of our LIMS has resulted in the correction or clarification of some method identifications. Due to this, some of the method reference information on reports has changed. However, no substantive change has been made to our laboratory methods, and as such there is no change in the validity of current or previous results.

If the date and time of sampling are not provided, the Laboratory will not be responsible for compromised results should testing be performed outside the recommended holding time.

Description	Testing Site	Extracted	Holding Time
Heavy Metals - Method: LTM-MET-3040 Metals in Waters, Soils & Sediments by ICP-MS	Sydney	Apr 08, 2020	180 Days
Heavy Metals (filtered) - Method: LTM-MET-3040 Metals in Waters, Soils & Sediments by ICP-MS	Sydney	Apr 08, 2020	180 Days
Mobil Metals : Metals M15 - Method: LTM-MET-3040 Metals in Waters, Soils & Sediments by ICP-MS	Sydney	Apr 08, 2020	28 Days

Australia

Melbourne
6 Monterey Road
Dandenong South VIC 3175
Phone : +61 3 8564 5000
NATA # 1261
Site # 1254 & 14271

Sydney
Unit F3, Building F
16 Mars Road
Lane Cove West NSW 2066
Phone : +61 2 9900 8400
NATA # 1261 Site # 18217

Brisbane
1/21 Smallwood Place
Murarrie QLD 4172
Phone : +61 7 3902 4600
NATA # 1261 Site # 20794

Perth
2/91 Leach Highway
Kewdale WA 6105
Phone : +61 8 9251 9600
NATA # 1261
Site # 23736

New Zealand

Auckland
35 O'Rorke Road
Penrose, Auckland 1061
Phone : +64 9 526 45 51
IANZ # 1327

Christchurch
43 Detroit Drive
Rolleston, Christchurch 7675
Phone : 0800 856 450
IANZ # 1290

Company Name: Ramboll Australia Pty Ltd
Address: Level 3/100 Pacific Highway
North Sydney
NSW 2060

Order No.:
Report #: 711589
Phone: 02 9954 8118
Fax: 02 9954 8150

Received: Apr 1, 2020 11:04 AM
Due: Apr 8, 2020
Priority: 5 Day
Contact Name: Stephen Maxwell

Project Name:
Project ID: 318000780

Eurofins Analytical Services Manager : Andrew Black

Sample Detail						HOLD	Lead	NEPM 2013 Metals : Metals M13	NEPM 2013 Metals : Metals M13 filtered	Moisture Set
Melbourne Laboratory - NATA Site # 1254 & 14271										
Sydney Laboratory - NATA Site # 18217						X	X	X	X	X
Brisbane Laboratory - NATA Site # 20794										
Perth Laboratory - NATA Site # 23736										
External Laboratory										
No	Sample ID	Sample Date	Sampling Time	Matrix	LAB ID					
1	P23_HA01_0.0	Mar 31, 2020		Soil	S20-Ap03088		X			X
2	P23_HA01_0.2	Mar 31, 2020		Soil	S20-Ap03089		X			X
3	P23_HA02_0.0	Mar 31, 2020		Soil	S20-Ap03090		X			X
4	P23_HA02_0.2	Mar 31, 2020		Soil	S20-Ap03091		X			X
5	P23_HA03_0.0	Mar 31, 2020		Soil	S20-Ap03092		X			X
6	P23_HA03_0.2	Mar 31, 2020		Soil	S20-Ap03093		X			X

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NATA # 1261 Site # 20794

Perth
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Kewdale WA 6105
Phone : +61 8 9251 9600
NATA # 1261
Site # 23736

New Zealand

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Penrose, Auckland 1061
Phone : +64 9 526 45 51
IANZ # 1327

Christchurch
43 Detroit Drive
Rolleston, Christchurch 7675
Phone : 0800 856 450
IANZ # 1290

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Melbourne Laboratory - NATA Site # 1254 & 14271										
Sydney Laboratory - NATA Site # 18217						X	X	X	X	X
Brisbane Laboratory - NATA Site # 20794										
Perth Laboratory - NATA Site # 23736										
7	P23_HA04_0	Mar 31, 2020		Soil	S20-Ap03094		X			X
8	P23_HA04_2	Mar 31, 2020		Soil	S20-Ap03095		X			X
9	P23_HA05_0	Mar 31, 2020		Soil	S20-Ap03096		X			X
10	P23_HA05_2	Mar 31, 2020		Soil	S20-Ap03097		X			X
11	P23_TW1	Mar 31, 2020		Water	S20-Ap03098			X	X	
12	P23_BORE	Mar 31, 2020		Water	S20-Ap03099			X	X	
13	P23_TWS1	Mar 31, 2020		Sediment	S20-Ap03100		X			X
14	P18_BORE	Mar 31, 2020		Water	S20-Ap03101	X				
15	RB_300320	Mar 30, 2020		Water	S20-Ap03102	X				
16	P10_HA02_0	Mar 25, 2020		Soil	S20-Ap03103	X				

Australia

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Melbourne Laboratory - NATA Site # 1254 & 14271										
Sydney Laboratory - NATA Site # 18217						X	X	X	X	X
Brisbane Laboratory - NATA Site # 20794										
Perth Laboratory - NATA Site # 23736										
0-0.2										
Test Counts						3	11	2	2	11

Internal Quality Control Review and Glossary
General

- Laboratory QC results for Method Blanks, Duplicates, Matrix Spikes, and Laboratory Control Samples follows guidelines delineated in the National Environment Protection (Assessment of Site Contamination) Measure 1999, as amended May 2013 and are included in this QC report where applicable. Additional QC data may be available on request.
- All soil/sediment/solid results are reported on a dry basis, unless otherwise stated.
- All biota/food results are reported on a wet weight basis on the edible portion, unless otherwise stated.
- Actual LORs are matrix dependant. Quoted LORs may be raised where sample extracts are diluted due to interferences.
- Results are uncorrected for matrix spikes or surrogate recoveries except for PFAS compounds.
- SVOC analysis on waters are performed on homogenised, unfiltered samples, unless noted otherwise.
- Samples were analysed on an 'as received' basis.
- Information identified on this report with blue colour, indicates data provided by customer, that may have an impact on the results.
- This report replaces any interim results previously issued.

Holding Times

Please refer to 'Sample Preservation and Container Guide' for holding times (QS3001).

For samples received on the last day of holding time, notification of testing requirements should have been received at least 6 hours prior to sample receipt deadlines as stated on the SRA.

If the Laboratory did not receive the information in the required timeframe, and regardless of any other integrity issues, suitably qualified results may still be reported.

Holding times apply from the date of sampling, therefore compliance to these may be outside the laboratory's control.

For VOCs containing vinyl chloride, styrene and 2-chloroethyl vinyl ether the holding time is 7 days however for all other VOCs such as BTEX or C6-10 TRH then the holding time is 14 days.

****NOTE:** pH duplicates are reported as a range NOT as RPD

Units

mg/kg: milligrams per kilogram

mg/L: milligrams per litre

ug/L: micrograms per litre

ppm: Parts per million

ppb: Parts per billion

%: Percentage

org/100mL: Organisms per 100 millilitres

NTU: Nephelometric Turbidity Units

MPN/100mL: Most Probable Number of organisms per 100 millilitres

Terms

Dry	Where a moisture has been determined on a solid sample the result is expressed on a dry basis.
LOR	Limit of Reporting.
SPIKE	Addition of the analyte to the sample and reported as percentage recovery.
RPD	Relative Percent Difference between two Duplicate pieces of analysis.
LCS	Laboratory Control Sample - reported as percent recovery.
CRM	Certified Reference Material - reported as percent recovery.
Method Blank	In the case of solid samples these are performed on laboratory certified clean sands and in the case of water samples these are performed on de-ionised water.
Surr - Surrogate	The addition of a like compound to the analyte target and reported as percentage recovery.
Duplicate	A second piece of analysis from the same sample and reported in the same units as the result to show comparison.
USEPA	United States Environmental Protection Agency
APHA	American Public Health Association
TCLP	Toxicity Characteristic Leaching Procedure
COC	Chain of Custody
SRA	Sample Receipt Advice
QSM	US Department of Defense Quality Systems Manual Version 5.3
CP	Client Parent - QC was performed on samples pertaining to this report
NCP	Non-Client Parent - QC performed on samples not pertaining to this report, QC is representative of the sequence or batch that client samples were analysed within.
TEQ	Toxic Equivalency Quotient

QC - Acceptance Criteria

RPD Duplicates: Global RPD Duplicates Acceptance Criteria is 30% however the following acceptance guidelines are equally applicable:

Results <10 times the LOR : No Limit

Results between 10-20 times the LOR : RPD must lie between 0-50%

Results >20 times the LOR : RPD must lie between 0-30%

Surrogate Recoveries: Recoveries must lie between 20-130% Phenols & 50-150% PFASs

PFAS field samples that contain surrogate recoveries in excess of the QC limit designated in QSM 5.3 where no positive PFAS results have been reported have been reviewed and no data was affected.

WA DWER (n=10): PFBA, PFPeA, PFHxA, PFHpA, PFOA, PFBS, PFHxS, PFOS, 6:2 FTSA, 8:2 FTSA

QC Data General Comments

- Where a result is reported as a less than (<), higher than the nominated LOR, this is due to either matrix interference, extract dilution required due to interferences or contaminant levels within the sample, high moisture content or insufficient sample provided.
- Duplicate data shown within this report that states the word "BATCH" is a Batch Duplicate from outside of your sample batch, but within the laboratory sample batch at a 1:10 ratio. The Parent and Duplicate data shown is not data from your samples.
- Organochlorine Pesticide analysis - where reporting LCS data, Toxaphene & Chlordane are not added to the LCS.
- Organochlorine Pesticide analysis - where reporting Spike data, Toxaphene is not added to the Spike.
- Total Recoverable Hydrocarbons - where reporting Spike & LCS data, a single spike of commercial Hydrocarbon products in the range of C12-C30 is added and it's Total Recovery is reported in the C10-C14 cell of the Report.
- pH and Free Chlorine analysed in the laboratory - Analysis on this test must begin within 30 minutes of sampling. Therefore laboratory analysis is unlikely to be completed within holding time. Analysis will begin as soon as possible after sample receipt.
- Recovery Data (Spikes & Surrogates) - where chromatographic interference does not allow the determination of Recovery the term "INT" appears against that analyte.
- Polychlorinated Biphenyls are spiked only using Aroclor 1260 in Matrix Spikes and LCS.
- For Matrix Spikes and LCS results a dash " - " in the report means that the specific analyte was not added to the QC sample.
- Duplicate RPDs are calculated from raw analytical data thus it is possible to have two sets of data.

Quality Control Results

Test	Units	Result 1		Acceptance Limits	Pass Limits	Qualifying Code
Method Blank						
Heavy Metals						
Aluminium	mg/L	< 0.05		0.05	Pass	
Aluminium (filtered)	mg/L	< 0.05		0.05	Pass	
Arsenic	mg/L	< 0.001		0.001	Pass	
Arsenic (filtered)	mg/L	< 0.001		0.001	Pass	
Barium	mg/L	< 0.02		0.02	Pass	
Barium (filtered)	mg/L	< 0.02		0.02	Pass	
Beryllium	mg/L	< 0.001		0.001	Pass	
Beryllium (filtered)	mg/L	< 0.001		0.001	Pass	
Cadmium	mg/L	< 0.0002		0.0002	Pass	
Cadmium (filtered)	mg/L	< 0.0002		0.0002	Pass	
Chromium	mg/L	< 0.001		0.001	Pass	
Chromium (filtered)	mg/L	< 0.001		0.001	Pass	
Cobalt	mg/L	< 0.001		0.001	Pass	
Cobalt (filtered)	mg/L	< 0.001		0.001	Pass	
Copper	mg/L	< 0.001		0.001	Pass	
Copper (filtered)	mg/L	< 0.001		0.001	Pass	
Iron	mg/L	< 0.05		0.05	Pass	
Iron (filtered)	mg/L	< 0.05		0.05	Pass	
Lead	mg/L	< 0.001		0.001	Pass	
Lead (filtered)	mg/L	< 0.001		0.001	Pass	
Manganese	mg/L	< 0.005		0.005	Pass	
Manganese (filtered)	mg/L	< 0.005		0.005	Pass	
Mercury	mg/L	< 0.0001		0.0001	Pass	
Mercury (filtered)	mg/L	< 0.0001		0.0001	Pass	
Nickel	mg/L	< 0.001		0.001	Pass	
Nickel (filtered)	mg/L	< 0.001		0.001	Pass	
Zinc	mg/L	< 0.005		0.005	Pass	
Zinc (filtered)	mg/L	< 0.005		0.005	Pass	
LCS - % Recovery						
Heavy Metals						
Aluminium	%	89		70-130	Pass	
Aluminium (filtered)	%	92		70-130	Pass	
Arsenic	%	91		70-130	Pass	
Arsenic (filtered)	%	91		70-130	Pass	
Barium	%	90		70-130	Pass	
Barium (filtered)	%	87		70-130	Pass	
Beryllium	%	92		70-130	Pass	
Beryllium (filtered)	%	94		70-130	Pass	
Cadmium	%	86		70-130	Pass	
Cadmium (filtered)	%	89		70-130	Pass	
Chromium	%	90		70-130	Pass	
Chromium (filtered)	%	93		70-130	Pass	
Cobalt	%	90		70-130	Pass	
Cobalt (filtered)	%	92		70-130	Pass	
Copper	%	88		70-130	Pass	
Copper (filtered)	%	93		70-130	Pass	
Iron	%	91		70-130	Pass	
Iron (filtered)	%	93		70-130	Pass	
Lead	%	88		70-130	Pass	
Lead (filtered)	%	91		70-130	Pass	

Test			Units	Result 1			Acceptance Limits	Pass Limits	Qualifying Code
Manganese			%	89			70-130	Pass	
Manganese (filtered)			%	92			70-130	Pass	
Mercury			%	103			70-130	Pass	
Mercury (filtered)			%	92			70-130	Pass	
Nickel			%	90			70-130	Pass	
Nickel (filtered)			%	94			70-130	Pass	
Zinc			%	87			70-130	Pass	
Zinc (filtered)			%	95			70-130	Pass	
Test	Lab Sample ID	QA Source	Units	Result 1			Acceptance Limits	Pass Limits	Qualifying Code
Spike - % Recovery									
Heavy Metals				Result 1					
Aluminium	S20-Ap01271	NCP	%	98			70-130	Pass	
Aluminium (filtered)	S20-Ap02189	NCP	%	99			70-130	Pass	
Arsenic	S20-Ap01271	NCP	%	93			70-130	Pass	
Arsenic (filtered)	S20-Ap02189	NCP	%	92			70-130	Pass	
Barium	S20-Ap01271	NCP	%	96			70-130	Pass	
Barium (filtered)	S20-Ap02189	NCP	%	83			70-130	Pass	
Beryllium	S20-Ap01271	NCP	%	98			70-130	Pass	
Beryllium (filtered)	S20-Ap02189	NCP	%	93			70-130	Pass	
Cadmium	S20-Ap01271	NCP	%	93			70-130	Pass	
Cadmium (filtered)	S20-Ap02189	NCP	%	92			70-130	Pass	
Chromium	S20-Ap01271	NCP	%	102			70-130	Pass	
Chromium (filtered)	S20-Ap02189	NCP	%	96			70-130	Pass	
Cobalt	S20-Ap01271	NCP	%	102			70-130	Pass	
Cobalt (filtered)	S20-Ap02189	NCP	%	96			70-130	Pass	
Copper	S20-Ap01271	NCP	%	101			70-130	Pass	
Copper (filtered)	S20-Ap02189	NCP	%	97			70-130	Pass	
Iron	S20-Ap01271	NCP	%	94			70-130	Pass	
Iron (filtered)	S20-Ap02189	NCP	%	94			70-130	Pass	
Lead	S20-Ap01271	NCP	%	94			70-130	Pass	
Lead (filtered)	S20-Ap02189	NCP	%	89			70-130	Pass	
Manganese	S20-Ap01271	NCP	%	98			70-130	Pass	
Manganese (filtered)	S20-Ap02189	NCP	%	87			70-130	Pass	
Mercury	S20-Ap01271	NCP	%	109			70-130	Pass	
Mercury (filtered)	S20-Ap02189	NCP	%	85			70-130	Pass	
Nickel	S20-Ap01271	NCP	%	101			70-130	Pass	
Nickel (filtered)	S20-Ap02189	NCP	%	98			70-130	Pass	
Zinc	S20-Ap01271	NCP	%	98			70-130	Pass	
Zinc (filtered)	S20-Ap02189	NCP	%	93			70-130	Pass	
Test	Lab Sample ID	QA Source	Units	Result 1			Acceptance Limits	Pass Limits	Qualifying Code
Duplicate									
Heavy Metals				Result 1	Result 2	RPD			
Aluminium (filtered)	S20-Ap02981	NCP	mg/L	< 0.05	< 0.05	<1	30%	Pass	
Arsenic (filtered)	S20-Ap02981	NCP	mg/L	< 0.001	< 0.001	<1	30%	Pass	
Barium (filtered)	S20-Ap02981	NCP	mg/L	0.05	0.05	9.0	30%	Pass	
Beryllium (filtered)	S20-Ap02981	NCP	mg/L	< 0.001	< 0.001	<1	30%	Pass	
Cadmium (filtered)	S20-Ap02981	NCP	mg/L	< 0.0002	< 0.0002	<1	30%	Pass	
Chromium (filtered)	S20-Ap02981	NCP	mg/L	< 0.001	< 0.001	<1	30%	Pass	
Cobalt (filtered)	S20-Ap02981	NCP	mg/L	< 0.001	< 0.001	<1	30%	Pass	
Copper (filtered)	S20-Ap02981	NCP	mg/L	< 0.001	< 0.001	<1	30%	Pass	
Iron (filtered)	S20-Ap02981	NCP	mg/L	< 0.05	< 0.05	<1	30%	Pass	
Lead (filtered)	S20-Ap02981	NCP	mg/L	< 0.001	< 0.001	<1	30%	Pass	
Manganese (filtered)	S20-Ap02981	NCP	mg/L	< 0.005	< 0.005	<1	30%	Pass	

Test	Lab Sample ID	QA Source	Units	Result 1	Result 2	RPD	Acceptance Limits	Pass Limits	Qualifying Code
Duplicate									
Heavy Metals				Result 1	Result 2	RPD			
Mercury (filtered)	S20-Ap02981	NCP	mg/L	< 0.0001	< 0.0001	<1	30%	Pass	
Nickel (filtered)	S20-Ap02981	NCP	mg/L	< 0.001	< 0.001	<1	30%	Pass	
Zinc (filtered)	S20-Ap02981	NCP	mg/L	0.017	0.019	13	30%	Pass	
Duplicate									
Heavy Metals				Result 1	Result 2	RPD			
Aluminium	S20-Ap03099	CP	mg/L	0.34	0.44	25	30%	Pass	
Arsenic	S20-Ap03099	CP	mg/L	0.006	0.006	3.0	30%	Pass	
Barium	S20-Ap03099	CP	mg/L	0.10	0.09	7.0	30%	Pass	
Beryllium	S20-Ap03099	CP	mg/L	< 0.001	< 0.001	<1	30%	Pass	
Cadmium	S20-Ap03099	CP	mg/L	< 0.0002	< 0.0002	<1	30%	Pass	
Chromium	S20-Ap03099	CP	mg/L	0.001	0.001	1.0	30%	Pass	
Cobalt	S20-Ap03099	CP	mg/L	0.002	0.002	3.0	30%	Pass	
Copper	S20-Ap03099	CP	mg/L	0.007	0.007	6.0	30%	Pass	
Iron	S20-Ap03099	CP	mg/L	0.63	0.82	27	30%	Pass	
Lead	S20-Ap03099	CP	mg/L	0.004	0.004	2.0	30%	Pass	
Manganese	S20-Ap03099	CP	mg/L	0.16	0.15	2.0	30%	Pass	
Mercury	S20-Ap03099	CP	mg/L	< 0.0001	< 0.0001	<1	30%	Pass	
Nickel	S20-Ap03099	CP	mg/L	0.001	0.001	2.0	30%	Pass	
Zinc	S20-Ap03099	CP	mg/L	0.048	0.048	<1	30%	Pass	
Duplicate									
Heavy Metals				Result 1	Result 2	RPD			
Arsenic	S20-Ap03100	CP	mg/L	0.029	0.020	33	30%	Fail	Q15
Barium	S20-Ap03100	CP	mg/L	0.19	0.13	34	30%	Fail	Q15
Cadmium	S20-Ap03100	CP	mg/L	0.029	0.021	32	30%	Fail	Q15
Chromium	S20-Ap03100	CP	mg/L	0.13	0.091	34	30%	Fail	Q15
Cobalt	S20-Ap03100	CP	mg/L	0.013	0.010	27	30%	Pass	
Copper	S20-Ap03100	CP	mg/L	0.61	0.41	38	30%	Fail	Q15
Lead	S20-Ap03100	CP	mg/L	1.4	0.98	36	30%	Fail	Q15
Manganese	S20-Ap03100	CP	mg/L	0.70	0.55	23	30%	Pass	
Mercury	S20-Ap03100	CP	mg/L	0.0004	0.0003	44	30%	Fail	Q15
Nickel	S20-Ap03100	CP	mg/L	0.038	0.028	32	30%	Fail	Q15
Zinc	S20-Ap03100	CP	mg/L	66	49	30	30%	Pass	

Comments
Sample Integrity

Custody Seals Intact (if used)	N/A
Attempt to Chill was evident	Yes
Sample correctly preserved	Yes
Appropriate sample containers have been used	Yes
Sample containers for volatile analysis received with minimal headspace	Yes
Samples received within HoldingTime	Yes
Some samples have been subcontracted	No

Qualifier Codes/Comments

Code	Description
Q15	The RPD reported passes Eurofins Environment Testing's QC - Acceptance Criteria as defined in the Internal Quality Control Review and Glossary page of this report.

Authorised By

Andrew Black	Analytical Services Manager
Gabriele Cordero	Senior Analyst-Metal (NSW)


**Glenn Jackson
General Manager**

Final report - this Report replaces any previously issued Report

- Indicates Not Requested

* Indicates NATA accreditation does not cover the performance of this service

Measurement uncertainty of test data is available on request or please [click here](#).

Eurofins shall not be liable for loss, cost, damages or expenses incurred by the client, or any other person or company, resulting from the use of any information or interpretation given in this report. In no case shall Eurofins be liable for consequential damages including, but not limited to, lost profits, damages for failure to meet deadlines and lost production arising from this report. This document shall not be reproduced except in full and relates only to the items tested. Unless indicated otherwise, the tests were performed on the samples as received.

Ramboll Environ Australia Pty Ltd
 Level 3/100 Pacific Highway
 North Sydney
 NSW 2060



NATA Accredited
Accreditation Number 1261
Site Number 18217

Accredited for compliance with ISO/IEC 17025 – Testing
 The results of the tests, calibrations and/or
 measurements included in this document are traceable
 to Australian/national standards.

Attention: **Stephen Maxwell**

Report **713878-S-V13**

Project name

Project ID **318000780**

Received Date **Apr 15, 2020**

Client Sample ID			P23_TWS1
Sample Matrix			Solid
Eurofins Sample No.			S20-Ap21446
Date Sampled			Mar 31, 2020
Test/Reference	LOR	Unit	
Heavy Metals			
Lead	1	mg/kg	500

Sample History

Where samples are submitted/analysed over several days, the last date of extraction and analysis is reported.

A recent review of our LIMS has resulted in the correction or clarification of some method identifications. Due to this, some of the method reference information on reports has changed. However, no substantive change has been made to our laboratory methods, and as such there is no change in the validity of current or previous results.

If the date and time of sampling are not provided, the Laboratory will not be responsible for compromised results should testing be performed outside the recommended holding time.

Description

Heavy Metals

Testing Site

Sydney

Extracted

Apr 16, 2020

Holding Time

180 Days

- Method: LTM-MET-3040 Metals in Waters, Soils & Sediments by ICP-MS

Australia

Melbourne
6 Monterey Road
Dandenong South VIC 3175
Phone : +61 3 8564 5000
NATA # 1261
Site # 1254 & 14271

Sydney
Unit F3, Building F
16 Mars Road
Lane Cove West NSW 2066
Phone : +61 2 9900 8400
NATA # 1261 Site # 18217

Brisbane
1/21 Smallwood Place
Murarrie QLD 4172
Phone : +61 7 3902 4600
NATA # 1261 Site # 20794

Perth
2/91 Leach Highway
Kewdale WA 6105
Phone : +61 8 9251 9600
NATA # 1261
Site # 23736

New Zealand

Auckland
35 O'Rorke Road
Penrose, Auckland 1061
Phone : +64 9 526 45 51
IANZ # 1327

Christchurch
43 Detroit Drive
Rolleston, Christchurch 7675
Phone : 0800 856 450
IANZ # 1290

Company Name: Ramboll Australia Pty Ltd
Address: Level 3/100 Pacific Highway
North Sydney
NSW 2060

Order No.:
Report #: 713878
Phone: 02 9954 8118
Fax: 02 9954 8150

Received: Apr 15, 2020 1:37 PM
Due: Apr 20, 2020
Priority: 3 Day
Contact Name: Stephen Maxwell

Project Name:
Project ID: 318000780

Eurofins Analytical Services Manager : Andrew Black

Sample Detail						Lead	Moisture Set
Melbourne Laboratory - NATA Site # 1254 & 14271							
Sydney Laboratory - NATA Site # 18217						X	X
Brisbane Laboratory - NATA Site # 20794							
Perth Laboratory - NATA Site # 23736							
External Laboratory							
No	Sample ID	Sample Date	Sampling Time	Matrix	LAB ID		
1	P3_TWS2	Mar 26, 2020		Solid	S20-Ap21433	X	X
2	P4_TWS2	Mar 24, 2020		Solid	S20-Ap21434	X	X
3	P7_TWS2	Mar 25, 2020		Solid	S20-Ap21435	X	X
4	SMCTS1	Mar 24, 2020		Solid	S20-Ap21436	X	X
5	P11_TWS1	Mar 26, 2020		Solid	S20-Ap21437	X	X
6	P11_TWS2	Mar 26, 2020		Solid	S20-Ap21438	X	X
7	P12_TWS1	Mar 26, 2020		Solid	S20-Ap21439	X	X
8	P12_TWS2	Mar 26, 2020		Solid	S20-Ap21440	X	X
9	P14_TWS3	Mar 26, 2020		Solid	S20-Ap21441	X	X
10	P18_TWS1	Mar 31, 2020		Solid	S20-Ap21442	X	X

Australia

Melbourne
 6 Monterey Road
 Dandenong South VIC 3175
 Phone : +61 3 8564 5000
 NATA # 1261
 Site # 1254 & 14271

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 NATA # 1261 Site # 18217

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 Phone : +61 7 3902 4600
 NATA # 1261 Site # 20794

Perth
 2/91 Leach Highway
 Kewdale WA 6105
 Phone : +61 8 9251 9600
 NATA # 1261
 Site # 23736

New Zealand

Auckland
 35 O'Rorke Road
 Penrose, Auckland 1061
 Phone : +64 9 526 45 51
 IANZ # 1327

Christchurch
 43 Detroit Drive
 Rolleston, Christchurch 7675
 Phone : 0800 856 450
 IANZ # 1290

Company Name: Ramboll Australia Pty Ltd
Address: Level 3/100 Pacific Highway
 North Sydney
 NSW 2060

Project Name:
Project ID: 318000780

Order No.:
Report #: 713878
Phone: 02 9954 8118
Fax: 02 9954 8150

Received: Apr 15, 2020 1:37 PM
Due: Apr 20, 2020
Priority: 3 Day
Contact Name: Stephen Maxwell

Eurofins Analytical Services Manager : Andrew Black

Sample Detail						Lead	Moisture Set
Melbourne Laboratory - NATA Site # 1254 & 14271							
Sydney Laboratory - NATA Site # 18217						X	X
Brisbane Laboratory - NATA Site # 20794							
Perth Laboratory - NATA Site # 23736							
11	P18_TWS2	Mar 31, 2020		Solid	S20-Ap21443	X	X
12	P21_TWS1	Mar 31, 2020		Solid	S20-Ap21444	X	X
13	P21_TWS2	Mar 31, 2020		Solid	S20-Ap21445	X	X
14	P23_TWS1	Mar 31, 2020		Solid	S20-Ap21446	X	X
Test Counts						14	14

Internal Quality Control Review and Glossary
General

- Laboratory QC results for Method Blanks, Duplicates, Matrix Spikes, and Laboratory Control Samples follows guidelines delineated in the National Environment Protection (Assessment of Site Contamination) Measure 1999, as amended May 2013 and are included in this QC report where applicable. Additional QC data may be available on request.
- All soil/sediment/solid results are reported on a dry basis, unless otherwise stated.
- All biota/food results are reported on a wet weight basis on the edible portion, unless otherwise stated.
- Actual LORs are matrix dependant. Quoted LORs may be raised where sample extracts are diluted due to interferences.
- Results are uncorrected for matrix spikes or surrogate recoveries except for PFAS compounds.
- SVOC analysis on waters are performed on homogenised, unfiltered samples, unless noted otherwise.
- Samples were analysed on an 'as received' basis.
- Information identified on this report with blue colour, indicates data provided by customer, that may have an impact on the results.
- This report replaces any interim results previously issued.

Holding Times

Please refer to 'Sample Preservation and Container Guide' for holding times (QS3001).

For samples received on the last day of holding time, notification of testing requirements should have been received at least 6 hours prior to sample receipt deadlines as stated on the SRA.

If the Laboratory did not receive the information in the required timeframe, and regardless of any other integrity issues, suitably qualified results may still be reported.

Holding times apply from the date of sampling, therefore compliance to these may be outside the laboratory's control.

For VOCs containing vinyl chloride, styrene and 2-chloroethyl vinyl ether the holding time is 7 days however for all other VOCs such as BTEX or C6-10 TRH then the holding time is 14 days.

****NOTE:** pH duplicates are reported as a range NOT as RPD

Units

mg/kg: milligrams per kilogram

mg/L: milligrams per litre

ug/L: micrograms per litre

ppm: Parts per million

ppb: Parts per billion

%: Percentage

org/100mL: Organisms per 100 millilitres

NTU: Nephelometric Turbidity Units

MPN/100mL: Most Probable Number of organisms per 100 millilitres

Terms

Dry	Where a moisture has been determined on a solid sample the result is expressed on a dry basis.
LOR	Limit of Reporting.
SPIKE	Addition of the analyte to the sample and reported as percentage recovery.
RPD	Relative Percent Difference between two Duplicate pieces of analysis.
LCS	Laboratory Control Sample - reported as percent recovery.
CRM	Certified Reference Material - reported as percent recovery.
Method Blank	In the case of solid samples these are performed on laboratory certified clean sands and in the case of water samples these are performed on de-ionised water.
Surr - Surrogate	The addition of a like compound to the analyte target and reported as percentage recovery.
Duplicate	A second piece of analysis from the same sample and reported in the same units as the result to show comparison.
USEPA	United States Environmental Protection Agency
APHA	American Public Health Association
TCLP	Toxicity Characteristic Leaching Procedure
COC	Chain of Custody
SRA	Sample Receipt Advice
QSM	US Department of Defense Quality Systems Manual Version 5.3
CP	Client Parent - QC was performed on samples pertaining to this report
NCP	Non-Client Parent - QC performed on samples not pertaining to this report, QC is representative of the sequence or batch that client samples were analysed within.
TEQ	Toxic Equivalency Quotient

QC - Acceptance Criteria

RPD Duplicates: Global RPD Duplicates Acceptance Criteria is 30% however the following acceptance guidelines are equally applicable:

Results <10 times the LOR : No Limit

Results between 10-20 times the LOR : RPD must lie between 0-50%

Results >20 times the LOR : RPD must lie between 0-30%

Surrogate Recoveries: Recoveries must lie between 20-130% Phenols & 50-150% PFASs

PFAS field samples that contain surrogate recoveries in excess of the QC limit designated in QSM 5.3 where no positive PFAS results have been reported have been reviewed and no data was affected.

WA DWER (n=10): PFBA, PFPeA, PFHxA, PFHpA, PFOA, PFBS, PFHxS, PFOS, 6:2 FTSA, 8:2 FTSA

QC Data General Comments

- Where a result is reported as a less than (<), higher than the nominated LOR, this is due to either matrix interference, extract dilution required due to interferences or contaminant levels within the sample, high moisture content or insufficient sample provided.
- Duplicate data shown within this report that states the word "BATCH" is a Batch Duplicate from outside of your sample batch, but within the laboratory sample batch at a 1:10 ratio. The Parent and Duplicate data shown is not data from your samples.
- Organochlorine Pesticide analysis - where reporting LCS data, Toxaphene & Chlordane are not added to the LCS.
- Organochlorine Pesticide analysis - where reporting Spike data, Toxaphene is not added to the Spike.
- Total Recoverable Hydrocarbons - where reporting Spike & LCS data, a single spike of commercial Hydrocarbon products in the range of C12-C30 is added and it's Total Recovery is reported in the C10-C14 cell of the Report.
- pH and Free Chlorine analysed in the laboratory - Analysis on this test must begin within 30 minutes of sampling. Therefore laboratory analysis is unlikely to be completed within holding time. Analysis will begin as soon as possible after sample receipt.
- Recovery Data (Spikes & Surrogates) - where chromatographic interference does not allow the determination of Recovery the term "INT" appears against that analyte.
- Polychlorinated Biphenyls are spiked only using Aroclor 1260 in Matrix Spikes and LCS.
- For Matrix Spikes and LCS results a dash " - " in the report means that the specific analyte was not added to the QC sample.
- Duplicate RPDs are calculated from raw analytical data thus it is possible to have two sets of data.

Quality Control Results

Test				Units	Result 1			Acceptance Limits	Pass Limits	Qualifying Code	
Method Blank											
Heavy Metals											
Lead				mg/kg	< 1			1	Pass		
LCS - % Recovery											
Heavy Metals											
Lead				%	96			70-130	Pass		
Test	Lab Sample ID	QA Source	Units	Result 1				Acceptance Limits	Pass Limits	Qualifying Code	
Spike - % Recovery											
Heavy Metals					Result 1						
Lead				B20-Ap16161	NCP	%	89	70-130	Pass		
Spike - % Recovery											
Heavy Metals					Result 1						
Lead				B20-Ap16161	NCP	%	89	70-130	Pass		
Spike - % Recovery											
Heavy Metals					Result 1						
Lead				B20-Ap16161	NCP	%	89	70-130	Pass		
Spike - % Recovery											
Heavy Metals					Result 1						
Lead				B20-Ap16161	NCP	%	89	70-130	Pass		
Spike - % Recovery											
Heavy Metals					Result 1						
Lead				B20-Ap16161	NCP	%	89	70-130	Pass		
Spike - % Recovery											
Heavy Metals					Result 1						
Lead				B20-Ap16161	NCP	%	89	70-130	Pass		
Spike - % Recovery											
Heavy Metals					Result 1						
Lead				B20-Ap16161	NCP	%	89	70-130	Pass		
Spike - % Recovery											
Heavy Metals					Result 1						
Lead				B20-Ap16161	NCP	%	89	70-130	Pass		
Spike - % Recovery											
Heavy Metals					Result 1						
Lead				S20-Ap21444	CP	%	87	70-130	Pass		
Spike - % Recovery											
Heavy Metals					Result 1						
Lead				B20-Ap16161	NCP	%	89	70-130	Pass		
Test	Lab Sample ID	QA Source	Units	Result 1				Acceptance Limits	Pass Limits	Qualifying Code	
Duplicate											
Heavy Metals					Result 1	Result 2	RPD				
Lead				S20-Ap17051	NCP	mg/kg	29	35	19	30%	Pass
Duplicate											
Heavy Metals					Result 1	Result 2	RPD				
Lead				S20-Ap17051	NCP	mg/kg	29	**	19	30%	Pass
Duplicate											
Heavy Metals					Result 1	Result 2	RPD				
Lead				S20-Ap17051	NCP	mg/kg	29	**	19	30%	Pass
Duplicate											
Heavy Metals					Result 1	Result 2	RPD				
Lead				S20-Ap17051	NCP	mg/kg	29	**	19	30%	Pass

Duplicate								
Heavy Metals				Result 1	Result 2	RPD		
Lead	S20-Ap17051	NCP	mg/kg	29	**	19	30%	Pass
Duplicate								
Heavy Metals				Result 1	Result 2	RPD		
Lead	S20-Ap17051	NCP	mg/kg	29	**	19	30%	Pass
Duplicate								
Heavy Metals				Result 1	Result 2	RPD		
Lead	S20-Ap17051	NCP	mg/kg	29	**	19	30%	Pass
Duplicate								
Heavy Metals				Result 1	Result 2	RPD		
Lead	S20-Ap21444	CP	mg/kg	70	69	2.0	30%	Pass
Duplicate								
Heavy Metals				Result 1	Result 2	RPD		
Lead	S20-Ap17051	NCP	mg/kg	29	**	19	30%	Pass

Comments

New version to split samples.

Sample Integrity

Custody Seals Intact (if used)	N/A
Attempt to Chill was evident	N/A
Sample correctly preserved	Yes
Appropriate sample containers have been used	Yes
Sample containers for volatile analysis received with minimal headspace	Yes
Samples received within HoldingTime	Yes
Some samples have been subcontracted	No

Authorised By

Andrew Black Analytical Services Manager
Gabriele Cordero Senior Analyst-Metal (NSW)



Glenn Jackson
General Manager

Final report - this Report replaces any previously issued Report

- Indicates Not Requested

* Indicates NATA accreditation does not cover the performance of this service

Measurement uncertainty of test data is available on request or please [click here](#).

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CHAIN OF CUSTODY RECORD

ABN 50 005 085 521

Sydney Laboratory
Unit F3 Bld F, 16 Mars Rd, Lane Cove West, NSW 2066
02 9900 8400 EnviroSampleNSW@eurofins.com

Brisbane Laboratory
Unit 1, 21 Smallwood Pl, Murarie, QLD 4172
07 3902 4600 EnviroSampleQLD@eurofins.com

Perth Laboratory
Unit 2, 91 Leach Highway, Kewdale WA 6105
08 9251 9600 EnviroSampleWA@eurofins.com

Melbourne Laboratory
2 Kingston Town Close, Oakleigh, VIC 3166
03 8564 5000 EnviroSampleVic@eurofins.com

Company		Ramboll		Project No	318000780				Project Manager	Stephen Maxwell				Sampler(s)	JK + RC		
Address		50 Glebe Road the Junction		Project Name					EDD Format (ESdat, EQUIS)	Excel and PDF				Handed over by	SM		
Contact Name		Stephen Maxwell		Analyses <small>(Note: Where metals are requested, please specify "Total" or "Filtered" - SUITE code must be used to attract SUITE pricing)</small>	Lead	M13 (Al, As, Ba, Be, Cd, Cr, Co, Cu, Fe, Pb, Mn, Hg, Ni, Zn) total	M13 (Al, As, Ba, Be, Cd, Cr, Co, Cu, Fe, Pb, Mn, Hg, Ni, Zn) dissolved							Email for Invoice		smaxwell@ramboll.com asiapac-accounts@ramboll.com	
Phone No														Email for Results		smaxwell@ramboll.com jblackwell@ramboll.com rcondon@ramboll.com shyde@ramboll.com	
Special Directions														Turnaround Time (TAT) Requirements (default will be 5 days if not ticked)		<input type="checkbox"/> Overnight (9am)* <input type="checkbox"/> 1 Day* <input type="checkbox"/> 2 Day* <input type="checkbox"/> 3 Day* <input checked="" type="checkbox"/> 5 Day* <input type="checkbox"/> Other () * Surcharges apply	
Purchase Order														Sample Comments / Dangerous Goods Hazard Warning			
Quote ID No		180813RAMN_1															
No	Client Sample ID	Sampled Date/Time (dd/mm/yy hh:mm)	Matrix (Solid (S) Water (W))														
1	P24_HA01_0.0	1/04/20	S	X													
2	P24_HA01_0.2	1/04/20	S	X													
3	P24_HA02_0.0	1/04/20	S	X													
4	P24_HA02_0.2	1/04/20	S	X													
5	P24_HA03_0.0	1/04/20	S	X													
6	P24_HA03_0.2	1/04/20	S	X													
7	P24_HA04_0.0	1/04/20	S	X													
8	P24_HA04_0.2	1/04/20	S	X													
9	P24_HA05_0.0	1/04/20	S	X													
10	P24_HA05_0.2	1/04/20	S	X													
Total Counts				10													

Method of Shipment	<input type="checkbox"/> Courier (#) <input type="checkbox"/> Hand Delivered <input type="checkbox"/> Postal	Name	Signature	Date	Time
Eurofins mgt Laboratory Use Only	Received By	SYD BNE MEL PER ADL NTL DRW	Signature	Date	Time
	Received By	SYD BNE MEL PER ADL NTL DRW	Signature	Date	Time

Temperature 26.2°C
Report No 712479

Submission of samples to the laboratory will be deemed as acceptance of Eurofins | mgt Standard Terms and Conditions unless agreed otherwise. A copy of Eurofins | mgt Standard Terms and Conditions is available on request.

Eurofins Environment Testing Australia Pty Ltd trading as Eurofins | mgt



CHAIN OF CUSTODY RECORD

ABN 50 005 085 521

Sydney Laboratory
Unit F3 Bld.F, 16 Mars Rd, Lane Cove West, NSW 2066
02 9900 8400 EnviroSampleNSW@eurofins.com

Brisbane Laboratory
Unit 1, 21 Smallwood Pl., Murarie, QLD 4172
07 3902 4600 EnviroSampleQLD@eurofins.com

Perth Laboratory
Unit 2, 91 Leach Highway, Kewdale WA 6105
08 9251 9600 EnviroSampleWA@eurofins.com

Melbourne Laboratory
2 Kingston Town Close, Oakleigh, VIC 3166
03 8564 5000 EnviroSampleVic@eurofins.com

Company	Ramboll			Project No	318000780			Project Manager	Stephen Maxwell			Sampler(s)	JB + JAB					
Address	50 Glebe Road the Junction			Project Name				EDD Format (ESdat, EQUIS)	Excel and PDF			Handed over by	SM					
Contact Name	Stephen Maxwell			Analyses <small>(Note: Where metals are requested, please specify "Total" or "Filtered" SUITE code must be used to attract SUITE pricing)</small>	Lead	M13 (Al, As, Ba, Be, Cd, Cr, Co, Cu, Fe, Pb, Mn, Hg, Ni, Zn) total	M13 (Al, As, Ba, Be, Cd, Cr, Co, Cu, Fe, Pb, Mn, Hg, Ni, Zn) dissolved								Email for Invoice	smaxwell@ramboll.com asiapac-accounts@ramboll.com		
Phone No															Email for Results	smaxwell@ramboll.com jblackwell@ramboll.com rcondon@ramboll.com shyde@ramboll.com		
Special Directions															Turnaround Time (TAT) Requirements <small>(default will be 5 days if not ticked)</small>			
Purchase Order															<input type="checkbox"/> Overnight (9am)* <input type="checkbox"/> 1 Day* <input type="checkbox"/> 2 Day* <input type="checkbox"/> 3 Day* <input checked="" type="checkbox"/> 5 Day* <input type="checkbox"/> Other () * Surcharges apply			
Quote ID No	180813RAMN_1														Sample Comments / Dangerous Goods Hazard Warning			
No	Client Sample ID	Sampled Date/Time (dd/mm/yy hh:mm)	Matrix (Solid (S) Water (W))															
1	P24_TW1	1/04/20	W	X	X													
2	P24_TW2	1/04/20	W	X	X													
3	P24_TWS1	1/04/20	sediment	X													Please homogenise in this sample then analyse	
4	P24_TWS2	1/04/20	sediment	X													Please homogenise in this sample then analyse	
5																		
6																		
7																		
8																		
9																		
10																		
Total Counts				2	2	2												
Method of Shipment	<input type="checkbox"/> Courier (#) <input type="checkbox"/> Hand Delivered <input type="checkbox"/> Postal			Name				Signature				Date	_/_/		Time	_:		
Eurofins mgt Laboratory Use Only	Received By	<i>Rupan</i>		SYD BNE MEL PER ADL NTL DRW	Signature			Date	<i>26/04/20</i>		Time	<i>2:36 PM</i>		Temperature				
	Received By			SYD BNE MEL PER ADL NTL DRW	Signature			Date	_/_/		Time	_:		Report No				

Submission of samples to the laboratory will be deemed as acceptance of Eurofins | mgt Standard Terms and Conditions unless agreed otherwise. A copy of Eurofins | mgt Standard Terms and Conditions is available on request.

Melbourne

6 Monterey Road
Dandenong South Vic 3175
Phone : +61 3 8564 5000
NATA # 1261
Site # 1254 & 14271

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Phone : +61 2 9900 8400
NATA # 1261 Site # 18217

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Phone : +61 7 3902 4600
NATA # 1261 Site # 20794

Perth

2/91 Leach Highway
Kewdale WA 6105
Phone : +61 8 9251 9600
NATA # 1261 Site # 23736

Sample Receipt Advice

Company name: **Ramboll Australia Pty Ltd**

Contact name: **Stephen Maxwell**

Project ID: **318000780**

COC number: **Not provided**

Turn around time: **5 Day**

Date/Time received: **Apr 6, 2020 2:36 PM**

Eurofins reference: **712479**

Sample information

- A detailed list of analytes logged into our LIMS, is included in the attached summary table.
- All samples have been received as described on the above COC.
- COC has been completed correctly.
- Attempt to chill was evident.
- Appropriately preserved sample containers have been used.
- All samples were received in good condition.
- Samples have been provided with adequate time to commence analysis in accordance with the relevant holding times.
- Appropriate sample containers have been used.
- Sample containers for volatile analysis received with zero headspace.
- Split sample sent to requested external lab.
- Some samples have been subcontracted.
- N/A Custody Seals intact (if used).

Contact notes

If you have any questions with respect to these samples please contact:

Andrew Black on Phone : (+61) 2 9900 8490 or by e.mail: AndrewBlack@eurofins.com

Results will be delivered electronically via e.mail to Stephen Maxwell - smaxwell@ramboll.com.

Note: A copy of these results will also be delivered to the general Ramboll Australia Pty Ltd email address.

Ramboll Environ Australia Pty Ltd
 Level 3/100 Pacific Highway
 North Sydney
 NSW 2060



NATA Accredited
 Accreditation Number 1261
 Site Number 18217

Accredited for compliance with ISO/IEC 17025 – Testing
 The results of the tests, calibrations and/or
 measurements included in this document are traceable
 to Australian/national standards.

Attention: Stephen Maxwell

Report 712479-S
 Project name
 Project ID 318000780
 Received Date Apr 06, 2020

Client Sample ID			P24_HA01_0.0	P24_HA01_0.2	P24_HA02_0.0	P24_HA02_0.2
Sample Matrix			Soil	Soil	Soil	Soil
Eurofins Sample No.			S20-Ap09824	S20-Ap09825	S20-Ap09826	S20-Ap09827
Date Sampled			Apr 01, 2020	Apr 01, 2020	Apr 01, 2020	Apr 01, 2020
Test/Reference	LOR	Unit				
Heavy Metals						
Lead	5	mg/kg	37	24	22	18
% Moisture	1	%	11	9.8	9.0	9.0

Client Sample ID			P24_HA03_0.0	P24_HA03_0.2	P24_HA04_0.0	P24_HA04_0.2
Sample Matrix			Soil	Soil	Soil	Soil
Eurofins Sample No.			S20-Ap09828	S20-Ap09829	S20-Ap09830	S20-Ap09831
Date Sampled			Apr 01, 2020	Apr 01, 2020	Apr 01, 2020	Apr 01, 2020
Test/Reference	LOR	Unit				
Heavy Metals						
Lead	5	mg/kg	21	19	29	31
% Moisture	1	%	10.0	10	3.4	4.7

Client Sample ID			P24_HA05_0.0	P24_HA05_0.2
Sample Matrix			Soil	Soil
Eurofins Sample No.			S20-Ap09832	S20-Ap09833
Date Sampled			Apr 01, 2020	Apr 01, 2020
Test/Reference	LOR	Unit		
Heavy Metals				
Lead	5	mg/kg	27	50
% Moisture	1	%	6.4	9.0

Sample History

Where samples are submitted/analysed over several days, the last date of extraction and analysis is reported.

A recent review of our LIMS has resulted in the correction or clarification of some method identifications. Due to this, some of the method reference information on reports has changed. However, no substantive change has been made to our laboratory methods, and as such there is no change in the validity of current or previous results.

If the date and time of sampling are not provided, the Laboratory will not be responsible for compromised results should testing be performed outside the recommended holding time.

Description

Heavy Metals

- Method: LTM-MET-3040 Metals in Waters, Soils & Sediments by ICP-MS

% Moisture

- Method: LTM-GEN-7080 Moisture

Testing Site

Sydney

Sydney

Extracted

Apr 09, 2020

Apr 07, 2020

Holding Time

180 Days

14 Days

Australia

Melbourne
6 Monterey Road
Dandenong South VIC 3175
Phone : +61 3 8564 5000
NATA # 1261
Site # 1254 & 14271

Sydney
Unit F3, Building F
16 Mars Road
Lane Cove West NSW 2066
Phone : +61 2 9900 8400
NATA # 1261 Site # 18217

Brisbane
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New Zealand

Auckland
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Phone : +64 9 526 45 51
IANZ # 1327

Christchurch
43 Detroit Drive
Rolleston, Christchurch 7675
Phone : 0800 856 450
IANZ # 1290

Company Name:	Ramboll Australia Pty Ltd	Order No.:		Received:	Apr 6, 2020 2:36 PM
Address:	Level 3/100 Pacific Highway North Sydney NSW 2060	Report #:	712479	Due:	Apr 15, 2020
Project Name:		Phone:	02 9954 8118	Priority:	5 Day
Project ID:	318000780	Fax:	02 9954 8150	Contact Name:	Stephen Maxwell

Eurofins Analytical Services Manager : Andrew Black

Sample Detail						Aluminium	Aluminium (filtered)	Arsenic	Arsenic (filtered)	Barium	Barium (filtered)	Beryllium	Beryllium (filtered)	Cadmium	Cadmium (filtered)	Chromium	Chromium (filtered)	Cobalt	Cobalt (filtered)	Copper	Copper (filtered)	Iron	Iron (filtered)	Lead	Lead (filtered)	Manganese	Manganese (filtered)	Mercury	Mercury (filtered)	Nickel	Nickel (filtered)	Zinc	Zinc (filtered)	Moisture Set	
Melbourne Laboratory - NATA Site # 1254 & 14271																																			
Sydney Laboratory - NATA Site # 18217						X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X
Brisbane Laboratory - NATA Site # 20794																																			
Perth Laboratory - NATA Site # 23736																																			
External Laboratory																																			
No	Sample ID	Sample Date	Sampling Time	Matrix	LAB ID																														
1	P24_HA01_0.0	Apr 01, 2020		Soil	S20-Ap09824																		X										X		
2	P24_HA01_0.2	Apr 01, 2020		Soil	S20-Ap09825																		X										X		
3	P24_HA02_0.0	Apr 01, 2020		Soil	S20-Ap09826																		X										X		
4	P24_HA02_0.2	Apr 01, 2020		Soil	S20-Ap09827																		X										X		
5	P24_HA03_0.0	Apr 01, 2020		Soil	S20-Ap09828																		X										X		
6	P24_HA03_0.2	Apr 01, 2020		Soil	S20-Ap09829																		X										X		

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Eurofins Analytical Services Manager : Andrew Black

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Brisbane Laboratory - NATA Site # 20794																																				
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7	P24_HA04_0	Apr 01, 2020		Soil	S20-Ap09830																		X											X		
8	P24_HA04_2	Apr 01, 2020		Soil	S20-Ap09831																		X											X		
9	P24_HA05_0	Apr 01, 2020		Soil	S20-Ap09832																		X											X		
10	P24_HA05_2	Apr 01, 2020		Soil	S20-Ap09833																		X											X		
11	P24_TW1	Apr 01, 2020		Water	S20-Ap09834	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X			
12	P24_TW2	Apr 01, 2020		Water	S20-Ap09835	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X			
13	P24_TWS1	Apr 01, 2020		Water	S20-Ap09836																		X													
14	P24_TWS2	Apr 01, 2020		Water	S20-Ap09837																		X													
Test Counts						2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	14	2	2	2	2	2	2	2	2	2	10	

Internal Quality Control Review and Glossary
General

- Laboratory QC results for Method Blanks, Duplicates, Matrix Spikes, and Laboratory Control Samples follows guidelines delineated in the National Environment Protection (Assessment of Site Contamination) Measure 1999, as amended May 2013 and are included in this QC report where applicable. Additional QC data may be available on request.
- All soil/sediment/solid results are reported on a dry basis, unless otherwise stated.
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- Actual LORs are matrix dependant. Quoted LORs may be raised where sample extracts are diluted due to interferences.
- Results are uncorrected for matrix spikes or surrogate recoveries except for PFAS compounds.
- SVOC analysis on waters are performed on homogenised, unfiltered samples, unless noted otherwise.
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- Information identified on this report with blue colour, indicates data provided by customer, that may have an impact on the results.
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Holding Times

Please refer to 'Sample Preservation and Container Guide' for holding times (QS3001).

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For VOCs containing vinyl chloride, styrene and 2-chloroethyl vinyl ether the holding time is 7 days however for all other VOCs such as BTEX or C6-10 TRH then the holding time is 14 days.

****NOTE:** pH duplicates are reported as a range NOT as RPD

Units

mg/kg: milligrams per kilogram

mg/L: milligrams per litre

ug/L: micrograms per litre

ppm: Parts per million

ppb: Parts per billion

%: Percentage

org/100mL: Organisms per 100 millilitres

NTU: Nephelometric Turbidity Units

MPN/100mL: Most Probable Number of organisms per 100 millilitres

Terms

Dry	Where a moisture has been determined on a solid sample the result is expressed on a dry basis.
LOR	Limit of Reporting.
SPIKE	Addition of the analyte to the sample and reported as percentage recovery.
RPD	Relative Percent Difference between two Duplicate pieces of analysis.
LCS	Laboratory Control Sample - reported as percent recovery.
CRM	Certified Reference Material - reported as percent recovery.
Method Blank	In the case of solid samples these are performed on laboratory certified clean sands and in the case of water samples these are performed on de-ionised water.
Surr - Surrogate	The addition of a like compound to the analyte target and reported as percentage recovery.
Duplicate	A second piece of analysis from the same sample and reported in the same units as the result to show comparison.
USEPA	United States Environmental Protection Agency
APHA	American Public Health Association
TCLP	Toxicity Characteristic Leaching Procedure
COC	Chain of Custody
SRA	Sample Receipt Advice
QSM	US Department of Defense Quality Systems Manual Version 5.3
CP	Client Parent - QC was performed on samples pertaining to this report
NCP	Non-Client Parent - QC performed on samples not pertaining to this report, QC is representative of the sequence or batch that client samples were analysed within.
TEQ	Toxic Equivalency Quotient

QC - Acceptance Criteria

RPD Duplicates: Global RPD Duplicates Acceptance Criteria is 30% however the following acceptance guidelines are equally applicable:

Results <10 times the LOR : No Limit

Results between 10-20 times the LOR : RPD must lie between 0-50%

Results >20 times the LOR : RPD must lie between 0-30%

Surrogate Recoveries: Recoveries must lie between 20-130% Phenols & 50-150% PFASs

PFAS field samples that contain surrogate recoveries in excess of the QC limit designated in QSM 5.3 where no positive PFAS results have been reported have been reviewed and no data was affected.

WA DWER (n=10): PFBA, PFPeA, PFHxA, PFHpA, PFOA, PFBS, PFHxS, PFOS, 6:2 FTSA, 8:2 FTSA

QC Data General Comments

- Where a result is reported as a less than (<), higher than the nominated LOR, this is due to either matrix interference, extract dilution required due to interferences or contaminant levels within the sample, high moisture content or insufficient sample provided.
- Duplicate data shown within this report that states the word "BATCH" is a Batch Duplicate from outside of your sample batch, but within the laboratory sample batch at a 1:10 ratio. The Parent and Duplicate data shown is not data from your samples.
- Organochlorine Pesticide analysis - where reporting LCS data, Toxaphene & Chlordane are not added to the LCS.
- Organochlorine Pesticide analysis - where reporting Spike data, Toxaphene is not added to the Spike.
- Total Recoverable Hydrocarbons - where reporting Spike & LCS data, a single spike of commercial Hydrocarbon products in the range of C12-C30 is added and it's Total Recovery is reported in the C10-C14 cell of the Report.
- pH and Free Chlorine analysed in the laboratory - Analysis on this test must begin within 30 minutes of sampling. Therefore laboratory analysis is unlikely to be completed within holding time. Analysis will begin as soon as possible after sample receipt.
- Recovery Data (Spikes & Surrogates) - where chromatographic interference does not allow the determination of Recovery the term "INT" appears against that analyte.
- Polychlorinated Biphenyls are spiked only using Aroclor 1260 in Matrix Spikes and LCS.
- For Matrix Spikes and LCS results a dash " - " in the report means that the specific analyte was not added to the QC sample.
- Duplicate RPDs are calculated from raw analytical data thus it is possible to have two sets of data.

Quality Control Results

Test				Units	Result 1		Acceptance Limits	Pass Limits	Qualifying Code		
Method Blank											
Heavy Metals											
Lead				mg/kg	< 5		5	Pass			
LCS - % Recovery											
Heavy Metals											
Lead				%	100		70-130	Pass			
Test	Lab Sample ID	QA Source	Units	Result 1			Acceptance Limits	Pass Limits	Qualifying Code		
Spike - % Recovery											
Heavy Metals											
Lead				S20-Ap09829	CP	%	87	70-130	Pass		
Test	Lab Sample ID	QA Source	Units	Result 1			Acceptance Limits	Pass Limits	Qualifying Code		
Duplicate											
				Result 1	Result 2	RPD					
% Moisture				S20-Ap10676	NCP	%	17	16	5.0	30%	Pass
Duplicate											
Heavy Metals											
Lead				S20-Ap09828	CP	mg/kg	21	24	12	30%	Pass

Comments**Sample Integrity**

Custody Seals Intact (if used)	N/A
Attempt to Chill was evident	No
Sample correctly preserved	Yes
Appropriate sample containers have been used	Yes
Sample containers for volatile analysis received with minimal headspace	Yes
Samples received within HoldingTime	Yes
Some samples have been subcontracted	No

Authorised By

Andrew Black Analytical Services Manager
Gabriele Cordero Senior Analyst-Metal (NSW)

**Glenn Jackson
General Manager**

Final report - this Report replaces any previously issued Report

- Indicates Not Requested

* Indicates NATA accreditation does not cover the performance of this service

Measurement uncertainty of test data is available on request or please [click here](#).

Eurofins shall not be liable for loss, cost, damages or expenses incurred by the client, or any other person or company, resulting from the use of any information or interpretation given in this report. In no case shall Eurofins be liable for consequential damages including, but not limited to, lost profits, damages for failure to meet deadlines and lost production arising from this report. This document shall not be reproduced except in full and relates only to the items tested. Unless indicated otherwise, the tests were performed on the samples as received.

Ramboll Environ Australia Pty Ltd
 Level 3/100 Pacific Highway
 North Sydney
 NSW 2060



NATA Accredited
 Accreditation Number 1261
 Site Number 18217

Accredited for compliance with ISO/IEC 17025 – Testing
 The results of the tests, calibrations and/or
 measurements included in this document are traceable
 to Australian/national standards.

Attention: Stephen Maxwell

Report 712479-W
 Project name
 Project ID 318000780
 Received Date Apr 06, 2020

Client Sample ID			P24_TW1	P24_TW2	P24_TWS1	P24_TWS2
Sample Matrix			Water	Water	Water	Water
Eurofins Sample No.			S20-Ap09834	S20-Ap09835	S20-Ap09836	S20-Ap09837
Date Sampled			Apr 01, 2020	Apr 01, 2020	Apr 01, 2020	Apr 01, 2020
Test/Reference	LOR	Unit				
Heavy Metals						
Aluminium	0.05	mg/L	0.06	< 0.05	-	-
Aluminium (filtered)	0.05	mg/L	< 0.05	< 0.05	-	-
Arsenic	0.001	mg/L	< 0.001	< 0.001	-	-
Arsenic (filtered)	0.001	mg/L	< 0.001	< 0.001	-	-
Barium	0.02	mg/L	< 0.02	< 0.02	-	-
Barium (filtered)	0.02	mg/L	< 0.02	< 0.02	-	-
Beryllium	0.001	mg/L	< 0.001	< 0.001	-	-
Beryllium (filtered)	0.001	mg/L	< 0.001	< 0.001	-	-
Cadmium	0.0002	mg/L	< 0.0002	< 0.0002	-	-
Cadmium (filtered)	0.0002	mg/L	< 0.0002	< 0.0002	-	-
Chromium	0.001	mg/L	0.001	0.001	-	-
Chromium (filtered)	0.001	mg/L	< 0.001	< 0.001	-	-
Cobalt	0.001	mg/L	< 0.001	< 0.001	-	-
Cobalt (filtered)	0.001	mg/L	< 0.001	< 0.001	-	-
Copper	0.001	mg/L	< 0.001	< 0.001	-	-
Copper (filtered)	0.001	mg/L	< 0.001	< 0.001	-	-
Iron	0.05	mg/L	0.10	< 0.05	-	-
Iron (filtered)	0.05	mg/L	< 0.05	< 0.05	-	-
Lead	0.001	mg/L	< 0.001	< 0.001	0.069	0.16
Lead (filtered)	0.001	mg/L	< 0.001	< 0.001	-	-
Manganese	0.005	mg/L	0.007	0.014	-	-
Manganese (filtered)	0.005	mg/L	0.006	0.014	-	-
Mercury	0.0001	mg/L	< 0.0001	< 0.0001	-	-
Mercury (filtered)	0.0001	mg/L	< 0.0001	< 0.0001	-	-
Nickel	0.001	mg/L	< 0.001	0.001	-	-
Nickel (filtered)	0.001	mg/L	< 0.001	< 0.001	-	-
Zinc	0.005	mg/L	0.064	0.044	-	-
Zinc (filtered)	0.005	mg/L	0.058	0.030	-	-

Sample History

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Description	Testing Site	Extracted	Holding Time
Heavy Metals - Method: LTM-MET-3040 Metals in Waters, Soils & Sediments by ICP-MS	Sydney	Apr 15, 2020	180 Days
Heavy Metals (filtered) - Method: LTM-MET-3040 Metals in Waters, Soils & Sediments by ICP-MS	Sydney	Apr 14, 2020	180 Days
Mobil Metals : Metals M15 - Method: LTM-MET-3040 Metals in Waters, Soils & Sediments by ICP-MS	Sydney	Apr 14, 2020	28 Days

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Company Name: Ramboll Australia Pty Ltd
Address: Level 3/100 Pacific Highway
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NSW 2060

Order No.:
Report #: 712479
Phone: 02 9954 8118
Fax: 02 9954 8150

Received: Apr 6, 2020 2:36 PM
Due: Apr 15, 2020
Priority: 5 Day
Contact Name: Stephen Maxwell

Project Name:
Project ID: 318000780

Eurofins Analytical Services Manager : Andrew Black

Sample Detail						Aluminium	Aluminium (filtered)	Arsenic	Arsenic (filtered)	Barium	Barium (filtered)	Beryllium	Beryllium (filtered)	Cadmium	Cadmium (filtered)	Chromium	Chromium (filtered)	Cobalt	Cobalt (filtered)	Copper	Copper (filtered)	Iron	Iron (filtered)	Lead	Lead (filtered)	Manganese	Manganese (filtered)	Mercury	Mercury (filtered)	Nickel	Nickel (filtered)	Zinc	Zinc (filtered)	Moisture Set		
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Project ID:	318000780	Fax:	02 9954 8150	Contact Name:	Stephen Maxwell

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12	P24_TW2	Apr 01, 2020		Water	S20-Ap09835	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X			
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org/100mL: Organisms per 100 millilitres

NTU: Nephelometric Turbidity Units

MPN/100mL: Most Probable Number of organisms per 100 millilitres

Terms

Dry	Where a moisture has been determined on a solid sample the result is expressed on a dry basis.
LOR	Limit of Reporting.
SPIKE	Addition of the analyte to the sample and reported as percentage recovery.
RPD	Relative Percent Difference between two Duplicate pieces of analysis.
LCS	Laboratory Control Sample - reported as percent recovery.
CRM	Certified Reference Material - reported as percent recovery.
Method Blank	In the case of solid samples these are performed on laboratory certified clean sands and in the case of water samples these are performed on de-ionised water.
Surr - Surrogate	The addition of a like compound to the analyte target and reported as percentage recovery.
Duplicate	A second piece of analysis from the same sample and reported in the same units as the result to show comparison.
USEPA	United States Environmental Protection Agency
APHA	American Public Health Association
TCLP	Toxicity Characteristic Leaching Procedure
COC	Chain of Custody
SRA	Sample Receipt Advice
QSM	US Department of Defense Quality Systems Manual Version 5.3
CP	Client Parent - QC was performed on samples pertaining to this report
NCP	Non-Client Parent - QC performed on samples not pertaining to this report, QC is representative of the sequence or batch that client samples were analysed within.
TEQ	Toxic Equivalency Quotient

QC - Acceptance Criteria

RPD Duplicates: Global RPD Duplicates Acceptance Criteria is 30% however the following acceptance guidelines are equally applicable:

Results <10 times the LOR : No Limit

Results between 10-20 times the LOR : RPD must lie between 0-50%

Results >20 times the LOR : RPD must lie between 0-30%

Surrogate Recoveries: Recoveries must lie between 20-130% Phenols & 50-150% PFASs

PFAS field samples that contain surrogate recoveries in excess of the QC limit designated in QSM 5.3 where no positive PFAS results have been reported have been reviewed and no data was affected.

WA DWER (n=10): PFBA, PFPeA, PFHxA, PFHpA, PFOA, PFBS, PFHxS, PFOS, 6:2 FTSA, 8:2 FTSA

QC Data General Comments

- Where a result is reported as a less than (<), higher than the nominated LOR, this is due to either matrix interference, extract dilution required due to interferences or contaminant levels within the sample, high moisture content or insufficient sample provided.
- Duplicate data shown within this report that states the word "BATCH" is a Batch Duplicate from outside of your sample batch, but within the laboratory sample batch at a 1:10 ratio. The Parent and Duplicate data shown is not data from your samples.
- Organochlorine Pesticide analysis - where reporting LCS data, Toxaphene & Chlordane are not added to the LCS.
- Organochlorine Pesticide analysis - where reporting Spike data, Toxaphene is not added to the Spike.
- Total Recoverable Hydrocarbons - where reporting Spike & LCS data, a single spike of commercial Hydrocarbon products in the range of C12-C30 is added and it's Total Recovery is reported in the C10-C14 cell of the Report.
- pH and Free Chlorine analysed in the laboratory - Analysis on this test must begin within 30 minutes of sampling. Therefore laboratory analysis is unlikely to be completed within holding time. Analysis will begin as soon as possible after sample receipt.
- Recovery Data (Spikes & Surrogates) - where chromatographic interference does not allow the determination of Recovery the term "INT" appears against that analyte.
- Polychlorinated Biphenyls are spiked only using Aroclor 1260 in Matrix Spikes and LCS.
- For Matrix Spikes and LCS results a dash " - " in the report means that the specific analyte was not added to the QC sample.
- Duplicate RPDs are calculated from raw analytical data thus it is possible to have two sets of data.

Quality Control Results

Test	Units	Result 1			Acceptance Limits	Pass Limits	Qualifying Code
Method Blank							
Heavy Metals							
Aluminium	mg/L	< 0.05			0.05	Pass	
Aluminium (filtered)	mg/L	< 0.05			0.05	Pass	
Arsenic	mg/L	< 0.001			0.001	Pass	
Arsenic (filtered)	mg/L	< 0.001			0.001	Pass	
Barium	mg/L	< 0.02			0.02	Pass	
Barium (filtered)	mg/L	< 0.02			0.02	Pass	
Beryllium	mg/L	< 0.001			0.001	Pass	
Beryllium (filtered)	mg/L	< 0.001			0.001	Pass	
Cadmium	mg/L	< 0.0002			0.0002	Pass	
Cadmium (filtered)	mg/L	< 0.0002			0.0002	Pass	
Chromium	mg/L	< 0.001			0.001	Pass	
Chromium (filtered)	mg/L	< 0.001			0.001	Pass	
Cobalt	mg/L	< 0.001			0.001	Pass	
Cobalt (filtered)	mg/L	< 0.001			0.001	Pass	
Copper	mg/L	< 0.001			0.001	Pass	
Copper (filtered)	mg/L	< 0.001			0.001	Pass	
Iron	mg/L	< 0.05			0.05	Pass	
Iron (filtered)	mg/L	< 0.05			0.05	Pass	
Lead	mg/L	< 0.001			0.001	Pass	
Lead (filtered)	mg/L	< 0.001			0.001	Pass	
Manganese	mg/L	< 0.005			0.005	Pass	
Manganese (filtered)	mg/L	< 0.005			0.005	Pass	
Mercury	mg/L	< 0.0001			0.0001	Pass	
Mercury (filtered)	mg/L	< 0.0001			0.0001	Pass	
Nickel	mg/L	< 0.001			0.001	Pass	
Nickel (filtered)	mg/L	< 0.001			0.001	Pass	
Zinc	mg/L	< 0.005			0.005	Pass	
Zinc (filtered)	mg/L	< 0.005			0.005	Pass	
LCS - % Recovery							
Heavy Metals							
Aluminium	%	85			70-130	Pass	
Aluminium (filtered)	%	93			70-130	Pass	
Arsenic	%	102			70-130	Pass	
Arsenic (filtered)	%	109			70-130	Pass	
Barium	%	97			70-130	Pass	
Barium (filtered)	%	102			70-130	Pass	
Beryllium	%	103			70-130	Pass	
Beryllium (filtered)	%	108			70-130	Pass	
Cadmium	%	100			70-130	Pass	
Cadmium (filtered)	%	100			70-130	Pass	
Chromium	%	94			70-130	Pass	
Chromium (filtered)	%	94			70-130	Pass	
Cobalt	%	95			70-130	Pass	
Cobalt (filtered)	%	93			70-130	Pass	
Copper	%	97			70-130	Pass	
Copper (filtered)	%	91			70-130	Pass	
Iron	%	94			70-130	Pass	
Iron (filtered)	%	93			70-130	Pass	
Lead	%	98			70-130	Pass	
Lead (filtered)	%	97			70-130	Pass	

Test		Units	Result 1			Acceptance Limits	Pass Limits	Qualifying Code	
Manganese		%	92			70-130	Pass		
Manganese (filtered)		%	96			70-130	Pass		
Mercury		%	98			70-130	Pass		
Mercury (filtered)		%	93			70-130	Pass		
Nickel		%	97			70-130	Pass		
Nickel (filtered)		%	92			70-130	Pass		
Zinc		%	95			70-130	Pass		
Zinc (filtered)		%	97			70-130	Pass		
Test	Lab Sample ID	QA Source	Units	Result 1			Acceptance Limits	Pass Limits	Qualifying Code
Spike - % Recovery									
Heavy Metals				Result 1					
Aluminium (filtered)	S20-Ap16805	NCP	%	94			70-130	Pass	
Arsenic (filtered)	S20-Ap16805	NCP	%	85			70-130	Pass	
Barium (filtered)	S20-Ap16805	NCP	%	96			70-130	Pass	
Beryllium (filtered)	S20-Ap16805	NCP	%	103			70-130	Pass	
Cadmium (filtered)	S20-Ap16805	NCP	%	100			70-130	Pass	
Chromium (filtered)	S20-Ap16805	NCP	%	100			70-130	Pass	
Cobalt (filtered)	S20-Ap16805	NCP	%	103			70-130	Pass	
Copper	S20-Ap08166	NCP	%	95			70-130	Pass	
Copper (filtered)	S20-Ap16805	NCP	%	99			70-130	Pass	
Iron (filtered)	S20-Ap16805	NCP	%	90			70-130	Pass	
Lead (filtered)	S20-Ap16805	NCP	%	102			70-130	Pass	
Manganese (filtered)	S20-Ap16805	NCP	%	102			70-130	Pass	
Mercury (filtered)	S20-Ap16805	NCP	%	101			70-130	Pass	
Nickel (filtered)	S20-Ap16805	NCP	%	103			70-130	Pass	
Zinc (filtered)	S20-Ap16805	NCP	%	95			70-130	Pass	
Test	Lab Sample ID	QA Source	Units	Result 1			Acceptance Limits	Pass Limits	Qualifying Code
Duplicate									
Heavy Metals				Result 1	Result 2	RPD			
Aluminium	S20-Ap09834	CP	mg/L	0.06	0.08	17	30%	Pass	
Aluminium (filtered)	S20-Ap09848	NCP	mg/L	< 0.05	< 0.05	<1	30%	Pass	
Arsenic	S20-Ap09834	CP	mg/L	< 0.001	< 0.001	<1	30%	Pass	
Arsenic (filtered)	S20-Ap09848	NCP	mg/L	< 0.001	< 0.001	<1	30%	Pass	
Barium	S20-Ap09834	CP	mg/L	< 0.02	< 0.02	<1	30%	Pass	
Barium (filtered)	S20-Ap09848	NCP	mg/L	< 0.02	< 0.02	<1	30%	Pass	
Beryllium	S20-Ap09834	CP	mg/L	< 0.001	< 0.001	<1	30%	Pass	
Beryllium (filtered)	S20-Ap09848	NCP	mg/L	< 0.001	< 0.001	<1	30%	Pass	
Cadmium	S20-Ap09834	CP	mg/L	< 0.0002	< 0.0002	<1	30%	Pass	
Cadmium (filtered)	S20-Ap09848	NCP	mg/L	< 0.0002	< 0.0002	<1	30%	Pass	
Chromium	S20-Ap09834	CP	mg/L	0.001	0.001	14	30%	Pass	
Chromium (filtered)	S20-Ap09848	NCP	mg/L	< 0.001	< 0.001	<1	30%	Pass	
Cobalt	S20-Ap09834	CP	mg/L	< 0.001	< 0.001	<1	30%	Pass	
Cobalt (filtered)	S20-Ap09848	NCP	mg/L	< 0.001	< 0.001	<1	30%	Pass	
Copper	S20-Ap09834	CP	mg/L	< 0.001	< 0.001	<1	30%	Pass	
Copper (filtered)	S20-Ap09848	NCP	mg/L	0.002	0.002	1.0	30%	Pass	
Iron	S20-Ap09834	CP	mg/L	0.10	0.08	23	30%	Pass	
Iron (filtered)	S20-Ap09848	NCP	mg/L	< 0.05	< 0.05	<1	30%	Pass	
Lead	S20-Ap09834	CP	mg/L	< 0.001	< 0.001	<1	30%	Pass	
Lead (filtered)	S20-Ap09848	NCP	mg/L	< 0.001	< 0.001	<1	30%	Pass	
Manganese	S20-Ap09834	CP	mg/L	0.007	0.007	1.0	30%	Pass	
Manganese (filtered)	S20-Ap09848	NCP	mg/L	0.005	0.005	8.0	30%	Pass	
Mercury	S20-Ap09834	CP	mg/L	< 0.0001	< 0.0001	<1	30%	Pass	
Mercury (filtered)	S20-Ap09848	NCP	mg/L	< 0.0001	< 0.0001	<1	30%	Pass	

Test	Lab Sample ID	QA Source	Units	Result 1			Acceptance Limits	Pass Limits	Qualifying Code
Duplicate									
Heavy Metals				Result 1	Result 2	RPD			
Nickel	S20-Ap09834	CP	mg/L	< 0.001	< 0.001	<1	30%	Pass	
Nickel (filtered)	S20-Ap09848	NCP	mg/L	< 0.001	< 0.001	<1	30%	Pass	
Zinc	S20-Ap09834	CP	mg/L	0.064	0.073	14	30%	Pass	
Zinc (filtered)	S20-Ap09848	NCP	mg/L	0.028	0.030	6.0	30%	Pass	

Comments**Sample Integrity**

Custody Seals Intact (if used)	N/A
Attempt to Chill was evident	No
Sample correctly preserved	Yes
Appropriate sample containers have been used	Yes
Sample containers for volatile analysis received with minimal headspace	Yes
Samples received within HoldingTime	Yes
Some samples have been subcontracted	No

Authorised By

Andrew Black Analytical Services Manager
Gabriele Cordero Senior Analyst-Metal (NSW)

**Glenn Jackson
General Manager**

Final report - this Report replaces any previously issued Report

- Indicates Not Requested

* Indicates NATA accreditation does not cover the performance of this service

Measurement uncertainty of test data is available on request or please [click here](#).

Eurofins shall not be liable for loss, cost, damages or expenses incurred by the client, or any other person or company, resulting from the use of any information or interpretation given in this report. In no case shall Eurofins be liable for consequential damages including, but not limited to, lost profits, damages for failure to meet deadlines and lost production arising from this report. This document shall not be reproduced except in full and relates only to the items tested. Unless indicated otherwise, the tests were performed on the samples as received.

#AU04_COCNSW

Subject:

FW: 5 DAY TAT ADDITIONAL ANALYSIS: FW: Sediment samples

From: Joshua Blackwell [mailto:JBLACKWELL@ramboll.com]

Sent: Tuesday, 28 April 2020 3:11 PM

To: Andrew Black

Subject: Sediment samples

EXTERNAL EMAIL *

Hi Andrew,

Could I please request the following samples be dried and analysed for lead in mg/kg and moisture content. Please report in 8 separate reports as follows:

1. P6_TWS1 (S20-Ap02120)
2. P24_TWS1 (S20-Ap09836) & P24_TWS2 (S20-Ap09837)
3. P25_TWS1 (S20-Ap09766) & P25_TWS2 (S20-Ap09767)
4. P26_TWS1 (S20-Ap09881)
5. P27_TWS1 (S20-Ap09734)
6. P28_TWS1 (S20-Ap09694) & P28_TWS2 (S20-Ap09695) & P28_TWS3 (S20-Ap09696)
7. P31_TWS1 (S20-Ap09851) & P31_TWS2 (S20-Ap09852) & P31_TWS3 (S20-Ap09853)
8. P32_TWS2 (S20-Ap09662)

Kind regards

Joshua Blackwell


Consultant

3182675 - Hunter

D +61 (481) 157565

M +61 (481) 157565

jblackwell@ramboll.com

Connect with us 

Ramboll

Level 2, Suite 18 Eastpoint

50 Glebe Road

PO Box 435

The Junction

NSW 2291

Australia

<https://ramboll.com>

Ramboll Australia Pty Ltd.

ACN 095 437 442

ABN 49 095 437 442

Click [here](#) to report this email as spam.

ScannedByWebSenseForEurofins

Melbourne

6 Monterey Road
Dandenong South Vic 3175
Phone : +61 3 8564 5000
NATA # 1261
Site # 1254 & 14271

Sydney

Unit F3, Building F
16 Mars Road
Lane Cove West NSW 2066
Phone : +61 2 9900 8400
NATA # 1261 Site # 18217

Brisbane

1/21 Smallwood Place
Murarrie QLD 4172
Phone : +61 7 3902 4600
NATA # 1261 Site # 20794

Perth

2/91 Leach Highway
Kewdale WA 6105
Phone : +61 8 9251 9600
NATA # 1261 Site # 23736

Sample Receipt Advice

Company name: **Ramboll Australia Pty Ltd**
Contact name: **Joshua Blackwell**
Project name: **ADDITIONAL - 318000780**
COC number: **Not provided**
Turn around time: **5 Day**
Date/Time received: **Apr 28, 2020 3:11 PM**
Eurofins reference: **716290**

Sample information

- A detailed list of analytes logged into our LIMS, is included in the attached summary table.
- All samples have been received as described on the above COC.
- COC has been completed correctly.
- Attempt to chill was evident.
- Appropriately preserved sample containers have been used.
- All samples were received in good condition.
- Samples have been provided with adequate time to commence analysis in accordance with the relevant holding times.
- Appropriate sample containers have been used.
- Split sample sent to requested external lab.
- Some samples have been subcontracted.
- N/A Custody Seals intact (if used).

Contact notes

If you have any questions with respect to these samples please contact:

Andrew Black on Phone : (+61) 2 9900 8490 or by e.mail: AndrewBlack@eurofins.com

Results will be delivered electronically via e.mail to Joshua Blackwell - jblackwell@ramboll.com.

Note: A copy of these results will also be delivered to the general Ramboll Australia Pty Ltd email address.

Australia

Melbourne
 6 Monterey Road
 Dandenong South VIC 3175
 Phone : +61 3 8564 5000
 NATA # 1261
 Site # 1254 & 14271

Sydney
 Unit F3, Building F
 16 Mars Road
 Lane Cove West NSW 2066
 Phone : +61 2 9900 8400
 NATA # 1261 Site # 18217

Brisbane
 1/21 Smallwood Place
 Murarrie QLD 4172
 Phone : +61 7 3902 4600
 NATA # 1261 Site # 20794

Perth
 2/91 Leach Highway
 Kewdale WA 6105
 Phone : +61 8 9251 9600
 NATA # 1261
 Site # 23736

New Zealand

Auckland
 35 O'Rorke Road
 Penrose, Auckland 1061
 Phone : +64 9 526 45 51
 IANZ # 1327

Christchurch
 43 Detroit Drive
 Rolleston, Christchurch 7675
 Phone : 0800 856 450
 IANZ # 1290

Company Name: Ramboll Australia Pty Ltd
Address: Level 3/100 Pacific Highway
 North Sydney
 NSW 2060
Project Name: ADDITIONAL - 318000780

Order No.:
Report #: 716290
Phone: 02 9954 8118
Fax: 02 9954 8150

Received: Apr 28, 2020 3:11 PM
Due: May 5, 2020
Priority: 5 Day
Contact Name: Joshua Blackwell

Eurofins Analytical Services Manager : Andrew Black

Sample Detail						Lead	Moisture Set
Melbourne Laboratory - NATA Site # 1254 & 14271							
Sydney Laboratory - NATA Site # 18217						X	X
Brisbane Laboratory - NATA Site # 20794							
Perth Laboratory - NATA Site # 23736							
External Laboratory							
No	Sample ID	Sample Date	Sampling Time	Matrix	LAB ID		
1	P24_TWS1	Apr 01, 2020		Sediment	S20-Ap42270	X	X
2	P24_TWS2	Apr 01, 2020		Sediment	S20-Ap42271	X	X
Test Counts						2	2

Ramboll Environ Australia Pty Ltd
 Level 3/100 Pacific Highway
 North Sydney
 NSW 2060



NATA Accredited
Accreditation Number 1261
Site Number 18217

Accredited for compliance with ISO/IEC 17025 – Testing
 The results of the tests, calibrations and/or
 measurements included in this document are traceable
 to Australian/national standards.

Attention: **Joshua Blackwell**

Report **716290-S**
 Project name **ADDITIONAL - 318000780**
 Received Date **Apr 28, 2020**

Client Sample ID			P24_TWS1	P24_TWS2
Sample Matrix			Sediment	Sediment
Eurofins Sample No.			S20-Ap42270	S20-Ap42271
Date Sampled			Apr 01, 2020	Apr 01, 2020
Test/Reference	LOR	Unit		
Heavy Metals				
Lead	5	mg/kg	40	8100
% Moisture	1	%	100	99

Sample History

Where samples are submitted/analysed over several days, the last date of extraction and analysis is reported.

A recent review of our LIMS has resulted in the correction or clarification of some method identifications. Due to this, some of the method reference information on reports has changed. However, no substantive change has been made to our laboratory methods, and as such there is no change in the validity of current or previous results.

If the date and time of sampling are not provided, the Laboratory will not be responsible for compromised results should testing be performed outside the recommended holding time.

Description

Heavy Metals

- Method: LTM-MET-3040 Metals in Waters, Soils & Sediments by ICP-MS

% Moisture

- Method: LTM-GEN-7080 Moisture

Testing Site

Sydney

Sydney

Extracted

May 04, 2020

Apr 29, 2020

Holding Time

180 Days

14 Days

Australia

Melbourne
6 Monterey Road
Dandenong South VIC 3175
Phone : +61 3 8564 5000
NATA # 1261
Site # 1254 & 14271

Sydney
Unit F3, Building F
16 Mars Road
Lane Cove West NSW 2066
Phone : +61 2 9900 8400
NATA # 1261 Site # 18217

Brisbane
1/21 Smallwood Place
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NATA # 1261 Site # 20794

Perth
2/91 Leach Highway
Kewdale WA 6105
Phone : +61 8 9251 9600
NATA # 1261
Site # 23736

New Zealand

Auckland
35 O'Rorke Road
Penrose, Auckland 1061
Phone : +64 9 526 45 51
IANZ # 1327

Christchurch
43 Detroit Drive
Rolleston, Christchurch 7675
Phone : 0800 856 450
IANZ # 1290

Company Name: Ramboll Australia Pty Ltd
Address: Level 3/100 Pacific Highway
North Sydney
NSW 2060
Project Name: ADDITIONAL - 318000780

Order No.:
Report #: 716290
Phone: 02 9954 8118
Fax: 02 9954 8150

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Due: May 5, 2020
Priority: 5 Day
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Eurofins Analytical Services Manager : Andrew Black

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Melbourne Laboratory - NATA Site # 1254 & 14271							
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Perth Laboratory - NATA Site # 23736							
External Laboratory							
No	Sample ID	Sample Date	Sampling Time	Matrix	LAB ID		
1	P24_TWS1	Apr 01, 2020		Sediment	S20-Ap42270	X	X
2	P24_TWS2	Apr 01, 2020		Sediment	S20-Ap42271	X	X
Test Counts						2	2

Internal Quality Control Review and Glossary
General

- Laboratory QC results for Method Blanks, Duplicates, Matrix Spikes, and Laboratory Control Samples follows guidelines delineated in the National Environment Protection (Assessment of Site Contamination) Measure 1999, as amended May 2013 and are included in this QC report where applicable. Additional QC data may be available on request.
- All soil/sediment/solid results are reported on a dry basis, unless otherwise stated.
- All biota/food results are reported on a wet weight basis on the edible portion, unless otherwise stated.
- Actual LORs are matrix dependant. Quoted LORs may be raised where sample extracts are diluted due to interferences.
- Results are uncorrected for matrix spikes or surrogate recoveries except for PFAS compounds.
- SVOC analysis on waters are performed on homogenised, unfiltered samples, unless noted otherwise.
- Samples were analysed on an 'as received' basis.
- Information identified on this report with blue colour, indicates data provided by customer, that may have an impact on the results.
- This report replaces any interim results previously issued.

Holding Times

Please refer to 'Sample Preservation and Container Guide' for holding times (QS3001).

For samples received on the last day of holding time, notification of testing requirements should have been received at least 6 hours prior to sample receipt deadlines as stated on the SRA.

If the Laboratory did not receive the information in the required timeframe, and regardless of any other integrity issues, suitably qualified results may still be reported.

Holding times apply from the date of sampling, therefore compliance to these may be outside the laboratory's control.

For VOCs containing vinyl chloride, styrene and 2-chloroethyl vinyl ether the holding time is 7 days however for all other VOCs such as BTEX or C6-10 TRH then the holding time is 14 days.

****NOTE:** pH duplicates are reported as a range NOT as RPD

Units

mg/kg: milligrams per kilogram

mg/L: milligrams per litre

ug/L: micrograms per litre

ppm: Parts per million

ppb: Parts per billion

%: Percentage

org/100mL: Organisms per 100 millilitres

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Results <10 times the LOR : No Limit

Results between 10-20 times the LOR : RPD must lie between 0-50%

Results >20 times the LOR : RPD must lie between 0-30%

Surrogate Recoveries: Recoveries must lie between 20-130% Phenols & 50-150% PFASs

PFAS field samples that contain surrogate recoveries in excess of the QC limit designated in QSM 5.3 where no positive PFAS results have been reported have been reviewed and no data was affected.

WA DWER (n=10): PFBA, PFPeA, PFHxA, PFHpA, PFOA, PFBS, PFHxS, PFOS, 6:2 FTSA, 8:2 FTSA

QC Data General Comments

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- Organochlorine Pesticide analysis - where reporting LCS data, Toxaphene & Chlordane are not added to the LCS.
- Organochlorine Pesticide analysis - where reporting Spike data, Toxaphene is not added to the Spike.
- Total Recoverable Hydrocarbons - where reporting Spike & LCS data, a single spike of commercial Hydrocarbon products in the range of C12-C30 is added and it's Total Recovery is reported in the C10-C14 cell of the Report.
- pH and Free Chlorine analysed in the laboratory - Analysis on this test must begin within 30 minutes of sampling. Therefore laboratory analysis is unlikely to be completed within holding time. Analysis will begin as soon as possible after sample receipt.
- Recovery Data (Spikes & Surrogates) - where chromatographic interference does not allow the determination of Recovery the term "INT" appears against that analyte.
- Polychlorinated Biphenyls are spiked only using Aroclor 1260 in Matrix Spikes and LCS.
- For Matrix Spikes and LCS results a dash " - " in the report means that the specific analyte was not added to the QC sample.
- Duplicate RPDs are calculated from raw analytical data thus it is possible to have two sets of data.

Quality Control Results

Test				Units	Result 1		Acceptance Limits	Pass Limits	Qualifying Code		
Method Blank											
Heavy Metals											
Lead				mg/kg	< 5		5	Pass			
LCS - % Recovery											
Heavy Metals											
Lead				%	99		70-130	Pass			
Test	Lab Sample ID	QA Source	Units	Result 1			Acceptance Limits	Pass Limits	Qualifying Code		
Spike - % Recovery											
Heavy Metals											
Lead				S20-Ap44661	NCP	%	91	70-130	Pass		
Duplicate											
Heavy Metals											
Lead				S20-Ap42291	NCP	mg/kg	97	100	4.0	30%	Pass
Duplicate											
% Moisture				S20-My03200	NCP	%	13	14	5.0	30%	Pass

Comments**Sample Integrity**

Custody Seals Intact (if used)	N/A
Attempt to Chill was evident	No
Sample correctly preserved	Yes
Appropriate sample containers have been used	Yes
Sample containers for volatile analysis received with minimal headspace	Yes
Samples received within HoldingTime	Yes
Some samples have been subcontracted	No

Authorised By

Andrew Black Analytical Services Manager
Gabriele Cordero Senior Analyst-Metal (NSW)

**Glenn Jackson
General Manager**

Final report - this Report replaces any previously issued Report

- Indicates Not Requested

* Indicates NATA accreditation does not cover the performance of this service

Measurement uncertainty of test data is available on request or please [click here](#).

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CHAIN OF CUSTODY RECORD

ABN 50 005 085 521

Sydney Laboratory
Unit F3 Bld F, 16 Mars Rd, Lane Cove West, NSW 2066
02 9900 8400 EnviroSampleNSW@eurofins.com

Brisbane Laboratory
Unit 1, 21 Smallwood Pl, Murarie, QLD 4172
07 3902 4600 EnviroSampleQLD@eurofins.com

Perth Laboratory
Unit 2, 91 Leach Highway, Kewdale WA 6105
08 9251 9600 EnviroSampleWA@eurofins.com

Melbourne Laboratory
2 Kingston Town Close, Oakleigh, VIC 3166
03 8564 5000 EnviroSampleVic@eurofins.com

Company		Ramboll		Project No		318000780		Project Manager		Stephen Maxwell		Sampler(s)		JK + RC			
Address		50 Glebe Road the Junction		Project Name				EDD Format (ESdat, EQUIS)		Excel and PDF		Handed over by		SM			
Contact Name		Stephen Maxwell		<small>Analyses (Notes: Where suitable are requested, please specify "Total" or "Filtered") SUITE code must be used to attract SUITE pricing</small> Lead M13 (Al, As, Ba, Be, Cd, Cr, Co, Cu, Fe, Pb, Mn, Hg, Ni, Zn) total M13 (Al, As, Ba, Be, Cd, Cr, Co, Cu, Fe, Pb, Mn, Hg, Ni, Zn) dissolved										Email for Invoice		smaxwell@ramboll.com asiapac-accounts@ramboll.com	
Phone No														Email for Results		smaxwell@ramboll.com jblackwell@ramboll.com rcondon@ramboll.com shyde@ramboll.com	
Special Directions														Turnaround Time (TAT) Requirements (default will be 5 days if not ticked)		<input type="checkbox"/> Overnight (9am)* <input type="checkbox"/> 1 Day* <input type="checkbox"/> 2 Day* <input type="checkbox"/> 3 Day* <input checked="" type="checkbox"/> 5 Day* <input type="checkbox"/> Other () * Surcharges apply	
Purchase Order														Sample Comments / Dangerous Goods Hazard Warning			
Quote ID No		180813RAMN_1															
No	Client Sample ID	Sampled Date/Time (dd/mm/yy hh:mm)	Matrix (Solid (S) Water (W))														
1	P25_HA01_0.0	1/04/20	S	X													
2	P25_HA01_0.2	1/04/20	S	X													
3	P25_HA02_0.0	1/04/20	S	X													
4	P25_HA02_0.2	1/04/20	S	X													
5	P25_HA03_0.0	1/04/20	S	X													
6	P25_HA03_0.2	1/04/20	S	X													
7	P25_HA04_0.0	1/04/20	S	X													
8	P25_HA04_0.2	1/04/20	S	X													
9	P25_HA05_0.0	1/04/20	S	X													
10	P25_HA05_0.2	1/04/20	S	X													
Total Counts				10													
Method of Shipment		<input type="checkbox"/> Courier (#) <input type="checkbox"/> Hand Delivered <input type="checkbox"/> Postal		Name		Signature		Date		Date		Time		Temperature			
Eurofins mgt Laboratory Use Only		Received By <i>Japan</i>		SYD BNE MEL PER ADL NTL DRW		Signature		Date <i>06/04/20</i>		Time <i>2:36 PM</i>		Temperature <i>26.2</i>		Report No <i>712468</i>			
		Received By		SYD BNE MEL PER ADL NTL DRW		Signature		Date		Time		Report No					

Submission of samples to the laboratory will be deemed as acceptance of Eurofins | mgt Standard Terms and Conditions unless agreed otherwise. A copy of Eurofins | mgt Standard Terms and Conditions is available on request.



CHAIN OF CUSTODY RECORD

ABN 50 005 085 521

Sydney Laboratory
Unit F3 Bld.F, 16 Mars Rd, Lane Cove West, NSW 2066
02 9900 8400 EnviroSampleNSW@eurofins.com

Brisbane Laboratory
Unit 1, 21 Smallwood Pl., Murarrie, QLD 4172
07 3902 4600 EnviroSampleQLD@eurofins.com

Perth Laboratory
Unit 2, 91 Leach Highway, Kewdale WA 6105
08 9251 9600 EnviroSampleWA@eurofins.com

Melbourne Laboratory
2 Kingston Town Close, Oakleigh, VIC 3166
03 8564 5000 EnviroSampleVic@eurofins.com

Company		Ramboll			Project No		318000780			Project Manager		Stephen Maxwell			Sampler(s)		JB + JAB		
Address		50 Glebe Road the Junction			Project Name					EDD Format (ESdat, EQUIS,		Excel and PDF			Handed over by		SM		
Contact Name		Stephen Maxwell			Analyses <small>(Note: Where metals are requested, please specify "Total" or "Filtered" SUITE code must be used to attract SUITE pricing)</small>		Lead M13 (Al, As, Ba, Be, Cd, Cr, Co, Cu, Fe, Pb, Mn, Hg, Ni, Zn) total M13 (Al, As, Ba, Be, Cd, Cr, Co, Cu, Fe, Pb, Mn, Hg, Ni, Zn) dissolved									Email for Invoice		smaxwell@ramboll.com asiapac-accounts@ramboll.com	
Phone No																Email for Results		smaxwell@ramboll.com jblackwell@ramboll.com rcondon@ramboll.com shyde@ramboll.com	
Special Directions																Turnaround Time (TAT) Requirements (default will be 5 days if not ticked)		<input type="checkbox"/> Overnight (9am)* <input type="checkbox"/> 1 Day* <input type="checkbox"/> 2 Day* <input type="checkbox"/> 3 Day* <input checked="" type="checkbox"/> 5 Day* <input type="checkbox"/> Other () * Surcharges apply	
Purchase Order																1L Plastic			
Quote ID No		180813RAMN_1			Matrix (Solid (S) Water (W))														
No	Client Sample ID	Sampled Date/Time (dd/mm/yy hh:mm)	Matrix (Solid (S) Water (W))																
1	P25_TW1	1/04/20	W		X	X													
2	P25_TW2	1/04/20	W		X	X													
3	P25_TWS1	1/04/20	sediment		X													Please homogenise in this sample then analyse	
4	P25_TWS2	1/04/20	sediment		X													Please homogenise in this sample then analyse	
5																			
6																			
7																			
8																			
9																			
10																			
Total Counts				2	2	2													
Method of Shipment		<input type="checkbox"/> Courier (#) <input type="checkbox"/> Hand Delivered <input type="checkbox"/> Postal		Name		Signature		Date		Date		Time		Time		Temperature		Report No	
Eurofins mgt Laboratory Use Only		Received By		SYD BNE MEL PER ADL NTL DRW		Signature		Date		Date		Time		Time		Temperature		Report No	
		<i>Impan</i>						06/04/20											

Submission of samples to the laboratory will be deemed as acceptance of Eurofins | mgt Standard Terms and Conditions unless agreed otherwise. A copy of Eurofins | mgt Standard Terms and Conditions is available on request.

Eurofins Environment Testing Australia Pty Ltd trading as Eurofins | mgt

Melbourne

6 Monterey Road
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Sydney

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NATA # 1261 Site # 18217

Brisbane

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Phone : +61 7 3902 4600
NATA # 1261 Site # 20794

Perth

2/91 Leach Highway
Kewdale WA 6105
Phone : +61 8 9251 9600
NATA # 1261 Site # 23736

Sample Receipt Advice

Company name: **Ramboll Australia Pty Ltd**

Contact name: **Stephen Maxwell**

Project ID: **318000780**

COC number: **Not provided**

Turn around time: **5 Day**

Date/Time received: **Apr 6, 2020 2:36 PM**

Eurofins reference: **712468**

Sample information

- A detailed list of analytes logged into our LIMS, is included in the attached summary table.
- All samples have been received as described on the above COC.
- COC has been completed correctly.
- Attempt to chill was evident.
- Appropriately preserved sample containers have been used.
- All samples were received in good condition.
- Samples have been provided with adequate time to commence analysis in accordance with the relevant holding times.
- Appropriate sample containers have been used.
- Sample containers for volatile analysis received with zero headspace.
- Split sample sent to requested external lab.
- Some samples have been subcontracted.
- N/A Custody Seals intact (if used).

Contact notes

If you have any questions with respect to these samples please contact:

Andrew Black on Phone : (+61) 2 9900 8490 or by e.mail: AndrewBlack@eurofins.com

Results will be delivered electronically via e.mail to Stephen Maxwell - smaxwell@ramboll.com.

Note: A copy of these results will also be delivered to the general Ramboll Australia Pty Ltd email address.

Ramboll Environ Australia Pty Ltd
 Level 3/100 Pacific Highway
 North Sydney
 NSW 2060



NATA Accredited
 Accreditation Number 1261
 Site Number 18217

Accredited for compliance with ISO/IEC 17025 – Testing
 The results of the tests, calibrations and/or
 measurements included in this document are traceable
 to Australian/national standards.

Attention: Stephen Maxwell

Report 712468-S
 Project name
 Project ID 318000780
 Received Date Apr 06, 2020

Client Sample ID			P25_HA01_0.0	P25_HA01_0.2	P25_HA02_0.0	P25_HA02_0.2
Sample Matrix			Soil	Soil	Soil	Soil
Eurofins Sample No.			S20-Ap09754	S20-Ap09755	S20-Ap09756	S20-Ap09757
Date Sampled			Apr 01, 2020	Apr 01, 2020	Apr 01, 2020	Apr 01, 2020
Test/Reference	LOR	Unit				
Heavy Metals						
Lead	5	mg/kg	25	22	20	13
% Moisture	1	%	9.8	7.7	2.9	4.2

Client Sample ID			P25_HA03_0.0	P25_HA03_0.2	P25_HA04_0.0	P25_HA04_0.2
Sample Matrix			Soil	Soil	Soil	Soil
Eurofins Sample No.			S20-Ap09758	S20-Ap09759	S20-Ap09760	S20-Ap09761
Date Sampled			Apr 01, 2020	Apr 01, 2020	Apr 01, 2020	Apr 01, 2020
Test/Reference	LOR	Unit				
Heavy Metals						
Lead	5	mg/kg	23	16	40	65
% Moisture	1	%	9.7	5.3	21	13

Client Sample ID			P25_HA05_0.0	P25_HA05_0.2
Sample Matrix			Soil	Soil
Eurofins Sample No.			S20-Ap09762	S20-Ap09763
Date Sampled			Apr 01, 2020	Apr 01, 2020
Test/Reference	LOR	Unit		
Heavy Metals				
Lead	5	mg/kg	18	13
% Moisture	1	%	9.7	7.5

Sample History

Where samples are submitted/analysed over several days, the last date of extraction and analysis is reported.

A recent review of our LIMS has resulted in the correction or clarification of some method identifications. Due to this, some of the method reference information on reports has changed. However, no substantive change has been made to our laboratory methods, and as such there is no change in the validity of current or previous results.

If the date and time of sampling are not provided, the Laboratory will not be responsible for compromised results should testing be performed outside the recommended holding time.

Description

Heavy Metals

- Method: LTM-MET-3040 Metals in Waters, Soils & Sediments by ICP-MS

% Moisture

- Method: LTM-GEN-7080 Moisture

Testing Site

Sydney

Sydney

Extracted

Apr 09, 2020

Apr 07, 2020

Holding Time

180 Days

14 Days

Australia

Melbourne
6 Monterey Road
Dandenong South VIC 3175
Phone : +61 3 8564 5000
NATA # 1261
Site # 1254 & 14271

Sydney
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Brisbane
1/21 Smallwood Place
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NATA # 1261 Site # 20794

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Kewdale WA 6105
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NATA # 1261
Site # 23736

New Zealand

Auckland
35 O'Rorke Road
Penrose, Auckland 1061
Phone : +64 9 526 45 51
IANZ # 1327

Christchurch
43 Detroit Drive
Rolleston, Christchurch 7675
Phone : 0800 856 450
IANZ # 1290

Company Name: Ramboll Australia Pty Ltd
Address: Level 3/100 Pacific Highway
North Sydney
NSW 2060

Order No.:
Report #: 712468
Phone: 02 9954 8118
Fax: 02 9954 8150

Received: Apr 6, 2020 2:36 PM
Due: Apr 15, 2020
Priority: 5 Day
Contact Name: Stephen Maxwell

Project Name:
Project ID: 318000780

Eurofins Analytical Services Manager : Andrew Black

Sample Detail						Aluminium	Aluminium (filtered)	Arsenic	Arsenic (filtered)	Barium	Barium (filtered)	Beryllium	Beryllium (filtered)	Cadmium	Cadmium (filtered)	Chromium	Chromium (filtered)	Cobalt	Cobalt (filtered)	Copper	Copper (filtered)	Iron	Iron (filtered)	Lead	Lead (filtered)	Manganese	Manganese (filtered)	Mercury	Mercury (filtered)	Nickel	Nickel (filtered)	Zinc	Zinc (filtered)	Moisture Set		
Melbourne Laboratory - NATA Site # 1254 & 14271																																				
Sydney Laboratory - NATA Site # 18217						X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	
Brisbane Laboratory - NATA Site # 20794																																				
Perth Laboratory - NATA Site # 23736																																				
External Laboratory																																				
No	Sample ID	Sample Date	Sampling Time	Matrix	LAB ID																															
1	P25_HA01_0.0	Apr 01, 2020		Soil	S20-Ap09754																		X										X			
2	P25_HA01_0.2	Apr 01, 2020		Soil	S20-Ap09755																		X										X			
3	P25_HA02_0.0	Apr 01, 2020		Soil	S20-Ap09756																		X										X			
4	P25_HA02_0.2	Apr 01, 2020		Soil	S20-Ap09757																		X										X			
5	P25_HA03_0.0	Apr 01, 2020		Soil	S20-Ap09758																		X										X			
6	P25_HA03_0.2	Apr 01, 2020		Soil	S20-Ap09759																		X										X			

Australia

Melbourne
6 Monterey Road
Dandenong South VIC 3175
Phone : +61 3 8564 5000
NATA # 1261
Site # 1254 & 14271

Sydney
Unit F3, Building F
16 Mars Road
Lane Cove West NSW 2066
Phone : +61 2 9900 8400
NATA # 1261 Site # 18217

Brisbane
1/21 Smallwood Place
Murarrie QLD 4172
Phone : +61 7 3902 4600
NATA # 1261 Site # 20794

Perth
2/91 Leach Highway
Kewdale WA 6105
Phone : +61 8 9251 9600
NATA # 1261
Site # 23736

New Zealand

Auckland
35 O'Rorke Road
Penrose, Auckland 1061
Phone : +64 9 526 45 51
IANZ # 1327

Christchurch
43 Detroit Drive
Rolleston, Christchurch 7675
Phone : 0800 856 450
IANZ # 1290

Company Name:	Ramboll Australia Pty Ltd	Order No.:		Received:	Apr 6, 2020 2:36 PM
Address:	Level 3/100 Pacific Highway North Sydney NSW 2060	Report #:	712468	Due:	Apr 15, 2020
Project Name:		Phone:	02 9954 8118	Priority:	5 Day
Project ID:	318000780	Fax:	02 9954 8150	Contact Name:	Stephen Maxwell

Eurofins Analytical Services Manager : Andrew Black

Sample Detail						Aluminium	Aluminium (filtered)	Arsenic	Arsenic (filtered)	Barium	Barium (filtered)	Beryllium	Beryllium (filtered)	Cadmium	Cadmium (filtered)	Chromium	Chromium (filtered)	Cobalt	Cobalt (filtered)	Copper	Copper (filtered)	Iron	Iron (filtered)	Lead	Lead (filtered)	Manganese	Manganese (filtered)	Mercury	Mercury (filtered)	Nickel	Nickel (filtered)	Zinc	Zinc (filtered)	Moisture Set		
Melbourne Laboratory - NATA Site # 1254 & 14271																																				
Sydney Laboratory - NATA Site # 18217						X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	
Brisbane Laboratory - NATA Site # 20794																																				
Perth Laboratory - NATA Site # 23736																																				
7	P25_HA04_0	Apr 01, 2020		Soil	S20-Ap09760																		X											X		
8	P25_HA04_2	Apr 01, 2020		Soil	S20-Ap09761																		X											X		
9	P25_HA05_0	Apr 01, 2020		Soil	S20-Ap09762																		X											X		
10	P25_HA05_2	Apr 01, 2020		Soil	S20-Ap09763																		X											X		
11	P25_TW1	Apr 01, 2020		Water	S20-Ap09764	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X			
12	P25_TW2	Apr 01, 2020		Water	S20-Ap09765	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X			
13	P25_TWS1	Apr 01, 2020		Water	S20-Ap09766																		X													
14	P25_TWS2	Apr 01, 2020		Water	S20-Ap09767																		X													
Test Counts						2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	14	2	2	2	2	2	2	2	2	2	10	

Internal Quality Control Review and Glossary
General

- Laboratory QC results for Method Blanks, Duplicates, Matrix Spikes, and Laboratory Control Samples follows guidelines delineated in the National Environment Protection (Assessment of Site Contamination) Measure 1999, as amended May 2013 and are included in this QC report where applicable. Additional QC data may be available on request.
- All soil/sediment/solid results are reported on a dry basis, unless otherwise stated.
- All biota/food results are reported on a wet weight basis on the edible portion, unless otherwise stated.
- Actual LORs are matrix dependant. Quoted LORs may be raised where sample extracts are diluted due to interferences.
- Results are uncorrected for matrix spikes or surrogate recoveries except for PFAS compounds.
- SVOC analysis on waters are performed on homogenised, unfiltered samples, unless noted otherwise.
- Samples were analysed on an 'as received' basis.
- Information identified on this report with blue colour, indicates data provided by customer, that may have an impact on the results.
- This report replaces any interim results previously issued.

Holding Times

Please refer to 'Sample Preservation and Container Guide' for holding times (QS3001).

For samples received on the last day of holding time, notification of testing requirements should have been received at least 6 hours prior to sample receipt deadlines as stated on the SRA.

If the Laboratory did not receive the information in the required timeframe, and regardless of any other integrity issues, suitably qualified results may still be reported.

Holding times apply from the date of sampling, therefore compliance to these may be outside the laboratory's control.

For VOCs containing vinyl chloride, styrene and 2-chloroethyl vinyl ether the holding time is 7 days however for all other VOCs such as BTEX or C6-10 TRH then the holding time is 14 days.

****NOTE:** pH duplicates are reported as a range NOT as RPD

Units

mg/kg: milligrams per kilogram

mg/L: milligrams per litre

ug/L: micrograms per litre

ppm: Parts per million

ppb: Parts per billion

%: Percentage

org/100mL: Organisms per 100 millilitres

NTU: Nephelometric Turbidity Units

MPN/100mL: Most Probable Number of organisms per 100 millilitres

Terms

Dry	Where a moisture has been determined on a solid sample the result is expressed on a dry basis.
LOR	Limit of Reporting.
SPIKE	Addition of the analyte to the sample and reported as percentage recovery.
RPD	Relative Percent Difference between two Duplicate pieces of analysis.
LCS	Laboratory Control Sample - reported as percent recovery.
CRM	Certified Reference Material - reported as percent recovery.
Method Blank	In the case of solid samples these are performed on laboratory certified clean sands and in the case of water samples these are performed on de-ionised water.
Surr - Surrogate	The addition of a like compound to the analyte target and reported as percentage recovery.
Duplicate	A second piece of analysis from the same sample and reported in the same units as the result to show comparison.
USEPA	United States Environmental Protection Agency
APHA	American Public Health Association
TCLP	Toxicity Characteristic Leaching Procedure
COC	Chain of Custody
SRA	Sample Receipt Advice
QSM	US Department of Defense Quality Systems Manual Version 5.3
CP	Client Parent - QC was performed on samples pertaining to this report
NCP	Non-Client Parent - QC performed on samples not pertaining to this report, QC is representative of the sequence or batch that client samples were analysed within.
TEQ	Toxic Equivalency Quotient

QC - Acceptance Criteria

RPD Duplicates: Global RPD Duplicates Acceptance Criteria is 30% however the following acceptance guidelines are equally applicable:

Results <10 times the LOR : No Limit

Results between 10-20 times the LOR : RPD must lie between 0-50%

Results >20 times the LOR : RPD must lie between 0-30%

Surrogate Recoveries: Recoveries must lie between 20-130% Phenols & 50-150% PFASs

PFAS field samples that contain surrogate recoveries in excess of the QC limit designated in QSM 5.3 where no positive PFAS results have been reported have been reviewed and no data was affected.

WA DWER (n=10): PFBA, PFPeA, PFHxA, PFHpA, PFOA, PFBS, PFHxS, PFOS, 6:2 FTSA, 8:2 FTSA

QC Data General Comments

- Where a result is reported as a less than (<), higher than the nominated LOR, this is due to either matrix interference, extract dilution required due to interferences or contaminant levels within the sample, high moisture content or insufficient sample provided.
- Duplicate data shown within this report that states the word "BATCH" is a Batch Duplicate from outside of your sample batch, but within the laboratory sample batch at a 1:10 ratio. The Parent and Duplicate data shown is not data from your samples.
- Organochlorine Pesticide analysis - where reporting LCS data, Toxaphene & Chlordane are not added to the LCS.
- Organochlorine Pesticide analysis - where reporting Spike data, Toxaphene is not added to the Spike.
- Total Recoverable Hydrocarbons - where reporting Spike & LCS data, a single spike of commercial Hydrocarbon products in the range of C12-C30 is added and it's Total Recovery is reported in the C10-C14 cell of the Report.
- pH and Free Chlorine analysed in the laboratory - Analysis on this test must begin within 30 minutes of sampling. Therefore laboratory analysis is unlikely to be completed within holding time. Analysis will begin as soon as possible after sample receipt.
- Recovery Data (Spikes & Surrogates) - where chromatographic interference does not allow the determination of Recovery the term "INT" appears against that analyte.
- Polychlorinated Biphenyls are spiked only using Aroclor 1260 in Matrix Spikes and LCS.
- For Matrix Spikes and LCS results a dash " - " in the report means that the specific analyte was not added to the QC sample.
- Duplicate RPDs are calculated from raw analytical data thus it is possible to have two sets of data.

Quality Control Results

Test				Units	Result 1			Acceptance Limits	Pass Limits	Qualifying Code	
Method Blank											
Heavy Metals											
Lead				mg/kg	< 5			5	Pass		
LCS - % Recovery											
Heavy Metals											
Lead				%	116			70-130	Pass		
Test	Lab Sample ID	QA Source	Units	Result 1			Acceptance Limits	Pass Limits	Qualifying Code		
Spike - % Recovery											
Heavy Metals											
Lead				S20-Ap09829	NCP	%	87	70-130	Pass		
Test	Lab Sample ID	QA Source	Units	Result 1			Acceptance Limits	Pass Limits	Qualifying Code		
Duplicate											
				Result 1	Result 2	RPD					
% Moisture				S20-Ap10676	NCP	%	17	16	5.0	30%	Pass
Duplicate											
Heavy Metals											
Lead				S20-Ap09760	CP	mg/kg	40	33	19	30%	Pass

Comments**Sample Integrity**

Custody Seals Intact (if used)	N/A
Attempt to Chill was evident	No
Sample correctly preserved	Yes
Appropriate sample containers have been used	Yes
Sample containers for volatile analysis received with minimal headspace	Yes
Samples received within HoldingTime	Yes
Some samples have been subcontracted	No

Authorised By

Andrew Black Analytical Services Manager
Gabriele Cordero Senior Analyst-Metal (NSW)

**Glenn Jackson
General Manager**

Final report - this Report replaces any previously issued Report

- Indicates Not Requested

* Indicates NATA accreditation does not cover the performance of this service

Measurement uncertainty of test data is available on request or please [click here](#).

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Ramboll Environ Australia Pty Ltd
 Level 3/100 Pacific Highway
 North Sydney
 NSW 2060



NATA Accredited
 Accreditation Number 1261
 Site Number 18217

Accredited for compliance with ISO/IEC 17025 – Testing
 The results of the tests, calibrations and/or
 measurements included in this document are traceable
 to Australian/national standards.

Attention: Stephen Maxwell

Report 712468-W
 Project name
 Project ID 318000780
 Received Date Apr 06, 2020

Client Sample ID			P25_TW1	P25_TW2	P25_TWS1	P25_TWS2
Sample Matrix			Water	Water	Water	Water
Eurofins Sample No.			S20-Ap09764	S20-Ap09765	S20-Ap09766	S20-Ap09767
Date Sampled			Apr 01, 2020	Apr 01, 2020	Apr 01, 2020	Apr 01, 2020
Test/Reference	LOR	Unit				
Heavy Metals						
Aluminium	0.05	mg/L	< 0.05	< 0.05	-	-
Aluminium (filtered)	0.05	mg/L	< 0.05	< 0.05	-	-
Arsenic	0.001	mg/L	< 0.001	< 0.001	-	-
Arsenic (filtered)	0.001	mg/L	< 0.001	< 0.001	-	-
Barium	0.02	mg/L	< 0.02	< 0.02	-	-
Barium (filtered)	0.02	mg/L	< 0.02	< 0.02	-	-
Beryllium	0.001	mg/L	< 0.001	< 0.001	-	-
Beryllium (filtered)	0.001	mg/L	< 0.001	< 0.001	-	-
Cadmium	0.0002	mg/L	< 0.0002	< 0.0002	-	-
Cadmium (filtered)	0.0002	mg/L	< 0.0002	< 0.0002	-	-
Chromium	0.001	mg/L	0.001	0.001	-	-
Chromium (filtered)	0.001	mg/L	< 0.001	< 0.001	-	-
Cobalt	0.001	mg/L	< 0.001	< 0.001	-	-
Cobalt (filtered)	0.001	mg/L	< 0.001	< 0.001	-	-
Copper	0.001	mg/L	< 0.001	0.002	-	-
Copper (filtered)	0.001	mg/L	< 0.001	0.002	-	-
Iron	0.05	mg/L	< 0.05	< 0.05	-	-
Iron (filtered)	0.05	mg/L	< 0.05	< 0.05	-	-
Lead	0.001	mg/L	< 0.001	< 0.001	0.16	0.24
Lead (filtered)	0.001	mg/L	< 0.001	< 0.001	-	-
Manganese	0.005	mg/L	< 0.005	0.017	-	-
Manganese (filtered)	0.005	mg/L	< 0.005	0.019	-	-
Mercury	0.0001	mg/L	< 0.0001	< 0.0001	-	-
Mercury (filtered)	0.0001	mg/L	< 0.0001	< 0.0001	-	-
Nickel	0.001	mg/L	< 0.001	< 0.001	-	-
Nickel (filtered)	0.001	mg/L	< 0.001	< 0.001	-	-
Zinc	0.005	mg/L	0.051	0.044	-	-
Zinc (filtered)	0.005	mg/L	0.050	0.042	-	-

Sample History

Where samples are submitted/analysed over several days, the last date of extraction and analysis is reported. A recent review of our LIMS has resulted in the correction or clarification of some method identifications. Due to this, some of the method reference information on reports has changed. However, no substantive change has been made to our laboratory methods, and as such there is no change in the validity of current or previous results.

If the date and time of sampling are not provided, the Laboratory will not be responsible for compromised results should testing be performed outside the recommended holding time.

Description	Testing Site	Extracted	Holding Time
Heavy Metals - Method: LTM-MET-3040 Metals in Waters, Soils & Sediments by ICP-MS	Sydney	Apr 15, 2020	180 Days
Heavy Metals (filtered) - Method: LTM-MET-3040 Metals in Waters, Soils & Sediments by ICP-MS	Sydney	Apr 14, 2020	180 Days
Mobil Metals : Metals M15 - Method: LTM-MET-3040 Metals in Waters, Soils & Sediments by ICP-MS	Sydney	Apr 14, 2020	28 Days

Australia

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Site # 1254 & 14271

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IANZ # 1290

Company Name: Ramboll Australia Pty Ltd
Address: Level 3/100 Pacific Highway
North Sydney
NSW 2060

Order No.:
Report #: 712468
Phone: 02 9954 8118
Fax: 02 9954 8150

Received: Apr 6, 2020 2:36 PM
Due: Apr 15, 2020
Priority: 5 Day
Contact Name: Stephen Maxwell

Project Name:
Project ID: 318000780

Eurofins Analytical Services Manager : Andrew Black

Sample Detail						Aluminium	Aluminium (filtered)	Arsenic	Arsenic (filtered)	Barium	Barium (filtered)	Beryllium	Beryllium (filtered)	Cadmium	Cadmium (filtered)	Chromium	Chromium (filtered)	Cobalt	Cobalt (filtered)	Copper	Copper (filtered)	Iron	Iron (filtered)	Lead	Lead (filtered)	Manganese	Manganese (filtered)	Mercury	Mercury (filtered)	Nickel	Nickel (filtered)	Zinc	Zinc (filtered)	Moisture Set		
Melbourne Laboratory - NATA Site # 1254 & 14271																																				
Sydney Laboratory - NATA Site # 18217						X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	
Brisbane Laboratory - NATA Site # 20794																																				
Perth Laboratory - NATA Site # 23736																																				
External Laboratory																																				
No	Sample ID	Sample Date	Sampling Time	Matrix	LAB ID																															
1	P25_HA01_0_0	Apr 01, 2020		Soil	S20-Ap09754																		X										X			
2	P25_HA01_0_2	Apr 01, 2020		Soil	S20-Ap09755																		X											X		
3	P25_HA02_0_0	Apr 01, 2020		Soil	S20-Ap09756																		X											X		
4	P25_HA02_0_2	Apr 01, 2020		Soil	S20-Ap09757																		X											X		
5	P25_HA03_0_0	Apr 01, 2020		Soil	S20-Ap09758																		X											X		
6	P25_HA03_0_2	Apr 01, 2020		Soil	S20-Ap09759																		X											X		

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Christchurch
43 Detroit Drive
Rolleston, Christchurch 7675
Phone : 0800 856 450
IANZ # 1290

Company Name:	Ramboll Australia Pty Ltd	Order No.:		Received:	Apr 6, 2020 2:36 PM
Address:	Level 3/100 Pacific Highway North Sydney NSW 2060	Report #:	712468	Due:	Apr 15, 2020
Project Name:		Phone:	02 9954 8118	Priority:	5 Day
Project ID:	318000780	Fax:	02 9954 8150	Contact Name:	Stephen Maxwell

Eurofins Analytical Services Manager : Andrew Black

Sample Detail						Aluminium	Aluminium (filtered)	Arsenic	Arsenic (filtered)	Barium	Barium (filtered)	Beryllium	Beryllium (filtered)	Cadmium	Cadmium (filtered)	Chromium	Chromium (filtered)	Cobalt	Cobalt (filtered)	Copper	Copper (filtered)	Iron	Iron (filtered)	Lead	Lead (filtered)	Manganese	Manganese (filtered)	Mercury	Mercury (filtered)	Nickel	Nickel (filtered)	Zinc	Zinc (filtered)	Moisture Set	
Melbourne Laboratory - NATA Site # 1254 & 14271																																			
Sydney Laboratory - NATA Site # 18217						X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X
Brisbane Laboratory - NATA Site # 20794																																			
Perth Laboratory - NATA Site # 23736																																			
7	P25_HA04_0	Apr 01, 2020		Soil	S20-Ap09760																		X										X		
8	P25_HA04_2	Apr 01, 2020		Soil	S20-Ap09761																		X										X		
9	P25_HA05_0	Apr 01, 2020		Soil	S20-Ap09762																		X										X		
10	P25_HA05_2	Apr 01, 2020		Soil	S20-Ap09763																		X										X		
11	P25_TW1	Apr 01, 2020		Water	S20-Ap09764	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X		
12	P25_TW2	Apr 01, 2020		Water	S20-Ap09765	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X		
13	P25_TWS1	Apr 01, 2020		Water	S20-Ap09766																		X												
14	P25_TWS2	Apr 01, 2020		Water	S20-Ap09767																		X												
Test Counts						2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	14	2	2	2	2	2	2	2	2	2	10	

Internal Quality Control Review and Glossary

General

- Laboratory QC results for Method Blanks, Duplicates, Matrix Spikes, and Laboratory Control Samples follows guidelines delineated in the National Environment Protection (Assessment of Site Contamination) Measure 1999, as amended May 2013 and are included in this QC report where applicable. Additional QC data may be available on request.
- All soil/sediment/solid results are reported on a dry basis, unless otherwise stated.
- All biota/food results are reported on a wet weight basis on the edible portion, unless otherwise stated.
- Actual LORs are matrix dependant. Quoted LORs may be raised where sample extracts are diluted due to interferences.
- Results are uncorrected for matrix spikes or surrogate recoveries except for PFAS compounds.
- SVOC analysis on waters are performed on homogenised, unfiltered samples, unless noted otherwise.
- Samples were analysed on an 'as received' basis.
- Information identified on this report with blue colour, indicates data provided by customer, that may have an impact on the results.
- This report replaces any interim results previously issued.

Holding Times

Please refer to 'Sample Preservation and Container Guide' for holding times (QS3001).

For samples received on the last day of holding time, notification of testing requirements should have been received at least 6 hours prior to sample receipt deadlines as stated on the SRA.

If the Laboratory did not receive the information in the required timeframe, and regardless of any other integrity issues, suitably qualified results may still be reported.

Holding times apply from the date of sampling, therefore compliance to these may be outside the laboratory's control.

For VOCs containing vinyl chloride, styrene and 2-chloroethyl vinyl ether the holding time is 7 days however for all other VOCs such as BTEX or C6-10 TRH then the holding time is 14 days.

****NOTE:** pH duplicates are reported as a range NOT as RPD

Units

mg/kg: milligrams per kilogram

mg/L: milligrams per litre

ug/L: micrograms per litre

ppm: Parts per million

ppb: Parts per billion

%: Percentage

org/100mL: Organisms per 100 millilitres

NTU: Nephelometric Turbidity Units

MPN/100mL: Most Probable Number of organisms per 100 millilitres

Terms

Dry	Where a moisture has been determined on a solid sample the result is expressed on a dry basis.
LOR	Limit of Reporting.
SPIKE	Addition of the analyte to the sample and reported as percentage recovery.
RPD	Relative Percent Difference between two Duplicate pieces of analysis.
LCS	Laboratory Control Sample - reported as percent recovery.
CRM	Certified Reference Material - reported as percent recovery.
Method Blank	In the case of solid samples these are performed on laboratory certified clean sands and in the case of water samples these are performed on de-ionised water.
Surr - Surrogate	The addition of a like compound to the analyte target and reported as percentage recovery.
Duplicate	A second piece of analysis from the same sample and reported in the same units as the result to show comparison.
USEPA	United States Environmental Protection Agency
APHA	American Public Health Association
TCLP	Toxicity Characteristic Leaching Procedure
COC	Chain of Custody
SRA	Sample Receipt Advice
QSM	US Department of Defense Quality Systems Manual Version 5.3
CP	Client Parent - QC was performed on samples pertaining to this report
NCP	Non-Client Parent - QC performed on samples not pertaining to this report, QC is representative of the sequence or batch that client samples were analysed within.
TEQ	Toxic Equivalency Quotient

QC - Acceptance Criteria

RPD Duplicates: Global RPD Duplicates Acceptance Criteria is 30% however the following acceptance guidelines are equally applicable:

Results <10 times the LOR : No Limit

Results between 10-20 times the LOR : RPD must lie between 0-50%

Results >20 times the LOR : RPD must lie between 0-30%

Surrogate Recoveries: Recoveries must lie between 20-130% Phenols & 50-150% PFASs

PFAS field samples that contain surrogate recoveries in excess of the QC limit designated in QSM 5.3 where no positive PFAS results have been reported have been reviewed and no data was affected.

WA DWER (n=10): PFBA, PFPeA, PFHxA, PFHpA, PFOA, PFBS, PFHxS, PFOS, 6:2 FTSA, 8:2 FTSA

QC Data General Comments

- Where a result is reported as a less than (<), higher than the nominated LOR, this is due to either matrix interference, extract dilution required due to interferences or contaminant levels within the sample, high moisture content or insufficient sample provided.
- Duplicate data shown within this report that states the word "BATCH" is a Batch Duplicate from outside of your sample batch, but within the laboratory sample batch at a 1:10 ratio. The Parent and Duplicate data shown is not data from your samples.
- Organochlorine Pesticide analysis - where reporting LCS data, Toxaphene & Chlordane are not added to the LCS.
- Organochlorine Pesticide analysis - where reporting Spike data, Toxaphene is not added to the Spike.
- Total Recoverable Hydrocarbons - where reporting Spike & LCS data, a single spike of commercial Hydrocarbon products in the range of C12-C30 is added and it's Total Recovery is reported in the C10-C14 cell of the Report.
- pH and Free Chlorine analysed in the laboratory - Analysis on this test must begin within 30 minutes of sampling. Therefore laboratory analysis is unlikely to be completed within holding time. Analysis will begin as soon as possible after sample receipt.
- Recovery Data (Spikes & Surrogates) - where chromatographic interference does not allow the determination of Recovery the term "INT" appears against that analyte.
- Polychlorinated Biphenyls are spiked only using Aroclor 1260 in Matrix Spikes and LCS.
- For Matrix Spikes and LCS results a dash " - " in the report means that the specific analyte was not added to the QC sample.
- Duplicate RPDs are calculated from raw analytical data thus it is possible to have two sets of data.

Quality Control Results

Test	Units	Result 1			Acceptance Limits	Pass Limits	Qualifying Code
Method Blank							
Heavy Metals							
Aluminium	mg/L	< 0.05			0.05	Pass	
Aluminium (filtered)	mg/L	< 0.05			0.05	Pass	
Arsenic	mg/L	< 0.001			0.001	Pass	
Arsenic (filtered)	mg/L	< 0.001			0.001	Pass	
Barium	mg/L	< 0.02			0.02	Pass	
Barium (filtered)	mg/L	< 0.02			0.02	Pass	
Beryllium	mg/L	< 0.001			0.001	Pass	
Beryllium (filtered)	mg/L	< 0.001			0.001	Pass	
Cadmium	mg/L	< 0.0002			0.0002	Pass	
Cadmium (filtered)	mg/L	< 0.0002			0.0002	Pass	
Chromium	mg/L	< 0.001			0.001	Pass	
Chromium (filtered)	mg/L	< 0.001			0.001	Pass	
Cobalt	mg/L	< 0.001			0.001	Pass	
Cobalt (filtered)	mg/L	< 0.001			0.001	Pass	
Copper	mg/L	< 0.001			0.001	Pass	
Copper (filtered)	mg/L	< 0.001			0.001	Pass	
Iron	mg/L	< 0.05			0.05	Pass	
Iron (filtered)	mg/L	< 0.05			0.05	Pass	
Lead	mg/L	< 0.001			0.001	Pass	
Lead (filtered)	mg/L	< 0.001			0.001	Pass	
Manganese	mg/L	< 0.005			0.005	Pass	
Manganese (filtered)	mg/L	< 0.005			0.005	Pass	
Mercury	mg/L	< 0.0001			0.0001	Pass	
Mercury (filtered)	mg/L	< 0.0001			0.0001	Pass	
Nickel	mg/L	< 0.001			0.001	Pass	
Nickel (filtered)	mg/L	< 0.001			0.001	Pass	
Zinc	mg/L	< 0.005			0.005	Pass	
Zinc (filtered)	mg/L	< 0.005			0.005	Pass	
LCS - % Recovery							
Heavy Metals							
Aluminium	%	85			70-130	Pass	
Aluminium (filtered)	%	93			70-130	Pass	
Arsenic	%	102			70-130	Pass	
Arsenic (filtered)	%	109			70-130	Pass	
Barium	%	97			70-130	Pass	
Barium (filtered)	%	102			70-130	Pass	
Beryllium	%	103			70-130	Pass	
Beryllium (filtered)	%	108			70-130	Pass	
Cadmium	%	100			70-130	Pass	
Cadmium (filtered)	%	100			70-130	Pass	
Chromium	%	94			70-130	Pass	
Chromium (filtered)	%	94			70-130	Pass	
Cobalt	%	95			70-130	Pass	
Cobalt (filtered)	%	93			70-130	Pass	
Copper	%	97			70-130	Pass	
Copper (filtered)	%	91			70-130	Pass	
Iron	%	94			70-130	Pass	
Iron (filtered)	%	93			70-130	Pass	
Lead	%	98			70-130	Pass	
Lead (filtered)	%	97			70-130	Pass	

Test		Units	Result 1			Acceptance Limits	Pass Limits	Qualifying Code	
Manganese		%	92			70-130	Pass		
Manganese (filtered)		%	96			70-130	Pass		
Mercury		%	98			70-130	Pass		
Mercury (filtered)		%	93			70-130	Pass		
Nickel		%	97			70-130	Pass		
Nickel (filtered)		%	92			70-130	Pass		
Zinc		%	95			70-130	Pass		
Zinc (filtered)		%	97			70-130	Pass		
Test	Lab Sample ID	QA Source	Units	Result 1			Acceptance Limits	Pass Limits	Qualifying Code
Spike - % Recovery									
Heavy Metals				Result 1					
Aluminium (filtered)	S20-Ap16805	NCP	%	94			70-130	Pass	
Arsenic (filtered)	S20-Ap16805	NCP	%	85			70-130	Pass	
Barium (filtered)	S20-Ap16805	NCP	%	96			70-130	Pass	
Beryllium (filtered)	S20-Ap16805	NCP	%	103			70-130	Pass	
Cadmium (filtered)	S20-Ap16805	NCP	%	100			70-130	Pass	
Chromium (filtered)	S20-Ap16805	NCP	%	100			70-130	Pass	
Cobalt (filtered)	S20-Ap16805	NCP	%	103			70-130	Pass	
Copper	S20-Ap08166	NCP	%	95			70-130	Pass	
Copper (filtered)	S20-Ap16805	NCP	%	99			70-130	Pass	
Iron (filtered)	S20-Ap16805	NCP	%	90			70-130	Pass	
Lead (filtered)	S20-Ap16805	NCP	%	102			70-130	Pass	
Manganese (filtered)	S20-Ap16805	NCP	%	102			70-130	Pass	
Mercury (filtered)	S20-Ap16805	NCP	%	101			70-130	Pass	
Nickel (filtered)	S20-Ap16805	NCP	%	103			70-130	Pass	
Zinc (filtered)	S20-Ap16805	NCP	%	95			70-130	Pass	
Spike - % Recovery									
Heavy Metals				Result 1					
Lead	S20-Ap16805	NCP	%	98			70-130	Pass	
Test	Lab Sample ID	QA Source	Units	Result 1			Acceptance Limits	Pass Limits	Qualifying Code
Duplicate									
Heavy Metals				Result 1	Result 2	RPD			
Aluminium	S20-Ap09834	NCP	mg/L	0.06	0.08	17	30%	Pass	
Aluminium (filtered)	S20-Ap09848	NCP	mg/L	< 0.05	< 0.05	<1	30%	Pass	
Arsenic	S20-Ap09834	NCP	mg/L	< 0.001	< 0.001	<1	30%	Pass	
Arsenic (filtered)	S20-Ap09848	NCP	mg/L	< 0.001	< 0.001	<1	30%	Pass	
Barium	S20-Ap09834	NCP	mg/L	< 0.02	< 0.02	<1	30%	Pass	
Barium (filtered)	S20-Ap09848	NCP	mg/L	< 0.02	< 0.02	<1	30%	Pass	
Beryllium	S20-Ap09834	NCP	mg/L	< 0.001	< 0.001	<1	30%	Pass	
Beryllium (filtered)	S20-Ap09848	NCP	mg/L	< 0.001	< 0.001	<1	30%	Pass	
Cadmium	S20-Ap09834	NCP	mg/L	< 0.0002	< 0.0002	<1	30%	Pass	
Cadmium (filtered)	S20-Ap09848	NCP	mg/L	< 0.0002	< 0.0002	<1	30%	Pass	
Chromium	S20-Ap09834	NCP	mg/L	0.001	0.001	14	30%	Pass	
Chromium (filtered)	S20-Ap09848	NCP	mg/L	< 0.001	< 0.001	<1	30%	Pass	
Cobalt	S20-Ap09834	NCP	mg/L	< 0.001	< 0.001	<1	30%	Pass	
Cobalt (filtered)	S20-Ap09848	NCP	mg/L	< 0.001	< 0.001	<1	30%	Pass	
Copper	S20-Ap09834	NCP	mg/L	< 0.001	< 0.001	<1	30%	Pass	
Copper (filtered)	S20-Ap09848	NCP	mg/L	0.002	0.002	1.0	30%	Pass	
Iron	S20-Ap09834	NCP	mg/L	0.10	0.08	23	30%	Pass	
Iron (filtered)	S20-Ap09848	NCP	mg/L	< 0.05	< 0.05	<1	30%	Pass	
Lead	S20-Ap09834	NCP	mg/L	< 0.001	< 0.001	<1	30%	Pass	
Lead (filtered)	S20-Ap09848	NCP	mg/L	< 0.001	< 0.001	<1	30%	Pass	
Manganese	S20-Ap09834	NCP	mg/L	0.007	0.007	1.0	30%	Pass	

Test	Lab Sample ID	QA Source	Units	Result 1			Acceptance Limits	Pass Limits	Qualifying Code
Duplicate									
Heavy Metals				Result 1	Result 2	RPD			
Manganese (filtered)	S20-Ap09848	NCP	mg/L	0.005	0.005	8.0	30%	Pass	
Mercury	S20-Ap09834	NCP	mg/L	< 0.0001	< 0.0001	<1	30%	Pass	
Mercury (filtered)	S20-Ap09848	NCP	mg/L	< 0.0001	< 0.0001	<1	30%	Pass	
Nickel	S20-Ap09834	NCP	mg/L	< 0.001	< 0.001	<1	30%	Pass	
Nickel (filtered)	S20-Ap09848	NCP	mg/L	< 0.001	< 0.001	<1	30%	Pass	
Zinc	S20-Ap09834	NCP	mg/L	0.064	0.073	14	30%	Pass	
Zinc (filtered)	S20-Ap09848	NCP	mg/L	0.028	0.030	6.0	30%	Pass	

Comments**Sample Integrity**

Custody Seals Intact (if used)	N/A
Attempt to Chill was evident	No
Sample correctly preserved	Yes
Appropriate sample containers have been used	Yes
Sample containers for volatile analysis received with minimal headspace	Yes
Samples received within HoldingTime	Yes
Some samples have been subcontracted	No

Authorised By

Andrew Black Analytical Services Manager
Gabriele Cordero Senior Analyst-Metal (NSW)

**Glenn Jackson
General Manager**

Final report - this Report replaces any previously issued Report

- Indicates Not Requested

* Indicates NATA accreditation does not cover the performance of this service

Measurement uncertainty of test data is available on request or please [click here](#).

Eurofins shall not be liable for loss, cost, damages or expenses incurred by the client, or any other person or company, resulting from the use of any information or interpretation given in this report. In no case shall Eurofins be liable for consequential damages including, but not limited to, lost profits, damages for failure to meet deadlines and lost production arising from this report. This document shall not be reproduced except in full and relates only to the items tested. Unless indicated otherwise, the tests were performed on the samples as received.

#AU04_COCNSW

Subject:

FW: 5 DAY TAT ADDITIONAL ANALYSIS: FW: Sediment samples

From: Joshua Blackwell [mailto:JBLACKWELL@ramboll.com]

Sent: Tuesday, 28 April 2020 3:11 PM

To: Andrew Black

Subject: Sediment samples

EXTERNAL EMAIL *

Hi Andrew,

Could I please request the following samples be dried and analysed for lead in mg/kg and moisture content. Please report in 8 separate reports as follows;

1. P6_TWS1 (S20-Ap02120)
2. P24_TWS1 (S20-Ap09836) & P24_TWS2 (S20-Ap09837)
3. P25_TWS1 (S20-Ap09766) & P25_TWS2 (S20-Ap09767)
4. P26_TWS1 (S20-Ap09881)
5. P27_TWS1 (S20-Ap09734)
6. P28_TWS1 (S20-Ap09694) & P28_TWS2 (S20-Ap09695) & P28_TWS3 (S20-Ap09696)
7. P31_TWS1 (S20-Ap09851) & P31_TWS2 (S20-Ap09852) & P31_TWS3 (S20-Ap09853)
8. P32_TWS2 (S20-Ap09662)

Kind regards

Joshua Blackwell


Consultant

3182675 - Hunter

D +61 (481) 157565

M +61 (481) 157565

jblackwell@ramboll.com

Connect with us 

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The Junction

NSW 2291

Australia

<https://ramboll.com>

Ramboll Australia Pty Ltd.

ACN 095 437 442

ABN 49 095 437 442

Click [here](#) to report this email as spam.

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Melbourne

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NATA # 1261
Site # 1254 & 14271

Sydney

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Phone : +61 2 9900 8400
NATA # 1261 Site # 18217

Brisbane

1/21 Smallwood Place
Murarrie QLD 4172
Phone : +61 7 3902 4600
NATA # 1261 Site # 20794

Perth

2/91 Leach Highway
Kewdale WA 6105
Phone : +61 8 9251 9600
NATA # 1261 Site # 23736

Sample Receipt Advice

Company name: **Ramboll Australia Pty Ltd**
Contact name: Joshua Blackwell
Project name: ADDITIONAL - 318000780
COC number: Not provided
Turn around time: 5 Day
Date/Time received: Apr 28, 2020 3:11 PM
Eurofins reference: **716291**

Sample information

- A detailed list of analytes logged into our LIMS, is included in the attached summary table.
- All samples have been received as described on the above COC.
- COC has been completed correctly.
- Attempt to chill was evident.
- Appropriately preserved sample containers have been used.
- All samples were received in good condition.
- Samples have been provided with adequate time to commence analysis in accordance with the relevant holding times.
- Appropriate sample containers have been used.
- Split sample sent to requested external lab.
- Some samples have been subcontracted.
- N/A Custody Seals intact (if used).

Contact notes

If you have any questions with respect to these samples please contact:

Andrew Black on Phone : (+61) 2 9900 8490 or by e.mail: AndrewBlack@eurofins.com

Results will be delivered electronically via e.mail to Joshua Blackwell - jblackwell@ramboll.com.

Note: A copy of these results will also be delivered to the general Ramboll Australia Pty Ltd email address.

Australia

Melbourne
 6 Monterey Road
 Dandenong South VIC 3175
 Phone : +61 3 8564 5000
 NATA # 1261
 Site # 1254 & 14271

Sydney
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 Kewdale WA 6105
 Phone : +61 8 9251 9600
 NATA # 1261
 Site # 23736

New Zealand

Auckland
 35 O'Rorke Road
 Penrose, Auckland 1061
 Phone : +64 9 526 45 51
 IANZ # 1327

Christchurch
 43 Detroit Drive
 Rolleston, Christchurch 7675
 Phone : 0800 856 450
 IANZ # 1290

Company Name: Ramboll Australia Pty Ltd
Address: Level 3/100 Pacific Highway
 North Sydney
 NSW 2060
Project Name: ADDITIONAL - 318000780

Order No.:
Report #: 716291
Phone: 02 9954 8118
Fax: 02 9954 8150

Received: Apr 28, 2020 3:11 PM
Due: May 5, 2020
Priority: 5 Day
Contact Name: Joshua Blackwell

Eurofins Analytical Services Manager : Andrew Black

Sample Detail						Lead	Moisture Set
Melbourne Laboratory - NATA Site # 1254 & 14271							
Sydney Laboratory - NATA Site # 18217						X	X
Brisbane Laboratory - NATA Site # 20794							
Perth Laboratory - NATA Site # 23736							
External Laboratory							
No	Sample ID	Sample Date	Sampling Time	Matrix	LAB ID		
1	P25_TWS1	Apr 01, 2020		Sediment	S20-Ap42272	X	X
2	P25_TWS2	Apr 01, 2020		Sediment	S20-Ap42273	X	X
Test Counts						2	2

Ramboll Environ Australia Pty Ltd
 Level 3/100 Pacific Highway
 North Sydney
 NSW 2060



NATA Accredited
Accreditation Number 1261
Site Number 18217

Accredited for compliance with ISO/IEC 17025 – Testing
 The results of the tests, calibrations and/or
 measurements included in this document are traceable
 to Australian/national standards.

Attention: **Joshua Blackwell**

Report **716291-S**
 Project name **ADDITIONAL - 318000780**
 Received Date **Apr 28, 2020**

Client Sample ID			P25_TWS1	P25_TWS2
Sample Matrix			Sediment	Sediment
Eurofins Sample No.			S20-Ap42272	S20-Ap42273
Date Sampled			Apr 01, 2020	Apr 01, 2020
Test/Reference	LOR	Unit		
Heavy Metals				
Lead	5	mg/kg	4300	71
% Moisture	1	%	99	81

Sample History

Where samples are submitted/analysed over several days, the last date of extraction and analysis is reported. A recent review of our LIMS has resulted in the correction or clarification of some method identifications. Due to this, some of the method reference information on reports has changed. However, no substantive change has been made to our laboratory methods, and as such there is no change in the validity of current or previous results.

If the date and time of sampling are not provided, the Laboratory will not be responsible for compromised results should testing be performed outside the recommended holding time.

Description	Testing Site	Extracted	Holding Time
Heavy Metals - Method: LTM-MET-3040 Metals in Waters, Soils & Sediments by ICP-MS	Sydney	May 04, 2020	180 Days
% Moisture - Method: LTM-GEN-7080 Moisture	Sydney	Apr 29, 2020	14 Days

Australia

Melbourne
 6 Monterey Road
 Dandenong South VIC 3175
 Phone : +61 3 8564 5000
 NATA # 1261
 Site # 1254 & 14271

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 Unit F3, Building F
 16 Mars Road
 Lane Cove West NSW 2066
 Phone : +61 2 9900 8400
 NATA # 1261 Site # 18217

Brisbane
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 Phone : +61 8 9251 9600
 NATA # 1261
 Site # 23736

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 IANZ # 1327

Christchurch
 43 Detroit Drive
 Rolleston, Christchurch 7675
 Phone : 0800 856 450
 IANZ # 1290

Company Name: Ramboll Australia Pty Ltd
Address: Level 3/100 Pacific Highway
 North Sydney
 NSW 2060
Project Name: ADDITIONAL - 318000780

Order No.:
Report #: 716291
Phone: 02 9954 8118
Fax: 02 9954 8150

Received: Apr 28, 2020 3:11 PM
Due: May 5, 2020
Priority: 5 Day
Contact Name: Joshua Blackwell

Eurofins Analytical Services Manager : Andrew Black

Sample Detail						Lead	Moisture Set
Melbourne Laboratory - NATA Site # 1254 & 14271							
Sydney Laboratory - NATA Site # 18217						X	X
Brisbane Laboratory - NATA Site # 20794							
Perth Laboratory - NATA Site # 23736							
External Laboratory							
No	Sample ID	Sample Date	Sampling Time	Matrix	LAB ID		
1	P25_TWS1	Apr 01, 2020		Sediment	S20-Ap42272	X	X
2	P25_TWS2	Apr 01, 2020		Sediment	S20-Ap42273	X	X
Test Counts						2	2

Internal Quality Control Review and Glossary
General

- Laboratory QC results for Method Blanks, Duplicates, Matrix Spikes, and Laboratory Control Samples follows guidelines delineated in the National Environment Protection (Assessment of Site Contamination) Measure 1999, as amended May 2013 and are included in this QC report where applicable. Additional QC data may be available on request.
- All soil/sediment/solid results are reported on a dry basis, unless otherwise stated.
- All biota/food results are reported on a wet weight basis on the edible portion, unless otherwise stated.
- Actual LORs are matrix dependant. Quoted LORs may be raised where sample extracts are diluted due to interferences.
- Results are uncorrected for matrix spikes or surrogate recoveries except for PFAS compounds.
- SVOC analysis on waters are performed on homogenised, unfiltered samples, unless noted otherwise.
- Samples were analysed on an 'as received' basis.
- Information identified on this report with blue colour, indicates data provided by customer, that may have an impact on the results.
- This report replaces any interim results previously issued.

Holding Times

Please refer to 'Sample Preservation and Container Guide' for holding times (QS3001).

For samples received on the last day of holding time, notification of testing requirements should have been received at least 6 hours prior to sample receipt deadlines as stated on the SRA.

If the Laboratory did not receive the information in the required timeframe, and regardless of any other integrity issues, suitably qualified results may still be reported.

Holding times apply from the date of sampling, therefore compliance to these may be outside the laboratory's control.

For VOCs containing vinyl chloride, styrene and 2-chloroethyl vinyl ether the holding time is 7 days however for all other VOCs such as BTEX or C6-10 TRH then the holding time is 14 days.

****NOTE:** pH duplicates are reported as a range NOT as RPD

Units

mg/kg: milligrams per kilogram

mg/L: milligrams per litre

ug/L: micrograms per litre

ppm: Parts per million

ppb: Parts per billion

%: Percentage

org/100mL: Organisms per 100 millilitres

NTU: Nephelometric Turbidity Units

MPN/100mL: Most Probable Number of organisms per 100 millilitres

Terms

Dry	Where a moisture has been determined on a solid sample the result is expressed on a dry basis.
LOR	Limit of Reporting.
SPIKE	Addition of the analyte to the sample and reported as percentage recovery.
RPD	Relative Percent Difference between two Duplicate pieces of analysis.
LCS	Laboratory Control Sample - reported as percent recovery.
CRM	Certified Reference Material - reported as percent recovery.
Method Blank	In the case of solid samples these are performed on laboratory certified clean sands and in the case of water samples these are performed on de-ionised water.
Surr - Surrogate	The addition of a like compound to the analyte target and reported as percentage recovery.
Duplicate	A second piece of analysis from the same sample and reported in the same units as the result to show comparison.
USEPA	United States Environmental Protection Agency
APHA	American Public Health Association
TCLP	Toxicity Characteristic Leaching Procedure
COC	Chain of Custody
SRA	Sample Receipt Advice
QSM	US Department of Defense Quality Systems Manual Version 5.3
CP	Client Parent - QC was performed on samples pertaining to this report
NCP	Non-Client Parent - QC performed on samples not pertaining to this report, QC is representative of the sequence or batch that client samples were analysed within.
TEQ	Toxic Equivalency Quotient

QC - Acceptance Criteria

RPD Duplicates: Global RPD Duplicates Acceptance Criteria is 30% however the following acceptance guidelines are equally applicable:

Results <10 times the LOR : No Limit

Results between 10-20 times the LOR : RPD must lie between 0-50%

Results >20 times the LOR : RPD must lie between 0-30%

Surrogate Recoveries: Recoveries must lie between 20-130% Phenols & 50-150% PFASs

PFAS field samples that contain surrogate recoveries in excess of the QC limit designated in QSM 5.3 where no positive PFAS results have been reported have been reviewed and no data was affected.

WA DWER (n=10): PFBA, PFPeA, PFHxA, PFHpA, PFOA, PFBS, PFHxS, PFOS, 6:2 FTSA, 8:2 FTSA

QC Data General Comments

- Where a result is reported as a less than (<), higher than the nominated LOR, this is due to either matrix interference, extract dilution required due to interferences or contaminant levels within the sample, high moisture content or insufficient sample provided.
- Duplicate data shown within this report that states the word "BATCH" is a Batch Duplicate from outside of your sample batch, but within the laboratory sample batch at a 1:10 ratio. The Parent and Duplicate data shown is not data from your samples.
- Organochlorine Pesticide analysis - where reporting LCS data, Toxaphene & Chlordane are not added to the LCS.
- Organochlorine Pesticide analysis - where reporting Spike data, Toxaphene is not added to the Spike.
- Total Recoverable Hydrocarbons - where reporting Spike & LCS data, a single spike of commercial Hydrocarbon products in the range of C12-C30 is added and it's Total Recovery is reported in the C10-C14 cell of the Report.
- pH and Free Chlorine analysed in the laboratory - Analysis on this test must begin within 30 minutes of sampling. Therefore laboratory analysis is unlikely to be completed within holding time. Analysis will begin as soon as possible after sample receipt.
- Recovery Data (Spikes & Surrogates) - where chromatographic interference does not allow the determination of Recovery the term "INT" appears against that analyte.
- Polychlorinated Biphenyls are spiked only using Aroclor 1260 in Matrix Spikes and LCS.
- For Matrix Spikes and LCS results a dash " - " in the report means that the specific analyte was not added to the QC sample.
- Duplicate RPDs are calculated from raw analytical data thus it is possible to have two sets of data.

Quality Control Results

Test				Units	Result 1		Acceptance Limits	Pass Limits	Qualifying Code		
Method Blank											
Heavy Metals											
Lead				mg/kg	< 5		5	Pass			
LCS - % Recovery											
Heavy Metals											
Lead				%	99		70-130	Pass			
Test	Lab Sample ID	QA Source	Units	Result 1			Acceptance Limits	Pass Limits	Qualifying Code		
Spike - % Recovery											
Heavy Metals											
Lead				S20-Ap44661	NCP	%	91	70-130	Pass		
Duplicate											
Heavy Metals											
Lead				S20-Ap42291	NCP	mg/kg	97	100	4.0	30%	Pass
Duplicate											
% Moisture				S20-My03200	NCP	%	13	14	5.0	30%	Pass

Comments**Sample Integrity**

Custody Seals Intact (if used)	N/A
Attempt to Chill was evident	No
Sample correctly preserved	Yes
Appropriate sample containers have been used	Yes
Sample containers for volatile analysis received with minimal headspace	Yes
Samples received within HoldingTime	Yes
Some samples have been subcontracted	No

Authorised By

Andrew Black Analytical Services Manager
Gabriele Cordero Senior Analyst-Metal (NSW)

**Glenn Jackson
General Manager**

Final report - this Report replaces any previously issued Report

- Indicates Not Requested

* Indicates NATA accreditation does not cover the performance of this service

Measurement uncertainty of test data is available on request or please [click here](#).

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CHAIN OF CUSTODY RECORD

ABN 50 005 085 521

Sydney Laboratory
Unit F3 Bld.F, 16 Mars Rd, Lane Cove West, NSW 2066
02 9900 8400 EnviroSampleNSW@eurofins.com

Brisbane Laboratory
Unit 1, 21 Smallwood Pl., Murarie, QLD 4172
07 3902 4600 EnviroSampleQLD@eurofins.com

Perth Laboratory
Unit 2, 91 Leach Highway, Kewdale WA 6105
08 9251 9600 EnviroSampleWA@eurofins.com

Melbourne Laboratory
2 Kingston Town Close, Oakleigh, VIC 3166
03 8564 5000 EnviroSampleVic@eurofins.com

Company		Ramboll		Project №		318000780		Project Manager		Stephen Maxwell		Sampler(s)		JK + RC			
Address		50 Glebe Road the Junction		Project Name				EDD Format (ESdat, EQUIS)		Excel and PDF		Handed over by		SM			
Contact Name		Stephen Maxwell		Analyses (Note: Where metals are requested, please specify "Total" or "Filtered". SUITE code must be used to identify SUITE pricing.) Lead M13 (Al, As, Ba, Be, Cd, Cr, Co, Cu, Fe, Pb, Mn, Hg, Ni, Zn) total M13 (Al, As, Ba, Be, Cd, Cr, Co, Cu, Fe, Pb, Mn, Hg, Ni, Zn) dissolved								Email for Invoice		smaxwell@ramboll.com asiapac-accounts@ramboll.com			
Phone №														Email for Results		smaxwell@ramboll.com jblackwell@ramboll.com rcondon@ramboll.com shyde@ramboll.com	
Special Directions														jblackwell@ramboll.com		Turnaround Time (TAT) Requirements (Default will be 5 days if not ticked) <input type="checkbox"/> Overnight (9am)* <input type="checkbox"/> 1 Day* <input type="checkbox"/> 2 Day* <input type="checkbox"/> 3 Day* <input checked="" type="checkbox"/> 5 Day* <input type="checkbox"/> Other () * Surcharges apply	
Purchase Order																Sample Comments / Dangerous Goods Hazard Warning	
Quote ID №		180813RAMN_1															
№	Client Sample ID	Sampled Date/Time (dd/mm/yy hh:mm)	Matrix (Solid (S) Water (W))														
1	P26_HA01_0.0	1/04/20	S	X													
2	P26_HA01_0.2	1/04/20	S	X													
3	P26_HA02_0.0	1/04/20	S	X													
4	P26_HA02_0.2	1/04/20	S	X													
5	P26_HA03_0.0	1/04/20	S	X													
6	P26_HA03_0.2	1/04/20	S	X													
7	P26_HA04_0.0	1/04/20	S	X													
8	P26_HA04_0.2	1/04/20	S	X													
9	P26_HA05_0.0	1/04/20	S	X													
10	P26_HA05_0.2	1/04/20	S	X													
Total Counts				10													
Method of Shipment		<input type="checkbox"/> Courier (#) <input type="checkbox"/> Hand Delivered <input type="checkbox"/> Postal		Name		Signature		Date		Date		Time		Time			
Eurofins mgt Laboratory Use Only		Received By <i>Pupau</i>		SYD BNE MEL PER ADL NTL DRW		Signature		Date <i>06/04/20</i>		Date		Time <i>2:36 PM</i>		Temperature <i>26.2 C</i>			
		Received By		SYD BNE MEL PER ADL NTL DRW		Signature		Date		Date		Time		Report № <i>712484</i>			

Submission of samples to the laboratory will be deemed as acceptance of Eurofins | mgt Standard Terms and Conditions unless agreed otherwise. A copy of Eurofins | mgt Standard Terms and Conditions is available on request.

Eurofins Environment Testing Australia Pty Ltd trading as Eurofins | mgt



CHAIN OF CUSTODY RECORD

ABN 50 005 085 521

Sydney Laboratory
Unit F3 Bld F, 16 Mars Rd, Lane Cove West, NSW 2066
02 9900 8400 EnviroSampleNSW@eurofins.com

Brisbane Laboratory
Unit 1, 21 Smallwood Pl, Murarrie, QLD 4172
07 3902 4600 EnviroSampleQLD@eurofins.com

Perth Laboratory
Unit 2, 91 Leach Highway, Kewdale WA 6105
08 9251 9600 EnviroSampleWA@eurofins.com

Melbourne Laboratory
2 Kingston Town Close, Oakleigh, VIC 3166
03 8564 5000 EnviroSampleVic@eurofins.com

Company		Ramboll		Project No		318000780		Project Manager		Stephen Maxwell		Sampler(s)		JB + JAB			
Address		50 Glebe Road the Junction		Project Name				EDD Format (ESdat, EQuIS,		Excel and PDF		Handed over by		SM			
Contact Name		Stephen Maxwell		<small>Analyses (Note: Where suitable and requested, please specify "Total" or "Filtered") SUITE code must be used to avoid SUITE pricing</small> Lead M13 (Al, As, Ba, Be, Cd, Cr, Co, Cu, Fe, Pb, Mn, Hg, Ni, Zn) total M13 (Al, As, Ba, Be, Cd, Cr, Co, Cu, Fe, Pb, Mn, Hg, Ni, Zn) dissolved										Email for Invoice		smaxwell@ramboll.com asiapac-accounts@ramboll.com	
Phone No														Email for Results		smaxwell@ramboll.com jblackwell@ramboll.com rcondon@ramboll.com shyde@ramboll.com	
Special Directions														Turnaround Time (TAT) Requirements (Default will be 5 days if not ticked)		<input type="checkbox"/> Overnight (9am)* <input type="checkbox"/> 1 Day* <input type="checkbox"/> 2 Day* <input type="checkbox"/> 3 Day* <input checked="" type="checkbox"/> 5 Day* <input type="checkbox"/> Other () * Surcharges apply	
Purchase Order														Sample Comments / Dangerous Goods Hazard Warning			
Quote ID No		180813RAMN_1															
No	Client Sample ID	Sampled Date/Time (dd/mm/yy hh:mm)	Matrix (Solid (S) Water (W))														
1	P26_TW1	1/04/20	W		X	X											
2	P26_TWS1	1/04/20	sediment	X											Please homogenise in this sample then analyse		
3																	
4																	
5																	
6																	
7																	
8																	
9																	
10																	
Total Counts				1	1	1											
Method of Shipment		<input type="checkbox"/> Courier (#) <input type="checkbox"/> Hand Delivered <input type="checkbox"/> Postal		Name		Signature		Date		Time		Date		Time			
Eurofins mgt Laboratory Use Only		Received By <i>[Signature]</i>		SYD BNE MEL PER ADL NTL DRW		Signature		Date <i>[Signature]</i>		Time		Date		Temperature			
		Received By		SYD BNE MEL PER ADL NTL DRW		Signature		Date		Time		Date		Report No			

Submission of samples to the laboratory will be deemed as acceptance of Eurofins | mgt Standard Terms and Conditions unless agreed otherwise. A copy of Eurofins | mgt Standard Terms and Conditions is available on request.

Melbourne

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NATA # 1261 Site # 18217

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Phone : +61 7 3902 4600
NATA # 1261 Site # 20794

Perth

2/91 Leach Highway
Kewdale WA 6105
Phone : +61 8 9251 9600
NATA # 1261 Site # 23736

Sample Receipt Advice

Company name: **Ramboll Australia Pty Ltd**

Contact name: **Stephen Maxwell**

Project ID: **318000780**

COC number: **Not provided**

Turn around time: **5 Day**

Date/Time received: **Apr 6, 2020 2:36 PM**

Eurofins reference: **712484**

Sample information

- A detailed list of analytes logged into our LIMS, is included in the attached summary table.
- All samples have been received as described on the above COC.
- COC has been completed correctly.
- Attempt to chill was evident.
- Appropriately preserved sample containers have been used.
- All samples were received in good condition.
- Samples have been provided with adequate time to commence analysis in accordance with the relevant holding times.
- Appropriate sample containers have been used.
- Sample containers for volatile analysis received with zero headspace.
- Split sample sent to requested external lab.
- Some samples have been subcontracted.
- N/A Custody Seals intact (if used).

Contact notes

If you have any questions with respect to these samples please contact:

Andrew Black on Phone : (+61) 2 9900 8490 or by e.mail: AndrewBlack@eurofins.com

Results will be delivered electronically via e.mail to Stephen Maxwell - smaxwell@ramboll.com.

Note: A copy of these results will also be delivered to the general Ramboll Australia Pty Ltd email address.

Ramboll Environ Australia Pty Ltd
 Level 3/100 Pacific Highway
 North Sydney
 NSW 2060



NATA Accredited
 Accreditation Number 1261
 Site Number 18217

Accredited for compliance with ISO/IEC 17025 – Testing
 The results of the tests, calibrations and/or
 measurements included in this document are traceable
 to Australian/national standards.

Attention: Stephen Maxwell

Report 712484-S
 Project name
 Project ID 318000780
 Received Date Apr 06, 2020

Client Sample ID			P26_HA01_0.0	P26_HA01_0.2	P26_HA02_0.0	P26_HA02_0.2
Sample Matrix			Soil	Soil	Soil	Soil
Eurofins Sample No.			S20-Ap09870	S20-Ap09871	S20-Ap09872	S20-Ap09873
Date Sampled			Apr 01, 2020	Apr 01, 2020	Apr 01, 2020	Apr 01, 2020
Test/Reference	LOR	Unit				
Heavy Metals						
Lead	5	mg/kg	20	23	32	35
% Moisture	1	%	11	12	10	12

Client Sample ID			P26_HA03_0.0	P26_HA03_0.2	P26_HA04_0.0	P26_HA04_0.2
Sample Matrix			Soil	Soil	Soil	Soil
Eurofins Sample No.			S20-Ap09874	S20-Ap09875	S20-Ap09876	S20-Ap09877
Date Sampled			Apr 01, 2020	Apr 01, 2020	Apr 01, 2020	Apr 01, 2020
Test/Reference	LOR	Unit				
Heavy Metals						
Lead	5	mg/kg	30	33	27	17
% Moisture	1	%	18	14	12	10

Client Sample ID			P26_HA05_0.0	P26_HA05_0.2
Sample Matrix			Soil	Soil
Eurofins Sample No.			S20-Ap09878	S20-Ap09879
Date Sampled			Apr 01, 2020	Apr 01, 2020
Test/Reference	LOR	Unit		
Heavy Metals				
Lead	5	mg/kg	57	21
% Moisture	1	%	13	8.0

Sample History

Where samples are submitted/analysed over several days, the last date of extraction and analysis is reported.

A recent review of our LIMS has resulted in the correction or clarification of some method identifications. Due to this, some of the method reference information on reports has changed. However, no substantive change has been made to our laboratory methods, and as such there is no change in the validity of current or previous results.

If the date and time of sampling are not provided, the Laboratory will not be responsible for compromised results should testing be performed outside the recommended holding time.

Description

Heavy Metals

- Method: LTM-MET-3040 Metals in Waters, Soils & Sediments by ICP-MS

% Moisture

- Method: LTM-GEN-7080 Moisture

Testing Site

Sydney

Sydney

Extracted

Apr 09, 2020

Apr 07, 2020

Holding Time

180 Days

14 Days

Australia

Melbourne
6 Monterey Road
Dandenong South VIC 3175
Phone : +61 3 8564 5000
NATA # 1261
Site # 1254 & 14271

Sydney
Unit F3, Building F
16 Mars Road
Lane Cove West NSW 2066
Phone : +61 2 9900 8400
NATA # 1261 Site # 18217

Brisbane
1/21 Smallwood Place
Murarrie QLD 4172
Phone : +61 7 3902 4600
NATA # 1261 Site # 20794

Perth
2/91 Leach Highway
Kewdale WA 6105
Phone : +61 8 9251 9600
NATA # 1261
Site # 23736

New Zealand

Auckland
35 O'Rorke Road
Penrose, Auckland 1061
Phone : +64 9 526 45 51
IANZ # 1327

Christchurch
43 Detroit Drive
Rolleston, Christchurch 7675
Phone : 0800 856 450
IANZ # 1290

Company Name: Ramboll Australia Pty Ltd
Address: Level 3/100 Pacific Highway
North Sydney
NSW 2060

Order No.:
Report #: 712484
Phone: 02 9954 8118
Fax: 02 9954 8150

Received: Apr 6, 2020 2:36 PM
Due: Apr 15, 2020
Priority: 5 Day
Contact Name: Stephen Maxwell

Project Name:
Project ID: 318000780

Eurofins Analytical Services Manager : Andrew Black

Sample Detail						Aluminium	Aluminium (filtered)	Arsenic	Arsenic (filtered)	Barium	Barium (filtered)	Beryllium	Beryllium (filtered)	Cadmium	Cadmium (filtered)	Chromium	Chromium (filtered)	Cobalt	Cobalt (filtered)	Copper	Copper (filtered)	Iron	Iron (filtered)	Lead	Lead (filtered)	Manganese	Manganese (filtered)	Mercury	Mercury (filtered)	Nickel	Nickel (filtered)	Zinc	Zinc (filtered)	Moisture Set	
Melbourne Laboratory - NATA Site # 1254 & 14271																																			
Sydney Laboratory - NATA Site # 18217						X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X
Brisbane Laboratory - NATA Site # 20794																																			
Perth Laboratory - NATA Site # 23736																																			
External Laboratory																																			
No	Sample ID	Sample Date	Sampling Time	Matrix	LAB ID																														
1	P26_HA01_0.0	Apr 01, 2020		Soil	S20-Ap09870																		X										X		
2	P26_HA01_0.2	Apr 01, 2020		Soil	S20-Ap09871																		X										X		
3	P26_HA02_0.0	Apr 01, 2020		Soil	S20-Ap09872																		X										X		
4	P26_HA02_0.2	Apr 01, 2020		Soil	S20-Ap09873																		X										X		
5	P26_HA03_0.0	Apr 01, 2020		Soil	S20-Ap09874																		X										X		
6	P26_HA03_0.2	Apr 01, 2020		Soil	S20-Ap09875																		X										X		

Australia

Melbourne
6 Monterey Road
Dandenong South VIC 3175
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NATA # 1261
Site # 1254 & 14271

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Lane Cove West NSW 2066
Phone : +61 2 9900 8400
NATA # 1261 Site # 18217

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35 O'Rorke Road
Penrose, Auckland 1061
Phone : +64 9 526 45 51
IANZ # 1327

Christchurch
43 Detroit Drive
Rolleston, Christchurch 7675
Phone : 0800 856 450
IANZ # 1290

ABN – 50 005 085 521

web : www.eurofins.com.au

e.mail : EnviroSales@eurofins.com

Company Name: Ramboll Australia Pty Ltd
Address: Level 3/100 Pacific Highway
North Sydney
NSW 2060

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Melbourne Laboratory - NATA Site # 1254 & 14271																																			
Sydney Laboratory - NATA Site # 18217						X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X
Brisbane Laboratory - NATA Site # 20794																																			
Perth Laboratory - NATA Site # 23736																																			
7	P26_HA04_0	Apr 01, 2020		Soil	S20-Ap09876																		X										X		
8	P26_HA04_2	Apr 01, 2020		Soil	S20-Ap09877																		X										X		
9	P26_HA05_0	Apr 01, 2020		Soil	S20-Ap09878																		X										X		
10	P26_HA05_2	Apr 01, 2020		Soil	S20-Ap09879																		X										X		
11	P26_TW1	Apr 01, 2020		Water	S20-Ap09880	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X		
12	P26_TWS1	Apr 01, 2020		Water	S20-Ap09881																		X												
Test Counts						1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	12	1	1	1	1	1	1	1	1	1	10

Internal Quality Control Review and Glossary
General

- Laboratory QC results for Method Blanks, Duplicates, Matrix Spikes, and Laboratory Control Samples follows guidelines delineated in the National Environment Protection (Assessment of Site Contamination) Measure 1999, as amended May 2013 and are included in this QC report where applicable. Additional QC data may be available on request.
- All soil/sediment/solid results are reported on a dry basis, unless otherwise stated.
- All biota/food results are reported on a wet weight basis on the edible portion, unless otherwise stated.
- Actual LORs are matrix dependant. Quoted LORs may be raised where sample extracts are diluted due to interferences.
- Results are uncorrected for matrix spikes or surrogate recoveries except for PFAS compounds.
- SVOC analysis on waters are performed on homogenised, unfiltered samples, unless noted otherwise.
- Samples were analysed on an 'as received' basis.
- Information identified on this report with blue colour, indicates data provided by customer, that may have an impact on the results.
- This report replaces any interim results previously issued.

Holding Times

Please refer to 'Sample Preservation and Container Guide' for holding times (QS3001).

For samples received on the last day of holding time, notification of testing requirements should have been received at least 6 hours prior to sample receipt deadlines as stated on the SRA.

If the Laboratory did not receive the information in the required timeframe, and regardless of any other integrity issues, suitably qualified results may still be reported.

Holding times apply from the date of sampling, therefore compliance to these may be outside the laboratory's control.

For VOCs containing vinyl chloride, styrene and 2-chloroethyl vinyl ether the holding time is 7 days however for all other VOCs such as BTEX or C6-10 TRH then the holding time is 14 days.

****NOTE:** pH duplicates are reported as a range NOT as RPD

Units

mg/kg: milligrams per kilogram

mg/L: milligrams per litre

ug/L: micrograms per litre

ppm: Parts per million

ppb: Parts per billion

%: Percentage

org/100mL: Organisms per 100 millilitres

NTU: Nephelometric Turbidity Units

MPN/100mL: Most Probable Number of organisms per 100 millilitres

Terms

Dry	Where a moisture has been determined on a solid sample the result is expressed on a dry basis.
LOR	Limit of Reporting.
SPIKE	Addition of the analyte to the sample and reported as percentage recovery.
RPD	Relative Percent Difference between two Duplicate pieces of analysis.
LCS	Laboratory Control Sample - reported as percent recovery.
CRM	Certified Reference Material - reported as percent recovery.
Method Blank	In the case of solid samples these are performed on laboratory certified clean sands and in the case of water samples these are performed on de-ionised water.
Surr - Surrogate	The addition of a like compound to the analyte target and reported as percentage recovery.
Duplicate	A second piece of analysis from the same sample and reported in the same units as the result to show comparison.
USEPA	United States Environmental Protection Agency
APHA	American Public Health Association
TCLP	Toxicity Characteristic Leaching Procedure
COC	Chain of Custody
SRA	Sample Receipt Advice
QSM	US Department of Defense Quality Systems Manual Version 5.3
CP	Client Parent - QC was performed on samples pertaining to this report
NCP	Non-Client Parent - QC performed on samples not pertaining to this report, QC is representative of the sequence or batch that client samples were analysed within.
TEQ	Toxic Equivalency Quotient

QC - Acceptance Criteria

RPD Duplicates: Global RPD Duplicates Acceptance Criteria is 30% however the following acceptance guidelines are equally applicable:

Results <10 times the LOR : No Limit

Results between 10-20 times the LOR : RPD must lie between 0-50%

Results >20 times the LOR : RPD must lie between 0-30%

Surrogate Recoveries: Recoveries must lie between 20-130% Phenols & 50-150% PFASs

PFAS field samples that contain surrogate recoveries in excess of the QC limit designated in QSM 5.3 where no positive PFAS results have been reported have been reviewed and no data was affected.

WA DWER (n=10): PFBA, PFPeA, PFHxA, PFHpA, PFOA, PFBS, PFHxS, PFOS, 6:2 FTSA, 8:2 FTSA

QC Data General Comments

- Where a result is reported as a less than (<), higher than the nominated LOR, this is due to either matrix interference, extract dilution required due to interferences or contaminant levels within the sample, high moisture content or insufficient sample provided.
- Duplicate data shown within this report that states the word "BATCH" is a Batch Duplicate from outside of your sample batch, but within the laboratory sample batch at a 1:10 ratio. The Parent and Duplicate data shown is not data from your samples.
- Organochlorine Pesticide analysis - where reporting LCS data, Toxaphene & Chlordane are not added to the LCS.
- Organochlorine Pesticide analysis - where reporting Spike data, Toxaphene is not added to the Spike.
- Total Recoverable Hydrocarbons - where reporting Spike & LCS data, a single spike of commercial Hydrocarbon products in the range of C12-C30 is added and it's Total Recovery is reported in the C10-C14 cell of the Report.
- pH and Free Chlorine analysed in the laboratory - Analysis on this test must begin within 30 minutes of sampling. Therefore laboratory analysis is unlikely to be completed within holding time. Analysis will begin as soon as possible after sample receipt.
- Recovery Data (Spikes & Surrogates) - where chromatographic interference does not allow the determination of Recovery the term "INT" appears against that analyte.
- Polychlorinated Biphenyls are spiked only using Aroclor 1260 in Matrix Spikes and LCS.
- For Matrix Spikes and LCS results a dash " - " in the report means that the specific analyte was not added to the QC sample.
- Duplicate RPDs are calculated from raw analytical data thus it is possible to have two sets of data.

Quality Control Results

Test				Units	Result 1		Acceptance Limits	Pass Limits	Qualifying Code		
Method Blank											
Heavy Metals											
Lead				mg/kg	< 5		5	Pass			
LCS - % Recovery											
Heavy Metals											
Lead				%	97		70-130	Pass			
Test	Lab Sample ID	QA Source	Units	Result 1			Acceptance Limits	Pass Limits	Qualifying Code		
Spike - % Recovery											
Heavy Metals											
Lead				S20-Ap09870	CP	%	104	70-130	Pass		
Test	Lab Sample ID	QA Source	Units	Result 1			Acceptance Limits	Pass Limits	Qualifying Code		
Duplicate											
				Result 1	Result 2	RPD					
% Moisture				S20-Ap10676	NCP	%	17	16	5.0	30%	Pass
Duplicate											
Heavy Metals											
Lead				S20-Ap09879	CP	mg/kg	21	22	7.0	30%	Pass

Comments**Sample Integrity**

Custody Seals Intact (if used)	N/A
Attempt to Chill was evident	No
Sample correctly preserved	Yes
Appropriate sample containers have been used	Yes
Sample containers for volatile analysis received with minimal headspace	Yes
Samples received within HoldingTime	Yes
Some samples have been subcontracted	No

Authorised By

Andrew Black Analytical Services Manager
Gabriele Cordero Senior Analyst-Metal (NSW)

**Glenn Jackson
General Manager**

Final report - this Report replaces any previously issued Report

- Indicates Not Requested

* Indicates NATA accreditation does not cover the performance of this service

Measurement uncertainty of test data is available on request or please [click here](#).

Eurofins shall not be liable for loss, cost, damages or expenses incurred by the client, or any other person or company, resulting from the use of any information or interpretation given in this report. In no case shall Eurofins be liable for consequential damages including, but not limited to, lost profits, damages for failure to meet deadlines and lost production arising from this report. This document shall not be reproduced except in full and relates only to the items tested. Unless indicated otherwise, the tests were performed on the samples as received.



CHAIN OF CUSTODY RECORD

ABN 50 025 095 521

Sydney Laboratory
Unit F3 Bld F, 16 Mars Rd, Lane Cove West, NSW 2066
02 9900 8400 EnviroSampleNSW@eurofins.com

Brisbane Laboratory
Unit 1, 21 Snailwood Pl, Murrumbidgee, QLD 4172
07 3802 4500 EnviroSampleQLD@eurofins.com

Perth Laboratory
Unit 2, 91 Leach Highway, Kewdale WA 6105
08 9251 9500 EnviroSampleWA@eurofins.com

Melbourne Laboratory
2 Kingston Town Close, Oakleigh VIC 3166
03 8564 5000 EnviroSampleVIC@eurofins.com

Company: **Ramboll** Project Name: **318000780** Project Manager: **Stephen Maxwell** EDD Format: **Excel and PDF** Sampler(s): **J Bourke**

Address: **50 Glebe Road the Junction** Project Name: **318000780** Project Manager: **Stephen Maxwell** EDD Format: **Excel and PDF** Sampler(s): **J Bourke**

Contact Name: **Stephen Maxwell** Project Name: **318000780** Project Manager: **Stephen Maxwell** EDD Format: **Excel and PDF** Sampler(s): **J Bourke**

Phone No: Project Name: **318000780** Project Manager: **Stephen Maxwell** EDD Format: **Excel and PDF** Sampler(s): **J Bourke**

Special Directions: Project Name: **318000780** Project Manager: **Stephen Maxwell** EDD Format: **Excel and PDF** Sampler(s): **J Bourke**

Purchase Order: Project Name: **318000780** Project Manager: **Stephen Maxwell** EDD Format: **Excel and PDF** Sampler(s): **J Bourke**

Quote ID No: **180813RAMM_1** Project Name: **318000780** Project Manager: **Stephen Maxwell** EDD Format: **Excel and PDF** Sampler(s): **J Bourke**

No: **1** Client Sample ID: **P26_TM1A** Sampled Date/Time: **5/06/20** Matrix (Solid (S) Water (W)): **water** Analyses: **Lead**
M13 (Al, As, Ba, Be, Cd, Cr, Co, Cu, Fe, Pb, Mn, Hg, Ni, Zn) total
M13 (Al, As, Ba, Be, Cd, Cr, Co, Cu, Fe, Pb, Mn, Hg, Ni, Zn) dissolved

No: **2** Client Sample ID: **P26_TWS1A** Sampled Date/Time: **5/06/20** Matrix (Solid (S) Water (W)): **sediment** Analyses: **Lead**
M13 (Al, As, Ba, Be, Cd, Cr, Co, Cu, Fe, Pb, Mn, Hg, Ni, Zn) total
M13 (Al, As, Ba, Be, Cd, Cr, Co, Cu, Fe, Pb, Mn, Hg, Ni, Zn) dissolved

No	Client Sample ID	Sampled Date/Time (dd/mm/yy hh:mm)	Matrix (Solid (S) Water (W))	Analyses	Method of Shipment	Received By	Signature	Date	Temperature
1	P26_TM1A	5/06/20	water	Lead	<input type="checkbox"/> Courier #	<i>[Signature]</i>	<i>[Signature]</i>	<i>[Date]</i>	<i>[Temp]</i>
2	P26_TWS1A	5/06/20	sediment	Lead	<input type="checkbox"/> Hand Delivered	<i>[Signature]</i>	<i>[Signature]</i>	<i>[Date]</i>	<i>[Temp]</i>
Total Counts					<input type="checkbox"/> Postal	<i>[Signature]</i>	<i>[Signature]</i>	<i>[Date]</i>	<i>[Temp]</i>
3									
4									
5									
6									
7									
8									
9									
10									

Handed over by: **J Bourke**

Email for Invoice: **smaxwell@ramboll.com**
asia.nac-accounts@ramboll.com

Email for Results: **smaxwell@ramboll.com**
jblackwell@ramboll.com
rcondon@ramboll.com

Turnaround Time (TAT) Requirements (client will be 5 days if not ticked)

Overnight (9am)*
 1 Day*
 2 Day*
 3 Day*
 5 Day*
 Other () *Surcharges apply

Sample Comments / Dangerous Goods Hazard Warning: **Please oven dry and analyse in mg/kg.**

Method of Shipment: Courier # Hand Delivered Postal

Received By: *[Signature]* Signature: *[Signature]* Date: *[Date]* Temperature: *7.50°C*

Signature: *[Signature]* Date: *[Date]* Time: *[Time]* Report No: *[Report No]*

Melbourne

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Dandenong South Vic 3175
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NATA # 1261 Site # 20794

Perth

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Kewdale WA 6105
Phone : +61 8 9251 9600
NATA # 1261 Site # 23736

Sample Receipt Advice

Company name: **Ramboll Australia Pty Ltd**

Contact name: **Stephen Maxwell**

Project ID: **318000780**

COC number: **Not provided**

Turn around time: **1 Day**

Date/Time received: **Jun 5, 2020 3:35 PM**

Eurofins reference: **724052**

Sample information

- A detailed list of analytes logged into our LIMS, is included in the attached summary table.
- All samples have been received as described on the above COC.
- COC has been completed correctly.
- Attempt to chill was evident.
- Appropriately preserved sample containers have been used.
- All samples were received in good condition.
- Samples have been provided with adequate time to commence analysis in accordance with the relevant holding times.
- Appropriate sample containers have been used.
- Sample containers for volatile analysis received with zero headspace.
- Split sample sent to requested external lab.
- Some samples have been subcontracted.
- N/A Custody Seals intact (if used).

Contact notes

If you have any questions with respect to these samples please contact:

Andrew Black on Phone : (+61) 2 9900 8490 or by e.mail: AndrewBlack@eurofins.com

Results will be delivered electronically via e.mail to Stephen Maxwell - smaxwell@ramboll.com.

Note: A copy of these results will also be delivered to the general Ramboll Australia Pty Ltd email address.

Ramboll Environ Australia Pty Ltd
 Level 3/100 Pacific Highway
 North Sydney
 NSW 2060



NATA Accredited
Accreditation Number 1261
Site Number 18217

Accredited for compliance with ISO/IEC 17025 – Testing
 The results of the tests, calibrations and/or
 measurements included in this document are traceable
 to Australian/national standards.

Attention: Stephen Maxwell

Report 724052-W
 Project name
 Project ID 318000780
 Received Date Jun 05, 2020

Client Sample ID			P26_TW1A
Sample Matrix			Water
Eurofins Sample No.			S20-Jn09814
Date Sampled			Jun 05, 2020
Test/Reference	LOR	Unit	
Heavy Metals			
Aluminium	0.05	mg/L	< 0.05
Aluminium (filtered)	0.05	mg/L	< 0.05
Arsenic	0.001	mg/L	< 0.001
Arsenic (filtered)	0.001	mg/L	< 0.001
Barium	0.02	mg/L	< 0.02
Barium (filtered)	0.02	mg/L	< 0.02
Beryllium	0.001	mg/L	< 0.001
Beryllium (filtered)	0.001	mg/L	< 0.001
Cadmium	0.0002	mg/L	< 0.0002
Cadmium (filtered)	0.0002	mg/L	< 0.0002
Chromium	0.001	mg/L	< 0.001
Chromium (filtered)	0.001	mg/L	< 0.001
Cobalt	0.001	mg/L	< 0.001
Cobalt (filtered)	0.001	mg/L	< 0.001
Copper	0.001	mg/L	< 0.001
Copper (filtered)	0.001	mg/L	< 0.001
Iron	0.05	mg/L	< 0.05
Iron (filtered)	0.05	mg/L	< 0.05
Lead	0.001	mg/L	< 0.001
Lead (filtered)	0.001	mg/L	< 0.001
Manganese	0.005	mg/L	< 0.005
Manganese (filtered)	0.005	mg/L	< 0.005
Mercury	0.0001	mg/L	< 0.0001
Mercury (filtered)	0.0001	mg/L	< 0.0001
Nickel	0.001	mg/L	< 0.001
Nickel (filtered)	0.001	mg/L	< 0.001
Zinc	0.005	mg/L	0.078
Zinc (filtered)	0.005	mg/L	0.074

Sample History

Where samples are submitted/analysed over several days, the last date of extraction and analysis is reported. A recent review of our LIMS has resulted in the correction or clarification of some method identifications. Due to this, some of the method reference information on reports has changed. However, no substantive change has been made to our laboratory methods, and as such there is no change in the validity of current or previous results.

If the date and time of sampling are not provided, the Laboratory will not be responsible for compromised results should testing be performed outside the recommended holding time.

Description	Testing Site	Extracted	Holding Time
Heavy Metals - Method: LTM-MET-3040 Metals in Waters, Soils & Sediments by ICP-MS	Sydney	Jun 09, 2020	180 Days
Heavy Metals (filtered) - Method: LTM-MET-3040 Metals in Waters, Soils & Sediments by ICP-MS	Sydney	Jun 05, 2020	180 Days
Mobil Metals : Metals M15 - Method: LTM-MET-3040 Metals in Waters, Soils & Sediments by ICP-MS	Sydney	Jun 05, 2020	28 Days

Australia

Melbourne
6 Monterey Road
Dandenong South VIC 3175
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Site # 23736

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IANZ # 1327

Christchurch
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Phone : 0800 856 450
IANZ # 1290

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Address: Level 3/100 Pacific Highway
North Sydney
NSW 2060

Order No.:
Report #: 724052
Phone: 02 9954 8118
Fax: 02 9954 8150

Received: Jun 5, 2020 3:35 PM
Due: Jun 9, 2020
Priority: 1 Day
Contact Name: Stephen Maxwell

Project Name:
Project ID: 318000780

Eurofins Analytical Services Manager : Andrew Black

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Melbourne Laboratory - NATA Site # 1254 & 14271																																		
Sydney Laboratory - NATA Site # 18217						X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X
Brisbane Laboratory - NATA Site # 20794																																		
Perth Laboratory - NATA Site # 23736																																		
External Laboratory																																		
No	Sample ID	Sample Date	Sampling Time	Matrix	LAB ID																													
1	P26_TW1A	Jun 05, 2020		Water	S20-Jn09814	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X		
2	P26_TWS1A	Jun 05, 2020		Water	S20-Jn09815																			X										
Test Counts						1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	2	1	1	1	1	1	1	1	1	

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- SVOC analysis on waters are performed on homogenised, unfiltered samples, unless noted otherwise.
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Holding Times

Please refer to 'Sample Preservation and Container Guide' for holding times (QS3001).

For samples received on the last day of holding time, notification of testing requirements should have been received at least 6 hours prior to sample receipt deadlines as stated on the SRA.

If the Laboratory did not receive the information in the required timeframe, and regardless of any other integrity issues, suitably qualified results may still be reported.

Holding times apply from the date of sampling, therefore compliance to these may be outside the laboratory's control.

For VOCs containing vinyl chloride, styrene and 2-chloroethyl vinyl ether the holding time is 7 days however for all other VOCs such as BTEX or C6-10 TRH then the holding time is 14 days.

****NOTE:** pH duplicates are reported as a range NOT as RPD

Units

mg/kg: milligrams per kilogram

mg/L: milligrams per litre

ug/L: micrograms per litre

ppm: Parts per million

ppb: Parts per billion

%: Percentage

org/100mL: Organisms per 100 millilitres

NTU: Nephelometric Turbidity Units

MPN/100mL: Most Probable Number of organisms per 100 millilitres

Terms

Dry	Where a moisture has been determined on a solid sample the result is expressed on a dry basis.
LOR	Limit of Reporting.
SPIKE	Addition of the analyte to the sample and reported as percentage recovery.
RPD	Relative Percent Difference between two Duplicate pieces of analysis.
LCS	Laboratory Control Sample - reported as percent recovery.
CRM	Certified Reference Material - reported as percent recovery.
Method Blank	In the case of solid samples these are performed on laboratory certified clean sands and in the case of water samples these are performed on de-ionised water.
Surr - Surrogate	The addition of a like compound to the analyte target and reported as percentage recovery.
Duplicate	A second piece of analysis from the same sample and reported in the same units as the result to show comparison.
USEPA	United States Environmental Protection Agency
APHA	American Public Health Association
TCLP	Toxicity Characteristic Leaching Procedure
COC	Chain of Custody
SRA	Sample Receipt Advice
QSM	US Department of Defense Quality Systems Manual Version 5.3
CP	Client Parent - QC was performed on samples pertaining to this report
NCP	Non-Client Parent - QC performed on samples not pertaining to this report, QC is representative of the sequence or batch that client samples were analysed within.
TEQ	Toxic Equivalency Quotient

QC - Acceptance Criteria

RPD Duplicates: Global RPD Duplicates Acceptance Criteria is 30% however the following acceptance guidelines are equally applicable:

Results <10 times the LOR : No Limit

Results between 10-20 times the LOR : RPD must lie between 0-50%

Results >20 times the LOR : RPD must lie between 0-30%

Surrogate Recoveries: Recoveries must lie between 20-130% Phenols & 50-150% PFASs

PFAS field samples that contain surrogate recoveries in excess of the QC limit designated in QSM 5.3 where no positive PFAS results have been reported have been reviewed and no data was affected.

WA DWER (n=10): PFBA, PFPeA, PFHxA, PFHpA, PFOA, PFBS, PFHxS, PFOS, 6:2 FTSA, 8:2 FTSA

QC Data General Comments

- Where a result is reported as a less than (<), higher than the nominated LOR, this is due to either matrix interference, extract dilution required due to interferences or contaminant levels within the sample, high moisture content or insufficient sample provided.
- Duplicate data shown within this report that states the word "BATCH" is a Batch Duplicate from outside of your sample batch, but within the laboratory sample batch at a 1:10 ratio. The Parent and Duplicate data shown is not data from your samples.
- Organochlorine Pesticide analysis - where reporting LCS data, Toxaphene & Chlordane are not added to the LCS.
- Organochlorine Pesticide analysis - where reporting Spike data, Toxaphene is not added to the Spike.
- Total Recoverable Hydrocarbons - where reporting Spike & LCS data, a single spike of commercial Hydrocarbon products in the range of C12-C30 is added and it's Total Recovery is reported in the C10-C14 cell of the Report.
- pH and Free Chlorine analysed in the laboratory - Analysis on this test must begin within 30 minutes of sampling. Therefore laboratory analysis is unlikely to be completed within holding time. Analysis will begin as soon as possible after sample receipt.
- Recovery Data (Spikes & Surrogates) - where chromatographic interference does not allow the determination of Recovery the term "INT" appears against that analyte.
- Polychlorinated Biphenyls are spiked only using Aroclor 1260 in Matrix Spikes and LCS.
- For Matrix Spikes and LCS results a dash " - " in the report means that the specific analyte was not added to the QC sample.
- Duplicate RPDs are calculated from raw analytical data thus it is possible to have two sets of data.

Quality Control Results

Test	Units	Result 1		Acceptance Limits	Pass Limits	Qualifying Code
Method Blank						
Heavy Metals						
Aluminium	mg/L	< 0.05		0.05	Pass	
Aluminium (filtered)	mg/L	< 0.05		0.05	Pass	
Arsenic	mg/L	< 0.001		0.001	Pass	
Arsenic (filtered)	mg/L	< 0.001		0.001	Pass	
Barium	mg/L	< 0.02		0.02	Pass	
Barium (filtered)	mg/L	< 0.02		0.02	Pass	
Beryllium	mg/L	< 0.001		0.001	Pass	
Beryllium (filtered)	mg/L	< 0.001		0.001	Pass	
Cadmium	mg/L	< 0.0002		0.0002	Pass	
Cadmium (filtered)	mg/L	< 0.0002		0.0002	Pass	
Chromium	mg/L	< 0.001		0.001	Pass	
Chromium (filtered)	mg/L	< 0.001		0.001	Pass	
Cobalt	mg/L	< 0.001		0.001	Pass	
Cobalt (filtered)	mg/L	< 0.001		0.001	Pass	
Copper	mg/L	< 0.001		0.001	Pass	
Copper (filtered)	mg/L	< 0.001		0.001	Pass	
Iron	mg/L	< 0.05		0.05	Pass	
Iron (filtered)	mg/L	< 0.05		0.05	Pass	
Lead	mg/L	< 0.001		0.001	Pass	
Lead (filtered)	mg/L	< 0.001		0.001	Pass	
Manganese	mg/L	< 0.005		0.005	Pass	
Manganese (filtered)	mg/L	< 0.005		0.005	Pass	
Mercury	mg/L	< 0.0001		0.0001	Pass	
Mercury (filtered)	mg/L	< 0.0001		0.0001	Pass	
Nickel	mg/L	< 0.001		0.001	Pass	
Nickel (filtered)	mg/L	< 0.001		0.001	Pass	
Zinc	mg/L	< 0.005		0.005	Pass	
Zinc (filtered)	mg/L	< 0.005		0.005	Pass	
LCS - % Recovery						
Heavy Metals						
Aluminium	%	94		70-130	Pass	
Aluminium (filtered)	%	97		70-130	Pass	
Arsenic	%	98		70-130	Pass	
Arsenic (filtered)	%	99		70-130	Pass	
Barium	%	97		70-130	Pass	
Barium (filtered)	%	99		70-130	Pass	
Beryllium	%	97		70-130	Pass	
Beryllium (filtered)	%	103		70-130	Pass	
Cadmium	%	102		70-130	Pass	
Cadmium (filtered)	%	112		70-130	Pass	
Chromium	%	103		70-130	Pass	
Chromium (filtered)	%	102		70-130	Pass	
Cobalt	%	104		70-130	Pass	
Cobalt (filtered)	%	99		70-130	Pass	
Copper	%	103		70-130	Pass	
Copper (filtered)	%	103		70-130	Pass	
Iron	%	104		70-130	Pass	
Iron (filtered)	%	103		70-130	Pass	
Lead	%	105		70-130	Pass	
Lead (filtered)	%	103		70-130	Pass	

Test			Units	Result 1			Acceptance Limits	Pass Limits	Qualifying Code
Manganese			%	100			70-130	Pass	
Manganese (filtered)			%	103			70-130	Pass	
Mercury			%	114			70-130	Pass	
Mercury (filtered)			%	110			70-130	Pass	
Nickel			%	103			70-130	Pass	
Nickel (filtered)			%	103			70-130	Pass	
Zinc			%	101			70-130	Pass	
Zinc (filtered)			%	106			70-130	Pass	
Test	Lab Sample ID	QA Source	Units	Result 1			Acceptance Limits	Pass Limits	Qualifying Code
Spike - % Recovery									
Heavy Metals				Result 1					
Aluminium	S20-Jn05456	NCP	%	100			70-130	Pass	
Aluminium (filtered)	S20-Jn05666	NCP	%	95			70-130	Pass	
Arsenic	S20-Jn05456	NCP	%	106			70-130	Pass	
Arsenic (filtered)	S20-Jn05666	NCP	%	125			70-130	Pass	
Barium	S20-Jn05456	NCP	%	98			70-130	Pass	
Barium (filtered)	S20-Jn05666	NCP	%	113			70-130	Pass	
Beryllium	S20-Jn05456	NCP	%	101			70-130	Pass	
Beryllium (filtered)	S20-Jn05666	NCP	%	82			70-130	Pass	
Cadmium	S20-Jn05456	NCP	%	100			70-130	Pass	
Cadmium (filtered)	S20-Jn05666	NCP	%	117			70-130	Pass	
Chromium	S20-Jn05456	NCP	%	103			70-130	Pass	
Chromium (filtered)	S20-Jn05666	NCP	%	95			70-130	Pass	
Cobalt	S20-Jn05456	NCP	%	103			70-130	Pass	
Cobalt (filtered)	S20-Jn05666	NCP	%	89			70-130	Pass	
Copper	S20-Jn05456	NCP	%	99			70-130	Pass	
Copper (filtered)	S20-Jn05666	NCP	%	88			70-130	Pass	
Iron	S20-Jn05456	NCP	%	100			70-130	Pass	
Iron (filtered)	S20-Jn05666	NCP	%	97			70-130	Pass	
Lead	S20-Jn05456	NCP	%	103			70-130	Pass	
Lead (filtered)	S20-Jn05666	NCP	%	93			70-130	Pass	
Manganese	S20-Jn05456	NCP	%	100			70-130	Pass	
Mercury	S20-Jn05456	NCP	%	112			70-130	Pass	
Mercury (filtered)	S20-Jn05666	NCP	%	107			70-130	Pass	
Nickel	S20-Jn05456	NCP	%	101			70-130	Pass	
Nickel (filtered)	S20-Jn05666	NCP	%	90			70-130	Pass	
Zinc	S20-Jn05456	NCP	%	96			70-130	Pass	
Zinc (filtered)	S20-Jn05666	NCP	%	90			70-130	Pass	
Test	Lab Sample ID	QA Source	Units	Result 1			Acceptance Limits	Pass Limits	Qualifying Code
Duplicate									
Heavy Metals				Result 1	Result 2	RPD			
Aluminium	S20-Jn03559	NCP	mg/L	0.85	0.85	1.0	30%	Pass	
Aluminium (filtered)	S20-Jn05659	NCP	mg/L	< 0.05	< 0.05	<1	30%	Pass	
Arsenic	S20-Jn03559	NCP	mg/L	0.004	0.004	6.0	30%	Pass	
Arsenic (filtered)	S20-Jn05659	NCP	mg/L	0.038	0.039	3.0	30%	Pass	
Barium	S20-Jn03559	NCP	mg/L	0.04	0.04	3.0	30%	Pass	
Barium (filtered)	S20-Jn05659	NCP	mg/L	0.05	0.05	2.0	30%	Pass	
Beryllium	S20-Jn03559	NCP	mg/L	< 0.001	< 0.001	<1	30%	Pass	
Beryllium (filtered)	S20-Jn05659	NCP	mg/L	< 0.001	< 0.001	<1	30%	Pass	
Cadmium	S20-Jn03559	NCP	mg/L	< 0.0002	< 0.0002	<1	30%	Pass	
Cadmium (filtered)	S20-Jn05659	NCP	mg/L	< 0.0002	< 0.0002	<1	30%	Pass	
Chromium	S20-Jn03559	NCP	mg/L	0.012	0.012	4.0	30%	Pass	
Chromium (filtered)	S20-Jn05659	NCP	mg/L	< 0.001	< 0.001	<1	30%	Pass	

Test	Lab Sample ID	QA Source	Units	Result 1			Acceptance Limits	Pass Limits	Qualifying Code
Duplicate									
Heavy Metals				Result 1	Result 2	RPD			
Cobalt	S20-Jn03559	NCP	mg/L	< 0.001	< 0.001	<1	30%	Pass	
Cobalt (filtered)	S20-Jn05659	NCP	mg/L	0.007	0.006	8.0	30%	Pass	
Copper	S20-Jn03559	NCP	mg/L	0.002	0.003	7.0	30%	Pass	
Copper (filtered)	S20-Jn05659	NCP	mg/L	< 0.001	< 0.001	<1	30%	Pass	
Iron	S20-Jn03559	NCP	mg/L	0.14	0.14	<1	30%	Pass	
Iron (filtered)	S20-Jn05659	NCP	mg/L	0.05	0.05	6.0	30%	Pass	
Lead	S20-Jn03559	NCP	mg/L	< 0.001	< 0.001	<1	30%	Pass	
Lead (filtered)	S20-Jn05659	NCP	mg/L	< 0.001	< 0.001	<1	30%	Pass	
Manganese	S20-Jn03559	NCP	mg/L	0.050	0.048	3.0	30%	Pass	
Manganese (filtered)	S20-Jn05659	NCP	mg/L	1.3	1.3	3.0	30%	Pass	
Mercury	S20-Jn03559	NCP	mg/L	< 0.0001	< 0.0001	<1	30%	Pass	
Mercury (filtered)	S20-Jn05659	NCP	mg/L	< 0.0001	< 0.0001	<1	30%	Pass	
Nickel	S20-Jn03559	NCP	mg/L	0.004	0.004	7.0	30%	Pass	
Nickel (filtered)	S20-Jn05659	NCP	mg/L	0.003	0.003	7.0	30%	Pass	
Zinc	S20-Jn03559	NCP	mg/L	0.009	0.052	140	30%	Fail	Q15
Zinc (filtered)	S20-Jn05659	NCP	mg/L	0.012	0.012	1.0	30%	Pass	

Comments**Sample Integrity**

Custody Seals Intact (if used)	N/A
Attempt to Chill was evident	Yes
Sample correctly preserved	Yes
Appropriate sample containers have been used	Yes
Sample containers for volatile analysis received with minimal headspace	Yes
Samples received within HoldingTime	Yes
Some samples have been subcontracted	No

Qualifier Codes/Comments

Code	Description
Q15	The RPD reported passes Eurofins Environment Testing's QC - Acceptance Criteria as defined in the Internal Quality Control Review and Glossary page of this report.

Authorised By

Andrew Black	Analytical Services Manager
Gabriele Cordero	Senior Analyst-Metal (NSW)

**Glenn Jackson
General Manager**

Final report - this Report replaces any previously issued Report

- Indicates Not Requested

* Indicates NATA accreditation does not cover the performance of this service

Measurement uncertainty of test data is available on request or please [click here](#).

Eurofins shall not be liable for loss, cost, damages or expenses incurred by the client, or any other person or company, resulting from the use of any information or interpretation given in this report. In no case shall Eurofins be liable for consequential damages including, but not limited to, lost profits, damages for failure to meet deadlines and lost production arising from this report. This document shall not be reproduced except in full and relates only to the items tested. Unless indicated otherwise, the tests were performed on the samples as received.

Subject:

FW: 5 DAY TAT ADDITIONAL ANALYSIS: FW: Sediment samples

From: Joshua Blackwell [mailto:JBLACKWELL@ramboll.com]

Sent: Tuesday, 28 April 2020 3:11 PM

To: Andrew Black

Subject: Sediment samples

EXTERNAL EMAIL *

Hi Andrew,

Could I please request the following samples be dried and analysed for lead in mg/kg and moisture content. Please report in 8 separate reports as follows;

1. P6_TWS1 (S20-Ap02120)
2. P24_TWS1 (S20-Ap09836) & P24_TWS2 (S20-Ap09837)
3. P25_TWS1 (S20-Ap09766) & P25_TWS2 (S20-Ap09767)
4. P26_TWS1 (S20-Ap09881)
5. P27_TWS1 (S20-Ap09734)
6. P28_TWS1 (S20-Ap09694) & P28_TWS2 (S20-Ap09695) & P28_TWS3 (S20-Ap09696)
7. P31_TWS1 (S20-Ap09851) & P31_TWS2 (S20-Ap09852) & P31_TWS3 (S20-Ap09853)
8. P32_TWS2 (S20-Ap09662)

Kind regards

Joshua Blackwell


Consultant

3182675 - Hunter

D +61 (481) 157565

M +61 (481) 157565

jblackwell@ramboll.com

Connect with us 

Ramboll

Level 2, Suite 18 Eastpoint

50 Glebe Road

PO Box 435

The Junction

NSW 2291

Australia

<https://ramboll.com>

Ramboll Australia Pty Ltd.

ACN 095 437 442

ABN 49 095 437 442

Click [here](#) to report this email as spam.

ScannedByWebsenseForEurofins

Melbourne

6 Monterey Road
Dandenong South Vic 3175
Phone : +61 3 8564 5000
NATA # 1261
Site # 1254 & 14271

Sydney

Unit F3, Building F
16 Mars Road
Lane Cove West NSW 2066
Phone : +61 2 9900 8400
NATA # 1261 Site # 18217

Brisbane

1/21 Smallwood Place
Murarrie QLD 4172
Phone : +61 7 3902 4600
NATA # 1261 Site # 20794

Perth

2/91 Leach Highway
Kewdale WA 6105
Phone : +61 8 9251 9600
NATA # 1261 Site # 23736

Sample Receipt Advice

Company name: **Ramboll Australia Pty Ltd**
Contact name: **Joshua Blackwell**
Project name: **ADDITIONAL - 318000780**
COC number: **Not provided**
Turn around time: **5 Day**
Date/Time received: **Apr 28, 2020 3:11 PM**
Eurofins reference: **716292**

Sample information

- A detailed list of analytes logged into our LIMS, is included in the attached summary table.
- All samples have been received as described on the above COC.
- COC has been completed correctly.
- Attempt to chill was evident.
- Appropriately preserved sample containers have been used.
- All samples were received in good condition.
- Samples have been provided with adequate time to commence analysis in accordance with the relevant holding times.
- Appropriate sample containers have been used.
- Split sample sent to requested external lab.
- Some samples have been subcontracted.
- N/A Custody Seals intact (if used).

Contact notes

If you have any questions with respect to these samples please contact:

Andrew Black on Phone : (+61) 2 9900 8490 or by e.mail: AndrewBlack@eurofins.com

Results will be delivered electronically via e.mail to Joshua Blackwell - jblackwell@ramboll.com.

Note: A copy of these results will also be delivered to the general Ramboll Australia Pty Ltd email address.

Australia

Melbourne
 6 Monterey Road
 Dandenong South VIC 3175
 Phone : +61 3 8564 5000
 NATA # 1261
 Site # 1254 & 14271

Sydney
 Unit F3, Building F
 16 Mars Road
 Lane Cove West NSW 2066
 Phone : +61 2 9900 8400
 NATA # 1261 Site # 18217

Brisbane
 1/21 Smallwood Place
 Murarrie QLD 4172
 Phone : +61 7 3902 4600
 NATA # 1261 Site # 20794

Perth
 2/91 Leach Highway
 Kewdale WA 6105
 Phone : +61 8 9251 9600
 NATA # 1261
 Site # 23736

New Zealand

Auckland
 35 O'Rorke Road
 Penrose, Auckland 1061
 Phone : +64 9 526 45 51
 IANZ # 1327

Christchurch
 43 Detroit Drive
 Rolleston, Christchurch 7675
 Phone : 0800 856 450
 IANZ # 1290

Company Name: Ramboll Australia Pty Ltd
Address: Level 3/100 Pacific Highway
 North Sydney
 NSW 2060
Project Name: ADDITIONAL - 318000780

Order No.:
Report #: 716292
Phone: 02 9954 8118
Fax: 02 9954 8150

Received: Apr 28, 2020 3:11 PM
Due: May 5, 2020
Priority: 5 Day
Contact Name: Joshua Blackwell

Eurofins Analytical Services Manager : Andrew Black

Sample Detail						Lead	Moisture Set
Melbourne Laboratory - NATA Site # 1254 & 14271							
Sydney Laboratory - NATA Site # 18217						X	X
Brisbane Laboratory - NATA Site # 20794							
Perth Laboratory - NATA Site # 23736							
External Laboratory							
No	Sample ID	Sample Date	Sampling Time	Matrix	LAB ID		
1	P26_TWS1	Apr 01, 2020		Sediment	S20-Ap42285	X	X
Test Counts						1	1

Ramboll Environ Australia Pty Ltd
 Level 3/100 Pacific Highway
 North Sydney
 NSW 2060



NATA Accredited
Accreditation Number 1261
Site Number 18217

Accredited for compliance with ISO/IEC 17025 – Testing
 The results of the tests, calibrations and/or
 measurements included in this document are traceable
 to Australian/national standards.

Attention: **Joshua Blackwell**

Report **716292-S**
 Project name **ADDITIONAL - 318000780**
 Received Date **Apr 28, 2020**

Client Sample ID			P26_TWS1
Sample Matrix			Sediment
Eurofins Sample No.			S20-Ap42285
Date Sampled			Apr 01, 2020
Test/Reference	LOR	Unit	
Heavy Metals			
Lead	5	mg/kg	1000
% Moisture	1	%	95

Sample History

Where samples are submitted/analysed over several days, the last date of extraction and analysis is reported.

A recent review of our LIMS has resulted in the correction or clarification of some method identifications. Due to this, some of the method reference information on reports has changed. However, no substantive change has been made to our laboratory methods, and as such there is no change in the validity of current or previous results.

If the date and time of sampling are not provided, the Laboratory will not be responsible for compromised results should testing be performed outside the recommended holding time.

Description

Heavy Metals

- Method: LTM-MET-3040 Metals in Waters, Soils & Sediments by ICP-MS

% Moisture

- Method: LTM-GEN-7080 Moisture

Testing Site

Sydney

Sydney

Extracted

May 04, 2020

Apr 29, 2020

Holding Time

180 Days

14 Days

Australia

Melbourne
6 Monterey Road
Dandenong South VIC 3175
Phone : +61 3 8564 5000
NATA # 1261
Site # 1254 & 14271

Sydney
Unit F3, Building F
16 Mars Road
Lane Cove West NSW 2066
Phone : +61 2 9900 8400
NATA # 1261 Site # 18217

Brisbane
1/21 Smallwood Place
Murarrie QLD 4172
Phone : +61 7 3902 4600
NATA # 1261 Site # 20794

Perth
2/91 Leach Highway
Kewdale WA 6105
Phone : +61 8 9251 9600
NATA # 1261
Site # 23736

New Zealand

Auckland
35 O'Rorke Road
Penrose, Auckland 1061
Phone : +64 9 526 45 51
IANZ # 1327

Christchurch
43 Detroit Drive
Rolleston, Christchurch 7675
Phone : 0800 856 450
IANZ # 1290

Company Name: Ramboll Australia Pty Ltd
Address: Level 3/100 Pacific Highway
North Sydney
NSW 2060
Project Name: ADDITIONAL - 318000780

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External Laboratory							
No	Sample ID	Sample Date	Sampling Time	Matrix	LAB ID		
1	P26_TWS1	Apr 01, 2020		Sediment	S20-Ap42285	X	X
Test Counts						1	1

Internal Quality Control Review and Glossary
General

- Laboratory QC results for Method Blanks, Duplicates, Matrix Spikes, and Laboratory Control Samples follows guidelines delineated in the National Environment Protection (Assessment of Site Contamination) Measure 1999, as amended May 2013 and are included in this QC report where applicable. Additional QC data may be available on request.
- All soil/sediment/solid results are reported on a dry basis, unless otherwise stated.
- All biota/food results are reported on a wet weight basis on the edible portion, unless otherwise stated.
- Actual LORs are matrix dependant. Quoted LORs may be raised where sample extracts are diluted due to interferences.
- Results are uncorrected for matrix spikes or surrogate recoveries except for PFAS compounds.
- SVOC analysis on waters are performed on homogenised, unfiltered samples, unless noted otherwise.
- Samples were analysed on an 'as received' basis.
- Information identified on this report with blue colour, indicates data provided by customer, that may have an impact on the results.
- This report replaces any interim results previously issued.

Holding Times

Please refer to 'Sample Preservation and Container Guide' for holding times (QS3001).

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COC	Chain of Custody
SRA	Sample Receipt Advice
QSM	US Department of Defense Quality Systems Manual Version 5.3
CP	Client Parent - QC was performed on samples pertaining to this report
NCP	Non-Client Parent - QC performed on samples not pertaining to this report, QC is representative of the sequence or batch that client samples were analysed within.
TEQ	Toxic Equivalency Quotient

QC - Acceptance Criteria

RPD Duplicates: Global RPD Duplicates Acceptance Criteria is 30% however the following acceptance guidelines are equally applicable:

Results <10 times the LOR : No Limit

Results between 10-20 times the LOR : RPD must lie between 0-50%

Results >20 times the LOR : RPD must lie between 0-30%

Surrogate Recoveries: Recoveries must lie between 20-130% Phenols & 50-150% PFASs

PFAS field samples that contain surrogate recoveries in excess of the QC limit designated in QSM 5.3 where no positive PFAS results have been reported have been reviewed and no data was affected.

WA DWER (n=10): PFBA, PFPeA, PFHxA, PFHpA, PFOA, PFBS, PFHxS, PFOS, 6:2 FTSA, 8:2 FTSA

QC Data General Comments

- Where a result is reported as a less than (<), higher than the nominated LOR, this is due to either matrix interference, extract dilution required due to interferences or contaminant levels within the sample, high moisture content or insufficient sample provided.
- Duplicate data shown within this report that states the word "BATCH" is a Batch Duplicate from outside of your sample batch, but within the laboratory sample batch at a 1:10 ratio. The Parent and Duplicate data shown is not data from your samples.
- Organochlorine Pesticide analysis - where reporting LCS data, Toxaphene & Chlordane are not added to the LCS.
- Organochlorine Pesticide analysis - where reporting Spike data, Toxaphene is not added to the Spike.
- Total Recoverable Hydrocarbons - where reporting Spike & LCS data, a single spike of commercial Hydrocarbon products in the range of C12-C30 is added and it's Total Recovery is reported in the C10-C14 cell of the Report.
- pH and Free Chlorine analysed in the laboratory - Analysis on this test must begin within 30 minutes of sampling. Therefore laboratory analysis is unlikely to be completed within holding time. Analysis will begin as soon as possible after sample receipt.
- Recovery Data (Spikes & Surrogates) - where chromatographic interference does not allow the determination of Recovery the term "INT" appears against that analyte.
- Polychlorinated Biphenyls are spiked only using Aroclor 1260 in Matrix Spikes and LCS.
- For Matrix Spikes and LCS results a dash " - " in the report means that the specific analyte was not added to the QC sample.
- Duplicate RPDs are calculated from raw analytical data thus it is possible to have two sets of data.

Quality Control Results

Test				Units	Result 1		Acceptance Limits	Pass Limits	Qualifying Code		
Method Blank											
Heavy Metals											
Lead				mg/kg	< 5		5	Pass			
LCS - % Recovery											
Heavy Metals											
Lead				%	99		70-130	Pass			
Test	Lab Sample ID	QA Source	Units	Result 1			Acceptance Limits	Pass Limits	Qualifying Code		
Spike - % Recovery											
Heavy Metals											
Lead				S20-Ap44661	NCP	%	91	70-130	Pass		
Test	Lab Sample ID	QA Source	Units	Result 1			Acceptance Limits	Pass Limits	Qualifying Code		
Duplicate											
Heavy Metals											
Lead				S20-Ap42291	NCP	mg/kg	97	100	4.0	30%	Pass
Duplicate											
					Result 1	Result 2	RPD				
% Moisture				S20-My03200	NCP	%	13	14	5.0	30%	Pass

Comments**Sample Integrity**

Custody Seals Intact (if used)	N/A
Attempt to Chill was evident	No
Sample correctly preserved	Yes
Appropriate sample containers have been used	Yes
Sample containers for volatile analysis received with minimal headspace	Yes
Samples received within HoldingTime	Yes
Some samples have been subcontracted	No

Authorised By

Andrew Black Analytical Services Manager
Gabriele Cordero Senior Analyst-Metal (NSW)

**Glenn Jackson
General Manager**

Final report - this Report replaces any previously issued Report

- Indicates Not Requested

* Indicates NATA accreditation does not cover the performance of this service

Measurement uncertainty of test data is available on request or please [click here](#).

Eurofins shall not be liable for loss, cost, damages or expenses incurred by the client, or any other person or company, resulting from the use of any information or interpretation given in this report. In no case shall Eurofins be liable for consequential damages including, but not limited to, lost profits, damages for failure to meet deadlines and lost production arising from this report. This document shall not be reproduced except in full and relates only to the items tested. Unless indicated otherwise, the tests were performed on the samples as received.



CHAIN OF CUSTODY RECORD

ABN 50 005 086 521

Hydrex Laboratory
Unit 13 Bld F, 16 Mars Rd, Lane Cove West, NSW 2055
02 9900 8400 EnviroSamplesNSW@eurofins.com

Brisbane Laboratory
Unit 1, 21 Smallwood Pl, Murrumbidgee, QLD 4172
07 3802 4600 EnviroSampleQLD@eurofins.com

Perth Laboratory
Unit 2, 91 Leach Highway, Kewdale WA 6105
08 9251 9800 EnviroSamplesWA@eurofins.com

Melbourne Laboratory
2 Kingston Town Close, Oakleigh VIC 3166
03 9564 5000 EnviroSampleVIC@eurofins.com

Company Ramboll		Project No 318000790	Project Manager EDD Formai (ES&I, EQUIS, Custom)	Sampler(s) TJ, JB	Handed over by Jordyn Kirsch
Address 50 Glebe Road the Junction		Project Name P26	Excel and PDF	Containers <input type="checkbox"/> Overnight (9am)* <input type="checkbox"/> 1 Day* <input type="checkbox"/> 2 Day* <input type="checkbox"/> 3 Day* <input checked="" type="checkbox"/> 5 Day* <input type="checkbox"/> Other () <small>*Surcharges apply</small>	
Contact Name Stephen Maxwell		Analyses <small>(Note: Where metals are requested, please specify "Total" or "Filtered") SUITE code must be used to attract SUITE pricing.</small>			
Phone No 0478 658 194		Total Lead (mg/kg)		Turnaround Time (TAT) <small>Requirements include will be 5 days from ticked</small>	
Special Directions		Total Sample Mass		Requirements (tick all that apply)	
Purchase Order		Total Lead (µg/L)		<input type="checkbox"/> 1L Plastic	
Quote ID No 180813RAMN_1				<input type="checkbox"/> 250mL Plastic	

No	Client Sample ID	Sampled Date/Time (dd/mm/yy hh:mm)	Matrix (Solid (S) Water (W))	Total Lead (mg/kg)	Total Sample Mass	Total Lead (µg/L)
1	DVAC_MBR(P26)	30/03/20	S	X	X	
2	DVAC_LR(P26)	30/03/20	S	X	X	
3	DVAC_KR(P26)	30/03/20	S	X	X	
4	DSWAB_LE(P26)	30/03/20	S		X	
5	DSWAB_WIN(P26)	30/03/20	S		X	
6	DSWAB_FE(P26)	30/03/20	S		X	
7	DSWAB_MH(P26)	30/03/20	S		X	
8						
9						
10						
Total Counts				3	3	4

Method of Shipment <input type="checkbox"/> Courier (#) <input checked="" type="checkbox"/> Hand Delivered	Signature <i>[Signature]</i>	Date 11/03/20	Time 11:28
Received By <i>[Signature]</i>	Signature <i>[Signature]</i>	Date 11/03/20	Time 11:28
Received By <i>[Signature]</i>	Signature <i>[Signature]</i>	Date 11/03/20	Time 11:28

Submission of samples to the laboratory will be deemed as acceptance of Eurofins Ingt Standard Terms and Conditions unless agreed otherwise. A copy of Eurofins Ingt Standard Terms and Conditions is available on request.

Eurofins Environment Testing Australia Pty Ltd trading as Eurofins | Ingt

Melbourne

6 Monterey Road
Dandenong South Vic 3175
Phone : +61 3 8564 5000
NATA # 1261
Site # 1254 & 14271

Sydney

Unit F3, Building F
16 Mars Road
Lane Cove West NSW 2066
Phone : +61 2 9900 8400
NATA # 1261 Site # 18217

Brisbane

1/21 Smallwood Place
Murarrie QLD 4172
Phone : +61 7 3902 4600
NATA # 1261 Site # 20794

Perth

2/91 Leach Highway
Kewdale WA 6105
Phone : +61 8 9251 9600
NATA # 1261 Site # 23736

ABN – 50 005 085 521

e.mail : EnviroSales@eurofins.com

web : www.eurofins.com.au

Sample Receipt Advice

Company name: **Ramboll Australia Pty Ltd**
Contact name: **Stephen Maxwell**
Project name: **P26**
Project ID: **318000780**
COC number: **Not provided**
Turn around time: **5 Day**
Date/Time received: **May 1, 2020 12:00 PM**
Eurofins reference: **717033**

Sample information

- A detailed list of analytes logged into our LIMS, is included in the attached summary table.
- All samples have been received as described on the above COC.
- COC has been completed correctly.
- N/A Attempt to chill was evident.
- Appropriately preserved sample containers have been used.
- All samples were received in good condition.
- Samples have been provided with adequate time to commence analysis in accordance with the relevant holding times.
- Appropriate sample containers have been used.
- Split sample sent to requested external lab.
- Some samples have been subcontracted.
- N/A Custody Seals intact (if used).

Notes

DSWAB_BE(P26) sample received extra - logged for analysis. DVAC_KB(P26) sample not received - analysis cancelled.

Contact notes

If you have any questions with respect to these samples please contact:

Andrew Black on Phone : (+61) 2 9900 8490 or by e.mail: AndrewBlack@eurofins.com

Results will be delivered electronically via e.mail to Stephen Maxwell - smaxwell@ramboll.com.

Note: A copy of these results will also be delivered to the general Ramboll Australia Pty Ltd email address.

Australia

Melbourne
6 Monterey Road
Dandenong South VIC 3175
Phone : +61 3 8564 5000
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Site # 1254 & 14271

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NATA # 1261 Site # 20794

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New Zealand

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Penrose, Auckland 1061
Phone : +64 9 526 45 51
IANZ # 1327

Christchurch
43 Detroit Drive
Rolleston, Christchurch 7675
Phone : 0800 856 450
IANZ # 1290

Company Name: Ramboll Australia Pty Ltd
Address: Level 3/100 Pacific Highway
North Sydney
NSW 2060

Project Name: P26
Project ID: 318000780

Order No.:
Report #: 717033
Phone: 02 9954 8118
Fax: 02 9954 8150

Received: May 1, 2020 12:00 PM
Due: May 8, 2020
Priority: 5 Day
Contact Name: Stephen Maxwell

Eurofins Analytical Services Manager : Andrew Black

Sample Detail						CANCELLED	Lead	Mass of sample*
Melbourne Laboratory - NATA Site # 1254 & 14271								
Sydney Laboratory - NATA Site # 18217						X	X	X
Brisbane Laboratory - NATA Site # 20794								
Perth Laboratory - NATA Site # 23736								
External Laboratory								
No	Sample ID	Sample Date	Sampling Time	Matrix	LAB ID			
1	DVAC_MBR(P26)	Apr 30, 2020		Dust	S20-My01831		X	X
2	DVAC_LR(P26)	Apr 30, 2020		Dust	S20-My01832		X	X
3	DSWAB_LE(P26)	Apr 30, 2020		Wipes	S20-My01833		X	
4	DSWAB_WIN(P26)	Apr 30, 2020		Wipes	S20-My01834		X	
5	DSWAB_FE(P26)	Apr 30, 2020		Wipes	S20-My01835		X	
6	DSWAB_MH(P26)	Apr 30, 2020		Wipes	S20-My01836		X	

Australia

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 NATA # 1261
 Site # 23736

New Zealand

Auckland
 35 O'Rorke Road
 Penrose, Auckland 1061
 Phone : +64 9 526 45 51
 IANZ # 1327

Christchurch
 43 Detroit Drive
 Rolleston, Christchurch 7675
 Phone : 0800 856 450
 IANZ # 1290

ABN – 50 005 085 521

web : www.eurofins.com.au

e.mail : EnviroSales@eurofins.com

Company Name: Ramboll Australia Pty Ltd
Address: Level 3/100 Pacific Highway
 North Sydney
 NSW 2060

Project Name: P26
Project ID: 318000780

Order No.:
Report #: 717033
Phone: 02 9954 8118
Fax: 02 9954 8150

Received: May 1, 2020 12:00 PM
Due: May 8, 2020
Priority: 5 Day
Contact Name: Stephen Maxwell

Eurofins Analytical Services Manager : Andrew Black

Sample Detail						CANCELLED	Lead	Mass of sample*
Melbourne Laboratory - NATA Site # 1254 & 14271								
Sydney Laboratory - NATA Site # 18217						X	X	X
Brisbane Laboratory - NATA Site # 20794								
Perth Laboratory - NATA Site # 23736								
7	DSWAB_BE(P26)	Apr 30, 2020		Wipes	S20-My01837		X	
8	DVAC_KB(P26)	Apr 30, 2020		Dust	S20-My01838	X		
Test Counts						1	7	2

Ramboll Environ Australia Pty Ltd
 Level 3/100 Pacific Highway
 North Sydney
 NSW 2060



NATA Accredited
Accreditation Number 1261
Site Number 18217

Accredited for compliance with ISO/IEC 17025 – Testing
 The results of the tests, calibrations and/or
 measurements included in this document are traceable
 to Australian/national standards.

Attention: **Stephen Maxwell**

Report **717033-A**
 Project name **P26**
 Project ID **318000780**
 Received Date **May 01, 2020**

Client Sample ID			DSWAB_LE(P26)	DSWAB_WIN(P26)	DSWAB_FE(P26)	DSWAB_MH(P26)
Sample Matrix			Wipes	Wipes	Wipes	Wipes
Eurofins Sample No.			S20-My01833	S20-My01834	S20-My01835	S20-My01836
Date Sampled			Apr 30, 2020	Apr 30, 2020	Apr 30, 2020	Apr 30, 2020
Test/Reference	LOR	Unit				
Heavy Metals						
Lead	1	Total ug	< 1	7.5	1.0	1.3

Client Sample ID			DSWAB_BE(P26)
Sample Matrix			Wipes
Eurofins Sample No.			S20-My01837
Date Sampled			Apr 30, 2020
Test/Reference	LOR	Unit	
Heavy Metals			
Lead	1	Total ug	< 1

Sample History

Where samples are submitted/analysed over several days, the last date of extraction and analysis is reported.

A recent review of our LIMS has resulted in the correction or clarification of some method identifications. Due to this, some of the method reference information on reports has changed. However, no substantive change has been made to our laboratory methods, and as such there is no change in the validity of current or previous results.

If the date and time of sampling are not provided, the Laboratory will not be responsible for compromised results should testing be performed outside the recommended holding time.

Description

Heavy Metals

Testing Site

Sydney

Extracted

May 07, 2020

Holding Time

180 Days

- Method: LTM-MET-3040 Metals in Waters, Soils & Sediments by ICP-MS

Australia

Melbourne
6 Monterey Road
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Phone : 0800 856 450
IANZ # 1290

Company Name: Ramboll Australia Pty Ltd
Address: Level 3/100 Pacific Highway
North Sydney
NSW 2060

Project Name: P26
Project ID: 318000780

Order No.:
Report #: 717033
Phone: 02 9954 8118
Fax: 02 9954 8150

Received: May 1, 2020 12:00 PM
Due: May 8, 2020
Priority: 5 Day
Contact Name: Stephen Maxwell

Eurofins Analytical Services Manager : Andrew Black

Sample Detail						CANCELLED	Lead	Mass of sample*
Melbourne Laboratory - NATA Site # 1254 & 14271								
Sydney Laboratory - NATA Site # 18217						X	X	X
Brisbane Laboratory - NATA Site # 20794								
Perth Laboratory - NATA Site # 23736								
External Laboratory								
No	Sample ID	Sample Date	Sampling Time	Matrix	LAB ID			
1	DVAC_MBR(P26)	Apr 30, 2020		Dust	S20-My01831		X	X
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3	DSWAB_LE(P26)	Apr 30, 2020		Wipes	S20-My01833		X	
4	DSWAB_WIN(P26)	Apr 30, 2020		Wipes	S20-My01834		X	
5	DSWAB_FE(P26)	Apr 30, 2020		Wipes	S20-My01835		X	
6	DSWAB_MH(P26)	Apr 30, 2020		Wipes	S20-My01836		X	

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Company Name: Ramboll Australia Pty Ltd
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Contact Name: Stephen Maxwell

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Sample Detail						CANCELLED	Lead	Mass of sample*
Melbourne Laboratory - NATA Site # 1254 & 14271								
Sydney Laboratory - NATA Site # 18217						X	X	X
Brisbane Laboratory - NATA Site # 20794								
Perth Laboratory - NATA Site # 23736								
7	DSWAB_BE(P26)	Apr 30, 2020		Wipes	S20-My01837		X	
8	DVAC_KB(P26)	Apr 30, 2020		Dust	S20-My01838	X		
Test Counts						1	7	2

Internal Quality Control Review and Glossary

General

- Laboratory QC results for Method Blanks, Duplicates, Matrix Spikes, and Laboratory Control Samples follows guidelines delineated in the National Environment Protection (Assessment of Site Contamination) Measure 1999, as amended May 2013 and are included in this QC report where applicable. Additional QC data may be available on request.
- All soil/sediment/solid results are reported on a dry basis, unless otherwise stated.
- All biota/food results are reported on a wet weight basis on the edible portion, unless otherwise stated.
- Actual LORs are matrix dependant. Quoted LORs may be raised where sample extracts are diluted due to interferences.
- Results are uncorrected for matrix spikes or surrogate recoveries except for PFAS compounds.
- SVOC analysis on waters are performed on homogenised, unfiltered samples, unless noted otherwise.
- Samples were analysed on an 'as received' basis.
- Information identified on this report with blue colour, indicates data provided by customer, that may have an impact on the results.
- This report replaces any interim results previously issued.

Holding Times

Please refer to 'Sample Preservation and Container Guide' for holding times (QS3001).

For samples received on the last day of holding time, notification of testing requirements should have been received at least 6 hours prior to sample receipt deadlines as stated on the SRA.

If the Laboratory did not receive the information in the required timeframe, and regardless of any other integrity issues, suitably qualified results may still be reported.

Holding times apply from the date of sampling, therefore compliance to these may be outside the laboratory's control.

For VOCs containing vinyl chloride, styrene and 2-chloroethyl vinyl ether the holding time is 7 days however for all other VOCs such as BTEX or C6-10 TRH then the holding time is 14 days.

****NOTE:** pH duplicates are reported as a range NOT as RPD

Units

mg/kg: milligrams per kilogram	mg/L: milligrams per litre	ug/L: micrograms per litre
ppm: Parts per million	ppb: Parts per billion	%: Percentage
org/100mL: Organisms per 100 millilitres	NTU: Nephelometric Turbidity Units	MPN/100mL: Most Probable Number of organisms per 100 millilitres

Terms

Dry	Where a moisture has been determined on a solid sample the result is expressed on a dry basis.
LOR	Limit of Reporting.
SPIKE	Addition of the analyte to the sample and reported as percentage recovery.
RPD	Relative Percent Difference between two Duplicate pieces of analysis.
LCS	Laboratory Control Sample - reported as percent recovery.
CRM	Certified Reference Material - reported as percent recovery.
Method Blank	In the case of solid samples these are performed on laboratory certified clean sands and in the case of water samples these are performed on de-ionised water.
Surr - Surrogate	The addition of a like compound to the analyte target and reported as percentage recovery.
Duplicate	A second piece of analysis from the same sample and reported in the same units as the result to show comparison.
USEPA	United States Environmental Protection Agency
APHA	American Public Health Association
TCLP	Toxicity Characteristic Leaching Procedure
COC	Chain of Custody
SRA	Sample Receipt Advice
QSM	US Department of Defense Quality Systems Manual Version 5.3
CP	Client Parent - QC was performed on samples pertaining to this report
NCP	Non-Client Parent - QC performed on samples not pertaining to this report, QC is representative of the sequence or batch that client samples were analysed within.
TEQ	Toxic Equivalency Quotient

QC - Acceptance Criteria

RPD Duplicates: Global RPD Duplicates Acceptance Criteria is 30% however the following acceptance guidelines are equally applicable:

Results <10 times the LOR : No Limit

Results between 10-20 times the LOR : RPD must lie between 0-50%

Results >20 times the LOR : RPD must lie between 0-30%

Surrogate Recoveries: Recoveries must lie between 20-130% Phenols & 50-150% PFASs

PFAS field samples that contain surrogate recoveries in excess of the QC limit designated in QSM 5.3 where no positive PFAS results have been reported have been reviewed and no data was affected.

WA DWER (n=10): PFBA, PFPeA, PFHxA, PFHpA, PFOA, PFBS, PFHxS, PFOS, 6:2 FTSA, 8:2 FTSA

QC Data General Comments

- Where a result is reported as a less than (<), higher than the nominated LOR, this is due to either matrix interference, extract dilution required due to interferences or contaminant levels within the sample, high moisture content or insufficient sample provided.
- Duplicate data shown within this report that states the word "BATCH" is a Batch Duplicate from outside of your sample batch, but within the laboratory sample batch at a 1:10 ratio. The Parent and Duplicate data shown is not data from your samples.
- Organochlorine Pesticide analysis - where reporting LCS data, Toxaphene & Chlordane are not added to the LCS.
- Organochlorine Pesticide analysis - where reporting Spike data, Toxaphene is not added to the Spike.
- Total Recoverable Hydrocarbons - where reporting Spike & LCS data, a single spike of commercial Hydrocarbon products in the range of C12-C30 is added and it's Total Recovery is reported in the C10-C14 cell of the Report.
- pH and Free Chlorine analysed in the laboratory - Analysis on this test must begin within 30 minutes of sampling. Therefore laboratory analysis is unlikely to be completed within holding time. Analysis will begin as soon as possible after sample receipt.
- Recovery Data (Spikes & Surrogates) - where chromatographic interference does not allow the determination of Recovery the term "INT" appears against that analyte.
- Polychlorinated Biphenyls are spiked only using Aroclor 1260 in Matrix Spikes and LCS.
- For Matrix Spikes and LCS results a dash " - " in the report means that the specific analyte was not added to the QC sample.
- Duplicate RPDs are calculated from raw analytical data thus it is possible to have two sets of data.

Quality Control Results

Comments**Sample Integrity**

Custody Seals Intact (if used)	N/A
Attempt to Chill was evident	N/A
Sample correctly preserved	Yes
Appropriate sample containers have been used	Yes
Sample containers for volatile analysis received with minimal headspace	Yes
Samples received within HoldingTime	Yes
Some samples have been subcontracted	No

Authorised By

Andrew Black Analytical Services Manager
Gabriele Cordero Senior Analyst-Metal (NSW)

**Glenn Jackson
General Manager**

Final report - this Report replaces any previously issued Report

- Indicates Not Requested

* Indicates NATA accreditation does not cover the performance of this service

Measurement uncertainty of test data is available on request or please [click here](#).

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Ramboll Environ Australia Pty Ltd
 Level 3/100 Pacific Highway
 North Sydney
 NSW 2060



NATA Accredited
Accreditation Number 1261
Site Number 18217

Accredited for compliance with ISO/IEC 17025 – Testing
 The results of the tests, calibrations and/or
 measurements included in this document are traceable
 to Australian/national standards.

Attention: **Stephen Maxwell**

Report **717033-S**
 Project name **P26**
 Project ID **318000780**
 Received Date **May 01, 2020**

Client Sample ID			DVAC_MBR(P26)	DVAC_LR(P26)
Sample Matrix			Dust	Dust
Eurofins Sample No.			S20-My01831	S20-My01832
Date Sampled			Apr 30, 2020	Apr 30, 2020
Test/Reference	LOR	Unit		
Heavy Metals				
Lead	5	mg/kg	11	20

Sample History

Where samples are submitted/analysed over several days, the last date of extraction and analysis is reported.

A recent review of our LIMS has resulted in the correction or clarification of some method identifications. Due to this, some of the method reference information on reports has changed. However, no substantive change has been made to our laboratory methods, and as such there is no change in the validity of current or previous results.

If the date and time of sampling are not provided, the Laboratory will not be responsible for compromised results should testing be performed outside the recommended holding time.

Description

Heavy Metals

Testing Site

Sydney

Extracted

May 01, 2020

Holding Time

180 Days

- Method: LTM-MET-3040 Metals in Waters, Soils & Sediments by ICP-MS

Australia

Melbourne
6 Monterey Road
Dandenong South VIC 3175
Phone : +61 3 8564 5000
NATA # 1261
Site # 1254 & 14271

Sydney
Unit F3, Building F
16 Mars Road
Lane Cove West NSW 2066
Phone : +61 2 9900 8400
NATA # 1261 Site # 18217

Brisbane
1/21 Smallwood Place
Murarrie QLD 4172
Phone : +61 7 3902 4600
NATA # 1261 Site # 20794

Perth
2/91 Leach Highway
Kewdale WA 6105
Phone : +61 8 9251 9600
NATA # 1261
Site # 23736

New Zealand

Auckland
35 O'Rorke Road
Penrose, Auckland 1061
Phone : +64 9 526 45 51
IANZ # 1327

Christchurch
43 Detroit Drive
Rolleston, Christchurch 7675
Phone : 0800 856 450
IANZ # 1290

Company Name: Ramboll Australia Pty Ltd
Address: Level 3/100 Pacific Highway
North Sydney
NSW 2060

Order No.:
Report #: 717033
Phone: 02 9954 8118
Fax: 02 9954 8150

Received: May 1, 2020 12:00 PM
Due: May 8, 2020
Priority: 5 Day
Contact Name: Stephen Maxwell

Project Name: P26
Project ID: 318000780

Eurofins Analytical Services Manager : Andrew Black

Sample Detail						CANCELLED	Lead	Mass of sample*
Melbourne Laboratory - NATA Site # 1254 & 14271								
Sydney Laboratory - NATA Site # 18217						X	X	X
Brisbane Laboratory - NATA Site # 20794								
Perth Laboratory - NATA Site # 23736								
External Laboratory								
No	Sample ID	Sample Date	Sampling Time	Matrix	LAB ID			
1	DVAC_MBR(P26)	Apr 30, 2020		Dust	S20-My01831		X	X
2	DVAC_LR(P26)	Apr 30, 2020		Dust	S20-My01832		X	X
3	DSWAB_LE(P26)	Apr 30, 2020		Wipes	S20-My01833		X	
4	DSWAB_WIN(P26)	Apr 30, 2020		Wipes	S20-My01834		X	
5	DSWAB_FE(P26)	Apr 30, 2020		Wipes	S20-My01835		X	
6	DSWAB_MH(P26)	Apr 30, 2020		Wipes	S20-My01836		X	

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 IANZ # 1327

Christchurch
 43 Detroit Drive
 Rolleston, Christchurch 7675
 Phone : 0800 856 450
 IANZ # 1290

ABN – 50 005 085 521

web : www.eurofins.com.au

e.mail : EnviroSales@eurofins.com

Company Name: Ramboll Australia Pty Ltd
Address: Level 3/100 Pacific Highway
 North Sydney
 NSW 2060

Project Name: P26
Project ID: 318000780

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Contact Name: Stephen Maxwell

Eurofins Analytical Services Manager : Andrew Black

Sample Detail						CANCELLED	Lead	Mass of sample*
Melbourne Laboratory - NATA Site # 1254 & 14271								
Sydney Laboratory - NATA Site # 18217						X	X	X
Brisbane Laboratory - NATA Site # 20794								
Perth Laboratory - NATA Site # 23736								
7	DSWAB_BE(P26)	Apr 30, 2020		Wipes	S20-My01837		X	
8	DVAC_KB(P26)	Apr 30, 2020		Dust	S20-My01838	X		
Test Counts						1	7	2

Internal Quality Control Review and Glossary

General

- Laboratory QC results for Method Blanks, Duplicates, Matrix Spikes, and Laboratory Control Samples follows guidelines delineated in the National Environment Protection (Assessment of Site Contamination) Measure 1999, as amended May 2013 and are included in this QC report where applicable. Additional QC data may be available on request.
- All soil/sediment/solid results are reported on a dry basis, unless otherwise stated.
- All biota/food results are reported on a wet weight basis on the edible portion, unless otherwise stated.
- Actual LORs are matrix dependant. Quoted LORs may be raised where sample extracts are diluted due to interferences.
- Results are uncorrected for matrix spikes or surrogate recoveries except for PFAS compounds.
- SVOC analysis on waters are performed on homogenised, unfiltered samples, unless noted otherwise.
- Samples were analysed on an 'as received' basis.
- Information identified on this report with blue colour, indicates data provided by customer, that may have an impact on the results.
- This report replaces any interim results previously issued.

Holding Times

Please refer to 'Sample Preservation and Container Guide' for holding times (QS3001).

For samples received on the last day of holding time, notification of testing requirements should have been received at least 6 hours prior to sample receipt deadlines as stated on the SRA.

If the Laboratory did not receive the information in the required timeframe, and regardless of any other integrity issues, suitably qualified results may still be reported.

Holding times apply from the date of sampling, therefore compliance to these may be outside the laboratory's control.

For VOCs containing vinyl chloride, styrene and 2-chloroethyl vinyl ether the holding time is 7 days however for all other VOCs such as BTEX or C6-10 TRH then the holding time is 14 days.

****NOTE:** pH duplicates are reported as a range NOT as RPD

Units

mg/kg: milligrams per kilogram

mg/L: milligrams per litre

ug/L: micrograms per litre

ppm: Parts per million

ppb: Parts per billion

%: Percentage

org/100mL: Organisms per 100 millilitres

NTU: Nephelometric Turbidity Units

MPN/100mL: Most Probable Number of organisms per 100 millilitres

Terms

Dry	Where a moisture has been determined on a solid sample the result is expressed on a dry basis.
LOR	Limit of Reporting.
SPIKE	Addition of the analyte to the sample and reported as percentage recovery.
RPD	Relative Percent Difference between two Duplicate pieces of analysis.
LCS	Laboratory Control Sample - reported as percent recovery.
CRM	Certified Reference Material - reported as percent recovery.
Method Blank	In the case of solid samples these are performed on laboratory certified clean sands and in the case of water samples these are performed on de-ionised water.
Surr - Surrogate	The addition of a like compound to the analyte target and reported as percentage recovery.
Duplicate	A second piece of analysis from the same sample and reported in the same units as the result to show comparison.
USEPA	United States Environmental Protection Agency
APHA	American Public Health Association
TCLP	Toxicity Characteristic Leaching Procedure
COC	Chain of Custody
SRA	Sample Receipt Advice
QSM	US Department of Defense Quality Systems Manual Version 5.3
CP	Client Parent - QC was performed on samples pertaining to this report
NCP	Non-Client Parent - QC performed on samples not pertaining to this report, QC is representative of the sequence or batch that client samples were analysed within.
TEQ	Toxic Equivalency Quotient

QC - Acceptance Criteria

RPD Duplicates: Global RPD Duplicates Acceptance Criteria is 30% however the following acceptance guidelines are equally applicable:

Results <10 times the LOR : No Limit

Results between 10-20 times the LOR : RPD must lie between 0-50%

Results >20 times the LOR : RPD must lie between 0-30%

Surrogate Recoveries: Recoveries must lie between 20-130% Phenols & 50-150% PFASs

PFAS field samples that contain surrogate recoveries in excess of the QC limit designated in QSM 5.3 where no positive PFAS results have been reported have been reviewed and no data was affected.

WA DWER (n=10): PFBA, PFPeA, PFHxA, PFHpA, PFOA, PFBS, PFHxS, PFOS, 6:2 FTSA, 8:2 FTSA

QC Data General Comments

- Where a result is reported as a less than (<), higher than the nominated LOR, this is due to either matrix interference, extract dilution required due to interferences or contaminant levels within the sample, high moisture content or insufficient sample provided.
- Duplicate data shown within this report that states the word "BATCH" is a Batch Duplicate from outside of your sample batch, but within the laboratory sample batch at a 1:10 ratio. The Parent and Duplicate data shown is not data from your samples.
- Organochlorine Pesticide analysis - where reporting LCS data, Toxaphene & Chlordane are not added to the LCS.
- Organochlorine Pesticide analysis - where reporting Spike data, Toxaphene is not added to the Spike.
- Total Recoverable Hydrocarbons - where reporting Spike & LCS data, a single spike of commercial Hydrocarbon products in the range of C12-C30 is added and it's Total Recovery is reported in the C10-C14 cell of the Report.
- pH and Free Chlorine analysed in the laboratory - Analysis on this test must begin within 30 minutes of sampling. Therefore laboratory analysis is unlikely to be completed within holding time. Analysis will begin as soon as possible after sample receipt.
- Recovery Data (Spikes & Surrogates) - where chromatographic interference does not allow the determination of Recovery the term "INT" appears against that analyte.
- Polychlorinated Biphenyls are spiked only using Aroclor 1260 in Matrix Spikes and LCS.
- For Matrix Spikes and LCS results a dash " - " in the report means that the specific analyte was not added to the QC sample.
- Duplicate RPDs are calculated from raw analytical data thus it is possible to have two sets of data.

Quality Control Results

Test				Units	Result 1		Acceptance Limits	Pass Limits	Qualifying Code		
Method Blank											
Heavy Metals											
Lead				mg/kg	< 5		5	Pass			
LCS - % Recovery											
Heavy Metals											
Lead				%	85		70-130	Pass			
Test	Lab Sample ID	QA Source	Units	Result 1			Acceptance Limits	Pass Limits	Qualifying Code		
Spike - % Recovery											
Heavy Metals											
Lead				S20-My04094	NCP	%	123	70-130	Pass		
Duplicate											
Heavy Metals											
Lead				S20-My04100	NCP	mg/kg	22	21	5.0	30%	Pass

Comments**Sample Integrity**

Custody Seals Intact (if used)	N/A
Attempt to Chill was evident	N/A
Sample correctly preserved	Yes
Appropriate sample containers have been used	Yes
Sample containers for volatile analysis received with minimal headspace	Yes
Samples received within HoldingTime	Yes
Some samples have been subcontracted	No

Authorised By

Andrew Black Analytical Services Manager
Gabriele Cordero Senior Analyst-Metal (NSW)

**Glenn Jackson
General Manager**

Final report - this Report replaces any previously issued Report

- Indicates Not Requested

* Indicates NATA accreditation does not cover the performance of this service

Measurement uncertainty of test data is available on request or please [click here](#).

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CHAIN OF CUSTODY RECORD

ABN 50 005 085 521

Sydney Laboratory

Unit F3 Bld F, 16 Mars Rd, Lane Cove West, NSW 2066
02 9900 8400 EnviroSampleNSW@eurofins.com

Brisbane Laboratory

Unit 1, 21 Smallwood Pl, Murarie, QLD 4172
07 3902 4600 EnviroSampleQLD@eurofins.com

Perth Laboratory

Unit 2, 91 Leach Highway, Kewdale WA 6105
08 9251 9600 EnviroSampleWA@eurofins.com

Melbourne Laboratory

2 Kingston Town Close, Oakleigh, VIC 3186
03 8564 5000 EnviroSampleVic@eurofins.com

Company		Ramboll		Project No		318000780		Project Manager		Stephen Maxwell		Sampler(s)		JK + RC			
Address		50 Glebe Road the Junction		Project Name				EDD Format		Excel and PDF		Handed over by		SM			
Contact Name		Stephen Maxwell		<small>(Note: Where metals are requested, please specify "Total" or "Filtered".) SUITE code must be used to attract SUITE pricing.</small> Analyses Lead M13 (Al, As, Ba, Be, Cd, Cr, Co, Cu, Fe, Pb, Mn, Hg, Ni, Zn) total M13 (Al, As, Ba, Be, Cd, Cr, Co, Cu, Fe, Pb, Mn, Hg, Ni, Zn) dissolved		Email for Invoice		smaxwell@ramboll.com asiapac-accounts@ramboll.com		Email for Results		smaxwell@ramboll.com jblackwell@ramboll.com rcondon@ramboll.com shyde@ramboll.com		Turnaround Time (TAT) Requirements (default will be 5 days if not ticked)			
Phone No						<input type="checkbox"/> Overnight (9am)* <input type="checkbox"/> 1 Day* <input type="checkbox"/> 2 Day* <input type="checkbox"/> 3 Day* <input checked="" type="checkbox"/> 5 Day* <input type="checkbox"/> Other () * Surcharges apply		<input type="checkbox"/> 1L Plastic <input type="checkbox"/> 250mL Plastic <input type="checkbox"/> 125mL Plastic <input type="checkbox"/> 200mL Amber Glass <input type="checkbox"/> 40mL VOA vial <input type="checkbox"/> 500mL PFAS Bottle <input type="checkbox"/> Jar (Glass or HDPE) <small>Other (Asbestos AS4654, WA Guidelines)</small>		Sample Comments / Dangerous Goods Hazard Warning							
Special Directions																	
Purchase Order																	
Quote ID No		180813RAMN_1															
No	Client Sample ID	Sampled Date/Time (dd/mm/yy hh:mm)	Matrix (Solid (S) Water (W))														
1	P27_HA01_0.0	1/04/20	S	X													
2	P27_HA02_0.0	1/04/20	S	X													
3	P27_HA02_0.2	1/04/20	S	X													
4	P27_HA03_0.0	1/04/20	S	X													
5	P27_HA03_0.2	1/04/20	S	X													
6	P27_HA04_0.0	1/04/20	S	X													
7	P27_HA04_0.2	1/04/20	S	X													
8	P27_HA05_0.0	1/04/20	S	X													
9	P27_HA05_0.2	1/04/20	S	X													
10	P27_TW1	1/04/20	W		X	X											
Total Counts				9	1	1											
Method of Shipment		<input type="checkbox"/> Courier (#) <input type="checkbox"/> Hand Delivered <input type="checkbox"/> Postal		Name		Signature		Date		Date		Time		Time			
Eurofins mgt Laboratory Use Only		Received By: <i>Inpan</i> Signature: <i>Inpan</i>		SYD BNE MEL PER ADL NTL DRW		Signature		Date: 06/04/20		Date		Time: 2:36 PM		Temperature: 26.2			
		Received By: _____ Signature: _____		SYD BNE MEL PER ADL NTL DRW		Signature		Date: _____		Date		Time: _____		Report No: 712465			

Submission of samples to the laboratory will be deemed acceptance of Eurofins | mgt Standard Terms and Conditions unless agreed otherwise. A copy of Eurofins | mgt Standard Terms and Conditions is available on request.



CHAIN OF CUSTODY RECORD

ABN 50 005 085 521

Sydney Laboratory
Unit F3 Bld F, 16 Mars Rd, Lane Cove West, NSW 2066
02 9900 8400 EnviroSampleNSW@eurofins.com

Brisbane Laboratory
Unit 1, 21 Smallwood Pl, Murarie, QLD 4172
07 3902 4600 EnviroSampleQLD@eurofins.com

Perth Laboratory
Unit 2, 91 Leach Highway, Kewdale WA 6105
08 9251 9600 EnviroSampleWA@eurofins.com

Melbourne Laboratory
2 Kingston Town Close, Oakleigh, VIC 3166
03 8564 5000 EnviroSampleVic@eurofins.com

Company		Ramboll		Project No		318000780		Project Manager		Stephen Maxwell		Sampler(s)		JB + JAB					
Address		50 Glebe Road the Junction		Project Name				EDD Format (ESdat, EQUIS,		Excel and PDF		Handed over by		SM					
Contact Name		Stephen Maxwell		<small>Analyses</small> <small>(Note: Where metals are requested, please specify "Total" or "Filtered". SUITE code must be used to attract SUITE pricing)</small> Lead M13 (Al, As, Ba, Be, Cd, Cr, Co, Cu, Fe, Pb, Mn, Hg, Ni, Zn) total M13 (Al, As, Ba, Be, Cd, Cr, Co, Cu, Fe, Pb, Mn, Hg, Ni, Zn) dissolved										Email for Invoice		smaxwell@ramboll.com asiapac-accounts@ramboll.com			
Phone No														Email for Results		smaxwell@ramboll.com jblackwell@ramboll.com rcondon@ramboll.com shyde@ramboll.com			
Special Directions														blackwell@ramboll.com		Turnaround Time (TAT) Requirements (default will be 5 days if not ticked)		<input type="checkbox"/> Overnight (9am)* <input type="checkbox"/> 1 Day* <input type="checkbox"/> 2 Day* <input type="checkbox"/> 3 Day* <input checked="" type="checkbox"/> 5 Day* <input type="checkbox"/> Other () * Surcharges apply	
Purchase Order														1L Plastic 250mL Plastic 125mL Plastic 200mL Amber Glass 40mL VOA vial 500mL PFAS Bottle Jar (Glass or HDPE) <small>Other (Asbestos AS4694, WA Guidelines)</small>		Sample Comments / Dangerous Goods Hazard Warning			
Quote ID No		180813RAMN_1																	
No	Client Sample ID	Sampled Date/Time (dd/mm/yy hh:mm)	Matrix (Solid (S) Water (W))											Please homogenise in this sample then analyse					
1	P27_TWS1	1/04/20	sediment	X															
2																			
3																			
4																			
5																			
6																			
7																			
8																			
9																			
10																			
Total Counts				1															
Method of Shipment		<input type="checkbox"/> Courier (#) <input type="checkbox"/> Hand Delivered <input type="checkbox"/> Postal		Name		Signature		Date		Date		Time		Time					
Eurofins mgt Laboratory Use Only		Received By <i>[Signature]</i>		SYD BNE MEL PER ADL NTL DRW		Signature		Date <i>06/04/20</i>		Date		Time		Temperature					
		Received By		SYD BNE MEL PER ADL NTL DRW		Signature		Date		Date		Time		Report No					

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Kewdale WA 6105
Phone : +61 8 9251 9600
NATA # 1261 Site # 23736

Sample Receipt Advice

Company name: **Ramboll Australia Pty Ltd**

Contact name: **Stephen Maxwell**

Project ID: **318000780**

COC number: **Not provided**

Turn around time: **5 Day**

Date/Time received: **Apr 6, 2020 2:36 PM**

Eurofins reference: **712465**

Sample information

- A detailed list of analytes logged into our LIMS, is included in the attached summary table.
- All samples have been received as described on the above COC.
- COC has been completed correctly.
- Attempt to chill was evident.
- Appropriately preserved sample containers have been used.
- All samples were received in good condition.
- Samples have been provided with adequate time to commence analysis in accordance with the relevant holding times.
- Appropriate sample containers have been used.
- Sample containers for volatile analysis received with zero headspace.
- Split sample sent to requested external lab.
- Some samples have been subcontracted.
- N/A Custody Seals intact (if used).

Contact notes

If you have any questions with respect to these samples please contact:

Andrew Black on Phone : (+61) 2 9900 8490 or by e.mail: AndrewBlack@eurofins.com

Results will be delivered electronically via e.mail to Stephen Maxwell - smaxwell@ramboll.com.

Note: A copy of these results will also be delivered to the general Ramboll Australia Pty Ltd email address.

Ramboll Environ Australia Pty Ltd
 Level 3/100 Pacific Highway
 North Sydney
 NSW 2060



NATA Accredited
 Accreditation Number 1261
 Site Number 18217

Accredited for compliance with ISO/IEC 17025 – Testing
 The results of the tests, calibrations and/or
 measurements included in this document are traceable
 to Australian/national standards.

Attention: Stephen Maxwell

Report 712465-S
 Project name
 Project ID 318000780
 Received Date Apr 06, 2020

Client Sample ID			P27_HA01_0.0	P27_HA02_0.0	P27_HA02_0.2	P27_HA03_0.0
Sample Matrix			Soil	Soil	Soil	Soil
Eurofins Sample No.			S20-Ap09724	S20-Ap09725	S20-Ap09726	S20-Ap09727
Date Sampled			Apr 01, 2020	Apr 01, 2020	Apr 01, 2020	Apr 01, 2020
Test/Reference	LOR	Unit				
Heavy Metals						
Lead	5	mg/kg	16	25	23	35
% Moisture	1	%	6.2	9.3	11	16

Client Sample ID			P27_HA03_0.2	P27_HA04_0.0	P27_HA04_0.2	P27_HA05_0.0
Sample Matrix			Soil	Soil	Soil	Soil
Eurofins Sample No.			S20-Ap09728	S20-Ap09729	S20-Ap09730	S20-Ap09731
Date Sampled			Apr 01, 2020	Apr 01, 2020	Apr 01, 2020	Apr 01, 2020
Test/Reference	LOR	Unit				
Heavy Metals						
Lead	5	mg/kg	20	32	20	43
% Moisture	1	%	12	7.4	5.5	11

Client Sample ID			P27_HA05_0.2
Sample Matrix			Soil
Eurofins Sample No.			S20-Ap09732
Date Sampled			Apr 01, 2020
Test/Reference	LOR	Unit	
Heavy Metals			
Lead	5	mg/kg	25
% Moisture	1	%	8.0

Sample History

Where samples are submitted/analysed over several days, the last date of extraction and analysis is reported.

A recent review of our LIMS has resulted in the correction or clarification of some method identifications. Due to this, some of the method reference information on reports has changed. However, no substantive change has been made to our laboratory methods, and as such there is no change in the validity of current or previous results.

If the date and time of sampling are not provided, the Laboratory will not be responsible for compromised results should testing be performed outside the recommended holding time.

Description

Heavy Metals

- Method: LTM-MET-3040 Metals in Waters, Soils & Sediments by ICP-MS

% Moisture

- Method: LTM-GEN-7080 Moisture

Testing Site

Sydney

Sydney

Extracted

Apr 09, 2020

Apr 07, 2020

Holding Time

180 Days

14 Days

Australia

Melbourne
6 Monterey Road
Dandenong South VIC 3175
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NSW 2060

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Phone: 02 9954 8118
Fax: 02 9954 8150

Received: Apr 6, 2020 2:36 PM
Due: Apr 15, 2020
Priority: 5 Day
Contact Name: Stephen Maxwell

Project Name:
Project ID: 318000780

Eurofins Analytical Services Manager : Andrew Black

Sample Detail						Aluminium	Aluminium (filtered)	Arsenic	Arsenic (filtered)	Barium	Barium (filtered)	Beryllium	Beryllium (filtered)	Cadmium	Cadmium (filtered)	Chromium	Chromium (filtered)	Cobalt	Cobalt (filtered)	Copper	Copper (filtered)	Iron	Iron (filtered)	Lead	Lead (filtered)	Manganese	Manganese (filtered)	Mercury	Mercury (filtered)	Nickel	Nickel (filtered)	Zinc	Zinc (filtered)	Moisture Set	
Melbourne Laboratory - NATA Site # 1254 & 14271																																			
Sydney Laboratory - NATA Site # 18217						X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X
Brisbane Laboratory - NATA Site # 20794																																			
Perth Laboratory - NATA Site # 23736																																			
External Laboratory																																			
No	Sample ID	Sample Date	Sampling Time	Matrix	LAB ID																														
1	P27_HA01_0_0	Apr 01, 2020		Soil	S20-Ap09724																		X										X		
2	P27_HA02_0_0	Apr 01, 2020		Soil	S20-Ap09725																		X										X		
3	P27_HA02_0_2	Apr 01, 2020		Soil	S20-Ap09726																		X										X		
4	P27_HA03_0_0	Apr 01, 2020		Soil	S20-Ap09727																		X										X		
5	P27_HA03_0_2	Apr 01, 2020		Soil	S20-Ap09728																		X										X		
6	P27_HA04_0_0	Apr 01, 2020		Soil	S20-Ap09729																		X										X		

Australia

Melbourne
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Site # 1254 & 14271

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IANZ # 1327

Christchurch
43 Detroit Drive
Rolleston, Christchurch 7675
Phone : 0800 856 450
IANZ # 1290

Company Name:	Ramboll Australia Pty Ltd	Order No.:		Received:	Apr 6, 2020 2:36 PM
Address:	Level 3/100 Pacific Highway North Sydney NSW 2060	Report #:	712465	Due:	Apr 15, 2020
Project Name:		Phone:	02 9954 8118	Priority:	5 Day
Project ID:	318000780	Fax:	02 9954 8150	Contact Name:	Stephen Maxwell

Eurofins Analytical Services Manager : Andrew Black

Sample Detail						Aluminium	Aluminium (filtered)	Arsenic	Arsenic (filtered)	Barium	Barium (filtered)	Beryllium	Beryllium (filtered)	Cadmium	Cadmium (filtered)	Chromium	Chromium (filtered)	Cobalt	Cobalt (filtered)	Copper	Copper (filtered)	Iron	Iron (filtered)	Lead	Lead (filtered)	Manganese	Manganese (filtered)	Mercury	Mercury (filtered)	Nickel	Nickel (filtered)	Zinc	Zinc (filtered)	Moisture Set		
Melbourne Laboratory - NATA Site # 1254 & 14271																																				
Sydney Laboratory - NATA Site # 18217						X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	
Brisbane Laboratory - NATA Site # 20794																																				
Perth Laboratory - NATA Site # 23736																																				
7	P27_HA04_0.2	Apr 01, 2020		Soil	S20-Ap09730																		X											X		
8	P27_HA05_0.0	Apr 01, 2020		Soil	S20-Ap09731																		X											X		
9	P27_HA05_0.2	Apr 01, 2020		Soil	S20-Ap09732																		X											X		
10	P27_TW1	Apr 01, 2020		Water	S20-Ap09733	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X			
11	P27_TWS1	Apr 01, 2020		Water	S20-Ap09734																		X													
Test Counts						1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	11	1	1	1	1	1	1	1	1	1	1	9	

Internal Quality Control Review and Glossary
General

- Laboratory QC results for Method Blanks, Duplicates, Matrix Spikes, and Laboratory Control Samples follows guidelines delineated in the National Environment Protection (Assessment of Site Contamination) Measure 1999, as amended May 2013 and are included in this QC report where applicable. Additional QC data may be available on request.
- All soil/sediment/solid results are reported on a dry basis, unless otherwise stated.
- All biota/food results are reported on a wet weight basis on the edible portion, unless otherwise stated.
- Actual LORs are matrix dependant. Quoted LORs may be raised where sample extracts are diluted due to interferences.
- Results are uncorrected for matrix spikes or surrogate recoveries except for PFAS compounds.
- SVOC analysis on waters are performed on homogenised, unfiltered samples, unless noted otherwise.
- Samples were analysed on an 'as received' basis.
- Information identified on this report with blue colour, indicates data provided by customer, that may have an impact on the results.
- This report replaces any interim results previously issued.

Holding Times

Please refer to 'Sample Preservation and Container Guide' for holding times (QS3001).

For samples received on the last day of holding time, notification of testing requirements should have been received at least 6 hours prior to sample receipt deadlines as stated on the SRA.

If the Laboratory did not receive the information in the required timeframe, and regardless of any other integrity issues, suitably qualified results may still be reported.

Holding times apply from the date of sampling, therefore compliance to these may be outside the laboratory's control.

For VOCs containing vinyl chloride, styrene and 2-chloroethyl vinyl ether the holding time is 7 days however for all other VOCs such as BTEX or C6-10 TRH then the holding time is 14 days.

****NOTE:** pH duplicates are reported as a range NOT as RPD

Units

mg/kg: milligrams per kilogram

mg/L: milligrams per litre

ug/L: micrograms per litre

ppm: Parts per million

ppb: Parts per billion

%: Percentage

org/100mL: Organisms per 100 millilitres

NTU: Nephelometric Turbidity Units

MPN/100mL: Most Probable Number of organisms per 100 millilitres

Terms

Dry	Where a moisture has been determined on a solid sample the result is expressed on a dry basis.
LOR	Limit of Reporting.
SPIKE	Addition of the analyte to the sample and reported as percentage recovery.
RPD	Relative Percent Difference between two Duplicate pieces of analysis.
LCS	Laboratory Control Sample - reported as percent recovery.
CRM	Certified Reference Material - reported as percent recovery.
Method Blank	In the case of solid samples these are performed on laboratory certified clean sands and in the case of water samples these are performed on de-ionised water.
Surr - Surrogate	The addition of a like compound to the analyte target and reported as percentage recovery.
Duplicate	A second piece of analysis from the same sample and reported in the same units as the result to show comparison.
USEPA	United States Environmental Protection Agency
APHA	American Public Health Association
TCLP	Toxicity Characteristic Leaching Procedure
COC	Chain of Custody
SRA	Sample Receipt Advice
QSM	US Department of Defense Quality Systems Manual Version 5.3
CP	Client Parent - QC was performed on samples pertaining to this report
NCP	Non-Client Parent - QC performed on samples not pertaining to this report, QC is representative of the sequence or batch that client samples were analysed within.
TEQ	Toxic Equivalency Quotient

QC - Acceptance Criteria

RPD Duplicates: Global RPD Duplicates Acceptance Criteria is 30% however the following acceptance guidelines are equally applicable:

Results <10 times the LOR : No Limit

Results between 10-20 times the LOR : RPD must lie between 0-50%

Results >20 times the LOR : RPD must lie between 0-30%

Surrogate Recoveries: Recoveries must lie between 20-130% Phenols & 50-150% PFASs

PFAS field samples that contain surrogate recoveries in excess of the QC limit designated in QSM 5.3 where no positive PFAS results have been reported have been reviewed and no data was affected.

WA DWER (n=10): PFBA, PFPeA, PFHxA, PFHpA, PFOA, PFBS, PFHxS, PFOS, 6:2 FTSA, 8:2 FTSA

QC Data General Comments

- Where a result is reported as a less than (<), higher than the nominated LOR, this is due to either matrix interference, extract dilution required due to interferences or contaminant levels within the sample, high moisture content or insufficient sample provided.
- Duplicate data shown within this report that states the word "BATCH" is a Batch Duplicate from outside of your sample batch, but within the laboratory sample batch at a 1:10 ratio. The Parent and Duplicate data shown is not data from your samples.
- Organochlorine Pesticide analysis - where reporting LCS data, Toxaphene & Chlordane are not added to the LCS.
- Organochlorine Pesticide analysis - where reporting Spike data, Toxaphene is not added to the Spike.
- Total Recoverable Hydrocarbons - where reporting Spike & LCS data, a single spike of commercial Hydrocarbon products in the range of C12-C30 is added and it's Total Recovery is reported in the C10-C14 cell of the Report.
- pH and Free Chlorine analysed in the laboratory - Analysis on this test must begin within 30 minutes of sampling. Therefore laboratory analysis is unlikely to be completed within holding time. Analysis will begin as soon as possible after sample receipt.
- Recovery Data (Spikes & Surrogates) - where chromatographic interference does not allow the determination of Recovery the term "INT" appears against that analyte.
- Polychlorinated Biphenyls are spiked only using Aroclor 1260 in Matrix Spikes and LCS.
- For Matrix Spikes and LCS results a dash " - " in the report means that the specific analyte was not added to the QC sample.
- Duplicate RPDs are calculated from raw analytical data thus it is possible to have two sets of data.

Quality Control Results

Test				Units	Result 1		Acceptance Limits	Pass Limits	Qualifying Code		
Method Blank											
Heavy Metals											
Lead				mg/kg	< 5		5	Pass			
LCS - % Recovery											
Heavy Metals											
Lead				%	100		70-130	Pass			
Test	Lab Sample ID	QA Source	Units	Result 1			Acceptance Limits	Pass Limits	Qualifying Code		
Spike - % Recovery											
Heavy Metals											
Lead				S20-Ap09732	CP	%	85	70-130	Pass		
Test	Lab Sample ID	QA Source	Units	Result 1			Acceptance Limits	Pass Limits	Qualifying Code		
Duplicate											
				Result 1	Result 2	RPD					
% Moisture				S20-Ap10676	NCP	%	17	16	5.0	30%	Pass
Duplicate											
Heavy Metals											
Lead				S20-Ap09731	CP	mg/kg	43	41	3.0	30%	Pass

Comments**Sample Integrity**

Custody Seals Intact (if used)	N/A
Attempt to Chill was evident	No
Sample correctly preserved	Yes
Appropriate sample containers have been used	Yes
Sample containers for volatile analysis received with minimal headspace	Yes
Samples received within HoldingTime	Yes
Some samples have been subcontracted	No

Authorised By

Andrew Black Analytical Services Manager
Gabriele Cordero Senior Analyst-Metal (NSW)

**Glenn Jackson
General Manager**

Final report - this Report replaces any previously issued Report

- Indicates Not Requested

* Indicates NATA accreditation does not cover the performance of this service

Measurement uncertainty of test data is available on request or please [click here](#).

Eurofins shall not be liable for loss, cost, damages or expenses incurred by the client, or any other person or company, resulting from the use of any information or interpretation given in this report. In no case shall Eurofins be liable for consequential damages including, but not limited to, lost profits, damages for failure to meet deadlines and lost production arising from this report. This document shall not be reproduced except in full and relates only to the items tested. Unless indicated otherwise, the tests were performed on the samples as received.

Ramboll Environ Australia Pty Ltd
Level 3/100 Pacific Highway
North Sydney
NSW 2060

Attention: **Stephen Maxwell**

Report **712465-W**
 Project name
 Project ID **318000780**
 Received Date **Apr 06, 2020**

Client Sample ID			P27_TW1	P27_TWS1
Sample Matrix			Water	Water
Eurofins Sample No.			S20-Ap09733	S20-Ap09734
Date Sampled			Apr 01, 2020	Apr 01, 2020
Test/Reference	LOR	Unit		
Heavy Metals				
Aluminium	0.05	mg/L	< 0.05	-
Aluminium (filtered)	0.05	mg/L	< 0.05	-
Arsenic	0.001	mg/L	< 0.001	-
Arsenic (filtered)	0.001	mg/L	< 0.001	-
Barium	0.02	mg/L	< 0.02	-
Barium (filtered)	0.02	mg/L	< 0.02	-
Beryllium	0.001	mg/L	< 0.001	-
Beryllium (filtered)	0.001	mg/L	< 0.001	-
Cadmium	0.0002	mg/L	< 0.0002	-
Cadmium (filtered)	0.0002	mg/L	< 0.0002	-
Chromium	0.001	mg/L	0.002	-
Chromium (filtered)	0.001	mg/L	< 0.001	-
Cobalt	0.001	mg/L	< 0.001	-
Cobalt (filtered)	0.001	mg/L	< 0.001	-
Copper	0.001	mg/L	< 0.001	-
Copper (filtered)	0.001	mg/L	< 0.001	-
Iron	0.05	mg/L	< 0.05	-
Iron (filtered)	0.05	mg/L	< 0.05	-
Lead	0.001	mg/L	< 0.001	0.21
Lead (filtered)	0.001	mg/L	< 0.001	-
Manganese	0.005	mg/L	< 0.005	-
Manganese (filtered)	0.005	mg/L	< 0.005	-
Mercury	0.0001	mg/L	< 0.0001	-
Mercury (filtered)	0.0001	mg/L	< 0.0001	-
Nickel	0.001	mg/L	< 0.001	-
Nickel (filtered)	0.001	mg/L	< 0.001	-
Zinc	0.005	mg/L	0.057	-
Zinc (filtered)	0.005	mg/L	0.050	-

Sample History

Where samples are submitted/analysed over several days, the last date of extraction and analysis is reported.

A recent review of our LIMS has resulted in the correction or clarification of some method identifications. Due to this, some of the method reference information on reports has changed. However, no substantive change has been made to our laboratory methods, and as such there is no change in the validity of current or previous results.

If the date and time of sampling are not provided, the Laboratory will not be responsible for compromised results should testing be performed outside the recommended holding time.

Description	Testing Site	Extracted	Holding Time
Heavy Metals - Method: LTM-MET-3040 Metals in Waters, Soils & Sediments by ICP-MS	Sydney	Apr 15, 2020	180 Days
Heavy Metals (filtered) - Method: LTM-MET-3040 Metals in Waters, Soils & Sediments by ICP-MS	Sydney	Apr 14, 2020	180 Days
Mobil Metals : Metals M15 - Method: LTM-MET-3040 Metals in Waters, Soils & Sediments by ICP-MS	Sydney	Apr 14, 2020	28 Days

Australia

Melbourne
6 Monterey Road
Dandenong South VIC 3175
Phone : +61 3 8564 5000
NATA # 1261
Site # 1254 & 14271

Sydney
Unit F3, Building F
16 Mars Road
Lane Cove West NSW 2066
Phone : +61 2 9900 8400
NATA # 1261 Site # 18217

Brisbane
1/21 Smallwood Place
Murarrie QLD 4172
Phone : +61 7 3902 4600
NATA # 1261 Site # 20794

Perth
2/91 Leach Highway
Kewdale WA 6105
Phone : +61 8 9251 9600
NATA # 1261
Site # 23736

New Zealand

Auckland
35 O'Rorke Road
Penrose, Auckland 1061
Phone : +64 9 526 45 51
IANZ # 1327

Christchurch
43 Detroit Drive
Rolleston, Christchurch 7675
Phone : 0800 856 450
IANZ # 1290

Company Name: Ramboll Australia Pty Ltd
Address: Level 3/100 Pacific Highway
North Sydney
NSW 2060

Order No.:
Report #: 712465
Phone: 02 9954 8118
Fax: 02 9954 8150

Received: Apr 6, 2020 2:36 PM
Due: Apr 15, 2020
Priority: 5 Day
Contact Name: Stephen Maxwell

Project Name:
Project ID: 318000780

Eurofins Analytical Services Manager : Andrew Black

Sample Detail						Aluminium	Aluminium (filtered)	Arsenic	Arsenic (filtered)	Barium	Barium (filtered)	Beryllium	Beryllium (filtered)	Cadmium	Cadmium (filtered)	Chromium	Chromium (filtered)	Cobalt	Cobalt (filtered)	Copper	Copper (filtered)	Iron	Iron (filtered)	Lead	Lead (filtered)	Manganese	Manganese (filtered)	Mercury	Mercury (filtered)	Nickel	Nickel (filtered)	Zinc	Zinc (filtered)	Moisture Set	
Melbourne Laboratory - NATA Site # 1254 & 14271																																			
Sydney Laboratory - NATA Site # 18217						X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X
Brisbane Laboratory - NATA Site # 20794																																			
Perth Laboratory - NATA Site # 23736																																			
External Laboratory																																			
No	Sample ID	Sample Date	Sampling Time	Matrix	LAB ID																														
1	P27_HA01_0_0	Apr 01, 2020		Soil	S20-Ap09724																		X										X		
2	P27_HA02_0_0	Apr 01, 2020		Soil	S20-Ap09725																		X										X		
3	P27_HA02_0_2	Apr 01, 2020		Soil	S20-Ap09726																		X										X		
4	P27_HA03_0_0	Apr 01, 2020		Soil	S20-Ap09727																		X										X		
5	P27_HA03_0_2	Apr 01, 2020		Soil	S20-Ap09728																		X										X		
6	P27_HA04_0_0	Apr 01, 2020		Soil	S20-Ap09729																		X										X		

Australia

Melbourne
6 Monterey Road
Dandenong South VIC 3175
Phone : +61 3 8564 5000
NATA # 1261
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NATA # 1261 Site # 20794

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Kewdale WA 6105
Phone : +61 8 9251 9600
NATA # 1261
Site # 23736

New Zealand

Auckland
35 O'Rorke Road
Penrose, Auckland 1061
Phone : +64 9 526 45 51
IANZ # 1327

Christchurch
43 Detroit Drive
Rolleston, Christchurch 7675
Phone : 0800 856 450
IANZ # 1290

Company Name:	Ramboll Australia Pty Ltd	Order No.:		Received:	Apr 6, 2020 2:36 PM
Address:	Level 3/100 Pacific Highway North Sydney NSW 2060	Report #:	712465	Due:	Apr 15, 2020
Project Name:		Phone:	02 9954 8118	Priority:	5 Day
Project ID:	318000780	Fax:	02 9954 8150	Contact Name:	Stephen Maxwell

Eurofins Analytical Services Manager : Andrew Black

Sample Detail						Aluminium	Aluminium (filtered)	Arsenic	Arsenic (filtered)	Barium	Barium (filtered)	Beryllium	Beryllium (filtered)	Cadmium	Cadmium (filtered)	Chromium	Chromium (filtered)	Cobalt	Cobalt (filtered)	Copper	Copper (filtered)	Iron	Iron (filtered)	Lead	Lead (filtered)	Manganese	Manganese (filtered)	Mercury	Mercury (filtered)	Nickel	Nickel (filtered)	Zinc	Zinc (filtered)	Moisture Set		
Melbourne Laboratory - NATA Site # 1254 & 14271																																				
Sydney Laboratory - NATA Site # 18217						X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	
Brisbane Laboratory - NATA Site # 20794																																				
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7	P27_HA04_0.2	Apr 01, 2020		Soil	S20-Ap09730																			X										X		
8	P27_HA05_0.0	Apr 01, 2020		Soil	S20-Ap09731																			X										X		
9	P27_HA05_0.2	Apr 01, 2020		Soil	S20-Ap09732																			X										X		
10	P27_TW1	Apr 01, 2020		Water	S20-Ap09733	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X			
11	P27_TWS1	Apr 01, 2020		Water	S20-Ap09734																			X												
Test Counts						1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	11	1	1	1	1	1	1	1	1	1	9	

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- Laboratory QC results for Method Blanks, Duplicates, Matrix Spikes, and Laboratory Control Samples follows guidelines delineated in the National Environment Protection (Assessment of Site Contamination) Measure 1999, as amended May 2013 and are included in this QC report where applicable. Additional QC data may be available on request.
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- For Matrix Spikes and LCS results a dash " - " in the report means that the specific analyte was not added to the QC sample.
- Duplicate RPDs are calculated from raw analytical data thus it is possible to have two sets of data.

Quality Control Results

Test	Units	Result 1			Acceptance Limits	Pass Limits	Qualifying Code
Method Blank							
Heavy Metals							
Aluminium	mg/L	< 0.05			0.05	Pass	
Aluminium (filtered)	mg/L	< 0.05			0.05	Pass	
Arsenic	mg/L	< 0.001			0.001	Pass	
Arsenic (filtered)	mg/L	< 0.001			0.001	Pass	
Barium	mg/L	< 0.02			0.02	Pass	
Barium (filtered)	mg/L	< 0.02			0.02	Pass	
Beryllium	mg/L	< 0.001			0.001	Pass	
Beryllium (filtered)	mg/L	< 0.001			0.001	Pass	
Cadmium	mg/L	< 0.0002			0.0002	Pass	
Cadmium (filtered)	mg/L	< 0.0002			0.0002	Pass	
Chromium	mg/L	< 0.001			0.001	Pass	
Chromium (filtered)	mg/L	< 0.001			0.001	Pass	
Cobalt	mg/L	< 0.001			0.001	Pass	
Cobalt (filtered)	mg/L	< 0.001			0.001	Pass	
Copper	mg/L	< 0.001			0.001	Pass	
Copper (filtered)	mg/L	< 0.001			0.001	Pass	
Iron	mg/L	< 0.05			0.05	Pass	
Iron (filtered)	mg/L	< 0.05			0.05	Pass	
Lead	mg/L	< 0.001			0.001	Pass	
Lead (filtered)	mg/L	< 0.001			0.001	Pass	
Manganese	mg/L	< 0.005			0.005	Pass	
Manganese (filtered)	mg/L	< 0.005			0.005	Pass	
Mercury	mg/L	< 0.0001			0.0001	Pass	
Mercury (filtered)	mg/L	< 0.0001			0.0001	Pass	
Nickel	mg/L	< 0.001			0.001	Pass	
Nickel (filtered)	mg/L	< 0.001			0.001	Pass	
Zinc	mg/L	< 0.005			0.005	Pass	
Zinc (filtered)	mg/L	< 0.005			0.005	Pass	
LCS - % Recovery							
Heavy Metals							
Aluminium	%	85			70-130	Pass	
Aluminium (filtered)	%	93			70-130	Pass	
Arsenic	%	102			70-130	Pass	
Arsenic (filtered)	%	109			70-130	Pass	
Barium	%	97			70-130	Pass	
Barium (filtered)	%	102			70-130	Pass	
Beryllium	%	103			70-130	Pass	
Beryllium (filtered)	%	108			70-130	Pass	
Cadmium	%	100			70-130	Pass	
Cadmium (filtered)	%	100			70-130	Pass	
Chromium	%	94			70-130	Pass	
Chromium (filtered)	%	94			70-130	Pass	
Cobalt	%	95			70-130	Pass	
Cobalt (filtered)	%	93			70-130	Pass	
Copper	%	97			70-130	Pass	
Copper (filtered)	%	91			70-130	Pass	
Iron	%	94			70-130	Pass	
Iron (filtered)	%	93			70-130	Pass	
Lead	%	98			70-130	Pass	
Lead (filtered)	%	97			70-130	Pass	

Test		Units	Result 1			Acceptance Limits	Pass Limits	Qualifying Code
Manganese		%	92			70-130	Pass	
Manganese (filtered)		%	96			70-130	Pass	
Mercury		%	98			70-130	Pass	
Mercury (filtered)		%	93			70-130	Pass	
Nickel		%	97			70-130	Pass	
Nickel (filtered)		%	92			70-130	Pass	
Zinc		%	95			70-130	Pass	
Zinc (filtered)		%	97			70-130	Pass	
Test	Lab Sample ID	QA Source	Units	Result 1		Acceptance Limits	Pass Limits	Qualifying Code
Spike - % Recovery								
Heavy Metals				Result 1				
Aluminium (filtered)	S20-Ap16805	NCP	%	94		70-130	Pass	
Arsenic (filtered)	S20-Ap16805	NCP	%	85		70-130	Pass	
Barium (filtered)	S20-Ap16805	NCP	%	96		70-130	Pass	
Beryllium (filtered)	S20-Ap16805	NCP	%	103		70-130	Pass	
Cadmium (filtered)	S20-Ap16805	NCP	%	100		70-130	Pass	
Chromium (filtered)	S20-Ap16805	NCP	%	100		70-130	Pass	
Cobalt (filtered)	S20-Ap16805	NCP	%	103		70-130	Pass	
Copper	S20-Ap08166	NCP	%	95		70-130	Pass	
Copper (filtered)	S20-Ap16805	NCP	%	99		70-130	Pass	
Iron (filtered)	S20-Ap16805	NCP	%	90		70-130	Pass	
Lead (filtered)	S20-Ap16805	NCP	%	102		70-130	Pass	
Manganese (filtered)	S20-Ap16805	NCP	%	102		70-130	Pass	
Mercury (filtered)	S20-Ap16805	NCP	%	101		70-130	Pass	
Nickel (filtered)	S20-Ap16805	NCP	%	103		70-130	Pass	
Zinc (filtered)	S20-Ap16805	NCP	%	95		70-130	Pass	
Spike - % Recovery								
Heavy Metals				Result 1				
Lead	S20-Ap16805	NCP	%	98		70-130	Pass	
Test	Lab Sample ID	QA Source	Units	Result 1		Acceptance Limits	Pass Limits	Qualifying Code
Duplicate								
Heavy Metals				Result 1	Result 2	RPD		
Aluminium	S20-Ap09834	NCP	mg/L	0.06	0.08	17	30%	Pass
Aluminium (filtered)	S20-Ap09848	NCP	mg/L	< 0.05	< 0.05	<1	30%	Pass
Arsenic	S20-Ap09834	NCP	mg/L	< 0.001	< 0.001	<1	30%	Pass
Arsenic (filtered)	S20-Ap09848	NCP	mg/L	< 0.001	< 0.001	<1	30%	Pass
Barium	S20-Ap09834	NCP	mg/L	< 0.02	< 0.02	<1	30%	Pass
Barium (filtered)	S20-Ap09848	NCP	mg/L	< 0.02	< 0.02	<1	30%	Pass
Beryllium	S20-Ap09834	NCP	mg/L	< 0.001	< 0.001	<1	30%	Pass
Beryllium (filtered)	S20-Ap09848	NCP	mg/L	< 0.001	< 0.001	<1	30%	Pass
Cadmium	S20-Ap09834	NCP	mg/L	< 0.0002	< 0.0002	<1	30%	Pass
Cadmium (filtered)	S20-Ap09848	NCP	mg/L	< 0.0002	< 0.0002	<1	30%	Pass
Chromium	S20-Ap09834	NCP	mg/L	0.001	0.001	14	30%	Pass
Chromium (filtered)	S20-Ap09848	NCP	mg/L	< 0.001	< 0.001	<1	30%	Pass
Cobalt	S20-Ap09834	NCP	mg/L	< 0.001	< 0.001	<1	30%	Pass
Cobalt (filtered)	S20-Ap09848	NCP	mg/L	< 0.001	< 0.001	<1	30%	Pass
Copper	S20-Ap09834	NCP	mg/L	< 0.001	< 0.001	<1	30%	Pass
Copper (filtered)	S20-Ap09848	NCP	mg/L	0.002	0.002	1.0	30%	Pass
Iron	S20-Ap09834	NCP	mg/L	0.10	0.08	23	30%	Pass
Iron (filtered)	S20-Ap09848	NCP	mg/L	< 0.05	< 0.05	<1	30%	Pass
Lead	S20-Ap09834	NCP	mg/L	< 0.001	< 0.001	<1	30%	Pass
Lead (filtered)	S20-Ap09848	NCP	mg/L	< 0.001	< 0.001	<1	30%	Pass
Manganese	S20-Ap09834	NCP	mg/L	0.007	0.007	1.0	30%	Pass

Test	Lab Sample ID	QA Source	Units	Result 1			Acceptance Limits	Pass Limits	Qualifying Code
Duplicate									
Heavy Metals				Result 1	Result 2	RPD			
Manganese (filtered)	S20-Ap09848	NCP	mg/L	0.005	0.005	8.0	30%	Pass	
Mercury	S20-Ap09834	NCP	mg/L	< 0.0001	< 0.0001	<1	30%	Pass	
Mercury (filtered)	S20-Ap09848	NCP	mg/L	< 0.0001	< 0.0001	<1	30%	Pass	
Nickel	S20-Ap09834	NCP	mg/L	< 0.001	< 0.001	<1	30%	Pass	
Nickel (filtered)	S20-Ap09848	NCP	mg/L	< 0.001	< 0.001	<1	30%	Pass	
Zinc	S20-Ap09834	NCP	mg/L	0.064	0.073	14	30%	Pass	
Zinc (filtered)	S20-Ap09848	NCP	mg/L	0.028	0.030	6.0	30%	Pass	

Comments**Sample Integrity**

Custody Seals Intact (if used)	N/A
Attempt to Chill was evident	No
Sample correctly preserved	Yes
Appropriate sample containers have been used	Yes
Sample containers for volatile analysis received with minimal headspace	Yes
Samples received within HoldingTime	Yes
Some samples have been subcontracted	No

Authorised By

Andrew Black Analytical Services Manager
Gabriele Cordero Senior Analyst-Metal (NSW)

**Glenn Jackson
General Manager**

Final report - this Report replaces any previously issued Report

- Indicates Not Requested

* Indicates NATA accreditation does not cover the performance of this service

Measurement uncertainty of test data is available on request or please [click here](#).

Eurofins shall not be liable for loss, cost, damages or expenses incurred by the client, or any other person or company, resulting from the use of any information or interpretation given in this report. In no case shall Eurofins be liable for consequential damages including, but not limited to, lost profits, damages for failure to meet deadlines and lost production arising from this report. This document shall not be reproduced except in full and relates only to the items tested. Unless indicated otherwise, the tests were performed on the samples as received.



CHAIN OF CUSTODY RECORD

ASN 50 005 005 521

Hydney Laboratory
 Unit F3 Bld F, 18 Ware Rd, Lane Cove West, NSW, 2056
 02 9900 8400 E:\enviro\sample\SN@eurofins.com

Brisbane Laboratory
 Unit 1, 21 Smallwood Pl., Murrumbidgee, QLD 4172
 07 3302 4000 E:\enviro\sample\QLD@eurofins.com

Perth Laboratory
 Unit 2, 91 Leach Highway, Kewdale WA 6105
 08 9251 9800 E:\enviro\sample\WA@eurofins.com

Melbourne Laboratory
 2 Kingsley Town Close, Carlisle VIC 3166
 03 9564 5000 E:\enviro\sample\VIC@eurofins.com

Company	Ramboll	Project No	318000780	Project Manager	Stephen Maxwell	Sampler(s)	J.B. T.J. JK
Address	50 Glebe Road the Junction	Project Name	P27	ES&S, EQUS, Custom)	Excel and PDF	Handed over by	Jordyn Kirsch
Contact Name	Stephen Maxwell	Analyses (Note: Where metals are requested, please specify "Total" or "Filtered") SUITE code must be used to attract SUITE pricing.					
Phone No	0478 658 194	<input type="checkbox"/> Total Lead (mg/kg) <input type="checkbox"/> Total Sample Mass <input type="checkbox"/> Total Lead (µg/L)					
Special Directions		Containers					
Purchase Order		<input type="checkbox"/> 1L Plastic <input type="checkbox"/> 250mL Plastic <input type="checkbox"/> 125mL Plastic <input type="checkbox"/> 200mL Amber Glass <input type="checkbox"/> 40mL VOA vial <input type="checkbox"/> 500mL PFAS Bottle <input type="checkbox"/> Jar (Glass or HDPE) <input type="checkbox"/> Other (Asbestos AS4964, WA Guidelines)					
Quote ID No	180813RAMN_1	<input type="checkbox"/> Overnight (9am)* <input type="checkbox"/> 1 Day* <input type="checkbox"/> 2 Day* <input checked="" type="checkbox"/> 3 Day* <input type="checkbox"/> 5 Day* <input type="checkbox"/> Other () *Surcharges apply					
No	Client Sample ID	Sampler Date/Time (dd/mm/yy hh:mm)	Matrix (Solid (S) Water (W))	Turnaround Time (TAT) Requirements (Order will be 5 days later (week))			

No	Client Sample ID	Sampler Date/Time (dd/mm/yy hh:mm)	Matrix (Solid (S) Water (W))	Total Counts		Name	Signature	Date	Time	Report No
1	DSWAB_MH(P27)	28/04/20	S	2	2			11/11	12:00pm	716986
2	DSWAB_LE(P27)	28/04/20	S							
3	DSWAB_BE(P27)	28/04/20	S							
4	DSWAB_FE(P27)	28/04/20	S							
5	DVAC_KP(P27)	28/04/20	S	X	X					
5	DVAC_KP(P27)	28/04/20	S	X	X					
5	DVAC_RR(P27)	28/04/20	S	X	X					
7										
8										
9										
10										
				2	2	4				

Method of Shipment
 Courier (#) Hand Delivered Postal

Eurofins | mgt Laboratory Use Only
 Received By: *[Signature]*
 Received By: *[Signature]*
 Signature: *[Signature]*
 Signature: *[Signature]*
 Date: 11/11 Date: 11/11
 Time: 12:00pm Time: 12:00pm
 Report No: 716986

Submission of samples to this laboratory will be deemed as acceptance of Eurofins | mgt Standard Terms and Conditions unless agreed otherwise. A copy of Eurofins | mgt Standard Terms and Conditions is available on request.
 Eurofins Environment Testing Australia Pty Ltd trading as Eurofins | mgt
 28/04/2020 12:00pm 716986

Melbourne

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Phone : +61 3 8564 5000
NATA # 1261
Site # 1254 & 14271

Sydney

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16 Mars Road
Lane Cove West NSW 2066
Phone : +61 2 9900 8400
NATA # 1261 Site # 18217

Brisbane

1/21 Smallwood Place
Murarrie QLD 4172
Phone : +61 7 3902 4600
NATA # 1261 Site # 20794

Perth

2/91 Leach Highway
Kewdale WA 6105
Phone : +61 8 9251 9600
NATA # 1261 Site # 23736

Sample Receipt Advice

Company name: **Ramboll Australia Pty Ltd**
Contact name: **Stephen Maxwell**
Project name: **P27**
Project ID: **318000780**
COC number: **Not provided**
Turn around time: **5 Day**
Date/Time received: **May 1, 2020 12:00 PM**
Eurofins reference: **716986**

Sample information

- A detailed list of analytes logged into our LIMS, is included in the attached summary table.
- All samples have been received as described on the above COC.
- COC has been completed correctly.
- N/A Attempt to chill was evident.
- Appropriately preserved sample containers have been used.
- All samples were received in good condition.
- Samples have been provided with adequate time to commence analysis in accordance with the relevant holding times.
- Appropriate sample containers have been used.
- Split sample sent to requested external lab.
- Some samples have been subcontracted.
- N/A Custody Seals intact (if used).

Contact notes

If you have any questions with respect to these samples please contact:

Andrew Black on Phone : (+61) 2 9900 8490 or by e.mail: AndrewBlack@eurofins.com

Results will be delivered electronically via e.mail to Stephen Maxwell - smaxwell@ramboll.com.

Note: A copy of these results will also be delivered to the general Ramboll Australia Pty Ltd email address.

Australia

Melbourne
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Site # 23736

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Phone : +64 9 526 45 51
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Christchurch
43 Detroit Drive
Rolleston, Christchurch 7675
Phone : 0800 856 450
IANZ # 1290

ABN – 50 005 085 521

web : www.eurofins.com.au

e.mail : EnviroSales@eurofins.com

Company Name: Ramboll Australia Pty Ltd
Address: Level 3/100 Pacific Highway
North Sydney
NSW 2060

Project Name: P27
Project ID: 318000780

Order No.:
Report #: 716986
Phone: 02 9954 8118
Fax: 02 9954 8150

Received: May 1, 2020 12:00 PM
Due: May 8, 2020
Priority: 5 Day
Contact Name: Stephen Maxwell

Eurofins Analytical Services Manager : Andrew Black

Sample Detail						Lead	Mass of sample*
Melbourne Laboratory - NATA Site # 1254 & 14271							
Sydney Laboratory - NATA Site # 18217						X	X
Brisbane Laboratory - NATA Site # 20794							
Perth Laboratory - NATA Site # 23736							
External Laboratory							
No	Sample ID	Sample Date	Sampling Time	Matrix	LAB ID		
1	DSWAB_MH(P27)	Apr 28, 2020		Wipes	S20-My01271	X	
2	DSWAB_LE(P27)	Apr 28, 2020		Wipes	S20-My01272	X	
3	DSWAB_BE(P27)	Apr 28, 2020		Wipes	S20-My01273	X	
4	DSWAB_FE(P27)	Apr 28, 2020		Wipes	S20-My01274	X	
5	DVAC_KB(P27)	Apr 28, 2020		Dust	S20-My01275	X	X
6	DVAC_RR(P27)	Apr 28, 2020		Dust	S20-My01276	X	X

Australia

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 NATA # 1261 Site # 20794

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 Phone : +61 8 9251 9600
 NATA # 1261
 Site # 23736

New Zealand

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 35 O'Rorke Road
 Penrose, Auckland 1061
 Phone : +64 9 526 45 51
 IANZ # 1327

Christchurch
 43 Detroit Drive
 Rolleston, Christchurch 7675
 Phone : 0800 856 450
 IANZ # 1290

Company Name: Ramboll Australia Pty Ltd
Address: Level 3/100 Pacific Highway
 North Sydney
 NSW 2060

Project Name: P27
Project ID: 318000780

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Contact Name: Stephen Maxwell

Eurofins Analytical Services Manager : Andrew Black

Sample Detail	Lead	Mass of sample*
Melbourne Laboratory - NATA Site # 1254 & 14271		
Sydney Laboratory - NATA Site # 18217	X	X
Brisbane Laboratory - NATA Site # 20794		
Perth Laboratory - NATA Site # 23736		
Test Counts	6	2

Ramboll Environ Australia Pty Ltd
 Level 3/100 Pacific Highway
 North Sydney
 NSW 2060



NATA Accredited
Accreditation Number 1261
Site Number 18217

Accredited for compliance with ISO/IEC 17025 – Testing
 The results of the tests, calibrations and/or
 measurements included in this document are traceable
 to Australian/national standards.

Attention: **Stephen Maxwell**

Report **716986-A**
 Project name **P27**
 Project ID **318000780**
 Received Date **May 01, 2020**

Client Sample ID			DSWAB_MH(P27)	DSWAB_LE(P27)	DSWAB_BE(P27)	DSWAB_FE(P27)
Sample Matrix			Wipes	Wipes	Wipes	Wipes
Eurofins Sample No.			S20-My01271	S20-My01272	S20-My01273	S20-My01274
Date Sampled			Apr 28, 2020	Apr 28, 2020	Apr 28, 2020	Apr 28, 2020
Test/Reference	LOR	Unit				
Heavy Metals						
Lead	1	Total ug	3.3	1.4	< 1	1.4

Sample History

Where samples are submitted/analysed over several days, the last date of extraction and analysis is reported.

A recent review of our LIMS has resulted in the correction or clarification of some method identifications. Due to this, some of the method reference information on reports has changed. However, no substantive change has been made to our laboratory methods, and as such there is no change in the validity of current or previous results.

If the date and time of sampling are not provided, the Laboratory will not be responsible for compromised results should testing be performed outside the recommended holding time.

Description

Heavy Metals

Testing Site

Sydney

Extracted

May 07, 2020

Holding Time

180 Days

- Method: LTM-MET-3040 Metals in Waters, Soils & Sediments by ICP-MS

Australia

Melbourne
6 Monterey Road
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NATA # 1261 Site # 18217

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NATA # 1261 Site # 20794

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Phone : 0800 856 450
IANZ # 1290

Company Name: Ramboll Australia Pty Ltd
Address: Level 3/100 Pacific Highway
North Sydney
NSW 2060

Project Name: P27
Project ID: 318000780

Order No.:
Report #: 716986
Phone: 02 9954 8118
Fax: 02 9954 8150

Received: May 1, 2020 12:00 PM
Due: May 8, 2020
Priority: 5 Day
Contact Name: Stephen Maxwell

Eurofins Analytical Services Manager : Andrew Black

Sample Detail						Lead	Mass of sample*
Melbourne Laboratory - NATA Site # 1254 & 14271							
Sydney Laboratory - NATA Site # 18217						X	X
Brisbane Laboratory - NATA Site # 20794							
Perth Laboratory - NATA Site # 23736							
External Laboratory							
No	Sample ID	Sample Date	Sampling Time	Matrix	LAB ID		
1	DSWAB_MH(P27)	Apr 28, 2020		Wipes	S20-My01271	X	
2	DSWAB_LE(P27)	Apr 28, 2020		Wipes	S20-My01272	X	
3	DSWAB_BE(P27)	Apr 28, 2020		Wipes	S20-My01273	X	
4	DSWAB_FE(P27)	Apr 28, 2020		Wipes	S20-My01274	X	
5	DVAC_KB(P27)	Apr 28, 2020		Dust	S20-My01275	X	X
6	DVAC_RR(P27)	Apr 28, 2020		Dust	S20-My01276	X	X

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ABN – 50 005 085 521

web : www.eurofins.com.au

e.mail : EnviroSales@eurofins.com

Company Name:	Ramboll Australia Pty Ltd	Order No.:		Received:	May 1, 2020 12:00 PM
Address:	Level 3/100 Pacific Highway North Sydney NSW 2060	Report #:	716986	Due:	May 8, 2020
Project Name:	P27	Phone:	02 9954 8118	Priority:	5 Day
Project ID:	318000780	Fax:	02 9954 8150	Contact Name:	Stephen Maxwell
Eurofins Analytical Services Manager : Andrew Black					

Sample Detail	Lead	Mass of sample*
Melbourne Laboratory - NATA Site # 1254 & 14271		
Sydney Laboratory - NATA Site # 18217	X	X
Brisbane Laboratory - NATA Site # 20794		
Perth Laboratory - NATA Site # 23736		
Test Counts	6	2

Internal Quality Control Review and Glossary
General

- Laboratory QC results for Method Blanks, Duplicates, Matrix Spikes, and Laboratory Control Samples follows guidelines delineated in the National Environment Protection (Assessment of Site Contamination) Measure 1999, as amended May 2013 and are included in this QC report where applicable. Additional QC data may be available on request.
- All soil/sediment/solid results are reported on a dry basis, unless otherwise stated.
- All biota/food results are reported on a wet weight basis on the edible portion, unless otherwise stated.
- Actual LORs are matrix dependant. Quoted LORs may be raised where sample extracts are diluted due to interferences.
- Results are uncorrected for matrix spikes or surrogate recoveries except for PFAS compounds.
- SVOC analysis on waters are performed on homogenised, unfiltered samples, unless noted otherwise.
- Samples were analysed on an 'as received' basis.
- Information identified on this report with blue colour, indicates data provided by customer, that may have an impact on the results.
- This report replaces any interim results previously issued.

Holding Times

Please refer to 'Sample Preservation and Container Guide' for holding times (QS3001).

For samples received on the last day of holding time, notification of testing requirements should have been received at least 6 hours prior to sample receipt deadlines as stated on the SRA.

If the Laboratory did not receive the information in the required timeframe, and regardless of any other integrity issues, suitably qualified results may still be reported.

Holding times apply from the date of sampling, therefore compliance to these may be outside the laboratory's control.

For VOCs containing vinyl chloride, styrene and 2-chloroethyl vinyl ether the holding time is 7 days however for all other VOCs such as BTEX or C6-10 TRH then the holding time is 14 days.

****NOTE:** pH duplicates are reported as a range NOT as RPD

Units

mg/kg: milligrams per kilogram

mg/L: milligrams per litre

ug/L: micrograms per litre

ppm: Parts per million

ppb: Parts per billion

%: Percentage

org/100mL: Organisms per 100 millilitres

NTU: Nephelometric Turbidity Units

MPN/100mL: Most Probable Number of organisms per 100 millilitres

Terms

Dry	Where a moisture has been determined on a solid sample the result is expressed on a dry basis.
LOR	Limit of Reporting.
SPIKE	Addition of the analyte to the sample and reported as percentage recovery.
RPD	Relative Percent Difference between two Duplicate pieces of analysis.
LCS	Laboratory Control Sample - reported as percent recovery.
CRM	Certified Reference Material - reported as percent recovery.
Method Blank	In the case of solid samples these are performed on laboratory certified clean sands and in the case of water samples these are performed on de-ionised water.
Surr - Surrogate	The addition of a like compound to the analyte target and reported as percentage recovery.
Duplicate	A second piece of analysis from the same sample and reported in the same units as the result to show comparison.
USEPA	United States Environmental Protection Agency
APHA	American Public Health Association
TCLP	Toxicity Characteristic Leaching Procedure
COC	Chain of Custody
SRA	Sample Receipt Advice
QSM	US Department of Defense Quality Systems Manual Version 5.3
CP	Client Parent - QC was performed on samples pertaining to this report
NCP	Non-Client Parent - QC performed on samples not pertaining to this report, QC is representative of the sequence or batch that client samples were analysed within.
TEQ	Toxic Equivalency Quotient

QC - Acceptance Criteria

RPD Duplicates: Global RPD Duplicates Acceptance Criteria is 30% however the following acceptance guidelines are equally applicable:

Results <10 times the LOR : No Limit

Results between 10-20 times the LOR : RPD must lie between 0-50%

Results >20 times the LOR : RPD must lie between 0-30%

Surrogate Recoveries: Recoveries must lie between 20-130% Phenols & 50-150% PFASs

PFAS field samples that contain surrogate recoveries in excess of the QC limit designated in QSM 5.3 where no positive PFAS results have been reported have been reviewed and no data was affected.

WA DWER (n=10): PFBA, PFPeA, PFHxA, PFHpA, PFOA, PFBS, PFHxS, PFOS, 6:2 FTSA, 8:2 FTSA

QC Data General Comments

- Where a result is reported as a less than (<), higher than the nominated LOR, this is due to either matrix interference, extract dilution required due to interferences or contaminant levels within the sample, high moisture content or insufficient sample provided.
- Duplicate data shown within this report that states the word "BATCH" is a Batch Duplicate from outside of your sample batch, but within the laboratory sample batch at a 1:10 ratio. The Parent and Duplicate data shown is not data from your samples.
- Organochlorine Pesticide analysis - where reporting LCS data, Toxaphene & Chlordane are not added to the LCS.
- Organochlorine Pesticide analysis - where reporting Spike data, Toxaphene is not added to the Spike.
- Total Recoverable Hydrocarbons - where reporting Spike & LCS data, a single spike of commercial Hydrocarbon products in the range of C12-C30 is added and it's Total Recovery is reported in the C10-C14 cell of the Report.
- pH and Free Chlorine analysed in the laboratory - Analysis on this test must begin within 30 minutes of sampling. Therefore laboratory analysis is unlikely to be completed within holding time. Analysis will begin as soon as possible after sample receipt.
- Recovery Data (Spikes & Surrogates) - where chromatographic interference does not allow the determination of Recovery the term "INT" appears against that analyte.
- Polychlorinated Biphenyls are spiked only using Aroclor 1260 in Matrix Spikes and LCS.
- For Matrix Spikes and LCS results a dash " - " in the report means that the specific analyte was not added to the QC sample.
- Duplicate RPDs are calculated from raw analytical data thus it is possible to have two sets of data.

Comments**Sample Integrity**

Custody Seals Intact (if used)	N/A
Attempt to Chill was evident	N/A
Sample correctly preserved	Yes
Appropriate sample containers have been used	Yes
Sample containers for volatile analysis received with minimal headspace	Yes
Samples received within HoldingTime	Yes
Some samples have been subcontracted	No

Authorised By

Andrew Black Analytical Services Manager
Gabriele Cordero Senior Analyst-Metal (NSW)

**Glenn Jackson
General Manager**

Final report - this Report replaces any previously issued Report

- Indicates Not Requested

* Indicates NATA accreditation does not cover the performance of this service

Measurement uncertainty of test data is available on request or please [click here](#).

Eurofins shall not be liable for loss, cost, damages or expenses incurred by the client, or any other person or company, resulting from the use of any information or interpretation given in this report. In no case shall Eurofins be liable for consequential damages including, but not limited to, lost profits, damages for failure to meet deadlines and lost production arising from this report. This document shall not be reproduced except in full and relates only to the items tested. Unless indicated otherwise, the tests were performed on the samples as received.

Ramboll Environ Australia Pty Ltd
 Level 3/100 Pacific Highway
 North Sydney
 NSW 2060



NATA Accredited
Accreditation Number 1261
Site Number 18217

Accredited for compliance with ISO/IEC 17025 – Testing
 The results of the tests, calibrations and/or
 measurements included in this document are traceable
 to Australian/national standards.

Attention: **Stephen Maxwell**

Report **716986-S**
 Project name **P27**
 Project ID **318000780**
 Received Date **May 01, 2020**

Client Sample ID			DVAC_KB(P27)	DVAC_RR(P27)
Sample Matrix			Dust	Dust
Eurofins Sample No.			S20-My01275	S20-My01276
Date Sampled			Apr 28, 2020	Apr 28, 2020
Test/Reference	LOR	Unit		
Heavy Metals				
Lead	5	mg/kg	< 5	42

Sample History

Where samples are submitted/analysed over several days, the last date of extraction and analysis is reported.

A recent review of our LIMS has resulted in the correction or clarification of some method identifications. Due to this, some of the method reference information on reports has changed. However, no substantive change has been made to our laboratory methods, and as such there is no change in the validity of current or previous results.

If the date and time of sampling are not provided, the Laboratory will not be responsible for compromised results should testing be performed outside the recommended holding time.

Description

Heavy Metals

Testing Site

Sydney

Extracted

May 08, 2020

Holding Time

180 Days

- Method: LTM-MET-3040 Metals in Waters, Soils & Sediments by ICP-MS

Australia

Melbourne
6 Monterey Road
Dandenong South VIC 3175
Phone : +61 3 8564 5000
NATA # 1261
Site # 1254 & 14271

Sydney
Unit F3, Building F
16 Mars Road
Lane Cove West NSW 2066
Phone : +61 2 9900 8400
NATA # 1261 Site # 18217

Brisbane
1/21 Smallwood Place
Murarrie QLD 4172
Phone : +61 7 3902 4600
NATA # 1261 Site # 20794

Perth
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Kewdale WA 6105
Phone : +61 8 9251 9600
NATA # 1261
Site # 23736

New Zealand

Auckland
35 O'Rorke Road
Penrose, Auckland 1061
Phone : +64 9 526 45 51
IANZ # 1327

Christchurch
43 Detroit Drive
Rolleston, Christchurch 7675
Phone : 0800 856 450
IANZ # 1290

Company Name: Ramboll Australia Pty Ltd
Address: Level 3/100 Pacific Highway
North Sydney
NSW 2060

Project Name: P27
Project ID: 318000780

Order No.:
Report #: 716986
Phone: 02 9954 8118
Fax: 02 9954 8150

Received: May 1, 2020 12:00 PM
Due: May 8, 2020
Priority: 5 Day
Contact Name: Stephen Maxwell

Eurofins Analytical Services Manager : Andrew Black

Sample Detail						Lead	Mass of sample*
Melbourne Laboratory - NATA Site # 1254 & 14271							
Sydney Laboratory - NATA Site # 18217						X	X
Brisbane Laboratory - NATA Site # 20794							
Perth Laboratory - NATA Site # 23736							
External Laboratory							
No	Sample ID	Sample Date	Sampling Time	Matrix	LAB ID		
1	DSWAB_MH(P27)	Apr 28, 2020		Wipes	S20-My01271	X	
2	DSWAB_LE(P27)	Apr 28, 2020		Wipes	S20-My01272	X	
3	DSWAB_BE(P27)	Apr 28, 2020		Wipes	S20-My01273	X	
4	DSWAB_FE(P27)	Apr 28, 2020		Wipes	S20-My01274	X	
5	DVAC_KB(P27)	Apr 28, 2020		Dust	S20-My01275	X	X
6	DVAC_RR(P27)	Apr 28, 2020		Dust	S20-My01276	X	X

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 IANZ # 1327

Christchurch
 43 Detroit Drive
 Rolleston, Christchurch 7675
 Phone : 0800 856 450
 IANZ # 1290

ABN – 50 005 085 521

web : www.eurofins.com.au

e.mail : EnviroSales@eurofins.com

Company Name: Ramboll Australia Pty Ltd
Address: Level 3/100 Pacific Highway
 North Sydney
 NSW 2060

Project Name: P27
Project ID: 318000780

Order No.:
Report #: 716986
Phone: 02 9954 8118
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Received: May 1, 2020 12:00 PM
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Contact Name: Stephen Maxwell

Eurofins Analytical Services Manager : Andrew Black

Sample Detail	Lead	Mass of sample*
Melbourne Laboratory - NATA Site # 1254 & 14271		
Sydney Laboratory - NATA Site # 18217	X	X
Brisbane Laboratory - NATA Site # 20794		
Perth Laboratory - NATA Site # 23736		
Test Counts	6	2

Internal Quality Control Review and Glossary
General

- Laboratory QC results for Method Blanks, Duplicates, Matrix Spikes, and Laboratory Control Samples follows guidelines delineated in the National Environment Protection (Assessment of Site Contamination) Measure 1999, as amended May 2013 and are included in this QC report where applicable. Additional QC data may be available on request.
- All soil/sediment/solid results are reported on a dry basis, unless otherwise stated.
- All biota/food results are reported on a wet weight basis on the edible portion, unless otherwise stated.
- Actual LORs are matrix dependant. Quoted LORs may be raised where sample extracts are diluted due to interferences.
- Results are uncorrected for matrix spikes or surrogate recoveries except for PFAS compounds.
- SVOC analysis on waters are performed on homogenised, unfiltered samples, unless noted otherwise.
- Samples were analysed on an 'as received' basis.
- Information identified on this report with blue colour, indicates data provided by customer, that may have an impact on the results.
- This report replaces any interim results previously issued.

Holding Times

Please refer to 'Sample Preservation and Container Guide' for holding times (QS3001).

For samples received on the last day of holding time, notification of testing requirements should have been received at least 6 hours prior to sample receipt deadlines as stated on the SRA.

If the Laboratory did not receive the information in the required timeframe, and regardless of any other integrity issues, suitably qualified results may still be reported.

Holding times apply from the date of sampling, therefore compliance to these may be outside the laboratory's control.

For VOCs containing vinyl chloride, styrene and 2-chloroethyl vinyl ether the holding time is 7 days however for all other VOCs such as BTEX or C6-10 TRH then the holding time is 14 days.

****NOTE:** pH duplicates are reported as a range NOT as RPD

Units

mg/kg: milligrams per kilogram

mg/L: milligrams per litre

ug/L: micrograms per litre

ppm: Parts per million

ppb: Parts per billion

%: Percentage

org/100mL: Organisms per 100 millilitres

NTU: Nephelometric Turbidity Units

MPN/100mL: Most Probable Number of organisms per 100 millilitres

Terms

Dry	Where a moisture has been determined on a solid sample the result is expressed on a dry basis.
LOR	Limit of Reporting.
SPIKE	Addition of the analyte to the sample and reported as percentage recovery.
RPD	Relative Percent Difference between two Duplicate pieces of analysis.
LCS	Laboratory Control Sample - reported as percent recovery.
CRM	Certified Reference Material - reported as percent recovery.
Method Blank	In the case of solid samples these are performed on laboratory certified clean sands and in the case of water samples these are performed on de-ionised water.
Surr - Surrogate	The addition of a like compound to the analyte target and reported as percentage recovery.
Duplicate	A second piece of analysis from the same sample and reported in the same units as the result to show comparison.
USEPA	United States Environmental Protection Agency
APHA	American Public Health Association
TCLP	Toxicity Characteristic Leaching Procedure
COC	Chain of Custody
SRA	Sample Receipt Advice
QSM	US Department of Defense Quality Systems Manual Version 5.3
CP	Client Parent - QC was performed on samples pertaining to this report
NCP	Non-Client Parent - QC performed on samples not pertaining to this report, QC is representative of the sequence or batch that client samples were analysed within.
TEQ	Toxic Equivalency Quotient

QC - Acceptance Criteria

RPD Duplicates: Global RPD Duplicates Acceptance Criteria is 30% however the following acceptance guidelines are equally applicable:

Results <10 times the LOR : No Limit

Results between 10-20 times the LOR : RPD must lie between 0-50%

Results >20 times the LOR : RPD must lie between 0-30%

Surrogate Recoveries: Recoveries must lie between 20-130% Phenols & 50-150% PFASs

PFAS field samples that contain surrogate recoveries in excess of the QC limit designated in QSM 5.3 where no positive PFAS results have been reported have been reviewed and no data was affected.

WA DWER (n=10): PFBA, PFPeA, PFHxA, PFHpA, PFOA, PFBS, PFHxS, PFOS, 6:2 FTSA, 8:2 FTSA

QC Data General Comments

- Where a result is reported as a less than (<), higher than the nominated LOR, this is due to either matrix interference, extract dilution required due to interferences or contaminant levels within the sample, high moisture content or insufficient sample provided.
- Duplicate data shown within this report that states the word "BATCH" is a Batch Duplicate from outside of your sample batch, but within the laboratory sample batch at a 1:10 ratio. The Parent and Duplicate data shown is not data from your samples.
- Organochlorine Pesticide analysis - where reporting LCS data, Toxaphene & Chlordane are not added to the LCS.
- Organochlorine Pesticide analysis - where reporting Spike data, Toxaphene is not added to the Spike.
- Total Recoverable Hydrocarbons - where reporting Spike & LCS data, a single spike of commercial Hydrocarbon products in the range of C12-C30 is added and it's Total Recovery is reported in the C10-C14 cell of the Report.
- pH and Free Chlorine analysed in the laboratory - Analysis on this test must begin within 30 minutes of sampling. Therefore laboratory analysis is unlikely to be completed within holding time. Analysis will begin as soon as possible after sample receipt.
- Recovery Data (Spikes & Surrogates) - where chromatographic interference does not allow the determination of Recovery the term "INT" appears against that analyte.
- Polychlorinated Biphenyls are spiked only using Aroclor 1260 in Matrix Spikes and LCS.
- For Matrix Spikes and LCS results a dash " - " in the report means that the specific analyte was not added to the QC sample.
- Duplicate RPDs are calculated from raw analytical data thus it is possible to have two sets of data.

Comments**Sample Integrity**

Custody Seals Intact (if used)	N/A
Attempt to Chill was evident	N/A
Sample correctly preserved	Yes
Appropriate sample containers have been used	Yes
Sample containers for volatile analysis received with minimal headspace	Yes
Samples received within HoldingTime	Yes
Some samples have been subcontracted	No

Authorised By

Andrew Black Analytical Services Manager
Gabriele Cordero Senior Analyst-Metal (NSW)

**Glenn Jackson
General Manager**

Final report - this Report replaces any previously issued Report

- Indicates Not Requested

* Indicates NATA accreditation does not cover the performance of this service

Measurement uncertainty of test data is available on request or please [click here](#).

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#AU04_COCNSW

Subject:

FW: 5 DAY TAT ADDITIONAL ANALYSIS: FW: Sediment samples

From: Joshua Blackwell [mailto:JBLACKWELL@ramboll.com]

Sent: Tuesday, 28 April 2020 3:11 PM

To: Andrew Black

Subject: Sediment samples

EXTERNAL EMAIL *

Hi Andrew,

Could I please request the following samples be dried and analysed for lead in mg/kg and moisture content. Please report in 8 separate reports as follows;

1. P6_TWS1 (S20-Ap02120)
2. P24_TWS1 (S20-Ap09836) & P24_TWS2 (S20-Ap09837)
3. P25_TWS1 (S20-Ap09766) & P25_TWS2 (S20-Ap09767)
4. P26_TWS1 (S20-Ap09881)
5. P27_TWS1 (S20-Ap09734)
6. P28_TWS1 (S20-Ap09694) & P28_TWS2 (S20-Ap09695) & P28_TWS3 (S20-Ap09696)
7. P31_TWS1 (S20-Ap09851) & P31_TWS2 (S20-Ap09852) & P31_TWS3 (S20-Ap09853)
8. P32_TWS2 (S20-Ap09662)

Kind regards

Joshua Blackwell


Consultant

3182675 - Hunter

D +61 (481) 157565

M +61 (481) 157565

jblackwell@ramboll.com

Connect with us 

Ramboll

Level 2, Suite 18 Eastpoint

50 Glebe Road

PO Box 435

The Junction

NSW 2291

Australia

<https://ramboll.com>

Ramboll Australia Pty Ltd.

ACN 095 437 442

ABN 49 095 437 442

Click [here](#) to report this email as spam.

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Melbourne

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NATA # 1261 Site # 20794

Perth

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Kewdale WA 6105
Phone : +61 8 9251 9600
NATA # 1261 Site # 23736

Sample Receipt Advice

Company name: **Ramboll Australia Pty Ltd**
Contact name: Joshua Blackwell
Project name: ADDITIONAL - 318000780
COC number: Not provided
Turn around time: 5 Day
Date/Time received: Apr 28, 2020 3:11 PM
Eurofins reference: **716294**

Sample information

- A detailed list of analytes logged into our LIMS, is included in the attached summary table.
- All samples have been received as described on the above COC.
- COC has been completed correctly.
- Attempt to chill was evident.
- Appropriately preserved sample containers have been used.
- All samples were received in good condition.
- Samples have been provided with adequate time to commence analysis in accordance with the relevant holding times.
- Appropriate sample containers have been used.
- Split sample sent to requested external lab.
- Some samples have been subcontracted.
- N/A Custody Seals intact (if used).

Contact notes

If you have any questions with respect to these samples please contact:

Andrew Black on Phone : (+61) 2 9900 8490 or by e.mail: AndrewBlack@eurofins.com

Results will be delivered electronically via e.mail to Joshua Blackwell - jblackwell@ramboll.com.

Note: A copy of these results will also be delivered to the general Ramboll Australia Pty Ltd email address.

Australia

Melbourne
6 Monterey Road
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Site # 1254 & 14271

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43 Detroit Drive
Rolleston, Christchurch 7675
Phone : 0800 856 450
IANZ # 1290

Company Name: Ramboll Australia Pty Ltd
Address: Level 3/100 Pacific Highway
North Sydney
NSW 2060
Project Name: ADDITIONAL - 318000780

Order No.:
Report #: 716294
Phone: 02 9954 8118
Fax: 02 9954 8150

Received: Apr 28, 2020 3:11 PM
Due: May 5, 2020
Priority: 5 Day
Contact Name: Joshua Blackwell

Eurofins Analytical Services Manager : Andrew Black

Sample Detail						Lead	Moisture Set
Melbourne Laboratory - NATA Site # 1254 & 14271							
Sydney Laboratory - NATA Site # 18217						X	X
Brisbane Laboratory - NATA Site # 20794							
Perth Laboratory - NATA Site # 23736							
External Laboratory							
No	Sample ID	Sample Date	Sampling Time	Matrix	LAB ID		
1	P27_TWS1	Apr 01, 2020		Sediment	S20-Ap42286	X	X
Test Counts						1	1

Ramboll Environ Australia Pty Ltd
 Level 3/100 Pacific Highway
 North Sydney
 NSW 2060



NATA Accredited
Accreditation Number 1261
Site Number 18217

Accredited for compliance with ISO/IEC 17025 – Testing
 The results of the tests, calibrations and/or
 measurements included in this document are traceable
 to Australian/national standards.

Attention: **Joshua Blackwell**

Report **716294-S**
 Project name **ADDITIONAL - 318000780**
 Received Date **Apr 28, 2020**

Client Sample ID			P27_TWS1
Sample Matrix			Sediment
Eurofins Sample No.			S20-Ap42286
Date Sampled			Apr 01, 2020
Test/Reference	LOR	Unit	
Heavy Metals			
Lead	5	mg/kg	90
% Moisture	1	%	100

Sample History

Where samples are submitted/analysed over several days, the last date of extraction and analysis is reported.

A recent review of our LIMS has resulted in the correction or clarification of some method identifications. Due to this, some of the method reference information on reports has changed. However, no substantive change has been made to our laboratory methods, and as such there is no change in the validity of current or previous results.

If the date and time of sampling are not provided, the Laboratory will not be responsible for compromised results should testing be performed outside the recommended holding time.

Description

Heavy Metals

- Method: LTM-MET-3040 Metals in Waters, Soils & Sediments by ICP-MS

% Moisture

- Method: LTM-GEN-7080 Moisture

Testing Site

Sydney

Sydney

Extracted

May 04, 2020

Apr 29, 2020

Holding Time

180 Days

14 Days

Australia

Melbourne
 6 Monterey Road
 Dandenong South VIC 3175
 Phone : +61 3 8564 5000
 NATA # 1261
 Site # 1254 & 14271

Sydney
 Unit F3, Building F
 16 Mars Road
 Lane Cove West NSW 2066
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Address: Level 3/100 Pacific Highway
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Project Name: ADDITIONAL - 318000780

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Received: Apr 28, 2020 3:11 PM
Due: May 5, 2020
Priority: 5 Day
Contact Name: Joshua Blackwell

Eurofins Analytical Services Manager : Andrew Black

Sample Detail						Lead	Moisture Set
Melbourne Laboratory - NATA Site # 1254 & 14271							
Sydney Laboratory - NATA Site # 18217						X	X
Brisbane Laboratory - NATA Site # 20794							
Perth Laboratory - NATA Site # 23736							
External Laboratory							
No	Sample ID	Sample Date	Sampling Time	Matrix	LAB ID		
1	P27_TWS1	Apr 01, 2020		Sediment	S20-Ap42286	X	X
Test Counts						1	1

Internal Quality Control Review and Glossary

General

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- All soil/sediment/solid results are reported on a dry basis, unless otherwise stated.
- All biota/food results are reported on a wet weight basis on the edible portion, unless otherwise stated.
- Actual LORs are matrix dependant. Quoted LORs may be raised where sample extracts are diluted due to interferences.
- Results are uncorrected for matrix spikes or surrogate recoveries except for PFAS compounds.
- SVOC analysis on waters are performed on homogenised, unfiltered samples, unless noted otherwise.
- Samples were analysed on an 'as received' basis.
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Holding Times

Please refer to 'Sample Preservation and Container Guide' for holding times (QS3001).

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For VOCs containing vinyl chloride, styrene and 2-chloroethyl vinyl ether the holding time is 7 days however for all other VOCs such as BTEX or C6-10 TRH then the holding time is 14 days.

****NOTE:** pH duplicates are reported as a range NOT as RPD

Units

mg/kg: milligrams per kilogram

mg/L: milligrams per litre

ug/L: micrograms per litre

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%: Percentage

org/100mL: Organisms per 100 millilitres

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MPN/100mL: Most Probable Number of organisms per 100 millilitres

Terms

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LOR	Limit of Reporting.
SPIKE	Addition of the analyte to the sample and reported as percentage recovery.
RPD	Relative Percent Difference between two Duplicate pieces of analysis.
LCS	Laboratory Control Sample - reported as percent recovery.
CRM	Certified Reference Material - reported as percent recovery.
Method Blank	In the case of solid samples these are performed on laboratory certified clean sands and in the case of water samples these are performed on de-ionised water.
Surr - Surrogate	The addition of a like compound to the analyte target and reported as percentage recovery.
Duplicate	A second piece of analysis from the same sample and reported in the same units as the result to show comparison.
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TEQ	Toxic Equivalency Quotient

QC - Acceptance Criteria

RPD Duplicates: Global RPD Duplicates Acceptance Criteria is 30% however the following acceptance guidelines are equally applicable:

Results <10 times the LOR : No Limit

Results between 10-20 times the LOR : RPD must lie between 0-50%

Results >20 times the LOR : RPD must lie between 0-30%

Surrogate Recoveries: Recoveries must lie between 20-130% Phenols & 50-150% PFASs

PFAS field samples that contain surrogate recoveries in excess of the QC limit designated in QSM 5.3 where no positive PFAS results have been reported have been reviewed and no data was affected.

WA DWER (n=10): PFBA, PFPeA, PFHxA, PFHpA, PFOA, PFBS, PFHxS, PFOS, 6:2 FTSA, 8:2 FTSA

QC Data General Comments

- Where a result is reported as a less than (<), higher than the nominated LOR, this is due to either matrix interference, extract dilution required due to interferences or contaminant levels within the sample, high moisture content or insufficient sample provided.
- Duplicate data shown within this report that states the word "BATCH" is a Batch Duplicate from outside of your sample batch, but within the laboratory sample batch at a 1:10 ratio. The Parent and Duplicate data shown is not data from your samples.
- Organochlorine Pesticide analysis - where reporting LCS data, Toxaphene & Chlordane are not added to the LCS.
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- Total Recoverable Hydrocarbons - where reporting Spike & LCS data, a single spike of commercial Hydrocarbon products in the range of C12-C30 is added and it's Total Recovery is reported in the C10-C14 cell of the Report.
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- For Matrix Spikes and LCS results a dash " - " in the report means that the specific analyte was not added to the QC sample.
- Duplicate RPDs are calculated from raw analytical data thus it is possible to have two sets of data.

Quality Control Results

Test				Units	Result 1		Acceptance Limits	Pass Limits	Qualifying Code		
Method Blank											
Heavy Metals											
Lead				mg/kg	< 5		5	Pass			
LCS - % Recovery											
Heavy Metals											
Lead				%	99		70-130	Pass			
Test	Lab Sample ID	QA Source	Units	Result 1			Acceptance Limits	Pass Limits	Qualifying Code		
Spike - % Recovery											
Heavy Metals											
Lead				S20-Ap44661	NCP	%	91	70-130	Pass		
Test	Lab Sample ID	QA Source	Units	Result 1			Acceptance Limits	Pass Limits	Qualifying Code		
Duplicate											
Heavy Metals											
Lead				S20-Ap42291	NCP	mg/kg	97	100	4.0	30%	Pass
Duplicate											
					Result 1	Result 2	RPD				
% Moisture				S20-My03200	NCP	%	13	14	5.0	30%	Pass

Comments**Sample Integrity**

Custody Seals Intact (if used)	N/A
Attempt to Chill was evident	No
Sample correctly preserved	Yes
Appropriate sample containers have been used	Yes
Sample containers for volatile analysis received with minimal headspace	Yes
Samples received within HoldingTime	Yes
Some samples have been subcontracted	No

Authorised By

Andrew Black Analytical Services Manager
Gabriele Cordero Senior Analyst-Metal (NSW)

**Glenn Jackson
General Manager**

Final report - this Report replaces any previously issued Report

- Indicates Not Requested

* Indicates NATA accreditation does not cover the performance of this service

Measurement uncertainty of test data is available on request or please [click here](#).

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CHAIN OF CUSTODY RECORD

ABN 50 005 085 521

Sydney Laboratory

Unit F3 Bld.F, 16 Mars Rd, Lane Cove West, NSW 2066
02 9900 8400 EnviroSampleNSW@eurofins.com

Brisbane Laboratory

Unit 1, 21 Smallwood Pl., Murarie, QLD 4172
07 3902 4600 EnviroSampleQLD@eurofins.com

Perth Laboratory

Unit 2, 91 Leach Highway, Kewdale WA 6105
08 9251 9600 EnviroSampleWA@eurofins.com

Melbourne Laboratory

2 Kingston Town Close, Oakleigh, VIC 3166
03 8564 5000 EnviroSampleVic@eurofins.com

Company		Ramboll		Project No		318000780		Project Manager		Stephen Maxwell		Sampler(s)		JK + RC									
Address		50 Glebe Road the Junction		Project Name				EDD Format (ESdat, EQuIS)		Excel and PDF		Handed over by		SM									
Contact Name		Stephen Maxwell		<small>(Note: Where metals are requested, please specify "Total" or "Filtered". SUITE code must be used to attend SUITE pricing.)</small> Analyses Lead M13 (Al, As, Ba, Be, Cd, Cr, Co, Cu, Fe, Pb, Mn, Hg, Ni, Zn) total M13 (Al, As, Ba, Be, Cd, Cr, Co, Cu, Fe, Pb, Mn, Hg, Ni, Zn) dissolved		Email for Invoice		smaxwell@ramboll.com asiapac-accounts@ramboll.com		Email for Results		smaxwell@ramboll.com jblackwell@ramboll.com rcondon@ramboll.com shyde@ramboll.com		Turnaround Time (TAT) Requirements (default will be 5 days if not ticked)		<input type="checkbox"/> Overnight (9am)* <input type="checkbox"/> 1 Day* <input type="checkbox"/> 2 Day* <input type="checkbox"/> 3 Day* <input checked="" type="checkbox"/> 5 Day* <input type="checkbox"/> Other () * Surcharges apply							
Phone No						jblackwell@ramboll.com		1L Plastic		250mL Plastic		125mL Plastic		200mL Amber Glass		40mL VOA vial		500mL PFAS Bottle		Jar (Glass or HDPE)		Other (Asbestos: AS4654, WA Guidelines)	
Special Directions						Sample Comments / Dangerous Goods Hazard Warning																	
Purchase Order																							
Quote ID No		180813RAMN_1																					
No	Client Sample ID	Sampled Date/Time (dd/mm/yy hh:mm)	Matrix (Solid (S) Water (W))																				
1	P28_HA01_0.0	1/04/20	S	X																			
2	P28_HA01_0.2	1/04/20	S	X																			
3	P28_HA02_0.0	1/04/20	S	X																			
4	P28_HA02_0.2	1/04/20	S	X																			
5	P28_HA03_0.0	1/04/20	S	X																			
6	P28_HA04_0.0	1/04/20	S	X																			
7	P28_HA05_0.0	1/04/20	S	X																			
8	P28_HA05_0.2	1/04/20	S	X																			
9	P28_TW1	1/04/20	W		X	X																	
10	P28_TW2	1/04/20	W		X	X																	
Total Counts				8	2	2																	
Method of Shipment		<input type="checkbox"/> Courier (#) <input type="checkbox"/> Hand Delivered <input type="checkbox"/> Postal		Name		Signature		Date		Date		Time		Time		Temperature		Report No					
Eurofins mgt Laboratory Use Only		Received By <i>Lupan</i>		SYD BNE MEL PER ADL NTL DRW		Signature		Date <i>06/04/20</i>		Date		Time <i>2:36 PM</i>		Time		Temperature <i>26.2°C</i>		Report No <i>712462</i>					

Submission of samples to the laboratory will be deemed as acceptance of Eurofins | mgt Standard Terms and Conditions unless agreed otherwise. A copy of Eurofins | mgt Standard Terms and Conditions is available on request.



CHAIN OF CUSTODY RECORD

ABN 50 005 085 521

Sydney Laboratory
Unit F3 Bld F, 16 Mars Rd, Lane Cove West, NSW 2066
02 9900 8400 EnviroSampleNSW@eurofins.com

Brisbane Laboratory
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07 3902 4600 EnviroSampleQLD@eurofins.com

Perth Laboratory
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08 9251 9600 EnviroSampleWA@eurofins.com

Melbourne Laboratory
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03 8564 5000 EnviroSampleVic@eurofins.com

Company		Ramboll		Project №		318000780		Project Manager		Stephen Maxwell		Sampler(s)		JB + JAB			
Address		50 Glebe Road the Junction		Project Name				EDD Format (ESdat, EQulS,		Excel and PDF		Handed over by		SM			
Contact Name		Stephen Maxwell		<small>(Note: Where metals are requested, please specify "Total" or "Filtered". SUITE code must be used to attach SUITE pricing.)</small> Analyses Lead M13 (Al, As, Ba, Be, Cd, Cr, Co, Cu, Fe, Pb, Mn, Hg, Ni, Zn) total M13 (Al, As, Ba, Be, Cd, Cr, Co, Cu, Fe, Pb, Mn, Hg, Ni, Zn) dissolved								Email for Invoice		smaxwell@ramboll.com asiapac-accounts@ramboll.com			
Phone №														Email for Results		smaxwell@ramboll.com jblackwell@ramboll.com rcondon@ramboll.com shyde@ramboll.com	
Special Directions														Turnaround Time (TAT) Requirements (Default will be 5 days if not ticked)		<input type="checkbox"/> Overnight (9am)* <input type="checkbox"/> 1 Day* <input type="checkbox"/> 2 Day* <input type="checkbox"/> 3 Day* <input checked="" type="checkbox"/> 5 Day* * Surcharges apply <input type="checkbox"/> Other ()	
Purchase Order														<input type="checkbox"/> 1L Plastic <input type="checkbox"/> 250mL Plastic <input type="checkbox"/> 125mL Plastic <input type="checkbox"/> 200mL Amber Glass <input type="checkbox"/> 40mL VOA vial <input type="checkbox"/> 500mL PFAS Bottle <input type="checkbox"/> Jar (Glass or HDPE) <small>Other (Asbestos AS4654, WA Guidelines)</small>		Sample Comments / Dangerous Goods Hazard Warning	
Quote ID №		180813RAMN_1															
No	Client Sample ID	Sampled Date/Time (dd/mm/yy hh:mm)	Matrix (Solid (S) Water (W))														
1	P28_TW3	1/04/20	W		X	X											
2	P28_TWS1	1/04/20	sediment	X											Please homogenise sediment in this sample then analyse		
3	P28_TWS2	1/04/20	sediment	X											Please homogenise sediment in this sample then analyse		
4	P28_TWS3	1/04/20	sediment	X											Please homogenise sediment in this sample then analyse		
5																	
6																	
7																	
8																	
9																	
10																	
Total Counts				3	1	1											
Method of Shipment		<input type="checkbox"/> Courier (#) <input type="checkbox"/> Hand Delivered <input type="checkbox"/> Postal		Name		Signature		Date		Date		Time		Time			
Eurofins mgt Laboratory Use Only		Received By		SYD BNE MEL PER ADL NTL DRW		Signature		Date		06/04/20		Time		Temperature			
		Received By		SYD BNE MEL PER ADL NTL DRW		Signature		Date		_/_/		Time		Report №			

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Melbourne

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Site # 1254 & 14271

Sydney

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NATA # 1261 Site # 18217

Brisbane

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Murarrie QLD 4172
Phone : +61 7 3902 4600
NATA # 1261 Site # 20794

Perth

2/91 Leach Highway
Kewdale WA 6105
Phone : +61 8 9251 9600
NATA # 1261 Site # 23736

Sample Receipt Advice

Company name: **Ramboll Australia Pty Ltd**

Contact name: **Stephen Maxwell**

Project ID: **318000780**

COC number: **Not provided**

Turn around time: **5 Day**

Date/Time received: **Apr 6, 2020 2:36 PM**

Eurofins reference: **712462**

Sample information

- A detailed list of analytes logged into our LIMS, is included in the attached summary table.
- All samples have been received as described on the above COC.
- COC has been completed correctly.
- Attempt to chill was evident.
- Appropriately preserved sample containers have been used.
- All samples were received in good condition.
- Samples have been provided with adequate time to commence analysis in accordance with the relevant holding times.
- Appropriate sample containers have been used.
- Sample containers for volatile analysis received with zero headspace.
- Split sample sent to requested external lab.
- Some samples have been subcontracted.
- N/A Custody Seals intact (if used).

Contact notes

If you have any questions with respect to these samples please contact:

Andrew Black on Phone : (+61) 2 9900 8490 or by e.mail: AndrewBlack@eurofins.com

Results will be delivered electronically via e.mail to Stephen Maxwell - smaxwell@ramboll.com.

Note: A copy of these results will also be delivered to the general Ramboll Australia Pty Ltd email address.

Ramboll Environ Australia Pty Ltd
 Level 3/100 Pacific Highway
 North Sydney
 NSW 2060



NATA Accredited
 Accreditation Number 1261
 Site Number 18217

Accredited for compliance with ISO/IEC 17025 – Testing
 The results of the tests, calibrations and/or
 measurements included in this document are traceable
 to Australian/national standards.

Attention: Stephen Maxwell

Report 712462-S
 Project name
 Project ID 318000780
 Received Date Apr 06, 2020

Client Sample ID			P28_HA01_0.0	P28_HA01_0.2	P28_HA02_0.0	P28_HA02_0.2
Sample Matrix			Soil	Soil	Soil	Soil
Eurofins Sample No.			S20-Ap09683	S20-Ap09684	S20-Ap09685	S20-Ap09686
Date Sampled			Apr 01, 2020	Apr 01, 2020	Apr 01, 2020	Apr 01, 2020
Test/Reference	LOR	Unit				
Heavy Metals						
Lead	5	mg/kg	27	50	13	26
% Moisture	1	%	24	16	7.9	14

Client Sample ID			P28_HA03_0.0	P28_HA04_0.0	P28_HA05_0.0	P28_HA05_0.2
Sample Matrix			Soil	Soil	Soil	Soil
Eurofins Sample No.			S20-Ap09687	S20-Ap09688	S20-Ap09689	S20-Ap09690
Date Sampled			Apr 01, 2020	Apr 01, 2020	Apr 01, 2020	Apr 01, 2020
Test/Reference	LOR	Unit				
Heavy Metals						
Lead	5	mg/kg	19	20	16	28
% Moisture	1	%	13	14	12	15

Sample History

Where samples are submitted/analysed over several days, the last date of extraction and analysis is reported.

A recent review of our LIMS has resulted in the correction or clarification of some method identifications. Due to this, some of the method reference information on reports has changed. However, no substantive change has been made to our laboratory methods, and as such there is no change in the validity of current or previous results.

If the date and time of sampling are not provided, the Laboratory will not be responsible for compromised results should testing be performed outside the recommended holding time.

Description

Heavy Metals

- Method: LTM-MET-3040 Metals in Waters, Soils & Sediments by ICP-MS

% Moisture

- Method: LTM-GEN-7080 Moisture

Testing Site

Sydney

Sydney

Extracted

Apr 14, 2020

Apr 07, 2020

Holding Time

180 Days

14 Days

Australia

Melbourne
6 Monterey Road
Dandenong South VIC 3175
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Penrose, Auckland 1061
Phone : +64 9 526 45 51
IANZ # 1327

Christchurch
43 Detroit Drive
Rolleston, Christchurch 7675
Phone : 0800 856 450
IANZ # 1290

Company Name:	Ramboll Australia Pty Ltd	Order No.:		Received:	Apr 6, 2020 2:36 PM
Address:	Level 3/100 Pacific Highway North Sydney NSW 2060	Report #:	712462	Due:	Apr 15, 2020
Project Name:		Phone:	02 9954 8118	Priority:	5 Day
Project ID:	318000780	Fax:	02 9954 8150	Contact Name:	Stephen Maxwell

Eurofins Analytical Services Manager : Andrew Black

Sample Detail						Aluminium	Aluminium (filtered)	Arsenic	Arsenic (filtered)	Barium	Barium (filtered)	Beryllium	Beryllium (filtered)	Cadmium	Cadmium (filtered)	Chromium	Chromium (filtered)	Cobalt	Cobalt (filtered)	Copper	Copper (filtered)	Iron	Iron (filtered)	Lead	Lead (filtered)	Manganese	Manganese (filtered)	Mercury	Mercury (filtered)	Nickel	Nickel (filtered)	Zinc	Zinc (filtered)	Moisture Set	
Melbourne Laboratory - NATA Site # 1254 & 14271																																			
Sydney Laboratory - NATA Site # 18217						X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X
Brisbane Laboratory - NATA Site # 20794																																			
Perth Laboratory - NATA Site # 23736																																			
External Laboratory																																			
No	Sample ID	Sample Date	Sampling Time	Matrix	LAB ID																														
1	P28_HA01_0_0	Apr 01, 2020		Soil	S20-Ap09683																		X										X		
2	P28_HA01_0_2	Apr 01, 2020		Soil	S20-Ap09684																		X										X		
3	P28_HA02_0_0	Apr 01, 2020		Soil	S20-Ap09685																		X										X		
4	P28_HA02_0_2	Apr 01, 2020		Soil	S20-Ap09686																		X										X		
5	P28_HA03_0_0	Apr 01, 2020		Soil	S20-Ap09687																		X										X		
6	P28_HA04_0_0	Apr 01, 2020		Soil	S20-Ap09688																		X										X		

Australia

Melbourne
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NATA # 1261 Site # 20794

Perth
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Phone : +61 8 9251 9600
NATA # 1261
Site # 23736

New Zealand

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Penrose, Auckland 1061
Phone : +64 9 526 45 51
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Christchurch
43 Detroit Drive
Rolleston, Christchurch 7675
Phone : 0800 856 450
IANZ # 1290

ABN – 50 005 085 521

web : www.eurofins.com.au

e.mail : EnviroSales@eurofins.com

Company Name: Ramboll Australia Pty Ltd
Address: Level 3/100 Pacific Highway
North Sydney
NSW 2060

Order No.:
Report #: 712462
Phone: 02 9954 8118
Fax: 02 9954 8150

Received: Apr 6, 2020 2:36 PM
Due: Apr 15, 2020
Priority: 5 Day
Contact Name: Stephen Maxwell

Project Name:
Project ID: 318000780

Eurofins Analytical Services Manager : Andrew Black

Sample Detail						Aluminium	Aluminium (filtered)	Arsenic	Arsenic (filtered)	Barium	Barium (filtered)	Beryllium	Beryllium (filtered)	Cadmium	Cadmium (filtered)	Chromium	Chromium (filtered)	Cobalt	Cobalt (filtered)	Copper	Copper (filtered)	Iron	Iron (filtered)	Lead	Lead (filtered)	Manganese	Manganese (filtered)	Mercury	Mercury (filtered)	Nickel	Nickel (filtered)	Zinc	Zinc (filtered)	Moisture Set	
Melbourne Laboratory - NATA Site # 1254 & 14271																																			
Sydney Laboratory - NATA Site # 18217						X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X
Brisbane Laboratory - NATA Site # 20794																																			
Perth Laboratory - NATA Site # 23736																																			
7	P28_HA05_0_0	Apr 01, 2020		Soil	S20-Ap09689																		X										X		
8	P28_HA05_0_2	Apr 01, 2020		Soil	S20-Ap09690																		X										X		
9	P28_TW1	Apr 01, 2020		Water	S20-Ap09691	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X		
10	P28_TW2	Apr 01, 2020		Water	S20-Ap09692	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X		
11	P28_TW3	Apr 01, 2020		Water	S20-Ap09693	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X		
12	P28_TWS1	Apr 01, 2020		Water	S20-Ap09694																		X												
13	P28_TWS2	Apr 01, 2020		Water	S20-Ap09695																		X												
14	P28_TWS3	Apr 01, 2020		Water	S20-Ap09696																		X												
Test Counts						3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	14	3	3	3	3	3	3	3	3	3	8

Internal Quality Control Review and Glossary

General

- Laboratory QC results for Method Blanks, Duplicates, Matrix Spikes, and Laboratory Control Samples follows guidelines delineated in the National Environment Protection (Assessment of Site Contamination) Measure 1999, as amended May 2013 and are included in this QC report where applicable. Additional QC data may be available on request.
- All soil/sediment/solid results are reported on a dry basis, unless otherwise stated.
- All biota/food results are reported on a wet weight basis on the edible portion, unless otherwise stated.
- Actual LORs are matrix dependant. Quoted LORs may be raised where sample extracts are diluted due to interferences.
- Results are uncorrected for matrix spikes or surrogate recoveries except for PFAS compounds.
- SVOC analysis on waters are performed on homogenised, unfiltered samples, unless noted otherwise.
- Samples were analysed on an 'as received' basis.
- Information identified on this report with blue colour, indicates data provided by customer, that may have an impact on the results.
- This report replaces any interim results previously issued.

Holding Times

Please refer to 'Sample Preservation and Container Guide' for holding times (QS3001).

For samples received on the last day of holding time, notification of testing requirements should have been received at least 6 hours prior to sample receipt deadlines as stated on the SRA.

If the Laboratory did not receive the information in the required timeframe, and regardless of any other integrity issues, suitably qualified results may still be reported.

Holding times apply from the date of sampling, therefore compliance to these may be outside the laboratory's control.

For VOCs containing vinyl chloride, styrene and 2-chloroethyl vinyl ether the holding time is 7 days however for all other VOCs such as BTEX or C6-10 TRH then the holding time is 14 days.

****NOTE:** pH duplicates are reported as a range NOT as RPD

Units

mg/kg: milligrams per kilogram

mg/L: milligrams per litre

ug/L: micrograms per litre

ppm: Parts per million

ppb: Parts per billion

%: Percentage

org/100mL: Organisms per 100 millilitres

NTU: Nephelometric Turbidity Units

MPN/100mL: Most Probable Number of organisms per 100 millilitres

Terms

Dry	Where a moisture has been determined on a solid sample the result is expressed on a dry basis.
LOR	Limit of Reporting.
SPIKE	Addition of the analyte to the sample and reported as percentage recovery.
RPD	Relative Percent Difference between two Duplicate pieces of analysis.
LCS	Laboratory Control Sample - reported as percent recovery.
CRM	Certified Reference Material - reported as percent recovery.
Method Blank	In the case of solid samples these are performed on laboratory certified clean sands and in the case of water samples these are performed on de-ionised water.
Surr - Surrogate	The addition of a like compound to the analyte target and reported as percentage recovery.
Duplicate	A second piece of analysis from the same sample and reported in the same units as the result to show comparison.
USEPA	United States Environmental Protection Agency
APHA	American Public Health Association
TCLP	Toxicity Characteristic Leaching Procedure
COC	Chain of Custody
SRA	Sample Receipt Advice
QSM	US Department of Defense Quality Systems Manual Version 5.3
CP	Client Parent - QC was performed on samples pertaining to this report
NCP	Non-Client Parent - QC performed on samples not pertaining to this report, QC is representative of the sequence or batch that client samples were analysed within.
TEQ	Toxic Equivalency Quotient

QC - Acceptance Criteria

RPD Duplicates: Global RPD Duplicates Acceptance Criteria is 30% however the following acceptance guidelines are equally applicable:

Results <10 times the LOR : No Limit

Results between 10-20 times the LOR : RPD must lie between 0-50%

Results >20 times the LOR : RPD must lie between 0-30%

Surrogate Recoveries: Recoveries must lie between 20-130% Phenols & 50-150% PFASs

PFAS field samples that contain surrogate recoveries in excess of the QC limit designated in QSM 5.3 where no positive PFAS results have been reported have been reviewed and no data was affected.

WA DWER (n=10): PFBA, PFPeA, PFHxA, PFHpA, PFOA, PFBS, PFHxS, PFOS, 6:2 FTSA, 8:2 FTSA

QC Data General Comments

- Where a result is reported as a less than (<), higher than the nominated LOR, this is due to either matrix interference, extract dilution required due to interferences or contaminant levels within the sample, high moisture content or insufficient sample provided.
- Duplicate data shown within this report that states the word "BATCH" is a Batch Duplicate from outside of your sample batch, but within the laboratory sample batch at a 1:10 ratio. The Parent and Duplicate data shown is not data from your samples.
- Organochlorine Pesticide analysis - where reporting LCS data, Toxaphene & Chlordane are not added to the LCS.
- Organochlorine Pesticide analysis - where reporting Spike data, Toxaphene is not added to the Spike.
- Total Recoverable Hydrocarbons - where reporting Spike & LCS data, a single spike of commercial Hydrocarbon products in the range of C12-C30 is added and it's Total Recovery is reported in the C10-C14 cell of the Report.
- pH and Free Chlorine analysed in the laboratory - Analysis on this test must begin within 30 minutes of sampling. Therefore laboratory analysis is unlikely to be completed within holding time. Analysis will begin as soon as possible after sample receipt.
- Recovery Data (Spikes & Surrogates) - where chromatographic interference does not allow the determination of Recovery the term "INT" appears against that analyte.
- Polychlorinated Biphenyls are spiked only using Aroclor 1260 in Matrix Spikes and LCS.
- For Matrix Spikes and LCS results a dash " - " in the report means that the specific analyte was not added to the QC sample.
- Duplicate RPDs are calculated from raw analytical data thus it is possible to have two sets of data.

Quality Control Results

Test				Units	Result 1			Acceptance Limits	Pass Limits	Qualifying Code	
Method Blank											
Heavy Metals											
Lead				mg/kg	< 5			5	Pass		
LCS - % Recovery											
Heavy Metals											
Lead				%	114			70-130	Pass		
Test	Lab Sample ID	QA Source	Units	Result 1			Acceptance Limits	Pass Limits	Qualifying Code		
Spike - % Recovery											
Heavy Metals											
Lead				S20-Ap09732	NCP	%	85	70-130	Pass		
Duplicate											
Heavy Metals											
Lead				N20-Ap18127	NCP	mg/kg	12	12	1.0	30%	Pass
Duplicate											
% Moisture				S20-Ap10676	NCP	%	17	16	5.0	30%	Pass

Comments**Sample Integrity**

Custody Seals Intact (if used)	N/A
Attempt to Chill was evident	No
Sample correctly preserved	Yes
Appropriate sample containers have been used	Yes
Sample containers for volatile analysis received with minimal headspace	Yes
Samples received within HoldingTime	Yes
Some samples have been subcontracted	No

Authorised By

Andrew Black Analytical Services Manager
Gabriele Cordero Senior Analyst-Metal (NSW)

**Glenn Jackson
General Manager**

Final report - this Report replaces any previously issued Report

- Indicates Not Requested

* Indicates NATA accreditation does not cover the performance of this service

Measurement uncertainty of test data is available on request or please [click here](#).

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Ramboll Environ Australia Pty Ltd
 Level 3/100 Pacific Highway
 North Sydney
 NSW 2060



NATA Accredited
 Accreditation Number 1261
 Site Number 18217

Accredited for compliance with ISO/IEC 17025 – Testing
 The results of the tests, calibrations and/or
 measurements included in this document are traceable
 to Australian/national standards.

Attention: Stephen Maxwell

Report 712462-W
 Project name
 Project ID 318000780
 Received Date Apr 06, 2020

Client Sample ID			P28_TW1	P28_TW2	P28_TW3	P28_TWS1
Sample Matrix			Water	Water	Water	Water
Eurofins Sample No.			S20-Ap09691	S20-Ap09692	S20-Ap09693	S20-Ap09694
Date Sampled			Apr 01, 2020	Apr 01, 2020	Apr 01, 2020	Apr 01, 2020
Test/Reference	LOR	Unit				
Heavy Metals						
Aluminium	0.05	mg/L	< 0.05	0.12	< 0.05	-
Aluminium (filtered)	0.05	mg/L	< 0.05	< 0.05	< 0.05	-
Arsenic	0.001	mg/L	< 0.001	< 0.001	< 0.001	-
Arsenic (filtered)	0.001	mg/L	< 0.001	< 0.001	< 0.001	-
Barium	0.02	mg/L	< 0.02	< 0.02	< 0.02	-
Barium (filtered)	0.02	mg/L	< 0.02	< 0.02	< 0.02	-
Beryllium	0.001	mg/L	< 0.001	< 0.001	< 0.001	-
Beryllium (filtered)	0.001	mg/L	< 0.001	< 0.001	< 0.001	-
Cadmium	0.0002	mg/L	< 0.0002	< 0.0002	< 0.0002	-
Cadmium (filtered)	0.0002	mg/L	< 0.0002	< 0.0002	< 0.0002	-
Chromium	0.001	mg/L	0.002	0.002	< 0.001	-
Chromium (filtered)	0.001	mg/L	< 0.001	< 0.001	< 0.001	-
Cobalt	0.001	mg/L	< 0.001	< 0.001	< 0.001	-
Cobalt (filtered)	0.001	mg/L	< 0.001	< 0.001	< 0.001	-
Copper	0.001	mg/L	0.002	0.004	0.002	-
Copper (filtered)	0.001	mg/L	0.001	0.003	0.002	-
Iron	0.05	mg/L	< 0.05	< 0.05	< 0.05	-
Iron (filtered)	0.05	mg/L	< 0.05	< 0.05	< 0.05	-
Lead	0.001	mg/L	< 0.001	< 0.001	< 0.001	36
Lead (filtered)	0.001	mg/L	< 0.001	< 0.001	< 0.001	-
Manganese	0.005	mg/L	< 0.005	< 0.005	0.008	-
Manganese (filtered)	0.005	mg/L	< 0.005	< 0.005	0.008	-
Mercury	0.0001	mg/L	< 0.0001	< 0.0001	< 0.0001	-
Mercury (filtered)	0.0001	mg/L	< 0.0001	< 0.0001	< 0.0001	-
Nickel	0.001	mg/L	< 0.001	< 0.001	< 0.001	-
Nickel (filtered)	0.001	mg/L	< 0.001	< 0.001	< 0.001	-
Zinc	0.005	mg/L	0.13	0.061	0.22	-
Zinc (filtered)	0.005	mg/L	0.13	0.062	0.23	-

Client Sample ID			P28_TWS2	P28_TWS3
Sample Matrix			Water	Water
Eurofins Sample No.			S20-Ap09695	S20-Ap09696
Date Sampled			Apr 01, 2020	Apr 01, 2020
Test/Reference	LOR	Unit		
Heavy Metals				
Lead	0.001	mg/L	1.1	0.19

Sample History

Where samples are submitted/analysed over several days, the last date of extraction and analysis is reported.

A recent review of our LIMS has resulted in the correction or clarification of some method identifications. Due to this, some of the method reference information on reports has changed. However, no substantive change has been made to our laboratory methods, and as such there is no change in the validity of current or previous results.

If the date and time of sampling are not provided, the Laboratory will not be responsible for compromised results should testing be performed outside the recommended holding time.

Description	Testing Site	Extracted	Holding Time
Heavy Metals - Method: LTM-MET-3040 Metals in Waters, Soils & Sediments by ICP-MS	Sydney	Apr 15, 2020	180 Days
Heavy Metals (filtered) - Method: LTM-MET-3040 Metals in Waters, Soils & Sediments by ICP-MS	Sydney	Apr 14, 2020	180 Days
Mobil Metals : Metals M15 - Method: LTM-MET-3040 Metals in Waters, Soils & Sediments by ICP-MS	Sydney	Apr 14, 2020	28 Days

Australia

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NATA # 1261
Site # 1254 & 14271

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NATA # 1261 Site # 20794

Perth
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Kewdale WA 6105
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NATA # 1261
Site # 23736

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Penrose, Auckland 1061
Phone : +64 9 526 45 51
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Rolleston, Christchurch 7675
Phone : 0800 856 450
IANZ # 1290

Company Name: Ramboll Australia Pty Ltd
Address: Level 3/100 Pacific Highway
North Sydney
NSW 2060

Order No.:
Report #: 712462
Phone: 02 9954 8118
Fax: 02 9954 8150

Received: Apr 6, 2020 2:36 PM
Due: Apr 15, 2020
Priority: 5 Day
Contact Name: Stephen Maxwell

Project Name:
Project ID: 318000780

Eurofins Analytical Services Manager : Andrew Black

Sample Detail						Aluminium	Aluminium (filtered)	Arsenic	Arsenic (filtered)	Barium	Barium (filtered)	Beryllium	Beryllium (filtered)	Cadmium	Cadmium (filtered)	Chromium	Chromium (filtered)	Cobalt	Cobalt (filtered)	Copper	Copper (filtered)	Iron	Iron (filtered)	Lead	Lead (filtered)	Manganese	Manganese (filtered)	Mercury	Mercury (filtered)	Nickel	Nickel (filtered)	Zinc	Zinc (filtered)	Moisture Set		
Melbourne Laboratory - NATA Site # 1254 & 14271																																				
Sydney Laboratory - NATA Site # 18217						X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	
Brisbane Laboratory - NATA Site # 20794																																				
Perth Laboratory - NATA Site # 23736																																				
External Laboratory																																				
No	Sample ID	Sample Date	Sampling Time	Matrix	LAB ID																															
1	P28_HA01_0_0	Apr 01, 2020		Soil	S20-Ap09683																		X										X			
2	P28_HA01_0_2	Apr 01, 2020		Soil	S20-Ap09684																		X										X			
3	P28_HA02_0_0	Apr 01, 2020		Soil	S20-Ap09685																		X										X			
4	P28_HA02_0_2	Apr 01, 2020		Soil	S20-Ap09686																		X										X			
5	P28_HA03_0_0	Apr 01, 2020		Soil	S20-Ap09687																		X										X			
6	P28_HA04_0_0	Apr 01, 2020		Soil	S20-Ap09688																		X										X			

Australia

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Phone : +64 9 526 45 51
IANZ # 1327

Christchurch
43 Detroit Drive
Rolleston, Christchurch 7675
Phone : 0800 856 450
IANZ # 1290

Company Name: Ramboll Australia Pty Ltd
Address: Level 3/100 Pacific Highway
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NSW 2060

Order No.:
Report #: 712462
Phone: 02 9954 8118
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Received: Apr 6, 2020 2:36 PM
Due: Apr 15, 2020
Priority: 5 Day
Contact Name: Stephen Maxwell

Project Name:
Project ID: 318000780

Eurofins Analytical Services Manager : Andrew Black

Sample Detail						Aluminium	Aluminium (filtered)	Arsenic	Arsenic (filtered)	Barium	Barium (filtered)	Beryllium	Beryllium (filtered)	Cadmium	Cadmium (filtered)	Chromium	Chromium (filtered)	Cobalt	Cobalt (filtered)	Copper	Copper (filtered)	Iron	Iron (filtered)	Lead	Lead (filtered)	Manganese	Manganese (filtered)	Mercury	Mercury (filtered)	Nickel	Nickel (filtered)	Zinc	Zinc (filtered)	Moisture Set		
Melbourne Laboratory - NATA Site # 1254 & 14271																																				
Sydney Laboratory - NATA Site # 18217						X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	
Brisbane Laboratory - NATA Site # 20794																																				
Perth Laboratory - NATA Site # 23736																																				
7	P28_HA05_0_0	Apr 01, 2020		Soil	S20-Ap09689																		X										X			
8	P28_HA05_0_2	Apr 01, 2020		Soil	S20-Ap09690																		X										X			
9	P28_TW1	Apr 01, 2020		Water	S20-Ap09691	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X			
10	P28_TW2	Apr 01, 2020		Water	S20-Ap09692	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X			
11	P28_TW3	Apr 01, 2020		Water	S20-Ap09693	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X			
12	P28_TWS1	Apr 01, 2020		Water	S20-Ap09694																		X													
13	P28_TWS2	Apr 01, 2020		Water	S20-Ap09695																		X													
14	P28_TWS3	Apr 01, 2020		Water	S20-Ap09696																		X													
Test Counts						3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	14	3	3	3	3	3	3	3	3	3	8	

Internal Quality Control Review and Glossary

General

- Laboratory QC results for Method Blanks, Duplicates, Matrix Spikes, and Laboratory Control Samples follows guidelines delineated in the National Environment Protection (Assessment of Site Contamination) Measure 1999, as amended May 2013 and are included in this QC report where applicable. Additional QC data may be available on request.
- All soil/sediment/solid results are reported on a dry basis, unless otherwise stated.
- All biota/food results are reported on a wet weight basis on the edible portion, unless otherwise stated.
- Actual LORs are matrix dependant. Quoted LORs may be raised where sample extracts are diluted due to interferences.
- Results are uncorrected for matrix spikes or surrogate recoveries except for PFAS compounds.
- SVOC analysis on waters are performed on homogenised, unfiltered samples, unless noted otherwise.
- Samples were analysed on an 'as received' basis.
- Information identified on this report with blue colour, indicates data provided by customer, that may have an impact on the results.
- This report replaces any interim results previously issued.

Holding Times

Please refer to 'Sample Preservation and Container Guide' for holding times (QS3001).

For samples received on the last day of holding time, notification of testing requirements should have been received at least 6 hours prior to sample receipt deadlines as stated on the SRA.

If the Laboratory did not receive the information in the required timeframe, and regardless of any other integrity issues, suitably qualified results may still be reported.

Holding times apply from the date of sampling, therefore compliance to these may be outside the laboratory's control.

For VOCs containing vinyl chloride, styrene and 2-chloroethyl vinyl ether the holding time is 7 days however for all other VOCs such as BTEX or C6-10 TRH then the holding time is 14 days.

****NOTE:** pH duplicates are reported as a range NOT as RPD

Units

mg/kg: milligrams per kilogram

mg/L: milligrams per litre

ug/L: micrograms per litre

ppm: Parts per million

ppb: Parts per billion

%: Percentage

org/100mL: Organisms per 100 millilitres

NTU: Nephelometric Turbidity Units

MPN/100mL: Most Probable Number of organisms per 100 millilitres

Terms

Dry	Where a moisture has been determined on a solid sample the result is expressed on a dry basis.
LOR	Limit of Reporting.
SPIKE	Addition of the analyte to the sample and reported as percentage recovery.
RPD	Relative Percent Difference between two Duplicate pieces of analysis.
LCS	Laboratory Control Sample - reported as percent recovery.
CRM	Certified Reference Material - reported as percent recovery.
Method Blank	In the case of solid samples these are performed on laboratory certified clean sands and in the case of water samples these are performed on de-ionised water.
Surr - Surrogate	The addition of a like compound to the analyte target and reported as percentage recovery.
Duplicate	A second piece of analysis from the same sample and reported in the same units as the result to show comparison.
USEPA	United States Environmental Protection Agency
APHA	American Public Health Association
TCLP	Toxicity Characteristic Leaching Procedure
COC	Chain of Custody
SRA	Sample Receipt Advice
QSM	US Department of Defense Quality Systems Manual Version 5.3
CP	Client Parent - QC was performed on samples pertaining to this report
NCP	Non-Client Parent - QC performed on samples not pertaining to this report, QC is representative of the sequence or batch that client samples were analysed within.
TEQ	Toxic Equivalency Quotient

QC - Acceptance Criteria

RPD Duplicates: Global RPD Duplicates Acceptance Criteria is 30% however the following acceptance guidelines are equally applicable:

Results <10 times the LOR : No Limit

Results between 10-20 times the LOR : RPD must lie between 0-50%

Results >20 times the LOR : RPD must lie between 0-30%

Surrogate Recoveries: Recoveries must lie between 20-130% Phenols & 50-150% PFASs

PFAS field samples that contain surrogate recoveries in excess of the QC limit designated in QSM 5.3 where no positive PFAS results have been reported have been reviewed and no data was affected.

WA DWER (n=10): PFBA, PFPeA, PFHxA, PFHpA, PFOA, PFBS, PFHxS, PFOS, 6:2 FTSA, 8:2 FTSA

QC Data General Comments

- Where a result is reported as a less than (<), higher than the nominated LOR, this is due to either matrix interference, extract dilution required due to interferences or contaminant levels within the sample, high moisture content or insufficient sample provided.
- Duplicate data shown within this report that states the word "BATCH" is a Batch Duplicate from outside of your sample batch, but within the laboratory sample batch at a 1:10 ratio. The Parent and Duplicate data shown is not data from your samples.
- Organochlorine Pesticide analysis - where reporting LCS data, Toxaphene & Chlordane are not added to the LCS.
- Organochlorine Pesticide analysis - where reporting Spike data, Toxaphene is not added to the Spike.
- Total Recoverable Hydrocarbons - where reporting Spike & LCS data, a single spike of commercial Hydrocarbon products in the range of C12-C30 is added and it's Total Recovery is reported in the C10-C14 cell of the Report.
- pH and Free Chlorine analysed in the laboratory - Analysis on this test must begin within 30 minutes of sampling. Therefore laboratory analysis is unlikely to be completed within holding time. Analysis will begin as soon as possible after sample receipt.
- Recovery Data (Spikes & Surrogates) - where chromatographic interference does not allow the determination of Recovery the term "INT" appears against that analyte.
- Polychlorinated Biphenyls are spiked only using Aroclor 1260 in Matrix Spikes and LCS.
- For Matrix Spikes and LCS results a dash " - " in the report means that the specific analyte was not added to the QC sample.
- Duplicate RPDs are calculated from raw analytical data thus it is possible to have two sets of data.

Quality Control Results

Test	Units	Result 1			Acceptance Limits	Pass Limits	Qualifying Code
Method Blank							
Heavy Metals							
Aluminium	mg/L	< 0.05			0.05	Pass	
Aluminium (filtered)	mg/L	< 0.05			0.05	Pass	
Arsenic	mg/L	< 0.001			0.001	Pass	
Arsenic (filtered)	mg/L	< 0.001			0.001	Pass	
Barium	mg/L	< 0.02			0.02	Pass	
Barium (filtered)	mg/L	< 0.02			0.02	Pass	
Beryllium	mg/L	< 0.001			0.001	Pass	
Beryllium (filtered)	mg/L	< 0.001			0.001	Pass	
Cadmium	mg/L	< 0.0002			0.0002	Pass	
Cadmium (filtered)	mg/L	< 0.0002			0.0002	Pass	
Chromium	mg/L	< 0.001			0.001	Pass	
Chromium (filtered)	mg/L	< 0.001			0.001	Pass	
Cobalt	mg/L	< 0.001			0.001	Pass	
Cobalt (filtered)	mg/L	< 0.001			0.001	Pass	
Copper	mg/L	< 0.001			0.001	Pass	
Copper (filtered)	mg/L	< 0.001			0.001	Pass	
Iron	mg/L	< 0.05			0.05	Pass	
Iron (filtered)	mg/L	< 0.05			0.05	Pass	
Lead	mg/L	< 0.001			0.001	Pass	
Lead (filtered)	mg/L	< 0.001			0.001	Pass	
Manganese	mg/L	< 0.005			0.005	Pass	
Manganese (filtered)	mg/L	< 0.005			0.005	Pass	
Mercury	mg/L	< 0.0001			0.0001	Pass	
Mercury (filtered)	mg/L	< 0.0001			0.0001	Pass	
Nickel	mg/L	< 0.001			0.001	Pass	
Nickel (filtered)	mg/L	< 0.001			0.001	Pass	
Zinc	mg/L	< 0.005			0.005	Pass	
Zinc (filtered)	mg/L	< 0.005			0.005	Pass	
LCS - % Recovery							
Heavy Metals							
Aluminium	%	85			70-130	Pass	
Aluminium (filtered)	%	93			70-130	Pass	
Arsenic	%	102			70-130	Pass	
Arsenic (filtered)	%	109			70-130	Pass	
Barium	%	97			70-130	Pass	
Barium (filtered)	%	102			70-130	Pass	
Beryllium	%	103			70-130	Pass	
Beryllium (filtered)	%	108			70-130	Pass	
Cadmium	%	100			70-130	Pass	
Cadmium (filtered)	%	100			70-130	Pass	
Chromium	%	94			70-130	Pass	
Chromium (filtered)	%	94			70-130	Pass	
Cobalt	%	95			70-130	Pass	
Cobalt (filtered)	%	93			70-130	Pass	
Copper	%	97			70-130	Pass	
Copper (filtered)	%	91			70-130	Pass	
Iron	%	94			70-130	Pass	
Iron (filtered)	%	93			70-130	Pass	
Lead	%	98			70-130	Pass	
Lead (filtered)	%	97			70-130	Pass	

Test		Units	Result 1			Acceptance Limits	Pass Limits	Qualifying Code	
Manganese		%	92			70-130	Pass		
Manganese (filtered)		%	96			70-130	Pass		
Mercury		%	98			70-130	Pass		
Mercury (filtered)		%	93			70-130	Pass		
Nickel		%	97			70-130	Pass		
Nickel (filtered)		%	92			70-130	Pass		
Zinc		%	95			70-130	Pass		
Zinc (filtered)		%	97			70-130	Pass		
Test	Lab Sample ID	QA Source	Units	Result 1			Acceptance Limits	Pass Limits	Qualifying Code
Spike - % Recovery									
Heavy Metals				Result 1					
Aluminium (filtered)	S20-Ap16805	NCP	%	94			70-130	Pass	
Arsenic (filtered)	S20-Ap16805	NCP	%	85			70-130	Pass	
Barium (filtered)	S20-Ap16805	NCP	%	96			70-130	Pass	
Beryllium (filtered)	S20-Ap16805	NCP	%	103			70-130	Pass	
Cadmium (filtered)	S20-Ap16805	NCP	%	100			70-130	Pass	
Chromium (filtered)	S20-Ap16805	NCP	%	100			70-130	Pass	
Cobalt (filtered)	S20-Ap16805	NCP	%	103			70-130	Pass	
Copper	S20-Ap08166	NCP	%	95			70-130	Pass	
Copper (filtered)	S20-Ap16805	NCP	%	99			70-130	Pass	
Iron (filtered)	S20-Ap16805	NCP	%	90			70-130	Pass	
Lead (filtered)	S20-Ap16805	NCP	%	102			70-130	Pass	
Manganese (filtered)	S20-Ap16805	NCP	%	102			70-130	Pass	
Mercury (filtered)	S20-Ap16805	NCP	%	101			70-130	Pass	
Nickel (filtered)	S20-Ap16805	NCP	%	103			70-130	Pass	
Zinc (filtered)	S20-Ap16805	NCP	%	95			70-130	Pass	
Spike - % Recovery									
Heavy Metals				Result 1					
Lead	S20-Ap16805	NCP	%	98			70-130	Pass	
Test	Lab Sample ID	QA Source	Units	Result 1			Acceptance Limits	Pass Limits	Qualifying Code
Duplicate									
Heavy Metals				Result 1	Result 2	RPD			
Aluminium	S20-Ap09691	CP	mg/L	< 0.05	< 0.05	<1	30%	Pass	
Aluminium (filtered)	S20-Ap09657	NCP	mg/L	< 0.05	< 0.05	<1	30%	Pass	
Arsenic	S20-Ap09691	CP	mg/L	< 0.001	< 0.001	<1	30%	Pass	
Arsenic (filtered)	S20-Ap09657	NCP	mg/L	< 0.001	< 0.001	<1	30%	Pass	
Barium	S20-Ap09691	CP	mg/L	< 0.02	< 0.02	<1	30%	Pass	
Barium (filtered)	S20-Ap09657	NCP	mg/L	< 0.02	< 0.02	<1	30%	Pass	
Beryllium	S20-Ap09691	CP	mg/L	< 0.001	< 0.001	<1	30%	Pass	
Beryllium (filtered)	S20-Ap09657	NCP	mg/L	< 0.001	< 0.001	<1	30%	Pass	
Cadmium	S20-Ap09691	CP	mg/L	< 0.0002	< 0.0002	<1	30%	Pass	
Cadmium (filtered)	S20-Ap09657	NCP	mg/L	< 0.0002	< 0.0002	<1	30%	Pass	
Chromium	S20-Ap09691	CP	mg/L	0.002	0.003	19	30%	Pass	
Chromium (filtered)	S20-Ap09657	NCP	mg/L	< 0.001	< 0.001	<1	30%	Pass	
Cobalt	S20-Ap09691	CP	mg/L	< 0.001	< 0.001	<1	30%	Pass	
Cobalt (filtered)	S20-Ap09657	NCP	mg/L	< 0.001	< 0.001	<1	30%	Pass	
Copper	S20-Ap09691	CP	mg/L	0.002	0.002	4.0	30%	Pass	
Copper (filtered)	S20-Ap09657	NCP	mg/L	0.002	0.002	51	30%	Fail	Q15
Iron	S20-Ap09691	CP	mg/L	< 0.05	< 0.05	<1	30%	Pass	
Iron (filtered)	S20-Ap09657	NCP	mg/L	< 0.05	< 0.05	<1	30%	Pass	
Lead	S20-Ap09691	CP	mg/L	< 0.001	< 0.001	<1	30%	Pass	
Lead (filtered)	S20-Ap09657	NCP	mg/L	< 0.001	< 0.001	<1	30%	Pass	
Manganese	S20-Ap09691	CP	mg/L	< 0.005	< 0.005	<1	30%	Pass	

Test	Lab Sample ID	QA Source	Units	Result 1			Acceptance Limits	Pass Limits	Qualifying Code
Duplicate									
Heavy Metals				Result 1	Result 2	RPD			
Manganese (filtered)	S20-Ap09657	NCP	mg/L	< 0.005	< 0.005	<1	30%	Pass	
Mercury	S20-Ap09691	CP	mg/L	< 0.0001	< 0.0001	<1	30%	Pass	
Mercury (filtered)	S20-Ap09657	NCP	mg/L	< 0.0001	< 0.0001	<1	30%	Pass	
Nickel	S20-Ap09691	CP	mg/L	< 0.001	< 0.001	<1	30%	Pass	
Nickel (filtered)	S20-Ap09657	NCP	mg/L	< 0.001	< 0.001	<1	30%	Pass	
Zinc	S20-Ap09691	CP	mg/L	0.13	0.13	2.0	30%	Pass	
Zinc (filtered)	S20-Ap09657	NCP	mg/L	0.018	0.015	160	30%	Fail	Q15
Duplicate									
Heavy Metals				Result 1	Result 2	RPD			
Arsenic	S20-Ap09694	CP	mg/L	3.2	2.5	25	30%	Pass	
Barium	S20-Ap09694	CP	mg/L	52	45	15	30%	Pass	
Cadmium	S20-Ap09694	CP	mg/L	0.30	0.27	10	30%	Pass	
Chromium	S20-Ap09694	CP	mg/L	37	33	11	30%	Pass	
Cobalt	S20-Ap09694	CP	mg/L	1.7	1.5	11	30%	Pass	
Copper	S20-Ap09694	CP	mg/L	160	140	13	30%	Pass	
Iron	S20-Ap09694	CP	mg/L	8700	7700	12	30%	Pass	
Lead	S20-Ap09694	CP	mg/L	36	31	12	30%	Pass	
Manganese	S20-Ap09694	CP	mg/L	77	68	13	30%	Pass	
Mercury	S20-Ap09694	CP	mg/L	0.13	0.10	25	30%	Pass	
Nickel	S20-Ap09694	CP	mg/L	9.6	9.6	<1	30%	Pass	
Zinc	S20-Ap09694	CP	mg/L	430	390	11	30%	Pass	

Comments
Sample Integrity

Custody Seals Intact (if used)	N/A
Attempt to Chill was evident	No
Sample correctly preserved	Yes
Appropriate sample containers have been used	Yes
Sample containers for volatile analysis received with minimal headspace	Yes
Samples received within HoldingTime	Yes
Some samples have been subcontracted	No

Qualifier Codes/Comments

Code	Description
Q15	The RPD reported passes Eurofins Environment Testing's QC - Acceptance Criteria as defined in the Internal Quality Control Review and Glossary page of this report.

Authorised By

Andrew Black	Analytical Services Manager
Gabriele Cordero	Senior Analyst-Metal (NSW)


**Glenn Jackson
General Manager**

Final report - this Report replaces any previously issued Report

- Indicates Not Requested

* Indicates NATA accreditation does not cover the performance of this service

Measurement uncertainty of test data is available on request or please [click here](#).

Eurofins shall not be liable for loss, cost, damages or expenses incurred by the client, or any other person or company, resulting from the use of any information or interpretation given in this report. In no case shall Eurofins be liable for consequential damages including, but not limited to, lost profits, damages for failure to meet deadlines and lost production arising from this report. This document shall not be reproduced except in full and relates only to the items tested. Unless indicated otherwise, the tests were performed on the samples as received.

#AU04_COCNSW

Subject:

FW: 5 DAY TAT ADDITIONAL ANALYSIS: FW: Sediment samples

From: Joshua Blackwell [mailto:JBLACKWELL@ramboll.com]

Sent: Tuesday, 28 April 2020 3:11 PM

To: Andrew Black

Subject: Sediment samples

EXTERNAL EMAIL *

Hi Andrew,

Could I please request the following samples be dried and analysed for lead in mg/kg and moisture content. Please report in 8 separate reports as follows;

1. P6_TWS1 (S20-Ap02120)
2. P24_TWS1 (S20-Ap09836) & P24_TWS2 (S20-Ap09837)
3. P25_TWS1 (S20-Ap09766) & P25_TWS2 (S20-Ap09767)
4. P26_TWS1 (S20-Ap09881)
5. P27_TWS1 (S20-Ap09734)
6. P28_TWS1 (S20-Ap09694) & P28_TWS2 (S20-Ap09695) & P28_TWS3 (S20-Ap09696)
7. P31_TWS1 (S20-Ap09851) & P31_TWS2 (S20-Ap09852) & P31_TWS3 (S20-Ap09853)
8. P32_TWS2 (S20-Ap09662)

Kind regards

Joshua Blackwell


Consultant

3182675 - Hunter

D +61 (481) 157565

M +61 (481) 157565

jblackwell@ramboll.com

Connect with us 

Ramboll

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PO Box 435

The Junction

NSW 2291

Australia

<https://ramboll.com>

Ramboll Australia Pty Ltd.

ACN 095 437 442

ABN 49 095 437 442

Click [here](#) to report this email as spam.

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Melbourne

6 Monterey Road
Dandenong South Vic 3175
Phone : +61 3 8564 5000
NATA # 1261
Site # 1254 & 14271

Sydney

Unit F3, Building F
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Phone : +61 2 9900 8400
NATA # 1261 Site # 18217

Brisbane

1/21 Smallwood Place
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Phone : +61 7 3902 4600
NATA # 1261 Site # 20794

Perth

2/91 Leach Highway
Kewdale WA 6105
Phone : +61 8 9251 9600
NATA # 1261 Site # 23736

Sample Receipt Advice

Company name: **Ramboll Australia Pty Ltd**
Contact name: Joshua Blackwell
Project name: ADDITIONAL - 318000780
COC number: Not provided
Turn around time: 5 Day
Date/Time received: Apr 28, 2020 3:11 PM
Eurofins reference: **716295**

Sample information

- A detailed list of analytes logged into our LIMS, is included in the attached summary table.
- All samples have been received as described on the above COC.
- COC has been completed correctly.
- Attempt to chill was evident.
- Appropriately preserved sample containers have been used.
- All samples were received in good condition.
- Samples have been provided with adequate time to commence analysis in accordance with the relevant holding times.
- Appropriate sample containers have been used.
- Split sample sent to requested external lab.
- Some samples have been subcontracted.
- N/A Custody Seals intact (if used).

Contact notes

If you have any questions with respect to these samples please contact:

Andrew Black on Phone : (+61) 2 9900 8490 or by e.mail: AndrewBlack@eurofins.com

Results will be delivered electronically via e.mail to Joshua Blackwell - jblackwell@ramboll.com.

Note: A copy of these results will also be delivered to the general Ramboll Australia Pty Ltd email address.

Australia

Melbourne
 6 Monterey Road
 Dandenong South VIC 3175
 Phone : +61 3 8564 5000
 NATA # 1261
 Site # 1254 & 14271

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 Lane Cove West NSW 2066
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 NATA # 1261 Site # 18217

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 NATA # 1261 Site # 20794

Perth
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 Kewdale WA 6105
 Phone : +61 8 9251 9600
 NATA # 1261
 Site # 23736

New Zealand

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 35 O'Rorke Road
 Penrose, Auckland 1061
 Phone : +64 9 526 45 51
 IANZ # 1327

Christchurch
 43 Detroit Drive
 Rolleston, Christchurch 7675
 Phone : 0800 856 450
 IANZ # 1290

Company Name: Ramboll Australia Pty Ltd
Address: Level 3/100 Pacific Highway
 North Sydney
 NSW 2060
Project Name: ADDITIONAL - 318000780

Order No.:
Report #: 716295
Phone: 02 9954 8118
Fax: 02 9954 8150

Received: Apr 28, 2020 3:11 PM
Due: May 5, 2020
Priority: 5 Day
Contact Name: Joshua Blackwell

Eurofins Analytical Services Manager : Andrew Black

Sample Detail						Lead	Moisture Set
Melbourne Laboratory - NATA Site # 1254 & 14271							
Sydney Laboratory - NATA Site # 18217						X	X
Brisbane Laboratory - NATA Site # 20794							
Perth Laboratory - NATA Site # 23736							
External Laboratory							
No	Sample ID	Sample Date	Sampling Time	Matrix	LAB ID		
1	P28_TWS1	Apr 01, 2020		Sediment	S20-Ap42288	X	X
2	P28_TWS2	Apr 01, 2020		Sediment	S20-Ap42289	X	X
3	P28_TWS3	Apr 01, 2020		Sediment	S20-Ap42290	X	X
Test Counts						3	3

Ramboll Environ Australia Pty Ltd
 Level 3/100 Pacific Highway
 North Sydney
 NSW 2060



NATA Accredited
Accreditation Number 1261
Site Number 18217

Accredited for compliance with ISO/IEC 17025 – Testing
 The results of the tests, calibrations and/or
 measurements included in this document are traceable
 to Australian/national standards.

Attention: **Joshua Blackwell**

Report **716295-S**
 Project name **ADDITIONAL - 318000780**
 Received Date **Apr 28, 2020**

Client Sample ID			P28_TWS1	P28_TWS2	P28_TWS3
Sample Matrix			Sediment	Sediment	Sediment
Eurofins Sample No.			S20-Ap42288	S20-Ap42289	S20-Ap42290
Date Sampled			Apr 01, 2020	Apr 01, 2020	Apr 01, 2020
Test/Reference	LOR	Unit			
Heavy Metals					
Lead	5	mg/kg	72	110	33
% Moisture	1	%	72	77	85

Sample History

Where samples are submitted/analysed over several days, the last date of extraction and analysis is reported.

A recent review of our LIMS has resulted in the correction or clarification of some method identifications. Due to this, some of the method reference information on reports has changed. However, no substantive change has been made to our laboratory methods, and as such there is no change in the validity of current or previous results.

If the date and time of sampling are not provided, the Laboratory will not be responsible for compromised results should testing be performed outside the recommended holding time.

Description

Heavy Metals

- Method: LTM-MET-3040 Metals in Waters, Soils & Sediments by ICP-MS

% Moisture

- Method: LTM-GEN-7080 Moisture

Testing Site

Sydney

Sydney

Extracted

May 02, 2020

Apr 29, 2020

Holding Time

180 Days

14 Days

Australia

Melbourne
 6 Monterey Road
 Dandenong South VIC 3175
 Phone : +61 3 8564 5000
 NATA # 1261
 Site # 1254 & 14271

Sydney
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 16 Mars Road
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 Phone : +64 9 526 45 51
 IANZ # 1327

Christchurch
 43 Detroit Drive
 Rolleston, Christchurch 7675
 Phone : 0800 856 450
 IANZ # 1290

Company Name:	Ramboll Australia Pty Ltd	Order No.:		Received:	Apr 28, 2020 3:11 PM
Address:	Level 3/100 Pacific Highway North Sydney NSW 2060	Report #:	716295	Due:	May 5, 2020
Project Name:	ADDITIONAL - 318000780	Phone:	02 9954 8118	Priority:	5 Day
		Fax:	02 9954 8150	Contact Name:	Joshua Blackwell
Eurofins Analytical Services Manager : Andrew Black					

Sample Detail						Lead	Moisture Set
Melbourne Laboratory - NATA Site # 1254 & 14271							
Sydney Laboratory - NATA Site # 18217						X	X
Brisbane Laboratory - NATA Site # 20794							
Perth Laboratory - NATA Site # 23736							
External Laboratory							
No	Sample ID	Sample Date	Sampling Time	Matrix	LAB ID		
1	P28_TWS1	Apr 01, 2020		Sediment	S20-Ap42288	X	X
2	P28_TWS2	Apr 01, 2020		Sediment	S20-Ap42289	X	X
3	P28_TWS3	Apr 01, 2020		Sediment	S20-Ap42290	X	X
Test Counts						3	3

Internal Quality Control Review and Glossary
General

- Laboratory QC results for Method Blanks, Duplicates, Matrix Spikes, and Laboratory Control Samples follows guidelines delineated in the National Environment Protection (Assessment of Site Contamination) Measure 1999, as amended May 2013 and are included in this QC report where applicable. Additional QC data may be available on request.
- All soil/sediment/solid results are reported on a dry basis, unless otherwise stated.
- All biota/food results are reported on a wet weight basis on the edible portion, unless otherwise stated.
- Actual LORs are matrix dependant. Quoted LORs may be raised where sample extracts are diluted due to interferences.
- Results are uncorrected for matrix spikes or surrogate recoveries except for PFAS compounds.
- SVOC analysis on waters are performed on homogenised, unfiltered samples, unless noted otherwise.
- Samples were analysed on an 'as received' basis.
- Information identified on this report with blue colour, indicates data provided by customer, that may have an impact on the results.
- This report replaces any interim results previously issued.

Holding Times

Please refer to 'Sample Preservation and Container Guide' for holding times (QS3001).

For samples received on the last day of holding time, notification of testing requirements should have been received at least 6 hours prior to sample receipt deadlines as stated on the SRA.

If the Laboratory did not receive the information in the required timeframe, and regardless of any other integrity issues, suitably qualified results may still be reported.

Holding times apply from the date of sampling, therefore compliance to these may be outside the laboratory's control.

For VOCs containing vinyl chloride, styrene and 2-chloroethyl vinyl ether the holding time is 7 days however for all other VOCs such as BTEX or C6-10 TRH then the holding time is 14 days.

****NOTE:** pH duplicates are reported as a range NOT as RPD

Units

mg/kg: milligrams per kilogram

mg/L: milligrams per litre

ug/L: micrograms per litre

ppm: Parts per million

ppb: Parts per billion

%: Percentage

org/100mL: Organisms per 100 millilitres

NTU: Nephelometric Turbidity Units

MPN/100mL: Most Probable Number of organisms per 100 millilitres

Terms

Dry	Where a moisture has been determined on a solid sample the result is expressed on a dry basis.
LOR	Limit of Reporting.
SPIKE	Addition of the analyte to the sample and reported as percentage recovery.
RPD	Relative Percent Difference between two Duplicate pieces of analysis.
LCS	Laboratory Control Sample - reported as percent recovery.
CRM	Certified Reference Material - reported as percent recovery.
Method Blank	In the case of solid samples these are performed on laboratory certified clean sands and in the case of water samples these are performed on de-ionised water.
Surr - Surrogate	The addition of a like compound to the analyte target and reported as percentage recovery.
Duplicate	A second piece of analysis from the same sample and reported in the same units as the result to show comparison.
USEPA	United States Environmental Protection Agency
APHA	American Public Health Association
TCLP	Toxicity Characteristic Leaching Procedure
COC	Chain of Custody
SRA	Sample Receipt Advice
QSM	US Department of Defense Quality Systems Manual Version 5.3
CP	Client Parent - QC was performed on samples pertaining to this report
NCP	Non-Client Parent - QC performed on samples not pertaining to this report, QC is representative of the sequence or batch that client samples were analysed within.
TEQ	Toxic Equivalency Quotient

QC - Acceptance Criteria

RPD Duplicates: Global RPD Duplicates Acceptance Criteria is 30% however the following acceptance guidelines are equally applicable:

Results <10 times the LOR : No Limit

Results between 10-20 times the LOR : RPD must lie between 0-50%

Results >20 times the LOR : RPD must lie between 0-30%

Surrogate Recoveries: Recoveries must lie between 20-130% Phenols & 50-150% PFASs

PFAS field samples that contain surrogate recoveries in excess of the QC limit designated in QSM 5.3 where no positive PFAS results have been reported have been reviewed and no data was affected.

WA DWER (n=10): PFBA, PFPeA, PFHxA, PFHpA, PFOA, PFBS, PFHxS, PFOS, 6:2 FTSA, 8:2 FTSA

QC Data General Comments

- Where a result is reported as a less than (<), higher than the nominated LOR, this is due to either matrix interference, extract dilution required due to interferences or contaminant levels within the sample, high moisture content or insufficient sample provided.
- Duplicate data shown within this report that states the word "BATCH" is a Batch Duplicate from outside of your sample batch, but within the laboratory sample batch at a 1:10 ratio. The Parent and Duplicate data shown is not data from your samples.
- Organochlorine Pesticide analysis - where reporting LCS data, Toxaphene & Chlordane are not added to the LCS.
- Organochlorine Pesticide analysis - where reporting Spike data, Toxaphene is not added to the Spike.
- Total Recoverable Hydrocarbons - where reporting Spike & LCS data, a single spike of commercial Hydrocarbon products in the range of C12-C30 is added and it's Total Recovery is reported in the C10-C14 cell of the Report.
- pH and Free Chlorine analysed in the laboratory - Analysis on this test must begin within 30 minutes of sampling. Therefore laboratory analysis is unlikely to be completed within holding time. Analysis will begin as soon as possible after sample receipt.
- Recovery Data (Spikes & Surrogates) - where chromatographic interference does not allow the determination of Recovery the term "INT" appears against that analyte.
- Polychlorinated Biphenyls are spiked only using Aroclor 1260 in Matrix Spikes and LCS.
- For Matrix Spikes and LCS results a dash " - " in the report means that the specific analyte was not added to the QC sample.
- Duplicate RPDs are calculated from raw analytical data thus it is possible to have two sets of data.

Quality Control Results

Test				Units	Result 1		Acceptance Limits	Pass Limits	Qualifying Code		
Method Blank											
Heavy Metals											
Lead				mg/kg	< 5		5	Pass			
LCS - % Recovery											
Heavy Metals											
Lead				%	99		70-130	Pass			
Test	Lab Sample ID	QA Source	Units	Result 1			Acceptance Limits	Pass Limits	Qualifying Code		
Spike - % Recovery											
Heavy Metals											
Lead				S20-Ap44661	NCP	%	91	70-130	Pass		
Duplicate											
Heavy Metals											
Lead				S20-Ap42291	NCP	mg/kg	97	100	4.0	30%	Pass
Duplicate											
% Moisture				S20-Ap42500	NCP	%	4.8	4.7	2.0	30%	Pass

Comments**Sample Integrity**

Custody Seals Intact (if used)	N/A
Attempt to Chill was evident	No
Sample correctly preserved	No
Appropriate sample containers have been used	Yes
Sample containers for volatile analysis received with minimal headspace	Yes
Samples received within HoldingTime	Yes
Some samples have been subcontracted	No

Authorised By

Andrew Black Analytical Services Manager
Gabriele Cordero Senior Analyst-Metal (NSW)

**Glenn Jackson
General Manager**

Final report - this Report replaces any previously issued Report

- Indicates Not Requested

* Indicates NATA accreditation does not cover the performance of this service

Measurement uncertainty of test data is available on request or please [click here](#).

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CHAIN OF CUSTODY RECORD

ADN 50 005 085 521

Pydney Laboratory
Unit F3 Bld. F, 18 Mars Rd, Lane Cove West, NSW 2066
02 9900 9400 EnviroSamplesNSW@eurofins.com

Brisbane Laboratory
Unit 1, 21 Smallwood Pl, Murarie, QLD 4172
07 3902 4600 EnviroSamplesQLD@eurofins.com

Perth Laboratory
Unit 2, 51 Leach Highway, Kewdale WA 6105
08 9251 9500 EnviroSamplesWA@eurofins.com

Melbourne Laboratory
2 Kingspan Town Place, Oakleigh, VIC 3196
03 8564 5000 EnviroSamplesVIC@eurofins.com

Company Ramboll
Address 50 Glebe Road the Junction
Contact Name Stephen Maxwell
Phone No 0478 658 194

Project No 318000780
Project Name P28

Project Manager EDD Fornat (ES&I, EQUIS, Custom)

Stephen Maxwell
Excel and PDF

Sampler(s) JB, TJ, JK
Handed over by Jordyn Kitcher
Email for invoice smaxwell@ramboll.com
Email for results asianac-accounts@ramboll.com
smaxwell@ramboll.com
jblackwell@ramboll.com

Special Directions
Purchase Order
Quote ID No 1808135AMN_1

Analyses
(Note: Where metals are requested, please specify "Total" or "Filtered") SUITE code must be used to extract SUITE pricing.
Total Lead (mg/kg)
Total Sample Mass
Total Lead (µg/L)

Containers
1L Plastic
250mL Plastic
125mL Plastic
200mL Amber Glass
40mL VOA vial
500mL PFAS Bottle
Jar (Glass or HDPE)
Other (Asbestos AS4864, WA Guidelines)

Turnaround Time (TAT)
Requirements (turnaround will be 5 days from job start)
 Overnight (9am)*
 1 Day*
 2 Day*
 3 Day*
 5 Day*
*Surcharges apply

Sample Comments / Dangerous Goods Hazard Warning

No	Client Sample ID	Sampled Date/Time (dd/mm/yy hh:mm)	Matrix (Solid (S) Water (W))	Total Lead (mg/kg)	Total Sample Mass	Total Lead (µg/L)	Name	Signature	Date	Time
1	DVAC_LR(P28)	29/04/20	S	X	X					
2	DVAC_MB(P28)	29/04/20	S	X	X					
3	DSWAB_BE(P28)	29/04/20	S			X				
4	DSWAB_FE(P28)	29/04/20	S			X				
5	DSWAB_MH(P28)	29/04/20	S			X				
6										
7										
8										
9										
10										
Total Counts				2	2	3				

Method of Shipment Courier #) Hand Delivered Postal

Eurofins | mgt Received By: *[Signature]* Signature: *[Signature]* Date: *[Date]* Time: *[Time]*

Eurofins Environment Testing Australia Pty Ltd Trading as Eurofins | mgt SVD | BNE | MEL | PER | ADL | NTL | DRW Signature: *[Signature]* Date: *[Date]* Time: *[Time]* Report No: *716955*

Submission of samples to the laboratory will be deemed as acceptance of Eurofins | mgt Standard Terms and Conditions unless agreed otherwise. A copy of Eurofins | mgt Standard Terms and Conditions is available on request.
Eurofins Environment Testing Australia Pty Ltd Trading as Eurofins | mgt
Created by: [Name] Approved by: [Name] Approved on: [Date]

Melbourne

6 Monterey Road
Dandenong South Vic 3175
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NATA # 1261
Site # 1254 & 14271

Sydney

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NATA # 1261 Site # 18217

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Phone : +61 7 3902 4600
NATA # 1261 Site # 20794

Perth

2/91 Leach Highway
Kewdale WA 6105
Phone : +61 8 9251 9600
NATA # 1261 Site # 23736

Sample Receipt Advice

Company name: **Ramboll Australia Pty Ltd**
Contact name: Stephen Maxwell
Project name: P28
Project ID: 318000780
COC number: Not provided
Turn around time: 5 Day
Date/Time received: May 1, 2020 12:00 PM
Eurofins reference: **716958**

Sample information

- A detailed list of analytes logged into our LIMS, is included in the attached summary table.
- All samples have been received as described on the above COC.
- COC has been completed correctly.
- N/A Attempt to chill was evident.
- Appropriately preserved sample containers have been used.
- All samples were received in good condition.
- Samples have been provided with adequate time to commence analysis in accordance with the relevant holding times.
- Appropriate sample containers have been used.
- Split sample sent to requested external lab.
- Some samples have been subcontracted.
- N/A Custody Seals intact (if used).

Contact notes

If you have any questions with respect to these samples please contact:

Andrew Black on Phone : (+61) 2 9900 8490 or by e.mail: AndrewBlack@eurofins.com

Results will be delivered electronically via e.mail to Stephen Maxwell - smaxwell@ramboll.com.

Note: A copy of these results will also be delivered to the general Ramboll Australia Pty Ltd email address.

Australia

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Site # 1254 & 14271

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NATA # 1261
Site # 23736

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IANZ # 1327

Christchurch
43 Detroit Drive
Rolleston, Christchurch 7675
Phone : 0800 856 450
IANZ # 1290

ABN – 50 005 085 521

web : www.eurofins.com.au

e.mail : EnviroSales@eurofins.com

Company Name: Ramboll Australia Pty Ltd
Address: Level 3/100 Pacific Highway
North Sydney
NSW 2060

Project Name: P28
Project ID: 318000780

Order No.:
Report #: 716958
Phone: 02 9954 8118
Fax: 02 9954 8150

Received: May 1, 2020 12:00 PM
Due: May 8, 2020
Priority: 5 Day
Contact Name: Stephen Maxwell

Eurofins Analytical Services Manager : Andrew Black

Sample Detail						Lead	Mass of sample*
Melbourne Laboratory - NATA Site # 1254 & 14271							
Sydney Laboratory - NATA Site # 18217						X	X
Brisbane Laboratory - NATA Site # 20794							
Perth Laboratory - NATA Site # 23736							
External Laboratory							
No	Sample ID	Sample Date	Sampling Time	Matrix	LAB ID		
1	DVAC_LR(P28)	Apr 29, 2020		Dust	S20-My01108	X	X
2	DVAC_MB(P28)	Apr 29, 2020		Dust	S20-My01109	X	X
3	DSWAB_BE(P28)	Apr 29, 2020		Wipes	S20-My01110	X	
4	DSWAB_FE(P28)	Apr 29, 2020		Wipes	S20-My01111	X	
5	DSWAB_MH(P28)	Apr 29, 2020		Wipes	S20-My01112	X	
Test Counts						5	2

Ramboll Environ Australia Pty Ltd
 Level 3/100 Pacific Highway
 North Sydney
 NSW 2060



NATA Accredited
Accreditation Number 1261
Site Number 18217

Accredited for compliance with ISO/IEC 17025 – Testing
 The results of the tests, calibrations and/or
 measurements included in this document are traceable
 to Australian/national standards.

Attention: **Stephen Maxwell**

Report **716958-A**
 Project name **P28**
 Project ID **318000780**
 Received Date **May 01, 2020**

Client Sample ID			DSWAB_BE(P28)	DSWAB_FE(P28)	DSWAB_MH(P28)
Sample Matrix			Wipes	Wipes	Wipes
Eurofins Sample No.			S20-My01110	S20-My01111	S20-My01112
Date Sampled			Apr 29, 2020	Apr 29, 2020	Apr 29, 2020
Test/Reference	LOR	Unit			
Heavy Metals					
Lead	1	Total ug	1.7	5.7	4.0

Sample History

Where samples are submitted/analysed over several days, the last date of extraction and analysis is reported.

A recent review of our LIMS has resulted in the correction or clarification of some method identifications. Due to this, some of the method reference information on reports has changed. However, no substantive change has been made to our laboratory methods, and as such there is no change in the validity of current or previous results.

If the date and time of sampling are not provided, the Laboratory will not be responsible for compromised results should testing be performed outside the recommended holding time.

Description

Heavy Metals

Testing Site

Sydney

Extracted

May 07, 2020

Holding Time

180 Days

- Method: LTM-MET-3040 Metals in Waters, Soils & Sediments by ICP-MS

Australia

Melbourne
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43 Detroit Drive
Rolleston, Christchurch 7675
Phone : 0800 856 450
IANZ # 1290

Company Name: Ramboll Australia Pty Ltd
Address: Level 3/100 Pacific Highway
North Sydney
NSW 2060

Project Name: P28
Project ID: 318000780

Order No.:
Report #: 716958
Phone: 02 9954 8118
Fax: 02 9954 8150

Received: May 1, 2020 12:00 PM
Due: May 8, 2020
Priority: 5 Day
Contact Name: Stephen Maxwell

Eurofins Analytical Services Manager : Andrew Black

Sample Detail						Lead	Mass of sample*
Melbourne Laboratory - NATA Site # 1254 & 14271							
Sydney Laboratory - NATA Site # 18217						X	X
Brisbane Laboratory - NATA Site # 20794							
Perth Laboratory - NATA Site # 23736							
External Laboratory							
No	Sample ID	Sample Date	Sampling Time	Matrix	LAB ID		
1	DVAC_LR(P28)	Apr 29, 2020		Dust	S20-My01108	X	X
2	DVAC_MB(P28)	Apr 29, 2020		Dust	S20-My01109	X	X
3	DSWAB_BE(P28)	Apr 29, 2020		Wipes	S20-My01110	X	
4	DSWAB_FE(P28)	Apr 29, 2020		Wipes	S20-My01111	X	
5	DSWAB_MH(P28)	Apr 29, 2020		Wipes	S20-My01112	X	
Test Counts						5	2

Internal Quality Control Review and Glossary
General

- Laboratory QC results for Method Blanks, Duplicates, Matrix Spikes, and Laboratory Control Samples follows guidelines delineated in the National Environment Protection (Assessment of Site Contamination) Measure 1999, as amended May 2013 and are included in this QC report where applicable. Additional QC data may be available on request.
- All soil/sediment/solid results are reported on a dry basis, unless otherwise stated.
- All biota/food results are reported on a wet weight basis on the edible portion, unless otherwise stated.
- Actual LORs are matrix dependant. Quoted LORs may be raised where sample extracts are diluted due to interferences.
- Results are uncorrected for matrix spikes or surrogate recoveries except for PFAS compounds.
- SVOC analysis on waters are performed on homogenised, unfiltered samples, unless noted otherwise.
- Samples were analysed on an 'as received' basis.
- Information identified on this report with blue colour, indicates data provided by customer, that may have an impact on the results.
- This report replaces any interim results previously issued.

Holding Times

Please refer to 'Sample Preservation and Container Guide' for holding times (QS3001).

For samples received on the last day of holding time, notification of testing requirements should have been received at least 6 hours prior to sample receipt deadlines as stated on the SRA.

If the Laboratory did not receive the information in the required timeframe, and regardless of any other integrity issues, suitably qualified results may still be reported.

Holding times apply from the date of sampling, therefore compliance to these may be outside the laboratory's control.

For VOCs containing vinyl chloride, styrene and 2-chloroethyl vinyl ether the holding time is 7 days however for all other VOCs such as BTEX or C6-10 TRH then the holding time is 14 days.

****NOTE:** pH duplicates are reported as a range NOT as RPD

Units

mg/kg: milligrams per kilogram

mg/L: milligrams per litre

ug/L: micrograms per litre

ppm: Parts per million

ppb: Parts per billion

%: Percentage

org/100mL: Organisms per 100 millilitres

NTU: Nephelometric Turbidity Units

MPN/100mL: Most Probable Number of organisms per 100 millilitres

Terms

Dry	Where a moisture has been determined on a solid sample the result is expressed on a dry basis.
LOR	Limit of Reporting.
SPIKE	Addition of the analyte to the sample and reported as percentage recovery.
RPD	Relative Percent Difference between two Duplicate pieces of analysis.
LCS	Laboratory Control Sample - reported as percent recovery.
CRM	Certified Reference Material - reported as percent recovery.
Method Blank	In the case of solid samples these are performed on laboratory certified clean sands and in the case of water samples these are performed on de-ionised water.
Surr - Surrogate	The addition of a like compound to the analyte target and reported as percentage recovery.
Duplicate	A second piece of analysis from the same sample and reported in the same units as the result to show comparison.
USEPA	United States Environmental Protection Agency
APHA	American Public Health Association
TCLP	Toxicity Characteristic Leaching Procedure
COC	Chain of Custody
SRA	Sample Receipt Advice
QSM	US Department of Defense Quality Systems Manual Version 5.3
CP	Client Parent - QC was performed on samples pertaining to this report
NCP	Non-Client Parent - QC performed on samples not pertaining to this report, QC is representative of the sequence or batch that client samples were analysed within.
TEQ	Toxic Equivalency Quotient

QC - Acceptance Criteria

RPD Duplicates: Global RPD Duplicates Acceptance Criteria is 30% however the following acceptance guidelines are equally applicable:

Results <10 times the LOR : No Limit

Results between 10-20 times the LOR : RPD must lie between 0-50%

Results >20 times the LOR : RPD must lie between 0-30%

Surrogate Recoveries: Recoveries must lie between 20-130% Phenols & 50-150% PFASs

PFAS field samples that contain surrogate recoveries in excess of the QC limit designated in QSM 5.3 where no positive PFAS results have been reported have been reviewed and no data was affected.

WA DWER (n=10): PFBA, PFPeA, PFHxA, PFHpA, PFOA, PFBS, PFHxS, PFOS, 6:2 FTSA, 8:2 FTSA

QC Data General Comments

- Where a result is reported as a less than (<), higher than the nominated LOR, this is due to either matrix interference, extract dilution required due to interferences or contaminant levels within the sample, high moisture content or insufficient sample provided.
- Duplicate data shown within this report that states the word "BATCH" is a Batch Duplicate from outside of your sample batch, but within the laboratory sample batch at a 1:10 ratio. The Parent and Duplicate data shown is not data from your samples.
- Organochlorine Pesticide analysis - where reporting LCS data, Toxaphene & Chlordane are not added to the LCS.
- Organochlorine Pesticide analysis - where reporting Spike data, Toxaphene is not added to the Spike.
- Total Recoverable Hydrocarbons - where reporting Spike & LCS data, a single spike of commercial Hydrocarbon products in the range of C12-C30 is added and it's Total Recovery is reported in the C10-C14 cell of the Report.
- pH and Free Chlorine analysed in the laboratory - Analysis on this test must begin within 30 minutes of sampling. Therefore laboratory analysis is unlikely to be completed within holding time. Analysis will begin as soon as possible after sample receipt.
- Recovery Data (Spikes & Surrogates) - where chromatographic interference does not allow the determination of Recovery the term "INT" appears against that analyte.
- Polychlorinated Biphenyls are spiked only using Aroclor 1260 in Matrix Spikes and LCS.
- For Matrix Spikes and LCS results a dash " - " in the report means that the specific analyte was not added to the QC sample.
- Duplicate RPDs are calculated from raw analytical data thus it is possible to have two sets of data.

Quality Control Results

Comments**Sample Integrity**

Custody Seals Intact (if used)	N/A
Attempt to Chill was evident	N/A
Sample correctly preserved	Yes
Appropriate sample containers have been used	Yes
Sample containers for volatile analysis received with minimal headspace	Yes
Samples received within HoldingTime	Yes
Some samples have been subcontracted	No

Authorised By

Andrew Black Analytical Services Manager
Gabriele Cordero Senior Analyst-Metal (NSW)

**Glenn Jackson
General Manager**

Final report - this Report replaces any previously issued Report

- Indicates Not Requested

* Indicates NATA accreditation does not cover the performance of this service

Measurement uncertainty of test data is available on request or please [click here](#).

Eurofins shall not be liable for loss, cost, damages or expenses incurred by the client, or any other person or company, resulting from the use of any information or interpretation given in this report. In no case shall Eurofins be liable for consequential damages including, but not limited to, lost profits, damages for failure to meet deadlines and lost production arising from this report. This document shall not be reproduced except in full and relates only to the items tested. Unless indicated otherwise, the tests were performed on the samples as received.

Ramboll Environ Australia Pty Ltd
 Level 3/100 Pacific Highway
 North Sydney
 NSW 2060



NATA Accredited
Accreditation Number 1261
Site Number 18217

Accredited for compliance with ISO/IEC 17025 – Testing
 The results of the tests, calibrations and/or
 measurements included in this document are traceable
 to Australian/national standards.

Attention: **Stephen Maxwell**

Report **716958-S**
 Project name **P28**
 Project ID **318000780**
 Received Date **May 01, 2020**

Client Sample ID			DVAC_LR(P28)	DVAC_MB(P28)
Sample Matrix			Dust	Dust
Eurofins Sample No.			S20-My01108	S20-My01109
Date Sampled			Apr 29, 2020	Apr 29, 2020
Test/Reference	LOR	Unit		
Heavy Metals				
Lead	5	mg/kg	23	18

Sample History

Where samples are submitted/analysed over several days, the last date of extraction and analysis is reported.

A recent review of our LIMS has resulted in the correction or clarification of some method identifications. Due to this, some of the method reference information on reports has changed. However, no substantive change has been made to our laboratory methods, and as such there is no change in the validity of current or previous results.

If the date and time of sampling are not provided, the Laboratory will not be responsible for compromised results should testing be performed outside the recommended holding time.

Description

Heavy Metals

Testing Site

Sydney

Extracted

May 08, 2020

Holding Time

180 Days

- Method: LTM-MET-3040 Metals in Waters, Soils & Sediments by ICP-MS

Australia

Melbourne
6 Monterey Road
Dandenong South VIC 3175
Phone : +61 3 8564 5000
NATA # 1261
Site # 1254 & 14271

Sydney
Unit F3, Building F
16 Mars Road
Lane Cove West NSW 2066
Phone : +61 2 9900 8400
NATA # 1261 Site # 18217

Brisbane
1/21 Smallwood Place
Murarrie QLD 4172
Phone : +61 7 3902 4600
NATA # 1261 Site # 20794

Perth
2/91 Leach Highway
Kewdale WA 6105
Phone : +61 8 9251 9600
NATA # 1261
Site # 23736

New Zealand

Auckland
35 O'Rorke Road
Penrose, Auckland 1061
Phone : +64 9 526 45 51
IANZ # 1327

Christchurch
43 Detroit Drive
Rolleston, Christchurch 7675
Phone : 0800 856 450
IANZ # 1290

Company Name: Ramboll Australia Pty Ltd
Address: Level 3/100 Pacific Highway
North Sydney
NSW 2060

Project Name: P28
Project ID: 318000780

Order No.:
Report #: 716958
Phone: 02 9954 8118
Fax: 02 9954 8150

Received: May 1, 2020 12:00 PM
Due: May 8, 2020
Priority: 5 Day
Contact Name: Stephen Maxwell

Eurofins Analytical Services Manager : Andrew Black

Sample Detail						Lead	Mass of sample*
Melbourne Laboratory - NATA Site # 1254 & 14271							
Sydney Laboratory - NATA Site # 18217						X	X
Brisbane Laboratory - NATA Site # 20794							
Perth Laboratory - NATA Site # 23736							
External Laboratory							
No	Sample ID	Sample Date	Sampling Time	Matrix	LAB ID		
1	DVAC_LR(P28)	Apr 29, 2020		Dust	S20-My01108	X	X
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4	DSWAB_FE(P28)	Apr 29, 2020		Wipes	S20-My01111	X	
5	DSWAB_MH(P28)	Apr 29, 2020		Wipes	S20-My01112	X	
Test Counts						5	2

Internal Quality Control Review and Glossary

General

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Quality Control Results

Comments**Sample Integrity**

Custody Seals Intact (if used)	N/A
Attempt to Chill was evident	N/A
Sample correctly preserved	Yes
Appropriate sample containers have been used	Yes
Sample containers for volatile analysis received with minimal headspace	Yes
Samples received within HoldingTime	Yes
Some samples have been subcontracted	No

Authorised By

Andrew Black Analytical Services Manager
Gabriele Cordero Senior Analyst-Metal (NSW)

**Glenn Jackson
General Manager**

Final report - this Report replaces any previously issued Report

- Indicates Not Requested

* Indicates NATA accreditation does not cover the performance of this service

Measurement uncertainty of test data is available on request or please [click here](#).

Eurofins shall not be liable for loss, cost, damages or expenses incurred by the client, or any other person or company, resulting from the use of any information or interpretation given in this report. In no case shall Eurofins be liable for consequential damages including, but not limited to, lost profits, damages for failure to meet deadlines and lost production arising from this report. This document shall not be reproduced except in full and relates only to the items tested. Unless indicated otherwise, the tests were performed on the samples as received.



CHAIN OF CUSTODY RECORD

LAB 10 005 036 52

Cydney Laboratory
Unit F3 Bld F, 16 Mars Rd, Lane Cove West, NSW 2066
02 9390 8400 EnviroSamples@eurofins.com

Brisbane Laboratory
Unit 1, 21 Smalwood Pl, Muramba, QLD 4172
07 3907 4600 EnviroSampleQLD@eurofins.com

Perth Laboratory
Unit 2, 91 Leach Highway, Kewdale WA 6105
08 9251 9600 EnviroSampleWA@eurofins.com

Melbourne Laboratory
2 Kingsgate Town Close, Oakleigh, VIC 3166
03 8564 5000 EnviroSampleVIC@eurofins.com

Company Ramboll **Project No** 318000780 **Project Name** Lead

Address 50 Glebe Road the Junction **Analyses** (Note: Where metals are requested, please specify "Total" or "Filtered") SUITE code must be used to attract SUITE pricing

Contact Name Stephen Maxwell **Project Manager** EDD Forrat (ES&at EQUIS)

Phone No **Signature** Stephen Maxwell **Excel and PDF**

Special Directions **Signature** **Sampler(s)** JK + RC **SMI** smaxwell@ramboll.com
asiabac-accounts@ramboll.com

Purchase Order **Signature** **Handed over by** **Email for Invoice** smaxwell@ramboll.com

Quote ID No 180813RAMAN_1 **Signature** **Email for Results** sblackwell@ramboll.com
rcondon@ramboll.com
shyde@ramboll.com

No **Client Sample ID** **Sampled Date/Time (dd/mm/yy hh:mm)** **Matrix (Solid (\$), Water (W))** **Turnaround Time (TAT) Requirements (submit will be 5 days if not ticked)**

1 P29_HA01_0.0 20/4/20 S X M13 (Al, As, Ba, Be, Cd, Cr, Co, Cu, Fe, Pb, Mn, Hg, Ni, Zn) total

2 P29_HA01_0.2 20/4/20 S X M13 (Al, As, Ba, Be, Cd, Cr, Co, Cu, Fe, Pb, Mn, Hg, Ni, Zn) dissolved

3 P29_HA02_0.0 20/4/20 S X

4 P29_HA02_0.2 20/4/20 S X

5 P29_HA03_0.0 20/4/20 S X

6 P29_HA03_0.2 20/4/20 S X

7 P29_HA04_0.0 20/4/20 S X

8 P29_HA05_0.0 20/4/20 S X

9 P29_HA05_0.0 20/4/20 S X

10 P29_SURFACE1 20/4/20 S X

Total Counts 10

Method of Shipment Courier # Hand Delivered Postal **Name** **Signature**

Eurofins | mgmt **Received By** **Signature** **Date** 06/04/20 **Time** 2:36 PM **Temperature** 24.8°C

Laboratory Use Only **Received By** **Signature** **Date** **Time** **Report No**

Submission of samples to the laboratory will be deemed as acceptance of Eurofins | mgmt Standard Terms and Conditions unless agreed otherwise. A copy of Eurofins | mgmt Standard Terms and Conditions is available on request.
Eurofins Environment Testing Australia Pty Ltd trading as Eurofins | mgmt

Pydney Laboratory
 Unit F3 Bldg 16 Mars Rd Lane Cove West NSW 2066
 02 9900 9400 EnviroSamplesNSW@eurofins.com

Brisbane Laboratory
 Unit 1, 21 Smallwood Pl, Murrie QLD 4172
 07 3902 4900 EnviroSampleQLD@eurofins.com

Perth Laboratory
 Unit 2, 91 Leach Highway, Kewdale WA 6105
 08 9251 9600 EnviroSampleWA@eurofins.com

Melbourne Laboratory
 2 Kingston Court, Camberley VIC 3185
 03 8964 5000 EnviroSampleVIC@eurofins.com

Company Ramboll **Project No** 318000780 **Project Name** Lead

Address 50 Glebe Road the Junction **Project Name** Lead

Contact Name Stephen Maxwell **Analyses** (Note: Where methods are requested, please specify "Total" or "Filtered") SUITE code must be used in all test SUITE pricing
 M13 (Al, As, Ba, Be, Cd, Cr, Co, Cu, Fe, Pb, Mn, Hg, Ni, Zn) total
 M13 (Al, As, Ba, Be, Cd, Cr, Co, Cu, Fe, Pb, Mn, Hg, Ni, Zn) dissolved

Phone No **Special Directions** **Purchase Order** **Quote ID No** 180813RAMN_1

No	Client Sample ID	Sampled Date/Time (dd/mm/yy hr:mm)	Matrix (Solid (S) Water (W))	Method of Shipment	Received By	Signature	Date	Time	Temperature
1	P29_SURFACE2	20/04/20	S	<input type="checkbox"/> Courier # <input type="checkbox"/> Hand Delivered <input type="checkbox"/> Postal	Signature	Signature	____/____/____	____:____	____:____
2	P29_SURFACES3	20/04/20	S	<input type="checkbox"/> Courier # <input type="checkbox"/> Hand Delivered <input type="checkbox"/> Postal	Signature	Signature	____/____/____	____:____	____:____
				Total Counts					

Method of Shipment Courier # Hand Delivered Postal **Name** **Signature** **Date** **Time** **Temperature**

Eurofins | mgf **Received By** **Signature** **Date** **Time** **Temperature**

Laboratory Use Only **Received By** **Signature** **Date** **Time** **Temperature**

Submission of samples to the laboratory will be deemed as acceptance of Eurofins | mgf Standard Terms and Conditions unless agreed otherwise. A copy of Eurofins | mgf Standard Terms and Conditions is available on request.
 Eurofins Environment Testing Australia Pty Ltd trading as Eurofins | mgf

Handed over by JK + RC **SM**

Email for Invoice smaxwell@ramboll.com
 asiana@accounts@ramboll.com

Email for Results smaxwell@ramboll.com
 jblackwell@ramboll.com
 rondon@ramboll.com
 shyde@ramboll.com

Turnaround Time (TAT) Requirements (dependent on 5 day TAT)
 Overnight (9am)*
 1 Day* 2 Day*
 3 Day* 5 Day*
 Other () *Surcharge apply

1L Plastic
 250mL Plastic
 125mL Plastic
 200mL Amber Glass
 40mL VOA vial
 500mL PFAS Bottle
 Jar (Glass or HDPE)
 Other (Asbestos AS4564, WA Guidelines)

Sample Comments / Dangerous Goods Hazard Warning

Melbourne

6 Monterey Road
Dandenong South Vic 3175
Phone : +61 3 8564 5000
NATA # 1261
Site # 1254 & 14271

Sydney

Unit F3, Building F
16 Mars Road
Lane Cove West NSW 2066
Phone : +61 2 9900 8400
NATA # 1261 Site # 18217

Brisbane

1/21 Smallwood Place
Murarrie QLD 4172
Phone : +61 7 3902 4600
NATA # 1261 Site # 20794

Perth

2/91 Leach Highway
Kewdale WA 6105
Phone : +61 8 9251 9600
NATA # 1261 Site # 23736

Sample Receipt Advice

Company name: **Ramboll Australia Pty Ltd**

Contact name: **Stephen Maxwell**

Project ID: **318000780**

COC number: **Not provided**

Turn around time: **5 Day**

Date/Time received: **Apr 6, 2020 2:36 PM**

Eurofins reference: **712441**

Sample information

- A detailed list of analytes logged into our LIMS, is included in the attached summary table.
 - All samples have been received as described on the above COC.
 - COC has been completed correctly.
 - Attempt to chill was evident.
 - Appropriately preserved sample containers have been used.
 - All samples were received in good condition.
 - Samples have been provided with adequate time to commence analysis in accordance with the relevant holding times.
 - Appropriate sample containers have been used.
 - Split sample sent to requested external lab.
 - Some samples have been subcontracted.
- N/A Custody Seals intact (if used).

Contact notes

If you have any questions with respect to these samples please contact:

Andrew Black on Phone : (+61) 2 9900 8490 or by e.mail: AndrewBlack@eurofins.com

Results will be delivered electronically via e.mail to Stephen Maxwell - smaxwell@ramboll.com.

Note: A copy of these results will also be delivered to the general Ramboll Australia Pty Ltd email address.

Australia

Melbourne
6 Monterey Road
Dandenong South VIC 3175
Phone : +61 3 8564 5000
NATA # 1261
Site # 1254 & 14271

Sydney
Unit F3, Building F
16 Mars Road
Lane Cove West NSW 2066
Phone : +61 2 9900 8400
NATA # 1261 Site # 18217

Brisbane
1/21 Smallwood Place
Murarrie QLD 4172
Phone : +61 7 3902 4600
NATA # 1261 Site # 20794

Perth
2/91 Leach Highway
Kewdale WA 6105
Phone : +61 8 9251 9600
NATA # 1261
Site # 23736

New Zealand

Auckland
35 O'Rorke Road
Penrose, Auckland 1061
Phone : +64 9 526 45 51
IANZ # 1327

Christchurch
43 Detroit Drive
Rolleston, Christchurch 7675
Phone : 0800 856 450
IANZ # 1290

Company Name: Ramboll Australia Pty Ltd
Address: Level 3/100 Pacific Highway
North Sydney
NSW 2060

Order No.:
Report #: 712441
Phone: 02 9954 8118
Fax: 02 9954 8150

Received: Apr 6, 2020 2:36 PM
Due: Apr 15, 2020
Priority: 5 Day
Contact Name: Stephen Maxwell

Project Name:
Project ID: 318000780

Eurofins Analytical Services Manager : Andrew Black

Sample Detail						Lead	Moisture Set
Melbourne Laboratory - NATA Site # 1254 & 14271							
Sydney Laboratory - NATA Site # 18217						X	X
Brisbane Laboratory - NATA Site # 20794							
Perth Laboratory - NATA Site # 23736							
External Laboratory							
No	Sample ID	Sample Date	Sampling Time	Matrix	LAB ID		
1	P29_HA01_0.0	Apr 02, 2020		Soil	S20-Ap09564	X	X
2	P29_HA01_0.2	Apr 02, 2020		Soil	S20-Ap09565	X	X
3	P29_HA02_0.0	Apr 02, 2020		Soil	S20-Ap09566	X	X
4	P29_HA02_0.2	Apr 02, 2020		Soil	S20-Ap09567	X	X
5	P29_HA03_0.0	Apr 02, 2020		Soil	S20-Ap09568	X	X
6	P29_HA03_0.2	Apr 02, 2020		Soil	S20-Ap09569	X	X

Australia

Melbourne
6 Monterey Road
Dandenong South VIC 3175
Phone : +61 3 8564 5000
NATA # 1261
Site # 1254 & 14271

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NATA # 1261 Site # 18217

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NATA # 1261
Site # 23736

New Zealand

Auckland
35 O'Rorke Road
Penrose, Auckland 1061
Phone : +64 9 526 45 51
IANZ # 1327

Christchurch
43 Detroit Drive
Rolleston, Christchurch 7675
Phone : 0800 856 450
IANZ # 1290

Company Name: Ramboll Australia Pty Ltd
Address: Level 3/100 Pacific Highway
North Sydney
NSW 2060

Project Name:
Project ID: 318000780

Order No.:
Report #: 712441
Phone: 02 9954 8118
Fax: 02 9954 8150

Received: Apr 6, 2020 2:36 PM
Due: Apr 15, 2020
Priority: 5 Day
Contact Name: Stephen Maxwell

Eurofins Analytical Services Manager : Andrew Black

Sample Detail						Lead	Moisture Set
Melbourne Laboratory - NATA Site # 1254 & 14271							
Sydney Laboratory - NATA Site # 18217						X	X
Brisbane Laboratory - NATA Site # 20794							
Perth Laboratory - NATA Site # 23736							
7	P29_HA04_0	Apr 02, 2020		Soil	S20-Ap09570	X	X
8	P29_HA05_0	Apr 02, 2020		Soil	S20-Ap09571	X	X
9	P29_HA05_2	Apr 02, 2020		Soil	S20-Ap09572	X	X
10	P29_SURFAC E1	Apr 02, 2020		Soil	S20-Ap09573	X	X
11	P29_SURFAC E2	Apr 02, 2020		Soil	S20-Ap09574	X	X
12	P29_SURFAC E3	Apr 02, 2020		Soil	S20-Ap09575	X	X
Test Counts						12	12

Ramboll Environ Australia Pty Ltd
 Level 3/100 Pacific Highway
 North Sydney
 NSW 2060



NATA Accredited
 Accreditation Number 1261
 Site Number 18217

Accredited for compliance with ISO/IEC 17025 – Testing
 The results of the tests, calibrations and/or
 measurements included in this document are traceable
 to Australian/national standards.

Attention: Stephen Maxwell

Report 712441-S
 Project name
 Project ID 318000780
 Received Date Apr 06, 2020

Client Sample ID			P29_HA01_0.0	P29_HA01_0.2	P29_HA02_0.0	P29_HA02_0.2
Sample Matrix			Soil	Soil	Soil	Soil
Eurofins Sample No.			S20-Ap09564	S20-Ap09565	S20-Ap09566	S20-Ap09567
Date Sampled			Apr 02, 2020	Apr 02, 2020	Apr 02, 2020	Apr 02, 2020
Test/Reference	LOR	Unit				
Heavy Metals						
Lead	5	mg/kg	21	12	130	47
% Moisture	1	%	23	11	18	16

Client Sample ID			P29_HA03_0.0	P29_HA03_0.2	P29_HA04_0.0	P29_HA05_0.0
Sample Matrix			Soil	Soil	Soil	Soil
Eurofins Sample No.			S20-Ap09568	S20-Ap09569	S20-Ap09570	S20-Ap09571
Date Sampled			Apr 02, 2020	Apr 02, 2020	Apr 02, 2020	Apr 02, 2020
Test/Reference	LOR	Unit				
Heavy Metals						
Lead	5	mg/kg	100	33	47	160
% Moisture	1	%	11	10	12	19

Client Sample ID			P29_HA05_0.2	P29_SURFACE 1	P29_SURFACE 2	P29_SURFACE 3
Sample Matrix			Soil	Soil	Soil	Soil
Eurofins Sample No.			S20-Ap09572	S20-Ap09573	S20-Ap09574	S20-Ap09575
Date Sampled			Apr 02, 2020	Apr 02, 2020	Apr 02, 2020	Apr 02, 2020
Test/Reference	LOR	Unit				
Heavy Metals						
Lead	5	mg/kg	71	190	220	400
% Moisture	1	%	9.5	23	25	30

Sample History

Where samples are submitted/analysed over several days, the last date of extraction and analysis is reported.

A recent review of our LIMS has resulted in the correction or clarification of some method identifications. Due to this, some of the method reference information on reports has changed. However, no substantive change has been made to our laboratory methods, and as such there is no change in the validity of current or previous results.

If the date and time of sampling are not provided, the Laboratory will not be responsible for compromised results should testing be performed outside the recommended holding time.

Description

Heavy Metals

- Method: LTM-MET-3040 Metals in Waters, Soils & Sediments by ICP-MS

% Moisture

- Method: LTM-GEN-7080 Moisture

Testing Site

Sydney

Sydney

Extracted

Apr 09, 2020

Apr 07, 2020

Holding Time

180 Days

14 Days

Australia

Melbourne
6 Monterey Road
Dandenong South VIC 3175
Phone : +61 3 8564 5000
NATA # 1261
Site # 1254 & 14271

Sydney
Unit F3, Building F
16 Mars Road
Lane Cove West NSW 2066
Phone : +61 2 9900 8400
NATA # 1261 Site # 18217

Brisbane
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IANZ # 1327

Christchurch
43 Detroit Drive
Rolleston, Christchurch 7675
Phone : 0800 856 450
IANZ # 1290

Company Name: Ramboll Australia Pty Ltd
Address: Level 3/100 Pacific Highway
North Sydney
NSW 2060

Order No.:
Report #: 712441
Phone: 02 9954 8118
Fax: 02 9954 8150

Received: Apr 6, 2020 2:36 PM
Due: Apr 15, 2020
Priority: 5 Day
Contact Name: Stephen Maxwell

Project Name:
Project ID: 318000780

Eurofins Analytical Services Manager : Andrew Black

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Sydney Laboratory - NATA Site # 18217						X	X
Brisbane Laboratory - NATA Site # 20794							
Perth Laboratory - NATA Site # 23736							
External Laboratory							
No	Sample ID	Sample Date	Sampling Time	Matrix	LAB ID		
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3	P29_HA02_0.0	Apr 02, 2020		Soil	S20-Ap09566	X	X
4	P29_HA02_0.2	Apr 02, 2020		Soil	S20-Ap09567	X	X
5	P29_HA03_0.0	Apr 02, 2020		Soil	S20-Ap09568	X	X
6	P29_HA03_0.2	Apr 02, 2020		Soil	S20-Ap09569	X	X

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ABN – 50 005 085 521

web : www.eurofins.com.au

e.mail : EnviroSales@eurofins.com

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Internal Quality Control Review and Glossary

General

- Laboratory QC results for Method Blanks, Duplicates, Matrix Spikes, and Laboratory Control Samples follows guidelines delineated in the National Environment Protection (Assessment of Site Contamination) Measure 1999, as amended May 2013 and are included in this QC report where applicable. Additional QC data may be available on request.
- All soil/sediment/solid results are reported on a dry basis, unless otherwise stated.
- All biota/food results are reported on a wet weight basis on the edible portion, unless otherwise stated.
- Actual LORs are matrix dependant. Quoted LORs may be raised where sample extracts are diluted due to interferences.
- Results are uncorrected for matrix spikes or surrogate recoveries except for PFAS compounds.
- SVOC analysis on waters are performed on homogenised, unfiltered samples, unless noted otherwise.
- Samples were analysed on an 'as received' basis.
- Information identified on this report with blue colour, indicates data provided by customer, that may have an impact on the results.
- This report replaces any interim results previously issued.

Holding Times

Please refer to 'Sample Preservation and Container Guide' for holding times (QS3001).

For samples received on the last day of holding time, notification of testing requirements should have been received at least 6 hours prior to sample receipt deadlines as stated on the SRA.

If the Laboratory did not receive the information in the required timeframe, and regardless of any other integrity issues, suitably qualified results may still be reported.

Holding times apply from the date of sampling, therefore compliance to these may be outside the laboratory's control.

For VOCs containing vinyl chloride, styrene and 2-chloroethyl vinyl ether the holding time is 7 days however for all other VOCs such as BTEX or C6-10 TRH then the holding time is 14 days.

****NOTE:** pH duplicates are reported as a range NOT as RPD

Units

mg/kg: milligrams per kilogram

mg/L: milligrams per litre

ug/L: micrograms per litre

ppm: Parts per million

ppb: Parts per billion

%: Percentage

org/100mL: Organisms per 100 millilitres

NTU: Nephelometric Turbidity Units

MPN/100mL: Most Probable Number of organisms per 100 millilitres

Terms

Dry	Where a moisture has been determined on a solid sample the result is expressed on a dry basis.
LOR	Limit of Reporting.
SPIKE	Addition of the analyte to the sample and reported as percentage recovery.
RPD	Relative Percent Difference between two Duplicate pieces of analysis.
LCS	Laboratory Control Sample - reported as percent recovery.
CRM	Certified Reference Material - reported as percent recovery.
Method Blank	In the case of solid samples these are performed on laboratory certified clean sands and in the case of water samples these are performed on de-ionised water.
Surr - Surrogate	The addition of a like compound to the analyte target and reported as percentage recovery.
Duplicate	A second piece of analysis from the same sample and reported in the same units as the result to show comparison.
USEPA	United States Environmental Protection Agency
APHA	American Public Health Association
TCLP	Toxicity Characteristic Leaching Procedure
COC	Chain of Custody
SRA	Sample Receipt Advice
QSM	US Department of Defense Quality Systems Manual Version 5.3
CP	Client Parent - QC was performed on samples pertaining to this report
NCP	Non-Client Parent - QC performed on samples not pertaining to this report, QC is representative of the sequence or batch that client samples were analysed within.
TEQ	Toxic Equivalency Quotient

QC - Acceptance Criteria

RPD Duplicates: Global RPD Duplicates Acceptance Criteria is 30% however the following acceptance guidelines are equally applicable:

Results <10 times the LOR : No Limit

Results between 10-20 times the LOR : RPD must lie between 0-50%

Results >20 times the LOR : RPD must lie between 0-30%

Surrogate Recoveries: Recoveries must lie between 20-130% Phenols & 50-150% PFASs

PFAS field samples that contain surrogate recoveries in excess of the QC limit designated in QSM 5.3 where no positive PFAS results have been reported have been reviewed and no data was affected.

WA DWER (n=10): PFBA, PFPeA, PFHxA, PFHpA, PFOA, PFBS, PFHxS, PFOS, 6:2 FTSA, 8:2 FTSA

QC Data General Comments

- Where a result is reported as a less than (<), higher than the nominated LOR, this is due to either matrix interference, extract dilution required due to interferences or contaminant levels within the sample, high moisture content or insufficient sample provided.
- Duplicate data shown within this report that states the word "BATCH" is a Batch Duplicate from outside of your sample batch, but within the laboratory sample batch at a 1:10 ratio. The Parent and Duplicate data shown is not data from your samples.
- Organochlorine Pesticide analysis - where reporting LCS data, Toxaphene & Chlordane are not added to the LCS.
- Organochlorine Pesticide analysis - where reporting Spike data, Toxaphene is not added to the Spike.
- Total Recoverable Hydrocarbons - where reporting Spike & LCS data, a single spike of commercial Hydrocarbon products in the range of C12-C30 is added and it's Total Recovery is reported in the C10-C14 cell of the Report.
- pH and Free Chlorine analysed in the laboratory - Analysis on this test must begin within 30 minutes of sampling. Therefore laboratory analysis is unlikely to be completed within holding time. Analysis will begin as soon as possible after sample receipt.
- Recovery Data (Spikes & Surrogates) - where chromatographic interference does not allow the determination of Recovery the term "INT" appears against that analyte.
- Polychlorinated Biphenyls are spiked only using Aroclor 1260 in Matrix Spikes and LCS.
- For Matrix Spikes and LCS results a dash " - " in the report means that the specific analyte was not added to the QC sample.
- Duplicate RPDs are calculated from raw analytical data thus it is possible to have two sets of data.

Quality Control Results

Test				Units	Result 1			Acceptance Limits	Pass Limits	Qualifying Code		
Method Blank												
Heavy Metals												
Lead				mg/kg	< 5			5	Pass			
LCS - % Recovery												
Heavy Metals												
Lead				%	116			70-130	Pass			
Test	Lab Sample ID	QA Source	Units	Result 1			Acceptance Limits	Pass Limits	Qualifying Code			
Spike - % Recovery												
Heavy Metals												
Lead				S20-Ap09574	CP	%	109	70-130	Pass			
Test	Lab Sample ID	QA Source	Units	Result 1			Acceptance Limits	Pass Limits	Qualifying Code			
Duplicate												
Heavy Metals												
Lead				S20-Ap09564	CP	mg/kg	21	19	10	30%	Pass	
Duplicate												
Heavy Metals												
% Moisture				S20-Ap10676	NCP	%	17	16	5.0	30%	Pass	
Duplicate												
Heavy Metals												
Lead				S20-Ap09573	CP	mg/kg	190	110	49	30%	Fail	Q15

Comments
Sample Integrity

Custody Seals Intact (if used)	N/A
Attempt to Chill was evident	Yes
Sample correctly preserved	Yes
Appropriate sample containers have been used	Yes
Sample containers for volatile analysis received with minimal headspace	Yes
Samples received within HoldingTime	Yes
Some samples have been subcontracted	No

Qualifier Codes/Comments

Code	Description
Q15	The RPD reported passes Eurofins Environment Testing's QC - Acceptance Criteria as defined in the Internal Quality Control Review and Glossary page of this report.

Authorised By

Andrew Black	Analytical Services Manager
Gabriele Cordero	Senior Analyst-Metal (NSW)


**Glenn Jackson
General Manager**

Final report - this Report replaces any previously issued Report

- Indicates Not Requested

* Indicates NATA accreditation does not cover the performance of this service

Measurement uncertainty of test data is available on request or please [click here](#).

Eurofins shall not be liable for loss, cost, damages or expenses incurred by the client, or any other person or company, resulting from the use of any information or interpretation given in this report. In no case shall Eurofins be liable for consequential damages including, but not limited to, lost profits, damages for failure to meet deadlines and lost production arising from this report. This document shall not be reproduced except in full and relates only to the items tested. Unless indicated otherwise, the tests were performed on the samples as received.

Ramboll Environ Australia Pty Ltd
 Level 3/100 Pacific Highway
 North Sydney
 NSW 2060



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Accreditation Number 1261
Site Number 18217

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 The results of the tests, calibrations and/or
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Attention: Stephen Maxwell

Report 712798-S-V3
 Project name 318000780
 Received Date Apr 04, 2020

Client Sample ID			SED7
Sample Matrix			Sediment
Eurofins Sample No.			S20-Ap12281
Date Sampled			Apr 02, 2020
Test/Reference	LOR	Unit	
Heavy Metals			
Aluminium	10	mg/kg	5200
Arsenic	2	mg/kg	6.4
Barium	10	mg/kg	60
Beryllium	2	mg/kg	< 2
Cadmium	0.4	mg/kg	4.6
Chromium	5	mg/kg	8.1
Cobalt	5	mg/kg	< 5
Copper	5	mg/kg	190
Iron	20	mg/kg	7600
Lead	5	mg/kg	210
Manganese	5	mg/kg	140
Mercury	0.1	mg/kg	< 0.1
Nickel	5	mg/kg	< 5
Zinc	5	mg/kg	580

Sample History

Where samples are submitted/analysed over several days, the last date of extraction and analysis is reported.

A recent review of our LIMS has resulted in the correction or clarification of some method identifications. Due to this, some of the method reference information on reports has changed. However, no substantive change has been made to our laboratory methods, and as such there is no change in the validity of current or previous results.

If the date and time of sampling are not provided, the Laboratory will not be responsible for compromised results should testing be performed outside the recommended holding time.

Description

Heavy Metals

Testing Site

Sydney

Extracted

Apr 16, 2020

Holding Time

180 Days

- Method: LTM-MET-3040 Metals in Waters, Soils & Sediments by ICP-MS

Australia

Melbourne
6 Monterey Road
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Phone : +61 3 8564 5000
NATA # 1261
Site # 1254 & 14271

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NATA # 1261 Site # 18217

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Phone : +64 9 526 45 51
IANZ # 1327

Christchurch
43 Detroit Drive
Rolleston, Christchurch 7675
Phone : 0800 856 450
IANZ # 1290

Company Name:	Ramboll Australia Pty Ltd	Order No.:		Received:	Apr 8, 2020 2:59 PM
Address:	Level 3/100 Pacific Highway North Sydney NSW 2060	Report #:	712798	Due:	Apr 17, 2020
Project Name:	318000780	Phone:	02 9954 8118	Priority:	5 Day
		Fax:	02 9954 8150	Contact Name:	Jordyn Kirsch

Eurofins Analytical Services Manager : Andrew Black

Sample Detail						Aluminium	Arsenic	Barium	Beryllium	Cadmium	CANCELLED	Chromium	Cobalt	Copper	Iron	Lead	Manganese	Mercury	Nickel	Zinc	
Melbourne Laboratory - NATA Site # 1254 & 14271																					
Sydney Laboratory - NATA Site # 18217						X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X
Brisbane Laboratory - NATA Site # 20794																					
Perth Laboratory - NATA Site # 23736																					
External Laboratory																					
No	Sample ID	Sample Date	Sampling Time	Matrix	LAB ID																
1	SED1	Apr 01, 2020		Sediment	S20-Ap12274	X	X	X	X	X		X	X	X	X	X	X	X	X	X	
2	SED1_UP	Apr 01, 2020		Sediment	S20-Ap12275	X	X	X	X	X		X	X	X	X	X	X	X	X	X	
3	SED2	Apr 01, 2020		Sediment	S20-Ap12276	X	X	X	X	X		X	X	X	X	X	X	X	X	X	
4	SED3	Apr 01, 2020		Sediment	S20-Ap12277	X	X	X	X	X		X	X	X	X	X	X	X	X	X	
5	SED4	Apr 01, 2020		Sediment	S20-Ap12278	X	X	X	X	X		X	X	X	X	X	X	X	X	X	
6	SED5	Apr 01, 2020		Sediment	S20-Ap12279	X	X	X	X	X		X	X	X	X	X	X	X	X	X	
7	SED6	Apr 01, 2020		Sediment	S20-Ap12280	X	X	X	X	X		X	X	X	X	X	X	X	X	X	
8	SED7	Apr 02, 2020		Sediment	S20-Ap12281	X	X	X	X	X		X	X	X	X	X	X	X	X	X	
9	SED8	Apr 02, 2020		Sediment	S20-Ap12282	X	X	X	X	X		X	X	X	X	X	X	X	X	X	
10	SED9	Apr 02, 2020		Sediment	S20-Ap12283	X	X	X	X	X		X	X	X	X	X	X	X	X	X	
11	SED_D01_020	Apr 02, 2020		Sediment	S20-Ap12284	X	X	X	X	X		X	X	X	X	X	X	X	X	X	

Australia

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Brisbane Laboratory - NATA Site # 20794																			
Perth Laboratory - NATA Site # 23736																			
	420																		
12	SED_T01_020 420	Apr 02, 2020		Sediment	S20-Ap12285					X									
13	SW1	Apr 01, 2020		Water	S20-Ap12286	X	X	X	X		X	X	X	X	X	X	X	X	X
14	SW1_UP	Apr 01, 2020		Water	S20-Ap12287	X	X	X	X		X	X	X	X	X	X	X	X	X
15	SW2	Apr 01, 2020		Water	S20-Ap12288	X	X	X	X		X	X	X	X	X	X	X	X	X
16	SW3	Apr 01, 2020		Water	S20-Ap12289	X	X	X	X		X	X	X	X	X	X	X	X	X
17	SW4	Apr 01, 2020		Water	S20-Ap12290	X	X	X	X		X	X	X	X	X	X	X	X	X
18	SW7	Apr 02, 2020		Water	S20-Ap12291	X	X	X	X		X	X	X	X	X	X	X	X	X
19	SW8	Apr 01, 2020		Water	S20-Ap12292	X	X	X	X		X	X	X	X	X	X	X	X	X
20	SW9	Apr 01, 2020		Water	S20-Ap12293	X	X	X	X		X	X	X	X	X	X	X	X	X
21	D01_020420	Apr 01, 2020		Water	S20-Ap12294	X	X	X	X		X	X	X	X	X	X	X	X	X
22	T01_020420	Apr 01, 2020		Water	S20-Ap12295					X									
Test Counts					20	20	20	20	20	2	20	20	20	20	20	20	20	20	20

Internal Quality Control Review and Glossary
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ug/L: micrograms per litre

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NTU: Nephelometric Turbidity Units

MPN/100mL: Most Probable Number of organisms per 100 millilitres

Terms

Dry	Where a moisture has been determined on a solid sample the result is expressed on a dry basis.
LOR	Limit of Reporting.
SPIKE	Addition of the analyte to the sample and reported as percentage recovery.
RPD	Relative Percent Difference between two Duplicate pieces of analysis.
LCS	Laboratory Control Sample - reported as percent recovery.
CRM	Certified Reference Material - reported as percent recovery.
Method Blank	In the case of solid samples these are performed on laboratory certified clean sands and in the case of water samples these are performed on de-ionised water.
Surr - Surrogate	The addition of a like compound to the analyte target and reported as percentage recovery.
Duplicate	A second piece of analysis from the same sample and reported in the same units as the result to show comparison.
USEPA	United States Environmental Protection Agency
APHA	American Public Health Association
TCLP	Toxicity Characteristic Leaching Procedure
COC	Chain of Custody
SRA	Sample Receipt Advice
QSM	US Department of Defense Quality Systems Manual Version 5.3
CP	Client Parent - QC was performed on samples pertaining to this report
NCP	Non-Client Parent - QC performed on samples not pertaining to this report, QC is representative of the sequence or batch that client samples were analysed within.
TEQ	Toxic Equivalency Quotient

QC - Acceptance Criteria

RPD Duplicates: Global RPD Duplicates Acceptance Criteria is 30% however the following acceptance guidelines are equally applicable:

Results <10 times the LOR : No Limit

Results between 10-20 times the LOR : RPD must lie between 0-50%

Results >20 times the LOR : RPD must lie between 0-30%

Surrogate Recoveries: Recoveries must lie between 20-130% Phenols & 50-150% PFASs

PFAS field samples that contain surrogate recoveries in excess of the QC limit designated in QSM 5.3 where no positive PFAS results have been reported have been reviewed and no data was affected.

WA DWER (n=10): PFBA, PFPeA, PFHxA, PFHpA, PFOA, PFBS, PFHxS, PFOS, 6:2 FTSA, 8:2 FTSA

QC Data General Comments

- Where a result is reported as a less than (<), higher than the nominated LOR, this is due to either matrix interference, extract dilution required due to interferences or contaminant levels within the sample, high moisture content or insufficient sample provided.
- Duplicate data shown within this report that states the word "BATCH" is a Batch Duplicate from outside of your sample batch, but within the laboratory sample batch at a 1:10 ratio. The Parent and Duplicate data shown is not data from your samples.
- Organochlorine Pesticide analysis - where reporting LCS data, Toxaphene & Chlordane are not added to the LCS.
- Organochlorine Pesticide analysis - where reporting Spike data, Toxaphene is not added to the Spike.
- Total Recoverable Hydrocarbons - where reporting Spike & LCS data, a single spike of commercial Hydrocarbon products in the range of C12-C30 is added and it's Total Recovery is reported in the C10-C14 cell of the Report.
- pH and Free Chlorine analysed in the laboratory - Analysis on this test must begin within 30 minutes of sampling. Therefore laboratory analysis is unlikely to be completed within holding time. Analysis will begin as soon as possible after sample receipt.
- Recovery Data (Spikes & Surrogates) - where chromatographic interference does not allow the determination of Recovery the term "INT" appears against that analyte.
- Polychlorinated Biphenyls are spiked only using Aroclor 1260 in Matrix Spikes and LCS.
- For Matrix Spikes and LCS results a dash " - " in the report means that the specific analyte was not added to the QC sample.
- Duplicate RPDs are calculated from raw analytical data thus it is possible to have two sets of data.

Quality Control Results

Test		Units	Result 1			Acceptance Limits	Pass Limits	Qualifying Code
Method Blank								
Heavy Metals								
Aluminium		mg/kg	< 10			10	Pass	
Arsenic		mg/kg	< 2			2	Pass	
Barium		mg/kg	< 10			10	Pass	
Beryllium		mg/kg	< 2			2	Pass	
Cadmium		mg/kg	< 0.4			0.4	Pass	
Chromium		mg/kg	< 5			5	Pass	
Cobalt		mg/kg	< 5			5	Pass	
Copper		mg/kg	< 5			5	Pass	
Iron		mg/kg	< 20			20	Pass	
Lead		mg/kg	< 5			5	Pass	
Manganese		mg/kg	< 5			5	Pass	
Mercury		mg/kg	< 0.1			0.1	Pass	
Nickel		mg/kg	< 5			5	Pass	
Zinc		mg/kg	< 5			5	Pass	
LCS - % Recovery								
Heavy Metals								
Aluminium		%	83			70-130	Pass	
Arsenic		%	95			70-130	Pass	
Barium		%	101			70-130	Pass	
Beryllium		%	100			70-130	Pass	
Cadmium		%	94			70-130	Pass	
Chromium		%	91			70-130	Pass	
Cobalt		%	90			70-130	Pass	
Copper		%	88			70-130	Pass	
Iron		%	85			70-130	Pass	
Lead		%	89			70-130	Pass	
Manganese		%	92			70-130	Pass	
Mercury		%	90			70-130	Pass	
Nickel		%	89			70-130	Pass	
Zinc		%	89			70-130	Pass	
Test	Lab Sample ID	QA Source	Units	Result 1		Acceptance Limits	Pass Limits	Qualifying Code
Spike - % Recovery								
Heavy Metals								
				Result 1				
Arsenic	S20-Ap20511	NCP	%	106		70-130	Pass	
Barium	S20-Ap20511	NCP	%	86		70-130	Pass	
Beryllium	S20-Ap20511	NCP	%	94		70-130	Pass	
Cadmium	S20-Ap20511	NCP	%	110		70-130	Pass	
Chromium	S20-Ap20511	NCP	%	102		70-130	Pass	
Cobalt	S20-Ap20511	NCP	%	100		70-130	Pass	
Copper	S20-Ap20511	NCP	%	117		70-130	Pass	
Lead	S20-Ap20511	NCP	%	87		70-130	Pass	
Manganese	S20-Ap20511	NCP	%	89		70-130	Pass	
Mercury	S20-Ap20511	NCP	%	107		70-130	Pass	
Nickel	S20-Ap20511	NCP	%	98		70-130	Pass	
Zinc	S20-Ap17231	NCP	%	90		70-130	Pass	
Spike - % Recovery								
Heavy Metals								
				Result 1				
Arsenic	S20-Ap20511	NCP	%	106		70-130	Pass	
Barium	S20-Ap20511	NCP	%	86		70-130	Pass	

Test	Lab Sample ID	QA Source	Units	Result 1			Acceptance Limits	Pass Limits	Qualifying Code
Beryllium	S20-Ap20511	NCP	%	94			70-130	Pass	
Cadmium	S20-Ap20511	NCP	%	110			70-130	Pass	
Chromium	S20-Ap20511	NCP	%	102			70-130	Pass	
Cobalt	S20-Ap20511	NCP	%	100			70-130	Pass	
Copper	S20-Ap20511	NCP	%	117			70-130	Pass	
Lead	S20-Ap20511	NCP	%	87			70-130	Pass	
Manganese	S20-Ap20511	NCP	%	89			70-130	Pass	
Mercury	S20-Ap20511	NCP	%	107			70-130	Pass	
Nickel	S20-Ap20511	NCP	%	98			70-130	Pass	
Zinc	S20-Ap14369	NCP	%	93			70-130	Pass	
Test	Lab Sample ID	QA Source	Units	Result 1			Acceptance Limits	Pass Limits	Qualifying Code
Duplicate									
Heavy Metals				Result 1	Result 2	RPD			
Aluminium	S20-Ap22929	NCP	mg/kg	10000	11000	4.0	30%	Pass	
Arsenic	S20-Ap22929	NCP	mg/kg	10	10	4.0	30%	Pass	
Barium	S20-Ap22929	NCP	mg/kg	260	270	<1	30%	Pass	
Beryllium	S20-Ap22929	NCP	mg/kg	< 2	< 2	<1	30%	Pass	
Cadmium	S20-Ap22929	NCP	mg/kg	< 0.4	< 0.4	<1	30%	Pass	
Chromium	S20-Ap22929	NCP	mg/kg	27	29	4.0	30%	Pass	
Cobalt	S20-Ap22929	NCP	mg/kg	19	20	2.0	30%	Pass	
Copper	S20-Ap22929	NCP	mg/kg	38	39	3.0	30%	Pass	
Iron	S20-Ap22929	NCP	mg/kg	36000	37000	4.0	30%	Pass	
Lead	S20-Ap22929	NCP	mg/kg	25	26	5.0	30%	Pass	
Manganese	S20-Ap22929	NCP	mg/kg	560	580	3.0	30%	Pass	
Mercury	S20-Ap22929	NCP	mg/kg	< 0.1	< 0.1	<1	30%	Pass	
Nickel	S20-Ap22929	NCP	mg/kg	26	26	2.0	30%	Pass	
Zinc	S20-Ap22929	NCP	mg/kg	140	140	3.0	30%	Pass	
Duplicate									
Heavy Metals				Result 1	Result 2	RPD			
Aluminium	S20-Ap22929	NCP	mg/kg	10000	**	4.0	30%	Pass	
Arsenic	S20-Ap22929	NCP	mg/kg	10	**	4.0	30%	Pass	
Barium	S20-Ap22929	NCP	mg/kg	260	**	<1	30%	Pass	
Beryllium	S20-Ap22929	NCP	mg/kg	< 2	**	1.0	30%	Pass	
Cadmium	S20-Ap22929	NCP	mg/kg	< 0.4	**	4.0	30%	Pass	
Chromium	S20-Ap22929	NCP	mg/kg	27	**	4.0	30%	Pass	
Cobalt	S20-Ap22929	NCP	mg/kg	19	**	2.0	30%	Pass	
Copper	S20-Ap22929	NCP	mg/kg	38	**	3.0	30%	Pass	
Iron	S20-Ap22929	NCP	mg/kg	36000	**	4.0	30%	Pass	
Lead	S20-Ap22929	NCP	mg/kg	25	**	5.0	30%	Pass	
Manganese	S20-Ap22929	NCP	mg/kg	560	**	3.0	30%	Pass	
Mercury	S20-Ap22929	NCP	mg/kg	< 0.1	**	5.0	30%	Pass	
Nickel	S20-Ap22929	NCP	mg/kg	26	**	2.0	30%	Pass	
Zinc	S20-Ap22929	NCP	mg/kg	140	**	3.0	30%	Pass	

Comments

New version to remove samples SW7 and SED7

Sample Integrity

Custody Seals Intact (if used)	N/A
Attempt to Chill was evident	Yes
Sample correctly preserved	Yes
Appropriate sample containers have been used	Yes
Sample containers for volatile analysis received with minimal headspace	Yes
Samples received within HoldingTime	Yes
Some samples have been subcontracted	No

Authorised By

Andrew Black Analytical Services Manager
Gabriele Cordero Senior Analyst-Metal (NSW)

**Glenn Jackson
General Manager**

Final report - this Report replaces any previously issued Report

- Indicates Not Requested

* Indicates NATA accreditation does not cover the performance of this service

Measurement uncertainty of test data is available on request or please [click here](#).

Eurofins shall not be liable for loss, cost, damages or expenses incurred by the client, or any other person or company, resulting from the use of any information or interpretation given in this report. In no case shall Eurofins be liable for consequential damages including, but not limited to, lost profits, damages for failure to meet deadlines and lost production arising from this report. This document shall not be reproduced except in full and relates only to the items tested. Unless indicated otherwise, the tests were performed on the samples as received.

Ramboll Environ Australia Pty Ltd
 Level 3/100 Pacific Highway
 North Sydney
 NSW 2060



NATA Accredited
Accreditation Number 1261
Site Number 18217

Accredited for compliance with ISO/IEC 17025 – Testing
 The results of the tests, calibrations and/or
 measurements included in this document are traceable
 to Australian/national standards.

Attention: **Stephen Maxwell**

Report **712798-W-V3**
 Project name **318000780**
 Received Date **Apr 04, 2020**

Client Sample ID			SW7
Sample Matrix			Water
Eurofins Sample No.			S20-Ap12291
Date Sampled			Apr 02, 2020
Test/Reference	LOR	Unit	
Heavy Metals			
Aluminium	0.05	mg/L	0.21
Arsenic	0.001	mg/L	0.003
Barium	0.02	mg/L	0.08
Beryllium	0.001	mg/L	< 0.001
Cadmium	0.0002	mg/L	0.0009
Chromium	0.001	mg/L	0.001
Cobalt	0.001	mg/L	0.002
Copper	0.001	mg/L	0.022
Iron	0.05	mg/L	4.2
Lead	0.001	mg/L	0.020
Manganese	0.005	mg/L	0.41
Mercury	0.0001	mg/L	< 0.0001
Nickel	0.001	mg/L	0.006
Zinc	0.005	mg/L	0.15

Sample History

Where samples are submitted/analysed over several days, the last date of extraction and analysis is reported.

A recent review of our LIMS has resulted in the correction or clarification of some method identifications. Due to this, some of the method reference information on reports has changed. However, no substantive change has been made to our laboratory methods, and as such there is no change in the validity of current or previous results.

If the date and time of sampling are not provided, the Laboratory will not be responsible for compromised results should testing be performed outside the recommended holding time.

Description

Heavy Metals

Testing Site

Sydney

Extracted

Apr 09, 2020

Holding Time

180 Days

- Method: LTM-MET-3040 Metals in Waters, Soils & Sediments by ICP-MS

Australia

Melbourne
6 Monterey Road
Dandenong South VIC 3175
Phone : +61 3 8564 5000
NATA # 1261
Site # 1254 & 14271

Sydney
Unit F3, Building F
16 Mars Road
Lane Cove West NSW 2066
Phone : +61 2 9900 8400
NATA # 1261 Site # 18217

Brisbane
1/21 Smallwood Place
Murarrie QLD 4172
Phone : +61 7 3902 4600
NATA # 1261 Site # 20794

Perth
2/91 Leach Highway
Kewdale WA 6105
Phone : +61 8 9251 9600
NATA # 1261
Site # 23736

New Zealand

Auckland
35 O'Rorke Road
Penrose, Auckland 1061
Phone : +64 9 526 45 51
IANZ # 1327

Christchurch
43 Detroit Drive
Rolleston, Christchurch 7675
Phone : 0800 856 450
IANZ # 1290

Company Name:	Ramboll Australia Pty Ltd	Order No.:		Received:	Apr 8, 2020 2:59 PM
Address:	Level 3/100 Pacific Highway North Sydney NSW 2060	Report #:	712798	Due:	Apr 17, 2020
Project Name:	318000780	Phone:	02 9954 8118	Priority:	5 Day
		Fax:	02 9954 8150	Contact Name:	Jordyn Kirsch

Eurofins Analytical Services Manager : Andrew Black

Sample Detail						Aluminium	Arsenic	Barium	Beryllium	Cadmium	CANCELLED	Chromium	Cobalt	Copper	Iron	Lead	Manganese	Mercury	Nickel	Zinc	
Melbourne Laboratory - NATA Site # 1254 & 14271																					
Sydney Laboratory - NATA Site # 18217						X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X
Brisbane Laboratory - NATA Site # 20794																					
Perth Laboratory - NATA Site # 23736																					
External Laboratory																					
No	Sample ID	Sample Date	Sampling Time	Matrix	LAB ID																
1	SED1	Apr 01, 2020		Sediment	S20-Ap12274	X	X	X	X	X		X	X	X	X	X	X	X	X	X	
2	SED1_UP	Apr 01, 2020		Sediment	S20-Ap12275	X	X	X	X	X		X	X	X	X	X	X	X	X	X	
3	SED2	Apr 01, 2020		Sediment	S20-Ap12276	X	X	X	X	X		X	X	X	X	X	X	X	X	X	
4	SED3	Apr 01, 2020		Sediment	S20-Ap12277	X	X	X	X	X		X	X	X	X	X	X	X	X	X	
5	SED4	Apr 01, 2020		Sediment	S20-Ap12278	X	X	X	X	X		X	X	X	X	X	X	X	X	X	
6	SED5	Apr 01, 2020		Sediment	S20-Ap12279	X	X	X	X	X		X	X	X	X	X	X	X	X	X	
7	SED6	Apr 01, 2020		Sediment	S20-Ap12280	X	X	X	X	X		X	X	X	X	X	X	X	X	X	
8	SED7	Apr 02, 2020		Sediment	S20-Ap12281	X	X	X	X	X		X	X	X	X	X	X	X	X	X	
9	SED8	Apr 02, 2020		Sediment	S20-Ap12282	X	X	X	X	X		X	X	X	X	X	X	X	X	X	
10	SED9	Apr 02, 2020		Sediment	S20-Ap12283	X	X	X	X	X		X	X	X	X	X	X	X	X	X	
11	SED_D01_020	Apr 02, 2020		Sediment	S20-Ap12284	X	X	X	X	X		X	X	X	X	X	X	X	X	X	

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ABN – 50 005 085 521

web : www.eurofins.com.au

e.mail : EnviroSales@eurofins.com

Company Name: Ramboll Australia Pty Ltd
Address: Level 3/100 Pacific Highway
North Sydney
NSW 2060
Project Name: 318000780

Order No.:
Report #: 712798
Phone: 02 9954 8118
Fax: 02 9954 8150

Received: Apr 8, 2020 2:59 PM
Due: Apr 17, 2020
Priority: 5 Day
Contact Name: Jordyn Kirsch

Eurofins Analytical Services Manager : Andrew Black

Sample Detail					Aluminium	Arsenic	Barium	Beryllium	Cadmium	CANCELLED	Chromium	Cobalt	Copper	Iron	Lead	Manganese	Mercury	Nickel	Zinc
Melbourne Laboratory - NATA Site # 1254 & 14271																			
Sydney Laboratory - NATA Site # 18217					X	X	X	X	X	X	X	X	X	X	X	X	X	X	X
Brisbane Laboratory - NATA Site # 20794																			
Perth Laboratory - NATA Site # 23736																			
	420																		
12	SED_T01_020 420	Apr 02, 2020		Sediment	S20-Ap12285					X									
13	SW1	Apr 01, 2020		Water	S20-Ap12286	X	X	X	X		X	X	X	X	X	X	X	X	X
14	SW1_UP	Apr 01, 2020		Water	S20-Ap12287	X	X	X	X		X	X	X	X	X	X	X	X	X
15	SW2	Apr 01, 2020		Water	S20-Ap12288	X	X	X	X		X	X	X	X	X	X	X	X	X
16	SW3	Apr 01, 2020		Water	S20-Ap12289	X	X	X	X		X	X	X	X	X	X	X	X	X
17	SW4	Apr 01, 2020		Water	S20-Ap12290	X	X	X	X		X	X	X	X	X	X	X	X	X
18	SW7	Apr 02, 2020		Water	S20-Ap12291	X	X	X	X		X	X	X	X	X	X	X	X	X
19	SW8	Apr 01, 2020		Water	S20-Ap12292	X	X	X	X		X	X	X	X	X	X	X	X	X
20	SW9	Apr 01, 2020		Water	S20-Ap12293	X	X	X	X		X	X	X	X	X	X	X	X	X
21	D01_020420	Apr 01, 2020		Water	S20-Ap12294	X	X	X	X		X	X	X	X	X	X	X	X	X
22	T01_020420	Apr 01, 2020		Water	S20-Ap12295					X									
Test Counts					20	20	20	20	20	2	20	20	20	20	20	20	20	20	20

Internal Quality Control Review and Glossary
General

- Laboratory QC results for Method Blanks, Duplicates, Matrix Spikes, and Laboratory Control Samples follows guidelines delineated in the National Environment Protection (Assessment of Site Contamination) Measure 1999, as amended May 2013 and are included in this QC report where applicable. Additional QC data may be available on request.
- All soil/sediment/solid results are reported on a dry basis, unless otherwise stated.
- All biota/food results are reported on a wet weight basis on the edible portion, unless otherwise stated.
- Actual LORs are matrix dependant. Quoted LORs may be raised where sample extracts are diluted due to interferences.
- Results are uncorrected for matrix spikes or surrogate recoveries except for PFAS compounds.
- SVOC analysis on waters are performed on homogenised, unfiltered samples, unless noted otherwise.
- Samples were analysed on an 'as received' basis.
- Information identified on this report with blue colour, indicates data provided by customer, that may have an impact on the results.
- This report replaces any interim results previously issued.

Holding Times

Please refer to 'Sample Preservation and Container Guide' for holding times (QS3001).

For samples received on the last day of holding time, notification of testing requirements should have been received at least 6 hours prior to sample receipt deadlines as stated on the SRA.

If the Laboratory did not receive the information in the required timeframe, and regardless of any other integrity issues, suitably qualified results may still be reported.

Holding times apply from the date of sampling, therefore compliance to these may be outside the laboratory's control.

For VOCs containing vinyl chloride, styrene and 2-chloroethyl vinyl ether the holding time is 7 days however for all other VOCs such as BTEX or C6-10 TRH then the holding time is 14 days.

****NOTE:** pH duplicates are reported as a range NOT as RPD

Units

mg/kg: milligrams per kilogram

mg/L: milligrams per litre

ug/L: micrograms per litre

ppm: Parts per million

ppb: Parts per billion

%: Percentage

org/100mL: Organisms per 100 millilitres

NTU: Nephelometric Turbidity Units

MPN/100mL: Most Probable Number of organisms per 100 millilitres

Terms

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Results <10 times the LOR : No Limit

Results between 10-20 times the LOR : RPD must lie between 0-50%

Results >20 times the LOR : RPD must lie between 0-30%

Surrogate Recoveries: Recoveries must lie between 20-130% Phenols & 50-150% PFASs

PFAS field samples that contain surrogate recoveries in excess of the QC limit designated in QSM 5.3 where no positive PFAS results have been reported have been reviewed and no data was affected.

WA DWER (n=10): PFBA, PFPeA, PFHxA, PFHpA, PFOA, PFBS, PFHxS, PFOS, 6:2 FTSA, 8:2 FTSA

QC Data General Comments

- Where a result is reported as a less than (<), higher than the nominated LOR, this is due to either matrix interference, extract dilution required due to interferences or contaminant levels within the sample, high moisture content or insufficient sample provided.
- Duplicate data shown within this report that states the word "BATCH" is a Batch Duplicate from outside of your sample batch, but within the laboratory sample batch at a 1:10 ratio. The Parent and Duplicate data shown is not data from your samples.
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- Organochlorine Pesticide analysis - where reporting Spike data, Toxaphene is not added to the Spike.
- Total Recoverable Hydrocarbons - where reporting Spike & LCS data, a single spike of commercial Hydrocarbon products in the range of C12-C30 is added and it's Total Recovery is reported in the C10-C14 cell of the Report.
- pH and Free Chlorine analysed in the laboratory - Analysis on this test must begin within 30 minutes of sampling. Therefore laboratory analysis is unlikely to be completed within holding time. Analysis will begin as soon as possible after sample receipt.
- Recovery Data (Spikes & Surrogates) - where chromatographic interference does not allow the determination of Recovery the term "INT" appears against that analyte.
- Polychlorinated Biphenyls are spiked only using Aroclor 1260 in Matrix Spikes and LCS.
- For Matrix Spikes and LCS results a dash " - " in the report means that the specific analyte was not added to the QC sample.
- Duplicate RPDs are calculated from raw analytical data thus it is possible to have two sets of data.

Quality Control Results

Test			Units	Result 1		Acceptance Limits	Pass Limits	Qualifying Code
Method Blank								
Heavy Metals								
Aluminium			mg/L	< 0.05		0.05	Pass	
Arsenic			mg/L	< 0.001		0.001	Pass	
Barium			mg/L	< 0.02		0.02	Pass	
Beryllium			mg/L	< 0.001		0.001	Pass	
Cadmium			mg/L	< 0.0002		0.0002	Pass	
Chromium			mg/L	< 0.001		0.001	Pass	
Cobalt			mg/L	< 0.001		0.001	Pass	
Copper			mg/L	< 0.001		0.001	Pass	
Iron			mg/L	< 0.05		0.05	Pass	
Lead			mg/L	< 0.001		0.001	Pass	
Manganese			mg/L	< 0.005		0.005	Pass	
Mercury			mg/L	< 0.0001		0.0001	Pass	
Nickel			mg/L	< 0.001		0.001	Pass	
Zinc			mg/L	< 0.005		0.005	Pass	
LCS - % Recovery								
Heavy Metals								
Aluminium			%	93		70-130	Pass	
Arsenic			%	96		70-130	Pass	
Barium			%	98		70-130	Pass	
Beryllium			%	88		70-130	Pass	
Cadmium			%	90		70-130	Pass	
Chromium			%	99		70-130	Pass	
Cobalt			%	100		70-130	Pass	
Copper			%	98		70-130	Pass	
Iron			%	96		70-130	Pass	
Lead			%	98		70-130	Pass	
Manganese			%	100		70-130	Pass	
Mercury			%	101		70-130	Pass	
Nickel			%	100		70-130	Pass	
Zinc			%	96		70-130	Pass	
Test	Lab Sample ID	QA Source	Units	Result 1		Acceptance Limits	Pass Limits	Qualifying Code
Spike - % Recovery								
Heavy Metals				Result 1				
Aluminium	S20-Ap16992	NCP	%	99		70-130	Pass	
Arsenic	S20-Ap16992	NCP	%	101		70-130	Pass	
Barium	S20-Ap16992	NCP	%	105		70-130	Pass	
Beryllium	S20-Ap16992	NCP	%	91		70-130	Pass	
Cadmium	S20-Ap16992	NCP	%	100		70-130	Pass	
Chromium	S20-Ap16992	NCP	%	96		70-130	Pass	
Cobalt	S20-Ap16992	NCP	%	98		70-130	Pass	
Copper	S20-Ap16992	NCP	%	95		70-130	Pass	
Iron	S20-Ap16992	NCP	%	98		70-130	Pass	
Lead	S20-Ap16992	NCP	%	95		70-130	Pass	
Manganese	S20-Ap16992	NCP	%	100		70-130	Pass	
Mercury	S20-Ap16992	NCP	%	101		70-130	Pass	
Nickel	S20-Ap16992	NCP	%	95		70-130	Pass	
Zinc	S20-Ap16992	NCP	%	96		70-130	Pass	
Spike - % Recovery								
Heavy Metals				Result 1				

Test	Lab Sample ID	QA Source	Units	Result 1			Acceptance Limits	Pass Limits	Qualifying Code
Aluminium	S20-Ap12294	CP	%	99			70-130	Pass	
Arsenic	S20-Ap12294	CP	%	98			70-130	Pass	
Barium	S20-Ap12294	CP	%	98			70-130	Pass	
Beryllium	S20-Ap12294	CP	%	91			70-130	Pass	
Cadmium	S20-Ap12294	CP	%	95			70-130	Pass	
Chromium	S20-Ap12294	CP	%	98			70-130	Pass	
Cobalt	S20-Ap12294	CP	%	99			70-130	Pass	
Copper	S20-Ap12294	CP	%	99			70-130	Pass	
Iron	S20-Ap12294	CP	%	109			70-130	Pass	
Lead	S20-Ap12294	CP	%	101			70-130	Pass	
Manganese	S20-Ap12294	CP	%	95			70-130	Pass	
Mercury	S20-Ap12294	CP	%	105			70-130	Pass	
Nickel	S20-Ap12294	CP	%	100			70-130	Pass	
Zinc	S20-Ap12294	CP	%	98			70-130	Pass	
Test	Lab Sample ID	QA Source	Units	Result 1			Acceptance Limits	Pass Limits	Qualifying Code
Duplicate									
Heavy Metals				Result 1	Result 2	RPD			
Aluminium	S20-Ap12286	CP	mg/L	0.13	0.15	11	30%	Pass	
Arsenic	S20-Ap12286	CP	mg/L	0.004	0.004	2.0	30%	Pass	
Barium	S20-Ap12286	CP	mg/L	0.15	0.15	4.0	30%	Pass	
Beryllium	S20-Ap12286	CP	mg/L	< 0.001	< 0.001	<1	30%	Pass	
Cadmium	S20-Ap12286	CP	mg/L	0.0013	0.0013	3.0	30%	Pass	
Chromium	S20-Ap12286	CP	mg/L	< 0.001	< 0.001	<1	30%	Pass	
Cobalt	S20-Ap12286	CP	mg/L	0.014	0.014	1.0	30%	Pass	
Copper	S20-Ap12286	CP	mg/L	0.019	0.018	5.0	30%	Pass	
Iron	S20-Ap12286	CP	mg/L	4.5	4.5	<1	30%	Pass	
Lead	S20-Ap12286	CP	mg/L	0.056	0.055	1.0	30%	Pass	
Manganese	S20-Ap12286	CP	mg/L	0.76	0.75	<1	30%	Pass	
Mercury	S20-Ap12286	CP	mg/L	< 0.0001	< 0.0001	<1	30%	Pass	
Nickel	S20-Ap12286	CP	mg/L	0.003	0.002	21	30%	Pass	
Zinc	S20-Ap12286	CP	mg/L	0.20	0.19	3.0	30%	Pass	
Duplicate									
Heavy Metals				Result 1	Result 2	RPD			
Aluminium	S20-Ap12290	CP	mg/L	0.18	0.20	14	30%	Pass	
Arsenic	S20-Ap12290	CP	mg/L	0.002	0.003	15	30%	Pass	
Barium	S20-Ap12290	CP	mg/L	0.07	0.07	1.0	30%	Pass	
Beryllium	S20-Ap12290	CP	mg/L	< 0.001	< 0.001	<1	30%	Pass	
Cadmium	S20-Ap12290	CP	mg/L	0.019	0.020	7.0	30%	Pass	
Chromium	S20-Ap12290	CP	mg/L	< 0.001	< 0.001	<1	30%	Pass	
Cobalt	S20-Ap12290	CP	mg/L	0.005	0.006	3.0	30%	Pass	
Copper	S20-Ap12290	CP	mg/L	0.13	0.13	1.0	30%	Pass	
Iron	S20-Ap12290	CP	mg/L	0.68	0.71	5.0	30%	Pass	
Lead	S20-Ap12290	CP	mg/L	0.055	0.057	3.0	30%	Pass	
Manganese	S20-Ap12290	CP	mg/L	0.42	0.42	1.0	30%	Pass	
Mercury	S20-Ap12290	CP	mg/L	< 0.0001	< 0.0001	<1	30%	Pass	
Nickel	S20-Ap12290	CP	mg/L	0.037	0.038	4.0	30%	Pass	
Zinc	S20-Ap12290	CP	mg/L	3.2	3.2	1.0	30%	Pass	
Duplicate									
Heavy Metals				Result 1	Result 2	RPD			
Aluminium	S20-Ap16986	NCP	mg/L	0.07	0.07	8.0	30%	Pass	
Arsenic	S20-Ap16986	NCP	mg/L	0.002	0.002	2.0	30%	Pass	
Barium	S20-Ap16986	NCP	mg/L	0.03	0.03	6.0	30%	Pass	
Beryllium	S20-Ap16986	NCP	mg/L	< 0.001	< 0.001	<1	30%	Pass	
Cadmium	S20-Ap16986	NCP	mg/L	< 0.0002	< 0.0002	<1	30%	Pass	

Duplicate								
Heavy Metals				Result 1	Result 2	RPD		
Chromium	S20-Ap16986	NCP	mg/L	< 0.001	< 0.001	<1	30%	Pass
Cobalt	S20-Ap16986	NCP	mg/L	< 0.001	< 0.001	<1	30%	Pass
Copper	S20-Ap16986	NCP	mg/L	0.004	0.004	1.0	30%	Pass
Iron	S20-Ap16986	NCP	mg/L	0.07	0.05	33	30%	Fail
Lead	S20-Ap16986	NCP	mg/L	< 0.001	< 0.001	<1	30%	Pass
Manganese	S20-Ap16986	NCP	mg/L	0.007	0.007	1.0	30%	Pass
Mercury	S20-Ap16986	NCP	mg/L	< 0.0001	< 0.0001	<1	30%	Pass
Nickel	S20-Ap16986	NCP	mg/L	0.001	< 0.001	28	30%	Pass
Zinc	S20-Ap16986	NCP	mg/L	0.023	0.024	3.0	30%	Pass

Comments

New version to remove samples SW7 and SED7

Sample Integrity

Custody Seals Intact (if used)	N/A
Attempt to Chill was evident	Yes
Sample correctly preserved	Yes
Appropriate sample containers have been used	Yes
Sample containers for volatile analysis received with minimal headspace	Yes
Samples received within HoldingTime	Yes
Some samples have been subcontracted	No

Authorised By

Andrew Black Analytical Services Manager
Gabriele Cordero Senior Analyst-Metal (NSW)



Glenn Jackson
General Manager

Final report - this Report replaces any previously issued Report

- Indicates Not Requested

* Indicates NATA accreditation does not cover the performance of this service

Measurement uncertainty of test data is available on request or please [click here](#).

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#AU04_Enviro_Sample_NSW

Subject: FW: 5 DAY TAT ADDITIONAL ANALYSIS: FW: Request for additional analysis

From: Joshua Blackwell <JBLACKWELL@ramboll.com>
Sent: Tuesday, 16 June 2020 2:00 PM
To: Andrew Black <AndrewBlack@eurofins.com>
Cc: Stephen Maxwell <SMAXWELL@ramboll.com>; Rachel Condon <RCONDON@ramboll.com>
Subject: Request for additional analysis

EXTERNAL EMAIL*

Hi Andrew,

Could I please request additional analysis of soil samples. All analysis is for **M13(Al, As, Ba, Be, Cd, Cr, Co, Cu, Fe, Pb, Mn, Hg, Ni, Zn) Excluding hexavalent chromium**. Standard turnaround is requested.

Please report in 4 separate reports as specified below.

Report 1:

- S20-Ap02154 from report 711464
- All samples between sample number 24 (M20-Ma43453) through to sample number 45 (M20-Ma43474) from report 710537
- Sample no 55 (M20-Ma43584) from report 710537
- S20-Ap02115, S20-Ap02116, S20-Ap02117, S20-Ap02155, S20-Ap02156 from report 713210

Report 2:

- S20-Ap02155, M20-Ma43804, M20-Ma43807 from report 710584

Report 3:

- S20-My00960, S20-My00962 from report 716931

Report 4:

- All samples from lab report 712441

Kind regards

Joshua Blackwell

Consultant
3182675 - Hunter

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M +61 (481) 157565
jblackwell@ramboll.com

Connect with us 

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ACN 095 437 442
ABN 49 095 437 442

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Perth

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Phone : +61 8 9251 9600
NATA # 1261 Site # 23736

ABN – 50 005 085 521

e.mail : EnviroSales@eurofins.com

web : www.eurofins.com.au

Sample Receipt Advice

Company name: **Ramboll Australia Pty Ltd**
Contact name: Joshua Blackwell
Project name: ADDITIONAL - 318000780
COC number: Not provided
Turn around time: 5 Day
Date/Time received: Jun 16, 2020 2:00 PM
Eurofins reference: **725971**

Sample information

- A detailed list of analytes logged into our LIMS, is included in the attached summary table.
- All samples have been received as described on the above COC.
- COC has been completed correctly.
- Attempt to chill was evident.
- Appropriately preserved sample containers have been used.
- All samples were received in good condition.
- Samples have been provided with adequate time to commence analysis in accordance with the relevant holding times.
- Appropriate sample containers have been used.
- Split sample sent to requested external lab.
- Some samples have been subcontracted.
- N/A Custody Seals intact (if used).

Contact notes

If you have any questions with respect to these samples please contact:

Andrew Black on Phone : (+61) 2 9900 8490 or by e.mail: AndrewBlack@eurofins.com

Results will be delivered electronically via e.mail to Joshua Blackwell - jblackwell@ramboll.com.

Note: A copy of these results will also be delivered to the general Ramboll Australia Pty Ltd email address.

Ramboll Environ Australia Pty Ltd
 Level 3/100 Pacific Highway
 North Sydney
 NSW 2060



NATA Accredited
 Accreditation Number 1261
 Site Number 18217

Accredited for compliance with ISO/IEC 17025 – Testing
 The results of the tests, calibrations and/or
 measurements included in this document are traceable
 to Australian/national standards.

Attention: **Joshua Blackwell**

Report **725971-S**
 Project name **ADDITIONAL - 318000780**
 Received Date **Jun 16, 2020**

Client Sample ID			P29_HA01_0.0	P29_HA01_0.2	P29_HA02_0.0	P29_HA02_0.2
Sample Matrix			Soil	Soil	Soil	Soil
Eurofins Sample No.			S20-Jn26502	S20-Jn26503	S20-Jn26504	S20-Jn26505
Date Sampled			Apr 02, 2020	Apr 02, 2020	Apr 02, 2020	Apr 02, 2020
Test/Reference	LOR	Unit				
Heavy Metals						
Aluminium	10	mg/kg	2500	1900	4400	4300
Arsenic	2	mg/kg	3.0	2.4	4.2	3.5
Barium	10	mg/kg	42	27	120	140
Beryllium	2	mg/kg	< 2	< 2	< 2	< 2
Cadmium	0.4	mg/kg	< 0.4	< 0.4	0.8	< 0.4
Chromium	5	mg/kg	9.2	8.5	9.8	11
Cobalt	5	mg/kg	< 5	< 5	< 5	< 5
Copper	5	mg/kg	11	< 5	37	16
Iron	20	mg/kg	5400	4600	6700	8000
Lead	5	mg/kg	30	13	110	52
Manganese	5	mg/kg	200	69	400	280
Mercury	0.1	mg/kg	< 0.1	< 0.1	< 0.1	< 0.1
Nickel	5	mg/kg	< 5	< 5	< 5	< 5
Zinc	5	mg/kg	130	19	190	120
% Moisture	1	%	17	11	17	15

Client Sample ID			P29_HA03_0.0	P29_HA03_0.2	P29_HA04_0.0	P29_HA05_0.0
Sample Matrix			Soil	Soil	Soil	Soil
Eurofins Sample No.			S20-Jn26506	S20-Jn26507	S20-Jn26508	S20-Jn26509
Date Sampled			Apr 02, 2020	Apr 02, 2020	Apr 02, 2020	Apr 02, 2020
Test/Reference	LOR	Unit				
Heavy Metals						
Aluminium	10	mg/kg	6700	7800	3400	3200
Arsenic	2	mg/kg	8.0	6.7	3.5	5.4
Barium	10	mg/kg	72	73	61	74
Beryllium	2	mg/kg	< 2	< 2	< 2	< 2
Cadmium	0.4	mg/kg	1.2	0.4	0.4	0.9
Chromium	5	mg/kg	11	13	8.8	11
Cobalt	5	mg/kg	< 5	< 5	< 5	< 5
Copper	5	mg/kg	42	18	19	44
Iron	20	mg/kg	7900	9600	5100	7000
Lead	5	mg/kg	100	43	52	160
Manganese	5	mg/kg	110	100	210	240
Mercury	0.1	mg/kg	< 0.1	< 0.1	< 0.1	< 0.1

Client Sample ID			P29_HA03_0.0	P29_HA03_0.2	P29_HA04_0.0	P29_HA05_0.0
Sample Matrix			Soil	Soil	Soil	Soil
Eurofins Sample No.			S20-Jn26506	S20-Jn26507	S20-Jn26508	S20-Jn26509
Date Sampled			Apr 02, 2020	Apr 02, 2020	Apr 02, 2020	Apr 02, 2020
Test/Reference	LOR	Unit				
Heavy Metals						
Nickel	5	mg/kg	< 5	< 5	< 5	< 5
Zinc	5	mg/kg	220	130	80	210
% Moisture						
	1	%	9.8	8.1	11	20

Client Sample ID			P29_HA05_0.2	P29_SURFACE 1	P29_SURFACE 2	P29_SURFACE 3
Sample Matrix			Soil	Soil	Soil	Soil
Eurofins Sample No.			S20-Jn26510	S20-Jn26511	S20-Jn26512	S20-Jn26513
Date Sampled			Apr 02, 2020	Apr 02, 2020	Apr 02, 2020	Apr 02, 2020
Test/Reference	LOR	Unit				
Heavy Metals						
Aluminium	10	mg/kg	3500	6800	7500	8100
Arsenic	2	mg/kg	4.2	4.6	7.7	14
Barium	10	mg/kg	50	72	61	75
Beryllium	2	mg/kg	< 2	< 2	< 2	< 2
Cadmium	0.4	mg/kg	0.6	3.0	4.3	9.1
Chromium	5	mg/kg	10	11	13	13
Cobalt	5	mg/kg	< 5	< 5	< 5	6.9
Copper	5	mg/kg	21	81	94	740
Iron	20	mg/kg	9400	7900	12000	9200
Lead	5	mg/kg	59	91	110	570
Manganese	5	mg/kg	180	72	140	340
Mercury	0.1	mg/kg	< 0.1	< 0.1	< 0.1	< 0.1
Nickel	5	mg/kg	< 5	< 5	5.0	8.2
Zinc	5	mg/kg	140	350	650	1100
% Moisture						
	1	%	8.1	21	22	33

Sample History

Where samples are submitted/analysed over several days, the last date of extraction and analysis is reported.

A recent review of our LIMS has resulted in the correction or clarification of some method identifications. Due to this, some of the method reference information on reports has changed. However, no substantive change has been made to our laboratory methods, and as such there is no change in the validity of current or previous results.

If the date and time of sampling are not provided, the Laboratory will not be responsible for compromised results should testing be performed outside the recommended holding time.

Description

Heavy Metals

- Method: LTM-MET-3040 Metals in Waters, Soils & Sediments by ICP-MS

% Moisture

- Method: LTM-GEN-7080 Moisture

Testing Site

Sydney

Sydney

Extracted

Jun 22, 2020

Jun 16, 2020

Holding Time

180 Days

14 Days

Australia

Melbourne
6 Monterey Road
Dandenong South VIC 3175
Phone : +61 3 8564 5000
NATA # 1261
Site # 1254 & 14271

Sydney
Unit F3, Building F
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Phone : +61 2 9900 8400
NATA # 1261 Site # 18217

Brisbane
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Murarrie QLD 4172
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NATA # 1261 Site # 20794

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43 Detroit Drive
Rolleston, Christchurch 7675
Phone : 0800 856 450
IANZ # 1290

Company Name: Ramboll Australia Pty Ltd
Address: Level 3/100 Pacific Highway
North Sydney
NSW 2060
Project Name: ADDITIONAL - 318000780

Order No.:
Report #: 725971
Phone: 02 9954 8118
Fax: 02 9954 8150

Received: Jun 16, 2020 2:00 PM
Due: Jun 23, 2020
Priority: 5 Day
Contact Name: Joshua Blackwell

Eurofins Analytical Services Manager : Andrew Black

Sample Detail						Aluminium	Arsenic	Barium	Beryllium	Cadmium	Chromium	Cobalt	Copper	Iron	Lead	Manganese	Mercury	Nickel	Zinc	Moisture Set	
Melbourne Laboratory - NATA Site # 1254 & 14271																					
Sydney Laboratory - NATA Site # 18217						X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X
Brisbane Laboratory - NATA Site # 20794																					
Perth Laboratory - NATA Site # 23736																					
External Laboratory																					
No	Sample ID	Sample Date	Sampling Time	Matrix	LAB ID																
1	P29_HA01_0_0	Apr 02, 2020		Soil	S20-Jn26502	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	
2	P29_HA01_0_2	Apr 02, 2020		Soil	S20-Jn26503	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	
3	P29_HA02_0_0	Apr 02, 2020		Soil	S20-Jn26504	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	
4	P29_HA02_0_2	Apr 02, 2020		Soil	S20-Jn26505	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	
5	P29_HA03_0_0	Apr 02, 2020		Soil	S20-Jn26506	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	
6	P29_HA03_0_2	Apr 02, 2020		Soil	S20-Jn26507	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	
7	P29_HA04_0_0	Apr 02, 2020		Soil	S20-Jn26508	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	

Australia

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ABN – 50 005 085 521

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e.mail : EnviroSales@eurofins.com

Company Name: Ramboll Australia Pty Ltd
Address: Level 3/100 Pacific Highway
North Sydney
NSW 2060
Project Name: ADDITIONAL - 318000780

Order No.:
Report #: 725971
Phone: 02 9954 8118
Fax: 02 9954 8150

Received: Jun 16, 2020 2:00 PM
Due: Jun 23, 2020
Priority: 5 Day
Contact Name: Joshua Blackwell

Eurofins Analytical Services Manager : Andrew Black

Sample Detail					Aluminium	Arsenic	Barium	Beryllium	Cadmium	Chromium	Cobalt	Copper	Iron	Lead	Manganese	Mercury	Nickel	Zinc	Moisture Set
Melbourne Laboratory - NATA Site # 1254 & 14271																			
Sydney Laboratory - NATA Site # 18217					X	X	X	X	X	X	X	X	X	X	X	X	X	X	X
Brisbane Laboratory - NATA Site # 20794																			
Perth Laboratory - NATA Site # 23736																			
	0																		
8	P29_HA05_0.0	Apr 02, 2020		Soil	S20-Jn26509	X	X	X	X	X	X	X	X	X	X	X	X	X	X
9	P29_HA05_0.2	Apr 02, 2020		Soil	S20-Jn26510	X	X	X	X	X	X	X	X	X	X	X	X	X	X
10	P29_SURFAC E1	Apr 02, 2020		Soil	S20-Jn26511	X	X	X	X	X	X	X	X	X	X	X	X	X	X
11	P29_SURFAC E2	Apr 02, 2020		Soil	S20-Jn26512	X	X	X	X	X	X	X	X	X	X	X	X	X	X
12	P29_SURFAC E3	Apr 02, 2020		Soil	S20-Jn26513	X	X	X	X	X	X	X	X	X	X	X	X	X	X
Test Counts					12	12	12	12	12	12	12	12	12	12	12	12	12	12	12

Internal Quality Control Review and Glossary
General

- Laboratory QC results for Method Blanks, Duplicates, Matrix Spikes, and Laboratory Control Samples follows guidelines delineated in the National Environment Protection (Assessment of Site Contamination) Measure 1999, as amended May 2013 and are included in this QC report where applicable. Additional QC data may be available on request.
- All soil/sediment/solid results are reported on a dry basis, unless otherwise stated.
- All biota/food results are reported on a wet weight basis on the edible portion, unless otherwise stated.
- Actual LORs are matrix dependant. Quoted LORs may be raised where sample extracts are diluted due to interferences.
- Results are uncorrected for matrix spikes or surrogate recoveries except for PFAS compounds.
- SVOC analysis on waters are performed on homogenised, unfiltered samples, unless noted otherwise.
- Samples were analysed on an 'as received' basis.
- Information identified on this report with blue colour, indicates data provided by customer, that may have an impact on the results.
- This report replaces any interim results previously issued.

Holding Times

Please refer to 'Sample Preservation and Container Guide' for holding times (QS3001).

For samples received on the last day of holding time, notification of testing requirements should have been received at least 6 hours prior to sample receipt deadlines as stated on the SRA.

If the Laboratory did not receive the information in the required timeframe, and regardless of any other integrity issues, suitably qualified results may still be reported.

Holding times apply from the date of sampling, therefore compliance to these may be outside the laboratory's control.

For VOCs containing vinyl chloride, styrene and 2-chloroethyl vinyl ether the holding time is 7 days however for all other VOCs such as BTEX or C6-10 TRH then the holding time is 14 days.

****NOTE:** pH duplicates are reported as a range NOT as RPD

Units

mg/kg: milligrams per kilogram

mg/L: milligrams per litre

ug/L: micrograms per litre

ppm: Parts per million

ppb: Parts per billion

%: Percentage

org/100mL: Organisms per 100 millilitres

NTU: Nephelometric Turbidity Units

MPN/100mL: Most Probable Number of organisms per 100 millilitres

Terms

Dry	Where a moisture has been determined on a solid sample the result is expressed on a dry basis.
LOR	Limit of Reporting.
SPIKE	Addition of the analyte to the sample and reported as percentage recovery.
RPD	Relative Percent Difference between two Duplicate pieces of analysis.
LCS	Laboratory Control Sample - reported as percent recovery.
CRM	Certified Reference Material - reported as percent recovery.
Method Blank	In the case of solid samples these are performed on laboratory certified clean sands and in the case of water samples these are performed on de-ionised water.
Surr - Surrogate	The addition of a like compound to the analyte target and reported as percentage recovery.
Duplicate	A second piece of analysis from the same sample and reported in the same units as the result to show comparison.
USEPA	United States Environmental Protection Agency
APHA	American Public Health Association
TCLP	Toxicity Characteristic Leaching Procedure
COC	Chain of Custody
SRA	Sample Receipt Advice
QSM	US Department of Defense Quality Systems Manual Version 5.3
CP	Client Parent - QC was performed on samples pertaining to this report
NCP	Non-Client Parent - QC performed on samples not pertaining to this report, QC is representative of the sequence or batch that client samples were analysed within.
TEQ	Toxic Equivalency Quotient

QC - Acceptance Criteria

RPD Duplicates: Global RPD Duplicates Acceptance Criteria is 30% however the following acceptance guidelines are equally applicable:

Results <10 times the LOR : No Limit

Results between 10-20 times the LOR : RPD must lie between 0-50%

Results >20 times the LOR : RPD must lie between 0-30%

Surrogate Recoveries: Recoveries must lie between 20-130% Phenols & 50-150% PFASs

PFAS field samples that contain surrogate recoveries in excess of the QC limit designated in QSM 5.3 where no positive PFAS results have been reported have been reviewed and no data was affected.

WA DWER (n=10): PFBA, PFPeA, PFHxA, PFHpA, PFOA, PFBS, PFHxS, PFOS, 6:2 FTSA, 8:2 FTSA

QC Data General Comments

- Where a result is reported as a less than (<), higher than the nominated LOR, this is due to either matrix interference, extract dilution required due to interferences or contaminant levels within the sample, high moisture content or insufficient sample provided.
- Duplicate data shown within this report that states the word "BATCH" is a Batch Duplicate from outside of your sample batch, but within the laboratory sample batch at a 1:10 ratio. The Parent and Duplicate data shown is not data from your samples.
- Organochlorine Pesticide analysis - where reporting LCS data, Toxaphene & Chlordane are not added to the LCS.
- Organochlorine Pesticide analysis - where reporting Spike data, Toxaphene is not added to the Spike.
- Total Recoverable Hydrocarbons - where reporting Spike & LCS data, a single spike of commercial Hydrocarbon products in the range of C12-C30 is added and it's Total Recovery is reported in the C10-C14 cell of the Report.
- pH and Free Chlorine analysed in the laboratory - Analysis on this test must begin within 30 minutes of sampling. Therefore laboratory analysis is unlikely to be completed within holding time. Analysis will begin as soon as possible after sample receipt.
- Recovery Data (Spikes & Surrogates) - where chromatographic interference does not allow the determination of Recovery the term "INT" appears against that analyte.
- Polychlorinated Biphenyls are spiked only using Aroclor 1260 in Matrix Spikes and LCS.
- For Matrix Spikes and LCS results a dash " - " in the report means that the specific analyte was not added to the QC sample.
- Duplicate RPDs are calculated from raw analytical data thus it is possible to have two sets of data.

Quality Control Results

Test	Units	Result 1			Acceptance Limits	Pass Limits	Qualifying Code	
Method Blank								
Heavy Metals								
Aluminium	mg/kg	< 10			10	Pass		
Arsenic	mg/kg	< 2			2	Pass		
Barium	mg/kg	< 10			10	Pass		
Beryllium	mg/kg	< 2			2	Pass		
Cadmium	mg/kg	< 0.4			0.4	Pass		
Chromium	mg/kg	< 5			5	Pass		
Cobalt	mg/kg	< 5			5	Pass		
Copper	mg/kg	< 5			5	Pass		
Iron	mg/kg	< 20			20	Pass		
Lead	mg/kg	< 5			5	Pass		
Manganese	mg/kg	< 5			5	Pass		
Mercury	mg/kg	< 0.1			0.1	Pass		
Nickel	mg/kg	< 5			5	Pass		
Zinc	mg/kg	< 5			5	Pass		
LCS - % Recovery								
Heavy Metals								
Aluminium	%	96			70-130	Pass		
Arsenic	%	98			70-130	Pass		
Barium	%	107			70-130	Pass		
Beryllium	%	92			70-130	Pass		
Cadmium	%	100			70-130	Pass		
Chromium	%	103			70-130	Pass		
Cobalt	%	103			70-130	Pass		
Copper	%	104			70-130	Pass		
Iron	%	105			70-130	Pass		
Lead	%	102			70-130	Pass		
Manganese	%	104			70-130	Pass		
Mercury	%	94			70-130	Pass		
Nickel	%	104			70-130	Pass		
Zinc	%	102			70-130	Pass		
Test	Lab Sample ID	QA Source	Units	Result 1		Acceptance Limits	Pass Limits	Qualifying Code
Spike - % Recovery								
Heavy Metals				Result 1				
Manganese	S20-Jn26721	NCP	%	78		70-130	Pass	
Spike - % Recovery								
Heavy Metals				Result 1				
Arsenic	S20-Jn26504	CP	%	104		70-130	Pass	
Barium	S20-Jn26504	CP	%	100		70-130	Pass	
Beryllium	S20-Jn26504	CP	%	94		70-130	Pass	
Cadmium	S20-Jn26504	CP	%	105		70-130	Pass	
Chromium	S20-Jn26504	CP	%	113		70-130	Pass	
Cobalt	S20-Jn26504	CP	%	110		70-130	Pass	
Copper	S20-Jn26504	CP	%	107		70-130	Pass	
Lead	S20-Jn26504	CP	%	94		70-130	Pass	
Mercury	S20-Jn26504	CP	%	109		70-130	Pass	
Nickel	S20-Jn26504	CP	%	112		70-130	Pass	
Zinc	S20-Jn26504	CP	%	103		70-130	Pass	

Test	Lab Sample ID	QA Source	Units	Result 1			Acceptance Limits	Pass Limits	Qualifying Code
Duplicate									
Heavy Metals				Result 1	Result 2	RPD			
Aluminium	S20-Jn26503	CP	mg/kg	1900	2100	9.0	30%	Pass	
Arsenic	S20-Jn26503	CP	mg/kg	2.4	2.2	7.0	30%	Pass	
Barium	S20-Jn26503	CP	mg/kg	27	26	3.0	30%	Pass	
Beryllium	S20-Jn26503	CP	mg/kg	< 2	< 2	<1	30%	Pass	
Cadmium	S20-Jn26503	CP	mg/kg	< 0.4	< 0.4	<1	30%	Pass	
Chromium	S20-Jn26503	CP	mg/kg	8.5	7.7	10	30%	Pass	
Cobalt	S20-Jn26503	CP	mg/kg	< 5	< 5	<1	30%	Pass	
Copper	S20-Jn26503	CP	mg/kg	< 5	< 5	<1	30%	Pass	
Iron	S20-Jn26503	CP	mg/kg	4600	5000	7.0	30%	Pass	
Lead	S20-Jn26503	CP	mg/kg	13	12	8.0	30%	Pass	
Manganese	S20-Jn26503	CP	mg/kg	69	67	3.0	30%	Pass	
Mercury	S20-Jn26503	CP	mg/kg	< 0.1	< 0.1	<1	30%	Pass	
Nickel	S20-Jn26503	CP	mg/kg	< 5	< 5	<1	30%	Pass	
Zinc	S20-Jn26503	CP	mg/kg	19	18	5.0	30%	Pass	
Duplicate									
				Result 1	Result 2	RPD			
% Moisture	S20-Jn26510	CP	%	8.1	7.6	6.0	30%	Pass	
Duplicate									
Heavy Metals				Result 1	Result 2	RPD			
Aluminium	S20-Jn26513	CP	mg/kg	8100	9000	10	30%	Pass	
Arsenic	S20-Jn26513	CP	mg/kg	14	11	18	30%	Pass	
Barium	S20-Jn26513	CP	mg/kg	75	72	4.0	30%	Pass	
Beryllium	S20-Jn26513	CP	mg/kg	< 2	< 2	<1	30%	Pass	
Cadmium	S20-Jn26513	CP	mg/kg	9.1	8.4	9.0	30%	Pass	
Chromium	S20-Jn26513	CP	mg/kg	13	12	10	30%	Pass	
Cobalt	S20-Jn26513	CP	mg/kg	6.9	< 5	75	30%	Fail	Q15
Copper	S20-Jn26513	CP	mg/kg	740	570	26	30%	Pass	
Iron	S20-Jn26513	CP	mg/kg	9200	9600	4.0	30%	Pass	
Lead	S20-Jn26513	CP	mg/kg	570	440	26	30%	Pass	
Manganese	S20-Jn26513	CP	mg/kg	340	110	100	30%	Fail	Q02
Mercury	S20-Jn26513	CP	mg/kg	< 0.1	< 0.1	<1	30%	Pass	
Nickel	S20-Jn26513	CP	mg/kg	8.2	8.0	3.0	30%	Pass	
Zinc	S20-Jn26513	CP	mg/kg	1100	1100	4.0	30%	Pass	

Comments
Sample Integrity

Custody Seals Intact (if used)	N/A
Attempt to Chill was evident	Yes
Sample correctly preserved	Yes
Appropriate sample containers have been used	Yes
Sample containers for volatile analysis received with minimal headspace	Yes
Samples received within HoldingTime	Yes
Some samples have been subcontracted	No

Qualifier Codes/Comments

Code	Description
Q02	The duplicate %RPD is outside the recommended acceptance criteria. Further analysis indicates sample heterogeneity as the cause
Q15	The RPD reported passes Eurofins Environment Testing's QC - Acceptance Criteria as defined in the Internal Quality Control Review and Glossary page of this report.

Authorised By

Andrew Black	Analytical Services Manager
Gabriele Cordero	Senior Analyst-Metal (NSW)


**Glenn Jackson
General Manager**

Final report - this Report replaces any previously issued Report

- Indicates Not Requested

* Indicates NATA accreditation does not cover the performance of this service

Measurement uncertainty of test data is available on request or please [click here](#).

Eurofins shall not be liable for loss, cost, damages or expenses incurred by the client, or any other person or company, resulting from the use of any information or interpretation given in this report. In no case shall Eurofins be liable for consequential damages including, but not limited to, lost profits, damages for failure to meet deadlines and lost production arising from this report. This document shall not be reproduced except in full and relates only to the items tested. Unless indicated otherwise, the tests were performed on the samples as received.



CHAIN OF CUSTODY RECORD

ANU 30 005 096 521

Sydney Laboratory
Unit F3 3rd Fl., 16 Hare Rd, Lane Cove West, NSW 2086
02 9900 9400 EnviroSampleNSW@eurofins.com

Brisbane Laboratory
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07 3902 4800 EnviroSampleQLD@eurofins.com

Perth Laboratory
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08 9251 9900 EnviroSampleWA@eurofins.com

Melbourne Laboratory
2 Kingston Town Close, Oakleigh, VIC 3166
03 8554 5000 EnviroSampleVIC@eurofins.com

Company
Ramboll

Project Name
318000780

Project No
318000780

Project Manager
Stephen Maxwell

Excel and PDF

Handled over by
JB + RC

SM

Address
50 Glebe Road the Junction

Project Name

Project No

Project Manager

Excel and PDF

Handled over by

SM

Contact Name
Stephen Maxwell

Project Name

Project No

Project Manager

Excel and PDF

Handled over by

SM

Phone No

Project Name

Project No

Project Manager

Excel and PDF

Handled over by

SM

Special Directions

Project Name

Project No

Project Manager

Excel and PDF

Handled over by

SM

Purchase Order

Project Name

Project No

Project Manager

Excel and PDF

Handled over by

SM

Quote ID No
180813RAMM_1

Project Name

Project No

Project Manager

Excel and PDF

Handled over by

SM

Client Sample ID

Sampled Date/Time (dd/mm/yy hh:mm)

Matrix (Solid (S) Water (W))

Analyses
(Note: Where metals are requested, please specify "Total" or "Filtered") SUITE code must be used to attract SUITE pricing
Lead
M13 (Al, As, Ba, Be, Cd, Cr, Co, Cu, Fe, Pb, Mn, Hg, Ni, Zn) total
M13 (Al, As, Ba, Be, Cd, Cr, Co, Cu, Fe, Pb, Mn, Hg, Ni, Zn) dissolved

1L Plastic
250mL Plastic
125mL Plastic
200mL Amber Glass
40mL VOA vial
500mL PFAS Bottle
Jar (Glass or HDPE)
Other (Asbestos AS4964, WA Guidelines)

Turnaround Time (TAT)
Requirements (Default will be 5 days not tested)
 Overnight (9am)*
 1 Day*
 2 Day*
 3 Day*
 5 Day*
 Other ()
*Surcharges apply

Sample Comments / Dangerous Goods Hazard Warning

No	Client Sample ID	Sampled Date/Time (dd/mm/yy hh:mm)	Matrix (Solid (S) Water (W))	Analyses	Project Name	Project No	Project Manager	Excel and PDF	Handled over by	SM
1	P30_HA01_0.0	2/04/20	S	X						
2	P30_HA01_0.2	2/04/20	S	X						
3	P30_HA02_0.0	2/04/20	S	X						
4	P30_HA03_0.0	2/04/20	S	X						
5	P30_HA03_0.2	2/04/20	S	X						
6	P30_HA04_0.0	2/04/20	S	X						
7	P30_HA04_0.2	2/04/20	S	X						
8	P30_HA05_0.0	2/04/20	S	X						
9	P30_HA05_0.2	2/04/20	S	X						
10										
Total Counts						9				

Method of Shipment: Courier # Hand Delivered Postal

Name: _____ Signature: _____ Date: ____/____/____ Time: ____:____

Eurofins | Ingt Laboratory Use Only

Received By: *Lee D* Signature: _____ Date: *26/04/20* Time: *2:56 pm* Temperature: *24.2 °C*

Received By: _____ Signature: _____ Date: ____/____/____ Time: ____:____

Submission of samples to the laboratory will be deemed as acceptance of Eurofins | Ingt Standard Terms and Conditions (unless agreed otherwise). A copy of Eurofins | Ingt Standard Terms and Conditions is available on request.

Eurofins Environment Testing Australia Pty Ltd trading as Eurofins | Ingt

Melbourne

6 Monterey Road
Dandenong South Vic 3175
Phone : +61 3 8564 5000
NATA # 1261
Site # 1254 & 14271

Sydney

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NATA # 1261 Site # 18217

Brisbane

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Murarrie QLD 4172
Phone : +61 7 3902 4600
NATA # 1261 Site # 20794

Perth

2/91 Leach Highway
Kewdale WA 6105
Phone : +61 8 9251 9600
NATA # 1261 Site # 23736

Sample Receipt Advice

Company name: **Ramboll Australia Pty Ltd**

Contact name: **Stephen Maxwell**

Project ID: **318000780**

COC number: **Not provided**

Turn around time: **5 Day**

Date/Time received: **Apr 6, 2020 2:36 PM**

Eurofins reference: **712439**

Sample information

- A detailed list of analytes logged into our LIMS, is included in the attached summary table.
 - All samples have been received as described on the above COC.
 - COC has been completed correctly.
 - Attempt to chill was evident.
 - Appropriately preserved sample containers have been used.
 - All samples were received in good condition.
 - Samples have been provided with adequate time to commence analysis in accordance with the relevant holding times.
 - Appropriate sample containers have been used.
 - Split sample sent to requested external lab.
 - Some samples have been subcontracted.
- N/A Custody Seals intact (if used).

Contact notes

If you have any questions with respect to these samples please contact:

Andrew Black on Phone : (+61) 2 9900 8490 or by e.mail: AndrewBlack@eurofins.com

Results will be delivered electronically via e.mail to Stephen Maxwell - smaxwell@ramboll.com.

Note: A copy of these results will also be delivered to the general Ramboll Australia Pty Ltd email address.

Australia

Melbourne
6 Monterey Road
Dandenong South VIC 3175
Phone : +61 3 8564 5000
NATA # 1261
Site # 1254 & 14271

Sydney
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16 Mars Road
Lane Cove West NSW 2066
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NATA # 1261 Site # 18217

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IANZ # 1327

Christchurch
43 Detroit Drive
Rolleston, Christchurch 7675
Phone : 0800 856 450
IANZ # 1290

Company Name: Ramboll Australia Pty Ltd
Address: Level 3/100 Pacific Highway
North Sydney
NSW 2060

Order No.:
Report #: 712439
Phone: 02 9954 8118
Fax: 02 9954 8150

Received: Apr 6, 2020 2:36 PM
Due: Apr 15, 2020
Priority: 5 Day
Contact Name: Stephen Maxwell

Project Name:
Project ID: 318000780

Eurofins Analytical Services Manager : Andrew Black

Sample Detail						Lead	Moisture Set
Melbourne Laboratory - NATA Site # 1254 & 14271							
Sydney Laboratory - NATA Site # 18217						X	X
Brisbane Laboratory - NATA Site # 20794							
Perth Laboratory - NATA Site # 23736							
External Laboratory							
No	Sample ID	Sample Date	Sampling Time	Matrix	LAB ID		
1	P30_HA01_0_0	Apr 02, 2020		Soil	S20-Ap09555	X	X
2	P30_HA01_0_2	Apr 02, 2020		Soil	S20-Ap09556	X	X
3	P30_HA02_0_0	Apr 02, 2020		Soil	S20-Ap09557	X	X
4	P30_HA03_0_0	Apr 02, 2020		Soil	S20-Ap09558	X	X
5	P30_HA03_0_2	Apr 02, 2020		Soil	S20-Ap09559	X	X
6	P30_HA04_0_0	Apr 02, 2020		Soil	S20-Ap09560	X	X

Australia

Melbourne
 6 Monterey Road
 Dandenong South VIC 3175
 Phone : +61 3 8564 5000
 NATA # 1261
 Site # 1254 & 14271

Sydney
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 NATA # 1261 Site # 18217

Brisbane
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 NATA # 1261 Site # 20794

Perth
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 Site # 23736

New Zealand

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 Rolleston, Christchurch 7675
 Phone : 0800 856 450
 IANZ # 1290

ABN – 50 005 085 521

web : www.eurofins.com.au

e.mail : EnviroSales@eurofins.com

Company Name: Ramboll Australia Pty Ltd
Address: Level 3/100 Pacific Highway
 North Sydney
 NSW 2060

Project Name:
Project ID: 318000780

Order No.:
Report #: 712439
Phone: 02 9954 8118
Fax: 02 9954 8150

Received: Apr 6, 2020 2:36 PM
Due: Apr 15, 2020
Priority: 5 Day
Contact Name: Stephen Maxwell

Eurofins Analytical Services Manager : Andrew Black

Sample Detail						Lead	Moisture Set
Melbourne Laboratory - NATA Site # 1254 & 14271							
Sydney Laboratory - NATA Site # 18217						X	X
Brisbane Laboratory - NATA Site # 20794							
Perth Laboratory - NATA Site # 23736							
7	P30_HA04_0_2	Apr 02, 2020		Soil	S20-Ap09561	X	X
8	P30_HA05_0_0	Apr 02, 2020		Soil	S20-Ap09562	X	X
9	P30_HA05_0_2	Apr 02, 2020		Soil	S20-Ap09563	X	X
Test Counts						9	9

Ramboll Environ Australia Pty Ltd
 Level 3/100 Pacific Highway
 North Sydney
 NSW 2060



NATA Accredited
 Accreditation Number 1261
 Site Number 18217

Accredited for compliance with ISO/IEC 17025 – Testing
 The results of the tests, calibrations and/or
 measurements included in this document are traceable
 to Australian/national standards.

Attention: Stephen Maxwell

Report 712439-S
 Project name
 Project ID 318000780
 Received Date Apr 06, 2020

Client Sample ID			P30_HA01_0.0	P30_HA01_0.2	P30_HA02_0.0	P30_HA03_0.0
Sample Matrix			Soil	Soil	Soil	Soil
Eurofins Sample No.			S20-Ap09555	S20-Ap09556	S20-Ap09557	S20-Ap09558
Date Sampled			Apr 02, 2020	Apr 02, 2020	Apr 02, 2020	Apr 02, 2020
Test/Reference	LOR	Unit				
Heavy Metals						
Lead	5	mg/kg	12	7.3	23	28
% Moisture	1	%	26	8.8	20	35

Client Sample ID			P30_HA03_0.2	P30_HA04_0.0	P30_HA04_0.2	P30_HA05_0.0
Sample Matrix			Soil	Soil	Soil	Soil
Eurofins Sample No.			S20-Ap09559	S20-Ap09560	S20-Ap09561	S20-Ap09562
Date Sampled			Apr 02, 2020	Apr 02, 2020	Apr 02, 2020	Apr 02, 2020
Test/Reference	LOR	Unit				
Heavy Metals						
Lead	5	mg/kg	16	20	12	9.3
% Moisture	1	%	17	37	10	20

Client Sample ID			P30_HA05_0.2
Sample Matrix			Soil
Eurofins Sample No.			S20-Ap09563
Date Sampled			Apr 02, 2020
Test/Reference	LOR	Unit	
Heavy Metals			
Lead	5	mg/kg	7.2
% Moisture	1	%	13

Sample History

Where samples are submitted/analysed over several days, the last date of extraction and analysis is reported.

A recent review of our LIMS has resulted in the correction or clarification of some method identifications. Due to this, some of the method reference information on reports has changed. However, no substantive change has been made to our laboratory methods, and as such there is no change in the validity of current or previous results.

If the date and time of sampling are not provided, the Laboratory will not be responsible for compromised results should testing be performed outside the recommended holding time.

Description

Heavy Metals

- Method: LTM-MET-3040 Metals in Waters, Soils & Sediments by ICP-MS

% Moisture

- Method: LTM-GEN-7080 Moisture

Testing Site

Sydney

Sydney

Extracted

Apr 09, 2020

Apr 07, 2020

Holding Time

180 Days

14 Days

Australia

Melbourne
6 Monterey Road
Dandenong South VIC 3175
Phone : +61 3 8564 5000
NATA # 1261
Site # 1254 & 14271

Sydney
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Lane Cove West NSW 2066
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NATA # 1261 Site # 18217

Brisbane
1/21 Smallwood Place
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NATA # 1261 Site # 20794

Perth
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NATA # 1261
Site # 23736

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43 Detroit Drive
Rolleston, Christchurch 7675
Phone : 0800 856 450
IANZ # 1290

Company Name: Ramboll Australia Pty Ltd
Address: Level 3/100 Pacific Highway
North Sydney
NSW 2060

Order No.:
Report #: 712439
Phone: 02 9954 8118
Fax: 02 9954 8150

Received: Apr 6, 2020 2:36 PM
Due: Apr 15, 2020
Priority: 5 Day
Contact Name: Stephen Maxwell

Project Name:
Project ID: 318000780

Eurofins Analytical Services Manager : Andrew Black

Sample Detail						Lead	Moisture Set
Melbourne Laboratory - NATA Site # 1254 & 14271							
Sydney Laboratory - NATA Site # 18217						X	X
Brisbane Laboratory - NATA Site # 20794							
Perth Laboratory - NATA Site # 23736							
External Laboratory							
No	Sample ID	Sample Date	Sampling Time	Matrix	LAB ID		
1	P30_HA01_0.0	Apr 02, 2020		Soil	S20-Ap09555	X	X
2	P30_HA01_0.2	Apr 02, 2020		Soil	S20-Ap09556	X	X
3	P30_HA02_0.0	Apr 02, 2020		Soil	S20-Ap09557	X	X
4	P30_HA03_0.0	Apr 02, 2020		Soil	S20-Ap09558	X	X
5	P30_HA03_0.2	Apr 02, 2020		Soil	S20-Ap09559	X	X
6	P30_HA04_0.0	Apr 02, 2020		Soil	S20-Ap09560	X	X

Australia

Melbourne
 6 Monterey Road
 Dandenong South VIC 3175
 Phone : +61 3 8564 5000
 NATA # 1261
 Site # 1254 & 14271

Sydney
 Unit F3, Building F
 16 Mars Road
 Lane Cove West NSW 2066
 Phone : +61 2 9900 8400
 NATA # 1261 Site # 18217

Brisbane
 1/21 Smallwood Place
 Murarrie QLD 4172
 Phone : +61 7 3902 4600
 NATA # 1261 Site # 20794

Perth
 2/91 Leach Highway
 Kewdale WA 6105
 Phone : +61 8 9251 9600
 NATA # 1261
 Site # 23736

New Zealand

Auckland
 35 O'Rorke Road
 Penrose, Auckland 1061
 Phone : +64 9 526 45 51
 IANZ # 1327

Christchurch
 43 Detroit Drive
 Rolleston, Christchurch 7675
 Phone : 0800 856 450
 IANZ # 1290

ABN – 50 005 085 521

web : www.eurofins.com.au

e.mail : EnviroSales@eurofins.com

Company Name: Ramboll Australia Pty Ltd
Address: Level 3/100 Pacific Highway
 North Sydney
 NSW 2060

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Project ID: 318000780

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Melbourne Laboratory - NATA Site # 1254 & 14271							
Sydney Laboratory - NATA Site # 18217						X	X
Brisbane Laboratory - NATA Site # 20794							
Perth Laboratory - NATA Site # 23736							
7	P30_HA04_0_2	Apr 02, 2020		Soil	S20-Ap09561	X	X
8	P30_HA05_0_0	Apr 02, 2020		Soil	S20-Ap09562	X	X
9	P30_HA05_0_2	Apr 02, 2020		Soil	S20-Ap09563	X	X
Test Counts						9	9

Internal Quality Control Review and Glossary
General

- Laboratory QC results for Method Blanks, Duplicates, Matrix Spikes, and Laboratory Control Samples follows guidelines delineated in the National Environment Protection (Assessment of Site Contamination) Measure 1999, as amended May 2013 and are included in this QC report where applicable. Additional QC data may be available on request.
- All soil/sediment/solid results are reported on a dry basis, unless otherwise stated.
- All biota/food results are reported on a wet weight basis on the edible portion, unless otherwise stated.
- Actual LORs are matrix dependant. Quoted LORs may be raised where sample extracts are diluted due to interferences.
- Results are uncorrected for matrix spikes or surrogate recoveries except for PFAS compounds.
- SVOC analysis on waters are performed on homogenised, unfiltered samples, unless noted otherwise.
- Samples were analysed on an 'as received' basis.
- Information identified on this report with blue colour, indicates data provided by customer, that may have an impact on the results.
- This report replaces any interim results previously issued.

Holding Times

Please refer to 'Sample Preservation and Container Guide' for holding times (QS3001).

For samples received on the last day of holding time, notification of testing requirements should have been received at least 6 hours prior to sample receipt deadlines as stated on the SRA.

If the Laboratory did not receive the information in the required timeframe, and regardless of any other integrity issues, suitably qualified results may still be reported.

Holding times apply from the date of sampling, therefore compliance to these may be outside the laboratory's control.

For VOCs containing vinyl chloride, styrene and 2-chloroethyl vinyl ether the holding time is 7 days however for all other VOCs such as BTEX or C6-10 TRH then the holding time is 14 days.

****NOTE:** pH duplicates are reported as a range NOT as RPD

Units

mg/kg: milligrams per kilogram

mg/L: milligrams per litre

ug/L: micrograms per litre

ppm: Parts per million

ppb: Parts per billion

%: Percentage

org/100mL: Organisms per 100 millilitres

NTU: Nephelometric Turbidity Units

MPN/100mL: Most Probable Number of organisms per 100 millilitres

Terms

Dry	Where a moisture has been determined on a solid sample the result is expressed on a dry basis.
LOR	Limit of Reporting.
SPIKE	Addition of the analyte to the sample and reported as percentage recovery.
RPD	Relative Percent Difference between two Duplicate pieces of analysis.
LCS	Laboratory Control Sample - reported as percent recovery.
CRM	Certified Reference Material - reported as percent recovery.
Method Blank	In the case of solid samples these are performed on laboratory certified clean sands and in the case of water samples these are performed on de-ionised water.
Surr - Surrogate	The addition of a like compound to the analyte target and reported as percentage recovery.
Duplicate	A second piece of analysis from the same sample and reported in the same units as the result to show comparison.
USEPA	United States Environmental Protection Agency
APHA	American Public Health Association
TCLP	Toxicity Characteristic Leaching Procedure
COC	Chain of Custody
SRA	Sample Receipt Advice
QSM	US Department of Defense Quality Systems Manual Version 5.3
CP	Client Parent - QC was performed on samples pertaining to this report
NCP	Non-Client Parent - QC performed on samples not pertaining to this report, QC is representative of the sequence or batch that client samples were analysed within.
TEQ	Toxic Equivalency Quotient

QC - Acceptance Criteria

RPD Duplicates: Global RPD Duplicates Acceptance Criteria is 30% however the following acceptance guidelines are equally applicable:

Results <10 times the LOR : No Limit

Results between 10-20 times the LOR : RPD must lie between 0-50%

Results >20 times the LOR : RPD must lie between 0-30%

Surrogate Recoveries: Recoveries must lie between 20-130% Phenols & 50-150% PFASs

PFAS field samples that contain surrogate recoveries in excess of the QC limit designated in QSM 5.3 where no positive PFAS results have been reported have been reviewed and no data was affected.

WA DWER (n=10): PFBA, PFPeA, PFHxA, PFHpA, PFOA, PFBS, PFHxS, PFOS, 6:2 FTSA, 8:2 FTSA

QC Data General Comments

- Where a result is reported as a less than (<), higher than the nominated LOR, this is due to either matrix interference, extract dilution required due to interferences or contaminant levels within the sample, high moisture content or insufficient sample provided.
- Duplicate data shown within this report that states the word "BATCH" is a Batch Duplicate from outside of your sample batch, but within the laboratory sample batch at a 1:10 ratio. The Parent and Duplicate data shown is not data from your samples.
- Organochlorine Pesticide analysis - where reporting LCS data, Toxaphene & Chlordane are not added to the LCS.
- Organochlorine Pesticide analysis - where reporting Spike data, Toxaphene is not added to the Spike.
- Total Recoverable Hydrocarbons - where reporting Spike & LCS data, a single spike of commercial Hydrocarbon products in the range of C12-C30 is added and it's Total Recovery is reported in the C10-C14 cell of the Report.
- pH and Free Chlorine analysed in the laboratory - Analysis on this test must begin within 30 minutes of sampling. Therefore laboratory analysis is unlikely to be completed within holding time. Analysis will begin as soon as possible after sample receipt.
- Recovery Data (Spikes & Surrogates) - where chromatographic interference does not allow the determination of Recovery the term "INT" appears against that analyte.
- Polychlorinated Biphenyls are spiked only using Aroclor 1260 in Matrix Spikes and LCS.
- For Matrix Spikes and LCS results a dash " - " in the report means that the specific analyte was not added to the QC sample.
- Duplicate RPDs are calculated from raw analytical data thus it is possible to have two sets of data.

Quality Control Results

Test				Units	Result 1		Acceptance Limits	Pass Limits	Qualifying Code
Method Blank									
Heavy Metals									
Lead				mg/kg	< 5		5	Pass	
LCS - % Recovery									
Heavy Metals									
Lead				%	116		70-130	Pass	
Test	Lab Sample ID	QA Source	Units	Result 1			Acceptance Limits	Pass Limits	Qualifying Code
Duplicate									
				Result 1	Result 2	RPD			
% Moisture	S20-Ap10676	NCP	%	17	16	5.0	30%	Pass	
Duplicate									
				Result 1	Result 2	RPD			
Lead	S20-Ap09563	CP	mg/kg	7.2	6.4	11	30%	Pass	

Comments**Sample Integrity**

Custody Seals Intact (if used)	N/A
Attempt to Chill was evident	Yes
Sample correctly preserved	Yes
Appropriate sample containers have been used	Yes
Sample containers for volatile analysis received with minimal headspace	Yes
Samples received within HoldingTime	Yes
Some samples have been subcontracted	No

Authorised By

Andrew Black Analytical Services Manager
Gabriele Cordero Senior Analyst-Metal (NSW)

**Glenn Jackson
General Manager**

Final report - this Report replaces any previously issued Report

- Indicates Not Requested

* Indicates NATA accreditation does not cover the performance of this service

Measurement uncertainty of test data is available on request or please [click here](#).

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CHAIN OF CUSTODY RECORD

ABN 50 005 085 521

Sydney Laboratory
Unit F3 Bld. F, 16 Mars Rd, Lane Cove West, NSW 2066
02 9900 8400 EnviroSampleNSW@eurofins.com

Brisbane Laboratory
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07 3902 4600 EnviroSampleQLD@eurofins.com

Perth Laboratory
Unit 2, 91 Leach Highway, Kewdale WA 6105
08 9251 9600 EnviroSampleWA@eurofins.com

Melbourne Laboratory
2 Kingston Town Close, Oakleigh, VIC 3166
03 8564 5000 EnviroSampleVic@eurofins.com

Company		Ramboll		Project No	318000780				Project Manager	Stephen Maxwell				Sampler(s)	JB + RC			
Address		50 Glebe Road the Junction		Project Name				EDD Format (ESdat, EQUIS,	Excel and PDF				Handed over by	SM				
Contact Name		Stephen Maxwell		Analyses <small>(Note: Where metals are requested, please specify "Total" or "Filtered". SUITE code must be used to amend SUITE pricing.)</small>	Lead	M13 (Al, As, Ba, Be, Cd, Cr, Co, Cu, Fe, Pb, Mn, Hg, Ni, Zn) total	M13 (Al, As, Ba, Be, Cd, Cr, Co, Cu, Fe, Pb, Mn, Hg, Ni, Zn) dissolved								Email for Invoice	smaxwell@ramboll.com asiapac-accounts@ramboll.com		
Phone No															Email for Results	smaxwell@ramboll.com jblackwell@ramboll.com rcondon@ramboll.com shyde@ramboll.com		
Special Directions															Turnaround Time (TAT) Requirements (Default will be 5 days if not ticked)		<input type="checkbox"/> Overnight (9am)* <input type="checkbox"/> 1 Day* <input type="checkbox"/> 2 Day* <input type="checkbox"/> 3 Day* <input checked="" type="checkbox"/> 5 Day* <input type="checkbox"/> Other () * Surcharges apply	
Purchase Order															Sample Comments / Dangerous Goods Hazard Warning			
Quote ID No		180813RAMN_1																
No	Client Sample ID	Sampled Date/Time (dd/mm/yy hh:mm)	Matrix (Solid (S) Water (W))															
1	P31_HA01_0.0	2/04/20	S	X														
2	P31_HA01_0.2	2/04/20	S	X														
3	P31_HA02_0.0	2/04/20	S	X														
4	P31_HA02_0.2	2/04/20	S	X														
5	P31_HA03_0.0	2/04/20	S	X														
6	P31_HA03_0.2	2/04/20	S	X														
7	P31_HA04_0.0	2/04/20	S	X														
8	P31_HA04_0.2	2/04/20	S	X														
9	P31_HA05_0.0	2/04/20	S	X														
10	P31_HA05_0.2	2/04/20	S	X														
Total Counts				10														
Method of Shipment		<input type="checkbox"/> Courier (#) <input type="checkbox"/> Hand Delivered <input type="checkbox"/> Postal		Name		Signature		Date		Time		Date		Time		Temperature		
Eurofins mgt Laboratory Use Only		Received By		Pupau		SYD BNE MEL PER ADL NTL DRW		Signature		Date		06/04/20		Time		2:36 PM		
		Received By				SYD BNE MEL PER ADL NTL DRW		Signature		Date				Time		Report No 712481		

Submission of samples to the laboratory will be deemed as acceptance of Eurofins | mgt Standard Terms and Conditions unless agreed otherwise. A copy of Eurofins | mgt Standard Terms and Conditions is available on request.



CHAIN OF CUSTODY RECORD

ABN: 50 005 085 521

Sydney Laboratory
Unit F3 Bld F, 16 Mars Rd, Lane Cove West, NSW 2066
02 9900 8400 EnviroSampleNSW@eurofins.com

Brisbane Laboratory
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Perth Laboratory
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08 9251 9600 EnviroSampleWA@eurofins.com

Melbourne Laboratory
2 Kingston Town Close, Oakleigh, VIC 3166
03 8564 5000 EnviroSampleVic@eurofins.com

Company		Ramboll		Project No	318000780			Project Manager	Stephen Maxwell			Sampler(s)	JB + RC				
Address		50 Glebe Road the Junction		Project Name				EDD Format (ESdat, EQUIS)	Excel and PDF			Handed over by	SM				
Contact Name		Stephen Maxwell		Analyses <small>Note: where matrix is unspecified, 'Soil' is implied. 'Soil' goods must be used to ensure SUITE pricing.</small>	Lead	M13 (Al, As, Ba, Be, Cd, Cr, Co, Cu, Fe, Pb, Mn, Hg, Ni, Zn) total	M13 (Al, As, Ba, Be, Cd, Cr, Co, Cu, Fe, Pb, Mn, Hg, Ni, Zn) dissolved					Email for Invoice	smaxwell@ramboll.com asiapac-accounts@ramboll.com				
Phone No													Email for Results	smaxwell@ramboll.com jblackwell@ramboll.com rcondon@ramboll.com shyde@ramboll.com			
Special Directions														Turnaround Time (TAT) Requirements (Default will be 5 days if not ticked)	<input type="checkbox"/> Overnight (9am)* <input type="checkbox"/> 1 Day* <input type="checkbox"/> 2 Day* <input type="checkbox"/> 3 Day* <input checked="" type="checkbox"/> 5 Day* <input type="checkbox"/> Other () <small>Charges apply</small>		
Purchase Order															Sample Comments / Dangerous Goods Hazard Warning		
Quote ID No		180813RAMN_1															
No	Client Sample ID	Sampled Date/Time (dd/mm/yy hh:mm)	Matrix (Solid (S) Water (W))														
1	P31_TW1	2/04/20	W		X	X											
2	P31_TW2	2/04/20	W		X	X											
3	P31_TW3	2/04/20	W		X	X											
4	P31_TWS1	2/04/20	Sediment	X										Please homogenise sediment in this sample then analyse			
5	P31_TWS2	2/04/20	Sediment	X										Please homogenise sediment in this sample then analyse			
6	P31_TWS2	2/04/20	Sediment	X										Please homogenise sediment in this sample then analyse			
7																	
8																	
9																	
10																	
Total Counts					3	3	3										
Method of Shipment		<input type="checkbox"/> Courier (#) <input type="checkbox"/> Hand Delivered		Name				Signature				Date	_ / _ / _				
Eurofins mgt Laboratory Use Only		Received By	<i>[Signature]</i>		SYD BNE MEL PER ADL NTL DRW			Signature				Date	06/04				
		Received By			SYD BNE MEL PER ADL NTL DRW			Signature				Date	_ / _ / _				

Submission of samples to the laboratory will be deemed as acceptance of Eurofins | mgt Standard Terms and Conditions unless agreed otherwise. A copy of Eurofins | mgt Standard Terms and Conditions is available on request.
Eurofins Environment Testing Australia Pty Ltd trading as Eurofins | mgt

Melbourne

6 Monterey Road
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Sydney

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NATA # 1261 Site # 18217

Brisbane

1/21 Smallwood Place
Murarrie QLD 4172
Phone : +61 7 3902 4600
NATA # 1261 Site # 20794

Perth

2/91 Leach Highway
Kewdale WA 6105
Phone : +61 8 9251 9600
NATA # 1261 Site # 23736

Sample Receipt Advice

Company name: **Ramboll Australia Pty Ltd**

Contact name: **Stephen Maxwell**

Project ID: **318000780**

COC number: **Not provided**

Turn around time: **5 Day**

Date/Time received: **Apr 6, 2020 2:36 PM**

Eurofins reference: **712481**

Sample information

- A detailed list of analytes logged into our LIMS, is included in the attached summary table.
- All samples have been received as described on the above COC.
- COC has been completed correctly.
- Attempt to chill was evident.
- Appropriately preserved sample containers have been used.
- All samples were received in good condition.
- Samples have been provided with adequate time to commence analysis in accordance with the relevant holding times.
- Appropriate sample containers have been used.
- Sample containers for volatile analysis received with zero headspace.
- Split sample sent to requested external lab.
- Some samples have been subcontracted.
- N/A Custody Seals intact (if used).

Contact notes

If you have any questions with respect to these samples please contact:

Andrew Black on Phone : (+61) 2 9900 8490 or by e.mail: AndrewBlack@eurofins.com

Results will be delivered electronically via e.mail to Stephen Maxwell - smaxwell@ramboll.com.

Note: A copy of these results will also be delivered to the general Ramboll Australia Pty Ltd email address.

Ramboll Environ Australia Pty Ltd
 Level 3/100 Pacific Highway
 North Sydney
 NSW 2060



NATA Accredited
 Accreditation Number 1261
 Site Number 18217

Accredited for compliance with ISO/IEC 17025 – Testing
 The results of the tests, calibrations and/or
 measurements included in this document are traceable
 to Australian/national standards.

Attention: Stephen Maxwell

Report 712481-S

Project name

Project ID 318000780

Received Date Apr 06, 2020

Client Sample ID			P31_HA01_0.0	P31_HA01_0.2	P31_HA02_0.0	P31_HA02_0.2
Sample Matrix			Soil	Soil	Soil	Soil
Eurofins Sample No.			S20-Ap09838	S20-Ap09839	S20-Ap09840	S20-Ap09841
Date Sampled			Apr 02, 2020	Apr 02, 2020	Apr 02, 2020	Apr 02, 2020
Test/Reference	LOR	Unit				
Heavy Metals						
Lead	5	mg/kg	30	33	50	17
% Moisture	1	%	21	10.0	21	11

Client Sample ID			P31_HA03_0.0	P31_HA03_0.2	P31_HA04_0.0	P31_HA04_0.2
Sample Matrix			Soil	Soil	Soil	Soil
Eurofins Sample No.			S20-Ap09842	S20-Ap09843	S20-Ap09844	S20-Ap09845
Date Sampled			Apr 02, 2020	Apr 02, 2020	Apr 02, 2020	Apr 02, 2020
Test/Reference	LOR	Unit				
Heavy Metals						
Lead	5	mg/kg	26	27	35	19
% Moisture	1	%	25	6.2	26	17

Client Sample ID			P31_HA05_0.0	P31_HA05_0.2
Sample Matrix			Soil	Soil
Eurofins Sample No.			S20-Ap09846	S20-Ap09847
Date Sampled			Apr 02, 2020	Apr 02, 2020
Test/Reference	LOR	Unit		
Heavy Metals				
Lead	5	mg/kg	23	37
% Moisture	1	%	44	20

Sample History

Where samples are submitted/analysed over several days, the last date of extraction and analysis is reported.

A recent review of our LIMS has resulted in the correction or clarification of some method identifications. Due to this, some of the method reference information on reports has changed. However, no substantive change has been made to our laboratory methods, and as such there is no change in the validity of current or previous results.

If the date and time of sampling are not provided, the Laboratory will not be responsible for compromised results should testing be performed outside the recommended holding time.

Description	Testing Site	Extracted	Holding Time
Heavy Metals - Method: LTM-MET-3040 Metals in Waters, Soils & Sediments by ICP-MS	Sydney	Apr 09, 2020	180 Days
% Moisture - Method: LTM-GEN-7080 Moisture	Sydney	Apr 07, 2020	14 Days

Australia

Melbourne
6 Monterey Road
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NATA # 1261
Site # 1254 & 14271

Sydney
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Phone : +61 2 9900 8400
NATA # 1261 Site # 18217

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1/21 Smallwood Place
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NATA # 1261 Site # 20794

Perth
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NATA # 1261
Site # 23736

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Rolleston, Christchurch 7675
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IANZ # 1290

Company Name:	Ramboll Australia Pty Ltd	Order No.:		Received:	Apr 6, 2020 2:36 PM
Address:	Level 3/100 Pacific Highway North Sydney NSW 2060	Report #:	712481	Due:	Apr 15, 2020
Project Name:		Phone:	02 9954 8118	Priority:	5 Day
Project ID:	318000780	Fax:	02 9954 8150	Contact Name:	Stephen Maxwell

Eurofins Analytical Services Manager : Andrew Black

Sample Detail						Aluminium	Aluminium (filtered)	Arsenic	Arsenic (filtered)	Barium	Barium (filtered)	Beryllium	Beryllium (filtered)	Cadmium	Cadmium (filtered)	Chromium	Chromium (filtered)	Cobalt	Cobalt (filtered)	Copper	Copper (filtered)	Iron	Iron (filtered)	Lead	Lead (filtered)	Manganese	Manganese (filtered)	Mercury	Mercury (filtered)	Nickel	Nickel (filtered)	Zinc	Zinc (filtered)	Moisture Set		
Melbourne Laboratory - NATA Site # 1254 & 14271																																				
Sydney Laboratory - NATA Site # 18217						X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	
Brisbane Laboratory - NATA Site # 20794																																				
Perth Laboratory - NATA Site # 23736																																				
External Laboratory																																				
No	Sample ID	Sample Date	Sampling Time	Matrix	LAB ID																															
1	P31_HA01_0.0	Apr 02, 2020		Soil	S20-Ap09838																		X											X		
2	P31_HA01_0.2	Apr 02, 2020		Soil	S20-Ap09839																		X											X		
3	P31_HA02_0.0	Apr 02, 2020		Soil	S20-Ap09840																		X											X		
4	P31_HA02_0.2	Apr 02, 2020		Soil	S20-Ap09841																		X											X		
5	P31_HA03_0.0	Apr 02, 2020		Soil	S20-Ap09842																		X											X		
6	P31_HA03_0.2	Apr 02, 2020		Soil	S20-Ap09843																		X											X		

Australia

Melbourne
6 Monterey Road
Dandenong South VIC 3175
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NATA # 1261
Site # 1254 & 14271

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16 Mars Road
Lane Cove West NSW 2066
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NATA # 1261 Site # 18217

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NATA # 1261 Site # 20794

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NATA # 1261
Site # 23736

New Zealand

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Rolleston, Christchurch 7675
Phone : 0800 856 450
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ABN – 50 005 085 521

web : www.eurofins.com.au

e.mail : EnviroSales@eurofins.com

Company Name: Ramboll Australia Pty Ltd
Address: Level 3/100 Pacific Highway
North Sydney
NSW 2060

Order No.:
Report #: 712481
Phone: 02 9954 8118
Fax: 02 9954 8150

Received: Apr 6, 2020 2:36 PM
Due: Apr 15, 2020
Priority: 5 Day
Contact Name: Stephen Maxwell

Project Name:
Project ID: 318000780

Eurofins Analytical Services Manager : Andrew Black

Sample Detail						Aluminium	Aluminium (filtered)	Arsenic	Arsenic (filtered)	Barium	Barium (filtered)	Beryllium	Beryllium (filtered)	Cadmium	Cadmium (filtered)	Chromium	Chromium (filtered)	Cobalt	Cobalt (filtered)	Copper	Copper (filtered)	Iron	Iron (filtered)	Lead	Lead (filtered)	Manganese	Manganese (filtered)	Mercury	Mercury (filtered)	Nickel	Nickel (filtered)	Zinc	Zinc (filtered)	Moisture Set		
Melbourne Laboratory - NATA Site # 1254 & 14271																																				
Sydney Laboratory - NATA Site # 18217						X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	
Brisbane Laboratory - NATA Site # 20794																																				
Perth Laboratory - NATA Site # 23736																																				
7	P31_HA04_0	Apr 02, 2020		Soil	S20-Ap09844																		X											X		
8	P31_HA04_2	Apr 02, 2020		Soil	S20-Ap09845																		X											X		
9	P31_HA05_0	Apr 02, 2020		Soil	S20-Ap09846																		X											X		
10	P31_HA05_2	Apr 02, 2020		Soil	S20-Ap09847																		X											X		
11	P31_TW1	Apr 02, 2020		Water	S20-Ap09848	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X			
12	P31_TW2	Apr 02, 2020		Water	S20-Ap09849	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X			
13	P31_TW3	Apr 02, 2020		Water	S20-Ap09850	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X			
14	P31_TWS1	Apr 02, 2020		Sediment	S20-Ap09851																		X											X		
15	P31_TWS2	Apr 02, 2020		Sediment	S20-Ap09852																		X											X		
16	P31_TWS3	Apr 02, 2020		Sediment	S20-Ap09853																		X											X		

Australia

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Company Name:	Ramboll Australia Pty Ltd	Order No.:		Received:	Apr 6, 2020 2:36 PM
Address:	Level 3/100 Pacific Highway North Sydney NSW 2060	Report #:	712481	Due:	Apr 15, 2020
Project Name:		Phone:	02 9954 8118	Priority:	5 Day
Project ID:	318000780	Fax:	02 9954 8150	Contact Name:	Stephen Maxwell
Eurofins Analytical Services Manager : Andrew Black					

Sample Detail	Aluminium	Aluminium (filtered)	Arsenic	Arsenic (filtered)	Barium	Barium (filtered)	Beryllium	Beryllium (filtered)	Cadmium	Cadmium (filtered)	Chromium	Chromium (filtered)	Cobalt	Cobalt (filtered)	Copper	Copper (filtered)	Iron	Iron (filtered)	Lead	Lead (filtered)	Manganese	Manganese (filtered)	Mercury	Mercury (filtered)	Nickel	Nickel (filtered)	Zinc	Zinc (filtered)	Moisture Set
Melbourne Laboratory - NATA Site # 1254 & 14271																													
Sydney Laboratory - NATA Site # 18217	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X
Brisbane Laboratory - NATA Site # 20794																													
Perth Laboratory - NATA Site # 23736																													
Test Counts	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	16	3	3	3	3	3	3	3	3	13	

Internal Quality Control Review and Glossary
General

- Laboratory QC results for Method Blanks, Duplicates, Matrix Spikes, and Laboratory Control Samples follows guidelines delineated in the National Environment Protection (Assessment of Site Contamination) Measure 1999, as amended May 2013 and are included in this QC report where applicable. Additional QC data may be available on request.
- All soil/sediment/solid results are reported on a dry basis, unless otherwise stated.
- All biota/food results are reported on a wet weight basis on the edible portion, unless otherwise stated.
- Actual LORs are matrix dependant. Quoted LORs may be raised where sample extracts are diluted due to interferences.
- Results are uncorrected for matrix spikes or surrogate recoveries except for PFAS compounds.
- SVOC analysis on waters are performed on homogenised, unfiltered samples, unless noted otherwise.
- Samples were analysed on an 'as received' basis.
- Information identified on this report with blue colour, indicates data provided by customer, that may have an impact on the results.
- This report replaces any interim results previously issued.

Holding Times

Please refer to 'Sample Preservation and Container Guide' for holding times (QS3001).

For samples received on the last day of holding time, notification of testing requirements should have been received at least 6 hours prior to sample receipt deadlines as stated on the SRA.

If the Laboratory did not receive the information in the required timeframe, and regardless of any other integrity issues, suitably qualified results may still be reported.

Holding times apply from the date of sampling, therefore compliance to these may be outside the laboratory's control.

For VOCs containing vinyl chloride, styrene and 2-chloroethyl vinyl ether the holding time is 7 days however for all other VOCs such as BTEX or C6-10 TRH then the holding time is 14 days.

****NOTE:** pH duplicates are reported as a range NOT as RPD

Units

mg/kg: milligrams per kilogram

mg/L: milligrams per litre

ug/L: micrograms per litre

ppm: Parts per million

ppb: Parts per billion

%: Percentage

org/100mL: Organisms per 100 millilitres

NTU: Nephelometric Turbidity Units

MPN/100mL: Most Probable Number of organisms per 100 millilitres

Terms

Dry	Where a moisture has been determined on a solid sample the result is expressed on a dry basis.
LOR	Limit of Reporting.
SPIKE	Addition of the analyte to the sample and reported as percentage recovery.
RPD	Relative Percent Difference between two Duplicate pieces of analysis.
LCS	Laboratory Control Sample - reported as percent recovery.
CRM	Certified Reference Material - reported as percent recovery.
Method Blank	In the case of solid samples these are performed on laboratory certified clean sands and in the case of water samples these are performed on de-ionised water.
Surr - Surrogate	The addition of a like compound to the analyte target and reported as percentage recovery.
Duplicate	A second piece of analysis from the same sample and reported in the same units as the result to show comparison.
USEPA	United States Environmental Protection Agency
APHA	American Public Health Association
TCLP	Toxicity Characteristic Leaching Procedure
COC	Chain of Custody
SRA	Sample Receipt Advice
QSM	US Department of Defense Quality Systems Manual Version 5.3
CP	Client Parent - QC was performed on samples pertaining to this report
NCP	Non-Client Parent - QC performed on samples not pertaining to this report, QC is representative of the sequence or batch that client samples were analysed within.
TEQ	Toxic Equivalency Quotient

QC - Acceptance Criteria

RPD Duplicates: Global RPD Duplicates Acceptance Criteria is 30% however the following acceptance guidelines are equally applicable:

Results <10 times the LOR : No Limit

Results between 10-20 times the LOR : RPD must lie between 0-50%

Results >20 times the LOR : RPD must lie between 0-30%

Surrogate Recoveries: Recoveries must lie between 20-130% Phenols & 50-150% PFASs

PFAS field samples that contain surrogate recoveries in excess of the QC limit designated in QSM 5.3 where no positive PFAS results have been reported have been reviewed and no data was affected.

WA DWER (n=10): PFBA, PFPeA, PFHxA, PFHpA, PFOA, PFBS, PFHxS, PFOS, 6:2 FTSA, 8:2 FTSA

QC Data General Comments

- Where a result is reported as a less than (<), higher than the nominated LOR, this is due to either matrix interference, extract dilution required due to interferences or contaminant levels within the sample, high moisture content or insufficient sample provided.
- Duplicate data shown within this report that states the word "BATCH" is a Batch Duplicate from outside of your sample batch, but within the laboratory sample batch at a 1:10 ratio. The Parent and Duplicate data shown is not data from your samples.
- Organochlorine Pesticide analysis - where reporting LCS data, Toxaphene & Chlordane are not added to the LCS.
- Organochlorine Pesticide analysis - where reporting Spike data, Toxaphene is not added to the Spike.
- Total Recoverable Hydrocarbons - where reporting Spike & LCS data, a single spike of commercial Hydrocarbon products in the range of C12-C30 is added and it's Total Recovery is reported in the C10-C14 cell of the Report.
- pH and Free Chlorine analysed in the laboratory - Analysis on this test must begin within 30 minutes of sampling. Therefore laboratory analysis is unlikely to be completed within holding time. Analysis will begin as soon as possible after sample receipt.
- Recovery Data (Spikes & Surrogates) - where chromatographic interference does not allow the determination of Recovery the term "INT" appears against that analyte.
- Polychlorinated Biphenyls are spiked only using Aroclor 1260 in Matrix Spikes and LCS.
- For Matrix Spikes and LCS results a dash " - " in the report means that the specific analyte was not added to the QC sample.
- Duplicate RPDs are calculated from raw analytical data thus it is possible to have two sets of data.

Quality Control Results

Test				Units	Result 1		Acceptance Limits	Pass Limits	Qualifying Code			
Method Blank												
Heavy Metals												
Lead				mg/kg	< 5		5	Pass				
LCS - % Recovery												
Heavy Metals												
Lead				%	97		70-130	Pass				
Test	Lab Sample ID	QA Source	Units	Result 1			Acceptance Limits	Pass Limits	Qualifying Code			
Spike - % Recovery												
Heavy Metals												
Lead				S20-Ap09841	CP	%	123	70-130	Pass			
Test	Lab Sample ID	QA Source	Units	Result 1			Acceptance Limits	Pass Limits	Qualifying Code			
Duplicate												
				Result 1	Result 2	RPD						
% Moisture				S20-Ap10676	NCP	%	17	16	5.0	30%	Pass	
Duplicate												
Heavy Metals												
Lead				S20-Ap09840	CP	mg/kg	50	24	71	30%	Fail	Q15
Duplicate												
Heavy Metals												
Lead				S20-Ap09845	CP	mg/kg	19	18	7.0	30%	Pass	

Comments**Sample Integrity**

Custody Seals Intact (if used)	N/A
Attempt to Chill was evident	No
Sample correctly preserved	Yes
Appropriate sample containers have been used	Yes
Sample containers for volatile analysis received with minimal headspace	Yes
Samples received within HoldingTime	Yes
Some samples have been subcontracted	No

Qualifier Codes/Comments

Code	Description
Q15	The RPD reported passes Eurofins Environment Testing's QC - Acceptance Criteria as defined in the Internal Quality Control Review and Glossary page of this report.

Authorised By

Andrew Black Analytical Services Manager
Gabriele Cordero Senior Analyst-Metal (NSW)

**Glenn Jackson
General Manager**

Final report - this Report replaces any previously issued Report

- Indicates Not Requested

* Indicates NATA accreditation does not cover the performance of this service

Measurement uncertainty of test data is available on request or please [click here](#).

Eurofins shall not be liable for loss, cost, damages or expenses incurred by the client, or any other person or company, resulting from the use of any information or interpretation given in this report. In no case shall Eurofins be liable for consequential damages including, but not limited to, lost profits, damages for failure to meet deadlines and lost production arising from this report. This document shall not be reproduced except in full and relates only to the items tested. Unless indicated otherwise, the tests were performed on the samples as received.

Ramboll Environ Australia Pty Ltd
 Level 3/100 Pacific Highway
 North Sydney
 NSW 2060



NATA Accredited
 Accreditation Number 1261
 Site Number 18217

Accredited for compliance with ISO/IEC 17025 – Testing
 The results of the tests, calibrations and/or
 measurements included in this document are traceable
 to Australian/national standards.

Attention: Stephen Maxwell

Report 712481-W
 Project name
 Project ID 318000780
 Received Date Apr 06, 2020

Client Sample ID			P31_TW1	P31_TW2	P31_TW3	P31_TWS1
Sample Matrix			Water	Water	Water	Water
Eurofins Sample No.			S20-Ap09848	S20-Ap09849	S20-Ap09850	S20-Ap09851
Date Sampled			Apr 02, 2020	Apr 02, 2020	Apr 02, 2020	Apr 02, 2020
Test/Reference	LOR	Unit				
Heavy Metals						
Aluminium	0.05	mg/L	< 0.05	< 0.05	< 0.05	-
Aluminium (filtered)	0.05	mg/L	< 0.05	< 0.05	< 0.05	-
Arsenic	0.001	mg/L	< 0.001	< 0.001	< 0.001	-
Arsenic (filtered)	0.001	mg/L	< 0.001	< 0.001	< 0.001	-
Barium	0.02	mg/L	< 0.02	< 0.02	< 0.02	-
Barium (filtered)	0.02	mg/L	< 0.02	< 0.02	< 0.02	-
Beryllium	0.001	mg/L	< 0.001	< 0.001	< 0.001	-
Beryllium (filtered)	0.001	mg/L	< 0.001	< 0.001	< 0.001	-
Cadmium	0.0002	mg/L	< 0.0002	< 0.0002	< 0.0002	-
Cadmium (filtered)	0.0002	mg/L	< 0.0002	< 0.0002	< 0.0002	-
Chromium	0.001	mg/L	0.001	0.003	0.001	-
Chromium (filtered)	0.001	mg/L	< 0.001	< 0.001	< 0.001	-
Cobalt	0.001	mg/L	< 0.001	0.002	< 0.001	-
Cobalt (filtered)	0.001	mg/L	< 0.001	< 0.001	< 0.001	-
Copper	0.001	mg/L	0.002	0.005	0.006	-
Copper (filtered)	0.001	mg/L	0.002	0.003	0.004	-
Iron	0.05	mg/L	< 0.05	< 0.05	< 0.05	-
Iron (filtered)	0.05	mg/L	< 0.05	< 0.05	< 0.05	-
Lead	0.001	mg/L	< 0.001	< 0.001	< 0.001	4.3
Lead (filtered)	0.001	mg/L	< 0.001	< 0.001	< 0.001	-
Manganese	0.005	mg/L	< 0.005	0.009	0.021	-
Manganese (filtered)	0.005	mg/L	0.005	0.007	0.024	-
Mercury	0.0001	mg/L	< 0.0001	< 0.0001	< 0.0001	-
Mercury (filtered)	0.0001	mg/L	< 0.0001	< 0.0001	< 0.0001	-
Nickel	0.001	mg/L	< 0.001	< 0.001	< 0.001	-
Nickel (filtered)	0.001	mg/L	< 0.001	< 0.001	< 0.001	-
Zinc	0.005	mg/L	0.037	0.066	0.51	-
Zinc (filtered)	0.005	mg/L	0.028	0.030	0.50	-

Client Sample ID			P31_TWS2	P31_TWS3
Sample Matrix			Water	Water
Eurofins Sample No.			S20-Ap09852	S20-Ap09853
Date Sampled			Apr 02, 2020	Apr 02, 2020
Test/Reference	LOR	Unit		
Heavy Metals				
Lead	0.001	mg/L	18	7.0

Sample History

Where samples are submitted/analysed over several days, the last date of extraction and analysis is reported.

A recent review of our LIMS has resulted in the correction or clarification of some method identifications. Due to this, some of the method reference information on reports has changed. However, no substantive change has been made to our laboratory methods, and as such there is no change in the validity of current or previous results.

If the date and time of sampling are not provided, the Laboratory will not be responsible for compromised results should testing be performed outside the recommended holding time.

Description	Testing Site	Extracted	Holding Time
Heavy Metals - Method: LTM-MET-3040 Metals in Waters, Soils & Sediments by ICP-MS	Sydney	Apr 15, 2020	180 Days
Heavy Metals (filtered) - Method: LTM-MET-3040 Metals in Waters, Soils & Sediments by ICP-MS	Sydney	Apr 14, 2020	180 Days
Mobil Metals : Metals M15 - Method: LTM-MET-3040 Metals in Waters, Soils & Sediments by ICP-MS	Sydney	Apr 14, 2020	28 Days

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Company Name: Ramboll Australia Pty Ltd
Address: Level 3/100 Pacific Highway
North Sydney
NSW 2060

Order No.:
Report #: 712481
Phone: 02 9954 8118
Fax: 02 9954 8150

Received: Apr 6, 2020 2:36 PM
Due: Apr 15, 2020
Priority: 5 Day
Contact Name: Stephen Maxwell

Project Name:
Project ID: 318000780

Eurofins Analytical Services Manager : Andrew Black

Sample Detail						Aluminium	Aluminium (filtered)	Arsenic	Arsenic (filtered)	Barium	Barium (filtered)	Beryllium	Beryllium (filtered)	Cadmium	Cadmium (filtered)	Chromium	Chromium (filtered)	Cobalt	Cobalt (filtered)	Copper	Copper (filtered)	Iron	Iron (filtered)	Lead	Lead (filtered)	Manganese	Manganese (filtered)	Mercury	Mercury (filtered)	Nickel	Nickel (filtered)	Zinc	Zinc (filtered)	Moisture Set	
Melbourne Laboratory - NATA Site # 1254 & 14271																																			
Sydney Laboratory - NATA Site # 18217						X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X
Brisbane Laboratory - NATA Site # 20794																																			
Perth Laboratory - NATA Site # 23736																																			
External Laboratory																																			
No	Sample ID	Sample Date	Sampling Time	Matrix	LAB ID																														
1	P31_HA01_0.0	Apr 02, 2020		Soil	S20-Ap09838																		X										X		
2	P31_HA01_0.2	Apr 02, 2020		Soil	S20-Ap09839																		X										X		
3	P31_HA02_0.0	Apr 02, 2020		Soil	S20-Ap09840																		X										X		
4	P31_HA02_0.2	Apr 02, 2020		Soil	S20-Ap09841																		X										X		
5	P31_HA03_0.0	Apr 02, 2020		Soil	S20-Ap09842																		X										X		
6	P31_HA03_0.2	Apr 02, 2020		Soil	S20-Ap09843																		X										X		

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Phone: 02 9954 8118
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Received: Apr 6, 2020 2:36 PM
Due: Apr 15, 2020
Priority: 5 Day
Contact Name: Stephen Maxwell

Project Name:
Project ID: 318000780

Eurofins Analytical Services Manager : Andrew Black

Sample Detail						Aluminium	Aluminium (filtered)	Arsenic	Arsenic (filtered)	Barium	Barium (filtered)	Beryllium	Beryllium (filtered)	Cadmium	Cadmium (filtered)	Chromium	Chromium (filtered)	Cobalt	Cobalt (filtered)	Copper	Copper (filtered)	Iron	Iron (filtered)	Lead	Lead (filtered)	Manganese	Manganese (filtered)	Mercury	Mercury (filtered)	Nickel	Nickel (filtered)	Zinc	Zinc (filtered)	Moisture Set	
Melbourne Laboratory - NATA Site # 1254 & 14271																																			
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Brisbane Laboratory - NATA Site # 20794																																			
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9	P31_HA05_0	Apr 02, 2020		Soil	S20-Ap09846																		X										X		
10	P31_HA05_2	Apr 02, 2020		Soil	S20-Ap09847																		X										X		
11	P31_TW1	Apr 02, 2020		Water	S20-Ap09848	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X		
12	P31_TW2	Apr 02, 2020		Water	S20-Ap09849	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X		
13	P31_TW3	Apr 02, 2020		Water	S20-Ap09850	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X		
14	P31_TWS1	Apr 02, 2020		Sediment	S20-Ap09851																		X										X		
15	P31_TWS2	Apr 02, 2020		Sediment	S20-Ap09852																		X										X		
16	P31_TWS3	Apr 02, 2020		Sediment	S20-Ap09853																		X										X		

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Company Name: Ramboll Australia Pty Ltd
Address: Level 3/100 Pacific Highway
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Order No.:
Report #: 712481
Phone: 02 9954 8118
Fax: 02 9954 8150

Received: Apr 6, 2020 2:36 PM
Due: Apr 15, 2020
Priority: 5 Day
Contact Name: Stephen Maxwell

Project Name:
Project ID: 318000780

Eurofins Analytical Services Manager : Andrew Black

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Melbourne Laboratory - NATA Site # 1254 & 14271																													
Sydney Laboratory - NATA Site # 18217	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X
Brisbane Laboratory - NATA Site # 20794																													
Perth Laboratory - NATA Site # 23736																													
Test Counts	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	16	3	3	3	3	3	3	3	3	13	

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If the Laboratory did not receive the information in the required timeframe, and regardless of any other integrity issues, suitably qualified results may still be reported.

Holding times apply from the date of sampling, therefore compliance to these may be outside the laboratory's control.

For VOCs containing vinyl chloride, styrene and 2-chloroethyl vinyl ether the holding time is 7 days however for all other VOCs such as BTEX or C6-10 TRH then the holding time is 14 days.

****NOTE:** pH duplicates are reported as a range NOT as RPD

Units

mg/kg: milligrams per kilogram

mg/L: milligrams per litre

ug/L: micrograms per litre

ppm: Parts per million

ppb: Parts per billion

%: Percentage

org/100mL: Organisms per 100 millilitres

NTU: Nephelometric Turbidity Units

MPN/100mL: Most Probable Number of organisms per 100 millilitres

Terms

Dry	Where a moisture has been determined on a solid sample the result is expressed on a dry basis.
LOR	Limit of Reporting.
SPIKE	Addition of the analyte to the sample and reported as percentage recovery.
RPD	Relative Percent Difference between two Duplicate pieces of analysis.
LCS	Laboratory Control Sample - reported as percent recovery.
CRM	Certified Reference Material - reported as percent recovery.
Method Blank	In the case of solid samples these are performed on laboratory certified clean sands and in the case of water samples these are performed on de-ionised water.
Surr - Surrogate	The addition of a like compound to the analyte target and reported as percentage recovery.
Duplicate	A second piece of analysis from the same sample and reported in the same units as the result to show comparison.
USEPA	United States Environmental Protection Agency
APHA	American Public Health Association
TCLP	Toxicity Characteristic Leaching Procedure
COC	Chain of Custody
SRA	Sample Receipt Advice
QSM	US Department of Defense Quality Systems Manual Version 5.3
CP	Client Parent - QC was performed on samples pertaining to this report
NCP	Non-Client Parent - QC performed on samples not pertaining to this report, QC is representative of the sequence or batch that client samples were analysed within.
TEQ	Toxic Equivalency Quotient

QC - Acceptance Criteria

RPD Duplicates: Global RPD Duplicates Acceptance Criteria is 30% however the following acceptance guidelines are equally applicable:

Results <10 times the LOR : No Limit

Results between 10-20 times the LOR : RPD must lie between 0-50%

Results >20 times the LOR : RPD must lie between 0-30%

Surrogate Recoveries: Recoveries must lie between 20-130% Phenols & 50-150% PFASs

PFAS field samples that contain surrogate recoveries in excess of the QC limit designated in QSM 5.3 where no positive PFAS results have been reported have been reviewed and no data was affected.

WA DWER (n=10): PFBA, PFPeA, PFHxA, PFHpA, PFOA, PFBS, PFHxS, PFOS, 6:2 FTSA, 8:2 FTSA

QC Data General Comments

- Where a result is reported as a less than (<), higher than the nominated LOR, this is due to either matrix interference, extract dilution required due to interferences or contaminant levels within the sample, high moisture content or insufficient sample provided.
- Duplicate data shown within this report that states the word "BATCH" is a Batch Duplicate from outside of your sample batch, but within the laboratory sample batch at a 1:10 ratio. The Parent and Duplicate data shown is not data from your samples.
- Organochlorine Pesticide analysis - where reporting LCS data, Toxaphene & Chlordane are not added to the LCS.
- Organochlorine Pesticide analysis - where reporting Spike data, Toxaphene is not added to the Spike.
- Total Recoverable Hydrocarbons - where reporting Spike & LCS data, a single spike of commercial Hydrocarbon products in the range of C12-C30 is added and it's Total Recovery is reported in the C10-C14 cell of the Report.
- pH and Free Chlorine analysed in the laboratory - Analysis on this test must begin within 30 minutes of sampling. Therefore laboratory analysis is unlikely to be completed within holding time. Analysis will begin as soon as possible after sample receipt.
- Recovery Data (Spikes & Surrogates) - where chromatographic interference does not allow the determination of Recovery the term "INT" appears against that analyte.
- Polychlorinated Biphenyls are spiked only using Aroclor 1260 in Matrix Spikes and LCS.
- For Matrix Spikes and LCS results a dash " - " in the report means that the specific analyte was not added to the QC sample.
- Duplicate RPDs are calculated from raw analytical data thus it is possible to have two sets of data.

Quality Control Results

Test	Units	Result 1			Acceptance Limits	Pass Limits	Qualifying Code
Method Blank							
Heavy Metals							
Aluminium	mg/L	< 0.05			0.05	Pass	
Aluminium (filtered)	mg/L	< 0.05			0.05	Pass	
Arsenic	mg/L	< 0.001			0.001	Pass	
Arsenic (filtered)	mg/L	< 0.001			0.001	Pass	
Barium	mg/L	< 0.02			0.02	Pass	
Barium (filtered)	mg/L	< 0.02			0.02	Pass	
Beryllium	mg/L	< 0.001			0.001	Pass	
Beryllium (filtered)	mg/L	< 0.001			0.001	Pass	
Cadmium	mg/L	< 0.0002			0.0002	Pass	
Cadmium (filtered)	mg/L	< 0.0002			0.0002	Pass	
Chromium	mg/L	< 0.001			0.001	Pass	
Chromium (filtered)	mg/L	< 0.001			0.001	Pass	
Cobalt	mg/L	< 0.001			0.001	Pass	
Cobalt (filtered)	mg/L	< 0.001			0.001	Pass	
Copper	mg/L	< 0.001			0.001	Pass	
Copper (filtered)	mg/L	< 0.001			0.001	Pass	
Iron	mg/L	< 0.05			0.05	Pass	
Iron (filtered)	mg/L	< 0.05			0.05	Pass	
Lead	mg/L	< 0.001			0.001	Pass	
Lead (filtered)	mg/L	< 0.001			0.001	Pass	
Manganese	mg/L	< 0.005			0.005	Pass	
Manganese (filtered)	mg/L	< 0.005			0.005	Pass	
Mercury	mg/L	< 0.0001			0.0001	Pass	
Mercury (filtered)	mg/L	< 0.0001			0.0001	Pass	
Nickel	mg/L	< 0.001			0.001	Pass	
Nickel (filtered)	mg/L	< 0.001			0.001	Pass	
Zinc	mg/L	< 0.005			0.005	Pass	
Zinc (filtered)	mg/L	< 0.005			0.005	Pass	
LCS - % Recovery							
Heavy Metals							
Aluminium	%	85			70-130	Pass	
Aluminium (filtered)	%	93			70-130	Pass	
Arsenic	%	102			70-130	Pass	
Arsenic (filtered)	%	109			70-130	Pass	
Barium	%	97			70-130	Pass	
Barium (filtered)	%	102			70-130	Pass	
Beryllium	%	103			70-130	Pass	
Beryllium (filtered)	%	108			70-130	Pass	
Cadmium	%	100			70-130	Pass	
Cadmium (filtered)	%	100			70-130	Pass	
Chromium	%	94			70-130	Pass	
Chromium (filtered)	%	94			70-130	Pass	
Cobalt	%	95			70-130	Pass	
Cobalt (filtered)	%	93			70-130	Pass	
Copper	%	97			70-130	Pass	
Copper (filtered)	%	91			70-130	Pass	
Iron	%	94			70-130	Pass	
Iron (filtered)	%	93			70-130	Pass	
Lead	%	98			70-130	Pass	
Lead (filtered)	%	97			70-130	Pass	

Test		Units	Result 1			Acceptance Limits	Pass Limits	Qualifying Code	
Manganese		%	92			70-130	Pass		
Manganese (filtered)		%	96			70-130	Pass		
Mercury		%	98			70-130	Pass		
Mercury (filtered)		%	93			70-130	Pass		
Nickel		%	97			70-130	Pass		
Nickel (filtered)		%	92			70-130	Pass		
Zinc		%	95			70-130	Pass		
Zinc (filtered)		%	97			70-130	Pass		
Test	Lab Sample ID	QA Source	Units	Result 1			Acceptance Limits	Pass Limits	Qualifying Code
Spike - % Recovery									
Heavy Metals				Result 1					
Aluminium (filtered)	S20-Ap16805	NCP	%	94			70-130	Pass	
Arsenic (filtered)	S20-Ap16805	NCP	%	85			70-130	Pass	
Barium (filtered)	S20-Ap16805	NCP	%	96			70-130	Pass	
Beryllium (filtered)	S20-Ap16805	NCP	%	103			70-130	Pass	
Cadmium (filtered)	S20-Ap16805	NCP	%	100			70-130	Pass	
Chromium (filtered)	S20-Ap16805	NCP	%	100			70-130	Pass	
Cobalt (filtered)	S20-Ap16805	NCP	%	103			70-130	Pass	
Copper	S20-Ap08166	NCP	%	95			70-130	Pass	
Copper (filtered)	S20-Ap16805	NCP	%	99			70-130	Pass	
Iron (filtered)	S20-Ap16805	NCP	%	90			70-130	Pass	
Lead (filtered)	S20-Ap16805	NCP	%	102			70-130	Pass	
Manganese (filtered)	S20-Ap16805	NCP	%	102			70-130	Pass	
Mercury (filtered)	S20-Ap16805	NCP	%	101			70-130	Pass	
Nickel (filtered)	S20-Ap16805	NCP	%	103			70-130	Pass	
Zinc (filtered)	S20-Ap16805	NCP	%	95			70-130	Pass	
Spike - % Recovery									
Heavy Metals				Result 1					
Lead	S20-Ap16805	NCP	%	98			70-130	Pass	
Test	Lab Sample ID	QA Source	Units	Result 1			Acceptance Limits	Pass Limits	Qualifying Code
Duplicate									
Heavy Metals				Result 1	Result 2	RPD			
Aluminium	S20-Ap09834	NCP	mg/L	0.06	0.08	17	30%	Pass	
Aluminium (filtered)	S20-Ap09848	CP	mg/L	< 0.05	< 0.05	<1	30%	Pass	
Arsenic	S20-Ap09834	NCP	mg/L	< 0.001	< 0.001	<1	30%	Pass	
Arsenic (filtered)	S20-Ap09848	CP	mg/L	< 0.001	< 0.001	<1	30%	Pass	
Barium	S20-Ap09834	NCP	mg/L	< 0.02	< 0.02	<1	30%	Pass	
Barium (filtered)	S20-Ap09848	CP	mg/L	< 0.02	< 0.02	<1	30%	Pass	
Beryllium	S20-Ap09834	NCP	mg/L	< 0.001	< 0.001	<1	30%	Pass	
Beryllium (filtered)	S20-Ap09848	CP	mg/L	< 0.001	< 0.001	<1	30%	Pass	
Cadmium	S20-Ap09834	NCP	mg/L	< 0.0002	< 0.0002	<1	30%	Pass	
Cadmium (filtered)	S20-Ap09848	CP	mg/L	< 0.0002	< 0.0002	<1	30%	Pass	
Chromium	S20-Ap09834	NCP	mg/L	0.001	0.001	14	30%	Pass	
Chromium (filtered)	S20-Ap09848	CP	mg/L	< 0.001	< 0.001	<1	30%	Pass	
Cobalt	S20-Ap09834	NCP	mg/L	< 0.001	< 0.001	<1	30%	Pass	
Cobalt (filtered)	S20-Ap09848	CP	mg/L	< 0.001	< 0.001	<1	30%	Pass	
Copper	S20-Ap09834	NCP	mg/L	< 0.001	< 0.001	<1	30%	Pass	
Copper (filtered)	S20-Ap09848	CP	mg/L	0.002	0.002	1.0	30%	Pass	
Iron	S20-Ap09834	NCP	mg/L	0.10	0.08	23	30%	Pass	
Iron (filtered)	S20-Ap09848	CP	mg/L	< 0.05	< 0.05	<1	30%	Pass	
Lead	S20-Ap09834	NCP	mg/L	< 0.001	< 0.001	<1	30%	Pass	
Lead (filtered)	S20-Ap09848	CP	mg/L	< 0.001	< 0.001	<1	30%	Pass	
Manganese	S20-Ap09834	NCP	mg/L	0.007	0.007	1.0	30%	Pass	

Test	Lab Sample ID	QA Source	Units	Result 1			Acceptance Limits	Pass Limits	Qualifying Code
Duplicate									
Heavy Metals				Result 1	Result 2	RPD			
Manganese (filtered)	S20-Ap09848	CP	mg/L	0.005	0.005	8.0	30%	Pass	
Mercury	S20-Ap09834	NCP	mg/L	< 0.0001	< 0.0001	<1	30%	Pass	
Mercury (filtered)	S20-Ap09848	CP	mg/L	< 0.0001	< 0.0001	<1	30%	Pass	
Nickel	S20-Ap09834	NCP	mg/L	< 0.001	< 0.001	<1	30%	Pass	
Nickel (filtered)	S20-Ap09848	CP	mg/L	< 0.001	< 0.001	<1	30%	Pass	
Zinc	S20-Ap09834	NCP	mg/L	0.064	0.073	14	30%	Pass	
Zinc (filtered)	S20-Ap09848	CP	mg/L	0.028	0.030	6.0	30%	Pass	

Comments**Sample Integrity**

Custody Seals Intact (if used)	N/A
Attempt to Chill was evident	No
Sample correctly preserved	Yes
Appropriate sample containers have been used	Yes
Sample containers for volatile analysis received with minimal headspace	Yes
Samples received within HoldingTime	Yes
Some samples have been subcontracted	No

Authorised By

Andrew Black Analytical Services Manager
Gabriele Cordero Senior Analyst-Metal (NSW)

**Glenn Jackson
General Manager**

Final report - this Report replaces any previously issued Report

- Indicates Not Requested

* Indicates NATA accreditation does not cover the performance of this service

Measurement uncertainty of test data is available on request or please [click here](#).

Eurofins shall not be liable for loss, cost, damages or expenses incurred by the client, or any other person or company, resulting from the use of any information or interpretation given in this report. In no case shall Eurofins be liable for consequential damages including, but not limited to, lost profits, damages for failure to meet deadlines and lost production arising from this report. This document shall not be reproduced except in full and relates only to the items tested. Unless indicated otherwise, the tests were performed on the samples as received.

Subject:

FW: 5 DAY TAT ADDITIONAL ANALYSIS: FW: Sediment samples

From: Joshua Blackwell [mailto:JBLACKWELL@ramboll.com]

Sent: Tuesday, 28 April 2020 3:11 PM

To: Andrew Black

Subject: Sediment samples

EXTERNAL EMAIL *

Hi Andrew,

Could I please request the following samples be dried and analysed for lead in mg/kg and moisture content. Please report in 8 separate reports as follows;

1. P6_TWS1 (S20-Ap02120)
2. P24_TWS1 (S20-Ap09836) & P24_TWS2 (S20-Ap09837)
3. P25_TWS1 (S20-Ap09766) & P25_TWS2 (S20-Ap09767)
4. P26_TWS1 (S20-Ap09881)
5. P27_TWS1 (S20-Ap09734)
6. P28_TWS1 (S20-Ap09694) & P28_TWS2 (S20-Ap09695) & P28_TWS3 (S20-Ap09696)
7. P31_TWS1 (S20-Ap09851) & P31_TWS2 (S20-Ap09852) & P31_TWS3 (S20-Ap09853)
8. P32_TWS2 (S20-Ap09662)

Kind regards

Joshua Blackwell


Consultant

3182675 - Hunter

D +61 (481) 157565

M +61 (481) 157565

jblackwell@ramboll.com

Connect with us 

Ramboll

Level 2, Suite 18 Eastpoint

50 Glebe Road

PO Box 435

The Junction

NSW 2291

Australia

<https://ramboll.com>

Ramboll Australia Pty Ltd.

ACN 095 437 442

ABN 49 095 437 442

Click [here](#) to report this email as spam.

ScannedByWebSenseForEurofins

Melbourne

6 Monterey Road
Dandenong South Vic 3175
Phone : +61 3 8564 5000
NATA # 1261
Site # 1254 & 14271

Sydney

Unit F3, Building F
16 Mars Road
Lane Cove West NSW 2066
Phone : +61 2 9900 8400
NATA # 1261 Site # 18217

Brisbane

1/21 Smallwood Place
Murarrie QLD 4172
Phone : +61 7 3902 4600
NATA # 1261 Site # 20794

Perth

2/91 Leach Highway
Kewdale WA 6105
Phone : +61 8 9251 9600
NATA # 1261 Site # 23736

Sample Receipt Advice

Company name: **Ramboll Australia Pty Ltd**
Contact name: Joshua Blackwell
Project name: ADDITIONAL - 318000780
COC number: Not provided
Turn around time: 5 Day
Date/Time received: Apr 28, 2020 3:11 PM
Eurofins reference: **716297**

Sample information

- A detailed list of analytes logged into our LIMS, is included in the attached summary table.
- All samples have been received as described on the above COC.
- COC has been completed correctly.
- Attempt to chill was evident.
- Appropriately preserved sample containers have been used.
- All samples were received in good condition.
- Samples have been provided with adequate time to commence analysis in accordance with the relevant holding times.
- Appropriate sample containers have been used.
- Split sample sent to requested external lab.
- Some samples have been subcontracted.
- N/A Custody Seals intact (if used).

Contact notes

If you have any questions with respect to these samples please contact:

Andrew Black on Phone : (+61) 2 9900 8490 or by e.mail: AndrewBlack@eurofins.com

Results will be delivered electronically via e.mail to Joshua Blackwell - jblackwell@ramboll.com.

Note: A copy of these results will also be delivered to the general Ramboll Australia Pty Ltd email address.

Australia

Melbourne
 6 Monterey Road
 Dandenong South VIC 3175
 Phone : +61 3 8564 5000
 NATA # 1261
 Site # 1254 & 14271

Sydney
 Unit F3, Building F
 16 Mars Road
 Lane Cove West NSW 2066
 Phone : +61 2 9900 8400
 NATA # 1261 Site # 18217

Brisbane
 1/21 Smallwood Place
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 Phone : +61 7 3902 4600
 NATA # 1261 Site # 20794

Perth
 2/91 Leach Highway
 Kewdale WA 6105
 Phone : +61 8 9251 9600
 NATA # 1261
 Site # 23736

New Zealand

Auckland
 35 O'Rorke Road
 Penrose, Auckland 1061
 Phone : +64 9 526 45 51
 IANZ # 1327

Christchurch
 43 Detroit Drive
 Rolleston, Christchurch 7675
 Phone : 0800 856 450
 IANZ # 1290

Company Name: Ramboll Australia Pty Ltd
Address: Level 3/100 Pacific Highway
 North Sydney
 NSW 2060
Project Name: ADDITIONAL - 318000780

Order No.:
Report #: 716297
Phone: 02 9954 8118
Fax: 02 9954 8150

Received: Apr 28, 2020 3:11 PM
Due: May 5, 2020
Priority: 5 Day
Contact Name: Joshua Blackwell

Eurofins Analytical Services Manager : Andrew Black

Sample Detail						Lead	Moisture Set
Melbourne Laboratory - NATA Site # 1254 & 14271							
Sydney Laboratory - NATA Site # 18217						X	X
Brisbane Laboratory - NATA Site # 20794							
Perth Laboratory - NATA Site # 23736							
External Laboratory							
No	Sample ID	Sample Date	Sampling Time	Matrix	LAB ID		
1	P31_TWS1	Apr 02, 2020		Sediment	S20-Ap42291	X	X
2	P31_TWS2	Apr 02, 2020		Sediment	S20-Ap42292	X	X
3	P31_TWS3	Apr 02, 2020		Sediment	S20-Ap42293	X	X
Test Counts						3	3

Ramboll Environ Australia Pty Ltd
 Level 3/100 Pacific Highway
 North Sydney
 NSW 2060



NATA Accredited
Accreditation Number 1261
Site Number 18217

Accredited for compliance with ISO/IEC 17025 – Testing
 The results of the tests, calibrations and/or
 measurements included in this document are traceable
 to Australian/national standards.

Attention: **Joshua Blackwell**

Report **716297-S**
 Project name **ADDITIONAL - 318000780**
 Received Date **Apr 28, 2020**

Client Sample ID			P31_TWS1	P31_TWS2	P31_TWS3
Sample Matrix			Sediment	Sediment	Sediment
Eurofins Sample No.			S20-Ap42291	S20-Ap42292	S20-Ap42293
Date Sampled			Apr 02, 2020	Apr 02, 2020	Apr 02, 2020
Test/Reference	LOR	Unit			
Heavy Metals					
Lead	5	mg/kg	97	120	110
% Moisture	1	%	72	69	72

Sample History

Where samples are submitted/analysed over several days, the last date of extraction and analysis is reported.

A recent review of our LIMS has resulted in the correction or clarification of some method identifications. Due to this, some of the method reference information on reports has changed. However, no substantive change has been made to our laboratory methods, and as such there is no change in the validity of current or previous results.

If the date and time of sampling are not provided, the Laboratory will not be responsible for compromised results should testing be performed outside the recommended holding time.

Description

Heavy Metals

- Method: LTM-MET-3040 Metals in Waters, Soils & Sediments by ICP-MS

% Moisture

- Method: LTM-GEN-7080 Moisture

Testing Site

Sydney

Sydney

Extracted

May 02, 2020

Apr 29, 2020

Holding Time

180 Days

14 Days

Australia

Melbourne
 6 Monterey Road
 Dandenong South VIC 3175
 Phone : +61 3 8564 5000
 NATA # 1261
 Site # 1254 & 14271

Sydney
 Unit F3, Building F
 16 Mars Road
 Lane Cove West NSW 2066
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 2/91 Leach Highway
 Kewdale WA 6105
 Phone : +61 8 9251 9600
 NATA # 1261
 Site # 23736

New Zealand

Auckland
 35 O'Rorke Road
 Penrose, Auckland 1061
 Phone : +64 9 526 45 51
 IANZ # 1327

Christchurch
 43 Detroit Drive
 Rolleston, Christchurch 7675
 Phone : 0800 856 450
 IANZ # 1290

Company Name: Ramboll Australia Pty Ltd
Address: Level 3/100 Pacific Highway
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 NSW 2060
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Fax: 02 9954 8150

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2	P31_TWS2	Apr 02, 2020		Sediment	S20-Ap42292	X	X
3	P31_TWS3	Apr 02, 2020		Sediment	S20-Ap42293	X	X
Test Counts						3	3

Internal Quality Control Review and Glossary
General

- Laboratory QC results for Method Blanks, Duplicates, Matrix Spikes, and Laboratory Control Samples follows guidelines delineated in the National Environment Protection (Assessment of Site Contamination) Measure 1999, as amended May 2013 and are included in this QC report where applicable. Additional QC data may be available on request.
- All soil/sediment/solid results are reported on a dry basis, unless otherwise stated.
- All biota/food results are reported on a wet weight basis on the edible portion, unless otherwise stated.
- Actual LORs are matrix dependant. Quoted LORs may be raised where sample extracts are diluted due to interferences.
- Results are uncorrected for matrix spikes or surrogate recoveries except for PFAS compounds.
- SVOC analysis on waters are performed on homogenised, unfiltered samples, unless noted otherwise.
- Samples were analysed on an 'as received' basis.
- Information identified on this report with blue colour, indicates data provided by customer, that may have an impact on the results.
- This report replaces any interim results previously issued.

Holding Times

Please refer to 'Sample Preservation and Container Guide' for holding times (QS3001).

For samples received on the last day of holding time, notification of testing requirements should have been received at least 6 hours prior to sample receipt deadlines as stated on the SRA.

If the Laboratory did not receive the information in the required timeframe, and regardless of any other integrity issues, suitably qualified results may still be reported.

Holding times apply from the date of sampling, therefore compliance to these may be outside the laboratory's control.

For VOCs containing vinyl chloride, styrene and 2-chloroethyl vinyl ether the holding time is 7 days however for all other VOCs such as BTEX or C6-10 TRH then the holding time is 14 days.

****NOTE:** pH duplicates are reported as a range NOT as RPD

Units

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Surrogate Recoveries: Recoveries must lie between 20-130% Phenols & 50-150% PFASs

PFAS field samples that contain surrogate recoveries in excess of the QC limit designated in QSM 5.3 where no positive PFAS results have been reported have been reviewed and no data was affected.

WA DWER (n=10): PFBA, PFPeA, PFHxA, PFHpA, PFOA, PFBS, PFHxS, PFOS, 6:2 FTSA, 8:2 FTSA

QC Data General Comments

- Where a result is reported as a less than (<), higher than the nominated LOR, this is due to either matrix interference, extract dilution required due to interferences or contaminant levels within the sample, high moisture content or insufficient sample provided.
- Duplicate data shown within this report that states the word "BATCH" is a Batch Duplicate from outside of your sample batch, but within the laboratory sample batch at a 1:10 ratio. The Parent and Duplicate data shown is not data from your samples.
- Organochlorine Pesticide analysis - where reporting LCS data, Toxaphene & Chlordane are not added to the LCS.
- Organochlorine Pesticide analysis - where reporting Spike data, Toxaphene is not added to the Spike.
- Total Recoverable Hydrocarbons - where reporting Spike & LCS data, a single spike of commercial Hydrocarbon products in the range of C12-C30 is added and it's Total Recovery is reported in the C10-C14 cell of the Report.
- pH and Free Chlorine analysed in the laboratory - Analysis on this test must begin within 30 minutes of sampling. Therefore laboratory analysis is unlikely to be completed within holding time. Analysis will begin as soon as possible after sample receipt.
- Recovery Data (Spikes & Surrogates) - where chromatographic interference does not allow the determination of Recovery the term "INT" appears against that analyte.
- Polychlorinated Biphenyls are spiked only using Aroclor 1260 in Matrix Spikes and LCS.
- For Matrix Spikes and LCS results a dash " - " in the report means that the specific analyte was not added to the QC sample.
- Duplicate RPDs are calculated from raw analytical data thus it is possible to have two sets of data.

Quality Control Results

Test				Units	Result 1		Acceptance Limits	Pass Limits	Qualifying Code	
Method Blank										
Heavy Metals										
Lead				mg/kg	< 5		5	Pass		
LCS - % Recovery										
Heavy Metals										
Lead				%	99		70-130	Pass		
Test	Lab Sample ID	QA Source	Units	Result 1			Acceptance Limits	Pass Limits	Qualifying Code	
Spike - % Recovery										
Heavy Metals										
Lead				S20-Ap44661	NCP	%	91	70-130	Pass	
Duplicate										
Heavy Metals										
Lead				S20-Ap42291	CP	mg/kg	97	100	4.0	30% Pass
Duplicate										
					Result 1	Result 2	RPD			
% Moisture				S20-Ap42500	NCP	%	4.8	4.7	2.0	30% Pass

Comments**Sample Integrity**

Custody Seals Intact (if used)	N/A
Attempt to Chill was evident	No
Sample correctly preserved	Yes
Appropriate sample containers have been used	Yes
Sample containers for volatile analysis received with minimal headspace	Yes
Samples received within HoldingTime	Yes
Some samples have been subcontracted	No

Authorised By

Andrew Black Analytical Services Manager
Gabriele Cordero Senior Analyst-Metal (NSW)

**Glenn Jackson
General Manager**

Final report - this Report replaces any previously issued Report

- Indicates Not Requested

* Indicates NATA accreditation does not cover the performance of this service

Measurement uncertainty of test data is available on request or please [click here](#).

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CHAIN OF CUSTODY RECORD

ABN 50 005 085 521

Sydney Laboratory
Unit F3 Bld.F, 16 Mars Rd, Lane Cove West, NSW 2066
02 9900 8400 EnviroSampleNSW@eurofins.com

Brisbane Laboratory
Unit 1, 21 Smallwood Pl., Murarrie, QLD 4172
07 3902 4600 EnviroSampleQLD@eurofins.com

Perth Laboratory
Unit 2, 91 Leach Highway, Kewdale WA 6105
08 9251 9600 EnviroSampleWA@eurofins.com

Melbourne Laboratory
2 Kingston Town Close, Oakleigh, VIC 3166
03 8564 5000 EnviroSampleVic@eurofins.com

Company		Ramboll		Project No		318000780		Project Manager		Stephen Maxwell		Sampler(s)		JB + RC			
Address		50 Glebe Road the Junction		Project Name				EDD Format (ESdat, EQUiS,		Excel and PDF		Handed over by		SM			
Contact Name		Stephen Maxwell		<small>Analyses</small> <small>(Note: Where matrices are requested, please specify "Total" or "Filtered" / SUITE code must be used to subtract SUITE pricing)</small> Lead M13 (Al, As, Ba, Be, Cd, Cr, Co, Cu, Fe, Pb, Mn, Hg, Ni, Zn) total M13 (Al, As, Ba, Be, Cd, Cr, Co, Cu, Fe, Pb, Mn, Hg, Ni, Zn) dissolved								Email for Invoice		smaxwell@ramboll.com asiapac-accounts@ramboll.com			
Phone No														Email for Results		smaxwell@ramboll.com jblackwell@ramboll.com rcondon@ramboll.com shyde@ramboll.com	
Special Directions														Turnaround Time (TAT) Requirements (default will be 5 days if not ticked) <input type="checkbox"/> Overnight (9am)* <input type="checkbox"/> 1 Day* <input type="checkbox"/> 2 Day* <input type="checkbox"/> 3 Day* <input checked="" type="checkbox"/> 5 Day* * Surcharges apply <input type="checkbox"/> Other ()			
Purchase Order														jblackwell@ramboll.com 1L Plastic 250mL Plastic 125mL Plastic 200mL Amber Glass 40mL VOA vial 500mL PFAS Bottle Jar (Glass or HDPE) <small>Other (As per AS4654, WA Guidelines)</small>			
Quote ID No		180813RAMN_1		Matrix (Solid (S) Water (W))										Sample Comments / Dangerous Goods Hazard Warning			
No	Client Sample ID	Sampled Date/Time (dd/mm/yy hh:mm)															
1	P32_HA01_0.0	2/04/20	S	X													
2	P32_HA01_0.2	2/04/20	S	X													
3	P32_HA02_0.0	2/04/20	S	X													
4	P32_HA02_0.2	2/04/20	S	X													
5	P32_HA03_0.0	2/04/20	S	X													
6	P32_HA03_0.2	2/04/20	S	X													
7	P32_HA04_0.0	2/04/20	S	X													
8	P32_HA04_0.2	2/04/20	S	X													
9	P32_HA05_0.0	2/04/20	S	X													
10	P32_HA05_0.2	2/04/20	S	X													
Total Counts				10													
Method of Shipment		<input type="checkbox"/> Courier (#) <input type="checkbox"/> Hand Delivered <input type="checkbox"/> Postal		Name		Signature		Date		Date		Time		Time			
Eurofins mgt Laboratory Use Only		Received By: <i>Rupay</i> Received By:		SYD BNE MEL PER ADL NTL DRW Signature		Signature		Date: <i>2/04/20</i> Date:		Date: <i>2:36 PM</i> Time:		Temperature: <i>26.2°C</i> Report No: <i>712460</i>		Report No:			

Submission of samples to the laboratory will be deemed as acceptance of Eurofins | mgt Standard Terms and Conditions unless agreed otherwise. A copy of Eurofins | mgt Standard Terms and Conditions is available on request.



CHAIN OF CUSTODY RECORD

ABN 50 000 085 521

Sydney Laboratory
Unit F3 Bld F, 16 Mars Rd, Lane Cove West, NSW 2066
02 9900 8400 EnviroSampleNSW@eurofins.com

Brisbane Laboratory
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Perth Laboratory
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Melbourne Laboratory
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03 8564 5000 EnviroSampleVic@eurofins.com

Company		Ramboll		Project No	318000780			Project Manager	Stephen Maxwell			Sampler(s)	JB + RC	
Address		50 Glebe Road the Junction		Project Name				EDD Format (ESdat, EQUIS)	Excel and PDF			Handed over by	SM	
Contact Name		Stephen Maxwell		<small>Analyses</small> <small>(Note: Where metals are reported, specify as Total, Soluble or Filtered) Sulfide code must be used to indicate total H2S priority</small> Lead M13 (Al, As, Ba, Be, Cd, Cr, Co, Cu, Fe, Pb, Mn, Hg, Ni, Zn) total M13 (Al, As, Ba, Be, Cd, Cr, Co, Cu, Fe, Pb, Mn, Hg, Ni, Zn) dissolved							Email for Invoice	smaxwell@ramboll.com asiapac-accounts@ramboll.com		
Phone No											Email for Results	smaxwell@ramboll.com jblackwell@ramboll.com rcondon@ramboll.com shyde@ramboll.com		
Special Directions											jblackwell@ramboll.com	Turnaround Time (TAT) Requirements (Default will be 5 days if not ticked)		
Purchase Order												<input type="checkbox"/> Overnight (9am)* <input type="checkbox"/> 1 Day* <input type="checkbox"/> 2 Day* <input type="checkbox"/> 3 Day* <input checked="" type="checkbox"/> 5 Day* <input type="checkbox"/> Other () <input type="checkbox"/> Surcharges apply		
Quote ID No		180813RAMN_1										Sample Comments / Dangerous Goods Hazard Warning		
No	Client Sample ID	Sampled Date/Time (dd/mm/yy hh:mm)	Matrix (Solid (S) Water (W))											
1	P32_TW1	2/04/20	W		X	X								
2	P32_TW2	2/04/20	W		X	X								
3	P32_BORE	2/04/20	W		X	X								
4														
5														
6														
7														
8														
9														
10														
Total Counts				3	3									
Method of Shipment		<input type="checkbox"/> Courier (#)		<input type="checkbox"/> Hand Delivered		<input type="checkbox"/> Postal		Name	Signature	Date	Time	Temperature	Report No	
Eurofins mgt Laboratory Use Only		Received By	<i>Pupam</i>		SYD BNE MEL PER ADL NTL DRW		Signature		Date	06/04	Time			
		Received By			SYD BNE MEL PER ADL NTL DRW		Signature		Date		Time			

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Eurofins Environment Testing Australia Pty Ltd trading as Eurofins | mgt

1121160

#AU04_Enviro_Sample_NSW

To: Stephen Maxwell
Subject: RE: Eurofins Sample Receipt Advice - Report 712460 : Site 318000780

From: Stephen Maxwell [<mailto:SMAXWELL@ramboll.com>]
Sent: Thursday, 9 April 2020 8:56 AM
To: #AU04_Enviro_Sample_NSW
Cc: Joshua Blackwell
Subject: RE: Eurofins Sample Receipt Advice - Report 712460 : Site 318000780

Hi

Please homogenise sediment within P32_TWS2 and analyse for unfiltered lead.

Kind regards
Stephen Maxwell
Lead Consultant

D +61 478658194
M +61 478658194
smaxwell@ramboll.com

Ramboll Australia Pty Ltd.
ACN 095 437 442
ABN 49 095 437 442

From: EnviroSampleNSW@eurofins.com <EnviroSampleNSW@eurofins.com>
Sent: 9 April, 2020 8:47 AM
To: Stephen Maxwell <SMAXWELL@ramboll.com>
Subject: Eurofins Sample Receipt Advice - Report 712460 : Site 318000780

Dear Valued Client,

EXTRA SAMPLE REC: P32_TWS2, placed on HOLD.

Please find attached a Sample Receipt Advice (SRA), a Summary Sheet and a scanned copy of your Chain-of-Custody this documentation to ensure that the details are correct such as the Client Job Number, Turn Around Time, any compliance numbers as well as the requested analysis. If there are any irregularities then please contact your Eurofins | mgt Analyst as possible to make certain that they get changed.

Regards

Luca Dominici
Sample Receipt

Eurofins | Environmental Testing

Unit F3, Parkview Building

16 Mars Road

LANE COVE WEST NSW 2066

AUSTRALIA

Phone: +61 02 9900 8421

Email: EnviroSampleNSW@eurofins.com

Website: environment.eurofins.com.au

[EnviroNote 1098 - Melbourne PFAS Accreditation](#)

[EnviroNote 1080 - Total Organofluorine Analysis & PFAS Investigations](#)

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Site # 1254 & 14271

Sydney

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Brisbane

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NATA # 1261 Site # 20794

Perth

2/91 Leach Highway
Kewdale WA 6105
Phone : +61 8 9251 9600
NATA # 1261 Site # 23736

Sample Receipt Advice

Company name: **Ramboll Australia Pty Ltd**

Contact name: **Stephen Maxwell**

Project ID: **318000780**

COC number: **Not provided**

Turn around time: **5 Day**

Date/Time received: **Apr 6, 2020 2:36 PM**

Eurofins reference: **712460**

Sample information

- A detailed list of analytes logged into our LIMS, is included in the attached summary table.
- All samples have been received as described on the above COC.
- COC has been completed correctly.
- Attempt to chill was evident.
- Appropriately preserved sample containers have been used.
- All samples were received in good condition.
- Samples have been provided with adequate time to commence analysis in accordance with the relevant holding times.
- Appropriate sample containers have been used.
- Sample containers for volatile analysis received with zero headspace.
- Split sample sent to requested external lab.
- Some samples have been subcontracted.
- N/A Custody Seals intact (if used).

Contact notes

If you have any questions with respect to these samples please contact:

Andrew Black on Phone : (+61) 2 9900 8490 or by e.mail: AndrewBlack@eurofins.com

Results will be delivered electronically via e.mail to Stephen Maxwell - smaxwell@ramboll.com.

Note: A copy of these results will also be delivered to the general Ramboll Australia Pty Ltd email address.

Ramboll Environ Australia Pty Ltd
 Level 3/100 Pacific Highway
 North Sydney
 NSW 2060



NATA Accredited
 Accreditation Number 1261
 Site Number 18217

Accredited for compliance with ISO/IEC 17025 – Testing
 The results of the tests, calibrations and/or
 measurements included in this document are traceable
 to Australian/national standards.

Attention: Stephen Maxwell

Report 712460-S
 Project name
 Project ID 318000780
 Received Date Apr 06, 2020

Client Sample ID			P32_HA01_0.0	P32_HA01_0.2	P32_HA02_0.0	P32_HA02_0.2
Sample Matrix			Soil	Soil	Soil	Soil
Eurofins Sample No.			S20-Ap09647	S20-Ap09648	S20-Ap09649	S20-Ap09650
Date Sampled			Apr 02, 2020	Apr 02, 2020	Apr 02, 2020	Apr 02, 2020
Test/Reference	LOR	Unit				
Heavy Metals						
Lead	5	mg/kg	42	13	69	53
% Moisture	1	%	9.2	6.9	49	15

Client Sample ID			P32_HA03_0.0	P32_HA03_0.2	P32_HA04_0.0	P32_HA04_0.2
Sample Matrix			Soil	Soil	Soil	Soil
Eurofins Sample No.			S20-Ap09651	S20-Ap09652	S20-Ap09653	S20-Ap09654
Date Sampled			Apr 02, 2020	Apr 02, 2020	Apr 02, 2020	Apr 02, 2020
Test/Reference	LOR	Unit				
Heavy Metals						
Lead	5	mg/kg	99	70	72	36
% Moisture	1	%	25	12	22	15

Client Sample ID			P32_HA05_0.0	P32_HA05_0.2
Sample Matrix			Soil	Soil
Eurofins Sample No.			S20-Ap09655	S20-Ap09656
Date Sampled			Apr 02, 2020	Apr 02, 2020
Test/Reference	LOR	Unit		
Heavy Metals				
Lead	5	mg/kg	98	25
% Moisture	1	%	20	3.4

Sample History

Where samples are submitted/analysed over several days, the last date of extraction and analysis is reported.

A recent review of our LIMS has resulted in the correction or clarification of some method identifications. Due to this, some of the method reference information on reports has changed. However, no substantive change has been made to our laboratory methods, and as such there is no change in the validity of current or previous results.

If the date and time of sampling are not provided, the Laboratory will not be responsible for compromised results should testing be performed outside the recommended holding time.

Description

Heavy Metals

- Method: LTM-MET-3040 Metals in Waters, Soils & Sediments by ICP-MS

% Moisture

- Method: LTM-GEN-7080 Moisture

Testing Site

Sydney

Sydney

Extracted

Apr 09, 2020

Apr 07, 2020

Holding Time

180 Days

14 Days

Australia

Melbourne
6 Monterey Road
Dandenong South VIC 3175
Phone : +61 3 8564 5000
NATA # 1261
Site # 1254 & 14271

Sydney
Unit F3, Building F
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NATA # 1261 Site # 18217

Brisbane
1/21 Smallwood Place
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NATA # 1261 Site # 20794

Perth
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Kewdale WA 6105
Phone : +61 8 9251 9600
NATA # 1261
Site # 23736

New Zealand

Auckland
35 O'Rorke Road
Penrose, Auckland 1061
Phone : +64 9 526 45 51
IANZ # 1327

Christchurch
43 Detroit Drive
Rolleston, Christchurch 7675
Phone : 0800 856 450
IANZ # 1290

Company Name:	Ramboll Australia Pty Ltd	Order No.:		Received:	Apr 6, 2020 2:36 PM
Address:	Level 3/100 Pacific Highway North Sydney NSW 2060	Report #:	712460	Due:	Apr 15, 2020
Project Name:		Phone:	02 9954 8118	Priority:	5 Day
Project ID:	318000780	Fax:	02 9954 8150	Contact Name:	Stephen Maxwell

Eurofins Analytical Services Manager : Andrew Black

Sample Detail						Aluminium	Aluminium (filtered)	Arsenic	Arsenic (filtered)	Barium	Barium (filtered)	Beryllium	Beryllium (filtered)	Cadmium	Cadmium (filtered)	Chromium	Chromium (filtered)	Cobalt	Cobalt (filtered)	Copper	Copper (filtered)	Iron	Iron (filtered)	Lead	Lead (filtered)	Manganese	Manganese (filtered)	Mercury	Mercury (filtered)	Nickel	Nickel (filtered)	Zinc	Zinc (filtered)	Moisture Set		
Melbourne Laboratory - NATA Site # 1254 & 14271																																				
Sydney Laboratory - NATA Site # 18217						X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	
Brisbane Laboratory - NATA Site # 20794																																				
Perth Laboratory - NATA Site # 23736																																				
External Laboratory																																				
No	Sample ID	Sample Date	Sampling Time	Matrix	LAB ID																															
1	P32_HA01_0_0	Apr 02, 2020		Soil	S20-Ap09647																		X										X			
2	P32_HA01_0_2	Apr 02, 2020		Soil	S20-Ap09648																		X										X			
3	P32_HA02_0_0	Apr 02, 2020		Soil	S20-Ap09649																		X										X			
4	P32_HA02_0_2	Apr 02, 2020		Soil	S20-Ap09650																		X										X			
5	P32_HA03_0_0	Apr 02, 2020		Soil	S20-Ap09651																		X										X			
6	P32_HA03_0_2	Apr 02, 2020		Soil	S20-Ap09652																		X										X			

Australia

Melbourne
6 Monterey Road
Dandenong South VIC 3175
Phone : +61 3 8564 5000
NATA # 1261
Site # 1254 & 14271

Sydney
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16 Mars Road
Lane Cove West NSW 2066
Phone : +61 2 9900 8400
NATA # 1261 Site # 18217

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Phone : +61 7 3902 4600
NATA # 1261 Site # 20794

Perth
2/91 Leach Highway
Kewdale WA 6105
Phone : +61 8 9251 9600
NATA # 1261
Site # 23736

New Zealand

Auckland
35 O'Rorke Road
Penrose, Auckland 1061
Phone : +64 9 526 45 51
IANZ # 1327

Christchurch
43 Detroit Drive
Rolleston, Christchurch 7675
Phone : 0800 856 450
IANZ # 1290

Company Name: Ramboll Australia Pty Ltd
Address: Level 3/100 Pacific Highway
North Sydney
NSW 2060

Order No.:
Report #: 712460
Phone: 02 9954 8118
Fax: 02 9954 8150

Received: Apr 6, 2020 2:36 PM
Due: Apr 15, 2020
Priority: 5 Day
Contact Name: Stephen Maxwell

Project Name:
Project ID: 318000780

Eurofins Analytical Services Manager : Andrew Black

Sample Detail						Aluminium	Aluminium (filtered)	Arsenic	Arsenic (filtered)	Barium	Barium (filtered)	Beryllium	Beryllium (filtered)	Cadmium	Cadmium (filtered)	Chromium	Chromium (filtered)	Cobalt	Cobalt (filtered)	Copper	Copper (filtered)	Iron	Iron (filtered)	Lead	Lead (filtered)	Manganese	Manganese (filtered)	Mercury	Mercury (filtered)	Nickel	Nickel (filtered)	Zinc	Zinc (filtered)	Moisture Set	
Melbourne Laboratory - NATA Site # 1254 & 14271																																			
Sydney Laboratory - NATA Site # 18217						X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X
Brisbane Laboratory - NATA Site # 20794																																			
Perth Laboratory - NATA Site # 23736																																			
7	P32_HA04_0	Apr 02, 2020		Soil	S20-Ap09653																		X										X		
8	P32_HA04_2	Apr 02, 2020		Soil	S20-Ap09654																		X										X		
9	P32_HA05_0	Apr 02, 2020		Soil	S20-Ap09655																		X										X		
10	P32_HA05_2	Apr 02, 2020		Soil	S20-Ap09656																		X										X		
11	P32_TW1	Apr 02, 2020		Water	S20-Ap09657	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X		
12	P32_TW2	Apr 02, 2020		Water	S20-Ap09658	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X		
13	P32_BORE	Apr 02, 2020		Water	S20-Ap09659	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X		
14	P32_TWS2	Apr 02, 2020		Sediment	S20-Ap09662																		X										X		
Test Counts						3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	14	3	3	3	3	3	3	3	3	3	11

Internal Quality Control Review and Glossary

General

- Laboratory QC results for Method Blanks, Duplicates, Matrix Spikes, and Laboratory Control Samples follows guidelines delineated in the National Environment Protection (Assessment of Site Contamination) Measure 1999, as amended May 2013 and are included in this QC report where applicable. Additional QC data may be available on request.
- All soil/sediment/solid results are reported on a dry basis, unless otherwise stated.
- All biota/food results are reported on a wet weight basis on the edible portion, unless otherwise stated.
- Actual LORs are matrix dependant. Quoted LORs may be raised where sample extracts are diluted due to interferences.
- Results are uncorrected for matrix spikes or surrogate recoveries except for PFAS compounds.
- SVOC analysis on waters are performed on homogenised, unfiltered samples, unless noted otherwise.
- Samples were analysed on an 'as received' basis.
- Information identified on this report with blue colour, indicates data provided by customer, that may have an impact on the results.
- This report replaces any interim results previously issued.

Holding Times

Please refer to 'Sample Preservation and Container Guide' for holding times (QS3001).

For samples received on the last day of holding time, notification of testing requirements should have been received at least 6 hours prior to sample receipt deadlines as stated on the SRA.

If the Laboratory did not receive the information in the required timeframe, and regardless of any other integrity issues, suitably qualified results may still be reported.

Holding times apply from the date of sampling, therefore compliance to these may be outside the laboratory's control.

For VOCs containing vinyl chloride, styrene and 2-chloroethyl vinyl ether the holding time is 7 days however for all other VOCs such as BTEX or C6-10 TRH then the holding time is 14 days.

****NOTE:** pH duplicates are reported as a range NOT as RPD

Units

mg/kg: milligrams per kilogram

mg/L: milligrams per litre

ug/L: micrograms per litre

ppm: Parts per million

ppb: Parts per billion

%: Percentage

org/100mL: Organisms per 100 millilitres

NTU: Nephelometric Turbidity Units

MPN/100mL: Most Probable Number of organisms per 100 millilitres

Terms

Dry	Where a moisture has been determined on a solid sample the result is expressed on a dry basis.
LOR	Limit of Reporting.
SPIKE	Addition of the analyte to the sample and reported as percentage recovery.
RPD	Relative Percent Difference between two Duplicate pieces of analysis.
LCS	Laboratory Control Sample - reported as percent recovery.
CRM	Certified Reference Material - reported as percent recovery.
Method Blank	In the case of solid samples these are performed on laboratory certified clean sands and in the case of water samples these are performed on de-ionised water.
Surr - Surrogate	The addition of a like compound to the analyte target and reported as percentage recovery.
Duplicate	A second piece of analysis from the same sample and reported in the same units as the result to show comparison.
USEPA	United States Environmental Protection Agency
APHA	American Public Health Association
TCLP	Toxicity Characteristic Leaching Procedure
COC	Chain of Custody
SRA	Sample Receipt Advice
QSM	US Department of Defense Quality Systems Manual Version 5.3
CP	Client Parent - QC was performed on samples pertaining to this report
NCP	Non-Client Parent - QC performed on samples not pertaining to this report, QC is representative of the sequence or batch that client samples were analysed within.
TEQ	Toxic Equivalency Quotient

QC - Acceptance Criteria

RPD Duplicates: Global RPD Duplicates Acceptance Criteria is 30% however the following acceptance guidelines are equally applicable:

Results <10 times the LOR : No Limit

Results between 10-20 times the LOR : RPD must lie between 0-50%

Results >20 times the LOR : RPD must lie between 0-30%

Surrogate Recoveries: Recoveries must lie between 20-130% Phenols & 50-150% PFASs

PFAS field samples that contain surrogate recoveries in excess of the QC limit designated in QSM 5.3 where no positive PFAS results have been reported have been reviewed and no data was affected.

WA DWER (n=10): PFBA, PFPeA, PFHxA, PFHpA, PFOA, PFBS, PFHxS, PFOS, 6:2 FTSA, 8:2 FTSA

QC Data General Comments

- Where a result is reported as a less than (<), higher than the nominated LOR, this is due to either matrix interference, extract dilution required due to interferences or contaminant levels within the sample, high moisture content or insufficient sample provided.
- Duplicate data shown within this report that states the word "BATCH" is a Batch Duplicate from outside of your sample batch, but within the laboratory sample batch at a 1:10 ratio. The Parent and Duplicate data shown is not data from your samples.
- Organochlorine Pesticide analysis - where reporting LCS data, Toxaphene & Chlordane are not added to the LCS.
- Organochlorine Pesticide analysis - where reporting Spike data, Toxaphene is not added to the Spike.
- Total Recoverable Hydrocarbons - where reporting Spike & LCS data, a single spike of commercial Hydrocarbon products in the range of C12-C30 is added and it's Total Recovery is reported in the C10-C14 cell of the Report.
- pH and Free Chlorine analysed in the laboratory - Analysis on this test must begin within 30 minutes of sampling. Therefore laboratory analysis is unlikely to be completed within holding time. Analysis will begin as soon as possible after sample receipt.
- Recovery Data (Spikes & Surrogates) - where chromatographic interference does not allow the determination of Recovery the term "INT" appears against that analyte.
- Polychlorinated Biphenyls are spiked only using Aroclor 1260 in Matrix Spikes and LCS.
- For Matrix Spikes and LCS results a dash " - " in the report means that the specific analyte was not added to the QC sample.
- Duplicate RPDs are calculated from raw analytical data thus it is possible to have two sets of data.

Quality Control Results

Test				Units	Result 1		Acceptance Limits	Pass Limits	Qualifying Code		
Method Blank											
Heavy Metals											
Lead				mg/kg	< 5		5	Pass			
LCS - % Recovery											
Heavy Metals											
Lead				%	114		70-130	Pass			
Test	Lab Sample ID	QA Source	Units	Result 1			Acceptance Limits	Pass Limits	Qualifying Code		
Spike - % Recovery											
Heavy Metals											
Lead				S20-Ap16839	NCP	%	88	70-130	Pass		
Duplicate											
Heavy Metals											
Lead				S20-Ap11688	NCP	mg/kg	12	12	2.0	30%	Pass
Duplicate											
% Moisture				S20-Ap10676	NCP	%	17	16	5.0	30%	Pass

Comments**Sample Integrity**

Custody Seals Intact (if used)	N/A
Attempt to Chill was evident	No
Sample correctly preserved	Yes
Appropriate sample containers have been used	Yes
Sample containers for volatile analysis received with minimal headspace	Yes
Samples received within HoldingTime	Yes
Some samples have been subcontracted	No

Authorised By

Andrew Black Analytical Services Manager
Gabriele Cordero Senior Analyst-Metal (NSW)

**Glenn Jackson
General Manager**

Final report - this Report replaces any previously issued Report

- Indicates Not Requested

* Indicates NATA accreditation does not cover the performance of this service

Measurement uncertainty of test data is available on request or please [click here](#).

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Ramboll Environ Australia Pty Ltd
 Level 3/100 Pacific Highway
 North Sydney
 NSW 2060



NATA Accredited
 Accreditation Number 1261
 Site Number 18217

Accredited for compliance with ISO/IEC 17025 – Testing
 The results of the tests, calibrations and/or
 measurements included in this document are traceable
 to Australian/national standards.

Attention: Stephen Maxwell

Report 712460-W
 Project name
 Project ID 318000780
 Received Date Apr 06, 2020

Client Sample ID			P32_TW1	P32_TW2	P32_BORE	P32_TWS2
Sample Matrix			Water	Water	Water	Water
Eurofins Sample No.			S20-Ap09657	S20-Ap09658	S20-Ap09659	S20-Ap09662
Date Sampled			Apr 02, 2020	Apr 02, 2020	Apr 02, 2020	Apr 02, 2020
Test/Reference	LOR	Unit				
Heavy Metals						
Aluminium	0.05	mg/L	< 0.05	< 0.05	< 0.05	-
Aluminium (filtered)	0.05	mg/L	< 0.05	< 0.05	< 0.05	-
Arsenic	0.001	mg/L	< 0.001	< 0.001	< 0.001	-
Arsenic (filtered)	0.001	mg/L	< 0.001	< 0.001	< 0.001	-
Barium	0.02	mg/L	< 0.02	< 0.02	0.06	-
Barium (filtered)	0.02	mg/L	< 0.02	< 0.02	0.07	-
Beryllium	0.001	mg/L	< 0.001	< 0.001	< 0.001	-
Beryllium (filtered)	0.001	mg/L	< 0.001	< 0.001	< 0.001	-
Cadmium	0.0002	mg/L	< 0.0002	< 0.0002	< 0.0002	-
Cadmium (filtered)	0.0002	mg/L	< 0.0002	< 0.0002	< 0.0002	-
Chromium	0.001	mg/L	< 0.001	0.001	0.002	-
Chromium (filtered)	0.001	mg/L	< 0.001	< 0.001	< 0.001	-
Cobalt	0.001	mg/L	< 0.001	< 0.001	< 0.001	-
Cobalt (filtered)	0.001	mg/L	< 0.001	< 0.001	< 0.001	-
Copper	0.001	mg/L	0.002	< 0.001	< 0.001	-
Copper (filtered)	0.001	mg/L	0.002	< 0.001	< 0.001	-
Iron	0.05	mg/L	< 0.05	< 0.05	11	-
Iron (filtered)	0.05	mg/L	< 0.05	< 0.05	13	-
Lead	0.001	mg/L	< 0.001	< 0.001	< 0.001	0.21
Lead (filtered)	0.001	mg/L	< 0.001	< 0.001	< 0.001	-
Manganese	0.005	mg/L	< 0.005	< 0.005	0.13	-
Manganese (filtered)	0.005	mg/L	< 0.005	< 0.005	0.16	-
Mercury	0.0001	mg/L	< 0.0001	< 0.0001	< 0.0001	-
Mercury (filtered)	0.0001	mg/L	< 0.0001	< 0.0001	< 0.0001	-
Nickel	0.001	mg/L	< 0.001	< 0.001	< 0.001	-
Nickel (filtered)	0.001	mg/L	< 0.001	< 0.001	< 0.001	-
Zinc	0.005	mg/L	0.015	0.019	0.006	-
Zinc (filtered)	0.005	mg/L	0.018	0.015	< 0.005	-

Sample History

Where samples are submitted/analysed over several days, the last date of extraction and analysis is reported.

A recent review of our LIMS has resulted in the correction or clarification of some method identifications. Due to this, some of the method reference information on reports has changed. However, no substantive change has been made to our laboratory methods, and as such there is no change in the validity of current or previous results.

If the date and time of sampling are not provided, the Laboratory will not be responsible for compromised results should testing be performed outside the recommended holding time.

Description	Testing Site	Extracted	Holding Time
Heavy Metals - Method: LTM-MET-3040 Metals in Waters, Soils & Sediments by ICP-MS	Sydney	Apr 15, 2020	180 Days
Heavy Metals (filtered) - Method: LTM-MET-3040 Metals in Waters, Soils & Sediments by ICP-MS	Sydney	Apr 14, 2020	180 Days
Mobil Metals : Metals M15 - Method: LTM-MET-3040 Metals in Waters, Soils & Sediments by ICP-MS	Sydney	Apr 14, 2020	28 Days

Australia

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6 Monterey Road
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Site # 1254 & 14271

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NATA # 1261 Site # 20794

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Kewdale WA 6105
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NATA # 1261
Site # 23736

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43 Detroit Drive
Rolleston, Christchurch 7675
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IANZ # 1290

Company Name: Ramboll Australia Pty Ltd
Address: Level 3/100 Pacific Highway
North Sydney
NSW 2060

Order No.:
Report #: 712460
Phone: 02 9954 8118
Fax: 02 9954 8150

Received: Apr 6, 2020 2:36 PM
Due: Apr 15, 2020
Priority: 5 Day
Contact Name: Stephen Maxwell

Project Name:
Project ID: 318000780

Eurofins Analytical Services Manager : Andrew Black

Sample Detail						Aluminium	Aluminium (filtered)	Arsenic	Arsenic (filtered)	Barium	Barium (filtered)	Beryllium	Beryllium (filtered)	Cadmium	Cadmium (filtered)	Chromium	Chromium (filtered)	Cobalt	Cobalt (filtered)	Copper	Copper (filtered)	Iron	Iron (filtered)	Lead	Lead (filtered)	Manganese	Manganese (filtered)	Mercury	Mercury (filtered)	Nickel	Nickel (filtered)	Zinc	Zinc (filtered)	Moisture Set	
Melbourne Laboratory - NATA Site # 1254 & 14271																																			
Sydney Laboratory - NATA Site # 18217						X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X
Brisbane Laboratory - NATA Site # 20794																																			
Perth Laboratory - NATA Site # 23736																																			
External Laboratory																																			
No	Sample ID	Sample Date	Sampling Time	Matrix	LAB ID																														
1	P32_HA01_0_0	Apr 02, 2020		Soil	S20-Ap09647																		X										X		
2	P32_HA01_0_2	Apr 02, 2020		Soil	S20-Ap09648																		X										X		
3	P32_HA02_0_0	Apr 02, 2020		Soil	S20-Ap09649																		X										X		
4	P32_HA02_0_2	Apr 02, 2020		Soil	S20-Ap09650																		X										X		
5	P32_HA03_0_0	Apr 02, 2020		Soil	S20-Ap09651																		X										X		
6	P32_HA03_0_2	Apr 02, 2020		Soil	S20-Ap09652																		X										X		

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Brisbane
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Phone : +64 9 526 45 51
IANZ # 1327

Christchurch
43 Detroit Drive
Rolleston, Christchurch 7675
Phone : 0800 856 450
IANZ # 1290

Company Name:	Ramboll Australia Pty Ltd	Order No.:		Received:	Apr 6, 2020 2:36 PM
Address:	Level 3/100 Pacific Highway North Sydney NSW 2060	Report #:	712460	Due:	Apr 15, 2020
Project Name:		Phone:	02 9954 8118	Priority:	5 Day
Project ID:	318000780	Fax:	02 9954 8150	Contact Name:	Stephen Maxwell

Eurofins Analytical Services Manager : Andrew Black

Sample Detail						Aluminium	Aluminium (filtered)	Arsenic	Arsenic (filtered)	Barium	Barium (filtered)	Beryllium	Beryllium (filtered)	Cadmium	Cadmium (filtered)	Chromium	Chromium (filtered)	Cobalt	Cobalt (filtered)	Copper	Copper (filtered)	Iron	Iron (filtered)	Lead	Lead (filtered)	Manganese	Manganese (filtered)	Mercury	Mercury (filtered)	Nickel	Nickel (filtered)	Zinc	Zinc (filtered)	Moisture Set	
Melbourne Laboratory - NATA Site # 1254 & 14271																																			
Sydney Laboratory - NATA Site # 18217						X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	
Brisbane Laboratory - NATA Site # 20794																																			
Perth Laboratory - NATA Site # 23736																																			
7	P32_HA04_0	Apr 02, 2020		Soil	S20-Ap09653																		X										X		
8	P32_HA04_2	Apr 02, 2020		Soil	S20-Ap09654																		X										X		
9	P32_HA05_0	Apr 02, 2020		Soil	S20-Ap09655																		X										X		
10	P32_HA05_2	Apr 02, 2020		Soil	S20-Ap09656																		X										X		
11	P32_TW1	Apr 02, 2020		Water	S20-Ap09657	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X		
12	P32_TW2	Apr 02, 2020		Water	S20-Ap09658	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X		
13	P32_BORE	Apr 02, 2020		Water	S20-Ap09659	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X		
14	P32_TWS2	Apr 02, 2020		Sediment	S20-Ap09662																		X										X		
Test Counts						3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	14	3	3	3	3	3	3	3	3	3	11

Internal Quality Control Review and Glossary

General

1. Laboratory QC results for Method Blanks, Duplicates, Matrix Spikes, and Laboratory Control Samples follows guidelines delineated in the National Environment Protection (Assessment of Site Contamination) Measure 1999, as amended May 2013 and are included in this QC report where applicable. Additional QC data may be available on request.
2. All soil/sediment/solid results are reported on a dry basis, unless otherwise stated.
3. All biota/food results are reported on a wet weight basis on the edible portion, unless otherwise stated.
4. Actual LORs are matrix dependant. Quoted LORs may be raised where sample extracts are diluted due to interferences.
5. Results are uncorrected for matrix spikes or surrogate recoveries except for PFAS compounds.
6. SVOC analysis on waters are performed on homogenised, unfiltered samples, unless noted otherwise.
7. Samples were analysed on an 'as received' basis.
8. Information identified on this report with blue colour, indicates data provided by customer, that may have an impact on the results.
9. This report replaces any interim results previously issued.

Holding Times

Please refer to 'Sample Preservation and Container Guide' for holding times (QS3001).

For samples received on the last day of holding time, notification of testing requirements should have been received at least 6 hours prior to sample receipt deadlines as stated on the SRA.

If the Laboratory did not receive the information in the required timeframe, and regardless of any other integrity issues, suitably qualified results may still be reported.

Holding times apply from the date of sampling, therefore compliance to these may be outside the laboratory's control.

For VOCs containing vinyl chloride, styrene and 2-chloroethyl vinyl ether the holding time is 7 days however for all other VOCs such as BTEX or C6-10 TRH then the holding time is 14 days.

****NOTE:** pH duplicates are reported as a range NOT as RPD

Units

mg/kg: milligrams per kilogram

mg/L: milligrams per litre

ug/L: micrograms per litre

ppm: Parts per million

ppb: Parts per billion

%: Percentage

org/100mL: Organisms per 100 millilitres

NTU: Nephelometric Turbidity Units

MPN/100mL: Most Probable Number of organisms per 100 millilitres

Terms

Dry	Where a moisture has been determined on a solid sample the result is expressed on a dry basis.
LOR	Limit of Reporting.
SPIKE	Addition of the analyte to the sample and reported as percentage recovery.
RPD	Relative Percent Difference between two Duplicate pieces of analysis.
LCS	Laboratory Control Sample - reported as percent recovery.
CRM	Certified Reference Material - reported as percent recovery.
Method Blank	In the case of solid samples these are performed on laboratory certified clean sands and in the case of water samples these are performed on de-ionised water.
Surr - Surrogate	The addition of a like compound to the analyte target and reported as percentage recovery.
Duplicate	A second piece of analysis from the same sample and reported in the same units as the result to show comparison.
USEPA	United States Environmental Protection Agency
APHA	American Public Health Association
TCLP	Toxicity Characteristic Leaching Procedure
COC	Chain of Custody
SRA	Sample Receipt Advice
QSM	US Department of Defense Quality Systems Manual Version 5.3
CP	Client Parent - QC was performed on samples pertaining to this report
NCP	Non-Client Parent - QC performed on samples not pertaining to this report, QC is representative of the sequence or batch that client samples were analysed within.
TEQ	Toxic Equivalency Quotient

QC - Acceptance Criteria

RPD Duplicates: Global RPD Duplicates Acceptance Criteria is 30% however the following acceptance guidelines are equally applicable:

Results <10 times the LOR : No Limit

Results between 10-20 times the LOR : RPD must lie between 0-50%

Results >20 times the LOR : RPD must lie between 0-30%

Surrogate Recoveries: Recoveries must lie between 20-130% Phenols & 50-150% PFASs

PFAS field samples that contain surrogate recoveries in excess of the QC limit designated in QSM 5.3 where no positive PFAS results have been reported have been reviewed and no data was affected.

WA DWER (n=10): PFBA, PFPeA, PFHxA, PFHpA, PFOA, PFBS, PFHxS, PFOS, 6:2 FTSA, 8:2 FTSA

QC Data General Comments

1. Where a result is reported as a less than (<), higher than the nominated LOR, this is due to either matrix interference, extract dilution required due to interferences or contaminant levels within the sample, high moisture content or insufficient sample provided.
2. Duplicate data shown within this report that states the word "BATCH" is a Batch Duplicate from outside of your sample batch, but within the laboratory sample batch at a 1:10 ratio. The Parent and Duplicate data shown is not data from your samples.
3. Organochlorine Pesticide analysis - where reporting LCS data, Toxaphene & Chlordane are not added to the LCS.
4. Organochlorine Pesticide analysis - where reporting Spike data, Toxaphene is not added to the Spike.
5. Total Recoverable Hydrocarbons - where reporting Spike & LCS data, a single spike of commercial Hydrocarbon products in the range of C12-C30 is added and it's Total Recovery is reported in the C10-C14 cell of the Report.
6. pH and Free Chlorine analysed in the laboratory - Analysis on this test must begin within 30 minutes of sampling. Therefore laboratory analysis is unlikely to be completed within holding time. Analysis will begin as soon as possible after sample receipt.
7. Recovery Data (Spikes & Surrogates) - where chromatographic interference does not allow the determination of Recovery the term "INT" appears against that analyte.
8. Polychlorinated Biphenyls are spiked only using Aroclor 1260 in Matrix Spikes and LCS.
9. For Matrix Spikes and LCS results a dash " - " in the report means that the specific analyte was not added to the QC sample.
10. Duplicate RPDs are calculated from raw analytical data thus it is possible to have two sets of data.

Quality Control Results

Test	Units	Result 1			Acceptance Limits	Pass Limits	Qualifying Code	
Method Blank								
Heavy Metals								
Aluminium	mg/L	< 0.05			0.05	Pass		
Aluminium (filtered)	mg/L	< 0.05			0.05	Pass		
Arsenic	mg/L	< 0.001			0.001	Pass		
Arsenic (filtered)	mg/L	< 0.001			0.001	Pass		
Barium	mg/L	< 0.02			0.02	Pass		
Barium (filtered)	mg/L	< 0.02			0.02	Pass		
Beryllium	mg/L	< 0.001			0.001	Pass		
Beryllium (filtered)	mg/L	< 0.001			0.001	Pass		
Cadmium	mg/L	< 0.0002			0.0002	Pass		
Cadmium (filtered)	mg/L	< 0.0002			0.0002	Pass		
Chromium	mg/L	< 0.001			0.001	Pass		
Chromium (filtered)	mg/L	< 0.001			0.001	Pass		
Cobalt	mg/L	< 0.001			0.001	Pass		
Cobalt (filtered)	mg/L	< 0.001			0.001	Pass		
Copper	mg/L	< 0.001			0.001	Pass		
Copper (filtered)	mg/L	< 0.001			0.001	Pass		
Iron (filtered)	mg/L	< 0.05			0.05	Pass		
Lead	mg/L	< 0.001			0.001	Pass		
Lead (filtered)	mg/L	< 0.001			0.001	Pass		
Manganese	mg/L	< 0.005			0.005	Pass		
Manganese (filtered)	mg/L	< 0.005			0.005	Pass		
Mercury	mg/L	0.0001			0.0001	Pass		
Mercury (filtered)	mg/L	< 0.0001			0.0001	Pass		
Nickel (filtered)	mg/L	< 0.001			0.001	Pass		
Zinc (filtered)	mg/L	< 0.005			0.005	Pass		
LCS - % Recovery								
Heavy Metals								
Aluminium (filtered)	%	93			70-130	Pass		
Arsenic (filtered)	%	109			70-130	Pass		
Barium (filtered)	%	102			70-130	Pass		
Beryllium (filtered)	%	108			70-130	Pass		
Cadmium (filtered)	%	100			70-130	Pass		
Chromium (filtered)	%	94			70-130	Pass		
Cobalt (filtered)	%	93			70-130	Pass		
Copper (filtered)	%	91			70-130	Pass		
Iron (filtered)	%	93			70-130	Pass		
Lead (filtered)	%	97			70-130	Pass		
Manganese (filtered)	%	96			70-130	Pass		
Mercury (filtered)	%	93			70-130	Pass		
Nickel (filtered)	%	92			70-130	Pass		
Zinc (filtered)	%	97			70-130	Pass		
Test	Lab Sample ID	QA Source	Units	Result 1		Acceptance Limits	Pass Limits	Qualifying Code
Spike - % Recovery								
				Result 1				
Aluminium (filtered)	S20-Ap16805	NCP	%	94		70-130	Pass	
Arsenic (filtered)	S20-Ap10320	NCP	%	117		70-130	Pass	
Barium (filtered)	S20-Ap10320	NCP	%	106		70-130	Pass	
Beryllium (filtered)	S20-Ap10320	NCP	%	88		70-130	Pass	
Cadmium (filtered)	S20-Ap10320	NCP	%	110		70-130	Pass	

Test	Lab Sample ID	QA Source	Units	Result 1			Acceptance Limits	Pass Limits	Qualifying Code
Chromium (filtered)	S20-Ap10320	NCP	%	90			70-130	Pass	
Cobalt (filtered)	S20-Ap16805	NCP	%	103			70-130	Pass	
Copper	S20-Ap08166	NCP	%	95			70-130	Pass	
Copper (filtered)	S20-Ap16805	NCP	%	99			70-130	Pass	
Iron (filtered)	S20-Ap16805	NCP	%	90			70-130	Pass	
Lead (filtered)	S20-Ap10320	NCP	%	84			70-130	Pass	
Manganese (filtered)	S20-Ap16805	NCP	%	102			70-130	Pass	
Mercury (filtered)	S20-Ap10320	NCP	%	76			70-130	Pass	
Nickel (filtered)	S20-Ap16805	NCP	%	103			70-130	Pass	
Zinc (filtered)	S20-Ap16805	NCP	%	95			70-130	Pass	
Spike - % Recovery									
Heavy Metals				Result 1					
Lead	S20-Ap16805	NCP	%	98			70-130	Pass	
Test	Lab Sample ID	QA Source	Units	Result 1			Acceptance Limits	Pass Limits	Qualifying Code
Duplicate									
Heavy Metals				Result 1	Result 2	RPD			
Aluminium	S20-Ap09834	NCP	mg/L	0.06	0.08	17	30%	Pass	
Aluminium (filtered)	S20-Ap09657	CP	mg/L	< 0.05	< 0.05	<1	30%	Pass	
Arsenic	S20-Ap09834	NCP	mg/L	< 0.001	< 0.001	<1	30%	Pass	
Arsenic (filtered)	S20-Ap09657	CP	mg/L	< 0.001	< 0.001	<1	30%	Pass	
Barium	S20-Ap09834	NCP	mg/L	< 0.02	< 0.02	<1	30%	Pass	
Barium (filtered)	S20-Ap09657	CP	mg/L	< 0.02	< 0.02	<1	30%	Pass	
Beryllium	S20-Ap09834	NCP	mg/L	< 0.001	< 0.001	<1	30%	Pass	
Beryllium (filtered)	S20-Ap09657	CP	mg/L	< 0.001	< 0.001	<1	30%	Pass	
Cadmium	S20-Ap09834	NCP	mg/L	< 0.0002	< 0.0002	<1	30%	Pass	
Cadmium (filtered)	S20-Ap09657	CP	mg/L	< 0.0002	< 0.0002	<1	30%	Pass	
Chromium	S20-Ap09834	NCP	mg/L	0.001	0.001	14	30%	Pass	
Chromium (filtered)	S20-Ap09657	CP	mg/L	< 0.001	< 0.001	<1	30%	Pass	
Cobalt	S20-Ap09834	NCP	mg/L	< 0.001	< 0.001	<1	30%	Pass	
Cobalt (filtered)	S20-Ap09657	CP	mg/L	< 0.001	< 0.001	<1	30%	Pass	
Copper	S20-Ap09834	NCP	mg/L	< 0.001	< 0.001	<1	30%	Pass	
Copper (filtered)	S20-Ap09657	CP	mg/L	0.002	0.002	51	30%	Fail	Q15
Iron	S20-Ap09834	NCP	mg/L	0.10	0.08	23	30%	Pass	
Iron (filtered)	S20-Ap09657	CP	mg/L	< 0.05	< 0.05	<1	30%	Pass	
Lead	S20-Ap09834	NCP	mg/L	< 0.001	< 0.001	<1	30%	Pass	
Lead (filtered)	S20-Ap09657	CP	mg/L	< 0.001	< 0.001	<1	30%	Pass	
Manganese	S20-Ap09834	NCP	mg/L	0.007	0.007	1.0	30%	Pass	
Manganese (filtered)	S20-Ap09657	CP	mg/L	< 0.005	< 0.005	<1	30%	Pass	
Mercury	S20-Ap09834	NCP	mg/L	< 0.0001	< 0.0001	<1	30%	Pass	
Mercury (filtered)	S20-Ap09657	CP	mg/L	< 0.0001	< 0.0001	<1	30%	Pass	
Nickel	S20-Ap09834	NCP	mg/L	< 0.001	< 0.001	<1	30%	Pass	
Nickel (filtered)	S20-Ap09657	CP	mg/L	< 0.001	< 0.001	<1	30%	Pass	
Zinc	S20-Ap09834	NCP	mg/L	0.064	0.073	14	30%	Pass	
Zinc (filtered)	S20-Ap09657	CP	mg/L	0.018	0.015	160	30%	Fail	Q15

Comments
Sample Integrity

Custody Seals Intact (if used)	N/A
Attempt to Chill was evident	No
Sample correctly preserved	Yes
Appropriate sample containers have been used	Yes
Sample containers for volatile analysis received with minimal headspace	Yes
Samples received within HoldingTime	Yes
Some samples have been subcontracted	No

Qualifier Codes/Comments

Code	Description
Q15	The RPD reported passes Eurofins Environment Testing's QC - Acceptance Criteria as defined in the Internal Quality Control Review and Glossary page of this report.

Authorised By

Andrew Black	Analytical Services Manager
Gabriele Cordero	Senior Analyst-Metal (NSW)


**Glenn Jackson
General Manager**

Final report - this Report replaces any previously issued Report

- Indicates Not Requested

* Indicates NATA accreditation does not cover the performance of this service

Measurement uncertainty of test data is available on request or please [click here](#).

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CHAIN OF CUSTODY RECORD

ABN 50 005 085 521

Sydney Laboratory
Unit F3 Bld.F, 16 Mars Rd, Lane Cove West, NSW 2066
02 9900 8400 EnviroSampleNSW@eurofins.com

Brisbane Laboratory
Unit 1, 21 Smallwood PL, Murarrie, QLD 4172
07 3902 4600 EnviroSampleQLD@eurofins.com

Perth Laboratory
Unit 2, 91 Leach Highway, Kewdale WA 6105
08 9251 9600 EnviroSampleWA@eurofins.com

Melbourne Laboratory
2 Kingston Town Close, Oakleigh, VIC 3166
03 8564 5000 EnviroSampleVic@eurofins.com

Company		Ramboll		Project No		318000780		Project Manager		Stephen Maxwell		Sampler(s)		JB, TJ, JK																	
Address		50 Glebe Road the Junction		Project Name		P33		EDD Format (ESdat, EQUIS, Custom)		Excel and PDF		Handed over by		Jordyn Kirsch																	
Contact Name		Stephen Maxwell		Analyses <small>(Note: Where metals are requested, please specify "Total" or "Filtered" / SULTE code must be used to extract SULTE pricing)</small>	Total Lead (mg/kg)	Total Sample Mass	Total Lead (ug/L)	M13 (Al, As, Ba, Be, Cd, Cr, Co, Cu, Fe, Pb, Mn, Hg, Ni, Zn) Excluding hexavalent chromium) Total						Turnaround Time (TAT) Requirements (Default will be 5 days if not ticked)																	
Phone No		0478 658 194												Email for Invoice		smaxwell@ramboll.com asiapac-accounts@ramboll.com		Email for Results		smaxwell@ramboll.com jblackwell@ramboll.com		<input type="checkbox"/> Overnight (9am)* <input type="checkbox"/> 1 Day* <input type="checkbox"/> 2 Day* <input type="checkbox"/> 3 Day* <input checked="" type="checkbox"/> 5 Day* <input type="checkbox"/> Other () * Surcharges apply									
Special Directions														Containers		1L Plastic		250mL Plastic		125mL Plastic		200mL Amber Glass		40mL VOA vial		500mL PFAS Bottle		Jar (Glass or HDPE)		Other (Asbestos AS49864, WA Guideline)	
Purchase Order														Quote ID No		180813RAMN_1														Sample Comments / Dangerous Goods Hazard Warning	
No	Client Sample ID	Sampled Date/Time (dd/mm/yy hh:mm)	Matrix (Solid (S) Water (W))																												
1	DVAC_LR(P33)	27/04/20	S	X	X																	1									
2	DVAC_KB(P33)	27/04/20	S	X	X																		1								
3	DSWAB_LE(P33)	27/04/20	S			X																	1								
4	DSAB_BE(P33)	27/04/20	S			X																	1								
5	DSWAB_FE(P33)	27/04/20	S			X																	1								
6	DGRAB_MH(P33)	27/04/20	S			X																	1								
7	P33_HA01_0.0	27/04/20	S	X																			1								
8	P33_HA01_0.2	27/04/20	S	X																			1								
9	P33_HA02_0.0	27/04/20	S	X																			1								
10	P33_HA02_0.2	27/04/20	S	X																			1								
Total Counts				6	2	4																4	6								
Method of Shipment		<input type="checkbox"/> Courier (#) <input checked="" type="checkbox"/> Hand Delivered		<input type="checkbox"/> Postal		Name		Signature		Date		Time		Date		Time		Temperature		Report No											
Eurofins mgt Laboratory Use Only		Received By <i>[Signature]</i>		SYD BNE MEL PER ADL NTL DRW		Signature		Date		01/05/20		Time		12:00 PM		Temperature		14.03		Report No		716880									
		Received By		SYD BNE MEL PER ADL NTL DRW		Signature		Date		_/_/_		Time		_:_:		Report No															

Submission of samples to the laboratory will be deemed as acceptance of Eurofins | mgt Standard Terms and Conditions unless agreed otherwise. A copy of Eurofins | mgt Standard Terms and Conditions is available on request.



CHAIN OF CUSTODY RECORD

ABN 50 085 521

Sydney Laboratory
Unit F3 Bld F, 16 Mars Rd, Lane Cove West, NSW 2056
02 9900 8400 EnviroSampleNSW@eurofins.com

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Melbourne Laboratory
2 Kingston Town Close, Oakleigh, VIC 3166
03 8564 5000 EnviroSampleVic@eurofins.com

Company		Ramboll		Project No		318000780		Project Manager		Stephen Maxwell		Sampler(s)		JB, TJ, JK			
Address		50 Glebe Road the Junction		Project Name		P33		EDD Format (ESdat, EQUIS, Custom)		Excel and PDF		Handed over by		Jordyn Kirsch			
Contact Name		Stephen Maxwell		(Note: Where metals are requested, please specify "Total" or "Filtered" SUITE code must be used to attach SUITE pricing)		Total Lead (mg/kg) Total Sample Mass Total Lead (µg/L) M13 (Al, As, Ba, Be, Cd, Cr, Co, Cu, Fe, Pb, Mn, Hg, Ni, Zn) Excluding hexavalent chromium) Total								Email for Invoice		smaxwell@ramboll.com asiapac-accounts@ramboll.com	
Phone No		0478 658 194												Email for Results		smaxwell@ramboll.com jblackwell@ramboll.com	
Special Directions														Turnaround Time (TAT)		Requirements (Default will be 5 days, if not ticked)	
Purchase Order														Containers		<input type="checkbox"/> Overnight (9am)* <input type="checkbox"/> 1 Day* <input type="checkbox"/> 2 Day* <input type="checkbox"/> 3 Day* <input checked="" type="checkbox"/> 5 Day <input type="checkbox"/> Other () * Surcharges apply	
Quote ID No		180813RAMN_1												Sample Comments / Dangerous Goods Hazard Warning			
No	Client Sample ID	Sampled Date/Time (dd/mm/yy hh:mm)	Matrix (Solid (S) Water (W))														
1	P33_HA03_0.0	27/04/20	S	X													
2	P33_HA03_0.2	27/04/20	S	X													
3	P33_HA04_0.0	27/04/20	S	X													
4	P33_HA04_0.2	27/04/20	S	X													
5	P33_HA05_0.0	27/04/20	S	X													
6	P33_HA05_0.2	27/04/20	S	X													
7	P33_TW1	27/04/20	W			X											
8	P33_TW2	27/04/20	W			X											
9	P33_TWS1	27/04/20	S	X										1	Please dry out and then analyse in mg/kg.		
10	P33_TWS2	27/04/20	S	X										1	Please dry out and then analyse in mg/kg.		
Total Counts				8		2								8			
Method of Shipment		<input type="checkbox"/> Courier (#) <input checked="" type="checkbox"/> Hand Delivered <input type="checkbox"/> Postal		Name		Signature		Date		Time		Date		Time			
Eurofins mgt Laboratory Use Only		Received By <i>[Signature]</i>		SYD BNE MEL PER ADL NTL DRW		Signature		Date 01/05/20		Time		Date		Temperature			
		Received By		SYD BNE MEL PER ADL NTL DRW		Signature		Date		Time		Date		Report No			

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NATA # 1261 Site # 20794

Perth

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Kewdale WA 6105
Phone : +61 8 9251 9600
NATA # 1261 Site # 23736

Sample Receipt Advice

Company name: **Ramboll Australia Pty Ltd**
Contact name: Stephen Maxwell
Project name: P33
Project ID: 318000780
COC number: Not provided
Turn around time: 5 Day
Date/Time received: May 1, 2020 12:00 PM
Eurofins reference: **716880**

Sample information

- A detailed list of analytes logged into our LIMS, is included in the attached summary table.
- All samples have been received as described on the above COC.
- COC has been completed correctly.
- Attempt to chill was evident.
- Appropriately preserved sample containers have been used.
- All samples were received in good condition.
- Samples have been provided with adequate time to commence analysis in accordance with the relevant holding times.
- Appropriate sample containers have been used.
- Sample containers for volatile analysis received with zero headspace.
- Split sample sent to requested external lab.
- Some samples have been subcontracted.
- N/A Custody Seals intact (if used).

Contact notes

If you have any questions with respect to these samples please contact:

Andrew Black on Phone : (+61) 2 9900 8490 or by e.mail: AndrewBlack@eurofins.com

Results will be delivered electronically via e.mail to Stephen Maxwell - smaxwell@ramboll.com.

Note: A copy of these results will also be delivered to the general Ramboll Australia Pty Ltd email address.

Australia

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IANZ # 1327

Christchurch
43 Detroit Drive
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Phone : 0800 856 450
IANZ # 1290

Company Name: Ramboll Australia Pty Ltd
Address: Level 3/100 Pacific Highway
North Sydney
NSW 2060

Order No.:
Report #: 716880
Phone: 02 9954 8118
Fax: 02 9954 8150

Received: May 1, 2020 12:00 PM
Due: May 8, 2020
Priority: 5 Day
Contact Name: Stephen Maxwell

Project Name: P33
Project ID: 318000780

Eurofins Analytical Services Manager : Andrew Black

Sample Detail						Aluminium	Arsenic	Barium	Beryllium	Cadmium	Chromium	Cobalt	Copper	Iron	Lead	Manganese	Mass of sample*	Mercury	Nickel	Zinc	Moisture Set	
Melbourne Laboratory - NATA Site # 1254 & 14271																						
Sydney Laboratory - NATA Site # 18217						X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X
Brisbane Laboratory - NATA Site # 20794																						
Perth Laboratory - NATA Site # 23736																						
External Laboratory																						
No	Sample ID	Sample Date	Sampling Time	Matrix	LAB ID																	
1	DVAC_LR(P33)	Apr 27, 2020		Dust	S20-My00627										X	X						
2	DVAC_KB(P33)	Apr 27, 2020		Dust	S20-My00628										X	X						
3	DSWAB_LE(P33)	Apr 27, 2020		Wipes	S20-My00629										X							
4	DSWAB_BE(P33)	Apr 27, 2020		Wipes	S20-My00630										X							
5	DSWAB_FE(P33)	Apr 27, 2020		Wipes	S20-My00631										X							
6	DGRAB_MH(P33)	Apr 27, 2020		Wipes	S20-My00632										X							

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Melbourne Laboratory - NATA Site # 1254 & 14271																						
Sydney Laboratory - NATA Site # 18217						X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X
Brisbane Laboratory - NATA Site # 20794																						
Perth Laboratory - NATA Site # 23736																						
7	P33_HA01_0	Apr 27, 2020		Soil	S20-My00633										X						X	
8	P33_HA01_2	Apr 27, 2020		Soil	S20-My00634										X						X	
9	P33_HA02_0	Apr 27, 2020		Soil	S20-My00635										X						X	
10	P33_HA02_2	Apr 27, 2020		Soil	S20-My00636										X						X	
11	P33_HA03_0	Apr 27, 2020		Soil	S20-My00637										X						X	
12	P33_HA03_2	Apr 27, 2020		Soil	S20-My00638										X						X	
13	P33_HA04_0	Apr 27, 2020		Soil	S20-My00639										X						X	
14	P33_HA04_0	Apr 27, 2020		Soil	S20-My00640										X						X	

Australia

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Eurofins Analytical Services Manager : Andrew Black

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Melbourne Laboratory - NATA Site # 1254 & 14271																						
Sydney Laboratory - NATA Site # 18217						X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	
Brisbane Laboratory - NATA Site # 20794																						
Perth Laboratory - NATA Site # 23736																						
	2																					
15	P33_HA05_0.0	Apr 27, 2020		Soil	S20-My00641										X						X	
16	P33_HA05_0.2	Apr 27, 2020		Soil	S20-My00642										X						X	
17	P33_TW1	Apr 27, 2020		Water	S20-My00643	X	X	X	X	X	X	X	X	X	X		X	X	X			
18	P33_TW2	Apr 27, 2020		Water	S20-My00644	X	X	X	X	X	X	X	X	X	X		X	X	X			
19	P33_TWS1	Apr 27, 2020		Sediment	S20-My00645										X						X	
20	P33_TWS2	Apr 27, 2020		Sediment	S20-My00646										X						X	
Test Counts						2	2	2	2	2	2	2	2	2	20	2	2	2	2	2	12	

Ramboll Environ Australia Pty Ltd
 Level 3/100 Pacific Highway
 North Sydney
 NSW 2060



NATA Accredited
Accreditation Number 1261
Site Number 18217

Accredited for compliance with ISO/IEC 17025 – Testing
 The results of the tests, calibrations and/or
 measurements included in this document are traceable
 to Australian/national standards.

Attention: **Stephen Maxwell**

Report **716880-A**
 Project name **P33**
 Project ID **318000780**
 Received Date **May 01, 2020**

Client Sample ID			DSWAB_LE(P33)	DSWAB_BE(P33)	DSWAB_FE(P33)	DGRAB_MH(P33)
Sample Matrix			Wipes	Wipes	Wipes	Wipes
Eurofins Sample No.			S20-My00629	S20-My00630	S20-My00631	S20-My00632
Date Sampled			Apr 27, 2020	Apr 27, 2020	Apr 27, 2020	Apr 27, 2020
Test/Reference	LOR	Unit				
Heavy Metals						
Lead	1	Total ug	3.9	1.0	1.3	< 1

Sample History

Where samples are submitted/analysed over several days, the last date of extraction and analysis is reported.

A recent review of our LIMS has resulted in the correction or clarification of some method identifications. Due to this, some of the method reference information on reports has changed. However, no substantive change has been made to our laboratory methods, and as such there is no change in the validity of current or previous results.

If the date and time of sampling are not provided, the Laboratory will not be responsible for compromised results should testing be performed outside the recommended holding time.

Description

Heavy Metals

Testing Site

Sydney

Extracted

May 07, 2020

Holding Time

180 Days

- Method: LTM-MET-3040 Metals in Waters, Soils & Sediments by ICP-MS

Australia

Melbourne
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Company Name: Ramboll Australia Pty Ltd
Address: Level 3/100 Pacific Highway
North Sydney
NSW 2060

Order No.:
Report #: 716880
Phone: 02 9954 8118
Fax: 02 9954 8150

Received: May 1, 2020 12:00 PM
Due: May 8, 2020
Priority: 5 Day
Contact Name: Stephen Maxwell

Project Name: P33
Project ID: 318000780

Eurofins Analytical Services Manager : Andrew Black

Sample Detail						Aluminium	Arsenic	Barium	Beryllium	Cadmium	Chromium	Cobalt	Copper	Iron	Lead	Manganese	Mass of sample*	Mercury	Nickel	Zinc	Moisture Set	
Melbourne Laboratory - NATA Site # 1254 & 14271																						
Sydney Laboratory - NATA Site # 18217						X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X
Brisbane Laboratory - NATA Site # 20794																						
Perth Laboratory - NATA Site # 23736																						
External Laboratory																						
No	Sample ID	Sample Date	Sampling Time	Matrix	LAB ID																	
1	DVAC_LR(P33)	Apr 27, 2020		Dust	S20-My00627										X	X						
2	DVAC_KB(P33)	Apr 27, 2020		Dust	S20-My00628										X	X						
3	DSWAB_LE(P33)	Apr 27, 2020		Wipes	S20-My00629										X							
4	DSWAB_BE(P33)	Apr 27, 2020		Wipes	S20-My00630										X							
5	DSWAB_FE(P33)	Apr 27, 2020		Wipes	S20-My00631										X							
6	DGRAB_MH(P33)	Apr 27, 2020		Wipes	S20-My00632										X							

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Melbourne Laboratory - NATA Site # 1254 & 14271																					
Sydney Laboratory - NATA Site # 18217						X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X
Brisbane Laboratory - NATA Site # 20794																					
Perth Laboratory - NATA Site # 23736																					
7	P33_HA01_0	Apr 27, 2020		Soil	S20-My00633										X						X
8	P33_HA01_2	Apr 27, 2020		Soil	S20-My00634										X						X
9	P33_HA02_0	Apr 27, 2020		Soil	S20-My00635										X						X
10	P33_HA02_2	Apr 27, 2020		Soil	S20-My00636										X						X
11	P33_HA03_0	Apr 27, 2020		Soil	S20-My00637										X						X
12	P33_HA03_2	Apr 27, 2020		Soil	S20-My00638										X						X
13	P33_HA04_0	Apr 27, 2020		Soil	S20-My00639										X						X
14	P33_HA04_0	Apr 27, 2020		Soil	S20-My00640										X						X

Australia

Melbourne
6 Monterey Road
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Phone : +61 3 8564 5000
NATA # 1261
Site # 1254 & 14271

Sydney
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16 Mars Road
Lane Cove West NSW 2066
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Brisbane
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New Zealand

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IANZ # 1327

Christchurch
43 Detroit Drive
Rolleston, Christchurch 7675
Phone : 0800 856 450
IANZ # 1290

Company Name: Ramboll Australia Pty Ltd
Address: Level 3/100 Pacific Highway
North Sydney
NSW 2060

Order No.:
Report #: 716880
Phone: 02 9954 8118
Fax: 02 9954 8150

Received: May 1, 2020 12:00 PM
Due: May 8, 2020
Priority: 5 Day
Contact Name: Stephen Maxwell

Project Name: P33
Project ID: 318000780

Eurofins Analytical Services Manager : Andrew Black

Sample Detail						Aluminium	Arsenic	Barium	Beryllium	Cadmium	Chromium	Cobalt	Copper	Iron	Lead	Manganese	Mass of sample*	Mercury	Nickel	Zinc	Moisture Set	
Melbourne Laboratory - NATA Site # 1254 & 14271																						
Sydney Laboratory - NATA Site # 18217						X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X
Brisbane Laboratory - NATA Site # 20794																						
Perth Laboratory - NATA Site # 23736																						
	2																					
15	P33_HA05_0.0	Apr 27, 2020		Soil	S20-My00641										X						X	
16	P33_HA05_0.2	Apr 27, 2020		Soil	S20-My00642										X						X	
17	P33_TW1	Apr 27, 2020		Water	S20-My00643	X	X	X	X	X	X	X	X	X	X		X	X	X			
18	P33_TW2	Apr 27, 2020		Water	S20-My00644	X	X	X	X	X	X	X	X	X	X		X	X	X			
19	P33_TWS1	Apr 27, 2020		Sediment	S20-My00645										X						X	
20	P33_TWS2	Apr 27, 2020		Sediment	S20-My00646										X						X	
Test Counts						2	2	2	2	2	2	2	2	2	20	2	2	2	2	2	12	

Internal Quality Control Review and Glossary
General

- Laboratory QC results for Method Blanks, Duplicates, Matrix Spikes, and Laboratory Control Samples follows guidelines delineated in the National Environment Protection (Assessment of Site Contamination) Measure 1999, as amended May 2013 and are included in this QC report where applicable. Additional QC data may be available on request.
- All soil/sediment/solid results are reported on a dry basis, unless otherwise stated.
- All biota/food results are reported on a wet weight basis on the edible portion, unless otherwise stated.
- Actual LORs are matrix dependant. Quoted LORs may be raised where sample extracts are diluted due to interferences.
- Results are uncorrected for matrix spikes or surrogate recoveries except for PFAS compounds.
- SVOC analysis on waters are performed on homogenised, unfiltered samples, unless noted otherwise.
- Samples were analysed on an 'as received' basis.
- Information identified on this report with blue colour, indicates data provided by customer, that may have an impact on the results.
- This report replaces any interim results previously issued.

Holding Times

Please refer to 'Sample Preservation and Container Guide' for holding times (QS3001).

For samples received on the last day of holding time, notification of testing requirements should have been received at least 6 hours prior to sample receipt deadlines as stated on the SRA.

If the Laboratory did not receive the information in the required timeframe, and regardless of any other integrity issues, suitably qualified results may still be reported.

Holding times apply from the date of sampling, therefore compliance to these may be outside the laboratory's control.

For VOCs containing vinyl chloride, styrene and 2-chloroethyl vinyl ether the holding time is 7 days however for all other VOCs such as BTEX or C6-10 TRH then the holding time is 14 days.

****NOTE:** pH duplicates are reported as a range NOT as RPD

Units

mg/kg: milligrams per kilogram

mg/L: milligrams per litre

ug/L: micrograms per litre

ppm: Parts per million

ppb: Parts per billion

%: Percentage

org/100mL: Organisms per 100 millilitres

NTU: Nephelometric Turbidity Units

MPN/100mL: Most Probable Number of organisms per 100 millilitres

Terms

Dry	Where a moisture has been determined on a solid sample the result is expressed on a dry basis.
LOR	Limit of Reporting.
SPIKE	Addition of the analyte to the sample and reported as percentage recovery.
RPD	Relative Percent Difference between two Duplicate pieces of analysis.
LCS	Laboratory Control Sample - reported as percent recovery.
CRM	Certified Reference Material - reported as percent recovery.
Method Blank	In the case of solid samples these are performed on laboratory certified clean sands and in the case of water samples these are performed on de-ionised water.
Surr - Surrogate	The addition of a like compound to the analyte target and reported as percentage recovery.
Duplicate	A second piece of analysis from the same sample and reported in the same units as the result to show comparison.
USEPA	United States Environmental Protection Agency
APHA	American Public Health Association
TCLP	Toxicity Characteristic Leaching Procedure
COC	Chain of Custody
SRA	Sample Receipt Advice
QSM	US Department of Defense Quality Systems Manual Version 5.3
CP	Client Parent - QC was performed on samples pertaining to this report
NCP	Non-Client Parent - QC performed on samples not pertaining to this report, QC is representative of the sequence or batch that client samples were analysed within.
TEQ	Toxic Equivalency Quotient

QC - Acceptance Criteria

RPD Duplicates: Global RPD Duplicates Acceptance Criteria is 30% however the following acceptance guidelines are equally applicable:

Results <10 times the LOR : No Limit

Results between 10-20 times the LOR : RPD must lie between 0-50%

Results >20 times the LOR : RPD must lie between 0-30%

Surrogate Recoveries: Recoveries must lie between 20-130% Phenols & 50-150% PFASs

PFAS field samples that contain surrogate recoveries in excess of the QC limit designated in QSM 5.3 where no positive PFAS results have been reported have been reviewed and no data was affected.

WA DWER (n=10): PFBA, PFPeA, PFHxA, PFHpA, PFOA, PFBS, PFHxS, PFOS, 6:2 FTSA, 8:2 FTSA

QC Data General Comments

- Where a result is reported as a less than (<), higher than the nominated LOR, this is due to either matrix interference, extract dilution required due to interferences or contaminant levels within the sample, high moisture content or insufficient sample provided.
- Duplicate data shown within this report that states the word "BATCH" is a Batch Duplicate from outside of your sample batch, but within the laboratory sample batch at a 1:10 ratio. The Parent and Duplicate data shown is not data from your samples.
- Organochlorine Pesticide analysis - where reporting LCS data, Toxaphene & Chlordane are not added to the LCS.
- Organochlorine Pesticide analysis - where reporting Spike data, Toxaphene is not added to the Spike.
- Total Recoverable Hydrocarbons - where reporting Spike & LCS data, a single spike of commercial Hydrocarbon products in the range of C12-C30 is added and it's Total Recovery is reported in the C10-C14 cell of the Report.
- pH and Free Chlorine analysed in the laboratory - Analysis on this test must begin within 30 minutes of sampling. Therefore laboratory analysis is unlikely to be completed within holding time. Analysis will begin as soon as possible after sample receipt.
- Recovery Data (Spikes & Surrogates) - where chromatographic interference does not allow the determination of Recovery the term "INT" appears against that analyte.
- Polychlorinated Biphenyls are spiked only using Aroclor 1260 in Matrix Spikes and LCS.
- For Matrix Spikes and LCS results a dash " - " in the report means that the specific analyte was not added to the QC sample.
- Duplicate RPDs are calculated from raw analytical data thus it is possible to have two sets of data.

Quality Control Results

Comments**Sample Integrity**

Custody Seals Intact (if used)	N/A
Attempt to Chill was evident	Yes
Sample correctly preserved	Yes
Appropriate sample containers have been used	Yes
Sample containers for volatile analysis received with minimal headspace	Yes
Samples received within HoldingTime	Yes
Some samples have been subcontracted	No

Authorised By

Andrew Black Analytical Services Manager
Gabriele Cordero Senior Analyst-Metal (NSW)

**Glenn Jackson
General Manager**

Final report - this Report replaces any previously issued Report

- Indicates Not Requested

* Indicates NATA accreditation does not cover the performance of this service

Measurement uncertainty of test data is available on request or please [click here](#).

Eurofins shall not be liable for loss, cost, damages or expenses incurred by the client, or any other person or company, resulting from the use of any information or interpretation given in this report. In no case shall Eurofins be liable for consequential damages including, but not limited to, lost profits, damages for failure to meet deadlines and lost production arising from this report. This document shall not be reproduced except in full and relates only to the items tested. Unless indicated otherwise, the tests were performed on the samples as received.

Ramboll Environ Australia Pty Ltd
 Level 3/100 Pacific Highway
 North Sydney
 NSW 2060



NATA Accredited
 Accreditation Number 1261
 Site Number 18217

Accredited for compliance with ISO/IEC 17025 – Testing
 The results of the tests, calibrations and/or
 measurements included in this document are traceable
 to Australian/national standards.

Attention: Stephen Maxwell

Report 716880-S
 Project name P33
 Project ID 318000780
 Received Date May 01, 2020

Client Sample ID			DVAC_LR(P33)	DVAC_KB(P33)	P33_HA01_0.0	P33_HA01_0.2
Sample Matrix			Dust	Dust	Soil	Soil
Eurofins Sample No.			S20-My00627	S20-My00628	S20-My00633	S20-My00634
Date Sampled			Apr 27, 2020	Apr 27, 2020	Apr 27, 2020	Apr 27, 2020
Test/Reference	LOR	Unit				
Heavy Metals						
Lead	0		29	12	12	14
% Moisture						
	0		-	-	9.8	9.4

Client Sample ID			P33_HA02_0.0	P33_HA02_0.2	P33_HA03_0.0	P33_HA03_0.2
Sample Matrix			Soil	Soil	Soil	Soil
Eurofins Sample No.			S20-My00635	S20-My00636	S20-My00637	S20-My00638
Date Sampled			Apr 27, 2020	Apr 27, 2020	Apr 27, 2020	Apr 27, 2020
Test/Reference	LOR	Unit				
Heavy Metals						
Lead	0		9.8	5.4	21	19
% Moisture						
	0		5.0	4.7	3.6	3.6

Client Sample ID			P33_HA04_0.0	P33_HA04_0.2	P33_HA05_0.0	P33_HA05_0.2
Sample Matrix			Soil	Soil	Soil	Soil
Eurofins Sample No.			S20-My00639	S20-My00640	S20-My00641	S20-My00642
Date Sampled			Apr 27, 2020	Apr 27, 2020	Apr 27, 2020	Apr 27, 2020
Test/Reference	LOR	Unit				
Heavy Metals						
Lead	0		42	24	13	9.5
% Moisture						
	0		5.3	3.0	5.8	5.2

Client Sample ID			P33_TWS1	P33_TWS2
Sample Matrix			Sediment	Sediment
Eurofins Sample No.			S20-My00645	S20-My00646
Date Sampled			Apr 27, 2020	Apr 27, 2020
Test/Reference	LOR	Unit		
Heavy Metals				
Lead	0		94	37
% Moisture	0		85	100

Sample History

Where samples are submitted/analysed over several days, the last date of extraction and analysis is reported.

A recent review of our LIMS has resulted in the correction or clarification of some method identifications. Due to this, some of the method reference information on reports has changed. However, no substantive change has been made to our laboratory methods, and as such there is no change in the validity of current or previous results.

If the date and time of sampling are not provided, the Laboratory will not be responsible for compromised results should testing be performed outside the recommended holding time.

Description**Testing Site****Extracted****Holding Time**

Australia

Melbourne
6 Monterey Road
Dandenong South VIC 3175
Phone : +61 3 8564 5000
NATA # 1261
Site # 1254 & 14271

Sydney
Unit F3, Building F
16 Mars Road
Lane Cove West NSW 2066
Phone : +61 2 9900 8400
NATA # 1261 Site # 18217

Brisbane
1/21 Smallwood Place
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NATA # 1261 Site # 20794

Perth
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Kewdale WA 6105
Phone : +61 8 9251 9600
NATA # 1261
Site # 23736

New Zealand

Auckland
35 O'Rorke Road
Penrose, Auckland 1061
Phone : +64 9 526 45 51
IANZ # 1327

Christchurch
43 Detroit Drive
Rolleston, Christchurch 7675
Phone : 0800 856 450
IANZ # 1290

Company Name: Ramboll Australia Pty Ltd
Address: Level 3/100 Pacific Highway
North Sydney
NSW 2060

Order No.:
Report #: 716880
Phone: 02 9954 8118
Fax: 02 9954 8150

Received: May 1, 2020 12:00 PM
Due: May 8, 2020
Priority: 5 Day
Contact Name: Stephen Maxwell

Project Name: P33
Project ID: 318000780

Eurofins Analytical Services Manager : Andrew Black

Sample Detail						Aluminium	Arsenic	Barium	Beryllium	Cadmium	Chromium	Cobalt	Copper	Iron	Lead	Manganese	Mass of sample*	Mercury	Nickel	Zinc	Moisture Set		
Melbourne Laboratory - NATA Site # 1254 & 14271																							
Sydney Laboratory - NATA Site # 18217						X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	
Brisbane Laboratory - NATA Site # 20794																							
Perth Laboratory - NATA Site # 23736																							
External Laboratory																							
No	Sample ID	Sample Date	Sampling Time	Matrix	LAB ID																		
1	DVAC_LR(P33)	Apr 27, 2020		Dust	S20-My00627										X	X							
2	DVAC_KB(P33)	Apr 27, 2020		Dust	S20-My00628										X	X							
3	DSWAB_LE(P33)	Apr 27, 2020		Wipes	S20-My00629										X								
4	DSWAB_BE(P33)	Apr 27, 2020		Wipes	S20-My00630										X								
5	DSWAB_FE(P33)	Apr 27, 2020		Wipes	S20-My00631										X								
6	DGRAB_MH(P33)	Apr 27, 2020		Wipes	S20-My00632										X								

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Melbourne Laboratory - NATA Site # 1254 & 14271																						
Sydney Laboratory - NATA Site # 18217						X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X
Brisbane Laboratory - NATA Site # 20794																						
Perth Laboratory - NATA Site # 23736																						
7	P33_HA01_0	Apr 27, 2020		Soil	S20-My00633										X						X	
8	P33_HA01_2	Apr 27, 2020		Soil	S20-My00634										X						X	
9	P33_HA02_0	Apr 27, 2020		Soil	S20-My00635										X						X	
10	P33_HA02_2	Apr 27, 2020		Soil	S20-My00636										X						X	
11	P33_HA03_0	Apr 27, 2020		Soil	S20-My00637										X						X	
12	P33_HA03_2	Apr 27, 2020		Soil	S20-My00638										X						X	
13	P33_HA04_0	Apr 27, 2020		Soil	S20-My00639										X						X	
14	P33_HA04_0	Apr 27, 2020		Soil	S20-My00640										X						X	

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15	P33_HA05_0.0	Apr 27, 2020		Soil	S20-My00641										X						X	
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17	P33_TW1	Apr 27, 2020		Water	S20-My00643	X	X	X	X	X	X	X	X	X	X		X	X	X			
18	P33_TW2	Apr 27, 2020		Water	S20-My00644	X	X	X	X	X	X	X	X	X	X		X	X	X			
19	P33_TWS1	Apr 27, 2020		Sediment	S20-My00645										X						X	
20	P33_TWS2	Apr 27, 2020		Sediment	S20-My00646										X						X	
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RPD	Relative Percent Difference between two Duplicate pieces of analysis.
LCS	Laboratory Control Sample - reported as percent recovery.
CRM	Certified Reference Material - reported as percent recovery.
Method Blank	In the case of solid samples these are performed on laboratory certified clean sands and in the case of water samples these are performed on de-ionised water.
Surr - Surrogate	The addition of a like compound to the analyte target and reported as percentage recovery.
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Results >20 times the LOR : RPD must lie between 0-30%

Surrogate Recoveries: Recoveries must lie between 20-130% Phenols & 50-150% PFASs

PFAS field samples that contain surrogate recoveries in excess of the QC limit designated in QSM 5.3 where no positive PFAS results have been reported have been reviewed and no data was affected.

WA DWER (n=10): PFBA, PFPeA, PFHxA, PFHpA, PFOA, PFBS, PFHxS, PFOS, 6:2 FTSA, 8:2 FTSA

QC Data General Comments

- Where a result is reported as a less than (<), higher than the nominated LOR, this is due to either matrix interference, extract dilution required due to interferences or contaminant levels within the sample, high moisture content or insufficient sample provided.
- Duplicate data shown within this report that states the word "BATCH" is a Batch Duplicate from outside of your sample batch, but within the laboratory sample batch at a 1:10 ratio. The Parent and Duplicate data shown is not data from your samples.
- Organochlorine Pesticide analysis - where reporting LCS data, Toxaphene & Chlordane are not added to the LCS.
- Organochlorine Pesticide analysis - where reporting Spike data, Toxaphene is not added to the Spike.
- Total Recoverable Hydrocarbons - where reporting Spike & LCS data, a single spike of commercial Hydrocarbon products in the range of C12-C30 is added and it's Total Recovery is reported in the C10-C14 cell of the Report.
- pH and Free Chlorine analysed in the laboratory - Analysis on this test must begin within 30 minutes of sampling. Therefore laboratory analysis is unlikely to be completed within holding time. Analysis will begin as soon as possible after sample receipt.
- Recovery Data (Spikes & Surrogates) - where chromatographic interference does not allow the determination of Recovery the term "INT" appears against that analyte.
- Polychlorinated Biphenyls are spiked only using Aroclor 1260 in Matrix Spikes and LCS.
- For Matrix Spikes and LCS results a dash " - " in the report means that the specific analyte was not added to the QC sample.
- Duplicate RPDs are calculated from raw analytical data thus it is possible to have two sets of data.

Quality Control Results

Test				Units	Result 1		Acceptance Limits	Pass Limits	Qualifying Code		
Method Blank											
Heavy Metals											
Lead				mg/kg	< 5		5	Pass			
LCS - % Recovery											
Heavy Metals											
Lead				%	85		70-130	Pass			
Test	Lab Sample ID	QA Source	Units	Result 1			Acceptance Limits	Pass Limits	Qualifying Code		
Spike - % Recovery											
Heavy Metals											
Lead				S20-My00635	CP	%	85	70-130	Pass		
Test	Lab Sample ID	QA Source	Units	Result 1			Acceptance Limits	Pass Limits	Qualifying Code		
Duplicate											
Heavy Metals											
Lead				S20-My00634	CP	mg/kg	14	15	7.0	30%	Pass
Duplicate											
					Result 1	Result 2	RPD				
% Moisture				S20-My00636	CP	%	4.7	5.1	8.0	30%	Pass

Comments**Sample Integrity**

Custody Seals Intact (if used)	N/A
Attempt to Chill was evident	Yes
Sample correctly preserved	Yes
Appropriate sample containers have been used	Yes
Sample containers for volatile analysis received with minimal headspace	Yes
Samples received within HoldingTime	Yes
Some samples have been subcontracted	No

Authorised By

Andrew Black Analytical Services Manager
Gabriele Cordero Senior Analyst-Metal (NSW)

**Glenn Jackson
General Manager**

Final report - this Report replaces any previously issued Report

- Indicates Not Requested

* Indicates NATA accreditation does not cover the performance of this service

Measurement uncertainty of test data is available on request or please [click here](#).

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Ramboll Environ Australia Pty Ltd
 Level 3/100 Pacific Highway
 North Sydney
 NSW 2060



NATA Accredited
Accreditation Number 1261
Site Number 18217

Accredited for compliance with ISO/IEC 17025 – Testing
 The results of the tests, calibrations and/or
 measurements included in this document are traceable
 to Australian/national standards.

Attention: **Stephen Maxwell**

Report **716880-W**
 Project name **P33**
 Project ID **318000780**
 Received Date **May 01, 2020**

Client Sample ID			P33_TW1	P33_TW2
Sample Matrix			Water	Water
Eurofins Sample No.			S20-My00643	S20-My00644
Date Sampled			Apr 27, 2020	Apr 27, 2020
Test/Reference	LOR	Unit		
Heavy Metals				
Aluminium	0.05	mg/L	< 0.05	0.13
Arsenic	0.001	mg/L	< 0.001	0.001
Barium	0.02	mg/L	< 0.02	< 0.02
Beryllium	0.001	mg/L	< 0.001	< 0.001
Cadmium	0.0002	mg/L	< 0.0002	< 0.0002
Chromium	0.001	mg/L	0.001	0.005
Cobalt	0.001	mg/L	< 0.001	< 0.001
Copper	0.001	mg/L	< 0.001	0.001
Iron	0.05	mg/L	< 0.05	0.07
Lead	0.001	mg/L	< 0.001	< 0.001
Manganese	0.005	mg/L	< 0.005	< 0.005
Mercury	0.0001	mg/L	< 0.0001	< 0.0001
Nickel	0.001	mg/L	< 0.001	< 0.001
Zinc	0.005	mg/L	0.035	< 0.005

Sample History

Where samples are submitted/analysed over several days, the last date of extraction and analysis is reported.

A recent review of our LIMS has resulted in the correction or clarification of some method identifications. Due to this, some of the method reference information on reports has changed. However, no substantive change has been made to our laboratory methods, and as such there is no change in the validity of current or previous results.

If the date and time of sampling are not provided, the Laboratory will not be responsible for compromised results should testing be performed outside the recommended holding time.

Description

Heavy Metals

Testing Site

Sydney

Extracted

May 05, 2020

Holding Time

180 Days

- Method: LTM-MET-3040 Metals in Waters, Soils & Sediments by ICP-MS

Australia

Melbourne
6 Monterey Road
Dandenong South VIC 3175
Phone : +61 3 8564 5000
NATA # 1261
Site # 1254 & 14271

Sydney
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Lane Cove West NSW 2066
Phone : +61 2 9900 8400
NATA # 1261 Site # 18217

Brisbane
1/21 Smallwood Place
Murarie QLD 4172
Phone : +61 7 3902 4600
NATA # 1261 Site # 20794

Perth
2/91 Leach Highway
Kewdale WA 6105
Phone : +61 8 9251 9600
NATA # 1261
Site # 23736

New Zealand

Auckland
35 O'Rorke Road
Penrose, Auckland 1061
Phone : +64 9 526 45 51
IANZ # 1327

Christchurch
43 Detroit Drive
Rolleston, Christchurch 7675
Phone : 0800 856 450
IANZ # 1290

Company Name: Ramboll Australia Pty Ltd
Address: Level 3/100 Pacific Highway
North Sydney
NSW 2060

Order No.:
Report #: 716880
Phone: 02 9954 8118
Fax: 02 9954 8150

Received: May 1, 2020 12:00 PM
Due: May 8, 2020
Priority: 5 Day
Contact Name: Stephen Maxwell

Project Name: P33
Project ID: 318000780

Eurofins Analytical Services Manager : Andrew Black

Sample Detail						Aluminium	Arsenic	Barium	Beryllium	Cadmium	Chromium	Cobalt	Copper	Iron	Lead	Manganese	Mass of sample*	Mercury	Nickel	Zinc	Moisture Set	
Melbourne Laboratory - NATA Site # 1254 & 14271																						
Sydney Laboratory - NATA Site # 18217						X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X
Brisbane Laboratory - NATA Site # 20794																						
Perth Laboratory - NATA Site # 23736																						
External Laboratory																						
No	Sample ID	Sample Date	Sampling Time	Matrix	LAB ID																	
1	DVAC_LR(P33)	Apr 27, 2020		Dust	S20-My00627										X	X						
2	DVAC_KB(P33)	Apr 27, 2020		Dust	S20-My00628										X	X						
3	DSWAB_LE(P33)	Apr 27, 2020		Wipes	S20-My00629										X							
4	DSWAB_BE(P33)	Apr 27, 2020		Wipes	S20-My00630										X							
5	DSWAB_FE(P33)	Apr 27, 2020		Wipes	S20-My00631										X							
6	DGRAB_MH(P33)	Apr 27, 2020		Wipes	S20-My00632										X							

Australia

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Melbourne Laboratory - NATA Site # 1254 & 14271																						
Sydney Laboratory - NATA Site # 18217						X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X
Brisbane Laboratory - NATA Site # 20794																						
Perth Laboratory - NATA Site # 23736																						
7	P33_HA01_0	Apr 27, 2020		Soil	S20-My00633										X						X	
8	P33_HA01_2	Apr 27, 2020		Soil	S20-My00634										X						X	
9	P33_HA02_0	Apr 27, 2020		Soil	S20-My00635										X						X	
10	P33_HA02_2	Apr 27, 2020		Soil	S20-My00636										X						X	
11	P33_HA03_0	Apr 27, 2020		Soil	S20-My00637										X						X	
12	P33_HA03_2	Apr 27, 2020		Soil	S20-My00638										X						X	
13	P33_HA04_0	Apr 27, 2020		Soil	S20-My00639										X						X	
14	P33_HA04_0	Apr 27, 2020		Soil	S20-My00640										X						X	

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Melbourne Laboratory - NATA Site # 1254 & 14271																					
Sydney Laboratory - NATA Site # 18217						X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X
Brisbane Laboratory - NATA Site # 20794																					
Perth Laboratory - NATA Site # 23736																					
	2																				
15	P33_HA05_0.0	Apr 27, 2020		Soil	S20-My00641										X						X
16	P33_HA05_0.2	Apr 27, 2020		Soil	S20-My00642										X						X
17	P33_TW1	Apr 27, 2020		Water	S20-My00643	X	X	X	X	X	X	X	X	X	X		X	X	X		
18	P33_TW2	Apr 27, 2020		Water	S20-My00644	X	X	X	X	X	X	X	X	X	X		X	X	X		
19	P33_TWS1	Apr 27, 2020		Sediment	S20-My00645										X						X
20	P33_TWS2	Apr 27, 2020		Sediment	S20-My00646										X						X
Test Counts						2	2	2	2	2	2	2	2	2	20	2	2	2	2	2	12

Internal Quality Control Review and Glossary

General

- Laboratory QC results for Method Blanks, Duplicates, Matrix Spikes, and Laboratory Control Samples follows guidelines delineated in the National Environment Protection (Assessment of Site Contamination) Measure 1999, as amended May 2013 and are included in this QC report where applicable. Additional QC data may be available on request.
- All soil/sediment/solid results are reported on a dry basis, unless otherwise stated.
- All biota/food results are reported on a wet weight basis on the edible portion, unless otherwise stated.
- Actual LORs are matrix dependant. Quoted LORs may be raised where sample extracts are diluted due to interferences.
- Results are uncorrected for matrix spikes or surrogate recoveries except for PFAS compounds.
- SVOC analysis on waters are performed on homogenised, unfiltered samples, unless noted otherwise.
- Samples were analysed on an 'as received' basis.
- Information identified on this report with blue colour, indicates data provided by customer, that may have an impact on the results.
- This report replaces any interim results previously issued.

Holding Times

Please refer to 'Sample Preservation and Container Guide' for holding times (QS3001).

For samples received on the last day of holding time, notification of testing requirements should have been received at least 6 hours prior to sample receipt deadlines as stated on the SRA.

If the Laboratory did not receive the information in the required timeframe, and regardless of any other integrity issues, suitably qualified results may still be reported.

Holding times apply from the date of sampling, therefore compliance to these may be outside the laboratory's control.

For VOCs containing vinyl chloride, styrene and 2-chloroethyl vinyl ether the holding time is 7 days however for all other VOCs such as BTEX or C6-10 TRH then the holding time is 14 days.

****NOTE:** pH duplicates are reported as a range NOT as RPD

Units

mg/kg: milligrams per kilogram

mg/L: milligrams per litre

ug/L: micrograms per litre

ppm: Parts per million

ppb: Parts per billion

%: Percentage

org/100mL: Organisms per 100 millilitres

NTU: Nephelometric Turbidity Units

MPN/100mL: Most Probable Number of organisms per 100 millilitres

Terms

Dry	Where a moisture has been determined on a solid sample the result is expressed on a dry basis.
LOR	Limit of Reporting.
SPIKE	Addition of the analyte to the sample and reported as percentage recovery.
RPD	Relative Percent Difference between two Duplicate pieces of analysis.
LCS	Laboratory Control Sample - reported as percent recovery.
CRM	Certified Reference Material - reported as percent recovery.
Method Blank	In the case of solid samples these are performed on laboratory certified clean sands and in the case of water samples these are performed on de-ionised water.
Surr - Surrogate	The addition of a like compound to the analyte target and reported as percentage recovery.
Duplicate	A second piece of analysis from the same sample and reported in the same units as the result to show comparison.
USEPA	United States Environmental Protection Agency
APHA	American Public Health Association
TCLP	Toxicity Characteristic Leaching Procedure
COC	Chain of Custody
SRA	Sample Receipt Advice
QSM	US Department of Defense Quality Systems Manual Version 5.3
CP	Client Parent - QC was performed on samples pertaining to this report
NCP	Non-Client Parent - QC performed on samples not pertaining to this report, QC is representative of the sequence or batch that client samples were analysed within.
TEQ	Toxic Equivalency Quotient

QC - Acceptance Criteria

RPD Duplicates: Global RPD Duplicates Acceptance Criteria is 30% however the following acceptance guidelines are equally applicable:

Results <10 times the LOR : No Limit

Results between 10-20 times the LOR : RPD must lie between 0-50%

Results >20 times the LOR : RPD must lie between 0-30%

Surrogate Recoveries: Recoveries must lie between 20-130% Phenols & 50-150% PFASs

PFAS field samples that contain surrogate recoveries in excess of the QC limit designated in QSM 5.3 where no positive PFAS results have been reported have been reviewed and no data was affected.

WA DWER (n=10): PFBA, PFPeA, PFHxA, PFHpA, PFOA, PFBS, PFHxS, PFOS, 6:2 FTSA, 8:2 FTSA

QC Data General Comments

- Where a result is reported as a less than (<), higher than the nominated LOR, this is due to either matrix interference, extract dilution required due to interferences or contaminant levels within the sample, high moisture content or insufficient sample provided.
- Duplicate data shown within this report that states the word "BATCH" is a Batch Duplicate from outside of your sample batch, but within the laboratory sample batch at a 1:10 ratio. The Parent and Duplicate data shown is not data from your samples.
- Organochlorine Pesticide analysis - where reporting LCS data, Toxaphene & Chlordane are not added to the LCS.
- Organochlorine Pesticide analysis - where reporting Spike data, Toxaphene is not added to the Spike.
- Total Recoverable Hydrocarbons - where reporting Spike & LCS data, a single spike of commercial Hydrocarbon products in the range of C12-C30 is added and it's Total Recovery is reported in the C10-C14 cell of the Report.
- pH and Free Chlorine analysed in the laboratory - Analysis on this test must begin within 30 minutes of sampling. Therefore laboratory analysis is unlikely to be completed within holding time. Analysis will begin as soon as possible after sample receipt.
- Recovery Data (Spikes & Surrogates) - where chromatographic interference does not allow the determination of Recovery the term "INT" appears against that analyte.
- Polychlorinated Biphenyls are spiked only using Aroclor 1260 in Matrix Spikes and LCS.
- For Matrix Spikes and LCS results a dash " - " in the report means that the specific analyte was not added to the QC sample.
- Duplicate RPDs are calculated from raw analytical data thus it is possible to have two sets of data.

Quality Control Results

Test		Units	Result 1			Acceptance Limits	Pass Limits	Qualifying Code
Method Blank								
Heavy Metals								
Aluminium		mg/L	< 0.05			0.05	Pass	
Arsenic		mg/L	< 0.001			0.001	Pass	
Barium		mg/L	< 0.02			0.02	Pass	
Beryllium		mg/L	< 0.001			0.001	Pass	
Cadmium		mg/L	< 0.0002			0.0002	Pass	
Chromium		mg/L	< 0.001			0.001	Pass	
Cobalt		mg/L	< 0.001			0.001	Pass	
Copper		mg/L	< 0.001			0.001	Pass	
Iron		mg/L	< 0.05			0.05	Pass	
Lead		mg/L	< 0.001			0.001	Pass	
Manganese		mg/L	< 0.005			0.005	Pass	
Mercury		mg/L	< 0.0001			0.0001	Pass	
Nickel		mg/L	< 0.001			0.001	Pass	
Zinc		mg/L	< 0.005			0.005	Pass	
LCS - % Recovery								
Heavy Metals								
Aluminium		%	99			70-130	Pass	
Arsenic		%	97			70-130	Pass	
Barium		%	90			70-130	Pass	
Beryllium		%	91			70-130	Pass	
Cadmium		%	93			70-130	Pass	
Chromium		%	98			70-130	Pass	
Cobalt		%	98			70-130	Pass	
Copper		%	97			70-130	Pass	
Iron		%	98			70-130	Pass	
Lead		%	100			70-130	Pass	
Manganese		%	95			70-130	Pass	
Mercury		%	109			70-130	Pass	
Nickel		%	98			70-130	Pass	
Zinc		%	93			70-130	Pass	
Test	Lab Sample ID	QA Source	Units	Result 1		Acceptance Limits	Pass Limits	Qualifying Code
Spike - % Recovery								
Heavy Metals				Result 1				
Aluminium	S20-My01516	NCP	%	98		70-130	Pass	
Arsenic	S20-My01516	NCP	%	98		70-130	Pass	
Barium	S20-My01516	NCP	%	92		70-130	Pass	
Beryllium	S20-My01516	NCP	%	91		70-130	Pass	
Cadmium	S20-My01516	NCP	%	95		70-130	Pass	
Chromium	S20-My01516	NCP	%	101		70-130	Pass	
Cobalt	S20-My01516	NCP	%	101		70-130	Pass	
Copper	S20-My01516	NCP	%	100		70-130	Pass	
Iron	S20-My01516	NCP	%	99		70-130	Pass	
Lead	S20-My01516	NCP	%	104		70-130	Pass	
Manganese	S20-My01516	NCP	%	97		70-130	Pass	
Mercury	S20-My01516	NCP	%	115		70-130	Pass	
Nickel	S20-My01516	NCP	%	102		70-130	Pass	
Zinc	S20-My01516	NCP	%	97		70-130	Pass	

Test	Lab Sample ID	QA Source	Units	Result 1			Acceptance Limits	Pass Limits	Qualifying Code
Duplicate									
Heavy Metals				Result 1	Result 2	RPD			
Aluminium	S20-My00643	CP	mg/L	< 0.05	< 0.05	<1	30%	Pass	
Arsenic	S20-My00643	CP	mg/L	< 0.001	< 0.001	<1	30%	Pass	
Barium	S20-My00643	CP	mg/L	< 0.02	< 0.02	<1	30%	Pass	
Beryllium	S20-My00643	CP	mg/L	< 0.001	< 0.001	<1	30%	Pass	
Cadmium	S20-My00643	CP	mg/L	< 0.0002	< 0.0002	<1	30%	Pass	
Chromium	S20-My00643	CP	mg/L	0.001	< 0.001	18	30%	Pass	
Cobalt	S20-My00643	CP	mg/L	< 0.001	< 0.001	<1	30%	Pass	
Copper	S20-My00643	CP	mg/L	< 0.001	< 0.001	<1	30%	Pass	
Iron	S20-My00643	CP	mg/L	< 0.05	< 0.05	<1	30%	Pass	
Lead	S20-My00643	CP	mg/L	< 0.001	< 0.001	<1	30%	Pass	
Manganese	S20-My00643	CP	mg/L	< 0.005	< 0.005	<1	30%	Pass	
Mercury	S20-My00643	CP	mg/L	< 0.0001	< 0.0001	<1	30%	Pass	
Nickel	S20-My00643	CP	mg/L	< 0.001	< 0.001	<1	30%	Pass	
Zinc	S20-My00643	CP	mg/L	0.035	0.033	7.0	30%	Pass	

Comments**Sample Integrity**

Custody Seals Intact (if used)	N/A
Attempt to Chill was evident	Yes
Sample correctly preserved	Yes
Appropriate sample containers have been used	Yes
Sample containers for volatile analysis received with minimal headspace	Yes
Samples received within HoldingTime	Yes
Some samples have been subcontracted	No

Authorised By

Andrew Black Analytical Services Manager
Gabriele Cordero Senior Analyst-Metal (NSW)

**Glenn Jackson
General Manager**

Final report - this Report replaces any previously issued Report

- Indicates Not Requested

* Indicates NATA accreditation does not cover the performance of this service

Measurement uncertainty of test data is available on request or please [click here](#).

Eurofins shall not be liable for loss, cost, damages or expenses incurred by the client, or any other person or company, resulting from the use of any information or interpretation given in this report. In no case shall Eurofins be liable for consequential damages including, but not limited to, lost profits, damages for failure to meet deadlines and lost production arising from this report. This document shall not be reproduced except in full and relates only to the items tested. Unless indicated otherwise, the tests were performed on the samples as received.



CHAIN OF CUSTODY RECORD

ABN 50 005 085 521

Sydney Laboratory
Unit F3 Bld.F, 16 Mars Rd, Lane Cove West, NSW 2086
02 9900 8400 EnviroSampleNSW@eurofins.com

Brisbane Laboratory
Unit 1, 21 Smallwood Pl., Murarie, QLD 4172
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Perth Laboratory
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08 9251 9600 EnviroSampleWA@eurofins.com

Melbourne Laboratory
2 Kingston Town Close, Oakleigh, VIC 3166
03 8564 5000 EnviroSampleVic@eurofins.com

Company		Ramboll		Project No		318000780		Project Manager		Stephen Maxwell		Sampler(s)		JB, TJ, JK			
Address		50 Glebe Road the Junction		Project Name		P34		EDD Format (ESdat, EQUIS, Custom)		Excel and PDF		Handed over by		Jordyn Kirsch			
Contact Name		Stephen Maxwell		Analyses <small>(Note: Where metals are requested, please specify "Total" or "Filtered" SUITE could meet the Lead to metal SUITE pricing)</small> Total Lead (mg/kg) Total Sample Mass Total Lead (ug/L) M13 (Al, As, Ba, Be, Cd, Cr, Co, Cu, Fe, Pb, Mn, Hg, Ni, Zn Excluding hexavalent chromium) Total										Email for Invoice		smaxwell@ramboll.com asiapac-accounts@ramboll.com	
Phone No		0478 658 194												Email for Results		smaxwell@ramboll.com jblackwell@ramboll.com	
Special Directions														Containers 1L Plastic 250mL Plastic 125mL Plastic 200mL Amber Glass 40mL VOA vial 500mL PFAS Bottle Jar (Glass or HDPE) Other (Asbestos AS4954, WA Guideline)		Turnaround Time (TAT) Requirements (Default will be 5 days if not ticked) <input type="checkbox"/> Overnight (9am)* <input type="checkbox"/> 1 Day* <input type="checkbox"/> 2 Day* <input type="checkbox"/> 3 Day* <input checked="" type="checkbox"/> 5 Day * Surcharges apply <input type="checkbox"/> Other ()	
Purchase Order																	
Quote ID No		180813RAMN_1															
No	Client Sample ID	Sampled Date/Time (dd/mm/yy hh:mm)	Matrix (Solid (S) Water (W))														
1	P34_HA01_0-0.05	28/04/20	S	X													
2	P34_HA01_0.2	28/04/20	S	X													
3	P34_HA02_0-0.05	28/04/20	S	X													
4	P34_HA02_0.2	28/04/20	S	X													
5	P34_HA03_0-0.05	28/04/20	S	X													
6	P34_HA03_0.2	28/04/20	S	X													
7	P34_HA04_0-0.05	28/04/20	S	X													
8	P34_HA04_0.2	28/04/20	S	X													
9	P34_HA04_0.3	28/04/20	S	X											HOLD		
10	P34_HA05_0-0.05	28/04/20	S	X													
Total Counts				10													
Method of Shipment		<input type="checkbox"/> Courier (#) <input checked="" type="checkbox"/> Hand Delivered <input type="checkbox"/> Postal		Name		Signature		Date		Date		Time		Time			
Eurofins mgt Laboratory Use Only		Received By <i>Anson Lee</i>		SYD BNE MEL PER ADL NTL DRW		Signature <i>[Signature]</i>		Date <i>15/20</i>		Date <i>12/00 PM</i>		Temperature <i>14.0°C</i>		Report No <i>#717015</i>			

Submission of samples to the laboratory will be deemed as acceptance of Eurofins | mgt Standard Terms and Conditions unless agreed otherwise. A copy of Eurofins | mgt Standard Terms and Conditions is available on request.

Eurofins Environment Testing Australia Pty Ltd trading as Eurofins | mgt



CHAIN OF CUSTODY RECORD

ABN 50 005 085 521

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03 8564 5000 EnviroSampleVic@eurofins.com

Company		Ramboll		Project No		318000780		Project Manager		Stephen Maxwell		Sampler(s)		JB, TJ, JK					
Address		50 Glebe Road the Junction		Project Name		P34		EDD Format (ESdat, EQUIS, Custom)		Excel and PDF		Handed over by		Jordyn Kirsch					
Contact Name		Stephen Maxwell		<small>Analyses</small> <small>(Note: Where metals are requested, please specify "Total" or "Filtered" SUITE code must be used to attract SUITE pricing)</small> Total Lead (mg/Kg) Total Sample Mass Total Lead (µg/L) M13 (Al, As, Ba, Be, Cd, Cr, Cu, Fe, Pb, Mn, Hg, Ni, Zn Excluding hexavalent chromium) Total										Email for Invoice		smaxwell@ramboll.com asiapac-accounts@ramboll.com			
Phone No		0478 658 194												Email for Results		smaxwell@ramboll.com jblackwell@ramboll.com			
Special Directions														Containers		Turnaround Time (TAT) Requirements (Default will be 5 days, if not ticked)		<input type="checkbox"/> Overnight (9am)* <input type="checkbox"/> 1 Day* <input type="checkbox"/> 2 Day* <input type="checkbox"/> 3 Day* <input checked="" type="checkbox"/> 5 Day * Surcharges apply <input type="checkbox"/> Other ()	
Purchase Order														Sample Comments / Dangerous Goods Hazard Warning					
Quote ID No		180813RAMN_1		No		Client Sample ID		Sampled Date/Time (dd/mm/yy hh:mm)		Matrix (Solid (S) Water (W))									
				1		P34_TW1		28/04/20		W									
				2		DSWAB_FE(P34)		27/04/20		S				X					
				3		DSWAB_BE(P35)		27/04/20		S				X					
				4		DSWAB_MH(P34)		27/04/20		S				X					
				5		DVAC_BR(P34)		27/04/20		S		X X		1					
				6															
				7															
				8															
				9															
				10															
				Total Counts		1		1		3		1		4					
Method of Shipment		<input type="checkbox"/> Courier (#) <input checked="" type="checkbox"/> Hand Delivered <input type="checkbox"/> Postal		Name		Signature		Date		Time		Date		Time					
Eurofins mgt		Received By <i>Amar La</i>		SYD BNE MEL PER ADL NTL DRW		<i>[Signature]</i>		Date <i>15/20</i>		Time <i>12:00pm</i>		Temperature <i>14.0°C</i>							
Laboratory Use Only		Received By		SYD BNE MEL PER ADL NTL DRW		Signature		Date		Time		Report No		<i>#717015</i>					

Submission of samples to the laboratory will be deemed as acceptance of Eurofins | mgt Standard Terms and Conditions unless agreed otherwise. A copy of Eurofins | mgt Standard Terms and Conditions is available on request.

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ABN – 50 005 085 521

e.mail : EnviroSales@eurofins.com

web : www.eurofins.com.au

Sample Receipt Advice

Company name: **Ramboll Australia Pty Ltd**
Contact name: Stephen Maxwell
Project name: P34
Project ID: 318000780
COC number: Not provided
Turn around time: 5 Day
Date/Time received: May 1, 2020 12:00 PM
Eurofins reference: **717015**

Sample information

- A detailed list of analytes logged into our LIMS, is included in the attached summary table.
- All samples have been received as described on the above COC.
- COC has been completed correctly.
- Attempt to chill was evident.
- Appropriately preserved sample containers have been used.
- All samples were received in good condition.
- Samples have been provided with adequate time to commence analysis in accordance with the relevant holding times.
- Appropriate sample containers have been used.
- Sample containers for volatile analysis received with zero headspace.
- Split sample sent to requested external lab.
- Some samples have been subcontracted.
- N/A Custody Seals intact (if used).

Notes

Extra jar sample P34_HA05_0.2 received. Logged on hold.

Contact notes

If you have any questions with respect to these samples please contact:

Andrew Black on Phone : (+61) 2 9900 8490 or by e.mail: AndrewBlack@eurofins.com

Results will be delivered electronically via e.mail to Stephen Maxwell - smaxwell@ramboll.com.

Note: A copy of these results will also be delivered to the general Ramboll Australia Pty Ltd email address.

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Company Name: Ramboll Australia Pty Ltd
Address: Level 3/100 Pacific Highway
North Sydney
NSW 2060

Order No.:
Report #: 717015
Phone: 02 9954 8118
Fax: 02 9954 8150

Received: May 1, 2020 12:00 PM
Due: May 8, 2020
Priority: 5 Day
Contact Name: Stephen Maxwell

Project Name: P34
Project ID: 318000780

Eurofins Analytical Services Manager : Andrew Black

Sample Detail						Aluminium	Arsenic	Barium	Beryllium	Cadmium	Chromium	Cobalt	Copper	HOLD	Iron	Lead	Manganese	Mass of sample*	Mercury	Nickel	Zinc	Moisture Set		
Melbourne Laboratory - NATA Site # 1254 & 14271																								
Sydney Laboratory - NATA Site # 18217						X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	
Brisbane Laboratory - NATA Site # 20794																								
Perth Laboratory - NATA Site # 23736																								
External Laboratory																								
No	Sample ID	Sample Date	Sampling Time	Matrix	LAB ID																			
1	P34_HA01_0-0.05	Apr 28, 2020		Soil	S20-My01479											X						X		
2	P34_HA01_0.2	Apr 28, 2020		Soil	S20-My01480											X						X		
3	P34_HA02_0-0.05	Apr 28, 2020		Soil	S20-My01481											X						X		
4	P34_HA02_0.2	Apr 28, 2020		Soil	S20-My01482											X						X		
5	P34_HA03_0-0.05	Apr 28, 2020		Soil	S20-My01483											X						X		
6	P34_HA03_0.2	Apr 28, 2020		Soil	S20-My01484											X						X		

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Melbourne Laboratory - NATA Site # 1254 & 14271																							
Sydney Laboratory - NATA Site # 18217						X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X
Brisbane Laboratory - NATA Site # 20794																							
Perth Laboratory - NATA Site # 23736																							
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8	P34_HA04_0.2	Apr 28, 2020		Soil	S20-My01486											X						X	
9	P34_HA05_0-0.05	Apr 28, 2020		Soil	S20-My01487											X						X	
10	P34_TW1	Apr 28, 2020		Water	S20-My01488	X	X	X	X	X	X	X	X		X	X	X		X	X	X		
11	DSWAB_FE(P34)	Apr 27, 2020		Wipes	S20-My01489											X							
12	DSWAB_BE(P34)	Apr 27, 2020		Wipes	S20-My01490											X							
13	DSWAB_MH(P34)	Apr 27, 2020		Wipes	S20-My01491											X							
14	DVAC_BR(P34)	Apr 27, 2020		Dust	S20-My01492											X	X						

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Contact Name: Stephen Maxwell

Project Name: P34
Project ID: 318000780

Eurofins Analytical Services Manager : Andrew Black

Sample Detail						Aluminium	Arsenic	Barium	Beryllium	Cadmium	Chromium	Cobalt	Copper	HOLD	Iron	Lead	Manganese	Mass of sample*	Mercury	Nickel	Zinc	Moisture Set	
Melbourne Laboratory - NATA Site # 1254 & 14271																							
Sydney Laboratory - NATA Site # 18217						X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X
Brisbane Laboratory - NATA Site # 20794																							
Perth Laboratory - NATA Site # 23736																							
15	P34_HA04_0.3	Apr 28, 2020		Soil	S20-My01493									X									
16	P34_HA05_0.2	Apr 28, 2020		Soil	S20-My01494									X									
Test Counts						1	1	1	1	1	1	1	1	2	1	14	1	1	1	1	1	9	

Ramboll Environ Australia Pty Ltd
 Level 3/100 Pacific Highway
 North Sydney
 NSW 2060



NATA Accredited
Accreditation Number 1261
Site Number 18217

Accredited for compliance with ISO/IEC 17025 – Testing
 The results of the tests, calibrations and/or
 measurements included in this document are traceable
 to Australian/national standards.

Attention: **Stephen Maxwell**

Report **717015-A**
 Project name **P34**
 Project ID **318000780**
 Received Date **May 01, 2020**

Client Sample ID			DSWAB_FE(P34)	DSWAB_BE(P34)	DSWAB_MH(P34)
Sample Matrix			Wipes	Wipes	Wipes
Eurofins Sample No.			S20-My01489	S20-My01490	S20-My01491
Date Sampled			Apr 27, 2020	Apr 27, 2020	Apr 27, 2020
Test/Reference	LOR	Unit			
Heavy Metals					
Lead	1	Total ug	9.7	15	3.1

Sample History

Where samples are submitted/analysed over several days, the last date of extraction and analysis is reported.

A recent review of our LIMS has resulted in the correction or clarification of some method identifications. Due to this, some of the method reference information on reports has changed. However, no substantive change has been made to our laboratory methods, and as such there is no change in the validity of current or previous results.

If the date and time of sampling are not provided, the Laboratory will not be responsible for compromised results should testing be performed outside the recommended holding time.

Description

Heavy Metals

Testing Site

Sydney

Extracted

May 07, 2020

Holding Time

180 Days

- Method: LTM-MET-3040 Metals in Waters, Soils & Sediments by ICP-MS

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10	P34_TW1	Apr 28, 2020		Water	S20-My01488	X	X	X	X	X	X	X	X		X	X	X		X	X	X		
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Melbourne Laboratory - NATA Site # 1254 & 14271																								
Sydney Laboratory - NATA Site # 18217						X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	
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15	P34_HA04_0.3	Apr 28, 2020		Soil	S20-My01493									X										
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Test Counts						1	1	1	1	1	1	1	1	2	1	14	1	1	1	1	1	1	9	

Internal Quality Control Review and Glossary

General

- Laboratory QC results for Method Blanks, Duplicates, Matrix Spikes, and Laboratory Control Samples follows guidelines delineated in the National Environment Protection (Assessment of Site Contamination) Measure 1999, as amended May 2013 and are included in this QC report where applicable. Additional QC data may be available on request.
- All soil/sediment/solid results are reported on a dry basis, unless otherwise stated.
- All biota/food results are reported on a wet weight basis on the edible portion, unless otherwise stated.
- Actual LORs are matrix dependant. Quoted LORs may be raised where sample extracts are diluted due to interferences.
- Results are uncorrected for matrix spikes or surrogate recoveries except for PFAS compounds.
- SVOC analysis on waters are performed on homogenised, unfiltered samples, unless noted otherwise.
- Samples were analysed on an 'as received' basis.
- Information identified on this report with blue colour, indicates data provided by customer, that may have an impact on the results.
- This report replaces any interim results previously issued.

Holding Times

Please refer to 'Sample Preservation and Container Guide' for holding times (QS3001).

For samples received on the last day of holding time, notification of testing requirements should have been received at least 6 hours prior to sample receipt deadlines as stated on the SRA.

If the Laboratory did not receive the information in the required timeframe, and regardless of any other integrity issues, suitably qualified results may still be reported.

Holding times apply from the date of sampling, therefore compliance to these may be outside the laboratory's control.

For VOCs containing vinyl chloride, styrene and 2-chloroethyl vinyl ether the holding time is 7 days however for all other VOCs such as BTEX or C6-10 TRH then the holding time is 14 days.

****NOTE:** pH duplicates are reported as a range NOT as RPD

Units

mg/kg: milligrams per kilogram	mg/L: milligrams per litre	ug/L: micrograms per litre
ppm: Parts per million	ppb: Parts per billion	%: Percentage
org/100mL: Organisms per 100 millilitres	NTU: Nephelometric Turbidity Units	MPN/100mL: Most Probable Number of organisms per 100 millilitres

Terms

Dry	Where a moisture has been determined on a solid sample the result is expressed on a dry basis.
LOR	Limit of Reporting.
SPIKE	Addition of the analyte to the sample and reported as percentage recovery.
RPD	Relative Percent Difference between two Duplicate pieces of analysis.
LCS	Laboratory Control Sample - reported as percent recovery.
CRM	Certified Reference Material - reported as percent recovery.
Method Blank	In the case of solid samples these are performed on laboratory certified clean sands and in the case of water samples these are performed on de-ionised water.
Surr - Surrogate	The addition of a like compound to the analyte target and reported as percentage recovery.
Duplicate	A second piece of analysis from the same sample and reported in the same units as the result to show comparison.
USEPA	United States Environmental Protection Agency
APHA	American Public Health Association
TCLP	Toxicity Characteristic Leaching Procedure
COC	Chain of Custody
SRA	Sample Receipt Advice
QSM	US Department of Defense Quality Systems Manual Version 5.3
CP	Client Parent - QC was performed on samples pertaining to this report
NCP	Non-Client Parent - QC performed on samples not pertaining to this report, QC is representative of the sequence or batch that client samples were analysed within.
TEQ	Toxic Equivalency Quotient

QC - Acceptance Criteria

RPD Duplicates: Global RPD Duplicates Acceptance Criteria is 30% however the following acceptance guidelines are equally applicable:

Results <10 times the LOR : No Limit

Results between 10-20 times the LOR : RPD must lie between 0-50%

Results >20 times the LOR : RPD must lie between 0-30%

Surrogate Recoveries: Recoveries must lie between 20-130% Phenols & 50-150% PFASs

PFAS field samples that contain surrogate recoveries in excess of the QC limit designated in QSM 5.3 where no positive PFAS results have been reported have been reviewed and no data was affected.

WA DWER (n=10): PFBA, PFPeA, PFHxA, PFHpA, PFOA, PFBS, PFHxS, PFOS, 6:2 FTSA, 8:2 FTSA

QC Data General Comments

- Where a result is reported as a less than (<), higher than the nominated LOR, this is due to either matrix interference, extract dilution required due to interferences or contaminant levels within the sample, high moisture content or insufficient sample provided.
- Duplicate data shown within this report that states the word "BATCH" is a Batch Duplicate from outside of your sample batch, but within the laboratory sample batch at a 1:10 ratio. The Parent and Duplicate data shown is not data from your samples.
- Organochlorine Pesticide analysis - where reporting LCS data, Toxaphene & Chlordane are not added to the LCS.
- Organochlorine Pesticide analysis - where reporting Spike data, Toxaphene is not added to the Spike.
- Total Recoverable Hydrocarbons - where reporting Spike & LCS data, a single spike of commercial Hydrocarbon products in the range of C12-C30 is added and it's Total Recovery is reported in the C10-C14 cell of the Report.
- pH and Free Chlorine analysed in the laboratory - Analysis on this test must begin within 30 minutes of sampling. Therefore laboratory analysis is unlikely to be completed within holding time. Analysis will begin as soon as possible after sample receipt.
- Recovery Data (Spikes & Surrogates) - where chromatographic interference does not allow the determination of Recovery the term "INT" appears against that analyte.
- Polychlorinated Biphenyls are spiked only using Aroclor 1260 in Matrix Spikes and LCS.
- For Matrix Spikes and LCS results a dash " - " in the report means that the specific analyte was not added to the QC sample.
- Duplicate RPDs are calculated from raw analytical data thus it is possible to have two sets of data.

Quality Control Results

Comments**Sample Integrity**

Custody Seals Intact (if used)	N/A
Attempt to Chill was evident	No
Sample correctly preserved	Yes
Appropriate sample containers have been used	Yes
Sample containers for volatile analysis received with minimal headspace	Yes
Samples received within HoldingTime	Yes
Some samples have been subcontracted	No

Authorised By

Andrew Black Analytical Services Manager
Gabriele Cordero Senior Analyst-Metal (NSW)

**Glenn Jackson
General Manager**

Final report - this Report replaces any previously issued Report

- Indicates Not Requested

* Indicates NATA accreditation does not cover the performance of this service

Measurement uncertainty of test data is available on request or please [click here](#).

Eurofins shall not be liable for loss, cost, damages or expenses incurred by the client, or any other person or company, resulting from the use of any information or interpretation given in this report. In no case shall Eurofins be liable for consequential damages including, but not limited to, lost profits, damages for failure to meet deadlines and lost production arising from this report. This document shall not be reproduced except in full and relates only to the items tested. Unless indicated otherwise, the tests were performed on the samples as received.

Ramboll Environ Australia Pty Ltd
 Level 3/100 Pacific Highway
 North Sydney
 NSW 2060



NATA Accredited
 Accreditation Number 1261
 Site Number 18217

Accredited for compliance with ISO/IEC 17025 – Testing
 The results of the tests, calibrations and/or
 measurements included in this document are traceable
 to Australian/national standards.

Attention: Stephen Maxwell

Report 717015-S
 Project name P34
 Project ID 318000780
 Received Date May 01, 2020

Client Sample ID			P34_HA01_0-0.05	P34_HA01_0.2	P34_HA02_0-0.05	P34_HA02_0.2
Sample Matrix			Soil	Soil	Soil	Soil
Eurofins Sample No.			S20-My01479	S20-My01480	S20-My01481	S20-My01482
Date Sampled			Apr 28, 2020	Apr 28, 2020	Apr 28, 2020	Apr 28, 2020
Test/Reference	LOR	Unit				
Heavy Metals						
Lead	5	mg/kg	93	90	120	8.3
% Moisture						
% Moisture	1	%	8.9	11	12	8.2

Client Sample ID			P34_HA03_0-0.05	P34_HA03_0.2	P34_HA04_0-0.05	P34_HA04_0.2
Sample Matrix			Soil	Soil	Soil	Soil
Eurofins Sample No.			S20-My01483	S20-My01484	S20-My01485	S20-My01486
Date Sampled			Apr 28, 2020	Apr 28, 2020	Apr 28, 2020	Apr 28, 2020
Test/Reference	LOR	Unit				
Heavy Metals						
Lead	5	mg/kg	270	18	800	55
% Moisture						
% Moisture	1	%	15	13	5.4	16

Client Sample ID			P34_HA05_0-0.05	DVAC_BR(P34)
Sample Matrix			Soil	Dust
Eurofins Sample No.			S20-My01487	S20-My01492
Date Sampled			Apr 28, 2020	Apr 27, 2020
Test/Reference	LOR	Unit		
Heavy Metals				
Lead	5	mg/kg	420	49
% Moisture				
% Moisture	1	%	5.6	-

Sample History

Where samples are submitted/analysed over several days, the last date of extraction and analysis is reported. A recent review of our LIMS has resulted in the correction or clarification of some method identifications. Due to this, some of the method reference information on reports has changed. However, no substantive change has been made to our laboratory methods, and as such there is no change in the validity of current or previous results.

If the date and time of sampling are not provided, the Laboratory will not be responsible for compromised results should testing be performed outside the recommended holding time.

Description	Testing Site	Extracted	Holding Time
Heavy Metals - Method: LTM-MET-3040 Metals in Waters, Soils & Sediments by ICP-MS	Sydney	May 08, 2020	180 Days
% Moisture - Method: LTM-GEN-7080 Moisture	Sydney	May 01, 2020	14 Days

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Company Name: Ramboll Australia Pty Ltd
Address: Level 3/100 Pacific Highway
North Sydney
NSW 2060

Order No.:
Report #: 717015
Phone: 02 9954 8118
Fax: 02 9954 8150

Received: May 1, 2020 12:00 PM
Due: May 8, 2020
Priority: 5 Day
Contact Name: Stephen Maxwell

Project Name: P34
Project ID: 318000780

Eurofins Analytical Services Manager : Andrew Black

Sample Detail						Aluminium	Arsenic	Barium	Beryllium	Cadmium	Chromium	Cobalt	Copper	HOLD	Iron	Lead	Manganese	Mass of sample*	Mercury	Nickel	Zinc	Moisture Set	
Melbourne Laboratory - NATA Site # 1254 & 14271																							
Sydney Laboratory - NATA Site # 18217						X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X
Brisbane Laboratory - NATA Site # 20794																							
Perth Laboratory - NATA Site # 23736																							
External Laboratory																							
No	Sample ID	Sample Date	Sampling Time	Matrix	LAB ID																		
1	P34_HA01_0-0.05	Apr 28, 2020		Soil	S20-My01479											X						X	
2	P34_HA01_0.2	Apr 28, 2020		Soil	S20-My01480											X						X	
3	P34_HA02_0-0.05	Apr 28, 2020		Soil	S20-My01481											X						X	
4	P34_HA02_0.2	Apr 28, 2020		Soil	S20-My01482											X						X	
5	P34_HA03_0-0.05	Apr 28, 2020		Soil	S20-My01483											X						X	
6	P34_HA03_0.2	Apr 28, 2020		Soil	S20-My01484											X						X	

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Sample Detail						Aluminium	Arsenic	Barium	Beryllium	Cadmium	Chromium	Cobalt	Copper	HOLD	Iron	Lead	Manganese	Mass of sample*	Mercury	Nickel	Zinc	Moisture Set	
Melbourne Laboratory - NATA Site # 1254 & 14271																							
Sydney Laboratory - NATA Site # 18217						X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X
Brisbane Laboratory - NATA Site # 20794																							
Perth Laboratory - NATA Site # 23736																							
7	P34_HA04_0-0.05	Apr 28, 2020		Soil	S20-My01485											X						X	
8	P34_HA04_0.2	Apr 28, 2020		Soil	S20-My01486											X						X	
9	P34_HA05_0-0.05	Apr 28, 2020		Soil	S20-My01487											X						X	
10	P34_TW1	Apr 28, 2020		Water	S20-My01488	X	X	X	X	X	X	X	X		X	X	X		X	X	X		
11	DSWAB_FE(P34)	Apr 27, 2020		Wipes	S20-My01489											X							
12	DSWAB_BE(P34)	Apr 27, 2020		Wipes	S20-My01490											X							
13	DSWAB_MH(P34)	Apr 27, 2020		Wipes	S20-My01491											X							
14	DVAC_BR(P34)	Apr 27, 2020		Dust	S20-My01492											X	X						

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e.mail : EnviroSales@eurofins.com

Company Name: Ramboll Australia Pty Ltd
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Received: May 1, 2020 12:00 PM
Due: May 8, 2020
Priority: 5 Day
Contact Name: Stephen Maxwell

Project Name: P34
Project ID: 318000780

Eurofins Analytical Services Manager : Andrew Black

Sample Detail						Aluminium	Arsenic	Barium	Beryllium	Cadmium	Chromium	Cobalt	Copper	HOLD	Iron	Lead	Manganese	Mass of sample*	Mercury	Nickel	Zinc	Moisture Set	
Melbourne Laboratory - NATA Site # 1254 & 14271																							
Sydney Laboratory - NATA Site # 18217						X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X
Brisbane Laboratory - NATA Site # 20794																							
Perth Laboratory - NATA Site # 23736																							
15	P34_HA04_0_3	Apr 28, 2020		Soil	S20-My01493									X									
16	P34_HA05_0_2	Apr 28, 2020		Soil	S20-My01494									X									
Test Counts						1	1	1	1	1	1	1	1	2	1	14	1	1	1	1	1	9	

Internal Quality Control Review and Glossary
General

- Laboratory QC results for Method Blanks, Duplicates, Matrix Spikes, and Laboratory Control Samples follows guidelines delineated in the National Environment Protection (Assessment of Site Contamination) Measure 1999, as amended May 2013 and are included in this QC report where applicable. Additional QC data may be available on request.
- All soil/sediment/solid results are reported on a dry basis, unless otherwise stated.
- All biota/food results are reported on a wet weight basis on the edible portion, unless otherwise stated.
- Actual LORs are matrix dependant. Quoted LORs may be raised where sample extracts are diluted due to interferences.
- Results are uncorrected for matrix spikes or surrogate recoveries except for PFAS compounds.
- SVOC analysis on waters are performed on homogenised, unfiltered samples, unless noted otherwise.
- Samples were analysed on an 'as received' basis.
- Information identified on this report with blue colour, indicates data provided by customer, that may have an impact on the results.
- This report replaces any interim results previously issued.

Holding Times

Please refer to 'Sample Preservation and Container Guide' for holding times (QS3001).

For samples received on the last day of holding time, notification of testing requirements should have been received at least 6 hours prior to sample receipt deadlines as stated on the SRA.

If the Laboratory did not receive the information in the required timeframe, and regardless of any other integrity issues, suitably qualified results may still be reported.

Holding times apply from the date of sampling, therefore compliance to these may be outside the laboratory's control.

For VOCs containing vinyl chloride, styrene and 2-chloroethyl vinyl ether the holding time is 7 days however for all other VOCs such as BTEX or C6-10 TRH then the holding time is 14 days.

****NOTE:** pH duplicates are reported as a range NOT as RPD

Units

mg/kg: milligrams per kilogram

mg/L: milligrams per litre

ug/L: micrograms per litre

ppm: Parts per million

ppb: Parts per billion

%: Percentage

org/100mL: Organisms per 100 millilitres

NTU: Nephelometric Turbidity Units

MPN/100mL: Most Probable Number of organisms per 100 millilitres

Terms

Dry	Where a moisture has been determined on a solid sample the result is expressed on a dry basis.
LOR	Limit of Reporting.
SPIKE	Addition of the analyte to the sample and reported as percentage recovery.
RPD	Relative Percent Difference between two Duplicate pieces of analysis.
LCS	Laboratory Control Sample - reported as percent recovery.
CRM	Certified Reference Material - reported as percent recovery.
Method Blank	In the case of solid samples these are performed on laboratory certified clean sands and in the case of water samples these are performed on de-ionised water.
Surr - Surrogate	The addition of a like compound to the analyte target and reported as percentage recovery.
Duplicate	A second piece of analysis from the same sample and reported in the same units as the result to show comparison.
USEPA	United States Environmental Protection Agency
APHA	American Public Health Association
TCLP	Toxicity Characteristic Leaching Procedure
COC	Chain of Custody
SRA	Sample Receipt Advice
QSM	US Department of Defense Quality Systems Manual Version 5.3
CP	Client Parent - QC was performed on samples pertaining to this report
NCP	Non-Client Parent - QC performed on samples not pertaining to this report, QC is representative of the sequence or batch that client samples were analysed within.
TEQ	Toxic Equivalency Quotient

QC - Acceptance Criteria

RPD Duplicates: Global RPD Duplicates Acceptance Criteria is 30% however the following acceptance guidelines are equally applicable:

Results <10 times the LOR : No Limit

Results between 10-20 times the LOR : RPD must lie between 0-50%

Results >20 times the LOR : RPD must lie between 0-30%

Surrogate Recoveries: Recoveries must lie between 20-130% Phenols & 50-150% PFASs

PFAS field samples that contain surrogate recoveries in excess of the QC limit designated in QSM 5.3 where no positive PFAS results have been reported have been reviewed and no data was affected.

WA DWER (n=10): PFBA, PFPeA, PFHxA, PFHpA, PFOA, PFBS, PFHxS, PFOS, 6:2 FTSA, 8:2 FTSA

QC Data General Comments

- Where a result is reported as a less than (<), higher than the nominated LOR, this is due to either matrix interference, extract dilution required due to interferences or contaminant levels within the sample, high moisture content or insufficient sample provided.
- Duplicate data shown within this report that states the word "BATCH" is a Batch Duplicate from outside of your sample batch, but within the laboratory sample batch at a 1:10 ratio. The Parent and Duplicate data shown is not data from your samples.
- Organochlorine Pesticide analysis - where reporting LCS data, Toxaphene & Chlordane are not added to the LCS.
- Organochlorine Pesticide analysis - where reporting Spike data, Toxaphene is not added to the Spike.
- Total Recoverable Hydrocarbons - where reporting Spike & LCS data, a single spike of commercial Hydrocarbon products in the range of C12-C30 is added and it's Total Recovery is reported in the C10-C14 cell of the Report.
- pH and Free Chlorine analysed in the laboratory - Analysis on this test must begin within 30 minutes of sampling. Therefore laboratory analysis is unlikely to be completed within holding time. Analysis will begin as soon as possible after sample receipt.
- Recovery Data (Spikes & Surrogates) - where chromatographic interference does not allow the determination of Recovery the term "INT" appears against that analyte.
- Polychlorinated Biphenyls are spiked only using Aroclor 1260 in Matrix Spikes and LCS.
- For Matrix Spikes and LCS results a dash " - " in the report means that the specific analyte was not added to the QC sample.
- Duplicate RPDs are calculated from raw analytical data thus it is possible to have two sets of data.

Quality Control Results

Test				Units	Result 1			Acceptance Limits	Pass Limits	Qualifying Code	
Method Blank											
Heavy Metals											
Lead				mg/kg	< 5			5	Pass		
LCS - % Recovery											
Heavy Metals											
Lead				%	88			70-130	Pass		
Test	Lab Sample ID	QA Source	Units	Result 1			Acceptance Limits	Pass Limits	Qualifying Code		
Spike - % Recovery											
Heavy Metals											
Lead				S20-My01797	NCP	%	107	70-130	Pass		
Test	Lab Sample ID	QA Source	Units	Result 1			Acceptance Limits	Pass Limits	Qualifying Code		
Duplicate											
				Result 1	Result 2	RPD					
% Moisture				S20-My01439	NCP	%	20	20	2.0	30%	Pass
Duplicate											
Heavy Metals											
Lead				S20-My01480	CP	mg/kg	90	110	21	30%	Pass

Comments**Sample Integrity**

Custody Seals Intact (if used)	N/A
Attempt to Chill was evident	No
Sample correctly preserved	Yes
Appropriate sample containers have been used	Yes
Sample containers for volatile analysis received with minimal headspace	Yes
Samples received within HoldingTime	Yes
Some samples have been subcontracted	No

Authorised By

Andrew Black Analytical Services Manager
Gabriele Cordero Senior Analyst-Metal (NSW)

**Glenn Jackson
General Manager**

Final report - this Report replaces any previously issued Report

- Indicates Not Requested

* Indicates NATA accreditation does not cover the performance of this service

Measurement uncertainty of test data is available on request or please [click here](#).

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 The results of the tests, calibrations and/or
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 to Australian/national standards.

Attention: **Stephen Maxwell**

Report **717015-W**
 Project name **P34**
 Project ID **318000780**
 Received Date **May 01, 2020**

Client Sample ID			P34_TW1
Sample Matrix			Water
Eurofins Sample No.			S20-My01488
Date Sampled			Apr 28, 2020
Test/Reference	LOR	Unit	
Heavy Metals			
Aluminium	0.05	mg/L	< 0.05
Arsenic	0.001	mg/L	< 0.001
Barium	0.02	mg/L	0.03
Beryllium	0.001	mg/L	< 0.001
Cadmium	0.0002	mg/L	< 0.0002
Chromium	0.001	mg/L	0.002
Cobalt	0.001	mg/L	< 0.001
Copper	0.001	mg/L	< 0.001
Iron	0.05	mg/L	0.14
Lead	0.001	mg/L	< 0.001
Manganese	0.005	mg/L	< 0.005
Mercury	0.0001	mg/L	< 0.0001
Nickel	0.001	mg/L	< 0.001
Zinc	0.005	mg/L	0.031

Sample History

Where samples are submitted/analysed over several days, the last date of extraction and analysis is reported.

A recent review of our LIMS has resulted in the correction or clarification of some method identifications. Due to this, some of the method reference information on reports has changed. However, no substantive change has been made to our laboratory methods, and as such there is no change in the validity of current or previous results.

If the date and time of sampling are not provided, the Laboratory will not be responsible for compromised results should testing be performed outside the recommended holding time.

Description

Heavy Metals

Testing Site

Sydney

Extracted

May 05, 2020

Holding Time

180 Days

- Method: LTM-MET-3040 Metals in Waters, Soils & Sediments by ICP-MS

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Order No.:
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Phone: 02 9954 8118
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Received: May 1, 2020 12:00 PM
Due: May 8, 2020
Priority: 5 Day
Contact Name: Stephen Maxwell

Project Name: P34
Project ID: 318000780

Eurofins Analytical Services Manager : Andrew Black

Sample Detail						Aluminium	Arsenic	Barium	Beryllium	Cadmium	Chromium	Cobalt	Copper	HOLD	Iron	Lead	Manganese	Mass of sample*	Mercury	Nickel	Zinc	Moisture Set	
Melbourne Laboratory - NATA Site # 1254 & 14271																							
Sydney Laboratory - NATA Site # 18217						X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X
Brisbane Laboratory - NATA Site # 20794																							
Perth Laboratory - NATA Site # 23736																							
External Laboratory																							
No	Sample ID	Sample Date	Sampling Time	Matrix	LAB ID																		
1	P34_HA01_0-0.05	Apr 28, 2020		Soil	S20-My01479											X						X	
2	P34_HA01_0.2	Apr 28, 2020		Soil	S20-My01480											X						X	
3	P34_HA02_0-0.05	Apr 28, 2020		Soil	S20-My01481											X						X	
4	P34_HA02_0.2	Apr 28, 2020		Soil	S20-My01482											X						X	
5	P34_HA03_0-0.05	Apr 28, 2020		Soil	S20-My01483											X						X	
6	P34_HA03_0.2	Apr 28, 2020		Soil	S20-My01484											X						X	

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Melbourne Laboratory - NATA Site # 1254 & 14271																							
Sydney Laboratory - NATA Site # 18217						X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X
Brisbane Laboratory - NATA Site # 20794																							
Perth Laboratory - NATA Site # 23736																							
7	P34_HA04_0-0.05	Apr 28, 2020		Soil	S20-My01485											X						X	
8	P34_HA04_0.2	Apr 28, 2020		Soil	S20-My01486											X						X	
9	P34_HA05_0-0.05	Apr 28, 2020		Soil	S20-My01487											X						X	
10	P34_TW1	Apr 28, 2020		Water	S20-My01488	X	X	X	X	X	X	X	X		X	X	X		X	X	X		
11	DSWAB_FE(P34)	Apr 27, 2020		Wipes	S20-My01489											X							
12	DSWAB_BE(P34)	Apr 27, 2020		Wipes	S20-My01490											X							
13	DSWAB_MH(P34)	Apr 27, 2020		Wipes	S20-My01491											X							
14	DVAC_BR(P34)	Apr 27, 2020		Dust	S20-My01492											X	X						

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NATA # 1261 Site # 20794

Perth
2/91 Leach Highway
Kewdale WA 6105
Phone : +61 8 9251 9600
NATA # 1261
Site # 23736

New Zealand

Auckland
35 O'Rorke Road
Penrose, Auckland 1061
Phone : +64 9 526 45 51
IANZ # 1327

Christchurch
43 Detroit Drive
Rolleston, Christchurch 7675
Phone : 0800 856 450
IANZ # 1290

ABN – 50 005 085 521

web : www.eurofins.com.au

e.mail : EnviroSales@eurofins.com

Company Name: Ramboll Australia Pty Ltd
Address: Level 3/100 Pacific Highway
North Sydney
NSW 2060

Order No.:
Report #: 717015
Phone: 02 9954 8118
Fax: 02 9954 8150

Received: May 1, 2020 12:00 PM
Due: May 8, 2020
Priority: 5 Day
Contact Name: Stephen Maxwell

Project Name: P34
Project ID: 318000780

Eurofins Analytical Services Manager : Andrew Black

Sample Detail						Aluminium	Arsenic	Barium	Beryllium	Cadmium	Chromium	Cobalt	Copper	HOLD	Iron	Lead	Manganese	Mass of sample*	Mercury	Nickel	Zinc	Moisture Set	
Melbourne Laboratory - NATA Site # 1254 & 14271																							
Sydney Laboratory - NATA Site # 18217						X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X
Brisbane Laboratory - NATA Site # 20794																							
Perth Laboratory - NATA Site # 23736																							
15	P34_HA04_0_3	Apr 28, 2020		Soil	S20-My01493									X									
16	P34_HA05_0_2	Apr 28, 2020		Soil	S20-My01494									X									
Test Counts						1	1	1	1	1	1	1	1	2	1	14	1	1	1	1	1	1	9

Internal Quality Control Review and Glossary
General

- Laboratory QC results for Method Blanks, Duplicates, Matrix Spikes, and Laboratory Control Samples follows guidelines delineated in the National Environment Protection (Assessment of Site Contamination) Measure 1999, as amended May 2013 and are included in this QC report where applicable. Additional QC data may be available on request.
- All soil/sediment/solid results are reported on a dry basis, unless otherwise stated.
- All biota/food results are reported on a wet weight basis on the edible portion, unless otherwise stated.
- Actual LORs are matrix dependant. Quoted LORs may be raised where sample extracts are diluted due to interferences.
- Results are uncorrected for matrix spikes or surrogate recoveries except for PFAS compounds.
- SVOC analysis on waters are performed on homogenised, unfiltered samples, unless noted otherwise.
- Samples were analysed on an 'as received' basis.
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Please refer to 'Sample Preservation and Container Guide' for holding times (QS3001).

For samples received on the last day of holding time, notification of testing requirements should have been received at least 6 hours prior to sample receipt deadlines as stated on the SRA.

If the Laboratory did not receive the information in the required timeframe, and regardless of any other integrity issues, suitably qualified results may still be reported.

Holding times apply from the date of sampling, therefore compliance to these may be outside the laboratory's control.

For VOCs containing vinyl chloride, styrene and 2-chloroethyl vinyl ether the holding time is 7 days however for all other VOCs such as BTEX or C6-10 TRH then the holding time is 14 days.

****NOTE:** pH duplicates are reported as a range NOT as RPD

Units

mg/kg: milligrams per kilogram

mg/L: milligrams per litre

ug/L: micrograms per litre

ppm: Parts per million

ppb: Parts per billion

%: Percentage

org/100mL: Organisms per 100 millilitres

NTU: Nephelometric Turbidity Units

MPN/100mL: Most Probable Number of organisms per 100 millilitres

Terms

Dry	Where a moisture has been determined on a solid sample the result is expressed on a dry basis.
LOR	Limit of Reporting.
SPIKE	Addition of the analyte to the sample and reported as percentage recovery.
RPD	Relative Percent Difference between two Duplicate pieces of analysis.
LCS	Laboratory Control Sample - reported as percent recovery.
CRM	Certified Reference Material - reported as percent recovery.
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Surr - Surrogate	The addition of a like compound to the analyte target and reported as percentage recovery.
Duplicate	A second piece of analysis from the same sample and reported in the same units as the result to show comparison.
USEPA	United States Environmental Protection Agency
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QC - Acceptance Criteria

RPD Duplicates: Global RPD Duplicates Acceptance Criteria is 30% however the following acceptance guidelines are equally applicable:

Results <10 times the LOR : No Limit

Results between 10-20 times the LOR : RPD must lie between 0-50%

Results >20 times the LOR : RPD must lie between 0-30%

Surrogate Recoveries: Recoveries must lie between 20-130% Phenols & 50-150% PFASs

PFAS field samples that contain surrogate recoveries in excess of the QC limit designated in QSM 5.3 where no positive PFAS results have been reported have been reviewed and no data was affected.

WA DWER (n=10): PFBA, PFPeA, PFHxA, PFHpA, PFOA, PFBS, PFHxS, PFOS, 6:2 FTSA, 8:2 FTSA

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- Organochlorine Pesticide analysis - where reporting Spike data, Toxaphene is not added to the Spike.
- Total Recoverable Hydrocarbons - where reporting Spike & LCS data, a single spike of commercial Hydrocarbon products in the range of C12-C30 is added and it's Total Recovery is reported in the C10-C14 cell of the Report.
- pH and Free Chlorine analysed in the laboratory - Analysis on this test must begin within 30 minutes of sampling. Therefore laboratory analysis is unlikely to be completed within holding time. Analysis will begin as soon as possible after sample receipt.
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- Polychlorinated Biphenyls are spiked only using Aroclor 1260 in Matrix Spikes and LCS.
- For Matrix Spikes and LCS results a dash " - " in the report means that the specific analyte was not added to the QC sample.
- Duplicate RPDs are calculated from raw analytical data thus it is possible to have two sets of data.

Quality Control Results

Test	Units	Result 1			Acceptance Limits	Pass Limits	Qualifying Code	
Method Blank								
Heavy Metals								
Aluminium	mg/L	< 0.05			0.05	Pass		
Arsenic	mg/L	< 0.001			0.001	Pass		
Barium	mg/L	< 0.02			0.02	Pass		
Beryllium	mg/L	< 0.001			0.001	Pass		
Cadmium	mg/L	< 0.0002			0.0002	Pass		
Chromium	mg/L	< 0.001			0.001	Pass		
Cobalt	mg/L	< 0.001			0.001	Pass		
Copper	mg/L	< 0.001			0.001	Pass		
Iron	mg/L	< 0.05			0.05	Pass		
Lead	mg/L	< 0.001			0.001	Pass		
Manganese	mg/L	< 0.005			0.005	Pass		
Mercury	mg/L	< 0.0001			0.0001	Pass		
Nickel	mg/L	< 0.001			0.001	Pass		
Zinc	mg/L	< 0.005			0.005	Pass		
LCS - % Recovery								
Heavy Metals								
Aluminium	%	99			70-130	Pass		
Arsenic	%	97			70-130	Pass		
Barium	%	90			70-130	Pass		
Beryllium	%	91			70-130	Pass		
Cadmium	%	93			70-130	Pass		
Chromium	%	98			70-130	Pass		
Cobalt	%	98			70-130	Pass		
Copper	%	97			70-130	Pass		
Iron	%	98			70-130	Pass		
Lead	%	100			70-130	Pass		
Manganese	%	95			70-130	Pass		
Mercury	%	109			70-130	Pass		
Nickel	%	98			70-130	Pass		
Zinc	%	93			70-130	Pass		
Test	Lab Sample ID	QA Source	Units	Result 1		Acceptance Limits	Pass Limits	Qualifying Code
Spike - % Recovery								
Heavy Metals				Result 1				
Aluminium	S20-My01516	NCP	%	98		70-130	Pass	
Arsenic	S20-My01516	NCP	%	98		70-130	Pass	
Barium	S20-My01516	NCP	%	92		70-130	Pass	
Beryllium	S20-My01516	NCP	%	91		70-130	Pass	
Cadmium	S20-My01516	NCP	%	95		70-130	Pass	
Chromium	S20-My01516	NCP	%	101		70-130	Pass	
Cobalt	S20-My01516	NCP	%	101		70-130	Pass	
Copper	S20-My01516	NCP	%	100		70-130	Pass	
Iron	S20-My01516	NCP	%	99		70-130	Pass	
Lead	S20-My01516	NCP	%	104		70-130	Pass	
Manganese	S20-My01516	NCP	%	97		70-130	Pass	
Mercury	S20-My01516	NCP	%	115		70-130	Pass	
Nickel	S20-My01516	NCP	%	102		70-130	Pass	
Zinc	S20-My01516	NCP	%	97		70-130	Pass	

Test	Lab Sample ID	QA Source	Units	Result 1			Acceptance Limits	Pass Limits	Qualifying Code
Duplicate									
Heavy Metals				Result 1	Result 2	RPD			
Aluminium	S20-My01341	NCP	mg/L	0.06	0.06	1.0	30%	Pass	
Arsenic	S20-My01341	NCP	mg/L	< 0.001	0.001	25	30%	Pass	
Barium	S20-My01341	NCP	mg/L	0.08	0.09	6.0	30%	Pass	
Beryllium	S20-My01341	NCP	mg/L	< 0.001	< 0.001	<1	30%	Pass	
Cadmium	S20-My01341	NCP	mg/L	0.0004	0.0004	<1	30%	Pass	
Chromium	S20-My01341	NCP	mg/L	< 0.001	< 0.001	<1	30%	Pass	
Cobalt	S20-My01341	NCP	mg/L	0.002	0.002	11	30%	Pass	
Copper	S20-My01341	NCP	mg/L	0.006	0.006	2.0	30%	Pass	
Iron	S20-My01341	NCP	mg/L	0.75	0.75	<1	30%	Pass	
Lead	S20-My01341	NCP	mg/L	0.006	0.006	<1	30%	Pass	
Manganese	S20-My01341	NCP	mg/L	0.26	0.26	<1	30%	Pass	
Mercury	S20-My01341	NCP	mg/L	< 0.0001	< 0.0001	<1	30%	Pass	
Nickel	S20-My01341	NCP	mg/L	< 0.001	< 0.001	<1	30%	Pass	
Zinc	S20-My01341	NCP	mg/L	0.16	0.16	4.0	30%	Pass	

Comments**Sample Integrity**

Custody Seals Intact (if used)	N/A
Attempt to Chill was evident	No
Sample correctly preserved	Yes
Appropriate sample containers have been used	Yes
Sample containers for volatile analysis received with minimal headspace	Yes
Samples received within HoldingTime	Yes
Some samples have been subcontracted	No

Authorised By

Andrew Black Analytical Services Manager
Gabriele Cordero Senior Analyst-Metal (NSW)

**Glenn Jackson
General Manager**

Final report - this Report replaces any previously issued Report

- Indicates Not Requested

* Indicates NATA accreditation does not cover the performance of this service

Measurement uncertainty of test data is available on request or please [click here](#).

Eurofins shall not be liable for loss, cost, damages or expenses incurred by the client, or any other person or company, resulting from the use of any information or interpretation given in this report. In no case shall Eurofins be liable for consequential damages including, but not limited to, lost profits, damages for failure to meet deadlines and lost production arising from this report. This document shall not be reproduced except in full and relates only to the items tested. Unless indicated otherwise, the tests were performed on the samples as received.

#AU04_Enviro_Sample_NSW

To: Andrew Black
Subject: RE: 5 DAY TAT ADDITIONAL ANALYSIS: FW: Eurofins Test Results, Invoice - Report 717015 : Site P34 (318000780)

From: Rachel Condon [<mailto:RCONDON@ramboll.com>]
Sent: Friday, 15 May 2020 4:38 PM
To: Andrew Black; Stephen Maxwell
Cc: Joshua Blackwell
Subject: RE: Eurofins Test Results, Invoice - Report 717015 : Site P34 (318000780)

EXTERNAL EMAIL*

Hi Andrew,

Can we please get the two samples on hold, P34_HA04_0.3 and P34_HA05_0.2, analysed for lead?

Many thanks.

Kind regards
Rachel Condon
Senior Consultant

D +61 (2) 4962 5444
M +61 423 374 852
rcondon@ramboll.com

Ramboll Australia Pty Ltd.
ACN 095 437 442
ABN 49 095 437 442

From: AndrewBlack@eurofins.com <AndrewBlack@eurofins.com>
Sent: Friday, 8 May 2020 4:53 PM
To: Stephen Maxwell <SMAXWELL@ramboll.com>
Cc: Joshua Blackwell <JBLACKWELL@ramboll.com>
Subject: Eurofins Test Results, Invoice - Report 717015 : Site P34 (318000780)

Regards

Andrew Black
Analytical Services Manager

Eurofins | Environment Testing

Unit 7
7 Friesian Close
SANDGATE NSW 2304
AUSTRALIA
Phone: +61 299 008 490
Mobile: +61 410 220 750
Email: AndrewBlack@eurofins.com
Website: environment.eurofins.com.au
[EnviroNote 1098 - Melbourne PFAS Accreditation](#)
[EnviroNote 1080 - Total Organofluorine Analysis & PFAS Investigations](#)

Click [here](#) to report this email as spam.

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* WARNING - EXTERNAL: This email originated from outside of Eurofins. Do not click any links or open any attachments unless you trust the sender and know that the content is safe!

Melbourne

6 Monterey Road
Dandenong South Vic 3175
Phone : +61 3 8564 5000
NATA # 1261
Site # 1254 & 14271

Sydney

Unit F3, Building F
16 Mars Road
Lane Cove West NSW 2066
Phone : +61 2 9900 8400
NATA # 1261 Site # 18217

Brisbane

1/21 Smallwood Place
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Phone : +61 7 3902 4600
NATA # 1261 Site # 20794

Perth

2/91 Leach Highway
Kewdale WA 6105
Phone : +61 8 9251 9600
NATA # 1261 Site # 23736

Sample Receipt Advice

Company name: **Ramboll Australia Pty Ltd**
Contact name: **Stephen Maxwell**
Project name: **ADDITIONAL - P34**
Project ID: **318000780**
COC number: **Not provided**
Turn around time: **5 Day**
Date/Time received: **May 15, 2020 4:38 PM**
Eurofins reference: **719919**

Sample information

- A detailed list of analytes logged into our LIMS, is included in the attached summary table.
- All samples have been received as described on the above COC.
- COC has been completed correctly.
- N/A Attempt to chill was evident.
- Appropriately preserved sample containers have been used.
- All samples were received in good condition.
- Samples have been provided with adequate time to commence analysis in accordance with the relevant holding times.
- Appropriate sample containers have been used.
- Split sample sent to requested external lab.
- Some samples have been subcontracted.
- N/A Custody Seals intact (if used).

Contact notes

If you have any questions with respect to these samples please contact:

Andrew Black on Phone : (+61) 2 9900 8490 or by e.mail: AndrewBlack@eurofins.com

Results will be delivered electronically via e.mail to Stephen Maxwell - smaxwell@ramboll.com.

Note: A copy of these results will also be delivered to the general Ramboll Australia Pty Ltd email address.

Australia

Melbourne
 6 Monterey Road
 Dandenong South VIC 3175
 Phone : +61 3 8564 5000
 NATA # 1261
 Site # 1254 & 14271

Sydney
 Unit F3, Building F
 16 Mars Road
 Lane Cove West NSW 2066
 Phone : +61 2 9900 8400
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Company Name: Ramboll Australia Pty Ltd
Address: Level 3/100 Pacific Highway
 North Sydney
 NSW 2060

Project Name: ADDITIONAL - P34
Project ID: 318000780

Order No.:
Report #: 719919
Phone: 02 9954 8118
Fax: 02 9954 8150

Received: May 15, 2020 4:38 PM
Due: May 22, 2020
Priority: 5 Day
Contact Name: Stephen Maxwell

Eurofins Analytical Services Manager : Andrew Black

Sample Detail						Lead	Moisture Set
Melbourne Laboratory - NATA Site # 1254 & 14271							
Sydney Laboratory - NATA Site # 18217						X	X
Brisbane Laboratory - NATA Site # 20794							
Perth Laboratory - NATA Site # 23736							
External Laboratory							
No	Sample ID	Sample Date	Sampling Time	Matrix	LAB ID		
1	P34_HA04_0.3	Apr 28, 2020		Soil	S20-My24341	X	X
2	P34_HA05_0.2	Apr 28, 2020		Soil	S20-My24342	X	X
Test Counts						2	2

Ramboll Environ Australia Pty Ltd
 Level 3/100 Pacific Highway
 North Sydney
 NSW 2060



NATA Accredited
Accreditation Number 1261
Site Number 18217

Accredited for compliance with ISO/IEC 17025 – Testing
 The results of the tests, calibrations and/or
 measurements included in this document are traceable
 to Australian/national standards.

Attention: **Stephen Maxwell**

Report **719919-S**
 Project name **ADDITIONAL - P34**
 Project ID **318000780**
 Received Date **May 15, 2020**

Client Sample ID			P34_HA04_0.3	P34_HA05_0.2
Sample Matrix			Soil	Soil
Eurofins Sample No.			S20-My24341	S20-My24342
Date Sampled			Apr 28, 2020	Apr 28, 2020
Test/Reference	LOR	Unit		
Heavy Metals				
Lead	5	mg/kg	36	16
% Moisture	1	%	15	7.6

Sample History

Where samples are submitted/analysed over several days, the last date of extraction and analysis is reported.

A recent review of our LIMS has resulted in the correction or clarification of some method identifications. Due to this, some of the method reference information on reports has changed. However, no substantive change has been made to our laboratory methods, and as such there is no change in the validity of current or previous results.

If the date and time of sampling are not provided, the Laboratory will not be responsible for compromised results should testing be performed outside the recommended holding time.

Description

Heavy Metals

- Method: LTM-MET-3040 Metals in Waters, Soils & Sediments by ICP-MS

% Moisture

- Method: LTM-GEN-7080 Moisture

Testing Site

Sydney

Sydney

Extracted

May 20, 2020

May 18, 2020

Holding Time

180 Days

14 Days

Australia

Melbourne
 6 Monterey Road
 Dandenong South VIC 3175
 Phone : +61 3 8564 5000
 NATA # 1261
 Site # 1254 & 14271

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 Penrose, Auckland 1061
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 IANZ # 1327

Christchurch
 43 Detroit Drive
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 IANZ # 1290

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 NSW 2060

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- Duplicate RPDs are calculated from raw analytical data thus it is possible to have two sets of data.

Quality Control Results

Test				Units	Result 1		Acceptance Limits	Pass Limits	Qualifying Code		
Method Blank											
Heavy Metals											
Lead				mg/kg	< 5		5	Pass			
LCS - % Recovery											
Heavy Metals											
Lead				%	106		70-130	Pass			
Test	Lab Sample ID	QA Source	Units	Result 1			Acceptance Limits	Pass Limits	Qualifying Code		
Spike - % Recovery											
Heavy Metals											
Lead				S20-My29668	NCP	%	93	70-130	Pass		
Duplicate											
Heavy Metals											
Lead				S20-My24381	NCP	mg/kg	160	130	21	30%	Pass
Duplicate											
% Moisture				S20-My24385	NCP	%	5.4	6.5	18	30%	Pass

Comments
Sample Integrity

Custody Seals Intact (if used)	N/A
Attempt to Chill was evident	N/A
Sample correctly preserved	Yes
Appropriate sample containers have been used	Yes
Sample containers for volatile analysis received with minimal headspace	Yes
Samples received within HoldingTime	Yes
Some samples have been subcontracted	No

Authorised By

Andrew Black	Analytical Services Manager
Gabriele Cordero	Senior Analyst-Metal (NSW)


**Glenn Jackson
General Manager**

Final report - this Report replaces any previously issued Report

- Indicates Not Requested

* Indicates NATA accreditation does not cover the performance of this service

Measurement uncertainty of test data is available on request or please [click here](#).

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CHAIN OF CUSTODY RECORD

AS1 90 905 065 521

Pidney Laboratory
 Unit 13 Bld F, 15 Mars Rd, Lane Cove West, NSW 2066
 02 9900 8400 EnviroSampleNSW@eurofins.com

Brisbane Laboratory
 Unit 1, 21 Smallwood Pl, Murarie, QLD 4172
 07 3802 4800 EnviroSampleQLD@eurofins.com

Perth Laboratory
 Unit 2, 91 Leach Highway, Kewdale WA 6105
 08 9251 9800 EnviroSampleWA@eurofins.com

Melbourne Laboratory
 2 Kingston Town Close, Oakleigh VIC 3186
 03 8564 5000 EnviroSampleVIC@eurofins.com

Company	Ramboll	Project No	318000780	Project Manager	Stephen Maxwell	Sampler(s)	JB, TL, JK
Address	50 Glebe Road the Junction	Project Name	P35	EDD Format (Estat, EQUIS, Custom)	Excel and PDF	Handed over by	Jordyn Kirschi
Contact Name	Stephen Maxwell						
Phone No	0478 658 194						

Special Directions							
Purchase Order							
Quote ID No	180813RAMN_1						
Analyses	(Note: Where metals are requested, please specify "Total" or "Filtered") SUITE code must be used to attract SUITE pricing.						
	Total Lead (mg/kg)	Total Sample Mass	Total Lead (µg/L)	M13 (Al, As, Ba, Be, Cd, Cr, Co, Cu, Fe, Pb, Mn, Hg, Ni, Zn) Excluding hexavalent chromium) Total			

No	Client Sample ID	Sampled Date/Time (dd/mm/yy hh:mm)	Matrix (Solid (S) Water (W))						
1	P35_HA03_0.05	28/04/20	S	X					
2	P35_HA03_0.2	28/04/20	S	X					
3	P35_HA04_0.05	28/04/20	S	X					
4	P35_HA04_0.2	28/04/20	S	X					
5	P35_HA05_0.05	28/04/20	S	X					
6	P35_HA05_0.2	28/04/20	S	X					
7	P35_TW1	28/04/20	W		X				
8	P35_TW2	28/04/20	W		X				
9	P35_TWS1	28/04/20	S		X				
10	P35_TWS2	28/04/20	S		X				
Total Counts					6				4

Method of Shipment	<input type="checkbox"/> Courier (#) <input checked="" type="checkbox"/> Hand Delivered	<input type="checkbox"/> Postal	Name		Signature		Date		Time
Eurofins Ingt Laboratory Use Only	Received By	Received By	SVD BNE MEL PER ADL NTL DRW	Signature	Signature	Date	Date	Time	Report No
	<i>[Signature]</i>	<i>[Signature]</i>		<i>[Signature]</i>	<i>[Signature]</i>	14/05/20	14/05/20	14:05:00	77025

Submission of samples to the laboratory will be deemed an acceptance of Eurofins | Ingt Standard Terms and Conditions unless signed otherwise. A copy of Eurofins | Ingt Standard Terms and Conditions is available on request.

Eurofins Environmental Testing Australia Pty Ltd trading as Eurofins | Ingt

Sydney Laboratory
 Unit F3 Bldg F, 18 Mars Rd, Lane Cove West, NSW 2086
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Perth Laboratory
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 08 9251 9800 EnviroSamplesWA@eurofins.com

Melbourne Laboratory
 2 Kingston Town Circle, Oakleigh VIC 3166
 03 9564 5000 EnviroSamplesVIC@eurofins.com

Company: Ramboll
Address: 50 Globe Road the Junction
Project No: 318000780
Project Name: P35
Project Manager: EDD Forman (ES, Data, EQUS, Custom)
Sampler(s): JB, TJ, JK
Handed over by: Jordyn Kirsch
Signature: [Signature]
Date: [Date]

Contact Name: Stephen Maxwell
Phone No: 0478 658 194
Analyses: (Note: Where metals are requested, please specify "Total" or "Filtered") SUITE code must be used to attract SUITE pricing.
 Total Lead (mg/kg)
 Total Sample Mass
 Total Lead (µg/L)
 M13 (Al, As, Ba, Be, Cd, Cr, Co, Cu, Fe, Pb, Mn, Hg, Ni, Zn) Excluding hexavalent chromium Total

Special Directions:
Purchase Order:
Quote ID No: 180813RAMNL_1
Containers: 1L Plastic, 250mL Plastic, 125mL Plastic, 200mL Amber Glass, 40mL VOA vial, 500mL PFAS Bottle, Jar (Glass or HDPE), Other (Asbestos AS4984, WA Guidelines)
Turnaround Time (TAT): Overnight (9am)*, 1 Day*, 2 Day*, 3 Day*, 5 Day* (Surcharge apply)
 Requirements (where applicable) will be 5 days from receipt

No	Client Sample ID	Sampled Date/Time (dd/mm/yyyy hh:mm)	Matrix (Soil (S) Water (W))	Total Lead (mg/kg)	Total Sample Mass	Total Lead (µg/L)	M13 (Al, As, Ba, Be, Cd, Cr, Co, Cu, Fe, Pb, Mn, Hg, Ni, Zn) Excluding hexavalent chromium Total
1	DVAC_LRP35	28/04/20	S	X	X		
2	DVAC_KRP35	28/04/20	S	X	X		
3	DSWAB_FEP35	28/04/20	S			X	
4	DSWAB_BEP35	28/04/20	S			X	
5	DSWAB_KCP35	28/04/20	S			X	
6	DSWAB_MHP35	28/04/20	S			X	
7	P35_HA01_0.005	28/04/20	S	X			
8	P35_HA01_0.02	28/04/20	S	X			
9	P35_HA02_0.005	28/04/20	S	X			
10	P35_HA02_0.02	28/04/20	S	X			
Total Counts				6	2	4	

Method of Shipment: Courier (#) Hand Delivered Postal
Signature: [Signature]
Date: [Date]
Time: [Time]
Temperature: [Temperature]
Report No: 717025

Submission of samples to the laboratory will be deemed as acceptance of Eurofins | Ingt Standard Terms and Conditions unless signed otherwise. A copy of Eurofins | Ingt Standard Terms and Conditions is available on request.
 Eurofins Environment Testing Australia Pty Ltd trading as Eurofins | Ingt
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NATA # 1261 Site # 20794

Perth

2/91 Leach Highway
Kewdale WA 6105
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NATA # 1261 Site # 23736

Sample Receipt Advice

Company name: **Ramboll Australia Pty Ltd**
Contact name: **Stephen Maxwell**
Project name: **P35**
Project ID: **318000780**
COC number: **Not provided**
Turn around time: **5 Day**
Date/Time received: **May 1, 2020 12:00 PM**
Eurofins reference: **717025**

Sample information

- A detailed list of analytes logged into our LIMS, is included in the attached summary table.
- All samples have been received as described on the above COC.
- COC has been completed correctly.
- Attempt to chill was evident.
- Appropriately preserved sample containers have been used.
- All samples were received in good condition.
- Samples have been provided with adequate time to commence analysis in accordance with the relevant holding times.
- Appropriate sample containers have been used.
- Sample containers for volatile analysis received with zero headspace.
- Split sample sent to requested external lab.
- Some samples have been subcontracted.
- N/A Custody Seals intact (if used).

Contact notes

If you have any questions with respect to these samples please contact:

Andrew Black on Phone : (+61) 2 9900 8490 or by e.mail: AndrewBlack@eurofins.com

Results will be delivered electronically via e.mail to Stephen Maxwell - smaxwell@ramboll.com.

Note: A copy of these results will also be delivered to the general Ramboll Australia Pty Ltd email address.

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IANZ # 1290

Company Name: Ramboll Australia Pty Ltd
Address: Level 3/100 Pacific Highway
North Sydney
NSW 2060

Order No.:
Report #: 717025
Phone: 02 9954 8118
Fax: 02 9954 8150

Received: May 1, 2020 12:00 PM
Due: May 8, 2020
Priority: 5 Day
Contact Name: Stephen Maxwell

Project Name: P35
Project ID: 318000780

Eurofins Analytical Services Manager : Andrew Black

Sample Detail						Aluminium	Arsenic	Barium	Beryllium	Cadmium	Chromium	Cobalt	Copper	Iron	Lead	Manganese	Mass of sample *	Mercury	Nickel	Zinc	Moisture Set	
Melbourne Laboratory - NATA Site # 1254 & 14271																						
Sydney Laboratory - NATA Site # 18217						X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X
Brisbane Laboratory - NATA Site # 20794																						
Perth Laboratory - NATA Site # 23736																						
External Laboratory																						
No	Sample ID	Sample Date	Sampling Time	Matrix	LAB ID																	
1	P35_HA03_0_0.05	Apr 28, 2020		Soil	S20-My01744										X						X	
2	P35_HA03_0_2	Apr 28, 2020		Soil	S20-My01745										X						X	
3	P35_HA04_0_0.05	Apr 28, 2020		Soil	S20-My01746										X						X	
4	P35_HA04_0_2	Apr 28, 2020		Soil	S20-My01747										X						X	
5	P35_HA05_0_0.05	Apr 28, 2020		Soil	S20-My01748										X						X	
6	P35_HA05_0_2	Apr 28, 2020		Soil	S20-My01749										X						X	

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Eurofins Analytical Services Manager : Andrew Black

Sample Detail						Aluminium	Arsenic	Barium	Beryllium	Cadmium	Chromium	Cobalt	Copper	Iron	Lead	Manganese	Mass of sample*	Mercury	Nickel	Zinc	Moisture Set	
Melbourne Laboratory - NATA Site # 1254 & 14271																						
Sydney Laboratory - NATA Site # 18217						X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X
Brisbane Laboratory - NATA Site # 20794																						
Perth Laboratory - NATA Site # 23736																						
7	P35_TW1	Apr 28, 2020		Water	S20-My01750	X	X	X	X	X	X	X	X	X	X		X	X	X			
8	P35_TW2	Apr 28, 2020		Water	S20-My01751	X	X	X	X	X	X	X	X	X	X		X	X	X			
9	P35_TWS1	Apr 28, 2020		Water	S20-My01752	X	X	X	X	X	X	X	X	X	X		X	X	X			
10	P35_TWS2	Apr 28, 2020		Water	S20-My01753	X	X	X	X	X	X	X	X	X	X		X	X	X			
11	DVAC_LR(P35)	Apr 28, 2020		Dust	S20-My01754									X		X						
12	DVAC_KB(P35)	Apr 28, 2020		Dust	S20-My01755									X		X						
13	DSWAB_FE(P35)	Apr 28, 2020		Wipes	S20-My01756									X								
14	DSWAB_BE(P35)	Apr 28, 2020		Wipes	S20-My01757									X								
15	DSWAB_KC(P35)	Apr 28, 2020		Wipes	S20-My01758									X								

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Company Name: Ramboll Australia Pty Ltd
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NSW 2060

Order No.:
Report #: 717025
Phone: 02 9954 8118
Fax: 02 9954 8150

Received: May 1, 2020 12:00 PM
Due: May 8, 2020
Priority: 5 Day
Contact Name: Stephen Maxwell

Project Name: P35
Project ID: 318000780

Eurofins Analytical Services Manager : Andrew Black

Sample Detail						Aluminium	Arsenic	Barium	Beryllium	Cadmium	Chromium	Cobalt	Copper	Iron	Lead	Manganese	Mass of sample*	Mercury	Nickel	Zinc	Moisture Set	
Melbourne Laboratory - NATA Site # 1254 & 14271																						
Sydney Laboratory - NATA Site # 18217						X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X
Brisbane Laboratory - NATA Site # 20794																						
Perth Laboratory - NATA Site # 23736																						
16	DSWAB_MH(P35)	Apr 28, 2020		Wipes	S20-My01759										X							
17	P35_HA01_0_0.05	Apr 28, 2020		Soil	S20-My01760										X						X	
18	P35_HA01_0_2	Apr 28, 2020		Soil	S20-My01761										X						X	
19	P35_HA02_0_0.05	Apr 28, 2020		Soil	S20-My01762										X						X	
20	P35_HA02_0_2	Apr 28, 2020		Soil	S20-My01763										X						X	
Test Counts						4	4	4	4	4	4	4	4	4	20	4	2	4	4	4	10	

Ramboll Environ Australia Pty Ltd
 Level 3/100 Pacific Highway
 North Sydney
 NSW 2060



NATA Accredited
Accreditation Number 1261
Site Number 18217

Accredited for compliance with ISO/IEC 17025 – Testing
 The results of the tests, calibrations and/or
 measurements included in this document are traceable
 to Australian/national standards.

Attention: **Stephen Maxwell**

Report **717025-A**
 Project name **P35**
 Project ID **318000780**
 Received Date **May 01, 2020**

Client Sample ID			DSWAB_FE(P35)	DSWAB_BE(P35)	DSWAB_KC(P35)	DSWAB_MH(P35)
Sample Matrix			Wipes	Wipes	Wipes	Wipes
Eurofins Sample No.			S20-My01756	S20-My01757	S20-My01758	S20-My01759
Date Sampled			Apr 28, 2020	Apr 28, 2020	Apr 28, 2020	Apr 28, 2020
Test/Reference	LOR	Unit				
Heavy Metals						
Lead	1	Total ug	1.5	< 1	2.9	38

Sample History

Where samples are submitted/analysed over several days, the last date of extraction and analysis is reported.

A recent review of our LIMS has resulted in the correction or clarification of some method identifications. Due to this, some of the method reference information on reports has changed. However, no substantive change has been made to our laboratory methods, and as such there is no change in the validity of current or previous results.

If the date and time of sampling are not provided, the Laboratory will not be responsible for compromised results should testing be performed outside the recommended holding time.

Description

Heavy Metals

Testing Site

Sydney

Extracted

May 07, 2020

Holding Time

180 Days

- Method: LTM-MET-3040 Metals in Waters, Soils & Sediments by ICP-MS

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Company Name: Ramboll Australia Pty Ltd
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Order No.:
Report #: 717025
Phone: 02 9954 8118
Fax: 02 9954 8150

Received: May 1, 2020 12:00 PM
Due: May 8, 2020
Priority: 5 Day
Contact Name: Stephen Maxwell

Project Name: P35
Project ID: 318000780

Eurofins Analytical Services Manager : Andrew Black

Sample Detail						Aluminium	Arsenic	Barium	Beryllium	Cadmium	Chromium	Cobalt	Copper	Iron	Lead	Manganese	Mass of sample*	Mercury	Nickel	Zinc	Moisture Set	
Melbourne Laboratory - NATA Site # 1254 & 14271																						
Sydney Laboratory - NATA Site # 18217						X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X
Brisbane Laboratory - NATA Site # 20794																						
Perth Laboratory - NATA Site # 23736																						
External Laboratory																						
No	Sample ID	Sample Date	Sampling Time	Matrix	LAB ID																	
1	P35_HA03_0_0.05	Apr 28, 2020		Soil	S20-My01744										X						X	
2	P35_HA03_0_2	Apr 28, 2020		Soil	S20-My01745										X						X	
3	P35_HA04_0_0.05	Apr 28, 2020		Soil	S20-My01746										X						X	
4	P35_HA04_0_2	Apr 28, 2020		Soil	S20-My01747										X						X	
5	P35_HA05_0_0.05	Apr 28, 2020		Soil	S20-My01748										X						X	
6	P35_HA05_0_2	Apr 28, 2020		Soil	S20-My01749										X						X	

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Sample Detail						Aluminium	Arsenic	Barium	Beryllium	Cadmium	Chromium	Cobalt	Copper	Iron	Lead	Manganese	Mass of sample*	Mercury	Nickel	Zinc	Moisture Set	
Melbourne Laboratory - NATA Site # 1254 & 14271																						
Sydney Laboratory - NATA Site # 18217						X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X
Brisbane Laboratory - NATA Site # 20794																						
Perth Laboratory - NATA Site # 23736																						
7	P35_TW1	Apr 28, 2020		Water	S20-My01750	X	X	X	X	X	X	X	X	X	X		X	X	X			
8	P35_TW2	Apr 28, 2020		Water	S20-My01751	X	X	X	X	X	X	X	X	X	X		X	X	X			
9	P35_TWS1	Apr 28, 2020		Water	S20-My01752	X	X	X	X	X	X	X	X	X	X		X	X	X			
10	P35_TWS2	Apr 28, 2020		Water	S20-My01753	X	X	X	X	X	X	X	X	X	X		X	X	X			
11	DVAC_LR(P35)	Apr 28, 2020		Dust	S20-My01754									X		X						
12	DVAC_KB(P35)	Apr 28, 2020		Dust	S20-My01755									X		X						
13	DSWAB_FE(P35)	Apr 28, 2020		Wipes	S20-My01756									X								
14	DSWAB_BE(P35)	Apr 28, 2020		Wipes	S20-My01757									X								
15	DSWAB_KC(P35)	Apr 28, 2020		Wipes	S20-My01758									X								

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ABN – 50 005 085 521

web : www.eurofins.com.au

e.mail : EnviroSales@eurofins.com

Company Name: Ramboll Australia Pty Ltd
Address: Level 3/100 Pacific Highway
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NSW 2060

Order No.:
Report #: 717025
Phone: 02 9954 8118
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Received: May 1, 2020 12:00 PM
Due: May 8, 2020
Priority: 5 Day
Contact Name: Stephen Maxwell

Project Name: P35
Project ID: 318000780

Eurofins Analytical Services Manager : Andrew Black

Sample Detail						Aluminium	Arsenic	Barium	Beryllium	Cadmium	Chromium	Cobalt	Copper	Iron	Lead	Manganese	Mass of sample*	Mercury	Nickel	Zinc	Moisture Set	
Melbourne Laboratory - NATA Site # 1254 & 14271																						
Sydney Laboratory - NATA Site # 18217						X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X
Brisbane Laboratory - NATA Site # 20794																						
Perth Laboratory - NATA Site # 23736																						
16	DSWAB_MH(P35)	Apr 28, 2020		Wipes	S20-My01759										X							
17	P35_HA01_0_0.05	Apr 28, 2020		Soil	S20-My01760										X						X	
18	P35_HA01_0_2	Apr 28, 2020		Soil	S20-My01761										X						X	
19	P35_HA02_0_0.05	Apr 28, 2020		Soil	S20-My01762										X						X	
20	P35_HA02_0_2	Apr 28, 2020		Soil	S20-My01763										X						X	
Test Counts						4	4	4	4	4	4	4	4	4	20	4	2	4	4	4	10	

Internal Quality Control Review and Glossary
General

- Laboratory QC results for Method Blanks, Duplicates, Matrix Spikes, and Laboratory Control Samples follows guidelines delineated in the National Environment Protection (Assessment of Site Contamination) Measure 1999, as amended May 2013 and are included in this QC report where applicable. Additional QC data may be available on request.
- All soil/sediment/solid results are reported on a dry basis, unless otherwise stated.
- All biota/food results are reported on a wet weight basis on the edible portion, unless otherwise stated.
- Actual LORs are matrix dependant. Quoted LORs may be raised where sample extracts are diluted due to interferences.
- Results are uncorrected for matrix spikes or surrogate recoveries except for PFAS compounds.
- SVOC analysis on waters are performed on homogenised, unfiltered samples, unless noted otherwise.
- Samples were analysed on an 'as received' basis.
- Information identified on this report with blue colour, indicates data provided by customer, that may have an impact on the results.
- This report replaces any interim results previously issued.

Holding Times

Please refer to 'Sample Preservation and Container Guide' for holding times (QS3001).

For samples received on the last day of holding time, notification of testing requirements should have been received at least 6 hours prior to sample receipt deadlines as stated on the SRA.

If the Laboratory did not receive the information in the required timeframe, and regardless of any other integrity issues, suitably qualified results may still be reported.

Holding times apply from the date of sampling, therefore compliance to these may be outside the laboratory's control.

For VOCs containing vinyl chloride, styrene and 2-chloroethyl vinyl ether the holding time is 7 days however for all other VOCs such as BTEX or C6-10 TRH then the holding time is 14 days.

****NOTE:** pH duplicates are reported as a range NOT as RPD

Units

mg/kg: milligrams per kilogram

mg/L: milligrams per litre

ug/L: micrograms per litre

ppm: Parts per million

ppb: Parts per billion

%: Percentage

org/100mL: Organisms per 100 millilitres

NTU: Nephelometric Turbidity Units

MPN/100mL: Most Probable Number of organisms per 100 millilitres

Terms

Dry	Where a moisture has been determined on a solid sample the result is expressed on a dry basis.
LOR	Limit of Reporting.
SPIKE	Addition of the analyte to the sample and reported as percentage recovery.
RPD	Relative Percent Difference between two Duplicate pieces of analysis.
LCS	Laboratory Control Sample - reported as percent recovery.
CRM	Certified Reference Material - reported as percent recovery.
Method Blank	In the case of solid samples these are performed on laboratory certified clean sands and in the case of water samples these are performed on de-ionised water.
Surr - Surrogate	The addition of a like compound to the analyte target and reported as percentage recovery.
Duplicate	A second piece of analysis from the same sample and reported in the same units as the result to show comparison.
USEPA	United States Environmental Protection Agency
APHA	American Public Health Association
TCLP	Toxicity Characteristic Leaching Procedure
COC	Chain of Custody
SRA	Sample Receipt Advice
QSM	US Department of Defense Quality Systems Manual Version 5.3
CP	Client Parent - QC was performed on samples pertaining to this report
NCP	Non-Client Parent - QC performed on samples not pertaining to this report, QC is representative of the sequence or batch that client samples were analysed within.
TEQ	Toxic Equivalency Quotient

QC - Acceptance Criteria

RPD Duplicates: Global RPD Duplicates Acceptance Criteria is 30% however the following acceptance guidelines are equally applicable:

Results <10 times the LOR : No Limit

Results between 10-20 times the LOR : RPD must lie between 0-50%

Results >20 times the LOR : RPD must lie between 0-30%

Surrogate Recoveries: Recoveries must lie between 20-130% Phenols & 50-150% PFASs

PFAS field samples that contain surrogate recoveries in excess of the QC limit designated in QSM 5.3 where no positive PFAS results have been reported have been reviewed and no data was affected.

WA DWER (n=10): PFBA, PFPeA, PFHxA, PFHpA, PFOA, PFBS, PFHxS, PFOS, 6:2 FTSA, 8:2 FTSA

QC Data General Comments

- Where a result is reported as a less than (<), higher than the nominated LOR, this is due to either matrix interference, extract dilution required due to interferences or contaminant levels within the sample, high moisture content or insufficient sample provided.
- Duplicate data shown within this report that states the word "BATCH" is a Batch Duplicate from outside of your sample batch, but within the laboratory sample batch at a 1:10 ratio. The Parent and Duplicate data shown is not data from your samples.
- Organochlorine Pesticide analysis - where reporting LCS data, Toxaphene & Chlordane are not added to the LCS.
- Organochlorine Pesticide analysis - where reporting Spike data, Toxaphene is not added to the Spike.
- Total Recoverable Hydrocarbons - where reporting Spike & LCS data, a single spike of commercial Hydrocarbon products in the range of C12-C30 is added and it's Total Recovery is reported in the C10-C14 cell of the Report.
- pH and Free Chlorine analysed in the laboratory - Analysis on this test must begin within 30 minutes of sampling. Therefore laboratory analysis is unlikely to be completed within holding time. Analysis will begin as soon as possible after sample receipt.
- Recovery Data (Spikes & Surrogates) - where chromatographic interference does not allow the determination of Recovery the term "INT" appears against that analyte.
- Polychlorinated Biphenyls are spiked only using Aroclor 1260 in Matrix Spikes and LCS.
- For Matrix Spikes and LCS results a dash " - " in the report means that the specific analyte was not added to the QC sample.
- Duplicate RPDs are calculated from raw analytical data thus it is possible to have two sets of data.

Quality Control Results

Comments**Sample Integrity**

Custody Seals Intact (if used)	N/A
Attempt to Chill was evident	No
Sample correctly preserved	Yes
Appropriate sample containers have been used	Yes
Sample containers for volatile analysis received with minimal headspace	Yes
Samples received within HoldingTime	Yes
Some samples have been subcontracted	No

Authorised By

Andrew Black Analytical Services Manager
Gabriele Cordero Senior Analyst-Metal (NSW)

**Glenn Jackson
General Manager**

Final report - this Report replaces any previously issued Report

- Indicates Not Requested

* Indicates NATA accreditation does not cover the performance of this service

Measurement uncertainty of test data is available on request or please [click here](#).

Eurofins shall not be liable for loss, cost, damages or expenses incurred by the client, or any other person or company, resulting from the use of any information or interpretation given in this report. In no case shall Eurofins be liable for consequential damages including, but not limited to, lost profits, damages for failure to meet deadlines and lost production arising from this report. This document shall not be reproduced except in full and relates only to the items tested. Unless indicated otherwise, the tests were performed on the samples as received.

Ramboll Environ Australia Pty Ltd
 Level 3/100 Pacific Highway
 North Sydney
 NSW 2060



NATA Accredited
 Accreditation Number 1261
 Site Number 18217

Accredited for compliance with ISO/IEC 17025 – Testing
 The results of the tests, calibrations and/or
 measurements included in this document are traceable
 to Australian/national standards.

Attention: Stephen Maxwell

Report 717025-S
 Project name P35
 Project ID 318000780
 Received Date May 01, 2020

Client Sample ID			P35_HA03_0_0 .05	P35_HA03_0.2	P35_HA04_0_0 .05	P35_HA04_0.2
Sample Matrix			Soil	Soil	Soil	Soil
Eurofins Sample No.			S20-My01744	S20-My01745	S20-My01746	S20-My01747
Date Sampled			Apr 28, 2020	Apr 28, 2020	Apr 28, 2020	Apr 28, 2020
Test/Reference	LOR	Unit				
Heavy Metals						
Lead	5	mg/kg	22	7.7	25	15
% Moisture	1	%	6.4	10	11	9.3

Client Sample ID			P35_HA05_0_0 .05	P35_HA05_0.2	P35_TWS1	P35_TWS2
Sample Matrix			Soil	Soil	Sediment	Sediment
Eurofins Sample No.			S20-My01748	S20-My01749	S20-My01752	S20-My01753
Date Sampled			Apr 28, 2020	Apr 28, 2020	Apr 28, 2020	Apr 28, 2020
Test/Reference	LOR	Unit				
Heavy Metals						
Aluminium	10	mg/kg	-	-	18000	19000
Arsenic	2	mg/kg	-	-	9.1	9.2
Barium	10	mg/kg	-	-	140	120
Beryllium	2	mg/kg	-	-	< 2	< 2
Cadmium	0.4	mg/kg	-	-	0.7	0.8
Chromium	5	mg/kg	-	-	51	37
Cobalt	5	mg/kg	-	-	12	11
Copper	5	mg/kg	-	-	110	88
Iron	20	mg/kg	-	-	34000	33000
Lead	5	mg/kg	37	12	260	210
Manganese	5	mg/kg	-	-	840	980
Mercury	0.1	mg/kg	-	-	0.3	0.2
Nickel	5	mg/kg	-	-	26	23
Zinc	5	mg/kg	-	-	650	580
% Moisture	1	%	6.4	9.9	-	-

Client Sample ID			DVAC_LR(P35)	DVAC_KB(P35)	P35_HA01_0_0	P35_HA01_0.2
Sample Matrix			Dust	Dust	Soil	Soil
Eurofins Sample No.			S20-My01754	S20-My01755	S20-My01760	S20-My01761
Date Sampled			Apr 28, 2020	Apr 28, 2020	Apr 28, 2020	Apr 28, 2020
Test/Reference	LOR	Unit				
Heavy Metals						
Lead	5	mg/kg	35	31	24	37
% Moisture						
% Moisture	1	%	-	-	21	6.1

Client Sample ID			P35_HA02_0_0	P35_HA02_0.2
Sample Matrix			Soil	Soil
Eurofins Sample No.			S20-My01762	S20-My01763
Date Sampled			Apr 28, 2020	Apr 28, 2020
Test/Reference	LOR	Unit		
Heavy Metals				
Lead	5	mg/kg	34	25
% Moisture				
% Moisture	1	%	16	15

Sample History

Where samples are submitted/analysed over several days, the last date of extraction and analysis is reported.

A recent review of our LIMS has resulted in the correction or clarification of some method identifications. Due to this, some of the method reference information on reports has changed. However, no substantive change has been made to our laboratory methods, and as such there is no change in the validity of current or previous results.

If the date and time of sampling are not provided, the Laboratory will not be responsible for compromised results should testing be performed outside the recommended holding time.

Description	Testing Site	Extracted	Holding Time
Heavy Metals - Method: LTM-MET-3040 Metals in Waters, Soils & Sediments by ICP-MS	Sydney	May 07, 2020	180 Days
Mercury - Method: LTM-MET-3040 Metals in Waters, Soils & Sediments by ICP-MS	Sydney	May 07, 2020	28 Days
% Moisture - Method: LTM-GEN-7080 Moisture	Sydney	May 01, 2020	14 Days

Australia

Melbourne
6 Monterey Road
Dandenong South VIC 3175
Phone : +61 3 8564 5000
NATA # 1261
Site # 1254 & 14271

Sydney
Unit F3, Building F
16 Mars Road
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New Zealand

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Phone : +64 9 526 45 51
IANZ # 1327

Christchurch
43 Detroit Drive
Rolleston, Christchurch 7675
Phone : 0800 856 450
IANZ # 1290

Company Name: Ramboll Australia Pty Ltd
Address: Level 3/100 Pacific Highway
North Sydney
NSW 2060

Order No.:
Report #: 717025
Phone: 02 9954 8118
Fax: 02 9954 8150

Received: May 1, 2020 12:00 PM
Due: May 8, 2020
Priority: 5 Day
Contact Name: Stephen Maxwell

Project Name: P35
Project ID: 318000780

Eurofins Analytical Services Manager : Andrew Black

Sample Detail						Aluminium	Arsenic	Barium	Beryllium	Cadmium	Chromium	Cobalt	Copper	Iron	Lead	Manganese	Mass of sample*	Mercury	Nickel	Zinc	Moisture Set	
Melbourne Laboratory - NATA Site # 1254 & 14271																						
Sydney Laboratory - NATA Site # 18217						X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X
Brisbane Laboratory - NATA Site # 20794																						
Perth Laboratory - NATA Site # 23736																						
External Laboratory																						
No	Sample ID	Sample Date	Sampling Time	Matrix	LAB ID																	
1	P35_HA03_0_0.05	Apr 28, 2020		Soil	S20-My01744										X						X	
2	P35_HA03_0_2	Apr 28, 2020		Soil	S20-My01745										X						X	
3	P35_HA04_0_0.05	Apr 28, 2020		Soil	S20-My01746										X						X	
4	P35_HA04_0_2	Apr 28, 2020		Soil	S20-My01747										X						X	
5	P35_HA05_0_0.05	Apr 28, 2020		Soil	S20-My01748										X						X	
6	P35_HA05_0_2	Apr 28, 2020		Soil	S20-My01749										X						X	

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Brisbane Laboratory - NATA Site # 20794																						
Perth Laboratory - NATA Site # 23736																						
7	P35_TW1	Apr 28, 2020		Water	S20-My01750	X	X	X	X	X	X	X	X	X	X		X	X	X			
8	P35_TW2	Apr 28, 2020		Water	S20-My01751	X	X	X	X	X	X	X	X	X	X		X	X	X			
9	P35_TWS1	Apr 28, 2020		Water	S20-My01752	X	X	X	X	X	X	X	X	X	X		X	X	X			
10	P35_TWS2	Apr 28, 2020		Water	S20-My01753	X	X	X	X	X	X	X	X	X	X		X	X	X			
11	DVAC_LR(P35)	Apr 28, 2020		Dust	S20-My01754									X		X						
12	DVAC_KB(P35)	Apr 28, 2020		Dust	S20-My01755									X		X						
13	DSWAB_FE(P35)	Apr 28, 2020		Wipes	S20-My01756									X								
14	DSWAB_BE(P35)	Apr 28, 2020		Wipes	S20-My01757									X								
15	DSWAB_KC(P35)	Apr 28, 2020		Wipes	S20-My01758									X								

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- Recovery Data (Spikes & Surrogates) - where chromatographic interference does not allow the determination of Recovery the term "INT" appears against that analyte.
- Polychlorinated Biphenyls are spiked only using Aroclor 1260 in Matrix Spikes and LCS.
- For Matrix Spikes and LCS results a dash " - " in the report means that the specific analyte was not added to the QC sample.
- Duplicate RPDs are calculated from raw analytical data thus it is possible to have two sets of data.

Quality Control Results

Test			Units	Result 1		Acceptance Limits	Pass Limits	Qualifying Code
Method Blank								
Heavy Metals								
Aluminium			mg/kg	< 10		10	Pass	
Arsenic			mg/kg	< 2		2	Pass	
Barium			mg/kg	< 10		10	Pass	
Beryllium			mg/kg	< 2		2	Pass	
Cadmium			mg/kg	< 0.4		0.4	Pass	
Chromium			mg/kg	< 5		5	Pass	
Cobalt			mg/kg	< 5		5	Pass	
Copper			mg/kg	< 5		5	Pass	
Iron			mg/kg	< 20		20	Pass	
Lead			mg/kg	< 5		5	Pass	
Manganese			mg/kg	< 5		5	Pass	
Mercury			mg/kg	< 0.1		0.1	Pass	
Nickel			mg/kg	< 5		5	Pass	
Zinc			mg/kg	< 5		5	Pass	
LCS - % Recovery								
Heavy Metals								
Aluminium			%	103		70-130	Pass	
Arsenic			%	98		70-130	Pass	
Barium			%	103		70-130	Pass	
Beryllium			%	95		70-130	Pass	
Cadmium			%	99		70-130	Pass	
Chromium			%	101		70-130	Pass	
Cobalt			%	101		70-130	Pass	
Copper			%	99		70-130	Pass	
Iron			%	97		70-130	Pass	
Lead			%	100		70-130	Pass	
Manganese			%	100		70-130	Pass	
Mercury			%	100		70-130	Pass	
Nickel			%	100		70-130	Pass	
Zinc			%	100		70-130	Pass	
Test	Lab Sample ID	QA Source	Units	Result 1		Acceptance Limits	Pass Limits	Qualifying Code
Spike - % Recovery								
Heavy Metals				Result 1				
Aluminium	S20-My01747	CP	%	75		70-130	Pass	
Arsenic	S20-My01747	CP	%	89		70-130	Pass	
Barium	S20-My01747	CP	%	100		70-130	Pass	
Beryllium	S20-My01747	CP	%	94		70-130	Pass	
Cadmium	S20-My01747	CP	%	100		70-130	Pass	
Chromium	S20-My01747	CP	%	95		70-130	Pass	
Cobalt	S20-My01747	CP	%	96		70-130	Pass	
Copper	S20-My01747	CP	%	95		70-130	Pass	
Lead	S20-My01747	CP	%	98		70-130	Pass	
Manganese	S20-My01747	CP	%	105		70-130	Pass	
Mercury	S20-My01747	CP	%	104		70-130	Pass	
Nickel	S20-My01747	CP	%	96		70-130	Pass	
Zinc	S20-My01747	CP	%	89		70-130	Pass	
Spike - % Recovery								
Heavy Metals				Result 1				
Aluminium	S20-My00635	NCP	%	95		70-130	Pass	

Test	Lab Sample ID	QA Source	Units	Result 1			Acceptance Limits	Pass Limits	Qualifying Code
Arsenic	S20-My08558	NCP	%	90			70-130	Pass	
Barium	S20-My08558	NCP	%	86			70-130	Pass	
Beryllium	S20-My08558	NCP	%	91			70-130	Pass	
Cadmium	S20-My08558	NCP	%	97			70-130	Pass	
Chromium	S20-My08558	NCP	%	94			70-130	Pass	
Cobalt	S20-My08558	NCP	%	93			70-130	Pass	
Copper	S20-My08558	NCP	%	95			70-130	Pass	
Iron	S20-My08558	NCP	%	94			70-130	Pass	
Manganese	S20-My08558	NCP	%	84			70-130	Pass	
Mercury	S20-My08558	NCP	%	97			70-130	Pass	
Nickel	S20-My08558	NCP	%	91			70-130	Pass	
Zinc	S20-My08558	NCP	%	98			70-130	Pass	
Test	Lab Sample ID	QA Source	Units	Result 1			Acceptance Limits	Pass Limits	Qualifying Code
Duplicate									
Heavy Metals				Result 1	Result 2	RPD			
Aluminium	S20-My01746	CP	mg/kg	4900	4700	5.0	30%	Pass	
Arsenic	S20-My01746	CP	mg/kg	3.4	2.2	44	30%	Fail	Q15
Barium	S20-My01746	CP	mg/kg	53	54	3.0	30%	Pass	
Beryllium	S20-My01746	CP	mg/kg	< 2	< 2	<1	30%	Pass	
Cadmium	S20-My01746	CP	mg/kg	< 0.4	< 0.4	<1	30%	Pass	
Chromium	S20-My01746	CP	mg/kg	13	9.2	35	30%	Fail	Q15
Cobalt	S20-My01746	CP	mg/kg	< 5	< 5	<1	30%	Pass	
Copper	S20-My01746	CP	mg/kg	9.6	10	6.0	30%	Pass	
Iron	S20-My01746	CP	mg/kg	9400	6500	36	30%	Fail	Q02
Lead	S20-My01746	CP	mg/kg	25	24	5.0	30%	Pass	
Manganese	S20-My01746	CP	mg/kg	140	150	6.0	30%	Pass	
Mercury	S20-My01746	CP	mg/kg	< 0.1	< 0.1	<1	30%	Pass	
Nickel	S20-My01746	CP	mg/kg	< 5	< 5	<1	30%	Pass	
Zinc	S20-My01746	CP	mg/kg	68	75	10	30%	Pass	
Duplicate									
				Result 1	Result 2	RPD			
% Moisture	S20-My01749	CP	%	9.9	10	3.0	30%	Pass	
Duplicate									
Heavy Metals				Result 1	Result 2	RPD			
Aluminium	S20-My01760	CP	mg/kg	4300	4100	5.0	30%	Pass	
Arsenic	S20-My01760	CP	mg/kg	2.6	< 2	42	30%	Fail	Q15
Barium	S20-My01760	CP	mg/kg	120	37	110	30%	Fail	Q02
Beryllium	S20-My01760	CP	mg/kg	< 2	< 2	<1	30%	Pass	
Cadmium	S20-My01760	CP	mg/kg	< 0.4	< 0.4	<1	30%	Pass	
Chromium	S20-My01760	CP	mg/kg	6.6	6.1	8.0	30%	Pass	
Cobalt	S20-My01760	CP	mg/kg	8.1	7.4	10	30%	Pass	
Copper	S20-My01760	CP	mg/kg	15	14	4.0	30%	Pass	
Iron	S20-My01760	CP	mg/kg	7000	5300	27	30%	Pass	
Lead	S20-My01760	CP	mg/kg	24	9.2	91	30%	Fail	Q15
Mercury	S20-My01760	CP	mg/kg	< 0.1	< 0.1	<1	30%	Pass	
Nickel	S20-My01760	CP	mg/kg	11	< 5	110	30%	Fail	Q15
Zinc	S20-My01760	CP	mg/kg	40	39	4.0	30%	Pass	

Comments
Sample Integrity

Custody Seals Intact (if used)	N/A
Attempt to Chill was evident	No
Sample correctly preserved	Yes
Appropriate sample containers have been used	Yes
Sample containers for volatile analysis received with minimal headspace	Yes
Samples received within HoldingTime	Yes
Some samples have been subcontracted	No

Qualifier Codes/Comments

Code	Description
Q02	The duplicate %RPD is outside the recommended acceptance criteria. Further analysis indicates sample heterogeneity as the cause
Q15	The RPD reported passes Eurofins Environment Testing's QC - Acceptance Criteria as defined in the Internal Quality Control Review and Glossary page of this report.

Authorised By

Andrew Black	Analytical Services Manager
Gabriele Cordero	Senior Analyst-Metal (NSW)


Glenn Jackson
General Manager

Final report - this Report replaces any previously issued Report

- Indicates Not Requested

* Indicates NATA accreditation does not cover the performance of this service

Measurement uncertainty of test data is available on request or please [click here](#).

Eurofins shall not be liable for loss, cost, damages or expenses incurred by the client, or any other person or company, resulting from the use of any information or interpretation given in this report. In no case shall Eurofins be liable for consequential damages including, but not limited to, lost profits, damages for failure to meet deadlines and lost production arising from this report. This document shall not be reproduced except in full and relates only to the items tested. Unless indicated otherwise, the tests were performed on the samples as received.

Ramboll Environ Australia Pty Ltd
 Level 3/100 Pacific Highway
 North Sydney
 NSW 2060



NATA Accredited
Accreditation Number 1261
Site Number 18217

Accredited for compliance with ISO/IEC 17025 – Testing
 The results of the tests, calibrations and/or
 measurements included in this document are traceable
 to Australian/national standards.

Attention: **Stephen Maxwell**

Report **717025-W**
 Project name **P35**
 Project ID **318000780**
 Received Date **May 01, 2020**

Client Sample ID			P35_TW1	P35_TW2
Sample Matrix			Water	Water
Eurofins Sample No.			S20-My01750	S20-My01751
Date Sampled			Apr 28, 2020	Apr 28, 2020
Test/Reference	LOR	Unit		
Heavy Metals				
Aluminium	0.05	mg/L	< 0.05	< 0.05
Arsenic	0.001	mg/L	< 0.001	< 0.001
Barium	0.02	mg/L	0.02	< 0.02
Beryllium	0.001	mg/L	< 0.001	< 0.001
Cadmium	0.0002	mg/L	< 0.0002	< 0.0002
Chromium	0.001	mg/L	< 0.001	< 0.001
Cobalt	0.001	mg/L	< 0.001	< 0.001
Copper	0.001	mg/L	< 0.001	< 0.001
Iron	0.05	mg/L	< 0.05	< 0.05
Lead	0.001	mg/L	< 0.001	< 0.001
Manganese	0.005	mg/L	< 0.005	< 0.005
Mercury	0.0001	mg/L	< 0.0001	< 0.0001
Nickel	0.001	mg/L	< 0.001	< 0.001
Zinc	0.005	mg/L	0.016	0.014

Sample History

Where samples are submitted/analysed over several days, the last date of extraction and analysis is reported.

A recent review of our LIMS has resulted in the correction or clarification of some method identifications. Due to this, some of the method reference information on reports has changed. However, no substantive change has been made to our laboratory methods, and as such there is no change in the validity of current or previous results.

If the date and time of sampling are not provided, the Laboratory will not be responsible for compromised results should testing be performed outside the recommended holding time.

Description

Heavy Metals

Testing Site

Sydney

Extracted

May 05, 2020

Holding Time

180 Days

- Method: LTM-MET-3040 Metals in Waters, Soils & Sediments by ICP-MS

Australia

Melbourne
6 Monterey Road
Dandenong South VIC 3175
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NATA # 1261
Site # 1254 & 14271

Sydney
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Lane Cove West NSW 2066
Phone : +61 2 9900 8400
NATA # 1261 Site # 18217

Brisbane
1/21 Smallwood Place
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Phone : +61 7 3902 4600
NATA # 1261 Site # 20794

Perth
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NATA # 1261
Site # 23736

New Zealand

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Penrose, Auckland 1061
Phone : +64 9 526 45 51
IANZ # 1327

Christchurch
43 Detroit Drive
Rolleston, Christchurch 7675
Phone : 0800 856 450
IANZ # 1290

Company Name: Ramboll Australia Pty Ltd
Address: Level 3/100 Pacific Highway
North Sydney
NSW 2060

Order No.:
Report #: 717025
Phone: 02 9954 8118
Fax: 02 9954 8150

Received: May 1, 2020 12:00 PM
Due: May 8, 2020
Priority: 5 Day
Contact Name: Stephen Maxwell

Project Name: P35
Project ID: 318000780

Eurofins Analytical Services Manager : Andrew Black

Sample Detail						Aluminium	Arsenic	Barium	Beryllium	Cadmium	Chromium	Cobalt	Copper	Iron	Lead	Manganese	Mass of sample*	Mercury	Nickel	Zinc	Moisture Set		
Melbourne Laboratory - NATA Site # 1254 & 14271																							
Sydney Laboratory - NATA Site # 18217						X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	
Brisbane Laboratory - NATA Site # 20794																							
Perth Laboratory - NATA Site # 23736																							
External Laboratory																							
No	Sample ID	Sample Date	Sampling Time	Matrix	LAB ID																		
1	P35_HA03_0_0.05	Apr 28, 2020		Soil	S20-My01744										X							X	
2	P35_HA03_0_2	Apr 28, 2020		Soil	S20-My01745										X							X	
3	P35_HA04_0_0.05	Apr 28, 2020		Soil	S20-My01746										X							X	
4	P35_HA04_0_2	Apr 28, 2020		Soil	S20-My01747										X							X	
5	P35_HA05_0_0.05	Apr 28, 2020		Soil	S20-My01748										X							X	
6	P35_HA05_0_2	Apr 28, 2020		Soil	S20-My01749										X							X	

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NATA # 1261 Site # 20794

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NATA # 1261
Site # 23736

New Zealand

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Christchurch
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Address: Level 3/100 Pacific Highway
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Project ID: 318000780

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Report #: 717025
Phone: 02 9954 8118
Fax: 02 9954 8150

Received: May 1, 2020 12:00 PM
Due: May 8, 2020
Priority: 5 Day
Contact Name: Stephen Maxwell

Eurofins Analytical Services Manager : Andrew Black

Sample Detail						Aluminium	Arsenic	Barium	Beryllium	Cadmium	Chromium	Cobalt	Copper	Iron	Lead	Manganese	Mass of sample*	Mercury	Nickel	Zinc	Moisture Set	
Melbourne Laboratory - NATA Site # 1254 & 14271																						
Sydney Laboratory - NATA Site # 18217						X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X
Brisbane Laboratory - NATA Site # 20794																						
Perth Laboratory - NATA Site # 23736																						
7	P35_TW1	Apr 28, 2020		Water	S20-My01750	X	X	X	X	X	X	X	X	X	X		X	X	X			
8	P35_TW2	Apr 28, 2020		Water	S20-My01751	X	X	X	X	X	X	X	X	X	X		X	X	X			
9	P35_TWS1	Apr 28, 2020		Water	S20-My01752	X	X	X	X	X	X	X	X	X	X		X	X	X			
10	P35_TWS2	Apr 28, 2020		Water	S20-My01753	X	X	X	X	X	X	X	X	X	X		X	X	X			
11	DVAC_LR(P35)	Apr 28, 2020		Dust	S20-My01754									X		X						
12	DVAC_KB(P35)	Apr 28, 2020		Dust	S20-My01755									X		X						
13	DSWAB_FE(P35)	Apr 28, 2020		Wipes	S20-My01756									X								
14	DSWAB_BE(P35)	Apr 28, 2020		Wipes	S20-My01757									X								
15	DSWAB_KC(P35)	Apr 28, 2020		Wipes	S20-My01758									X								

Australia

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Company Name: Ramboll Australia Pty Ltd
Address: Level 3/100 Pacific Highway
North Sydney
NSW 2060

Order No.:
Report #: 717025
Phone: 02 9954 8118
Fax: 02 9954 8150

Received: May 1, 2020 12:00 PM
Due: May 8, 2020
Priority: 5 Day
Contact Name: Stephen Maxwell

Project Name: P35
Project ID: 318000780

Eurofins Analytical Services Manager : Andrew Black

Sample Detail						Aluminium	Arsenic	Barium	Beryllium	Cadmium	Chromium	Cobalt	Copper	Iron	Lead	Manganese	Mass of sample*	Mercury	Nickel	Zinc	Moisture Set	
Melbourne Laboratory - NATA Site # 1254 & 14271																						
Sydney Laboratory - NATA Site # 18217						X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X
Brisbane Laboratory - NATA Site # 20794																						
Perth Laboratory - NATA Site # 23736																						
16	DSWAB_MH(P35)	Apr 28, 2020		Wipes	S20-My01759										X							
17	P35_HA01_0_0.05	Apr 28, 2020		Soil	S20-My01760										X						X	
18	P35_HA01_0_2	Apr 28, 2020		Soil	S20-My01761										X						X	
19	P35_HA02_0_0.05	Apr 28, 2020		Soil	S20-My01762										X						X	
20	P35_HA02_0_2	Apr 28, 2020		Soil	S20-My01763										X						X	
Test Counts						4	4	4	4	4	4	4	4	4	20	4	2	4	4	4	4	10

Internal Quality Control Review and Glossary
General

1. Laboratory QC results for Method Blanks, Duplicates, Matrix Spikes, and Laboratory Control Samples follows guidelines delineated in the National Environment Protection (Assessment of Site Contamination) Measure 1999, as amended May 2013 and are included in this QC report where applicable. Additional QC data may be available on request.
2. All soil/sediment/solid results are reported on a dry basis, unless otherwise stated.
3. All biota/food results are reported on a wet weight basis on the edible portion, unless otherwise stated.
4. Actual LORs are matrix dependant. Quoted LORs may be raised where sample extracts are diluted due to interferences.
5. Results are uncorrected for matrix spikes or surrogate recoveries except for PFAS compounds.
6. SVOC analysis on waters are performed on homogenised, unfiltered samples, unless noted otherwise.
7. Samples were analysed on an 'as received' basis.
8. Information identified on this report with blue colour, indicates data provided by customer, that may have an impact on the results.
9. This report replaces any interim results previously issued.

Holding Times

Please refer to 'Sample Preservation and Container Guide' for holding times (QS3001).

For samples received on the last day of holding time, notification of testing requirements should have been received at least 6 hours prior to sample receipt deadlines as stated on the SRA.

If the Laboratory did not receive the information in the required timeframe, and regardless of any other integrity issues, suitably qualified results may still be reported.

Holding times apply from the date of sampling, therefore compliance to these may be outside the laboratory's control.

For VOCs containing vinyl chloride, styrene and 2-chloroethyl vinyl ether the holding time is 7 days however for all other VOCs such as BTEX or C6-10 TRH then the holding time is 14 days.

****NOTE:** pH duplicates are reported as a range NOT as RPD

Units

mg/kg: milligrams per kilogram

mg/L: milligrams per litre

ug/L: micrograms per litre

ppm: Parts per million

ppb: Parts per billion

%: Percentage

org/100mL: Organisms per 100 millilitres

NTU: Nephelometric Turbidity Units

MPN/100mL: Most Probable Number of organisms per 100 millilitres

Terms

Dry	Where a moisture has been determined on a solid sample the result is expressed on a dry basis.
LOR	Limit of Reporting.
SPIKE	Addition of the analyte to the sample and reported as percentage recovery.
RPD	Relative Percent Difference between two Duplicate pieces of analysis.
LCS	Laboratory Control Sample - reported as percent recovery.
CRM	Certified Reference Material - reported as percent recovery.
Method Blank	In the case of solid samples these are performed on laboratory certified clean sands and in the case of water samples these are performed on de-ionised water.
Surr - Surrogate	The addition of a like compound to the analyte target and reported as percentage recovery.
Duplicate	A second piece of analysis from the same sample and reported in the same units as the result to show comparison.
USEPA	United States Environmental Protection Agency
APHA	American Public Health Association
TCLP	Toxicity Characteristic Leaching Procedure
COC	Chain of Custody
SRA	Sample Receipt Advice
QSM	US Department of Defense Quality Systems Manual Version 5.3
CP	Client Parent - QC was performed on samples pertaining to this report
NCP	Non-Client Parent - QC performed on samples not pertaining to this report, QC is representative of the sequence or batch that client samples were analysed within.
TEQ	Toxic Equivalency Quotient

QC - Acceptance Criteria

RPD Duplicates: Global RPD Duplicates Acceptance Criteria is 30% however the following acceptance guidelines are equally applicable:

Results <10 times the LOR : No Limit

Results between 10-20 times the LOR : RPD must lie between 0-50%

Results >20 times the LOR : RPD must lie between 0-30%

Surrogate Recoveries: Recoveries must lie between 20-130% Phenols & 50-150% PFASs

PFAS field samples that contain surrogate recoveries in excess of the QC limit designated in QSM 5.3 where no positive PFAS results have been reported have been reviewed and no data was affected.

WA DWER (n=10): PFBA, PFPeA, PFHxA, PFHpA, PFOA, PFBS, PFHxS, PFOS, 6:2 FTSA, 8:2 FTSA

QC Data General Comments

1. Where a result is reported as a less than (<), higher than the nominated LOR, this is due to either matrix interference, extract dilution required due to interferences or contaminant levels within the sample, high moisture content or insufficient sample provided.
2. Duplicate data shown within this report that states the word "BATCH" is a Batch Duplicate from outside of your sample batch, but within the laboratory sample batch at a 1:10 ratio. The Parent and Duplicate data shown is not data from your samples.
3. Organochlorine Pesticide analysis - where reporting LCS data, Toxaphene & Chlordane are not added to the LCS.
4. Organochlorine Pesticide analysis - where reporting Spike data, Toxaphene is not added to the Spike.
5. Total Recoverable Hydrocarbons - where reporting Spike & LCS data, a single spike of commercial Hydrocarbon products in the range of C12-C30 is added and it's Total Recovery is reported in the C10-C14 cell of the Report.
6. pH and Free Chlorine analysed in the laboratory - Analysis on this test must begin within 30 minutes of sampling. Therefore laboratory analysis is unlikely to be completed within holding time. Analysis will begin as soon as possible after sample receipt.
7. Recovery Data (Spikes & Surrogates) - where chromatographic interference does not allow the determination of Recovery the term "INT" appears against that analyte.
8. Polychlorinated Biphenyls are spiked only using Aroclor 1260 in Matrix Spikes and LCS.
9. For Matrix Spikes and LCS results a dash " - " in the report means that the specific analyte was not added to the QC sample.
10. Duplicate RPDs are calculated from raw analytical data thus it is possible to have two sets of data.

Quality Control Results

Test			Units	Result 1		Acceptance Limits	Pass Limits	Qualifying Code
Method Blank								
Heavy Metals								
Aluminium			mg/L	< 0.05		0.05	Pass	
Arsenic			mg/L	< 0.001		0.001	Pass	
Barium			mg/L	< 0.02		0.02	Pass	
Beryllium			mg/L	< 0.001		0.001	Pass	
Cadmium			mg/L	< 0.0002		0.0002	Pass	
Chromium			mg/L	< 0.001		0.001	Pass	
Cobalt			mg/L	< 0.001		0.001	Pass	
Copper			mg/L	< 0.001		0.001	Pass	
Iron			mg/L	< 0.05		0.05	Pass	
Lead			mg/L	< 0.001		0.001	Pass	
Manganese			mg/L	< 0.005		0.005	Pass	
Mercury			mg/L	< 0.0001		0.0001	Pass	
Nickel			mg/L	< 0.001		0.001	Pass	
Zinc			mg/L	< 0.005		0.005	Pass	
LCS - % Recovery								
Heavy Metals								
Aluminium			%	92		70-130	Pass	
Arsenic			%	110		70-130	Pass	
Barium			%	108		70-130	Pass	
Beryllium			%	106		70-130	Pass	
Cadmium			%	112		70-130	Pass	
Chromium			%	88		70-130	Pass	
Cobalt			%	91		70-130	Pass	
Copper			%	86		70-130	Pass	
Iron			%	95		70-130	Pass	
Lead			%	106		70-130	Pass	
Manganese			%	90		70-130	Pass	
Mercury			%	107		70-130	Pass	
Nickel			%	87		70-130	Pass	
Zinc			%	86		70-130	Pass	
Test	Lab Sample ID	QA Source	Units	Result 1		Acceptance Limits	Pass Limits	Qualifying Code
Spike - % Recovery								
Heavy Metals				Result 1				
Aluminium	S20-My01814	NCP	%	79		70-130	Pass	
Arsenic	S20-My01814	NCP	%	94		70-130	Pass	
Barium	S20-My01814	NCP	%	93		70-130	Pass	
Beryllium	S20-My01814	NCP	%	86		70-130	Pass	
Cadmium	S20-My01814	NCP	%	92		70-130	Pass	
Chromium	S20-My01814	NCP	%	77		70-130	Pass	
Cobalt	S20-My01814	NCP	%	78		70-130	Pass	
Copper	S20-My01814	NCP	%	77		70-130	Pass	
Iron	S20-My01814	NCP	%	83		70-130	Pass	
Lead	S20-My01814	NCP	%	91		70-130	Pass	
Manganese	S20-My01814	NCP	%	78		70-130	Pass	
Mercury	S20-My01814	NCP	%	88		70-130	Pass	
Nickel	S20-My01814	NCP	%	77		70-130	Pass	
Zinc	S20-My01814	NCP	%	75		70-130	Pass	

Test	Lab Sample ID	QA Source	Units	Result 1			Acceptance Limits	Pass Limits	Qualifying Code
Duplicate									
Heavy Metals				Result 1	Result 2	RPD			
Aluminium	S20-My01750	CP	mg/L	< 0.05	< 0.05	<1	30%	Pass	
Arsenic	S20-My01750	CP	mg/L	< 0.001	< 0.001	<1	30%	Pass	
Barium	S20-My01750	CP	mg/L	0.02	0.02	5.0	30%	Pass	
Beryllium	S20-My01750	CP	mg/L	< 0.001	< 0.001	<1	30%	Pass	
Cadmium	S20-My01750	CP	mg/L	< 0.0002	< 0.0002	<1	30%	Pass	
Chromium	S20-My01750	CP	mg/L	< 0.001	< 0.001	<1	30%	Pass	
Cobalt	S20-My01750	CP	mg/L	< 0.001	< 0.001	<1	30%	Pass	
Copper	S20-My01750	CP	mg/L	< 0.001	< 0.001	<1	30%	Pass	
Iron	S20-My01750	CP	mg/L	< 0.05	< 0.05	<1	30%	Pass	
Lead	S20-My01750	CP	mg/L	< 0.001	0.001	120	30%	Fail	Q15
Manganese	S20-My01750	CP	mg/L	< 0.005	< 0.005	<1	30%	Pass	
Mercury	S20-My01750	CP	mg/L	< 0.0001	< 0.0001	<1	30%	Pass	
Nickel	S20-My01750	CP	mg/L	< 0.001	< 0.001	<1	30%	Pass	
Zinc	S20-My01750	CP	mg/L	0.016	0.013	24	30%	Pass	

Comments
Sample Integrity

Custody Seals Intact (if used)	N/A
Attempt to Chill was evident	No
Sample correctly preserved	Yes
Appropriate sample containers have been used	Yes
Sample containers for volatile analysis received with minimal headspace	Yes
Samples received within HoldingTime	Yes
Some samples have been subcontracted	No

Qualifier Codes/Comments

Code	Description
Q15	The RPD reported passes Eurofins Environment Testing's QC - Acceptance Criteria as defined in the Internal Quality Control Review and Glossary page of this report.

Authorised By

Andrew Black	Analytical Services Manager
Gabriele Cordero	Senior Analyst-Metal (NSW)


**Glenn Jackson
General Manager**

Final report - this Report replaces any previously issued Report

- Indicates Not Requested

* Indicates NATA accreditation does not cover the performance of this service

Measurement uncertainty of test data is available on request or please [click here](#).

Eurofins shall not be liable for loss, cost, damages or expenses incurred by the client, or any other person or company, resulting from the use of any information or interpretation given in this report. In no case shall Eurofins be liable for consequential damages including, but not limited to, lost profits, damages for failure to meet deadlines and lost production arising from this report. This document shall not be reproduced except in full and relates only to the items tested. Unless indicated otherwise, the tests were performed on the samples as received.



CHAIN OF CUSTODY RECORD

ABN 50 005 085 521

Sydney Laboratory
Unit F3 Bld.F, 16 Mars Rd, Lane Cove West, NSW 2066
02 9900 8400 EnviroSampleNSW@eurofins.com

Brisbane Laboratory
Unit 1, 21 Smallwood Pl., Murarie, QLD 4172
07 3902 4600 EnviroSampleQLD@eurofins.com

Perth Laboratory
Unit 2, 91 Leach Highway, Kewdale WA 6105
08 9251 9600 EnviroSampleWA@eurofins.com

Melbourne Laboratory
2 Kingston Town Close, Oakleigh, VIC 3166
03 8504 5000 EnviroSampleVic@eurofins.com

Company		Ramboll		Project No		318000780		Project Manager		Stephen Maxwell		Sampler(s)		JB, TJ, JK			
Address		50 Glebe Road the Junction		Project Name		P36		EDD Format (ESdat, EQUIS, Custom)		Excel and PDF		Handed over by		Jordyn Kirsch			
Contact Name		Stephen Maxwell		Analyses <small>(Note: Where metals are requested, please specify "Total" or "Filtered") SUITE code must be used to assist with pricing.</small>	Total Lead (mg/kg)	M13 (Al, As, Ba, Be, Cd, Cr, Cu, Fe, Pb, Mn, Hg, Ni, Zn Excluding hexavalent chromium) Total							Email for Invoice	smaxwell@ramboll.com asiapac-accounts@ramboll.com			
Phone No		0478 658 194												Email for Results	smaxwell@ramboll.com jblackwell@ramboll.com		
Special Directions															Turnaround Time (TAT) Requirements (Default will be 5 days if not ticked)		
Purchase Order														Containers		Requirements (Default will be 5 days if not ticked)	
Quote ID No		180813RAMN_1		1L Plastic		250mL Plastic		125mL Plastic		200mL Amber Glass		40mL VOA vial		500mL PFAS Bottle Jar (Glass or HDPE)		Other (Asbestos AS1964, WA Guidelines)	
No	Client Sample ID	Sampled Date/Time (dd/mm/yy hh:mm)	Matrix (Solid (S) Water (W))													Sample Comments / Dangerous Goods Hazard Warning	
1	P36_HA01_0.0_0.05	28/04/20	S	X											1		
2	P36_HA01_0.2	28/04/20	S	X											1		
3	P36_HA02_0.0_0.05	28/04/20	S	X											1		
4	P36_HA02_0.2	28/04/20	S	X											1		
5	P36_HA03_0.0_0.05	28/04/20	S	X											1		
6	P36_HA03_0.2	28/04/20	S	X											1		
7	P36_HA04_0.0_0.05	28/04/20	S	X											1		
8	P36_HA04_0.2	28/04/20	S	X											1		
9	P36_HA05_0.0_0.05	28/04/20	S	X											1		
10	P36_HA05_0.2	28/04/20	S	X											1		
Total Counts				10											10		
Method of Shipment		<input type="checkbox"/> Courier (#)		<input type="checkbox"/> Hand Delivered		<input type="checkbox"/> Postal		Name		Signature		Date		Time			
Eurofins mgt Laboratory Use Only		Received By	<i>Lupan</i>		SYD BNE MEL PER ADL NTL DRW		Signature		Date		01/05/20		Time		12:00 PM		
		Received By			SYD BNE MEL PER ADL NTL DRW		Signature		Date				Time		Report No		

Submission of samples to the laboratory will be deemed as acceptance of Eurofins | mgt Standard Terms and Conditions unless agreed otherwise. A copy of Eurofins | mgt Standard Terms and Conditions is available on request.

Eurofins Environment Testing Australia Pty Ltd trading as Eurofins | mgt

Temperature 14.03 C
Report No 716878



CHAIN OF CUSTODY RECORD

ABN 50 005 085 521

Sydney Laboratory
Unit F3 Bld F, 16 Mars Rd, Lane Cove West, NSW 2066
02 9900 8400 EnviroSampleNSW@eurofins.com

Brisbane Laboratory
Unit 1, 21 Smallwood Pl., Murarie, QLD 4172
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08 9251 9600 EnviroSampleWA@eurofins.com

Melbourne Laboratory
2 Kingston Town Close, Oakleigh, VIC 3166
03 8564 5000 EnviroSampleVic@eurofins.com

Company		Ramboll		Project No		318000780		Project Manager		Stephen Maxwell		Sampler(s)		JB, TJ, JK			
Address		50 Glebe Road the Junction		Project Name		P36		EDD Format (ESdat, EQULS, Custom)		Excel and PDF		Handed over by		Jordyn Kirsch			
Contact Name		Stephen Maxwell		Analyses (Note: Where metals are requested, please specify 'Total' or 'Filtered' SUITE code must be used to attract SUITE pricing)		Total Lead (mg/kg) Mn, Ni, As, Ba, Be, Cd, Cr, Co, Cu, Fe, Pb, Mn, Hg, Ni, Zn Excluding hexavalent chromium Total								Email for Invoice		smaxwell@ramboll.com asiapac-accounts@ramboll.com	
Phone No		0478 658 194												Email for Results		smaxwell@ramboll.com jblackwell@ramboll.com	
Special Directions														Containers		Turnaround Time (TAT) Requirements (default will be 5 days if not ticked)	
Purchase Order																	
Quote ID No		180813RAMN_1												Sample Comments / Dangerous Goods Hazard Warning			
Ne		Client Sample ID		Sampled Date/Time (dd/mm/yy hh:mm)		Matrix (Solid (S) Water (W))											
1		P36_TW1		28/04/20		W		X									
2		P36_TW2		28/04/20		W		X									
3																	
4																	
5																	
6																	
7																	
8																	
9																	
10																	
		Total Counts				2											

Method of Shipment		<input type="checkbox"/> Courier (#) <input checked="" type="checkbox"/> Hand Delivered <input type="checkbox"/> Postal		Name		Signature		Date		Time		Temperature	
Eurofins mgt		Received By		SYD BNE MEL PER AOL NTL DRW		Signature		Date		Time		Temperature	
Laboratory Use Only		Received By		SYD BNE MEL PER AOL NTL DRW		Signature		Date		Time		Report No	

Submission of samples to the laboratory will be deemed as acceptance of Eurofins | mgt Standard Terms and Conditions unless agreed otherwise. A copy of Eurofins | mgt Standard Terms and Conditions is available on request.

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NATA # 1261 Site # 18217

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Murarrie QLD 4172
Phone : +61 7 3902 4600
NATA # 1261 Site # 20794

Perth

2/91 Leach Highway
Kewdale WA 6105
Phone : +61 8 9251 9600
NATA # 1261 Site # 23736

Sample Receipt Advice

Company name: **Ramboll Australia Pty Ltd**
Contact name: **Stephen Maxwell**
Project name: **P36**
Project ID: **318000780**
COC number: **Not provided**
Turn around time: **5 Day**
Date/Time received: **May 1, 2020 12:00 PM**
Eurofins reference: **716878**

Sample information

- A detailed list of analytes logged into our LIMS, is included in the attached summary table.
- All samples have been received as described on the above COC.
- COC has been completed correctly.
- Attempt to chill was evident.
- Appropriately preserved sample containers have been used.
- All samples were received in good condition.
- Samples have been provided with adequate time to commence analysis in accordance with the relevant holding times.
- Appropriate sample containers have been used.
- Sample containers for volatile analysis received with zero headspace.
- Split sample sent to requested external lab.
- Some samples have been subcontracted.
- N/A Custody Seals intact (if used).

Contact notes

If you have any questions with respect to these samples please contact:

Andrew Black on Phone : (+61) 2 9900 8490 or by e.mail: AndrewBlack@eurofins.com

Results will be delivered electronically via e.mail to Stephen Maxwell - smaxwell@ramboll.com.

Note: A copy of these results will also be delivered to the general Ramboll Australia Pty Ltd email address.

Australia

Melbourne
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Company Name: Ramboll Australia Pty Ltd
Address: Level 3/100 Pacific Highway
North Sydney
NSW 2060

Order No.:
Report #: 716878
Phone: 02 9954 8118
Fax: 02 9954 8150

Received: May 1, 2020 12:00 PM
Due: May 8, 2020
Priority: 5 Day
Contact Name: Stephen Maxwell

Project Name: P36
Project ID: 318000780

Eurofins Analytical Services Manager : Andrew Black

Sample Detail						Aluminium	Arsenic	Barium	Beryllium	Cadmium	Chromium	Cobalt	Copper	Iron	Lead	Manganese	Mercury	Nickel	Zinc	Moisture Set	
Melbourne Laboratory - NATA Site # 1254 & 14271																					
Sydney Laboratory - NATA Site # 18217						X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X
Brisbane Laboratory - NATA Site # 20794																					
Perth Laboratory - NATA Site # 23736																					
External Laboratory																					
No	Sample ID	Sample Date	Sampling Time	Matrix	LAB ID																
1	P36_HA01_0.0-0.05	Apr 28, 2020		Soil	S20-My00604										X					X	
2	P36_HA01_0.2	Apr 28, 2020		Soil	S20-My00605										X					X	
3	P36_HA02_0.0-0.05	Apr 28, 2020		Soil	S20-My00606										X					X	
4	P36_HA02_0.2	Apr 28, 2020		Soil	S20-My00607										X					X	
5	P36_HA03_0.0-0.05	Apr 28, 2020		Soil	S20-My00608										X					X	
6	P36_HA03_0.2	Apr 28, 2020		Soil	S20-My00609										X					X	

Australia

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43 Detroit Drive
Rolleston, Christchurch 7675
Phone : 0800 856 450
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Company Name: Ramboll Australia Pty Ltd
Address: Level 3/100 Pacific Highway
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NSW 2060

Project Name: P36
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Order No.:
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Received: May 1, 2020 12:00 PM
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Contact Name: Stephen Maxwell

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Sample Detail						Aluminium	Arsenic	Barium	Beryllium	Cadmium	Chromium	Cobalt	Copper	Iron	Lead	Manganese	Mercury	Nickel	Zinc	Moisture Set	
Melbourne Laboratory - NATA Site # 1254 & 14271																					
Sydney Laboratory - NATA Site # 18217						X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X
Brisbane Laboratory - NATA Site # 20794																					
Perth Laboratory - NATA Site # 23736																					
7	P36_HA04_0-0.05	Apr 28, 2020		Soil	S20-My00610										X					X	
8	P36_HA04_0.2	Apr 28, 2020		Soil	S20-My00611										X					X	
9	P36_HA05_0-0.05	Apr 28, 2020		Soil	S20-My00612										X					X	
10	P36_HA05_0.2	Apr 28, 2020		Soil	S20-My00613										X					X	
11	P36_TW1	Apr 28, 2020		Water	S20-My00614	X	X	X	X	X	X	X	X	X	X	X	X	X	X		
12	P36_TW2	Apr 28, 2020		Water	S20-My00615	X	X	X	X	X	X	X	X	X	X	X	X	X	X		
Test Counts						2	2	2	2	2	2	2	2	2	12	2	2	2	2	10	

Ramboll Environ Australia Pty Ltd
 Level 3/100 Pacific Highway
 North Sydney
 NSW 2060



NATA Accredited
 Accreditation Number 1261
 Site Number 18217

Accredited for compliance with ISO/IEC 17025 – Testing
 The results of the tests, calibrations and/or
 measurements included in this document are traceable
 to Australian/national standards.

Attention: Stephen Maxwell

Report 716878-S
 Project name P36
 Project ID 318000780
 Received Date May 01, 2020

Client Sample ID			P36_HA01_0.0-0.05	P36_HA01_0.2	P36_HA02_0.0-0.05	P36_HA02_0.2
Sample Matrix			Soil	Soil	Soil	Soil
Eurofins Sample No.			S20-My00604	S20-My00605	S20-My00606	S20-My00607
Date Sampled			Apr 28, 2020	Apr 28, 2020	Apr 28, 2020	Apr 28, 2020
Test/Reference	LOR	Unit				
Heavy Metals						
Lead	5	mg/kg	160	20	180	22
% Moisture	1	%	11	8.9	10	9.9

Client Sample ID			P36_HA03_0.0-0.05	P36_HA03_0.2	P36_HA04_0.0-0.05	P36_HA04_0.2
Sample Matrix			Soil	Soil	Soil	Soil
Eurofins Sample No.			S20-My00608	S20-My00609	S20-My00610	S20-My00611
Date Sampled			Apr 28, 2020	Apr 28, 2020	Apr 28, 2020	Apr 28, 2020
Test/Reference	LOR	Unit				
Heavy Metals						
Lead	5	mg/kg	45	12	44	14
% Moisture	1	%	9.7	8.8	18	16

Client Sample ID			P36_HA05_0.0-0.05	P36_HA05_0.2
Sample Matrix			Soil	Soil
Eurofins Sample No.			S20-My00612	S20-My00613
Date Sampled			Apr 28, 2020	Apr 28, 2020
Test/Reference	LOR	Unit		
Heavy Metals				
Lead	5	mg/kg	58	30
% Moisture	1	%	12	12

Sample History

Where samples are submitted/analysed over several days, the last date of extraction and analysis is reported.

A recent review of our LIMS has resulted in the correction or clarification of some method identifications. Due to this, some of the method reference information on reports has changed. However, no substantive change has been made to our laboratory methods, and as such there is no change in the validity of current or previous results.

If the date and time of sampling are not provided, the Laboratory will not be responsible for compromised results should testing be performed outside the recommended holding time.

Description

Heavy Metals

- Method: LTM-MET-3040 Metals in Waters, Soils & Sediments by ICP-MS

% Moisture

- Method: LTM-GEN-7080 Moisture

Testing Site

Sydney

Sydney

Extracted

May 06, 2020

May 01, 2020

Holding Time

180 Days

14 Days

Australia

Melbourne
6 Monterey Road
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IANZ # 1290

Company Name: Ramboll Australia Pty Ltd
Address: Level 3/100 Pacific Highway
North Sydney
NSW 2060

Order No.:
Report #: 716878
Phone: 02 9954 8118
Fax: 02 9954 8150

Received: May 1, 2020 12:00 PM
Due: May 8, 2020
Priority: 5 Day
Contact Name: Stephen Maxwell

Project Name: P36
Project ID: 318000780

Eurofins Analytical Services Manager : Andrew Black

Sample Detail						Aluminium	Arsenic	Barium	Beryllium	Cadmium	Chromium	Cobalt	Copper	Iron	Lead	Manganese	Mercury	Nickel	Zinc	Moisture Set	
Melbourne Laboratory - NATA Site # 1254 & 14271																					
Sydney Laboratory - NATA Site # 18217						X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X
Brisbane Laboratory - NATA Site # 20794																					
Perth Laboratory - NATA Site # 23736																					
External Laboratory																					
No	Sample ID	Sample Date	Sampling Time	Matrix	LAB ID																
1	P36_HA01_0.0-0.05	Apr 28, 2020		Soil	S20-My00604										X					X	
2	P36_HA01_0.2	Apr 28, 2020		Soil	S20-My00605										X					X	
3	P36_HA02_0.0-0.05	Apr 28, 2020		Soil	S20-My00606										X					X	
4	P36_HA02_0.2	Apr 28, 2020		Soil	S20-My00607										X					X	
5	P36_HA03_0.0-0.05	Apr 28, 2020		Soil	S20-My00608										X					X	
6	P36_HA03_0.2	Apr 28, 2020		Soil	S20-My00609										X					X	

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Contact Name: Stephen Maxwell

Project Name: P36
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Sample Detail						Aluminium	Arsenic	Barium	Beryllium	Cadmium	Chromium	Cobalt	Copper	Iron	Lead	Manganese	Mercury	Nickel	Zinc	Moisture Set	
Melbourne Laboratory - NATA Site # 1254 & 14271																					
Sydney Laboratory - NATA Site # 18217						X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X
Brisbane Laboratory - NATA Site # 20794																					
Perth Laboratory - NATA Site # 23736																					
7	P36_HA04_0-0.05	Apr 28, 2020		Soil	S20-My00610										X					X	
8	P36_HA04_0.2	Apr 28, 2020		Soil	S20-My00611										X					X	
9	P36_HA05_0-0.05	Apr 28, 2020		Soil	S20-My00612										X					X	
10	P36_HA05_0.2	Apr 28, 2020		Soil	S20-My00613										X					X	
11	P36_TW1	Apr 28, 2020		Water	S20-My00614	X	X	X	X	X	X	X	X	X	X	X	X	X	X		
12	P36_TW2	Apr 28, 2020		Water	S20-My00615	X	X	X	X	X	X	X	X	X	X	X	X	X	X		
Test Counts						2	2	2	2	2	2	2	2	2	12	2	2	2	2	10	

Internal Quality Control Review and Glossary
General

- Laboratory QC results for Method Blanks, Duplicates, Matrix Spikes, and Laboratory Control Samples follows guidelines delineated in the National Environment Protection (Assessment of Site Contamination) Measure 1999, as amended May 2013 and are included in this QC report where applicable. Additional QC data may be available on request.
- All soil/sediment/solid results are reported on a dry basis, unless otherwise stated.
- All biota/food results are reported on a wet weight basis on the edible portion, unless otherwise stated.
- Actual LORs are matrix dependant. Quoted LORs may be raised where sample extracts are diluted due to interferences.
- Results are uncorrected for matrix spikes or surrogate recoveries except for PFAS compounds.
- SVOC analysis on waters are performed on homogenised, unfiltered samples, unless noted otherwise.
- Samples were analysed on an 'as received' basis.
- Information identified on this report with blue colour, indicates data provided by customer, that may have an impact on the results.
- This report replaces any interim results previously issued.

Holding Times

Please refer to 'Sample Preservation and Container Guide' for holding times (QS3001).

For samples received on the last day of holding time, notification of testing requirements should have been received at least 6 hours prior to sample receipt deadlines as stated on the SRA.

If the Laboratory did not receive the information in the required timeframe, and regardless of any other integrity issues, suitably qualified results may still be reported.

Holding times apply from the date of sampling, therefore compliance to these may be outside the laboratory's control.

For VOCs containing vinyl chloride, styrene and 2-chloroethyl vinyl ether the holding time is 7 days however for all other VOCs such as BTEX or C6-10 TRH then the holding time is 14 days.

****NOTE:** pH duplicates are reported as a range NOT as RPD

Units

mg/kg: milligrams per kilogram

mg/L: milligrams per litre

ug/L: micrograms per litre

ppm: Parts per million

ppb: Parts per billion

%: Percentage

org/100mL: Organisms per 100 millilitres

NTU: Nephelometric Turbidity Units

MPN/100mL: Most Probable Number of organisms per 100 millilitres

Terms

Dry	Where a moisture has been determined on a solid sample the result is expressed on a dry basis.
LOR	Limit of Reporting.
SPIKE	Addition of the analyte to the sample and reported as percentage recovery.
RPD	Relative Percent Difference between two Duplicate pieces of analysis.
LCS	Laboratory Control Sample - reported as percent recovery.
CRM	Certified Reference Material - reported as percent recovery.
Method Blank	In the case of solid samples these are performed on laboratory certified clean sands and in the case of water samples these are performed on de-ionised water.
Surr - Surrogate	The addition of a like compound to the analyte target and reported as percentage recovery.
Duplicate	A second piece of analysis from the same sample and reported in the same units as the result to show comparison.
USEPA	United States Environmental Protection Agency
APHA	American Public Health Association
TCLP	Toxicity Characteristic Leaching Procedure
COC	Chain of Custody
SRA	Sample Receipt Advice
QSM	US Department of Defense Quality Systems Manual Version 5.3
CP	Client Parent - QC was performed on samples pertaining to this report
NCP	Non-Client Parent - QC performed on samples not pertaining to this report, QC is representative of the sequence or batch that client samples were analysed within.
TEQ	Toxic Equivalency Quotient

QC - Acceptance Criteria

RPD Duplicates: Global RPD Duplicates Acceptance Criteria is 30% however the following acceptance guidelines are equally applicable:

Results <10 times the LOR : No Limit

Results between 10-20 times the LOR : RPD must lie between 0-50%

Results >20 times the LOR : RPD must lie between 0-30%

Surrogate Recoveries: Recoveries must lie between 20-130% Phenols & 50-150% PFASs

PFAS field samples that contain surrogate recoveries in excess of the QC limit designated in QSM 5.3 where no positive PFAS results have been reported have been reviewed and no data was affected.

WA DWER (n=10): PFBA, PFPeA, PFHxA, PFHpA, PFOA, PFBS, PFHxS, PFOS, 6:2 FTSA, 8:2 FTSA

QC Data General Comments

- Where a result is reported as a less than (<), higher than the nominated LOR, this is due to either matrix interference, extract dilution required due to interferences or contaminant levels within the sample, high moisture content or insufficient sample provided.
- Duplicate data shown within this report that states the word "BATCH" is a Batch Duplicate from outside of your sample batch, but within the laboratory sample batch at a 1:10 ratio. The Parent and Duplicate data shown is not data from your samples.
- Organochlorine Pesticide analysis - where reporting LCS data, Toxaphene & Chlordane are not added to the LCS.
- Organochlorine Pesticide analysis - where reporting Spike data, Toxaphene is not added to the Spike.
- Total Recoverable Hydrocarbons - where reporting Spike & LCS data, a single spike of commercial Hydrocarbon products in the range of C12-C30 is added and it's Total Recovery is reported in the C10-C14 cell of the Report.
- pH and Free Chlorine analysed in the laboratory - Analysis on this test must begin within 30 minutes of sampling. Therefore laboratory analysis is unlikely to be completed within holding time. Analysis will begin as soon as possible after sample receipt.
- Recovery Data (Spikes & Surrogates) - where chromatographic interference does not allow the determination of Recovery the term "INT" appears against that analyte.
- Polychlorinated Biphenyls are spiked only using Aroclor 1260 in Matrix Spikes and LCS.
- For Matrix Spikes and LCS results a dash " - " in the report means that the specific analyte was not added to the QC sample.
- Duplicate RPDs are calculated from raw analytical data thus it is possible to have two sets of data.

Quality Control Results

Test				Units	Result 1		Acceptance Limits	Pass Limits	Qualifying Code		
Method Blank											
Heavy Metals											
Lead				mg/kg	< 5		5	Pass			
LCS - % Recovery											
Heavy Metals											
Lead				%	92		70-130	Pass			
Test	Lab Sample ID	QA Source	Units	Result 1			Acceptance Limits	Pass Limits	Qualifying Code		
Spike - % Recovery											
Heavy Metals											
Lead				S20-My00611	CP	%	86	70-130	Pass		
Test	Lab Sample ID	QA Source	Units	Result 1			Acceptance Limits	Pass Limits	Qualifying Code		
Duplicate											
Heavy Metals											
Lead				S20-My00610	CP	mg/kg	44	45	<1	30%	Pass
Duplicate											
					Result 1	Result 2	RPD				
% Moisture				S20-My00611	CP	%	16	17	4.0	30%	Pass

Comments**Sample Integrity**

Custody Seals Intact (if used)	N/A
Attempt to Chill was evident	Yes
Sample correctly preserved	Yes
Appropriate sample containers have been used	Yes
Sample containers for volatile analysis received with minimal headspace	Yes
Samples received within HoldingTime	Yes
Some samples have been subcontracted	No

Authorised By

Andrew Black Analytical Services Manager
Gabriele Cordero Senior Analyst-Metal (NSW)

**Glenn Jackson
General Manager**

Final report - this Report replaces any previously issued Report

- Indicates Not Requested

* Indicates NATA accreditation does not cover the performance of this service

Measurement uncertainty of test data is available on request or please [click here](#).

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Ramboll Environ Australia Pty Ltd
 Level 3/100 Pacific Highway
 North Sydney
 NSW 2060



NATA Accredited
Accreditation Number 1261
Site Number 18217

Accredited for compliance with ISO/IEC 17025 – Testing
 The results of the tests, calibrations and/or
 measurements included in this document are traceable
 to Australian/national standards.

Attention: **Stephen Maxwell**

Report **716878-W**
 Project name **P36**
 Project ID **318000780**
 Received Date **May 01, 2020**

Client Sample ID			P36_TW1	P36_TW2
Sample Matrix			Water	Water
Eurofins Sample No.			S20-My00614	S20-My00615
Date Sampled			Apr 28, 2020	Apr 28, 2020
Test/Reference	LOR	Unit		
Heavy Metals				
Aluminium	0.05	mg/L	< 0.05	< 0.05
Arsenic	0.001	mg/L	< 0.001	< 0.001
Barium	0.02	mg/L	0.04	0.03
Beryllium	0.001	mg/L	< 0.001	< 0.001
Cadmium	0.0002	mg/L	< 0.0002	< 0.0002
Chromium	0.001	mg/L	< 0.001	< 0.001
Cobalt	0.001	mg/L	< 0.001	< 0.001
Copper	0.001	mg/L	< 0.001	0.004
Iron	0.05	mg/L	< 0.05	< 0.05
Lead	0.001	mg/L	< 0.001	< 0.001
Manganese	0.005	mg/L	< 0.005	< 0.005
Mercury	0.0001	mg/L	< 0.0001	< 0.0001
Nickel	0.001	mg/L	< 0.001	< 0.001
Zinc	0.005	mg/L	< 0.005	0.008

Sample History

Where samples are submitted/analysed over several days, the last date of extraction and analysis is reported.

A recent review of our LIMS has resulted in the correction or clarification of some method identifications. Due to this, some of the method reference information on reports has changed. However, no substantive change has been made to our laboratory methods, and as such there is no change in the validity of current or previous results.

If the date and time of sampling are not provided, the Laboratory will not be responsible for compromised results should testing be performed outside the recommended holding time.

Description

Heavy Metals

Testing Site

Sydney

Extracted

May 05, 2020

Holding Time

180 Days

- Method: LTM-MET-3040 Metals in Waters, Soils & Sediments by ICP-MS

Australia

Melbourne
6 Monterey Road
Dandenong South VIC 3175
Phone : +61 3 8564 5000
NATA # 1261
Site # 1254 & 14271

Sydney
Unit F3, Building F
16 Mars Road
Lane Cove West NSW 2066
Phone : +61 2 9900 8400
NATA # 1261 Site # 18217

Brisbane
1/21 Smallwood Place
Murarie QLD 4172
Phone : +61 7 3902 4600
NATA # 1261 Site # 20794

Perth
2/91 Leach Highway
Kewdale WA 6105
Phone : +61 8 9251 9600
NATA # 1261
Site # 23736

New Zealand

Auckland
35 O'Rorke Road
Penrose, Auckland 1061
Phone : +64 9 526 45 51
IANZ # 1327

Christchurch
43 Detroit Drive
Rolleston, Christchurch 7675
Phone : 0800 856 450
IANZ # 1290

Company Name: Ramboll Australia Pty Ltd
Address: Level 3/100 Pacific Highway
North Sydney
NSW 2060

Order No.:
Report #: 716878
Phone: 02 9954 8118
Fax: 02 9954 8150

Received: May 1, 2020 12:00 PM
Due: May 8, 2020
Priority: 5 Day
Contact Name: Stephen Maxwell

Project Name: P36
Project ID: 318000780

Eurofins Analytical Services Manager : Andrew Black

Sample Detail						Aluminium	Arsenic	Barium	Beryllium	Cadmium	Chromium	Cobalt	Copper	Iron	Lead	Manganese	Mercury	Nickel	Zinc	Moisture Set	
Melbourne Laboratory - NATA Site # 1254 & 14271																					
Sydney Laboratory - NATA Site # 18217						X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X
Brisbane Laboratory - NATA Site # 20794																					
Perth Laboratory - NATA Site # 23736																					
External Laboratory																					
No	Sample ID	Sample Date	Sampling Time	Matrix	LAB ID																
1	P36_HA01_0.0-0.05	Apr 28, 2020		Soil	S20-My00604										X					X	
2	P36_HA01_0.2	Apr 28, 2020		Soil	S20-My00605										X					X	
3	P36_HA02_0.0-0.05	Apr 28, 2020		Soil	S20-My00606										X					X	
4	P36_HA02_0.2	Apr 28, 2020		Soil	S20-My00607										X					X	
5	P36_HA03_0.0-0.05	Apr 28, 2020		Soil	S20-My00608										X					X	
6	P36_HA03_0.2	Apr 28, 2020		Soil	S20-My00609										X					X	

Australia

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Phone : +61 8 9251 9600
NATA # 1261
Site # 23736

New Zealand

Auckland
35 O'Rorke Road
Penrose, Auckland 1061
Phone : +64 9 526 45 51
IANZ # 1327

Christchurch
43 Detroit Drive
Rolleston, Christchurch 7675
Phone : 0800 856 450
IANZ # 1290

ABN – 50 005 085 521

web : www.eurofins.com.au

e.mail : EnviroSales@eurofins.com

Company Name: Ramboll Australia Pty Ltd
Address: Level 3/100 Pacific Highway
North Sydney
NSW 2060

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Melbourne Laboratory - NATA Site # 1254 & 14271																					
Sydney Laboratory - NATA Site # 18217						X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X
Brisbane Laboratory - NATA Site # 20794																					
Perth Laboratory - NATA Site # 23736																					
7	P36_HA04_0-0.05	Apr 28, 2020		Soil	S20-My00610										X					X	
8	P36_HA04_0.2	Apr 28, 2020		Soil	S20-My00611										X					X	
9	P36_HA05_0-0.05	Apr 28, 2020		Soil	S20-My00612										X					X	
10	P36_HA05_0.2	Apr 28, 2020		Soil	S20-My00613										X					X	
11	P36_TW1	Apr 28, 2020		Water	S20-My00614	X	X	X	X	X	X	X	X	X	X	X	X	X	X		
12	P36_TW2	Apr 28, 2020		Water	S20-My00615	X	X	X	X	X	X	X	X	X	X	X	X	X	X		
Test Counts						2	2	2	2	2	2	2	2	2	12	2	2	2	2	10	

Internal Quality Control Review and Glossary
General

- Laboratory QC results for Method Blanks, Duplicates, Matrix Spikes, and Laboratory Control Samples follows guidelines delineated in the National Environment Protection (Assessment of Site Contamination) Measure 1999, as amended May 2013 and are included in this QC report where applicable. Additional QC data may be available on request.
- All soil/sediment/solid results are reported on a dry basis, unless otherwise stated.
- All biota/food results are reported on a wet weight basis on the edible portion, unless otherwise stated.
- Actual LORs are matrix dependant. Quoted LORs may be raised where sample extracts are diluted due to interferences.
- Results are uncorrected for matrix spikes or surrogate recoveries except for PFAS compounds.
- SVOC analysis on waters are performed on homogenised, unfiltered samples, unless noted otherwise.
- Samples were analysed on an 'as received' basis.
- Information identified on this report with blue colour, indicates data provided by customer, that may have an impact on the results.
- This report replaces any interim results previously issued.

Holding Times

Please refer to 'Sample Preservation and Container Guide' for holding times (QS3001).

For samples received on the last day of holding time, notification of testing requirements should have been received at least 6 hours prior to sample receipt deadlines as stated on the SRA.

If the Laboratory did not receive the information in the required timeframe, and regardless of any other integrity issues, suitably qualified results may still be reported.

Holding times apply from the date of sampling, therefore compliance to these may be outside the laboratory's control.

For VOCs containing vinyl chloride, styrene and 2-chloroethyl vinyl ether the holding time is 7 days however for all other VOCs such as BTEX or C6-10 TRH then the holding time is 14 days.

****NOTE:** pH duplicates are reported as a range NOT as RPD

Units

mg/kg: milligrams per kilogram

mg/L: milligrams per litre

ug/L: micrograms per litre

ppm: Parts per million

ppb: Parts per billion

%: Percentage

org/100mL: Organisms per 100 millilitres

NTU: Nephelometric Turbidity Units

MPN/100mL: Most Probable Number of organisms per 100 millilitres

Terms

Dry	Where a moisture has been determined on a solid sample the result is expressed on a dry basis.
LOR	Limit of Reporting.
SPIKE	Addition of the analyte to the sample and reported as percentage recovery.
RPD	Relative Percent Difference between two Duplicate pieces of analysis.
LCS	Laboratory Control Sample - reported as percent recovery.
CRM	Certified Reference Material - reported as percent recovery.
Method Blank	In the case of solid samples these are performed on laboratory certified clean sands and in the case of water samples these are performed on de-ionised water.
Surr - Surrogate	The addition of a like compound to the analyte target and reported as percentage recovery.
Duplicate	A second piece of analysis from the same sample and reported in the same units as the result to show comparison.
USEPA	United States Environmental Protection Agency
APHA	American Public Health Association
TCLP	Toxicity Characteristic Leaching Procedure
COC	Chain of Custody
SRA	Sample Receipt Advice
QSM	US Department of Defense Quality Systems Manual Version 5.3
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TEQ	Toxic Equivalency Quotient

QC - Acceptance Criteria

RPD Duplicates: Global RPD Duplicates Acceptance Criteria is 30% however the following acceptance guidelines are equally applicable:

Results <10 times the LOR : No Limit

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Results >20 times the LOR : RPD must lie between 0-30%

Surrogate Recoveries: Recoveries must lie between 20-130% Phenols & 50-150% PFASs

PFAS field samples that contain surrogate recoveries in excess of the QC limit designated in QSM 5.3 where no positive PFAS results have been reported have been reviewed and no data was affected.

WA DWER (n=10): PFBA, PFPeA, PFHxA, PFHpA, PFOA, PFBS, PFHxS, PFOS, 6:2 FTSA, 8:2 FTSA

QC Data General Comments

- Where a result is reported as a less than (<), higher than the nominated LOR, this is due to either matrix interference, extract dilution required due to interferences or contaminant levels within the sample, high moisture content or insufficient sample provided.
- Duplicate data shown within this report that states the word "BATCH" is a Batch Duplicate from outside of your sample batch, but within the laboratory sample batch at a 1:10 ratio. The Parent and Duplicate data shown is not data from your samples.
- Organochlorine Pesticide analysis - where reporting LCS data, Toxaphene & Chlordane are not added to the LCS.
- Organochlorine Pesticide analysis - where reporting Spike data, Toxaphene is not added to the Spike.
- Total Recoverable Hydrocarbons - where reporting Spike & LCS data, a single spike of commercial Hydrocarbon products in the range of C12-C30 is added and it's Total Recovery is reported in the C10-C14 cell of the Report.
- pH and Free Chlorine analysed in the laboratory - Analysis on this test must begin within 30 minutes of sampling. Therefore laboratory analysis is unlikely to be completed within holding time. Analysis will begin as soon as possible after sample receipt.
- Recovery Data (Spikes & Surrogates) - where chromatographic interference does not allow the determination of Recovery the term "INT" appears against that analyte.
- Polychlorinated Biphenyls are spiked only using Aroclor 1260 in Matrix Spikes and LCS.
- For Matrix Spikes and LCS results a dash " - " in the report means that the specific analyte was not added to the QC sample.
- Duplicate RPDs are calculated from raw analytical data thus it is possible to have two sets of data.

Quality Control Results

Test			Units	Result 1		Acceptance Limits	Pass Limits	Qualifying Code
Method Blank								
Heavy Metals								
Aluminium			mg/L	< 0.05		0.05	Pass	
Arsenic			mg/L	< 0.001		0.001	Pass	
Barium			mg/L	< 0.02		0.02	Pass	
Beryllium			mg/L	< 0.001		0.001	Pass	
Cadmium			mg/L	< 0.0002		0.0002	Pass	
Chromium			mg/L	< 0.001		0.001	Pass	
Cobalt			mg/L	< 0.001		0.001	Pass	
Copper			mg/L	< 0.001		0.001	Pass	
Iron			mg/L	< 0.05		0.05	Pass	
Lead			mg/L	< 0.001		0.001	Pass	
Manganese			mg/L	< 0.005		0.005	Pass	
Mercury			mg/L	< 0.0001		0.0001	Pass	
Nickel			mg/L	< 0.001		0.001	Pass	
Zinc			mg/L	< 0.005		0.005	Pass	
LCS - % Recovery								
Heavy Metals								
Aluminium			%	92		70-130	Pass	
Arsenic			%	110		70-130	Pass	
Barium			%	108		70-130	Pass	
Beryllium			%	106		70-130	Pass	
Cadmium			%	112		70-130	Pass	
Chromium			%	88		70-130	Pass	
Cobalt			%	91		70-130	Pass	
Copper			%	86		70-130	Pass	
Iron			%	95		70-130	Pass	
Lead			%	106		70-130	Pass	
Manganese			%	90		70-130	Pass	
Mercury			%	107		70-130	Pass	
Nickel			%	87		70-130	Pass	
Zinc			%	86		70-130	Pass	
Test	Lab Sample ID	QA Source	Units	Result 1		Acceptance Limits	Pass Limits	Qualifying Code
Spike - % Recovery								
Heavy Metals				Result 1				
Aluminium	S20-My01814	NCP	%	79		70-130	Pass	
Arsenic	S20-My01814	NCP	%	94		70-130	Pass	
Barium	S20-My01814	NCP	%	93		70-130	Pass	
Beryllium	S20-My01814	NCP	%	86		70-130	Pass	
Cadmium	S20-My01814	NCP	%	92		70-130	Pass	
Chromium	S20-My01814	NCP	%	77		70-130	Pass	
Cobalt	S20-My01814	NCP	%	78		70-130	Pass	
Copper	S20-My01814	NCP	%	77		70-130	Pass	
Iron	S20-My01814	NCP	%	83		70-130	Pass	
Lead	S20-My01814	NCP	%	91		70-130	Pass	
Manganese	S20-My01814	NCP	%	78		70-130	Pass	
Mercury	S20-My01814	NCP	%	88		70-130	Pass	
Nickel	S20-My01814	NCP	%	77		70-130	Pass	
Zinc	S20-My01814	NCP	%	75		70-130	Pass	

Test	Lab Sample ID	QA Source	Units	Result 1			Acceptance Limits	Pass Limits	Qualifying Code
Duplicate									
Heavy Metals				Result 1	Result 2	RPD			
Aluminium	S20-My00614	CP	mg/L	< 0.05	< 0.05	<1	30%	Pass	
Arsenic	S20-My00614	CP	mg/L	< 0.001	< 0.001	<1	30%	Pass	
Barium	S20-My00614	CP	mg/L	0.04	0.03	6.0	30%	Pass	
Beryllium	S20-My00614	CP	mg/L	< 0.001	< 0.001	<1	30%	Pass	
Cadmium	S20-My00614	CP	mg/L	< 0.0002	< 0.0002	<1	30%	Pass	
Chromium	S20-My00614	CP	mg/L	< 0.001	< 0.001	<1	30%	Pass	
Cobalt	S20-My00614	CP	mg/L	< 0.001	< 0.001	<1	30%	Pass	
Copper	S20-My00614	CP	mg/L	< 0.001	< 0.001	<1	30%	Pass	
Iron	S20-My00614	CP	mg/L	< 0.05	< 0.05	<1	30%	Pass	
Lead	S20-My00614	CP	mg/L	< 0.001	< 0.001	<1	30%	Pass	
Manganese	S20-My00614	CP	mg/L	< 0.005	< 0.005	<1	30%	Pass	
Mercury	S20-My00614	CP	mg/L	< 0.0001	< 0.0001	<1	30%	Pass	
Nickel	S20-My00614	CP	mg/L	< 0.001	< 0.001	<1	30%	Pass	
Zinc	S20-My00614	CP	mg/L	< 0.005	0.006	36	30%	Fail	

Comments**Sample Integrity**

Custody Seals Intact (if used)	N/A
Attempt to Chill was evident	Yes
Sample correctly preserved	Yes
Appropriate sample containers have been used	Yes
Sample containers for volatile analysis received with minimal headspace	Yes
Samples received within HoldingTime	Yes
Some samples have been subcontracted	No

Authorised By

Andrew Black Analytical Services Manager
Gabriele Cordero Senior Analyst-Metal (NSW)

**Glenn Jackson
General Manager**

Final report - this Report replaces any previously issued Report

- Indicates Not Requested

* Indicates NATA accreditation does not cover the performance of this service

Measurement uncertainty of test data is available on request or please [click here](#).

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CHAIN OF CUSTODY RECORD

ABN 50 005 85 521

Pydney Laboratory
Unit F3 Bld F, 16 Mars Rd, Lane Cove West, NSW 2086
02 9300 8400 EnviroSampleNSW@eurofins.com

Brisbane Laboratory
Unit 1, 21 Smaikwood Pl, Murarie, QLD 4172
07 3902 4800 EnviroSampleQLD@eurofins.com

Perth Laboratory
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08 9251 9800 EnviroSampleWA@eurofins.com

Melbourne Laboratory
2 Kingsford Town Close, Oakleigh, VIC 3166
03 8564 5000 EnviroSampleVIC@eurofins.com

Company	Ramboll	Project No	31800780	Project Manager	Stephen Maxwell	Sampler(s)	JB, T.J, JK
Address	50 Glebe Road the Junction	Project Name	P40	Excel and PDF	Excel and PDF	Handed over by	Jordyn Kirsch
Contact Name	Stephen Maxwell					Email for Invoice	smaxwell@ramboll.com
Phone No	0478 658 194					Email for Results	asia@acc@ramboll.com smaxwell@ramboll.com jblackwell@ramboll.com
Special Directions		Analyses	(Note: Where metals are requested, please specify "Total" or "Filterable") SUITE code must be used to attract SUITE pricing. M13 (Al, As, Ba, Be, Cd, Cr, Co, Cu, Fe, Pb, Mn, Hg, Ni, Zn) Excluding hexavalent chromium				
Purchase Order		Quote ID No	180813RAMN_1				
Method of Shipment	<input type="checkbox"/> Courier (#) <input type="checkbox"/> Hand Delivered <input type="checkbox"/> Postal	Name		Signature		Date	1/1/
Received By		Signature				Date	1/1/
Received By		Signature				Date	1/1/

- Containers**
- Overnight (9am)*
 - 1 Day*
 - 2 Day*
 - 3 Day*
 - 5 Day
 - Other (Surcharges apply)
- Turnaround Time (TAT)**
- Requirements (Quorum will be 5 days (fast-track))
- 1L Plastic
250mL Plastic
125mL Plastic
200mL Amber Glass
40mL VOA vial
500mL PFAS Bottle
Jar (Glass or HDPE)
Other (Asbestos AS4964, WA Guidelines)

No	Client Sample ID	Sampled Date/Time (dd/mm/yy (hh:mm))	Matrix (Solid (s) Water (W))								
1	P40_HA01_0-0.05	30/04/20	S	X							
2	P40_HA01_0.2	30/04/20	S	X							
3	P40_HA02_0-0.05	30/04/20	S	X							
4	P40_HA03_0-0.05	30/04/20	S	X							
5	P40_HA03_0.2	30/04/20	S	X							
6	P40_HA04_0-0.05	30/04/20	S	X							
7	P40_HA05_0-0.05	30/04/20	S	X							
8	P40_HA05_0.2	30/04/20	S	X							
9	P40_HA06_0-0.05	30/04/20	S	X							
10	P40_HA07_0-0.05	30/04/20	S	X							
Total Counts				10	X						10

Method of Shipment	<input type="checkbox"/> Courier (#) <input type="checkbox"/> Hand Delivered <input type="checkbox"/> Postal	Name		Signature		Date	1/1/	Time	
Received By		Signature				Date	1/1/	Time	12:00 PM
Received By		Signature				Date	1/1/	Time	
Received By		Signature				Date	1/1/	Time	
Temperature		Report No				Date	1/1/	Time	14:03:16
Temperature		Report No				Date	1/1/	Time	16:03:16

Submission of samples to the laboratory will be deemed as acceptance of Eurofins | mgf Standard Terms and Conditions unless agreed otherwise. A copy of Eurofins | mgf Standard Terms and Conditions is available on request.
Eurofins Environment Testing Australia Pty Ltd trading as Eurofins | mgf
AS3500:2017 Modified by DR Simpson Approved by [Signature] 17 August 2017



CHAIN OF CUSTODY RECORD

AS/NZS 9006:2015

Sydney Laboratory
Unit 13 Bld F, 16 Mars Rd, Lane Cove West, NSW 2066
02 9900 8400 EnviroSamplesNSW@eurofins.com

Brisbane Laboratory
Unit 1, 21 Smallwood Pl, Murarie, QLD 4172
07 3902 4600 EnviroSampleQLD@eurofins.com

Perth Laboratory
Unit 2, 91 Leach Highway, Kewdale WA 6105
08 9251 9900 EnviroSamplesWA@eurofins.com

Melbourne Laboratory
2 Kingsford Farm Close, Oakleigh, VIC 3166
03 8864 5000 EnviroSamplesVIC@eurofins.com

Company	Ramboll	Project No	318000780	Project Manager	Stephen Maxwell	Sampler(s)	JJB, T1, JK
Address	50 Glebe Road the Junction	Project Name	P40	EDD Format (Estat, EQUIS, Custom)	Excel and PDF	Handed over by	Jordyn Kirsch
Contact Name	Stephen Maxwell	Email for Invoice: smaxwell@ramboll.com Email for Results: asiapac-accounts@ramboll.com smaxwell@ramboll.com jblackwell@ramboll.com					
Phone No	0478 658 194	Containers: 1L Plastic, 250mL Plastic, 125mL Plastic, 200mL Amber Glass, 40mL VOA vial, 500mL PFAS Bottle, Jar (Glass or HDPE), Other (Asbestos AS4954, WA Guidelines)					
Special Directions		Turnaround Time (TAT) Requirements (Order will be 5 days in total - incl)					
Purchase Order		<input type="checkbox"/> Overnight (9am)* <input type="checkbox"/> 1 Day* <input type="checkbox"/> 2 Day* <input type="checkbox"/> 3 Day* <input checked="" type="checkbox"/> 5 Day* <input type="checkbox"/> Other () *Surcharges apply					
Quote ID No	180813RAMM_1	Sample Comments / Dangerous Goods Hazard Warning ()					

No	Client Sample ID	Sampled Date/Time (dd/mm/yy hh:mm)	Matrix (Solid (S) Water (W))	Analyses	Method of Shipment	Received By	Signature	Date	Time	Temperature	Report No
1	P40_HA07_-0.2	30/04/20	S	M13 (Al, As, Ba, Be, Cd, Cr, Co, Cu, Fe, Pb, Mn, Hg, Ni, Zn) Excluding hexavalent chromium	<input type="checkbox"/> Courier # <input checked="" type="checkbox"/> Hand Delivered	<i>Lucas D.</i>	<i>[Signature]</i>	01.08.20	12.00 PM	16.03 C	A16865
2	P40_HA08_-0.0-0.05	30/04/20	S								
3	P40_HA09_0.0-0.05	30/04/20	S								
4	P40_HA09_0.2	30/04/20	S								
5	P40_HA10_-0.0-0.05	30/04/20	S								
6											
7											
8											
9											
10											
Total Counts					5						

Method of Shipment	<input type="checkbox"/> Courier # <input checked="" type="checkbox"/> Hand Delivered	<input type="checkbox"/> Postal	Name	Signature	Date	Time	Temperature	Report No
Eurofins Ingt Laboratory Use Only	Received By	Received By	Signature	Signature	Date	Time	Temperature	Report No
SYD BNE MEL PER ADL NTL DRW		SYD BNE MEL PER ADL NTL DRW		Date		Time		Report No

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Eurofins Environment, Testing Australia Pty Ltd trading as Eurofins | Ingt

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NATA # 1261 Site # 20794

Perth

2/91 Leach Highway
Kewdale WA 6105
Phone : +61 8 9251 9600
NATA # 1261 Site # 23736

Sample Receipt Advice

Company name: **Ramboll Australia Pty Ltd**
Contact name: Stephen Maxwell
Project name: P40
Project ID: 318000780
COC number: Not provided
Turn around time: 5 Day
Date/Time received: May 1, 2020 12:00 PM
Eurofins reference: **716865**

Sample information

- A detailed list of analytes logged into our LIMS, is included in the attached summary table.
- All samples have been received as described on the above COC.
- COC has been completed correctly.
- Attempt to chill was evident.
- Appropriately preserved sample containers have been used.
- All samples were received in good condition.
- Samples have been provided with adequate time to commence analysis in accordance with the relevant holding times.
- Appropriate sample containers have been used.
- Split sample sent to requested external lab.
- Some samples have been subcontracted.
- N/A Custody Seals intact (if used).

Contact notes

If you have any questions with respect to these samples please contact:

Andrew Black on Phone : (+61) 2 9900 8490 or by e.mail: AndrewBlack@eurofins.com

Results will be delivered electronically via e.mail to Stephen Maxwell - smaxwell@ramboll.com.

Note: A copy of these results will also be delivered to the general Ramboll Australia Pty Ltd email address.

Ramboll Environ Australia Pty Ltd
 Level 3/100 Pacific Highway
 North Sydney
 NSW 2060



NATA Accredited
 Accreditation Number 1261
 Site Number 18217

Accredited for compliance with ISO/IEC 17025 – Testing
 The results of the tests, calibrations and/or
 measurements included in this document are traceable
 to Australian/national standards.

Attention: Stephen Maxwell

Report 716865-S
 Project name P40
 Project ID 318000780
 Received Date May 01, 2020

Client Sample ID			P40_HA01_0.0-0.05	P40_HA01_0.2	P40_HA02_0.0-0.05	P40_HA03_0.0-0.05
Sample Matrix			Soil	Soil	Soil	Soil
Eurofins Sample No.			S20-My00560	S20-My00561	S20-My00562	S20-My00563
Date Sampled			Apr 30, 2020	Apr 30, 2020	Apr 30, 2020	Apr 30, 2020
Test/Reference	LOR	Unit				
Heavy Metals						
Aluminium	10	mg/kg	5300	5400	3400	4000
Arsenic	2	mg/kg	5.5	3.3	3.2	3.6
Barium	10	mg/kg	85	94	42	160
Beryllium	2	mg/kg	< 2	< 2	< 2	< 2
Cadmium	0.4	mg/kg	4.4	< 0.4	< 0.4	1.0
Chromium	5	mg/kg	9.0	9.5	10	11
Cobalt	5	mg/kg	< 5	< 5	< 5	< 5
Copper	5	mg/kg	120	17	17	40
Iron	20	mg/kg	7600	7300	8600	16000
Lead	5	mg/kg	260	28	67	220
Manganese	5	mg/kg	290	430	92	360
Mercury	0.1	mg/kg	< 0.1	< 0.1	< 0.1	0.1
Nickel	5	mg/kg	5.3	< 5	< 5	< 5
Zinc	5	mg/kg	460	100	97	400
% Moisture	1	%	16	13	20	24

Client Sample ID			P40_HA03_0.2	P40_HA04_0.0-0.05	P40_HA05_0.0-0.05	P40_HA05_0.2
Sample Matrix			Soil	Soil	Soil	Soil
Eurofins Sample No.			S20-My00564	S20-My00565	S20-My00566	S20-My00567
Date Sampled			Apr 30, 2020	Apr 30, 2020	Apr 30, 2020	Apr 30, 2020
Test/Reference	LOR	Unit				
Heavy Metals						
Aluminium	10	mg/kg	4300	2700	8700	7200
Arsenic	2	mg/kg	4.2	3.6	7.7	4.7
Barium	10	mg/kg	230	41	150	120
Beryllium	2	mg/kg	< 2	< 2	< 2	< 2
Cadmium	0.4	mg/kg	< 0.4	0.7	9.0	1.6
Chromium	5	mg/kg	23	8.1	12	11
Cobalt	5	mg/kg	< 5	< 5	< 5	< 5
Copper	5	mg/kg	83	26	300	40
Iron	20	mg/kg	9900	7700	12000	9800
Lead	5	mg/kg	200	83	650	66

Client Sample ID			P40_HA03_0.2	P40_HA04_0.0-0.05	P40_HA05_0.0-0.05	P40_HA05_0.2
Sample Matrix			Soil	Soil	Soil	Soil
Eurofins Sample No.			S20-My00564	S20-My00565	S20-My00566	S20-My00567
Date Sampled			Apr 30, 2020	Apr 30, 2020	Apr 30, 2020	Apr 30, 2020
Test/Reference	LOR	Unit				
Heavy Metals						
Manganese	5	mg/kg	430	81	470	560
Mercury	0.1	mg/kg	0.3	< 0.1	< 0.1	< 0.1
Nickel	5	mg/kg	41	< 5	7.7	< 5
Zinc	5	mg/kg	370	150	870	340
% Moisture						
	1	%	9.9	19	30	14

Client Sample ID			P40_HA06_0.0-0.05	P40_HA07_0.0-0.05	P40_HA07_0.2	P40_HA08_0.0-0.05
Sample Matrix			Soil	Soil	Soil	Soil
Eurofins Sample No.			S20-My00568	S20-My00569	S20-My00570	S20-My00571
Date Sampled			Apr 30, 2020	Apr 30, 2020	Apr 30, 2020	Apr 30, 2020
Test/Reference	LOR	Unit				
Heavy Metals						
Aluminium	10	mg/kg	5900	7300	7200	5500
Arsenic	2	mg/kg	6.9	8.2	5.7	4.4
Barium	10	mg/kg	72	98	91	66
Beryllium	2	mg/kg	< 2	< 2	< 2	< 2
Cadmium	0.4	mg/kg	3.1	4.8	1.8	0.6
Chromium	5	mg/kg	11	11	13	12
Cobalt	5	mg/kg	< 5	< 5	6.6	< 5
Copper	5	mg/kg	110	130	26	24
Iron	20	mg/kg	10000	11000	16000	11000
Lead	5	mg/kg	190	270	31	91
Manganese	5	mg/kg	250	340	660	200
Mercury	0.1	mg/kg	< 0.1	< 0.1	< 0.1	< 0.1
Nickel	5	mg/kg	6.4	5.9	6.0	5.3
Zinc	5	mg/kg	360	480	210	170
% Moisture						
	1	%	7.9	30	10	22

Client Sample ID			P40_HA09_0.0-0.05	P40_HA09_0.2	P40_HA10_0.0-0.05
Sample Matrix			Soil	Soil	Soil
Eurofins Sample No.			S20-My00572	S20-My00573	S20-My00574
Date Sampled			Apr 30, 2020	Apr 30, 2020	Apr 30, 2020
Test/Reference	LOR	Unit			
Heavy Metals					
Aluminium	10	mg/kg	9200	9500	8000
Arsenic	2	mg/kg	10	5.3	8.6
Barium	10	mg/kg	100	230	110
Beryllium	2	mg/kg	< 2	< 2	< 2
Cadmium	0.4	mg/kg	6.1	0.7	4.7
Chromium	5	mg/kg	11	11	10
Cobalt	5	mg/kg	< 5	8.1	< 5
Copper	5	mg/kg	330	23	220
Iron	20	mg/kg	11000	12000	11000

Client Sample ID			P40_HA09_0.0-0.05	P40_HA09_0.2	P40_HA10_0.0-0.05
Sample Matrix			Soil	Soil	Soil
Eurofins Sample No.			S20-My00572	S20-My00573	S20-My00574
Date Sampled			Apr 30, 2020	Apr 30, 2020	Apr 30, 2020
Test/Reference	LOR	Unit			
Heavy Metals					
Lead	5	mg/kg	540	68	450
Manganese	5	mg/kg	280	2100	300
Mercury	0.1	mg/kg	< 0.1	< 0.1	< 0.1
Nickel	5	mg/kg	9.0	5.8	7.4
Zinc	5	mg/kg	680	290	3000
% Moisture					
% Moisture	1	%	26	19	32

Sample History

Where samples are submitted/analysed over several days, the last date of extraction and analysis is reported.

A recent review of our LIMS has resulted in the correction or clarification of some method identifications. Due to this, some of the method reference information on reports has changed. However, no substantive change has been made to our laboratory methods, and as such there is no change in the validity of current or previous results.

If the date and time of sampling are not provided, the Laboratory will not be responsible for compromised results should testing be performed outside the recommended holding time.

Description

Heavy Metals

- Method: LTM-MET-3040 Metals in Waters, Soils & Sediments by ICP-MS

% Moisture

- Method: LTM-GEN-7080 Moisture

Testing Site

Sydney

Sydney

Extracted

May 06, 2020

May 01, 2020

Holding Time

180 Days

14 Days

Australia

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6 Monterey Road
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Site # 23736

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IANZ # 1327

Christchurch
43 Detroit Drive
Rolleston, Christchurch 7675
Phone : 0800 856 450
IANZ # 1290

Company Name: Ramboll Australia Pty Ltd
Address: Level 3/100 Pacific Highway
North Sydney
NSW 2060

Order No.:
Report #: 716865
Phone: 02 9954 8118
Fax: 02 9954 8150

Received: May 1, 2020 12:00 PM
Due: May 8, 2020
Priority: 5 Day
Contact Name: Stephen Maxwell

Project Name: P40
Project ID: 318000780

Eurofins Analytical Services Manager : Andrew Black

Sample Detail						Aluminium	Arsenic	Barium	Beryllium	Cadmium	Chromium	Cobalt	Copper	Iron	Lead	Manganese	Mercury	Nickel	Zinc	Moisture Set	
Melbourne Laboratory - NATA Site # 1254 & 14271																					
Sydney Laboratory - NATA Site # 18217						X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X
Brisbane Laboratory - NATA Site # 20794																					
Perth Laboratory - NATA Site # 23736																					
External Laboratory																					
No	Sample ID	Sample Date	Sampling Time	Matrix	LAB ID																
1	P40_HA01_0.0-0.05	Apr 30, 2020		Soil	S20-My00560	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	
2	P40_HA01_0.2	Apr 30, 2020		Soil	S20-My00561	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	
3	P40_HA02_0.0-0.05	Apr 30, 2020		Soil	S20-My00562	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	
4	P40_HA03_0.0-0.05	Apr 30, 2020		Soil	S20-My00563	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	
5	P40_HA03_0.2	Apr 30, 2020		Soil	S20-My00564	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	
6	P40_HA04_0.0-0.05	Apr 30, 2020		Soil	S20-My00565	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	

Australia

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NATA # 1261 Site # 20794

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Phone: 02 9954 8118
Fax: 02 9954 8150

Received: May 1, 2020 12:00 PM
Due: May 8, 2020
Priority: 5 Day
Contact Name: Stephen Maxwell

Project Name: P40
Project ID: 318000780

Eurofins Analytical Services Manager : Andrew Black

Sample Detail						Aluminium	Arsenic	Barium	Beryllium	Cadmium	Chromium	Cobalt	Copper	Iron	Lead	Manganese	Mercury	Nickel	Zinc	Moisture Set	
Melbourne Laboratory - NATA Site # 1254 & 14271																					
Sydney Laboratory - NATA Site # 18217						X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X
Brisbane Laboratory - NATA Site # 20794																					
Perth Laboratory - NATA Site # 23736																					
7	P40_HA05_0.0-0.05	Apr 30, 2020		Soil	S20-My00566	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	
8	P40_HA05_0.2	Apr 30, 2020		Soil	S20-My00567	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	
9	P40_HA06_0.0-0.05	Apr 30, 2020		Soil	S20-My00568	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	
10	P40_HA07_0.0-0.05	Apr 30, 2020		Soil	S20-My00569	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	
11	P40_HA07_0.2	Apr 30, 2020		Soil	S20-My00570	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	
12	P40_HA08_0.0-0.05	Apr 30, 2020		Soil	S20-My00571	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	
13	P40_HA09_0.0-0.05	Apr 30, 2020		Soil	S20-My00572	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	
14	P40_HA09_0.	Apr 30, 2020		Soil	S20-My00573	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	

Australia

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Phone : 0800 856 450
IANZ # 1290

ABN – 50 005 085 521

web : www.eurofins.com.au

e.mail : EnviroSales@eurofins.com

Company Name: Ramboll Australia Pty Ltd
Address: Level 3/100 Pacific Highway
North Sydney
NSW 2060

Order No.:
Report #: 716865
Phone: 02 9954 8118
Fax: 02 9954 8150

Received: May 1, 2020 12:00 PM
Due: May 8, 2020
Priority: 5 Day
Contact Name: Stephen Maxwell

Project Name: P40
Project ID: 318000780

Eurofins Analytical Services Manager : Andrew Black

Sample Detail						Aluminium	Arsenic	Barium	Beryllium	Cadmium	Chromium	Cobalt	Copper	Iron	Lead	Manganese	Mercury	Nickel	Zinc	Moisture Set	
Melbourne Laboratory - NATA Site # 1254 & 14271																					
Sydney Laboratory - NATA Site # 18217						X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X
Brisbane Laboratory - NATA Site # 20794																					
Perth Laboratory - NATA Site # 23736																					
	2																				
15	P40_HA10_0.0-0.05	Apr 30, 2020		Soil	S20-My00574	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	
Test Counts						15	15	15	15	15	15	15	15	15	15	15	15	15	15	15	15

Internal Quality Control Review and Glossary
General

- Laboratory QC results for Method Blanks, Duplicates, Matrix Spikes, and Laboratory Control Samples follows guidelines delineated in the National Environment Protection (Assessment of Site Contamination) Measure 1999, as amended May 2013 and are included in this QC report where applicable. Additional QC data may be available on request.
- All soil/sediment/solid results are reported on a dry basis, unless otherwise stated.
- All biota/food results are reported on a wet weight basis on the edible portion, unless otherwise stated.
- Actual LORs are matrix dependant. Quoted LORs may be raised where sample extracts are diluted due to interferences.
- Results are uncorrected for matrix spikes or surrogate recoveries except for PFAS compounds.
- SVOC analysis on waters are performed on homogenised, unfiltered samples, unless noted otherwise.
- Samples were analysed on an 'as received' basis.
- Information identified on this report with blue colour, indicates data provided by customer, that may have an impact on the results.
- This report replaces any interim results previously issued.

Holding Times

Please refer to 'Sample Preservation and Container Guide' for holding times (QS3001).

For samples received on the last day of holding time, notification of testing requirements should have been received at least 6 hours prior to sample receipt deadlines as stated on the SRA.

If the Laboratory did not receive the information in the required timeframe, and regardless of any other integrity issues, suitably qualified results may still be reported.

Holding times apply from the date of sampling, therefore compliance to these may be outside the laboratory's control.

For VOCs containing vinyl chloride, styrene and 2-chloroethyl vinyl ether the holding time is 7 days however for all other VOCs such as BTEX or C6-10 TRH then the holding time is 14 days.

****NOTE:** pH duplicates are reported as a range NOT as RPD

Units

mg/kg: milligrams per kilogram

mg/L: milligrams per litre

ug/L: micrograms per litre

ppm: Parts per million

ppb: Parts per billion

%: Percentage

org/100mL: Organisms per 100 millilitres

NTU: Nephelometric Turbidity Units

MPN/100mL: Most Probable Number of organisms per 100 millilitres

Terms

Dry	Where a moisture has been determined on a solid sample the result is expressed on a dry basis.
LOR	Limit of Reporting.
SPIKE	Addition of the analyte to the sample and reported as percentage recovery.
RPD	Relative Percent Difference between two Duplicate pieces of analysis.
LCS	Laboratory Control Sample - reported as percent recovery.
CRM	Certified Reference Material - reported as percent recovery.
Method Blank	In the case of solid samples these are performed on laboratory certified clean sands and in the case of water samples these are performed on de-ionised water.
Surr - Surrogate	The addition of a like compound to the analyte target and reported as percentage recovery.
Duplicate	A second piece of analysis from the same sample and reported in the same units as the result to show comparison.
USEPA	United States Environmental Protection Agency
APHA	American Public Health Association
TCLP	Toxicity Characteristic Leaching Procedure
COC	Chain of Custody
SRA	Sample Receipt Advice
QSM	US Department of Defense Quality Systems Manual Version 5.3
CP	Client Parent - QC was performed on samples pertaining to this report
NCP	Non-Client Parent - QC performed on samples not pertaining to this report, QC is representative of the sequence or batch that client samples were analysed within.
TEQ	Toxic Equivalency Quotient

QC - Acceptance Criteria

RPD Duplicates: Global RPD Duplicates Acceptance Criteria is 30% however the following acceptance guidelines are equally applicable:

Results <10 times the LOR : No Limit

Results between 10-20 times the LOR : RPD must lie between 0-50%

Results >20 times the LOR : RPD must lie between 0-30%

Surrogate Recoveries: Recoveries must lie between 20-130% Phenols & 50-150% PFASs

PFAS field samples that contain surrogate recoveries in excess of the QC limit designated in QSM 5.3 where no positive PFAS results have been reported have been reviewed and no data was affected.

WA DWER (n=10): PFBA, PFPeA, PFHxA, PFHpA, PFOA, PFBS, PFHxS, PFOS, 6:2 FTSA, 8:2 FTSA

QC Data General Comments

- Where a result is reported as a less than (<), higher than the nominated LOR, this is due to either matrix interference, extract dilution required due to interferences or contaminant levels within the sample, high moisture content or insufficient sample provided.
- Duplicate data shown within this report that states the word "BATCH" is a Batch Duplicate from outside of your sample batch, but within the laboratory sample batch at a 1:10 ratio. The Parent and Duplicate data shown is not data from your samples.
- Organochlorine Pesticide analysis - where reporting LCS data, Toxaphene & Chlordane are not added to the LCS.
- Organochlorine Pesticide analysis - where reporting Spike data, Toxaphene is not added to the Spike.
- Total Recoverable Hydrocarbons - where reporting Spike & LCS data, a single spike of commercial Hydrocarbon products in the range of C12-C30 is added and it's Total Recovery is reported in the C10-C14 cell of the Report.
- pH and Free Chlorine analysed in the laboratory - Analysis on this test must begin within 30 minutes of sampling. Therefore laboratory analysis is unlikely to be completed within holding time. Analysis will begin as soon as possible after sample receipt.
- Recovery Data (Spikes & Surrogates) - where chromatographic interference does not allow the determination of Recovery the term "INT" appears against that analyte.
- Polychlorinated Biphenyls are spiked only using Aroclor 1260 in Matrix Spikes and LCS.
- For Matrix Spikes and LCS results a dash " - " in the report means that the specific analyte was not added to the QC sample.
- Duplicate RPDs are calculated from raw analytical data thus it is possible to have two sets of data.

Quality Control Results

Test		Units	Result 1		Acceptance Limits	Pass Limits	Qualifying Code	
Method Blank								
Heavy Metals								
Aluminium		mg/kg	< 10		10	Pass		
Arsenic		mg/kg	< 2		2	Pass		
Barium		mg/kg	< 10		10	Pass		
Beryllium		mg/kg	< 2		2	Pass		
Cadmium		mg/kg	< 0.4		0.4	Pass		
Chromium		mg/kg	< 5		5	Pass		
Cobalt		mg/kg	< 5		5	Pass		
Copper		mg/kg	< 5		5	Pass		
Iron		mg/kg	< 20		20	Pass		
Lead		mg/kg	< 5		5	Pass		
Manganese		mg/kg	< 5		5	Pass		
Mercury		mg/kg	< 0.1		0.1	Pass		
Nickel		mg/kg	< 5		5	Pass		
Zinc		mg/kg	< 5		5	Pass		
LCS - % Recovery								
Heavy Metals								
Aluminium		%	99		70-130	Pass		
Arsenic		%	104		70-130	Pass		
Barium		%	98		70-130	Pass		
Beryllium		%	118		70-130	Pass		
Cadmium		%	104		70-130	Pass		
Chromium		%	102		70-130	Pass		
Cobalt		%	102		70-130	Pass		
Copper		%	102		70-130	Pass		
Iron		%	105		70-130	Pass		
Lead		%	100		70-130	Pass		
Manganese		%	102		70-130	Pass		
Mercury		%	118		70-130	Pass		
Nickel		%	104		70-130	Pass		
Zinc		%	99		70-130	Pass		
Test	Lab Sample ID	QA Source	Units	Result 1		Acceptance Limits	Pass Limits	Qualifying Code
Spike - % Recovery								
Heavy Metals				Result 1				
Iron	S20-My05865	NCP	%	111		70-130	Pass	
Spike - % Recovery								
Heavy Metals				Result 1				
Aluminium	S20-My00562	CP	%	110		70-130	Pass	
Arsenic	S20-My00562	CP	%	88		70-130	Pass	
Barium	S20-My00562	CP	%	81		70-130	Pass	
Beryllium	S20-My00562	CP	%	84		70-130	Pass	
Cadmium	S20-My00562	CP	%	89		70-130	Pass	
Chromium	S20-My00562	CP	%	88		70-130	Pass	
Cobalt	S20-My00562	CP	%	87		70-130	Pass	
Copper	S20-My00562	CP	%	86		70-130	Pass	
Lead	S20-My00562	CP	%	81		70-130	Pass	
Manganese	S20-My00562	CP	%	112		70-130	Pass	
Mercury	S20-My00562	CP	%	101		70-130	Pass	
Nickel	S20-My00562	CP	%	88		70-130	Pass	
Zinc	S20-My00562	CP	%	90		70-130	Pass	

Test	Lab Sample ID	QA Source	Units	Result 1	Result 2	RPD	Acceptance Limits	Pass Limits	Qualifying Code
Duplicate									
Heavy Metals				Result 1	Result 2	RPD			
Aluminium	S20-My00561	CP	mg/kg	5400	5600	4.0	30%	Pass	
Arsenic	S20-My00561	CP	mg/kg	3.3	3.7	13	30%	Pass	
Barium	S20-My00561	CP	mg/kg	94	100	8.0	30%	Pass	
Beryllium	S20-My00561	CP	mg/kg	< 2	< 2	<1	30%	Pass	
Cadmium	S20-My00561	CP	mg/kg	< 0.4	< 0.4	<1	30%	Pass	
Chromium	S20-My00561	CP	mg/kg	9.5	9.9	3.0	30%	Pass	
Cobalt	S20-My00561	CP	mg/kg	< 5	< 5	<1	30%	Pass	
Copper	S20-My00561	CP	mg/kg	17	18	2.0	30%	Pass	
Iron	S20-My00561	CP	mg/kg	7300	8100	10	30%	Pass	
Lead	S20-My00561	CP	mg/kg	28	33	17	30%	Pass	
Manganese	S20-My00561	CP	mg/kg	430	590	31	30%	Fail	Q02
Mercury	S20-My00561	CP	mg/kg	< 0.1	< 0.1	<1	30%	Pass	
Nickel	S20-My00561	CP	mg/kg	< 5	< 5	<1	30%	Pass	
Zinc	S20-My00561	CP	mg/kg	100	110	2.0	30%	Pass	
Duplicate									
				Result 1	Result 2	RPD			
% Moisture	S20-My00562	CP	%	20	18	11	30%	Pass	
Duplicate									
Heavy Metals				Result 1	Result 2	RPD			
Aluminium	S20-My00571	CP	mg/kg	5500	5900	8.0	30%	Pass	
Arsenic	S20-My00571	CP	mg/kg	4.4	5.6	24	30%	Pass	
Barium	S20-My00571	CP	mg/kg	66	71	7.0	30%	Pass	
Beryllium	S20-My00571	CP	mg/kg	< 2	< 2	<1	30%	Pass	
Cadmium	S20-My00571	CP	mg/kg	0.6	0.6	1.0	30%	Pass	
Chromium	S20-My00571	CP	mg/kg	12	14	14	30%	Pass	
Cobalt	S20-My00571	CP	mg/kg	< 5	< 5	<1	30%	Pass	
Copper	S20-My00571	CP	mg/kg	24	26	6.0	30%	Pass	
Iron	S20-My00571	CP	mg/kg	11000	15000	34	30%	Fail	Q02
Lead	S20-My00571	CP	mg/kg	91	91	<1	30%	Pass	
Manganese	S20-My00571	CP	mg/kg	200	240	16	30%	Pass	
Mercury	S20-My00571	CP	mg/kg	< 0.1	< 0.1	<1	30%	Pass	
Nickel	S20-My00571	CP	mg/kg	5.3	6.0	13	30%	Pass	
Zinc	S20-My00571	CP	mg/kg	170	170	5.0	30%	Pass	

Comments
Sample Integrity

Custody Seals Intact (if used)	N/A
Attempt to Chill was evident	No
Sample correctly preserved	Yes
Appropriate sample containers have been used	Yes
Sample containers for volatile analysis received with minimal headspace	Yes
Samples received within HoldingTime	Yes
Some samples have been subcontracted	No

Qualifier Codes/Comments

Code	Description
Q02	The duplicate %RPD is outside the recommended acceptance criteria. Further analysis indicates sample heterogeneity as the cause

Authorised By

Andrew Black	Analytical Services Manager
Gabriele Cordero	Senior Analyst-Metal (NSW)


**Glenn Jackson
General Manager**

Final report - this Report replaces any previously issued Report

- Indicates Not Requested

* Indicates NATA accreditation does not cover the performance of this service

Measurement uncertainty of test data is available on request or please [click here](#).

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CHAIN OF CUSTODY RECORD

ABN 53 005 955 521

Brisbane Laboratory
Unit F3 Bld F, 16 Mars Rd, Lane Cove West, NSW 2066
02 8900 8400 EnviroSamplesNSW@eurofins.com

Brisbane Laboratory
Unit 1, 27 Smallwood Pl, Murarie, QLD 4172
07 3902 4800 EnviroSampleQLD@eurofins.com

Perth Laboratory
Unit 2, 91 Leach Highway, Kewdale, WA 6105
08 9251 9900 EnviroSampleWA@eurofins.com

Melbourne Laboratory
2 Kingston Town Close, Oakleigh, VIC 3165
03 8564 5000 EnviroSampleVIC@eurofins.com

Company	Ramboll	Project No	31800780	Project Manager	Stephen Maxwell	Sampler(s)	J.B, T.J, JK
Address	50 Glebe Road the Junction	Project Name	P37	EDD Format (ESdai, EQUIS, Custom)	Excel and PDF	Handed over by	Jordyn Kirsch
Contact Name	Stephen Maxwell	Analyses	Total Lead (mg/kg) Total Sample Mass Total Lead (µg/L) M13 (Al, As, Ba, Be, Cd, Cr, Co, Cu, Fe, Pb, Mn, Hg, Ni, Zn) Total (excluding hexavalent chromium)				
Phone No	0478 658 194	Special Directions					
Purchase Order		Quote ID No	180813RAMN_1	Containers <input type="checkbox"/> Overnight (9am)* <input type="checkbox"/> 1 Day* <input type="checkbox"/> 2 Day* <input type="checkbox"/> 3 Day* <input checked="" type="checkbox"/> 5 Day* <input type="checkbox"/> Other () * Such charges apply			
Method of Shipment	<input type="checkbox"/> Courier #) <input type="checkbox"/> Hand Delivered	Client Sample ID		Sampled Date/Time (dd/mm/yy hh:mm)	Matrix (Solid (S) Water (W))	Turnaround Time (TAT)	

No	Client Sample ID	Sampled Date/Time (dd/mm/yy hh:mm)	Matrix (Solid (S) Water (W))	Total Lead (mg/kg)	Total Sample Mass	Total Lead (µg/L)	M13 (Al, As, Ba, Be, Cd, Cr, Co, Cu, Fe, Pb, Mn, Hg, Ni, Zn) Total (excluding hexavalent chromium)
1	DVAC_LRP37	29/04/20	S	X	X		
2	DVAC_MBRP37	29/04/20	S	X	X		
3	DSWAB_SEF37	29/04/20	S			X	
4	DSWAB_BE(P37)	29/04/20	S			X	
5	DSWAB_FE(P37)	29/04/20	S			X	
6	DSWAB_MH(P37)	29/04/20	S			X	
7	P37_TW1	29/04/20	W			X	
8	P37_TW2	29/04/20	W			X	
9	P37_TWS2	29/04/20	S			X	
10	P37_HA01_0-0.05	29/04/20	S	X			
Total Counts				3	2	4	3

Method of Shipment	<input type="checkbox"/> Courier #) <input type="checkbox"/> Hand Delivered	<input type="checkbox"/> Postal	Name	Signature
Eurofins mgf	Received By	SVD BNE MEL PER ADL NTL DRW	Signature	Date
Laboratory Use Only	Received By	SVD BNE MEL PER ADL NTL DRW	Signature	Date
			Date	Time
			Temperature	Report No

Submission of samples to the laboratory will be deemed as acceptance of Eurofins | mgf Standard Terms and Conditions unless agreed otherwise. A copy of Eurofins | mgf Standard Terms and Conditions is available on request.

Eurofins Environment Testing Australia Pty Ltd trading as Eurofins | mgf

1-08-20
270209



CHAIN OF CUSTODY RECORD

ASB 29 095 096 521

Sydney Laboratory
 Unit F3 Bld F, 16 Mars Rd, Lane Cove West, NSW 2066
 02 9900 9400 EnviroSampleNSW@eurofins.com

Brisbane Laboratory
 Unit 1, 21 Smallwood Pl, Muramba, QLD 4172
 07 3802 4800 EnviroSampleQLD@eurofins.com

Perth Laboratory
 Unit 2, 91 Leach Highway, Kewdale WA 6105
 08 9251 9800 EnviroSampleWA@eurofins.com

Melbourne Laboratory
 2 Kingston Tron Cres, Oakleigh, VIC 3166
 03 8564 5000 EnviroSampleVic@eurofins.com

Company: Ramboll
 Project No: 318000780
 Address: 50 Glebe Road the Junction
 Project Name: P37
 Contact Name: Stephen Maxwell
 EDD Format (Estat, EQUIS, Custom):
 Phone No: 0478 658 194
 Stephen Maxwell
 Excel and PDF

Analyses
 (Note: Where matrix are requested, please specify "Total" or "Filtered") SUITE code must be used to attract SUITE pricing.
 Total Lead (mg/kg)
 Total Sample Mass
 Total Lead (µg/L)
 M13 (Al, As, Ba, Be, Cd, Cr, Co, Cu, Fe, Pb, Mn, Hg, Ni, Zn)
 Total (excluding hexavalent chromium)

No	Client Sample ID	Sampled Date/Time (dd/mm/yy hh:mm)	Matrix (Solid S/Water (W))	Signature	Date	Time	Temperature	Report No
1	P37_HA01_0.2	29/04/20	S	X				
2	P37_HA02_0-0.05	29/04/20	S	X				
3	P37_HA02_0.2	29/04/20	S	X				
4	P37_HA03_0-0.05	29/04/20	S	X				
5	P37_HA03_0.2	29/04/20	S	X				
6	P37_HA04_0-0.05	29/04/20	S	X				
7	P37_HA04_0.2	29/04/20	S	X				
8	P37_HA05_0-0.05	29/04/20	S	X				
9	P37_HA05_0.2	29/04/20	S	X				
10	Total Counts			9				

Method of Shipment: Courier #) Hand Delivered Postal
 Name: _____ Signature: _____
 Received By: _____ Signature: _____
 Received By: _____ Signature: _____
 Date: 29/04/20 Time: 14:03
 Date: 29/04/20 Time: 14:03
 Signature: _____
 Date: 29/04/20 Time: 14:03
 Signature: _____

Submission of samples to the laboratory will be deemed as acceptance of Eurofins | mgf Standard Terms and Conditions unless agreed otherwise. A copy of Eurofins | mgf Standard Terms and Conditions is available on request.

Eurofins Environment Testing Australia Pty Ltd trading as Eurofins | mgf

Handled over by: Jordyn Kirsch
 Email for Invoice: smaxwell@ramboll.com
 Email for Results: simaxwell@ramboll.com, iblackwell@ramboll.com
 Containers: 1L Plastic, 250mL Plastic, 125mL Plastic, 200mL Amber Glass, 40mL VOA vial, 500mL PFAS Bottle, Jar (Glass or HDPE), Other (Asbestos AS4364, WA Guidelines)
 Turnaround Time (TAT): Overnight (9am)*, 1 Day*, 2 Day*, 3 Day*, 5 Day*, Other (Surcharges apply)
 Requirements (subject will be 5 days if not listed)

Sampler(s): JIB, TJ, JK
 Signature: _____
 Date: 29/04/20
 Time: 14:03

Date: 29/04/20 Time: 14:03
 Signature: _____
 Date: 29/04/20 Time: 14:03
 Signature: _____

Melbourne

6 Monterey Road
Dandenong South Vic 3175
Phone : +61 3 8564 5000
NATA # 1261
Site # 1254 & 14271

Sydney

Unit F3, Building F
16 Mars Road
Lane Cove West NSW 2066
Phone : +61 2 9900 8400
NATA # 1261 Site # 18217

Brisbane

1/21 Smallwood Place
Murarrie QLD 4172
Phone : +61 7 3902 4600
NATA # 1261 Site # 20794

Perth

2/91 Leach Highway
Kewdale WA 6105
Phone : +61 8 9251 9600
NATA # 1261 Site # 23736

Sample Receipt Advice

Company name: **Ramboll Australia Pty Ltd**
Contact name: Stephen Maxwell
Project name: P37
Project ID: 318000780
COC number: Not provided
Turn around time: 5 Day
Date/Time received: May 1, 2020 12:00 PM
Eurofins reference: **717029**

Sample information

- A detailed list of analytes logged into our LIMS, is included in the attached summary table.
- All samples have been received as described on the above COC.
- COC has been completed correctly.
- Attempt to chill was evident.
- Appropriately preserved sample containers have been used.
- All samples were received in good condition.
- Samples have been provided with adequate time to commence analysis in accordance with the relevant holding times.
- Appropriate sample containers have been used.
- Sample containers for volatile analysis received with zero headspace.
- Split sample sent to requested external lab.
- Some samples have been subcontracted.
- N/A Custody Seals intact (if used).

Contact notes

If you have any questions with respect to these samples please contact:

Andrew Black on Phone : (+61) 2 9900 8490 or by e.mail: AndrewBlack@eurofins.com

Results will be delivered electronically via e.mail to Stephen Maxwell - smaxwell@ramboll.com.

Note: A copy of these results will also be delivered to the general Ramboll Australia Pty Ltd email address.

Australia

Melbourne
6 Monterey Road
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Phone : +61 3 8564 5000
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Site # 1254 & 14271

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NATA # 1261 Site # 20794

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NATA # 1261
Site # 23736

New Zealand

Auckland
35 O'Rorke Road
Penrose, Auckland 1061
Phone : +64 9 526 45 51
IANZ # 1327

Christchurch
43 Detroit Drive
Rolleston, Christchurch 7675
Phone : 0800 856 450
IANZ # 1290

Company Name: Ramboll Australia Pty Ltd
Address: Level 3/100 Pacific Highway
North Sydney
NSW 2060

Order No.:
Report #: 717029
Phone: 02 9954 8118
Fax: 02 9954 8150

Received: May 1, 2020 12:00 PM
Due: May 8, 2020
Priority: 5 Day
Contact Name: Stephen Maxwell

Project Name: P37
Project ID: 318000780

Eurofins Analytical Services Manager : Andrew Black

Sample Detail						Aluminium	Arsenic	Barium	Beryllium	Cadmium	Chromium	Cobalt	Copper	Iron	Lead	Manganese	Mass of sample*	Mercury	Nickel	Zinc	Moisture Set	
Melbourne Laboratory - NATA Site # 1254 & 14271																						
Sydney Laboratory - NATA Site # 18217						X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X
Brisbane Laboratory - NATA Site # 20794																						
Perth Laboratory - NATA Site # 23736																						
External Laboratory																						
No	Sample ID	Sample Date	Sampling Time	Matrix	LAB ID																	
1	DVAC_LR(P37)	Apr 29, 2020		Dust	S20-My01785										X	X						
2	DVAC_MBR(P37)	Apr 29, 2020		Dust	S20-My01786										X	X						
3	DSWAB_SE(P37)	Apr 29, 2020		Wipes	S20-My01787										X							
4	DSWAB_BE(P37)	Apr 29, 2020		Wipes	S20-My01788										X							
5	DSWAB_FE(P37)	Apr 29, 2020		Wipes	S20-My01789										X							
6	DSWAB_MH(P37)	Apr 29, 2020		Wipes	S20-My01790										X							

Australia

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NATA # 1261 Site # 18217

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Murarrie QLD 4172
Phone : +61 7 3902 4600
NATA # 1261 Site # 20794

Perth
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New Zealand

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35 O'Rorke Road
Penrose, Auckland 1061
Phone : +64 9 526 45 51
IANZ # 1327

Christchurch
43 Detroit Drive
Rolleston, Christchurch 7675
Phone : 0800 856 450
IANZ # 1290

Company Name: Ramboll Australia Pty Ltd
Address: Level 3/100 Pacific Highway
North Sydney
NSW 2060

Project Name: P37
Project ID: 318000780

Order No.:
Report #: 717029
Phone: 02 9954 8118
Fax: 02 9954 8150

Received: May 1, 2020 12:00 PM
Due: May 8, 2020
Priority: 5 Day
Contact Name: Stephen Maxwell

Eurofins Analytical Services Manager : Andrew Black

Sample Detail						Aluminium	Arsenic	Barium	Beryllium	Cadmium	Chromium	Cobalt	Copper	Iron	Lead	Manganese	Mass of sample*	Mercury	Nickel	Zinc	Moisture Set	
Melbourne Laboratory - NATA Site # 1254 & 14271																						
Sydney Laboratory - NATA Site # 18217						X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X
Brisbane Laboratory - NATA Site # 20794																						
Perth Laboratory - NATA Site # 23736																						
7	P37_TW1	Apr 29, 2020		Water	S20-My01791	X	X	X	X	X	X	X	X	X	X		X	X	X			
8	P37_TW2	Apr 29, 2020		Water	S20-My01792	X	X	X	X	X	X	X	X	X	X		X	X	X			
9	P37_TWS2	Apr 29, 2020		Water	S20-My01793	X	X	X	X	X	X	X	X	X	X		X	X	X			
10	P37_HA01_0-0.05	Apr 29, 2020		Soil	S20-My01794										X						X	
11	P37_HA01_0.2	Apr 29, 2020		Soil	S20-My01795										X						X	
12	P37_HA02_0-0.05	Apr 29, 2020		Soil	S20-My01796										X						X	
13	P37_HA02_0.2	Apr 29, 2020		Soil	S20-My01797										X						X	
14	P37_HA03_0-0.05	Apr 29, 2020		Soil	S20-My01798										X						X	
15	P37_HA03_0.2	Apr 29, 2020		Soil	S20-My01799										X						X	

Australia

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6 Monterey Road
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NATA # 1261
Site # 1254 & 14271

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NATA # 1261 Site # 18217

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1/21 Smallwood Place
Murarrie QLD 4172
Phone : +61 7 3902 4600
NATA # 1261 Site # 20794

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2/91 Leach Highway
Kewdale WA 6105
Phone : +61 8 9251 9600
NATA # 1261
Site # 23736

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35 O'Rorke Road
Penrose, Auckland 1061
Phone : +64 9 526 45 51
IANZ # 1327

Christchurch
43 Detroit Drive
Rolleston, Christchurch 7675
Phone : 0800 856 450
IANZ # 1290

ABN – 50 005 085 521

web : www.eurofins.com.au

e.mail : EnviroSales@eurofins.com

Company Name: Ramboll Australia Pty Ltd
Address: Level 3/100 Pacific Highway
North Sydney
NSW 2060

Order No.:
Report #: 717029
Phone: 02 9954 8118
Fax: 02 9954 8150

Received: May 1, 2020 12:00 PM
Due: May 8, 2020
Priority: 5 Day
Contact Name: Stephen Maxwell

Project Name: P37
Project ID: 318000780

Eurofins Analytical Services Manager : Andrew Black

Sample Detail						Aluminium	Arsenic	Barium	Beryllium	Cadmium	Chromium	Cobalt	Copper	Iron	Lead	Manganese	Mass of sample*	Mercury	Nickel	Zinc	Moisture Set	
Melbourne Laboratory - NATA Site # 1254 & 14271																						
Sydney Laboratory - NATA Site # 18217						X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X
Brisbane Laboratory - NATA Site # 20794																						
Perth Laboratory - NATA Site # 23736																						
16	P37_HA04_0-0.05	Apr 29, 2020		Soil	S20-My01800										X						X	
17	P37_HA04_0.2	Apr 29, 2020		Soil	S20-My01801										X						X	
18	P37_HA05_0-0.05	Apr 29, 2020		Soil	S20-My01802										X						X	
19	P37_HA05_0.2	Apr 29, 2020		Soil	S20-My01817										X						X	
Test Counts						3	3	3	3	3	3	3	3	3	19	3	2	3	3	3	10	

Ramboll Environ Australia Pty Ltd
Level 3/100 Pacific Highway
North Sydney
NSW 2060



NATA Accredited
Accreditation Number 1261
Site Number 18217

Accredited for compliance with ISO/IEC 17025 – Testing
 The results of the tests, calibrations and/or
 measurements included in this document are traceable
 to Australian/national standards.

Attention: **Stephen Maxwell**

Report **717029-A**
 Project name **P37**
 Project ID **318000780**
 Received Date **May 01, 2020**

Client Sample ID			DSWAB_SE(P37)	DSWAB_BE(P37)	DSWAB_FE(P37)	DSWAB_MH(P37)
Sample Matrix			Wipes	Wipes	Wipes	Wipes
Eurofins Sample No.			S20-My01787	S20-My01788	S20-My01789	S20-My01790
Date Sampled			Apr 29, 2020	Apr 29, 2020	Apr 29, 2020	Apr 29, 2020
Test/Reference	LOR	Unit				
Heavy Metals						
Lead	1	Total ug	3.7	3.4	26	13

Sample History

Where samples are submitted/analysed over several days, the last date of extraction and analysis is reported.

A recent review of our LIMS has resulted in the correction or clarification of some method identifications. Due to this, some of the method reference information on reports has changed. However, no substantive change has been made to our laboratory methods, and as such there is no change in the validity of current or previous results.

If the date and time of sampling are not provided, the Laboratory will not be responsible for compromised results should testing be performed outside the recommended holding time.

Description

Heavy Metals

Testing Site

Sydney

Extracted

May 07, 2020

Holding Time

180 Days

- Method: LTM-MET-3040 Metals in Waters, Soils & Sediments by ICP-MS

Australia

Melbourne
6 Monterey Road
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Phone : +61 3 8564 5000
NATA # 1261
Site # 1254 & 14271

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Company Name: Ramboll Australia Pty Ltd
Address: Level 3/100 Pacific Highway
North Sydney
NSW 2060

Order No.:
Report #: 717029
Phone: 02 9954 8118
Fax: 02 9954 8150

Received: May 1, 2020 12:00 PM
Due: May 8, 2020
Priority: 5 Day
Contact Name: Stephen Maxwell

Project Name: P37
Project ID: 318000780

Eurofins Analytical Services Manager : Andrew Black

Sample Detail						Aluminium	Arsenic	Barium	Beryllium	Cadmium	Chromium	Cobalt	Copper	Iron	Lead	Manganese	Mass of sample*	Mercury	Nickel	Zinc	Moisture Set	
Melbourne Laboratory - NATA Site # 1254 & 14271																						
Sydney Laboratory - NATA Site # 18217						X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X
Brisbane Laboratory - NATA Site # 20794																						
Perth Laboratory - NATA Site # 23736																						
External Laboratory																						
No	Sample ID	Sample Date	Sampling Time	Matrix	LAB ID																	
1	DVAC_LR(P37)	Apr 29, 2020		Dust	S20-My01785										X	X						
2	DVAC_MBR(P37)	Apr 29, 2020		Dust	S20-My01786										X	X						
3	DSWAB_SE(P37)	Apr 29, 2020		Wipes	S20-My01787										X							
4	DSWAB_BE(P37)	Apr 29, 2020		Wipes	S20-My01788										X							
5	DSWAB_FE(P37)	Apr 29, 2020		Wipes	S20-My01789										X							
6	DSWAB_MH(P37)	Apr 29, 2020		Wipes	S20-My01790										X							

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7	P37_TW1	Apr 29, 2020		Water	S20-My01791	X	X	X	X	X	X	X	X	X	X		X	X	X			
8	P37_TW2	Apr 29, 2020		Water	S20-My01792	X	X	X	X	X	X	X	X	X	X		X	X	X			
9	P37_TWS2	Apr 29, 2020		Water	S20-My01793	X	X	X	X	X	X	X	X	X	X		X	X	X			
10	P37_HA01_0-0.05	Apr 29, 2020		Soil	S20-My01794										X						X	
11	P37_HA01_0.2	Apr 29, 2020		Soil	S20-My01795										X						X	
12	P37_HA02_0-0.05	Apr 29, 2020		Soil	S20-My01796										X						X	
13	P37_HA02_0.2	Apr 29, 2020		Soil	S20-My01797										X						X	
14	P37_HA03_0-0.05	Apr 29, 2020		Soil	S20-My01798										X						X	
15	P37_HA03_0.2	Apr 29, 2020		Soil	S20-My01799										X						X	

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Sydney Laboratory - NATA Site # 18217						X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X
Brisbane Laboratory - NATA Site # 20794																						
Perth Laboratory - NATA Site # 23736																						
16	P37_HA04_0-0.05	Apr 29, 2020		Soil	S20-My01800										X						X	
17	P37_HA04_0.2	Apr 29, 2020		Soil	S20-My01801										X						X	
18	P37_HA05_0-0.05	Apr 29, 2020		Soil	S20-My01802										X						X	
19	P37_HA05_0.2	Apr 29, 2020		Soil	S20-My01817										X						X	
Test Counts						3	3	3	3	3	3	3	3	3	19	3	2	3	3	3	10	

Internal Quality Control Review and Glossary

General

- Laboratory QC results for Method Blanks, Duplicates, Matrix Spikes, and Laboratory Control Samples follows guidelines delineated in the National Environment Protection (Assessment of Site Contamination) Measure 1999, as amended May 2013 and are included in this QC report where applicable. Additional QC data may be available on request.
- All soil/sediment/solid results are reported on a dry basis, unless otherwise stated.
- All biota/food results are reported on a wet weight basis on the edible portion, unless otherwise stated.
- Actual LORs are matrix dependant. Quoted LORs may be raised where sample extracts are diluted due to interferences.
- Results are uncorrected for matrix spikes or surrogate recoveries except for PFAS compounds.
- SVOC analysis on waters are performed on homogenised, unfiltered samples, unless noted otherwise.
- Samples were analysed on an 'as received' basis.
- Information identified on this report with blue colour, indicates data provided by customer, that may have an impact on the results.
- This report replaces any interim results previously issued.

Holding Times

Please refer to 'Sample Preservation and Container Guide' for holding times (QS3001).

For samples received on the last day of holding time, notification of testing requirements should have been received at least 6 hours prior to sample receipt deadlines as stated on the SRA.

If the Laboratory did not receive the information in the required timeframe, and regardless of any other integrity issues, suitably qualified results may still be reported.

Holding times apply from the date of sampling, therefore compliance to these may be outside the laboratory's control.

For VOCs containing vinyl chloride, styrene and 2-chloroethyl vinyl ether the holding time is 7 days however for all other VOCs such as BTEX or C6-10 TRH then the holding time is 14 days.

****NOTE:** pH duplicates are reported as a range NOT as RPD

Units

mg/kg: milligrams per kilogram

mg/L: milligrams per litre

ug/L: micrograms per litre

ppm: Parts per million

ppb: Parts per billion

%: Percentage

org/100mL: Organisms per 100 millilitres

NTU: Nephelometric Turbidity Units

MPN/100mL: Most Probable Number of organisms per 100 millilitres

Terms

Dry	Where a moisture has been determined on a solid sample the result is expressed on a dry basis.
LOR	Limit of Reporting.
SPIKE	Addition of the analyte to the sample and reported as percentage recovery.
RPD	Relative Percent Difference between two Duplicate pieces of analysis.
LCS	Laboratory Control Sample - reported as percent recovery.
CRM	Certified Reference Material - reported as percent recovery.
Method Blank	In the case of solid samples these are performed on laboratory certified clean sands and in the case of water samples these are performed on de-ionised water.
Surr - Surrogate	The addition of a like compound to the analyte target and reported as percentage recovery.
Duplicate	A second piece of analysis from the same sample and reported in the same units as the result to show comparison.
USEPA	United States Environmental Protection Agency
APHA	American Public Health Association
TCLP	Toxicity Characteristic Leaching Procedure
COC	Chain of Custody
SRA	Sample Receipt Advice
QSM	US Department of Defense Quality Systems Manual Version 5.3
CP	Client Parent - QC was performed on samples pertaining to this report
NCP	Non-Client Parent - QC performed on samples not pertaining to this report, QC is representative of the sequence or batch that client samples were analysed within.
TEQ	Toxic Equivalency Quotient

QC - Acceptance Criteria

RPD Duplicates: Global RPD Duplicates Acceptance Criteria is 30% however the following acceptance guidelines are equally applicable:

Results <10 times the LOR : No Limit

Results between 10-20 times the LOR : RPD must lie between 0-50%

Results >20 times the LOR : RPD must lie between 0-30%

Surrogate Recoveries: Recoveries must lie between 20-130% Phenols & 50-150% PFASs

PFAS field samples that contain surrogate recoveries in excess of the QC limit designated in QSM 5.3 where no positive PFAS results have been reported have been reviewed and no data was affected.

WA DWER (n=10): PFBA, PFPeA, PFHxA, PFHpA, PFOA, PFBS, PFHxS, PFOS, 6:2 FTSA, 8:2 FTSA

QC Data General Comments

- Where a result is reported as a less than (<), higher than the nominated LOR, this is due to either matrix interference, extract dilution required due to interferences or contaminant levels within the sample, high moisture content or insufficient sample provided.
- Duplicate data shown within this report that states the word "BATCH" is a Batch Duplicate from outside of your sample batch, but within the laboratory sample batch at a 1:10 ratio. The Parent and Duplicate data shown is not data from your samples.
- Organochlorine Pesticide analysis - where reporting LCS data, Toxaphene & Chlordane are not added to the LCS.
- Organochlorine Pesticide analysis - where reporting Spike data, Toxaphene is not added to the Spike.
- Total Recoverable Hydrocarbons - where reporting Spike & LCS data, a single spike of commercial Hydrocarbon products in the range of C12-C30 is added and it's Total Recovery is reported in the C10-C14 cell of the Report.
- pH and Free Chlorine analysed in the laboratory - Analysis on this test must begin within 30 minutes of sampling. Therefore laboratory analysis is unlikely to be completed within holding time. Analysis will begin as soon as possible after sample receipt.
- Recovery Data (Spikes & Surrogates) - where chromatographic interference does not allow the determination of Recovery the term "INT" appears against that analyte.
- Polychlorinated Biphenyls are spiked only using Aroclor 1260 in Matrix Spikes and LCS.
- For Matrix Spikes and LCS results a dash " - " in the report means that the specific analyte was not added to the QC sample.
- Duplicate RPDs are calculated from raw analytical data thus it is possible to have two sets of data.

Quality Control Results

Comments**Sample Integrity**

Custody Seals Intact (if used)	N/A
Attempt to Chill was evident	No
Sample correctly preserved	Yes
Appropriate sample containers have been used	Yes
Sample containers for volatile analysis received with minimal headspace	Yes
Samples received within HoldingTime	Yes
Some samples have been subcontracted	No

Authorised By

Andrew Black Analytical Services Manager
Gabriele Cordero Senior Analyst-Metal (NSW)

**Glenn Jackson
General Manager**

Final report - this Report replaces any previously issued Report

- Indicates Not Requested

* Indicates NATA accreditation does not cover the performance of this service

Measurement uncertainty of test data is available on request or please [click here](#).

Eurofins shall not be liable for loss, cost, damages or expenses incurred by the client, or any other person or company, resulting from the use of any information or interpretation given in this report. In no case shall Eurofins be liable for consequential damages including, but not limited to, lost profits, damages for failure to meet deadlines and lost production arising from this report. This document shall not be reproduced except in full and relates only to the items tested. Unless indicated otherwise, the tests were performed on the samples as received.

Ramboll Environ Australia Pty Ltd
 Level 3/100 Pacific Highway
 North Sydney
 NSW 2060



NATA Accredited
 Accreditation Number 1261
 Site Number 18217

Accredited for compliance with ISO/IEC 17025 – Testing
 The results of the tests, calibrations and/or
 measurements included in this document are traceable
 to Australian/national standards.

Attention: Stephen Maxwell

Report 717029-S
 Project name P37
 Project ID 318000780
 Received Date May 01, 2020

Client Sample ID			DVAC_LR(P37)	DVAC_MBR(P37)	P37_TWS2	P37_HA01_0-0.05
Sample Matrix			Dust	Dust	Sediment	Soil
Eurofins Sample No.			S20-My01785	S20-My01786	S20-My01793	S20-My01794
Date Sampled			Apr 29, 2020	Apr 29, 2020	Apr 29, 2020	Apr 29, 2020
Test/Reference	LOR	Unit				
Heavy Metals						
Aluminium	10	mg/kg	-	-	14000	-
Arsenic	2	mg/kg	-	-	6.8	-
Barium	10	mg/kg	-	-	78	-
Beryllium	2	mg/kg	-	-	< 2	-
Cadmium	0.4	mg/kg	-	-	0.5	-
Chromium	5	mg/kg	-	-	26	-
Cobalt	5	mg/kg	-	-	11	-
Copper	5	mg/kg	-	-	54	-
Iron	20	mg/kg	-	-	22000	-
Lead	5	mg/kg	35	37	76	92
Manganese	5	mg/kg	-	-	700	-
Mercury	0.1	mg/kg	-	-	0.2	-
Nickel	5	mg/kg	-	-	11	-
Zinc	5	mg/kg	-	-	410	-
% Moisture	1	%	-	-	-	7.8

Client Sample ID			P37_HA01_0.2	P37_HA02_0-0.05	P37_HA02_0.2	P37_HA03_0-0.05
Sample Matrix			Soil	Soil	Soil	Soil
Eurofins Sample No.			S20-My01795	S20-My01796	S20-My01797	S20-My01798
Date Sampled			Apr 29, 2020	Apr 29, 2020	Apr 29, 2020	Apr 29, 2020
Test/Reference	LOR	Unit				
Heavy Metals						
Lead	5	mg/kg	44	52	54	41
% Moisture	1	%	4.5	5.7	6.6	9.8

Client Sample ID			P37_HA03_0.2	P37_HA04_0-0.05	P37_HA04_0.2	P37_HA05_0-0.05
Sample Matrix			Soil	Soil	Soil	Soil
Eurofins Sample No.			S20-My01799	S20-My01800	S20-My01801	S20-My01802
Date Sampled			Apr 29, 2020	Apr 29, 2020	Apr 29, 2020	Apr 29, 2020
Test/Reference	LOR	Unit				
Heavy Metals						
Lead	5	mg/kg	21	76	11	70
% Moisture						
% Moisture	1	%	8.6	5.3	5.8	8.3

Client Sample ID			P37_HA05_0.2
Sample Matrix			Soil
Eurofins Sample No.			S20-My01817
Date Sampled			Apr 29, 2020
Test/Reference	LOR	Unit	
Heavy Metals			
Lead	5	mg/kg	27
% Moisture			
% Moisture	1	%	8.9

Sample History

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Description

Heavy Metals

- Method: LTM-MET-3040 Metals in Waters, Soils & Sediments by ICP-MS

% Moisture

- Method: LTM-GEN-7080 Moisture

Testing Site

Sydney

Sydney

Extracted

May 07, 2020

May 01, 2020

Holding Time

180 Days

14 Days

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Eurofins Analytical Services Manager : Andrew Black

Sample Detail						Aluminium	Arsenic	Barium	Beryllium	Cadmium	Chromium	Cobalt	Copper	Iron	Lead	Manganese	Mass of sample*	Mercury	Nickel	Zinc	Moisture Set	
Melbourne Laboratory - NATA Site # 1254 & 14271																						
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17	P37_HA04_0.2	Apr 29, 2020		Soil	S20-My01801										X						X	
18	P37_HA05_0-0.05	Apr 29, 2020		Soil	S20-My01802										X						X	
19	P37_HA05_0.2	Apr 29, 2020		Soil	S20-My01817										X						X	
Test Counts						3	3	3	3	3	3	3	3	3	19	3	2	3	3	3	10	

Internal Quality Control Review and Glossary
General

- Laboratory QC results for Method Blanks, Duplicates, Matrix Spikes, and Laboratory Control Samples follows guidelines delineated in the National Environment Protection (Assessment of Site Contamination) Measure 1999, as amended May 2013 and are included in this QC report where applicable. Additional QC data may be available on request.
- All soil/sediment/solid results are reported on a dry basis, unless otherwise stated.
- All biota/food results are reported on a wet weight basis on the edible portion, unless otherwise stated.
- Actual LORs are matrix dependant. Quoted LORs may be raised where sample extracts are diluted due to interferences.
- Results are uncorrected for matrix spikes or surrogate recoveries except for PFAS compounds.
- SVOC analysis on waters are performed on homogenised, unfiltered samples, unless noted otherwise.
- Samples were analysed on an 'as received' basis.
- Information identified on this report with blue colour, indicates data provided by customer, that may have an impact on the results.
- This report replaces any interim results previously issued.

Holding Times

Please refer to 'Sample Preservation and Container Guide' for holding times (QS3001).

For samples received on the last day of holding time, notification of testing requirements should have been received at least 6 hours prior to sample receipt deadlines as stated on the SRA.

If the Laboratory did not receive the information in the required timeframe, and regardless of any other integrity issues, suitably qualified results may still be reported.

Holding times apply from the date of sampling, therefore compliance to these may be outside the laboratory's control.

For VOCs containing vinyl chloride, styrene and 2-chloroethyl vinyl ether the holding time is 7 days however for all other VOCs such as BTEX or C6-10 TRH then the holding time is 14 days.

****NOTE:** pH duplicates are reported as a range NOT as RPD

Units

mg/kg: milligrams per kilogram

mg/L: milligrams per litre

ug/L: micrograms per litre

ppm: Parts per million

ppb: Parts per billion

%: Percentage

org/100mL: Organisms per 100 millilitres

NTU: Nephelometric Turbidity Units

MPN/100mL: Most Probable Number of organisms per 100 millilitres

Terms

Dry	Where a moisture has been determined on a solid sample the result is expressed on a dry basis.
LOR	Limit of Reporting.
SPIKE	Addition of the analyte to the sample and reported as percentage recovery.
RPD	Relative Percent Difference between two Duplicate pieces of analysis.
LCS	Laboratory Control Sample - reported as percent recovery.
CRM	Certified Reference Material - reported as percent recovery.
Method Blank	In the case of solid samples these are performed on laboratory certified clean sands and in the case of water samples these are performed on de-ionised water.
Surr - Surrogate	The addition of a like compound to the analyte target and reported as percentage recovery.
Duplicate	A second piece of analysis from the same sample and reported in the same units as the result to show comparison.
USEPA	United States Environmental Protection Agency
APHA	American Public Health Association
TCLP	Toxicity Characteristic Leaching Procedure
COC	Chain of Custody
SRA	Sample Receipt Advice
QSM	US Department of Defense Quality Systems Manual Version 5.3
CP	Client Parent - QC was performed on samples pertaining to this report
NCP	Non-Client Parent - QC performed on samples not pertaining to this report, QC is representative of the sequence or batch that client samples were analysed within.
TEQ	Toxic Equivalency Quotient

QC - Acceptance Criteria

RPD Duplicates: Global RPD Duplicates Acceptance Criteria is 30% however the following acceptance guidelines are equally applicable:

Results <10 times the LOR : No Limit

Results between 10-20 times the LOR : RPD must lie between 0-50%

Results >20 times the LOR : RPD must lie between 0-30%

Surrogate Recoveries: Recoveries must lie between 20-130% Phenols & 50-150% PFASs

PFAS field samples that contain surrogate recoveries in excess of the QC limit designated in QSM 5.3 where no positive PFAS results have been reported have been reviewed and no data was affected.

WA DWER (n=10): PFBA, PFPeA, PFHxA, PFHpA, PFOA, PFBS, PFHxS, PFOS, 6:2 FTSA, 8:2 FTSA

QC Data General Comments

- Where a result is reported as a less than (<), higher than the nominated LOR, this is due to either matrix interference, extract dilution required due to interferences or contaminant levels within the sample, high moisture content or insufficient sample provided.
- Duplicate data shown within this report that states the word "BATCH" is a Batch Duplicate from outside of your sample batch, but within the laboratory sample batch at a 1:10 ratio. The Parent and Duplicate data shown is not data from your samples.
- Organochlorine Pesticide analysis - where reporting LCS data, Toxaphene & Chlordane are not added to the LCS.
- Organochlorine Pesticide analysis - where reporting Spike data, Toxaphene is not added to the Spike.
- Total Recoverable Hydrocarbons - where reporting Spike & LCS data, a single spike of commercial Hydrocarbon products in the range of C12-C30 is added and it's Total Recovery is reported in the C10-C14 cell of the Report.
- pH and Free Chlorine analysed in the laboratory - Analysis on this test must begin within 30 minutes of sampling. Therefore laboratory analysis is unlikely to be completed within holding time. Analysis will begin as soon as possible after sample receipt.
- Recovery Data (Spikes & Surrogates) - where chromatographic interference does not allow the determination of Recovery the term "INT" appears against that analyte.
- Polychlorinated Biphenyls are spiked only using Aroclor 1260 in Matrix Spikes and LCS.
- For Matrix Spikes and LCS results a dash " - " in the report means that the specific analyte was not added to the QC sample.
- Duplicate RPDs are calculated from raw analytical data thus it is possible to have two sets of data.

Quality Control Results

Test		Units	Result 1			Acceptance Limits	Pass Limits	Qualifying Code
Method Blank								
Heavy Metals								
Aluminium		mg/kg	< 10			10	Pass	
Arsenic		mg/kg	< 2			2	Pass	
Barium		mg/kg	< 10			10	Pass	
Beryllium		mg/kg	< 2			2	Pass	
Cadmium		mg/kg	< 0.4			0.4	Pass	
Chromium		mg/kg	< 5			5	Pass	
Cobalt		mg/kg	< 5			5	Pass	
Copper		mg/kg	< 5			5	Pass	
Iron		mg/kg	< 20			20	Pass	
Lead		mg/kg	< 5			5	Pass	
Manganese		mg/kg	< 5			5	Pass	
Mercury		mg/kg	< 0.1			0.1	Pass	
Nickel		mg/kg	< 5			5	Pass	
Zinc		mg/kg	< 5			5	Pass	
LCS - % Recovery								
Heavy Metals								
Aluminium		%	100			70-130	Pass	
Arsenic		%	97			70-130	Pass	
Barium		%	100			70-130	Pass	
Beryllium		%	94			70-130	Pass	
Cadmium		%	100			70-130	Pass	
Chromium		%	97			70-130	Pass	
Cobalt		%	99			70-130	Pass	
Copper		%	96			70-130	Pass	
Iron		%	94			70-130	Pass	
Lead		%	85			70-130	Pass	
Manganese		%	98			70-130	Pass	
Mercury		%	94			70-130	Pass	
Nickel		%	100			70-130	Pass	
Zinc		%	98			70-130	Pass	
Test	Lab Sample ID	QA Source	Units	Result 1		Acceptance Limits	Pass Limits	Qualifying Code
Spike - % Recovery								
Heavy Metals				Result 1				
Beryllium	S20-My08558	NCP	%	91		70-130	Pass	
Iron	S20-My08558	NCP	%	94		70-130	Pass	
Spike - % Recovery								
Heavy Metals				Result 1				
Aluminium	S20-My01797	CP	%	94		70-130	Pass	
Arsenic	S20-My01797	CP	%	86		70-130	Pass	
Barium	S20-My01797	CP	%	99		70-130	Pass	
Cadmium	S20-My01797	CP	%	91		70-130	Pass	
Chromium	S20-My01797	CP	%	94		70-130	Pass	
Cobalt	S20-My01797	CP	%	89		70-130	Pass	
Copper	S20-My01797	CP	%	96		70-130	Pass	
Lead	S20-My01797	CP	%	107		70-130	Pass	
Manganese	S20-My01797	CP	%	99		70-130	Pass	
Mercury	S20-My01797	CP	%	94		70-130	Pass	
Nickel	S20-My01797	CP	%	92		70-130	Pass	
Zinc	S20-My01797	CP	%	122		70-130	Pass	

Test	Lab Sample ID	QA Source	Units	Result 1			Acceptance Limits	Pass Limits	Qualifying Code
Duplicate									
Heavy Metals				Result 1	Result 2	RPD			
Aluminium	S20-My01796	CP	mg/kg	5700	8300	37	30%	Fail	Q02
Arsenic	S20-My01796	CP	mg/kg	3.0	5.7	62	30%	Fail	Q15
Barium	S20-My01796	CP	mg/kg	87	79	10	30%	Pass	
Beryllium	S20-My01796	CP	mg/kg	< 2	< 2	<1	30%	Pass	
Cadmium	S20-My01796	CP	mg/kg	< 0.4	< 0.4	<1	30%	Pass	
Chromium	S20-My01796	CP	mg/kg	13	18	34	30%	Fail	Q15
Cobalt	S20-My01796	CP	mg/kg	< 5	< 5	<1	30%	Pass	
Copper	S20-My01796	CP	mg/kg	13	16	24	30%	Pass	
Iron	S20-My01796	CP	mg/kg	8800	18000	69	30%	Fail	Q02
Lead	S20-My01796	CP	mg/kg	52	61	17	30%	Pass	
Manganese	S20-My01796	CP	mg/kg	500	530	6.0	30%	Pass	
Mercury	S20-My01796	CP	mg/kg	< 0.1	< 0.1	<1	30%	Pass	
Nickel	S20-My01796	CP	mg/kg	< 5	< 5	<1	30%	Pass	
Zinc	S20-My01796	CP	mg/kg	120	95	26	30%	Pass	
Duplicate									
				Result 1	Result 2	RPD			
% Moisture	S20-My01799	CP	%	8.6	8.0	7.0	30%	Pass	

Comments
Sample Integrity

Custody Seals Intact (if used)	N/A
Attempt to Chill was evident	No
Sample correctly preserved	Yes
Appropriate sample containers have been used	Yes
Sample containers for volatile analysis received with minimal headspace	Yes
Samples received within HoldingTime	Yes
Some samples have been subcontracted	No

Qualifier Codes/Comments

Code	Description
Q02	The duplicate %RPD is outside the recommended acceptance criteria. Further analysis indicates sample heterogeneity as the cause
Q15	The RPD reported passes Eurofins Environment Testing's QC - Acceptance Criteria as defined in the Internal Quality Control Review and Glossary page of this report.

Authorised By

Andrew Black	Analytical Services Manager
Gabriele Cordero	Senior Analyst-Metal (NSW)


**Glenn Jackson
General Manager**

Final report - this Report replaces any previously issued Report

- Indicates Not Requested

* Indicates NATA accreditation does not cover the performance of this service

Measurement uncertainty of test data is available on request or please [click here](#).

Eurofins shall not be liable for loss, cost, damages or expenses incurred by the client, or any other person or company, resulting from the use of any information or interpretation given in this report. In no case shall Eurofins be liable for consequential damages including, but not limited to, lost profits, damages for failure to meet deadlines and lost production arising from this report. This document shall not be reproduced except in full and relates only to the items tested. Unless indicated otherwise, the tests were performed on the samples as received.

Ramboll Environ Australia Pty Ltd
 Level 3/100 Pacific Highway
 North Sydney
 NSW 2060



NATA Accredited
Accreditation Number 1261
Site Number 18217

Accredited for compliance with ISO/IEC 17025 – Testing
 The results of the tests, calibrations and/or
 measurements included in this document are traceable
 to Australian/national standards.

Attention: **Stephen Maxwell**

Report **717029-W**
 Project name **P37**
 Project ID **318000780**
 Received Date **May 01, 2020**

Client Sample ID			P37_TW1	P37_TW2
Sample Matrix			Water	Water
Eurofins Sample No.			S20-My01791	S20-My01792
Date Sampled			Apr 29, 2020	Apr 29, 2020
Test/Reference	LOR	Unit		
Heavy Metals				
Aluminium	0.05	mg/L	< 0.05	< 0.05
Arsenic	0.001	mg/L	< 0.001	0.001
Barium	0.02	mg/L	< 0.02	< 0.02
Beryllium	0.001	mg/L	< 0.001	0.001
Cadmium	0.0002	mg/L	< 0.0002	< 0.0002
Chromium	0.001	mg/L	< 0.001	0.001
Cobalt	0.001	mg/L	< 0.001	< 0.001
Copper	0.001	mg/L	0.002	0.003
Iron	0.05	mg/L	< 0.05	< 0.05
Lead	0.001	mg/L	< 0.001	< 0.001
Manganese	0.005	mg/L	< 0.005	< 0.005
Mercury	0.0001	mg/L	< 0.0001	< 0.0001
Nickel	0.001	mg/L	< 0.001	< 0.001
Zinc	0.005	mg/L	0.039	0.046

Sample History

Where samples are submitted/analysed over several days, the last date of extraction and analysis is reported.

A recent review of our LIMS has resulted in the correction or clarification of some method identifications. Due to this, some of the method reference information on reports has changed. However, no substantive change has been made to our laboratory methods, and as such there is no change in the validity of current or previous results.

If the date and time of sampling are not provided, the Laboratory will not be responsible for compromised results should testing be performed outside the recommended holding time.

Description

Heavy Metals

Testing Site

Sydney

Extracted

May 05, 2020

Holding Time

180 Days

- Method: LTM-MET-3040 Metals in Waters, Soils & Sediments by ICP-MS

Australia

Melbourne
6 Monterey Road
Dandenong South VIC 3175
Phone : +61 3 8564 5000
NATA # 1261
Site # 1254 & 14271

Sydney
Unit F3, Building F
16 Mars Road
Lane Cove West NSW 2066
Phone : +61 2 9900 8400
NATA # 1261 Site # 18217

Brisbane
1/21 Smallwood Place
Murarie QLD 4172
Phone : +61 7 3902 4600
NATA # 1261 Site # 20794

Perth
2/91 Leach Highway
Kewdale WA 6105
Phone : +61 8 9251 9600
NATA # 1261
Site # 23736

New Zealand

Auckland
35 O'Rorke Road
Penrose, Auckland 1061
Phone : +64 9 526 45 51
IANZ # 1327

Christchurch
43 Detroit Drive
Rolleston, Christchurch 7675
Phone : 0800 856 450
IANZ # 1290

Company Name:	Ramboll Australia Pty Ltd	Order No.:		Received:	May 1, 2020 12:00 PM
Address:	Level 3/100 Pacific Highway North Sydney NSW 2060	Report #:	717029	Due:	May 8, 2020
Project Name:	P37	Phone:	02 9954 8118	Priority:	5 Day
Project ID:	318000780	Fax:	02 9954 8150	Contact Name:	Stephen Maxwell

Eurofins Analytical Services Manager : Andrew Black

Sample Detail						Aluminium	Arsenic	Barium	Beryllium	Cadmium	Chromium	Cobalt	Copper	Iron	Lead	Manganese	Mass of sample*	Mercury	Nickel	Zinc	Moisture Set	
Melbourne Laboratory - NATA Site # 1254 & 14271																						
Sydney Laboratory - NATA Site # 18217						X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X
Brisbane Laboratory - NATA Site # 20794																						
Perth Laboratory - NATA Site # 23736																						
External Laboratory																						
No	Sample ID	Sample Date	Sampling Time	Matrix	LAB ID																	
1	DVAC_LR(P37)	Apr 29, 2020		Dust	S20-My01785										X	X						
2	DVAC_MBR(P37)	Apr 29, 2020		Dust	S20-My01786										X	X						
3	DSWAB_SE(P37)	Apr 29, 2020		Wipes	S20-My01787										X							
4	DSWAB_BE(P37)	Apr 29, 2020		Wipes	S20-My01788										X							
5	DSWAB_FE(P37)	Apr 29, 2020		Wipes	S20-My01789										X							
6	DSWAB_MH(P37)	Apr 29, 2020		Wipes	S20-My01790										X							

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IANZ # 1327

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Rolleston, Christchurch 7675
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North Sydney
NSW 2060

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Project ID: 318000780

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Fax: 02 9954 8150

Received: May 1, 2020 12:00 PM
Due: May 8, 2020
Priority: 5 Day
Contact Name: Stephen Maxwell

Eurofins Analytical Services Manager : Andrew Black

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Melbourne Laboratory - NATA Site # 1254 & 14271																						
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Brisbane Laboratory - NATA Site # 20794																						
Perth Laboratory - NATA Site # 23736																						
7	P37_TW1	Apr 29, 2020		Water	S20-My01791	X	X	X	X	X	X	X	X	X	X		X	X	X			
8	P37_TW2	Apr 29, 2020		Water	S20-My01792	X	X	X	X	X	X	X	X	X	X		X	X	X			
9	P37_TWS2	Apr 29, 2020		Water	S20-My01793	X	X	X	X	X	X	X	X	X	X		X	X	X			
10	P37_HA01_0-0.05	Apr 29, 2020		Soil	S20-My01794										X						X	
11	P37_HA01_0.2	Apr 29, 2020		Soil	S20-My01795										X						X	
12	P37_HA02_0-0.05	Apr 29, 2020		Soil	S20-My01796										X						X	
13	P37_HA02_0.2	Apr 29, 2020		Soil	S20-My01797										X						X	
14	P37_HA03_0-0.05	Apr 29, 2020		Soil	S20-My01798										X						X	
15	P37_HA03_0.2	Apr 29, 2020		Soil	S20-My01799										X						X	

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Phone : 0800 856 450
IANZ # 1290

ABN – 50 005 085 521

web : www.eurofins.com.au

e.mail : EnviroSales@eurofins.com

Company Name: Ramboll Australia Pty Ltd
Address: Level 3/100 Pacific Highway
North Sydney
NSW 2060

Order No.:
Report #: 717029
Phone: 02 9954 8118
Fax: 02 9954 8150

Received: May 1, 2020 12:00 PM
Due: May 8, 2020
Priority: 5 Day
Contact Name: Stephen Maxwell

Project Name: P37
Project ID: 318000780

Eurofins Analytical Services Manager : Andrew Black

Sample Detail						Aluminium	Arsenic	Barium	Beryllium	Cadmium	Chromium	Cobalt	Copper	Iron	Lead	Manganese	Mass of sample*	Mercury	Nickel	Zinc	Moisture Set	
Melbourne Laboratory - NATA Site # 1254 & 14271																						
Sydney Laboratory - NATA Site # 18217						X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X
Brisbane Laboratory - NATA Site # 20794																						
Perth Laboratory - NATA Site # 23736																						
16	P37_HA04_0-0.05	Apr 29, 2020		Soil	S20-My01800										X						X	
17	P37_HA04_0.2	Apr 29, 2020		Soil	S20-My01801										X						X	
18	P37_HA05_0-0.05	Apr 29, 2020		Soil	S20-My01802										X						X	
19	P37_HA05_0.2	Apr 29, 2020		Soil	S20-My01817										X						X	
Test Counts						3	3	3	3	3	3	3	3	3	19	3	2	3	3	3	10	

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- Laboratory QC results for Method Blanks, Duplicates, Matrix Spikes, and Laboratory Control Samples follows guidelines delineated in the National Environment Protection (Assessment of Site Contamination) Measure 1999, as amended May 2013 and are included in this QC report where applicable. Additional QC data may be available on request.
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- All biota/food results are reported on a wet weight basis on the edible portion, unless otherwise stated.
- Actual LORs are matrix dependant. Quoted LORs may be raised where sample extracts are diluted due to interferences.
- Results are uncorrected for matrix spikes or surrogate recoveries except for PFAS compounds.
- SVOC analysis on waters are performed on homogenised, unfiltered samples, unless noted otherwise.
- Samples were analysed on an 'as received' basis.
- Information identified on this report with blue colour, indicates data provided by customer, that may have an impact on the results.
- This report replaces any interim results previously issued.

Holding Times

Please refer to 'Sample Preservation and Container Guide' for holding times (QS3001).

For samples received on the last day of holding time, notification of testing requirements should have been received at least 6 hours prior to sample receipt deadlines as stated on the SRA.

If the Laboratory did not receive the information in the required timeframe, and regardless of any other integrity issues, suitably qualified results may still be reported.

Holding times apply from the date of sampling, therefore compliance to these may be outside the laboratory's control.

For VOCs containing vinyl chloride, styrene and 2-chloroethyl vinyl ether the holding time is 7 days however for all other VOCs such as BTEX or C6-10 TRH then the holding time is 14 days.

****NOTE:** pH duplicates are reported as a range NOT as RPD

Units

mg/kg: milligrams per kilogram

mg/L: milligrams per litre

ug/L: micrograms per litre

ppm: Parts per million

ppb: Parts per billion

%: Percentage

org/100mL: Organisms per 100 millilitres

NTU: Nephelometric Turbidity Units

MPN/100mL: Most Probable Number of organisms per 100 millilitres

Terms

Dry	Where a moisture has been determined on a solid sample the result is expressed on a dry basis.
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RPD	Relative Percent Difference between two Duplicate pieces of analysis.
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USEPA	United States Environmental Protection Agency
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NCP	Non-Client Parent - QC performed on samples not pertaining to this report, QC is representative of the sequence or batch that client samples were analysed within.
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RPD Duplicates: Global RPD Duplicates Acceptance Criteria is 30% however the following acceptance guidelines are equally applicable:

Results <10 times the LOR : No Limit

Results between 10-20 times the LOR : RPD must lie between 0-50%

Results >20 times the LOR : RPD must lie between 0-30%

Surrogate Recoveries: Recoveries must lie between 20-130% Phenols & 50-150% PFASs

PFAS field samples that contain surrogate recoveries in excess of the QC limit designated in QSM 5.3 where no positive PFAS results have been reported have been reviewed and no data was affected.

WA DWER (n=10): PFBA, PFPeA, PFHxA, PFHpA, PFOA, PFBS, PFHxS, PFOS, 6:2 FTSA, 8:2 FTSA

QC Data General Comments

- Where a result is reported as a less than (<), higher than the nominated LOR, this is due to either matrix interference, extract dilution required due to interferences or contaminant levels within the sample, high moisture content or insufficient sample provided.
- Duplicate data shown within this report that states the word "BATCH" is a Batch Duplicate from outside of your sample batch, but within the laboratory sample batch at a 1:10 ratio. The Parent and Duplicate data shown is not data from your samples.
- Organochlorine Pesticide analysis - where reporting LCS data, Toxaphene & Chlordane are not added to the LCS.
- Organochlorine Pesticide analysis - where reporting Spike data, Toxaphene is not added to the Spike.
- Total Recoverable Hydrocarbons - where reporting Spike & LCS data, a single spike of commercial Hydrocarbon products in the range of C12-C30 is added and it's Total Recovery is reported in the C10-C14 cell of the Report.
- pH and Free Chlorine analysed in the laboratory - Analysis on this test must begin within 30 minutes of sampling. Therefore laboratory analysis is unlikely to be completed within holding time. Analysis will begin as soon as possible after sample receipt.
- Recovery Data (Spikes & Surrogates) - where chromatographic interference does not allow the determination of Recovery the term "INT" appears against that analyte.
- Polychlorinated Biphenyls are spiked only using Aroclor 1260 in Matrix Spikes and LCS.
- For Matrix Spikes and LCS results a dash " - " in the report means that the specific analyte was not added to the QC sample.
- Duplicate RPDs are calculated from raw analytical data thus it is possible to have two sets of data.

Quality Control Results

Test		Units	Result 1			Acceptance Limits	Pass Limits	Qualifying Code
Method Blank								
Heavy Metals								
Aluminium		mg/L	< 0.05			0.05	Pass	
Arsenic		mg/L	< 0.001			0.001	Pass	
Barium		mg/L	< 0.02			0.02	Pass	
Beryllium		mg/L	< 0.001			0.001	Pass	
Cadmium		mg/L	< 0.0002			0.0002	Pass	
Chromium		mg/L	< 0.001			0.001	Pass	
Cobalt		mg/L	< 0.001			0.001	Pass	
Copper		mg/L	< 0.001			0.001	Pass	
Iron		mg/L	< 0.05			0.05	Pass	
Lead		mg/L	< 0.001			0.001	Pass	
Manganese		mg/L	< 0.005			0.005	Pass	
Mercury		mg/L	< 0.0001			0.0001	Pass	
Nickel		mg/L	< 0.001			0.001	Pass	
Zinc		mg/L	< 0.005			0.005	Pass	
LCS - % Recovery								
Heavy Metals								
Aluminium		%	92			70-130	Pass	
Arsenic		%	110			70-130	Pass	
Barium		%	108			70-130	Pass	
Beryllium		%	106			70-130	Pass	
Cadmium		%	112			70-130	Pass	
Chromium		%	88			70-130	Pass	
Cobalt		%	91			70-130	Pass	
Copper		%	86			70-130	Pass	
Iron		%	95			70-130	Pass	
Lead		%	106			70-130	Pass	
Manganese		%	90			70-130	Pass	
Mercury		%	107			70-130	Pass	
Nickel		%	87			70-130	Pass	
Zinc		%	86			70-130	Pass	
Test	Lab Sample ID	QA Source	Units	Result 1		Acceptance Limits	Pass Limits	Qualifying Code
Spike - % Recovery								
Heavy Metals				Result 1				
Aluminium	S20-My01814	NCP	%	79		70-130	Pass	
Arsenic	S20-My01814	NCP	%	94		70-130	Pass	
Barium	S20-My01814	NCP	%	93		70-130	Pass	
Beryllium	S20-My01814	NCP	%	86		70-130	Pass	
Cadmium	S20-My01814	NCP	%	92		70-130	Pass	
Chromium	S20-My01814	NCP	%	77		70-130	Pass	
Cobalt	S20-My01814	NCP	%	78		70-130	Pass	
Copper	S20-My01814	NCP	%	77		70-130	Pass	
Iron	S20-My01814	NCP	%	83		70-130	Pass	
Lead	S20-My01814	NCP	%	91		70-130	Pass	
Manganese	S20-My01814	NCP	%	78		70-130	Pass	
Mercury	S20-My01814	NCP	%	88		70-130	Pass	
Nickel	S20-My01814	NCP	%	77		70-130	Pass	
Zinc	S20-My01814	NCP	%	75		70-130	Pass	

Test	Lab Sample ID	QA Source	Units	Result 1			Acceptance Limits	Pass Limits	Qualifying Code
Duplicate									
Heavy Metals				Result 1	Result 2	RPD			
Aluminium	S20-My01750	NCP	mg/L	< 0.05	< 0.05	<1	30%	Pass	
Arsenic	S20-My01750	NCP	mg/L	< 0.001	< 0.001	<1	30%	Pass	
Barium	S20-My01750	NCP	mg/L	0.02	0.02	5.0	30%	Pass	
Beryllium	S20-My01750	NCP	mg/L	< 0.001	< 0.001	<1	30%	Pass	
Cadmium	S20-My01750	NCP	mg/L	< 0.0002	< 0.0002	<1	30%	Pass	
Chromium	S20-My01750	NCP	mg/L	< 0.001	< 0.001	<1	30%	Pass	
Cobalt	S20-My01750	NCP	mg/L	< 0.001	< 0.001	<1	30%	Pass	
Copper	S20-My01750	NCP	mg/L	< 0.001	< 0.001	<1	30%	Pass	
Iron	S20-My01750	NCP	mg/L	< 0.05	< 0.05	<1	30%	Pass	
Lead	S20-My01750	NCP	mg/L	< 0.001	0.001	120	30%	Fail	Q15
Manganese	S20-My01750	NCP	mg/L	< 0.005	< 0.005	<1	30%	Pass	
Mercury	S20-My01750	NCP	mg/L	< 0.0001	< 0.0001	<1	30%	Pass	
Nickel	S20-My01750	NCP	mg/L	< 0.001	< 0.001	<1	30%	Pass	
Zinc	S20-My01750	NCP	mg/L	0.016	0.013	24	30%	Pass	

Comments
Sample Integrity

Custody Seals Intact (if used)	N/A
Attempt to Chill was evident	No
Sample correctly preserved	Yes
Appropriate sample containers have been used	Yes
Sample containers for volatile analysis received with minimal headspace	Yes
Samples received within HoldingTime	Yes
Some samples have been subcontracted	No

Qualifier Codes/Comments

Code	Description
Q15	The RPD reported passes Eurofins Environment Testing's QC - Acceptance Criteria as defined in the Internal Quality Control Review and Glossary page of this report.

Authorised By

Andrew Black	Analytical Services Manager
Gabriele Cordero	Senior Analyst-Metal (NSW)


**Glenn Jackson
General Manager**

Final report - this Report replaces any previously issued Report

- Indicates Not Requested

* Indicates NATA accreditation does not cover the performance of this service

Measurement uncertainty of test data is available on request or please [click here](#).

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CHAIN OF CUSTODY RECORD

ABN 50 005 085 521

Sydney Laboratory
Unit F3 Bld F, 16 Mars Rd, Lane Cove West, NSW 2066
02 9900 8400 EnviroSampleNSW@eurofins.com

Brisbane Laboratory
Unit 1, 21 Smallwood Pl., Murarrie, QLD 4172
07 3902 4600 EnviroSampleQLD@eurofins.com

Perth Laboratory
Unit 2, 91 Leach Highway, Kewdale WA 6105
08 9251 9600 EnviroSampleWA@eurofins.com

Melbourne Laboratory
2 Kingston Town Close, Oakleigh, VIC 3166
03 8564 5000 EnviroSampleVic@eurofins.com

Company		Ramboll		Project No		318000780		Project Manager		Stephen Maxwell		Sampler(s)		JB, TJ, JK					
Address		50 Glebe Road the Junction		Project Name		P38		EDD Format (ESdat, EQUIS, Custom)		Excel and PDF		Handed over by		Jordyn Kirsch					
Contact Name		Stephen Maxwell		Analyses (Note: Where multiple analyses are requested, please specify "Total" or "Filtered" SUITE case must be used to return SUITE pricing.)		Total Lead (mg/kg)		Total Sample Mass		Total Lead (µg/L)		M13 (Al, As, Ba, Be, Bi, Cd, Cr, Co, Cu, Fe, Pb, Mn, Hg, Ni, Zn) Total (excluding hexavalent chromium)		Email for Invoice		smaxwell@ramboll.com asiapac-accounts@ramboll.com			
Phone No		0478 658 194												Email for Results		smaxwell@ramboll.com jblackwell@ramboll.com			
Special Directions														Containers		Turnaround Time (TAT) Requirements (Default will be 5 days if not ticked)		<input type="checkbox"/> Overnight (9am)* <input type="checkbox"/> 1 Day* <input type="checkbox"/> 2 Day* <input type="checkbox"/> 3 Day* <input checked="" type="checkbox"/> 5 Day* <input type="checkbox"/> Other () * Surcharges apply	
Purchase Order														Sample Comments / Dangerous Goods Hazard Warning					
Quote ID No		180813RAMN_1																	
No	Client Sample ID	Sampled Date/Time (dd/mm/yy hh:mm)	Matrix (Solid (S) Water (W))																
1	DVAC_LR(P38)	29/04/20	S	X	X														
2	DVAC_KB(P38)	29/04/20	S	X	X														
3	DSWAB_BE(P38)	29/04/20	S			X													
4	DSWAB_FE(P38)	29/04/20	S			X													
5	DGRAB_MH(P38)	29/04/20	S			X													
6	P38_TW1	29/04/20	W			X													
7	P38_TW2	29/04/20	W			X													
8	P38_TWS1	29/04/20	S			X								1	Please dry out and then analyse in mg/kg.				
9	P38_TWS2	29/04/20	S			X								1	Please dry out and then analyse in mg/kg.				
10	P38_HA01_0-0.05	29/04/20	S	X										1					
Total Counts				3	2	3	4							3	5				
Method of Shipment		<input type="checkbox"/> Courier (#) <input checked="" type="checkbox"/> Hand Delivered <input type="checkbox"/> Postal		Name		Signature		Date		Date		Time		Time					
Eurofins mgt Laboratory Use Only		Received By <i>Amson Lee</i>		SYD BNE MEL PER ADL NTL DRW		Signature <i>[Signature]</i>		Date <i>15/20</i>		Date		Time <i>12:00 PM</i>		Temperature <i>14.00</i>					
		Received By		SYD BNE MEL PER ADL NTL DRW		Signature		Date		Date		Time		Report No <i>#717027</i>					

Submission of samples to the laboratory will be deemed as acceptance of Eurofins | mgt Standard Terms and Conditions unless agreed otherwise. A copy of Eurofins | mgt Standard Terms and Conditions is available on request.

Eurofins Environment Testing Australia Pty Ltd trading as Eurofins | mgt



CHAIN OF CUSTODY RECORD

ABN 50 005 085 521

Sydney Laboratory
Unit F3 Bld F, 16 Mars Rd, Lane Cove West, NSW 2066
02 9900 8400 EnviroSampleNSW@eurofins.com

Brisbane Laboratory
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08 9251 9600 EnviroSampleWA@eurofins.com

Melbourne Laboratory
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03 8564 5000 EnviroSampleVic@eurofins.com

Company		Ramboll		Project No		318000780		Project Manager		Stephen Maxwell		Sampler(s)		JB, TJ, JK							
Address		50 Glebe Road the Junction		Project Name		P38		EDD Format (ESdat, EQUIS, Custom)		Excel and PDF		Handed over by		Jordyn Kirsch							
Contact Name		Stephen Maxwell		Analyses <small>(Note: Where metals are requested, please specify "Total" or "Filtered" SUITE codes must be used to attract SUITE pricing)</small> Total Lead (mg/kg) Total Sample Mass Total Lead (µg/L) M13 (Al, As, Ba, Be, Cd, Cr, Co, Cu, Fe, Pb, Mn, Hg, Ni, Zn) Total (excluding hexavalent chromium)										Email for Invoice		smaxwell@ramboll.com asiapac-accounts@ramboll.com					
Phone No		0478 658 194												Email for Results		smaxwell@ramboll.com jblackwell@ramboll.com					
Special Directions														Containers		1L Plastic 250mL Plastic 125mL Plastic 200mL Amber Glass 40mL VOA vial 500mL PFAS Bottle Jar (Glass or HDPE) Other (Asbestos AS4654, WA Guidelines)		Turnaround Time (TAT) Requirements (Default will be 5 days if not stated)		<input type="checkbox"/> Overnight (9am)* <input type="checkbox"/> 1 Day* <input type="checkbox"/> 2 Day* <input type="checkbox"/> 3 Day* <input checked="" type="checkbox"/> 5 Day <input type="checkbox"/> Other () * Surcharges apply	
Purchase Order														Sample Comments / Dangerous Goods Hazard Warning							
Quote ID No		180813RAMN_1																			
No	Client Sample ID	Sampled Date/Time (dd/mm/yy hh:mm)	Matrix (Solid (S) Water (W))																		
1	P38_HA01_0.2	29/04/20	S	X																	
2	P38_HA02_0-0.05	29/04/20	S	X																	
3	P38_HA02_0.2	29/04/20	S	X																	
4	P38_HA03_0-0.05	29/04/20	S	X																	
5	P38_HA03_0.2	29/04/20	S	X																	
6	P38_HA04_0-0.05	29/04/20	S	X																	
7	P38_HA04_0.2	29/04/20	S	X																	
8	P38_HA05_0-0.05	29/04/20	S	X																	
9	P38_HA05_0.2	29/04/20	S	X																	
10																					
Total Counts				9																	
Method of Shipment		<input type="checkbox"/> Courier (#) <input checked="" type="checkbox"/> Hand Delivered <input type="checkbox"/> Postal		Name		Signature		Date		Time		Date		Time							
Eurofins mgt Laboratory Use Only		Received By <i>Anson Lee</i>		SYD BNE MEL PER ADL NTL DRW		Signature <i>[Signature]</i>		Date 15/20		Time 12:00PM		Temperature 14.0°C		Report No #717027							
		Received By		SYD BNE MEL PER ADL NTL DRW		Signature		Date		Time											

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Perth

2/91 Leach Highway
Kewdale WA 6105
Phone : +61 8 9251 9600
NATA # 1261 Site # 23736

Sample Receipt Advice

Company name: **Ramboll Australia Pty Ltd**
Contact name: **Stephen Maxwell**
Project name: **P38**
Project ID: **318000780**
COC number: **Not provided**
Turn around time: **5 Day**
Date/Time received: **May 1, 2020 12:00 PM**
Eurofins reference: **717027**

Sample information

- A detailed list of analytes logged into our LIMS, is included in the attached summary table.
- All samples have been received as described on the above COC.
- COC has been completed correctly.
- Attempt to chill was evident.
- Appropriately preserved sample containers have been used.
- All samples were received in good condition.
- Samples have been provided with adequate time to commence analysis in accordance with the relevant holding times.
- Appropriate sample containers have been used.
- Sample containers for volatile analysis received with zero headspace.
- Split sample sent to requested external lab.
- Some samples have been subcontracted.
- N/A Custody Seals intact (if used).

Contact notes

If you have any questions with respect to these samples please contact:

Andrew Black on Phone : (+61) 2 9900 8490 or by e.mail: AndrewBlack@eurofins.com

Results will be delivered electronically via e.mail to Stephen Maxwell - smaxwell@ramboll.com.

Note: A copy of these results will also be delivered to the general Ramboll Australia Pty Ltd email address.

Australia

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Phone : +64 9 526 45 51
IANZ # 1327

Christchurch
43 Detroit Drive
Rolleston, Christchurch 7675
Phone : 0800 856 450
IANZ # 1290

Company Name: Ramboll Australia Pty Ltd
Address: Level 3/100 Pacific Highway
North Sydney
NSW 2060

Order No.:
Report #: 717027
Phone: 02 9954 8118
Fax: 02 9954 8150

Received: May 1, 2020 12:00 PM
Due: May 8, 2020
Priority: 5 Day
Contact Name: Stephen Maxwell

Project Name: P38
Project ID: 318000780

Eurofins Analytical Services Manager : Andrew Black

Sample Detail						Aluminium	Arsenic	Barium	Beryllium	Cadmium	Chromium	Cobalt	Copper	Iron	Lead	Manganese	Mass of sample*	Mercury	Nickel	Zinc	Moisture Set	
Melbourne Laboratory - NATA Site # 1254 & 14271																						
Sydney Laboratory - NATA Site # 18217						X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X
Brisbane Laboratory - NATA Site # 20794																						
Perth Laboratory - NATA Site # 23736																						
External Laboratory																						
No	Sample ID	Sample Date	Sampling Time	Matrix	LAB ID																	
1	DVAC_LR(P38)	Apr 29, 2020		Dust	S20-My01766										X		X					
2	DVAC_KB(P38)	Apr 29, 2020		Dust	S20-My01767										X		X					
3	DSWAB_BE(P38)	Apr 29, 2020		Wipes	S20-My01768										X							
4	DSWAB_FE(P38)	Apr 29, 2020		Wipes	S20-My01769										X							
5	DGRAB_MH(P38)	Apr 29, 2020		Dust	S20-My01770										X							
6	P38_TW1	Apr 29, 2020		Water	S20-My01771	X	X	X	X	X	X	X	X	X	X	X		X	X	X		
7	P38_TW2	Apr 29, 2020		Water	S20-My01772	X	X	X	X	X	X	X	X	X	X	X		X	X	X		

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Site # 23736

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Rolleston, Christchurch 7675
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IANZ # 1290

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Due: May 8, 2020
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Contact Name: Stephen Maxwell

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Project ID: 318000780

Eurofins Analytical Services Manager : Andrew Black

Sample Detail						Aluminium	Arsenic	Barium	Beryllium	Cadmium	Chromium	Cobalt	Copper	Iron	Lead	Manganese	Mass of sample *	Mercury	Nickel	Zinc	Moisture Set	
Melbourne Laboratory - NATA Site # 1254 & 14271																						
Sydney Laboratory - NATA Site # 18217						X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X
Brisbane Laboratory - NATA Site # 20794																						
Perth Laboratory - NATA Site # 23736																						
8	P38_TWS1	Apr 29, 2020		Water	S20-My01773	X	X	X	X	X	X	X	X	X	X		X	X	X			
9	P38_TWS2	Apr 29, 2020		Water	S20-My01774	X	X	X	X	X	X	X	X	X	X		X	X	X			
10	P38_HA01_0-0.05	Apr 29, 2020		Soil	S20-My01775										X						X	
11	P38_HA01_0.2	Apr 29, 2020		Soil	S20-My01776										X						X	
12	P38_HA02_0-0.05	Apr 29, 2020		Soil	S20-My01777										X						X	
13	P38_HA02_0.2	Apr 29, 2020		Soil	S20-My01778										X						X	
14	P38_HA03_0-0.05	Apr 29, 2020		Soil	S20-My01779										X						X	
15	P38_HA03_0.2	Apr 29, 2020		Soil	S20-My01780										X						X	
16	P38_HA04_0-	Apr 29, 2020		Soil	S20-My01781										X						X	

Australia

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IANZ # 1290

ABN – 50 005 085 521

web : www.eurofins.com.au

e.mail : EnviroSales@eurofins.com

Company Name: Ramboll Australia Pty Ltd
Address: Level 3/100 Pacific Highway
North Sydney
NSW 2060

Project Name: P38
Project ID: 318000780

Order No.:
Report #: 717027
Phone: 02 9954 8118
Fax: 02 9954 8150

Received: May 1, 2020 12:00 PM
Due: May 8, 2020
Priority: 5 Day
Contact Name: Stephen Maxwell

Eurofins Analytical Services Manager : Andrew Black

Sample Detail						Aluminium	Arsenic	Barium	Beryllium	Cadmium	Chromium	Cobalt	Copper	Iron	Lead	Manganese	Mass of sample*	Mercury	Nickel	Zinc	Moisture Set	
Melbourne Laboratory - NATA Site # 1254 & 14271																						
Sydney Laboratory - NATA Site # 18217						X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	
Brisbane Laboratory - NATA Site # 20794																						
Perth Laboratory - NATA Site # 23736																						
16	P38_HA04_0-0.05	Apr 29, 2020		Soil	S20-My01781																	
17	P38_HA04_0.2	Apr 29, 2020		Soil	S20-My01782										X						X	
18	P38_HA05_0-0.05	Apr 29, 2020		Soil	S20-My01783										X						X	
19	P38_HA05_0.2	Apr 29, 2020		Soil	S20-My01784										X						X	
Test Counts						4	4	4	4	4	4	4	4	4	19	4	2	4	4	4	10	

Ramboll Environ Australia Pty Ltd
 Level 3/100 Pacific Highway
 North Sydney
 NSW 2060



NATA Accredited
Accreditation Number 1261
Site Number 18217

Accredited for compliance with ISO/IEC 17025 – Testing
 The results of the tests, calibrations and/or
 measurements included in this document are traceable
 to Australian/national standards.

Attention: **Stephen Maxwell**

Report **717027-A**
 Project name **P38**
 Project ID **318000780**
 Received Date **May 01, 2020**

Client Sample ID			DSWAB_BE(P38)	DSWAB_FE(P38)
Sample Matrix			Wipes	Wipes
Eurofins Sample No.			S20-My01768	S20-My01769
Date Sampled			Apr 29, 2020	Apr 29, 2020
Test/Reference	LOR	Unit		
Heavy Metals				
Lead	1	Total ug	2.9	2.6

Sample History

Where samples are submitted/analysed over several days, the last date of extraction and analysis is reported.

A recent review of our LIMS has resulted in the correction or clarification of some method identifications. Due to this, some of the method reference information on reports has changed. However, no substantive change has been made to our laboratory methods, and as such there is no change in the validity of current or previous results.

If the date and time of sampling are not provided, the Laboratory will not be responsible for compromised results should testing be performed outside the recommended holding time.

Description

Heavy Metals

Testing Site

Sydney

Extracted

May 07, 2020

Holding Time

180 Days

- Method: LTM-MET-3040 Metals in Waters, Soils & Sediments by ICP-MS

Australia

Melbourne
6 Monterey Road
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NATA # 1261 Site # 18217

Brisbane
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NATA # 1261 Site # 20794

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IANZ # 1290

Company Name: Ramboll Australia Pty Ltd
Address: Level 3/100 Pacific Highway
North Sydney
NSW 2060

Order No.:
Report #: 717027
Phone: 02 9954 8118
Fax: 02 9954 8150

Received: May 1, 2020 12:00 PM
Due: May 8, 2020
Priority: 5 Day
Contact Name: Stephen Maxwell

Project Name: P38
Project ID: 318000780

Eurofins Analytical Services Manager : Andrew Black

Sample Detail						Aluminium	Arsenic	Barium	Beryllium	Cadmium	Chromium	Cobalt	Copper	Iron	Lead	Manganese	Mass of sample*	Mercury	Nickel	Zinc	Moisture Set
Melbourne Laboratory - NATA Site # 1254 & 14271																					
Sydney Laboratory - NATA Site # 18217						X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X
Brisbane Laboratory - NATA Site # 20794																					
Perth Laboratory - NATA Site # 23736																					
External Laboratory																					
No	Sample ID	Sample Date	Sampling Time	Matrix	LAB ID																
1	DVAC_LR(P38)	Apr 29, 2020		Dust	S20-My01766										X	X					
2	DVAC_KB(P38)	Apr 29, 2020		Dust	S20-My01767										X	X					
3	DSWAB_BE(P38)	Apr 29, 2020		Wipes	S20-My01768										X						
4	DSWAB_FE(P38)	Apr 29, 2020		Wipes	S20-My01769										X						
5	DGRAB_MH(P38)	Apr 29, 2020		Dust	S20-My01770										X						
6	P38_TW1	Apr 29, 2020		Water	S20-My01771	X	X	X	X	X	X	X	X	X	X		X	X	X		
7	P38_TW2	Apr 29, 2020		Water	S20-My01772	X	X	X	X	X	X	X	X	X	X		X	X	X		

Australia

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Perth Laboratory - NATA Site # 23736																					
8	P38_TWS1	Apr 29, 2020		Water	S20-My01773	X	X	X	X	X	X	X	X	X	X		X	X	X		
9	P38_TWS2	Apr 29, 2020		Water	S20-My01774	X	X	X	X	X	X	X	X	X	X		X	X	X		
10	P38_HA01_0-0.05	Apr 29, 2020		Soil	S20-My01775										X					X	
11	P38_HA01_0.2	Apr 29, 2020		Soil	S20-My01776										X					X	
12	P38_HA02_0-0.05	Apr 29, 2020		Soil	S20-My01777										X					X	
13	P38_HA02_0.2	Apr 29, 2020		Soil	S20-My01778										X					X	
14	P38_HA03_0-0.05	Apr 29, 2020		Soil	S20-My01779										X					X	
15	P38_HA03_0.2	Apr 29, 2020		Soil	S20-My01780										X					X	
16	P38_HA04_0-	Apr 29, 2020		Soil	S20-My01781										X					X	

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Brisbane Laboratory - NATA Site # 20794																						
Perth Laboratory - NATA Site # 23736																						
16	P38_HA04_0-0.05	Apr 29, 2020		Soil	S20-My01781																	
17	P38_HA04_0.2	Apr 29, 2020		Soil	S20-My01782										X						X	
18	P38_HA05_0-0.05	Apr 29, 2020		Soil	S20-My01783										X						X	
19	P38_HA05_0.2	Apr 29, 2020		Soil	S20-My01784										X						X	
Test Counts						4	4	4	4	4	4	4	4	4	19	4	2	4	4	4	10	

Internal Quality Control Review and Glossary
General

- Laboratory QC results for Method Blanks, Duplicates, Matrix Spikes, and Laboratory Control Samples follows guidelines delineated in the National Environment Protection (Assessment of Site Contamination) Measure 1999, as amended May 2013 and are included in this QC report where applicable. Additional QC data may be available on request.
- All soil/sediment/solid results are reported on a dry basis, unless otherwise stated.
- All biota/food results are reported on a wet weight basis on the edible portion, unless otherwise stated.
- Actual LORs are matrix dependant. Quoted LORs may be raised where sample extracts are diluted due to interferences.
- Results are uncorrected for matrix spikes or surrogate recoveries except for PFAS compounds.
- SVOC analysis on waters are performed on homogenised, unfiltered samples, unless noted otherwise.
- Samples were analysed on an 'as received' basis.
- Information identified on this report with blue colour, indicates data provided by customer, that may have an impact on the results.
- This report replaces any interim results previously issued.

Holding Times

Please refer to 'Sample Preservation and Container Guide' for holding times (QS3001).

For samples received on the last day of holding time, notification of testing requirements should have been received at least 6 hours prior to sample receipt deadlines as stated on the SRA.

If the Laboratory did not receive the information in the required timeframe, and regardless of any other integrity issues, suitably qualified results may still be reported.

Holding times apply from the date of sampling, therefore compliance to these may be outside the laboratory's control.

For VOCs containing vinyl chloride, styrene and 2-chloroethyl vinyl ether the holding time is 7 days however for all other VOCs such as BTEX or C6-10 TRH then the holding time is 14 days.

****NOTE:** pH duplicates are reported as a range NOT as RPD

Units

mg/kg: milligrams per kilogram

mg/L: milligrams per litre

ug/L: micrograms per litre

ppm: Parts per million

ppb: Parts per billion

%: Percentage

org/100mL: Organisms per 100 millilitres

NTU: Nephelometric Turbidity Units

MPN/100mL: Most Probable Number of organisms per 100 millilitres

Terms

Dry	Where a moisture has been determined on a solid sample the result is expressed on a dry basis.
LOR	Limit of Reporting.
SPIKE	Addition of the analyte to the sample and reported as percentage recovery.
RPD	Relative Percent Difference between two Duplicate pieces of analysis.
LCS	Laboratory Control Sample - reported as percent recovery.
CRM	Certified Reference Material - reported as percent recovery.
Method Blank	In the case of solid samples these are performed on laboratory certified clean sands and in the case of water samples these are performed on de-ionised water.
Surr - Surrogate	The addition of a like compound to the analyte target and reported as percentage recovery.
Duplicate	A second piece of analysis from the same sample and reported in the same units as the result to show comparison.
USEPA	United States Environmental Protection Agency
APHA	American Public Health Association
TCLP	Toxicity Characteristic Leaching Procedure
COC	Chain of Custody
SRA	Sample Receipt Advice
QSM	US Department of Defense Quality Systems Manual Version 5.3
CP	Client Parent - QC was performed on samples pertaining to this report
NCP	Non-Client Parent - QC performed on samples not pertaining to this report, QC is representative of the sequence or batch that client samples were analysed within.
TEQ	Toxic Equivalency Quotient

QC - Acceptance Criteria

RPD Duplicates: Global RPD Duplicates Acceptance Criteria is 30% however the following acceptance guidelines are equally applicable:

Results <10 times the LOR : No Limit

Results between 10-20 times the LOR : RPD must lie between 0-50%

Results >20 times the LOR : RPD must lie between 0-30%

Surrogate Recoveries: Recoveries must lie between 20-130% Phenols & 50-150% PFASs

PFAS field samples that contain surrogate recoveries in excess of the QC limit designated in QSM 5.3 where no positive PFAS results have been reported have been reviewed and no data was affected.

WA DWER (n=10): PFBA, PFPeA, PFHxA, PFHpA, PFOA, PFBS, PFHxS, PFOS, 6:2 FTSA, 8:2 FTSA

QC Data General Comments

- Where a result is reported as a less than (<), higher than the nominated LOR, this is due to either matrix interference, extract dilution required due to interferences or contaminant levels within the sample, high moisture content or insufficient sample provided.
- Duplicate data shown within this report that states the word "BATCH" is a Batch Duplicate from outside of your sample batch, but within the laboratory sample batch at a 1:10 ratio. The Parent and Duplicate data shown is not data from your samples.
- Organochlorine Pesticide analysis - where reporting LCS data, Toxaphene & Chlordane are not added to the LCS.
- Organochlorine Pesticide analysis - where reporting Spike data, Toxaphene is not added to the Spike.
- Total Recoverable Hydrocarbons - where reporting Spike & LCS data, a single spike of commercial Hydrocarbon products in the range of C12-C30 is added and it's Total Recovery is reported in the C10-C14 cell of the Report.
- pH and Free Chlorine analysed in the laboratory - Analysis on this test must begin within 30 minutes of sampling. Therefore laboratory analysis is unlikely to be completed within holding time. Analysis will begin as soon as possible after sample receipt.
- Recovery Data (Spikes & Surrogates) - where chromatographic interference does not allow the determination of Recovery the term "INT" appears against that analyte.
- Polychlorinated Biphenyls are spiked only using Aroclor 1260 in Matrix Spikes and LCS.
- For Matrix Spikes and LCS results a dash " - " in the report means that the specific analyte was not added to the QC sample.
- Duplicate RPDs are calculated from raw analytical data thus it is possible to have two sets of data.

Quality Control Results

Comments**Sample Integrity**

Custody Seals Intact (if used)	N/A
Attempt to Chill was evident	No
Sample correctly preserved	Yes
Appropriate sample containers have been used	Yes
Sample containers for volatile analysis received with minimal headspace	Yes
Samples received within HoldingTime	Yes
Some samples have been subcontracted	No

Authorised By

Andrew Black Analytical Services Manager
Gabriele Cordero Senior Analyst-Metal (NSW)

**Glenn Jackson
General Manager**

Final report - this Report replaces any previously issued Report

- Indicates Not Requested

* Indicates NATA accreditation does not cover the performance of this service

Measurement uncertainty of test data is available on request or please [click here](#).

Eurofins shall not be liable for loss, cost, damages or expenses incurred by the client, or any other person or company, resulting from the use of any information or interpretation given in this report. In no case shall Eurofins be liable for consequential damages including, but not limited to, lost profits, damages for failure to meet deadlines and lost production arising from this report. This document shall not be reproduced except in full and relates only to the items tested. Unless indicated otherwise, the tests were performed on the samples as received.

Ramboll Environ Australia Pty Ltd
 Level 3/100 Pacific Highway
 North Sydney
 NSW 2060



NATA Accredited
 Accreditation Number 1261
 Site Number 18217

Accredited for compliance with ISO/IEC 17025 – Testing
 The results of the tests, calibrations and/or
 measurements included in this document are traceable
 to Australian/national standards.

Attention: Stephen Maxwell

Report 717027-S
 Project name P38
 Project ID 318000780
 Received Date May 01, 2020

Client Sample ID			DVAC_LR(P38)	DVAC_KB(P38)	DGRAB_MH(P38)	P38_TWS1
Sample Matrix			Dust	Dust	Dust	Sediment
Eurofins Sample No.			S20-My01766	S20-My01767	S20-My01770	S20-My01773
Date Sampled			Apr 29, 2020	Apr 29, 2020	Apr 29, 2020	Apr 29, 2020
Test/Reference	LOR	Unit				
Heavy Metals						
Aluminium	10	mg/kg	-	-	-	41000
Arsenic	2	mg/kg	-	-	-	9.1
Barium	10	mg/kg	-	-	-	91
Beryllium	2	mg/kg	-	-	-	< 2
Cadmium	0.4	mg/kg	-	-	-	0.7
Chromium	5	mg/kg	-	-	-	71
Cobalt	5	mg/kg	-	-	-	10
Copper	5	mg/kg	-	-	-	110
Iron	20	mg/kg	-	-	-	15000
Lead	5	mg/kg	20	13	< 5	120
Manganese	5	mg/kg	-	-	-	830
Mercury	0.1	mg/kg	-	-	-	1.0
Nickel	5	mg/kg	-	-	-	17
Zinc	5	mg/kg	-	-	-	2900

Client Sample ID			P38_TWS2	P38_HA01_0-0.05	P38_HA01_0.2	P38_HA02_0-0.05
Sample Matrix			Sediment	Soil	Soil	Soil
Eurofins Sample No.			S20-My01774	S20-My01775	S20-My01776	S20-My01777
Date Sampled			Apr 29, 2020	Apr 29, 2020	Apr 29, 2020	Apr 29, 2020
Test/Reference	LOR	Unit				
Heavy Metals						
Aluminium	10	mg/kg	22000	-	-	-
Arsenic	2	mg/kg	8.7	-	-	-
Barium	10	mg/kg	85	-	-	-
Beryllium	2	mg/kg	< 2	-	-	-
Cadmium	0.4	mg/kg	0.4	-	-	-
Chromium	5	mg/kg	120	-	-	-
Cobalt	5	mg/kg	5.7	-	-	-
Copper	5	mg/kg	86	-	-	-
Iron	20	mg/kg	35000	-	-	-
Lead	5	mg/kg	92	21	14	15
Manganese	5	mg/kg	240	-	-	-
Mercury	0.1	mg/kg	0.2	-	-	-

Client Sample ID			P38_TWS2	P38_HA01_0-0.05	P38_HA01_0.2	P38_HA02_0-0.05
Sample Matrix			Sediment	Soil	Soil	Soil
Eurofins Sample No.			S20-My01774	S20-My01775	S20-My01776	S20-My01777
Date Sampled			Apr 29, 2020	Apr 29, 2020	Apr 29, 2020	Apr 29, 2020
Test/Reference	LOR	Unit				
Heavy Metals						
Nickel	5	mg/kg	18	-	-	-
Zinc	5	mg/kg	1700	-	-	-
% Moisture						
	1	%	-	11	6.1	7.6

Client Sample ID			P38_HA02_0.2	P38_HA03_0-0.05	P38_HA03_0.2	P38_HA04_0-0.05
Sample Matrix			Soil	Soil	Soil	Soil
Eurofins Sample No.			S20-My01778	S20-My01779	S20-My01780	S20-My01781
Date Sampled			Apr 29, 2020	Apr 29, 2020	Apr 29, 2020	Apr 29, 2020
Test/Reference	LOR	Unit				
Heavy Metals						
Lead	5	mg/kg	9.8	16	13	16
% Moisture						
	1	%	5.4	8.0	6.5	7.7

Client Sample ID			P38_HA04_0.2	P38_HA05_0-0.05	P38_HA05_0.2
Sample Matrix			Soil	Soil	Soil
Eurofins Sample No.			S20-My01782	S20-My01783	S20-My01784
Date Sampled			Apr 29, 2020	Apr 29, 2020	Apr 29, 2020
Test/Reference	LOR	Unit			
Heavy Metals					
Lead	5	mg/kg	7.0	38	17
% Moisture					
	1	%	3.3	7.6	4.9

Sample History

Where samples are submitted/analysed over several days, the last date of extraction and analysis is reported.

A recent review of our LIMS has resulted in the correction or clarification of some method identifications. Due to this, some of the method reference information on reports has changed. However, no substantive change has been made to our laboratory methods, and as such there is no change in the validity of current or previous results.

If the date and time of sampling are not provided, the Laboratory will not be responsible for compromised results should testing be performed outside the recommended holding time.

Description

Heavy Metals

- Method: LTM-MET-3040 Metals in Waters, Soils & Sediments by ICP-MS

% Moisture

- Method: LTM-GEN-7080 Moisture

Testing Site

Sydney

Sydney

Extracted

May 07, 2020

May 01, 2020

Holding Time

180 Days

14 Days

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7	P38_TW2	Apr 29, 2020		Water	S20-My01772	X	X	X	X	X	X	X	X	X	X		X	X	X			

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Sydney Laboratory - NATA Site # 18217						X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X
Brisbane Laboratory - NATA Site # 20794																					
Perth Laboratory - NATA Site # 23736																					
16	P38_HA04_0-0.05	Apr 29, 2020		Soil	S20-My01781																
17	P38_HA04_0.2	Apr 29, 2020		Soil	S20-My01782										X						X
18	P38_HA05_0-0.05	Apr 29, 2020		Soil	S20-My01783										X						X
19	P38_HA05_0.2	Apr 29, 2020		Soil	S20-My01784										X						X
Test Counts						4	4	4	4	4	4	4	4	4	19	4	2	4	4	4	10

Internal Quality Control Review and Glossary
General

- Laboratory QC results for Method Blanks, Duplicates, Matrix Spikes, and Laboratory Control Samples follows guidelines delineated in the National Environment Protection (Assessment of Site Contamination) Measure 1999, as amended May 2013 and are included in this QC report where applicable. Additional QC data may be available on request.
- All soil/sediment/solid results are reported on a dry basis, unless otherwise stated.
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- Results are uncorrected for matrix spikes or surrogate recoveries except for PFAS compounds.
- SVOC analysis on waters are performed on homogenised, unfiltered samples, unless noted otherwise.
- Samples were analysed on an 'as received' basis.
- Information identified on this report with blue colour, indicates data provided by customer, that may have an impact on the results.
- This report replaces any interim results previously issued.

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Please refer to 'Sample Preservation and Container Guide' for holding times (QS3001).

For samples received on the last day of holding time, notification of testing requirements should have been received at least 6 hours prior to sample receipt deadlines as stated on the SRA.

If the Laboratory did not receive the information in the required timeframe, and regardless of any other integrity issues, suitably qualified results may still be reported.

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For VOCs containing vinyl chloride, styrene and 2-chloroethyl vinyl ether the holding time is 7 days however for all other VOCs such as BTEX or C6-10 TRH then the holding time is 14 days.

****NOTE:** pH duplicates are reported as a range NOT as RPD

Units

mg/kg: milligrams per kilogram

mg/L: milligrams per litre

ug/L: micrograms per litre

ppm: Parts per million

ppb: Parts per billion

%: Percentage

org/100mL: Organisms per 100 millilitres

NTU: Nephelometric Turbidity Units

MPN/100mL: Most Probable Number of organisms per 100 millilitres

Terms

Dry	Where a moisture has been determined on a solid sample the result is expressed on a dry basis.
LOR	Limit of Reporting.
SPIKE	Addition of the analyte to the sample and reported as percentage recovery.
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LCS	Laboratory Control Sample - reported as percent recovery.
CRM	Certified Reference Material - reported as percent recovery.
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QC - Acceptance Criteria

RPD Duplicates: Global RPD Duplicates Acceptance Criteria is 30% however the following acceptance guidelines are equally applicable:

Results <10 times the LOR : No Limit

Results between 10-20 times the LOR : RPD must lie between 0-50%

Results >20 times the LOR : RPD must lie between 0-30%

Surrogate Recoveries: Recoveries must lie between 20-130% Phenols & 50-150% PFASs

PFAS field samples that contain surrogate recoveries in excess of the QC limit designated in QSM 5.3 where no positive PFAS results have been reported have been reviewed and no data was affected.

WA DWER (n=10): PFBA, PFPeA, PFHxA, PFHpA, PFOA, PFBS, PFHxS, PFOS, 6:2 FTSA, 8:2 FTSA

QC Data General Comments

- Where a result is reported as a less than (<), higher than the nominated LOR, this is due to either matrix interference, extract dilution required due to interferences or contaminant levels within the sample, high moisture content or insufficient sample provided.
- Duplicate data shown within this report that states the word "BATCH" is a Batch Duplicate from outside of your sample batch, but within the laboratory sample batch at a 1:10 ratio. The Parent and Duplicate data shown is not data from your samples.
- Organochlorine Pesticide analysis - where reporting LCS data, Toxaphene & Chlordane are not added to the LCS.
- Organochlorine Pesticide analysis - where reporting Spike data, Toxaphene is not added to the Spike.
- Total Recoverable Hydrocarbons - where reporting Spike & LCS data, a single spike of commercial Hydrocarbon products in the range of C12-C30 is added and it's Total Recovery is reported in the C10-C14 cell of the Report.
- pH and Free Chlorine analysed in the laboratory - Analysis on this test must begin within 30 minutes of sampling. Therefore laboratory analysis is unlikely to be completed within holding time. Analysis will begin as soon as possible after sample receipt.
- Recovery Data (Spikes & Surrogates) - where chromatographic interference does not allow the determination of Recovery the term "INT" appears against that analyte.
- Polychlorinated Biphenyls are spiked only using Aroclor 1260 in Matrix Spikes and LCS.
- For Matrix Spikes and LCS results a dash " - " in the report means that the specific analyte was not added to the QC sample.
- Duplicate RPDs are calculated from raw analytical data thus it is possible to have two sets of data.

Quality Control Results

Test		Units	Result 1			Acceptance Limits	Pass Limits	Qualifying Code
Method Blank								
Heavy Metals								
Aluminium		mg/kg	< 10			10	Pass	
Arsenic		mg/kg	< 2			2	Pass	
Barium		mg/kg	< 10			10	Pass	
Beryllium		mg/kg	< 2			2	Pass	
Cadmium		mg/kg	< 0.4			0.4	Pass	
Chromium		mg/kg	< 5			5	Pass	
Cobalt		mg/kg	< 5			5	Pass	
Copper		mg/kg	< 5			5	Pass	
Iron		mg/kg	< 20			20	Pass	
Lead		mg/kg	< 5			5	Pass	
Manganese		mg/kg	< 5			5	Pass	
Mercury		mg/kg	< 0.1			0.1	Pass	
Nickel		mg/kg	< 5			5	Pass	
Zinc		mg/kg	< 5			5	Pass	
LCS - % Recovery								
Heavy Metals								
Aluminium		%	100			70-130	Pass	
Arsenic		%	97			70-130	Pass	
Barium		%	100			70-130	Pass	
Beryllium		%	94			70-130	Pass	
Cadmium		%	100			70-130	Pass	
Chromium		%	97			70-130	Pass	
Cobalt		%	99			70-130	Pass	
Copper		%	96			70-130	Pass	
Iron		%	94			70-130	Pass	
Lead		%	85			70-130	Pass	
Manganese		%	98			70-130	Pass	
Mercury		%	94			70-130	Pass	
Nickel		%	100			70-130	Pass	
Zinc		%	98			70-130	Pass	
Test	Lab Sample ID	QA Source	Units	Result 1		Acceptance Limits	Pass Limits	Qualifying Code
Spike - % Recovery								
Heavy Metals				Result 1				
Lead	S20-My04094	NCP	%	123		70-130	Pass	
Spike - % Recovery								
Heavy Metals				Result 1				
Aluminium	S20-My01747	NCP	%	75		70-130	Pass	
Arsenic	S20-My08558	NCP	%	90		70-130	Pass	
Barium	S20-My08558	NCP	%	86		70-130	Pass	
Beryllium	S20-My08558	NCP	%	91		70-130	Pass	
Cadmium	S20-My08558	NCP	%	97		70-130	Pass	
Chromium	S20-My08558	NCP	%	94		70-130	Pass	
Cobalt	S20-My08558	NCP	%	93		70-130	Pass	
Copper	S20-My08558	NCP	%	95		70-130	Pass	
Iron	S20-My08558	NCP	%	94		70-130	Pass	
Manganese	S20-My08558	NCP	%	84		70-130	Pass	
Mercury	S20-My08558	NCP	%	97		70-130	Pass	
Nickel	S20-My08558	NCP	%	91		70-130	Pass	
Zinc	S20-My08558	NCP	%	98		70-130	Pass	

Test	Lab Sample ID	QA Source	Units	Result 1			Acceptance Limits	Pass Limits	Qualifying Code
Duplicate									
Heavy Metals				Result 1	Result 2	RPD			
Aluminium	S20-My01778	CP	mg/kg	3100	3000	3.0	30%	Pass	
Arsenic	S20-My01778	CP	mg/kg	< 2	< 2	<1	30%	Pass	
Barium	S20-My01778	CP	mg/kg	45	52	15	30%	Pass	
Beryllium	S20-My01778	CP	mg/kg	< 2	< 2	<1	30%	Pass	
Cadmium	S20-My01778	CP	mg/kg	< 0.4	< 0.4	<1	30%	Pass	
Chromium	S20-My01778	CP	mg/kg	9.5	8.9	6.0	30%	Pass	
Cobalt	S20-My01778	CP	mg/kg	< 5	6.5	32	30%	Fail	Q15
Copper	S20-My01778	CP	mg/kg	< 5	< 5	<1	30%	Pass	
Iron	S20-My01778	CP	mg/kg	6000	6400	7.0	30%	Pass	
Lead	S20-My01778	CP	mg/kg	9.8	11	12	30%	Pass	
Manganese	S20-My01778	CP	mg/kg	410	620	40	30%	Fail	Q02
Mercury	S20-My01778	CP	mg/kg	< 0.1	< 0.1	<1	30%	Pass	
Nickel	S20-My01778	CP	mg/kg	< 5	< 5	<1	30%	Pass	
Zinc	S20-My01778	CP	mg/kg	12	13	1.0	30%	Pass	
Duplicate									
				Result 1	Result 2	RPD			
% Moisture	S20-My01781	CP	%	7.7	6.2	22	30%	Pass	

Comments
Sample Integrity

Custody Seals Intact (if used)	N/A
Attempt to Chill was evident	No
Sample correctly preserved	Yes
Appropriate sample containers have been used	Yes
Sample containers for volatile analysis received with minimal headspace	Yes
Samples received within HoldingTime	Yes
Some samples have been subcontracted	No

Qualifier Codes/Comments

Code	Description
Q02	The duplicate %RPD is outside the recommended acceptance criteria. Further analysis indicates sample heterogeneity as the cause
Q15	The RPD reported passes Eurofins Environment Testing's QC - Acceptance Criteria as defined in the Internal Quality Control Review and Glossary page of this report.

Authorised By

Andrew Black	Analytical Services Manager
Gabriele Cordero	Senior Analyst-Metal (NSW)


**Glenn Jackson
General Manager**

Final report - this Report replaces any previously issued Report

- Indicates Not Requested

* Indicates NATA accreditation does not cover the performance of this service

Measurement uncertainty of test data is available on request or please [click here](#).

Eurofins shall not be liable for loss, cost, damages or expenses incurred by the client, or any other person or company, resulting from the use of any information or interpretation given in this report. In no case shall Eurofins be liable for consequential damages including, but not limited to, lost profits, damages for failure to meet deadlines and lost production arising from this report. This document shall not be reproduced except in full and relates only to the items tested. Unless indicated otherwise, the tests were performed on the samples as received.

Ramboll Environ Australia Pty Ltd
 Level 3/100 Pacific Highway
 North Sydney
 NSW 2060



NATA Accredited
Accreditation Number 1261
Site Number 18217

Accredited for compliance with ISO/IEC 17025 – Testing
 The results of the tests, calibrations and/or
 measurements included in this document are traceable
 to Australian/national standards.

Attention: **Stephen Maxwell**

Report **717027-W**
 Project name **P38**
 Project ID **318000780**
 Received Date **May 01, 2020**

Client Sample ID			P38_TW1	P38_TW2
Sample Matrix			Water	Water
Eurofins Sample No.			S20-My01771	S20-My01772
Date Sampled			Apr 29, 2020	Apr 29, 2020
Test/Reference	LOR	Unit		
Heavy Metals				
Aluminium	0.05	mg/L	< 0.05	< 0.05
Arsenic	0.001	mg/L	< 0.001	< 0.001
Barium	0.02	mg/L	< 0.02	< 0.02
Beryllium	0.001	mg/L	< 0.001	< 0.001
Cadmium	0.0002	mg/L	< 0.0002	< 0.0002
Chromium	0.001	mg/L	0.003	0.002
Cobalt	0.001	mg/L	< 0.001	< 0.001
Copper	0.001	mg/L	< 0.001	< 0.001
Iron	0.05	mg/L	< 0.05	< 0.05
Lead	0.001	mg/L	< 0.001	< 0.001
Manganese	0.005	mg/L	< 0.005	< 0.005
Mercury	0.0001	mg/L	< 0.0001	< 0.0001
Nickel	0.001	mg/L	< 0.001	< 0.001
Zinc	0.005	mg/L	0.14	0.17

Sample History

Where samples are submitted/analysed over several days, the last date of extraction and analysis is reported.

A recent review of our LIMS has resulted in the correction or clarification of some method identifications. Due to this, some of the method reference information on reports has changed. However, no substantive change has been made to our laboratory methods, and as such there is no change in the validity of current or previous results.

If the date and time of sampling are not provided, the Laboratory will not be responsible for compromised results should testing be performed outside the recommended holding time.

Description

Heavy Metals

Testing Site

Sydney

Extracted

May 05, 2020

Holding Time

180 Days

- Method: LTM-MET-3040 Metals in Waters, Soils & Sediments by ICP-MS

Australia

Melbourne
6 Monterey Road
Dandenong South VIC 3175
Phone : +61 3 8564 5000
NATA # 1261
Site # 1254 & 14271

Sydney
Unit F3, Building F
16 Mars Road
Lane Cove West NSW 2066
Phone : +61 2 9900 8400
NATA # 1261 Site # 18217

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1/21 Smallwood Place
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NATA # 1261
Site # 23736

New Zealand

Auckland
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Penrose, Auckland 1061
Phone : +64 9 526 45 51
IANZ # 1327

Christchurch
43 Detroit Drive
Rolleston, Christchurch 7675
Phone : 0800 856 450
IANZ # 1290

Company Name: Ramboll Australia Pty Ltd
Address: Level 3/100 Pacific Highway
North Sydney
NSW 2060

Order No.:
Report #: 717027
Phone: 02 9954 8118
Fax: 02 9954 8150

Received: May 1, 2020 12:00 PM
Due: May 8, 2020
Priority: 5 Day
Contact Name: Stephen Maxwell

Project Name: P38
Project ID: 318000780

Eurofins Analytical Services Manager : Andrew Black

Sample Detail						Aluminium	Arsenic	Barium	Beryllium	Cadmium	Chromium	Cobalt	Copper	Iron	Lead	Manganese	Mass of sample*	Mercury	Nickel	Zinc	Moisture Set	
Melbourne Laboratory - NATA Site # 1254 & 14271																						
Sydney Laboratory - NATA Site # 18217						X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X
Brisbane Laboratory - NATA Site # 20794																						
Perth Laboratory - NATA Site # 23736																						
External Laboratory																						
No	Sample ID	Sample Date	Sampling Time	Matrix	LAB ID																	
1	DVAC_LR(P38)	Apr 29, 2020		Dust	S20-My01766										X	X						
2	DVAC_KB(P38)	Apr 29, 2020		Dust	S20-My01767										X	X						
3	DSWAB_BE(P38)	Apr 29, 2020		Wipes	S20-My01768										X							
4	DSWAB_FE(P38)	Apr 29, 2020		Wipes	S20-My01769										X							
5	DGRAB_MH(P38)	Apr 29, 2020		Dust	S20-My01770										X							
6	P38_TW1	Apr 29, 2020		Water	S20-My01771	X	X	X	X	X	X	X	X	X	X	X		X	X	X		
7	P38_TW2	Apr 29, 2020		Water	S20-My01772	X	X	X	X	X	X	X	X	X	X	X		X	X	X		

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Perth Laboratory - NATA Site # 23736																						
8	P38_TWS1	Apr 29, 2020		Water	S20-My01773	X	X	X	X	X	X	X	X	X	X		X	X	X			
9	P38_TWS2	Apr 29, 2020		Water	S20-My01774	X	X	X	X	X	X	X	X	X	X		X	X	X			
10	P38_HA01_0-0.05	Apr 29, 2020		Soil	S20-My01775										X						X	
11	P38_HA01_0.2	Apr 29, 2020		Soil	S20-My01776										X						X	
12	P38_HA02_0-0.05	Apr 29, 2020		Soil	S20-My01777										X						X	
13	P38_HA02_0.2	Apr 29, 2020		Soil	S20-My01778										X						X	
14	P38_HA03_0-0.05	Apr 29, 2020		Soil	S20-My01779										X						X	
15	P38_HA03_0.2	Apr 29, 2020		Soil	S20-My01780										X						X	
16	P38_HA04_0-	Apr 29, 2020		Soil	S20-My01781										X						X	

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ABN – 50 005 085 521

web : www.eurofins.com.au

e.mail : EnviroSales@eurofins.com

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18	P38_HA05_0-0.05	Apr 29, 2020		Soil	S20-My01783										X						X
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QC Data General Comments

- Where a result is reported as a less than (<), higher than the nominated LOR, this is due to either matrix interference, extract dilution required due to interferences or contaminant levels within the sample, high moisture content or insufficient sample provided.
- Duplicate data shown within this report that states the word "BATCH" is a Batch Duplicate from outside of your sample batch, but within the laboratory sample batch at a 1:10 ratio. The Parent and Duplicate data shown is not data from your samples.
- Organochlorine Pesticide analysis - where reporting LCS data, Toxaphene & Chlordane are not added to the LCS.
- Organochlorine Pesticide analysis - where reporting Spike data, Toxaphene is not added to the Spike.
- Total Recoverable Hydrocarbons - where reporting Spike & LCS data, a single spike of commercial Hydrocarbon products in the range of C12-C30 is added and it's Total Recovery is reported in the C10-C14 cell of the Report.
- pH and Free Chlorine analysed in the laboratory - Analysis on this test must begin within 30 minutes of sampling. Therefore laboratory analysis is unlikely to be completed within holding time. Analysis will begin as soon as possible after sample receipt.
- Recovery Data (Spikes & Surrogates) - where chromatographic interference does not allow the determination of Recovery the term "INT" appears against that analyte.
- Polychlorinated Biphenyls are spiked only using Aroclor 1260 in Matrix Spikes and LCS.
- For Matrix Spikes and LCS results a dash " - " in the report means that the specific analyte was not added to the QC sample.
- Duplicate RPDs are calculated from raw analytical data thus it is possible to have two sets of data.

Quality Control Results

Test			Units	Result 1		Acceptance Limits	Pass Limits	Qualifying Code
Method Blank								
Heavy Metals								
Aluminium			mg/L	< 0.05		0.05	Pass	
Arsenic			mg/L	< 0.001		0.001	Pass	
Barium			mg/L	< 0.02		0.02	Pass	
Beryllium			mg/L	< 0.001		0.001	Pass	
Cadmium			mg/L	< 0.0002		0.0002	Pass	
Chromium			mg/L	< 0.001		0.001	Pass	
Cobalt			mg/L	< 0.001		0.001	Pass	
Copper			mg/L	< 0.001		0.001	Pass	
Iron			mg/L	< 0.05		0.05	Pass	
Lead			mg/L	< 0.001		0.001	Pass	
Manganese			mg/L	< 0.005		0.005	Pass	
Mercury			mg/L	< 0.0001		0.0001	Pass	
Nickel			mg/L	< 0.001		0.001	Pass	
Zinc			mg/L	< 0.005		0.005	Pass	
LCS - % Recovery								
Heavy Metals								
Aluminium			%	92		70-130	Pass	
Arsenic			%	110		70-130	Pass	
Barium			%	108		70-130	Pass	
Beryllium			%	106		70-130	Pass	
Cadmium			%	112		70-130	Pass	
Chromium			%	88		70-130	Pass	
Cobalt			%	91		70-130	Pass	
Copper			%	86		70-130	Pass	
Iron			%	95		70-130	Pass	
Lead			%	106		70-130	Pass	
Manganese			%	90		70-130	Pass	
Mercury			%	107		70-130	Pass	
Nickel			%	87		70-130	Pass	
Zinc			%	86		70-130	Pass	
Test	Lab Sample ID	QA Source	Units	Result 1		Acceptance Limits	Pass Limits	Qualifying Code
Spike - % Recovery								
Heavy Metals				Result 1				
Aluminium	S20-My01814	NCP	%	79		70-130	Pass	
Arsenic	S20-My01814	NCP	%	94		70-130	Pass	
Barium	S20-My01814	NCP	%	93		70-130	Pass	
Beryllium	S20-My01814	NCP	%	86		70-130	Pass	
Cadmium	S20-My01814	NCP	%	92		70-130	Pass	
Chromium	S20-My01814	NCP	%	77		70-130	Pass	
Cobalt	S20-My01814	NCP	%	78		70-130	Pass	
Copper	S20-My01814	NCP	%	77		70-130	Pass	
Iron	S20-My01814	NCP	%	83		70-130	Pass	
Lead	S20-My01814	NCP	%	91		70-130	Pass	
Manganese	S20-My01814	NCP	%	78		70-130	Pass	
Mercury	S20-My01814	NCP	%	88		70-130	Pass	
Nickel	S20-My01814	NCP	%	77		70-130	Pass	
Zinc	S20-My01814	NCP	%	75		70-130	Pass	

Test	Lab Sample ID	QA Source	Units	Result 1			Acceptance Limits	Pass Limits	Qualifying Code
Duplicate									
Heavy Metals				Result 1	Result 2	RPD			
Aluminium	S20-My01750	NCP	mg/L	< 0.05	< 0.05	<1	30%	Pass	
Arsenic	S20-My01750	NCP	mg/L	< 0.001	< 0.001	<1	30%	Pass	
Barium	S20-My01750	NCP	mg/L	0.02	0.02	5.0	30%	Pass	
Beryllium	S20-My01750	NCP	mg/L	< 0.001	< 0.001	<1	30%	Pass	
Cadmium	S20-My01750	NCP	mg/L	< 0.0002	< 0.0002	<1	30%	Pass	
Chromium	S20-My01750	NCP	mg/L	< 0.001	< 0.001	<1	30%	Pass	
Cobalt	S20-My01750	NCP	mg/L	< 0.001	< 0.001	<1	30%	Pass	
Copper	S20-My01750	NCP	mg/L	< 0.001	< 0.001	<1	30%	Pass	
Iron	S20-My01750	NCP	mg/L	< 0.05	< 0.05	<1	30%	Pass	
Lead	S20-My01750	NCP	mg/L	< 0.001	0.001	120	30%	Fail	Q15
Manganese	S20-My01750	NCP	mg/L	< 0.005	< 0.005	<1	30%	Pass	
Mercury	S20-My01750	NCP	mg/L	< 0.0001	< 0.0001	<1	30%	Pass	
Nickel	S20-My01750	NCP	mg/L	< 0.001	< 0.001	<1	30%	Pass	
Zinc	S20-My01750	NCP	mg/L	0.016	0.013	24	30%	Pass	

Comments**Sample Integrity**

Custody Seals Intact (if used)	N/A
Attempt to Chill was evident	No
Sample correctly preserved	Yes
Appropriate sample containers have been used	Yes
Sample containers for volatile analysis received with minimal headspace	Yes
Samples received within HoldingTime	Yes
Some samples have been subcontracted	No

Qualifier Codes/Comments

Code	Description
Q15	The RPD reported passes Eurofins Environment Testing's QC - Acceptance Criteria as defined in the Internal Quality Control Review and Glossary page of this report.

Authorised By

Andrew Black Analytical Services Manager
Gabriele Cordero Senior Analyst-Metal (NSW)

**Glenn Jackson
General Manager**

Final report - this Report replaces any previously issued Report

- Indicates Not Requested

* Indicates NATA accreditation does not cover the performance of this service

Measurement uncertainty of test data is available on request or please [click here](#).

Eurofins shall not be liable for loss, cost, damages or expenses incurred by the client, or any other person or company, resulting from the use of any information or interpretation given in this report. In no case shall Eurofins be liable for consequential damages including, but not limited to, lost profits, damages for failure to meet deadlines and lost production arising from this report. This document shall not be reproduced except in full and relates only to the items tested. Unless indicated otherwise, the tests were performed on the samples as received.

#AU04_Enviro_Sample_NSW

Subject: FW: 5 DAY TAT ADDITIONAL ANALYSIS: FW: Request for additional analysis

From: Joshua Blackwell <JBLACKWELL@ramboll.com>

Sent: Tuesday, 16 June 2020 2:00 PM

To: Andrew Black <AndrewBlack@eurofins.com>

Cc: Stephen Maxwell <SMAXWELL@ramboll.com>; Rachel Condon <RCONDON@ramboll.com>

Subject: Request for additional analysis

EXTERNAL EMAIL*

Hi Andrew,

Could I please request additional analysis of soil samples. All analysis is for **M13(Al, As, Ba, Be, Cd, Cr, Co, Cu, Fe, Pb, Mn, Hg, Ni, Zn) Excluding hexavalent chromium**. Standard turnaround is requested.

Please report in 4 separate reports as specified below.

Report 1:

- S20-Ap02154 from report 711464
- All samples between sample number 24 (M20-Ma43453) through to sample number 45 (M20-Ma43474) from report 710537
- Sample no 55 (M20-Ma43584) from report 710537
- S20-Ap02115, S20-Ap02116, S20-Ap02117, S20-Ap02155, S20-Ap02156 from report 713210

Report 2:

- S20-Ap02155, M20-Ma43804, M20-Ma43807 from report 710584

Report 3:

- S20-My00960, S20-My00962 from report 716931

Report 4:

- All samples from lab report 712441

Kind regards

Joshua Blackwell

Consultant

3182675 - Hunter

D +61 (481) 157565

M +61 (481) 157565

jblackwell@ramboll.com

Connect with us 

Ramboll

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50 Glebe Road

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The Junction

NSW 2291

Australia

<https://ramboll.com>

Ramboll Australia Pty Ltd.
ACN 095 437 442
ABN 49 095 437 442

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Melbourne

6 Monterey Road
Dandenong South Vic 3175
Phone : +61 3 8564 5000
NATA # 1261
Site # 1254 & 14271

Sydney

Unit F3, Building F
16 Mars Road
Lane Cove West NSW 2066
Phone : +61 2 9900 8400
NATA # 1261 Site # 18217

Brisbane

1/21 Smallwood Place
Murarrie QLD 4172
Phone : +61 7 3902 4600
NATA # 1261 Site # 20794

Perth

2/91 Leach Highway
Kewdale WA 6105
Phone : +61 8 9251 9600
NATA # 1261 Site # 23736

ABN – 50 005 085 521

e.mail : EnviroSales@eurofins.com

web : www.eurofins.com.au

Sample Receipt Advice

Company name: **Ramboll Australia Pty Ltd**
Contact name: Joshua Blackwell
Project name: ADDITIONAL - P39
Project ID: 318000780
COC number: Not provided
Turn around time: 5 Day
Date/Time received: Jun 16, 2020 2:00 PM
Eurofins reference: **725969**

Sample information

- A detailed list of analytes logged into our LIMS, is included in the attached summary table.
- All samples have been received as described on the above COC.
- COC has been completed correctly.
- Attempt to chill was evident.
- Appropriately preserved sample containers have been used.
- All samples were received in good condition.
- Samples have been provided with adequate time to commence analysis in accordance with the relevant holding times.
- Appropriate sample containers have been used.
- Split sample sent to requested external lab.
- Some samples have been subcontracted.
- N/A Custody Seals intact (if used).

Contact notes

If you have any questions with respect to these samples please contact:

Andrew Black on Phone : (+61) 2 9900 8490 or by e.mail: AndrewBlack@eurofins.com

Results will be delivered electronically via e.mail to Joshua Blackwell - jblackwell@ramboll.com.

Note: A copy of these results will also be delivered to the general Ramboll Australia Pty Ltd email address.

Ramboll Environ Australia Pty Ltd
 Level 3/100 Pacific Highway
 North Sydney
 NSW 2060



NATA Accredited
Accreditation Number 1261
Site Number 18217

Accredited for compliance with ISO/IEC 17025 – Testing
 The results of the tests, calibrations and/or
 measurements included in this document are traceable
 to Australian/national standards.

Attention: **Joshua Blackwell**

Report **725969-S**
 Project name **ADDITIONAL - P39**
 Project ID **318000780**
 Received Date **Jun 16, 2020**

Client Sample ID			P39_HA01_0.0-0.05	P39_HA02_0.0-0.05
Sample Matrix			Soil	Soil
Eurofins Sample No.			S20-Jn26499	S20-Jn26500
Date Sampled			Apr 30, 2020	Apr 30, 2020
Test/Reference	LOR	Unit		
Heavy Metals				
Aluminium	10	mg/kg	3200	5200
Arsenic	2	mg/kg	3.3	5.1
Barium	10	mg/kg	54	56
Beryllium	2	mg/kg	< 2	< 2
Cadmium	0.4	mg/kg	3.2	2.1
Chromium	5	mg/kg	< 5	7.7
Cobalt	5	mg/kg	< 5	< 5
Copper	5	mg/kg	83	95
Iron	20	mg/kg	4700	6600
Lead	5	mg/kg	220	250
Manganese	5	mg/kg	290	90
Mercury	0.1	mg/kg	< 0.1	0.2
Nickel	5	mg/kg	< 5	< 5
Zinc	5	mg/kg	360	340
% Moisture	1	%	29	36

Sample History

Where samples are submitted/analysed over several days, the last date of extraction and analysis is reported.

A recent review of our LIMS has resulted in the correction or clarification of some method identifications. Due to this, some of the method reference information on reports has changed. However, no substantive change has been made to our laboratory methods, and as such there is no change in the validity of current or previous results.

If the date and time of sampling are not provided, the Laboratory will not be responsible for compromised results should testing be performed outside the recommended holding time.

Description

Heavy Metals

- Method: LTM-MET-3040 Metals in Waters, Soils & Sediments by ICP-MS

% Moisture

- Method: LTM-GEN-7080 Moisture

Testing Site

Sydney

Sydney

Extracted

Jun 19, 2020

Jun 16, 2020

Holding Time

180 Days

14 Days

Australia

Melbourne
6 Monterey Road
Dandenong South VIC 3175
Phone : +61 3 8564 5000
NATA # 1261
Site # 1254 & 14271

Sydney
Unit F3, Building F
16 Mars Road
Lane Cove West NSW 2066
Phone : +61 2 9900 8400
NATA # 1261 Site # 18217

Brisbane
1/21 Smallwood Place
Murarie QLD 4172
Phone : +61 7 3902 4600
NATA # 1261 Site # 20794

Perth
2/91 Leach Highway
Kewdale WA 6105
Phone : +61 8 9251 9600
NATA # 1261
Site # 23736

New Zealand

Auckland
35 O'Rorke Road
Penrose, Auckland 1061
Phone : +64 9 526 45 51
IANZ # 1327

Christchurch
43 Detroit Drive
Rolleston, Christchurch 7675
Phone : 0800 856 450
IANZ # 1290

Company Name: Ramboll Australia Pty Ltd
Address: Level 3/100 Pacific Highway
North Sydney
NSW 2060

Order No.:
Report #: 725969
Phone: 02 9954 8118
Fax: 02 9954 8150

Received: Jun 16, 2020 2:00 PM
Due: Jun 23, 2020
Priority: 5 Day
Contact Name: Joshua Blackwell

Project Name: ADDITIONAL - P39
Project ID: 318000780

Eurofins Analytical Services Manager : Andrew Black

Sample Detail						Aluminium	Arsenic	Barium	Beryllium	Cadmium	Chromium	Cobalt	Copper	Iron	Lead	Manganese	Mercury	Nickel	Zinc	Moisture Set	
Melbourne Laboratory - NATA Site # 1254 & 14271																					
Sydney Laboratory - NATA Site # 18217						X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X
Brisbane Laboratory - NATA Site # 20794																					
Perth Laboratory - NATA Site # 23736																					
External Laboratory																					
No	Sample ID	Sample Date	Sampling Time	Matrix	LAB ID																
1	P39_HA01_0.0-0.05	Apr 30, 2020		Soil	S20-Jn26499	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	
2	P39_HA02_0.0-0.05	Apr 30, 2020		Soil	S20-Jn26500	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	
Test Counts						2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2

Internal Quality Control Review and Glossary
General

- Laboratory QC results for Method Blanks, Duplicates, Matrix Spikes, and Laboratory Control Samples follows guidelines delineated in the National Environment Protection (Assessment of Site Contamination) Measure 1999, as amended May 2013 and are included in this QC report where applicable. Additional QC data may be available on request.
- All soil/sediment/solid results are reported on a dry basis, unless otherwise stated.
- All biota/food results are reported on a wet weight basis on the edible portion, unless otherwise stated.
- Actual LORs are matrix dependant. Quoted LORs may be raised where sample extracts are diluted due to interferences.
- Results are uncorrected for matrix spikes or surrogate recoveries except for PFAS compounds.
- SVOC analysis on waters are performed on homogenised, unfiltered samples, unless noted otherwise.
- Samples were analysed on an 'as received' basis.
- Information identified on this report with blue colour, indicates data provided by customer, that may have an impact on the results.
- This report replaces any interim results previously issued.

Holding Times

Please refer to 'Sample Preservation and Container Guide' for holding times (QS3001).

For samples received on the last day of holding time, notification of testing requirements should have been received at least 6 hours prior to sample receipt deadlines as stated on the SRA.

If the Laboratory did not receive the information in the required timeframe, and regardless of any other integrity issues, suitably qualified results may still be reported.

Holding times apply from the date of sampling, therefore compliance to these may be outside the laboratory's control.

For VOCs containing vinyl chloride, styrene and 2-chloroethyl vinyl ether the holding time is 7 days however for all other VOCs such as BTEX or C6-10 TRH then the holding time is 14 days.

****NOTE:** pH duplicates are reported as a range NOT as RPD

Units

mg/kg: milligrams per kilogram

mg/L: milligrams per litre

ug/L: micrograms per litre

ppm: Parts per million

ppb: Parts per billion

%: Percentage

org/100mL: Organisms per 100 millilitres

NTU: Nephelometric Turbidity Units

MPN/100mL: Most Probable Number of organisms per 100 millilitres

Terms

Dry	Where a moisture has been determined on a solid sample the result is expressed on a dry basis.
LOR	Limit of Reporting.
SPIKE	Addition of the analyte to the sample and reported as percentage recovery.
RPD	Relative Percent Difference between two Duplicate pieces of analysis.
LCS	Laboratory Control Sample - reported as percent recovery.
CRM	Certified Reference Material - reported as percent recovery.
Method Blank	In the case of solid samples these are performed on laboratory certified clean sands and in the case of water samples these are performed on de-ionised water.
Surr - Surrogate	The addition of a like compound to the analyte target and reported as percentage recovery.
Duplicate	A second piece of analysis from the same sample and reported in the same units as the result to show comparison.
USEPA	United States Environmental Protection Agency
APHA	American Public Health Association
TCLP	Toxicity Characteristic Leaching Procedure
COC	Chain of Custody
SRA	Sample Receipt Advice
QSM	US Department of Defense Quality Systems Manual Version 5.3
CP	Client Parent - QC was performed on samples pertaining to this report
NCP	Non-Client Parent - QC performed on samples not pertaining to this report, QC is representative of the sequence or batch that client samples were analysed within.
TEQ	Toxic Equivalency Quotient

QC - Acceptance Criteria

RPD Duplicates: Global RPD Duplicates Acceptance Criteria is 30% however the following acceptance guidelines are equally applicable:

Results <10 times the LOR : No Limit

Results between 10-20 times the LOR : RPD must lie between 0-50%

Results >20 times the LOR : RPD must lie between 0-30%

Surrogate Recoveries: Recoveries must lie between 20-130% Phenols & 50-150% PFASs

PFAS field samples that contain surrogate recoveries in excess of the QC limit designated in QSM 5.3 where no positive PFAS results have been reported have been reviewed and no data was affected.

WA DWER (n=10): PFBA, PFPeA, PFHxA, PFHpA, PFOA, PFBS, PFHxS, PFOS, 6:2 FTSA, 8:2 FTSA

QC Data General Comments

- Where a result is reported as a less than (<), higher than the nominated LOR, this is due to either matrix interference, extract dilution required due to interferences or contaminant levels within the sample, high moisture content or insufficient sample provided.
- Duplicate data shown within this report that states the word "BATCH" is a Batch Duplicate from outside of your sample batch, but within the laboratory sample batch at a 1:10 ratio. The Parent and Duplicate data shown is not data from your samples.
- Organochlorine Pesticide analysis - where reporting LCS data, Toxaphene & Chlordane are not added to the LCS.
- Organochlorine Pesticide analysis - where reporting Spike data, Toxaphene is not added to the Spike.
- Total Recoverable Hydrocarbons - where reporting Spike & LCS data, a single spike of commercial Hydrocarbon products in the range of C12-C30 is added and it's Total Recovery is reported in the C10-C14 cell of the Report.
- pH and Free Chlorine analysed in the laboratory - Analysis on this test must begin within 30 minutes of sampling. Therefore laboratory analysis is unlikely to be completed within holding time. Analysis will begin as soon as possible after sample receipt.
- Recovery Data (Spikes & Surrogates) - where chromatographic interference does not allow the determination of Recovery the term "INT" appears against that analyte.
- Polychlorinated Biphenyls are spiked only using Aroclor 1260 in Matrix Spikes and LCS.
- For Matrix Spikes and LCS results a dash " - " in the report means that the specific analyte was not added to the QC sample.
- Duplicate RPDs are calculated from raw analytical data thus it is possible to have two sets of data.

Quality Control Results

Test		Units	Result 1			Acceptance Limits	Pass Limits	Qualifying Code
Method Blank								
Heavy Metals								
Aluminium		mg/kg	< 10			10	Pass	
Arsenic		mg/kg	< 2			2	Pass	
Barium		mg/kg	< 10			10	Pass	
Beryllium		mg/kg	< 2			2	Pass	
Cadmium		mg/kg	< 0.4			0.4	Pass	
Chromium		mg/kg	< 5			5	Pass	
Cobalt		mg/kg	< 5			5	Pass	
Copper		mg/kg	< 5			5	Pass	
Iron		mg/kg	< 20			20	Pass	
Lead		mg/kg	< 5			5	Pass	
Manganese		mg/kg	< 5			5	Pass	
Mercury		mg/kg	< 0.1			0.1	Pass	
Nickel		mg/kg	< 5			5	Pass	
Zinc		mg/kg	< 5			5	Pass	
LCS - % Recovery								
Heavy Metals								
Aluminium		%	95			70-130	Pass	
Arsenic		%	95			70-130	Pass	
Barium		%	93			70-130	Pass	
Beryllium		%	92			70-130	Pass	
Cadmium		%	96			70-130	Pass	
Chromium		%	95			70-130	Pass	
Cobalt		%	97			70-130	Pass	
Copper		%	95			70-130	Pass	
Iron		%	95			70-130	Pass	
Lead		%	97			70-130	Pass	
Manganese		%	94			70-130	Pass	
Mercury		%	92			70-130	Pass	
Nickel		%	95			70-130	Pass	
Zinc		%	94			70-130	Pass	
Test	Lab Sample ID	QA Source	Units	Result 1		Acceptance Limits	Pass Limits	Qualifying Code
Spike - % Recovery								
Heavy Metals								
Arsenic		S20-Jn26721	NCP	%	95		70-130	Pass
Barium		S20-Jn36619	NCP	%	112		70-130	Pass
Beryllium		S20-Jn26721	NCP	%	89		70-130	Pass
Cadmium		S20-Jn26721	NCP	%	90		70-130	Pass
Chromium		S20-Jn26721	NCP	%	98		70-130	Pass
Cobalt		S20-Jn26721	NCP	%	86		70-130	Pass
Copper		S20-Jn36619	NCP	%	110		70-130	Pass
Lead		S20-Jn26721	NCP	%	87		70-130	Pass
Manganese		S20-Jn26721	NCP	%	78		70-130	Pass
Mercury		S20-Jn26721	NCP	%	84		70-130	Pass
Nickel		S20-Jn26721	NCP	%	78		70-130	Pass
Zinc		S20-Jn36619	NCP	%	110		70-130	Pass

Test	Lab Sample ID	QA Source	Units	Result 1			Acceptance Limits	Pass Limits	Qualifying Code
Duplicate									
Heavy Metals				Result 1	Result 2	RPD			
Aluminium	S20-Jn26936	NCP	mg/kg	14000	7500	61	30%	Fail	Q02
Arsenic	S20-Jn26936	NCP	mg/kg	7.1	4.4	48	30%	Fail	Q15
Barium	S20-Jn26936	NCP	mg/kg	85	40	72	30%	Fail	Q02
Beryllium	S20-Jn26936	NCP	mg/kg	< 2	< 2	<1	30%	Pass	
Cadmium	S20-Jn26936	NCP	mg/kg	< 0.4	< 0.4	<1	30%	Pass	
Chromium	S20-Jn26936	NCP	mg/kg	15	9.2	48	30%	Fail	Q15
Cobalt	S20-Jn26936	NCP	mg/kg	10	5.2	67	30%	Fail	Q15
Copper	S20-Jn26936	NCP	mg/kg	14	7.2	64	30%	Fail	Q15
Iron	S20-Jn26936	NCP	mg/kg	30000	18000	48	30%	Fail	Q02
Lead	S20-Jn26936	NCP	mg/kg	25	13	59	30%	Fail	Q15
Manganese	S20-Jn26936	NCP	mg/kg	220	110	65	30%	Fail	Q02
Mercury	S20-Jn26936	NCP	mg/kg	< 0.1	< 0.1	<1	30%	Pass	
Nickel	S20-Jn26936	NCP	mg/kg	8.3	< 5	64	30%	Fail	Q15
Zinc	S20-Jn26936	NCP	mg/kg	54	28	62	30%	Fail	Q15
Duplicate									
				Result 1	Result 2	RPD			
% Moisture	S20-Jn26314	NCP	%	5.1	6.3	20	30%	Pass	

Comments
Sample Integrity

Custody Seals Intact (if used)	N/A
Attempt to Chill was evident	No
Sample correctly preserved	Yes
Appropriate sample containers have been used	Yes
Sample containers for volatile analysis received with minimal headspace	Yes
Samples received within HoldingTime	Yes
Some samples have been subcontracted	No

Qualifier Codes/Comments

Code	Description
Q02	The duplicate %RPD is outside the recommended acceptance criteria. Further analysis indicates sample heterogeneity as the cause
Q15	The RPD reported passes Eurofins Environment Testing's QC - Acceptance Criteria as defined in the Internal Quality Control Review and Glossary page of this report.

Authorised By

Andrew Black	Analytical Services Manager
Gabriele Cordero	Senior Analyst-Metal (NSW)


**Glenn Jackson
General Manager**

Final report - this Report replaces any previously issued Report

- Indicates Not Requested

* Indicates NATA accreditation does not cover the performance of this service

Measurement uncertainty of test data is available on request or please [click here](#).

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CHAIN OF CUSTODY RECORD

ABN 50 005 085 521

Sydney Laboratory
Unit F3 Bld.F, 16 Mars Rd, Lane Cove West, NSW 2066
02 9900 8400 EnviroSampleNSW@eurofins.com

Brisbane Laboratory
Unit 1, 21 Smallwood Pl, Murarie, QLD 4172
07 3902 4600 EnviroSampleQLD@eurofins.com

Perth Laboratory
Unit 2, 91 Leach Highway, Kewdale WA 6105
08 9251 9600 EnviroSampleWA@eurofins.com

Melbourne Laboratory
2 Kingston Town Close, Oakleigh, VIC 3166
03 8564 5000 EnviroSampleVic@eurofins.com

Company		Ramboll		Project No		318000780		Project Manager		Stephen Maxwell		Sampler(s)		JB, TJ, JK					
Address		50 Glebe Road the Junction		Project Name		P39		EDD Format (ESdat, EQuIS, Custom)		Excel and PDF		Handed over by		Jordyn Kirsch					
Contact Name		Stephen Maxwell		<small>(Use when multiple are requested, for each "Total" or "Filtered") SUITE code must be used to affect SUITE priority</small> Analyses Total Lead (mg/kg) M13 (Al, As, Ba, Be, Cd, Cr, Co, Cu, Fe, Pb, Mn, Hg, Ni, Zn Excluding hexavalent chromium) Total										Email for Invoice		smaxwell@ramboll.com asiapac-accounts@ramboll.com			
Phone No		0478 658 194												Email for Results		smaxwell@ramboll.com jblackwell@ramboll.com			
Special Directions														Containers 1L Plastic 250mL Plastic 125mL Plastic 200mL Amber Glass 40mL VOA vial 500mL PFA/AS Bottle Jar (Glass or HDPE) Other (Asbestos AS4554, WA Guideline)		Turnaround Time (TAT) Requirements (default will be 5 days if not ticked)		<input type="checkbox"/> Overnight (9am)* <input type="checkbox"/> 1 Day* <input type="checkbox"/> 2 Day* <input type="checkbox"/> 3 Day* <input checked="" type="checkbox"/> 5 Day* <input type="checkbox"/> Other () * Surcharges apply	
Purchase Order																Sample Comments / Dangerous Goods Hazard Warning			
Quote ID No		180613RAMN_1																	
No	Client Sample ID	Sampled Date/Time (dd/mm/yy hh:mm)	Matrix (Solid (S) Water (W))																
1	P39_HA01_0.0-0.05	30/04/20	S	X											1				
2	P39_HA01_0.2	30/04/20	S	X											1				
3	P39_HA02_0.0-0.05	30/04/20	S	X											1				
4	P39_HA03_0.0-0.05	30/04/20	S	X											1				
5	P39_HA03_0.2	30/04/20	S	X											1				
6	P39_HA04_0.0-0.05	30/04/20	S	X											1				
7	P39_HA05_0.0-0.05	30/04/20	S	X											1				
8	P39_HA05_0.2	30/04/20	S	X											1				
9	P39_HA06_0.0-0.05	30/04/20	S	X											1				
10	P39_HA07_0.0-0.05	30/04/20	S	X											1				
Total Counts				10										10					
Method of Shipment		<input type="checkbox"/> Courier (#) <input type="checkbox"/> Hand Delivered <input type="checkbox"/> Postal		Name		Signature		Date		Time		Date		Time					
Eurofins mgt Laboratory Use Only		Received By <i>Anson Lee</i>		SYD BNE MEL PER ADL NTL DRW		Signature <i>[Signature]</i>		Date <i>15/20</i>		Time <i>12:00PM</i>		Temperature <i>14.0°C</i>		Report No <i>#716931</i>					

Submission of samples to the laboratory will be deemed as acceptance of Eurofins | mgt Standard Terms and Conditions unless agreed otherwise. A copy of Eurofins | mgt Standard Terms and Conditions is available on request.

Eurofins Environment Testing Australia Pty Ltd trading as Eurofins | mgt



CHAIN OF CUSTODY RECORD

ABN 50 005 085 521

Sydney Laboratory
Unit F3 Bld.F, 16 Mars Rd, Lane Cove West, NSW 2066
02 9900 8400 EnviroSampleNSW@eurofins.com

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07 3902 4600 EnviroSampleQLD@eurofins.com

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08 9251 9600 EnviroSampleWA@eurofins.com

Melbourne Laboratory
2 Kingston Town Close, Oakleigh, VIC 3166
03 8564 5000 EnviroSampleVic@eurofins.com

Company		Ramboll		Project No		318000780		Project Manager		Stephen Maxwell		Sampler(s)		JB, TJ, JK			
Address		50 Glebe Road the Junction		Project Name		P39		EDD Format (ESdat, EQUIS, Custom)		Excel and PDF		Handed over by		Jordyn Kirsch			
Contact Name		Stephen Maxwell		Analyses <small>(Note: Where metals are requested, please specify "Total" or "Filtered") SUITE code must be used to avoid SUITE picking</small> Total Lead (mg/kg) M13 (Al, As, Ba, Be, Cd, Cr, Co, Cu, Fe, Pb, Mn, Hg, Ni, Zn Excluding hexavalent chromium) Total										Email for Invoice		smaxwell@ramboll.com asiapac-accounts@ramboll.com	
Phone No		0478 658 194												Email for Results		smaxwell@ramboll.com jblackwell@ramboll.com	
Special Directions														Turnaround Time (TAT) Requirements <small>(Default will be 5 days if not ticked)</small>		<input type="checkbox"/> Overnight (9am)* <input type="checkbox"/> 1 Day* <input type="checkbox"/> 2 Day* <input type="checkbox"/> 3 Day* <input checked="" type="checkbox"/> 5 Day* <input type="checkbox"/> Other () * Surcharges apply	
Purchase Order														Containers		1L Plastic 250mL Plastic 125mL Plastic 200mL Amber Glass 40mL VOA vial 500mL PFAS Bottle Jar (Glass or HDPE) Other (Asbestos AS4694, WA Guidelines)	
Quote ID No		180813RAMN_1		Matrix (Solid (S) Water (W))										Sample Comments / Dangerous Goods Hazard Warning			
No	Client Sample ID	Sampled Date/Time (dd/mm/yy hh:mm)	Matrix (Solid (S) Water (W))														
1	P39_HA07_0-2	30/04/20	S	X													
2	P39_HA08_0-0.05	30/04/20	S	X													
3	P39_HA09_0.0-0.05	30/04/20	S	X													
4	P39_HA09_0.2	30/04/20	S	X													
5	P39_HA10_0-0.05	30/04/20	S	X													
6	P39_TW1	30/04/20	W	X													
7	P39_TWS1	30/04/20	S	X											Please dry out and then analyse in mg/kg.		
8	P39_TW2	30/04/20	W	X													
9	P39_TWS2	30/04/20	S	X											Please dry out and then analyse in mg/kg.		
10	P39_GWBORE	30/04/20	W	X													
Total Counts				5	5												
Method of Shipment		<input type="checkbox"/> Courier (#) <input checked="" type="checkbox"/> Hand Delivered <input type="checkbox"/> Postal		Name		Signature		Date		Time		Date		Time			
Eurofins mgt Laboratory Use Only		Received By <i>Anson Lee</i>		SYD BNE MEL PER ADL NTL DRW		Signature <i>[Signature]</i>		Date 15/20		Time 12:00pm		Temperature 14.0°C		Report No #716931			
		Received By		SYD BNE MEL PER ADL NTL DRW		Signature		Date		Time		Report No					

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Melbourne

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Brisbane

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NATA # 1261 Site # 20794

Perth

2/91 Leach Highway
Kewdale WA 6105
Phone : +61 8 9251 9600
NATA # 1261 Site # 23736

Sample Receipt Advice

Company name: **Ramboll Australia Pty Ltd**
Contact name: Stephen Maxwell
Project name: P39
Project ID: 318000780
COC number: Not provided
Turn around time: 5 Day
Date/Time received: May 1, 2020 12:00 PM
Eurofins reference: **716931**

Sample information

- A detailed list of analytes logged into our LIMS, is included in the attached summary table.
- All samples have been received as described on the above COC.
- COC has been completed correctly.
- Attempt to chill was evident.
- Appropriately preserved sample containers have been used.
- All samples were received in good condition.
- Samples have been provided with adequate time to commence analysis in accordance with the relevant holding times.
- Appropriate sample containers have been used.
- Sample containers for volatile analysis received with zero headspace.
- Split sample sent to requested external lab.
- Some samples have been subcontracted.
- N/A Custody Seals intact (if used).

Contact notes

If you have any questions with respect to these samples please contact:

Andrew Black on Phone : (+61) 2 9900 8490 or by e.mail: AndrewBlack@eurofins.com

Results will be delivered electronically via e.mail to Stephen Maxwell - smaxwell@ramboll.com.

Note: A copy of these results will also be delivered to the general Ramboll Australia Pty Ltd email address.

Australia

Melbourne
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New Zealand

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Phone : +64 9 526 45 51
IANZ # 1327

Christchurch
43 Detroit Drive
Rolleston, Christchurch 7675
Phone : 0800 856 450
IANZ # 1290

Company Name: Ramboll Australia Pty Ltd
Address: Level 3/100 Pacific Highway
North Sydney
NSW 2060

Order No.:
Report #: 716931
Phone: 02 9954 8118
Fax: 02 9954 8150

Received: May 1, 2020 12:00 PM
Due: May 8, 2020
Priority: 5 Day
Contact Name: Stephen Maxwell

Project Name: P39
Project ID: 318000780

Eurofins Analytical Services Manager : Andrew Black

Sample Detail						Aluminium	Arsenic	Barium	Beryllium	Cadmium	Chromium	Cobalt	Copper	Iron	Lead	Manganese	Mercury	Nickel	Zinc	Moisture Set	
Melbourne Laboratory - NATA Site # 1254 & 14271																					
Sydney Laboratory - NATA Site # 18217						X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X
Brisbane Laboratory - NATA Site # 20794																					
Perth Laboratory - NATA Site # 23736																					
External Laboratory																					
No	Sample ID	Sample Date	Sampling Time	Matrix	LAB ID																
1	P39_HA01_0.0-0.05	Apr 30, 2020		Soil	S20-My00960										X					X	
2	P39_HA01_0.2	Apr 30, 2020		Soil	S20-My00961										X					X	
3	P39_HA02_0.0-0.05	Apr 30, 2020		Soil	S20-My00962										X					X	
4	P39_HA03_0.0-0.05	Apr 30, 2020		Soil	S20-My00963										X					X	
5	P39_HA03_0.2	Apr 30, 2020		Soil	S20-My00964										X					X	
6	P39_HA04_0.0-0.05	Apr 30, 2020		Soil	S20-My00965										X					X	

Australia

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Site # 23736

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Company Name: Ramboll Australia Pty Ltd
Address: Level 3/100 Pacific Highway
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Contact Name: Stephen Maxwell

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Sample Detail						Aluminium	Arsenic	Barium	Beryllium	Cadmium	Chromium	Cobalt	Copper	Iron	Lead	Manganese	Mercury	Nickel	Zinc	Moisture Set	
Melbourne Laboratory - NATA Site # 1254 & 14271																					
Sydney Laboratory - NATA Site # 18217						X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X
Brisbane Laboratory - NATA Site # 20794																					
Perth Laboratory - NATA Site # 23736																					
7	P39_HA05_0.0-0.05	Apr 30, 2020		Soil	S20-My00966										X					X	
8	P39_HA05_0.2	Apr 30, 2020		Soil	S20-My00967										X					X	
9	P39_HA06_0.0-0.05	Apr 30, 2020		Soil	S20-My00968										X					X	
10	P39_HA07_0.0-0.05	Apr 30, 2020		Soil	S20-My00969										X					X	
11	P39_HA07_0.2	Apr 30, 2020		Soil	S20-My00970										X					X	
12	P39_HA08_0.0-0.05	Apr 30, 2020		Soil	S20-My00971										X					X	
13	P39_HA09_0.0-0.05	Apr 30, 2020		Soil	S20-My00972										X					X	
14	P39_HA09_0.	Apr 30, 2020		Soil	S20-My00973										X					X	

Australia

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Site # 23736

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Company Name: Ramboll Australia Pty Ltd
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NSW 2060

Order No.:
Report #: 716931
Phone: 02 9954 8118
Fax: 02 9954 8150

Received: May 1, 2020 12:00 PM
Due: May 8, 2020
Priority: 5 Day
Contact Name: Stephen Maxwell

Project Name: P39
Project ID: 318000780

Eurofins Analytical Services Manager : Andrew Black

Sample Detail						Aluminium	Arsenic	Barium	Beryllium	Cadmium	Chromium	Cobalt	Copper	Iron	Lead	Manganese	Mercury	Nickel	Zinc	Moisture Set	
Melbourne Laboratory - NATA Site # 1254 & 14271																					
Sydney Laboratory - NATA Site # 18217						X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X
Brisbane Laboratory - NATA Site # 20794																					
Perth Laboratory - NATA Site # 23736																					
	2																				
15	P39_HA10_0.0-0.05	Apr 30, 2020		Soil	S20-My00974										X					X	
16	P39_TW1	Apr 30, 2020		Water	S20-My00975	X	X	X	X	X	X	X	X	X	X	X	X	X	X		
17	P39_TWS1	Apr 30, 2020		Water	S20-My00976	X	X	X	X	X	X	X	X	X	X	X	X	X	X		
18	P39_TW2	Apr 30, 2020		Water	S20-My00977	X	X	X	X	X	X	X	X	X	X	X	X	X	X		
19	P39_TWS2	Apr 30, 2020		Water	S20-My00978	X	X	X	X	X	X	X	X	X	X	X	X	X	X		
20	P39_GWBOR E	Apr 30, 2020		Water	S20-My00979	X	X	X	X	X	X	X	X	X	X	X	X	X	X		
Test Counts						5	5	5	5	5	5	5	5	5	20	5	5	5	5	15	

Ramboll Environ Australia Pty Ltd
 Level 3/100 Pacific Highway
 North Sydney
 NSW 2060



NATA Accredited
 Accreditation Number 1261
 Site Number 18217

Accredited for compliance with ISO/IEC 17025 – Testing
 The results of the tests, calibrations and/or
 measurements included in this document are traceable
 to Australian/national standards.

Attention: Stephen Maxwell

Report 716931-S
 Project name P39
 Project ID 318000780
 Received Date May 01, 2020

Client Sample ID			P39_HA01_0.0-0.05	P39_HA01_0.2	P39_HA02_0.0-0.05	P39_HA03_0.0-0.05
Sample Matrix			Soil	Soil	Soil	Soil
Eurofins Sample No.			S20-My00960	S20-My00961	S20-My00962	S20-My00963
Date Sampled			Apr 30, 2020	Apr 30, 2020	Apr 30, 2020	Apr 30, 2020
Test/Reference	LOR	Unit				
Heavy Metals						
Lead	5	mg/kg	310	36	390	130
% Moisture						
% Moisture	1	%	32	14	32	30

Client Sample ID			P39_HA03_0.2	P39_HA04_0.0-0.05	P39_HA05_0.0-0.05	P39_HA05_0.2
Sample Matrix			Soil	Soil	Soil	Soil
Eurofins Sample No.			S20-My00964	S20-My00965	S20-My00966	S20-My00967
Date Sampled			Apr 30, 2020	Apr 30, 2020	Apr 30, 2020	Apr 30, 2020
Test/Reference	LOR	Unit				
Heavy Metals						
Lead	5	mg/kg	53	50	93	39
% Moisture						
% Moisture	1	%	13	25	27	12

Client Sample ID			P39_HA06_0.0-0.05	P39_HA07_0.0-0.05	P39_HA07_0.2	P39_HA08_0.0-0.05
Sample Matrix			Soil	Soil	Soil	Soil
Eurofins Sample No.			S20-My00968	S20-My00969	S20-My00970	S20-My00971
Date Sampled			Apr 30, 2020	Apr 30, 2020	Apr 30, 2020	Apr 30, 2020
Test/Reference	LOR	Unit				
Heavy Metals						
Lead	5	mg/kg	28	78	26	120
% Moisture						
% Moisture	1	%	32	17	9.1	29

Client Sample ID			P39_HA09_0.0-0.05	P39_HA09_0.2	P39_HA10_0.0-0.05	P39_TWS1
Sample Matrix			Soil	Soil	Soil	Sediment
Eurofins Sample No.			S20-My00972	S20-My00973	S20-My00974	S20-My00976
Date Sampled			Apr 30, 2020	Apr 30, 2020	Apr 30, 2020	Apr 30, 2020
Test/Reference	LOR	Unit				
Heavy Metals						
Aluminium	10	mg/kg	-	-	-	15000
Arsenic	2	mg/kg	-	-	-	4.9
Barium	10	mg/kg	-	-	-	43
Beryllium	2	mg/kg	-	-	-	0.6
Cadmium	0.4	mg/kg	-	-	-	0.3
Chromium	5	mg/kg	-	-	-	35
Cobalt	5	mg/kg	-	-	-	2.8
Copper	5	mg/kg	-	-	-	180
Iron	20	mg/kg	-	-	-	16000
Lead	5	mg/kg	79	46	110	160
Manganese	5	mg/kg	-	-	-	130
Mercury	0.1	mg/kg	-	-	-	0.2
Nickel	5	mg/kg	-	-	-	8.9
Zinc	5	mg/kg	-	-	-	410
% Moisture						
	1	%	17	5.6	26	78

Client Sample ID			P39_TWS2
Sample Matrix			Sediment
Eurofins Sample No.			S20-My00978
Date Sampled			Apr 30, 2020
Test/Reference	LOR	Unit	
Heavy Metals			
Aluminium	10	mg/kg	9600
Arsenic	2	mg/kg	4.0
Barium	10	mg/kg	37
Beryllium	2	mg/kg	0.6
Cadmium	0.4	mg/kg	1.9
Chromium	5	mg/kg	60
Cobalt	5	mg/kg	4.0
Copper	5	mg/kg	56
Iron	20	mg/kg	18000
Lead	5	mg/kg	1100
Manganese	5	mg/kg	250
Mercury	0.1	mg/kg	0.06
Nickel	5	mg/kg	15
Zinc	5	mg/kg	1800
% Moisture			
	1	%	69

Sample History

Where samples are submitted/analysed over several days, the last date of extraction and analysis is reported.

A recent review of our LIMS has resulted in the correction or clarification of some method identifications. Due to this, some of the method reference information on reports has changed. However, no substantive change has been made to our laboratory methods, and as such there is no change in the validity of current or previous results.

If the date and time of sampling are not provided, the Laboratory will not be responsible for compromised results should testing be performed outside the recommended holding time.

Description

Heavy Metals

- Method: LTM-MET-3040 Metals in Waters, Soils & Sediments by ICP-MS

% Moisture

- Method: LTM-GEN-7080 Moisture

Testing Site

Sydney

Sydney

Extracted

May 06, 2020

May 04, 2020

Holding Time

180 Days

14 Days

Australia

Melbourne
6 Monterey Road
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NSW 2060

Order No.:
Report #: 716931
Phone: 02 9954 8118
Fax: 02 9954 8150

Received: May 1, 2020 12:00 PM
Due: May 8, 2020
Priority: 5 Day
Contact Name: Stephen Maxwell

Project Name: P39
Project ID: 318000780

Eurofins Analytical Services Manager : Andrew Black

Sample Detail						Aluminium	Arsenic	Barium	Beryllium	Cadmium	Chromium	Cobalt	Copper	Iron	Lead	Manganese	Mercury	Nickel	Zinc	Moisture Set	
Melbourne Laboratory - NATA Site # 1254 & 14271																					
Sydney Laboratory - NATA Site # 18217						X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X
Brisbane Laboratory - NATA Site # 20794																					
Perth Laboratory - NATA Site # 23736																					
External Laboratory																					
No	Sample ID	Sample Date	Sampling Time	Matrix	LAB ID																
1	P39_HA01_0.0-0.05	Apr 30, 2020		Soil	S20-My00960										X					X	
2	P39_HA01_0.2	Apr 30, 2020		Soil	S20-My00961										X					X	
3	P39_HA02_0.0-0.05	Apr 30, 2020		Soil	S20-My00962										X					X	
4	P39_HA03_0.0-0.05	Apr 30, 2020		Soil	S20-My00963										X					X	
5	P39_HA03_0.2	Apr 30, 2020		Soil	S20-My00964										X					X	
6	P39_HA04_0.0-0.05	Apr 30, 2020		Soil	S20-My00965										X					X	

Australia

Melbourne
6 Monterey Road
Dandenong South VIC 3175
Phone : +61 3 8564 5000
NATA # 1261
Site # 1254 & 14271

Sydney
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Brisbane
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Rolleston, Christchurch 7675
Phone : 0800 856 450
IANZ # 1290

Company Name: Ramboll Australia Pty Ltd
Address: Level 3/100 Pacific Highway
North Sydney
NSW 2060

Order No.:
Report #: 716931
Phone: 02 9954 8118
Fax: 02 9954 8150

Received: May 1, 2020 12:00 PM
Due: May 8, 2020
Priority: 5 Day
Contact Name: Stephen Maxwell

Project Name: P39
Project ID: 318000780

Eurofins Analytical Services Manager : Andrew Black

Sample Detail						Aluminium	Arsenic	Barium	Beryllium	Cadmium	Chromium	Cobalt	Copper	Iron	Lead	Manganese	Mercury	Nickel	Zinc	Moisture Set	
Melbourne Laboratory - NATA Site # 1254 & 14271																					
Sydney Laboratory - NATA Site # 18217						X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X
Brisbane Laboratory - NATA Site # 20794																					
Perth Laboratory - NATA Site # 23736																					
7	P39_HA05_0.0-0.05	Apr 30, 2020		Soil	S20-My00966										X					X	
8	P39_HA05_0.2	Apr 30, 2020		Soil	S20-My00967										X					X	
9	P39_HA06_0.0-0.05	Apr 30, 2020		Soil	S20-My00968										X					X	
10	P39_HA07_0.0-0.05	Apr 30, 2020		Soil	S20-My00969										X					X	
11	P39_HA07_0.2	Apr 30, 2020		Soil	S20-My00970										X					X	
12	P39_HA08_0.0-0.05	Apr 30, 2020		Soil	S20-My00971										X					X	
13	P39_HA09_0.0-0.05	Apr 30, 2020		Soil	S20-My00972										X					X	
14	P39_HA09_0.	Apr 30, 2020		Soil	S20-My00973										X					X	

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Melbourne Laboratory - NATA Site # 1254 & 14271																					
Sydney Laboratory - NATA Site # 18217						X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X
Brisbane Laboratory - NATA Site # 20794																					
Perth Laboratory - NATA Site # 23736																					
	2																				
15	P39_HA10_0.0-0.05	Apr 30, 2020		Soil	S20-My00974										X					X	
16	P39_TW1	Apr 30, 2020		Water	S20-My00975	X	X	X	X	X	X	X	X	X	X	X	X	X	X		
17	P39_TWS1	Apr 30, 2020		Water	S20-My00976	X	X	X	X	X	X	X	X	X	X	X	X	X	X		
18	P39_TW2	Apr 30, 2020		Water	S20-My00977	X	X	X	X	X	X	X	X	X	X	X	X	X	X		
19	P39_TWS2	Apr 30, 2020		Water	S20-My00978	X	X	X	X	X	X	X	X	X	X	X	X	X	X		
20	P39_GWBOR E	Apr 30, 2020		Water	S20-My00979	X	X	X	X	X	X	X	X	X	X	X	X	X	X		
Test Counts						5	5	5	5	5	5	5	5	5	20	5	5	5	5	15	

Internal Quality Control Review and Glossary
General

- Laboratory QC results for Method Blanks, Duplicates, Matrix Spikes, and Laboratory Control Samples follows guidelines delineated in the National Environment Protection (Assessment of Site Contamination) Measure 1999, as amended May 2013 and are included in this QC report where applicable. Additional QC data may be available on request.
- All soil/sediment/solid results are reported on a dry basis, unless otherwise stated.
- All biota/food results are reported on a wet weight basis on the edible portion, unless otherwise stated.
- Actual LORs are matrix dependant. Quoted LORs may be raised where sample extracts are diluted due to interferences.
- Results are uncorrected for matrix spikes or surrogate recoveries except for PFAS compounds.
- SVOC analysis on waters are performed on homogenised, unfiltered samples, unless noted otherwise.
- Samples were analysed on an 'as received' basis.
- Information identified on this report with blue colour, indicates data provided by customer, that may have an impact on the results.
- This report replaces any interim results previously issued.

Holding Times

Please refer to 'Sample Preservation and Container Guide' for holding times (QS3001).

For samples received on the last day of holding time, notification of testing requirements should have been received at least 6 hours prior to sample receipt deadlines as stated on the SRA.

If the Laboratory did not receive the information in the required timeframe, and regardless of any other integrity issues, suitably qualified results may still be reported.

Holding times apply from the date of sampling, therefore compliance to these may be outside the laboratory's control.

For VOCs containing vinyl chloride, styrene and 2-chloroethyl vinyl ether the holding time is 7 days however for all other VOCs such as BTEX or C6-10 TRH then the holding time is 14 days.

****NOTE:** pH duplicates are reported as a range NOT as RPD

Units

mg/kg: milligrams per kilogram

mg/L: milligrams per litre

ug/L: micrograms per litre

ppm: Parts per million

ppb: Parts per billion

%: Percentage

org/100mL: Organisms per 100 millilitres

NTU: Nephelometric Turbidity Units

MPN/100mL: Most Probable Number of organisms per 100 millilitres

Terms

Dry	Where a moisture has been determined on a solid sample the result is expressed on a dry basis.
LOR	Limit of Reporting.
SPIKE	Addition of the analyte to the sample and reported as percentage recovery.
RPD	Relative Percent Difference between two Duplicate pieces of analysis.
LCS	Laboratory Control Sample - reported as percent recovery.
CRM	Certified Reference Material - reported as percent recovery.
Method Blank	In the case of solid samples these are performed on laboratory certified clean sands and in the case of water samples these are performed on de-ionised water.
Surr - Surrogate	The addition of a like compound to the analyte target and reported as percentage recovery.
Duplicate	A second piece of analysis from the same sample and reported in the same units as the result to show comparison.
USEPA	United States Environmental Protection Agency
APHA	American Public Health Association
TCLP	Toxicity Characteristic Leaching Procedure
COC	Chain of Custody
SRA	Sample Receipt Advice
QSM	US Department of Defense Quality Systems Manual Version 5.3
CP	Client Parent - QC was performed on samples pertaining to this report
NCP	Non-Client Parent - QC performed on samples not pertaining to this report, QC is representative of the sequence or batch that client samples were analysed within.
TEQ	Toxic Equivalency Quotient

QC - Acceptance Criteria

RPD Duplicates: Global RPD Duplicates Acceptance Criteria is 30% however the following acceptance guidelines are equally applicable:

Results <10 times the LOR : No Limit

Results between 10-20 times the LOR : RPD must lie between 0-50%

Results >20 times the LOR : RPD must lie between 0-30%

Surrogate Recoveries: Recoveries must lie between 20-130% Phenols & 50-150% PFASs

PFAS field samples that contain surrogate recoveries in excess of the QC limit designated in QSM 5.3 where no positive PFAS results have been reported have been reviewed and no data was affected.

WA DWER (n=10): PFBA, PFPeA, PFHxA, PFHpA, PFOA, PFBS, PFHxS, PFOS, 6:2 FTSA, 8:2 FTSA

QC Data General Comments

- Where a result is reported as a less than (<), higher than the nominated LOR, this is due to either matrix interference, extract dilution required due to interferences or contaminant levels within the sample, high moisture content or insufficient sample provided.
- Duplicate data shown within this report that states the word "BATCH" is a Batch Duplicate from outside of your sample batch, but within the laboratory sample batch at a 1:10 ratio. The Parent and Duplicate data shown is not data from your samples.
- Organochlorine Pesticide analysis - where reporting LCS data, Toxaphene & Chlordane are not added to the LCS.
- Organochlorine Pesticide analysis - where reporting Spike data, Toxaphene is not added to the Spike.
- Total Recoverable Hydrocarbons - where reporting Spike & LCS data, a single spike of commercial Hydrocarbon products in the range of C12-C30 is added and it's Total Recovery is reported in the C10-C14 cell of the Report.
- pH and Free Chlorine analysed in the laboratory - Analysis on this test must begin within 30 minutes of sampling. Therefore laboratory analysis is unlikely to be completed within holding time. Analysis will begin as soon as possible after sample receipt.
- Recovery Data (Spikes & Surrogates) - where chromatographic interference does not allow the determination of Recovery the term "INT" appears against that analyte.
- Polychlorinated Biphenyls are spiked only using Aroclor 1260 in Matrix Spikes and LCS.
- For Matrix Spikes and LCS results a dash " - " in the report means that the specific analyte was not added to the QC sample.
- Duplicate RPDs are calculated from raw analytical data thus it is possible to have two sets of data.

Quality Control Results

Test			Units	Result 1		Acceptance Limits	Pass Limits	Qualifying Code
Method Blank								
Heavy Metals								
Aluminium			mg/kg	< 10		10	Pass	
Arsenic			mg/kg	< 2		2	Pass	
Barium			mg/kg	< 10		10	Pass	
Beryllium			mg/kg	< 2		2	Pass	
Cadmium			mg/kg	< 0.4		0.4	Pass	
Chromium			mg/kg	< 5		5	Pass	
Cobalt			mg/kg	< 5		5	Pass	
Copper			mg/kg	< 5		5	Pass	
Iron			mg/kg	< 20		20	Pass	
Lead			mg/kg	< 5		5	Pass	
Manganese			mg/kg	< 5		5	Pass	
Mercury			mg/kg	< 0.1		0.1	Pass	
Nickel			mg/kg	< 5		5	Pass	
Zinc			mg/kg	< 5		5	Pass	
LCS - % Recovery								
Heavy Metals								
Aluminium			%	96		70-130	Pass	
Arsenic			%	98		70-130	Pass	
Barium			%	99		70-130	Pass	
Beryllium			%	90		70-130	Pass	
Cadmium			%	96		70-130	Pass	
Chromium			%	97		70-130	Pass	
Cobalt			%	95		70-130	Pass	
Copper			%	97		70-130	Pass	
Iron			%	99		70-130	Pass	
Lead			%	98		70-130	Pass	
Manganese			%	98		70-130	Pass	
Mercury			%	99		70-130	Pass	
Nickel			%	97		70-130	Pass	
Zinc			%	96		70-130	Pass	
Test	Lab Sample ID	QA Source	Units	Result 1		Acceptance Limits	Pass Limits	Qualifying Code
Spike - % Recovery								
Heavy Metals								
				Result 1				
Arsenic	S20-My00969	CP	%	86		70-130	Pass	
Barium	S20-My00969	CP	%	82		70-130	Pass	
Beryllium	S20-My00969	CP	%	96		70-130	Pass	
Cadmium	S20-My00969	CP	%	89		70-130	Pass	
Chromium	S20-My00969	CP	%	81		70-130	Pass	
Cobalt	S20-My00969	CP	%	82		70-130	Pass	
Copper	S20-My00969	CP	%	84		70-130	Pass	
Lead	S20-My00969	CP	%	90		70-130	Pass	
Manganese	S20-My00969	CP	%	94		70-130	Pass	
Mercury	S20-My00969	CP	%	86		70-130	Pass	
Nickel	S20-My00969	CP	%	82		70-130	Pass	
Zinc	S20-My00969	CP	%	78		70-130	Pass	
Spike - % Recovery								
Heavy Metals								
				Result 1				
Aluminium	S20-My01797	NCP	%	94		70-130	Pass	
Arsenic	S20-My08642	NCP	%	75		70-130	Pass	

Test	Lab Sample ID	QA Source	Units	Result 1			Acceptance Limits	Pass Limits	Qualifying Code
Barium	S20-My05865	NCP	%	84			70-130	Pass	
Beryllium	S20-My08642	NCP	%	75			70-130	Pass	
Cadmium	S20-My08642	NCP	%	81			70-130	Pass	
Chromium	S20-My08642	NCP	%	74			70-130	Pass	
Cobalt	S20-My08642	NCP	%	78			70-130	Pass	
Copper	S20-My08642	NCP	%	78			70-130	Pass	
Iron	S20-My05865	NCP	%	111			70-130	Pass	
Manganese	S20-My05865	NCP	%	95			70-130	Pass	
Mercury	S20-My08642	NCP	%	80			70-130	Pass	
Nickel	S20-My08642	NCP	%	77			70-130	Pass	
Zinc	S20-My05865	NCP	%	84			70-130	Pass	
Test	Lab Sample ID	QA Source	Units	Result 1			Acceptance Limits	Pass Limits	Qualifying Code
Duplicate									
				Result 1	Result 2	RPD			
% Moisture	S20-My00960	CP	%	32	27	15	30%	Pass	
Duplicate									
Heavy Metals				Result 1	Result 2	RPD			
Aluminium	S20-My00968	CP	mg/kg	4000	4800	18	30%	Pass	
Arsenic	S20-My00968	CP	mg/kg	3.1	3.7	17	30%	Pass	
Barium	S20-My00968	CP	mg/kg	48	54	11	30%	Pass	
Beryllium	S20-My00968	CP	mg/kg	0.3	0.3	9.0	30%	Pass	
Cadmium	S20-My00968	CP	mg/kg	0.3	0.3	21	30%	Pass	
Chromium	S20-My00968	CP	mg/kg	7.2	9.1	23	30%	Pass	
Cobalt	S20-My00968	CP	mg/kg	3.7	2.8	26	30%	Pass	
Copper	S20-My00968	CP	mg/kg	9.2	12	27	30%	Pass	
Iron	S20-My00968	CP	mg/kg	7300	8300	13	30%	Pass	
Lead	S20-My00968	CP	mg/kg	28	49	55	30%	Fail	Q15
Manganese	S20-My00968	CP	mg/kg	270	260	1.0	30%	Pass	
Mercury	S20-My00968	CP	mg/kg	0.03	0.04	35	30%	Fail	Q15
Nickel	S20-My00968	CP	mg/kg	3.5	4.0	14	30%	Pass	
Zinc	S20-My00968	CP	mg/kg	71	88	22	30%	Pass	
Duplicate									
				Result 1	Result 2	RPD			
% Moisture	S20-My00970	CP	%	9.1	9.4	4.0	30%	Pass	
Duplicate									
Heavy Metals				Result 1	Result 2	RPD			
Aluminium	S20-My01826	NCP	mg/kg	6900	6500	7.0	30%	Pass	
Arsenic	S20-My01826	NCP	mg/kg	7.3	7.3	1.0	30%	Pass	
Barium	S20-My01826	NCP	mg/kg	100	100	2.0	30%	Pass	
Beryllium	S20-My01826	NCP	mg/kg	< 2	< 2	<1	30%	Pass	
Cadmium	S20-My01826	NCP	mg/kg	4.8	4.1	14	30%	Pass	
Chromium	S20-My01826	NCP	mg/kg	9.0	8.6	5.0	30%	Pass	
Cobalt	S20-My01826	NCP	mg/kg	< 5	< 5	<1	30%	Pass	
Copper	S20-My01826	NCP	mg/kg	200	200	3.0	30%	Pass	
Iron	S20-My01826	NCP	mg/kg	9400	9300	1.0	30%	Pass	
Manganese	S20-My01826	NCP	mg/kg	270	260	2.0	30%	Pass	
Mercury	S20-My01826	NCP	mg/kg	< 0.1	< 0.1	<1	30%	Pass	
Nickel	S20-My01826	NCP	mg/kg	7.3	6.3	15	30%	Pass	
Zinc	S20-My01826	NCP	mg/kg	2000	2800	32	30%	Fail	Q02

Comments
Sample Integrity

Custody Seals Intact (if used)	N/A
Attempt to Chill was evident	No
Sample correctly preserved	Yes
Appropriate sample containers have been used	Yes
Sample containers for volatile analysis received with minimal headspace	Yes
Samples received within HoldingTime	Yes
Some samples have been subcontracted	No

Qualifier Codes/Comments

Code	Description
Q02	The duplicate %RPD is outside the recommended acceptance criteria. Further analysis indicates sample heterogeneity as the cause
Q15	The RPD reported passes Eurofins Environment Testing's QC - Acceptance Criteria as defined in the Internal Quality Control Review and Glossary page of this report.

Authorised By

Andrew Black	Analytical Services Manager
Gabriele Cordero	Senior Analyst-Metal (NSW)


**Glenn Jackson
General Manager**

Final report - this Report replaces any previously issued Report

- Indicates Not Requested

* Indicates NATA accreditation does not cover the performance of this service

Measurement uncertainty of test data is available on request or please [click here](#).

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Ramboll Environ Australia Pty Ltd
 Level 3/100 Pacific Highway
 North Sydney
 NSW 2060



NATA Accredited
Accreditation Number 1261
Site Number 18217

Accredited for compliance with ISO/IEC 17025 – Testing
 The results of the tests, calibrations and/or
 measurements included in this document are traceable
 to Australian/national standards.

Attention: **Stephen Maxwell**

Report **716931-W**
 Project name **P39**
 Project ID **318000780**
 Received Date **May 01, 2020**

Client Sample ID			P39_TW1	P39_TW2	P39_GWBORE
Sample Matrix			Water	Water	Water
Eurofins Sample No.			S20-My00975	S20-My00977	S20-My00979
Date Sampled			Apr 30, 2020	Apr 30, 2020	Apr 30, 2020
Test/Reference	LOR	Unit			
Heavy Metals					
Aluminium	0.05	mg/L	0.05	< 0.05	< 0.05
Arsenic	0.001	mg/L	< 0.001	< 0.001	< 0.001
Barium	0.02	mg/L	< 0.02	< 0.02	0.09
Beryllium	0.001	mg/L	< 0.001	< 0.001	< 0.001
Cadmium	0.0002	mg/L	< 0.0002	< 0.0002	< 0.0002
Chromium	0.001	mg/L	0.001	0.001	< 0.001
Cobalt	0.001	mg/L	< 0.001	< 0.001	< 0.001
Copper	0.001	mg/L	0.008	< 0.001	< 0.001
Iron	0.05	mg/L	< 0.05	0.05	< 0.05
Lead	0.001	mg/L	< 0.001	0.007	< 0.001
Manganese	0.005	mg/L	< 0.005	< 0.005	< 0.005
Mercury	0.0001	mg/L	< 0.0001	< 0.0001	< 0.0001
Nickel	0.001	mg/L	< 0.001	< 0.001	< 0.001
Zinc	0.005	mg/L	0.14	0.064	0.006

Sample History

Where samples are submitted/analysed over several days, the last date of extraction and analysis is reported.

A recent review of our LIMS has resulted in the correction or clarification of some method identifications. Due to this, some of the method reference information on reports has changed. However, no substantive change has been made to our laboratory methods, and as such there is no change in the validity of current or previous results.

If the date and time of sampling are not provided, the Laboratory will not be responsible for compromised results should testing be performed outside the recommended holding time.

Description

Heavy Metals

Testing Site

Sydney

Extracted

May 05, 2020

Holding Time

180 Days

- Method: LTM-MET-3040 Metals in Waters, Soils & Sediments by ICP-MS

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Eurofins Analytical Services Manager : Andrew Black

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Melbourne Laboratory - NATA Site # 1254 & 14271																					
Sydney Laboratory - NATA Site # 18217						X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X
Brisbane Laboratory - NATA Site # 20794																					
Perth Laboratory - NATA Site # 23736																					
External Laboratory																					
No	Sample ID	Sample Date	Sampling Time	Matrix	LAB ID																
1	P39_HA01_0.0-0.05	Apr 30, 2020		Soil	S20-My00960										X					X	
2	P39_HA01_0.2	Apr 30, 2020		Soil	S20-My00961										X					X	
3	P39_HA02_0.0-0.05	Apr 30, 2020		Soil	S20-My00962										X					X	
4	P39_HA03_0.0-0.05	Apr 30, 2020		Soil	S20-My00963										X					X	
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Due: May 8, 2020
Priority: 5 Day
Contact Name: Stephen Maxwell

Project Name: P39
Project ID: 318000780

Eurofins Analytical Services Manager : Andrew Black

Sample Detail						Aluminium	Arsenic	Barium	Beryllium	Cadmium	Chromium	Cobalt	Copper	Iron	Lead	Manganese	Mercury	Nickel	Zinc	Moisture Set	
Melbourne Laboratory - NATA Site # 1254 & 14271																					
Sydney Laboratory - NATA Site # 18217						X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X
Brisbane Laboratory - NATA Site # 20794																					
Perth Laboratory - NATA Site # 23736																					
7	P39_HA05_0.0-0.05	Apr 30, 2020		Soil	S20-My00966										X					X	
8	P39_HA05_0.2	Apr 30, 2020		Soil	S20-My00967										X					X	
9	P39_HA06_0.0-0.05	Apr 30, 2020		Soil	S20-My00968										X					X	
10	P39_HA07_0.0-0.05	Apr 30, 2020		Soil	S20-My00969										X					X	
11	P39_HA07_0.2	Apr 30, 2020		Soil	S20-My00970										X					X	
12	P39_HA08_0.0-0.05	Apr 30, 2020		Soil	S20-My00971										X					X	
13	P39_HA09_0.0-0.05	Apr 30, 2020		Soil	S20-My00972										X					X	
14	P39_HA09_0.	Apr 30, 2020		Soil	S20-My00973										X					X	

Australia

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Site # 1254 & 14271

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Phone : +61 2 9900 8400
NATA # 1261 Site # 18217

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NATA # 1261 Site # 20794

Perth
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Phone : +61 8 9251 9600
NATA # 1261
Site # 23736

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Phone : 0800 856 450
IANZ # 1290

ABN – 50 005 085 521

web : www.eurofins.com.au

e.mail : EnviroSales@eurofins.com

Company Name: Ramboll Australia Pty Ltd
Address: Level 3/100 Pacific Highway
North Sydney
NSW 2060

Order No.:
Report #: 716931
Phone: 02 9954 8118
Fax: 02 9954 8150

Received: May 1, 2020 12:00 PM
Due: May 8, 2020
Priority: 5 Day
Contact Name: Stephen Maxwell

Project Name: P39
Project ID: 318000780

Eurofins Analytical Services Manager : Andrew Black

Sample Detail						Aluminium	Arsenic	Barium	Beryllium	Cadmium	Chromium	Cobalt	Copper	Iron	Lead	Manganese	Mercury	Nickel	Zinc	Moisture Set	
Melbourne Laboratory - NATA Site # 1254 & 14271																					
Sydney Laboratory - NATA Site # 18217						X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X
Brisbane Laboratory - NATA Site # 20794																					
Perth Laboratory - NATA Site # 23736																					
	2																				
15	P39_HA10_0.0-0.05	Apr 30, 2020		Soil	S20-My00974										X					X	
16	P39_TW1	Apr 30, 2020		Water	S20-My00975	X	X	X	X	X	X	X	X	X	X	X	X	X	X		
17	P39_TWS1	Apr 30, 2020		Water	S20-My00976	X	X	X	X	X	X	X	X	X	X	X	X	X	X		
18	P39_TW2	Apr 30, 2020		Water	S20-My00977	X	X	X	X	X	X	X	X	X	X	X	X	X	X		
19	P39_TWS2	Apr 30, 2020		Water	S20-My00978	X	X	X	X	X	X	X	X	X	X	X	X	X	X		
20	P39_GWBOR E	Apr 30, 2020		Water	S20-My00979	X	X	X	X	X	X	X	X	X	X	X	X	X	X		
Test Counts						5	5	5	5	5	5	5	5	5	20	5	5	5	5	15	

Internal Quality Control Review and Glossary
General

- Laboratory QC results for Method Blanks, Duplicates, Matrix Spikes, and Laboratory Control Samples follows guidelines delineated in the National Environment Protection (Assessment of Site Contamination) Measure 1999, as amended May 2013 and are included in this QC report where applicable. Additional QC data may be available on request.
- All soil/sediment/solid results are reported on a dry basis, unless otherwise stated.
- All biota/food results are reported on a wet weight basis on the edible portion, unless otherwise stated.
- Actual LORs are matrix dependant. Quoted LORs may be raised where sample extracts are diluted due to interferences.
- Results are uncorrected for matrix spikes or surrogate recoveries except for PFAS compounds.
- SVOC analysis on waters are performed on homogenised, unfiltered samples, unless noted otherwise.
- Samples were analysed on an 'as received' basis.
- Information identified on this report with blue colour, indicates data provided by customer, that may have an impact on the results.
- This report replaces any interim results previously issued.

Holding Times

Please refer to 'Sample Preservation and Container Guide' for holding times (QS3001).

For samples received on the last day of holding time, notification of testing requirements should have been received at least 6 hours prior to sample receipt deadlines as stated on the SRA.

If the Laboratory did not receive the information in the required timeframe, and regardless of any other integrity issues, suitably qualified results may still be reported.

Holding times apply from the date of sampling, therefore compliance to these may be outside the laboratory's control.

For VOCs containing vinyl chloride, styrene and 2-chloroethyl vinyl ether the holding time is 7 days however for all other VOCs such as BTEX or C6-10 TRH then the holding time is 14 days.

****NOTE:** pH duplicates are reported as a range NOT as RPD

Units

mg/kg: milligrams per kilogram

mg/L: milligrams per litre

ug/L: micrograms per litre

ppm: Parts per million

ppb: Parts per billion

%: Percentage

org/100mL: Organisms per 100 millilitres

NTU: Nephelometric Turbidity Units

MPN/100mL: Most Probable Number of organisms per 100 millilitres

Terms

Dry	Where a moisture has been determined on a solid sample the result is expressed on a dry basis.
LOR	Limit of Reporting.
SPIKE	Addition of the analyte to the sample and reported as percentage recovery.
RPD	Relative Percent Difference between two Duplicate pieces of analysis.
LCS	Laboratory Control Sample - reported as percent recovery.
CRM	Certified Reference Material - reported as percent recovery.
Method Blank	In the case of solid samples these are performed on laboratory certified clean sands and in the case of water samples these are performed on de-ionised water.
Surr - Surrogate	The addition of a like compound to the analyte target and reported as percentage recovery.
Duplicate	A second piece of analysis from the same sample and reported in the same units as the result to show comparison.
USEPA	United States Environmental Protection Agency
APHA	American Public Health Association
TCLP	Toxicity Characteristic Leaching Procedure
COC	Chain of Custody
SRA	Sample Receipt Advice
QSM	US Department of Defense Quality Systems Manual Version 5.3
CP	Client Parent - QC was performed on samples pertaining to this report
NCP	Non-Client Parent - QC performed on samples not pertaining to this report, QC is representative of the sequence or batch that client samples were analysed within.
TEQ	Toxic Equivalency Quotient

QC - Acceptance Criteria

RPD Duplicates: Global RPD Duplicates Acceptance Criteria is 30% however the following acceptance guidelines are equally applicable:

Results <10 times the LOR : No Limit

Results between 10-20 times the LOR : RPD must lie between 0-50%

Results >20 times the LOR : RPD must lie between 0-30%

Surrogate Recoveries: Recoveries must lie between 20-130% Phenols & 50-150% PFASs

PFAS field samples that contain surrogate recoveries in excess of the QC limit designated in QSM 5.3 where no positive PFAS results have been reported have been reviewed and no data was affected.

WA DWER (n=10): PFBA, PFPeA, PFHxA, PFHpA, PFOA, PFBS, PFHxS, PFOS, 6:2 FTSA, 8:2 FTSA

QC Data General Comments

- Where a result is reported as a less than (<), higher than the nominated LOR, this is due to either matrix interference, extract dilution required due to interferences or contaminant levels within the sample, high moisture content or insufficient sample provided.
- Duplicate data shown within this report that states the word "BATCH" is a Batch Duplicate from outside of your sample batch, but within the laboratory sample batch at a 1:10 ratio. The Parent and Duplicate data shown is not data from your samples.
- Organochlorine Pesticide analysis - where reporting LCS data, Toxaphene & Chlordane are not added to the LCS.
- Organochlorine Pesticide analysis - where reporting Spike data, Toxaphene is not added to the Spike.
- Total Recoverable Hydrocarbons - where reporting Spike & LCS data, a single spike of commercial Hydrocarbon products in the range of C12-C30 is added and it's Total Recovery is reported in the C10-C14 cell of the Report.
- pH and Free Chlorine analysed in the laboratory - Analysis on this test must begin within 30 minutes of sampling. Therefore laboratory analysis is unlikely to be completed within holding time. Analysis will begin as soon as possible after sample receipt.
- Recovery Data (Spikes & Surrogates) - where chromatographic interference does not allow the determination of Recovery the term "INT" appears against that analyte.
- Polychlorinated Biphenyls are spiked only using Aroclor 1260 in Matrix Spikes and LCS.
- For Matrix Spikes and LCS results a dash " - " in the report means that the specific analyte was not added to the QC sample.
- Duplicate RPDs are calculated from raw analytical data thus it is possible to have two sets of data.

Quality Control Results

Test			Units	Result 1		Acceptance Limits	Pass Limits	Qualifying Code
Method Blank								
Heavy Metals								
Aluminium			mg/L	< 0.05		0.05	Pass	
Arsenic			mg/L	< 0.001		0.001	Pass	
Barium			mg/L	< 0.02		0.02	Pass	
Beryllium			mg/L	< 0.001		0.001	Pass	
Cadmium			mg/L	< 0.0002		0.0002	Pass	
Chromium			mg/L	< 0.001		0.001	Pass	
Cobalt			mg/L	< 0.001		0.001	Pass	
Copper			mg/L	< 0.001		0.001	Pass	
Iron			mg/L	< 0.05		0.05	Pass	
Lead			mg/L	< 0.001		0.001	Pass	
Manganese			mg/L	< 0.005		0.005	Pass	
Mercury			mg/L	< 0.0001		0.0001	Pass	
Nickel			mg/L	< 0.001		0.001	Pass	
Zinc			mg/L	< 0.005		0.005	Pass	
LCS - % Recovery								
Heavy Metals								
Aluminium			%	99		70-130	Pass	
Arsenic			%	97		70-130	Pass	
Barium			%	90		70-130	Pass	
Beryllium			%	91		70-130	Pass	
Cadmium			%	93		70-130	Pass	
Chromium			%	98		70-130	Pass	
Cobalt			%	98		70-130	Pass	
Copper			%	97		70-130	Pass	
Iron			%	98		70-130	Pass	
Lead			%	100		70-130	Pass	
Manganese			%	95		70-130	Pass	
Mercury			%	109		70-130	Pass	
Nickel			%	98		70-130	Pass	
Zinc			%	93		70-130	Pass	
Test	Lab Sample ID	QA Source	Units	Result 1		Acceptance Limits	Pass Limits	Qualifying Code
Spike - % Recovery								
Heavy Metals				Result 1				
Aluminium	S20-My01516	NCP	%	98		70-130	Pass	
Arsenic	S20-My01516	NCP	%	98		70-130	Pass	
Barium	S20-My01516	NCP	%	92		70-130	Pass	
Beryllium	S20-My01516	NCP	%	91		70-130	Pass	
Cadmium	S20-My01516	NCP	%	95		70-130	Pass	
Chromium	S20-My01516	NCP	%	101		70-130	Pass	
Cobalt	S20-My01516	NCP	%	101		70-130	Pass	
Copper	S20-My01516	NCP	%	100		70-130	Pass	
Iron	S20-My01516	NCP	%	99		70-130	Pass	
Lead	S20-My01516	NCP	%	104		70-130	Pass	
Manganese	S20-My01516	NCP	%	97		70-130	Pass	
Mercury	S20-My01516	NCP	%	115		70-130	Pass	
Nickel	S20-My01516	NCP	%	102		70-130	Pass	
Zinc	S20-My01516	NCP	%	97		70-130	Pass	

Test	Lab Sample ID	QA Source	Units	Result 1			Acceptance Limits	Pass Limits	Qualifying Code
Duplicate									
Heavy Metals				Result 1	Result 2	RPD			
Aluminium	S20-My01341	NCP	mg/L	0.06	0.06	1.0	30%	Pass	
Arsenic	S20-My01341	NCP	mg/L	< 0.001	0.001	25	30%	Pass	
Barium	S20-My01341	NCP	mg/L	0.08	0.09	6.0	30%	Pass	
Beryllium	S20-My01341	NCP	mg/L	< 0.001	< 0.001	<1	30%	Pass	
Cadmium	S20-My01341	NCP	mg/L	0.0004	0.0004	<1	30%	Pass	
Chromium	S20-My01341	NCP	mg/L	< 0.001	< 0.001	<1	30%	Pass	
Cobalt	S20-My01341	NCP	mg/L	0.002	0.002	11	30%	Pass	
Copper	S20-My01341	NCP	mg/L	0.006	0.006	2.0	30%	Pass	
Iron	S20-My01341	NCP	mg/L	0.75	0.75	<1	30%	Pass	
Lead	S20-My01341	NCP	mg/L	0.006	0.006	<1	30%	Pass	
Manganese	S20-My01341	NCP	mg/L	0.26	0.26	<1	30%	Pass	
Mercury	S20-My01341	NCP	mg/L	< 0.0001	< 0.0001	<1	30%	Pass	
Nickel	S20-My01341	NCP	mg/L	< 0.001	< 0.001	<1	30%	Pass	
Zinc	S20-My01341	NCP	mg/L	0.16	0.16	4.0	30%	Pass	

Comments**Sample Integrity**

Custody Seals Intact (if used)	N/A
Attempt to Chill was evident	No
Sample correctly preserved	Yes
Appropriate sample containers have been used	Yes
Sample containers for volatile analysis received with minimal headspace	Yes
Samples received within HoldingTime	Yes
Some samples have been subcontracted	No

Authorised By

Andrew Black Analytical Services Manager
Gabriele Cordero Senior Analyst-Metal (NSW)

**Glenn Jackson
General Manager**

Final report - this Report replaces any previously issued Report

- Indicates Not Requested

* Indicates NATA accreditation does not cover the performance of this service

Measurement uncertainty of test data is available on request or please [click here](#).

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CHAIN OF CUSTODY RECORD

AS/NZS 9006:2015

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Brisbane Laboratory
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Perth Laboratory
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Melbourne Laboratory
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03 8864 5000 EnviroSamplesVIC@eurofins.com

Company	Ramboll	Project No	318000780	Project Manager	Stephen Maxwell	Sampler(s)	JIB, T1, JK
Address	50 Glebe Road the Junction	Project Name	P40	EDD Format (Estat EQUIS, Custom)	Excel and PDF	Handed over by	Jordyn Kirsch
Contact Name	Stephen Maxwell	Email for Invoice: smaxwell@ramboll.com Email for Results: asiapac-accounts@ramboll.com smaxwell@ramboll.com jblackwell@ramboll.com					
Phone No	0478 658 194	Containers: 1L Plastic, 250mL Plastic, 125mL Plastic, 200mL Amber Glass, 40mL VOA vial, 500mL PFAS Bottle, Jar (Glass or HDPE), Other (Asbestos AS4954, WA Guidelines)					
Special Directions		Turnaround Time (TAT) Requirements (Order will be 5 days in total - incl) <input type="checkbox"/> Overnight (9am)* <input type="checkbox"/> 1 Day* <input type="checkbox"/> 3 Day* <input checked="" type="checkbox"/> 5 Day* <input type="checkbox"/> Other () *Surcharges apply					
Purchase Order		Sample Comments / Dangerous Goods Hazard Warning					
Quote ID No	180813RAMM_1						

No	Client Sample ID	Sampled Date/Time (dd/mm/yy hh:mm)	Matrix (Solid (S) Water (W))	Analyses	Method of Shipment	Received By	Signature	Date	Time	Temperature	Report No
1	P40_HA07_-0.2	30/04/20	S	M13 (Al, As, Ba, Be, Cd, Cr, Co, Cu, Fe, Pb, Mn, Hg, Ni, Zn) Excluding hexavalent chromium	<input type="checkbox"/> Courier # <input checked="" type="checkbox"/> Hand Delivered	<i>Lucas D.</i>	<i>[Signature]</i>	01.08.20	12.00 PM	16.03 C	A16865
2	P40_HA08_-0.0-0.05	30/04/20	S								
3	P40_HA09_0.0-0.05	30/04/20	S								
4	P40_HA09_0.2	30/04/20	S								
5	P40_HA10_-0.0-0.05	30/04/20	S								
6											
7											
8											
9											
10											
Total Counts					5						

Method of Shipment	<input type="checkbox"/> Courier # <input checked="" type="checkbox"/> Hand Delivered	<input type="checkbox"/> Postal	Name	Signature	Date	Time	Temperature	Report No
Eurofins Ingt Laboratory Use Only	Received By	Received By	Signature	Signature	Date	Time	Temperature	Report No
SYD BNE MEL PER ADL NTL DRW		SYD BNE MEL PER ADL NTL DRW						

Submission of samples to the laboratory will be deemed as acceptance of Eurofins Ingt Standard Terms and Conditions unless agreed otherwise. A copy of Eurofins Ingt Standard Terms and Conditions is available on request.

Eurofins Environment, Testing Australia Pty Ltd, trading as Eurofins | Ingt

Melbourne

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NATA # 1261 Site # 18217

Brisbane

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Phone : +61 7 3902 4600
NATA # 1261 Site # 20794

Perth

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Kewdale WA 6105
Phone : +61 8 9251 9600
NATA # 1261 Site # 23736

Sample Receipt Advice

Company name: **Ramboll Australia Pty Ltd**
Contact name: Stephen Maxwell
Project name: P40
Project ID: 318000780
COC number: Not provided
Turn around time: 5 Day
Date/Time received: May 1, 2020 12:00 PM
Eurofins reference: **716865**

Sample information

- A detailed list of analytes logged into our LIMS, is included in the attached summary table.
- All samples have been received as described on the above COC.
- COC has been completed correctly.
- Attempt to chill was evident.
- Appropriately preserved sample containers have been used.
- All samples were received in good condition.
- Samples have been provided with adequate time to commence analysis in accordance with the relevant holding times.
- Appropriate sample containers have been used.
- Split sample sent to requested external lab.
- Some samples have been subcontracted.
- N/A Custody Seals intact (if used).

Contact notes

If you have any questions with respect to these samples please contact:

Andrew Black on Phone : (+61) 2 9900 8490 or by e.mail: AndrewBlack@eurofins.com

Results will be delivered electronically via e.mail to Stephen Maxwell - smaxwell@ramboll.com.

Note: A copy of these results will also be delivered to the general Ramboll Australia Pty Ltd email address.

Ramboll Environ Australia Pty Ltd
 Level 3/100 Pacific Highway
 North Sydney
 NSW 2060



NATA Accredited
 Accreditation Number 1261
 Site Number 18217

Accredited for compliance with ISO/IEC 17025 – Testing
 The results of the tests, calibrations and/or
 measurements included in this document are traceable
 to Australian/national standards.

Attention: Stephen Maxwell

Report 716865-S
 Project name P40
 Project ID 318000780
 Received Date May 01, 2020

Client Sample ID			P40_HA01_0.0-0.05	P40_HA01_0.2	P40_HA02_0.0-0.05	P40_HA03_0.0-0.05
Sample Matrix			Soil	Soil	Soil	Soil
Eurofins Sample No.			S20-My00560	S20-My00561	S20-My00562	S20-My00563
Date Sampled			Apr 30, 2020	Apr 30, 2020	Apr 30, 2020	Apr 30, 2020
Test/Reference	LOR	Unit				
Heavy Metals						
Aluminium	10	mg/kg	5300	5400	3400	4000
Arsenic	2	mg/kg	5.5	3.3	3.2	3.6
Barium	10	mg/kg	85	94	42	160
Beryllium	2	mg/kg	< 2	< 2	< 2	< 2
Cadmium	0.4	mg/kg	4.4	< 0.4	< 0.4	1.0
Chromium	5	mg/kg	9.0	9.5	10	11
Cobalt	5	mg/kg	< 5	< 5	< 5	< 5
Copper	5	mg/kg	120	17	17	40
Iron	20	mg/kg	7600	7300	8600	16000
Lead	5	mg/kg	260	28	67	220
Manganese	5	mg/kg	290	430	92	360
Mercury	0.1	mg/kg	< 0.1	< 0.1	< 0.1	0.1
Nickel	5	mg/kg	5.3	< 5	< 5	< 5
Zinc	5	mg/kg	460	100	97	400
% Moisture	1	%	16	13	20	24

Client Sample ID			P40_HA03_0.2	P40_HA04_0.0-0.05	P40_HA05_0.0-0.05	P40_HA05_0.2
Sample Matrix			Soil	Soil	Soil	Soil
Eurofins Sample No.			S20-My00564	S20-My00565	S20-My00566	S20-My00567
Date Sampled			Apr 30, 2020	Apr 30, 2020	Apr 30, 2020	Apr 30, 2020
Test/Reference	LOR	Unit				
Heavy Metals						
Aluminium	10	mg/kg	4300	2700	8700	7200
Arsenic	2	mg/kg	4.2	3.6	7.7	4.7
Barium	10	mg/kg	230	41	150	120
Beryllium	2	mg/kg	< 2	< 2	< 2	< 2
Cadmium	0.4	mg/kg	< 0.4	0.7	9.0	1.6
Chromium	5	mg/kg	23	8.1	12	11
Cobalt	5	mg/kg	< 5	< 5	< 5	< 5
Copper	5	mg/kg	83	26	300	40
Iron	20	mg/kg	9900	7700	12000	9800
Lead	5	mg/kg	200	83	650	66

Client Sample ID			P40_HA03_0.2	P40_HA04_0.0-0.05	P40_HA05_0.0-0.05	P40_HA05_0.2
Sample Matrix			Soil	Soil	Soil	Soil
Eurofins Sample No.			S20-My00564	S20-My00565	S20-My00566	S20-My00567
Date Sampled			Apr 30, 2020	Apr 30, 2020	Apr 30, 2020	Apr 30, 2020
Test/Reference	LOR	Unit				
Heavy Metals						
Manganese	5	mg/kg	430	81	470	560
Mercury	0.1	mg/kg	0.3	< 0.1	< 0.1	< 0.1
Nickel	5	mg/kg	41	< 5	7.7	< 5
Zinc	5	mg/kg	370	150	870	340
% Moisture						
	1	%	9.9	19	30	14

Client Sample ID			P40_HA06_0.0-0.05	P40_HA07_0.0-0.05	P40_HA07_0.2	P40_HA08_0.0-0.05
Sample Matrix			Soil	Soil	Soil	Soil
Eurofins Sample No.			S20-My00568	S20-My00569	S20-My00570	S20-My00571
Date Sampled			Apr 30, 2020	Apr 30, 2020	Apr 30, 2020	Apr 30, 2020
Test/Reference	LOR	Unit				
Heavy Metals						
Aluminium	10	mg/kg	5900	7300	7200	5500
Arsenic	2	mg/kg	6.9	8.2	5.7	4.4
Barium	10	mg/kg	72	98	91	66
Beryllium	2	mg/kg	< 2	< 2	< 2	< 2
Cadmium	0.4	mg/kg	3.1	4.8	1.8	0.6
Chromium	5	mg/kg	11	11	13	12
Cobalt	5	mg/kg	< 5	< 5	6.6	< 5
Copper	5	mg/kg	110	130	26	24
Iron	20	mg/kg	10000	11000	16000	11000
Lead	5	mg/kg	190	270	31	91
Manganese	5	mg/kg	250	340	660	200
Mercury	0.1	mg/kg	< 0.1	< 0.1	< 0.1	< 0.1
Nickel	5	mg/kg	6.4	5.9	6.0	5.3
Zinc	5	mg/kg	360	480	210	170
% Moisture						
	1	%	7.9	30	10	22

Client Sample ID			P40_HA09_0.0-0.05	P40_HA09_0.2	P40_HA10_0.0-0.05
Sample Matrix			Soil	Soil	Soil
Eurofins Sample No.			S20-My00572	S20-My00573	S20-My00574
Date Sampled			Apr 30, 2020	Apr 30, 2020	Apr 30, 2020
Test/Reference	LOR	Unit			
Heavy Metals					
Aluminium	10	mg/kg	9200	9500	8000
Arsenic	2	mg/kg	10	5.3	8.6
Barium	10	mg/kg	100	230	110
Beryllium	2	mg/kg	< 2	< 2	< 2
Cadmium	0.4	mg/kg	6.1	0.7	4.7
Chromium	5	mg/kg	11	11	10
Cobalt	5	mg/kg	< 5	8.1	< 5
Copper	5	mg/kg	330	23	220
Iron	20	mg/kg	11000	12000	11000

Client Sample ID			P40_HA09_0.0-0.05	P40_HA09_0.2	P40_HA10_0.0-0.05
Sample Matrix			Soil	Soil	Soil
Eurofins Sample No.			S20-My00572	S20-My00573	S20-My00574
Date Sampled			Apr 30, 2020	Apr 30, 2020	Apr 30, 2020
Test/Reference	LOR	Unit			
Heavy Metals					
Lead	5	mg/kg	540	68	450
Manganese	5	mg/kg	280	2100	300
Mercury	0.1	mg/kg	< 0.1	< 0.1	< 0.1
Nickel	5	mg/kg	9.0	5.8	7.4
Zinc	5	mg/kg	680	290	3000
% Moisture					
% Moisture	1	%	26	19	32

Sample History

Where samples are submitted/analysed over several days, the last date of extraction and analysis is reported.

A recent review of our LIMS has resulted in the correction or clarification of some method identifications. Due to this, some of the method reference information on reports has changed. However, no substantive change has been made to our laboratory methods, and as such there is no change in the validity of current or previous results.

If the date and time of sampling are not provided, the Laboratory will not be responsible for compromised results should testing be performed outside the recommended holding time.

Description

Heavy Metals

- Method: LTM-MET-3040 Metals in Waters, Soils & Sediments by ICP-MS

% Moisture

- Method: LTM-GEN-7080 Moisture

Testing Site

Sydney

Sydney

Extracted

May 06, 2020

May 01, 2020

Holding Time

180 Days

14 Days

Australia

Melbourne
6 Monterey Road
Dandenong South VIC 3175
Phone : +61 3 8564 5000
NATA # 1261
Site # 1254 & 14271

Sydney
Unit F3, Building F
16 Mars Road
Lane Cove West NSW 2066
Phone : +61 2 9900 8400
NATA # 1261 Site # 18217

Brisbane
1/21 Smallwood Place
Murarie QLD 4172
Phone : +61 7 3902 4600
NATA # 1261 Site # 20794

Perth
2/91 Leach Highway
Kewdale WA 6105
Phone : +61 8 9251 9600
NATA # 1261
Site # 23736

New Zealand

Auckland
35 O'Rorke Road
Penrose, Auckland 1061
Phone : +64 9 526 45 51
IANZ # 1327

Christchurch
43 Detroit Drive
Rolleston, Christchurch 7675
Phone : 0800 856 450
IANZ # 1290

Company Name: Ramboll Australia Pty Ltd
Address: Level 3/100 Pacific Highway
North Sydney
NSW 2060

Order No.:
Report #: 716865
Phone: 02 9954 8118
Fax: 02 9954 8150

Received: May 1, 2020 12:00 PM
Due: May 8, 2020
Priority: 5 Day
Contact Name: Stephen Maxwell

Project Name: P40
Project ID: 318000780

Eurofins Analytical Services Manager : Andrew Black

Sample Detail						Aluminium	Arsenic	Barium	Beryllium	Cadmium	Chromium	Cobalt	Copper	Iron	Lead	Manganese	Mercury	Nickel	Zinc	Moisture Set		
Melbourne Laboratory - NATA Site # 1254 & 14271																						
Sydney Laboratory - NATA Site # 18217						X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	
Brisbane Laboratory - NATA Site # 20794																						
Perth Laboratory - NATA Site # 23736																						
External Laboratory																						
No	Sample ID	Sample Date	Sampling Time	Matrix	LAB ID																	
1	P40_HA01_0.0-0.05	Apr 30, 2020		Soil	S20-My00560	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	
2	P40_HA01_0.2	Apr 30, 2020		Soil	S20-My00561	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	
3	P40_HA02_0.0-0.05	Apr 30, 2020		Soil	S20-My00562	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	
4	P40_HA03_0.0-0.05	Apr 30, 2020		Soil	S20-My00563	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	
5	P40_HA03_0.2	Apr 30, 2020		Soil	S20-My00564	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	
6	P40_HA04_0.0-0.05	Apr 30, 2020		Soil	S20-My00565	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	

Australia

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Site # 1254 & 14271

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Phone : +61 2 9900 8400
NATA # 1261 Site # 18217

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Phone : +61 7 3902 4600
NATA # 1261 Site # 20794

Perth
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Kewdale WA 6105
Phone : +61 8 9251 9600
NATA # 1261
Site # 23736

New Zealand

Auckland
35 O'Rorke Road
Penrose, Auckland 1061
Phone : +64 9 526 45 51
IANZ # 1327

Christchurch
43 Detroit Drive
Rolleston, Christchurch 7675
Phone : 0800 856 450
IANZ # 1290

Company Name: Ramboll Australia Pty Ltd
Address: Level 3/100 Pacific Highway
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NSW 2060

Order No.:
Report #: 716865
Phone: 02 9954 8118
Fax: 02 9954 8150

Received: May 1, 2020 12:00 PM
Due: May 8, 2020
Priority: 5 Day
Contact Name: Stephen Maxwell

Project Name: P40
Project ID: 318000780

Eurofins Analytical Services Manager : Andrew Black

Sample Detail						Aluminium	Arsenic	Barium	Beryllium	Cadmium	Chromium	Cobalt	Copper	Iron	Lead	Manganese	Mercury	Nickel	Zinc	Moisture Set	
Melbourne Laboratory - NATA Site # 1254 & 14271																					
Sydney Laboratory - NATA Site # 18217						X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X
Brisbane Laboratory - NATA Site # 20794																					
Perth Laboratory - NATA Site # 23736																					
7	P40_HA05_0.0-0.05	Apr 30, 2020		Soil	S20-My00566	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	
8	P40_HA05_0.2	Apr 30, 2020		Soil	S20-My00567	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	
9	P40_HA06_0.0-0.05	Apr 30, 2020		Soil	S20-My00568	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	
10	P40_HA07_0.0-0.05	Apr 30, 2020		Soil	S20-My00569	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	
11	P40_HA07_0.2	Apr 30, 2020		Soil	S20-My00570	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	
12	P40_HA08_0.0-0.05	Apr 30, 2020		Soil	S20-My00571	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	
13	P40_HA09_0.0-0.05	Apr 30, 2020		Soil	S20-My00572	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	
14	P40_HA09_0.	Apr 30, 2020		Soil	S20-My00573	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	

Australia

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Christchurch
43 Detroit Drive
Rolleston, Christchurch 7675
Phone : 0800 856 450
IANZ # 1290

ABN – 50 005 085 521

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e.mail : EnviroSales@eurofins.com

Company Name: Ramboll Australia Pty Ltd
Address: Level 3/100 Pacific Highway
North Sydney
NSW 2060

Order No.:
Report #: 716865
Phone: 02 9954 8118
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Received: May 1, 2020 12:00 PM
Due: May 8, 2020
Priority: 5 Day
Contact Name: Stephen Maxwell

Project Name: P40
Project ID: 318000780

Eurofins Analytical Services Manager : Andrew Black

Sample Detail						Aluminium	Arsenic	Barium	Beryllium	Cadmium	Chromium	Cobalt	Copper	Iron	Lead	Manganese	Mercury	Nickel	Zinc	Moisture Set	
Melbourne Laboratory - NATA Site # 1254 & 14271																					
Sydney Laboratory - NATA Site # 18217						X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X
Brisbane Laboratory - NATA Site # 20794																					
Perth Laboratory - NATA Site # 23736																					
	2																				
15	P40_HA10_0.0-0.05	Apr 30, 2020		Soil	S20-My00574	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	
Test Counts						15	15	15	15	15	15	15	15	15	15	15	15	15	15	15	15

Internal Quality Control Review and Glossary
General

- Laboratory QC results for Method Blanks, Duplicates, Matrix Spikes, and Laboratory Control Samples follows guidelines delineated in the National Environment Protection (Assessment of Site Contamination) Measure 1999, as amended May 2013 and are included in this QC report where applicable. Additional QC data may be available on request.
- All soil/sediment/solid results are reported on a dry basis, unless otherwise stated.
- All biota/food results are reported on a wet weight basis on the edible portion, unless otherwise stated.
- Actual LORs are matrix dependant. Quoted LORs may be raised where sample extracts are diluted due to interferences.
- Results are uncorrected for matrix spikes or surrogate recoveries except for PFAS compounds.
- SVOC analysis on waters are performed on homogenised, unfiltered samples, unless noted otherwise.
- Samples were analysed on an 'as received' basis.
- Information identified on this report with blue colour, indicates data provided by customer, that may have an impact on the results.
- This report replaces any interim results previously issued.

Holding Times

Please refer to 'Sample Preservation and Container Guide' for holding times (QS3001).

For samples received on the last day of holding time, notification of testing requirements should have been received at least 6 hours prior to sample receipt deadlines as stated on the SRA.

If the Laboratory did not receive the information in the required timeframe, and regardless of any other integrity issues, suitably qualified results may still be reported.

Holding times apply from the date of sampling, therefore compliance to these may be outside the laboratory's control.

For VOCs containing vinyl chloride, styrene and 2-chloroethyl vinyl ether the holding time is 7 days however for all other VOCs such as BTEX or C6-10 TRH then the holding time is 14 days.

****NOTE:** pH duplicates are reported as a range NOT as RPD

Units

mg/kg: milligrams per kilogram

mg/L: milligrams per litre

ug/L: micrograms per litre

ppm: Parts per million

ppb: Parts per billion

%: Percentage

org/100mL: Organisms per 100 millilitres

NTU: Nephelometric Turbidity Units

MPN/100mL: Most Probable Number of organisms per 100 millilitres

Terms

Dry	Where a moisture has been determined on a solid sample the result is expressed on a dry basis.
LOR	Limit of Reporting.
SPIKE	Addition of the analyte to the sample and reported as percentage recovery.
RPD	Relative Percent Difference between two Duplicate pieces of analysis.
LCS	Laboratory Control Sample - reported as percent recovery.
CRM	Certified Reference Material - reported as percent recovery.
Method Blank	In the case of solid samples these are performed on laboratory certified clean sands and in the case of water samples these are performed on de-ionised water.
Surr - Surrogate	The addition of a like compound to the analyte target and reported as percentage recovery.
Duplicate	A second piece of analysis from the same sample and reported in the same units as the result to show comparison.
USEPA	United States Environmental Protection Agency
APHA	American Public Health Association
TCLP	Toxicity Characteristic Leaching Procedure
COC	Chain of Custody
SRA	Sample Receipt Advice
QSM	US Department of Defense Quality Systems Manual Version 5.3
CP	Client Parent - QC was performed on samples pertaining to this report
NCP	Non-Client Parent - QC performed on samples not pertaining to this report, QC is representative of the sequence or batch that client samples were analysed within.
TEQ	Toxic Equivalency Quotient

QC - Acceptance Criteria

RPD Duplicates: Global RPD Duplicates Acceptance Criteria is 30% however the following acceptance guidelines are equally applicable:

Results <10 times the LOR : No Limit

Results between 10-20 times the LOR : RPD must lie between 0-50%

Results >20 times the LOR : RPD must lie between 0-30%

Surrogate Recoveries: Recoveries must lie between 20-130% Phenols & 50-150% PFASs

PFAS field samples that contain surrogate recoveries in excess of the QC limit designated in QSM 5.3 where no positive PFAS results have been reported have been reviewed and no data was affected.

WA DWER (n=10): PFBA, PFPeA, PFHxA, PFHpA, PFOA, PFBS, PFHxS, PFOS, 6:2 FTSA, 8:2 FTSA

QC Data General Comments

- Where a result is reported as a less than (<), higher than the nominated LOR, this is due to either matrix interference, extract dilution required due to interferences or contaminant levels within the sample, high moisture content or insufficient sample provided.
- Duplicate data shown within this report that states the word "BATCH" is a Batch Duplicate from outside of your sample batch, but within the laboratory sample batch at a 1:10 ratio. The Parent and Duplicate data shown is not data from your samples.
- Organochlorine Pesticide analysis - where reporting LCS data, Toxaphene & Chlordane are not added to the LCS.
- Organochlorine Pesticide analysis - where reporting Spike data, Toxaphene is not added to the Spike.
- Total Recoverable Hydrocarbons - where reporting Spike & LCS data, a single spike of commercial Hydrocarbon products in the range of C12-C30 is added and it's Total Recovery is reported in the C10-C14 cell of the Report.
- pH and Free Chlorine analysed in the laboratory - Analysis on this test must begin within 30 minutes of sampling. Therefore laboratory analysis is unlikely to be completed within holding time. Analysis will begin as soon as possible after sample receipt.
- Recovery Data (Spikes & Surrogates) - where chromatographic interference does not allow the determination of Recovery the term "INT" appears against that analyte.
- Polychlorinated Biphenyls are spiked only using Aroclor 1260 in Matrix Spikes and LCS.
- For Matrix Spikes and LCS results a dash " - " in the report means that the specific analyte was not added to the QC sample.
- Duplicate RPDs are calculated from raw analytical data thus it is possible to have two sets of data.

Quality Control Results

Test	Units	Result 1			Acceptance Limits	Pass Limits	Qualifying Code	
Method Blank								
Heavy Metals								
Aluminium	mg/kg	< 10			10	Pass		
Arsenic	mg/kg	< 2			2	Pass		
Barium	mg/kg	< 10			10	Pass		
Beryllium	mg/kg	< 2			2	Pass		
Cadmium	mg/kg	< 0.4			0.4	Pass		
Chromium	mg/kg	< 5			5	Pass		
Cobalt	mg/kg	< 5			5	Pass		
Copper	mg/kg	< 5			5	Pass		
Iron	mg/kg	< 20			20	Pass		
Lead	mg/kg	< 5			5	Pass		
Manganese	mg/kg	< 5			5	Pass		
Mercury	mg/kg	< 0.1			0.1	Pass		
Nickel	mg/kg	< 5			5	Pass		
Zinc	mg/kg	< 5			5	Pass		
LCS - % Recovery								
Heavy Metals								
Aluminium	%	99			70-130	Pass		
Arsenic	%	104			70-130	Pass		
Barium	%	98			70-130	Pass		
Beryllium	%	118			70-130	Pass		
Cadmium	%	104			70-130	Pass		
Chromium	%	102			70-130	Pass		
Cobalt	%	102			70-130	Pass		
Copper	%	102			70-130	Pass		
Iron	%	105			70-130	Pass		
Lead	%	100			70-130	Pass		
Manganese	%	102			70-130	Pass		
Mercury	%	118			70-130	Pass		
Nickel	%	104			70-130	Pass		
Zinc	%	99			70-130	Pass		
Test	Lab Sample ID	QA Source	Units	Result 1		Acceptance Limits	Pass Limits	Qualifying Code
Spike - % Recovery								
Heavy Metals				Result 1				
Iron	S20-My05865	NCP	%	111		70-130	Pass	
Spike - % Recovery								
Heavy Metals				Result 1				
Aluminium	S20-My00562	CP	%	110		70-130	Pass	
Arsenic	S20-My00562	CP	%	88		70-130	Pass	
Barium	S20-My00562	CP	%	81		70-130	Pass	
Beryllium	S20-My00562	CP	%	84		70-130	Pass	
Cadmium	S20-My00562	CP	%	89		70-130	Pass	
Chromium	S20-My00562	CP	%	88		70-130	Pass	
Cobalt	S20-My00562	CP	%	87		70-130	Pass	
Copper	S20-My00562	CP	%	86		70-130	Pass	
Lead	S20-My00562	CP	%	81		70-130	Pass	
Manganese	S20-My00562	CP	%	112		70-130	Pass	
Mercury	S20-My00562	CP	%	101		70-130	Pass	
Nickel	S20-My00562	CP	%	88		70-130	Pass	
Zinc	S20-My00562	CP	%	90		70-130	Pass	

Test	Lab Sample ID	QA Source	Units	Result 1	Result 2	RPD	Acceptance Limits	Pass Limits	Qualifying Code
Duplicate									
Heavy Metals				Result 1	Result 2	RPD			
Aluminium	S20-My00561	CP	mg/kg	5400	5600	4.0	30%	Pass	
Arsenic	S20-My00561	CP	mg/kg	3.3	3.7	13	30%	Pass	
Barium	S20-My00561	CP	mg/kg	94	100	8.0	30%	Pass	
Beryllium	S20-My00561	CP	mg/kg	< 2	< 2	<1	30%	Pass	
Cadmium	S20-My00561	CP	mg/kg	< 0.4	< 0.4	<1	30%	Pass	
Chromium	S20-My00561	CP	mg/kg	9.5	9.9	3.0	30%	Pass	
Cobalt	S20-My00561	CP	mg/kg	< 5	< 5	<1	30%	Pass	
Copper	S20-My00561	CP	mg/kg	17	18	2.0	30%	Pass	
Iron	S20-My00561	CP	mg/kg	7300	8100	10	30%	Pass	
Lead	S20-My00561	CP	mg/kg	28	33	17	30%	Pass	
Manganese	S20-My00561	CP	mg/kg	430	590	31	30%	Fail	Q02
Mercury	S20-My00561	CP	mg/kg	< 0.1	< 0.1	<1	30%	Pass	
Nickel	S20-My00561	CP	mg/kg	< 5	< 5	<1	30%	Pass	
Zinc	S20-My00561	CP	mg/kg	100	110	2.0	30%	Pass	
Duplicate									
				Result 1	Result 2	RPD			
% Moisture	S20-My00562	CP	%	20	18	11	30%	Pass	
Duplicate									
Heavy Metals				Result 1	Result 2	RPD			
Aluminium	S20-My00571	CP	mg/kg	5500	5900	8.0	30%	Pass	
Arsenic	S20-My00571	CP	mg/kg	4.4	5.6	24	30%	Pass	
Barium	S20-My00571	CP	mg/kg	66	71	7.0	30%	Pass	
Beryllium	S20-My00571	CP	mg/kg	< 2	< 2	<1	30%	Pass	
Cadmium	S20-My00571	CP	mg/kg	0.6	0.6	1.0	30%	Pass	
Chromium	S20-My00571	CP	mg/kg	12	14	14	30%	Pass	
Cobalt	S20-My00571	CP	mg/kg	< 5	< 5	<1	30%	Pass	
Copper	S20-My00571	CP	mg/kg	24	26	6.0	30%	Pass	
Iron	S20-My00571	CP	mg/kg	11000	15000	34	30%	Fail	Q02
Lead	S20-My00571	CP	mg/kg	91	91	<1	30%	Pass	
Manganese	S20-My00571	CP	mg/kg	200	240	16	30%	Pass	
Mercury	S20-My00571	CP	mg/kg	< 0.1	< 0.1	<1	30%	Pass	
Nickel	S20-My00571	CP	mg/kg	5.3	6.0	13	30%	Pass	
Zinc	S20-My00571	CP	mg/kg	170	170	5.0	30%	Pass	

Comments**Sample Integrity**

Custody Seals Intact (if used)	N/A
Attempt to Chill was evident	No
Sample correctly preserved	Yes
Appropriate sample containers have been used	Yes
Sample containers for volatile analysis received with minimal headspace	Yes
Samples received within HoldingTime	Yes
Some samples have been subcontracted	No

Qualifier Codes/Comments

Code	Description
Q02	The duplicate %RPD is outside the recommended acceptance criteria. Further analysis indicates sample heterogeneity as the cause

Authorised By

Andrew Black Analytical Services Manager
Gabriele Cordero Senior Analyst-Metal (NSW)

**Glenn Jackson
General Manager**

Final report - this Report replaces any previously issued Report

- Indicates Not Requested

* Indicates NATA accreditation does not cover the performance of this service

Measurement uncertainty of test data is available on request or please [click here](#).

Eurofins shall not be liable for loss, cost, damages or expenses incurred by the client, or any other person or company, resulting from the use of any information or interpretation given in this report. In no case shall Eurofins be liable for consequential damages including, but not limited to, lost profits, damages for failure to meet deadlines and lost production arising from this report. This document shall not be reproduced except in full and relates only to the items tested. Unless indicated otherwise, the tests were performed on the samples as received.

APPENDIX 8 PUBLIC PROPERTY LETTER REPORTS

Tarago Town Hall
C/- Wayne Baynham
18 Wallace Street
Tarago NSW 2580

Delivered: by email

Tarago Town Hall, 18 Wallace Street, Tarago NSW Lead Investigation Report

Date 17/6/2020

This report presents the findings of an investigation of lead at Tarago Town Hall undertaken as part of the investigation of lead impacts in the Tarago Community.

Investigation at your property comprised collection of samples as shown **Table 1** and the attached figure. Samples were collected on 23, 24, 25, 26 March and April 27 and 30, 2020.

Table 1 Samples Collected

Type	Number of samples collected
Soil	9
Groundwater from onsite bore	No bore present on site.
Rainwater tank water	1 – one of the two tanks could not be accessed to collect a sample.
Rainwater tank sediment	1 – one of the two tanks could not be accessed to collect a sample.
Dust (from inside property)	13 ¹
Paint	1

¹Internal dust sampling was initially undertaken on 25 March 2020. Additional swab sampling occurred 27 and 30 April 2020.

Samples were sent to an independent certified laboratory for analysis.

Results

Sample results were compared against guidelines relevant for a commercial property. Results are tabulated in **Table 2 - Table 4**. Concentrations shown in BOLD are above the relevant guideline.

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Level 2, Suite 18 Eastpoint
50 Glebe Road
PO Box 435
The Junction
NSW 2291
Australia

T +61 2 4962 5444
<https://ramboll.com>

Table 2 Summary lead concentrations relevant to health investigation levels

Type	Guideline	Result						
		P3_HA01_0.0-0.05	P3_HA01_0.2	P3_HA01_0.4	P3_HA02_0.0-0.05	P3_HA02_0.15	P3_HA02_0.4	P3_HA03_0.0-0.05
Soil	600 (mg/kg) ¹	120	97	110	100	400	320	320
		P3_HA03_0.15	P3_HA03_0.3					
		420	240					
Rainwater tank water	0.01 (mg/L) ²	P3_TW2 <0.001						
Dust Interior - Floors	1,000 (µg/m ²) ³	DSWAB_RE (P3) 102	DSWAB_SE (P3) 1,222	DSWAB_FE (P3) 311	DVAC_MH(P3) 196			
Dust Interior – Window Sills and Shelves	5,000 (µg/m ²) ³	DSWAB_WIN (P3) 344						
Paint	0.1% ⁴	P3_PAINT 1 <0.01						

¹ NEPM (2013) Schedule B1: Guideline on investigation levels for soil and groundwater. National Environment Protection (Assessment of Site Contamination) Measure 1999. Federal Register of Legislative Instruments F2013C00288 (HIL C – developed open space such as parks, playgrounds, playing fields (e.g. ovals), secondary schools and footpaths).

² NHMRC, NRMCC (2011 updated 2018) Australian Drinking Water Guidelines (ADWG) Paper 6 National Water Quality Management Strategy. National Health and Medical Research Council, National Resource Management Ministerial Council, Commonwealth of Australia, Canberra.

³ AS 4361.2-1998 Guide to lead paint management - Residential and commercial buildings.

⁴ Australian Government Department of the Environment, Lead Alert: the six step guide to painting your home, 5th Ed. 2016.

Table 2 presents a comparison of the results against the guidelines and found all lead concentrations in samples from soil and the rainwater tank to be below the relevant guidelines. This means that risks to health from lead in soil and the rainwater tank are considered low and acceptable.

However, the lead loading in floor dust from a sample collected at the side entrance to the Hall exceeded health criteria and as a result actions were completed to reduce lead dust loadings and to further assess concentrations of lead in dust. The following works have been completed:

1. Commercial cleaning inside of the Town Hall at or around the end of March (co-ordinated by the Tarago and District Progress Association Inc (TADPAI))
2. Additional assessment of internal dust on 27 April 2020 including a repeat of the sampling completed at the side entrance to the Hall.
3. Ramboll use of the Town Hall 27 – 30 April 2020 for the community investigation of lead impacts.
4. Ramboll cleaning of the Hall followed by additional assessment of internal dust on 30 April 2020 including a repeat of the sampling completed at the side entrance to the Hall.
5. Commercial cleaning inside of the Town Hall at or around the start of May (co-ordinated by TADPAI).

Type	Guideline	Date	Result		
Dust Interior - Floors	1,000 (µg/m ²) ¹	27/4/2020	DSWAB_FE (P3) 200	DSWAB_KE (P3) 102	DSWAB_SE (P3) 878
		30/4/2020	DSWAB_FE (P3) 144	DSWAB_KE (P3) 64	DSWAB_SE (P3) 133
Dust Interior - Window Sills	5,000 (µg/m ²) ¹	27/4/2020	DSWAB_WIN(P3) 111		
		30/4/2020	DSWAB_WIN(P3) 27		

¹ AS 4361.2-1998 Guide to lead paint management - Residential and commercial buildings.

Table 3 presents comparison of results from additional dust sampling completed on the 27 April 2020 and 30 April 2020. All results were reported below the relevant guideline and on this basis health risks associated with lead in internal dust are considered low and acceptable.

Table 4 Summary of lead concentration results for tank sediment

Type	Guideline	Result
Rainwater tank sediment	600 mg/kg ¹	450

¹ NEPM (2013) Schedule B1: Guideline on investigation levels for soil and groundwater. National Environment Protection (Assessment of Site Contamination) Measure 1999. Federal Register of Legislative Instruments F2013C00288 (HIL C – developed open space such as parks, playgrounds, playing fields (e.g. ovals), secondary schools and footpaths).

Table 4 presents the concentration of lead in tank sediment. In accordance with NSW Department of Health guidance (<https://www.health.nsw.gov.au/environment/water/Pages/rainwater.aspx>) sediment in rain water tanks should be periodically removed. Concentrations of lead in tank sediment indicate that sediment can be reused at the Town Hall property.

Based on the assessment completed of lead in soil, dust, rainwater tank water and rainwater tank sediment, concentrations of lead present were below guidelines and risks to human health from lead are considered low and acceptable. No further action at the Tarago Hall is required.

For further information please contact the undersigned.

Yours sincerely



Stephen Maxwell

Tarago Lead Investigation Project Manager

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smaxwell@ramboll.com



Fiona Robinson

Principal Contaminated Land Specialist

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Attachments

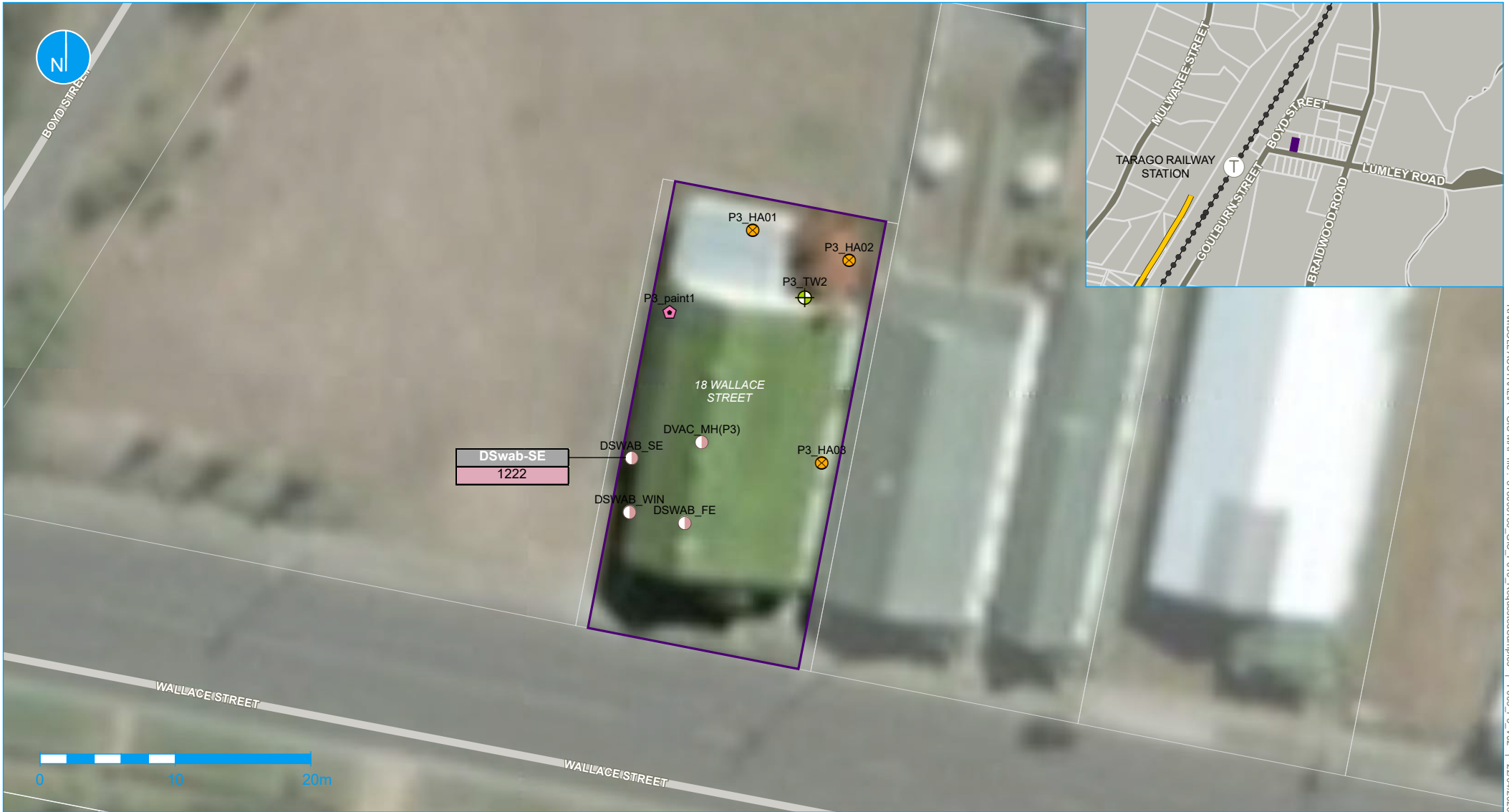
Figure of sampling locations

Reference

Laboratory report 710553, 711781, 713180 and 716985

Limitations

Ramboll Australia Pty Ltd prepared this report in accordance with the scope of work as outlined in our proposal to John Holland Rail and in accordance with our understanding and interpretation of current regulatory standards. A representative program of sampling and laboratory analyses was undertaken as part of this investigation. While every care has been taken, concentrations of contaminants measured may not be representative of conditions between the locations sampled and investigated. We cannot therefore preclude the presence of materials that may be hazardous. Site conditions may change over time. This report is based on conditions encountered at the Site at the time of the report and Ramboll disclaims responsibility for any changes that may have occurred after this time. The conclusions presented in this report represent Ramboll's professional judgment based on information made available during the course of this assignment and are true and correct to the best of Ramboll's knowledge as at the date of the assessment. Ramboll did not independently verify all of the written or oral information provided to Ramboll during the course of this investigation. While Ramboll has no reason to doubt the accuracy of the information provided to it, the report is complete and accurate only to the extent that the information provided to Ramboll was itself complete and accurate. This report does not purport to give legal advice. This advice can only be given by qualified legal advisors.



RAMBOLL AUSTRALIA - GIS MAP file : 3180007390_GIS_P010_RequestedSamples | E003_P3_V02 | 22/04/2020

Imagery © Department Finance, Services and Innovation 2020

Legend

- Property boundary
- Dust sample
- ⊗ Hand auger sample
- ⬠ Paint sample
- ⊕ Tank water sample

Note: P3_TW1 could not be accessed for sampling

Lead exceedance criteria

Dust Interior	
Window Sills / Shelves	>1076 (µg/m ²)



Ramboll Environ Australia Pty Ltd
 Level 3/100 Pacific Highway
 North Sydney
 NSW 2060



NATA Accredited
 Accreditation Number 1261
 Site Number 1254

Accredited for compliance with ISO/IEC 17025 – Testing
 The results of the tests, calibrations and/or
 measurements included in this document are traceable
 to Australian/national standards.

Attention: Stephen Maxwell

Report 710553-S
 Project name
 Project ID 31800078
 Received Date Mar 27, 2020

Client Sample ID			P3_HA01_0.05	P3_HA01_0.4	P3_HA01_0.2	P3_HA02_0.15
Sample Matrix			Soil	Soil	Soil	Soil
Eurofins Sample No.			M20-Ma43602	M20-Ma43603	M20-Ma43604	M20-Ma43605
Date Sampled			Mar 24, 2020	Mar 24, 2020	Mar 24, 2020	Mar 24, 2020
Test/Reference	LOR	Unit				
Heavy Metals						
Lead	5	mg/kg	120	110	97	400
% Moisture	1	%	11	10	9.8	14

Client Sample ID			P3_HA02_0.4	P3_HA02_0-0.05	P3_HA03_0.15	P3_HA03_0.3
Sample Matrix			Soil	Soil	Soil	Soil
Eurofins Sample No.			M20-Ma43606	M20-Ma43607	M20-Ma43608	M20-Ma43609
Date Sampled			Mar 24, 2020	Mar 24, 2020	Mar 24, 2020	Mar 24, 2020
Test/Reference	LOR	Unit				
Heavy Metals						
Lead	5	mg/kg	320	100	420	240
% Moisture	1	%	14	3.7	9.3	12

Client Sample ID			P3_HA03_0-0.05
Sample Matrix			Soil
Eurofins Sample No.			M20-Ma43610
Date Sampled			Mar 24, 2020
Test/Reference	LOR	Unit	
Heavy Metals			
Lead	5	mg/kg	320
% Moisture	1	%	6.5

Sample History

Where samples are submitted/analysed over several days, the last date of extraction and analysis is reported.

A recent review of our LIMS has resulted in the correction or clarification of some method identifications. Due to this, some of the method reference information on reports has changed. However, no substantive change has been made to our laboratory methods, and as such there is no change in the validity of current or previous results.

If the date and time of sampling are not provided, the Laboratory will not be responsible for compromised results should testing be performed outside the recommended holding time.

Description

Heavy Metals

- Method: LTM-MET-3040 Metals in Waters, Soils & Sediments by ICP-MS

% Moisture

- Method: LTM-GEN-7080 Moisture

Testing Site

Melbourne

Melbourne

Extracted

Mar 30, 2020

Mar 27, 2020

Holding Time

180 Days

14 Days

Australia

Melbourne
6 Monterey Road
Dandenong South VIC 3175
Phone : +61 3 8564 5000
NATA # 1261
Site # 1254 & 14271

Sydney
Unit F3, Building F
16 Mars Road
Lane Cove West NSW 2066
Phone : +61 2 9900 8400
NATA # 1261 Site # 18217

Brisbane
1/21 Smallwood Place
Murarrie QLD 4172
Phone : +61 7 3902 4600
NATA # 1261 Site # 20794

Perth
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Kewdale WA 6105
Phone : +61 8 9251 9600
NATA # 1261
Site # 23736

New Zealand

Auckland
35 O'Rorke Road
Penrose, Auckland 1061
Phone : +64 9 526 45 51
IANZ # 1327

Christchurch
43 Detroit Drive
Rolleston, Christchurch 7675
Phone : 0800 856 450
IANZ # 1290

Company Name: Ramboll Australia Pty Ltd
Address: Level 3/100 Pacific Highway
North Sydney
NSW 2060

Order No.:
Report #: 710553
Phone: 02 9954 8118
Fax: 02 9954 8150

Received: Mar 27, 2020 12:00 AM
Due: Apr 3, 2020
Priority: 5 Day
Contact Name: Stephen Maxwell

Project Name:
Project ID: 31800078

Eurofins Analytical Services Manager : Andrew Black

Sample Detail						Lead	Moisture Set
Melbourne Laboratory - NATA Site # 1254 & 14271						X	X
Sydney Laboratory - NATA Site # 18217							
Brisbane Laboratory - NATA Site # 20794							
Perth Laboratory - NATA Site # 23736							
External Laboratory							
No	Sample ID	Sample Date	Sampling Time	Matrix	LAB ID		
1	P3_HA01_0.05	Mar 24, 2020		Soil	M20-Ma43602	X	X
2	P3_HA01_0.4	Mar 24, 2020		Soil	M20-Ma43603	X	X
3	P3_HA01_0.2	Mar 24, 2020		Soil	M20-Ma43604	X	X
4	P3_HA02_0.15	Mar 24, 2020		Soil	M20-Ma43605	X	X
5	P3_HA02_0.4	Mar 24, 2020		Soil	M20-Ma43606	X	X
6	P3_HA02_0-0.05	Mar 24, 2020		Soil	M20-Ma43607	X	X
7	P3_HA03_0.15	Mar 24, 2020		Soil	M20-Ma43608	X	X

Australia

Melbourne
 6 Monterey Road
 Dandenong South VIC 3175
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 NATA # 1261
 Site # 1254 & 14271

Sydney
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Perth
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 Site # 23736

New Zealand

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Christchurch
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 IANZ # 1290

ABN – 50 005 085 521

web : www.eurofins.com.au

e.mail : EnviroSales@eurofins.com

Company Name: Ramboll Australia Pty Ltd
Address: Level 3/100 Pacific Highway
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 NSW 2060

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Received: Mar 27, 2020 12:00 AM
Due: Apr 3, 2020
Priority: 5 Day
Contact Name: Stephen Maxwell

Eurofins Analytical Services Manager : Andrew Black

Sample Detail						Lead	Moisture Set
Melbourne Laboratory - NATA Site # 1254 & 14271						X	X
Sydney Laboratory - NATA Site # 18217							
Brisbane Laboratory - NATA Site # 20794							
Perth Laboratory - NATA Site # 23736							
8	P3_HA03_0.3	Mar 24, 2020		Soil	M20-Ma43609	X	X
9	P3_HA03_0-0.05	Mar 24, 2020		Soil	M20-Ma43610	X	X
Test Counts						9	9

Internal Quality Control Review and Glossary
General

- Laboratory QC results for Method Blanks, Duplicates, Matrix Spikes, and Laboratory Control Samples follows guidelines delineated in the National Environment Protection (Assessment of Site Contamination) Measure 1999, as amended May 2013 and are included in this QC report where applicable. Additional QC data may be available on request.
- All soil/sediment/solid results are reported on a dry basis, unless otherwise stated.
- All biota/food results are reported on a wet weight basis on the edible portion, unless otherwise stated.
- Actual LORs are matrix dependant. Quoted LORs may be raised where sample extracts are diluted due to interferences.
- Results are uncorrected for matrix spikes or surrogate recoveries except for PFAS compounds.
- SVOC analysis on waters are performed on homogenised, unfiltered samples, unless noted otherwise.
- Samples were analysed on an 'as received' basis.
- Information identified on this report with blue colour, indicates data provided by customer, that may have an impact on the results.
- This report replaces any interim results previously issued.

Holding Times

Please refer to 'Sample Preservation and Container Guide' for holding times (QS3001).

For samples received on the last day of holding time, notification of testing requirements should have been received at least 6 hours prior to sample receipt deadlines as stated on the SRA.

If the Laboratory did not receive the information in the required timeframe, and regardless of any other integrity issues, suitably qualified results may still be reported.

Holding times apply from the date of sampling, therefore compliance to these may be outside the laboratory's control.

For VOCs containing vinyl chloride, styrene and 2-chloroethyl vinyl ether the holding time is 7 days however for all other VOCs such as BTEX or C6-10 TRH then the holding time is 14 days.

****NOTE:** pH duplicates are reported as a range NOT as RPD

Units

mg/kg: milligrams per kilogram

mg/L: milligrams per litre

ug/L: micrograms per litre

ppm: Parts per million

ppb: Parts per billion

%: Percentage

org/100mL: Organisms per 100 millilitres

NTU: Nephelometric Turbidity Units

MPN/100mL: Most Probable Number of organisms per 100 millilitres

Terms

Dry	Where a moisture has been determined on a solid sample the result is expressed on a dry basis.
LOR	Limit of Reporting.
SPIKE	Addition of the analyte to the sample and reported as percentage recovery.
RPD	Relative Percent Difference between two Duplicate pieces of analysis.
LCS	Laboratory Control Sample - reported as percent recovery.
CRM	Certified Reference Material - reported as percent recovery.
Method Blank	In the case of solid samples these are performed on laboratory certified clean sands and in the case of water samples these are performed on de-ionised water.
Surr - Surrogate	The addition of a like compound to the analyte target and reported as percentage recovery.
Duplicate	A second piece of analysis from the same sample and reported in the same units as the result to show comparison.
USEPA	United States Environmental Protection Agency
APHA	American Public Health Association
TCLP	Toxicity Characteristic Leaching Procedure
COC	Chain of Custody
SRA	Sample Receipt Advice
QSM	US Department of Defense Quality Systems Manual Version 5.3
CP	Client Parent - QC was performed on samples pertaining to this report
NCP	Non-Client Parent - QC performed on samples not pertaining to this report, QC is representative of the sequence or batch that client samples were analysed within.
TEQ	Toxic Equivalency Quotient

QC - Acceptance Criteria

RPD Duplicates: Global RPD Duplicates Acceptance Criteria is 30% however the following acceptance guidelines are equally applicable:

Results <10 times the LOR : No Limit

Results between 10-20 times the LOR : RPD must lie between 0-50%

Results >20 times the LOR : RPD must lie between 0-30%

Surrogate Recoveries: Recoveries must lie between 20-130% Phenols & 50-150% PFASs

PFAS field samples that contain surrogate recoveries in excess of the QC limit designated in QSM 5.3 where no positive PFAS results have been reported have been reviewed and no data was affected.

WA DWER (n=10): PFBA, PFPeA, PFHxA, PFHpA, PFOA, PFBS, PFHxS, PFOS, 6:2 FTSA, 8:2 FTSA

QC Data General Comments

- Where a result is reported as a less than (<), higher than the nominated LOR, this is due to either matrix interference, extract dilution required due to interferences or contaminant levels within the sample, high moisture content or insufficient sample provided.
- Duplicate data shown within this report that states the word "BATCH" is a Batch Duplicate from outside of your sample batch, but within the laboratory sample batch at a 1:10 ratio. The Parent and Duplicate data shown is not data from your samples.
- Organochlorine Pesticide analysis - where reporting LCS data, Toxaphene & Chlordane are not added to the LCS.
- Organochlorine Pesticide analysis - where reporting Spike data, Toxaphene is not added to the Spike.
- Total Recoverable Hydrocarbons - where reporting Spike & LCS data, a single spike of commercial Hydrocarbon products in the range of C12-C30 is added and it's Total Recovery is reported in the C10-C14 cell of the Report.
- pH and Free Chlorine analysed in the laboratory - Analysis on this test must begin within 30 minutes of sampling. Therefore laboratory analysis is unlikely to be completed within holding time. Analysis will begin as soon as possible after sample receipt.
- Recovery Data (Spikes & Surrogates) - where chromatographic interference does not allow the determination of Recovery the term "INT" appears against that analyte.
- Polychlorinated Biphenyls are spiked only using Aroclor 1260 in Matrix Spikes and LCS.
- For Matrix Spikes and LCS results a dash " - " in the report means that the specific analyte was not added to the QC sample.
- Duplicate RPDs are calculated from raw analytical data thus it is possible to have two sets of data.

Quality Control Results

Test				Units	Result 1			Acceptance Limits	Pass Limits	Qualifying Code	
Method Blank											
Heavy Metals											
Lead				mg/kg	< 5			5	Pass		
LCS - % Recovery											
Heavy Metals											
Lead				%	98			80-120	Pass		
Test	Lab Sample ID	QA Source	Units	Result 1				Acceptance Limits	Pass Limits	Qualifying Code	
Spike - % Recovery											
Heavy Metals											
Lead				M20-Ma43609	CP	%	109		75-125	Pass	
Test	Lab Sample ID	QA Source	Units	Result 1				Acceptance Limits	Pass Limits	Qualifying Code	
Duplicate											
					Result 1	Result 2	RPD				
% Moisture				M20-Ma43603	CP	%	10	10	1.0	30%	Pass
Duplicate											
Heavy Metals											
Lead				M20-Ma43608	CP	mg/kg	420	420	1.0	30%	Pass
Duplicate											
Heavy Metals											
Lead				M20-Ma43609	CP	mg/kg	240	260	8.0	30%	Pass

Comments**Sample Integrity**

Custody Seals Intact (if used)	N/A
Attempt to Chill was evident	Yes
Sample correctly preserved	Yes
Appropriate sample containers have been used	Yes
Sample containers for volatile analysis received with minimal headspace	Yes
Samples received within HoldingTime	Yes
Some samples have been subcontracted	No

Authorised By

Andrew Black	Analytical Services Manager
Emily Rosenberg	Senior Analyst-Metal (VIC)

**Glenn Jackson
General Manager**

Final report - this Report replaces any previously issued Report

- Indicates Not Requested

* Indicates NATA accreditation does not cover the performance of this service

Measurement uncertainty of test data is available on request or please [click here](#).

Eurofins shall not be liable for loss, cost, damages or expenses incurred by the client, or any other person or company, resulting from the use of any information or interpretation given in this report. In no case shall Eurofins be liable for consequential damages including, but not limited to, lost profits, damages for failure to meet deadlines and lost production arising from this report. This document shall not be reproduced except in full and relates only to the items tested. Unless indicated otherwise, the tests were performed on the samples as received.

Ramboll Environ Australia Pty Ltd
 Level 3/100 Pacific Highway
 North Sydney
 NSW 2060



NATA Accredited
Accreditation Number 1261
Site Number 18217

Accredited for compliance with ISO/IEC 17025 – Testing
 The results of the tests, calibrations and/or
 measurements included in this document are traceable
 to Australian/national standards.

Attention: **Stephen Maxwell**

Report **711781-S**
 Project name
 Project ID **318000780**
 Received Date **Mar 27, 2020**

Client Sample ID			P3_PAINT 1
Sample Matrix			Paint
Eurofins Sample No.			S20-Ap02142
Date Sampled			Mar 23, 2020
Test/Reference	LOR	Unit	
Lead (% w/w)	0.01	%	< 0.01

Sample History

Where samples are submitted/analysed over several days, the last date of extraction and analysis is reported.

A recent review of our LIMS has resulted in the correction or clarification of some method identifications. Due to this, some of the method reference information on reports has changed. However, no substantive change has been made to our laboratory methods, and as such there is no change in the validity of current or previous results.

If the date and time of sampling are not provided, the Laboratory will not be responsible for compromised results should testing be performed outside the recommended holding time.

Description

Lead (% w/w)

Testing Site

Sydney

Extracted

Apr 09, 2020

Holding Time

6 Month

- Method: E022.5 - ACID EXTRACTABLE METALS IN PAINT IN LIQUID AND POWDERED FORM BY ICP-MS ANALYSIS

Australia

Melbourne
6 Monterey Road
Dandenong South VIC 3175
Phone : +61 3 8564 5000
NATA # 1261
Site # 1254 & 14271

Sydney
Unit F3, Building F
16 Mars Road
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NATA # 1261
Site # 23736

New Zealand

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Penrose, Auckland 1061
Phone : +64 9 526 45 51
IANZ # 1327

Christchurch
43 Detroit Drive
Rolleston, Christchurch 7675
Phone : 0800 856 450
IANZ # 1290

Company Name: Ramboll Australia Pty Ltd
Address: Level 3/100 Pacific Highway
North Sydney
NSW 2060

Order No.:
Report #: 711781
Phone: 02 9954 8118
Fax: 02 9954 8150

Received: Mar 27, 2020 2:57 PM
Due: Apr 9, 2020
Priority: 5 Day
Contact Name: Stephen Maxwell

Project Name:
Project ID: 318000780

Eurofins Analytical Services Manager : Andrew Black

Sample Detail						CANCELLED	Lead	Lead (% w/w)	NEPM 2013 Metals : Metals M13	NEPM 2013 Metals : Metals M13 filtered	Moisture Set
Melbourne Laboratory - NATA Site # 1254 & 14271											
Sydney Laboratory - NATA Site # 18217						X	X	X	X	X	X
Brisbane Laboratory - NATA Site # 20794											
Perth Laboratory - NATA Site # 23736											
External Laboratory											
No	Sample ID	Sample Date	Sampling Time	Matrix	LAB ID						
1	P3_TWS2	Mar 26, 2020		Sediment	S20-Ap02118		X				X
2	P3_TW2	Mar 26, 2020		Water	S20-Ap02121				X	X	
3	P3_PAINT 1	Mar 23, 2020		Paint	S20-Ap02142			X			
4	P3_TW1	Mar 26, 2020		Water	S20-Ap04333	X					
5	DSWAB_FE(C H)	Mar 26, 2020		Water	S20-Ap04334	X					
6	DSWAB_KE(C H)	Mar 26, 2020		Water	S20-Ap04335	X					
7	DSWAB_SE(C H)	Mar 26, 2020		Water	S20-Ap04336	X					
8	DSWAB_WIN(Mar 26, 2020		Water	S20-Ap04337	X					

Australia

Melbourne
 6 Monterey Road
 Dandenong South VIC 3175
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 NATA # 1261
 Site # 1254 & 14271

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New Zealand

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Christchurch
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 Rolleston, Christchurch 7675
 Phone : 0800 856 450
 IANZ # 1290

ABN – 50 005 085 521

web : www.eurofins.com.au

e.mail : EnviroSales@eurofins.com

Company Name: Ramboll Australia Pty Ltd
Address: Level 3/100 Pacific Highway
 North Sydney
 NSW 2060

Order No.:
Report #: 711781
Phone: 02 9954 8118
Fax: 02 9954 8150

Received: Mar 27, 2020 2:57 PM
Due: Apr 9, 2020
Priority: 5 Day
Contact Name: Stephen Maxwell

Project Name:
Project ID: 318000780

Eurofins Analytical Services Manager : Andrew Black

Sample Detail						CANCELLED	Lead	Lead (% w/w)	NEPM 2013 Metals : Metals M13	NEPM 2013 Metals : Metals M13 filtered	Moisture Set
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Sydney Laboratory - NATA Site # 18217						X	X	X	X	X	X
Brisbane Laboratory - NATA Site # 20794											
Perth Laboratory - NATA Site # 23736											
	CH)										
9	DVAC_MH(CH)	Mar 26, 2020		Water	S20-Ap04338	X					
Test Counts						6	1	1	1	1	1

Internal Quality Control Review and Glossary
General

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Please refer to 'Sample Preservation and Container Guide' for holding times (QS3001).

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****NOTE:** pH duplicates are reported as a range NOT as RPD

Units

mg/kg: milligrams per kilogram	mg/L: milligrams per litre	ug/L: micrograms per litre
ppm: Parts per million	ppb: Parts per billion	%: Percentage
org/100mL: Organisms per 100 millilitres	NTU: Nephelometric Turbidity Units	MPN/100mL: Most Probable Number of organisms per 100 millilitres

Terms

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Surr - Surrogate	The addition of a like compound to the analyte target and reported as percentage recovery.
Duplicate	A second piece of analysis from the same sample and reported in the same units as the result to show comparison.
USEPA	United States Environmental Protection Agency
APHA	American Public Health Association
TCLP	Toxicity Characteristic Leaching Procedure
COC	Chain of Custody
SRA	Sample Receipt Advice
QSM	US Department of Defense Quality Systems Manual Version 5.3
CP	Client Parent - QC was performed on samples pertaining to this report
NCP	Non-Client Parent - QC performed on samples not pertaining to this report, QC is representative of the sequence or batch that client samples were analysed within.
TEQ	Toxic Equivalency Quotient

QC - Acceptance Criteria

RPD Duplicates: Global RPD Duplicates Acceptance Criteria is 30% however the following acceptance guidelines are equally applicable:

Results <10 times the LOR : No Limit

Results between 10-20 times the LOR : RPD must lie between 0-50%

Results >20 times the LOR : RPD must lie between 0-30%

Surrogate Recoveries: Recoveries must lie between 20-130% Phenols & 50-150% PFASs

PFAS field samples that contain surrogate recoveries in excess of the QC limit designated in QSM 5.3 where no positive PFAS results have been reported have been reviewed and no data was affected.

WA DWER (n=10): PFBA, PFPeA, PFHxA, PFHpA, PFOA, PFBS, PFHxS, PFOS, 6:2 FTSA, 8:2 FTSA

QC Data General Comments

- Where a result is reported as a less than (<), higher than the nominated LOR, this is due to either matrix interference, extract dilution required due to interferences or contaminant levels within the sample, high moisture content or insufficient sample provided.
- Duplicate data shown within this report that states the word "BATCH" is a Batch Duplicate from outside of your sample batch, but within the laboratory sample batch at a 1:10 ratio. The Parent and Duplicate data shown is not data from your samples.
- Organochlorine Pesticide analysis - where reporting LCS data, Toxaphene & Chlordane are not added to the LCS.
- Organochlorine Pesticide analysis - where reporting Spike data, Toxaphene is not added to the Spike.
- Total Recoverable Hydrocarbons - where reporting Spike & LCS data, a single spike of commercial Hydrocarbon products in the range of C12-C30 is added and it's Total Recovery is reported in the C10-C14 cell of the Report.
- pH and Free Chlorine analysed in the laboratory - Analysis on this test must begin within 30 minutes of sampling. Therefore laboratory analysis is unlikely to be completed within holding time. Analysis will begin as soon as possible after sample receipt.
- Recovery Data (Spikes & Surrogates) - where chromatographic interference does not allow the determination of Recovery the term "INT" appears against that analyte.
- Polychlorinated Biphenyls are spiked only using Aroclor 1260 in Matrix Spikes and LCS.
- For Matrix Spikes and LCS results a dash " - " in the report means that the specific analyte was not added to the QC sample.
- Duplicate RPDs are calculated from raw analytical data thus it is possible to have two sets of data.

Comments**Sample Integrity**

Custody Seals Intact (if used)	N/A
Attempt to Chill was evident	N/A
Sample correctly preserved	Yes
Appropriate sample containers have been used	Yes
Sample containers for volatile analysis received with minimal headspace	Yes
Samples received within HoldingTime	Yes
Some samples have been subcontracted	No

Authorised By

Andrew Black Analytical Services Manager
Gabriele Cordero Senior Analyst-Metal (NSW)

**Glenn Jackson
General Manager**

Final report - this Report replaces any previously issued Report

- Indicates Not Requested

* Indicates NATA accreditation does not cover the performance of this service

Measurement uncertainty of test data is available on request or please [click here](#).

Eurofins shall not be liable for loss, cost, damages or expenses incurred by the client, or any other person or company, resulting from the use of any information or interpretation given in this report. In no case shall Eurofins be liable for consequential damages including, but not limited to, lost profits, damages for failure to meet deadlines and lost production arising from this report. This document shall not be reproduced except in full and relates only to the items tested. Unless indicated otherwise, the tests were performed on the samples as received.

Ramboll Environ Australia Pty Ltd
 Level 3/100 Pacific Highway
 North Sydney
 NSW 2060



NATA Accredited
Accreditation Number 1261
Site Number 18217

Accredited for compliance with ISO/IEC 17025 – Testing
 The results of the tests, calibrations and/or
 measurements included in this document are traceable
 to Australian/national standards.

Attention: **Stephen Maxwell**

Report **711781-W**
 Project name
 Project ID **318000780**
 Received Date **Mar 27, 2020**

Client Sample ID			P3_TWS2	P3_TW2
Sample Matrix			Water	Water
Eurofins Sample No.			S20-Ap02118	S20-Ap02121
Date Sampled			Mar 26, 2020	Mar 26, 2020
Test/Reference	LOR	Unit		
Heavy Metals				
Aluminium	0.05	mg/L	-	< 0.05
Aluminium (filtered)	0.05	mg/L	-	0.07
Arsenic	0.001	mg/L	-	< 0.001
Arsenic (filtered)	0.001	mg/L	-	< 0.001
Barium	0.02	mg/L	-	< 0.02
Barium (filtered)	0.02	mg/L	-	< 0.02
Beryllium	0.001	mg/L	-	< 0.001
Beryllium (filtered)	0.001	mg/L	-	< 0.001
Cadmium	0.0002	mg/L	-	< 0.0002
Cadmium (filtered)	0.0002	mg/L	-	< 0.0002
Chromium	0.001	mg/L	-	0.002
Chromium (filtered)	0.001	mg/L	-	0.001
Cobalt	0.001	mg/L	-	< 0.001
Cobalt (filtered)	0.001	mg/L	-	< 0.001
Copper	0.001	mg/L	-	0.002
Copper (filtered)	0.001	mg/L	-	0.001
Iron	0.05	mg/L	-	< 0.05
Iron (filtered)	0.05	mg/L	-	< 0.05
Lead	0.001	mg/L	0.90	< 0.001
Lead (filtered)	0.001	mg/L	-	< 0.001
Manganese	0.005	mg/L	-	< 0.005
Manganese (filtered)	0.005	mg/L	-	< 0.005
Mercury	0.0001	mg/L	-	< 0.0001
Mercury (filtered)	0.0001	mg/L	-	< 0.0001
Nickel	0.001	mg/L	-	< 0.001
Nickel (filtered)	0.001	mg/L	-	< 0.001
Zinc	0.005	mg/L	-	0.42
Zinc (filtered)	0.005	mg/L	-	0.39

Sample History

Where samples are submitted/analysed over several days, the last date of extraction and analysis is reported.

A recent review of our LIMS has resulted in the correction or clarification of some method identifications. Due to this, some of the method reference information on reports has changed. However, no substantive change has been made to our laboratory methods, and as such there is no change in the validity of current or previous results.

If the date and time of sampling are not provided, the Laboratory will not be responsible for compromised results should testing be performed outside the recommended holding time.

Description	Testing Site	Extracted	Holding Time
Heavy Metals - Method: LTM-MET-3040 Metals in Waters, Soils & Sediments by ICP-MS	Sydney	Apr 09, 2020	180 Days
Heavy Metals (filtered) - Method: LTM-MET-3040 Metals in Waters, Soils & Sediments by ICP-MS	Sydney	Apr 09, 2020	180 Days
Mobil Metals : Metals M15 - Method: LTM-MET-3040 Metals in Waters, Soils & Sediments by ICP-MS	Sydney	Apr 09, 2020	28 Days

Australia

Melbourne
6 Monterey Road
Dandenong South VIC 3175
Phone : +61 3 8564 5000
NATA # 1261
Site # 1254 & 14271

Sydney
Unit F3, Building F
16 Mars Road
Lane Cove West NSW 2066
Phone : +61 2 9900 8400
NATA # 1261 Site # 18217

Brisbane
1/21 Smallwood Place
Murarrie QLD 4172
Phone : +61 7 3902 4600
NATA # 1261 Site # 20794

Perth
2/91 Leach Highway
Kewdale WA 6105
Phone : +61 8 9251 9600
NATA # 1261
Site # 23736

New Zealand

Auckland
35 O'Rorke Road
Penrose, Auckland 1061
Phone : +64 9 526 45 51
IANZ # 1327

Christchurch
43 Detroit Drive
Rolleston, Christchurch 7675
Phone : 0800 856 450
IANZ # 1290

Company Name: Ramboll Australia Pty Ltd
Address: Level 3/100 Pacific Highway
North Sydney
NSW 2060

Order No.:
Report #: 711781
Phone: 02 9954 8118
Fax: 02 9954 8150

Received: Mar 27, 2020 2:57 PM
Due: Apr 9, 2020
Priority: 5 Day
Contact Name: Stephen Maxwell

Project Name:
Project ID: 318000780

Eurofins Analytical Services Manager : Andrew Black

Sample Detail						CANCELLED	Lead	Lead (% w/w)	NEPM 2013 Metals : Metals M13	NEPM 2013 Metals : Metals M13 filtered	Moisture Set
Melbourne Laboratory - NATA Site # 1254 & 14271											
Sydney Laboratory - NATA Site # 18217						X	X	X	X	X	X
Brisbane Laboratory - NATA Site # 20794											
Perth Laboratory - NATA Site # 23736											
External Laboratory											
No	Sample ID	Sample Date	Sampling Time	Matrix	LAB ID						
1	P3_TWS2	Mar 26, 2020		Sediment	S20-Ap02118		X				X
2	P3_TW2	Mar 26, 2020		Water	S20-Ap02121				X	X	
3	P3_PAINT 1	Mar 23, 2020		Paint	S20-Ap02142			X			
4	P3_TW1	Mar 26, 2020		Water	S20-Ap04333	X					
5	DSWAB_FE(C H)	Mar 26, 2020		Water	S20-Ap04334	X					
6	DSWAB_KE(C H)	Mar 26, 2020		Water	S20-Ap04335	X					
7	DSWAB_SE(C H)	Mar 26, 2020		Water	S20-Ap04336	X					
8	DSWAB_WIN(Mar 26, 2020		Water	S20-Ap04337	X					

Australia

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 6 Monterey Road
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 Lane Cove West NSW 2066
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Brisbane
 1/21 Smallwood Place
 Murarrie QLD 4172
 Phone : +61 7 3902 4600
 NATA # 1261 Site # 20794

Perth
 2/91 Leach Highway
 Kewdale WA 6105
 Phone : +61 8 9251 9600
 NATA # 1261
 Site # 23736

New Zealand

Auckland
 35 O'Rorke Road
 Penrose, Auckland 1061
 Phone : +64 9 526 45 51
 IANZ # 1327

Christchurch
 43 Detroit Drive
 Rolleston, Christchurch 7675
 Phone : 0800 856 450
 IANZ # 1290

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web : www.eurofins.com.au

e.mail : EnviroSales@eurofins.com

Company Name: Ramboll Australia Pty Ltd
Address: Level 3/100 Pacific Highway
 North Sydney
 NSW 2060

Order No.:
Report #: 711781
Phone: 02 9954 8118
Fax: 02 9954 8150

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Due: Apr 9, 2020
Priority: 5 Day
Contact Name: Stephen Maxwell

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Sydney Laboratory - NATA Site # 18217						X	X	X	X	X	X
Brisbane Laboratory - NATA Site # 20794											
Perth Laboratory - NATA Site # 23736											
	CH)										
9	DVAC_MH(CH)	Mar 26, 2020		Water	S20-Ap04338	X					
Test Counts						6	1	1	1	1	1

Internal Quality Control Review and Glossary
General

- Laboratory QC results for Method Blanks, Duplicates, Matrix Spikes, and Laboratory Control Samples follows guidelines delineated in the National Environment Protection (Assessment of Site Contamination) Measure 1999, as amended May 2013 and are included in this QC report where applicable. Additional QC data may be available on request.
- All soil/sediment/solid results are reported on a dry basis, unless otherwise stated.
- All biota/food results are reported on a wet weight basis on the edible portion, unless otherwise stated.
- Actual LORs are matrix dependant. Quoted LORs may be raised where sample extracts are diluted due to interferences.
- Results are uncorrected for matrix spikes or surrogate recoveries except for PFAS compounds.
- SVOC analysis on waters are performed on homogenised, unfiltered samples, unless noted otherwise.
- Samples were analysed on an 'as received' basis.
- Information identified on this report with blue colour, indicates data provided by customer, that may have an impact on the results.
- This report replaces any interim results previously issued.

Holding Times

Please refer to 'Sample Preservation and Container Guide' for holding times (QS3001).

For samples received on the last day of holding time, notification of testing requirements should have been received at least 6 hours prior to sample receipt deadlines as stated on the SRA.

If the Laboratory did not receive the information in the required timeframe, and regardless of any other integrity issues, suitably qualified results may still be reported.

Holding times apply from the date of sampling, therefore compliance to these may be outside the laboratory's control.

For VOCs containing vinyl chloride, styrene and 2-chloroethyl vinyl ether the holding time is 7 days however for all other VOCs such as BTEX or C6-10 TRH then the holding time is 14 days.

****NOTE:** pH duplicates are reported as a range NOT as RPD

Units

mg/kg: milligrams per kilogram

mg/L: milligrams per litre

ug/L: micrograms per litre

ppm: Parts per million

ppb: Parts per billion

%: Percentage

org/100mL: Organisms per 100 millilitres

NTU: Nephelometric Turbidity Units

MPN/100mL: Most Probable Number of organisms per 100 millilitres

Terms

Dry	Where a moisture has been determined on a solid sample the result is expressed on a dry basis.
LOR	Limit of Reporting.
SPIKE	Addition of the analyte to the sample and reported as percentage recovery.
RPD	Relative Percent Difference between two Duplicate pieces of analysis.
LCS	Laboratory Control Sample - reported as percent recovery.
CRM	Certified Reference Material - reported as percent recovery.
Method Blank	In the case of solid samples these are performed on laboratory certified clean sands and in the case of water samples these are performed on de-ionised water.
Surr - Surrogate	The addition of a like compound to the analyte target and reported as percentage recovery.
Duplicate	A second piece of analysis from the same sample and reported in the same units as the result to show comparison.
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PFAS field samples that contain surrogate recoveries in excess of the QC limit designated in QSM 5.3 where no positive PFAS results have been reported have been reviewed and no data was affected.

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QC Data General Comments

- Where a result is reported as a less than (<), higher than the nominated LOR, this is due to either matrix interference, extract dilution required due to interferences or contaminant levels within the sample, high moisture content or insufficient sample provided.
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- Duplicate RPDs are calculated from raw analytical data thus it is possible to have two sets of data.

Quality Control Results

Test	Units	Result 1			Acceptance Limits	Pass Limits	Qualifying Code
Method Blank							
Heavy Metals							
Aluminium	mg/L	< 0.05			0.05	Pass	
Aluminium (filtered)	mg/L	< 0.05			0.05	Pass	
Arsenic	mg/L	< 0.001			0.001	Pass	
Arsenic (filtered)	mg/L	< 0.001			0.001	Pass	
Barium	mg/L	< 0.02			0.02	Pass	
Barium (filtered)	mg/L	< 0.02			0.02	Pass	
Beryllium	mg/L	< 0.001			0.001	Pass	
Beryllium (filtered)	mg/L	< 0.001			0.001	Pass	
Cadmium	mg/L	< 0.0002			0.0002	Pass	
Cadmium (filtered)	mg/L	< 0.0002			0.0002	Pass	
Chromium	mg/L	< 0.001			0.001	Pass	
Chromium (filtered)	mg/L	< 0.001			0.001	Pass	
Cobalt	mg/L	< 0.001			0.001	Pass	
Cobalt (filtered)	mg/L	< 0.001			0.001	Pass	
Copper	mg/L	< 0.001			0.001	Pass	
Copper (filtered)	mg/L	< 0.001			0.001	Pass	
Iron	mg/L	< 0.05			0.05	Pass	
Iron (filtered)	mg/L	< 0.05			0.05	Pass	
Lead	mg/L	< 0.001			0.001	Pass	
Lead (filtered)	mg/L	< 0.001			0.001	Pass	
Manganese	mg/L	< 0.005			0.005	Pass	
Manganese (filtered)	mg/L	< 0.005			0.005	Pass	
Mercury	mg/L	< 0.0001			0.0001	Pass	
Mercury (filtered)	mg/L	< 0.0001			0.0001	Pass	
Nickel	mg/L	< 0.001			0.001	Pass	
Nickel (filtered)	mg/L	< 0.001			0.001	Pass	
Zinc	mg/L	< 0.005			0.005	Pass	
Zinc (filtered)	mg/L	< 0.005			0.005	Pass	
LCS - % Recovery							
Heavy Metals							
Aluminium	%	104			70-130	Pass	
Aluminium (filtered)	%	98			70-130	Pass	
Arsenic	%	104			70-130	Pass	
Arsenic (filtered)	%	96			70-130	Pass	
Barium	%	99			70-130	Pass	
Barium (filtered)	%	93			70-130	Pass	
Beryllium	%	101			70-130	Pass	
Beryllium (filtered)	%	96			70-130	Pass	
Cadmium	%	102			70-130	Pass	
Cadmium (filtered)	%	96			70-130	Pass	
Chromium	%	103			70-130	Pass	
Chromium (filtered)	%	92			70-130	Pass	
Cobalt	%	101			70-130	Pass	
Cobalt (filtered)	%	93			70-130	Pass	
Copper	%	98			70-130	Pass	
Copper (filtered)	%	92			70-130	Pass	
Iron	%	102			70-130	Pass	
Iron (filtered)	%	93			70-130	Pass	
Lead	%	97			70-130	Pass	
Lead (filtered)	%	88			70-130	Pass	

Test		Units	Result 1			Acceptance Limits	Pass Limits	Qualifying Code	
Manganese		%	101			70-130	Pass		
Manganese (filtered)		%	95			70-130	Pass		
Mercury		%	102			70-130	Pass		
Mercury (filtered)		%	85			70-130	Pass		
Nickel		%	101			70-130	Pass		
Nickel (filtered)		%	93			70-130	Pass		
Zinc		%	97			70-130	Pass		
Zinc (filtered)		%	93			70-130	Pass		
Test	Lab Sample ID	QA Source	Units	Result 1			Acceptance Limits	Pass Limits	Qualifying Code
Spike - % Recovery									
Heavy Metals				Result 1					
Lead	S20-Ap11956	NCP	%	85			70-130	Pass	
Spike - % Recovery									
Heavy Metals				Result 1					
Aluminium	S20-Ap11956	NCP	%	95			70-130	Pass	
Aluminium (filtered)	S20-Ap04602	NCP	%	98			70-130	Pass	
Arsenic	S20-Ap11956	NCP	%	105			70-130	Pass	
Arsenic (filtered)	S20-Ap04602	NCP	%	99			70-130	Pass	
Barium	S20-Ap11956	NCP	%	97			70-130	Pass	
Barium (filtered)	S20-Ap04602	NCP	%	90			70-130	Pass	
Beryllium	S20-Ap11956	NCP	%	97			70-130	Pass	
Beryllium (filtered)	S20-Ap04602	NCP	%	97			70-130	Pass	
Cadmium	S20-Ap11956	NCP	%	96			70-130	Pass	
Cadmium (filtered)	S20-Ap04602	NCP	%	99			70-130	Pass	
Chromium	S20-Ap11956	NCP	%	91			70-130	Pass	
Chromium (filtered)	S20-Ap04602	NCP	%	91			70-130	Pass	
Cobalt	S20-Ap11956	NCP	%	87			70-130	Pass	
Cobalt (filtered)	S20-Ap04602	NCP	%	90			70-130	Pass	
Copper	S20-Ap11956	NCP	%	85			70-130	Pass	
Copper (filtered)	S20-Ap04602	NCP	%	91			70-130	Pass	
Iron	S20-Ap11956	NCP	%	90			70-130	Pass	
Iron (filtered)	S20-Ap04602	NCP	%	92			70-130	Pass	
Lead (filtered)	S20-Ap04602	NCP	%	90			70-130	Pass	
Manganese	S20-Ap11956	NCP	%	90			70-130	Pass	
Manganese (filtered)	S20-Ap04602	NCP	%	93			70-130	Pass	
Mercury	S20-Ap11956	NCP	%	86			70-130	Pass	
Mercury (filtered)	S20-Ap04602	NCP	%	85			70-130	Pass	
Nickel	S20-Ap11956	NCP	%	86			70-130	Pass	
Nickel (filtered)	S20-Ap04602	NCP	%	92			70-130	Pass	
Zinc	S20-Ap11956	NCP	%	81			70-130	Pass	
Zinc (filtered)	S20-Ap04602	NCP	%	92			70-130	Pass	
Test	Lab Sample ID	QA Source	Units	Result 1			Acceptance Limits	Pass Limits	Qualifying Code
Duplicate									
Heavy Metals				Result 1	Result 2	RPD			
Lead	S20-Ap08434	NCP	mg/L	0.001	0.001	7.0	30%	Pass	
Duplicate									
Heavy Metals				Result 1	Result 2	RPD			
Aluminium	S20-Ap08434	NCP	mg/L	< 0.05	< 0.05	<1	30%	Pass	
Aluminium (filtered)	S20-Ap02121	CP	mg/L	0.07	0.07	2.0	30%	Pass	
Arsenic	S20-Ap08434	NCP	mg/L	< 0.001	< 0.001	<1	30%	Pass	
Arsenic (filtered)	S20-Ap02121	CP	mg/L	< 0.001	< 0.001	<1	30%	Pass	
Barium	S20-Ap08434	NCP	mg/L	< 0.02	< 0.02	<1	30%	Pass	
Barium (filtered)	S20-Ap02121	CP	mg/L	< 0.02	< 0.02	<1	30%	Pass	

Duplicate								
Heavy Metals				Result 1	Result 2	RPD		
Beryllium	S20-Ap08434	NCP	mg/L	< 0.001	< 0.001	<1	30%	Pass
Beryllium (filtered)	S20-Ap02121	CP	mg/L	< 0.001	< 0.001	<1	30%	Pass
Cadmium	S20-Ap08434	NCP	mg/L	< 0.0002	< 0.0002	<1	30%	Pass
Cadmium (filtered)	S20-Ap02121	CP	mg/L	< 0.0002	< 0.0002	<1	30%	Pass
Chromium	S20-Ap08434	NCP	mg/L	< 0.001	< 0.001	<1	30%	Pass
Chromium (filtered)	S20-Ap02121	CP	mg/L	0.001	0.001	2.0	30%	Pass
Cobalt	S20-Ap08434	NCP	mg/L	< 0.001	< 0.001	<1	30%	Pass
Cobalt (filtered)	S20-Ap02121	CP	mg/L	< 0.001	< 0.001	<1	30%	Pass
Copper	S20-Ap08434	NCP	mg/L	0.015	0.015	1.0	30%	Pass
Copper (filtered)	S20-Ap02121	CP	mg/L	0.001	0.001	<1	30%	Pass
Iron	S20-Ap08434	NCP	mg/L	< 0.05	< 0.05	<1	30%	Pass
Iron (filtered)	S20-Ap02121	CP	mg/L	< 0.05	< 0.05	<1	30%	Pass
Lead (filtered)	S20-Ap02121	CP	mg/L	< 0.001	< 0.001	<1	30%	Pass
Manganese	S20-Ap08434	NCP	mg/L	< 0.005	< 0.005	<1	30%	Pass
Manganese (filtered)	S20-Ap02121	CP	mg/L	< 0.005	< 0.005	<1	30%	Pass
Mercury	S20-Ap08434	NCP	mg/L	< 0.0001	< 0.0001	<1	30%	Pass
Mercury (filtered)	S20-Ap02121	CP	mg/L	< 0.0001	< 0.0001	<1	30%	Pass
Nickel	S20-Ap08434	NCP	mg/L	< 0.001	< 0.001	<1	30%	Pass
Nickel (filtered)	S20-Ap02121	CP	mg/L	< 0.001	< 0.001	<1	30%	Pass
Zinc	S20-Ap08434	NCP	mg/L	0.016	0.015	7.0	30%	Pass
Zinc (filtered)	S20-Ap02121	CP	mg/L	0.39	0.40	3.0	30%	Pass

Comments**Sample Integrity**

Custody Seals Intact (if used)	N/A
Attempt to Chill was evident	N/A
Sample correctly preserved	Yes
Appropriate sample containers have been used	Yes
Sample containers for volatile analysis received with minimal headspace	Yes
Samples received within HoldingTime	Yes
Some samples have been subcontracted	No

Authorised By

Andrew Black Analytical Services Manager
Gabriele Cordero Senior Analyst-Metal (NSW)

**Glenn Jackson
General Manager**

Final report - this Report replaces any previously issued Report

- Indicates Not Requested

* Indicates NATA accreditation does not cover the performance of this service

Measurement uncertainty of test data is available on request or please [click here](#).

Eurofins shall not be liable for loss, cost, damages or expenses incurred by the client, or any other person or company, resulting from the use of any information or interpretation given in this report. In no case shall Eurofins be liable for consequential damages including, but not limited to, lost profits, damages for failure to meet deadlines and lost production arising from this report. This document shall not be reproduced except in full and relates only to the items tested. Unless indicated otherwise, the tests were performed on the samples as received.

Ramboll Environ Australia Pty Ltd
 Level 3/100 Pacific Highway
 North Sydney
 NSW 2060



NATA Accredited
Accreditation Number 1261
Site Number 18217

Accredited for compliance with ISO/IEC 17025 – Testing
 The results of the tests, calibrations and/or
 measurements included in this document are traceable
 to Australian/national standards.

Attention: **Stephen Maxwell**

Report **713180-A**
 Project name
 Project ID **318000780**
 Received Date **Mar 27, 2020**

Client Sample ID			DSWAB_RE (P3)	DSWAB_SE (P3)	DSWAB_WIN (P3)	DSWAB_FE (P3)
Sample Matrix			Wipes	Wipes	Wipes	Wipes
Eurofins Sample No.			S20-Ap02127	S20-Ap02128	S20-Ap02129	S20-Ap02130
Date Sampled			Mar 25, 2020	Mar 25, 2020	Mar 25, 2020	Mar 25, 2020
Test/Reference	LOR	Unit				
Heavy Metals						
Lead	1	Total ug	9.2	110	31	28

Sample History

Where samples are submitted/analysed over several days, the last date of extraction and analysis is reported.

A recent review of our LIMS has resulted in the correction or clarification of some method identifications. Due to this, some of the method reference information on reports has changed. However, no substantive change has been made to our laboratory methods, and as such there is no change in the validity of current or previous results.

If the date and time of sampling are not provided, the Laboratory will not be responsible for compromised results should testing be performed outside the recommended holding time.

Description

Heavy Metals

Testing Site

Sydney

Extracted

Apr 16, 2020

Holding Time

180 Days

- Method: LTM-MET-3040 Metals in Waters, Soils & Sediments by ICP-MS

Australia

Melbourne
6 Monterey Road
Dandenong South VIC 3175
Phone : +61 3 8564 5000
NATA # 1261
Site # 1254 & 14271

Sydney
Unit F3, Building F
16 Mars Road
Lane Cove West NSW 2066
Phone : +61 2 9900 8400
NATA # 1261 Site # 18217

Brisbane
1/21 Smallwood Place
Murarrie QLD 4172
Phone : +61 7 3902 4600
NATA # 1261 Site # 20794

Perth
2/91 Leach Highway
Kewdale WA 6105
Phone : +61 8 9251 9600
NATA # 1261
Site # 23736

New Zealand

Auckland
35 O'Rorke Road
Penrose, Auckland 1061
Phone : +64 9 526 45 51
IANZ # 1327

Christchurch
43 Detroit Drive
Rolleston, Christchurch 7675
Phone : 0800 856 450
IANZ # 1290

Company Name: Ramboll Australia Pty Ltd
Address: Level 3/100 Pacific Highway
North Sydney
NSW 2060

Order No.:
Report #: 713180
Phone: 02 9954 8118
Fax: 02 9954 8150

Received: Apr 9, 2020 10:10 AM
Due: Apr 16, 2020
Priority: 3 Day
Contact Name: Stephen Maxwell

Project Name:
Project ID: 318000780

Eurofins Analytical Services Manager : Andrew Black

Lead

Sample Detail

Melbourne Laboratory - NATA Site # 1254 & 14271						
Sydney Laboratory - NATA Site # 18217						X
Brisbane Laboratory - NATA Site # 20794						
Perth Laboratory - NATA Site # 23736						
External Laboratory						
No	Sample ID	Sample Date	Sampling Time	Matrix	LAB ID	
1	DSWAB_RE (P3)	Mar 25, 2020		Wipes	S20-Ap02127	X
2	DSWAB_SE (P3)	Mar 25, 2020		Wipes	S20-Ap02128	X
3	DSWAB_WIN (P3)	Mar 25, 2020		Wipes	S20-Ap02129	X
4	DSWAB_FE (P3)	Mar 25, 2020		Wipes	S20-Ap02130	X
5	DVAC_MH(P3)	Mar 25, 2020		Dust	S20-Ap02148	X
Test Counts						5

Internal Quality Control Review and Glossary
General

- Laboratory QC results for Method Blanks, Duplicates, Matrix Spikes, and Laboratory Control Samples follows guidelines delineated in the National Environment Protection (Assessment of Site Contamination) Measure 1999, as amended May 2013 and are included in this QC report where applicable. Additional QC data may be available on request.
- All soil/sediment/solid results are reported on a dry basis, unless otherwise stated.
- All biota/food results are reported on a wet weight basis on the edible portion, unless otherwise stated.
- Actual LORs are matrix dependant. Quoted LORs may be raised where sample extracts are diluted due to interferences.
- Results are uncorrected for matrix spikes or surrogate recoveries except for PFAS compounds.
- SVOC analysis on waters are performed on homogenised, unfiltered samples, unless noted otherwise.
- Samples were analysed on an 'as received' basis.
- Information identified on this report with blue colour, indicates data provided by customer, that may have an impact on the results.
- This report replaces any interim results previously issued.

Holding Times

Please refer to 'Sample Preservation and Container Guide' for holding times (QS3001).

For samples received on the last day of holding time, notification of testing requirements should have been received at least 6 hours prior to sample receipt deadlines as stated on the SRA.

If the Laboratory did not receive the information in the required timeframe, and regardless of any other integrity issues, suitably qualified results may still be reported.

Holding times apply from the date of sampling, therefore compliance to these may be outside the laboratory's control.

For VOCs containing vinyl chloride, styrene and 2-chloroethyl vinyl ether the holding time is 7 days however for all other VOCs such as BTEX or C6-10 TRH then the holding time is 14 days.

****NOTE:** pH duplicates are reported as a range NOT as RPD

Units

mg/kg: milligrams per kilogram

mg/L: milligrams per litre

ug/L: micrograms per litre

ppm: Parts per million

ppb: Parts per billion

%: Percentage

org/100mL: Organisms per 100 millilitres

NTU: Nephelometric Turbidity Units

MPN/100mL: Most Probable Number of organisms per 100 millilitres

Terms

Dry	Where a moisture has been determined on a solid sample the result is expressed on a dry basis.
LOR	Limit of Reporting.
SPIKE	Addition of the analyte to the sample and reported as percentage recovery.
RPD	Relative Percent Difference between two Duplicate pieces of analysis.
LCS	Laboratory Control Sample - reported as percent recovery.
CRM	Certified Reference Material - reported as percent recovery.
Method Blank	In the case of solid samples these are performed on laboratory certified clean sands and in the case of water samples these are performed on de-ionised water.
Surr - Surrogate	The addition of a like compound to the analyte target and reported as percentage recovery.
Duplicate	A second piece of analysis from the same sample and reported in the same units as the result to show comparison.
USEPA	United States Environmental Protection Agency
APHA	American Public Health Association
TCLP	Toxicity Characteristic Leaching Procedure
COC	Chain of Custody
SRA	Sample Receipt Advice
QSM	US Department of Defense Quality Systems Manual Version 5.3
CP	Client Parent - QC was performed on samples pertaining to this report
NCP	Non-Client Parent - QC performed on samples not pertaining to this report, QC is representative of the sequence or batch that client samples were analysed within.
TEQ	Toxic Equivalency Quotient

QC - Acceptance Criteria

RPD Duplicates: Global RPD Duplicates Acceptance Criteria is 30% however the following acceptance guidelines are equally applicable:

Results <10 times the LOR : No Limit

Results between 10-20 times the LOR : RPD must lie between 0-50%

Results >20 times the LOR : RPD must lie between 0-30%

Surrogate Recoveries: Recoveries must lie between 20-130% Phenols & 50-150% PFASs

PFAS field samples that contain surrogate recoveries in excess of the QC limit designated in QSM 5.3 where no positive PFAS results have been reported have been reviewed and no data was affected.

WA DWER (n=10): PFBA, PFPeA, PFHxA, PFHpA, PFOA, PFBS, PFHxS, PFOS, 6:2 FTSA, 8:2 FTSA

QC Data General Comments

- Where a result is reported as a less than (<), higher than the nominated LOR, this is due to either matrix interference, extract dilution required due to interferences or contaminant levels within the sample, high moisture content or insufficient sample provided.
- Duplicate data shown within this report that states the word "BATCH" is a Batch Duplicate from outside of your sample batch, but within the laboratory sample batch at a 1:10 ratio. The Parent and Duplicate data shown is not data from your samples.
- Organochlorine Pesticide analysis - where reporting LCS data, Toxaphene & Chlordane are not added to the LCS.
- Organochlorine Pesticide analysis - where reporting Spike data, Toxaphene is not added to the Spike.
- Total Recoverable Hydrocarbons - where reporting Spike & LCS data, a single spike of commercial Hydrocarbon products in the range of C12-C30 is added and it's Total Recovery is reported in the C10-C14 cell of the Report.
- pH and Free Chlorine analysed in the laboratory - Analysis on this test must begin within 30 minutes of sampling. Therefore laboratory analysis is unlikely to be completed within holding time. Analysis will begin as soon as possible after sample receipt.
- Recovery Data (Spikes & Surrogates) - where chromatographic interference does not allow the determination of Recovery the term "INT" appears against that analyte.
- Polychlorinated Biphenyls are spiked only using Aroclor 1260 in Matrix Spikes and LCS.
- For Matrix Spikes and LCS results a dash " - " in the report means that the specific analyte was not added to the QC sample.
- Duplicate RPDs are calculated from raw analytical data thus it is possible to have two sets of data.

Quality Control Results

Comments**Sample Integrity**

Custody Seals Intact (if used)	N/A
Attempt to Chill was evident	N/A
Sample correctly preserved	Yes
Appropriate sample containers have been used	Yes
Sample containers for volatile analysis received with minimal headspace	Yes
Samples received within HoldingTime	Yes
Some samples have been subcontracted	No

Authorised By

Andrew Black Analytical Services Manager
Gabriele Cordero Senior Analyst-Metal (NSW)

**Glenn Jackson
General Manager**

Final report - this Report replaces any previously issued Report

- Indicates Not Requested

* Indicates NATA accreditation does not cover the performance of this service

Measurement uncertainty of test data is available on request or please [click here](#).

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Ramboll Environ Australia Pty Ltd
 Level 3/100 Pacific Highway
 North Sydney
 NSW 2060



NATA Accredited
Accreditation Number 1261
Site Number 18217

Accredited for compliance with ISO/IEC 17025 – Testing
 The results of the tests, calibrations and/or
 measurements included in this document are traceable
 to Australian/national standards.

Attention: **Stephen Maxwell**

Report **713180-S**
 Project name
 Project ID **318000780**
 Received Date **Mar 27, 2020**

Client Sample ID			DVAC_MH(P3)
Sample Matrix			Dust
Eurofins Sample No.			S20-Ap02148
Date Sampled			Mar 25, 2020
Test/Reference	LOR	Unit	
Heavy Metals			
Lead	5	mg/kg	450

Sample History

Where samples are submitted/analysed over several days, the last date of extraction and analysis is reported.

A recent review of our LIMS has resulted in the correction or clarification of some method identifications. Due to this, some of the method reference information on reports has changed. However, no substantive change has been made to our laboratory methods, and as such there is no change in the validity of current or previous results.

If the date and time of sampling are not provided, the Laboratory will not be responsible for compromised results should testing be performed outside the recommended holding time.

Description

Heavy Metals

Testing Site

Sydney

Extracted

Apr 16, 2020

Holding Time

180 Days

- Method: LTM-MET-3040 Metals in Waters, Soils & Sediments by ICP-MS

Australia

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IANZ # 1327

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Rolleston, Christchurch 7675
Phone : 0800 856 450
IANZ # 1290

Company Name: Ramboll Australia Pty Ltd
Address: Level 3/100 Pacific Highway
North Sydney
NSW 2060

Order No.:
Report #: 713180
Phone: 02 9954 8118
Fax: 02 9954 8150

Received: Apr 9, 2020 10:10 AM
Due: Apr 16, 2020
Priority: 3 Day
Contact Name: Stephen Maxwell

Project Name:
Project ID: 318000780

Eurofins Analytical Services Manager : Andrew Black

Lead

Sample Detail

Melbourne Laboratory - NATA Site # 1254 & 14271						
Sydney Laboratory - NATA Site # 18217						X
Brisbane Laboratory - NATA Site # 20794						
Perth Laboratory - NATA Site # 23736						
External Laboratory						
No	Sample ID	Sample Date	Sampling Time	Matrix	LAB ID	
1	DSWAB_RE (P3)	Mar 25, 2020		Wipes	S20-Ap02127	X
2	DSWAB_SE (P3)	Mar 25, 2020		Wipes	S20-Ap02128	X
3	DSWAB_WIN (P3)	Mar 25, 2020		Wipes	S20-Ap02129	X
4	DSWAB_FE (P3)	Mar 25, 2020		Wipes	S20-Ap02130	X
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Test Counts						5

Internal Quality Control Review and Glossary
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- pH and Free Chlorine analysed in the laboratory - Analysis on this test must begin within 30 minutes of sampling. Therefore laboratory analysis is unlikely to be completed within holding time. Analysis will begin as soon as possible after sample receipt.
- Recovery Data (Spikes & Surrogates) - where chromatographic interference does not allow the determination of Recovery the term "INT" appears against that analyte.
- Polychlorinated Biphenyls are spiked only using Aroclor 1260 in Matrix Spikes and LCS.
- For Matrix Spikes and LCS results a dash " - " in the report means that the specific analyte was not added to the QC sample.
- Duplicate RPDs are calculated from raw analytical data thus it is possible to have two sets of data.

Quality Control Results

Test				Units	Result 1		Acceptance Limits	Pass Limits	Qualifying Code	
Method Blank										
Heavy Metals										
Lead				mg/kg	< 5		5	Pass		
LCS - % Recovery										
Heavy Metals										
Lead				%	97		70-130	Pass		
Test	Lab Sample ID	QA Source	Units	Result 1			Acceptance Limits	Pass Limits	Qualifying Code	
Spike - % Recovery										
Heavy Metals										
Lead				S20-Ap18836	NCP	%	101	70-130	Pass	
Duplicate										
Heavy Metals										
Lead				S20-Ap18825	NCP	mg/kg	< 5	< 5	< 1	30% Pass

Comments**Sample Integrity**

Custody Seals Intact (if used)	N/A
Attempt to Chill was evident	N/A
Sample correctly preserved	Yes
Appropriate sample containers have been used	Yes
Sample containers for volatile analysis received with minimal headspace	Yes
Samples received within HoldingTime	Yes
Some samples have been subcontracted	No

Authorised By

Andrew Black Analytical Services Manager
Gabriele Cordero Senior Analyst-Metal (NSW)

**Glenn Jackson
General Manager**

Final report - this Report replaces any previously issued Report

- Indicates Not Requested

* Indicates NATA accreditation does not cover the performance of this service

Measurement uncertainty of test data is available on request or please [click here](#).

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Ramboll Environ Australia Pty Ltd
 Level 3/100 Pacific Highway
 North Sydney
 NSW 2060



NATA Accredited
Accreditation Number 1261
Site Number 18217

Accredited for compliance with ISO/IEC 17025 – Testing
 The results of the tests, calibrations and/or
 measurements included in this document are traceable
 to Australian/national standards.

Attention: **Stephen Maxwell**

Report **716985-A**
 Project name **P3**
 Project ID **318000780**
 Received Date **May 01, 2020**

Client Sample ID			DSWAB_FE(P3)	DSWAB_KE(P3)	DSWAB_SE(P3)	DSWAB_WIN(P3)
Sample Matrix			Wipes	Wipes	Wipes	Wipes
Eurofins Sample No.			S20-My01256	S20-My01257	S20-My01258	S20-My01259
Date Sampled			Apr 27, 2020	Apr 27, 2020	Apr 27, 2020	Apr 27, 2020
Test/Reference	LOR	Unit				
Heavy Metals						
Lead	1	Total ug	18	9.2	79	10

Client Sample ID			DSWAB_FE(P3)	DSWAB_KE(P3)	DSWAB_SE(P3)	DSWAB_WIN(P3)
Sample Matrix			Wipes	Wipes	Wipes	Wipes
Eurofins Sample No.			S20-My01260	S20-My01261	S20-My01262	S20-My01263
Date Sampled			Apr 30, 2020	Apr 30, 2020	Apr 30, 2020	Apr 30, 2020
Test/Reference	LOR	Unit				
Heavy Metals						
Lead	1	Total ug	13	5.8	12	2.4

Sample History

Where samples are submitted/analysed over several days, the last date of extraction and analysis is reported.

A recent review of our LIMS has resulted in the correction or clarification of some method identifications. Due to this, some of the method reference information on reports has changed. However, no substantive change has been made to our laboratory methods, and as such there is no change in the validity of current or previous results.

If the date and time of sampling are not provided, the Laboratory will not be responsible for compromised results should testing be performed outside the recommended holding time.

Description

Heavy Metals

Testing Site

Sydney

Extracted

May 07, 2020

Holding Time

180 Days

- Method: LTM-MET-3040 Metals in Waters, Soils & Sediments by ICP-MS

Australia

Melbourne
6 Monterey Road
Dandenong South VIC 3175
Phone : +61 3 8564 5000
NATA # 1261
Site # 1254 & 14271

Sydney
Unit F3, Building F
16 Mars Road
Lane Cove West NSW 2066
Phone : +61 2 9900 8400
NATA # 1261 Site # 18217

Brisbane
1/21 Smallwood Place
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NATA # 1261 Site # 20794

Perth
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Kewdale WA 6105
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NATA # 1261
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New Zealand

Auckland
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IANZ # 1327

Christchurch
43 Detroit Drive
Rolleston, Christchurch 7675
Phone : 0800 856 450
IANZ # 1290

Company Name: Ramboll Australia Pty Ltd
Address: Level 3/100 Pacific Highway
North Sydney
NSW 2060

Project Name: P3
Project ID: 318000780

Order No.:
Report #: 716985
Phone: 02 9954 8118
Fax: 02 9954 8150

Received: May 1, 2020 12:00 PM
Due: May 8, 2020
Priority: 5 Day
Contact Name: Stephen Maxwell

Eurofins Analytical Services Manager : Andrew Black

Lead

Sample Detail

Melbourne Laboratory - NATA Site # 1254 & 14271

Sydney Laboratory - NATA Site # 18217

Brisbane Laboratory - NATA Site # 20794

Perth Laboratory - NATA Site # 23736

External Laboratory

No	Sample ID	Sample Date	Sampling Time	Matrix	LAB ID	
1	DSWAB_FE(P3)	Apr 27, 2020		Wipes	S20-My01256	X
2	DSWAB_KE(P3)	Apr 27, 2020		Wipes	S20-My01257	X
3	DSWAB_SE(P3)	Apr 27, 2020		Wipes	S20-My01258	X
4	DSWAB_WIN(P3)	Apr 27, 2020		Wipes	S20-My01259	X
5	DSWAB_FE(P3)	Apr 30, 2020		Wipes	S20-My01260	X
6	DSWAB_KE(P3)	Apr 30, 2020		Wipes	S20-My01261	X

Australia

Melbourne
 6 Monterey Road
 Dandenong South VIC 3175
 Phone : +61 3 8564 5000
 NATA # 1261
 Site # 1254 & 14271

Sydney
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 NATA # 1261 Site # 18217

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 IANZ # 1327

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 IANZ # 1290

Company Name: Ramboll Australia Pty Ltd
Address: Level 3/100 Pacific Highway
 North Sydney
 NSW 2060

Project Name: P3
Project ID: 318000780

Order No.:
Report #: 716985
Phone: 02 9954 8118
Fax: 02 9954 8150

Received: May 1, 2020 12:00 PM
Due: May 8, 2020
Priority: 5 Day
Contact Name: Stephen Maxwell

Eurofins Analytical Services Manager : Andrew Black

Sample Detail						Lead
Melbourne Laboratory - NATA Site # 1254 & 14271						
Sydney Laboratory - NATA Site # 18217						X
Brisbane Laboratory - NATA Site # 20794						
Perth Laboratory - NATA Site # 23736						
7	DSWAB_SE(P3)	Apr 30, 2020		Wipes	S20-My01262	X
8	DSWAB_WIN(P3)	Apr 30, 2020		Wipes	S20-My01263	X
Test Counts						8

Internal Quality Control Review and Glossary

General

- Laboratory QC results for Method Blanks, Duplicates, Matrix Spikes, and Laboratory Control Samples follows guidelines delineated in the National Environment Protection (Assessment of Site Contamination) Measure 1999, as amended May 2013 and are included in this QC report where applicable. Additional QC data may be available on request.
- All soil/sediment/solid results are reported on a dry basis, unless otherwise stated.
- All biota/food results are reported on a wet weight basis on the edible portion, unless otherwise stated.
- Actual LORs are matrix dependant. Quoted LORs may be raised where sample extracts are diluted due to interferences.
- Results are uncorrected for matrix spikes or surrogate recoveries except for PFAS compounds.
- SVOC analysis on waters are performed on homogenised, unfiltered samples, unless noted otherwise.
- Samples were analysed on an 'as received' basis.
- Information identified on this report with blue colour, indicates data provided by customer, that may have an impact on the results.
- This report replaces any interim results previously issued.

Holding Times

Please refer to 'Sample Preservation and Container Guide' for holding times (QS3001).

For samples received on the last day of holding time, notification of testing requirements should have been received at least 6 hours prior to sample receipt deadlines as stated on the SRA.

If the Laboratory did not receive the information in the required timeframe, and regardless of any other integrity issues, suitably qualified results may still be reported.

Holding times apply from the date of sampling, therefore compliance to these may be outside the laboratory's control.

For VOCs containing vinyl chloride, styrene and 2-chloroethyl vinyl ether the holding time is 7 days however for all other VOCs such as BTEX or C6-10 TRH then the holding time is 14 days.

****NOTE:** pH duplicates are reported as a range NOT as RPD

Units

mg/kg: milligrams per kilogram

mg/L: milligrams per litre

ug/L: micrograms per litre

ppm: Parts per million

ppb: Parts per billion

%: Percentage

org/100mL: Organisms per 100 millilitres

NTU: Nephelometric Turbidity Units

MPN/100mL: Most Probable Number of organisms per 100 millilitres

Terms

Dry	Where a moisture has been determined on a solid sample the result is expressed on a dry basis.
LOR	Limit of Reporting.
SPIKE	Addition of the analyte to the sample and reported as percentage recovery.
RPD	Relative Percent Difference between two Duplicate pieces of analysis.
LCS	Laboratory Control Sample - reported as percent recovery.
CRM	Certified Reference Material - reported as percent recovery.
Method Blank	In the case of solid samples these are performed on laboratory certified clean sands and in the case of water samples these are performed on de-ionised water.
Surr - Surrogate	The addition of a like compound to the analyte target and reported as percentage recovery.
Duplicate	A second piece of analysis from the same sample and reported in the same units as the result to show comparison.
USEPA	United States Environmental Protection Agency
APHA	American Public Health Association
TCLP	Toxicity Characteristic Leaching Procedure
COC	Chain of Custody
SRA	Sample Receipt Advice
QSM	US Department of Defense Quality Systems Manual Version 5.3
CP	Client Parent - QC was performed on samples pertaining to this report
NCP	Non-Client Parent - QC performed on samples not pertaining to this report, QC is representative of the sequence or batch that client samples were analysed within.
TEQ	Toxic Equivalency Quotient

QC - Acceptance Criteria

RPD Duplicates: Global RPD Duplicates Acceptance Criteria is 30% however the following acceptance guidelines are equally applicable:

Results <10 times the LOR : No Limit

Results between 10-20 times the LOR : RPD must lie between 0-50%

Results >20 times the LOR : RPD must lie between 0-30%

Surrogate Recoveries: Recoveries must lie between 20-130% Phenols & 50-150% PFASs

PFAS field samples that contain surrogate recoveries in excess of the QC limit designated in QSM 5.3 where no positive PFAS results have been reported have been reviewed and no data was affected.

WA DWER (n=10): PFBA, PFPeA, PFHxA, PFHpA, PFOA, PFBS, PFHxS, PFOS, 6:2 FTSA, 8:2 FTSA

QC Data General Comments

- Where a result is reported as a less than (<), higher than the nominated LOR, this is due to either matrix interference, extract dilution required due to interferences or contaminant levels within the sample, high moisture content or insufficient sample provided.
- Duplicate data shown within this report that states the word "BATCH" is a Batch Duplicate from outside of your sample batch, but within the laboratory sample batch at a 1:10 ratio. The Parent and Duplicate data shown is not data from your samples.
- Organochlorine Pesticide analysis - where reporting LCS data, Toxaphene & Chlordane are not added to the LCS.
- Organochlorine Pesticide analysis - where reporting Spike data, Toxaphene is not added to the Spike.
- Total Recoverable Hydrocarbons - where reporting Spike & LCS data, a single spike of commercial Hydrocarbon products in the range of C12-C30 is added and it's Total Recovery is reported in the C10-C14 cell of the Report.
- pH and Free Chlorine analysed in the laboratory - Analysis on this test must begin within 30 minutes of sampling. Therefore laboratory analysis is unlikely to be completed within holding time. Analysis will begin as soon as possible after sample receipt.
- Recovery Data (Spikes & Surrogates) - where chromatographic interference does not allow the determination of Recovery the term "INT" appears against that analyte.
- Polychlorinated Biphenyls are spiked only using Aroclor 1260 in Matrix Spikes and LCS.
- For Matrix Spikes and LCS results a dash " - " in the report means that the specific analyte was not added to the QC sample.
- Duplicate RPDs are calculated from raw analytical data thus it is possible to have two sets of data.

Comments**Sample Integrity**

Custody Seals Intact (if used)	N/A
Attempt to Chill was evident	N/A
Sample correctly preserved	Yes
Appropriate sample containers have been used	Yes
Sample containers for volatile analysis received with minimal headspace	Yes
Samples received within HoldingTime	Yes
Some samples have been subcontracted	No

Authorised By

Andrew Black Analytical Services Manager
Gabriele Cordero Senior Analyst-Metal (NSW)

**Glenn Jackson
General Manager**

Final report - this Report replaces any previously issued Report

- Indicates Not Requested

* Indicates NATA accreditation does not cover the performance of this service

Measurement uncertainty of test data is available on request or please [click here](#).

Eurofins shall not be liable for loss, cost, damages or expenses incurred by the client, or any other person or company, resulting from the use of any information or interpretation given in this report. In no case shall Eurofins be liable for consequential damages including, but not limited to, lost profits, damages for failure to meet deadlines and lost production arising from this report. This document shall not be reproduced except in full and relates only to the items tested. Unless indicated otherwise, the tests were performed on the samples as received.

Ramboll Environ Australia Pty Ltd
 Level 3/100 Pacific Highway
 North Sydney
 NSW 2060



NATA Accredited
Accreditation Number 1261
Site Number 18217

Accredited for compliance with ISO/IEC 17025 – Testing
 The results of the tests, calibrations and/or
 measurements included in this document are traceable
 to Australian/national standards.

Attention: **Stephen Maxwell**

Report **713878-S-V5**

Project name

Project ID **318000780**

Received Date **Apr 15, 2020**

Client Sample ID			P3_TWS2
Sample Matrix			Solid
Eurofins Sample No.			S20-Ap21433
Date Sampled			Mar 26, 2020
Test/Reference	LOR	Unit	
Heavy Metals			
Lead	1	mg/kg	450

Sample History

Where samples are submitted/analysed over several days, the last date of extraction and analysis is reported.

A recent review of our LIMS has resulted in the correction or clarification of some method identifications. Due to this, some of the method reference information on reports has changed. However, no substantive change has been made to our laboratory methods, and as such there is no change in the validity of current or previous results.

If the date and time of sampling are not provided, the Laboratory will not be responsible for compromised results should testing be performed outside the recommended holding time.

Description

Heavy Metals

Testing Site

Sydney

Extracted

Apr 16, 2020

Holding Time

180 Days

- Method: LTM-MET-3040 Metals in Waters, Soils & Sediments by ICP-MS

Australia

Melbourne
6 Monterey Road
Dandenong South VIC 3175
Phone : +61 3 8564 5000
NATA # 1261
Site # 1254 & 14271

Sydney
Unit F3, Building F
16 Mars Road
Lane Cove West NSW 2066
Phone : +61 2 9900 8400
NATA # 1261 Site # 18217

Brisbane
1/21 Smallwood Place
Murarrie QLD 4172
Phone : +61 7 3902 4600
NATA # 1261 Site # 20794

Perth
2/91 Leach Highway
Kewdale WA 6105
Phone : +61 8 9251 9600
NATA # 1261
Site # 23736

New Zealand

Auckland
35 O'Rorke Road
Penrose, Auckland 1061
Phone : +64 9 526 45 51
IANZ # 1327

Christchurch
43 Detroit Drive
Rolleston, Christchurch 7675
Phone : 0800 856 450
IANZ # 1290

Company Name: Ramboll Australia Pty Ltd
Address: Level 3/100 Pacific Highway
North Sydney
NSW 2060

Order No.:
Report #: 713878
Phone: 02 9954 8118
Fax: 02 9954 8150

Received: Apr 15, 2020 1:37 PM
Due: Apr 20, 2020
Priority: 3 Day
Contact Name: Stephen Maxwell

Project Name:
Project ID: 318000780

Eurofins Analytical Services Manager : Andrew Black

Sample Detail						Lead	Moisture Set
Melbourne Laboratory - NATA Site # 1254 & 14271							
Sydney Laboratory - NATA Site # 18217						X	X
Brisbane Laboratory - NATA Site # 20794							
Perth Laboratory - NATA Site # 23736							
External Laboratory							
No	Sample ID	Sample Date	Sampling Time	Matrix	LAB ID		
1	P3_TWS2	Mar 26, 2020		Solid	S20-Ap21433	X	X
2	P4_TWS2	Mar 24, 2020		Solid	S20-Ap21434	X	X
3	P7_TWS2	Mar 25, 2020		Solid	S20-Ap21435	X	X
4	SMCTS1	Mar 24, 2020		Solid	S20-Ap21436	X	X
5	P11_TWS1	Mar 26, 2020		Solid	S20-Ap21437	X	X
6	P11_TWS2	Mar 26, 2020		Solid	S20-Ap21438	X	X
7	P12_TWS1	Mar 26, 2020		Solid	S20-Ap21439	X	X
8	P12_TWS2	Mar 26, 2020		Solid	S20-Ap21440	X	X
9	P14_TWS3	Mar 26, 2020		Solid	S20-Ap21441	X	X
10	P18_TWS1	Mar 31, 2020		Solid	S20-Ap21442	X	X

Australia

Melbourne
 6 Monterey Road
 Dandenong South VIC 3175
 Phone : +61 3 8564 5000
 NATA # 1261
 Site # 1254 & 14271

Sydney
 Unit F3, Building F
 16 Mars Road
 Lane Cove West NSW 2066
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 Kewdale WA 6105
 Phone : +61 8 9251 9600
 NATA # 1261
 Site # 23736

New Zealand

Auckland
 35 O'Rorke Road
 Penrose, Auckland 1061
 Phone : +64 9 526 45 51
 IANZ # 1327

Christchurch
 43 Detroit Drive
 Rolleston, Christchurch 7675
 Phone : 0800 856 450
 IANZ # 1290

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Brisbane Laboratory - NATA Site # 20794							
Perth Laboratory - NATA Site # 23736							
11	P18_TWS2	Mar 31, 2020		Solid	S20-Ap21443	X	X
12	P21_TWS1	Mar 31, 2020		Solid	S20-Ap21444	X	X
13	P21_TWS2	Mar 31, 2020		Solid	S20-Ap21445	X	X
14	P23_TWS1	Mar 31, 2020		Solid	S20-Ap21446	X	X
Test Counts						14	14

Internal Quality Control Review and Glossary

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Quality Control Results

Test				Units	Result 1			Acceptance Limits	Pass Limits	Qualifying Code	
Method Blank											
Heavy Metals											
Lead				mg/kg	< 1			1	Pass		
LCS - % Recovery											
Heavy Metals											
Lead				%	96			70-130	Pass		
Test	Lab Sample ID	QA Source	Units	Result 1				Acceptance Limits	Pass Limits	Qualifying Code	
Spike - % Recovery											
Heavy Metals											
Lead				B20-Ap16161	NCP	%	89		70-130	Pass	
Spike - % Recovery											
Heavy Metals											
Lead				B20-Ap16161	NCP	%	89		70-130	Pass	
Spike - % Recovery											
Heavy Metals											
Lead				S20-Ap21444	CP	%	87		70-130	Pass	
Test	Lab Sample ID	QA Source	Units	Result 1				Acceptance Limits	Pass Limits	Qualifying Code	
Duplicate											
Heavy Metals											
Lead				S20-Ap17051	NCP	mg/kg	29	35	19	30%	Pass
Duplicate											
Heavy Metals											
Lead				S20-Ap17051	NCP	mg/kg	29	**	19	30%	Pass
Duplicate											
Heavy Metals											
Lead				S20-Ap21444	CP	mg/kg	70	69	2.0	30%	Pass

Comments

New version to split samples.

Sample Integrity

Custody Seals Intact (if used)	N/A
Attempt to Chill was evident	N/A
Sample correctly preserved	Yes
Appropriate sample containers have been used	Yes
Sample containers for volatile analysis received with minimal headspace	Yes
Samples received within HoldingTime	Yes
Some samples have been subcontracted	No

Authorised By

Andrew Black Analytical Services Manager
Gabriele Cordero Senior Analyst-Metal (NSW)



Glenn Jackson
General Manager

Final report - this Report replaces any previously issued Report

- Indicates Not Requested

* Indicates NATA accreditation does not cover the performance of this service

Measurement uncertainty of test data is available on request or please [click here](#).

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Tarago Preschool
Braidwood Road
Tarago NSW 2580

Delivered: by email

Tarago Preschool, Braidwood Road, Tarago NSW Lead Investigation Report

Date 2/06/2020

This report presents the findings of an investigation of lead at Tarago Preschool undertaken as part of the investigation of lead impacts in the Tarago Community.

Investigation at the preschool comprised collection of samples as shown **Table 1** and the attached figure. Samples were collected on 24 March 2020 to inform preliminary assessment and on 18 May 2020 to provide supplementary data.

Ramboll
Level 2, Suite 18 Eastpoint
50 Glebe Road
PO Box 435
The Junction
NSW 2291
Australia

Table 1 Samples Collected

Type	Number of samples collected
Soil	6
Groundwater from onsite bore	n/a (a bore was not identified onsite)
Rainwater tank water	1
Rainwater tank sediment	n/a (sediment was not observed in the tank)
Dust (from inside the preschool)	14
Paint	1

T +61 2 4962 5444
<https://ramboll.com>

Samples were sent to an independent certified laboratory for analysis.

Results

Sample results were compared against guidelines relevant for a preschool. Results are tabulated in **Table 2** and **Table 3**. Concentrations shown in BOLD are above the relevant guideline.

Table 2 Summary lead concentrations relevant to health investigation levels

Type	Guideline	Result					
		P5_HA01_0.2	P5_HA01_0.3	P5_HA01_0.0-0.05	P5_HA02_0.3	P5_HA02_0.0-0.05	P5_SANDPIT
Soil	300 (mg/kg) ¹	42	26	38	33	67	<5
Tank water	0.01 (mg/L) ²	P5_TW1 < 0.001					
Dust Interior – Swab sampling of hard floor ⁴	108 (µg/m ²) ³	DSWAB_KA (PS) 19					
Dust Interior – Window Sills and Shelves ⁴	1076 (µg/m ²) ³	DSWAB_BC (PS) 144					
Dust Interior – Vacuum sampling of carpet floor ⁴	Further assessment required ⁶	DVAC-BE(PS) 52 (mg/kg) 258 (µg/m ²)	DVAC-FE(PS) 78 (mg/kg) 747 (µg/m ²)	DVAC-LA(PS) 74 (mg/kg) 563 (µg/m ²)			
Whole area vac sample	Further assessment required	DVAC-WPS(PS) 17 (mg/kg)					
Paint	0.1% ⁵	PAINT 1 (PS) 0.02					

¹NEPM (2013) Schedule B1: Guideline on investigation levels for soil and groundwater. National Environment Protection (Assessment of Site Contamination) Measure 1999. Federal Register of Legislative Instruments F2013C00288 (HIL A - Residential with garden/accessible soil (home grown produce <10% fruit and vegetable intake (no poultry), also includes childcare centres, preschools and primary schools). No poultry observed.

²NHMRC, NRMCC (2011 updated 2018) Australian Drinking Water Guidelines (ADWG) Paper 6 National Water Quality Management Strategy. National Health and Medical Research Council, National Resource Management Ministerial Council, Commonwealth of Australia, Canberra. Groundwater samples filtered as per AS/NZS 5667.11.

³USEPA (2020) Protect your family from lead in your home. US Environmental Protection Agency – January 2020.

⁴ The dust results presented are lead loadings (µg lead/m²). For vacuum samples, lead loadings were calculated as follows:

$$\text{Lead loading } (\mu\text{g}/\text{m}^2) = (\text{lead concentration } (\text{mg}/\text{kg}) \times \text{dust sample mass } (\text{g}) / \text{sample area } (\text{m}^2))$$

For swab samples, lead loadings were calculated as follows:

$$\text{Lead loading } (\mu\text{g}/\text{m}^2) = \text{Total lead } (\mu\text{g}) / \text{sample area } (\text{m}^2).$$

⁵ Australian Government Department of the Environment, Lead Alert: the six step guide to painting your home, 5th Ed. 2016.

⁶ Lead loadings in internal dust derived from vacuum sampling exceed a preliminary screening criterion which has triggered further assessment as presented in this report.

Lead concentrations in soil and tank water presented in **Table 2** fall below the adopted guidelines and indicate that risks to health from lead in soil and tank water are low and acceptable.

Lead loadings on window sills and hard floors were below the adopted guidelines. For the dust samples collected from the carpet flooring (DVAC samples in **Table 2**) the indicative dust lead loading levels (as µg/m²) suggests the presence of elevated levels of lead in dust in the carpet. The calculated dust lead loading is not indicative of the level of lead in dust that children or staff may be exposed to when accessing the carpet, however the indicative levels calculated trigger the need to collect some additional samples to better address what is on the surface of the carpet. These additional carpet swab samples are presented in **Table 3**.

The level of lead in dust samples collected using the vacuum can be reported as a concentration, just like for outdoor soil. The soil Health Investigation level adopted (HIL A) is a concentration based guideline that represents a safe lead concentration for children where lead exposure can occur from

both outdoor soil and indoor dust. In the absence of elevated outdoor soil lead concentrations, the indoor dust concentrations collected by vacuum can be directly compared with HIL A. This comparison is presented in **Table 3**.

Table 3 shows all dust concentrations are below the relevant guidelines.

Table 3 Summary lead concentrations relevant to health investigation levels

Type	Guideline	Result					
Dust Interior – Swab sampling of carpet floors ⁴	108 (µg/m ²) ³	DSWAB_2 (PS)	DSWAB_3 (PS)	DSWAB_4 (PS)	DSWAB_5 (PS)	DSWAB_6 (PS)	DSWAB_8 (PS)
		13	16	14	23	60	18
Dust Interior – Swab sampling of hard floors ⁴		DSWAB_1 (PS)	DSWAB_7 (PS)				
		23	12				
Dust Interior – Vacuum sampling of carpet floors	300 (mg/kg) ¹	DVAC-BE(PS)	DVAC-FE(PS)	DVAC-LA(PS)	DVAC-WPS(PS)		
		52	78	74	17		

¹NEPM (2013) Schedule B1: Guideline on investigation levels for soil and groundwater. National Environment Protection (Assessment of Site Contamination) Measure 1999. Federal Register of Legislative Instruments F2013C00288 (HIL A - Residential with garden/accessible soil (home grown produce <10% fruit and vegetable intake (no poultry), also includes childcare centres, preschools and primary schools). No poultry observed. The adoption of this guideline for comparison against indoor vacuumed dust sample is considered valid when exterior soil lead concentrations are low.

³ Refer to footnote 3 of Table 2

⁴ Refer to footnote 4 of Table 2

Within this context risks associated with lead in internal dust are also considered low and acceptable.

No further action at the site is required in relation to lead impact.


For further information please contact the undersigned.

Yours sincerely



Stephen Maxwell
Tarago Lead Investigation Project Manager

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M+61 478658194
smaxwell@ramboll.com



Fiona Robinson
Principal Contaminated Land Specialist

D+61 (2) 49625444
M+61 421311066
frobinson@ramboll.com

Attachments

Figure of sampling locations

Reference

Laboratory report 710586, 713210 and 720329

Limitations

Ramboll Australia Pty Ltd prepared this report in accordance with the scope of work as outlined in our proposal to John Holland Rail and in accordance with our understanding and interpretation of current regulatory standards. A representative program of sampling and laboratory analyses was undertaken as part of this investigation. While every care has been taken, concentrations of

contaminants measured may not be representative of conditions between the locations sampled and investigated. We cannot therefore preclude the presence of materials that may be hazardous. Site conditions may change over time. This report is based on conditions encountered at the Site at the time of the report and Ramboll disclaims responsibility for any changes that may have occurred after this time. The conclusions presented in this report represent Ramboll's professional judgment based on information made available during the course of this assignment and are true and correct to the best of Ramboll's knowledge as at the date of the assessment. Ramboll did not independently verify all of the written or oral information provided to Ramboll during the course of this investigation. While Ramboll has no reason to doubt the accuracy of the information provided to it, the report is complete and accurate only to the extent that the information provided to Ramboll was itself complete and accurate. This report does not purport to give legal advice. This advice can only be given by qualified legal advisors.



RAMBOLL AUSTRALIA - GIS MAP file : 318000780_GIS_P010_RequestsSamples | F005a_P5_V03 | 28/05/2020

Imagery © Department Finance, Services and Innovation 2020

Legend

- Property boundary
- Dust sample
- ⊗ Hand auger sample
- ⬠ Paint sample
- ⊕ Tank sample



Environmental Site Assessment: Tarago Preschool, Braidwood Road, Tarago NSW

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Ramboll Environ Australia Pty Ltd
 Level 3/100 Pacific Highway
 North Sydney
 NSW 2060



NATA Accredited
Accreditation Number 1261
Site Number 1254

Accredited for compliance with ISO/IEC 17025 – Testing
 The results of the tests, calibrations and/or
 measurements included in this document are traceable
 to Australian/national standards.

Attention: **Stephen Maxwell**

Report **710586-A**
 Project name **318000780**
 Received Date **Mar 27, 2020**

Client Sample ID			DSWAB_BC (PS)	DSWAB_KA (PS)
Sample Matrix			Wipes	Wipes
Eurofins Sample No.			M20-Ap02131	M20-Ap02133
Date Sampled			Mar 24, 2020	Mar 24, 2020
Test/Reference	LOR	Unit		
Heavy Metals				
Lead	1	Total ug	13	1.7

Sample History

Where samples are submitted/analysed over several days, the last date of extraction and analysis is reported.

A recent review of our LIMS has resulted in the correction or clarification of some method identifications. Due to this, some of the method reference information on reports has changed. However, no substantive change has been made to our laboratory methods, and as such there is no change in the validity of current or previous results.

If the date and time of sampling are not provided, the Laboratory will not be responsible for compromised results should testing be performed outside the recommended holding time.

Description

Heavy Metals

Testing Site

Sydney

Extracted

Apr 03, 2020

Holding Time

180 Days

- Method: LTM-MET-3040 Metals in Waters, Soils & Sediments by ICP-MS

Australia

Melbourne
6 Monterey Road
Dandenong South VIC 3175
Phone : +61 3 8564 5000
NATA # 1261
Site # 1254 & 14271

Sydney
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16 Mars Road
Lane Cove West NSW 2066
Phone : +61 2 9900 8400
NATA # 1261 Site # 18217

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Phone : +64 9 526 45 51
IANZ # 1327

Christchurch
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Rolleston, Christchurch 7675
Phone : 0800 856 450
IANZ # 1290

Company Name: Ramboll Australia Pty Ltd
Address: Level 3/100 Pacific Highway
North Sydney
NSW 2060
Project Name: 318000780

Order No.:
Report #: 710586
Phone: 02 9954 8118
Fax: 02 9954 8150

Received: Mar 27, 2020 8:30 AM
Due: Apr 3, 2020
Priority: 5 Day
Contact Name: Stephen Maxwell

Eurofins Analytical Services Manager : Andrew Black

Sample Detail						Lead	Lead	Moisture Set	NEPM 2013 Filtered Metals without Cr6+ (As, Be, B, Cd, Co, Cr, Cu, Hg, Pb, Ni, Mn, Cd, Co, Cr, Cu, Hg, Pb, Ni, Mn, Se, Zn)	NEPM 2013 Metals without Cr6+ (As, Be, B, Cd, Co, Cr, Cu, Hg, Pb, Ni, Mn, Se, Zn)
Melbourne Laboratory - NATA Site # 1254 & 14271						X		X	X	X
Sydney Laboratory - NATA Site # 18217							X			
Brisbane Laboratory - NATA Site # 20794										
Perth Laboratory - NATA Site # 23736										
External Laboratory										
No	Sample ID	Sample Date	Sampling Time	Matrix	LAB ID					
1	DSWAB_BC (PS)	Mar 24, 2020		Wipes	M20-Ap02131		X			
2	DSWAB_KA (PS)	Mar 24, 2020		Wipes	M20-Ap02133		X			
3	DVAC-FE(PS)	Mar 24, 2020		Dust	M20-Ap02149		X			
4	DVAC-LA(PS)	Mar 24, 2020		Dust	M20-Ap02150		X			
5	DVAC-WPS(PS)	Mar 24, 2020		Dust	M20-Ap02151		X			
6	P5_HA01_0.2	Mar 24, 2020		Soil	M20-Ma43789	X		X		
7	P5_HA01_0.3	Mar 24, 2020		Soil	M20-Ma43790	X		X		
8	P5_HA01_0.0-0.05	Mar 24, 2020		Soil	M20-Ma43791	X		X		

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ABN – 50 005 085 521

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e.mail : EnviroSales@eurofins.com

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Order No.:
Report #: 710586
Phone: 02 9954 8118
Fax: 02 9954 8150

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Due: Apr 3, 2020
Priority: 5 Day
Contact Name: Stephen Maxwell

Eurofins Analytical Services Manager : Andrew Black

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Melbourne Laboratory - NATA Site # 1254 & 14271					X		X	X	X
Sydney Laboratory - NATA Site # 18217						X			
Brisbane Laboratory - NATA Site # 20794									
Perth Laboratory - NATA Site # 23736									
9	P5_HA02_0.3	Mar 24, 2020	Soil	M20-Ma43792	X		X		
10	P5_HA02_0.0-0.05	Mar 24, 2020	Soil	M20-Ma43793	X		X		
11	P5_SANDPIT	Mar 24, 2020	Soil	M20-Ma43794	X		X		
12	P5_TW1	Mar 24, 2020	Water	M20-Ma43795				X	X
Test Counts					11	11	6	1	1

Internal Quality Control Review and Glossary

General

- Laboratory QC results for Method Blanks, Duplicates, Matrix Spikes, and Laboratory Control Samples follows guidelines delineated in the National Environment Protection (Assessment of Site Contamination) Measure 1999, as amended May 2013 and are included in this QC report where applicable. Additional QC data may be available on request.
- All soil/sediment/solid results are reported on a dry basis, unless otherwise stated.
- All biota/food results are reported on a wet weight basis on the edible portion, unless otherwise stated.
- Actual LORs are matrix dependant. Quoted LORs may be raised where sample extracts are diluted due to interferences.
- Results are uncorrected for matrix spikes or surrogate recoveries except for PFAS compounds.
- SVOC analysis on waters are performed on homogenised, unfiltered samples, unless noted otherwise.
- Samples were analysed on an 'as received' basis.
- Information identified on this report with blue colour, indicates data provided by customer, that may have an impact on the results.
- This report replaces any interim results previously issued.

Holding Times

Please refer to 'Sample Preservation and Container Guide' for holding times (QS3001).

For samples received on the last day of holding time, notification of testing requirements should have been received at least 6 hours prior to sample receipt deadlines as stated on the SRA.

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For VOCs containing vinyl chloride, styrene and 2-chloroethyl vinyl ether the holding time is 7 days however for all other VOCs such as BTEX or C6-10 TRH then the holding time is 14 days.

****NOTE:** pH duplicates are reported as a range NOT as RPD

Units

mg/kg: milligrams per kilogram

mg/L: milligrams per litre

ug/L: micrograms per litre

ppm: Parts per million

ppb: Parts per billion

%: Percentage

org/100mL: Organisms per 100 millilitres

NTU: Nephelometric Turbidity Units

MPN/100mL: Most Probable Number of organisms per 100 millilitres

Terms

Dry	Where a moisture has been determined on a solid sample the result is expressed on a dry basis.
LOR	Limit of Reporting.
SPIKE	Addition of the analyte to the sample and reported as percentage recovery.
RPD	Relative Percent Difference between two Duplicate pieces of analysis.
LCS	Laboratory Control Sample - reported as percent recovery.
CRM	Certified Reference Material - reported as percent recovery.
Method Blank	In the case of solid samples these are performed on laboratory certified clean sands and in the case of water samples these are performed on de-ionised water.
Surr - Surrogate	The addition of a like compound to the analyte target and reported as percentage recovery.
Duplicate	A second piece of analysis from the same sample and reported in the same units as the result to show comparison.
USEPA	United States Environmental Protection Agency
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TCLP	Toxicity Characteristic Leaching Procedure
COC	Chain of Custody
SRA	Sample Receipt Advice
QSM	US Department of Defense Quality Systems Manual Version 5.3
CP	Client Parent - QC was performed on samples pertaining to this report
NCP	Non-Client Parent - QC performed on samples not pertaining to this report, QC is representative of the sequence or batch that client samples were analysed within.
TEQ	Toxic Equivalency Quotient

QC - Acceptance Criteria

RPD Duplicates: Global RPD Duplicates Acceptance Criteria is 30% however the following acceptance guidelines are equally applicable:

Results <10 times the LOR : No Limit

Results between 10-20 times the LOR : RPD must lie between 0-50%

Results >20 times the LOR : RPD must lie between 0-30%

Surrogate Recoveries: Recoveries must lie between 20-130% Phenols & 50-150% PFASs

PFAS field samples that contain surrogate recoveries in excess of the QC limit designated in QSM 5.3 where no positive PFAS results have been reported have been reviewed and no data was affected.

WA DWER (n=10): PFBA, PFPeA, PFHxA, PFHpA, PFOA, PFBS, PFHxS, PFOS, 6:2 FTSA, 8:2 FTSA

QC Data General Comments

- Where a result is reported as a less than (<), higher than the nominated LOR, this is due to either matrix interference, extract dilution required due to interferences or contaminant levels within the sample, high moisture content or insufficient sample provided.
- Duplicate data shown within this report that states the word "BATCH" is a Batch Duplicate from outside of your sample batch, but within the laboratory sample batch at a 1:10 ratio. The Parent and Duplicate data shown is not data from your samples.
- Organochlorine Pesticide analysis - where reporting LCS data, Toxaphene & Chlordane are not added to the LCS.
- Organochlorine Pesticide analysis - where reporting Spike data, Toxaphene is not added to the Spike.
- Total Recoverable Hydrocarbons - where reporting Spike & LCS data, a single spike of commercial Hydrocarbon products in the range of C12-C30 is added and it's Total Recovery is reported in the C10-C14 cell of the Report.
- pH and Free Chlorine analysed in the laboratory - Analysis on this test must begin within 30 minutes of sampling. Therefore laboratory analysis is unlikely to be completed within holding time. Analysis will begin as soon as possible after sample receipt.
- Recovery Data (Spikes & Surrogates) - where chromatographic interference does not allow the determination of Recovery the term "INT" appears against that analyte.
- Polychlorinated Biphenyls are spiked only using Aroclor 1260 in Matrix Spikes and LCS.
- For Matrix Spikes and LCS results a dash " - " in the report means that the specific analyte was not added to the QC sample.
- Duplicate RPDs are calculated from raw analytical data thus it is possible to have two sets of data.

Quality Control Results

Comments**Sample Integrity**

Custody Seals Intact (if used)	N/A
Attempt to Chill was evident	Yes
Sample correctly preserved	Yes
Appropriate sample containers have been used	Yes
Sample containers for volatile analysis received with minimal headspace	Yes
Samples received within HoldingTime	Yes
Some samples have been subcontracted	No

Authorised By

Andrew Black Analytical Services Manager
Gabriele Cordero Senior Analyst-Metal (NSW)

**Glenn Jackson
General Manager**

Final report - this Report replaces any previously issued Report

- Indicates Not Requested

* Indicates NATA accreditation does not cover the performance of this service

Measurement uncertainty of test data is available on request or please [click here](#).

Eurofins shall not be liable for loss, cost, damages or expenses incurred by the client, or any other person or company, resulting from the use of any information or interpretation given in this report. In no case shall Eurofins be liable for consequential damages including, but not limited to, lost profits, damages for failure to meet deadlines and lost production arising from this report. This document shall not be reproduced except in full and relates only to the items tested. Unless indicated otherwise, the tests were performed on the samples as received.

Ramboll Environ Australia Pty Ltd
 Level 3/100 Pacific Highway
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 Site Number 1254

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Attention: **Stephen Maxwell**

Report **710586-S-V2**
 Project name **318000780**
 Received Date **Mar 27, 2020**

Client Sample ID			P5_HA01_0.2	P5_HA01_0.3	P5_HA01_0.0-0.05	P5_HA02_0.3
Sample Matrix			Soil	Soil	Soil	Soil
Eurofins Sample No.			M20-Ma43789	M20-Ma43790	M20-Ma43791	M20-Ma43792
Date Sampled			Mar 24, 2020	Mar 24, 2020	Mar 24, 2020	Mar 24, 2020
Test/Reference	LOR	Unit				
Heavy Metals						
Lead	5	mg/kg	42	26	38	33
% Moisture	1	%	13	13	8.5	11

Client Sample ID			P5_HA02_0.0-0.05	P5_SANDPIT	DVAC-FE(PS)	DVAC-LA(PS)
Sample Matrix			Soil	Soil	Dust	Dust
Eurofins Sample No.			M20-Ma43793	M20-Ma43794	M20-Ap02149	M20-Ap02150
Date Sampled			Mar 24, 2020	Mar 24, 2020	Mar 24, 2020	Mar 24, 2020
Test/Reference	LOR	Unit				
Heavy Metals						
Lead	5	mg/kg	67	< 5	78	74
% Moisture	1	%	12	< 1	-	-

Client Sample ID			DVAC-WPS(PS)
Sample Matrix			Dust
Eurofins Sample No.			M20-Ap02151
Date Sampled			Mar 24, 2020
Test/Reference	LOR	Unit	
Heavy Metals			
Lead	5	mg/kg	17

Sample History

Where samples are submitted/analysed over several days, the last date of extraction and analysis is reported.

A recent review of our LIMS has resulted in the correction or clarification of some method identifications. Due to this, some of the method reference information on reports has changed. However, no substantive change has been made to our laboratory methods, and as such there is no change in the validity of current or previous results.

If the date and time of sampling are not provided, the Laboratory will not be responsible for compromised results should testing be performed outside the recommended holding time.

Description

Heavy Metals

- Method: LTM-MET-3040 Metals in Waters, Soils & Sediments by ICP-MS

% Moisture

- Method: LTM-GEN-7080 Moisture

Testing Site

Sydney

Melbourne

Extracted

Apr 03, 2020

Mar 27, 2020

Holding Time

180 Days

14 Days

Australia

Melbourne
6 Monterey Road
Dandenong South VIC 3175
Phone : +61 3 8564 5000
NATA # 1261
Site # 1254 & 14271

Sydney
Unit F3, Building F
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NATA # 1261 Site # 18217

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New Zealand

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IANZ # 1290

Company Name: Ramboll Australia Pty Ltd
Address: Level 3/100 Pacific Highway
North Sydney
NSW 2060
Project Name: 318000780

Order No.:
Report #: 710586
Phone: 02 9954 8118
Fax: 02 9954 8150

Received: Mar 27, 2020 8:30 AM
Due: Apr 3, 2020
Priority: 5 Day
Contact Name: Stephen Maxwell

Eurofins Analytical Services Manager : Andrew Black

Sample Detail						Lead	Lead	Moisture Set	NEPM 2013 Filtered Metals without Cr6+ (As, Be, B, Cd, Co, Cr, Cu, Hg, Pb, Ni, Mn, Cd, Co, Cr, Cu, Hg, Pb, Ni, Mn, Se, Zn)	NEPM 2013 Metals without Cr6+ (As, Be, B, Cd, Co, Cr, Cu, Hg, Pb, Ni, Mn, Se, Zn)
Melbourne Laboratory - NATA Site # 1254 & 14271						X		X	X	X
Sydney Laboratory - NATA Site # 18217							X			
Brisbane Laboratory - NATA Site # 20794										
Perth Laboratory - NATA Site # 23736										
External Laboratory										
No	Sample ID	Sample Date	Sampling Time	Matrix	LAB ID					
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6	P5_HA01_0.2	Mar 24, 2020		Soil	M20-Ma43789	X		X		
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8	P5_HA01_0.0-0.05	Mar 24, 2020		Soil	M20-Ma43791	X		X		

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Quality Control Results

Test				Units	Result 1		Acceptance Limits	Pass Limits	Qualifying Code		
Method Blank											
Heavy Metals											
Lead				mg/kg	< 5		5	Pass			
LCS - % Recovery											
Heavy Metals											
Lead				%	89		80-120	Pass			
Test	Lab Sample ID	QA Source	Units	Result 1			Acceptance Limits	Pass Limits	Qualifying Code		
Spike - % Recovery											
Heavy Metals											
Lead				M20-Ma43792	CP	%	97	75-125	Pass		
Test	Lab Sample ID	QA Source	Units	Result 1			Acceptance Limits	Pass Limits	Qualifying Code		
Duplicate											
Heavy Metals											
Lead				M20-Ma43791	CP	mg/kg	38	42	9.0	30%	Pass
Duplicate											
Heavy Metals											
Lead				M20-Ma43792	CP	mg/kg	33	32	3.0	30%	Pass
Duplicate											
					Result 1	Result 2	RPD				
% Moisture				M20-Ma43792	CP	%	11	10	8.0	30%	Pass

Comments

New version to import dust.

Sample Integrity

Custody Seals Intact (if used)	N/A
Attempt to Chill was evident	Yes
Sample correctly preserved	Yes
Appropriate sample containers have been used	Yes
Sample containers for volatile analysis received with minimal headspace	Yes
Samples received within HoldingTime	Yes
Some samples have been subcontracted	No

Authorised By

Andrew Black	Analytical Services Manager
Emily Rosenberg	Senior Analyst-Metal (VIC)
Gabriele Cordero	Senior Analyst-Metal (NSW)

**Glenn Jackson
General Manager**

Final report - this Report replaces any previously issued Report

- Indicates Not Requested

* Indicates NATA accreditation does not cover the performance of this service

Measurement uncertainty of test data is available on request or please [click here](#).

Eurofins shall not be liable for loss, cost, damages or expenses incurred by the client, or any other person or company, resulting from the use of any information or interpretation given in this report. In no case shall Eurofins be liable for consequential damages including, but not limited to, lost profits, damages for failure to meet deadlines and lost production arising from this report. This document shall not be reproduced except in full and relates only to the items tested. Unless indicated otherwise, the tests were performed on the samples as received.

Ramboll Environ Australia Pty Ltd
 Level 3/100 Pacific Highway
 North Sydney
 NSW 2060



NATA Accredited
 Accreditation Number 1261
 Site Number 1254

Accredited for compliance with ISO/IEC 17025 – Testing
 The results of the tests, calibrations and/or
 measurements included in this document are traceable
 to Australian/national standards.

Attention: Stephen Maxwell

Report 710586-W-V2
 Project name 318000780
 Received Date Mar 27, 2020

Client Sample ID			P5_TW1
Sample Matrix			Water
Eurofins Sample No.			M20-Ma43795
Date Sampled			Mar 24, 2020
Test/Reference	LOR	Unit	
Heavy Metals			
Arsenic	0.001	mg/L	< 0.001
Arsenic (filtered)	0.001	mg/L	< 0.001
Beryllium	0.001	mg/L	< 0.001
Beryllium (filtered)	0.001	mg/L	< 0.001
Boron	0.05	mg/L	< 0.05
Boron (filtered)	0.05	mg/L	< 0.05
Cadmium	0.0002	mg/L	< 0.0002
Cadmium (filtered)	0.0002	mg/L	< 0.0002
Chromium	0.001	mg/L	0.002
Chromium (filtered)	0.001	mg/L	< 0.001
Cobalt	0.001	mg/L	< 0.001
Cobalt (filtered)	0.001	mg/L	< 0.001
Copper	0.001	mg/L	< 0.001
Copper (filtered)	0.001	mg/L	< 0.001
Lead	0.001	mg/L	< 0.001
Lead (filtered)	0.001	mg/L	< 0.001
Manganese	0.005	mg/L	0.25
Manganese (filtered)	0.005	mg/L	0.23
Mercury	0.0001	mg/L	< 0.0001
Mercury (filtered)	0.0001	mg/L	< 0.0001
Nickel	0.001	mg/L	0.002
Nickel (filtered)	0.001	mg/L	< 0.001
Selenium	0.001	mg/L	< 0.001
Selenium (filtered)	0.001	mg/L	< 0.001
Zinc	0.005	mg/L	0.088
Zinc (filtered)	0.005	mg/L	0.040

Sample History

Where samples are submitted/analysed over several days, the last date of extraction and analysis is reported.

A recent review of our LIMS has resulted in the correction or clarification of some method identifications. Due to this, some of the method reference information on reports has changed. However, no substantive change has been made to our laboratory methods, and as such there is no change in the validity of current or previous results.

If the date and time of sampling are not provided, the Laboratory will not be responsible for compromised results should testing be performed outside the recommended holding time.

Description

NEPM 2013 Metals without Cr6+ (As, Be, B, Cd, Co, Cr, Cu, Hg, Pb, Ni, Mn, Se, Zn)

- Method: LTM-MET-3040 Metals in Waters, Soils & Sediments by ICP-MS

NEPM 2013 Filtered Metals without Cr6+ (As, Be, B, Cd, Co, Cr, Cu, Hg, Pb, Ni, Mn, Se, Zn)

- Method: LTM-MET-3040 Metals in Waters, Soils & Sediments by ICP-MS

Testing Site**Extracted****Holding Time**

Melbourne

Mar 31, 2020

180 Days

Melbourne

Mar 27, 2020

28 Days

Australia

Melbourne
6 Monterey Road
Dandenong South VIC 3175
Phone : +61 3 8564 5000
NATA # 1261
Site # 1254 & 14271

Sydney
Unit F3, Building F
16 Mars Road
Lane Cove West NSW 2066
Phone : +61 2 9900 8400
NATA # 1261 Site # 18217

Brisbane
1/21 Smallwood Place
Murarie QLD 4172
Phone : +61 7 3902 4600
NATA # 1261 Site # 20794

Perth
2/91 Leach Highway
Kewdale WA 6105
Phone : +61 8 9251 9600
NATA # 1261
Site # 23736

New Zealand

Auckland
35 O'Rorke Road
Penrose, Auckland 1061
Phone : +64 9 526 45 51
IANZ # 1327

Christchurch
43 Detroit Drive
Rolleston, Christchurch 7675
Phone : 0800 856 450
IANZ # 1290

Company Name: Ramboll Australia Pty Ltd
Address: Level 3/100 Pacific Highway
North Sydney
NSW 2060
Project Name: 318000780

Order No.:
Report #: 710586
Phone: 02 9954 8118
Fax: 02 9954 8150

Received: Mar 27, 2020 8:30 AM
Due: Apr 3, 2020
Priority: 5 Day
Contact Name: Stephen Maxwell

Eurofins Analytical Services Manager : Andrew Black

Sample Detail						Lead	Lead	Moisture Set	NEPM 2013 Filtered Metals without Cr6+ (As, Be, B, Cd, Co, Cr, Cu, Hg, Pb, Ni, Mn, Cd, Co, Cr, Cu, Hg, Pb, Ni, Mn, Se, Zn)	NEPM 2013 Metals without Cr6+ (As, Be, B, Cd, Co, Cr, Cu, Hg, Pb, Ni, Mn, Se, Zn)
Melbourne Laboratory - NATA Site # 1254 & 14271						X		X	X	X
Sydney Laboratory - NATA Site # 18217							X			
Brisbane Laboratory - NATA Site # 20794										
Perth Laboratory - NATA Site # 23736										
External Laboratory										
No	Sample ID	Sample Date	Sampling Time	Matrix	LAB ID					
1	DSWAB_BC (PS)	Mar 24, 2020		Wipes	M20-Ap02131		X			
2	DSWAB_KA (PS)	Mar 24, 2020		Wipes	M20-Ap02133		X			
3	DVAC-FE(PS)	Mar 24, 2020		Dust	M20-Ap02149		X			
4	DVAC-LA(PS)	Mar 24, 2020		Dust	M20-Ap02150		X			
5	DVAC-WPS(PS)	Mar 24, 2020		Dust	M20-Ap02151		X			
6	P5_HA01_0.2	Mar 24, 2020		Soil	M20-Ma43789	X		X		
7	P5_HA01_0.3	Mar 24, 2020		Soil	M20-Ma43790	X		X		
8	P5_HA01_0.0-0.05	Mar 24, 2020		Soil	M20-Ma43791	X		X		

Australia

Melbourne
6 Monterey Road
Dandenong South VIC 3175
Phone : +61 3 8564 5000
NATA # 1261
Site # 1254 & 14271

Sydney
Unit F3, Building F
16 Mars Road
Lane Cove West NSW 2066
Phone : +61 2 9900 8400
NATA # 1261 Site # 18217

Brisbane
1/21 Smallwood Place
Murarrie QLD 4172
Phone : +61 7 3902 4600
NATA # 1261 Site # 20794

Perth
2/91 Leach Highway
Kewdale WA 6105
Phone : +61 8 9251 9600
NATA # 1261
Site # 23736

New Zealand

Auckland
35 O'Rorke Road
Penrose, Auckland 1061
Phone : +64 9 526 45 51
IANZ # 1327

Christchurch
43 Detroit Drive
Rolleston, Christchurch 7675
Phone : 0800 856 450
IANZ # 1290

ABN – 50 005 085 521

web : www.eurofins.com.au

e.mail : EnviroSales@eurofins.com

Company Name: Ramboll Australia Pty Ltd
Address: Level 3/100 Pacific Highway
North Sydney
NSW 2060
Project Name: 318000780

Order No.:
Report #: 710586
Phone: 02 9954 8118
Fax: 02 9954 8150

Received: Mar 27, 2020 8:30 AM
Due: Apr 3, 2020
Priority: 5 Day
Contact Name: Stephen Maxwell

Eurofins Analytical Services Manager : Andrew Black

Sample Detail					Lead	Lead	Moisture Set	NEPM 2013 Metals without Cr6+ (As, Be, B, Cd, Co, Cr, Cu, Hg, Pb, Ni, Mn, Ni, Mn, Se, Zn)	NEPM 2013 Filtered Metals without Cr6+ (As, Be, B, Cd, Co, Cr, Cu, Hg, Pb, Ni, Mn, Ni, Mn, Se, Zn)
Melbourne Laboratory - NATA Site # 1254 & 14271					X		X	X	X
Sydney Laboratory - NATA Site # 18217						X			
Brisbane Laboratory - NATA Site # 20794									
Perth Laboratory - NATA Site # 23736									
9	P5_HA02_0.3	Mar 24, 2020	Soil	M20-Ma43792	X		X		
10	P5_HA02_0.0-0.05	Mar 24, 2020	Soil	M20-Ma43793	X		X		
11	P5_SANDPIT	Mar 24, 2020	Soil	M20-Ma43794	X		X		
12	P5_TW1	Mar 24, 2020	Water	M20-Ma43795				X	X
Test Counts					11	11	6	1	1

Internal Quality Control Review and Glossary

General

- Laboratory QC results for Method Blanks, Duplicates, Matrix Spikes, and Laboratory Control Samples follows guidelines delineated in the National Environment Protection (Assessment of Site Contamination) Measure 1999, as amended May 2013 and are included in this QC report where applicable. Additional QC data may be available on request.
- All soil/sediment/solid results are reported on a dry basis, unless otherwise stated.
- All biota/food results are reported on a wet weight basis on the edible portion, unless otherwise stated.
- Actual LORs are matrix dependant. Quoted LORs may be raised where sample extracts are diluted due to interferences.
- Results are uncorrected for matrix spikes or surrogate recoveries except for PFAS compounds.
- SVOC analysis on waters are performed on homogenised, unfiltered samples, unless noted otherwise.
- Samples were analysed on an 'as received' basis.
- Information identified on this report with blue colour, indicates data provided by customer, that may have an impact on the results.
- This report replaces any interim results previously issued.

Holding Times

Please refer to 'Sample Preservation and Container Guide' for holding times (QS3001).

For samples received on the last day of holding time, notification of testing requirements should have been received at least 6 hours prior to sample receipt deadlines as stated on the SRA.

If the Laboratory did not receive the information in the required timeframe, and regardless of any other integrity issues, suitably qualified results may still be reported.

Holding times apply from the date of sampling, therefore compliance to these may be outside the laboratory's control.

For VOCs containing vinyl chloride, styrene and 2-chloroethyl vinyl ether the holding time is 7 days however for all other VOCs such as BTEX or C6-10 TRH then the holding time is 14 days.

****NOTE:** pH duplicates are reported as a range NOT as RPD

Units

mg/kg: milligrams per kilogram

mg/L: milligrams per litre

ug/L: micrograms per litre

ppm: Parts per million

ppb: Parts per billion

%: Percentage

org/100mL: Organisms per 100 millilitres

NTU: Nephelometric Turbidity Units

MPN/100mL: Most Probable Number of organisms per 100 millilitres

Terms

Dry	Where a moisture has been determined on a solid sample the result is expressed on a dry basis.
LOR	Limit of Reporting.
SPIKE	Addition of the analyte to the sample and reported as percentage recovery.
RPD	Relative Percent Difference between two Duplicate pieces of analysis.
LCS	Laboratory Control Sample - reported as percent recovery.
CRM	Certified Reference Material - reported as percent recovery.
Method Blank	In the case of solid samples these are performed on laboratory certified clean sands and in the case of water samples these are performed on de-ionised water.
Surr - Surrogate	The addition of a like compound to the analyte target and reported as percentage recovery.
Duplicate	A second piece of analysis from the same sample and reported in the same units as the result to show comparison.
USEPA	United States Environmental Protection Agency
APHA	American Public Health Association
TCLP	Toxicity Characteristic Leaching Procedure
COC	Chain of Custody
SRA	Sample Receipt Advice
QSM	US Department of Defense Quality Systems Manual Version 5.3
CP	Client Parent - QC was performed on samples pertaining to this report
NCP	Non-Client Parent - QC performed on samples not pertaining to this report, QC is representative of the sequence or batch that client samples were analysed within.
TEQ	Toxic Equivalency Quotient

QC - Acceptance Criteria

RPD Duplicates: Global RPD Duplicates Acceptance Criteria is 30% however the following acceptance guidelines are equally applicable:

Results <10 times the LOR : No Limit

Results between 10-20 times the LOR : RPD must lie between 0-50%

Results >20 times the LOR : RPD must lie between 0-30%

Surrogate Recoveries: Recoveries must lie between 20-130% Phenols & 50-150% PFASs

PFAS field samples that contain surrogate recoveries in excess of the QC limit designated in QSM 5.3 where no positive PFAS results have been reported have been reviewed and no data was affected.

WA DWER (n=10): PFBA, PFPeA, PFHxA, PFHpA, PFOA, PFBS, PFHxS, PFOS, 6:2 FTSA, 8:2 FTSA

QC Data General Comments

- Where a result is reported as a less than (<), higher than the nominated LOR, this is due to either matrix interference, extract dilution required due to interferences or contaminant levels within the sample, high moisture content or insufficient sample provided.
- Duplicate data shown within this report that states the word "BATCH" is a Batch Duplicate from outside of your sample batch, but within the laboratory sample batch at a 1:10 ratio. The Parent and Duplicate data shown is not data from your samples.
- Organochlorine Pesticide analysis - where reporting LCS data, Toxaphene & Chlordane are not added to the LCS.
- Organochlorine Pesticide analysis - where reporting Spike data, Toxaphene is not added to the Spike.
- Total Recoverable Hydrocarbons - where reporting Spike & LCS data, a single spike of commercial Hydrocarbon products in the range of C12-C30 is added and it's Total Recovery is reported in the C10-C14 cell of the Report.
- pH and Free Chlorine analysed in the laboratory - Analysis on this test must begin within 30 minutes of sampling. Therefore laboratory analysis is unlikely to be completed within holding time. Analysis will begin as soon as possible after sample receipt.
- Recovery Data (Spikes & Surrogates) - where chromatographic interference does not allow the determination of Recovery the term "INT" appears against that analyte.
- Polychlorinated Biphenyls are spiked only using Aroclor 1260 in Matrix Spikes and LCS.
- For Matrix Spikes and LCS results a dash " - " in the report means that the specific analyte was not added to the QC sample.
- Duplicate RPDs are calculated from raw analytical data thus it is possible to have two sets of data.

Quality Control Results

Test			Units	Result 1		Acceptance Limits	Pass Limits	Qualifying Code
Method Blank								
Heavy Metals								
Arsenic			mg/L	< 0.001		0.001	Pass	
Arsenic (filtered)			mg/L	< 0.001		0.001	Pass	
Beryllium			mg/L	< 0.001		0.001	Pass	
Beryllium (filtered)			mg/L	< 0.001		0.001	Pass	
Boron			mg/L	< 0.05		0.05	Pass	
Boron (filtered)			mg/L	< 0.05		0.05	Pass	
Cadmium			mg/L	< 0.0002		0.0002	Pass	
Cadmium (filtered)			mg/L	< 0.0002		0.0002	Pass	
Chromium			mg/L	< 0.001		0.001	Pass	
Chromium (filtered)			mg/L	< 0.001		0.001	Pass	
Cobalt			mg/L	< 0.001		0.001	Pass	
Cobalt (filtered)			mg/L	< 0.001		0.001	Pass	
Copper			mg/L	< 0.001		0.001	Pass	
Copper (filtered)			mg/L	< 0.001		0.001	Pass	
Lead			mg/L	< 0.001		0.001	Pass	
Lead (filtered)			mg/L	< 0.001		0.001	Pass	
Manganese			mg/L	< 0.005		0.005	Pass	
Manganese (filtered)			mg/L	< 0.005		0.005	Pass	
Mercury			mg/L	< 0.0001		0.0001	Pass	
Mercury (filtered)			mg/L	< 0.0001		0.0001	Pass	
Nickel			mg/L	< 0.001		0.001	Pass	
Nickel (filtered)			mg/L	< 0.001		0.001	Pass	
Selenium			mg/L	< 0.001		0.001	Pass	
Selenium (filtered)			mg/L	< 0.001		0.001	Pass	
Zinc			mg/L	< 0.005		0.005	Pass	
Zinc (filtered)			mg/L	< 0.005		0.005	Pass	
LCS - % Recovery								
Heavy Metals								
Arsenic			%	99		80-120	Pass	
Beryllium			%	104		80-120	Pass	
Boron			%	89		80-120	Pass	
Cadmium			%	105		80-120	Pass	
Chromium			%	103		80-120	Pass	
Cobalt			%	102		80-120	Pass	
Copper			%	101		80-120	Pass	
Lead			%	106		80-120	Pass	
Manganese			%	102		80-120	Pass	
Mercury			%	103		75-125	Pass	
Nickel			%	103		80-120	Pass	
Selenium			%	98		80-120	Pass	
Zinc			%	101		80-120	Pass	
Test	Lab Sample ID	QA Source	Units	Result 1		Acceptance Limits	Pass Limits	Qualifying Code
Spike - % Recovery								
Heavy Metals								
				Result 1				
Arsenic			P20-Ma43710	NCP	%	95	75-125	Pass
Arsenic (filtered)			M20-Ma45872	NCP	%	95	70-130	Pass
Beryllium			P20-Ma43710	NCP	%	95	75-125	Pass
Beryllium (filtered)			M20-Ma45872	NCP	%	98	75-125	Pass
Boron			P20-Ma43710	NCP	%	96	75-125	Pass

Test	Lab Sample ID	QA Source	Units	Result 1			Acceptance Limits	Pass Limits	Qualifying Code
Boron (filtered)	M20-Ma45872	NCP	%	88			75-125	Pass	
Cadmium	P20-Ma43710	NCP	%	94			75-125	Pass	
Cadmium (filtered)	M20-Ma45872	NCP	%	100			70-130	Pass	
Chromium	P20-Ma43710	NCP	%	91			75-125	Pass	
Chromium (filtered)	M20-Ma45872	NCP	%	97			70-130	Pass	
Cobalt	P20-Ma43710	NCP	%	90			75-125	Pass	
Cobalt (filtered)	M20-Ma45872	NCP	%	97			75-125	Pass	
Copper	P20-Ma43710	NCP	%	93			75-125	Pass	
Copper (filtered)	M20-Ma45872	NCP	%	94			70-130	Pass	
Lead	P20-Ma43710	NCP	%	95			75-125	Pass	
Lead (filtered)	M20-Ma45872	NCP	%	98			70-130	Pass	
Manganese	P20-Ma43710	NCP	%	71			75-125	Fail	Q08
Manganese (filtered)	M20-Ma45872	NCP	%	96			70-130	Pass	
Mercury	P20-Ma43710	NCP	%	100			70-130	Pass	
Mercury (filtered)	M20-Ma45872	NCP	%	97			70-130	Pass	
Nickel	P20-Ma43710	NCP	%	92			75-125	Pass	
Nickel (filtered)	M20-Ma45872	NCP	%	98			70-130	Pass	
Selenium	P20-Ma43710	NCP	%	89			75-125	Pass	
Selenium (filtered)	M20-Ma45872	NCP	%	94			70-130	Pass	
Zinc	P20-Ma43710	NCP	%	89			75-125	Pass	
Zinc (filtered)	M20-Ma45872	NCP	%	96			70-130	Pass	
Test	Lab Sample ID	QA Source	Units	Result 1			Acceptance Limits	Pass Limits	Qualifying Code
Duplicate									
Heavy Metals				Result 1	Result 2	RPD			
Arsenic	P20-Ma43710	NCP	mg/L	0.004	0.004	7.0	30%	Pass	
Arsenic (filtered)	M20-Ma45872	NCP	mg/L	< 0.001	< 0.001	<1	30%	Pass	
Beryllium	P20-Ma43710	NCP	mg/L	0.002	0.002	3.0	30%	Pass	
Beryllium (filtered)	M20-Ma45872	NCP	mg/L	< 0.001	< 0.001	<1	30%	Pass	
Boron	P20-Ma43710	NCP	mg/L	0.06	0.07	8.0	30%	Pass	
Boron (filtered)	M20-Ma45872	NCP	mg/L	< 0.05	< 0.05	<1	30%	Pass	
Cadmium	P20-Ma43710	NCP	mg/L	< 0.0002	< 0.0002	<1	30%	Pass	
Cadmium (filtered)	M20-Ma45872	NCP	mg/L	< 0.0002	< 0.0002	<1	30%	Pass	
Chromium	P20-Ma43710	NCP	mg/L	0.039	0.042	8.0	30%	Pass	
Chromium (filtered)	M20-Ma45872	NCP	mg/L	< 0.001	< 0.001	<1	30%	Pass	
Cobalt	P20-Ma43710	NCP	mg/L	0.034	0.037	7.0	30%	Pass	
Cobalt (filtered)	M20-Ma45872	NCP	mg/L	0.002	0.002	9.0	30%	Pass	
Copper	P20-Ma43710	NCP	mg/L	0.035	0.038	8.0	30%	Pass	
Copper (filtered)	M20-Ma45872	NCP	mg/L	0.004	0.004	10	30%	Pass	
Lead	P20-Ma43710	NCP	mg/L	0.034	0.037	8.0	30%	Pass	
Lead (filtered)	M20-Ma45872	NCP	mg/L	< 0.001	< 0.001	<1	30%	Pass	
Manganese	P20-Ma43710	NCP	mg/L	0.34	0.36	7.0	30%	Pass	
Manganese (filtered)	M20-Ma45872	NCP	mg/L	0.020	0.019	4.0	30%	Pass	
Mercury	P20-Ma43710	NCP	mg/L	< 0.0001	< 0.0001	<1	30%	Pass	
Mercury (filtered)	M20-Ma45872	NCP	mg/L	< 0.0001	< 0.0001	<1	30%	Pass	
Nickel	P20-Ma43710	NCP	mg/L	0.016	0.017	8.0	30%	Pass	
Nickel (filtered)	M20-Ma45872	NCP	mg/L	0.001	< 0.001	10	30%	Pass	
Selenium	P20-Ma43710	NCP	mg/L	0.001	0.001	7.0	30%	Pass	
Selenium (filtered)	M20-Ma45872	NCP	mg/L	< 0.001	< 0.001	<1	30%	Pass	
Zinc	P20-Ma43710	NCP	mg/L	0.023	0.026	14	30%	Pass	
Zinc (filtered)	M20-Ma45872	NCP	mg/L	< 0.005	< 0.005	<1	30%	Pass	

Comments
Sample Integrity

Custody Seals Intact (if used)	N/A
Attempt to Chill was evident	Yes
Sample correctly preserved	Yes
Appropriate sample containers have been used	Yes
Sample containers for volatile analysis received with minimal headspace	Yes
Samples received within HoldingTime	Yes
Some samples have been subcontracted	No

Qualifier Codes/Comments

Code	Description
Q08	The matrix spike recovery is outside of the recommended acceptance criteria. An acceptable recovery was obtained for the laboratory control sample indicating a sample matrix interference.

Authorised By

Andrew Black	Analytical Services Manager
Emily Rosenberg	Senior Analyst-Metal (VIC)


**Glenn Jackson
General Manager**

Final report - this Report replaces any previously issued Report

- Indicates Not Requested

* Indicates NATA accreditation does not cover the performance of this service

Measurement uncertainty of test data is available on request or please [click here](#).

Eurofins shall not be liable for loss, cost, damages or expenses incurred by the client, or any other person or company, resulting from the use of any information or interpretation given in this report. In no case shall Eurofins be liable for consequential damages including, but not limited to, lost profits, damages for failure to meet deadlines and lost production arising from this report. This document shall not be reproduced except in full and relates only to the items tested. Unless indicated otherwise, the tests were performed on the samples as received.

Ramboll Environ Australia Pty Ltd
 Level 3/100 Pacific Highway
 North Sydney
 NSW 2060



NATA Accredited
Accreditation Number 1261
Site Number 18217

Accredited for compliance with ISO/IEC 17025 – Testing
 The results of the tests, calibrations and/or
 measurements included in this document are traceable
 to Australian/national standards.

Attention: **Stephen Maxwell**

Report **713210-S-V3**

Project name

Project ID **318000780**

Received Date **Apr 09, 2020**

Client Sample ID			DVAC-BE(PS)
Sample Matrix			Dust
Eurofins Sample No.			S20-Ap02152
Date Sampled			Mar 24, 2020
Test/Reference	LOR	Unit	
Heavy Metals			
Lead	5	mg/kg	52

Sample History

Where samples are submitted/analysed over several days, the last date of extraction and analysis is reported.

A recent review of our LIMS has resulted in the correction or clarification of some method identifications. Due to this, some of the method reference information on reports has changed. However, no substantive change has been made to our laboratory methods, and as such there is no change in the validity of current or previous results.

If the date and time of sampling are not provided, the Laboratory will not be responsible for compromised results should testing be performed outside the recommended holding time.

Description

Heavy Metals

Testing Site

Sydney

Extracted

Apr 20, 2020

Holding Time

180 Days

- Method: LTM-MET-3040 Metals in Waters, Soils & Sediments by ICP-MS

Australia

Melbourne
6 Monterey Road
Dandenong South VIC 3175
Phone : +61 3 8564 5000
NATA # 1261
Site # 1254 & 14271

Sydney
Unit F3, Building F
16 Mars Road
Lane Cove West NSW 2066
Phone : +61 2 9900 8400
NATA # 1261 Site # 18217

Brisbane
1/21 Smallwood Place
Murarrie QLD 4172
Phone : +61 7 3902 4600
NATA # 1261 Site # 20794

Perth
2/91 Leach Highway
Kewdale WA 6105
Phone : +61 8 9251 9600
NATA # 1261
Site # 23736

New Zealand

Auckland
35 O'Rorke Road
Penrose, Auckland 1061
Phone : +64 9 526 45 51
IANZ # 1327

Christchurch
43 Detroit Drive
Rolleston, Christchurch 7675
Phone : 0800 856 450
IANZ # 1290

Company Name: Ramboll Australia Pty Ltd
Address: Level 3/100 Pacific Highway
North Sydney
NSW 2060

Order No.:
Report #: 713210
Phone: 02 9954 8118
Fax: 02 9954 8150

Received: Apr 9, 2020 10:10 AM
Due: Apr 20, 2020
Priority: 5 Day
Contact Name: Stephen Maxwell

Project Name:
Project ID: 318000780

Eurofins Analytical Services Manager : Andrew Black

Sample Detail						Lead	Moisture Set
Melbourne Laboratory - NATA Site # 1254 & 14271							
Sydney Laboratory - NATA Site # 18217						X	X
Brisbane Laboratory - NATA Site # 20794							
Perth Laboratory - NATA Site # 23736							
External Laboratory							
No	Sample ID	Sample Date	Sampling Time	Matrix	LAB ID		
1	GOULR12_3	Mar 23, 2020		Soil	S20-Ap02115	X	X
2	GOULRSE_1D	Mar 23, 2020		Soil	S20-Ap02116	X	X
3	ROSER19	Mar 23, 2020		Soil	S20-Ap02117	X	X
4	P4_TWS2	Mar 26, 2020		Water	S20-Ap02119	X	
5	DVAC-BE(PS)	Mar 24, 2020		Dust	S20-Ap02152	X	
6	XBOIDSTW1	Mar 18, 2020		Dust	S20-Ap02155	X	
7	XBOIDSTW3	Mar 18, 2020		Dust	S20-Ap02156	X	
Test Counts						7	3

Internal Quality Control Review and Glossary
General

- Laboratory QC results for Method Blanks, Duplicates, Matrix Spikes, and Laboratory Control Samples follows guidelines delineated in the National Environment Protection (Assessment of Site Contamination) Measure 1999, as amended May 2013 and are included in this QC report where applicable. Additional QC data may be available on request.
- All soil/sediment/solid results are reported on a dry basis, unless otherwise stated.
- All biota/food results are reported on a wet weight basis on the edible portion, unless otherwise stated.
- Actual LORs are matrix dependant. Quoted LORs may be raised where sample extracts are diluted due to interferences.
- Results are uncorrected for matrix spikes or surrogate recoveries except for PFAS compounds.
- SVOC analysis on waters are performed on homogenised, unfiltered samples, unless noted otherwise.
- Samples were analysed on an 'as received' basis.
- Information identified on this report with blue colour, indicates data provided by customer, that may have an impact on the results.
- This report replaces any interim results previously issued.

Holding Times

Please refer to 'Sample Preservation and Container Guide' for holding times (QS3001).

For samples received on the last day of holding time, notification of testing requirements should have been received at least 6 hours prior to sample receipt deadlines as stated on the SRA.

If the Laboratory did not receive the information in the required timeframe, and regardless of any other integrity issues, suitably qualified results may still be reported.

Holding times apply from the date of sampling, therefore compliance to these may be outside the laboratory's control.

For VOCs containing vinyl chloride, styrene and 2-chloroethyl vinyl ether the holding time is 7 days however for all other VOCs such as BTEX or C6-10 TRH then the holding time is 14 days.

****NOTE:** pH duplicates are reported as a range NOT as RPD

Units

mg/kg: milligrams per kilogram

mg/L: milligrams per litre

ug/L: micrograms per litre

ppm: Parts per million

ppb: Parts per billion

%: Percentage

org/100mL: Organisms per 100 millilitres

NTU: Nephelometric Turbidity Units

MPN/100mL: Most Probable Number of organisms per 100 millilitres

Terms

Dry	Where a moisture has been determined on a solid sample the result is expressed on a dry basis.
LOR	Limit of Reporting.
SPIKE	Addition of the analyte to the sample and reported as percentage recovery.
RPD	Relative Percent Difference between two Duplicate pieces of analysis.
LCS	Laboratory Control Sample - reported as percent recovery.
CRM	Certified Reference Material - reported as percent recovery.
Method Blank	In the case of solid samples these are performed on laboratory certified clean sands and in the case of water samples these are performed on de-ionised water.
Surr - Surrogate	The addition of a like compound to the analyte target and reported as percentage recovery.
Duplicate	A second piece of analysis from the same sample and reported in the same units as the result to show comparison.
USEPA	United States Environmental Protection Agency
APHA	American Public Health Association
TCLP	Toxicity Characteristic Leaching Procedure
COC	Chain of Custody
SRA	Sample Receipt Advice
QSM	US Department of Defense Quality Systems Manual Version 5.3
CP	Client Parent - QC was performed on samples pertaining to this report
NCP	Non-Client Parent - QC performed on samples not pertaining to this report, QC is representative of the sequence or batch that client samples were analysed within.
TEQ	Toxic Equivalency Quotient

QC - Acceptance Criteria

RPD Duplicates: Global RPD Duplicates Acceptance Criteria is 30% however the following acceptance guidelines are equally applicable:

Results <10 times the LOR : No Limit

Results between 10-20 times the LOR : RPD must lie between 0-50%

Results >20 times the LOR : RPD must lie between 0-30%

Surrogate Recoveries: Recoveries must lie between 20-130% Phenols & 50-150% PFASs

PFAS field samples that contain surrogate recoveries in excess of the QC limit designated in QSM 5.3 where no positive PFAS results have been reported have been reviewed and no data was affected.

WA DWER (n=10): PFBA, PFPeA, PFHxA, PFHpA, PFOA, PFBS, PFHxS, PFOS, 6:2 FTSA, 8:2 FTSA

QC Data General Comments

- Where a result is reported as a less than (<), higher than the nominated LOR, this is due to either matrix interference, extract dilution required due to interferences or contaminant levels within the sample, high moisture content or insufficient sample provided.
- Duplicate data shown within this report that states the word "BATCH" is a Batch Duplicate from outside of your sample batch, but within the laboratory sample batch at a 1:10 ratio. The Parent and Duplicate data shown is not data from your samples.
- Organochlorine Pesticide analysis - where reporting LCS data, Toxaphene & Chlordane are not added to the LCS.
- Organochlorine Pesticide analysis - where reporting Spike data, Toxaphene is not added to the Spike.
- Total Recoverable Hydrocarbons - where reporting Spike & LCS data, a single spike of commercial Hydrocarbon products in the range of C12-C30 is added and it's Total Recovery is reported in the C10-C14 cell of the Report.
- pH and Free Chlorine analysed in the laboratory - Analysis on this test must begin within 30 minutes of sampling. Therefore laboratory analysis is unlikely to be completed within holding time. Analysis will begin as soon as possible after sample receipt.
- Recovery Data (Spikes & Surrogates) - where chromatographic interference does not allow the determination of Recovery the term "INT" appears against that analyte.
- Polychlorinated Biphenyls are spiked only using Aroclor 1260 in Matrix Spikes and LCS.
- For Matrix Spikes and LCS results a dash " - " in the report means that the specific analyte was not added to the QC sample.
- Duplicate RPDs are calculated from raw analytical data thus it is possible to have two sets of data.

Quality Control Results

Test				Units	Result 1		Acceptance Limits	Pass Limits	Qualifying Code		
Method Blank											
Heavy Metals											
Lead				mg/kg	< 5		5	Pass			
LCS - % Recovery											
Heavy Metals											
Lead				%	96		70-130	Pass			
Test	Lab Sample ID	QA Source	Units	Result 1			Acceptance Limits	Pass Limits	Qualifying Code		
Spike - % Recovery											
Heavy Metals											
Lead				S20-Ap21385	NCP	%	109	70-130	Pass		
Spike - % Recovery											
Heavy Metals											
Lead				S20-Ap21404	NCP	%	77	70-130	Pass		
Test	Lab Sample ID	QA Source	Units	Result 1			Acceptance Limits	Pass Limits	Qualifying Code		
Duplicate											
Heavy Metals											
Lead				S20-Ap16938	NCP	mg/kg	2500	2900	13	30%	Pass
Duplicate											
Heavy Metals											
Lead				S20-Ap14723	NCP	mg/kg	14	14	5.0	30%	Pass

Comments

New version to split report.

Sample Integrity

Custody Seals Intact (if used)	N/A
Attempt to Chill was evident	N/A
Sample correctly preserved	Yes
Appropriate sample containers have been used	Yes
Sample containers for volatile analysis received with minimal headspace	Yes
Samples received within HoldingTime	Yes
Some samples have been subcontracted	No

Authorised By

Andrew Black Analytical Services Manager
Gabriele Cordero Senior Analyst-Metal (NSW)



Glenn Jackson
General Manager

Final report - this Report replaces any previously issued Report

- Indicates Not Requested

* Indicates NATA accreditation does not cover the performance of this service

Measurement uncertainty of test data is available on request or please [click here](#).

Eurofins shall not be liable for loss, cost, damages or expenses incurred by the client, or any other person or company, resulting from the use of any information or interpretation given in this report. In no case shall Eurofins be liable for consequential damages including, but not limited to, lost profits, damages for failure to meet deadlines and lost production arising from this report. This document shall not be reproduced except in full and relates only to the items tested. Unless indicated otherwise, the tests were performed on the samples as received.

Ramboll Environ Australia Pty Ltd
 Level 3/100 Pacific Highway
 North Sydney
 NSW 2060



NATA Accredited
Accreditation Number 1261
Site Number 18217

Accredited for compliance with ISO/IEC 17025 – Testing
 The results of the tests, calibrations and/or
 measurements included in this document are traceable
 to Australian/national standards.

Attention: **Stephen Maxwell**

Report **720329-A**
 Project name **318000780**
 Received Date **May 19, 2020**

Client Sample ID			DSWAB_1 (PS)	DSWAB_2 (PS)	DSWAB_3 (PS)	DSWAB_4 (PS)
Sample Matrix			Swab	Swab	Swab	Swab
Eurofins Sample No.			S20-My27000	S20-My27001	S20-My27002	S20-My27003
Date Sampled			May 18, 2020	May 18, 2020	May 18, 2020	May 18, 2020
Test/Reference	LOR	Unit				
Heavy Metals						
Lead	1	Total ug	2.1	1.2	1.4	1.3

Client Sample ID			DSWAB_5 (PS)	DSWAB_6 (PS)	DSWAB_7 (PS)	DSWAB_8 (PS)
Sample Matrix			Swab	Swab	Swab	Swab
Eurofins Sample No.			S20-My27004	S20-My27005	S20-My27006	S20-My27007
Date Sampled			May 18, 2020	May 18, 2020	May 18, 2020	May 18, 2020
Test/Reference	LOR	Unit				
Heavy Metals						
Lead	1	Total ug	2.1	5.4	1.1	1.6

Sample History

Where samples are submitted/analysed over several days, the last date of extraction and analysis is reported.

A recent review of our LIMS has resulted in the correction or clarification of some method identifications. Due to this, some of the method reference information on reports has changed. However, no substantive change has been made to our laboratory methods, and as such there is no change in the validity of current or previous results.

If the date and time of sampling are not provided, the Laboratory will not be responsible for compromised results should testing be performed outside the recommended holding time.

Description

Heavy Metals

Testing Site

Sydney

Extracted

May 19, 2020

Holding Time

180 Days

- Method: LTM-MET-3040 Metals in Waters, Soils & Sediments by ICP-MS

Australia

Melbourne
6 Monterey Road
Dandenong South VIC 3175
Phone : +61 3 8564 5000
NATA # 1261
Site # 1254 & 14271

Sydney
Unit F3, Building F
16 Mars Road
Lane Cove West NSW 2066
Phone : +61 2 9900 8400
NATA # 1261 Site # 18217

Brisbane
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NATA # 1261
Site # 23736

New Zealand

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IANZ # 1327

Christchurch
43 Detroit Drive
Rolleston, Christchurch 7675
Phone : 0800 856 450
IANZ # 1290

Company Name: Ramboll Australia Pty Ltd
Address: Level 3/100 Pacific Highway
North Sydney
NSW 2060
Project Name: 318000780

Order No.:
Report #: 720329
Phone: 02 9954 8118
Fax: 02 9954 8150

Received: May 19, 2020 12:12 PM
Due: May 20, 2020
Priority: Overnight
Contact Name: Stephen Maxwell

Eurofins Analytical Services Manager : Andrew Black

Sample Detail						Lead	Lead (% w/w)
Melbourne Laboratory - NATA Site # 1254 & 14271							
Sydney Laboratory - NATA Site # 18217						X	X
Brisbane Laboratory - NATA Site # 20794							
Perth Laboratory - NATA Site # 23736							
External Laboratory							
No	Sample ID	Sample Date	Sampling Time	Matrix	LAB ID		
1	DSWAB_1 (PS)	May 18, 2020		Swab	S20-My27000	X	
2	DSWAB_2 (PS)	May 18, 2020		Swab	S20-My27001	X	
3	DSWAB_3 (PS)	May 18, 2020		Swab	S20-My27002	X	
4	DSWAB_4 (PS)	May 18, 2020		Swab	S20-My27003	X	
5	DSWAB_5 (PS)	May 18, 2020		Swab	S20-My27004	X	
6	DSWAB_6 (PS)	May 18, 2020		Swab	S20-My27005	X	
7	DSWAB_7	May 18, 2020		Swab	S20-My27006	X	

Australia

Melbourne
 6 Monterey Road
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 NATA # 1261
 Site # 23736

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 IANZ # 1327

Christchurch
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Brisbane Laboratory - NATA Site # 20794							
Perth Laboratory - NATA Site # 23736							
	(PS)						
8	DSWAB_8 (PS)	May 18, 2020		Swab	S20-My27007	X	
9	PAINT 1 (PS)	May 18, 2020		Paint	S20-My27008		X
Test Counts						8	1

Internal Quality Control Review and Glossary

General

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****NOTE:** pH duplicates are reported as a range NOT as RPD

Units

mg/kg: milligrams per kilogram

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TEQ	Toxic Equivalency Quotient

QC - Acceptance Criteria

RPD Duplicates: Global RPD Duplicates Acceptance Criteria is 30% however the following acceptance guidelines are equally applicable:

Results <10 times the LOR : No Limit

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Surrogate Recoveries: Recoveries must lie between 20-130% Phenols & 50-150% PFASs

PFAS field samples that contain surrogate recoveries in excess of the QC limit designated in QSM 5.3 where no positive PFAS results have been reported have been reviewed and no data was affected.

WA DWER (n=10): PFBA, PFPeA, PFHxA, PFHpA, PFOA, PFBS, PFHxS, PFOS, 6:2 FTSA, 8:2 FTSA

QC Data General Comments

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- Organochlorine Pesticide analysis - where reporting LCS data, Toxaphene & Chlordane are not added to the LCS.
- Organochlorine Pesticide analysis - where reporting Spike data, Toxaphene is not added to the Spike.
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- pH and Free Chlorine analysed in the laboratory - Analysis on this test must begin within 30 minutes of sampling. Therefore laboratory analysis is unlikely to be completed within holding time. Analysis will begin as soon as possible after sample receipt.
- Recovery Data (Spikes & Surrogates) - where chromatographic interference does not allow the determination of Recovery the term "INT" appears against that analyte.
- Polychlorinated Biphenyls are spiked only using Aroclor 1260 in Matrix Spikes and LCS.
- For Matrix Spikes and LCS results a dash " - " in the report means that the specific analyte was not added to the QC sample.
- Duplicate RPDs are calculated from raw analytical data thus it is possible to have two sets of data.

Quality Control Results

Comments**Sample Integrity**

Custody Seals Intact (if used)	N/A
Attempt to Chill was evident	N/A
Sample correctly preserved	Yes
Appropriate sample containers have been used	Yes
Sample containers for volatile analysis received with minimal headspace	Yes
Samples received within HoldingTime	Yes
Some samples have been subcontracted	No

Authorised By

Andrew Black Analytical Services Manager
Gabriele Cordero Senior Analyst-Metal (NSW)

**Glenn Jackson
General Manager**

Final report - this Report replaces any previously issued Report

- Indicates Not Requested

* Indicates NATA accreditation does not cover the performance of this service

Measurement uncertainty of test data is available on request or please [click here](#).

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Ramboll Environ Australia Pty Ltd
 Level 3/100 Pacific Highway
 North Sydney
 NSW 2060



NATA Accredited
Accreditation Number 1261
Site Number 18217

Accredited for compliance with ISO/IEC 17025 – Testing
 The results of the tests, calibrations and/or
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 to Australian/national standards.

Attention: **Stephen Maxwell**

Report **720329-S**
 Project name **318000780**
 Received Date **May 19, 2020**

Client Sample ID			PAINT 1 (PS)
Sample Matrix			Paint
Eurofins Sample No.			S20-My27008
Date Sampled			May 18, 2020
Test/Reference	LOR	Unit	
Lead (% w/w)	0.01	%	0.02

Sample History

Where samples are submitted/analysed over several days, the last date of extraction and analysis is reported.

A recent review of our LIMS has resulted in the correction or clarification of some method identifications. Due to this, some of the method reference information on reports has changed. However, no substantive change has been made to our laboratory methods, and as such there is no change in the validity of current or previous results.

If the date and time of sampling are not provided, the Laboratory will not be responsible for compromised results should testing be performed outside the recommended holding time.

Description

Lead (% w/w)

Testing Site

Sydney

Extracted

May 19, 2020

Holding Time

6 Month

- Method: E022.5 - ACID EXTRACTABLE METALS IN PAINT IN LIQUID AND POWDERED FORM BY ICP-MS ANALYSIS

Australia

Melbourne
 6 Monterey Road
 Dandenong South VIC 3175
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 NATA # 1261
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External Laboratory							
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4	DSWAB_4 (PS)	May 18, 2020		Swab	S20-My27003	X	
5	DSWAB_5 (PS)	May 18, 2020		Swab	S20-My27004	X	
6	DSWAB_6 (PS)	May 18, 2020		Swab	S20-My27005	X	
7	DSWAB_7	May 18, 2020		Swab	S20-My27006	X	

Australia

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 Kewdale WA 6105
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 NATA # 1261
 Site # 23736

New Zealand

Auckland
 35 O'Rorke Road
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 Phone : +64 9 526 45 51
 IANZ # 1327

Christchurch
 43 Detroit Drive
 Rolleston, Christchurch 7675
 Phone : 0800 856 450
 IANZ # 1290

Company Name: Ramboll Australia Pty Ltd
Address: Level 3/100 Pacific Highway
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 NSW 2060
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If the Laboratory did not receive the information in the required timeframe, and regardless of any other integrity issues, suitably qualified results may still be reported.

Holding times apply from the date of sampling, therefore compliance to these may be outside the laboratory's control.

For VOCs containing vinyl chloride, styrene and 2-chloroethyl vinyl ether the holding time is 7 days however for all other VOCs such as BTEX or C6-10 TRH then the holding time is 14 days.

****NOTE:** pH duplicates are reported as a range NOT as RPD

Units

mg/kg: milligrams per kilogram

mg/L: milligrams per litre

ug/L: micrograms per litre

ppm: Parts per million

ppb: Parts per billion

%: Percentage

org/100mL: Organisms per 100 millilitres

NTU: Nephelometric Turbidity Units

MPN/100mL: Most Probable Number of organisms per 100 millilitres

Terms

Dry	Where a moisture has been determined on a solid sample the result is expressed on a dry basis.
LOR	Limit of Reporting.
SPIKE	Addition of the analyte to the sample and reported as percentage recovery.
RPD	Relative Percent Difference between two Duplicate pieces of analysis.
LCS	Laboratory Control Sample - reported as percent recovery.
CRM	Certified Reference Material - reported as percent recovery.
Method Blank	In the case of solid samples these are performed on laboratory certified clean sands and in the case of water samples these are performed on de-ionised water.
Surr - Surrogate	The addition of a like compound to the analyte target and reported as percentage recovery.
Duplicate	A second piece of analysis from the same sample and reported in the same units as the result to show comparison.
USEPA	United States Environmental Protection Agency
APHA	American Public Health Association
TCLP	Toxicity Characteristic Leaching Procedure
COC	Chain of Custody
SRA	Sample Receipt Advice
QSM	US Department of Defense Quality Systems Manual Version 5.3
CP	Client Parent - QC was performed on samples pertaining to this report
NCP	Non-Client Parent - QC performed on samples not pertaining to this report, QC is representative of the sequence or batch that client samples were analysed within.
TEQ	Toxic Equivalency Quotient

QC - Acceptance Criteria

RPD Duplicates: Global RPD Duplicates Acceptance Criteria is 30% however the following acceptance guidelines are equally applicable:

Results <10 times the LOR : No Limit

Results between 10-20 times the LOR : RPD must lie between 0-50%

Results >20 times the LOR : RPD must lie between 0-30%

Surrogate Recoveries: Recoveries must lie between 20-130% Phenols & 50-150% PFASs

PFAS field samples that contain surrogate recoveries in excess of the QC limit designated in QSM 5.3 where no positive PFAS results have been reported have been reviewed and no data was affected.

WA DWER (n=10): PFBA, PFPeA, PFHxA, PFHpA, PFOA, PFBS, PFHxS, PFOS, 6:2 FTSA, 8:2 FTSA

QC Data General Comments

- Where a result is reported as a less than (<), higher than the nominated LOR, this is due to either matrix interference, extract dilution required due to interferences or contaminant levels within the sample, high moisture content or insufficient sample provided.
- Duplicate data shown within this report that states the word "BATCH" is a Batch Duplicate from outside of your sample batch, but within the laboratory sample batch at a 1:10 ratio. The Parent and Duplicate data shown is not data from your samples.
- Organochlorine Pesticide analysis - where reporting LCS data, Toxaphene & Chlordane are not added to the LCS.
- Organochlorine Pesticide analysis - where reporting Spike data, Toxaphene is not added to the Spike.
- Total Recoverable Hydrocarbons - where reporting Spike & LCS data, a single spike of commercial Hydrocarbon products in the range of C12-C30 is added and it's Total Recovery is reported in the C10-C14 cell of the Report.
- pH and Free Chlorine analysed in the laboratory - Analysis on this test must begin within 30 minutes of sampling. Therefore laboratory analysis is unlikely to be completed within holding time. Analysis will begin as soon as possible after sample receipt.
- Recovery Data (Spikes & Surrogates) - where chromatographic interference does not allow the determination of Recovery the term "INT" appears against that analyte.
- Polychlorinated Biphenyls are spiked only using Aroclor 1260 in Matrix Spikes and LCS.
- For Matrix Spikes and LCS results a dash " - " in the report means that the specific analyte was not added to the QC sample.
- Duplicate RPDs are calculated from raw analytical data thus it is possible to have two sets of data.

Quality Control Results

Comments**Sample Integrity**

Custody Seals Intact (if used)	N/A
Attempt to Chill was evident	N/A
Sample correctly preserved	Yes
Appropriate sample containers have been used	Yes
Sample containers for volatile analysis received with minimal headspace	Yes
Samples received within HoldingTime	Yes
Some samples have been subcontracted	No

Authorised By

Andrew Black Analytical Services Manager
Gabriele Cordero Senior Analyst-Metal (NSW)

**Glenn Jackson
General Manager**

Final report - this Report replaces any previously issued Report

- Indicates Not Requested

* Indicates NATA accreditation does not cover the performance of this service

Measurement uncertainty of test data is available on request or please [click here](#).

Eurofins shall not be liable for loss, cost, damages or expenses incurred by the client, or any other person or company, resulting from the use of any information or interpretation given in this report. In no case shall Eurofins be liable for consequential damages including, but not limited to, lost profits, damages for failure to meet deadlines and lost production arising from this report. This document shall not be reproduced except in full and relates only to the items tested. Unless indicated otherwise, the tests were performed on the samples as received.

Wayne Baynham
Tarago Sports Ground
Tarago NSW 2580

Delivered: by email

Dear Wayne,

**Tarago Sports Ground, Tarago NSW
Lead Investigation Report**

Date 29/05/2020

This report presents the findings of an investigation of lead at Tarago Sports Ground undertaken as part of the investigation of lead impacts in the Tarago Community.

Investigation at the sports ground comprised collection of samples as shown in **Table 1** and the attached figure. Samples were collected on 25 March 2020. Soil sampling locations targeted areas considered most likely to be regularly trafficked by pedestrians (P6_HA02 and P6_HA03) and a drainage line (P6_HA01, P6_HA04 – P6_HA06). The playing surface was not sampled however the sampling that was completed is considered adequate as an indicative assessment of potential for lead contamination from the rail corridor as may have resulted through deposition of airborne dust and/or movement of through surface water.

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Table 1 Samples Collected

Type	Number of samples collected
Soil	16
Groundwater from onsite bore	n/a – no bore present on site.
Rainwater tank water	1
Rainwater tank sediment	1
Dust (from inside buildings)	n/a – the potential duration of exposure was considered too short to warrant assessment
Paint	n/a – unpainted tin shed

Samples were sent to an independent certified laboratory for analysis.

Results

Sample results were compared against guidelines relevant for a public open space. Results are tabulated in **Table 2** and **Table 3**. Concentrations shown in BOLD are above the relevant guideline.

Table 2 Summary lead concentrations relevant to health investigation levels

Type	Guideline	Result						
		P6_HA01_0.0-0.05	P6_HA01_0.2	P6_HA01_0.3	P6_HA02_0.0-0.05	P6_HA02_0.2	P6_HA02_0.3	P6_HA03_0.0
Soil	600 (mg/kg) ¹	6.4	56	13	28	37	24	6.0
		P6_HA3_0.2	P6_HA4_0.0	P6_HA4_0.2	P6_HA4_0.3	P6_HA5_0.0	P6_HA5_0.15	P6_HA6_0.0
		33	95	58	53	430	160	30
		P6_HA6_0.2	P6_HA6_0.3					
		25	15					
Tank water	0.01 (mg/L) ²	P6_TW1						
		< 0.001						

¹NEPM (2013) Schedule B1: Guideline on investigation levels for soil and groundwater. National Environment Protection (Assessment of Site Contamination) Measure 1999. Federal Register of Legislative Instruments F2013C00288 (HIL C - Public open space such as parks, playgrounds, playing fields (e.g. ovals), secondary schools and footpaths. This does not include undeveloped public open space where the potential for exposure is lower and where a site-specific assessment may be more appropriate.

²NHMRC, NRMCC (2011 updated 2018) Australian Drinking Water Guidelines (ADWG) Paper 6 National Water Quality Management Strategy. National Health and Medical Research Council, National Resource Management Ministerial Council, Commonwealth of Australia, Canberra. Groundwater samples filtered as per AS/NZS 5667.11.

Lead concentrations in soil and tank water presented in **Table 2** fall below the adopted guidelines. This means that risks to health from lead in soil potentially arising from the nearby rail corridor and tank water are considered low and acceptable. On this basis no further action is required.

Table 3 Summary of lead concentration results for tank sediment

Type	Guideline	Result
Rainwater tank sediment	600 mg/kg ¹	P6_TWS1 96

¹NEPM (2013) Schedule B1: Guideline on investigation levels for soil and groundwater. National Environment Protection (Assessment of Site Contamination) Measure 1999. Federal Register of Legislative Instruments F2013C00288 (HIL C - Public open space such as parks, playgrounds, playing fields (e.g. ovals), secondary schools and footpaths. This does not include undeveloped public open space where the potential for exposure is lower and where a site-specific assessment may be more appropriate.

Table 3 presents the concentration of lead in tank sediment. In accordance with NSW Department of Health guidance (<https://www.health.nsw.gov.au/environment/water/Pages/rainwater.aspx>) sediment in rain water tanks should be periodically removed.

For further information please contact the undersigned.

Yours sincerely



Stephen Maxwell

Tarago Lead Investigation Project Manager

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Fiona Robinson

Principal Contaminated Land Specialist

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+61 421 311 066
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Attachments

Figure of sampling locations

Reference

Laboratory report 710584, 711464¹ and 716287

Limitations

Ramboll Australia Pty Ltd prepared this report in accordance with the scope of work as outlined in our proposal to John Holland Rail and in accordance with our understanding and interpretation of current regulatory standards. A representative program of sampling and laboratory analyses was undertaken as part of this investigation. While every care has been taken, concentrations of contaminants measured may not be representative of conditions between the locations sampled and investigated. We cannot therefore preclude the presence of materials that may be hazardous. Site conditions may change over time. This report is based on conditions encountered at the Site at the time of the report and Ramboll disclaims responsibility for any changes that may have occurred after this time. The conclusions presented in this report represent Ramboll's professional judgment based on information made available during the course of this assignment and are true and correct to the best of Ramboll's knowledge as at the date of the assessment. Ramboll did not independently verify all of the written or oral information provided to Ramboll during the course of this investigation. While Ramboll has no reason to doubt the accuracy of the information provided to it, the report is complete and accurate only to the extent that the information provided to Ramboll was itself complete and accurate. This report does not purport to give legal advice. This advice can only be given by qualified legal advisors.

¹ Laboratory report 711464 includes one sample of sediment laden water from the base of the tank. Risks associated with lead in tank sediment have been assessed through subsequent analyses of dried sediment samples.



RAMBOLL AUSTRALIA - GIS MAP file : 318000780_GIS_P010_RequestsSamples | F006_P6_V03 | 7/05/2020

Imagery © Department Finance, Services and Innovation 2020

Legend

- Property boundary
- ⊗ Hand auger sample
- ⊕ Tank sample



Ramboll Environ Australia Pty Ltd
 Level 3/100 Pacific Highway
 North Sydney
 NSW 2060



NATA Accredited
 Accreditation Number 1261
 Site Number 1254

Accredited for compliance with ISO/IEC 17025 – Testing
 The results of the tests, calibrations and/or
 measurements included in this document are traceable
 to Australian/national standards.

Attention: Stephen Maxwell

Report 710584-S
 Project name
 Project ID 318000780
 Received Date Mar 27, 2020

Client Sample ID			P6_HA1_0-0.05	P6_HA1_0.2	P6_HA1_0.3	P6_HA2_0-0.05
Sample Matrix			Soil	Soil	Soil	Soil
Eurofins Sample No.			M20-Ma43796	M20-Ma43797	M20-Ma43798	M20-Ma43799
Date Sampled			Mar 25, 2020	Mar 25, 2020	Mar 25, 2020	Mar 25, 2020
Test/Reference	LOR	Unit				
Heavy Metals						
Lead	5	mg/kg	29	56	58	28
% Moisture	1	%	6.4	8.7	13	19

Client Sample ID			P6_HA2_0.2	P6_HA2_0.3	P6_HA3_0.0	P6_HA3_0.2
Sample Matrix			Soil	Soil	Soil	Soil
Eurofins Sample No.			M20-Ma43800	M20-Ma43801	M20-Ma43802	M20-Ma43803
Date Sampled			Mar 25, 2020	Mar 25, 2020	Mar 25, 2020	Mar 25, 2020
Test/Reference	LOR	Unit				
Heavy Metals						
Lead	5	mg/kg	37	24	6.0	33
% Moisture	1	%	15	12	1.8	11

Client Sample ID			P6_HA4_0.0	P6_HA4_0.2	P6_HA4_0.3	P6_HA5_0.0
Sample Matrix			Soil	Soil	Soil	Soil
Eurofins Sample No.			M20-Ma43804	M20-Ma43805	M20-Ma43806	M20-Ma43807
Date Sampled			Mar 25, 2020	Mar 25, 2020	Mar 25, 2020	Mar 25, 2020
Test/Reference	LOR	Unit				
Heavy Metals						
Lead	5	mg/kg	95	58	53	430
% Moisture	1	%	11	12	15	10

Client Sample ID			P6_HA5_0.15	P6_HA6_0.0	P6_HA6_0.2	P6_HA6_0.3
Sample Matrix			Soil	Soil	Soil	Soil
Eurofins Sample No.			M20-Ma43808	M20-Ma43809	M20-Ma43810	M20-Ma43811
Date Sampled			Mar 25, 2020	Mar 25, 2020	Mar 25, 2020	Mar 25, 2020
Test/Reference	LOR	Unit				
Heavy Metals						
Lead	5	mg/kg	160	30	25	15
% Moisture	1	%	16	17	12	18

Sample History

Where samples are submitted/analysed over several days, the last date of extraction and analysis is reported.

A recent review of our LIMS has resulted in the correction or clarification of some method identifications. Due to this, some of the method reference information on reports has changed. However, no substantive change has been made to our laboratory methods, and as such there is no change in the validity of current or previous results.

If the date and time of sampling are not provided, the Laboratory will not be responsible for compromised results should testing be performed outside the recommended holding time.

Description	Testing Site	Extracted	Holding Time
Heavy Metals - Method: LTM-MET-3040 Metals in Waters, Soils & Sediments by ICP-MS	Melbourne	Mar 30, 2020	180 Days
% Moisture - Method: LTM-GEN-7080 Moisture	Melbourne	Mar 27, 2020	14 Days

Australia

Melbourne
6 Monterey Road
Dandenong South VIC 3175
Phone : +61 3 8564 5000
NATA # 1261
Site # 1254 & 14271

Sydney
Unit F3, Building F
16 Mars Road
Lane Cove West NSW 2066
Phone : +61 2 9900 8400
NATA # 1261 Site # 18217

Brisbane
1/21 Smallwood Place
Murarrie QLD 4172
Phone : +61 7 3902 4600
NATA # 1261 Site # 20794

Perth
2/91 Leach Highway
Kewdale WA 6105
Phone : +61 8 9251 9600
NATA # 1261
Site # 23736

New Zealand

Auckland
35 O'Rorke Road
Penrose, Auckland 1061
Phone : +64 9 526 45 51
IANZ # 1327

Christchurch
43 Detroit Drive
Rolleston, Christchurch 7675
Phone : 0800 856 450
IANZ # 1290

Company Name: Ramboll Australia Pty Ltd
Address: Level 3/100 Pacific Highway
North Sydney
NSW 2060

Project Name:
Project ID: 318000780

Order No.:
Report #: 710584
Phone: 02 9954 8118
Fax: 02 9954 8150

Received: Mar 27, 2020 12:00 AM
Due: Apr 3, 2020
Priority: 5 Day
Contact Name: Stephen Maxwell

Eurofins Analytical Services Manager : Andrew Black

Sample Detail						Lead	Moisture Set
Melbourne Laboratory - NATA Site # 1254 & 14271						X	X
Sydney Laboratory - NATA Site # 18217							
Brisbane Laboratory - NATA Site # 20794							
Perth Laboratory - NATA Site # 23736							
External Laboratory							
No	Sample ID	Sample Date	Sampling Time	Matrix	LAB ID		
1	P6_HA1_0-0.05	Mar 25, 2020		Soil	M20-Ma43796	X	X
2	P6_HA1_0.2	Mar 25, 2020		Soil	M20-Ma43797	X	X
3	P6_HA1_0.3	Mar 25, 2020		Soil	M20-Ma43798	X	X
4	P6_HA2_0-0.05	Mar 25, 2020		Soil	M20-Ma43799	X	X
5	P6_HA2_0.2	Mar 25, 2020		Soil	M20-Ma43800	X	X
6	P6_HA2_0.3	Mar 25, 2020		Soil	M20-Ma43801	X	X
7	P6_HA3_0.0	Mar 25, 2020		Soil	M20-Ma43802	X	X
8	P6_HA3_0.2	Mar 25, 2020		Soil	M20-Ma43803	X	X
9	P6_HA4_0.0	Mar 25, 2020		Soil	M20-Ma43804	X	X

Australia

Melbourne
 6 Monterey Road
 Dandenong South VIC 3175
 Phone : +61 3 8564 5000
 NATA # 1261
 Site # 1254 & 14271

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 Lane Cove West NSW 2066
 Phone : +61 2 9900 8400
 NATA # 1261 Site # 18217

Brisbane
 1/21 Smallwood Place
 Murarrie QLD 4172
 Phone : +61 7 3902 4600
 NATA # 1261 Site # 20794

Perth
 2/91 Leach Highway
 Kewdale WA 6105
 Phone : +61 8 9251 9600
 NATA # 1261
 Site # 23736

New Zealand

Auckland
 35 O'Rorke Road
 Penrose, Auckland 1061
 Phone : +64 9 526 45 51
 IANZ # 1327

Christchurch
 43 Detroit Drive
 Rolleston, Christchurch 7675
 Phone : 0800 856 450
 IANZ # 1290

Company Name: Ramboll Australia Pty Ltd
Address: Level 3/100 Pacific Highway
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Brisbane Laboratory - NATA Site # 20794							
Perth Laboratory - NATA Site # 23736							
10	P6_HA4_0.2	Mar 25, 2020		Soil	M20-Ma43805	X	X
11	P6_HA4_0.3	Mar 25, 2020		Soil	M20-Ma43806	X	X
12	P6_HA5_0.0	Mar 25, 2020		Soil	M20-Ma43807	X	X
13	P6_HA5_0.15	Mar 25, 2020		Soil	M20-Ma43808	X	X
14	P6_HA6_0.0	Mar 25, 2020		Soil	M20-Ma43809	X	X
15	P6_HA6_0.2	Mar 25, 2020		Soil	M20-Ma43810	X	X
16	P6_HA6_0.3	Mar 25, 2020		Soil	M20-Ma43811	X	X
Test Counts						16	16

Internal Quality Control Review and Glossary
General

- Laboratory QC results for Method Blanks, Duplicates, Matrix Spikes, and Laboratory Control Samples follows guidelines delineated in the National Environment Protection (Assessment of Site Contamination) Measure 1999, as amended May 2013 and are included in this QC report where applicable. Additional QC data may be available on request.
- All soil/sediment/solid results are reported on a dry basis, unless otherwise stated.
- All biota/food results are reported on a wet weight basis on the edible portion, unless otherwise stated.
- Actual LORs are matrix dependant. Quoted LORs may be raised where sample extracts are diluted due to interferences.
- Results are uncorrected for matrix spikes or surrogate recoveries except for PFAS compounds.
- SVOC analysis on waters are performed on homogenised, unfiltered samples, unless noted otherwise.
- Samples were analysed on an 'as received' basis.
- Information identified on this report with blue colour, indicates data provided by customer, that may have an impact on the results.
- This report replaces any interim results previously issued.

Holding Times

Please refer to 'Sample Preservation and Container Guide' for holding times (QS3001).

For samples received on the last day of holding time, notification of testing requirements should have been received at least 6 hours prior to sample receipt deadlines as stated on the SRA.

If the Laboratory did not receive the information in the required timeframe, and regardless of any other integrity issues, suitably qualified results may still be reported.

Holding times apply from the date of sampling, therefore compliance to these may be outside the laboratory's control.

For VOCs containing vinyl chloride, styrene and 2-chloroethyl vinyl ether the holding time is 7 days however for all other VOCs such as BTEX or C6-10 TRH then the holding time is 14 days.

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WA DWER (n=10): PFBA, PFPeA, PFHxA, PFHpA, PFOA, PFBS, PFHxS, PFOS, 6:2 FTSA, 8:2 FTSA

QC Data General Comments

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- Duplicate data shown within this report that states the word "BATCH" is a Batch Duplicate from outside of your sample batch, but within the laboratory sample batch at a 1:10 ratio. The Parent and Duplicate data shown is not data from your samples.
- Organochlorine Pesticide analysis - where reporting LCS data, Toxaphene & Chlordane are not added to the LCS.
- Organochlorine Pesticide analysis - where reporting Spike data, Toxaphene is not added to the Spike.
- Total Recoverable Hydrocarbons - where reporting Spike & LCS data, a single spike of commercial Hydrocarbon products in the range of C12-C30 is added and it's Total Recovery is reported in the C10-C14 cell of the Report.
- pH and Free Chlorine analysed in the laboratory - Analysis on this test must begin within 30 minutes of sampling. Therefore laboratory analysis is unlikely to be completed within holding time. Analysis will begin as soon as possible after sample receipt.
- Recovery Data (Spikes & Surrogates) - where chromatographic interference does not allow the determination of Recovery the term "INT" appears against that analyte.
- Polychlorinated Biphenyls are spiked only using Aroclor 1260 in Matrix Spikes and LCS.
- For Matrix Spikes and LCS results a dash " - " in the report means that the specific analyte was not added to the QC sample.
- Duplicate RPDs are calculated from raw analytical data thus it is possible to have two sets of data.

Quality Control Results

Test				Units	Result 1			Acceptance Limits	Pass Limits	Qualifying Code
Method Blank										
Heavy Metals										
Lead				mg/kg	< 5			5	Pass	
LCS - % Recovery										
Heavy Metals										
Lead				%	108			80-120	Pass	
Test	Lab Sample ID	QA Source	Units	Result 1				Acceptance Limits	Pass Limits	Qualifying Code
Duplicate										
				Result 1	Result 2	RPD				
% Moisture	M20-Ma43801	CP	%	12	12	1.0		30%	Pass	
Duplicate										
Heavy Metals										
				Result 1	Result 2	RPD				
Lead	M20-Ma43807	CP	mg/kg	430	440	2.0		30%	Pass	
Duplicate										
Heavy Metals										
				Result 1	Result 2	RPD				
Lead	M20-Ma43808	CP	mg/kg	160	160	3.0		30%	Pass	
Duplicate										
				Result 1	Result 2	RPD				
% Moisture	M20-Ma43811	CP	%	18	19	7.0		30%	Pass	

Comments
Sample Integrity

Custody Seals Intact (if used)	N/A
Attempt to Chill was evident	No
Sample correctly preserved	Yes
Appropriate sample containers have been used	Yes
Sample containers for volatile analysis received with minimal headspace	Yes
Samples received within HoldingTime	Yes
Some samples have been subcontracted	No

Authorised By

Andrew Black	Analytical Services Manager
Emily Rosenberg	Senior Analyst-Metal (VIC)


**Glenn Jackson
General Manager**

Final report - this Report replaces any previously issued Report

- Indicates Not Requested

* Indicates NATA accreditation does not cover the performance of this service

Measurement uncertainty of test data is available on request or please [click here](#).

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Ramboll Environ Australia Pty Ltd
 Level 3/100 Pacific Highway
 North Sydney
 NSW 2060



NATA Accredited
 Accreditation Number 1261
 Site Number 18217

Accredited for compliance with ISO/IEC 17025 – Testing
 The results of the tests, calibrations and/or
 measurements included in this document are traceable
 to Australian/national standards.

Attention: Stephen Maxwell

Report 711464-W
 Project name
 Project ID 318000780
 Received Date Mar 27, 2020

Client Sample ID			P6_TWS1	P6_TW1	D01_25/3/2020	RB_25/3/2020
Sample Matrix			Water	Water	Water	Water
Eurofins Sample No.			S20-Ap02120	S20-Ap02122	S20-Ap02124	S20-Ap02125
Date Sampled			Mar 26, 2020	Mar 26, 2020	Mar 25, 2020	Mar 25, 2020
Test/Reference	LOR	Unit				
Heavy Metals						
Aluminium	0.05	mg/L	-	0.08	< 0.05	< 0.05
Aluminium (filtered)	0.05	mg/L	-	< 0.05	< 0.05	-
Arsenic	0.001	mg/L	-	< 0.001	< 0.001	< 0.001
Arsenic (filtered)	0.001	mg/L	-	< 0.001	< 0.001	-
Barium	0.02	mg/L	-	< 0.02	< 0.02	< 0.02
Barium (filtered)	0.02	mg/L	-	< 0.02	< 0.02	-
Beryllium	0.001	mg/L	-	< 0.001	< 0.001	< 0.001
Beryllium (filtered)	0.001	mg/L	-	< 0.001	< 0.001	-
Cadmium	0.0002	mg/L	-	0.0003	0.0004	< 0.0002
Cadmium (filtered)	0.0002	mg/L	-	< 0.0002	< 0.0002	-
Chromium	0.001	mg/L	-	< 0.001	< 0.001	< 0.001
Chromium (filtered)	0.001	mg/L	-	< 0.001	< 0.001	-
Cobalt	0.001	mg/L	-	< 0.001	< 0.001	< 0.001
Cobalt (filtered)	0.001	mg/L	-	< 0.001	< 0.001	-
Copper	0.001	mg/L	-	0.027	0.001	< 0.001
Copper (filtered)	0.001	mg/L	-	0.027	< 0.001	-
Iron	0.05	mg/L	-	< 0.05	< 0.05	< 0.05
Iron (filtered)	0.05	mg/L	-	< 0.05	< 0.05	-
Lead	0.001	mg/L	1.00	< 0.001	< 0.001	< 0.001
Lead (filtered)	0.001	mg/L	-	< 0.001	< 0.001	-
Manganese	0.005	mg/L	-	0.024	0.007	< 0.005
Manganese (filtered)	0.005	mg/L	-	0.022	< 0.005	-
Mercury	0.0001	mg/L	-	< 0.0001	< 0.0001	< 0.0001
Mercury (filtered)	0.0001	mg/L	-	< 0.0001	< 0.0001	-
Nickel	0.001	mg/L	-	< 0.001	< 0.001	< 0.001
Nickel (filtered)	0.001	mg/L	-	< 0.001	< 0.001	-
Zinc	0.005	mg/L	-	0.071	0.026	< 0.005
Zinc (filtered)	0.005	mg/L	-	0.067	0.018	-

Client Sample ID			RB_26/3/2020	DW01_240320	R01_1803200	R01_2003200
Sample Matrix			Water	Water	Water	Water
Eurofins Sample No.			S20-Ap02126	S20-Ap08929	S20-Ap08931	S20-Ap08932
Date Sampled			Mar 26, 2020	Mar 24, 2020	Mar 18, 2020	Mar 18, 2020
Test/Reference	LOR	Unit				
Heavy Metals						
Aluminium	0.05	mg/L	< 0.05	-	-	-
Arsenic	0.001	mg/L	< 0.001	-	-	-
Barium	0.02	mg/L	< 0.02	-	-	-
Beryllium	0.001	mg/L	< 0.001	-	-	-
Cadmium	0.0002	mg/L	< 0.0002	-	-	-
Chromium	0.001	mg/L	< 0.001	-	-	-
Cobalt	0.001	mg/L	< 0.001	-	-	-
Copper	0.001	mg/L	< 0.001	-	-	-
Iron	0.05	mg/L	< 0.05	-	-	-
Lead	0.001	mg/L	< 0.001	0.005	< 0.001	< 0.001
Manganese	0.005	mg/L	< 0.005	-	-	-
Mercury	0.0001	mg/L	< 0.0001	-	-	-
Nickel	0.001	mg/L	< 0.001	-	-	-
Zinc	0.005	mg/L	< 0.005	-	-	-

Sample History

Where samples are submitted/analysed over several days, the last date of extraction and analysis is reported.

A recent review of our LIMS has resulted in the correction or clarification of some method identifications. Due to this, some of the method reference information on reports has changed. However, no substantive change has been made to our laboratory methods, and as such there is no change in the validity of current or previous results.

If the date and time of sampling are not provided, the Laboratory will not be responsible for compromised results should testing be performed outside the recommended holding time.

Description	Testing Site	Extracted	Holding Time
Heavy Metals - Method: LTM-MET-3040 Metals in Waters, Soils & Sediments by ICP-MS	Sydney	Apr 20, 2020	180 Days
Heavy Metals (filtered) - Method: LTM-MET-3040 Metals in Waters, Soils & Sediments by ICP-MS	Sydney	Apr 20, 2020	180 Days
Mobil Metals : Metals M15 - Method: LTM-MET-3040 Metals in Waters, Soils & Sediments by ICP-MS	Sydney	Apr 15, 2020	28 Days

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Phone : 0800 856 450
IANZ # 1290

Company Name: Ramboll Australia Pty Ltd
Address: Level 3/100 Pacific Highway
North Sydney
NSW 2060

Order No.:
Report #: 711464
Phone: 02 9954 8118
Fax: 02 9954 8150

Received: Apr 9, 2020 10:10 AM
Due: Apr 20, 2020
Priority: 5 Day
Contact Name: Stephen Maxwell

Project Name:
Project ID: 318000780

Eurofins Analytical Services Manager : Andrew Black

Sample Detail						Aluminium	Aluminium (filtered)	Arsenic	Arsenic (filtered)	Barium	Barium (filtered)	Beryllium	Beryllium (filtered)	Cadmium	Cadmium (filtered)	Chromium	Chromium (filtered)	Cobalt	Cobalt (filtered)	Copper	Copper (filtered)	Iron	Iron (filtered)	Lead	Lead (filtered)	Manganese	Manganese (filtered)	Mercury	Mercury (filtered)	Nickel	Nickel (filtered)	Zinc	Zinc (filtered)	Moisture Set			
Melbourne Laboratory - NATA Site # 1254 & 14271																								X													
Sydney Laboratory - NATA Site # 18217						X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	
Brisbane Laboratory - NATA Site # 20794																																					
Perth Laboratory - NATA Site # 23736																																					
External Laboratory																																					
No	Sample ID	Sample Date	Sampling Time	Matrix	LAB ID																																
1	MULWR10_4	Mar 23, 2020		Soil	S20-Ap02114																			X										X			
2	P6_TWS1	Mar 26, 2020		Water	S20-Ap02120																			X													
3	P6_TW1	Mar 26, 2020		Water	S20-Ap02122	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X			
4	D01_25/3/2020	Mar 25, 2020		Water	S20-Ap02124	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X			
5	RB_25/3/2020	Mar 25, 2020		Water	S20-Ap02125	X		X		X		X		X		X		X		X		X		X		X		X		X		X					
6	RB_26/3/2020	Mar 26, 2020		Water	S20-Ap02126	X		X		X		X		X		X		X		X		X		X		X		X		X		X					
7	XSMC3	Mar 18, 2020		Dust	S20-Ap02154																			X													
8	DO4_250320	Mar 25, 2020		Dust	S20-Ap02157																			X													
9	D01_260320	Mar 26, 2020		Dust	S20-Ap02158																			X													

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43 Detroit Drive
Rolleston, Christchurch 7675
Phone : 0800 856 450
IANZ # 1290

Company Name: Ramboll Australia Pty Ltd
Address: Level 3/100 Pacific Highway
North Sydney
NSW 2060

Order No.:
Report #: 711464
Phone: 02 9954 8118
Fax: 02 9954 8150

Received: Apr 9, 2020 10:10 AM
Due: Apr 20, 2020
Priority: 5 Day
Contact Name: Stephen Maxwell

Project Name:
Project ID: 318000780

Eurofins Analytical Services Manager : Andrew Black

Sample Detail						Aluminium	Aluminium (filtered)	Arsenic	Arsenic (filtered)	Barium	Barium (filtered)	Beryllium	Beryllium (filtered)	Cadmium	Cadmium (filtered)	Chromium	Chromium (filtered)	Cobalt	Cobalt (filtered)	Copper	Copper (filtered)	Iron	Iron (filtered)	Lead	Lead (filtered)	Manganese	Manganese (filtered)	Mercury	Mercury (filtered)	Nickel	Nickel (filtered)	Zinc	Zinc (filtered)	Moisture Set	
Melbourne Laboratory - NATA Site # 1254 & 14271																								X											
Sydney Laboratory - NATA Site # 18217						X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X
Brisbane Laboratory - NATA Site # 20794																																			
Perth Laboratory - NATA Site # 23736																																			
10	DW01_240320	Mar 24, 2020		Water	S20-Ap08929																			X											
11	R01_1803200	Mar 18, 2020		Water	S20-Ap08931																			X											
12	R01_2003200	Mar 18, 2020		Water	S20-Ap08932																			X											
Test Counts						4	2	4	2	4	2	4	2	4	2	4	2	4	2	4	2	4	2	4	2	12	12	2	4	2	4	2	4	2	1

Internal Quality Control Review and Glossary

General

- Laboratory QC results for Method Blanks, Duplicates, Matrix Spikes, and Laboratory Control Samples follows guidelines delineated in the National Environment Protection (Assessment of Site Contamination) Measure 1999, as amended May 2013 and are included in this QC report where applicable. Additional QC data may be available on request.
- All soil/sediment/solid results are reported on a dry basis, unless otherwise stated.
- All biota/food results are reported on a wet weight basis on the edible portion, unless otherwise stated.
- Actual LORs are matrix dependant. Quoted LORs may be raised where sample extracts are diluted due to interferences.
- Results are uncorrected for matrix spikes or surrogate recoveries except for PFAS compounds.
- SVOC analysis on waters are performed on homogenised, unfiltered samples, unless noted otherwise.
- Samples were analysed on an 'as received' basis.
- Information identified on this report with blue colour, indicates data provided by customer, that may have an impact on the results.
- This report replaces any interim results previously issued.

Holding Times

Please refer to 'Sample Preservation and Container Guide' for holding times (QS3001).

For samples received on the last day of holding time, notification of testing requirements should have been received at least 6 hours prior to sample receipt deadlines as stated on the SRA.

If the Laboratory did not receive the information in the required timeframe, and regardless of any other integrity issues, suitably qualified results may still be reported.

Holding times apply from the date of sampling, therefore compliance to these may be outside the laboratory's control.

For VOCs containing vinyl chloride, styrene and 2-chloroethyl vinyl ether the holding time is 7 days however for all other VOCs such as BTEX or C6-10 TRH then the holding time is 14 days.

****NOTE:** pH duplicates are reported as a range NOT as RPD

Units

mg/kg: milligrams per kilogram

mg/L: milligrams per litre

ug/L: micrograms per litre

ppm: Parts per million

ppb: Parts per billion

%: Percentage

org/100mL: Organisms per 100 millilitres

NTU: Nephelometric Turbidity Units

MPN/100mL: Most Probable Number of organisms per 100 millilitres

Terms

Dry	Where a moisture has been determined on a solid sample the result is expressed on a dry basis.
LOR	Limit of Reporting.
SPIKE	Addition of the analyte to the sample and reported as percentage recovery.
RPD	Relative Percent Difference between two Duplicate pieces of analysis.
LCS	Laboratory Control Sample - reported as percent recovery.
CRM	Certified Reference Material - reported as percent recovery.
Method Blank	In the case of solid samples these are performed on laboratory certified clean sands and in the case of water samples these are performed on de-ionised water.
Surr - Surrogate	The addition of a like compound to the analyte target and reported as percentage recovery.
Duplicate	A second piece of analysis from the same sample and reported in the same units as the result to show comparison.
USEPA	United States Environmental Protection Agency
APHA	American Public Health Association
TCLP	Toxicity Characteristic Leaching Procedure
COC	Chain of Custody
SRA	Sample Receipt Advice
QSM	US Department of Defense Quality Systems Manual Version 5.3
CP	Client Parent - QC was performed on samples pertaining to this report
NCP	Non-Client Parent - QC performed on samples not pertaining to this report, QC is representative of the sequence or batch that client samples were analysed within.
TEQ	Toxic Equivalency Quotient

QC - Acceptance Criteria

RPD Duplicates: Global RPD Duplicates Acceptance Criteria is 30% however the following acceptance guidelines are equally applicable:

Results <10 times the LOR : No Limit

Results between 10-20 times the LOR : RPD must lie between 0-50%

Results >20 times the LOR : RPD must lie between 0-30%

Surrogate Recoveries: Recoveries must lie between 20-130% Phenols & 50-150% PFASs

PFAS field samples that contain surrogate recoveries in excess of the QC limit designated in QSM 5.3 where no positive PFAS results have been reported have been reviewed and no data was affected.

WA DWER (n=10): PFBA, PFPeA, PFHxA, PFHpA, PFOA, PFBS, PFHxS, PFOS, 6:2 FTSA, 8:2 FTSA

QC Data General Comments

- Where a result is reported as a less than (<), higher than the nominated LOR, this is due to either matrix interference, extract dilution required due to interferences or contaminant levels within the sample, high moisture content or insufficient sample provided.
- Duplicate data shown within this report that states the word "BATCH" is a Batch Duplicate from outside of your sample batch, but within the laboratory sample batch at a 1:10 ratio. The Parent and Duplicate data shown is not data from your samples.
- Organochlorine Pesticide analysis - where reporting LCS data, Toxaphene & Chlordane are not added to the LCS.
- Organochlorine Pesticide analysis - where reporting Spike data, Toxaphene is not added to the Spike.
- Total Recoverable Hydrocarbons - where reporting Spike & LCS data, a single spike of commercial Hydrocarbon products in the range of C12-C30 is added and it's Total Recovery is reported in the C10-C14 cell of the Report.
- pH and Free Chlorine analysed in the laboratory - Analysis on this test must begin within 30 minutes of sampling. Therefore laboratory analysis is unlikely to be completed within holding time. Analysis will begin as soon as possible after sample receipt.
- Recovery Data (Spikes & Surrogates) - where chromatographic interference does not allow the determination of Recovery the term "INT" appears against that analyte.
- Polychlorinated Biphenyls are spiked only using Aroclor 1260 in Matrix Spikes and LCS.
- For Matrix Spikes and LCS results a dash " - " in the report means that the specific analyte was not added to the QC sample.
- Duplicate RPDs are calculated from raw analytical data thus it is possible to have two sets of data.

Quality Control Results

Test	Units	Result 1			Acceptance Limits	Pass Limits	Qualifying Code
Method Blank							
Heavy Metals							
Aluminium	mg/L	< 0.05			0.05	Pass	
Aluminium (filtered)	mg/L	< 0.05			0.05	Pass	
Arsenic	mg/L	< 0.001			0.001	Pass	
Arsenic (filtered)	mg/L	< 0.001			0.001	Pass	
Barium	mg/L	< 0.02			0.02	Pass	
Barium (filtered)	mg/L	< 0.02			0.02	Pass	
Beryllium	mg/L	< 0.001			0.001	Pass	
Beryllium (filtered)	mg/L	< 0.001			0.001	Pass	
Chromium	mg/L	< 0.001			0.001	Pass	
Chromium (filtered)	mg/L	< 0.001			0.001	Pass	
Cobalt	mg/L	< 0.001			0.001	Pass	
Cobalt (filtered)	mg/L	< 0.001			0.001	Pass	
Copper	mg/L	< 0.001			0.001	Pass	
Copper (filtered)	mg/L	< 0.001			0.001	Pass	
Iron	mg/L	< 0.05			0.05	Pass	
Iron (filtered)	mg/L	< 0.05			0.05	Pass	
Lead	mg/L	< 0.001			0.001	Pass	
Lead (filtered)	mg/L	< 0.001			0.001	Pass	
Manganese	mg/L	< 0.005			0.005	Pass	
Manganese (filtered)	mg/L	< 0.005			0.005	Pass	
Mercury	mg/L	< 0.0001			0.0001	Pass	
Mercury (filtered)	mg/L	< 0.0001			0.0001	Pass	
Nickel	mg/L	< 0.001			0.001	Pass	
Nickel (filtered)	mg/L	< 0.001			0.001	Pass	
Zinc	mg/L	< 0.005			0.005	Pass	
Zinc (filtered)	mg/L	< 0.005			0.005	Pass	
LCS - % Recovery							
Heavy Metals							
Aluminium	%	95			70-130	Pass	
Aluminium (filtered)	%	103			70-130	Pass	
Arsenic	%	120			70-130	Pass	
Arsenic (filtered)	%	95			70-130	Pass	
Barium	%	101			70-130	Pass	
Barium (filtered)	%	104			70-130	Pass	
Beryllium	%	101			70-130	Pass	
Beryllium (filtered)	%	112			70-130	Pass	
Cadmium	%	99			70-130	Pass	
Cadmium (filtered)	%	99			70-130	Pass	
Chromium	%	98			70-130	Pass	
Chromium (filtered)	%	103			70-130	Pass	
Cobalt	%	94			70-130	Pass	
Cobalt (filtered)	%	103			70-130	Pass	
Copper	%	87			70-130	Pass	
Copper (filtered)	%	105			70-130	Pass	
Iron	%	94			70-130	Pass	
Iron (filtered)	%	107			70-130	Pass	
Lead	%	95			70-130	Pass	
Lead (filtered)	%	103			70-130	Pass	
Manganese	%	96			70-130	Pass	
Manganese (filtered)	%	107			70-130	Pass	

Test			Units	Result 1		Acceptance Limits	Pass Limits	Qualifying Code
Mercury			%	99		70-130	Pass	
Mercury (filtered)			%	105		70-130	Pass	
Nickel			%	90		70-130	Pass	
Nickel (filtered)			%	106		70-130	Pass	
Zinc			%	92		70-130	Pass	
Zinc (filtered)			%	107		70-130	Pass	
Test	Lab Sample ID	QA Source	Units	Result 1		Acceptance Limits	Pass Limits	Qualifying Code
Spike - % Recovery								
Heavy Metals				Result 1				
Aluminium	S20-Ap02122	CP	%	102		70-130	Pass	
Aluminium (filtered)	S20-Ap24358	NCP	%	88		70-130	Pass	
Arsenic	S20-Ap02122	CP	%	120		70-130	Pass	
Arsenic (filtered)	S20-Ap24358	NCP	%	84		70-130	Pass	
Barium	S20-Ap02122	CP	%	108		70-130	Pass	
Barium (filtered)	S20-Ap24358	NCP	%	79		70-130	Pass	
Beryllium	S20-Ap02122	CP	%	108		70-130	Pass	
Cadmium	S20-Ap02122	CP	%	106		70-130	Pass	
Cadmium (filtered)	S20-Ap24358	NCP	%	87		70-130	Pass	
Chromium	S20-Ap02122	CP	%	105		70-130	Pass	
Chromium (filtered)	S20-Ap24358	NCP	%	90		70-130	Pass	
Cobalt	S20-Ap02122	CP	%	101		70-130	Pass	
Cobalt (filtered)	S20-Ap24358	NCP	%	89		70-130	Pass	
Copper	S20-Ap02122	CP	%	95		70-130	Pass	
Copper (filtered)	S20-Ap24358	NCP	%	87		70-130	Pass	
Iron	S20-Ap02122	CP	%	100		70-130	Pass	
Iron (filtered)	S20-Ap24358	NCP	%	86		70-130	Pass	
Lead	S20-Ap02122	CP	%	103		70-130	Pass	
Lead (filtered)	S20-Ap24358	NCP	%	84		70-130	Pass	
Manganese	S20-Ap02122	CP	%	104		70-130	Pass	
Mercury	S20-Ap02122	CP	%	103		70-130	Pass	
Mercury (filtered)	S20-Ap24358	NCP	%	76		70-130	Pass	
Nickel	S20-Ap02122	CP	%	97		70-130	Pass	
Nickel (filtered)	S20-Ap24358	NCP	%	89		70-130	Pass	
Zinc	S20-Ap02122	CP	%	97		70-130	Pass	
Zinc (filtered)	S20-Ap24358	NCP	%	86		70-130	Pass	
Spike - % Recovery								
Heavy Metals				Result 1				
Aluminium	S20-Ap08929	CP	%	103		75-125	Pass	
Arsenic	S20-Ap08929	CP	%	106		75-125	Pass	
Barium	S20-Ap08929	CP	%	99		75-125	Pass	
Beryllium	S20-Ap08929	CP	%	103		75-125	Pass	
Cadmium	S20-Ap08929	CP	%	112		75-125	Pass	
Chromium	S20-Ap08929	CP	%	108		75-125	Pass	
Cobalt	S20-Ap08929	CP	%	110		75-125	Pass	
Copper	S20-Ap08929	CP	%	109		75-125	Pass	
Iron	S20-Ap08929	CP	%	108		75-125	Pass	
Lead	S20-Ap08929	CP	%	107		75-125	Pass	
Manganese	S20-Ap08929	CP	%	106		75-125	Pass	
Mercury	S20-Ap08929	CP	%	105		70-130	Pass	
Nickel	S20-Ap08929	CP	%	110		75-125	Pass	
Zinc	S20-Ap08929	CP	%	102		75-125	Pass	

Test	Lab Sample ID	QA Source	Units	Result 1	Result 2	RPD	Acceptance Limits	Pass Limits	Qualifying Code
Duplicate									
Heavy Metals				Result 1	Result 2	RPD			
Aluminium	S20-Ap02120	CP	mg/L	95	81	16	30%	Pass	
Arsenic	S20-Ap02120	CP	mg/L	0.057	0.047	20	30%	Pass	
Barium	S20-Ap02120	CP	mg/L	0.33	0.30	10	30%	Pass	
Beryllium	S20-Ap02120	CP	mg/L	0.003	0.003	14	30%	Pass	
Cadmium	S20-Ap02120	CP	mg/L	0.0038	0.0064	52	30%	Fail	Q15
Chromium	S20-Ap02120	CP	mg/L	0.29	0.24	18	30%	Pass	
Cobalt	S20-Ap02120	CP	mg/L	0.023	0.034	38	30%	Fail	Q15
Copper	S20-Ap02120	CP	mg/L	2.6	2.1	24	30%	Pass	
Lead	S20-Ap02120	CP	mg/L	1.00	0.79	23	30%	Pass	
Manganese	S20-Ap02120	CP	mg/L	1.0	0.81	21	30%	Pass	
Mercury	S20-Ap02120	CP	mg/L	0.0017	0.0014	18	30%	Pass	
Nickel	S20-Ap02120	CP	mg/L	0.084	0.079	6.0	30%	Pass	
Zinc	S20-Ap02120	CP	mg/L	1.4	1.5	3.0	30%	Pass	
Duplicate									
Heavy Metals				Result 1	Result 2	RPD			
Aluminium (filtered)	S20-Ap24357	NCP	mg/L	0.07	0.07	6.0	30%	Pass	
Arsenic (filtered)	S20-Ap24357	NCP	mg/L	< 0.001	< 0.001	<1	30%	Pass	
Barium (filtered)	S20-Ap24357	NCP	mg/L	0.15	0.14	9.0	30%	Pass	
Cadmium (filtered)	S20-Ap24357	NCP	mg/L	< 0.0002	< 0.0002	<1	30%	Pass	
Chromium (filtered)	S20-Ap24357	NCP	mg/L	0.003	0.003	4.0	30%	Pass	
Cobalt (filtered)	S20-Ap24357	NCP	mg/L	< 0.001	< 0.001	<1	30%	Pass	
Copper (filtered)	S20-Ap24357	NCP	mg/L	0.008	0.008	5.0	30%	Pass	
Iron (filtered)	S20-Ap24357	NCP	mg/L	dil15	dil15	5.0	30%	Pass	
Lead (filtered)	S20-Ap24357	NCP	mg/L	< 0.001	< 0.001	<1	30%	Pass	
Manganese (filtered)	S20-Ap24357	NCP	mg/L	0.19	0.18	4.0	30%	Pass	
Mercury (filtered)	S20-Ap24357	NCP	mg/L	< 0.0001	< 0.0001	<1	30%	Pass	
Nickel (filtered)	S20-Ap24357	NCP	mg/L	0.003	0.003	7.0	30%	Pass	
Zinc (filtered)	S20-Ap24357	NCP	mg/L	0.011	0.009	12	30%	Pass	
Duplicate									
Heavy Metals				Result 1	Result 2	RPD			
Aluminium	S20-Ap08929	CP	mg/L	0.13	0.12	3.0	30%	Pass	
Arsenic	S20-Ap08929	CP	mg/L	< 0.001	< 0.001	<1	30%	Pass	
Barium	S20-Ap08929	CP	mg/L	0.02	0.02	2.0	30%	Pass	
Beryllium	S20-Ap08929	CP	mg/L	< 0.001	< 0.001	<1	30%	Pass	
Cadmium	S20-Ap08929	CP	mg/L	< 0.0002	< 0.0002	<1	30%	Pass	
Chromium	S20-Ap08929	CP	mg/L	0.001	0.001	1.0	30%	Pass	
Cobalt	S20-Ap08929	CP	mg/L	< 0.001	< 0.001	<1	30%	Pass	
Copper	S20-Ap08929	CP	mg/L	0.002	0.002	1.0	30%	Pass	
Iron	S20-Ap08929	CP	mg/L	< 0.05	< 0.05	<1	30%	Pass	
Lead	S20-Ap08929	CP	mg/L	0.005	0.005	3.0	30%	Pass	
Manganese	S20-Ap08929	CP	mg/L	< 0.005	< 0.005	<1	30%	Pass	
Mercury	S20-Ap08929	CP	mg/L	< 0.0001	< 0.0001	<1	30%	Pass	
Nickel	S20-Ap08929	CP	mg/L	< 0.001	< 0.001	<1	30%	Pass	
Zinc	S20-Ap08929	CP	mg/L	0.077	0.078	1.0	30%	Pass	

Comments
Sample Integrity

Custody Seals Intact (if used)	N/A
Attempt to Chill was evident	Yes
Sample correctly preserved	Yes
Appropriate sample containers have been used	Yes
Sample containers for volatile analysis received with minimal headspace	Yes
Samples received within HoldingTime	Yes
Some samples have been subcontracted	No

Qualifier Codes/Comments

Code	Description
Q15	The RPD reported passes Eurofins Environment Testing's QC - Acceptance Criteria as defined in the Internal Quality Control Review and Glossary page of this report.

Authorised By

Andrew Black	Analytical Services Manager
Emily Rosenberg	Senior Analyst-Metal (VIC)
Gabriele Cordero	Senior Analyst-Metal (NSW)


Glenn Jackson
General Manager

Final report - this Report replaces any previously issued Report

- Indicates Not Requested

* Indicates NATA accreditation does not cover the performance of this service

Measurement uncertainty of test data is available on request or please [click here](#).

Eurofins shall not be liable for loss, cost, damages or expenses incurred by the client, or any other person or company, resulting from the use of any information or interpretation given in this report. In no case shall Eurofins be liable for consequential damages including, but not limited to, lost profits, damages for failure to meet deadlines and lost production arising from this report. This document shall not be reproduced except in full and relates only to the items tested. Unless indicated otherwise, the tests were performed on the samples as received.

Ramboll Environ Australia Pty Ltd
 Level 3/100 Pacific Highway
 North Sydney
 NSW 2060



NATA Accredited
Accreditation Number 1261
Site Number 18217

Accredited for compliance with ISO/IEC 17025 – Testing
 The results of the tests, calibrations and/or
 measurements included in this document are traceable
 to Australian/national standards.

Attention: **Joshua Blackwell**

Report **716287-S**
 Project name **ADDITIONAL - 318000780**
 Received Date **Apr 28, 2020**

Client Sample ID			P6_TWS1
Sample Matrix			Sediment
Eurofins Sample No.			S20-Ap42265
Date Sampled			Mar 26, 2020
Test/Reference	LOR	Unit	
Heavy Metals			
Lead	5	mg/kg	96
% Moisture	1	%	82

Sample History

Where samples are submitted/analysed over several days, the last date of extraction and analysis is reported.

A recent review of our LIMS has resulted in the correction or clarification of some method identifications. Due to this, some of the method reference information on reports has changed. However, no substantive change has been made to our laboratory methods, and as such there is no change in the validity of current or previous results.

If the date and time of sampling are not provided, the Laboratory will not be responsible for compromised results should testing be performed outside the recommended holding time.

Description

Heavy Metals

- Method: LTM-MET-3040 Metals in Waters, Soils & Sediments by ICP-MS

% Moisture

- Method: LTM-GEN-7080 Moisture

Testing Site

Sydney

Sydney

Extracted

May 02, 2020

Apr 29, 2020

Holding Time

180 Days

14 Days

Australia

Melbourne
6 Monterey Road
Dandenong South VIC 3175
Phone : +61 3 8564 5000
NATA # 1261
Site # 1254 & 14271

Sydney
Unit F3, Building F
16 Mars Road
Lane Cove West NSW 2066
Phone : +61 2 9900 8400
NATA # 1261 Site # 18217

Brisbane
1/21 Smallwood Place
Murarrie QLD 4172
Phone : +61 7 3902 4600
NATA # 1261 Site # 20794

Perth
2/91 Leach Highway
Kewdale WA 6105
Phone : +61 8 9251 9600
NATA # 1261
Site # 23736

New Zealand

Auckland
35 O'Rorke Road
Penrose, Auckland 1061
Phone : +64 9 526 45 51
IANZ # 1327

Christchurch
43 Detroit Drive
Rolleston, Christchurch 7675
Phone : 0800 856 450
IANZ # 1290

Company Name: Ramboll Australia Pty Ltd
Address: Level 3/100 Pacific Highway
North Sydney
NSW 2060
Project Name: ADDITIONAL - 318000780

Order No.:
Report #: 716287
Phone: 02 9954 8118
Fax: 02 9954 8150

Received: Apr 28, 2020 3:11 PM
Due: May 5, 2020
Priority: 5 Day
Contact Name: Joshua Blackwell

Eurofins Analytical Services Manager : Andrew Black

Sample Detail						Lead	Moisture Set
Melbourne Laboratory - NATA Site # 1254 & 14271							
Sydney Laboratory - NATA Site # 18217						X	X
Brisbane Laboratory - NATA Site # 20794							
Perth Laboratory - NATA Site # 23736							
External Laboratory							
No	Sample ID	Sample Date	Sampling Time	Matrix	LAB ID		
1	P6_TWS1	Mar 26, 2020		Sediment	S20-Ap42265	X	X
Test Counts						1	1

Internal Quality Control Review and Glossary

General

- Laboratory QC results for Method Blanks, Duplicates, Matrix Spikes, and Laboratory Control Samples follows guidelines delineated in the National Environment Protection (Assessment of Site Contamination) Measure 1999, as amended May 2013 and are included in this QC report where applicable. Additional QC data may be available on request.
- All soil/sediment/solid results are reported on a dry basis, unless otherwise stated.
- All biota/food results are reported on a wet weight basis on the edible portion, unless otherwise stated.
- Actual LORs are matrix dependant. Quoted LORs may be raised where sample extracts are diluted due to interferences.
- Results are uncorrected for matrix spikes or surrogate recoveries except for PFAS compounds.
- SVOC analysis on waters are performed on homogenised, unfiltered samples, unless noted otherwise.
- Samples were analysed on an 'as received' basis.
- Information identified on this report with blue colour, indicates data provided by customer, that may have an impact on the results.
- This report replaces any interim results previously issued.

Holding Times

Please refer to 'Sample Preservation and Container Guide' for holding times (QS3001).

For samples received on the last day of holding time, notification of testing requirements should have been received at least 6 hours prior to sample receipt deadlines as stated on the SRA.

If the Laboratory did not receive the information in the required timeframe, and regardless of any other integrity issues, suitably qualified results may still be reported.

Holding times apply from the date of sampling, therefore compliance to these may be outside the laboratory's control.

For VOCs containing vinyl chloride, styrene and 2-chloroethyl vinyl ether the holding time is 7 days however for all other VOCs such as BTEX or C6-10 TRH then the holding time is 14 days.

****NOTE:** pH duplicates are reported as a range NOT as RPD

Units

mg/kg: milligrams per kilogram

mg/L: milligrams per litre

ug/L: micrograms per litre

ppm: Parts per million

ppb: Parts per billion

%: Percentage

org/100mL: Organisms per 100 millilitres

NTU: Nephelometric Turbidity Units

MPN/100mL: Most Probable Number of organisms per 100 millilitres

Terms

Dry	Where a moisture has been determined on a solid sample the result is expressed on a dry basis.
LOR	Limit of Reporting.
SPIKE	Addition of the analyte to the sample and reported as percentage recovery.
RPD	Relative Percent Difference between two Duplicate pieces of analysis.
LCS	Laboratory Control Sample - reported as percent recovery.
CRM	Certified Reference Material - reported as percent recovery.
Method Blank	In the case of solid samples these are performed on laboratory certified clean sands and in the case of water samples these are performed on de-ionised water.
Surr - Surrogate	The addition of a like compound to the analyte target and reported as percentage recovery.
Duplicate	A second piece of analysis from the same sample and reported in the same units as the result to show comparison.
USEPA	United States Environmental Protection Agency
APHA	American Public Health Association
TCLP	Toxicity Characteristic Leaching Procedure
COC	Chain of Custody
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QSM	US Department of Defense Quality Systems Manual Version 5.3
CP	Client Parent - QC was performed on samples pertaining to this report
NCP	Non-Client Parent - QC performed on samples not pertaining to this report, QC is representative of the sequence or batch that client samples were analysed within.
TEQ	Toxic Equivalency Quotient

QC - Acceptance Criteria

RPD Duplicates: Global RPD Duplicates Acceptance Criteria is 30% however the following acceptance guidelines are equally applicable:

Results <10 times the LOR : No Limit

Results between 10-20 times the LOR : RPD must lie between 0-50%

Results >20 times the LOR : RPD must lie between 0-30%

Surrogate Recoveries: Recoveries must lie between 20-130% Phenols & 50-150% PFASs

PFAS field samples that contain surrogate recoveries in excess of the QC limit designated in QSM 5.3 where no positive PFAS results have been reported have been reviewed and no data was affected.

WA DWER (n=10): PFBA, PFPeA, PFHxA, PFHpA, PFOA, PFBS, PFHxS, PFOS, 6:2 FTSA, 8:2 FTSA

QC Data General Comments

- Where a result is reported as a less than (<), higher than the nominated LOR, this is due to either matrix interference, extract dilution required due to interferences or contaminant levels within the sample, high moisture content or insufficient sample provided.
- Duplicate data shown within this report that states the word "BATCH" is a Batch Duplicate from outside of your sample batch, but within the laboratory sample batch at a 1:10 ratio. The Parent and Duplicate data shown is not data from your samples.
- Organochlorine Pesticide analysis - where reporting LCS data, Toxaphene & Chlordane are not added to the LCS.
- Organochlorine Pesticide analysis - where reporting Spike data, Toxaphene is not added to the Spike.
- Total Recoverable Hydrocarbons - where reporting Spike & LCS data, a single spike of commercial Hydrocarbon products in the range of C12-C30 is added and it's Total Recovery is reported in the C10-C14 cell of the Report.
- pH and Free Chlorine analysed in the laboratory - Analysis on this test must begin within 30 minutes of sampling. Therefore laboratory analysis is unlikely to be completed within holding time. Analysis will begin as soon as possible after sample receipt.
- Recovery Data (Spikes & Surrogates) - where chromatographic interference does not allow the determination of Recovery the term "INT" appears against that analyte.
- Polychlorinated Biphenyls are spiked only using Aroclor 1260 in Matrix Spikes and LCS.
- For Matrix Spikes and LCS results a dash " - " in the report means that the specific analyte was not added to the QC sample.
- Duplicate RPDs are calculated from raw analytical data thus it is possible to have two sets of data.

Quality Control Results

Test				Units	Result 1		Acceptance Limits	Pass Limits	Qualifying Code		
Method Blank											
Heavy Metals											
Lead				mg/kg	< 5		5	Pass			
LCS - % Recovery											
Heavy Metals											
Lead				%	93		70-130	Pass			
Test	Lab Sample ID	QA Source	Units	Result 1			Acceptance Limits	Pass Limits	Qualifying Code		
Spike - % Recovery											
Heavy Metals											
Lead				S20-Ap44661	NCP	%	91	70-130	Pass		
Duplicate											
Heavy Metals											
Lead				S20-Ap42265	CP	mg/kg	96	92	5.0	30%	Pass
Duplicate											
% Moisture				S20-Ap42500	NCP	%	4.8	4.7	2.0	30%	Pass

Comments**Sample Integrity**

Custody Seals Intact (if used)	N/A
Attempt to Chill was evident	Yes
Sample correctly preserved	Yes
Appropriate sample containers have been used	Yes
Sample containers for volatile analysis received with minimal headspace	Yes
Samples received within HoldingTime	Yes
Some samples have been subcontracted	No

Authorised By

Andrew Black Analytical Services Manager
Gabriele Cordero Senior Analyst-Metal (NSW)

**Glenn Jackson
General Manager**

Final report - this Report replaces any previously issued Report

- Indicates Not Requested

* Indicates NATA accreditation does not cover the performance of this service

Measurement uncertainty of test data is available on request or please [click here](#).

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Country Women's Association
Braidwood Road
Tarago NSW 2580

Delivered: by email

Country Women's Association, Tarago NSW Lead Investigation Report

Date 28/05/2020

This report presents the findings of an investigation of lead at your property undertaken as part of the investigation of lead impacts in the Tarago Community.

Investigation at your property comprised collection of samples as shown **Table 1** and the attached figure. Samples were collected on 25 and 26 March 2020.

Table 1 Samples Collected

Type	Number of samples collected
Soil	4
Groundwater from onsite bore	n/a – no bore present on site.
Rainwater tank water	1
Rainwater tank sediment	n/a – sediment was not observed in the tank.
Dust (from inside property)	Due to precautions taken for Covid-19, internal dust sampling was not undertaken at this time.
Paint	1

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Level 2, Suite 18 Eastpoint
50 Glebe Road
PO Box 435
The Junction
NSW 2291
Australia

T +61 2 4962 5444
<https://ramboll.com>

Samples were sent to an independent certified laboratory for analysis.

Results

Sample results were compared against guidelines relevant for a commercial/industrial property. Results are tabulated in **Table 2**. Concentrations shown in BOLD are above the relevant guideline.

Table 2 Summary lead concentrations relevant to health investigation levels

Type	Guideline	Result			
Soil	1,500 (mg/kg) ¹	P8_HA01_ 0.0 49	P8_HA01_ 0.3 16	P8_HA02_ 0.0 290	P8_HA02_ 0.3 51
Rainwater tank water	0.01 (mg/L) ²	P8_TW1 <0.001			
Paint	0.1% ³	P8_PAINT 4.4			

¹NEPM (2013) Schedule B1: Guideline on investigation levels for soil and groundwater. National Environment Protection (Assessment of Site Contamination) Measure 1999. Federal Register of Legislative Instruments F2013C00288 (HIL D Commercial/industrial includes premises such as shops, offices, factories and industrial sites.

²Australian Drinking Water Guidelines (ADWG) Paper 6 National Water Quality Management Strategy. National Health and Medical Research Council, National Resource Management Ministerial Council, Commonwealth of Australia, Canberra. Groundwater samples filtered as per AS/NZS 5667.11.

³Australian Government Department of the Environment, Lead Alert: the six-step guide to painting your home, 5th Ed. 2016

Based on the results presented in **Table 2** lead concentrations in all reported soil and tank water samples fall below adopted guidelines. This means that risks to human health from lead in soil and lead in tank water are low and acceptable. Assessment of one paint sample identified lead above the adopted guideline. Paint should be managed in accordance with *Australian Standard AS 4361.2-1998 Guide to lead paint management - Residential and commercial buildings*.

For further information please contact the undersigned.

Yours sincerely



Stephen Maxwell

Tarago Lead Investigation Project Manager

D+61 (2) 4962 5444
M+61 478 658 194
smaxwell@ramboll.com



Fiona Robinson

Principal Contaminated Land Specialist

D+61 (2) 4962 5444
+61 421 311 066
frobinson@ramboll.com

Attachments

Figure of sampling locations

Reference

Laboratory report 710520 and 712349

Limitations

Ramboll Australia Pty Ltd prepared this report in accordance with the scope of work as outlined in our proposal to John Holland Rail and in accordance with our understanding and interpretation of current regulatory standards. A representative program of sampling and laboratory analyses was undertaken as part of this investigation. While every care has been taken, concentrations of contaminants measured may not be representative of conditions between the locations sampled and investigated. We cannot therefore preclude the presence of materials that may be hazardous. Site conditions may change over time. This report is based on conditions encountered at the Site at the time of the report and Ramboll disclaims responsibility for any changes that may have occurred after this time. The conclusions presented in this report represent Ramboll's professional judgment based on information made available during the course of this assignment and are true and correct to the best of Ramboll's knowledge as at the date of the assessment. Ramboll did not independently verify all of the written or oral information provided to Ramboll during the course of this investigation. While Ramboll has no reason to doubt the accuracy of the information provided to it, the report is complete and

accurate only to the extent that the information provided to Ramboll was itself complete and accurate. This report does not purport to give legal advice. This advice can only be given by qualified legal advisors.



RAMBOLL AUSTRALIA - GIS MAP file : 3180007390_GIS_P010_RequestedSamples | F008_P08_V02 | 5/05/2020

Imagery © Department Finance, Services and Innovation 2020

Legend

- Property boundary
- ⊗ Hand auger sample
- ⬠ Paint sample
- ⊕ Tank sample

Lead exceedance criteria

Paint
>0.1%

Note: The CWA site occupies the southern part of Lot 1 DP371482.
 Tarago Preschool occupies the northern part of Lot 1 DP371482 and is the subject of a separate assessment.



Ramboll Environ Australia Pty Ltd
Level 3/100 Pacific Highway
North Sydney
NSW 2060



NATA Accredited
Accreditation Number 1261
Site Number 18217

Accredited for compliance with ISO/IEC 17025 – Testing
 The results of the tests, calibrations and/or
 measurements included in this document are traceable
 to Australian/national standards.

Attention: **Stephen Maxwell**

Report **710520-S**
 Project name
 Project ID **318000780**
 Received Date **Mar 27, 2020**

Client Sample ID			P8_PAINT
Sample Matrix			Paint
Eurofins Sample No.			S20-Ma43286
Date Sampled			Mar 26, 2020
Test/Reference	LOR	Unit	
Lead (% w/w)	0.01	%	4.4

Sample History

Where samples are submitted/analysed over several days, the last date of extraction and analysis is reported.

A recent review of our LIMS has resulted in the correction or clarification of some method identifications. Due to this, some of the method reference information on reports has changed. However, no substantive change has been made to our laboratory methods, and as such there is no change in the validity of current or previous results.

If the date and time of sampling are not provided, the Laboratory will not be responsible for compromised results should testing be performed outside the recommended holding time.

Description

Lead (% w/w)

Testing Site

Sydney

Extracted

Apr 03, 2020

Holding Time

6 Month

- Method: E022.5 - ACID EXTRACTABLE METALS IN PAINT IN LIQUID AND POWDERED FORM BY ICP-MS ANALYSIS

Australia

Melbourne
6 Monterey Road
Dandenong South VIC 3175
Phone : +61 3 8564 5000
NATA # 1261
Site # 1254 & 14271

Sydney
Unit F3, Building F
16 Mars Road
Lane Cove West NSW 2066
Phone : +61 2 9900 8400
NATA # 1261 Site # 18217

Brisbane
1/21 Smallwood Place
Murarrie QLD 4172
Phone : +61 7 3902 4600
NATA # 1261 Site # 20794

Perth
2/91 Leach Highway
Kewdale WA 6105
Phone : +61 8 9251 9600
NATA # 1261
Site # 23736

New Zealand

Auckland
35 O'Rorke Road
Penrose, Auckland 1061
Phone : +64 9 526 45 51
IANZ # 1327

Christchurch
43 Detroit Drive
Rolleston, Christchurch 7675
Phone : 0800 856 450
IANZ # 1290

Company Name:	Ramboll Australia Pty Ltd	Order No.:		Received:	Mar 27, 2020 2:58 PM
Address:	Level 3/100 Pacific Highway North Sydney NSW 2060	Report #:	710520	Due:	Apr 3, 2020
Project Name:		Phone:	02 9954 8118	Priority:	5 Day
Project ID:	318000780	Fax:	02 9954 8150	Contact Name:	Stephen Maxwell
Eurofins Analytical Services Manager : Andrew Black					

Sample Detail						Lead (% w/w)	NEPM 2013 Filtered Metals without Cr6+ (As, Be, B, Cd, Co, Cr, Cu, Hg, Pb, Ni, Mn, NEPM 2013 Metals without Cr6+ (As, Be, B, Cd, Co, Cr, Cu, Hg, Pb, Ni, Mn, Se, Zn))	
Melbourne Laboratory - NATA Site # 1254 & 14271								
Sydney Laboratory - NATA Site # 18217						X	X	X
Brisbane Laboratory - NATA Site # 20794								
Perth Laboratory - NATA Site # 23736								
External Laboratory								
No	Sample ID	Sample Date	Sampling Time	Matrix	LAB ID			
1	P8_TW1	Mar 26, 2020		Water	S20-Ma43285		X	X
2	P8_PAINT	Mar 26, 2020		Paint	S20-Ma43286	X		
Test Counts						1	1	1

Internal Quality Control Review and Glossary
General

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- All soil/sediment/solid results are reported on a dry basis, unless otherwise stated.
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- Actual LORs are matrix dependant. Quoted LORs may be raised where sample extracts are diluted due to interferences.
- Results are uncorrected for matrix spikes or surrogate recoveries except for PFAS compounds.
- SVOC analysis on waters are performed on homogenised, unfiltered samples, unless noted otherwise.
- Samples were analysed on an 'as received' basis.
- Information identified on this report with blue colour, indicates data provided by customer, that may have an impact on the results.
- This report replaces any interim results previously issued.

Holding Times

Please refer to 'Sample Preservation and Container Guide' for holding times (QS3001).

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For VOCs containing vinyl chloride, styrene and 2-chloroethyl vinyl ether the holding time is 7 days however for all other VOCs such as BTEX or C6-10 TRH then the holding time is 14 days.

****NOTE:** pH duplicates are reported as a range NOT as RPD

Units

mg/kg: milligrams per kilogram

mg/L: milligrams per litre

ug/L: micrograms per litre

ppm: Parts per million

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MPN/100mL: Most Probable Number of organisms per 100 millilitres

Terms

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LOR	Limit of Reporting.
SPIKE	Addition of the analyte to the sample and reported as percentage recovery.
RPD	Relative Percent Difference between two Duplicate pieces of analysis.
LCS	Laboratory Control Sample - reported as percent recovery.
CRM	Certified Reference Material - reported as percent recovery.
Method Blank	In the case of solid samples these are performed on laboratory certified clean sands and in the case of water samples these are performed on de-ionised water.
Surr - Surrogate	The addition of a like compound to the analyte target and reported as percentage recovery.
Duplicate	A second piece of analysis from the same sample and reported in the same units as the result to show comparison.
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CP	Client Parent - QC was performed on samples pertaining to this report
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TEQ	Toxic Equivalency Quotient

QC - Acceptance Criteria

RPD Duplicates: Global RPD Duplicates Acceptance Criteria is 30% however the following acceptance guidelines are equally applicable:

Results <10 times the LOR : No Limit

Results between 10-20 times the LOR : RPD must lie between 0-50%

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Surrogate Recoveries: Recoveries must lie between 20-130% Phenols & 50-150% PFASs

PFAS field samples that contain surrogate recoveries in excess of the QC limit designated in QSM 5.3 where no positive PFAS results have been reported have been reviewed and no data was affected.

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QC Data General Comments

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- Duplicate data shown within this report that states the word "BATCH" is a Batch Duplicate from outside of your sample batch, but within the laboratory sample batch at a 1:10 ratio. The Parent and Duplicate data shown is not data from your samples.
- Organochlorine Pesticide analysis - where reporting LCS data, Toxaphene & Chlordane are not added to the LCS.
- Organochlorine Pesticide analysis - where reporting Spike data, Toxaphene is not added to the Spike.
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- pH and Free Chlorine analysed in the laboratory - Analysis on this test must begin within 30 minutes of sampling. Therefore laboratory analysis is unlikely to be completed within holding time. Analysis will begin as soon as possible after sample receipt.
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- For Matrix Spikes and LCS results a dash " - " in the report means that the specific analyte was not added to the QC sample.
- Duplicate RPDs are calculated from raw analytical data thus it is possible to have two sets of data.

Quality Control Results

Comments**Sample Integrity**

Custody Seals Intact (if used)	N/A
Attempt to Chill was evident	Yes
Sample correctly preserved	Yes
Appropriate sample containers have been used	Yes
Sample containers for volatile analysis received with minimal headspace	Yes
Samples received within HoldingTime	Yes
Some samples have been subcontracted	No

Authorised By

Andrew Black Analytical Services Manager
Gabriele Cordero Senior Analyst-Metal (NSW)

**Glenn Jackson
General Manager**

Final report - this Report replaces any previously issued Report

- Indicates Not Requested

* Indicates NATA accreditation does not cover the performance of this service

Measurement uncertainty of test data is available on request or please [click here](#).

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Ramboll Environ Australia Pty Ltd
 Level 3/100 Pacific Highway
 North Sydney
 NSW 2060



NATA Accredited
 Accreditation Number 1261
 Site Number 18217

Accredited for compliance with ISO/IEC 17025 – Testing
 The results of the tests, calibrations and/or
 measurements included in this document are traceable
 to Australian/national standards.

Attention: Stephen Maxwell

Report 710520-W
 Project name
 Project ID 318000780
 Received Date Mar 27, 2020

Client Sample ID			P8_TW1
Sample Matrix			Water
Eurofins Sample No.			S20-Ma43285
Date Sampled			Mar 26, 2020
Test/Reference	LOR	Unit	
Heavy Metals			
Arsenic	0.001	mg/L	< 0.001
Arsenic (filtered)	0.001	mg/L	< 0.001
Beryllium	0.001	mg/L	< 0.001
Beryllium (filtered)	0.001	mg/L	< 0.001
Boron	0.05	mg/L	< 0.05
Boron (filtered)	0.05	mg/L	< 0.05
Cadmium	0.0002	mg/L	0.0004
Cadmium (filtered)	0.0002	mg/L	0.0003
Chromium	0.001	mg/L	< 0.001
Chromium (filtered)	0.001	mg/L	< 0.001
Cobalt	0.001	mg/L	0.002
Cobalt (filtered)	0.001	mg/L	0.001
Copper	0.001	mg/L	< 0.001
Copper (filtered)	0.001	mg/L	< 0.001
Lead	0.001	mg/L	< 0.001
Lead (filtered)	0.001	mg/L	< 0.001
Manganese	0.005	mg/L	0.016
Manganese (filtered)	0.005	mg/L	0.014
Mercury	0.0001	mg/L	< 0.0001
Mercury (filtered)	0.0001	mg/L	< 0.0001
Nickel	0.001	mg/L	< 0.001
Nickel (filtered)	0.001	mg/L	< 0.001
Selenium	0.001	mg/L	< 0.001
Selenium (filtered)	0.001	mg/L	< 0.001
Zinc	0.005	mg/L	7.9
Zinc (filtered)	0.005	mg/L	7.1

Sample History

Where samples are submitted/analysed over several days, the last date of extraction and analysis is reported.

A recent review of our LIMS has resulted in the correction or clarification of some method identifications. Due to this, some of the method reference information on reports has changed. However, no substantive change has been made to our laboratory methods, and as such there is no change in the validity of current or previous results.

If the date and time of sampling are not provided, the Laboratory will not be responsible for compromised results should testing be performed outside the recommended holding time.

Description

NEPM 2013 Metals without Cr6+ (As, Be, B, Cd, Co, Cr, Cu, Hg, Pb, Ni, Mn, Se, Zn)

- Method: LTM-MET-3040 Metals in Waters, Soils & Sediments by ICP-MS

NEPM 2013 Filtered Metals without Cr6+ (As, Be, B, Cd, Co, Cr, Cu, Hg, Pb, Ni, Mn, Se, Zn)

- Method: LTM-MET-3040 Metals in Waters, Soils & Sediments by ICP-MS

Testing Site	Extracted	Holding Time
Sydney	Apr 03, 2020	180 Days
Sydney	Mar 27, 2020	28 Days

Australia

Melbourne
6 Monterey Road
Dandenong South VIC 3175
Phone : +61 3 8564 5000
NATA # 1261
Site # 1254 & 14271

Sydney
Unit F3, Building F
16 Mars Road
Lane Cove West NSW 2066
Phone : +61 2 9900 8400
NATA # 1261 Site # 18217

Brisbane
1/21 Smallwood Place
Murarrie QLD 4172
Phone : +61 7 3902 4600
NATA # 1261 Site # 20794

Perth
2/91 Leach Highway
Kewdale WA 6105
Phone : +61 8 9251 9600
NATA # 1261
Site # 23736

New Zealand

Auckland
35 O'Rorke Road
Penrose, Auckland 1061
Phone : +64 9 526 45 51
IANZ # 1327

Christchurch
43 Detroit Drive
Rolleston, Christchurch 7675
Phone : 0800 856 450
IANZ # 1290

Company Name: Ramboll Australia Pty Ltd
Address: Level 3/100 Pacific Highway
North Sydney
NSW 2060

Project Name:
Project ID: 318000780

Order No.:
Report #: 710520
Phone: 02 9954 8118
Fax: 02 9954 8150

Received: Mar 27, 2020 2:58 PM
Due: Apr 3, 2020
Priority: 5 Day
Contact Name: Stephen Maxwell

Eurofins Analytical Services Manager : Andrew Black

Sample Detail						Lead (% w/w)	NEPM 2013 Filtered Metals without Cr6+ (As, Be, B, Cd, Co, Cr, Cu, Hg, Pb, Ni, Mn, NEPM 2013 Metals without Cr6+ (As, Be, B, Cd, Co, Cr, Cu, Hg, Pb, Ni, Mn, Se, Zn))		
Melbourne Laboratory - NATA Site # 1254 & 14271									
Sydney Laboratory - NATA Site # 18217						X	X	X	
Brisbane Laboratory - NATA Site # 20794									
Perth Laboratory - NATA Site # 23736									
External Laboratory									
No	Sample ID	Sample Date	Sampling Time	Matrix	LAB ID				
1	P8_TW1	Mar 26, 2020		Water	S20-Ma43285		X	X	
2	P8_PAINT	Mar 26, 2020		Paint	S20-Ma43286	X			
Test Counts						1	1	1	

Internal Quality Control Review and Glossary

General

1. Laboratory QC results for Method Blanks, Duplicates, Matrix Spikes, and Laboratory Control Samples follows guidelines delineated in the National Environment Protection (Assessment of Site Contamination) Measure 1999, as amended May 2013 and are included in this QC report where applicable. Additional QC data may be available on request.
2. All soil/sediment/solid results are reported on a dry basis, unless otherwise stated.
3. All biota/food results are reported on a wet weight basis on the edible portion, unless otherwise stated.
4. Actual LORs are matrix dependant. Quoted LORs may be raised where sample extracts are diluted due to interferences.
5. Results are uncorrected for matrix spikes or surrogate recoveries except for PFAS compounds.
6. SVOC analysis on waters are performed on homogenised, unfiltered samples, unless noted otherwise.
7. Samples were analysed on an 'as received' basis.
8. Information identified on this report with blue colour, indicates data provided by customer, that may have an impact on the results.
9. This report replaces any interim results previously issued.

Holding Times

Please refer to 'Sample Preservation and Container Guide' for holding times (QS3001).

For samples received on the last day of holding time, notification of testing requirements should have been received at least 6 hours prior to sample receipt deadlines as stated on the SRA.

If the Laboratory did not receive the information in the required timeframe, and regardless of any other integrity issues, suitably qualified results may still be reported.

Holding times apply from the date of sampling, therefore compliance to these may be outside the laboratory's control.

For VOCs containing vinyl chloride, styrene and 2-chloroethyl vinyl ether the holding time is 7 days however for all other VOCs such as BTEX or C6-10 TRH then the holding time is 14 days.

****NOTE:** pH duplicates are reported as a range NOT as RPD

Units

mg/kg: milligrams per kilogram

mg/L: milligrams per litre

ug/L: micrograms per litre

ppm: Parts per million

ppb: Parts per billion

%: Percentage

org/100mL: Organisms per 100 millilitres

NTU: Nephelometric Turbidity Units

MPN/100mL: Most Probable Number of organisms per 100 millilitres

Terms

Dry	Where a moisture has been determined on a solid sample the result is expressed on a dry basis.
LOR	Limit of Reporting.
SPIKE	Addition of the analyte to the sample and reported as percentage recovery.
RPD	Relative Percent Difference between two Duplicate pieces of analysis.
LCS	Laboratory Control Sample - reported as percent recovery.
CRM	Certified Reference Material - reported as percent recovery.
Method Blank	In the case of solid samples these are performed on laboratory certified clean sands and in the case of water samples these are performed on de-ionised water.
Surr - Surrogate	The addition of a like compound to the analyte target and reported as percentage recovery.
Duplicate	A second piece of analysis from the same sample and reported in the same units as the result to show comparison.
USEPA	United States Environmental Protection Agency
APHA	American Public Health Association
TCLP	Toxicity Characteristic Leaching Procedure
COC	Chain of Custody
SRA	Sample Receipt Advice
QSM	US Department of Defense Quality Systems Manual Version 5.3
CP	Client Parent - QC was performed on samples pertaining to this report
NCP	Non-Client Parent - QC performed on samples not pertaining to this report, QC is representative of the sequence or batch that client samples were analysed within.
TEQ	Toxic Equivalency Quotient

QC - Acceptance Criteria

RPD Duplicates: Global RPD Duplicates Acceptance Criteria is 30% however the following acceptance guidelines are equally applicable:

Results <10 times the LOR : No Limit

Results between 10-20 times the LOR : RPD must lie between 0-50%

Results >20 times the LOR : RPD must lie between 0-30%

Surrogate Recoveries: Recoveries must lie between 20-130% Phenols & 50-150% PFASs

PFAS field samples that contain surrogate recoveries in excess of the QC limit designated in QSM 5.3 where no positive PFAS results have been reported have been reviewed and no data was affected.

WA DWER (n=10): PFBA, PFPeA, PFHxA, PFHpA, PFOA, PFBS, PFHxS, PFOS, 6:2 FTSA, 8:2 FTSA

QC Data General Comments

1. Where a result is reported as a less than (<), higher than the nominated LOR, this is due to either matrix interference, extract dilution required due to interferences or contaminant levels within the sample, high moisture content or insufficient sample provided.
2. Duplicate data shown within this report that states the word "BATCH" is a Batch Duplicate from outside of your sample batch, but within the laboratory sample batch at a 1:10 ratio. The Parent and Duplicate data shown is not data from your samples.
3. Organochlorine Pesticide analysis - where reporting LCS data, Toxaphene & Chlordane are not added to the LCS.
4. Organochlorine Pesticide analysis - where reporting Spike data, Toxaphene is not added to the Spike.
5. Total Recoverable Hydrocarbons - where reporting Spike & LCS data, a single spike of commercial Hydrocarbon products in the range of C12-C30 is added and it's Total Recovery is reported in the C10-C14 cell of the Report.
6. pH and Free Chlorine analysed in the laboratory - Analysis on this test must begin within 30 minutes of sampling. Therefore laboratory analysis is unlikely to be completed within holding time. Analysis will begin as soon as possible after sample receipt.
7. Recovery Data (Spikes & Surrogates) - where chromatographic interference does not allow the determination of Recovery the term "INT" appears against that analyte.
8. Polychlorinated Biphenyls are spiked only using Aroclor 1260 in Matrix Spikes and LCS.
9. For Matrix Spikes and LCS results a dash " - " in the report means that the specific analyte was not added to the QC sample.
10. Duplicate RPDs are calculated from raw analytical data thus it is possible to have two sets of data.

Quality Control Results

Test	Units	Result 1			Acceptance Limits	Pass Limits	Qualifying Code
Method Blank							
Heavy Metals							
Arsenic	mg/L	< 0.001			0.001	Pass	
Arsenic (filtered)	mg/L	< 0.001			0.001	Pass	
Beryllium	mg/L	< 0.001			0.001	Pass	
Beryllium (filtered)	mg/L	< 0.001			0.001	Pass	
Boron	mg/L	< 0.05			0.05	Pass	
Boron (filtered)	mg/L	< 0.05			0.05	Pass	
Cadmium	mg/L	< 0.0002			0.0002	Pass	
Cadmium (filtered)	mg/L	< 0.0002			0.0002	Pass	
Chromium	mg/L	< 0.001			0.001	Pass	
Chromium (filtered)	mg/L	< 0.001			0.001	Pass	
Cobalt	mg/L	< 0.001			0.001	Pass	
Cobalt (filtered)	mg/L	< 0.001			0.001	Pass	
Copper	mg/L	< 0.001			0.001	Pass	
Copper (filtered)	mg/L	< 0.001			0.001	Pass	
Lead	mg/L	< 0.001			0.001	Pass	
Lead (filtered)	mg/L	< 0.001			0.001	Pass	
Manganese	mg/L	< 0.005			0.005	Pass	
Manganese (filtered)	mg/L	< 0.005			0.005	Pass	
Mercury	mg/L	< 0.0001			0.0001	Pass	
Mercury (filtered)	mg/L	< 0.0001			0.0001	Pass	
Nickel	mg/L	< 0.001			0.001	Pass	
Nickel (filtered)	mg/L	< 0.001			0.001	Pass	
Selenium	mg/L	< 0.001			0.001	Pass	
Selenium (filtered)	mg/L	< 0.001			0.001	Pass	
Zinc	mg/L	< 0.005			0.005	Pass	
Zinc (filtered)	mg/L	< 0.005			0.005	Pass	
LCS - % Recovery							
Heavy Metals							
Arsenic	%	103			70-130	Pass	
Arsenic (filtered)	%	87			70-130	Pass	
Beryllium	%	101			70-130	Pass	
Beryllium (filtered)	%	85			70-130	Pass	
Boron	%	100			70-130	Pass	
Boron (filtered)	%	83			70-130	Pass	
Cadmium	%	101			70-130	Pass	
Cadmium (filtered)	%	84			70-130	Pass	
Chromium	%	99			70-130	Pass	
Chromium (filtered)	%	85			70-130	Pass	
Cobalt	%	99			70-130	Pass	
Cobalt (filtered)	%	85			70-130	Pass	
Copper	%	96			70-130	Pass	
Copper (filtered)	%	84			70-130	Pass	
Lead	%	103			70-130	Pass	
Lead (filtered)	%	86			70-130	Pass	
Manganese	%	99			70-130	Pass	
Manganese (filtered)	%	84			70-130	Pass	
Mercury	%	112			70-130	Pass	
Mercury (filtered)	%	80			70-130	Pass	
Nickel	%	98			70-130	Pass	
Nickel (filtered)	%	86			70-130	Pass	

Test			Units	Result 1			Acceptance Limits	Pass Limits	Qualifying Code
Selenium			%	103			70-130	Pass	
Selenium (filtered)			%	84			70-130	Pass	
Zinc			%	100			70-130	Pass	
Zinc (filtered)			%	85			70-130	Pass	
Test	Lab Sample ID	QA Source	Units	Result 1			Acceptance Limits	Pass Limits	Qualifying Code
Spike - % Recovery									
Heavy Metals				Result 1					
Arsenic	S20-Ma45004	NCP	%	103			70-130	Pass	
Arsenic (filtered)	S20-Ma44415	NCP	%	96			70-130	Pass	
Beryllium	S20-Ma45004	NCP	%	100			70-130	Pass	
Beryllium (filtered)	S20-Ma44415	NCP	%	93			70-130	Pass	
Boron	S20-Ma45004	NCP	%	93			70-130	Pass	
Cadmium	S20-Ma45004	NCP	%	99			70-130	Pass	
Cadmium (filtered)	S20-Ma44415	NCP	%	102			70-130	Pass	
Chromium	S20-Ma45004	NCP	%	96			70-130	Pass	
Chromium (filtered)	S20-Ma44415	NCP	%	93			70-130	Pass	
Cobalt	S20-Ma45004	NCP	%	97			70-130	Pass	
Cobalt (filtered)	S20-Ma44415	NCP	%	97			70-130	Pass	
Copper	S20-Ma45004	NCP	%	93			70-130	Pass	
Copper (filtered)	S20-Ma44415	NCP	%	94			70-130	Pass	
Lead	S20-Ma45004	NCP	%	103			70-130	Pass	
Lead (filtered)	S20-Ma44415	NCP	%	97			70-130	Pass	
Manganese	S20-Ma45004	NCP	%	97			70-130	Pass	
Manganese (filtered)	S20-Ma44415	NCP	%	97			70-130	Pass	
Mercury	S20-Ma45004	NCP	%	107			70-130	Pass	
Mercury (filtered)	S20-Ma44415	NCP	%	95			70-130	Pass	
Nickel	S20-Ma45004	NCP	%	97			70-130	Pass	
Nickel (filtered)	S20-Ma44415	NCP	%	95			70-130	Pass	
Selenium	S20-Ma45004	NCP	%	98			70-130	Pass	
Selenium (filtered)	S20-Ma44415	NCP	%	100			70-130	Pass	
Zinc	S20-Ma45004	NCP	%	95			70-130	Pass	
Zinc (filtered)	S20-Ma44415	NCP	%	84			70-130	Pass	
Test	Lab Sample ID	QA Source	Units	Result 1			Acceptance Limits	Pass Limits	Qualifying Code
Duplicate									
Heavy Metals				Result 1	Result 2	RPD			
Arsenic	S20-Ma43285	CP	mg/L	< 0.001	< 0.001	<1	30%	Pass	
Arsenic (filtered)	S20-Ma39694	NCP	mg/L	0.001	0.002	28	30%	Pass	
Beryllium	S20-Ma43285	CP	mg/L	< 0.001	< 0.001	<1	30%	Pass	
Beryllium (filtered)	S20-Ma39694	NCP	mg/L	< 0.001	< 0.001	<1	30%	Pass	
Boron	S20-Ma43285	CP	mg/L	< 0.05	< 0.05	<1	30%	Pass	
Boron (filtered)	S20-Ma39694	NCP	mg/L	0.49	0.09	140	30%	Fail	Q15
Cadmium	S20-Ma43285	CP	mg/L	0.0004	0.0004	3.0	30%	Pass	
Cadmium (filtered)	S20-Ma39694	NCP	mg/L	< 0.0002	< 0.0002	<1	30%	Pass	
Chromium	S20-Ma43285	CP	mg/L	< 0.001	< 0.001	<1	30%	Pass	
Chromium (filtered)	S20-Ma39694	NCP	mg/L	< 0.001	< 0.001	<1	30%	Pass	
Cobalt	S20-Ma43285	CP	mg/L	0.002	0.001	3.0	30%	Pass	
Cobalt (filtered)	S20-Ma39694	NCP	mg/L	0.019	0.008	83	30%	Fail	Q15
Copper	S20-Ma43285	CP	mg/L	< 0.001	< 0.001	<1	30%	Pass	
Copper (filtered)	S20-Ma39694	NCP	mg/L	0.009	0.017	63	30%	Fail	Q15
Lead	S20-Ma43285	CP	mg/L	< 0.001	< 0.001	<1	30%	Pass	
Lead (filtered)	S20-Ma39694	NCP	mg/L	< 0.001	< 0.001	<1	30%	Pass	
Manganese	S20-Ma43285	CP	mg/L	0.016	0.016	1.0	30%	Pass	
Manganese (filtered)	S20-Ma39694	NCP	mg/L	0.46	0.70	41	30%	Fail	Q02

Test	Lab Sample ID	QA Source	Units	Result 1			Acceptance Limits	Pass Limits	Qualifying Code
Duplicate									
Heavy Metals				Result 1	Result 2	RPD			
Mercury	S20-Ma43285	CP	mg/L	< 0.0001	< 0.0001	<1	30%	Pass	
Mercury (filtered)	S20-Ma39694	NCP	mg/L	< 0.0001	< 0.0001	<1	30%	Pass	
Nickel	S20-Ma43285	CP	mg/L	< 0.001	< 0.001	<1	30%	Pass	
Nickel (filtered)	S20-Ma39694	NCP	mg/L	0.006	0.010	51	30%	Fail	Q15
Selenium	S20-Ma43285	CP	mg/L	< 0.001	< 0.001	<1	30%	Pass	
Selenium (filtered)	S20-Ma39694	NCP	mg/L	< 0.001	< 0.001	<1	30%	Pass	
Zinc	S20-Ma43285	CP	mg/L	7.9	7.8	2.0	30%	Pass	
Zinc (filtered)	S20-Ma39694	NCP	mg/L	0.027	0.033	18	30%	Pass	

Comments
Sample Integrity

Custody Seals Intact (if used)	N/A
Attempt to Chill was evident	Yes
Sample correctly preserved	Yes
Appropriate sample containers have been used	Yes
Sample containers for volatile analysis received with minimal headspace	Yes
Samples received within HoldingTime	Yes
Some samples have been subcontracted	No

Qualifier Codes/Comments

Code	Description
Q02	The duplicate %RPD is outside the recommended acceptance criteria. Further analysis indicates sample heterogeneity as the cause
Q15	The RPD reported passes Eurofins Environment Testing's QC - Acceptance Criteria as defined in the Internal Quality Control Review and Glossary page of this report.

Authorised By

Andrew Black	Analytical Services Manager
Gabriele Cordero	Senior Analyst-Metal (NSW)


**Glenn Jackson
General Manager**

Final report - this Report replaces any previously issued Report

- Indicates Not Requested

* Indicates NATA accreditation does not cover the performance of this service

Measurement uncertainty of test data is available on request or please [click here](#).

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Ramboll Environ Australia Pty Ltd
 Level 3/100 Pacific Highway
 North Sydney
 NSW 2060



NATA Accredited
Accreditation Number 1261
Site Number 1254

Accredited for compliance with ISO/IEC 17025 – Testing
 The results of the tests, calibrations and/or
 measurements included in this document are traceable
 to Australian/national standards.

Attention: **Stephen Maxwell**

Report **712349-S**
 Project name
 Project ID **318000780**
 Received Date **Apr 07, 2020**

Client Sample ID			P8_HA1_0.0	P8_HA1_0.3	P8_HA2_0.0	P8_HA2_0.3
Sample Matrix			Soil	Soil	Soil	Soil
Eurofins Sample No.			M20-Ap08925	M20-Ap08926	M20-Ap08927	M20-Ap08928
Date Sampled			Mar 25, 2020	Mar 25, 2020	Mar 25, 2020	Mar 25, 2020
Test/Reference	LOR	Unit				
Heavy Metals						
Lead	5	mg/kg	49	16	290	51
% Moisture	1	%	14	12	10	10

Sample History

Where samples are submitted/analysed over several days, the last date of extraction and analysis is reported.

A recent review of our LIMS has resulted in the correction or clarification of some method identifications. Due to this, some of the method reference information on reports has changed. However, no substantive change has been made to our laboratory methods, and as such there is no change in the validity of current or previous results.

If the date and time of sampling are not provided, the Laboratory will not be responsible for compromised results should testing be performed outside the recommended holding time.

Description

Heavy Metals

- Method: LTM-MET-3040 Metals in Waters, Soils & Sediments by ICP-MS

% Moisture

- Method: LTM-GEN-7080 Moisture

Testing Site

Melbourne

Melbourne

Extracted

Apr 07, 2020

Apr 07, 2020

Holding Time

180 Days

14 Days

Australia

Melbourne
6 Monterey Road
Dandenong South VIC 3175
Phone : +61 3 8564 5000
NATA # 1261
Site # 1254 & 14271

Sydney
Unit F3, Building F
16 Mars Road
Lane Cove West NSW 2066
Phone : +61 2 9900 8400
NATA # 1261 Site # 18217

Brisbane
1/21 Smallwood Place
Murarrie QLD 4172
Phone : +61 7 3902 4600
NATA # 1261 Site # 20794

Perth
2/91 Leach Highway
Kewdale WA 6105
Phone : +61 8 9251 9600
NATA # 1261
Site # 23736

New Zealand

Auckland
35 O'Rorke Road
Penrose, Auckland 1061
Phone : +64 9 526 45 51
IANZ # 1327

Christchurch
43 Detroit Drive
Rolleston, Christchurch 7675
Phone : 0800 856 450
IANZ # 1290

Company Name: Ramboll Australia Pty Ltd
Address: Level 3/100 Pacific Highway
North Sydney
NSW 2060

Order No.:
Report #: 712349
Phone: 02 9954 8118
Fax: 02 9954 8150

Received: Apr 7, 2020 2:08 PM
Due: Apr 16, 2020
Priority: 5 Day
Contact Name: Stephen Maxwell

Project Name:
Project ID: 318000780

Eurofins Analytical Services Manager : Andrew Black

Sample Detail						HOLD	Lead	Moisture Set
Melbourne Laboratory - NATA Site # 1254 & 14271						X	X	X
Sydney Laboratory - NATA Site # 18217								
Brisbane Laboratory - NATA Site # 20794								
Perth Laboratory - NATA Site # 23736								
External Laboratory								
No	Sample ID	Sample Date	Sampling Time	Matrix	LAB ID			
1	P8_HA1_0.0	Mar 25, 2020		Soil	M20-Ap08925		X	X
2	P8_HA1_0.3	Mar 25, 2020		Soil	M20-Ap08926		X	X
3	P8_HA2_0.0	Mar 25, 2020		Soil	M20-Ap08927		X	X
4	P8_HA2_0.3	Mar 25, 2020		Soil	M20-Ap08928		X	X
5	DW01_240320	Mar 24, 2020		Soil	M20-Ap08929	X		
6	TW01_240320	Mar 24, 2020		Soil	M20-Ap08930	X		
7	R01_1803200	Mar 18, 2020		Soil	M20-Ap08931	X		
8	R01_2003200	Mar 18, 2020		Soil	M20-Ap08932	X		
9	P8_HA3_0.0	Mar 25, 2020		Soil	M20-Ap10770	X		
10	P8_HA3_0.3	Mar 25, 2020		Soil	M20-Ap10771	X		

Australia

Melbourne
 6 Monterey Road
 Dandenong South VIC 3175
 Phone : +61 3 8564 5000
 NATA # 1261
 Site # 1254 & 14271

Sydney
 Unit F3, Building F
 16 Mars Road
 Lane Cove West NSW 2066
 Phone : +61 2 9900 8400
 NATA # 1261 Site # 18217

Brisbane
 1/21 Smallwood Place
 Murarrie QLD 4172
 Phone : +61 7 3902 4600
 NATA # 1261 Site # 20794

Perth
 2/91 Leach Highway
 Kewdale WA 6105
 Phone : +61 8 9251 9600
 NATA # 1261
 Site # 23736

New Zealand

Auckland
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web : www.eurofins.com.au

e.mail : EnviroSales@eurofins.com

Company Name: Ramboll Australia Pty Ltd
Address: Level 3/100 Pacific Highway
 North Sydney
 NSW 2060

Order No.:
Report #: 712349
Phone: 02 9954 8118
Fax: 02 9954 8150

Received: Apr 7, 2020 2:08 PM
Due: Apr 16, 2020
Priority: 5 Day
Contact Name: Stephen Maxwell

Project Name:
Project ID: 318000780

Eurofins Analytical Services Manager : Andrew Black

Sample Detail						HOLD	Lead	Moisture Set
Melbourne Laboratory - NATA Site # 1254 & 14271						X	X	X
Sydney Laboratory - NATA Site # 18217								
Brisbane Laboratory - NATA Site # 20794								
Perth Laboratory - NATA Site # 23736								
11	P8_HA4_0.0	Mar 25, 2020		Soil	M20-Ap10772	X		
12	P8_HA4_0.3	Mar 25, 2020		Soil	M20-Ap10773	X		
Test Counts						8	4	4

Internal Quality Control Review and Glossary
General

- Laboratory QC results for Method Blanks, Duplicates, Matrix Spikes, and Laboratory Control Samples follows guidelines delineated in the National Environment Protection (Assessment of Site Contamination) Measure 1999, as amended May 2013 and are included in this QC report where applicable. Additional QC data may be available on request.
- All soil/sediment/solid results are reported on a dry basis, unless otherwise stated.
- All biota/food results are reported on a wet weight basis on the edible portion, unless otherwise stated.
- Actual LORs are matrix dependant. Quoted LORs may be raised where sample extracts are diluted due to interferences.
- Results are uncorrected for matrix spikes or surrogate recoveries except for PFAS compounds.
- SVOC analysis on waters are performed on homogenised, unfiltered samples, unless noted otherwise.
- Samples were analysed on an 'as received' basis.
- Information identified on this report with blue colour, indicates data provided by customer, that may have an impact on the results.
- This report replaces any interim results previously issued.

Holding Times

Please refer to 'Sample Preservation and Container Guide' for holding times (QS3001).

For samples received on the last day of holding time, notification of testing requirements should have been received at least 6 hours prior to sample receipt deadlines as stated on the SRA.

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Holding times apply from the date of sampling, therefore compliance to these may be outside the laboratory's control.

For VOCs containing vinyl chloride, styrene and 2-chloroethyl vinyl ether the holding time is 7 days however for all other VOCs such as BTEX or C6-10 TRH then the holding time is 14 days.

****NOTE:** pH duplicates are reported as a range NOT as RPD

Units

mg/kg: milligrams per kilogram

mg/L: milligrams per litre

ug/L: micrograms per litre

ppm: Parts per million

ppb: Parts per billion

%: Percentage

org/100mL: Organisms per 100 millilitres

NTU: Nephelometric Turbidity Units

MPN/100mL: Most Probable Number of organisms per 100 millilitres

Terms

Dry	Where a moisture has been determined on a solid sample the result is expressed on a dry basis.
LOR	Limit of Reporting.
SPIKE	Addition of the analyte to the sample and reported as percentage recovery.
RPD	Relative Percent Difference between two Duplicate pieces of analysis.
LCS	Laboratory Control Sample - reported as percent recovery.
CRM	Certified Reference Material - reported as percent recovery.
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Surr - Surrogate	The addition of a like compound to the analyte target and reported as percentage recovery.
Duplicate	A second piece of analysis from the same sample and reported in the same units as the result to show comparison.
USEPA	United States Environmental Protection Agency
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TCLP	Toxicity Characteristic Leaching Procedure
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TEQ	Toxic Equivalency Quotient

QC - Acceptance Criteria

RPD Duplicates: Global RPD Duplicates Acceptance Criteria is 30% however the following acceptance guidelines are equally applicable:

Results <10 times the LOR : No Limit

Results between 10-20 times the LOR : RPD must lie between 0-50%

Results >20 times the LOR : RPD must lie between 0-30%

Surrogate Recoveries: Recoveries must lie between 20-130% Phenols & 50-150% PFASs

PFAS field samples that contain surrogate recoveries in excess of the QC limit designated in QSM 5.3 where no positive PFAS results have been reported have been reviewed and no data was affected.

WA DWER (n=10): PFBA, PFPeA, PFHxA, PFHpA, PFOA, PFBS, PFHxS, PFOS, 6:2 FTSA, 8:2 FTSA

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- Where a result is reported as a less than (<), higher than the nominated LOR, this is due to either matrix interference, extract dilution required due to interferences or contaminant levels within the sample, high moisture content or insufficient sample provided.
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- Organochlorine Pesticide analysis - where reporting Spike data, Toxaphene is not added to the Spike.
- Total Recoverable Hydrocarbons - where reporting Spike & LCS data, a single spike of commercial Hydrocarbon products in the range of C12-C30 is added and it's Total Recovery is reported in the C10-C14 cell of the Report.
- pH and Free Chlorine analysed in the laboratory - Analysis on this test must begin within 30 minutes of sampling. Therefore laboratory analysis is unlikely to be completed within holding time. Analysis will begin as soon as possible after sample receipt.
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- Duplicate RPDs are calculated from raw analytical data thus it is possible to have two sets of data.

Quality Control Results

Test				Units	Result 1		Acceptance Limits	Pass Limits	Qualifying Code	
Method Blank										
Heavy Metals										
Lead				mg/kg	< 5		5	Pass		
LCS - % Recovery										
Heavy Metals										
Lead				%	108		80-120	Pass		
Test	Lab Sample ID	QA Source	Units	Result 1			Acceptance Limits	Pass Limits	Qualifying Code	
Spike - % Recovery										
Heavy Metals										
Lead				M20-Ap09705	NCP	%	105	75-125	Pass	
Duplicate										
					Result 1	Result 2	RPD			
% Moisture				M20-Ap08900	NCP	%	8.9	8.9	1.0	30% Pass
Duplicate										
Heavy Metals										
Lead				M20-Ap08926	CP	mg/kg	16	21	25	30% Pass
Duplicate										
Heavy Metals										
Lead				M20-Ap08927	CP	mg/kg	290	290	1.0	30% Pass

Comments**Sample Integrity**

Custody Seals Intact (if used)	N/A
Attempt to Chill was evident	Yes
Sample correctly preserved	Yes
Appropriate sample containers have been used	Yes
Sample containers for volatile analysis received with minimal headspace	Yes
Samples received within HoldingTime	Yes
Some samples have been subcontracted	No

Authorised By

Andrew Black	Analytical Services Manager
Emily Rosenberg	Senior Analyst-Metal (VIC)

**Glenn Jackson
General Manager**

Final report - this Report replaces any previously issued Report

- Indicates Not Requested

* Indicates NATA accreditation does not cover the performance of this service

Measurement uncertainty of test data is available on request or please [click here](#).

Eurofins shall not be liable for loss, cost, damages or expenses incurred by the client, or any other person or company, resulting from the use of any information or interpretation given in this report. In no case shall Eurofins be liable for consequential damages including, but not limited to, lost profits, damages for failure to meet deadlines and lost production arising from this report. This document shall not be reproduced except in full and relates only to the items tested. Unless indicated otherwise, the tests were performed on the samples as received.

Tarago Rural Fire Service
C/- Wayne Baynham
89-91 Goulburn Street
Tarago NSW 2580

Delivered: by email

**Tarago Rural Fire Service, 89-91 Goulburn Street, Tarago NSW
Lead Investigation Report**

Date 28/05/2020

This report presents the findings of an investigation of lead at the Tarago Rural Fire Services property (the RFS site) undertaken as part of the investigation of lead impacts in the Tarago Community.

Investigation at the RFS site comprised collection of samples as shown **Table 1** and the attached figure. Samples were collected on 25 March 2020.

Ramboll
Level 2, Suite 18 Eastpoint
50 Glebe Road
PO Box 435
The Junction
NSW 2291
Australia

Table 1 Samples Collected

Type	Number of samples collected
Soil	10
Groundwater from onsite bore	n/a – no bore present on site.
Rainwater tank water	2
Rainwater tank sediment	n/a – no sediment present in tanks.
Dust (from inside property)	5
Paint	n/a – building is constructed of Colourbond sheet metal and review of aerial imagery indicates buildings constructed post 1997.

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<https://ramboll.com>

Samples were sent to an independent certified laboratory for analysis.

Results

Sample results were compared against guidelines relevant for open spaces (outside the building) and a commercial/industrial property (internal dust). Results are tabulated in **Table 2**. Concentrations shown in **BOLD** are above the relevant guideline.

Table 2 Summary lead concentrations relevant to health investigation levels

Type	Guideline	Result						
Soil	600 (mg/kg) ¹	P9_HA01_0.0-0.05	P9_HA01_0.2	P9_HA02_0.0	P9_HA02_0.2	P9_HA03_0.0	P9_HA03_0.3	P9_HA04_0.0
		33	32	10	17	32	14	34
		P9_HA04_0.3	P9_HA05_0.0	P9_HA05_0.3				
		34	46	45				
Rainwater tank water	0.01 (mg/L) ²	RFS_TW1 <0.001	RFS_TW2 <0.001					
Dust Interior – Floors ⁴	1,000 (µg/m ²) ³	DSWAB_FE(F9)	DSWAB_BE(F9)	DVAC_MA(P9)	DSWAB_KF(P9)			
		104	122	541	93			
Dust Interior – Window Sills and Shelves	5,000 (µg/m ²) ³	DSWAB_BS(P9)						
		2,333						

¹ NEPM (2013) Schedule B1: Guideline on investigation levels for soil and groundwater. National Environment Protection (Assessment of Site Contamination) Measure 1999. Federal Register of Legislative Instruments F2013C00288 (HIL C – developed open space such as parks, playgrounds, playing fields (e.g. ovals), secondary schools and footpaths).

² NHMRC, NRMCC (2011 updated 2018) Australian Drinking Water Guidelines (ADWG) Paper 6 National Water Quality Management Strategy. National Health and Medical Research Council, National Resource Management Ministerial Council, Commonwealth of Australia, Canberra.

³ AS 4361.2-1998 Guide to lead paint management - Residential and commercial buildings. There are no guidelines specific to vacuum samples, hence this value has been used as a preliminary screening number to assess whether any further evaluation of dust in the main area (as assessed through vacuum sample DVAC_MA(P9)) is required.

⁴ The dust results presented are lead loadings (µg lead/m²). For vacuum samples, lead loadings were calculated as follows:

Lead loading (µg/m²) = (lead concentration (mg/kg) x dust sample mass (kg) / sample area (m²)) x 1000 (to convert from µg to mg).

For swab samples, lead loadings were calculated as follows:

$$\text{Lead loading (µg/m}^2\text{)} = \text{Total lead (µg)} / \text{sample area (m}^2\text{)}.$$

Table 2 presents a comparison of the results against the guidelines found all concentrations in all sample types below the relevant guidelines. This means that risks to health from lead are considered low and acceptable. On this basis no further action is required.

Sediment was not identified in the rainwater tanks, however, in accordance with NSW Department of Health guidance (<https://www.health.nsw.gov.au/environment/water/Pages/rainwater.aspx>) sediment in rain water tanks should be periodically removed.

For further information please contact the undersigned.

Yours sincerely



Stephen Maxwell

Tarago Lead Investigation Project Manager

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M+61 478 658 194

smaxwell@ramboll.com



Fiona Robinson

Principal Contaminated Land Specialist

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Attachments

Figure of sampling locations

Reference

Laboratory report 710643

Limitations

Ramboll Australia Pty Ltd prepared this report in accordance with the scope of work as outlined in our proposal to John Holland Rail and in accordance with our understanding and interpretation of current regulatory standards. A representative program of sampling and laboratory analyses was undertaken as part of this investigation. While every care has been taken, concentrations of contaminants measured may not be representative of conditions between the locations sampled and investigated. We cannot therefore preclude the presence of materials that may be hazardous. Site conditions may change over time. This report is based on conditions encountered at the Site at the time of the report and Ramboll disclaims responsibility for any changes that may have occurred after this time. The conclusions presented in this report represent Ramboll's professional judgment based on information made available during the course of this assignment and are true and correct to the best of Ramboll's knowledge as at the date of the assessment. Ramboll did not independently verify all of the written or oral information provided to Ramboll during the course of this investigation. While Ramboll has no reason to doubt the accuracy of the information provided to it, the report is complete and accurate only to the extent that the information provided to Ramboll was itself complete and accurate. This report does not purport to give legal advice. This advice can only be given by qualified legal advisors.



RAMBOLL AUSTRALIA - GIS MAP file : 318000780_GIS_P010_RequestedSamples | F009_P9_V03 | 29/04/2020

Imagery © Department Finance, Services and Innovation 2020

Legend

- Property boundary
- Dust sample
- ⊗ Hand auger sample
- ⊕ Tank water sample

Ramboll Environ Australia Pty Ltd
 Level 3/100 Pacific Highway
 North Sydney
 NSW 2060



NATA Accredited
Accreditation Number 1261
Site Number 18217

Accredited for compliance with ISO/IEC 17025 – Testing
 The results of the tests, calibrations and/or
 measurements included in this document are traceable
 to Australian/national standards.

Attention: **Stephen Maxwell**

Report **710643-A**
 Project name
 Project ID **318000780**
 Received Date **Mar 27, 2020**

Client Sample ID			DSWAB_FE(F9)	DSWAB_BE(F9)	DSWAB_KF(F9)	DSWAB_BS(P9)
Sample Matrix			Wipes	Wipes	Wipes	Wipes
Eurofins Sample No.			S20-Ma44387	S20-Ma44388	S20-Ma44389	S20-Ma44391
Date Sampled			Mar 25, 2020	Mar 25, 2020	Mar 25, 2020	Mar 25, 2020
Test/Reference	LOR	Unit				
Heavy Metals						
Lead	1	Total ug	9.4	11	8.4	210

Sample History

Where samples are submitted/analysed over several days, the last date of extraction and analysis is reported.

A recent review of our LIMS has resulted in the correction or clarification of some method identifications. Due to this, some of the method reference information on reports has changed. However, no substantive change has been made to our laboratory methods, and as such there is no change in the validity of current or previous results.

If the date and time of sampling are not provided, the Laboratory will not be responsible for compromised results should testing be performed outside the recommended holding time.

Description

Heavy Metals

Testing Site

Sydney

Extracted

Apr 03, 2020

Holding Time

180 Days

- Method: LTM-MET-3040 Metals in Waters, Soils & Sediments by ICP-MS

Australia

Melbourne
6 Monterey Road
Dandenong South VIC 3175
Phone : +61 3 8564 5000
NATA # 1261
Site # 1254 & 14271

Sydney
Unit F3, Building F
16 Mars Road
Lane Cove West NSW 2066
Phone : +61 2 9900 8400
NATA # 1261 Site # 18217

Brisbane
1/21 Smallwood Place
Murarrie QLD 4172
Phone : +61 7 3902 4600
NATA # 1261 Site # 20794

Perth
2/91 Leach Highway
Kewdale WA 6105
Phone : +61 8 9251 9600
NATA # 1261
Site # 23736

New Zealand

Auckland
35 O'Rorke Road
Penrose, Auckland 1061
Phone : +64 9 526 45 51
IANZ # 1327

Christchurch
43 Detroit Drive
Rolleston, Christchurch 7675
Phone : 0800 856 450
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Company Name: Ramboll Australia Pty Ltd
Address: Level 3/100 Pacific Highway
North Sydney
NSW 2060

Order No.:
Report #: 710643
Phone: 02 9954 8118
Fax: 02 9954 8150

Received: Mar 27, 2020 2:57 PM
Due: Apr 3, 2020
Priority: 5 Day
Contact Name: Stephen Maxwell

Project Name:
Project ID: 318000780

Eurofins Analytical Services Manager : Andrew Black

Sample Detail						Lead	Moisture Set	NEPM 2013 Filtered Metals without Cr6+ (As, Be, B, Cd, Co, Cr, Cu, Hg, Pb, Ni, Mn, NEPM 2013 Metals without Cr6+ (As, Be, B, Cd, Co, Cr, Cu, Hg, Pb, Ni, Mn, Se, Zn))	
Melbourne Laboratory - NATA Site # 1254 & 14271									
Sydney Laboratory - NATA Site # 18217						X	X	X	X
Brisbane Laboratory - NATA Site # 20794									
Perth Laboratory - NATA Site # 23736									
External Laboratory									
No	Sample ID	Sample Date	Sampling Time	Matrix	LAB ID				
1	RFS_TW1	Mar 25, 2020		Water	S20-Ma44377			X	X
2	RFS_TW2	Mar 25, 2020		Water	S20-Ma44378			X	X
3	P9_HA01_0.0-0.05	Mar 25, 2020		Soil	S20-Ma44379	X	X		
4	P9_HA01_0.2	Mar 25, 2020		Soil	S20-Ma44380	X	X		
5	P9_HA02_0.0	Mar 25, 2020		Soil	S20-Ma44381	X	X		
6	P9_HA03_0.0	Mar 25, 2020		Soil	S20-Ma44382	X	X		
7	P9_HA03_0.3	Mar 25, 2020		Soil	S20-Ma44383	X	X		
8	P9_HA04_0.0	Mar 25, 2020		Soil	S20-Ma44384	X	X		
9	P9_HA05_0.0	Mar 25, 2020		Soil	S20-Ma44385	X	X		

Australia

Melbourne
6 Monterey Road
Dandenong South VIC 3175
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Site # 1254 & 14271

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13	DSWAB_KF(F9)	Mar 25, 2020		Wipes	S20-Ma44389	X			
14	DVAC_MA(P9)	Mar 25, 2020		Dust	S20-Ma44390	X			
15	DSWAB_BS(P9)	Mar 25, 2020		Wipes	S20-Ma44391	X			
16	P9_HA2_0.2	Mar 25, 2020		Soil	S20-Ma44392	X	X		
17	P9_HA4_0.3	Mar 25, 2020		Soil	S20-Ma44393	X	X		
Test Counts						15	10	2	2

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Quality Control Results

Comments**Sample Integrity**

Custody Seals Intact (if used)	N/A
Attempt to Chill was evident	Yes
Sample correctly preserved	Yes
Appropriate sample containers have been used	Yes
Sample containers for volatile analysis received with minimal headspace	Yes
Samples received within HoldingTime	Yes
Some samples have been subcontracted	No

Authorised By

Andrew Black Analytical Services Manager
Gabriele Cordero Senior Analyst-Metal (NSW)

**Glenn Jackson
General Manager**

Final report - this Report replaces any previously issued Report

- Indicates Not Requested

* Indicates NATA accreditation does not cover the performance of this service

Measurement uncertainty of test data is available on request or please [click here](#).

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Ramboll Environ Australia Pty Ltd
 Level 3/100 Pacific Highway
 North Sydney
 NSW 2060



NATA Accredited
 Accreditation Number 1261
 Site Number 18217

Accredited for compliance with ISO/IEC 17025 – Testing
 The results of the tests, calibrations and/or
 measurements included in this document are traceable
 to Australian/national standards.

Attention: Stephen Maxwell

Report 710643-S
 Project name
 Project ID 318000780
 Received Date Mar 27, 2020

Client Sample ID			P9_HA01_0.0-0.05	P9_HA01_0.2	P9_HA02_0.0	P9_HA03_0.0
Sample Matrix			Soil	Soil	Soil	Soil
Eurofins Sample No.			S20-Ma44379	S20-Ma44380	S20-Ma44381	S20-Ma44382
Date Sampled			Mar 25, 2020	Mar 25, 2020	Mar 25, 2020	Mar 25, 2020
Test/Reference	LOR	Unit				
Heavy Metals						
Lead	5	mg/kg	33	32	10	32
% Moisture	1	%	< 1	4.3	3.0	4.2

Client Sample ID			P9_HA03_0.3	P9_HA04_0.0	P9_HA05_0.0	P9_HA05_0.3
Sample Matrix			Soil	Soil	Soil	Soil
Eurofins Sample No.			S20-Ma44383	S20-Ma44384	S20-Ma44385	S20-Ma44386
Date Sampled			Mar 25, 2020	Mar 25, 2020	Mar 25, 2020	Mar 25, 2020
Test/Reference	LOR	Unit				
Heavy Metals						
Lead	5	mg/kg	14	34	46	45
% Moisture	1	%	8.8	8.7	9.3	11

Client Sample ID			DVAC_MA(P9)	P9_HA2_0.2	P9_HA4_0.3
Sample Matrix			Dust	Soil	Soil
Eurofins Sample No.			S20-Ma44390	S20-Ma44392	S20-Ma44393
Date Sampled			Mar 25, 2020	Mar 25, 2020	Mar 25, 2020
Test/Reference	LOR	Unit			
Heavy Metals					
Lead	5	mg/kg	38	17	39
% Moisture	1	%	-	8.7	11

Sample History

Where samples are submitted/analysed over several days, the last date of extraction and analysis is reported.

A recent review of our LIMS has resulted in the correction or clarification of some method identifications. Due to this, some of the method reference information on reports has changed. However, no substantive change has been made to our laboratory methods, and as such there is no change in the validity of current or previous results.

If the date and time of sampling are not provided, the Laboratory will not be responsible for compromised results should testing be performed outside the recommended holding time.

Description

Heavy Metals

- Method: LTM-MET-3040 Metals in Waters, Soils & Sediments by ICP-MS

% Moisture

- Method: LTM-GEN-7080 Moisture

Testing Site

Sydney

Sydney

Extracted

Apr 03, 2020

Mar 30, 2020

Holding Time

180 Days

14 Days

Australia

Melbourne
6 Monterey Road
Dandenong South VIC 3175
Phone : +61 3 8564 5000
NATA # 1261
Site # 1254 & 14271

Sydney
Unit F3, Building F
16 Mars Road
Lane Cove West NSW 2066
Phone : +61 2 9900 8400
NATA # 1261 Site # 18217

Brisbane
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NATA # 1261 Site # 20794

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Site # 23736

New Zealand

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Penrose, Auckland 1061
Phone : +64 9 526 45 51
IANZ # 1327

Christchurch
43 Detroit Drive
Rolleston, Christchurch 7675
Phone : 0800 856 450
IANZ # 1290

Company Name: Ramboll Australia Pty Ltd
Address: Level 3/100 Pacific Highway
North Sydney
NSW 2060

Order No.:
Report #: 710643
Phone: 02 9954 8118
Fax: 02 9954 8150

Received: Mar 27, 2020 2:57 PM
Due: Apr 3, 2020
Priority: 5 Day
Contact Name: Stephen Maxwell

Project Name:
Project ID: 318000780

Eurofins Analytical Services Manager : Andrew Black

Sample Detail						Lead	Moisture Set	NEPM 2013 Metals without Cr6+ (As, Be, B, Cd, Co, Cr, Cu, Hg, Pb, Ni, Mn, Cd, Co, Cr, Cu, Hg, Pb, Ni, Mn, Se, Zn)	NEPM 2013 Filtered Metals without Cr6+ (As, Be, B, Cd, Co, Cr, Cu, Hg, Pb, Ni, Mn, Se, Zn)
Melbourne Laboratory - NATA Site # 1254 & 14271									
Sydney Laboratory - NATA Site # 18217						X	X	X	X
Brisbane Laboratory - NATA Site # 20794									
Perth Laboratory - NATA Site # 23736									
External Laboratory									
No	Sample ID	Sample Date	Sampling Time	Matrix	LAB ID				
1	RFS_TW1	Mar 25, 2020		Water	S20-Ma44377			X	X
2	RFS_TW2	Mar 25, 2020		Water	S20-Ma44378			X	X
3	P9_HA01_0.0-0.05	Mar 25, 2020		Soil	S20-Ma44379	X	X		
4	P9_HA01_0.2	Mar 25, 2020		Soil	S20-Ma44380	X	X		
5	P9_HA02_0.0	Mar 25, 2020		Soil	S20-Ma44381	X	X		
6	P9_HA03_0.0	Mar 25, 2020		Soil	S20-Ma44382	X	X		
7	P9_HA03_0.3	Mar 25, 2020		Soil	S20-Ma44383	X	X		
8	P9_HA04_0.0	Mar 25, 2020		Soil	S20-Ma44384	X	X		
9	P9_HA05_0.0	Mar 25, 2020		Soil	S20-Ma44385	X	X		

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Sydney Laboratory - NATA Site # 18217						X	X	X	X
Brisbane Laboratory - NATA Site # 20794									
Perth Laboratory - NATA Site # 23736									
10	P9_HA05_0.3	Mar 25, 2020		Soil	S20-Ma44386	X	X		
11	DSWAB_FE(F9)	Mar 25, 2020		Wipes	S20-Ma44387	X			
12	DSWAB_BE(F9)	Mar 25, 2020		Wipes	S20-Ma44388	X			
13	DSWAB_KF(F9)	Mar 25, 2020		Wipes	S20-Ma44389	X			
14	DVAC_MA(P9)	Mar 25, 2020		Dust	S20-Ma44390	X			
15	DSWAB_BS(P9)	Mar 25, 2020		Wipes	S20-Ma44391	X			
16	P9_HA2_0.2	Mar 25, 2020		Soil	S20-Ma44392	X	X		
17	P9_HA4_0.3	Mar 25, 2020		Soil	S20-Ma44393	X	X		
Test Counts						15	10	2	2

Internal Quality Control Review and Glossary
General

- Laboratory QC results for Method Blanks, Duplicates, Matrix Spikes, and Laboratory Control Samples follows guidelines delineated in the National Environment Protection (Assessment of Site Contamination) Measure 1999, as amended May 2013 and are included in this QC report where applicable. Additional QC data may be available on request.
- All soil/sediment/solid results are reported on a dry basis, unless otherwise stated.
- All biota/food results are reported on a wet weight basis on the edible portion, unless otherwise stated.
- Actual LORs are matrix dependant. Quoted LORs may be raised where sample extracts are diluted due to interferences.
- Results are uncorrected for matrix spikes or surrogate recoveries except for PFAS compounds.
- SVOC analysis on waters are performed on homogenised, unfiltered samples, unless noted otherwise.
- Samples were analysed on an 'as received' basis.
- Information identified on this report with blue colour, indicates data provided by customer, that may have an impact on the results.
- This report replaces any interim results previously issued.

Holding Times

Please refer to 'Sample Preservation and Container Guide' for holding times (QS3001).

For samples received on the last day of holding time, notification of testing requirements should have been received at least 6 hours prior to sample receipt deadlines as stated on the SRA.

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Holding times apply from the date of sampling, therefore compliance to these may be outside the laboratory's control.

For VOCs containing vinyl chloride, styrene and 2-chloroethyl vinyl ether the holding time is 7 days however for all other VOCs such as BTEX or C6-10 TRH then the holding time is 14 days.

****NOTE:** pH duplicates are reported as a range NOT as RPD

Units

mg/kg: milligrams per kilogram

mg/L: milligrams per litre

ug/L: micrograms per litre

ppm: Parts per million

ppb: Parts per billion

%: Percentage

org/100mL: Organisms per 100 millilitres

NTU: Nephelometric Turbidity Units

MPN/100mL: Most Probable Number of organisms per 100 millilitres

Terms

Dry	Where a moisture has been determined on a solid sample the result is expressed on a dry basis.
LOR	Limit of Reporting.
SPIKE	Addition of the analyte to the sample and reported as percentage recovery.
RPD	Relative Percent Difference between two Duplicate pieces of analysis.
LCS	Laboratory Control Sample - reported as percent recovery.
CRM	Certified Reference Material - reported as percent recovery.
Method Blank	In the case of solid samples these are performed on laboratory certified clean sands and in the case of water samples these are performed on de-ionised water.
Surr - Surrogate	The addition of a like compound to the analyte target and reported as percentage recovery.
Duplicate	A second piece of analysis from the same sample and reported in the same units as the result to show comparison.
USEPA	United States Environmental Protection Agency
APHA	American Public Health Association
TCLP	Toxicity Characteristic Leaching Procedure
COC	Chain of Custody
SRA	Sample Receipt Advice
QSM	US Department of Defense Quality Systems Manual Version 5.3
CP	Client Parent - QC was performed on samples pertaining to this report
NCP	Non-Client Parent - QC performed on samples not pertaining to this report, QC is representative of the sequence or batch that client samples were analysed within.
TEQ	Toxic Equivalency Quotient

QC - Acceptance Criteria

RPD Duplicates: Global RPD Duplicates Acceptance Criteria is 30% however the following acceptance guidelines are equally applicable:

Results <10 times the LOR : No Limit

Results between 10-20 times the LOR : RPD must lie between 0-50%

Results >20 times the LOR : RPD must lie between 0-30%

Surrogate Recoveries: Recoveries must lie between 20-130% Phenols & 50-150% PFASs

PFAS field samples that contain surrogate recoveries in excess of the QC limit designated in QSM 5.3 where no positive PFAS results have been reported have been reviewed and no data was affected.

WA DWER (n=10): PFBA, PFPeA, PFHxA, PFHpA, PFOA, PFBS, PFHxS, PFOS, 6:2 FTSA, 8:2 FTSA

QC Data General Comments

- Where a result is reported as a less than (<), higher than the nominated LOR, this is due to either matrix interference, extract dilution required due to interferences or contaminant levels within the sample, high moisture content or insufficient sample provided.
- Duplicate data shown within this report that states the word "BATCH" is a Batch Duplicate from outside of your sample batch, but within the laboratory sample batch at a 1:10 ratio. The Parent and Duplicate data shown is not data from your samples.
- Organochlorine Pesticide analysis - where reporting LCS data, Toxaphene & Chlordane are not added to the LCS.
- Organochlorine Pesticide analysis - where reporting Spike data, Toxaphene is not added to the Spike.
- Total Recoverable Hydrocarbons - where reporting Spike & LCS data, a single spike of commercial Hydrocarbon products in the range of C12-C30 is added and it's Total Recovery is reported in the C10-C14 cell of the Report.
- pH and Free Chlorine analysed in the laboratory - Analysis on this test must begin within 30 minutes of sampling. Therefore laboratory analysis is unlikely to be completed within holding time. Analysis will begin as soon as possible after sample receipt.
- Recovery Data (Spikes & Surrogates) - where chromatographic interference does not allow the determination of Recovery the term "INT" appears against that analyte.
- Polychlorinated Biphenyls are spiked only using Aroclor 1260 in Matrix Spikes and LCS.
- For Matrix Spikes and LCS results a dash " - " in the report means that the specific analyte was not added to the QC sample.
- Duplicate RPDs are calculated from raw analytical data thus it is possible to have two sets of data.

Quality Control Results

Test				Units	Result 1		Acceptance Limits	Pass Limits	Qualifying Code		
Method Blank											
Heavy Metals											
Lead				mg/kg	< 5		5	Pass			
LCS - % Recovery											
Heavy Metals											
Lead				%	103		70-130	Pass			
Test	Lab Sample ID	QA Source	Units	Result 1			Acceptance Limits	Pass Limits	Qualifying Code		
Spike - % Recovery											
Heavy Metals											
Lead				S20-Ma44386	CP	%	113	70-130	Pass		
Duplicate											
Heavy Metals											
Lead				S20-Ma44385	CP	mg/kg	46	45	2.0	30%	Pass
Duplicate											
% Moisture				S20-Ma44385	CP	%	9.3	10	10	30%	Pass

Comments**Sample Integrity**

Custody Seals Intact (if used)	N/A
Attempt to Chill was evident	Yes
Sample correctly preserved	Yes
Appropriate sample containers have been used	Yes
Sample containers for volatile analysis received with minimal headspace	Yes
Samples received within HoldingTime	Yes
Some samples have been subcontracted	No

Authorised By

Andrew Black Analytical Services Manager
Gabriele Cordero Senior Analyst-Metal (NSW)

**Glenn Jackson
General Manager**

Final report - this Report replaces any previously issued Report

- Indicates Not Requested

* Indicates NATA accreditation does not cover the performance of this service

Measurement uncertainty of test data is available on request or please [click here](#).

Eurofins shall not be liable for loss, cost, damages or expenses incurred by the client, or any other person or company, resulting from the use of any information or interpretation given in this report. In no case shall Eurofins be liable for consequential damages including, but not limited to, lost profits, damages for failure to meet deadlines and lost production arising from this report. This document shall not be reproduced except in full and relates only to the items tested. Unless indicated otherwise, the tests were performed on the samples as received.

Ramboll Environ Australia Pty Ltd
 Level 3/100 Pacific Highway
 North Sydney
 NSW 2060



NATA Accredited
 Accreditation Number 1261
 Site Number 18217

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 The results of the tests, calibrations and/or
 measurements included in this document are traceable
 to Australian/national standards.

Attention: Stephen Maxwell

Report 710643-W
 Project name
 Project ID 318000780
 Received Date Mar 27, 2020

Client Sample ID			RFS_TW1	RFS_TW2
Sample Matrix			Water	Water
Eurofins Sample No.			S20-Ma44377	S20-Ma44378
Date Sampled			Mar 25, 2020	Mar 25, 2020
Test/Reference	LOR	Unit		
Heavy Metals				
Arsenic	0.001	mg/L	< 0.001	< 0.001
Arsenic (filtered)	0.001	mg/L	< 0.001	< 0.001
Beryllium	0.001	mg/L	< 0.001	< 0.001
Beryllium (filtered)	0.001	mg/L	< 0.001	< 0.001
Boron	0.05	mg/L	< 0.05	< 0.05
Boron (filtered)	0.05	mg/L	< 0.05	< 0.05
Cadmium	0.0002	mg/L	< 0.0002	0.0015
Cadmium (filtered)	0.0002	mg/L	< 0.0002	0.0016
Chromium	0.001	mg/L	0.003	< 0.001
Chromium (filtered)	0.001	mg/L	0.002	< 0.001
Cobalt	0.001	mg/L	< 0.001	< 0.001
Cobalt (filtered)	0.001	mg/L	< 0.001	< 0.001
Copper	0.001	mg/L	0.008	0.005
Copper (filtered)	0.001	mg/L	0.008	0.007
Lead	0.001	mg/L	< 0.001	< 0.001
Lead (filtered)	0.001	mg/L	< 0.001	< 0.001
Manganese	0.005	mg/L	0.029	< 0.005
Manganese (filtered)	0.005	mg/L	0.029	< 0.005
Mercury	0.0001	mg/L	< 0.0001	< 0.0001
Mercury (filtered)	0.0001	mg/L	< 0.0001	< 0.0001
Nickel	0.001	mg/L	< 0.001	0.001
Nickel (filtered)	0.001	mg/L	< 0.001	0.001
Selenium	0.001	mg/L	< 0.001	< 0.001
Selenium (filtered)	0.001	mg/L	< 0.001	< 0.001
Zinc	0.005	mg/L	0.24	0.15
Zinc (filtered)	0.005	mg/L	0.24	0.16

Sample History

Where samples are submitted/analysed over several days, the last date of extraction and analysis is reported.

A recent review of our LIMS has resulted in the correction or clarification of some method identifications. Due to this, some of the method reference information on reports has changed. However, no substantive change has been made to our laboratory methods, and as such there is no change in the validity of current or previous results.

If the date and time of sampling are not provided, the Laboratory will not be responsible for compromised results should testing be performed outside the recommended holding time.

Description

NEPM 2013 Metals without Cr6+ (As, Be, B, Cd, Co, Cr, Cu, Hg, Pb, Ni, Mn, Se, Zn)

- Method: LTM-MET-3040 Metals in Waters, Soils & Sediments by ICP-MS

NEPM 2013 Filtered Metals without Cr6+ (As, Be, B, Cd, Co, Cr, Cu, Hg, Pb, Ni, Mn, Se, Zn)

- Method: LTM-MET-3040 Metals in Waters, Soils & Sediments by ICP-MS

Testing Site	Extracted	Holding Time
Sydney	Apr 03, 2020	180 Days
Sydney	Mar 27, 2020	28 Days

Australia

Melbourne
6 Monterey Road
Dandenong South VIC 3175
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NATA # 1261
Site # 1254 & 14271

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Eurofins Analytical Services Manager : Andrew Black

Sample Detail						Lead	Moisture Set	NEPM 2013 Filtered Metals without Cr6+ (As, Be, B, Cd, Co, Cr, Cu, Hg, Pb, Ni, Mn, NEPM 2013 Metals without Cr6+ (As, Be, B, Cd, Co, Cr, Cu, Hg, Pb, Ni, Mn, Se, Zn))	
Melbourne Laboratory - NATA Site # 1254 & 14271									
Sydney Laboratory - NATA Site # 18217						X	X	X	X
Brisbane Laboratory - NATA Site # 20794									
Perth Laboratory - NATA Site # 23736									
External Laboratory									
No	Sample ID	Sample Date	Sampling Time	Matrix	LAB ID				
1	RFS_TW1	Mar 25, 2020		Water	S20-Ma44377			X	X
2	RFS_TW2	Mar 25, 2020		Water	S20-Ma44378			X	X
3	P9_HA01_0.0-0.05	Mar 25, 2020		Soil	S20-Ma44379	X	X		
4	P9_HA01_0.2	Mar 25, 2020		Soil	S20-Ma44380	X	X		
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7	P9_HA03_0.3	Mar 25, 2020		Soil	S20-Ma44383	X	X		
8	P9_HA04_0.0	Mar 25, 2020		Soil	S20-Ma44384	X	X		
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Test Counts						15	10	2	2

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****NOTE:** pH duplicates are reported as a range NOT as RPD

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TCLP	Toxicity Characteristic Leaching Procedure
COC	Chain of Custody
SRA	Sample Receipt Advice
QSM	US Department of Defense Quality Systems Manual Version 5.3
CP	Client Parent - QC was performed on samples pertaining to this report
NCP	Non-Client Parent - QC performed on samples not pertaining to this report, QC is representative of the sequence or batch that client samples were analysed within.
TEQ	Toxic Equivalency Quotient

QC - Acceptance Criteria

RPD Duplicates: Global RPD Duplicates Acceptance Criteria is 30% however the following acceptance guidelines are equally applicable:

Results <10 times the LOR : No Limit

Results between 10-20 times the LOR : RPD must lie between 0-50%

Results >20 times the LOR : RPD must lie between 0-30%

Surrogate Recoveries: Recoveries must lie between 20-130% Phenols & 50-150% PFASs

PFAS field samples that contain surrogate recoveries in excess of the QC limit designated in QSM 5.3 where no positive PFAS results have been reported have been reviewed and no data was affected.

WA DWER (n=10): PFBA, PFPeA, PFHxA, PFHpA, PFOA, PFBS, PFHxS, PFOS, 6:2 FTSA, 8:2 FTSA

QC Data General Comments

- Where a result is reported as a less than (<), higher than the nominated LOR, this is due to either matrix interference, extract dilution required due to interferences or contaminant levels within the sample, high moisture content or insufficient sample provided.
- Duplicate data shown within this report that states the word "BATCH" is a Batch Duplicate from outside of your sample batch, but within the laboratory sample batch at a 1:10 ratio. The Parent and Duplicate data shown is not data from your samples.
- Organochlorine Pesticide analysis - where reporting LCS data, Toxaphene & Chlordane are not added to the LCS.
- Organochlorine Pesticide analysis - where reporting Spike data, Toxaphene is not added to the Spike.
- Total Recoverable Hydrocarbons - where reporting Spike & LCS data, a single spike of commercial Hydrocarbon products in the range of C12-C30 is added and it's Total Recovery is reported in the C10-C14 cell of the Report.
- pH and Free Chlorine analysed in the laboratory - Analysis on this test must begin within 30 minutes of sampling. Therefore laboratory analysis is unlikely to be completed within holding time. Analysis will begin as soon as possible after sample receipt.
- Recovery Data (Spikes & Surrogates) - where chromatographic interference does not allow the determination of Recovery the term "INT" appears against that analyte.
- Polychlorinated Biphenyls are spiked only using Aroclor 1260 in Matrix Spikes and LCS.
- For Matrix Spikes and LCS results a dash " - " in the report means that the specific analyte was not added to the QC sample.
- Duplicate RPDs are calculated from raw analytical data thus it is possible to have two sets of data.

Quality Control Results

Test	Units	Result 1			Acceptance Limits	Pass Limits	Qualifying Code
Method Blank							
Heavy Metals							
Arsenic	mg/L	< 0.001			0.001	Pass	
Arsenic (filtered)	mg/L	< 0.001			0.001	Pass	
Beryllium	mg/L	< 0.001			0.001	Pass	
Beryllium (filtered)	mg/L	< 0.001			0.001	Pass	
Boron	mg/L	< 0.05			0.05	Pass	
Boron (filtered)	mg/L	< 0.05			0.05	Pass	
Cadmium	mg/L	< 0.0002			0.0002	Pass	
Cadmium (filtered)	mg/L	< 0.0002			0.0002	Pass	
Chromium	mg/L	< 0.001			0.001	Pass	
Chromium (filtered)	mg/L	< 0.001			0.001	Pass	
Cobalt	mg/L	< 0.001			0.001	Pass	
Cobalt (filtered)	mg/L	< 0.001			0.001	Pass	
Copper	mg/L	< 0.001			0.001	Pass	
Copper (filtered)	mg/L	< 0.001			0.001	Pass	
Lead	mg/L	< 0.001			0.001	Pass	
Lead (filtered)	mg/L	< 0.001			0.001	Pass	
Manganese	mg/L	< 0.005			0.005	Pass	
Manganese (filtered)	mg/L	< 0.005			0.005	Pass	
Mercury	mg/L	< 0.0001			0.0001	Pass	
Mercury (filtered)	mg/L	< 0.0001			0.0001	Pass	
Nickel	mg/L	< 0.001			0.001	Pass	
Nickel (filtered)	mg/L	< 0.001			0.001	Pass	
Selenium	mg/L	< 0.001			0.001	Pass	
Selenium (filtered)	mg/L	< 0.001			0.001	Pass	
Zinc	mg/L	< 0.005			0.005	Pass	
Zinc (filtered)	mg/L	< 0.005			0.005	Pass	
LCS - % Recovery							
Heavy Metals							
Arsenic	%	103			70-130	Pass	
Arsenic (filtered)	%	87			70-130	Pass	
Beryllium	%	101			70-130	Pass	
Beryllium (filtered)	%	85			70-130	Pass	
Boron	%	100			70-130	Pass	
Boron (filtered)	%	83			70-130	Pass	
Cadmium	%	101			70-130	Pass	
Cadmium (filtered)	%	84			70-130	Pass	
Chromium	%	99			70-130	Pass	
Chromium (filtered)	%	85			70-130	Pass	
Cobalt	%	99			70-130	Pass	
Cobalt (filtered)	%	85			70-130	Pass	
Copper	%	96			70-130	Pass	
Copper (filtered)	%	84			70-130	Pass	
Lead	%	103			70-130	Pass	
Lead (filtered)	%	86			70-130	Pass	
Manganese	%	99			70-130	Pass	
Manganese (filtered)	%	84			70-130	Pass	
Mercury	%	112			70-130	Pass	
Mercury (filtered)	%	80			70-130	Pass	
Nickel	%	98			70-130	Pass	
Nickel (filtered)	%	86			70-130	Pass	

Test			Units	Result 1			Acceptance Limits	Pass Limits	Qualifying Code
Selenium			%	103			70-130	Pass	
Selenium (filtered)			%	84			70-130	Pass	
Zinc			%	100			70-130	Pass	
Zinc (filtered)			%	85			70-130	Pass	
Test	Lab Sample ID	QA Source	Units	Result 1			Acceptance Limits	Pass Limits	Qualifying Code
Spike - % Recovery									
Heavy Metals				Result 1					
Arsenic	S20-Ma44415	NCP	%	104			70-130	Pass	
Arsenic (filtered)	S20-Ma44415	NCP	%	96			70-130	Pass	
Beryllium	S20-Ma44415	NCP	%	103			70-130	Pass	
Beryllium (filtered)	S20-Ma44415	NCP	%	93			70-130	Pass	
Boron	S20-Ma44415	NCP	%	93			70-130	Pass	
Cadmium	S20-Ma44415	NCP	%	99			70-130	Pass	
Cadmium (filtered)	S20-Ma44415	NCP	%	102			70-130	Pass	
Chromium	S20-Ma44415	NCP	%	99			70-130	Pass	
Chromium (filtered)	S20-Ma44415	NCP	%	93			70-130	Pass	
Cobalt	S20-Ma44415	NCP	%	101			70-130	Pass	
Cobalt (filtered)	S20-Ma44415	NCP	%	97			70-130	Pass	
Copper	S20-Ma44415	NCP	%	96			70-130	Pass	
Copper (filtered)	S20-Ma44415	NCP	%	94			70-130	Pass	
Lead	S20-Ma44415	NCP	%	104			70-130	Pass	
Lead (filtered)	S20-Ma44415	NCP	%	97			70-130	Pass	
Manganese	S20-Ma44415	NCP	%	100			70-130	Pass	
Manganese (filtered)	S20-Ma44415	NCP	%	97			70-130	Pass	
Mercury	S20-Ma44415	NCP	%	103			70-130	Pass	
Mercury (filtered)	S20-Ma44415	NCP	%	95			70-130	Pass	
Nickel	S20-Ma44415	NCP	%	99			70-130	Pass	
Nickel (filtered)	S20-Ma44415	NCP	%	95			70-130	Pass	
Selenium	S20-Ma44415	NCP	%	101			70-130	Pass	
Selenium (filtered)	S20-Ma44415	NCP	%	100			70-130	Pass	
Zinc	S20-Ma44415	NCP	%	101			70-130	Pass	
Zinc (filtered)	S20-Ma44415	NCP	%	84			70-130	Pass	
Test	Lab Sample ID	QA Source	Units	Result 1			Acceptance Limits	Pass Limits	Qualifying Code
Duplicate									
Heavy Metals				Result 1	Result 2	RPD			
Arsenic	S20-Ma44158	NCP	mg/L	< 0.001	< 0.001	<1	30%	Pass	
Arsenic (filtered)	S20-Ma44142	NCP	mg/L	< 0.001	< 0.001	<1	30%	Pass	
Beryllium	S20-Ma44158	NCP	mg/L	< 0.001	< 0.001	<1	30%	Pass	
Beryllium (filtered)	S20-Ma44142	NCP	mg/L	< 0.001	< 0.001	<1	30%	Pass	
Boron	S20-Ma44158	NCP	mg/L	< 0.05	< 0.05	<1	30%	Pass	
Boron (filtered)	S20-Ma44142	NCP	mg/L	< 0.05	< 0.05	<1	30%	Pass	
Cadmium	S20-Ma44158	NCP	mg/L	< 0.0002	< 0.0002	<1	30%	Pass	
Cadmium (filtered)	S20-Ma44142	NCP	mg/L	0.0005	0.0003	30	30%	Pass	
Chromium	S20-Ma44158	NCP	mg/L	< 0.001	< 0.001	<1	30%	Pass	
Chromium (filtered)	S20-Ma44142	NCP	mg/L	0.002	0.002	2.0	30%	Pass	
Cobalt	S20-Ma44158	NCP	mg/L	< 0.001	< 0.001	<1	30%	Pass	
Cobalt (filtered)	S20-Ma44142	NCP	mg/L	< 0.001	< 0.001	<1	30%	Pass	
Copper	S20-Ma44158	NCP	mg/L	0.002	0.002	6.0	30%	Pass	
Copper (filtered)	S20-Ma44142	NCP	mg/L	0.001	< 0.001	28	30%	Pass	
Lead	S20-Ma44158	NCP	mg/L	< 0.001	< 0.001	<1	30%	Pass	
Lead (filtered)	S20-Ma44142	NCP	mg/L	< 0.001	< 0.001	<1	30%	Pass	
Manganese	S20-Ma44158	NCP	mg/L	0.066	0.066	<1	30%	Pass	
Manganese (filtered)	S20-Ma44142	NCP	mg/L	< 0.005	< 0.005	<1	30%	Pass	

Test	Lab Sample ID	QA Source	Units	Result 1			Acceptance Limits	Pass Limits	Qualifying Code
Duplicate									
Heavy Metals				Result 1	Result 2	RPD			
Mercury	S20-Ma44158	NCP	mg/L	< 0.0001	< 0.0001	<1	30%	Pass	
Mercury (filtered)	S20-Ma44142	NCP	mg/L	< 0.0001	< 0.0001	<1	30%	Pass	
Nickel	S20-Ma44158	NCP	mg/L	0.003	0.004	9.0	30%	Pass	
Nickel (filtered)	S20-Ma44142	NCP	mg/L	< 0.001	< 0.001	<1	30%	Pass	
Selenium	S20-Ma44158	NCP	mg/L	< 0.001	< 0.001	<1	30%	Pass	
Selenium (filtered)	S20-Ma44142	NCP	mg/L	< 0.001	< 0.001	<1	30%	Pass	
Zinc	S20-Ma44158	NCP	mg/L	0.018	0.011	53	30%	Fail	Q15
Zinc (filtered)	S20-Ma44142	NCP	mg/L	1.6	1.6	2.0	30%	Pass	

Comments**Sample Integrity**

Custody Seals Intact (if used)	N/A
Attempt to Chill was evident	Yes
Sample correctly preserved	Yes
Appropriate sample containers have been used	Yes
Sample containers for volatile analysis received with minimal headspace	Yes
Samples received within HoldingTime	Yes
Some samples have been subcontracted	No

Qualifier Codes/Comments

Code	Description
Q15	The RPD reported passes Eurofins Environment Testing's QC - Acceptance Criteria as defined in the Internal Quality Control Review and Glossary page of this report.

Authorised By

Andrew Black	Analytical Services Manager
Gabriele Cordero	Senior Analyst-Metal (NSW)

**Glenn Jackson
General Manager**

Final report - this Report replaces any previously issued Report

- Indicates Not Requested

* Indicates NATA accreditation does not cover the performance of this service

Measurement uncertainty of test data is available on request or please [click here](#).

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Tarago Showground
C/- Wayne Baynham
Braidwood Road
Tarago NSW 2580

Delivered: by email

Tarago Showground, Braidwood Road, Tarago NSW Lead Investigation Report

Date 16/06/2020

This report presents the findings of an investigation of lead at the Tarago Showground undertaken as part of the investigation of lead impacts in the Tarago Community.

Investigation at the Showground comprised collection of samples as shown **Table 1** and the attached figure. Samples were collected on 25 March 2020.

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Table 1 Samples Collected

Type	Number of samples collected
Soil	12
Groundwater from onsite bore	n/a – no bore present on site.
Rainwater tank water	2
Rainwater tank sediment	2
Dust (from inside property)	5
Paint	n/a – Painted surfaces comprised of Colourbond sheet metal

Samples were sent to an independent certified laboratory for analysis.

Results

Sample results were compared against guidelines relevant for a public open space. Results are tabulated in **Table 2** and **Table 3**. Concentrations shown in BOLD are above the relevant guideline.

Table 2 Summary lead concentrations relevant to health investigation levels

Type	Guideline	Result					
Soil	600 (mg/kg) ¹	P11_HA01_0.0-0.05	P11_HA01_0.2	P11_HA02_0.0	P11_HA02_0.2	P11_HA02_0.3	P11_HA03_0.0-0.05
		6	12	12	<5	<5	8
		P11_HA03_0.2	P11_HA04_0.0-0.05	P11_HA04_0.2	P11_HA04_0.3	P11_HA05_0.0-0.05	P11_HA05_0.2
		<5	12	8	7	11	7
Rainwater tank water	0.01 (mg/L) ²	P11_TW1 <0.001			P11_TW2 <0.001		
Dust Interior - Floors	1,000 (µg/m ²) ³	DVAC_MA(P11) 1,080 ⁶			DSWAB_FE(P11) 222		
Dust Interior – Window Sills and Shelves	5,000 (µg/m ²) ³	DSWAB_TC(P11) 844		DSWAB_KC(P11) 189		DSWAB_OD(P11) 267	

¹ NEPM (2013) Schedule B1: Guideline on investigation levels for soil and groundwater. National Environment Protection (Assessment of Site Contamination) Measure 1999. Federal Register of Legislative Instruments F2013C00288 (HIL C – developed open space such as parks, playgrounds, playing fields (e.g. ovals), secondary schools and footpaths).

² NHMRC, NRMCC (2011 updated 2018) Australian Drinking Water Guidelines (ADWG) Paper 6 National Water Quality Management Strategy. National Health and Medical Research Council, National Resource Management Ministerial Council, Commonwealth of Australia, Canberra.

³ AS 4361.2-1998 Guide to lead paint management – Residential and commercial buildings.

⁴ The dust results presented are lead loadings (µg lead/m²). For vacuum samples, lead loadings were calculated as follows:

$$\text{Lead loading } (\mu\text{g}/\text{m}^2) = (\text{lead concentration } (\text{mg}/\text{kg}) \times \text{dust sample mass } (\text{g}) / \text{sample area } (\text{m}^2))$$

For swab samples, lead loadings were calculated as follows:

$$\text{Lead loading } (\mu\text{g}/\text{m}^2) = \text{Total lead } (\mu\text{g}) / \text{sample area } (\text{m}^2).$$

⁵ Australian Government Department of the Environment, Lead Alert: the six step guide to painting your home, 5th Ed. 2016.

⁶ Vacuum sample of hard floor

Table 2 presents a comparison of the results against adopted health guidelines and found all soil and rainwater tank water lead concentrations below the relevant guidelines. A minor exceedance of lead loading in one dust sample collected inside the Showground Pavilion was recorded. However, when considering all data this minor exceedance was not considered to represent an unacceptable health risk. On the basis of the lead data collected, risks to health from users of the showground are considered low and acceptable.

Table 3 Summary of lead concentration results for tank sediment

Type	Guideline	Result	
Rainwater tank sediment	600 mg/kg ¹	P11_TWS1 590	P11_TWS2 47

¹ NEPM (2013) Schedule B1: Guideline on investigation levels for soil and groundwater. National Environment Protection (Assessment of Site Contamination) Measure 1999. Federal Register of Legislative Instruments F2013C00288 (HIL C – developed open space such as parks, playgrounds, playing fields (e.g. ovals), secondary schools and footpaths).

Table 3 presents the concentration of lead in tank sediment. In accordance with NSW Department of Health guidance (<https://www.health.nsw.gov.au/environment/water/Pages/rainwater.aspx>) sediment in rain water tanks should be periodically removed.

No further action in regard to lead impacts from the rail corridor is required.

For further information please contact the undersigned.

Yours sincerely



Stephen Maxwell

Tarago Lead Investigation Project Manager

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Fiona Robinson

Principal Contaminated Land Specialist

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Attachments

Figure of sampling locations

Reference

Laboratory reports 710611¹ and 713878

Limitations

Ramboll Australia Pty Ltd prepared this report in accordance with the scope of work as outlined in our proposal to John Holland Rail and in accordance with our understanding and interpretation of current regulatory standards. A representative program of sampling and laboratory analyses was undertaken as part of this investigation. While every care has been taken, concentrations of contaminants measured may not be representative of conditions between the locations sampled and investigated. We cannot therefore preclude the presence of materials that may be hazardous. Site conditions may change over time. This report is based on conditions encountered at the Site at the time of the report and Ramboll disclaims responsibility for any changes that may have occurred after this time. The conclusions presented in this report represent Ramboll's professional judgment based on information made available during the course of this assignment and are true and correct to the best of Ramboll's knowledge as at the date of the assessment. Ramboll did not independently verify all of the written or oral information provided to Ramboll during the course of this investigation. While Ramboll has no reason to doubt the accuracy of the information provided to it, the report is complete and accurate only to the extent that the information provided to Ramboll was itself complete and accurate. This report does not purport to give legal advice. This advice can only be given by qualified legal advisors.

¹ Laboratory report 710611 includes a sample of sediment laden water collected from the base of one of the rain water tanks. Risks associated with lead in tank sediment have been assessed through subsequent analyses of dried sediment samples.



Imagery © Department Finance, Services and Innovation 2020

Legend

- Property boundary
- Dust sample
- ⊗ Hand auger sample
- ⊕ Tank sample

Lead exceedance criteria

Dust Interior
>1000 (µg/m ²)

Environment Testing

Ramboll Environ Australia Pty Ltd
Level 3/100 Pacific Highway
North Sydney
NSW 2060

Attention: **Stephen Maxwell**

Report **710611-A**
 Project name
 Project ID **318000780**
 Received Date **Mar 27, 2020**

Client Sample ID			DSWAB_FE(P1 1)	DSWAB_TC(P1 1)	DSWAB_KC(P 11)	DSWAB_OD(P 11)
Sample Matrix			Wipes	Wipes	Wipes	Wipes
Eurofins Sample No.			S20-Ma44013	S20-Ma44014	S20-Ma44015	S20-Ma44016
Date Sampled			Mar 26, 2020	Mar 26, 2020	Mar 26, 2020	Mar 26, 2020
Test/Reference	LOR	Unit				
Heavy Metals						
Lead	1	Total ug	20	76	17	24

Sample History

Where samples are submitted/analysed over several days, the last date of extraction and analysis is reported.

A recent review of our LIMS has resulted in the correction or clarification of some method identifications. Due to this, some of the method reference information on reports has changed. However, no substantive change has been made to our laboratory methods, and as such there is no change in the validity of current or previous results.

If the date and time of sampling are not provided, the Laboratory will not be responsible for compromised results should testing be performed outside the recommended holding time.

Description

Heavy Metals

Testing Site

Melbourne

Extracted

Apr 02, 2020

Holding Time

180 Days

- Method: NIOSH Methods 7300 - Heavy Metals

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6 Monterey Road
Dandenong South VIC 3175
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NATA # 1261
Site # 1254 & 14271

Sydney
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Lane Cove West NSW 2066
Phone : +61 2 9900 8400
NATA # 1261 Site # 18217

Brisbane
1/21 Smallwood Place
Murarrie QLD 4172
Phone : +61 7 3902 4600
NATA # 1261 Site # 20794

Perth
2/91 Leach Highway
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NATA # 1261
Site # 23736

New Zealand

Auckland
35 O'Rorke Road
Penrose, Auckland 1061
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Rolleston, Christchurch 7675
Phone : 0800 856 450
IANZ # 1290

Company Name: Ramboll Australia Pty Ltd
Address: Level 3/100 Pacific Highway
North Sydney
NSW 2060

Order No.:
Report #: 710611
Phone: 02 9954 8118
Fax: 02 9954 8150

Received: Mar 27, 2020 2:58 PM
Due: Apr 3, 2020
Priority: 5 Day
Contact Name: Stephen Maxwell

Project Name:
Project ID: 318000780

Eurofins Analytical Services Manager : Andrew Black

Sample Detail						Lead	Lead	Moisture Set	NEPM 2013 Metals without Cr6+ (As, Be, B, Cd, Co, Cr, Cu, Hg, Pb, Ni, Mn, Cd, Co, Cr, Cu, Hg, Pb, Ni, Mn, Se, Zn)	NEPM 2013 Filtered Metals without Cr6+ (As, Be, B, Cd, Co, Cr, Cu, Hg, Pb, Ni, Mn, Se, Zn)
Melbourne Laboratory - NATA Site # 1254 & 14271						X				
Sydney Laboratory - NATA Site # 18217							X	X	X	X
Brisbane Laboratory - NATA Site # 20794										
Perth Laboratory - NATA Site # 23736										
External Laboratory										
No	Sample ID	Sample Date	Sampling Time	Matrix	LAB ID					
1	P11_TW1	Mar 26, 2020		Water	S20-Ma43996				X	X
2	P11_TW2	Mar 26, 2020		Water	S20-Ma43997				X	X
3	P11_HA01_0.0-0.05	Mar 26, 2020		Soil	S20-Ma43998		X	X		
4	P11_HA01_0.2	Mar 26, 2020		Soil	S20-Ma43999		X	X		
5	P11_HA02_0.0-0.05	Mar 26, 2020		Soil	S20-Ma44000		X	X		
6	P11_HA02_0.2	Mar 26, 2020		Soil	S20-Ma44001		X	X		
7	P11_HA02_0.3	Mar 26, 2020		Soil	S20-Ma44002		X	X		

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NATA # 1261 Site # 18217

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Murarrie QLD 4172
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NATA # 1261 Site # 20794

Perth
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e.mail : EnviroSales@eurofins.com

Company Name: Ramboll Australia Pty Ltd
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North Sydney
NSW 2060

Order No.:
Report #: 710611
Phone: 02 9954 8118
Fax: 02 9954 8150

Received: Mar 27, 2020 2:58 PM
Due: Apr 3, 2020
Priority: 5 Day
Contact Name: Stephen Maxwell

Project Name:
Project ID: 318000780

Eurofins Analytical Services Manager : Andrew Black

Sample Detail						Lead	Lead	Moisture Set	NEPM 2013 Filtered Metals without Cr6+ (As, Be, B, Cd, Co, Cr, Cu, Hg, Pb, Ni, Mn, NEPM 2013 Metals without Cr6+ (As, Be, B, Cd, Co, Cr, Cu, Hg, Pb, Ni, Mn, Se, Zn)	NEPM 2013 Filtered Metals without Cr6+ (As, Be, B, Cd, Co, Cr, Cu, Hg, Pb, Ni, Mn, Se, Zn)
Melbourne Laboratory - NATA Site # 1254 & 14271						X				
Sydney Laboratory - NATA Site # 18217							X	X	X	X
Brisbane Laboratory - NATA Site # 20794										
Perth Laboratory - NATA Site # 23736										
8	P11_HA03_0-0.05	Mar 26, 2020		Soil	S20-Ma44003		X	X		
9	P11_HA03_0.2	Mar 26, 2020		Soil	S20-Ma44004		X	X		
10	P11_HA04_0-0.05	Mar 26, 2020		Soil	S20-Ma44005		X	X		
11	P11_HA04_0.2	Mar 26, 2020		Soil	S20-Ma44006		X	X		
12	P11_HA04_0.3	Mar 26, 2020		Soil	S20-Ma44007		X	X		
13	P11_HA05_0-0.05	Mar 26, 2020		Soil	S20-Ma44008		X	X		
14	P11_HA05_0.2	Mar 26, 2020		Soil	S20-Ma44009		X	X		
15	P11_TWS1	Mar 26, 2020		Sediment	S20-Ma44010		X	X		

Australia

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NATA # 1261 Site # 18217

Brisbane
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Phone : +61 7 3902 4600
NATA # 1261 Site # 20794

Perth
2/91 Leach Highway
Kewdale WA 6105
Phone : +61 8 9251 9600
NATA # 1261
Site # 23736

New Zealand

Auckland
35 O'Rorke Road
Penrose, Auckland 1061
Phone : +64 9 526 45 51
IANZ # 1327

Christchurch
43 Detroit Drive
Rolleston, Christchurch 7675
Phone : 0800 856 450
IANZ # 1290

Company Name: Ramboll Australia Pty Ltd
Address: Level 3/100 Pacific Highway
North Sydney
NSW 2060

Order No.:
Report #: 710611
Phone: 02 9954 8118
Fax: 02 9954 8150

Received: Mar 27, 2020 2:58 PM
Due: Apr 3, 2020
Priority: 5 Day
Contact Name: Stephen Maxwell

Project Name:
Project ID: 318000780

Eurofins Analytical Services Manager : Andrew Black

Sample Detail						Lead	Lead	Moisture Set	NEPM 2013 Metals without Cr6+ (As, Be, B, Cd, Co, Cr, Cu, Hg, Pb, Ni, Mn, NEPM 2013 Metals without Cr6+ (As, Be, B, Cd, Co, Cr, Cu, Hg, Pb, Ni, Mn, Se, Zn)	NEPM 2013 Filtered Metals without Cr6+ (As, Be, B, Cd, Co, Cr, Cu, Hg, Pb, Ni, Mn,
Melbourne Laboratory - NATA Site # 1254 & 14271						X				
Sydney Laboratory - NATA Site # 18217							X	X	X	X
Brisbane Laboratory - NATA Site # 20794										
Perth Laboratory - NATA Site # 23736										
16	P11_TWS2	Mar 26, 2020		Sediment	S20-Ma44011		X	X		
17	DVAC_MA(P11)	Mar 26, 2020		Dust	S20-Ma44012	X				
18	DSWAB_FE(P11)	Mar 26, 2020		Wipes	S20-Ma44013	X				
19	DSWAB_TC(P11)	Mar 26, 2020		Wipes	S20-Ma44014	X				
20	DSWAB_KC(P11)	Mar 26, 2020		Wipes	S20-Ma44015	X				
21	DSWAB_OD(P11)	Mar 26, 2020		Wipes	S20-Ma44016	X				
Test Counts						19	19	14	2	2

Internal Quality Control Review and Glossary
General

- Laboratory QC results for Method Blanks, Duplicates, Matrix Spikes, and Laboratory Control Samples follows guidelines delineated in the National Environment Protection (Assessment of Site Contamination) Measure 1999, as amended May 2013 and are included in this QC report where applicable. Additional QC data may be available on request.
- All soil/sediment/solid results are reported on a dry basis, unless otherwise stated.
- All biota/food results are reported on a wet weight basis on the edible portion, unless otherwise stated.
- Actual LORs are matrix dependant. Quoted LORs may be raised where sample extracts are diluted due to interferences.
- Results are uncorrected for matrix spikes or surrogate recoveries except for PFAS compounds.
- SVOC analysis on waters are performed on homogenised, unfiltered samples, unless noted otherwise.
- Samples were analysed on an 'as received' basis.
- Information identified on this report with blue colour, indicates data provided by customer, that may have an impact on the results.
- This report replaces any interim results previously issued.

Holding Times

Please refer to 'Sample Preservation and Container Guide' for holding times (QS3001).

For samples received on the last day of holding time, notification of testing requirements should have been received at least 6 hours prior to sample receipt deadlines as stated on the SRA.

If the Laboratory did not receive the information in the required timeframe, and regardless of any other integrity issues, suitably qualified results may still be reported.

Holding times apply from the date of sampling, therefore compliance to these may be outside the laboratory's control.

For VOCs containing vinyl chloride, styrene and 2-chloroethyl vinyl ether the holding time is 7 days however for all other VOCs such as BTEX or C6-10 TRH then the holding time is 14 days.

****NOTE:** pH duplicates are reported as a range NOT as RPD

Units

mg/kg: milligrams per kilogram

mg/L: milligrams per litre

ug/L: micrograms per litre

ppm: Parts per million

ppb: Parts per billion

%: Percentage

org/100mL: Organisms per 100 millilitres

NTU: Nephelometric Turbidity Units

MPN/100mL: Most Probable Number of organisms per 100 millilitres

Terms

Dry	Where a moisture has been determined on a solid sample the result is expressed on a dry basis.
LOR	Limit of Reporting.
SPIKE	Addition of the analyte to the sample and reported as percentage recovery.
RPD	Relative Percent Difference between two Duplicate pieces of analysis.
LCS	Laboratory Control Sample - reported as percent recovery.
CRM	Certified Reference Material - reported as percent recovery.
Method Blank	In the case of solid samples these are performed on laboratory certified clean sands and in the case of water samples these are performed on de-ionised water.
Surr - Surrogate	The addition of a like compound to the analyte target and reported as percentage recovery.
Duplicate	A second piece of analysis from the same sample and reported in the same units as the result to show comparison.
USEPA	United States Environmental Protection Agency
APHA	American Public Health Association
TCLP	Toxicity Characteristic Leaching Procedure
COC	Chain of Custody
SRA	Sample Receipt Advice
QSM	US Department of Defense Quality Systems Manual Version 5.3
CP	Client Parent - QC was performed on samples pertaining to this report
NCP	Non-Client Parent - QC performed on samples not pertaining to this report, QC is representative of the sequence or batch that client samples were analysed within.
TEQ	Toxic Equivalency Quotient

QC - Acceptance Criteria

RPD Duplicates: Global RPD Duplicates Acceptance Criteria is 30% however the following acceptance guidelines are equally applicable:

Results <10 times the LOR : No Limit

Results between 10-20 times the LOR : RPD must lie between 0-50%

Results >20 times the LOR : RPD must lie between 0-30%

Surrogate Recoveries: Recoveries must lie between 20-130% Phenols & 50-150% PFASs

PFAS field samples that contain surrogate recoveries in excess of the QC limit designated in QSM 5.3 where no positive PFAS results have been reported have been reviewed and no data was affected.

WA DWER (n=10): PFBA, PFPeA, PFHxA, PFHpA, PFOA, PFBS, PFHxS, PFOS, 6:2 FTSA, 8:2 FTSA

QC Data General Comments

- Where a result is reported as a less than (<), higher than the nominated LOR, this is due to either matrix interference, extract dilution required due to interferences or contaminant levels within the sample, high moisture content or insufficient sample provided.
- Duplicate data shown within this report that states the word "BATCH" is a Batch Duplicate from outside of your sample batch, but within the laboratory sample batch at a 1:10 ratio. The Parent and Duplicate data shown is not data from your samples.
- Organochlorine Pesticide analysis - where reporting LCS data, Toxaphene & Chlordane are not added to the LCS.
- Organochlorine Pesticide analysis - where reporting Spike data, Toxaphene is not added to the Spike.
- Total Recoverable Hydrocarbons - where reporting Spike & LCS data, a single spike of commercial Hydrocarbon products in the range of C12-C30 is added and it's Total Recovery is reported in the C10-C14 cell of the Report.
- pH and Free Chlorine analysed in the laboratory - Analysis on this test must begin within 30 minutes of sampling. Therefore laboratory analysis is unlikely to be completed within holding time. Analysis will begin as soon as possible after sample receipt.
- Recovery Data (Spikes & Surrogates) - where chromatographic interference does not allow the determination of Recovery the term "INT" appears against that analyte.
- Polychlorinated Biphenyls are spiked only using Aroclor 1260 in Matrix Spikes and LCS.
- For Matrix Spikes and LCS results a dash " - " in the report means that the specific analyte was not added to the QC sample.
- Duplicate RPDs are calculated from raw analytical data thus it is possible to have two sets of data.

Quality Control Results

Comments**Sample Integrity**

Custody Seals Intact (if used)	N/A
Attempt to Chill was evident	Yes
Sample correctly preserved	Yes
Appropriate sample containers have been used	No
Sample containers for volatile analysis received with minimal headspace	Yes
Samples received within HoldingTime	Yes
Some samples have been subcontracted	No

Authorised By

Andrew Black	Analytical Services Manager
Emily Rosenberg	Senior Analyst-Metal (VIC)

**Glenn Jackson
General Manager**

Final report - this Report replaces any previously issued Report

- Indicates Not Requested

* Indicates NATA accreditation does not cover the performance of this service

Measurement uncertainty of test data is available on request or please [click here](#).

Eurofins shall not be liable for loss, cost, damages or expenses incurred by the client, or any other person or company, resulting from the use of any information or interpretation given in this report. In no case shall Eurofins be liable for consequential damages including, but not limited to, lost profits, damages for failure to meet deadlines and lost production arising from this report. This document shall not be reproduced except in full and relates only to the items tested. Unless indicated otherwise, the tests were performed on the samples as received.

Ramboll Environ Australia Pty Ltd
 Level 3/100 Pacific Highway
 North Sydney
 NSW 2060



NATA Accredited
 Accreditation Number 1261
 Site Number 18217

Accredited for compliance with ISO/IEC 17025 – Testing
 The results of the tests, calibrations and/or
 measurements included in this document are traceable
 to Australian/national standards.

Attention: Stephen Maxwell

Report 710611-S
 Project name
 Project ID 318000780
 Received Date Mar 27, 2020

Client Sample ID			P11_HA01_0.0-0.05	P11_HA01_0.2	P11_HA02_0.0-0.05	P11_HA02_0.2
Sample Matrix			Soil	Soil	Soil	Soil
Eurofins Sample No.			S20-Ma43998	S20-Ma43999	S20-Ma44000	S20-Ma44001
Date Sampled			Mar 26, 2020	Mar 26, 2020	Mar 26, 2020	Mar 26, 2020
Test/Reference	LOR	Unit				
Heavy Metals						
Lead	5	mg/kg	6.0	12	12	< 5
% Moisture						
	1	%	2.6	7.6	6.9	5.1

Client Sample ID			P11_HA02_0.3	P11_HA03_0.0-0.05	P11_HA03_0.2	P11_HA04_0.0-0.05
Sample Matrix			Soil	Soil	Soil	Soil
Eurofins Sample No.			S20-Ma44002	S20-Ma44003	S20-Ma44004	S20-Ma44005
Date Sampled			Mar 26, 2020	Mar 26, 2020	Mar 26, 2020	Mar 26, 2020
Test/Reference	LOR	Unit				
Heavy Metals						
Lead	5	mg/kg	< 5	8.2	< 5	12
% Moisture						
	1	%	5.9	1.5	4.6	12

Client Sample ID			P11_HA04_0.2	P11_HA04_0.3	P11_HA05_0.0-0.05	P11_HA05_0.2
Sample Matrix			Soil	Soil	Soil	Soil
Eurofins Sample No.			S20-Ma44006	S20-Ma44007	S20-Ma44008	S20-Ma44009
Date Sampled			Mar 26, 2020	Mar 26, 2020	Mar 26, 2020	Mar 26, 2020
Test/Reference	LOR	Unit				
Heavy Metals						
Lead	5	mg/kg	8.2	7.3	11	7.1
% Moisture						
	1	%	9.4	9.1	8.2	6.1

Client Sample ID			DVAC_MA(P11)
Sample Matrix			Dust
Eurofins Sample No.			S20-Ma44012
Date Sampled			Mar 26, 2020
Test/Reference	LOR	Unit	
Heavy Metals			
Lead	5	mg/kg	180

Sample History

Where samples are submitted/analysed over several days, the last date of extraction and analysis is reported.

A recent review of our LIMS has resulted in the correction or clarification of some method identifications. Due to this, some of the method reference information on reports has changed. However, no substantive change has been made to our laboratory methods, and as such there is no change in the validity of current or previous results.

If the date and time of sampling are not provided, the Laboratory will not be responsible for compromised results should testing be performed outside the recommended holding time.

Description

Heavy Metals

- Method: LTM-MET-3040 Metals in Waters, Soils & Sediments by ICP-MS

% Moisture

- Method: LTM-GEN-7080 Moisture

Testing Site

Sydney

Sydney

Extracted

Apr 02, 2020

Mar 27, 2020

Holding Time

180 Days

14 Days

Australia

Melbourne
6 Monterey Road
Dandenong South VIC 3175
Phone : +61 3 8564 5000
NATA # 1261
Site # 1254 & 14271

Sydney
Unit F3, Building F
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Lane Cove West NSW 2066
Phone : +61 2 9900 8400
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Rolleston, Christchurch 7675
Phone : 0800 856 450
IANZ # 1290

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Address: Level 3/100 Pacific Highway
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NSW 2060

Order No.:
Report #: 710611
Phone: 02 9954 8118
Fax: 02 9954 8150

Received: Mar 27, 2020 2:58 PM
Due: Apr 3, 2020
Priority: 5 Day
Contact Name: Stephen Maxwell

Project Name:
Project ID: 318000780

Eurofins Analytical Services Manager : Andrew Black

Sample Detail						Lead	Lead	Moisture Set	NEPM 2013 Metals without Cr6+ (As, Be, B, Cd, Co, Cr, Cu, Hg, Pb, Ni, Mn, Cd, Co, Cr, Cu, Hg, Pb, Ni, Mn, Se, Zn)	NEPM 2013 Filtered Metals without Cr6+ (As, Be, B, Cd, Co, Cr, Cu, Hg, Pb, Ni, Mn, Se, Zn)
Melbourne Laboratory - NATA Site # 1254 & 14271						X				
Sydney Laboratory - NATA Site # 18217							X	X	X	X
Brisbane Laboratory - NATA Site # 20794										
Perth Laboratory - NATA Site # 23736										
External Laboratory										
No	Sample ID	Sample Date	Sampling Time	Matrix	LAB ID					
1	P11_TW1	Mar 26, 2020		Water	S20-Ma43996				X	X
2	P11_TW2	Mar 26, 2020		Water	S20-Ma43997				X	X
3	P11_HA01_0.0-0.05	Mar 26, 2020		Soil	S20-Ma43998		X	X		
4	P11_HA01_0.2	Mar 26, 2020		Soil	S20-Ma43999		X	X		
5	P11_HA02_0.0-0.05	Mar 26, 2020		Soil	S20-Ma44000		X	X		
6	P11_HA02_0.2	Mar 26, 2020		Soil	S20-Ma44001		X	X		
7	P11_HA02_0.3	Mar 26, 2020		Soil	S20-Ma44002		X	X		

Australia

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Melbourne Laboratory - NATA Site # 1254 & 14271						X				
Sydney Laboratory - NATA Site # 18217							X	X	X	X
Brisbane Laboratory - NATA Site # 20794										
Perth Laboratory - NATA Site # 23736										
8	P11_HA03_0-0.05	Mar 26, 2020		Soil	S20-Ma44003		X	X		
9	P11_HA03_0.2	Mar 26, 2020		Soil	S20-Ma44004		X	X		
10	P11_HA04_0-0.05	Mar 26, 2020		Soil	S20-Ma44005		X	X		
11	P11_HA04_0.2	Mar 26, 2020		Soil	S20-Ma44006		X	X		
12	P11_HA04_0.3	Mar 26, 2020		Soil	S20-Ma44007		X	X		
13	P11_HA05_0-0.05	Mar 26, 2020		Soil	S20-Ma44008		X	X		
14	P11_HA05_0.2	Mar 26, 2020		Soil	S20-Ma44009		X	X		
15	P11_TWS1	Mar 26, 2020		Sediment	S20-Ma44010		X	X		

Australia

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****NOTE:** pH duplicates are reported as a range NOT as RPD

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MPN/100mL: Most Probable Number of organisms per 100 millilitres

Terms

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Results <10 times the LOR : No Limit

Results between 10-20 times the LOR : RPD must lie between 0-50%

Results >20 times the LOR : RPD must lie between 0-30%

Surrogate Recoveries: Recoveries must lie between 20-130% Phenols & 50-150% PFASs

PFAS field samples that contain surrogate recoveries in excess of the QC limit designated in QSM 5.3 where no positive PFAS results have been reported have been reviewed and no data was affected.

WA DWER (n=10): PFBA, PFPeA, PFHxA, PFHpA, PFOA, PFBS, PFHxS, PFOS, 6:2 FTSA, 8:2 FTSA

QC Data General Comments

- Where a result is reported as a less than (<), higher than the nominated LOR, this is due to either matrix interference, extract dilution required due to interferences or contaminant levels within the sample, high moisture content or insufficient sample provided.
- Duplicate data shown within this report that states the word "BATCH" is a Batch Duplicate from outside of your sample batch, but within the laboratory sample batch at a 1:10 ratio. The Parent and Duplicate data shown is not data from your samples.
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- Organochlorine Pesticide analysis - where reporting Spike data, Toxaphene is not added to the Spike.
- Total Recoverable Hydrocarbons - where reporting Spike & LCS data, a single spike of commercial Hydrocarbon products in the range of C12-C30 is added and it's Total Recovery is reported in the C10-C14 cell of the Report.
- pH and Free Chlorine analysed in the laboratory - Analysis on this test must begin within 30 minutes of sampling. Therefore laboratory analysis is unlikely to be completed within holding time. Analysis will begin as soon as possible after sample receipt.
- Recovery Data (Spikes & Surrogates) - where chromatographic interference does not allow the determination of Recovery the term "INT" appears against that analyte.
- Polychlorinated Biphenyls are spiked only using Aroclor 1260 in Matrix Spikes and LCS.
- For Matrix Spikes and LCS results a dash " - " in the report means that the specific analyte was not added to the QC sample.
- Duplicate RPDs are calculated from raw analytical data thus it is possible to have two sets of data.

Quality Control Results

Test				Units	Result 1		Acceptance Limits	Pass Limits	Qualifying Code	
Method Blank										
Heavy Metals										
Lead				mg/kg	< 5		5	Pass		
LCS - % Recovery										
Heavy Metals										
Lead				%	100		70-130	Pass		
Test	Lab Sample ID	QA Source	Units	Result 1			Acceptance Limits	Pass Limits	Qualifying Code	
Spike - % Recovery										
Heavy Metals										
Lead				M20-Ap02905	NCP	%	99	75-125	Pass	
Test	Lab Sample ID	QA Source	Units	Result 1			Acceptance Limits	Pass Limits	Qualifying Code	
Duplicate										
				Result 1	Result 2	RPD				
% Moisture				S20-Ma43967	NCP	%	12	12	<1	30% Pass
Duplicate										
Heavy Metals										
Lead				S20-Ma44004	CP	mg/kg	< 5	< 5	<1	30% Pass

Comments
Sample Integrity

Custody Seals Intact (if used)	N/A
Attempt to Chill was evident	Yes
Sample correctly preserved	Yes
Appropriate sample containers have been used	No
Sample containers for volatile analysis received with minimal headspace	Yes
Samples received within HoldingTime	Yes
Some samples have been subcontracted	No

Authorised By

Andrew Black	Analytical Services Manager
Emily Rosenberg	Senior Analyst-Metal (VIC)
Gabriele Cordero	Senior Analyst-Metal (NSW)


**Glenn Jackson
General Manager**

Final report - this Report replaces any previously issued Report

- Indicates Not Requested

* Indicates NATA accreditation does not cover the performance of this service

Measurement uncertainty of test data is available on request or please [click here](#).

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 Level 3/100 Pacific Highway
 North Sydney
 NSW 2060



NATA Accredited
 Accreditation Number 1261
 Site Number 18217

Accredited for compliance with ISO/IEC 17025 – Testing
 The results of the tests, calibrations and/or
 measurements included in this document are traceable
 to Australian/national standards.

Attention: Stephen Maxwell

Report 710611-W
 Project name
 Project ID 318000780
 Received Date Mar 27, 2020

Client Sample ID			P11_TW1	P11_TW2	P11_TWS1	P11_TWS2
Sample Matrix			Water	Water	Water	Water
Eurofins Sample No.			S20-Ma43996	S20-Ma43997	S20-Ma44010	S20-Ma44011
Date Sampled			Mar 26, 2020	Mar 26, 2020	Mar 26, 2020	Mar 26, 2020
Test/Reference	LOR	Unit				
Heavy Metals						
Arsenic	0.001	mg/L	< 0.001	< 0.001	-	-
Arsenic (filtered)	0.001	mg/L	< 0.001	< 0.001	-	-
Beryllium	0.001	mg/L	< 0.001	< 0.001	-	-
Beryllium (filtered)	0.001	mg/L	< 0.001	< 0.001	-	-
Boron	0.05	mg/L	< 0.05	< 0.05	-	-
Boron (filtered)	0.05	mg/L	< 0.05	< 0.05	-	-
Cadmium	0.0002	mg/L	0.0003	< 0.0002	-	-
Cadmium (filtered)	0.0002	mg/L	0.0003	< 0.0002	-	-
Chromium	0.001	mg/L	< 0.001	< 0.001	-	-
Chromium (filtered)	0.001	mg/L	< 0.001	< 0.001	-	-
Cobalt	0.001	mg/L	< 0.001	< 0.001	-	-
Cobalt (filtered)	0.001	mg/L	< 0.001	< 0.001	-	-
Copper	0.001	mg/L	< 0.001	0.002	-	-
Copper (filtered)	0.001	mg/L	< 0.001	0.002	-	-
Lead	0.001	mg/L	< 0.001	< 0.001	4.8	0.60
Lead (filtered)	0.001	mg/L	< 0.001	< 0.001	-	-
Manganese	0.005	mg/L	0.013	0.021	-	-
Manganese (filtered)	0.005	mg/L	0.011	0.018	-	-
Mercury	0.0001	mg/L	< 0.0001	< 0.0001	-	-
Mercury (filtered)	0.0001	mg/L	< 0.0001	< 0.0001	-	-
Nickel	0.001	mg/L	< 0.001	< 0.001	-	-
Nickel (filtered)	0.001	mg/L	< 0.001	< 0.001	-	-
Selenium	0.001	mg/L	< 0.001	< 0.001	-	-
Selenium (filtered)	0.001	mg/L	< 0.001	< 0.001	-	-
Zinc	0.005	mg/L	2.0	0.63	-	-
Zinc (filtered)	0.005	mg/L	1.9	0.57	-	-

Sample History

Where samples are submitted/analysed over several days, the last date of extraction and analysis is reported. A recent review of our LIMS has resulted in the correction or clarification of some method identifications. Due to this, some of the method reference information on reports has changed. However, no substantive change has been made to our laboratory methods, and as such there is no change in the validity of current or previous results.

If the date and time of sampling are not provided, the Laboratory will not be responsible for compromised results should testing be performed outside the recommended holding time.

Description	Testing Site	Extracted	Holding Time
NEPM 2013 Metals without Cr6+ (As, Be, B, Cd, Co, Cr, Cu, Hg, Pb, Ni, Mn, Se, Zn) - Method: LTM-MET-3040 Metals in Waters, Soils & Sediments by ICP-MS	Sydney	Apr 03, 2020	180 Days
NEPM 2013 Filtered Metals without Cr6+ (As, Be, B, Cd, Co, Cr, Cu, Hg, Pb, Ni, Mn, Se, Zn) - Method: LTM-MET-3040 Metals in Waters, Soils & Sediments by ICP-MS	Sydney	Mar 27, 2020	28 Days
Heavy Metals - Method: LTM-MET-3040 Metals in Waters, Soils & Sediments by ICP-MS	Sydney	Apr 03, 2020	180 Days

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Company Name: Ramboll Australia Pty Ltd
Address: Level 3/100 Pacific Highway
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NSW 2060

Order No.:
Report #: 710611
Phone: 02 9954 8118
Fax: 02 9954 8150

Received: Mar 27, 2020 2:58 PM
Due: Apr 3, 2020
Priority: 5 Day
Contact Name: Stephen Maxwell

Project Name:
Project ID: 318000780

Eurofins Analytical Services Manager : Andrew Black

Sample Detail						Lead	Lead	Moisture Set	NEPM 2013 Metals without Cr6+ (As, Be, B, Cd, Co, Cr, Cu, Hg, Pb, Ni, Mn, Cd, Co, Cr, Cu, Hg, Pb, Ni, Mn, Se, Zn)	NEPM 2013 Filtered Metals without Cr6+ (As, Be, B, Cd, Co, Cr, Cu, Hg, Pb, Ni, Mn, Se, Zn)
Melbourne Laboratory - NATA Site # 1254 & 14271						X				
Sydney Laboratory - NATA Site # 18217							X	X	X	X
Brisbane Laboratory - NATA Site # 20794										
Perth Laboratory - NATA Site # 23736										
External Laboratory										
No	Sample ID	Sample Date	Sampling Time	Matrix	LAB ID					
1	P11_TW1	Mar 26, 2020		Water	S20-Ma43996				X	X
2	P11_TW2	Mar 26, 2020		Water	S20-Ma43997				X	X
3	P11_HA01_0.0-0.05	Mar 26, 2020		Soil	S20-Ma43998		X	X		
4	P11_HA01_0.2	Mar 26, 2020		Soil	S20-Ma43999		X	X		
5	P11_HA02_0.0-0.05	Mar 26, 2020		Soil	S20-Ma44000		X	X		
6	P11_HA02_0.2	Mar 26, 2020		Soil	S20-Ma44001		X	X		
7	P11_HA02_0.3	Mar 26, 2020		Soil	S20-Ma44002		X	X		

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Melbourne Laboratory - NATA Site # 1254 & 14271						X				
Sydney Laboratory - NATA Site # 18217							X	X	X	X
Brisbane Laboratory - NATA Site # 20794										
Perth Laboratory - NATA Site # 23736										
8	P11_HA03_0-0.05	Mar 26, 2020		Soil	S20-Ma44003		X	X		
9	P11_HA03_0.2	Mar 26, 2020		Soil	S20-Ma44004		X	X		
10	P11_HA04_0-0.05	Mar 26, 2020		Soil	S20-Ma44005		X	X		
11	P11_HA04_0.2	Mar 26, 2020		Soil	S20-Ma44006		X	X		
12	P11_HA04_0.3	Mar 26, 2020		Soil	S20-Ma44007		X	X		
13	P11_HA05_0-0.05	Mar 26, 2020		Soil	S20-Ma44008		X	X		
14	P11_HA05_0.2	Mar 26, 2020		Soil	S20-Ma44009		X	X		
15	P11_TWS1	Mar 26, 2020		Sediment	S20-Ma44010		X	X		

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Melbourne Laboratory - NATA Site # 1254 & 14271						X				
Sydney Laboratory - NATA Site # 18217							X	X	X	X
Brisbane Laboratory - NATA Site # 20794										
Perth Laboratory - NATA Site # 23736										
16	P11_TWS2	Mar 26, 2020		Sediment	S20-Ma44011		X	X		
17	DVAC_MA(P11)	Mar 26, 2020		Dust	S20-Ma44012	X				
18	DSWAB_FE(P11)	Mar 26, 2020		Wipes	S20-Ma44013	X				
19	DSWAB_TC(P11)	Mar 26, 2020		Wipes	S20-Ma44014	X				
20	DSWAB_KC(P11)	Mar 26, 2020		Wipes	S20-Ma44015	X				
21	DSWAB_OD(P11)	Mar 26, 2020		Wipes	S20-Ma44016	X				
Test Counts						19	19	14	2	2

Internal Quality Control Review and Glossary
General

- Laboratory QC results for Method Blanks, Duplicates, Matrix Spikes, and Laboratory Control Samples follows guidelines delineated in the National Environment Protection (Assessment of Site Contamination) Measure 1999, as amended May 2013 and are included in this QC report where applicable. Additional QC data may be available on request.
- All soil/sediment/solid results are reported on a dry basis, unless otherwise stated.
- All biota/food results are reported on a wet weight basis on the edible portion, unless otherwise stated.
- Actual LORs are matrix dependant. Quoted LORs may be raised where sample extracts are diluted due to interferences.
- Results are uncorrected for matrix spikes or surrogate recoveries except for PFAS compounds.
- SVOC analysis on waters are performed on homogenised, unfiltered samples, unless noted otherwise.
- Samples were analysed on an 'as received' basis.
- Information identified on this report with blue colour, indicates data provided by customer, that may have an impact on the results.
- This report replaces any interim results previously issued.

Holding Times

Please refer to 'Sample Preservation and Container Guide' for holding times (QS3001).

For samples received on the last day of holding time, notification of testing requirements should have been received at least 6 hours prior to sample receipt deadlines as stated on the SRA.

If the Laboratory did not receive the information in the required timeframe, and regardless of any other integrity issues, suitably qualified results may still be reported.

Holding times apply from the date of sampling, therefore compliance to these may be outside the laboratory's control.

For VOCs containing vinyl chloride, styrene and 2-chloroethyl vinyl ether the holding time is 7 days however for all other VOCs such as BTEX or C6-10 TRH then the holding time is 14 days.

****NOTE:** pH duplicates are reported as a range NOT as RPD

Units

mg/kg: milligrams per kilogram

mg/L: milligrams per litre

ug/L: micrograms per litre

ppm: Parts per million

ppb: Parts per billion

%: Percentage

org/100mL: Organisms per 100 millilitres

NTU: Nephelometric Turbidity Units

MPN/100mL: Most Probable Number of organisms per 100 millilitres

Terms

Dry	Where a moisture has been determined on a solid sample the result is expressed on a dry basis.
LOR	Limit of Reporting.
SPIKE	Addition of the analyte to the sample and reported as percentage recovery.
RPD	Relative Percent Difference between two Duplicate pieces of analysis.
LCS	Laboratory Control Sample - reported as percent recovery.
CRM	Certified Reference Material - reported as percent recovery.
Method Blank	In the case of solid samples these are performed on laboratory certified clean sands and in the case of water samples these are performed on de-ionised water.
Surr - Surrogate	The addition of a like compound to the analyte target and reported as percentage recovery.
Duplicate	A second piece of analysis from the same sample and reported in the same units as the result to show comparison.
USEPA	United States Environmental Protection Agency
APHA	American Public Health Association
TCLP	Toxicity Characteristic Leaching Procedure
COC	Chain of Custody
SRA	Sample Receipt Advice
QSM	US Department of Defense Quality Systems Manual Version 5.3
CP	Client Parent - QC was performed on samples pertaining to this report
NCP	Non-Client Parent - QC performed on samples not pertaining to this report, QC is representative of the sequence or batch that client samples were analysed within.
TEQ	Toxic Equivalency Quotient

QC - Acceptance Criteria

RPD Duplicates: Global RPD Duplicates Acceptance Criteria is 30% however the following acceptance guidelines are equally applicable:

Results <10 times the LOR : No Limit

Results between 10-20 times the LOR : RPD must lie between 0-50%

Results >20 times the LOR : RPD must lie between 0-30%

Surrogate Recoveries: Recoveries must lie between 20-130% Phenols & 50-150% PFASs

PFAS field samples that contain surrogate recoveries in excess of the QC limit designated in QSM 5.3 where no positive PFAS results have been reported have been reviewed and no data was affected.

WA DWER (n=10): PFBA, PFPeA, PFHxA, PFHpA, PFOA, PFBS, PFHxS, PFOS, 6:2 FTSA, 8:2 FTSA

QC Data General Comments

- Where a result is reported as a less than (<), higher than the nominated LOR, this is due to either matrix interference, extract dilution required due to interferences or contaminant levels within the sample, high moisture content or insufficient sample provided.
- Duplicate data shown within this report that states the word "BATCH" is a Batch Duplicate from outside of your sample batch, but within the laboratory sample batch at a 1:10 ratio. The Parent and Duplicate data shown is not data from your samples.
- Organochlorine Pesticide analysis - where reporting LCS data, Toxaphene & Chlordane are not added to the LCS.
- Organochlorine Pesticide analysis - where reporting Spike data, Toxaphene is not added to the Spike.
- Total Recoverable Hydrocarbons - where reporting Spike & LCS data, a single spike of commercial Hydrocarbon products in the range of C12-C30 is added and it's Total Recovery is reported in the C10-C14 cell of the Report.
- pH and Free Chlorine analysed in the laboratory - Analysis on this test must begin within 30 minutes of sampling. Therefore laboratory analysis is unlikely to be completed within holding time. Analysis will begin as soon as possible after sample receipt.
- Recovery Data (Spikes & Surrogates) - where chromatographic interference does not allow the determination of Recovery the term "INT" appears against that analyte.
- Polychlorinated Biphenyls are spiked only using Aroclor 1260 in Matrix Spikes and LCS.
- For Matrix Spikes and LCS results a dash " - " in the report means that the specific analyte was not added to the QC sample.
- Duplicate RPDs are calculated from raw analytical data thus it is possible to have two sets of data.

Quality Control Results

Test	Units	Result 1			Acceptance Limits	Pass Limits	Qualifying Code
Method Blank							
Heavy Metals							
Arsenic	mg/L	< 0.001			0.001	Pass	
Arsenic (filtered)	mg/L	< 0.001			0.001	Pass	
Beryllium	mg/L	< 0.001			0.001	Pass	
Beryllium (filtered)	mg/L	< 0.001			0.001	Pass	
Boron	mg/L	< 0.05			0.05	Pass	
Boron (filtered)	mg/L	< 0.05			0.05	Pass	
Cadmium	mg/L	< 0.0002			0.0002	Pass	
Cadmium (filtered)	mg/L	< 0.0002			0.0002	Pass	
Chromium	mg/L	< 0.001			0.001	Pass	
Chromium (filtered)	mg/L	< 0.001			0.001	Pass	
Cobalt	mg/L	< 0.001			0.001	Pass	
Cobalt (filtered)	mg/L	< 0.001			0.001	Pass	
Copper	mg/L	< 0.001			0.001	Pass	
Copper (filtered)	mg/L	< 0.001			0.001	Pass	
Lead	mg/L	< 0.001			0.001	Pass	
Lead (filtered)	mg/L	< 0.001			0.001	Pass	
Manganese	mg/L	< 0.005			0.005	Pass	
Manganese (filtered)	mg/L	< 0.005			0.005	Pass	
Mercury	mg/L	< 0.0001			0.0001	Pass	
Mercury (filtered)	mg/L	< 0.0001			0.0001	Pass	
Nickel	mg/L	< 0.001			0.001	Pass	
Nickel (filtered)	mg/L	< 0.001			0.001	Pass	
Selenium	mg/L	< 0.001			0.001	Pass	
Selenium (filtered)	mg/L	< 0.001			0.001	Pass	
Zinc (filtered)	mg/L	< 0.005			0.005	Pass	
LCS - % Recovery							
Heavy Metals							
Arsenic	%	100			70-130	Pass	
Arsenic (filtered)	%	87			70-130	Pass	
Beryllium	%	101			70-130	Pass	
Beryllium (filtered)	%	85			70-130	Pass	
Boron	%	100			70-130	Pass	
Boron (filtered)	%	83			70-130	Pass	
Cadmium	%	99			70-130	Pass	
Cadmium (filtered)	%	84			70-130	Pass	
Chromium	%	96			70-130	Pass	
Chromium (filtered)	%	85			70-130	Pass	
Cobalt	%	96			70-130	Pass	
Cobalt (filtered)	%	85			70-130	Pass	
Copper	%	97			70-130	Pass	
Copper (filtered)	%	84			70-130	Pass	
Lead	%	104			70-130	Pass	
Lead (filtered)	%	86			70-130	Pass	
Manganese	%	96			70-130	Pass	
Manganese (filtered)	%	84			70-130	Pass	
Mercury	%	100			70-130	Pass	
Mercury (filtered)	%	80			70-130	Pass	
Nickel	%	95			70-130	Pass	
Nickel (filtered)	%	86			70-130	Pass	
Selenium	%	112			70-130	Pass	

Test			Units	Result 1			Acceptance Limits	Pass Limits	Qualifying Code
Selenium (filtered)			%	84			70-130	Pass	
Zinc			%	91			70-130	Pass	
Zinc (filtered)			%	85			70-130	Pass	
Test	Lab Sample ID	QA Source	Units	Result 1			Acceptance Limits	Pass Limits	Qualifying Code
Spike - % Recovery									
Heavy Metals				Result 1					
Arsenic	S20-Ma45004	NCP	%	103			70-130	Pass	
Arsenic (filtered)	S20-Ma44415	NCP	%	96			70-130	Pass	
Beryllium	S20-Ma45004	NCP	%	100			70-130	Pass	
Beryllium (filtered)	S20-Ma44415	NCP	%	93			70-130	Pass	
Boron	S20-Ma45004	NCP	%	93			70-130	Pass	
Cadmium	S20-Ma45004	NCP	%	99			70-130	Pass	
Cadmium (filtered)	S20-Ma44415	NCP	%	102			70-130	Pass	
Chromium	S20-Ma45004	NCP	%	96			70-130	Pass	
Chromium (filtered)	S20-Ma44415	NCP	%	93			70-130	Pass	
Cobalt	S20-Ma45004	NCP	%	97			70-130	Pass	
Cobalt (filtered)	S20-Ma44415	NCP	%	97			70-130	Pass	
Copper	S20-Ma45004	NCP	%	93			70-130	Pass	
Copper (filtered)	S20-Ma44415	NCP	%	94			70-130	Pass	
Lead	S20-Ma45004	NCP	%	103			70-130	Pass	
Lead (filtered)	S20-Ma44415	NCP	%	97			70-130	Pass	
Manganese	S20-Ma45004	NCP	%	97			70-130	Pass	
Manganese (filtered)	S20-Ma44415	NCP	%	97			70-130	Pass	
Mercury	S20-Ma45004	NCP	%	107			70-130	Pass	
Mercury (filtered)	S20-Ma44415	NCP	%	95			70-130	Pass	
Nickel	S20-Ma45004	NCP	%	97			70-130	Pass	
Nickel (filtered)	S20-Ma44415	NCP	%	95			70-130	Pass	
Selenium	S20-Ma45004	NCP	%	98			70-130	Pass	
Selenium (filtered)	S20-Ma44415	NCP	%	100			70-130	Pass	
Zinc	S20-Ma45004	NCP	%	95			70-130	Pass	
Zinc (filtered)	S20-Ma44415	NCP	%	84			70-130	Pass	
Test	Lab Sample ID	QA Source	Units	Result 1			Acceptance Limits	Pass Limits	Qualifying Code
Duplicate									
Heavy Metals				Result 1	Result 2	RPD			
Arsenic (filtered)	S20-Ma39694	NCP	mg/L	0.001	0.002	28	30%	Pass	
Beryllium	S20-Ma43285	NCP	mg/L	< 0.001	< 0.001	<1	30%	Pass	
Beryllium (filtered)	S20-Ma39694	NCP	mg/L	< 0.001	< 0.001	<1	30%	Pass	
Boron	S20-Ma43285	NCP	mg/L	< 0.05	< 0.05	<1	30%	Pass	
Boron (filtered)	S20-Ma39694	NCP	mg/L	0.49	0.09	140	30%	Fail	Q15
Cadmium (filtered)	S20-Ma39694	NCP	mg/L	< 0.0002	< 0.0002	<1	30%	Pass	
Chromium (filtered)	S20-Ma39694	NCP	mg/L	< 0.001	< 0.001	<1	30%	Pass	
Cobalt (filtered)	S20-Ma39694	NCP	mg/L	0.019	0.008	83	30%	Fail	Q15
Copper (filtered)	S20-Ma39694	NCP	mg/L	0.009	0.017	63	30%	Fail	Q15
Lead (filtered)	S20-Ma39694	NCP	mg/L	< 0.001	< 0.001	<1	30%	Pass	
Manganese (filtered)	S20-Ma39694	NCP	mg/L	0.46	0.70	41	30%	Fail	Q02
Mercury (filtered)	S20-Ma39694	NCP	mg/L	< 0.0001	< 0.0001	<1	30%	Pass	
Nickel (filtered)	S20-Ma39694	NCP	mg/L	0.006	0.010	51	30%	Fail	Q15
Selenium (filtered)	S20-Ma39694	NCP	mg/L	< 0.001	< 0.001	<1	30%	Pass	
Zinc (filtered)	S20-Ma39694	NCP	mg/L	0.027	0.033	18	30%	Pass	

Duplicate								
Heavy Metals				Result 1	Result 2	RPD		
Arsenic	S20-Ma44010	CP	mg/L	0.033	0.031	4.0	30%	Pass
Cadmium	S20-Ma44010	CP	mg/L	0.073	0.069	5.0	30%	Pass
Chromium	S20-Ma44010	CP	mg/L	0.21	0.21	3.0	30%	Pass
Cobalt	S20-Ma44010	CP	mg/L	0.075	0.073	3.0	30%	Pass
Copper	S20-Ma44010	CP	mg/L	0.62	0.60	3.0	30%	Pass
Lead	S20-Ma44010	CP	mg/L	4.8	4.6	6.0	30%	Pass
Manganese	S20-Ma44010	CP	mg/L	6.9	6.7	3.0	30%	Pass
Mercury	S20-Ma44010	CP	mg/L	0.0017	0.0016	7.0	30%	Pass
Nickel	S20-Ma44010	CP	mg/L	0.12	0.12	<1	30%	Pass
Selenium	S20-Ma44010	CP	mg/L	0.017	0.016	11	30%	Pass
Zinc	S20-Ma44010	CP	mg/L	540	520	3.0	30%	Pass

Comments
Sample Integrity

Custody Seals Intact (if used)	N/A
Attempt to Chill was evident	Yes
Sample correctly preserved	Yes
Appropriate sample containers have been used	No
Sample containers for volatile analysis received with minimal headspace	Yes
Samples received within HoldingTime	Yes
Some samples have been subcontracted	No

Qualifier Codes/Comments

Code	Description
Q02	The duplicate %RPD is outside the recommended acceptance criteria. Further analysis indicates sample heterogeneity as the cause
Q15	The RPD reported passes Eurofins Environment Testing's QC - Acceptance Criteria as defined in the Internal Quality Control Review and Glossary page of this report.

Authorised By

Andrew Black	Analytical Services Manager
Gabriele Cordero	Senior Analyst-Metal (NSW)


**Glenn Jackson
General Manager**

Final report - this Report replaces any previously issued Report

- Indicates Not Requested

* Indicates NATA accreditation does not cover the performance of this service

Measurement uncertainty of test data is available on request or please [click here](#).

Eurofins shall not be liable for loss, cost, damages or expenses incurred by the client, or any other person or company, resulting from the use of any information or interpretation given in this report. In no case shall Eurofins be liable for consequential damages including, but not limited to, lost profits, damages for failure to meet deadlines and lost production arising from this report. This document shall not be reproduced except in full and relates only to the items tested. Unless indicated otherwise, the tests were performed on the samples as received.

Ramboll Environ Australia Pty Ltd
 Level 3/100 Pacific Highway
 North Sydney
 NSW 2060



NATA Accredited
Accreditation Number 1261
Site Number 18217

Accredited for compliance with ISO/IEC 17025 – Testing
 The results of the tests, calibrations and/or
 measurements included in this document are traceable
 to Australian/national standards.

Attention: **Stephen Maxwell**

Report **713878-S-V8**

Project name

Project ID **318000780**

Received Date **Apr 15, 2020**

Client Sample ID			P11_TWS1	P11_TWS2
Sample Matrix			Solid	Solid
Eurofins Sample No.			S20-Ap21437	S20-Ap21438
Date Sampled			Mar 26, 2020	Mar 26, 2020
Test/Reference	LOR	Unit		
Heavy Metals				
Lead	1	mg/kg	590	47

Sample History

Where samples are submitted/analysed over several days, the last date of extraction and analysis is reported.

A recent review of our LIMS has resulted in the correction or clarification of some method identifications. Due to this, some of the method reference information on reports has changed. However, no substantive change has been made to our laboratory methods, and as such there is no change in the validity of current or previous results.

If the date and time of sampling are not provided, the Laboratory will not be responsible for compromised results should testing be performed outside the recommended holding time.

Description

Heavy Metals

Testing Site

Sydney

Extracted

Apr 16, 2020

Holding Time

180 Days

- Method: LTM-MET-3040 Metals in Waters, Soils & Sediments by ICP-MS

Australia

Melbourne
6 Monterey Road
Dandenong South VIC 3175
Phone : +61 3 8564 5000
NATA # 1261
Site # 1254 & 14271

Sydney
Unit F3, Building F
16 Mars Road
Lane Cove West NSW 2066
Phone : +61 2 9900 8400
NATA # 1261 Site # 18217

Brisbane
1/21 Smallwood Place
Murarrie QLD 4172
Phone : +61 7 3902 4600
NATA # 1261 Site # 20794

Perth
2/91 Leach Highway
Kewdale WA 6105
Phone : +61 8 9251 9600
NATA # 1261
Site # 23736

New Zealand

Auckland
35 O'Rorke Road
Penrose, Auckland 1061
Phone : +64 9 526 45 51
IANZ # 1327

Christchurch
43 Detroit Drive
Rolleston, Christchurch 7675
Phone : 0800 856 450
IANZ # 1290

Company Name: Ramboll Australia Pty Ltd
Address: Level 3/100 Pacific Highway
North Sydney
NSW 2060

Order No.:
Report #: 713878
Phone: 02 9954 8118
Fax: 02 9954 8150

Received: Apr 15, 2020 1:37 PM
Due: Apr 20, 2020
Priority: 3 Day
Contact Name: Stephen Maxwell

Project Name:
Project ID: 318000780

Eurofins Analytical Services Manager : Andrew Black

Sample Detail						Lead	Moisture Set
Melbourne Laboratory - NATA Site # 1254 & 14271							
Sydney Laboratory - NATA Site # 18217						X	X
Brisbane Laboratory - NATA Site # 20794							
Perth Laboratory - NATA Site # 23736							
External Laboratory							
No	Sample ID	Sample Date	Sampling Time	Matrix	LAB ID		
1	P3_TWS2	Mar 26, 2020		Solid	S20-Ap21433	X	X
2	P4_TWS2	Mar 24, 2020		Solid	S20-Ap21434	X	X
3	P7_TWS2	Mar 25, 2020		Solid	S20-Ap21435	X	X
4	SMCTS1	Mar 24, 2020		Solid	S20-Ap21436	X	X
5	P11_TWS1	Mar 26, 2020		Solid	S20-Ap21437	X	X
6	P11_TWS2	Mar 26, 2020		Solid	S20-Ap21438	X	X
7	P12_TWS1	Mar 26, 2020		Solid	S20-Ap21439	X	X
8	P12_TWS2	Mar 26, 2020		Solid	S20-Ap21440	X	X
9	P14_TWS3	Mar 26, 2020		Solid	S20-Ap21441	X	X
10	P18_TWS1	Mar 31, 2020		Solid	S20-Ap21442	X	X

Australia

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 Site # 1254 & 14271

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 Phone : +61 7 3902 4600
 NATA # 1261 Site # 20794

Perth
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 Kewdale WA 6105
 Phone : +61 8 9251 9600
 NATA # 1261
 Site # 23736

New Zealand

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 35 O'Rorke Road
 Penrose, Auckland 1061
 Phone : +64 9 526 45 51
 IANZ # 1327

Christchurch
 43 Detroit Drive
 Rolleston, Christchurch 7675
 Phone : 0800 856 450
 IANZ # 1290

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Sydney Laboratory - NATA Site # 18217						X	X
Brisbane Laboratory - NATA Site # 20794							
Perth Laboratory - NATA Site # 23736							
11	P18_TWS2	Mar 31, 2020		Solid	S20-Ap21443	X	X
12	P21_TWS1	Mar 31, 2020		Solid	S20-Ap21444	X	X
13	P21_TWS2	Mar 31, 2020		Solid	S20-Ap21445	X	X
14	P23_TWS1	Mar 31, 2020		Solid	S20-Ap21446	X	X
Test Counts						14	14

Internal Quality Control Review and Glossary
General

- Laboratory QC results for Method Blanks, Duplicates, Matrix Spikes, and Laboratory Control Samples follows guidelines delineated in the National Environment Protection (Assessment of Site Contamination) Measure 1999, as amended May 2013 and are included in this QC report where applicable. Additional QC data may be available on request.
- All soil/sediment/solid results are reported on a dry basis, unless otherwise stated.
- All biota/food results are reported on a wet weight basis on the edible portion, unless otherwise stated.
- Actual LORs are matrix dependant. Quoted LORs may be raised where sample extracts are diluted due to interferences.
- Results are uncorrected for matrix spikes or surrogate recoveries except for PFAS compounds.
- SVOC analysis on waters are performed on homogenised, unfiltered samples, unless noted otherwise.
- Samples were analysed on an 'as received' basis.
- Information identified on this report with blue colour, indicates data provided by customer, that may have an impact on the results.
- This report replaces any interim results previously issued.

Holding Times

Please refer to 'Sample Preservation and Container Guide' for holding times (QS3001).

For samples received on the last day of holding time, notification of testing requirements should have been received at least 6 hours prior to sample receipt deadlines as stated on the SRA.

If the Laboratory did not receive the information in the required timeframe, and regardless of any other integrity issues, suitably qualified results may still be reported.

Holding times apply from the date of sampling, therefore compliance to these may be outside the laboratory's control.

For VOCs containing vinyl chloride, styrene and 2-chloroethyl vinyl ether the holding time is 7 days however for all other VOCs such as BTEX or C6-10 TRH then the holding time is 14 days.

****NOTE:** pH duplicates are reported as a range NOT as RPD

Units

mg/kg: milligrams per kilogram

mg/L: milligrams per litre

ug/L: micrograms per litre

ppm: Parts per million

ppb: Parts per billion

%: Percentage

org/100mL: Organisms per 100 millilitres

NTU: Nephelometric Turbidity Units

MPN/100mL: Most Probable Number of organisms per 100 millilitres

Terms

Dry	Where a moisture has been determined on a solid sample the result is expressed on a dry basis.
LOR	Limit of Reporting.
SPIKE	Addition of the analyte to the sample and reported as percentage recovery.
RPD	Relative Percent Difference between two Duplicate pieces of analysis.
LCS	Laboratory Control Sample - reported as percent recovery.
CRM	Certified Reference Material - reported as percent recovery.
Method Blank	In the case of solid samples these are performed on laboratory certified clean sands and in the case of water samples these are performed on de-ionised water.
Surr - Surrogate	The addition of a like compound to the analyte target and reported as percentage recovery.
Duplicate	A second piece of analysis from the same sample and reported in the same units as the result to show comparison.
USEPA	United States Environmental Protection Agency
APHA	American Public Health Association
TCLP	Toxicity Characteristic Leaching Procedure
COC	Chain of Custody
SRA	Sample Receipt Advice
QSM	US Department of Defense Quality Systems Manual Version 5.3
CP	Client Parent - QC was performed on samples pertaining to this report
NCP	Non-Client Parent - QC performed on samples not pertaining to this report, QC is representative of the sequence or batch that client samples were analysed within.
TEQ	Toxic Equivalency Quotient

QC - Acceptance Criteria

RPD Duplicates: Global RPD Duplicates Acceptance Criteria is 30% however the following acceptance guidelines are equally applicable:

Results <10 times the LOR : No Limit

Results between 10-20 times the LOR : RPD must lie between 0-50%

Results >20 times the LOR : RPD must lie between 0-30%

Surrogate Recoveries: Recoveries must lie between 20-130% Phenols & 50-150% PFASs

PFAS field samples that contain surrogate recoveries in excess of the QC limit designated in QSM 5.3 where no positive PFAS results have been reported have been reviewed and no data was affected.

WA DWER (n=10): PFBA, PFPeA, PFHxA, PFHpA, PFOA, PFBS, PFHxS, PFOS, 6:2 FTSA, 8:2 FTSA

QC Data General Comments

- Where a result is reported as a less than (<), higher than the nominated LOR, this is due to either matrix interference, extract dilution required due to interferences or contaminant levels within the sample, high moisture content or insufficient sample provided.
- Duplicate data shown within this report that states the word "BATCH" is a Batch Duplicate from outside of your sample batch, but within the laboratory sample batch at a 1:10 ratio. The Parent and Duplicate data shown is not data from your samples.
- Organochlorine Pesticide analysis - where reporting LCS data, Toxaphene & Chlordane are not added to the LCS.
- Organochlorine Pesticide analysis - where reporting Spike data, Toxaphene is not added to the Spike.
- Total Recoverable Hydrocarbons - where reporting Spike & LCS data, a single spike of commercial Hydrocarbon products in the range of C12-C30 is added and it's Total Recovery is reported in the C10-C14 cell of the Report.
- pH and Free Chlorine analysed in the laboratory - Analysis on this test must begin within 30 minutes of sampling. Therefore laboratory analysis is unlikely to be completed within holding time. Analysis will begin as soon as possible after sample receipt.
- Recovery Data (Spikes & Surrogates) - where chromatographic interference does not allow the determination of Recovery the term "INT" appears against that analyte.
- Polychlorinated Biphenyls are spiked only using Aroclor 1260 in Matrix Spikes and LCS.
- For Matrix Spikes and LCS results a dash " - " in the report means that the specific analyte was not added to the QC sample.
- Duplicate RPDs are calculated from raw analytical data thus it is possible to have two sets of data.

Quality Control Results

Test				Units	Result 1		Acceptance Limits	Pass Limits	Qualifying Code		
Method Blank											
Heavy Metals											
Lead				mg/kg	< 1		1	Pass			
LCS - % Recovery											
Heavy Metals											
Lead				%	96		70-130	Pass			
Test	Lab Sample ID	QA Source	Units	Result 1			Acceptance Limits	Pass Limits	Qualifying Code		
Spike - % Recovery											
Heavy Metals											
Lead				B20-Ap16161	NCP	%	89	70-130	Pass		
Spike - % Recovery											
Heavy Metals											
Lead				B20-Ap16161	NCP	%	89	70-130	Pass		
Spike - % Recovery											
Heavy Metals											
Lead				B20-Ap16161	NCP	%	89	70-130	Pass		
Spike - % Recovery											
Heavy Metals											
Lead				B20-Ap16161	NCP	%	89	70-130	Pass		
Spike - % Recovery											
Heavy Metals											
Lead				B20-Ap16161	NCP	%	89	70-130	Pass		
Spike - % Recovery											
Heavy Metals											
Lead				S20-Ap21444	CP	%	87	70-130	Pass		
Test	Lab Sample ID	QA Source	Units	Result 1			Acceptance Limits	Pass Limits	Qualifying Code		
Duplicate											
Heavy Metals											
Lead				S20-Ap17051	NCP	mg/kg	29	35	19	30%	Pass
Duplicate											
Heavy Metals											
Lead				S20-Ap17051	NCP	mg/kg	29	**	19	30%	Pass
Duplicate											
Heavy Metals											
Lead				S20-Ap17051	NCP	mg/kg	29	**	19	30%	Pass
Duplicate											
Heavy Metals											
Lead				S20-Ap17051	NCP	mg/kg	29	**	19	30%	Pass
Duplicate											
Heavy Metals											
Lead				S20-Ap21444	CP	mg/kg	70	69	2.0	30%	Pass

Comments

New version to split samples.

Sample Integrity

Custody Seals Intact (if used)	N/A
Attempt to Chill was evident	N/A
Sample correctly preserved	Yes
Appropriate sample containers have been used	Yes
Sample containers for volatile analysis received with minimal headspace	Yes
Samples received within HoldingTime	Yes
Some samples have been subcontracted	No

Authorised By

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General Manager

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Measurement uncertainty of test data is available on request or please [click here](#).

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