M12 Motorway Surface water monitoring program

Report 9 – April 2023 to September
M12CDD-GHDA-ALL-EV-RPT-000030

Transport for NSW

24 April 2024

→ **The Power of Commitment**

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Acknowledgement of Country

GHD acknowledges Aboriginal and Torres Strait Islander peoples as the Traditional Custodians of the land, water and sky throughout Australia on which we do business. We recognise their strength, diversity, resilience and deep connections to Country. We pay our respects to Elders of the past, present and future, as they hold the memories, knowledges and spirit of Australia. GHD is committed to learning from Aboriginal and Torres Strait Islander peoples in the work we do.

Executive Summary

Background

The M12 Motorway (the project) is in the process of being constructed between the M7 Motorway at Cecil Hills, and The Northern Road at Luddenham, covering a distance of approximately 16 kilometres (km). The motorway will provide direct access between the Western Sydney International Airport (WSIA) at Badgerys Creek and Sydney's motorway network.

The Instrument of Approval granted by NSW Government Department of Planning, Industry and Environment in April 2021 stipulates conditions of approval for the M12 Motorway SSI 9364. Condition C17 of the approval requires the construction monitoring program for surface water quality and groundwater quality and levels (as approved by the Planning Secretary) to be implemented for the duration of construction.

Condition D9 of the approval requires the operational monitoring program for surface water quality and groundwater quality and levels to be implemented for the duration specified in the program.

– The Amendment Report to the Submissions Report states in Revised Environmental Management Measure (REMM) SWH06 that surface water monitoring will be carried out for a minimum of 12 months following the completion of construction.
– GW04 states that groundwater quality monitoring will be carried out for a minimum of six months following construction.

To meet these conditions of approval GHD Pty Ltd (GHD) was engaged by Transport for New South Wales (TfNSW) to undertake the surface water monitoring program for the M12 Motorway construction and operation project. This report details monitoring results from the monitoring period (April 2023 to September 2023), incorporating additional baseline and construction period data for the east portion, and continued construction data period data for west and central portions. Baseline data from previous events prior to April 2021 have been removed from the data assessment undertaken in this report.

The project has been divided into three packages and is being carried out by three separate construction contractors. The Central and Western M12 Motorway construction contractors took possession of their respective sites' in August 2022, which triggered the transition into the construction phase of the surface water monitoring program for the Central and Western portions of the site. The Eastern portion construction contractor took possession of the site in July 2023 which triggered the transition into the construction phase of the surface water monitoring program for the site.

Surrounding the M12 project area, there are other major infrastructure projects located upstream that may be impacting on the surface waters; this may include the Western Sydney International Airport on Badgerys Creek and Cosgroves Creek and the Sydney Water Treatment Plant overflow discharge into South Creek.

Water quality monitoring scope

TfNSW require a surface water quality monitoring program for the described construction works to characterise the post baseline surface water conditions in the vicinity of the project during construction and to assess any impacts the construction phase of the project has had / having on surface water quality. Baseline data and relevant public health and environment water quality criteria will be compared against the ongoing surface water quality. The scope of work undertaken to support the preparation of this report includes:

– Collection of monthly field observations and samples from up to thirteen surface water locations from six creeks that intersect, or will be affected by, the proposed project alignment over six months.
– Completion of one wet weather sampling event during the six-month reporting period.
– Laboratory analysis of surface water samples for contaminants of potential concern.
– Preparation of a surface water monitoring report every six months.

Summary of monitoring data

GHD have assessed the surface water quality for the baseline and construction monitoring periods since April 2021. The baseline period includes results from April 2021 to the start of the construction period. The construction period for the Central and Western portions started in August 2022 and in July 2023 for the Eastern portion. Surface water analytical results for the current monitoring period (April 2023 to September 2023) indicated:

- Most samples reported total suspended solid concentrations above ANZECC & ARMCANZ (2000) ecological criteria during monitoring events, with ROPUS reporting the highest concentrations.
- The majority of sampling locations in the East, Central, and Western portions of the M12 project reported 80th percentile concentrations in the construction period in exceedance of the 80th baseline percentile for total suspended solids, electrical conductivity, dissolved oxygen, chlorophyll-a and manganese. Slight exceedances of calculated percentiles may not be indicative of a trend and may instead be attributed to the limited size of the data set for the construction monitoring period compared to the baseline period at the time of reporting, particularly for the Eastern portion.
- ROPUS 80th percentiles during the current monitoring period (April 2023 to September 2023) reported exceedances of the baseline 80th percentile in the majority of metals concentrations. This is related to increased concentration in metals analytes recorded in the July 2023 monitoring round.
- All sampling locations reported multiple nutrient concentrations (ammonia, oxidised nitrogen, total nitrogen, soluble reactive phosphorus, total phosphorus, chlorophyll-a) above adopted ANZECC & ARMCANZ (2000) ecological criteria.
- Exceedances of ANZG (2018) 95% freshwater criterion above the laboratory LOR were reported for nitrate, cadmium, chromium, copper, lead, manganese, nickel, zinc, and OP pesticide compounds diazinon, dimethoate, malathion.
- Exceedances of the ADWG (NHMRC & NRMMC, 2011) criterion above the laboratory LOR were reported for Arsenic, Lead, and Nickel at ROPUS in July 2023, and Manganese within the M12 Central and East portions (COSDS, May and August 2023; COSUS, April, August, and September 2023; HINDS, May 2023; ROPDS May and September 2023; ROPUS July, August, and September 2023).
- Overall the calculated construction phase percentiles were within and / or slightly exceeded the baseline percentiles for the central and western portions of works. No management measures are required within these portions. The eastern portions noted construction percentiles exceeding the 80th percentiles for baseline. However this has a limited dataset and additional monitoring data will highlight if this becomes an issue. No management measures for the eastern portion are required.

Recommendations

GHD recommends the following improvements of the surface water monitoring program:

- Utilise weather station data from contractor weather stations to inform wet weather event triggers within the alignment.
- One round of hardness and filtered metals sampling at ROPUS to characterise increased metals concentrations.

This report is subject to, and must be read in conjunction with, the limitations set out in Section 1.4 and the assumptions and qualifications contained throughout the Report.

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1. Introduction

GHD Pty Ltd (GHD) was engaged by Transport for New South Wales (TfNSW) to undertake the surface water monitoring program for the M12 Motorway construction and operation project.

This biannual report is the first to include the construction monitoring results for all portions of the sites, and ninth overall report for the program. Reports 1, 2, 3, 4, 5, 6, 7, and 8 describe the 2019 through to March 2023 monitoring program, further detailing baseline data (eastern package) as well as the start of construction monitoring program for the central and western packages. This report (Report 9) provides details of the monitoring locations, sampling methodology, and results of the surface water samples collected during the baseline and construction monitoring program for the most recent monitoring period (April 2023 to September 2023).

This report details the fifth set of a six-month period of baseline and construction data collected from new sampling locations established in April 2021. This six-month monitoring period and six-monthly report sits under contract number 20.0000303606.0590.

1.1 Background

The M12 Motorway construction works (the project) in Western Sydney covers approximately 16 kilometres (km). The project is being constructed between the M7 Motorway at Cecil Hills and The Northern Road at Luddenham. At the completion of the project, the M12 Motorway will provide direct access between the Western Sydney International Airport (WSIA) at Badgerys Creek and Sydney's motorway network.

The Instrument of Approval granted by NSW Government Department of Planning, Industry and Environment in April 2021 stipulates conditions of approval for the M12 Motorway SSI 9364. Condition C17 of the approval requires the construction monitoring program for surface water quality and groundwater quality and levels (as approved by the Planning Secretary) to be implemented for the duration of construction.

Condition D9 of the approval requires the operational monitoring program for surface water quality and groundwater quality and levels to be implemented for the duration specified in the program.

– The Amendment Report to the Submissions Report states in Revised Environmental Management Measure (REMM) SWH06 that surface water monitoring will be carried out for a minimum of 12 months following the completion of construction.
– GW04 states that groundwater quality monitoring will be carried out for a minimum of six months following construction.

To meet these conditions of approval GHD Pty Ltd (GHD) was engaged by TfNSW to undertake the surface water monitoring program for the M12 Motorway construction and operation project.

The project has been determined to be a controlled action under Section 75 of the Environment Protection and Biodiversity Conservation Act 1999 (Commonwealth) (EPBC Act) (EPBC 2018/8286) for significant impact to threatened species and communities (Section 18 and Section 18A of the EPBC Act). This requires assessment and approval from the Commonwealth Government. As part of the project approval conditions, TfNSW are required to prepare and implement a surface water monitoring program for the project. GHD was commissioned to develop and undertake a surface water monitoring program during pre-construction (baseline), construction, and operational stages of the project.

A surface water quality and hydrology assessment report was prepared as part of the M12 Motorway Environmental Impact Statement (JAJV, 2019). The investigation concluded that the existing water quality within the relevant waterways was poor, with elevated concentrations of nutrients and heavy metals, and low concentrations of dissolved oxygen. As such, the existing water quality does not currently meet the water quality guidelines that have been adopted in this report (discussed in Section 4.2).

The purpose of this surface water monitoring program is to implement an environmental management measure to allow the observation of any changes in surface water quality that may be attributable to the project, assess the project's performance against the agreed water quality objectives (see Section 4.2), and inform appropriate management responses if required.

Between April 2019 and March 2021, GHD monitored twelve surface water locations in the pre-construction phase for the collection of baseline data. As per discussions with TfNSW in March 2021, surface water locations COSUS, COSDS, BADDS, SOUUS, SOUDS, KEMDS, ROPDS and ROPUS were relocated closer to the proposed M12 alignment to allow more representative sampling. Sampling of relocated sites and unmoved locations (BADUS, KEMUS, HINUS, HINDS) commenced in April 2021. An additional location (BADMS) was added to the current sampling program in October 2021 which is closer to the M12 project alignment to allow more representative sampling of Badgery's Creek. The sampling location names of ROPUS and ROPDS were also switched in October 2021 to ensure that upstream and downstream samples from Ropes Creek were accurately represented[1]. As per discussions with TfNSW, in August 2023 sampling locations SOUDS, BADDS, BADMS, and COSDS were moved slightly downstream, and COSUS was moved slightly upstream, to provide more representative sampling as the construction phase continued. Figure 1, Appendix A identifies the updated sampling locations.

The M12 Central Construction Soil and Water Quality Monitoring Program (Rev E), provided in Appendix B of the Construction Environmental Management Plan (CEMP) Appendix B4 Construction Soil and Water Management Plan (Rev E) (Seymour Whyte, 2023) also included thermotolerant coliforms as a surface water quality analyte which was not required by the EIS and the contract. Based on discussions with TfNSW, thermotolerant coliforms were added into the monitoring program in selected monitoring events.

The baseline data has been documented in seven previous reports including:

– Report 1 (GHD, 2019), presenting data from April 2019 to September 2019
– Report 2 (GHD, 2020), presenting data from October 2019 to March 2020
– Report 3 (GHD, 2021b), presenting data from April 2020 to September 2020
– Report 4 (GHD, 2021a), presenting data from October 2020 to March 2021
– Report 5 (GHD, 2022a), presenting data from April 2021 to September 2021.
– Report 6 (GHD, 2022b), presenting data from October 2021 to March 2022
– Report 7 (GHD, 2022c), presenting data from April 2022 to September 2022
– Report 8 (GHD, 2023), presenting data from October 2022 to March 2023

The most recent surface water monitoring period (April 2023 to September 2023) includes baseline and construction phase data for the eastern portion and construction phase data for the central and western portions. The Central and Western M12 Motorway construction contractors took possession of the site in August 2022, which triggered the transition into the construction phase of the surface water monitoring program for the Central and Western portions of the site. The Eastern portion construction contractors took possession in July 2023 which triggered the transition into the construction phase of the surface water monitoring program for the Eastern portion. (see Figure 1, Appendix A).

Surrounding the M12 project area, there are other major infrastructure projects located upstream that may be impacting on the surface waters; this may include the Western Sydney International Airport on Badgerys Creek and Cosgroves Creek and the Sydney Water Treatment Plant overflow discharge into South Creek.

1.2 Objective

The initial objective of the surface water monitoring program is to determine pre-construction (baseline) surface water conditions within the M12 Motorway project boundary prior to the commencement of the construction. As the monitoring program has now transitioned into the construction phase of the M12 Motorway, the objective of the program has evolved to evaluate the construction phase surface water conditions to the baseline to ascertain any impacts/changes.

Surface water monitoring will continue throughout the duration of construction and into operation of the M12 Motorway. The period of monitoring in the operational phase will be for a period of at least 12 months, as approved by TfNSW. Baseline data will be used to assess whether the construction and operational phases of the project are meeting the water quality objectives of the project, as described in Section 4.2.

[1] Please note all previous reported data in Report 5 (April 2021 to September 2021) will have the old Ropes Creek upstream and downstream sample location names. The analytical data and field parameters have been amended since to show the correct sample location names.

The baseline data supported the development of a surface water monitoring program and management plans for construction and operation of the project. The baseline data was also used to inform the design of construction and operational water quality control devices, such as sedimentation basins and vegetation swales.

1.3 Scope of work

For the duration of the pre-construction (baseline), construction, and operational phases, GHD is to undertake a monthly surface water monitoring event at each of the monitoring locations within the project.

The pre-construction monitoring was to occur for a minimum of 12 months, followed by up to four years of construction monitoring on a stage-by-stage basis. This will be followed by at least 12 months of post-construction (operational) monitoring commencing at the opening of each stage.

The scope for the surface water monitoring events undertaken within the project area includes:

– Collection of monthly field observations and samples from up to thirteen surface water locations from six creeks that intersect, or will be affected by, the project alignment.
– Completion of up to three wet weather sampling events during the six-month reporting period. One wet weather event was undertaken during this reporting period.
– Laboratory analysis of surface water samples for contaminants of potential concern, as detailed in Section 3.6.
– Preparation of a surface water monitoring report every six months.

This report provides the results of the baseline monitoring period (April 2021 to July 2022 (Central and West portion) and including the most recent 6-month monitoring period results (April 2023 to June 2023 (East portion)), and construction reporting for the central and western packages (August 2022 to September 2023), and the eastern package (July 2023 to September 2023).

1.4 Limitations

This report has been prepared by GHD for Transport for New South Wales and may only be used and relied on by Transport for New South Wales for the purpose agreed between GHD and Transport for New South Wales as set out in Section 1.2 of this report.

GHD otherwise disclaims responsibility to any person other than Transport for New South Wales arising in connection with this report. GHD also excludes implied warranties and conditions, to the extent legally permissible.

The services undertaken by GHD in connection with preparing this report were limited to those specifically detailed in the report and are subject to the scope limitations set out in the report.

The opinions, conclusions and any recommendations in this report are based on conditions encountered and information reviewed at the date of preparation of the report. GHD has no responsibility or obligation to update this report to account for events or changes occurring subsequent to the date that the report was prepared.

The opinions, conclusions and any recommendations in this report are based on assumptions made by GHD described in this report. GHD disclaims liability arising from any of the assumptions being incorrect.

The opinions, conclusions and any recommendations in this report are based on information obtained from, and testing undertaken at or in connection with, specific sample points. Site conditions at other parts of the site may be different from the site conditions found at the specific sample points.

Investigations undertaken in respect of this report are constrained by the particular site conditions, such as the location of buildings, services and vegetation. As a result, not all relevant site features and conditions may have been identified in this report.

Site conditions (including the presence of hazardous substances and/or site contamination) may change after the date of this Report. GHD does not accept responsibility arising from, or in connection with, any change to the site conditions. GHD is also not responsible for updating this report if the site conditions change.

2. Project description

2.1 Project identification

A summary of available information pertaining to the project is presented in Table 1. A location plan of the project is provided in Figure 1, Appendix A.

Table 1 Project identification summary

Item	Description
Description of the project	The M12 Motorway project is approximately 16 km in length. This will extend between the M7 Motorway at Cecil Hills and The Northern Road at Luddenham.
Local Government Area	Liverpool City Council - eastern portion up to Mamre Road Penrith City Council - westwards from Mamre Road
Traditional Custodians	Darug and Dharawal people
Local Land Use Zoning	Liverpool LEP 2008: – RU4 – primary production small lots – SEPP Western Sydney Parklands 2009 Fairfield LEP 2013: – RU4 – primary production small lots – RU1 – primary production Penrith LEP 2010: – RU4 – primary production small lots – C2 – environmental conservation – RU2 – rural landscape – SP2 – classified road State Environmental Planning Policy (Western Sydney Aerotropolis) 2020: – ENZ – environment and recreation – ENT – enterprise – SP2 – infrastructure
Land Use	The project is currently used for agricultural, industrial, residential, and rural purposes. Potentially contaminating activities within and/or directly adjacent to the project include the SUEZ Kemps Resource Recovery Park, Brandown Quarry and general agricultural land use.
Surrounding Land Use	A range of land uses including industrial, commercial, residential, agriculture and landfill surround the project. Potentially contaminating activities outside of the project include the Hi-Quality Group Quarry and Sydney Recycling Park (located adjacent to the Hi-Quality Group Quarry). An Ampol service station is located approximately 300 m north-east of the project at 1163 Mamre Road, Kemps Creek. Regulation under the Contaminated Land Management (CLM) Act is not required at the site.

2.2 Historical land use summary

An historical aerial photograph review of the project and surrounding area was completed by JAJV (2019). The review indicated that the project and surrounding area has remained largely rural/agricultural and residential since the 1940s. Increased rural residential density in suburban pockets, and a number of commercial/industrial premises in Kemps Creek have been observed since the 1950s and 1960s until present-day.

2.3 Environmental setting

JAJV (2019) undertook a desktop review of the existing environment for the entire M12 Motorway construction footprint. An updated summary of this information is presented in Table 2.

Table 2 Environmental setting summary

Item	Description
Climate	The long-term average monthly rainfall for the project ranges between 33.0 millimetres (mm) in July to 109.5 mm in March, with an average annual rainfall of 724.4 mm (Badgerys Creek AWS Station ID 067108) (BOM, 2023). Long-term maximum mean temperatures range between 19.4°C in June to 35.1°C in January, and minimum mean temperatures between 15.4°C in July to 26.8°C in January (Badgerys Creek AWS Station ID 067108) (BOM, 2023).
Topography and drainage	The ground surface along the project ranges between reduced level (RL) 70 metres (m) Australian Height Datum (AHD) to RL 115 metres AHD. The landscape comprises relatively flat terrain with low rising crests. Flat floodplains are present at South Creek and Kemps Creek. Low rolling hills are situated between the floodplain areas, typically comprising gentle rises and undulations with broad rounded crests (Geological Survey of NSW , 1991; NSW EPA, 2020). Based on the topography within the project, surface runoffs are expected to drain to nearby dams and creeks (i.e. Kemps Creek and South Creek), as well as infiltrating into subsurface soils across unsealed lands in the surrounding area.
Soil and landscapes	The project is primarily underlain by the Blacktown residual soil unit (Geological Survey of NSW , 1991).The South Creek and Kemps Creek areas are underlain by the South Creek fluvial soil landscape. The Blacktown residual soil landscape typically comprises of clayey soils over gently undulating crests. The soil unit can have moderately reactive, highly plastic subsoils and poor drainage. The South Creek fluvial soil comprises floodplains and drainage depressions of very deep layered clays and sands. These fluvial soils are prone to erosion and frequent flooding.
Acid sulfate soils (ASS)	The project is not covered by areas mapped in the Acid Sulfate Soil Risk Maps prepared by Department of Land and Water Conservation.
Geology	Majority of the project is underlain by two geological units, Bringelly Shale (Rwb) and Quaternary aged alluvial deposits (Qal) (Geological Survey of NSW , 1991). – Bringelly Shale is the predominant geological unit for the project. Bringelly Shale is described as comprising shale, carbonaceous claystone, laminite and rare coal. Bringelly Shale is the upper portion of the Wianamatta Group and the upper sedimentary sequence in the Sydney Basin with a thickness of typically 150 m. – Quaternary aged alluvial deposits (Qal) are described as comprising quartz and lithic fluvial sand, silt and clay. These are present near South Creek and Kemps Creek.
Hydrology	The project crosses South Creek in the western portion and Kemps Creek in the eastern portion. Kemps Creek is a tributary of South Creek, joining approximately three kilometres north of Elizabeth Drive, which then flows north to discharge into the Hawkesbury River.
Hydrogeology	The underlying aquifers are dominated by shale, siltstone and other sedimentary basins. They have a low potential for groundwater movement and comprise salinity levels greater than 16,000 microsiemens per centimetre (µs/cm), being unsuitable for stock use (DPI, 2014). According to the groundwater data collected during the groundwater baseline period (April 2019 to July 2022), groundwater levels within the project range between 9.114 m below top of casing (m bTOC) and 19.85 m bTOC.

3. Field program

3.1 Workplace health and safety

GHD developed a site-specific health safety and environment (HSE) plan for the works as part of the overall commitment to provide a healthy and safe working environment for staff and contractors. All work was conducted with appropriate personal protection equipment (PPE).

The HSE included a site-specific job safety and environmental analysis, detailing the step-by-step procedures of all aspects of the works and associated hazards and control measures to be implemented. The HSE plan was read by all GHD personnel with feedback and discussion provided prior to the works commencing. A site-specific pre-start safety assessment was conducted each morning before commencing works.

3.2 Sampling dates

Surface water sampling for the most recent monitoring period (April 2023 to September 2023) was conducted at all surface water locations on the following dates:

– Event 47 – 4-5 April 2023
– Event 48 – 1-3 May 2023
– Event 49 – 6-7 June 2023
– Event 50 – 4 and 7 July 2023
– Event 51 – 8-9 August 2023
– Wet Weather Event 6 – 31 August 2023
– Event 52 – 5-6 September 2023

3.3 Summary of surface water monitoring locations

The surface water locations identified are detailed below in and in Figure 1, Appendix A. Surface water locations COSUS, was moved slightly upstream, and locations COSDS, SOUDS, BADMS, and BADDS were moved slightly downstream from August 2023 as per agreement with Transport to provide more representative sampling as the construction phase continued. Original and current locations are identified in Figure 1, Appendix A. Table 3 below identifies the current monitoring locations. Table B2, Appendix B identifies deviations in monitoring locations including accessibility restrictions during each of the events.

Table 3 Surface water monitoring locations

Location	Approximate latitude	Approximate longitude	Description	Comments
COSUS	-33.859602	150.729091	Cosgroves Creek upstream of motorway alignment.	Located east of Luddenham Road. Access through CPBGGJV compound off Luddenham Road.
COSDS	-33.857257	150.732789	Cosgroves Creek downstream of motorway alignment.	Located east of Luddenham Road. Access through CPBGGJV compound off Luddenham Road.
BADUS	-33.873812	150.754808	Badgerys Creek upstream of motorway alignment.	Located under Elizabeth Drive road bridge, public access on north side anytime.
BADMS	-33.859556	150.754736	Badgerys Creek upstream of motorway alignment. Closer than BADUS to the alignment and is considered downstream of the nearby SUEZ waste facility.	Added into monitoring program from October 2021. Located approximately halfway between Luddenham Rd and Mamre Rd. Access through CPBGGJV compound off Luddenham Road.

Location	Approximate latitude	Approximate longitude	Description	Comments
BADDS	-33.856868	150.757777	Badgerys Creek downstream of motorway alignment.	Located approximately halfway between Luddenham Rd and Mamre Rd. Access through CPBGGJV compound off Luddenham Road.
SOUUS	-33.862360	150.770795	South Creek upstream of motorway alignment.	Located approximately halfway between Luddenham Rd and Mamre Rd. Access through Seymour Whyte compound off Clifton Ave.
SOUDS	-33.860191	150.768887	South Creek downstream of motorway alignment.	Located approximately halfway between Luddenham Rd and Mamre Rd. Access through Seymour Whyte compound off Clifton Ave.
KEMUS	-33.880991	150.798390	Kemps Creek upstream of motorway alignment.	Located under Elizabeth Drive road bridge, public access via gravel road on southeast side anytime
KEMDS	-33.874734	150.799028	Kemps Creek downstream of motorway alignment.	Located west of Mamre Road. Access through Seymour Whyte worksite off Clifton Ave.
ROPUS	-33.865962	150.849636	Ropes Creek downstream of motorway alignment. It was labelled as ROPDS between April 2021 and September 2021.	Pond in Western Sydney Parklands reserve, access negotiated.
ROPDS	-33.865970	150.846230	Ropes Creek upstream of motorway alignment. It was labelled as ROPUS between April 2021 and September 2021.	Located next to roundabout on Wallgrove Road, public access via gravel road on north side anytime.
HINUS	-33.885917	150.822292	Hinchinbrook Creek upstream of motorway alignment.	Pond in Western Sydney Parklands reserve, access through Wylde MTB and BMX park.
HINDS	-33.894390	150.842382	Hinchinbrook Creek downstream of motorway alignment.	Access via Kensington Close, sampling from dam adjacent to corner of Vidal Avenue and Antrim Drive.

3.4 Surface water sampling methodology

All fieldwork was conducted in general accordance with:

– Australian Standard 5667:1998 Water Quality – Sampling, Part 1: Guidance on the design of sampling programs, sampling techniques and the preservation and handling of samples (AS/NZS 5667.1:1998).
– Australian Standard 5667:1998 Water Quality – Sampling, Part 6: Guidance on sampling of rivers and streams (AS/NZS 5667.6:1998).
– GHD's standard operating procedures (SOP) for surface water quality sampling, which complies with procedures detailed in the ANZECC & ARMCANZ (2000) guidelines and the NSW EPA's Approved Methods for the Sampling and Interpretation of Results of Water Pollutants (NSW EPA, 2004).

Surface water monitoring locations were sampled routinely on a monthly basis, and in previous monitoring periods have been supplemented by event sampling during wet weather (Section 3.5). There was one wet weather event monitoring in the current monitoring period which occurred in August 2023.

At each site, field water quality parameters were recorded and grab samples collected for laboratory analysis. Where available sample volume permitted, the following physio-chemical measurements were collected using a calibrated multi-parameter water quality meter:

– Temperature (°C);

– pH (pH units);
– Electrical conductivity (EC) (µS/cm);
– Reduction-oxidation potential (ORP);
– Dissolved oxygen (DO) (mg/L and % saturation); and
– Turbidity (NTU).

The water quality meter was calibrated prior to each monitoring event by the equipment rental company (i.e. Air-Met). Calibration certificates for each sampling event in the current monitoring period are provided in Appendix E. In addition, relevant descriptions of visual and olfactory characteristics, such as colour, turbidity, odour, and sheen were recorded and provided on field sheets in Appendix F.

Grab samples were collected near the monitoring point to ensure representative sampling. At each location, a laboratory-supplied, unpreserved bottle was filled and used to distribute the collected water into sample bottles for laboratory analysis. Samples were collected from all sampling locations during the current monitoring period.

Surface water samples were transported on ice and submitted to ALS Environmental, a national association of testing authorities (NATA) Australia accredited laboratory, under chain of custody (CoC) procedures (presented in Appendix G). A maximum of 13 primary samples were collected during each sampling event. The NEPM (NEPC, 2013) states that split samples should be collected at a rate of one per 20 primary samples. As such, one intra-laboratory and one inter-laboratory duplicate samples were collected per event as part of the current surface water monitoring program.

3.5 Wet weather monitoring

The program is to include the monitoring of wet weather events during both the pre-construction and construction phases, in accordance with the Guideline for Construction Water Quality Monitoring (RTA, 2004). Rainfall can transport greater pollutant loads compared to dry weather base flows. Data from wet weather samples will demonstrate the variability in pollutant concentrations at each of the sampling locations over time.

The wet weather criterion as per an agreement with TfNSW and aligning with the Environmental Impact Statement (EIS) is defined as 22 mm over a 24-hour period, this criterion will be used to identify wet weather event triggers.

Rainfall data to determine the trigger of a wet weather event is obtained from the Badgerys Creek Bureau of Meteorology (BOM) Station (ID 067108) near the project. The trigger value was selected to ensure that rainfall was sufficient for substantial flows in waterways and ephemeral creeks. The wet weather event sampling data are likely to provide a greater level of detail for assessment of the influence of urban development (including road construction) on adjacent waterways, and of the effectiveness of construction impact mitigation measures.

The analytical suite for wet weather samples is identical to the monthly sampling analytical suite. This allows a direct comparison with samples collected during dry weather.

There have been six wet weather monitoring events to date:

– Four events in the baseline monitoring period for all portions (August 2021, November 2021, January 2022, July 2022)
– One event in November 2022 within the baseline monitoring period for the East portion and the construction monitoring period for the West and Central portions.
– One event in August 2023, occurring in the current monitoring period and the construction monitoring period for all portions.

Rainfall recorded in the 24 hours to 9am on 31 August 2023 at Badgerys Creek Station did not meet the wet weather trigger (11.2mm). However, 24mm of rainfall was recorded at Horsely Park Equestrian Centre station (ID 067119, 3.4km from project alignment) and rainfall data from the contractor weather station at M12 Central recorded rainfall 72.44mm. Based on this information, sampling conducted on 31 August 2023 is classified as a wet weather event. Rainfall data provided by the M12 Central Contractor is included in Figure 2, Appendix A.

3.6 Laboratory analytical schedule

All primary samples were analysed by ALS Environmental and all secondary samples were analysed by Eurofins, both NATA accredited laboratories. The analytical schedule for surface water is presented in Table B3 through to Table B7 in Appendix B, and summarised below.

Surface water samples were submitted for laboratory analysis including:

– Total suspended solids (TSS)
– Total dissolved solids (TDS)
– Hardness (April 2023 only)
– Chlorophyll- a
– Oil and grease
– Nutrients (including ammonia (NH3), nitrite (NO2), Nitrate (NO3), total nitrogen (TN), total kjeldahl nitrogen (TKN), total oxidised nitrogen (NOx), total phosphorus (TP) and soluble reactive phosphorus (SRP));
– Heavy metals (arsenic, cadmium, chromium, copper, iron, lead, manganese, mercury, nickel, and zinc)
– Benzene, toluene, ethylbenzene, xylenes, naphthalene (BTEXN)
– Standard polycyclic aromatic hydrocarbons (PAH)
– Phenols
– Volatile organic compounds (VOCs)
– Organochlorine pesticides (OCPs) (April and May 2023 only)
– Organophosphorus pesticides (OPPs)
– Chlorinated and halogenated hydrocarbons
– Fungicides
– PCBs (May 2023 only)

The laboratory analytical schedule is consistent with the surface water monitoring indicator requirements as stated in the EIS (JAJV, 2019) and the Overarching Construction Environmental Management Plan (OCEMP) (TfNSW, 2021).

It is noted that analysis OCPs and PCBs were conducted only in April and May 2023 for the current monitoring period. These compounds are monitored in select monitoring events only due to consistent non-detections of these compounds in the baseline period.

The analysis requirements of certain compounds are outlined below:

- Thermotolerant coliforms: one dry weather event and one wet weather event for each stage of works (baseline, construction, and post-construction)
- Per- and polyfluoroalkyl substances (PFAS): on an ad-hoc basis as per request from TfNSW

3.7 Quality assurance / Quality control (QA/QC)

A review of the field and laboratory QA/QC performance from the current monitoring period (April 2023 to September 2023) is presented Appendix H. QA/QC assessments from previous monitoring rounds are provided in the previous monitoring reports. It was considered the analytical dataset collected during the baseline monitoring period (April 2021 to July 2022 (June 2023 for East portion)) can be relied on for interpretation and assessment of background surface water conditions in the vicinity of the project. The construction monitoring period (August 2022 to September 2023) dataset can be relied upon for comparison to the baseline data.

4. Assessment methodology

4.1 Data quality objectives

Data Quality Objectives (DQO) have been established for this Surface Water Report and are detailed in Appendix H. DQOs have been established to ensure the investigation is undertaken in a way that supports the collection and reporting of reliable data on which to base the investigation.

Data quality indicators (DQIs) have also been established to assess the usability of the data to allow decisions to be made with confidence. These are presented in Appendix H.

4.2 Basis for assessment

4.2.1 Water quality objective

As per the EIS, and as identified in the Secretary's Environmental Assessment Requirements (SEARs), the desired performance outcome for the project in relation to water quality is detailed below (JAJV, 2019).

The project is designed, constructed and operated to protect the NSW Water Quality Objectives where they are currently being achieved, and contribute towards achievement of the Water Quality Objectives over time where they are currently not being achieved, including downstream of the project to the extent of the project impact including estuarine and marine water (if applicable).

The NSW Water Quality Objectives are the agreed environmental values and long-term goals for NSW's surface water (DECCW, 2006). Additionally, following an independent inquiry by the Healthy Rivers Commission (HRC), further environmental values for the waterways were agreed upon by the NSW Government. The environmental values determined in the HRC water quality have been adopted as the relevant environmental values to be protected during this project, which include:

– Protection of aquatic ecosystems.
– Visual amenity.
– Primary and secondary contact recreation.
– Irrigation water supply.
– Homestead water supply.

In order to achieve this, the framework in The Australian and New Zealand Environment Conservation Council and Agriculture and Resource Management Council of Australia and New Zealand (ANZECC & ARMCANZ) water quality guidelines (2000) is adopted to guide the conservation of ambient water quality. These guidelines provide recommended trigger values that have been applied to understand the current health of the waterways and key indicators of concern. There is the potential that baseline water quality does not meet the existing guidelines and trigger values for protecting nominated environmental values. Irrespective of the baseline condition of waterways, the project should not allow further degradation of water quality.

4.2.2 Relevant guidelines

The framework for the contamination assessment made herein, was developed in accordance with guidelines "made or approved", by the NSW EPA under Section 105 of the Contaminated Land Management Act, 1997. These guidelines include, but are not limited to the following:

– Australian and New Zealand Guidelines for Fresh and Marine Water Quality (ANZECC & ARMCANZ, 2000).
– Australian and New Zealand Guidelines for Fresh and Marine Water Quality (ANZG, 2018) (updated 26 July 2021).
– Consultants Reporting on Contaminated Land: Contaminated Land Guidelines, NSW EPA (2020).

– Heads of EPAs Australia and New Zealand (HEPA) PFAS National Environmental Management Plan (NEMP) (version 2.0) (HEPA , 2020).
– National Health and Medical Research Council & National Resource Management Ministerial Council (NHMRC & NRMMC) Australian Drinking Water Guidelines 6, 2011 (version 3.6 updated in March 2021) (NHMRC & NRMMC, 2011).
– NSW EPA, Guidelines on the Duty to Report Contamination under the Contaminated Land Management Act 1997 (NSW EPA, 2015).

4.2.3 Adopted assessment criteria

To assess and understand baseline and construction surface water quality conditions, assessment criteria have been adopted from ANZECC & ARMCANZ (2000), ANZG (2018) and NHMRC & NRMMC (2011). In order to achieve the water quality objectives (Section 4.2), which include the protection of environmental values such as aquatic ecosystems, visual amenity, primary and secondary recreational contact, irrigation and homestead water supply, various criteria have been adopted from these guidelines, as discussed below.

The ANZECC & ARMCANZ (2000) guidelines are trigger values for physical and chemical stressors for protection of waterway health. The guidelines are specific to the type of ecosystem being monitored, which, in this case, are lowland rivers (specifically east-flowing coastal lowland rivers in NSW). These guidelines are based on toxicological studies, which define trigger values for physical and chemical stressors at which an effect on aquatic ecosystem is observed.

The ANZECC & ARMCANZ (2000) guidelines relate to reference conditions of aquatic systems that are minimally disturbed, and therefore, they are regarded as conservative in relation to the current condition of the sampling locations. However, the trigger values can be used to assess the risks of adverse effects of excessive amounts of pollutants in various ecosystem types.

For the locations monitored in this project, the trigger values for NSW lowland coastal rivers have been applied as the most applicable system group described in ANZECC & ARMCANZ (2000). Additionally, ANZECC & ARMCANZ stock watering guidelines have been adopted to provide criteria where lowland river criteria does not. The listed criteria values for the parameters monitored in this project are as presented in Tables B3 to Table B7, Appendix B.

To supplement the ANZECC & ARMCANZ guidelines and facilitate the protection of the environmental values listed above and potential human receptors, additional criteria have been included:

– Australian Drinking Water Guidelines (ADWG) v3.7, updated in January 2022 (NHMRC & NRMMC, 2011), protective of human health.
– ANZG (2018) (updated 26 July 2021) Freshwater – 95% level of species protection (slightly to moderately disturbed systems), protective of ecological health.

These criteria are generally more conservative than those for aesthetic, primary contact recreation and secondary contact recreation, and as such no criteria have been selected for these environmental values.

4.2.4 PFAS

The NEMP (HEPA, 2020) is the national guidance document on the management of PFAS contamination in Australia. The purpose of the NEMP is to establish a practical basis for nationally consistent environmental guidance and standards for preventing and managing PFAS contamination. The NEMP details guidelines values adopted for exposure to PFAS contamination in soil and water, for human and ecological receptors. The NEMP further details waste management procedures for PFAS contaminated soil and water.

The recreational species protection criteria, outlined in the NEMP (HEPA, 2020), has been selected for the assessment of potential exposure of surface water to human receptors, particularly during construction works. The NEMP (2020) drinking water criteria has also been adopted as a conservative measure and to align with drinking water criteria adopted for remaining analytes.

The surface water locations are considered moderately disturbed systems, and during the construction phase would be considered as highly disturbed systems. As a conservative approach and given the bioaccumulation

potential of PFAS, the 95% species protection criteria for slightly to moderately disturbed systems has been adopted.

Adopted assessment criteria for PFAS is presented in Table B4, Appendix B.

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5. Data assessment

As the majority of surface water sampling locations were relocated following the March 2021 event and eighteen months of baseline data has now been collected from these new locations prior to the construction of the M12 Motorway, baseline data from events prior to April 2021 have been removed from the data assessment. This is considered appropriate to enable an accurate depiction of the sampling locations moving forward while still providing sufficient data to inform future events.

The East construction contractor took possession of the site in July 2023 which triggered the transition into the construction phase of surface water monitoring program for the East portion of the site (see Figure 1, Appendix A). The current monitoring period includes three months of baseline and three months of construction phase monitoring data from the East portion of the M12 Motorway, and the continuance of the construction phase monitoring period for the West and Central portions.

5.1 Rainfall

BOM rainfall gauging Station ID 067108 at Badgerys Creek (Lat.: -33.90 °S; Long: 150.73 °E) was utilised for rainfall data analysis. Data from the Badgerys Creek station was available between November 1995 and September 2023, however there were three periods from 20 December 2022 to 21 February 2023, 25 March 2023 to April 21 2023, and September 26 2023, to 30 September 2023 where rainfall data was not recorded (BOM, 2023). To address these data gaps, rainfall data was obtained from Station ID 067119 located at Horsley Park Equestrian Centre where available (Lat.: -33.85 °S; Long: 150.86 °E).

Long-term monthly and annual rainfall data, including monthly rainfall received between November 1995 and September 2023 are summarised in Table 4. The long-term average annual rainfall recorded between 1995 and 2022 was 716.9 mm, with a median annual rainfall of 664.6 mm recorded.

Rainfall recorded for the recent monitoring period (201 mm, for April 2023 to September 2023) was slightly lower than the April to September long-term average (247 mm, 1995 to 2023). Rainfall fluctuated throughout the reporting period, with greater than 74 mm recorded in April 2023 and less than 7 mm in July 2023.

Average monthly rainfall was 119 mm during the baseline monitoring period of the Central and West portions (April 2021 to July 2022), and 56 mm to date for the construction period (August 2022 to September 2023).

The daily rainfall for the Badgerys Creek station during the monitoring program (April 2021 to September 2023) with supplementary data from the Horsley Park station is presented in Figure 2, Appendix A. The figure shows peaks of heavy rainfall events, in which five wet weather events were subsequently conducted on the following dates:

– WW Event 1: 25 August 2021
– WW Event 2: 29 November 2021
– WW Event 3: 14 January 2022
– WW Event 4: 5-6 July 2022
– WW Event 5: 14-15 November 2022
– WW Event 6: 31 August 2023

Table 4 Summary of rainfall (mm) received at Badgerys Creek BOM station (ID 067108)

	January	February	March	April	May	June	July	August	September	October	November	December	ANNUAL
Long-term average rainfall (mm), Nov 1995 – September 2023	78.3	108.0	109.5	47.9	38.8	55.1	33.0	36.8	34.6	58.9	69.0	54.5	724.4
Long-term median rainfall (mm), Nov 1995 – September 2023	55.0	89.3	59.5	30.0	30.4	41.3	20.0	22.8	28.8	50.2	49.0	44.5	520.8
Reported rainfall (mm) for 2021	67.0	99.8	371.8	5.0	69.0	41.8	17.6	49.8	18.2	82.4	145.0	96.6	1064.0
Reported rainfall (mm) for 2022	170.0	194.4	561.4	118.4	52.0	4.2	280.0	32.8	74.6	186.8	45.8	3.8[1]	1721.0
Reported rainfall (mm) for 2023	97.6[1]	91.0[1]	49.2[1]	74.4[1]	47.6	14.6	6.8	44.2	13.0[1]	N/A	N/A	N/A	N/A

Notes:

N/A: Not applicable. Rainfall in these months will be reported in future reports.

[1]Partial or all rainfall data obtained from Station ID 067119 – Horsley Park as Station ID 067108 – Badgery's Creek has no recorded rainfall data during this period.

5.2 Field measured surface water quality parameters

Surface water quality parameters measured in the field during the surface water monitoring program are summarised in Tables B8 to B10, Appendix B. The sampling statuses of the monitoring locations throughout the monitoring program are presented in Table B1, Appendix B. Field observations during sampling are presented in Table B2, Appendix B.

Summary statistics of field parameters for all dry weather monitoring events during the baseline monitoring period and construction monitoring period to September 2023 were calculated for all sampling locations. Construction period summary statistics have not been calculated for East locations as there are only three rounds of data, however, they have been included in the current monitoring period (April 2023 to September 2023) summary statistics. All baseline concentrations for East locations during the current monitoring period have been included in the baseline summary statistics.

These include the 20th and 80th percentile concentrations of the field parameters, which can be used to define site-specific conditions during the baseline and construction and phases of the works. These summary statistics are presented in Sections 5.2.1 to 5.2.4 below. The tables present the number of samples collected that create the percentiles as well as how many samples from the construction exceed the baseline percentiles. Additionally, graphs presenting the field parameters at each location since the beginning of the monitoring program are presented in Appendix C. It is noted that missing data points observed in Figure 1 to Figure 12 in Appendix C, are the result of access restrictions limiting the collection of field parameters (see Table B1, Appendix B). Box and whisker plots have been created for selected field parameters and are included in Appendix D.

5.2.1 pH

pH levels within natural waters can vary greatly, as it is interdependent with a range of water quality parameters, including carbon dioxide, alkalinity and hardness. The pH of water is a measure of its acidity or alkalinity. Generally, pH itself is not a contaminant of concern, however it can become toxic in its own right, and is also known to influence the toxicity of hydrogen sulfide, cyanides, heavy metals and ammonia.

Most of the adverse effects of pH in water are associated with low pH values (acidic), effectively when pH is less than 6. ANZECC & ARMCANZ (2000) states that almost all water quality guidelines across the world recommend that pH should be maintained in the range 6.5 to 9.0, to protect freshwater aquatic organisms. The adopted ANZECC & ARMCANZ (2000) criteria for pH are 6.5 – 8.5 for NSW lowland rivers.

The summary statistics for the construction monitoring period (April 2023 to September 2023) compared to the baseline monitoring period are presented in Table 5 below. Variations in recorded pH across sampling locations and sampling events are presented in Figure 1 to Figure 3, Appendix C and in Figure 13, Appendix D.

Table 5 Summary statistics for pH monitoring

ANZECC 2000 Guideline Value					6.5 – 8.5					
Phase		**Current**			**Construction**			**Baseline**		
	Sampling Location	**N**	**20th %ile**	**80th %ile**	**N**	**20th %ile**	**80th %ile**	**N**	**20th %ile**	**80th %ile**
West	BADDS	6	7.23	7.59	13	7.02	7.48	10	7.02	7.76
	BADMS	6	7.23	**7.49**	13	**6.98**	**7.44**	5	7.00	7.16
	BADUS	6	7.37	7.81	13	**7.05**	7.72	15	7.13	7.84
	COSDS	5	7.45	7.94	12	7.37	7.87	14	7.26	8.03
	COSUS	5	**6.96**	7.91	12	**7.01**	7.81	14	7.23	8.20
Central	KEMDS	6	7.15	7.59	13	7.14	7.57	13	6.85	7.75
	KEMUS	6	7.18	**7.61**	13	**7.08**	**7.61**	14	7.16	7.57
	SOUDS	6	7.57	**8.05**	13	**6.95**	7.85	13	7.19	7.96
	SOUUS	6	7.60	**8.03**	13	**7.01**	7.64	13	7.21	7.80
East	HINDS	3	7.40	7.94				24	7.06	8.24
	HINUS	3	7.56	8.33				22	6.92	8.42
	ROPDS	3	7.52	7.60				24	7.19	7.68
	ROPUS	3	6.98	7.23				21	6.94	8.14

Notes: 1. **BOLD** = sits outside the baseline data (i.e. either below the 20th baseline percentile or above the 80th baseline percentile.)

pH readings during the current and construction period at upstream locations BADMS and KEMUS are outside the baseline and tending more alkaline, however, downstream locations have not seen an increase outside the baseline percentiles.

Similarly, pH readings during the current and construction period are outside the baseline and tending acidic were recorded at upstream locations BADMS, BADUS, KEMUS, and SOUUS. Downstream location SOUDS also recorded concentrations outside the baseline tending acid, potentially associated with the increased acidity outside the baseline at SOUUS. These results still site within the ANZECC (2000) guidelines values of 6.5-8.5 pH and therefore no major impact is occurring to these rivers from the construction.

Current monitoring period pH readings at HINUS are more alkaline than other locations, however, they are within the baseline percentiles.

5.2.2 Electrical conductivity

Electrical conductivity (EC) is a measure of the types of salts (ions) in water, including anions: chlorides, sulphates, carbonates, phosphates and nitrates, as well as cations: sodium, calcium, magnesium and potassium. Concentrations of individual ions can vary, impacting EC accordingly.

Metallic ions are able to raise EC in water, and are affected by local geology and soils, land use and catchment run off, agriculture, irrigation, urban and industrial development and run off, and groundwater inflows. High EC concentrations may also be caused by clearing of vegetation and the resultant rise in the water table.

EC above 1,500 µS/cm is known to be harmful to freshwater aquatic organisms (ANZECC & ARMCANZ, 2000). Therefore, it is possible to predict that such high ionic contents in the waterbodies are likely to change the freshwater environment into a part-saline habitat. If such a change occurs, biotic communities may also change, over time, as a result.

The ANZECC & ARMCANZ (2000) guideline range for EC in NSW coastal lowland rivers is 200-300 µS/cm and is applicable to flowing creeks. However, these guidelines also state that Australia's east flowing lowland rivers could have EC as high as 2200 µS/cm, and likewise should be above 125 µS/cm. As such, the guideline range for EC for these waters adopted from ANZECC & ARMCANZ (2000) is 125-2200 µS/cm.

The 20th and 80th percentile EC values calculated for the construction monitoring period (April 2023 to September 2023) compared to the baseline monitoring period are presented in Table 6 below. Variations in EC concentrations across sampling locations and sampling events are presented in Figure 4 to Figure 7, Appendix C and in Figure 14, Appendix D.

Table 6 Summary statistics for EC monitoring (in µS/cm)

ANZECC 2000 Guideline Value					125 – 2200 µS/cm					
Phase		**Current**			**Construction**			**Baseline**		
	Sampling Location	**N**	**20th %ile**	**80th %ile**	**N**	**20th %ile**	**80th %ile**	**N**	**20th %ile**	**80th %ile**
West	BADDS	6	914.00	**1329.00**	13	845.60	**1657.40**	10	641.20	1182.40
	BADMS	6	977.00	**1350.00**	13	862.20	**1633.80**	5	749.80	1139.00
	BADUS	6	997.00	1158.00	13	1003.40	**1483.00**	15	782.20	1301.60
	COSDS	5	855.40	**1541.80**	12	648.20	**1483.60**	14	599.00	1209.60
	COSUS	5	956.00	**4276.40**	12	803.00	**2006.80**	14	630.20	1185.00
Central	KEMDS	6	939.00	**2180.00**	13	991.80	**2048.60**	13	179.44	1566.80
	KEMUS	6	**935.00**	**2252.00**	13	1080.40	**2195.20**	14	1000.20	1879.00
	SOUDS	6	861.00	**1080.00**	13	859.20	**1169.80**	13	793.80	1056.00
	SOUUS	6	865.00	**1059.00**	13	841.60	**1215.40**	13	799.20	1047.40
East	HINDS	3	**389.02**	**437.26**				24	150.90	323.62
	HINUS	3	**472.90**	**529.00**				22	177.80	470.32
	ROPDS	3	3493.40	4044.80				24	946.00	4429.00
	ROPUS	3	**249.44**	**285.26**				21	127.80	237.00

Notes: 1. **BOLD** = sits outside the baseline data (i.e. either below the 20th baseline percentile or above the 80th baseline percentile.)

Electrical conductivity 80th percentile results for the construction monitoring period exceeded the 80th percentile results for the baseline monitoring period at all sample locations, and all locations with the exception of BADUS and ROPDS for the current monitoring period. Current monitoring period 20th percentile results below baseline were reported at KEMUS, HINDS, HINUS, and ROPUS.

Increases in electrical conductivity across all sampling locations may be related to the reduced rainfall trend and the subsequent decrease in freshwater runoff into streams. Stagnant water levels were noted during sampling at Badgerys Creek locations in April

Stagnant or low flowing water compared to previous monitoring locations was noted at all locations in all months with the exception of the May 2023 event when sampling occurred after a period of rainfall (see summary of observations in Table B2, Appendix B and field sheets in Appendix F).

Decreases in water level compared to previous monitoring rounds were recorded at Cosgroves Creek in April and June 2023, Hinchinbrook Creek in June, July and August 2023, Kemps Creek in June 2023, Ropes Creek in June 2023, and South Creek in June 2023. ROPUS was also frequented by cows throughout the current monitoring period.

Exceedances of current monitoring period calculated percentiles in the East portion may not be indicative of a trend and may instead be attributed to the limited size of the data set compared to the baseline period at the time of reporting.

5.2.3 Dissolved oxygen

Dissolved oxygen (DO) is a critical water quality parameter as most living organisms require oxygen. Low DO concentrations have adverse effects on many aquatic organisms, including fish, invertebrates, and aerobic microorganisms, which depend upon oxygen dissolved in the water for efficient functioning. Low concentrations of

DO creates reducing conditions in sediments, which can release previously bound nutrients and toxicants such as metals to the surrounding water.

The concentration of DO in water is highly dependent on temperature, salinity, biological activity (microbial, primary production) and the rate of transfer from the atmosphere. Under natural conditions, DO levels can vary considerably during a daily cycle (diurnal change). Highly productive systems (e.g., tropical wetlands, dune lakes and estuaries) can become severely depleted in DO, particularly when these systems are stratified.

Of greatest concern for water quality is the decrease in DO that can occur when bio-degradable organic matter is introduced (e.g., sewage, or dead plant matter). The depletion of DO depends on the organic load, microbial activity, and any re-aeration mechanisms that may be operating.

ANZECC & ARMCANZ (2000) describes a lower and upper range for DO saturation as 85%-110% in flowing waters. The 20th and 80th percentiles for DO data for the construction monitoring period to date compared to the baseline monitoring period is presented in Table 7. Variations in DO concentrations across sampling locations and sampling events is presented in Figure 7 to Figure 9, Appendix C and in Figure 15, Appendix D.

Table 7 Summary statistics for DO monitoring (in % Saturation)

ANZECC 2000 Guideline Value					85 - 110 %S					
Phase		**Current**			**Construction**			**Baseline**		
	Sampling Location	**N**	**20th %ile**	**80th %ile**	**N**	**20th %ile**	**80th %ile**	**N**	**20th %ile**	**80th %ile**
West	BADDS	6	44.50	71.90	13	48.33	**80.84**	10	36.86	77.30
	BADMS	6	58.30	68.40	13	**35.06**	68.82	5	54.04	71.28
	BADUS	6	49.50	**96.80**	13	52.67	**95.11**	15	44.82	93.06
	COSDS	5	**57.82**	83.72	12	**61.28**	83.91	14	67.16	92.14
	COSUS	5	**30.50**	66.34	12	**30.98**	71.78	14	50.88	87.56
Central	KEMDS	6	48.10	72.50	13	49.12	69.50	13	6.26	82.46
	KEMUS	6	55.40	**80.70**	13	55.40	**79.66**	14	40.20	75.61
	SOUDS	6	68.30	**100.60**	13	68.00	**95.03**	13	53.44	88.65
	SOUUS	6	75.50	**95.80**	13	62.53	**92.99**	13	55.04	81.08
East	HINDS	3	79.70	**103.60**				24	43.27	101.28
	HINUS	3	56.60	**110.42**				22	45.11	103.66
	ROPDS	3	69.70	**89.44**				24	44.66	79.48
	ROPUS	3	**54.40**	79.72				21	46.75	120.90

Notes: 1. **BOLD** = sits outside the baseline data (i.e. either below the 20th baseline percentile or above the 80th baseline percentile.)

Exceedances of dissolved oxygen concentrations for the construction monitoring period compared to the baseline occurred at the 20th percentile was at locations BADMS, COSDS and COSUS. Exceedances of the 20th percentile during the current monitoring period compared to the baseline only occurred at COSDS and COSUS and ROPUS.

Stagnant or low flowing water compared to previous monitoring locations was noted at all locations in all months with the exception of the May 2023 event when sampling occurred after a period of rainfall (see summary of observations in Table B2, Appendix B and field sheets in Appendix F).

Decreases in water level compared to previous monitoring rounds were recorded at Cosgroves Creek in April and June 2023, Hinchinbrook Creek in June, July and August 2023, Kemps Creek in June 2023, Ropes Creek in June 2023, and South Creek in June 2023.

Exceedances of the 80th percentile during the construction monitoring period compared to the baseline occurred at BADDS, BADUS, KEMUS, SOUDS, and SOUUS. Exceedances of the 80th percentile during the current monitoring period occurred at BADUS, KEMUS, SOUDS, SOUUS, HINDS, HINUS, and ROPUS.

Increases in dissolved oxygen locations at the majority of locations, both upstream and downstream, in the construction monitoring period compared to the baseline monitoring period may be attributed to the colder temperatures when the sampling occurred and the possible construction impact on realigning the creeks. .

Exceedances of current monitoring period calculated percentiles in the East portion may not be indicative of a trend and may instead be attributed to the limited size of the data set for compared to the baseline period at the time of reporting.

5.2.4 Turbidity

Turbidity, directly measured in situ by the water quality probe, provides readings which express how light is scattered by suspended particulate material in the water. These results, given in Nephelometric Turbidity Units (NTU), generally provide an accurate correlation with the concentration of particles in the water that affect water clarity and phytoplankton productivity.

Although high turbidity is often a sign of poor water quality and land management, clear water does not always guarantee healthy water. Extremely clear water can signify very acidic conditions, or high levels of salinity.

The ANZECC & ARMCANZ freshwater guidelines provide a trigger value of 6-50 NTU for turbidity in lowland rivers.

Variations in turbidity concentrations across sampling locations and sampling events are presented in Figure 10 to Figure 12, Appendix C and in Figure 16, Appendix D. Turbidity is a similar measure to total suspended solids, and therefore the summary statistics and results discussion have not been included as they have been summarised in Section 5.3.1.

5.3 Laboratory analytical results

The analytical results of the baseline period constitute the baseline data of the refined monitoring locations (as described in Section 5). This data is compared against relevant assessment criteria (outlined in Section 4.2).

The laboratory analytical results of surface water samples throughout the baseline monitoring program excluding wet weather events are tabulated in Table B3, Appendix B. PFAS analytical results for the baseline monitoring period are tabulated in Table B4, Appendix B. The laboratory analytical results of surface water samples for the construction monitoring period to date tabulated in Table B5, Appendix B. The laboratory analytical results of surface water samples for the current monitoring period are tabulated in Table B7, Appendix B. Laboratory reports are provided in Appendix G. A summary of the analysis is presented below in Sections 5.3.1 to 5.3.17.

Summary statistics of laboratory analytical results for all dry weather monitoring events during the baseline monitoring period and construction monitoring period to September 2023 were calculated for all sampling locations.

5.3.1 Total suspended solids (TSS)

Total suspended solids (TSS) consist of an inorganic fraction (silts, clays, etc.) and an organic fraction (algae, zooplankton, bacteria, and detritus) that are carried along by water as they run off the land. When suspended particles settle to the bottom of a water body, they become sediments or ‘silt’. Turbidity is correlated with the force of moving water, which keeps the particles suspended.

Suspended solids reduce sunlight penetration, reducing algal photosynthesis, thereby controlling phytoplankton abundance and the abundance of animals that feed on algae. Suspended solids also clog fish gills, either killing them or reducing their growth rate. When suspended sediment settles out and drops to the bottom, this causes the water to clear, but as the silt or sediment settles, it may change the nature of the lake bottom. The silt may be unfavourable to bottom-dwelling organisms, as it may cover breeding areas, and smother eggs.

Indirectly, suspended solids affect other water quality parameters, such as temperature and DO. Siltation (sediment deposition) may eventually fill up a water body converting it into a wetland.

A positive effect of the presence of suspended solids in water is that toxic chemicals, such as pesticides and metals tend to adsorb to them, or become complexed with them, which makes the toxins less available to be absorbed by living organisms.

It should be noted that TSS is an important parameter to be measured in waterways that may be impacted by construction activities. Elevated TSS, which is often transient, may not always be ecologically significant for biota. However, it is generally considered a good indicator of how effective the construction related sediment and runoff controls and other mitigation measures might be, which are taken to reduce adverse impacts on downstream waterways.

The adopted guideline concentration for TSS for these waters is 6 mg/L (Tables B3 to B7, Appendix B), as per ANZECC & ARMCANZ guidelines for lowland coastal rivers. The 20th and 80th percentiles for TSS data calculated for the construction monitoring program compared to the baseline monitoring program are presented in Table 8 below. Variations in TSS concentrations are presented as a box plot in Figure 18, Appendix D.

Table 8 Summary statistics for total suspended solids (in mg/L)

ANZECC 2000 Guideline Value					6 mg/L					
Phase		**Current**			**Construction**			**Baseline**		
	Sampling Location	**N**	**20th %ile**	**80th %ile**	**N**	**20th %ile**	**80th %ile**	**N**	**20th %ile**	**80th %ile**
West	BADDS	6	18.00	**63.00**	13	17.40	**38.60**	10	10.00	34.40
	BADMS	6	23.00	**55.00**	13	18.80	**36.60**	5	9.40	28.80
	BADUS	6	**10.00**	**40.00**	13	11.40	27.60	15	12.00	36.00
	COSDS	5	34.80	**61.00**	12	17.00	**46.80**	14	13.20	39.40
	COSUS	5	13.20	**69.40**	12	**11.60**	29.60	14	13.20	52.40
Central	KEMDS	6	**5.00**	16.00	13	**5.40**	15.60	13	9.80	42.20
	KEMUS	6	8.00	**27.00**	13	**6.20**	**22.00**	14	6.60	19.20
	SOUDS	6	18.00	**42.00**	13	22.80	**51.60**	13	14.80	24.60
	SOUUS	6	18.00	**38.00**	13	18.80	**41.20**	13	12.40	26.40
East	HINDS	3	9.80	**20.00**				24	5.00	11.00
	HINUS	3	5.80	7.00				22	5.00	37.40
	ROPDS	3	5.40	**9.60**				24	5.00	8.80
	ROPUS	3	42.20	**639.20**				21	14.00	83.00

Notes: 1. **BOLD** = sits outside the baseline data (i.e. either below the 20th baseline percentile or above the 80th baseline percentile.)

Total suspended solids concentrations at the 20th percentile for the construction period are in exceedance of the baseline at COSUS, KEMDS and KEMUS, and concentrations at the 20th percentile for the current monitoring period are in exceedance of the baseline at BADUS and KEMDS.

At the 80th percentile, all locations with the exception of BADUS, COSUS, and KEMDS during the construction monitoring period reported concentrations slightly higher than concentrations for the baseline monitoring period. 80th percentile concentration during the current monitoring period exceeded baseline concentrations at all locations with the exception of KEMDS and HINUS. Larger increases were observed at SOUDS, SOUUS, HINDS, and ROPUS.

Construction period 80th percentile concentrations above the baseline at BADDS and BADMS can be attributed to the May 2023 monitoring event that recorded high TSS concentrations, however, this was after a small period of high rainfall in the preceding days. Similar TSS concentrations were recorded at these locations in the November 2022 and August 2023 wet weather monitoring events. Increases above the baseline at COSUS are attributed to an increase in TSS concentrations in September 2023 when sampling occurred less than a week after increased rainfall.

TSS concentrations at South Creek could be attributed to the Sydney Water Treatment Plant overflow discharge into South Creek between SOUUS and SOUDS, with the highest levels during the current monitoring period reported in the September monitoring event, less than a week after the wet weather monitoring event in August.

Exceedances of current monitoring period calculated percentiles in the East portion may not be indicative of a trend and may instead be attributed to the limited size of the data set for compared to the baseline period at the time of reporting.

In addition, concentrations at ROPUS could be attributed to the location being a stagnant dam which is frequented by livestock with lower water levels noted in field notes since June 2023. ROPDS reported TSS concentrations of 1030 mg/L in July 2023 at the start of the construction period, however, two previous monitoring events recorded TSS concentrations of 698 mg/L and 1060 mg/L within the baseline monitoring period (February and May 2023, respectively). Sampling in August and September 2023 reported TSS concentrations below 50 mg/L.

Increases above the 80th percentile at HINDS are attributed to a spike in TSS concentrations at the start of the construction monitoring period in July 2023 and a gradual decline towards baseline levels.

5.3.2 Total dissolved solids (TDS)

All surface water samples in the baseline monitoring period reported TDS concentrations above the laboratory LOR (10 mg/L). Ecological and human health criteria are generally not applied to total dissolved solids as it is an aesthetic issue; however, the ADWG (NHMRC & NRMMC, 2011) recommends that TDS concentrations below 600 mg/L will exhibit good palatability.

Variations in TDS concentrations are presented as a box plot in Figure 17, Appendix D. TDS is a similar measure to electrical conductivity, and therefore the summary statistics and results discussion have not been included as they have been summarised in Section 5.2.2.

5.3.3 Nutrients

Of the range of parameters monitored as aquatic ecosystem health indicators in the monitoring program, algal growth nutrients (Nitrogen, N; and Phosphorus, P) are the most significant. The concentrations of N and P provide useful information on the changes that are occurring in the waterways and waterbodies of the project.

All surface water samples reported concentrations above the laboratory LOR for the majority of nutrients.

Summary statistics for the construction monitoring period to September 2023 and the baseline monitoring period were calculated, including the 20th and 80th percentile concentrations of the data for ammonia, oxidised nitrogen (NOx), total nitrogen, total phosphorus, soluble reactive phosphorus and chlorophyll-a. The 20th and 80th percentile values have been compared against the applicable ANZECC & ARMCANZ (2000) trigger values and ANZG (2018) 95% freshwater species protection criteria. These summary statistics are presented in 5.3.4 to 5.3.7.

5.3.4 Nitrogen

Nitrogen is the most abundant element, with the Earth's atmosphere comprising approximately 80% nitrogen. It is found in the cells of all living things and as a major component of proteins. Inorganic nitrogen may exist in the free-state as gaseous nitrogen (N2); or ammonia (NH3); or as oxides (nitrate (NO3-); nitrite (NO2-). Organic N is found in proteins and is continually recycled by plants and animals. Concentrations of these N species and total nitrogen (TN) are major indicators of aquatic ecosystem health (ANZECC & ARMCANZ, 2000). TN is the sum of organic nitrogen, NOx and ammonia:

TN = (organic nitrogen) + (NO3–) + (NO2–) + (NH3)

By definition, Total Kjeldahl Nitrogen (TKN), a component of TN, is the sum of organic nitrogen and ammonia. Therefore, the above equation may be re-written as:

TN = (TKN) + (NO3–) + (NO2–)

Ammonia

High levels of ammonia in water indicate poor water quality, as ammonia is a metabolic waste product. At high concentrations ammonia is toxic to most aquatic life, including fish, in which the structural development, hatching and growth rates of fish is impacted. Ammonia toxicity to aquatic life increases as pH and temperature decreases. Plants are more tolerant of ammonia than animals, and invertebrates are more tolerant than fish.

Most of the ammonia produced in Australia is used in fertilizers, as ammonium sulfate, nitrate and urea. It is also used in the production of ice and in refrigerating plants, and in household cleaning products. As ammonia is a decomposition product from urea and protein, it is found in domestic wastewater. Waste products from aquatic life also contribute to ammonia found in water bodies.

The ANZG (2018) criteria protective of 95% of freshwater species (0.9 mg/L) has been adopted. Summary statistics and analytical results for ammonia concentrations measured at the monitored locations are provided in Table 9 below. Variations in ammonia concentrations are presented as a box plot in Figure 19, Appendix D.

Table 9 Summary statistics for ammonia (in mg/L)

ANZG 2018 Value					0.9 mg/L					
Phase		**Current**			**Construction**			**Baseline**		
	Sampling Location	**N**	**20th %ile**	**80th %ile**	**N**	**20th %ile**	**80th %ile**	**N**	**20th %ile**	**80th %ile**
West	BADDS	6	0.01	0.03	13	0.01	0.04	10	0.01	0.07
	BADMS	6	**0.02**	0.03	13	**0.02**	0.04	5	0.05	0.18
	BADUS	6	0.01	0.06	13	0.01	0.08	15	0.01	0.08
	COSDS	5	**0.01**	0.04	12	**0.01**	**0.06**	14	0.02	0.05
	COSUS	5	0.05	**0.19**	12	0.02	**0.13**	14	0.01	0.06
Central	KEMDS	6	**0.01**	0.04	13	0.02	0.05	13	0.03	0.26
	KEMUS	6	0.03	0.04	13	0.02	0.04	14	0.03	0.09
	SOUDS	6	0.02	0.05	13	**0.01**	0.11	13	0.02	0.21
	SOUUS	6	0.02	0.04	13	0.02	0.12	13	0.01	0.17
East	HINDS	3	0.01	**0.09**				24	0.01	0.08
	HINUS	3	0.01	0.02				22	0.01	0.06
	ROPDS	3	0.01	0.03				24	0.02	0.05
	ROPUS	3	**0.44**	**1.03**				21	0.01	0.02

Notes: 1. **BOLD** = sits outside the baseline data (i.e. either below the 20th baseline percentile or above the 80th baseline percentile.)

Ammonia concentrations at the 20th percentile for the construction monitoring period were either consistent or slightly lower than calculated 20th percentile concentrations for the baseline monitoring period. Exceedances at the 80th percentile concentrations in the construction period compared to the baseline were reported in COSDS, and COSUS. Exceedances at the 80th percentile concentrations in the current monitoring period compared to the baseline were reported in COSUS, HINDS, and ROPUS. These percentiles values are below the ANZG (2018) value with the exception of ROPUS.

Exceedances of current monitoring period calculated percentiles at ROPUS and HINDS may not be indicative of a trend and may instead be attributed to the limited size of the data set for compared to the baseline period at the time of reporting. However, the sharp increase in ammonia at ROPUS can be attributed to reported concentrations around 1 mg/L in August and September 2023 monitoring events, prior to this the maximum reported concentration was 0.06 mg/L. The water levels at ROPUS have been noted as decreasing during sampling events and the location is also frequented by livestock which may contribute to the increased concentrations. In addition, concentrations above the baseline at HINDS may be attributable to increased ammonia concentrations recorded in the September 2023 event which may be related to increased rainfall in the week prior to sampling.

COSUS 80th percentile concentrations above the baseline are similarly attributed to higher concentrations recorded during the August and September 2023 monitoring events. Increased concentrations at COSUS in August may be attributable to stagnant flow noted when sampling, with concentrations in September potentially attributed to increased rainfall in the week prior to sampling.

Nitrogen oxides

Nitrate [NO 3 -] and nitrite [NO2-] are related N compounds, which occur naturally in soil, water, plants and food. They are formed when microorganisms break down organic materials, such as plants, animal manure, and sewage. Nitrate is found in chemical fertiliser and is also used as a preservative and a curing agent for meat. The occurrence of high levels of both nitrate and nitrite in water points to the contamination of water by various sources of N, such as fertiliser and wastewater (in runoff, or leaking septic tanks); manure from livestock, animal wastes (e.g. fish and birds); and discharges from car exhausts.

Bacteria in water readily convert nitrites to nitrates in an aerobic process called nitrification, which consumes dissolved oxygen. Because of the rapid conversion, nitrites in water are relatively short-lived. In poorly aerated

water or water overloaded with organic contamination, low oxygen levels can inhibit nitrification, leaving most of the nitrogen as ammonia or nitrite. Both of these compounds are relatively toxic to organisms.

The major impact of NOx on freshwater is nutrient enrichment, stimulating the growth of phytoplankton, which provides food for higher organisms (invertebrates and fish). An excess of nitrogen often results in over-production of phytoplankton, and as they die and decompose, they use up oxygen, causing oxygen-depletion and death of other oxygen-dependent organisms.

The ANZECC & ARMCANZ (2000) criteria value for NOx is 0.04 mg/L for lowland rivers. Summary statistics for nitrogen oxide concentrations measured at the monitored locations are provided in Table 10. Variations in total oxidised nitrogen concentrations are presented as a box plot in Figure 20, Appendix D. The following observations highlight the results:

Table 10 Summary statistics for total oxidised nitrogen (in mg/L)

ANZECC & ARMCANZ 2000 Value		0.04 mg/L								
Phase		**Current**			**Construction**			**Baseline**		
	Sampling Location	**N**	**20th %ile**	**80th %ile**	**N**	**20th %ile**	**80th %ile**	**N**	**20th %ile**	**80th %ile**
West	BADDS	6	0.13	**0.69**	13	**0.01**	**0.61**	10	0.02	0.42
	BADMS	6	0.15	**1.37**	13	**0.01**	**0.62**	5	0.11	0.31
	BADUS	6	0.05	0.27	13	**0.03**	0.40	15	0.04	0.60
	COSDS	5	**0.02**	**0.46**	12	**0.01**	0.16	14	0.11	0.27
	COSUS	5	**0.03**	0.19	12	**0.01**	0.14	14	0.09	0.29
Central	KEMDS	6	**3.25**	**4.75**	13	2.05	**3.55**	13	0.01	2.20
	KEMUS	6	3.03	4.00	13	**1.42**	3.74	14	1.75	5.59
	SOUDS	6	0.95	**2.05**	13	**0.07**	**2.04**	13	0.52	1.78
	SOUUS	6	0.93	**1.98**	13	**0.17**	**1.98**	13	0.54	1.75
East	HINDS	3	0.01	0.07				24	0.01	0.07
	HINUS	3	0.01	0.01				22	0.01	0.04
	ROPDS	3	**0.02**	**0.23**				24	0.03	0.13
	ROPUS	3	0.01	**0.02**				21	0.01	0.01

Notes: 1. **BOLD** = sits outside the baseline data (i.e. either below the 20th baseline percentile or above the 80th baseline percentile.)

20th percentile concentrations below the baseline for total oxidised nitrogen in the construction were reported in BADDS, BADMS, BADUS, KEMUS, SOUDS, and SOUUS, with COSDS, and COSUS reporting 20th percentile concentrations below the baseline during the current monitoring period. BADDS, BADMS, KEMDS, SOUDS, and SOUUS reported construction period concentrations at the 80th percentile above the baseline concentrations, whilst BADDS, BADMS, COSDS, KEMDS, SOUDS, and SOUUS reported current monitoring period 80th percentile concentrations in exceedance of the baseline.

Concentrations above the baseline 80th percentile at COSDS and BADMS can be attributed to increased concentrations recorded in the May 2023 and September 2023 monitoring events which occurred less than a week after short periods of increased rainfall. Baseline 80th percentile concentrations at KEMDS and KEMUS are higher than other streams. Throughout the current monitoring period concentrations at KEMDS and KEMUS have been within 0.6 mg/L of each other, with the exception of the July 2023 monitoring event, with concentrations of 9.02 mg/L reported at KEMDS compared to 3.06 mg/L reported at KEMUS. Following this event, concentrations remained within 0.6 mg/L of each other for the remainder of the monitoring period.

Concentrations in the current monitoring period calculated percentiles above the baseline at ROPDS may not be indicative of a trend and may instead be attributed to the limited size of the data set for compared to the baseline period at the time of reporting.

Total nitrogen (TN)

The ANZECC & ARMCANZ (2000) guidelines outline a default TN trigger value of 0.35 mg/L for freshwater lakes and reservoirs, and for east flowing coastal rivers in NSW. Summary statistics for total nitrogen concentrations measured at the monitored locations are provided in Table 11. Variations in total nitrogen concentrations are presented as a box plot in Figure 21, Appendix D.

Table 11 Summary statistics for total nitrogen (in mg/L)

ANZECC & ARMCANZ 2000 Value		0.35 mg/L								
Phase		**Current**			**Construction**			**Baseline**		
	Sampling Location	**N**	**20th %ile**	**80th %ile**	**N**	**20th %ile**	**80th %ile**	**N**	**20th %ile**	**80th %ile**
West	BADDS	6	0.60	1.40	13	0.60	1.36	10	0.56	2.22
	BADMS	6	0.90	**2.50**	13	0.90	1.56	5	0.78	1.68
	BADUS	6	**0.60**	1.10	13	**0.70**	1.38	15	1.02	2.06
	COSDS	5	0.40	**1.32**	12	0.50	1.08	14	0.40	1.20
	COSUS	5	0.56	1.06	12	0.62	0.90	14	0.46	1.08
Central	KEMDS	6	4.40	6.00	13	3.28	4.66	13	2.24	8.44
	KEMUS	6	4.20	5.40	13	**2.36**	4.92	14	3.18	7.10
	SOUDS	6	2.30	**4.80**	13	**1.10**	**4.40**	13	1.74	3.40
	SOUUS	6	**1.70**	**6.40**	13	**1.14**	**5.44**	13	1.76	3.44
East	HINDS	3	**0.90**	1.02				24	1.00	1.50
	HINUS	3	**0.90**	1.38				22	0.92	1.50
	ROPDS	3	0.54	0.78				24	0.46	1.32
	ROPUS	3	**2.42**	**6.98**				21	0.70	2.00

Notes: 1. **BOLD** = sits outside the baseline data (i.e. either below the 20th baseline percentile or above the 80th baseline percentile.)

Construction period 20th percentile concentrations below the baseline concentrations were reported at BADUS, KEMUS, SOUDS, and SOUUS, with BADMS, COSDS, SOUDS, SOUUS, HINDS, HINUS, and ROPDS reporting current monitoring period 20th percentile concentrations below the baseline. Construction period 80th percentile concentrations above baseline concentrations were reported at SOUDS, and SOUUS, with BADMS, SOUDS, SOUUS, and ROPUS reporting current monitoring period 80th percentile concentrations above the baseline.

Construction and current period 80th percentile concentrations above the baseline 80th percentile at SOUDS, SOUUS, BADMS, and COSDS are attributed to higher total nitrogen concentrations reported in the May and September 2023 monitoring events, which were monitored less than a week after short periods of increased rainfall. Outside of these two events, the maximum reported total nitrogen concentration in the current monitoring period was 3 mg/L. ROPUS concentrations above the baseline are attributed to the July 2023 monitoring event which reported total nitrogen concentrations of 9.3 mg/L, the maximum result from all other events within the current monitoring period was 3.5 mg/L. ROPUS is frequented by cows and the high concentration during this event may have been a result of cow manure.

Concentrations in the current monitoring period calculated percentiles above the baseline at ROPUS may not be indicative of a trend and may instead be attributed to the limited size of the data set for compared to the baseline period at the time of reporting.

5.3.5 Soluble reactive phosphorus (SRP)

Phosphorus (P) is a key element necessary for growth of all plants and animals. Phosphates can exist in three forms: orthophosphate, meta-phosphate (or polyphosphate) and organically bound phosphate. Each compound contains phosphorus in a different chemical formula. Ortho forms are produced by natural processes and are found in sewage. Poly forms are used for treating boiler waters and in detergents, where in water they change into

the ortho form. Organic phosphates result from the breakdown of organic pesticides, which contain phosphates. All forms of P may exist in solution, as particles, loose fragments or in the bodies of aquatic organisms.

Rainfall can cause varying amounts of phosphates to wash from farm soils into waterways. Phosphates stimulate the growth of plankton and aquatic plants, which provide food for fish. This may cause an increase in the fish population and improve the overall water quality.

However, under excess concentrations of P, algae and aquatic plants could grow wildly, choke up the waterways and consume large amounts of dissolved oxygen. This condition is known as eutrophication or over-fertilization of receiving waters. The excessive growth of aquatic vegetation eventually dies, and as it decays, it uses up oxygen. This process in turn causes the death of aquatic life, because of the lowering of oxygen levels.

The ANZECC & ARMCANZ (2000) criteria value for readily available, soluble P is 0.008 mg/L for east-flowing lowland coastal rivers. Summary statistics for reactive phosphorus concentrations measured at the monitored locations are provided in Table 12.

Table 12 Summary statistics for soluble reactive phosphorus (in mg/L)

ANZECC & ARMCANZ 2000 Value					0.008 mg/L					
Phase		**Current**			**Construction**			**Baseline**		
	Sampling Location	**N**	**20th %ile**	**80th %ile**	**N**	**20th %ile**	**80th %ile**	**N**	**20th %ile**	**80th %ile**
West	BADDS	6	0.010	0.010	13	0.010	0.010	10	0.010	0.012
	BADMS	6	0.010	0.010	13	0.010	0.010	5	0.010	0.014
	BADUS	6	0.010	0.010	13	0.010	0.010	15	0.010	0.078
	COSDS	5	0.010	0.010	12	0.010	0.010	14	0.010	0.010
	COSUS	5	0.010	0.010	12	0.010	0.010	14	0.010	0.010
Central	KEMDS	6	0.430	**0.560**	13	0.300	0.468	13	0.010	0.544
	KEMUS	6	0.460	0.520	13	**0.370**	0.470	14	0.444	0.944
	SOUDS	6	0.010	0.050	13	0.010	0.050	13	0.014	0.138
	SOUUS	6	0.010	0.050	13	**0.010**	0.068	13	0.018	0.140
East	HINDS	3	0.010	0.010				24	0.010	0.010
	HINUS	3	0.010	0.010				22	0.010	0.010
	ROPDS	3	0.010	0.016				24	0.010	0.020
	ROPUS	3	0.010	0.010				21	0.010	0.010

Notes: 1. **BOLD** = sits outside the baseline data (i.e. either below the 20th baseline percentile or above the 80th baseline percentile.)

The calculated 20th and 80th percentile concentrations for all sampling locations in the construction and current monitoring periods were consistent with those for the baseline monitoring period, with exception of KEMUS and SOUUS which reported construction period 20th percentile concentration below the baseline 20th percentile, and KEMDS which reported current period 80th percentile concentrations above the baseline 80th percentile.

5.3.6 Total phosphorus

The ANZECC & ARMCANZ (2000) criteria value for total phosphorus (TP) is 0.025 mg/L for east-flowing lowland coastal rivers. Summary statistics for reactive phosphorus concentrations measured at the monitored locations are provided in Table 13 below. Variations in total phosphorus concentrations are presented as a box plot in Figure 22, Appendix D.

Table 13 Summary statistics for total phosphorus (in mg/L)

ANZECC & ARMCANZ 2000 Value		0.025 mg/L								
Phase		**Current**			**Construction**			**Baseline**		
	Sampling Location	**N**	**20th %ile**	**80th %ile**	**N**	**20th %ile**	**80th %ile**	**N**	**20th %ile**	**80th %ile**
West	BADDS	6	**0.040**	0.080	13	**0.040**	0.092	10	0.056	0.260
	BADMS	6	**0.050**	0.130	13	**0.054**	0.106	5	0.058	0.162
	BADUS	6	**0.040**	0.090	13	**0.058**	0.126	15	0.072	0.350
	COSDS	5	**0.018**	**0.136**	12	0.032	**0.110**	14	0.020	0.078
	COSUS	5	0.018	**0.118**	12	0.022	0.078	14	0.016	0.090
Central	KEMDS	6	0.470	0.710	13	**0.370**	0.696	13	0.394	1.044
	KEMUS	6	**0.440**	0.670	13	**0.444**	0.596	14	0.558	1.074
	SOUDS	6	**0.060**	**0.420**	13	**0.082**	0.312	13	0.100	0.330
	SOUUS	6	**0.040**	0.320	13	**0.050**	0.312	13	0.108	0.350
East	HINDS	3	**0.022**	**0.052**				24	0.070	0.150
	HINUS	3	**0.036**	0.072				22	0.040	0.108
	ROPDS	3	**0.014**	**0.026**				24	0.030	0.134
	ROPUS	3	0.062	**0.848**				21	0.050	0.210

Notes: 1. **BOLD** = sits outside the baseline data (i.e. either below the 20th baseline percentile or above the 80th baseline percentile.)

Construction period 20th percentile concentrations were reported below the baseline at all locations with the exception of COSDS and COSUS, with current period concentrations below the baseline reported at all locations with the exception of COSUS, KEMDS, and ROPUS.

Construction period 80th percentile concentrations were reported above the baseline at COSDS, with current period concentrations above the baseline reported at COSDS, COSUS, SOUDS, and ROPUS.

Construction period 80th percentile concentrations above the baseline 80th percentile at COSDS and SOUDS are attributed to higher total phosphorus concentrations reported in the May and September 2023 monitoring events, with COSUS, which were monitored less than a week after short periods of increased rainfall. Outside of these two events, the maximum reported total phosphorus concentration in the current monitoring period was 0.04 mg/L at COSDS and 0.14 mg/L at SOUDS. COSUS percentile concentrations above the baseline are attributed to higher results in the April and September 2023 monitoring events, very low water levels were noted in field notes from April, and short period of increase rainfall was recorded less than a week before monitoring in September.

ROPUS concentrations above the baseline are attributed to the July 2023 monitoring event which reported total phosphorus concentrations of 1.32 mg/L, the maximum result from all other events within the current monitoring period was 0.29 mg/L. ROPUS is frequented by cows and the high concentration during this event may have been a result of cow manure. Concentrations in the current monitoring period calculated percentiles above the baseline at ROPDS may not be indicative of a trend and may instead be attributed to the limited size of the data set for compared to the baseline period at the time of reporting.

5.3.7 Chlorophyll-a

Chlorophyll-a (chl-a) is the primary, green, photosynthetic pigment, which captures sunlight, and found in all plants, including phytoplanktonic algae. Chl-a levels in water are a proven indicator of the condition of a waterway or a waterbody.

Nutrients alone cannot indicate whether a waterbody actually has a nuisance algae problem, whereas increased chl-a in the water indicates the productivity status of the water, due to the excessive growth of various algal groups, including cyanobacteria (blue-green algae).

Chl-a can be used as a non-specific indicator of the trophic status (productivity, which is driven by levels of nutrient pollution) of a waterbody (ANZECC & ARMCANZ, 2000). Low chl-a levels are often associated with less impacted waterways with good quality water, with high levels characteristic of water that has been nutrient-enriched, where algal productivity is high (eutrophic).

Chl-a concentrations often reflect the integrated effect of many of the water quality factors that may be altered in water bodies by human activities. The ANZECC & ARMCANZ (2000) criteria value for chl-a in east-flowing coastal rivers in NSW is 0.003 mg/L.

Summary statistics for chlorophyll-a concentrations measured at the monitored locations are provided in Table 14 below.

Table 14 Summary statistics for chlorophyll-a (in mg/L)

ANZECC & ARMCANZ 2000 Value					0.003 mg/L					
Phase		**Current**			**Construction**			**Baseline**		
	Sampling Location	**N**	**20th %ile**	**80th %ile**	**N**	**20th %ile**	**80th %ile**	**N**	**20th %ile**	**80th %ile**
West	BADDS	6	6.000	12.000	13	3.800	13.000	10	2.800	25.000
	BADMS	6	8.000	**13.000**	13	6.400	**21.400**	5	4.400	9.400
	BADUS	6	6.000	**17.000**	13	5.400	**24.600**	15	2.000	15.400
	COSDS	5	**6.600**	**21.600**	12	5.200	**11.000**	14	1.000	5.400
	COSUS	5	2.800	**81.000**	12	3.200	**14.600**	14	1.600	6.000
Central	KEMDS	6	2.000	**16.000**	13	2.000	14.600	13	1.400	14.800
	KEMUS	6	2.000	**8.000**	13	2.000	**15.000**	14	1.000	3.000
	SOUDS	6	12.000	**23.000**	13	8.400	**35.200**	13	3.000	19.600
	SOUUS	6	15.000	**38.000**	13	9.600	**36.800**	13	2.000	17.800
East	HINDS	3	5.600	**31.400**				24	3.600	25.800
	HINUS	3	**2.400**	10.200				21	3.000	18.000
	ROPDS	3	**3.400**	**8.800**				24	1.000	2.800
	ROPUS	3	41.600	**102.200**				21	10.000	78.000

Notes: 1. **BOLD** = sits outside the baseline data (i.e. either below the 20th baseline percentile or above the 80th baseline percentile.)

Current period 20th percentile concentrations below the baseline were reported at HINUS and ROPDS.

All sampling locations in the construction monitoring period, with exception of BADDS, reported 80th percentile concentrations in exceedance of the baseline 80th percentile concentration, and all sampling locations in the current monitoring period, with exception of BADDS and HINUS, reported an 80th percentile concentration in exceedance of the baseline 80th percentile concentration.

Chl-a concentrations have slightly increased since the construction period began. Chl-a is affected by nitrogen, phosphorus, water temperature and rainfall. The increases in Chl-a concentrations may be attributed to increased nitrogen and phosphorus recorded in November 2022, May 2023, and September 2023 following periods of increased rainfall.

Concentrations at SOUUS peaked significantly in September 2023 when monitoring was conducted less than a week after a short period of rainfall. Concentrations at CODS peaked significantly in the August 2023 event to 389 mg/L from concentrations below 10 mg/L in preceding events but returned to concentrations below 10 mg/L in the following events. ROPUS has reported consistently high concentrations since October 2022, which may be attributed to being a pond frequented by livestock with decreasing water levels.

5.3.8 N:P Ratios

Many cyanobacteria can fix atmospheric, gaseous N2 through heterocysts, and therefore, nitrogen does not limit their growth. On the other hand, phosphorus is often the limiting factor for the growth of most cyanobacteria. High P concentrations are, therefore, directly implicated in the pre-disposition of the waterbodies to algal blooms.

Many Australian studies have shown that it is the balance between the major nutrients (e.g. the N: P ratio) that influences the composition and abundance of the algal community (Cullen, Victor, & Bronson, 1993), including cyanobacterial dominance. The ratio of available N and P is an important determinant of which algal species would flourish during a bloom.

A ratio of N: P below ~16:1 is known to present favourable conditions for N-fixing cyanobacteria, such as Anabaena. As previously discussed, high concentrations of TP and TN characterise the significant nutrient enrichment of waterways in the projects.

The N: P ratios for the monitored sampling locations were calculated using the average concentrations of TN and TP at each location, as presented in Table 15. Low values, below 16:1 point to the potential for eutrophication, largely due to elevated concentrations of TP within the drainage systems. High values may reflect N contamination; however, lower concentrations of TP would limit algal growth, even though TN may be high.

The lowest calculated N: P ratio for current monitoring period was at KEMUS with a value of 8.91 and the highest N:P ratio was at HINUS with a value of 20.67.

Mean TP in the construction period is below the baseline in all monitoring locations, with Mean TN above the baseline in BADMS, COSDS, COSUS, and below the baseline in the remaining locations. N:P rations have increased in all locations indicating a more nitrogen rich environment despite the increases in Mean TN above the baseline only reported in three locations in the construction period.

Table 15 N:P Ratios characterising the monitored locations (mg/L)

Phase		Current			Construction			Baseline		
	Sampling Location	Mean TN	Mean TP	N:P	Mean TN	Mean TP	N:P	Mean TN	Mean TP	N:P
West	BADDS	1.17	0.08	14.58	1.07	0.07	14.63	1.82	0.16	11.64
	BADMS	1.60	0.09	17.14	1.32	0.08	16.07	1.24	0.13	9.54
	BADUS	1.22	0.07	17.80	1.56	0.10	15.62	1.74	0.25	6.94
	COSDS	0.86	0.07	11.94	0.82	0.07	12.25	1.15	0.15	7.67
	COSUS	0.84	0.08	10.50	0.80	0.06	12.63	1.35	0.15	9.1
Central	KEMDS	5.70	0.63	9.07	4.32	0.53	8.12	4.72	0.8	5.9
	KEMUS	4.90	0.55	8.91	3.88	0.52	7.51	4.83	0.82	5.9
	SOUDS	3.73	0.26	14.27	3.12	0.22	14.20	2.21	0.22	10.11
	SOUUS	3.80	0.24	16.06	3.18	0.22	14.73	2.47	0.28	8.75
East	HINDS	0.97	0.04	26.36				1.3	0.12	11.24
	HINUS	1.13	0.05	21.25				1.47	0.09	17.01
	ROPDS	0.67	0.02	33.33				1.49	0.22	6.74
	ROPUS	4.83	0.49	9.86				1.31	0.14	9.67

5.3.9 Metals

Metals at elevated concentrations in aquatic ecosystems can act as stressors and direct toxicants to the biota present. There is extensive discussion about the relative toxicity of different metals in ANZECC & ARMCANZ (2000), which is reflected in the criteria values adopted in this program.

Samples were examined for a suite of ten metals (arsenic, cadmium, chromium, copper, iron, lead, manganese, mercury, nickel and zinc) and compared against the NHMRC 2011 Australian Drinking Water Guidelines - Health criteria and ANZG (2018) Freshwater – 95% level of species protection – Ecological criteria.

Summary statistics were calculated for heavy metals, including the 20th and 80th percentile concentrations for the construction monitoring period to September 2023 and the baseline monitoring period. The 20th and 80th percentile values have been compared against the applicable criteria and are presented in Table 16 to Table 25.

It is noted that metals concentrations above the baseline that were recorded at ROPUS may be attributed to increased concentrations recorded in the July 2023 event which may be caused by increased sediment load within the water as water levels decrease.

Arsenic

The calculated 20th and 80th percentiles for arsenic in the construction monitoring period are consistent with those calculated for the baseline monitoring period, with no exceedances of the adopted criterion. These summary statistics are presented in Table 16.

Table 16 Summary statistics for arsenic (in mg/L)

ADWG 2011 Criterion:					0.010 mg/L					
ANZG 2018 Criterion:					0.013 mg/L					
Phase		**Current**			**Construction**			**Baseline**		
	Sampling Location	**N**	**20th %ile**	**80th %ile**	**N**	**20th %ile**	**80th %ile**	**N**	**20th %ile**	**80th %ile**
West	BADDS	6	0.001	0.001	13	0.001	0.001	10	0.001	0.002
	BADMS	6	0.001	0.001	13	0.001	0.001	5	0.001	0.001
	BADUS	6	0.001	0.001	13	0.001	0.001	15	0.001	0.002
	COSDS	5	0.001	0.001	12	0.001	0.001	14	0.001	0.001
	COSUS	5	0.001	0.001	12	0.001	0.001	14	0.001	0.001
Central	KEMDS	6	0.001	0.001	13	0.001	0.002	13	0.001	0.002
	KEMUS	6	0.001	0.001	13	0.001	0.002	14	0.001	0.002
	SOUDS	6	0.001	0.001	13	0.001	0.002	13	0.001	0.002
	SOUUS	6	0.001	0.001	13	0.001	0.001	13	0.001	0.002
East	HINDS	3	0.001	0.001				24	0.001	0.002
	HINUS	3	0.001	0.001				22	0.001	0.002
	ROPDS	3	0.001	0.001				24	0.001	0.001
	ROPUS	3	0.002	**0.007**				21	0.001	0.002

Notes: 1. **BOLD** = sits outside the baseline data (i.e. either below the 20th baseline percentile or above the 80th baseline percentile.)

Arsenic concentrations at the 20th and 80th percentile at all sampling locations were consistent between the current monitoring period and the baseline with the exception of ROPUS which reported 80th percentile concentrations above the baseline.

Cadmium

Table 17 Summary statistics for cadmium (in mg/L)

ADWG 2011 Criterion:		0.0020 mg/L								
ANZG 2018 Criterion:		0.0002 mg/L								
Phase		**Current**			**Construction**			**Baseline**		
	Sampling Location	**N**	**20th %ile**	**80th %ile**	**N**	**20th %ile**	**80th %ile**	**N**	**20th %ile**	**80th %ile**
West	BADDS	6	0.0001	0.0001	13	0.0001	0.0001	10	0.0001	0.0001
	BADMS	6	0.0001	0.0001	13	0.0001	0.0001	5	0.0001	0.0001
	BADUS	6	0.0001	0.0001	13	0.0001	0.0001	15	0.0001	0.0001
	COSDS	5	0.0001	0.0001	12	0.0001	0.0001	14	0.0001	0.0001
	COSUS	5	0.0001	0.0001	12	0.0001	0.0001	14	0.0001	0.0001
Central	KEMDS	6	0.0001	0.0001	13	0.0001	0.0001	13	0.0001	0.0001
	KEMUS	6	0.0001	0.0001	13	0.0001	0.0001	14	0.0001	0.0001
	SOUDS	6	0.0001	0.0001	13	0.0001	0.0001	13	0.0001	0.0001
	SOUUS	6	0.0001	0.0001	13	0.0001	0.0001	13	0.0001	0.0001
East	HINDS	3	0.0001	0.0001				24	0.0001	0.0001
	HINUS	3	0.0001	0.0001				22	0.0001	0.0001
	ROPDS	3	0.0001	0.0001				24	0.0001	0.0001
	ROPUS	3	0.0001	**0.0002**				21	0.0001	0.0001

Notes: 1. **BOLD** = sits outside the baseline data (i.e. either below the 20th baseline percentile or above the 80th baseline percentile.)

Cadmium concentrations at the 20th and 80th percentile at all sampling locations were consistent between the current monitoring period and the baseline with the exception of ROPUS which reported construction period 80th percentile concentrations above the baseline.

Chromium

Table 18 Summary statistics for chromium (in mg/L)

ADWG 2011 Criterion:					No criterion					
ANZG 2018 Criterion:					0.0001 mg/L					
Phase		**Current**			**Construction**			**Baseline**		
	Sampling Location	**N**	**20th %ile**	**80th %ile**	**N**	**20th %ile**	**80th %ile**	**N**	**20th %ile**	**80th %ile**
West	BADDS	6	0.0010	**0.0020**	13	0.0010	0.0010	10	0.0010	0.0012
	BADMS	6	0.0010	**0.0030**	13	0.0010	0.0016	5	0.0010	0.0020
	BADUS	6	0.0010	**0.0030**	13	0.0010	0.0020	15	0.0010	0.0020
	COSDS	5	0.0010	**0.0024**	12	0.0010	**0.0018**	14	0.0010	0.0014
	COSUS	5	0.0010	**0.0024**	12	0.0010	0.0010	14	0.0010	0.0010
Central	KEMDS	6	0.0010	0.0010	13	0.0010	0.0010	13	0.0010	0.0020
	KEMUS	6	0.0010	0.0010	13	0.0010	0.0010	14	0.0010	0.0010
	SOUDS	6	0.0010	0.0010	13	0.0010	0.0010	13	0.0010	0.0016
	SOUUS	6	0.0010	0.0010	13	0.0010	0.0010	13	0.0010	0.0016
East	HINDS	3	0.0010	0.0010				24	0.0010	0.0020
	HINUS	3	0.0010	0.0010				22	0.0010	0.0020
	ROPDS	3	0.0010	0.0010				24	0.0010	0.0010
	ROPUS	3	**0.0024**	**0.0360**				21	0.0010	0.0020

Notes: 1. **BOLD** = sits outside the baseline data (i.e. either below the 20th baseline percentile or above the 80th baseline percentile.)

Chromium concentrations at the 20th percentile at all sampling locations were consistent between the current and construction monitoring periods and the baseline. Construction period 80th percentile concentrations above the baseline were reported at COSDS and ROPUS, with current period concentration reported above baseline at all west locations and ROPUS.

Copper

Table 19 Summary statistics for copper (in mg/L)

ADWG 2011 Criterion:					2.0000 mg/L					
ANZG 2018 Criterion:					0.0014 mg/L					
Phase		**Current**			**Construction**			**Baseline**		
	Sampling Location	**N**	**20th %ile**	**80th %ile**	**N**	**20th %ile**	**80th %ile**	**N**	**20th %ile**	**80th %ile**
West	BADDS	6	0.0010	0.0040	13	0.0010	0.0032	10	0.0010	0.0042
	BADMS	6	0.0010	**0.0040**	13	0.0010	0.0026	5	0.0010	0.0026
	BADUS	6	0.0010	0.0040	13	0.0010	0.0040	15	0.0018	0.0052
	COSDS	5	0.0010	**0.0044**	12	0.0010	0.0020	14	0.0010	0.0024
	COSUS	5	0.0010	**0.0040**	12	0.0010	0.0020	14	0.0010	0.0028
Central	KEMDS	6	**0.0030**	0.0050	13	0.0030	0.0046	13	0.0010	0.0170
	KEMUS	6	0.0020	0.0040	13	**0.0030**	0.0050	14	0.0036	0.0064
	SOUDS	6	0.0020	0.0040	13	0.0020	**0.0052**	13	0.0020	0.0046
	SOUUS	6	0.0010	0.0030	13	**0.0014**	0.0046	13	0.0020	0.0050
East	HINDS	3	0.0010	0.0010				24	0.0010	0.0040
	HINUS	3	0.0010	0.0010				22	0.0010	0.0040
	ROPDS	3	0.0010	0.0016				24	0.0010	0.0050
	ROPUS	3	0.0024	**0.0456**				21	0.0010	0.0050

Notes: 1. **BOLD** = sits outside the baseline data (i.e. either below the 20th baseline percentile or above the 80th baseline percentile.)

Construction period concentrations below the baseline 20th percentile were reported at KEMUS and SOUUS, with current period concentrations below the baseline reported at KEMDS. Construction period concentrations above the baseline 80th percentile were reported at SOUDS and ROPUS, with current period concentrations above the baseline reported at BADMS, COSDS, COSUS, and ROPUS.

Iron

Table 20 Summary statistics for iron (in mg/L)

ADWG 2011 Criterion:					No criterion					
ANZG 2018 Criterion:					0.3 mg/L					
Phase		**Current**			**Construction**			**Baseline**		
	Sampling Location	**N**	**20th %ile**	**80th %ile**	**N**	**20th %ile**	**80th %ile**	**N**	**20th %ile**	**80th %ile**
West	BADDS	6	**0.78**	1.83	13	**0.47**	1.66	10	0.81	2.58
	BADMS	6	**0.92**	2.08	13	**0.75**	1.26	5	1.02	2.54
	BADUS	6	**0.48**	**3.09**	13	**0.77**	1.14	15	1.13	1.95
	COSDS	5	1.00	**2.70**	12	0.80	2.03	14	0.71	2.25
	COSUS	5	1.23	**3.54**	12	0.97	**1.76**	14	0.53	1.61
Central	KEMDS	6	**0.16**	1.00	13	**0.16**	0.90	13	0.57	4.63
	KEMUS	6	**0.27**	0.93	13	**0.26**	0.85	14	0.31	1.23
	SOUDS	6	0.71	1.55	13	0.73	1.79	13	0.68	2.86
	SOUUS	6	0.55	0.84	13	0.69	1.58	13	0.49	2.76
East	HINDS	3	**0.66**	0.96				24	1.14	3.84
	HINUS	3	**1.08**	2.42				22	1.69	4.26
	ROPDS	3	**0.08**	0.22				24	0.13	1.01
	ROPUS	3	4.54	**41.40**				21	2.73	5.19

Notes: 1. **BOLD** = sits outside the baseline data (i.e. either below the 20th baseline percentile or above the 80th baseline percentile.)

Construction period iron 20th percentile concentrations below the baseline percentile were recorded at all locations with the exception of COSDS, COSUS, SOUDS, and SOUUS, with current period concentration below the baseline at all locations with the exception of COSDS, COSUS, SOUDS, SOUUS, and ROPUS.

Construction period 80th percentile concentrations above the baseline were recorded at COSUS, with current period concentrations above the baseline recorded at BADUS, COSDS, COSUS, and ROPUS.

Variations in iron concentrations are presented as a box plot in Figure 23, Appendix D.

Lead

Table 21 Summary statistics for lead (in mg/L)

ADWG 2011 Criterion:		0.0100 mg/L								
ANZG 2018 Criterion:		0.0034 mg/L								
Phase		**Current**			**Construction**			**Baseline**		
	Sampling Location	**N**	**20th %ile**	**80th %ile**	**N**	**20th %ile**	**80th %ile**	**N**	**20th %ile**	**80th %ile**
West	BADDS	6	0.0010	0.0010	13	0.0010	0.0010	10	0.0010	0.0016
	BADMS	6	0.0010	0.0010	13	0.0010	0.0010	5	0.0010	0.0020
	BADUS	6	0.0010	0.0020	13	0.0010	0.0010	15	0.0010	0.0022
	COSDS	5	0.0010	0.0020	12	0.0010	0.0010	14	0.0010	0.0010
	COSUS	5	0.0010	**0.0016**	12	0.0010	0.0010	14	0.0010	0.0010
Central	KEMDS	6	0.0010	0.0010	13	0.0010	0.0010	13	0.0010	0.0022
	KEMUS	6	0.0010	**0.0020**	13	0.0010	0.0010	14	0.0010	0.0010
	SOUDS	6	0.0010	0.0010	13	0.0010	**0.0016**	13	0.0010	0.0010
	SOUUS	6	0.0010	0.0010	13	0.0010	**0.0016**	13	0.0010	0.0010
East	HINDS	3	0.0010	0.0010				24	0.0010	0.0020
	HINUS	3	0.0010	0.0010				22	0.0010	0.0018
	ROPDS	3	0.0010	0.0010				24	0.0010	0.0014
	ROPUS	3	0.0018	**0.0396**				21	0.0010	0.0020

Notes: 1. **BOLD** = sits outside the baseline data (i.e. either below the 20th baseline percentile or above the 80th baseline percentile.)

Construction and current period lead 20th percentile concentrations a were consistent with the baseline. Construction period 80th percentile concentrations above the baseline were recorded at SOUDS, and SOUUS, with current period concentration above the baseline recorded at COSUS, KEMUS, and ROPUS.

Manganese

Table 22 Summary statistics for manganese (in mg/L)

ADWG 2011 Criterion:		0.5 mg/L								
ANZG 2018 Criterion:		1.9 mg/L								
Phase		**Current**			**Construction**			**Baseline**		
	Sampling Location	**N**	**20th %ile**	**80th %ile**	**N**	**20th %ile**	**80th %ile**	**N**	**20th %ile**	**80th %ile**
West	BADDS	6	0.13	0.15	13	0.15	0.23	10	0.13	0.38
	BADMS	6	**0.16**	0.21	13	0.18	**0.55**	5	0.18	0.49
	BADUS	6	0.22	0.30	13	0.22	**0.47**	15	0.12	0.33
	COSDS	5	0.17	**0.69**	12	0.17	**1.18**	14	0.08	0.40
	COSUS	5	0.14	**2.65**	12	0.15	**2.73**	14	0.08	0.45
Central	KEMDS	6	**0.02**	0.04	13	**0.03**	0.11	13	0.09	0.79
	KEMUS	6	**0.03**	0.05	13	0.04	**0.12**	14	0.04	0.10
	SOUDS	6	**0.07**	0.18	13	0.14	**0.36**	13	0.13	0.33
	SOUUS	6	**0.12**	0.19	13	0.14	0.33	13	0.14	0.39
East	HINDS	3	0.23	0.37				24	0.13	0.39
	HINUS	3	0.20	**0.40**				22	0.07	0.19
	ROPDS	3	0.34	0.63				24	0.32	1.15
	ROPUS	3	0.89	**1.40**				21	0.11	0.32

Notes: 1. **BOLD** = sits outside the baseline data (i.e. either below the 20th baseline percentile or above the 80th baseline percentile.)

Construction period manganese 20th percentile concentrations below the baseline percentile were recorded at KEMDS, with current period concentrations below the baseline recorded at BADMS, KEMDS, KEMUS, SOUDS, and SOUUS.

Construction period 80th percentile concentrations above the baseline were recorded at BADMS, BADUS, COSDS, COSUS, KEMUS, and SOUDS, with current period concentrations above the baseline recorded at COSDS, COSUS, HINUS, and ROPUS.

Variations in manganese concentrations are presented as a box plot in Figure 24, Appendix D.

Mercury

Table 23 Summary statistics for mercury (in mg/L)

ADWG 2011 Criterion:		0.0010 mg/L								
ANZG 2018 Criterion:		0.0006 mg/L								
Phase		**Current**			**Construction**			**Baseline**		
	Sampling Location	**N**	**20th %ile**	**80th %ile**	**N**	**20th %ile**	**80th %ile**	**N**	**20th %ile**	**80th %ile**
West	BADDS	6	0.0001	0.0001	13	0.0001	0.0001	10	0.0001	0.0001
	BADMS	6	0.0001	0.0001	13	0.0001	0.0001	5	0.0001	0.0001
	BADUS	6	0.0001	0.0001	13	0.0001	0.0001	15	0.0001	0.0001
	COSDS	5	0.0001	0.0001	12	0.0001	0.0001	14	0.0001	0.0001
	COSUS	5	0.0001	0.0001	12	0.0001	0.0001	14	0.0001	0.0001
Central	KEMDS	6	0.0001	0.0001	13	0.0001	0.0001	13	0.0001	0.0001
	KEMUS	6	0.0001	0.0001	13	0.0001	0.0001	14	0.0001	0.0001
	SOUDS	6	0.0001	0.0001	13	0.0001	0.0001	13	0.0001	0.0001
	SOUUS	6	0.0001	0.0001	13	0.0001	0.0001	13	0.0001	0.0001
East	HINDS	3	0.0001	0.0001				24	0.0001	0.0001
	HINUS	3	0.0001	0.0001				22	0.0001	0.0001
	ROPDS	3	0.0001	0.0001				24	0.0001	0.0001
	ROPUS	3	0.0001	0.0001				21	0.0001	0.0001

Notes: 1. **BOLD** = sits outside the baseline data (i.e. either below the 20th baseline percentile or above the 80th baseline percentile.)

Mercury concentrations at the 20th and 80th percentile at all sampling locations were consistent between the current monitoring period and the baseline.

Nickel

Table 24 Summary statistics for nickel (in mg/L)

ADWG 2011 Criterion:					0.0200 mg/L					
ANZG 2018 Criterion:					0.0110 mg/L					
Phase		**Current**			**Construction**			**Baseline**		
	Sampling Location	**N**	**20th %ile**	**80th %ile**	**N**	**20th %ile**	**80th %ile**	**N**	**20th %ile**	**80th %ile**
West	BADDS	6	0.0020	0.0030	13	0.0014	0.0030	10	0.0010	0.0032
	BADMS	6	0.0020	0.0020	13	0.0020	0.0020	5	0.0010	0.0032
	BADUS	6	**0.0010**	0.0030	13	**0.0010**	0.0026	15	0.0018	0.0032
	COSDS	5	0.0010	**0.0024**	12	0.0010	0.0020	14	0.0010	0.0020
	COSUS	5	0.0010	**0.0028**	12	0.0010	0.0018	14	0.0010	0.0024
Central	KEMDS	6	0.0020	0.0020	13	0.0020	0.0020	13	0.0010	0.0026
	KEMUS	6	**0.0010**	0.0020	13	**0.0014**	0.0020	14	0.0020	0.0024
	SOUDS	6	0.0020	0.0030	13	0.0020	0.0030	13	0.0020	0.0036
	SOUUS	6	0.0030	0.0030	13	0.0024	0.0030	13	0.0010	0.0030
East	HINDS	3	0.0010	0.0010				24	0.0010	0.0020
	HINUS	3	0.0010	0.0010				22	0.0010	0.0020
	ROPDS	3	0.0010	0.0010				24	0.0010	0.0020
	ROPUS	3	0.0030	**0.0270**				21	0.0010	0.0030

Notes: 1. **BOLD** = sits outside the baseline data (i.e. either below the 20th baseline percentile or above the 80th baseline percentile.)

Construction and current period nickel 20th percentile concentrations below the baseline were recorded at BADUS and KEMUS.

Current period concentrations above the baseline 80th percentile were recorded at ROPUS, no concentrations above the baseline were reported for the construction monitoring period.

Zinc

Table 25 Summary statistics for zinc (in mg/L)

ADWG 2011 Criterion:					No criterion					
ANZG 2018 Criterion:					0.008 mg/L					
Phase		**Current**			**Construction**			**Baseline**		
	Sampling Location	**N**	**20th %ile**	**80th %ile**	**N**	**20th %ile**	**80th %ile**	**N**	**20th %ile**	**80th %ile**
West	BADDS	6	**0.012**	**0.029**	13	0.006	**0.018**	10	0.005	0.011
	BADMS	6	0.007	0.012	13	0.005	0.009	5	0.005	0.014
	BADUS	6	**0.005**	0.012	13	**0.005**	0.010	15	0.006	0.021
	COSDS	5	0.012	**0.025**	12	0.005	**0.021**	14	0.005	0.007
	COSUS	5	0.005	0.008	12	0.005	0.006	14	0.005	0.009
Central	KEMDS	6	0.009	0.016	13	0.006	0.014	13	0.005	0.020
	KEMUS	6	0.008	**0.017**	13	**0.007**	0.015	14	0.008	0.015
	SOUDS	6	0.005	**0.020**	13	0.005	**0.013**	13	0.005	0.011
	SOUUS	6	0.005	**0.015**	13	0.005	0.011	13	0.005	0.011
East	HINDS	3	0.005	**0.013**				24	0.005	0.008
	HINUS	3	0.005	0.005				22	0.005	0.007
	ROPDS	3	0.005	0.007				24	0.005	0.022
	ROPUS	3	0.007	**0.106**				21	0.005	0.012

Notes: 1. **BOLD** = sits outside the baseline data (i.e. either below the 20th baseline percentile or above the 80th baseline percentile.)

Construction period 20th percentile zinc concentrations below the baseline percentile were reported at BADUS and KEMUS, with current period concentrations below the baseline reported at BADDS and BADUS.

Construction period 80th percentile concentrations above the baseline were reported at BADDS, COSDS, and SOUDS, with current period concentrations above the baseline reported at BADDS, COSDS, KEMUS, SOUDS, and SOUUS.

5.3.10 Hardness

ANZECC & ARMCANZ (2000) stated that the toxicity of certain heavy metals in freshwater reduces with increasing hardness. As such, hardness-modified trigger values (HMTV) were derived for selected metals exceeding ecological criteria (cadmium, chromium, copper, lead, nickel and zinc) during the April 2023 monitoring event using guidance by ANZECC & ARMCANZ (2000). This provides a more accurate assessment of risk to ecological receptors. It is noted that HMTV algorithms are not able to be applied to iron and manganese.

All exceedance of the ANZECC & ARMCANZ (2000) criteria were eliminated following the application of HMTVs, as summarised in Table B11, Appendix B.

5.3.11 Thermotolerant coliforms and E. coli

No samples were analysed for thermotolerant coliforms and E. coli during the current monitoring period.

5.3.12 Benzene, toluene, ethylbenzene, xylenes, naphthalene (BTEXN)

All samples reported concentrations of BTEXN below adopted assessment criteria. All samples reported concentrations below the laboratory LOR with the exception of Toluene at KEMDS, KEMUS, and HINUS in May 2023 with a maximum concentration of 5 µg/L, above the LOR of 1 µg/L.

5.3.13 Polycyclic aromatic hydrocarbons (PAHs) and phenols

All samples reported concentrations of PAHs and phenols below the laboratory limit of reporting and adopted assessment criteria.

It is noted that the laboratory limit of reporting was higher than the adopted assessment criteria for anthracene, benzo(a)pyrene, and PAH (sum of total) analysis and therefore any exceedances of the assessment criteria may not have been reported. Anthracene and benzo(a)pyrene results were compared to previous ultra-trace PAH sampling undertaken during earlier baseline period monitoring (2021) where the laboratory reporting limit was less than adopted assessment criteria. No ultra-trace Benzo(a)pyrene was detected above the LOR in any previous samples.

5.3.14 Organochlorine pesticides (OCPs) and Organophosphorus pesticides (OPPs)

All OCPs reported concentrations below the laboratory LOR and adopted criteria.

The majority of OPPs reported concentrations below the laboratory LOR, with all samples reporting concentrations of OPPs below adopted human health criterion. However, the following samples exceeded the ANZG freshwater criteria:

– Diazinon (0.01 µg/L) at KEMDS and KEMUS in April 2023, SOUDS in May and September 2023, and SOUUS in May, July, and September 2023. The maximum reported concentration was 0.02 µg/L.
– Dimethoate (0.15 µg/L) at KEMDS in July 2023, KEMUS in May 2023, SOUDS in May and September 2023, and SOUUS in May 2023. The maximum reported concentration was 0.41 µg/L.
– Malathion at KEMUS in May 2023, equal to the criterion value of 0.05 µg/L.

It is noted that the laboratory limit of reporting was higher than the adopted assessment criteria for chlorpyrifos, fenitrothion, and parathion, and therefore any exceedances of the assessment criteria may not have been reported.

5.3.15 Oil and Grease

All samples in the current monitoring period reported concentrations oil and grease below the laboratory LOR (5000 µg/L) with exception of the following:

– BADDS in September 2023 with a reported concentration of 8000 µg/L
– BADMS in September 2023 with a reported concentration of 8000 µg/L
– BADUS in September 2023 with a reported concentration of 12,000 µg/L
– COSDS in September 2023 with a reported concentration if 14,000 µg/L

There is no adopted ecological or human health criteria for this analyte. Concentrations above the LOR for oil and grease are not uncommon in surface water locations in the western package, with concentrations above 5000 µg/L reported in these locations during the baseline and construction periods since August 2021. Badgerys Creek detected the highest concentration upstream and therefore may have been from an upstream source.

5.3.16 Volatile organic compounds (VOCs) and Polychlorinated biphenyls (PCBs)

All samples reported concentrations of VOCs and PCBs below the adopted assessment criteria, with the majority of samples reporting concentrations below the laboratory limit of reporting with the exception of the following:

– KEMUS reported chloroform concentrations of 36 µg/L in July 2023. This concentration is below the adopted ecological criterion of 770 µg/L.
– KEMUS reported bromodichloromethane concentrations of 7 µg/L in July 2023. There is no adopted ecological or human health criteria for this analyte.

It is noted that the laboratory limit of reporting was higher than the adopted assessment criteria for 1,2-dichloroethane, carbon tetrachloride, hexachlorobutadiene, vinyl chloride, bromomethane, and 1,2-dibromoethane analysis therefore any exceedances of the assessment criteria may not have been reported.

5.3.17 PFAS

No samples were analysed for PFAS in the current monitoring period.

5.4 Wet weather event monitoring

Wet weather flows can be expected to result in changed waterway conditions. The project during the baseline monitoring period included semi-rural landscapes where some intensive agriculture is present. Wet weather flows in such environments frequently transport agricultural wastes to waterways, with resultant degradation in particular water quality parameters such as nutrients. As construction and development of the area continues, the expected contaminants associated with wet weather events are likely to change.

As noted in Section 3.2, four wet weather (WW) sampling events have occurred during the baseline monitoring period, the fifth wet weather event occurred simultaneously in during the baseline monitoring period for the East portion and the construction period for the West and Central portions, and the sixth wet weather event occurring in the current monitoring period (April 2023 to September 2023) during the construction period for all portions.

The analytical results from the wet weather monitoring events are presented in Table B6, Appendix B. The wet weather events included sampling of all 13 surface water locations except for ROPUS during the August 2021 event as it was inaccessible.

Comparison between data from the wet weather events and data from dry weather conditions was made, and observations are summarised below:

– An increase in TSS were reported in majority of locations during wet weather events.
– Elevated concentrations of nutrients, particularly ammonia, total nitrogen and phosphorus were reported in the majority of locations during wet weather events.
– Elevated concentrations of heavy metals were observed in all sampling locations during wet weather events, with the exception of the August 2023 event.

Elevated concentrations of thermotolerant coliforms were reported in most locations during wet weather events.

Comparisons between data from wet weather events during the construction monitoring period and events during the baseline monitoring period was made. The following observations were noted:

– Increases in electrical conductivity and decreases in dissolved oxygen in the majority of locations in construction wet weather events compared to baseline wet weather events.
– Increased turbidity in COUS, BADMS, and BADDS in construction wet weather events compared to baseline wet weather events, however, recorded turbidity has reduced in the most recent wet weather event (August 2023).
– Increased total dissolved solids concentrations in all sampling locations and total suspended solids in the majority of locations in construction wet weather events compared to baseline wet weather events.
– Increased ammonia, total oxidised nitrogen, concentrations in the majority of locations in construction wet weather events compared to baseline wet weather events.
– Increased total nitrogen concentrations in BADUS, KEMDS, KEMUS, and ROPUS locations in construction wet weather events compared to baseline wet weather events.
– General decreases in total and reactive phosphorus, and chlorophyll concentrations in the majority of locations in construction wet weather events compared to baseline wet weather events.
– Increased metals concentrations in BADDS, BADMS, and COSUS in construction wet weather events compared to baseline wet weather events, however, metals concentrations have reduced in the most recent wet weather event (August 2023).

Slight increases and decreases in analytical results between the baseline and construction period may not be indicative of a trend and may instead be attributed to the limited size of the wet weather data set.

In addition to the above observations, for the August 2023 wet weather event there were exceedances of the adopted criteria for the following analytes:

- TSS, Ammonia, Nitrogen (Total), Chlorophyll-a, Total Phosphorus, Cadmium, Chromium, and Copper in all locations
- Nitrate as N in KEMDS and KEMUS
- Nitrogen (Total oxidised as N) and Zinc in all locations with the exception of ROPUS
- Lead in BADUS, KEMDS, SOUDS, and SOUUS
- Manganese in COSUS, HINDS, and ROPUS
- Dimethoate in KEMDS and KEMUS
- Malathion in KEMUS

It is noted that the laboratory limit of reporting was higher than the adopted assessment criteria for anthracene, benzo(a)pyrene, PAH (sum of total), chlorpyrifos, fenitrothion, parathion, 1,2-dichloroethane, carbon tetrachloride, hexachlorobutadiene, vinyl chloride, bromomethane, and 1,2-dibromoethane, and therefore any exceedances of the assessment criteria may not have been reported.

6. Conclusions and recommendations

6.1 Conclusions

The measured surface water quality parameters and the project analytical suite have provided sufficient data to refine the trigger values determined by the baseline monitoring period. This report serves as the final report providing baseline data prior to construction of the M12 alignment for the Eastern portion as well as the first report providing construction data for the Eastern portion. This is the third report providing construction data for the Central and Western portions. Previous data collected in former locations may be used in future reports to provide additional data if needed.

GHD have assessed the surface water quality for the baseline and construction monitoring periods since April 2021. The baseline period includes results from April 2021 to the start of the construction period. The construction period for the Central and Western portions started in August 2022 and in July 2023 for the Eastern portion. Surface water analytical results for the current monitoring period (April 2023 to September 2023) indicated:

– Most samples reported total suspended solid concentrations above ANZECC & ARMCANZ (2000) ecological criteria during monitoring events, with ROPUS reporting the highest concentrations.
– The majority of sampling locations in the East, Central, and Western portions of the M12 project reported 80th percentile concentrations in the construction period in exceedance of the 80th baseline percentile for total suspended solids, electrical conductivity, dissolved oxygen, chlorophyll-a and manganese. Slight exceedances of calculated percentiles may not be indicative of a trend and may instead be attributed to the limited size of the data set for the construction monitoring period compared to the baseline period at the time of reporting, particularly for the Eastern portion.
– ROPUS 80th percentiles during the current monitoring period (April 2023 to September 2023) reported exceedances of the baseline 80th percentile in the majority of metals concentrations. This is related to increased concentration in metals analytes recorded in the July 2023 monitoring round.
– All sampling locations reported multiple nutrient concentrations (ammonia, oxidised nitrogen, total nitrogen, soluble reactive phosphorus, total phosphorus, chlorophyll-a) above adopted ANZECC & ARMCANZ (2000) ecological criteria.
– Exceedances of ANZG (2018) 95% freshwater criterion above the laboratory LOR were reported for nitrate, cadmium, chromium, copper, lead, manganese, nickel, zinc, and OP pesticide compounds diazinon, dimethoate, malathion.
– Exceedances of the ADWG (NHMRC & NRMMC, 2011) criterion above the laboratory LOR were reported for Arsenic, Lead, and Nickel at ROPUS in July 2023, and Manganese within the M12 Central and East portions (COSDS, May and August 2023; COSUS, April, August, and September 2023; HINDS, May 2023; ROPDS May and September 2023; ROPUS July, August, and September 2023).
– Overall the calculated construction percentiles were within and / or slightly exceeded the baseline percentiles for the central and western portions of works. No management measures are required within these portions. The eastern portion noted construction phase percentiles exceeding the 80th percentiles for baseline. However this has a limited dataset and additional monitoring data will highlight if this becomes an issue. No management measures for the eastern portion are required.

6.2 Recommendations

GHD recommends the following improvements of the surface water monitoring program:

– Utilise weather station data from contractor weather stations to inform wet weather event triggers within the alignment.
– One round of hardness and filtered metals sampling at ROPUS to characterise increased metals concentrations

7. References

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Appendices

Appendix A

Figures

LEGEND

- Cadastre / Lot Boundaries
- M12 Motorway Alignment
- Roads
- Major Waterways
- Surface Water Monitoring
- Surface Water Monitoring (Pre-Aug 2023)

M12 West | M12 Central | M12 East

BAKERS LANE
ALDINGTON ROAD
GREENWAY PLACE
COBHAM STREET
WALLGROVE ROAD
KEMPS CREEK
LUDDENHAM ROAD
COSGROVES CREEK
OAKY CREEK
COSDS
COSUS
BADDS
BADMS
SOUDS
SOUUS
SOUTH CREEK
BADUS
MAMRE ROAD
GARFIELD ROAD
LINCOLN ROAD
KOALA WAY
ROPES CREEK
ALAINE PLACE
ROPUS
ROPDS
WESTLINK M7
BORDER ROAD
SELKIRK AVENUE
CECIL ROAD
KERRS ROAD
DUFF ROAD
ELIZABETH DRIVE
ADAMS ROAD
JACKSON ROAD
FERNDALE ROAD
TAYLORS ROAD
ANTON ROAD
LONGLEYS ROAD
BADGERYS CREEK ROAD
PITT STREET
FULLER STREET
LAWSON ROAD
MARTIN ROAD
OVERETT AVENUE
SUMBRAY AVENUE
PLOWES COURT
CROSS STREET
CLIFTON AVENUE
SALISBURY AVENUE
PRATTEN STREET
EXETER ROAD
TAVISTOCK ROAD
DEVONSHIRE ROAD
WESTERN ROAD
VICTOR AVENUE
BRENDA AVENUE
WATTS ROAD
WSHART ROAD
RAMSAY ROAD
HERBERT STREET
LEE AND CLARK ROAD
GREY BOX TRAIL
MELALEUCA TRAIL
GURNER AVENUE
EIGHTEENTH AVENUE
SEVENTEENTH AVENUE
FIFTEENTH AVENUE
ROBEY AVENUE
MCIVER AVENUE
HEMSWORTH AVENUE
REGENTVILLE DRIVE
AIRFIELD DRIVE
HINUS
HINDS
HINCHINS BROOK CREEK

Regional Locality Map
Site Location
Hornsby
Blacktown City Council
Blaxland
Penrith
Chatswood
Parramatta
North Sydney
Sydney
M7
M5
Liverpool
Liverpool City Council
Camden Council
Camden
Campbelltown
Holsworthy Military Reserve
Sutherland Shire Council

Paper Size ISO A3

0 200 400 600 800 1,000

Meters

Map Projection: Transverse Mercator
Horizontal Datum: GDA2020
Grid: GDA2020 MGA Zone 56

N

GHD

Transport for NSW
M12 Motorway
Surface Water Monitoring

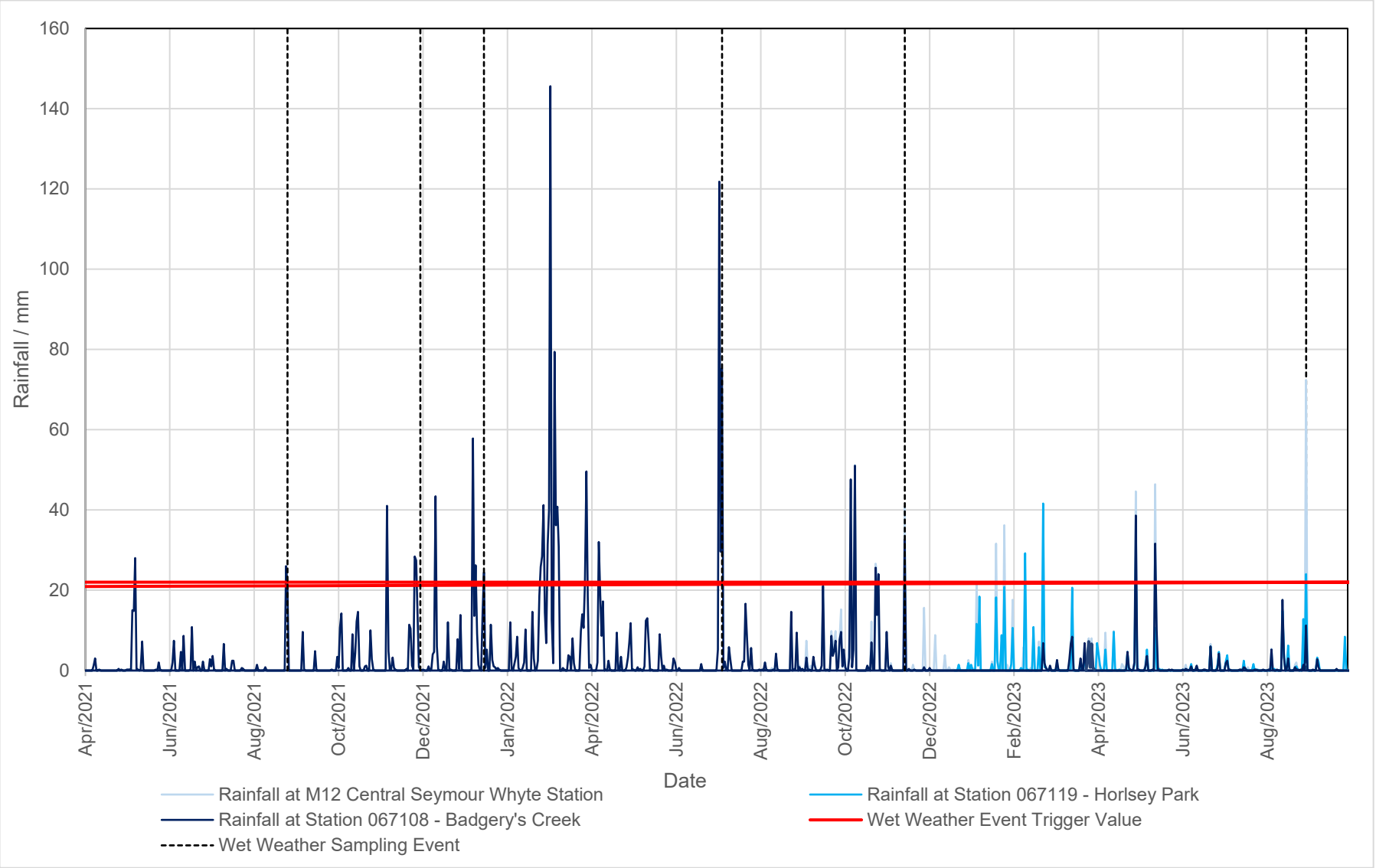
Surface Water Locations

Project No. **12554717**
Revision No. **A**
Date **18/10/2023**

FIGURE 1

C:\GIS_Local\12554717 M12 Motorway\Maps\Deliverables\12554717_Z013_M12_SurfaceWater_Monitoring_Sept2023.mxd
Print date: 18 Oct 2023 - 10:41

Data source: Imagery - NearMap; Roads and Cadastre - NSW LPMA. Created by: tnham



Appendix A - Figure 2: Rainfall April 2021 to September 2023

Appendix B

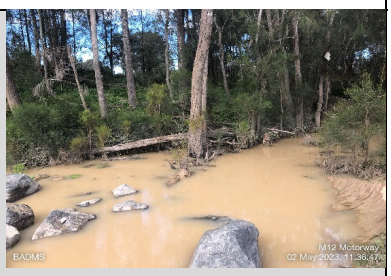
Analytical tables

Monitoring event	Western Package					Central Package				Eastern Package			
	Badgerys Creek			Cosgroves Creek		Kemps Creek		South Creek		Ropes Creek		Hinchinbrook Creek	
	BADDS	BADMS	BADUS	COSDS	COSUS	KEMDS	KEMUS	SOUDS	SOUUS	ROPDS	ROPUS	HINDS	HINUS
	Down stream	Mid stream	Up stream	Down stream	Up stream	Down stream	Up stream	Down stream	Up stream	Down stream	Up stream	Down stream	Up stream
Event 25 - April 2021	Sampled	Not Required	Sampled	Sampled	Sampled	Sampled	Sampled	Sampled	Sampled	Sampled	Sampled	Sampled	Sampled
Event 26 - May 2021		Not Required	Sampled	Sampled	Sampled	Sampled	Sampled	Sampled	Sampled	Sampled	Sampled	Sampled	Sampled
Event 27 - June 2021	Sampled	Not Required	Sampled	Sampled	Sampled	Sampled	Sampled	Sampled	Sampled	Sampled	Sampled	Sampled	Sampled
Event 28 - July 2021	Sampled	Not Required	Sampled	Sampled	Sampled	Sampled	Sampled	Sampled	Sampled	Sampled	Sampled	Sampled	Sampled
Event 29 - August 2021	Sampled	Not Required	Sampled	Sampled	Sampled			Sampled	Sampled				
WW Event 1 - 25 August 2021	Sampled	Not Required	Sampled	Sampled	Sampled	Sampled	Sampled	Sampled	Sampled	Sampled		Sampled	Sampled
Event 30 - September 2021	Sampled	Not Required	Sampled	Sampled	Sampled	Sampled	Sampled	Sampled	Sampled	Sampled		Sampled	
Event 31 - October 2021	Sampled	Sampled	Sampled	Sampled	Sampled	Sampled	Sampled	Sampled	Sampled	Sampled		Sampled	Sampled
Event 32 - November 2021	Sampled	Sampled	Sampled	Sampled	Sampled	Sampled	Sampled	Sampled	Sampled	Sampled	Sampled	Sampled	Sampled
WW Event 2 - 29 November 2021	Sampled	Sampled	Sampled	Sampled	Sampled	Sampled	Sampled	Sampled	Sampled	Sampled	Sampled	Sampled	Sampled
Event 33 - December 2021	Sampled	Sampled	Sampled	Sampled	Sampled	Sampled	Sampled	Sampled	Sampled	Sampled	Sampled	Sampled	Sampled
WW Event 3 - 14 January 2022	Sampled	Sampled	Sampled	Sampled	Sampled	Sampled	Sampled	Sampled	Sampled	Sampled	Sampled	Sampled	Sampled
Event 34 - February 2022			Sampled	Sampled	Sampled	Sampled	Sampled	Sampled	Sampled	Sampled	Sampled	Sampled	Sampled
Event 35 - March 2022			Sampled	Sampled	Sampled	Sampled	Sampled	Sampled	Sampled	Sampled	Sampled	Sampled	Sampled
Event 36 - April 2022			Sampled				Sampled			Sampled		Sampled	
Event 37 - May 2022			Sampled	Sampled	Sampled	Sampled	Sampled			Sampled	Sampled	Sampled	Sampled
Event 38 - June 2022	Sampled	Sampled	Sampled	Sampled	Sampled	Sampled	Sampled	Sampled	Sampled	Sampled	Sampled	Sampled	Sampled
WW Event 4 - 5-6 July 2022	Sampled	Sampled	Sampled	Sampled	Sampled	Sampled	Sampled	Sampled	Sampled	Sampled	Sampled	Sampled	Sampled
Event 39 - July 2022	Sampled	Sampled	Sampled	Sampled	Sampled	Sampled	Sampled	Sampled	Sampled	Sampled	Sampled	Sampled	Sampled
Event 40 - August 2022	Sampled	Sampled	Sampled	Sampled	Sampled	Sampled	Sampled	Sampled	Sampled	Sampled	Sampled	Sampled	Sampled
Event 41 - September 2022	Sampled	Sampled	Sampled	Sampled	Sampled	Sampled	Sampled	Sampled	Sampled	Sampled	Sampled	Sampled	Sampled
Event 42 - October 2022	Sampled	Sampled	Sampled	Sampled	Sampled	Sampled	Sampled	Sampled	Sampled	Sampled	Sampled	Sampled	Sampled
WW Event 5 - 14-15 November 2022	Sampled	Sampled	Sampled	Sampled	Sampled	Sampled	Sampled	Sampled	Sampled	Sampled	Sampled	Sampled	Sampled
Event 43 - December 2022	Sampled	Sampled	Sampled	Sampled	Sampled	Sampled	Sampled	Sampled	Sampled	Sampled	Sampled	Sampled	Sampled
Event 44 - January 2023	Sampled	Sampled	Sampled	Sampled	Sampled	Sampled	Sampled	Sampled	Sampled	Sampled	Sampled	Sampled	Sampled
Event 45 - February 2023	Sampled	Sampled	Sampled	Sampled	Sampled	Sampled	Sampled	Sampled	Sampled	Sampled	Sampled	Sampled	Sampled
Event 46 - March 2023	Sampled	Sampled	Sampled	Sampled	Sampled	Sampled	Sampled	Sampled	Sampled	Sampled	Sampled	Sampled	Sampled
Event 47 - April 2023	Sampled	Sampled	Sampled	Sampled	Sampled	Sampled	Sampled	Sampled	Sampled	Sampled	Sampled	Sampled	Sampled
Event 48 - May 2023	Sampled	Sampled	Sampled	Sampled	Sampled	Sampled	Sampled	Sampled	Sampled	Sampled	Sampled	Sampled	Sampled
Event 49 - June 2023	Sampled	Sampled	Sampled	Sampled	Sampled	Sampled	Sampled	Sampled	Sampled	Sampled	Sampled	Sampled	Sampled
Event 50 - July 2023	Sampled	Sampled	Sampled			Sampled	Sampled	Sampled	Sampled	Sampled	Sampled	Sampled	Sampled
Event 51 - August 2023	Sampled	Sampled	Sampled	Sampled	Sampled	Sampled	Sampled	Sampled	Sampled	Sampled	Sampled	Sampled	Sampled
WW Event 6 - 31 August 2023	Sampled	Sampled	Sampled	Sampled	Sampled	Sampled	Sampled	Sampled	Sampled	Sampled	Sampled	Sampled	Sampled
Event 52 - September 2023	Sampled	Sampled	Sampled	Sampled	Sampled	Sampled	Sampled	Sampled	Sampled	Sampled	Sampled	Sampled	Sampled

*BADMS only sampled since October 2021

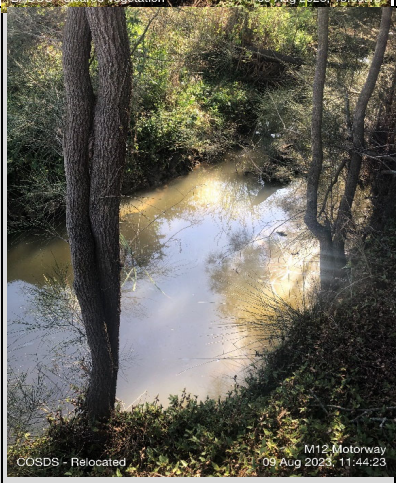
	Sampled - Baseline period
	Not sampled
	Wet weather event
	Sampled - Construction period
Bold	Current monitoring period

Zone	Location	Month	Event	Observations and Deviations	Photo
East	ROPDS	April 2023	Event 47	Pond looks black from sampling point, potentially due to sediment on bottom	
West	BADUS	April 2023	Event 47	Deviation: Sampled on opposite side of the creek due to concrete barriers on either side of Elizabeth Drive approaching the bridge. All subsequent monitoring taken from this point	
West	COSDS	April 2023	Event 47	Very low water level compared to previous rounds, slight organic sheen	

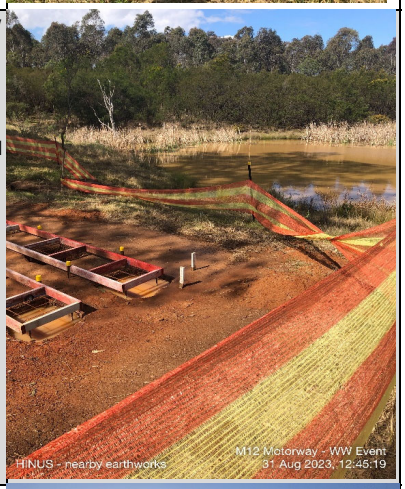
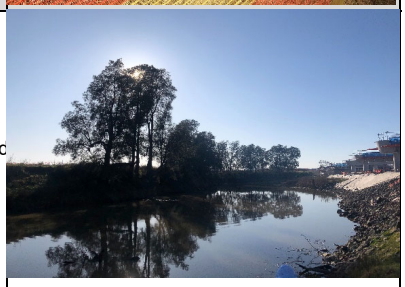
West	COSUS	April 2023	Event 47	Very low water level compared to previous rounds	
Central	KEMDS	May 2023	Event 48	High flow than normal	
East	HINDS	May 2023	Event 48	Scum on surface of pond	
West	BADMS	May 2023	Event 48	Light sediment load on surface of creek	
All	All SW Locati	June 2023	Event 49	Stagnant or low-flowing water and water levels lower than normal	
All	All SW Locati	July 2023	Event 50	Stagnant or low-flowing water and water levels lower than normal	

West	BADUS	July 2023	Event 50	Brown foamy substance on surface of water 5m upstream	
West	COSDS	July 2023	Event 50	Deviation: Not monitored - no access to sampling location. Cosgroves Creek was in an exclusion zone for a few weeks due to bridge construction.	
West	COSUS	July 2023	Event 50	Deviation: Not monitored - no access to sampling location. Cosgroves Creek was in an exclusion zone for a few weeks due to bridge construction.	
All	All surface water locations	August 2023	Event 51	Stagnant or low-flowing water	
Central	KEMDS	August 2023	Event 51	Green scum and algae on surface	

Central	KEMUS	August 2023	Event 51	Oily sheen and alage on surface	
Central	SOUDS	August 2023	Event 51	Deviation: Location moved downstream per agreement with Transport	
East	HINDS	August 2023	Event 51	Lower than typical water level	
East	HINUS	August 2023	Event 51	Slight surface sheen, lower than typical water level	
East	ROPDS	August 2023	Event 51	Slight sheen	

West	BADDS	August 2023	Event 51	Deviation: Location moved downstream per agreement with Transport	
West	BADMS	August 2023	Event 51	Deviation: Location moved downstream per agreement with Transport	
West	BADUS	August 2023	Event 51	Cleared vegetatation and evidence o earthworks on right bank of stream (assumed to be associated with WSA works)	
West	COSDS	August 2023	Event 51	Slight unidentifiable odour Deviation: Location moved downstream per agreement with Transport	

West	COSUS	August 2023	Event 51	Deviation: Location moved upstream per agreement with TfNSW	
All	All surface water locations	August 2023	Wet Weather Event	All locations cloudy or turbid, and pale-brown to brown in colour	
Central	KEMDS	August 2023	Wet Weather Event	Water level higher than previous rounds and much faster flowing	
Central	KEMUS	August 2023	Wet Weather Event	Water level is slightly higher than previous rounds	

Central	SOUDS	August 2023	Wet Weather Event	Higher water level than recent monitoring rounds	
East	HINUS	August 2023	Wet Weather Event	Water level was higher than last few rounds. Some earthworks was observed around in WSPT near location with no soil trap fencing. Location clearly affected by heavy rainfall with visible soil being flushed out of area into sampling location.	
Central	SOUDS	September 2023	Event 52	Sydney Water treatment plant is being built on site adjacent to M12 Central. SWC Environmental Advisor indicated they have basins on site which diacharge into South Creek slightly downstream on the old bridge (i.e.between SOUUS and SOUDS) which has been operating for months. Water is more turbid than upstream	
West	BADUS	September 2023	Event 52	Sludgy rust coloured sheen	

					Inorganics		Biological			Acidity & Alkalinity		Nutrients									Metals											BTEXN							TRH - NEPM 2013							TRH - NEPM 1999					TPH
					Total Dissolved Solids	Total Suspended Solids	E.coli	Thermotolerant (Faecal) Coliforms	Hardness as CaCO3	Hardness as CaCO3 (Filtered)	Ammonia as N	Nitrate (as N)	Nitrite (as N)	Nitrogen (Total Oxidised) (as N)	Nitrogen (Total)	Kjeldahl Nitrogen Total	Reactive Phosphorus as P	Chlorophyll a	Phosphorus (Total)	Arsenic	Cadmium	Chromium (III+VI)	Copper	Iron	Lead	Manganese	Mercury	Nickel	Zinc	Benzene	Toluene	Ethylbenzene	Xylene (o)	Xylene (m & p)	Xylene Total	BTEX (Sum of Total) - Lab Calc	Naphthalene (BTEXN suite)	F1 (C6-C10 minus BTEX)	C6-C10 Fraction	F2 (>C10-C16 minus Naphthalene)	>C10-C16 Fraction	F3 (>C16-C34 Fraction)	F4 (>C34-C40 Fraction)	>C10-C40 (Sum of Total)	C6-C9 Fraction	C10-C14 Fraction	C15-C28 Fraction	C28-C36 Fraction	C10-C36 (Sum of Total)	Oil & Grease
					mg/L	mg/L	orgs/100mL	orgs/100mL	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L
EQL					10	5	1	1	1	1	0.01	0.01	0.01	0.01	0.1	0.1	0.01	0.01	1	0.01	0.0001	0.001	0.001	0.05	0.001	0.0001	0.001	0.005	1	2	2	2	2	2	1	5	20	20	100	100	100	100	100	20	50	100	50	50	5000
ADWG 2011 Health (v3.7 updated 2022)												11.29[#1]	0.91[#2]							0.01	0.002		2		0.01	0.5	0.001	0.02		1	800	300			600														
ANZECC 2000 - Lowland Rivers (NSW coastal rivers)						6					**0.01166**[#3]			**0.04**	**0.35**		**0.008**	**0.003**	**0.025**																																	
ANZECC 2000 - Stock Watering					*5000*[#4]			*100*				*90*[#5]	*9.1*[#6]							*0.5*	*0.01*	*1*	*1*[#7]		*0.1*		*0.002*	*1*	*20*																					
ANZG (2018) - FW - 95% (updated 26 July 2021)											0.9[#8]	2.4[#9]								0.013[#10]	0.0002	0.001[#11]	0.0014		0.0034	1.9	0.0006	0.011	0.008	950	180	80	350				16													
Package	**Location Code**	**Sample Date**	**Field ID**	**Lab Report Number**																																													
M12 - Central	KEMDS	8/04/2021	KEMDS	ES2112843	161	**49**	-	-	-	62	**0.35**	0.01	<0.01	0.01	**2.9**	2.9	**0.02**	**2**	**0.47**	<0.001	<0.0001	0.002	0.005	3.97	0.003	0.638	<0.0001	0.002	0.018	<1	<2	<2	<2	<2	<2	<1	<5	<20	<20	<100	<100	<100	<100	<100	<20	<50	<100	<50	<50	<5000
		10/05/2021	KEMDS	ES2117470	124	**24**	-	-	-	65	**0.32**	<0.01	<0.01	<0.01	**2.2**	2.2	**0.02**	**10**	**0.39**	<0.001	<0.0001	<0.001	0.001	3.09	<0.001	0.511	<0.0001	0.001	<0.005	<1	<2	<2	<2	<2	<2	<1	<5	<20	<20	<100	<100	<100	<100	<100	<20	<50	<100	<50	<50	<5000
		10/06/2021	KEMDS	ES2121872	160	**26**	-	-	-	60	**0.51**	0.01	<0.01	0.01	**2.3**	2.3	**0.01**	**9**	**0.4**	<0.001	<0.0001	<0.001	<0.001	3.89	<0.001	0.794	<0.0001	<0.001	0.005	<1	<2	<2	<2	<2	<2	<1	<5	<20	<20	<100	<100	<100	<100	<100	<20	<50	<100	<50	<50	<5000
		9/07/2021	KEMDS	ES2125418	150	**22**	-	-	-	71	**0.08**	<0.01	<0.01	<0.01	**2**	2	**<0.01**	**16**	**0.46**	<0.001	<0.0001	<0.001	0.001	5.07	<0.001	0.777	<0.0001	<0.001	<0.005	<1	<2	<2	<2	<2	<2	<1	<5	<20	<20	<100	<100	<100	<100	<100	<20	<50	<100	<50	<50	<5000
		3/09/2021	KEMDS	ES2132112	104	**388**	-	-	-	53	**0.18**	0.02	<0.01	0.02	**21.2**	21.2	**<0.01**	**13**	**4.46**	0.006	<0.0001	0.007	0.036	34.4	0.011	3.62	<0.0001	0.011	0.118	<1	<2	<2	<2	<2	<2	<1	<5	<20	<20	<100	<100	370	<100	370	<20	<50	230	210	440	<5000
		13/10/2021	KEMDS	ES2136906	114	**32**	-	-	-	-	**0.16**	<0.01	<0.01	<0.01	**2**	2	**0.01**	**25**	**0.26**	<0.001	<0.0001	<0.001	<0.001	3.53	<0.001	0.661	<0.0001	<0.001	<0.005	<1	<2	<2	<2	<2	<2	<1	<5	-	-	-	-	-	-	-	-	-	-	-	-	<5000
		9/11/2021	KEMDS	ES2140480	97	**1770**	-	-	-	-	**0.14**	0.02	<0.01	0.02	**19.6**	19.6	**0.04**	**46**	**3.08**	0.009	0.0002	0.016	0.059	25.8	0.029	2.32	<0.0001	0.018	0.202	<1	<2	<2	<2	<2	<2	<1	<5	-	-	-	-	-	-	-	-	-	-	-	-	<5000
		7/12/2021	KEMDS	ES2144579	963	**9**	86[#3]	86[#3]	-	-	**0.05**	1.31	<0.01	**1.31**	**2.6**	1.3	**0.8**	**3**	**0.96**	0.001	<0.0001	<0.001	<0.001	0.47	<0.001	0.108	<0.0001	0.002	0.009	<1	<2	<2	<2	<2	<2	<1	<5	-	-	-	-	-	-	-	-	-	-	-	-	<5000
		8/02/2022	KEMDS	ES2204223	1600	<5	-	-	-	-	**0.02**	2.18	0.01	**2.19**	**3.5**	1.3	**0.62**	**2**	**0.65**	0.001	<0.0001	<0.001	0.004	0.25	<0.001	0.039	<0.0001	0.002	0.009	<1	<2	<2	<2	<2	<2	<1	<5	-	-	-	-	-	-	-	-	-	-	-	-	<5000
		17/03/2022	KEMDS	ES2209565	707	**11**	-	-	-	-	**0.04**	1.79	0.02	**1.81**	**3.2**	1.4	**0.43**	**<1**	**0.52**	0.002	<0.0001	<0.001	0.004	1.19	<0.001	0.088	<0.0001	0.002	0.007	<1	<2	<2	<2	<2	<2	<1	<5	-	-	-	-	-	-	-	-	-	-	-	-	<5000
		27/05/2022	KEMDS	ES2218614	834	**11**	-	-	-	-	**0.02**	2.7	<0.01	**2.7**	**4**	1.3	**0.43**	**<1**	**0.53**	0.001	<0.0001	<0.001	0.025	0.71	0.001	0.097	<0.0001	0.002	0.021	<1	<2	<2	<2	<2	<2	<1	<5	-	-	-	-	-	-	-	-	-	-	-	-	<5000
		27/06/2022	SWDUP2	901087	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	0.001	<0.0002	<0.001	0.006	-	<0.001	-	<0.0001	0.002	0.014	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
		27/06/2022	KEMDS	ES2222572	1680	<5	-	-	-	-	0.01	9.47	0.02	**9.49**	**11.4**	1.9	**0.86**	**5**	**1.1**	<0.001	<0.0001	<0.001	0.005	0.21	<0.001	0.047	<0.0001	0.001	0.013	<1	<2	<2	<2	<2	<2	<1	<5	-	-	-	-	-	-	-	-	-	-	-	-	<5000
		20/07/2022	KEMDS	ES2225657	980	**12**	-	-	-	-	**0.08**	2.18	0.02	**2.2**	**2.8**	0.6	**0.23**	**<1**	**0.27**	<0.001	<0.0001	<0.001	0.004	1.03	<0.001	0.119	<0.0001	0.003	0.007	<1	<2	<2	<2	<2	<2	<1	<5	-	-	-	-	-	-	-	-	-	-	-	-	<5000
			SWDUP1	ES2225657	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	<0.001	<0.0001	0.002	0.004	-	<0.001	-	<0.0001	0.002	0.007	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
	KEMUS	7/04/2021	KEMUS	ES2112843	954	**6**	-	-	-	312	**0.03**	1.58	<0.01	**1.58**	**2.7**	1.1	**0.46**	**2**	**0.54**	0.001	<0.0001	<0.001	0.003	0.47	<0.001	0.097	<0.0001	0.002	0.008	<1	<2	<2	<2	<2	<2	<1	<5	<20	<20	<100	<100	<100	<100	<100	<20	<50	<100	<50	<50	<5000
		10/05/2021	M12SWDUP2	795054	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
		10/05/2021	KEMUS	ES2117470	596	**32**	-	-	-	194	**0.04**	3.27	0.01	**3.28**	**4.6**	1.3	**0.62**	**3**	**0.76**	0.002	<0.0001	0.001	0.007	1.67	0.001	0.048	<0.0001	0.002	0.012	<1	<2	<2	<2	<2	<2	<1	<5	<20	<20	<100	<100	<100	<100	<100	<20	<50	<100	<50	<50	<5000
			M12SWDUP	ES2117470	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
		10/06/2021	KEMUS	ES2121872	1740	**8**	-	-	-	446	0.01	9.77	<0.01	**9.77**	**11.7**	1.9	**0.97**	**2**	**1.35**	0.001	<0.0001	<0.001	0.006	0.16	<0.001	0.025	<0.0001	0.002	0.019	<1	<2	<2	<2	<2	<2	<1	<5	<20	<20	<100	<100	<100	<100	<100	<20	<50	<100	<50	<50	<5000
		9/07/2021	KEMUS	ES2125418	988	**7**	-	-	-	274	<0.01	3.59	<0.01	**3.59**	**4.7**	1.1	**0.66**	**<1**	**0.74**	0.001	<0.0001	<0.001	0.005	0.42	<0.001	0.034	<0.0001	0.002	0.011	<1	<2	<2	<2	<2	<2	<1	<5	<20	<20	<100	<100	<100	<100	<100	<20	<50	<100	<50	<50	<5000
			M12SWDUP	ES2125418	1010	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
		3/09/2021	KEMUS	ES2132112	896	**22**	-	-	-	246	**0.03**	3.95	0.01	**3.96**	**5**	1	**0.55**	**5**	**0.69**	0.001	<0.0001	0.001	0.006	1.23	<0.001	0.079	<0.0001	0.002	0.012	<1	<2	<2	<2	<2	<2	<1	<5	<20	<20	<100	<100	<100	<100	<100	<20	<50	<100	<50	<50	6000
		13/10/2021	KEMUS	ES2136906	1340	**8**	-	-	-	-	**0.17**	12.8	0.11	**12.9**	**14.5**	1.6	**1.52**	**2**	**1.64**	0.002	<0.0001	<0.001	0.008	0.15	<0.001	0.044	<0.0001	0.002	0.034	<1	<2	<2	<2	<2	<2	<1	<5	-	-	-	-	-	-	-	-	-	-	-	-	<5000
		9/11/2021	KEMUS	ES2140480	728	**18**	-	-	-	-	**0.04**	3.84	0.02	**3.86**	**5.7**	1.8	**0.94**	**2**	**1.08**	0.002	<0.0001	<0.001	0.007	0.88	<0.001	0.039	<0.0001	0.003	0.015	<1	<2	<2	<2	<2	<2	<1	<5	-	-	-	-	-	-	-	-	-	-	-	-	<5000
		7/12/2021	KEMUS	ES2144579	982	**11**	82[#3]	82[#3]	-	-	**0.2**	1.79	<0.01	**1.79**	**3.3**	1.5	**0.87**	**4**	**1.07**	0.002	<0.0001	<0.001	<0.001	0.62	<0.001	0.123	<0.0001	0.002	0.012	<1	<2	<2	<2	<2	<2	<1	<5	-	-	-	-	-	-	-	-	-	-	-	-	<5000
		8/02/2022	KEMUS	ES2204223	1520	**6**	-	-	-	-	**0.02**	2.19	0.01	**2.2**	**3.4**	1.2	**0.57**	**3**	**0.62**	0.001	<0.0001	<0.001	0.003	0.37	<0.001	0.043	<0.0001	0.003	0.008	<1	<2	<2	<2	<2	<2	<1	<5	-	-	-	-	-	-	-	-	-	-	-	-	<5000
		17/03/2022	KEMUS	ES2209565	748	**10**	-	-	-	-	**0.05**	1.67	0.02	**1.69**	**3**	1.3	**0.42**	**<1**	**0.51**	0.002	<0.0001	0.001	0.004	1.24	<0.001	0.103	<0.0001	0.002	0.006	<1	<2	<2	<2	<2	<2	<1	<5	-	-	-	-	-	-	-	-	-	-	-	-	<5000
		12/04/2022	KEMUS	ES2212858	552	**21**	-	-	-	-	**0.04**	0.99	<0.01	**0.99**	**2.3**	1.3	**0.38**	**2**	**0.57**	0.002	<0.0001	0.001	0.006	1.66	0.001	0.09	<0.0001	0.003	0.012	<1	<2	<2	<2	<2	<2	<1	<5	-	-	-	-	-	-	-	-	-	-	-	-	<5000
		27/05/2022	SWDUP2	892529	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	0.001	<0.0002	<0.001	0.005	-	<0.001	-	<0.0001	0.002	0.008	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
		27/05/2022	KEMUS	ES2218614	790	**15**	-	-	-	-	**0.03**	3.03	<0.01	**3.03**	**4.4**	1.4	**0.48**	**<1**	**0.59**	0.001	<0.0001	<0.001	0.005	0.74	<0.001	0.101	<0.0001	0.002	0.009	<1	<2	<2	<2	<2	<2	<1	<5	-	-	-	-	-	-	-	-	-	-	-	-	<5000
		27/06/2022	KEMUS	ES2222572	1840	<5	-	-	-	-	**0.07**	8.02	0.02	**8.04**	**9.2**	1.2	**0.95**	**3**	**0.98**	0.001	<0.0001	<0.001	0.006	0.21	<0.001	0.049	<0.0001	0.002	0.016	<1	<2	<2	<2	<2	<2	<1	<5	-	-	-	-	-	-	-	-	-	-	-	-	<5000
		20/07/2022	SWDUP2	907459	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	0.001	<0.0002	<0.001	0.004	-	<0.001	-	<0.0001	0.002	0.008	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
		20/07/2022	KEMUS	ES2225657	1040	**11**	-	-	-	-	**0.13**	2.4	0.04	**2.44**	**3.4**	1	**0.27**	**<1**	**0.33**	<0.001	<0.0001	<0.001	0.004	0.76	<0.001	0.158	<0.0001	0.002	0.008	<1	<2	<2	<2	<2	<2	<1	<5	-	-	-	-	-	-	-	-	-	-	-	-	<5000
	SOUDS	8/04/2021	SOUDS	ES2112843	463	**14**	-	-	-	151	**0.02**	0.52	0.05	**0.57**	**1.7**	1.1	**0.04**	**13**	**0.22**	0.002	<0.0001	0.001	0.002	1.66	<0.001	0.296	<0.0001	0.002	0.006	<1	<2	<2	<2	<2	<2	<1	<5	<20	<20	<100	<100	<100	<100	<100	<20	<50	<100	<50	<50	<5000
		10/05/2021	SOUDS	ES2117470	586	**59**	-	-	-	175	**0.08**	2.32	0.04	**2.36**	**3.7**	1.3	**0.15**	**6**	**0.37**	0.002	<0.0001	0.003	0.006	3.4	0.002	0.13	<0.0001	0.005	0.011	<1	<2	<2	<2	<2	<2	<1	<5	<20	<20	<100	<100	<100	<100	<100	<20	<50	<100	<50	<50	11,000
		10/06/2021	SOUDS	ES2121872	612	**16**	-	-	-	170	<0.01	0.36	<0.01	**0.36**	**1.2**	0.8	**<0.01**	**32**	**0.1**	<0.001	<0.0001	<0.001	0.002	0.65	<0.001	0.191	<0.0001	0.001	0.007	<1	<2	<2	<2	<2	<2	<1	<5	<20	<20	<100	<100	<100	<100	<100	<20	<50	<100	<50	<50	<5000
		9/07/2021	SOUDS	ES2125418	900	**8**	-	-	-	245	**0.05**	1.38	<0.01	**1.38**	**2.2**	0.8	**0.05**	**3**	**0.08**	<0.001	<0.0001	<0.001	0.002	0.36	<0.001	0.078	<0.0001	0.002	0.008	<1	<2	<2	<2	<2	<2	<1	<5	<20	<20	<100	<100	<100	<100	<100	<20	<50	<100	<50	<50	<5000
		13/08/2021	SOUDS	ES2129574	868	**18**	-	-	-	251	**0.03**	0.91	0.01	**0.92**	**2.2**	1.3	**<0.01**	**24**	**0.1**	<0.001	<0.0001	<0.001	0.002	0.49	<0.001	0.126	<0.0001	0.002	<0.005	<1	<2	<2	<2	<2	<2	<1	<5	<20	<20	<100	<100	<100	<100	<100	<20	<50	<100	<50	<50	<5000
		3/09/2021	SOUDS	ES2132112	676	**27**	-	-	-	170	**0.02**	1.92	0.02	**1.94**	**3.1**	1.2	**0.08**	**12**	**0.25**	0.001	<0.0001	0.001	0.004	2.06	0.001	0.112	<0.0001	0.002	0.007	<1	<2	<2	<2	<2	<2	<1	<5	<20	<20	<100	<100	<100	<100	<100	<20	<50	<100	<50	<50	5000
		13/10/2021	SOUDS	ES2136906	686	**12**	-	-	-	-	**0.02**	1.35	0.03	**1.38**	**2.5**	1.1	**0.06**	**6**	**0.16**	<0.001	<0.0001	<0.001	0.003	0.72	<0.001	0.223	<0.0001	0.002	<0.005	<1	<2	<2	<2	<2	<2	<1	<5	-	-	-	-	-	-	-	-	-	-	-	-	<5000
		9/11/2021	SOUDS	ES2140480	582	**17**	-	-	-	-	**0.07**	1.5	0.03	**1.53**	**2.7**	1.2	**0.24**	**2**	**0.27**	0.001	<0.0001	<0.001	0.004	1.38	<0.001	0.169	<0.0001	0.002	0.006	<1	<2	<2	<2	<2	<2	<1	<5	-	-	-	-	-	-	-	-	-	-	-	-	<5000
		7/12/2021	SOUDS	ES2144579	455	**20**	110	*110*	-	-	**0.06**	0.48	0.01	**0.49**	**1.8**	1.3	**0.12**	**3**	**0.78**	0.001	<0.0001	<0.001	<0.001	1.89	0.001	0.3	<0.0001	0.002	0.011	<1	<2	<2	<2	<2	<2	<1	<5	-	-	-	-	-	-	-	-	-	-	-	-	<5000
		8/02/2022	SOUDS	ES2204223	626	**19**	-	-	-	-	<0.01	<0.01	<0.01	<0.01	**0.8**	0.8	**0.02**	**9**	**0.09**	0.002	<0.0001	<0.001	0.004	1.24	<0.001	0.354	<0.0001	0.002	<0.005	<1	<2	<2	<2	<2	<2	<1	<5	-	-	-	-	-	-	-	-	-	-	-	-	<5000
		17/03/2022	SOUDS	ES2209565	479	**20**	-	-	-	-	**0.78**	0.5	0.45	**0.95**	**3.6**	2.6	**0.16**	**5**	**0.45**	0.003	<0.0001	0.002	0.005	3.68	<0.001	0.39	<0.0001	0.004	0.018	<1	<2	<2	<2	<2	<2	<1	<5	-	-	-	-	-	-	-	-	-	-	-	-	<5000
			SWDUP1	ES2209565	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	0.002	<0.0001	0.002	0.005	-	<0.001	-	<0.0001	0.004	0.01	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
		28/06/2022	SOUDS	ES2222658	934	**21**	-	-	-	-	**0.72**	3.51	0.12	**3.63**	**6.3**	2.7	**<0.01**	**43**	**0.15**	<0.001	<0.0001	<0.001	0.004	1.22	<0.001	0.55	<0.0001	0.003	<0.005	<1	<2	<2	<2	<2	<2	<1	<5	-	-	-	-	-	-	-	-	-	-	-	-	<5000
		21/07/2022	SOUDS	ES2225821	556	**34**	-	-	-	-	**0.29**	1.21	0.04	**1.25**	**2.8**	1.6	**0.03**	**1**	**0.24**	0.002	<0.0001	<0.001	0.005	0.06	4.47	0.003	0.304	<0.0001	0.004	0.015	<1	<2	<2	<2	<2	<2	<1	<5	-	-	-	-	-	-	-	-	-	-	-	-	<5000
	SOUUS	8/04/2021	SOUUS	ES2112843	486	**24**	-	-	-	147	**0.02**	0.52	0.04	**0.56**	**2**	1.4	**0.04**	**31**	**0.27**	0.002	<0.0001	0.001	0.003	1.72	<0.001	0.29	<0.0001	0.002	<0.005	<1	<2	<2	<2	<2	<2	<1	<5	<20	<20	<100	<100	<100	<100	<100	<20	<50	<100	<50	<50	<5000
		10/05/2021	SOUUS	ES2117470	572	**65**	-	-	-	175	**0.06**	2.39	0.04	**2.43**	**3.7**	1.3	**0.14**	**8**	**0.37**	0.002	<0.0001	0.003	0.006	3.43	0.002	0.128	<0.0001	0.003	0.012	<1	<2	<2	<2	<2	<2	<1	<5	<20	<20	<100	<100	<100	<100	<100	<20	<50	<100	<50	<50	<5000
		10/06/2021	M12SWDUP	ES2121872	641	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
			SOUUS	ES2121872	608	**16**	-	-	-	-	<0.01	0.35	<0.01	**0.35**	**1**	0.7	**<0.01**	**7**	**0.1**	<0.001	<0.0001	<0.001	0.002	0.56	<0.001	0.205	<0.0001	0.001	<0.005	<1	<2	<2	<2	<2	<2	<1	<5	<20	<20	<100	<100	<100	<100	<100	<20	<50	<100	<50	<50	<5000
		9/07/2021	SOUUS	ES2125418	918	**7**	-	-	-	267	**0.04**	1.54	<0.01	**1.54**	**2.3**	0.8	**0.05**	**3**	**0.09**	<0.001	<0.0001	<0.001	0.002	0.33	<0.001	0.071	<0.0001	0.001	<0.005	<1	<2	<2	<2	<2	<2	<1	<5	<20	<20	<100	<100	<100	<100	<100	<20	<50	<100	<50	<50	<5000
		13/08/2021	SOUUS	ES2129574	857	**16**	-	-	-	244	<0.01	1.14	0.01	**1.15**	**2.4**	1.3	**<0.01**	**16**	**0.12**	<0.001	<0.0001	<0.001	0.002	0.38	<0.001	0.147	<0.0001	0.002	0.005	<1	<2	<2	<2	<2	<2	<1	<5	<20	<20	<100	<100	<100	<100	<100	<20	<50	<100	<50	<50	<5000
		3/09/2021	SOUUS	ES2132112	675	**19**	-	-	-	166	<0.01	1.87	0.02	**1.89**	**3.2**	1.3	**0.08**	**19**	**0.21**	0.001	<0.0001	0.001	0.004	1.75	0.001	0.107	<0.0001	0.001	0.007	<1	<2	<2	<2	<2	<2	<1	<5	<20	<20	<100	<100	<100	<100	<100	<20	<50	<100	<50	<50	6000
		13/10/2021	SOUUS	ES2136906	702	**12**	-	-	-	-	**0.04**	1.28	0.03	**1.31**	**2.5**	1.2	**0.06**	**8**	**0.25**	<0.001	<0.0001	<0.001	0.002	0.45	<0.001	0.221	<0.0001	0.002	0.005	<1	<2	<2	<2	<2	<2	<1	<5	-	-	-	-	-	-	-	-	-	-	-	-	<5000
		9/11/2021	SOUUS	ES2140480	546	**13**	-	-	-	-	**0.06**	1.5	0.02	**1.52**	**3.1**	1.6	**0.25**	**1**	**0.41**	<0.001	<0.0001	<0.001	0.005	1.16	0.001	0.494	<0.0001	0.002	0.014	<1	<2	<2	<2	<2	<2	<1	<5	-	-	-	-	-	-	-	-	-	-	-	-	<5000
		7/12/2021	SOUUS	ES2144579	460	**16**	110	*110*	-	-	**0.06**	0.52	0.01	**0.53**	**1.6**	1.1	**0.14**	**4**	**0.32**	0.001	<0.0001	<0.001	<0.001	1.32	<0.001	0.245	<0.0001	<0.001	0.008	<1	<2	<2	<2	<2	<2	<1	<5	-	-	-	-	-	-	-	-	-	-	-	-	<5000
		8/02/2022	SOUUS	ES2204223	616	**9**	-	-	-	-	<0.01	<0.01	<0.01	<0.01	**0.8**	0.8	**0.04**	**2**	**0.1**	0.002	<0.0001	<0.001	0.002	1	<0.001	0.386	<0.0001	0.002	<0.005	<1	<2	<2	<2	<2	<2	<1	<5	-	-	-	-	-	-	-	-	-	-	-	-	<5000
		17/03/2022	SOUUS	ES2209565	496	**28**	-	-	-	-	**0.7**	0.54	0.41	**0.95**	**3.6**	2.7	**0.16**	**2**	**0.46**	0.004	<0.0001	0.002	0.005	4.07	<0.001	0.388	<0.0001	0.004	0.01	<1	<2	<2	<2	<2	<2	<1	<5	-	-	-	-	-	-	-	-	-	-	-	-	<5000
		28/06/2022	SOUUS	ES2222658	972	**20**	-	-	-	-	**1.12**	3.87	0.15	**4.02**	**7**	3	**<0.01**	**31**	**0.16**	<0.001	<0.0001	<0.001	0.004	1.13	<0.001	0.58	<0.0001	0.003	<0.005	<1	<2	<2	<2	<2	<2	<1	<5	-	-	-	-	-	-	-	-	-	-	-	-	<5000
		21/07/2022	SOUUS	ES2225821	580	**36**	-	-	-	-	**0.25**	1.19	0.05	**1.24**	**2.7**	1.5	**0.03**	**2**	**0.24**	0.002	<0.0001	0.004	0.007	4.62	0.003	0.317	<0.0001	0.004	0.015	<1	<2	<2	<2	<2	<2	<1	<5	-	-	-	-	-	-	-	-	-	-	-	-	<5000
M12 - East	HINDS	8/04/2021	HINDS	ES2112843	129	**33**	-	-	-	22	**0.1**	<0.01	<0.01	<0.01	**1.5**	1.5	**0.02**	**3**	**0.15**	0.002	<0.0001	0.002	0.004	3.92	0.002	0.513	<0.0001	0.002	0.006	<1	<2	<2	<2	<2	<2	<1	<5	<20	<20	<100	<100	<100	<100	<100	<20	<50	<100	<50	<50	<5000
		10/05/2021	HINDS	ES2117470	128	**6**	-	-	-	29	**0.25**	0.04	<0.01	**0.04**	**1.4**	1.4	**0.02**	**5**	**0.14**	0.002	<0.0001	<0.001	0.002	3.24	0.002	0.428	<0.0001	0.002	0.005	<1	<2	<2	<2	<2	<2	<1	<5	<20	<20	<100	<100	<100	<100	<100	<20	<50	<100	<50	<50	<5000
		10/06/2021	HINDS	ES2121872	152	**7**	-	-	-	29	**0.37**	0.24	<0.01	**0.24**	**1.5**	1.3	**0.03**	**1**	**0.18**	0.002	<0.0001	0.001	0.003	3.73	0.003	0.443	<0.0001	0.002	0.005	<1	<2	<2	<2	<2	<2	<1	<5	<20	<20	<100	<100	<100	<100	<100	<20	<50	<100

					Inorganics		Biological			Acidity & Alkalinity		Nutrients									Metals												BTEXN							TRH - NEPM 2013								TRH - NEPM 1999					TPH
					Total Dissolved Solids	Total Suspended Solids	E.coli	Thermotolerant (Faecal) Coliforms	Hardness as CaCO3	Hardness as CaCO3 (Filtered)	Ammonia as N	Nitrate (as N)	Nitrite (as N)	Nitrogen (Total Oxidised) (as N)	Nitrogen (Total)	Kjeldahl Nitrogen Total	Reactive Phosphorus as P	Chlorophyll a	Phosphorus (Total)	Arsenic	Cadmium	Chromium (III+VI)	Copper	Iron	Lead	Manganese	Mercury	Nickel	Zinc	Benzene	Toluene	Ethylbenzene	Xylene (o)	Xylene (m & p)	Xylene Total	BTEX (Sum of Total) - Lab Calc	Naphthalene (BTEXN suite)	F1 (C6-C10 minus BTEX)	C6-C10 Fraction	F2 (>C10-C16 minus Naphthalene)	>C10-C16 Fraction	F3 (>C16-C34 Fraction)	F4 (>C34-C40 Fraction)	>C10-C40 (Sum of Total)	C6-C9 Fraction	C10-C14 Fraction	C15-C28 Fraction	C29-C36 Fraction	C10-C36 (Sum of Total)	Oil & Grease
					mg/L	mg/L	orgs/100mL	orgs/100mL	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L
EQL					10	5	1	1	1	1	0.01	0.01	0.01	0.01	0.1	0.1	0.01	1	0.01	0.001	0.0001	0.001	0.001	0.05	0.001	0.001	0.0001	0.001	0.005	1	2	2	2	2	2	1	5	20	20	100	100	100	100	100	20	50	100	50	50	5000
ADWG 2011 Health (v3.7 updated 2022)												11.29[#1]	0.9[#2]							0.01	0.002		2		0.01	0.5	0.001	0.02		1	800	300		2	600															
ANZECC 2000 - Lowland Rivers (NSW coastal rivers)						**6**					**0.01166[#3]**			**0.04**	**0.35**		**0.008**	**0.003**	**0.025**				**2**		**0.01**	**0.5**	**0.001**	**0.02**		**1**	**800**	**300**			**600**		**5**														
ANZECC 2000 - Stock Watering					*5000[#4]*			*100*				*90[#5]*	*9.1[#6]*							*0.5*	*0.01*	*1*	*1[#7]*		*0.1*		*0.002*	*1*	*20*																						
ANZG (2018) - FW - 95% (updated 26 July 2021)											*0.9[#8]*	*2.4[#9]*								*0.013[#10]*	*0.0002*	*0.001[#11]*	*0.0014*		*0.0034*	*1.9*	*0.0006*	*0.011*	*0.008*	*950*	*180*	*80*	*350*			*16*															
Package	**Location Code**	**Sample Date**	**Field ID**	**Lab Report Number**																																														
		4/04/2023	HINDS	ES2311425	245	5	-	-	64	-	**0.02**	0.04	<0.01	**0.04**	**1.2**	1.2	**<0.01**	**25**	**0.08**	<0.001	<0.0001	<0.001	<0.001	0.52	<0.001	0.191	<0.0001	0.002	<0.005	<1	<2	<2	<2	<2	<2	<1	-	-	-	-	-	-	-	-	-	-	-	-	-	-	<5000
		1/05/2023	HINDS	ES2314384	235	**16**	-	-	-	-	0.01	<0.01	<0.01	<0.01	**1.9**	1.9	**<0.01**	**27**	**0.15**	0.001	<0.0001	<0.001	<0.001	1.32	<0.001	0.609	<0.0001	<0.001	<0.005	<1	<2	<2	<2	<2	<2	<1	-	-	-	-	-	-	-	-	-	-	-	-	-	-	<5000
		6/06/2023	HINDS	ES2319028	244	**7**	-	-	-	-	**0.02**	0.01	<0.01	0.01	**1**	1	**<0.01**	**48**	**0.05**	<0.001	<0.0001	<0.001	<0.001	0.86	<0.001	0.279	<0.0001	0.001	0.005	<1	<2	<2	<2	<2	<2	<1	-	-	-	-	-	-	-	-	-	-	-	-	-	-	<5000
	HINUS	7/04/2021	HINUS	ES2112843	97	**39**	-	-	21		**0.02**	<0.01	<0.01	<0.01	**1.4**	1.4	**<0.01**	**2**	**0.08**	<0.001	<0.0001	<0.001	0.003	3.06	<0.001	0.342	<0.0001	<0.001	<0.005	<1	<2	<2	<2	<2	<2	<1	<5	<20	<20	<100	<100	<100	<100	<100	<20	<50	<100	<50	<50	<5000
		10/05/2021	HINUS	ES2117470	134	<5	-	-	-	26	**0.06**	0.02	<0.01	0.02	**1.3**	1.3	**<0.01**	**12**	**0.09**	<0.001	<0.0001	<0.001	<0.001	4.48	<0.001	0.164	<0.0001	0.001	<0.005	<1	<2	<2	<2	<2	<2	<1	<5	<20	<20	<100	<100	<100	<100	<100	<20	<50	<100	<50	<50	<5000
		10/06/2021	HINUS	ES2121872	146	**8**	-	-	30		**0.02**	0.04	<0.01	**0.04**	**0.9**	0.9	**<0.01**	**3**	**0.04**	<0.001	<0.0001	<0.001	<0.001	3.38	<0.001	0.036	<0.0001	<0.001	<0.005	<1	<2	<2	<2	<2	<2	<1	<5	<20	<20	<100	<100	<100	<100	<100	<20	<50	<100	<50	<50	<5000
		9/07/2021	HINUS	ES2125418	130	<5	-	-	-	34	<0.01	<0.01	<0.01	<0.01	**0.9**	0.9	**<0.01**	**<1**	0.02	<0.001	<0.0001	<0.001	<0.001	2	<0.001	0.055	<0.0001	<0.001	<0.005	<1	<2	<2	<2	<2	<2	<1	<5	<20	<20	<100	<100	<100	<100	<100	<20	<50	<100	<50	<50	<5000
		13/10/2021	HINUS	ES2136906	215	**8**	-	-	-	-	**0.04**	0.01	<0.01	0.01	**1.5**	1.5	**<0.01**	**5**	**0.06**	<0.001	<0.0001	<0.001	<0.001	2.11	<0.001	0.333	<0.0001	0.001	<0.005	<1	<2	<2	<2	<2	<2	<1	<5	-	-	-	-	-	-	-	-	-	-	-	-	-	-	<5000
		8/11/2021	HINUS	ES2140337	260	**235**	-	-	-	-	**0.06**	<0.01	<0.01	<0.01	**3.5**	3.5	**<0.01**	**28**	**0.35**	0.002	<0.0001	0.002	0.008	6.73	0.004	0.347	<0.0001	0.215	0.09	<1	<2	<2	<2	<2	<2	<1	<5	-	-	-	-	-	-	-	-	-	-	-	-	-	-	<5000
		7/12/2021	SWDUP2	849475	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	0.001	<0.0002	0.001	0.003	-	0.001	-	<0.0001	0.002	0.008	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
		7/12/2021	HINUS	ES2144579	328	**7**	18[#3]	18[#3]	-	-	0.01	<0.01	<0.01	<0.01	**1.3**	1.3	**<0.01**	**18**	**0.08**	<0.001	<0.0001	0.001	<0.001	2.79	<0.001	0.314	<0.0001	0.001	<0.005	<1	<2	<2	<2	<2	<2	<1	<5	-	-	-	-	-	-	-	-	-	-	-	-	-	-	<5000
		8/02/2022	HINUS	ES2204223	264	<5	-	-	-	-	0.01	<0.01	<0.01	<0.01	**0.9**	0.9	**<0.01**	-	**0.04**	0.001	<0.0001	<0.001	<0.001	2.32	<0.001	0.094	<0.0001	<0.001	<0.005	<1	<2	<2	<2	<2	<2	<1	<5	-	-	-	-	-	-	-	-	-	-	-	-	-	-	<5000
		17/03/2022	SWDUP2	873124	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	0.002	<0.0002	0.004	0.007	-	0.003	-	<0.0001	0.004	0.032	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
		17/03/2022	HINUS	ES2209565	98	**7**	-	-	-	-	**0.02**	<0.01	<0.01	<0.01	**1.4**	1.4	**<0.01**	**8**	**0.11**	0.002	<0.0001	0.002	0.004	3.4	<0.001	0.116	<0.0001	0.002	0.006	<1	<2	<2	<2	<2	<2	<1	<5	-	-	-	-	-	-	-	-	-	-	-	-	-	-	<5000
		27/05/2022	HINUS	ES2218614	299	**8**	-	-	-	-	**0.08**	0.24	0.03	**0.27**	**1.5**	1.2	**<0.01**	**10**	**0.09**	0.001	<0.0001	0.003	0.005	2.08	0.001	0.067	<0.0001	0.002	0.015	<1	<2	<2	<2	<2	<2	<1	<5	-	-	-	-	-	-	-	-	-	-	-	-	-	-	<5000
		28/06/2022	HINUS	ES2222658	286	<5	-	-	-	-	**0.03**	0.04	<0.01	**0.04**	**0.7**	0.7	**<0.01**	**1**	**0.03**	<0.001	<0.0001	0.001	0.002	1.86	<0.001	0.035	<0.0001	<0.001	<0.005	<1	<2	<2	<2	<2	<2	<1	<5	-	-	-	-	-	-	-	-	-	-	-	-	-	-	<5000
		20/07/2022	HINUS	ES2225657	261	**35**	-	-	-	-	**0.1**	0.18	<0.01	**0.18**	**1.5**	1.3	**<0.01**	**6**	**0.14**	0.002	<0.0001	0.005	0.007	5.5	0.003	0.109	<0.0001	0.004	0.012	<1	<2	<2	<2	<2	<2	<1	<5	-	-	-	-	-	-	-	-	-	-	-	-	-	-	<5000
		15/08/2022	HINUS	ES2229050	248	5	-	-	-	-	**0.06**	0.12	<0.01	**0.12**	**1.5**	1.4	**<0.01**	**2**	**0.14**	0.001	<0.0001	0.004	0.005	4.77	0.002	0.156	<0.0001	0.002	0.01	<1	<2	<2	<2	<2	<2	<1	<5	-	-	-	-	-	-	-	-	-	-	-	-	-	-	<5000
		20/09/2022	HINUS	ES2233731	222	<5	-	-	-	-	<0.01	<0.01	<0.01	<0.01	**1.1**	1.1	**<0.01**	**66**	**0.06**	<0.001	<0.0001	<0.001	0.002	1.31	<0.001	0.067	<0.0001	<0.001	<0.005	<1	<2	<2	<2	<2	<2	<1	<5	-	-	-	-	-	-	-	-	-	-	-	-	-	-	<5000
		19/10/2022	SWDUP2	934854	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	0.003	<0.0002	0.004	0.007	-	0.004	-	<0.0001	0.003	0.013	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
		19/10/2022	HINUS	ES2237608	232	**38**	-	-	-	-	<0.01	<0.01	<0.01	<0.01	**1.9**	1.9	**<0.01**	**22**	**0.16**	0.001	<0.0001	<0.001	0.004	2.8	0.002	0.175	<0.0001	0.001	<0.005	<1	<2	<2	<2	<2	<2	<1	<5	-	-	-	-	-	-	-	-	-	-	-	-	-	-	<5000
		13/12/2022	HINUS	ES2245059	154	**14**	-	-	-	-	0.01	<0.01	<0.01	<0.01	**1.3**	1.3	**<0.01**	**11**	**0.06**	0.001	<0.0001	<0.001	<0.001	1.98	<0.001	0.095	<0.0001	<0.001	<0.005	<1	<2	<2	<2	<2	<2	<1	<5	-	-	-	-	-	-	-	-	-	-	-	-	-	-	<5000
			SWDUP1	ES2245059	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	0.001	<0.0001	<0.001	<0.001	-	<0.001	-	<0.0001	<0.001	<0.005	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
		17/01/2023	HINUS	ES2301422	208	**112**	-	43	-	-	**0.06**	<0.01	<0.01	<0.01	**1**	1	**<0.01**	**24**	**0.1**	0.002	<0.0001	0.002	0.004	4.8	0.002	0.106	<0.0001	0.002	0.007	<1	<2	<2	<2	<2	<2	<1	<5	-	-	-	-	-	-	-	-	-	-	-	-	-	-	<5000
		7/02/2023	HINUS	ES2304061	303	**72**	-	-	-	-	**0.02**	<0.01	<0.01	<0.01	**1.2**	1.2	**<0.01**	**13**	**0.08**	0.001	<0.0001	<0.001	<0.001	1.79	<0.001	0.094	<0.0001	<0.001	<0.005	<1	<2	<2	<2	<2	<2	<1	<5	-	-	-	-	-	-	-	-	-	-	-	-	-	-	<5000
		2/03/2023	HINUS	ES2307008	249	**10**	-	-	-	-	**0.02**	<0.01	<0.01	<0.01	**1.1**	1.1	**<0.01**	**18**	**0.04**	0.002	<0.0001	<0.001	<0.001	1.66	<0.001	0.135	<0.0001	0.002	<0.005	<1	<2	<2	<2	<2	<2	<1	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	<5000
		4/04/2023	HINUS	ES2311425	264	**11**	-	-	83	-	<0.01	0.02	<0.01	0.02	**1.1**	1.1	**<0.01**	**11**	**0.06**	<0.001	<0.0001	<0.001	<0.001	1.24	<0.001	0.123	<0.0001	0.001	<0.005	<1	<2	<2	<2	<2	<2	<1	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	<5000
		1/05/2023	HINUS	ES2314384	278	**15**	-	-	-	-	0.01	<0.01	<0.01	<0.01	**1**	1	**<0.01**	**6**	**0.06**	0.001	<0.0001	<0.001	<0.001	1.01	<0.001	0.19	<0.0001	<0.001	0.007	<1	4	<2	<2	<2	<2	4	-	-	-	-	-	-	-	-	-	-	-	-	-	-	<5000
		6/06/2023	HINUS	ES2319028	308	**24**	-	-	-	-	**0.04**	<0.01	<0.01	<0.01	**0.7**	0.7	**<0.01**	**4**	0.02	<0.001	<0.0001	<0.001	<0.001	0.6	<0.001	0.123	<0.0001	<0.001	<0.005	<1	<2	<2	<2	<2	<2	<1	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	<5000
	ROPDS	7/04/2021	ROPUS	ES2112843	2860	**6**	-	-	-	821	**0.04**	0.07	<0.01	**0.07**	**0.7**	0.6	**<0.01**	**1**	**0.03**	<0.001	<0.0001	<0.001	<0.001	0.35	<0.001	2.29	<0.0001	<0.001	0.006	<1	<2	<2	<2	<2	<2	<1	<5	<20	<20	<100	<100	<100	<100	<100	<20	<50	<100	<50	<50	<5000
		10/05/2021	ROPUS	ES2117470	1320	<5	-	-	-	333	0.01	0.08	<0.01	**0.08**	**0.5**	0.4	**0.03**	**<1**	**0.07**	<0.001	<0.0001	<0.001	0.002	0.17	<0.001	0.325	<0.0001	0.002	0.007	<1	<2	<2	<2	<2	<2	<1	<5	<20	<20	<100	<100	<100	<100	<100	<20	<50	<100	<50	<50	<5000
		10/06/2021	ROPUS	ES2121872	2370	5	-	-	-	538	0.01	0.09	<0.01	**0.09**	**1.1**	1	**0.02**	**<1**	**0.2**	<0.001	<0.0001	0.001	0.005	1.23	0.002	1.14	<0.0001	0.001	0.031	<1	<2	<2	<2	<2	<2	<1	<5	<20	<20	<100	<100	<100	<100	<100	<20	<50	<100	<50	<50	<5000
		9/07/2021	ROPUS	ES2125418	3570	<5	-	-	-	975	0.01	<0.01	<0.01	<0.01	**0.4**	0.4	**0.01**	**<1**	**0.03**	<0.001	<0.0001	<0.001	<0.001	0.12	<0.001	0.486	<0.0001	<0.001	0.006	<1	<2	<2	<2	<2	<2	<1	<5	<20	<20	<100	<100	<100	<100	<100	<20	<50	<100	<50	<50	<5000
		3/09/2021	ROPUS	ES2132112	2650	**168**	-	-	-	652	<0.01	0.01	<0.01	0.01	**3.5**	3.5	**0.06**	**69**	**0.42**	0.001	<0.0001	<0.001	0.004	0.86	<0.001	8.29	<0.0001	0.002	0.061	<1	<2	<2	<2	<2	<2	<1	<5	<20	<20	<100	<100	690	250	940	<20	<50	370	460	830	<5000
		13/10/2021	ROPDS	ES2136906	400	**125**	-	-	-	-	**0.03**	0.45	0.02	**0.47**	**1.6**	1.1	**0.02**	**68**	**0.2**	0.003	<0.0001	0.006	0.03	4.49	0.018	0.256	<0.0001	0.005	0.143	<1	<2	<2	<2	<2	<2	<1	<5	-	-	-	-	-	-	-	-	-	-	-	-	-	-	<5000
		8/11/2021	SWDUP2	839397	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	<0.001	<0.0002	0.026	0.029	-	0.037	-	<0.0001	0.014	0.058	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
		8/11/2021	ROPDS	ES2140337	373	**242**	-	-	-	-	**0.03**	0.22	<0.01	**0.22**	**3.6**	3.4	**0.02**	**43**	**0.52**	0.002	<0.0001	0.003	0.022	2.97	0.008	1.08	<0.0001	0.006	0.113	<1	<2	<2	<2	<2	<2	<1	<5	-	-	-	-	-	-	-	-	-	-	-	-	-	-	<5000
		7/12/2021	ROPDS	ES2144579	2260	<5	440[#3]	550[#3]	-	-	**0.06**	0.04	<0.01	**0.04**	**0.6**	0.6	**0.02**	**<1**	**0.06**	<0.001	<0.0001	<0.001	<0.001	0.26	<0.001	1.37	<0.0001	<0.001	0.006	<1	<2	<2	<2	<2	<2	<1	<5	-	-	-	-	-	-	-	-	-	-	-	-	-	-	<5000
		8/02/2022	ROPDS	ES2204223	682	<5	-	-	-	-	**0.02**	0.09	<0.01	**0.09**	**0.6**	0.5	**0.06**	**<1**	**0.09**	<0.001	<0.0001	<0.001	0.004	0.24	<0.001	0.213	<0.0001	0.002	0.006	<1	<2	<2	<2	<2	<2	<1	<5	-	-	-	-	-	-	-	-	-	-	-	-	-	-	<5000
			SWDUP1	ES2204223	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	<0.001	<0.0001	<0.001	0.006	-	<0.001	-	<0.0001	<0.001	0.01	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
		17/03/2022	ROPDS	ES2209565	804	<5	-	-	-	-	**0.1**	0.67	0.03	**0.7**	**1.5**	0.8	**0.05**	**<1**	**0.06**	<0.001	<0.0001	<0.001	0.003	0.55	<0.001	0.454	<0.0001	<0.001	<0.005	<1	<2	<2	<2	<2	<2	<1	<5	-	-	-	-	-	-	-	-	-	-	-	-	-	-	<5000
		12/04/2022	ROPDS	ES2212858	532	**644**	-	-	-	-	**0.16**	0.14	<0.01	**0.14**	**19.7**	19.6	**0.02**	**4**	**3.38**	0.012	0.0007	0.037	0.133	44.2	0.07	15.7	<0.0001	0.039	0.828	<1	<2	<2	<2	<2	<2	<1	<5	-	-	-	-	-	-	-	-	-	-	-	-	-	-	<5000
		27/05/2022	ROPDS	ES2218614	734	<5	-	-	-	-	<0.01	0.08	<0.01	**0.08**	**0.7**	0.6	**0.01**	**<1**	**0.06**	<0.001	<0.0001	<0.001	0.001	0.54	<0.001	0.192	<0.0001	<0.001	<0.005	<1	<2	<2	<2	<2	<2	<1	<5	-	-	-	-	-	-	-	-	-	-	-	-	-	-	<5000
			SWDUP1	ES2218614	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	<0.001	<0.0001	<0.001	0.001	-	<0.001	-	<0.0001	<0.001	0.006	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
		28/06/2022	ROPDS	ES2222658	4830	<5	-	-	-	-	**0.06**	0.04	<0.01	**0.04**	**0.4**	0.4	**<0.01**	**<1**	**0.03**	<0.001	<0.0001	<0.001	<0.001	0.22	<0.001	0.955	<0.0001	<0.001	<0.005	<1	<2	<2	<2	<2	<2	<1	<5	-	-	-	-	-	-	-	-	-	-	-	-	-	-	<5000
		21/07/2022	ROPDS	ES2225821	1760	<5	-	-	-	-	**0.02**	0.09	0.01	**0.1**	**0.5**	0.4	**<0.01**	**<1**	**0.03**	<0.001	<0.0001	<0.001	0.001	0.29	<0.001	0.573	<0.0001	<0.001	<0.005	<1	<2	<2	<2	<2	<2	<1	<5	-	-	-	-	-	-	-	-	-	-	-	-	-	-	<5000
		15/08/2022	ROPDS	ES2229050	3510	<5	-	-	-	-	**0.02**	0.07	<0.01	**0.07**	**0.5**	0.4	**<0.01**	**14**	0.02	<0.001	<0.0001	<0.001	<0.001	0.18	<0.001	0.63	<0.0001	<0.001	<0.005	<1	<2	<2	<2	<2	<2	<1	<5	-	-	-	-	-	-	-	-	-	-	-	-	-	-	<5000
		21/09/2022	ROPDS	ES2233900	1620	**6**	-	-	-	-	**0.02**	0.02	<0.01	0.02	**0.4**	0.4	**<0.01**	**2**	**0.03**	<0.001	<0.0001	<0.001	0.002	0.13	<0.001	0.222	<0.0001	<0.001	<0.005	<1	<2	<2	<2	<2	<2	<1	<5	-	-	-	-	-	-	-	-	-	-	-	-	-	-	<5000
		18/10/2022	ROPDS	ES2237608	2020	<5	-	-	-	-	**0.07**	0.06	<0.01	**0.06**	**0.7**	0.6	**0.01**	**<1**	**0.03**	<0.001	<0.0001	<0.001	0.001	0.21	<0.001	1.06	<0.0001	<0.001	0.006	<1	<2	<2	<2	<2	<2	<1	<5	-	-	-	-	-	-	-	-	-	-	-	-	-	-	<5000
		19/10/2022	SWDUP1	ES2237608	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	<0.001	<0.0001	<0.001	0.001	-	<0.001	-	<0.0001	<0.001	<0.005	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
		13/12/2022	ROPDS	ES2245059	589	**13**	-	-	-	-	**0.05**	0.08	0.05	**0.13**	**1.2**	1.1	**0.01**	**<1**	**0.09**	0.001	<0.0001	<0.001	0.006	0.52	<0.001	1.17	<0.0001	0.001	0.011	<1	<2	<2	<2	<2	<2	<1	<5	-	-	-	-	-	-	-	-	-	-	-	-	-	-	<5000
		17/01/2023	ROPDS	ES2301422	1060	<5	-	29	-	-	**0.02**	<0.01	<0.01	<0.01	**0.6**	0.6	**0.02**	**2**	**0.06**	<0.001	<0.0001	<0.001	0.001	0.12	<0.001	0.577	<0.0001	<0.001	<0.005	<1	<2	<2	<2	<2	<2	<1	<5	-	-	-	-	-	-	-	-	-	-	-	-	-	-	<5000
		7/02/2023	ROPDS	ES2304061	810	<5	-	-	-	-	**0.04**	0.04	<0.01	**0.04**	**0.6**	0.6	**0.02**	**<1**	**0.04**	<0.001	<0.0001	<0.001	0.002	0.1	<0.001	0.305	<0.0001	<0.001	<0.005	<1	<2	<2	<2	<2	<2	<1	<5	-	-	-	-	-	-	-	-	-	-	-	-	-	-	<5000
			SWDUP1	ES2304061	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	<0.001	<0.0001	<0.001	0.001	-	<0.001	-	<0.0001	<0.001	<0.005	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
		2/03/2023	ROPDS	ES2307008	846	<5	-	-	-	-	**0.02**	0.03	<0.01	0.03	**0.5**	0.5	**<0.01**	**1**	0.02	<0.001	<0.0001	<0.001	0.002	0.1	<0.001	0.431	<0.0001	<0.001	<0.005	<1	<2	<2	<2	<2	<2	<1	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	<5000
		4/04/2023	ROPDS	ES2311425	655	<5	-	-	222	-	**0.02**	0.21	<0.01	**0.21**	**0.7**	0.5	**<0.01**	**2**	**0.04**	<0.001	<0.0001	<0.001	<0.001	0.16	<0.001	0.418	<0.0001	0.001	0.01	<1	<2	<2	<2	<2	<2	<1	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	<5000
		1/05/2023	ROPDS	ES2314384	356	<5	-	-	-	-	**0.04**	0.13	<0.01	**0.13**	**0.4**	0.3	**0.02**	**<1**	**0.05**	0.002	<0.0001	0.004	0.005	5.7	0.004	0.376	<0.0001	0.003	0.016	<1	<2	<2	<2	<2	<2	<1	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	<5000
		6/06/2023	ROPDS	ES2319028	2390	<5	-	-	-	-	**0.03**	0.02	<0.01	0.02	**0.4**	0.4	**0.02**	**<1**	0.02	<0.001	<0.0001	<0.001	<0.001	0.08	<0.001	0.516	<0.0001	<0.001	0.012	<1	<2	<2	<2	<2	<2	<1	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	<5000
	ROPUS	7/04/2021	M12SWDUP	ES2112843	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
			ROPDS	ES2112843	105	<5	-	-	-	22	<0.01	<0.01	<0.01	<0.01	**1.1**	1.1	**<0.01**	**26**	**0.07**	<0.001	<0.0001	<0.001	0.002	2.73	<0.001	0.17	<0.0001	<0.001	<0.005	<1	<2	<2	<2	<2	<2	<1	<5	<20	<20	<100	<100	<100	<100	<100	<20	<50	<100	<50	<50	<5000
		10/05/2021	ROPUS	ES2117470	94	**14**	-	-	-	26	<0.01	<0.01	<0.01	<0.01	**0.8**	0.8	**<0.01**	**16**	**0.08**	0.001	<0.0001	<0.001	<0.001	3.26	<0.001	0.202	<0.0001	0.001	<0.005	<1	<2	<2	<2	<2	<2	<1	<5	<20	<20	<100	<100	<100	<100	<100	<20	<50	<100	<50	<50	<5000
		10/06/2021	ROPUS	ES2121872	103	**8**	-	-	-	29	<0.01	0.02	<0.01	0.02	**0.6**	0.6	**<0.01**	**9**	**0.04**	<0.001	<0.0001	<0.001	<0.001	1.2	<0.001	0.036	<0.0001	<0.001	<0.005	<1	<2	<2	<2	<2	<2	<1	<5	<20	<20	<100	<100	<100	<100	<100	<20	<50	<100	<50	<50	<5000
		9/07/2021	ROPUS	ES2125418	94	**14**	-	-	-	33	0.01	<0.01	<0.01	<0.01	**0.6**	0.6	**<0.01**	**10**	<0.01	<0.001	<0.0001	<0.001	<0.001	1.08	<0.001	0.046	<0.0001	<0.001	<0.005	<1	<2	<2	<2	<2	<2	<1	<5	<20	<20	<100	<100	<100	<100	<100	<20	<50	<100	<50	<50	<5000
		8/11/2021	ROPUS	ES2140337	117	**4700**	-	-	-	-	**0.05**	0.02	<0.01	0.02	**7.6**	7.6	**<0.01**	**78**	**1.08**	0.005	<0.0001	0.024	0.023	25.1	0.03	1.26	<0.0001	0.014	0.059	<1	<2	<2	<2	<2	<2	<1	<5	-	-	-	-	-	-	-	-	-	-	-	-	-	-	<5000
			SWDUP1	ES2140337	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	0.003	<0.0001	0.005	0.024	-	0.008	-	<0.0001	0.005	0.138	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
		8/12/2021	ROPUS	ES2144783	104	**28**	42[#3]	42[#3]	-	-	<0.01	0.02	<0.01	0.02	**1.6**	1.6	**<0.01**	**26**	**0.14**	0.002

	Inorganics		Biological		Acidity & Alkalinity		Nutrients									Metals											BTEXN								TRH - NEPM 2013							TRH - NEPM 1999						TPH
	Total Dissolved Solids	Total Suspended Solids	E.coli	Thermotolerant (Fecal) Coliforms	Hardness as CaCO3	Hardness as CaCO3 (Filtered)	Ammonia as N	Nitrate (as N)	Nitrite (as N)	Nitrogen (Total Oxidised) (as N)	Nitrogen (Total)	Kjeldahl Nitrogen Total	Reactive Phosphorus as P	Chlorophyll a	Phosphorus (Total)	Arsenic	Cadmium	Chromium (III+VI)	Copper	Iron	Lead	Manganese	Mercury	Nickel	Zinc	Benzene	Toluene	Ethylbenzene	Xylene (o)	Xylene (m & p)	Xylene Total	BTEX (Sum of Total) - Lab Calc	Naphthalene (BTEXN suite)	F1 (C6-C10 minus BTEX)	C6-C10 Fraction	F2 (>C10-C16 minus Naphthalene)	>C10-C16 Fraction	F3 (>C16-C34 Fraction)	F4 (>C34-C40 Fraction)	>C10-C40 (Sum of Total)	C6-C9 Fraction	C10-C14 Fraction	C15-C28 Fraction	C28-C36 Fraction	C10-C36 (Sum of Total)	Oil & Grease
	mg/L	mg/L	orgs/100mL	orgs/100mL	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L
EQL	10	5	1	1	1	1	0.01	0.01	0.01	0.01	0.1	0.1	0.01	1	0.01	0.001	0.0001	0.001	0.001	0.05	0.001	0.001	0.0001	0.001	0.005	1	2	2	2	2	2	1	5	20	20	100	100	100	100	100	20	50	100	50	50	5000
ADWG 2011 Health (v3.7 updated 2022)								11.29[#1]	0.91[#2]							0.01	0.002		2		0.01	0.5	0.001	0.02		1	800	300			600																
ANZECC 2000 - Lowland Rivers (NSW coastal rivers)		**6**					**0.01166**[#3]			**0.04**	**0.35**		**0.008**	**0.003**	**0.025**																																	
ANZECC 2000 - Stock Watering	*5000*[#4]			*100*				*90*[#5]	*9.1*[#6]							*0.5*	*0.01*	*1*	*1*[#7]		*0.1*		*0.002*	*1*	*20*																						
ANZG (2018) - FW - 95% (updated 26 July 2021)							*0.9*[#8]	*2.4*[#9]								0.013[#10]	0.0002	0.001[#11]	0.0014		0.0034	1.9	0.0006	0.011	0.008	950	180	80	350				16														
M12 - West	BADDS	4/04/2023	ROPUS	ES2311425	169	**60**	-	-	46	-	**0.06**	0.01	<0.01	0.01	**0.7**	0.7	**<0.01**	**30**	**0.06**	<0.001	<0.0001	0.002	<0.001	3.81	0.001	0.215	<0.0001	0.002	<0.005	<1	<2	<2	<2	<2	<2	<1	-	-	-	-	-	-	-	-	-	-	-	-	<5000
		1/05/2023	ROPUS	ES2314384	152	**1060**	-	-	-	-	**0.02**	<0.01	<0.01	<0.01	**2.2**	2.2	**<0.01**	**138**	**0.22**	<0.001	<0.0001	<0.001	0.004	0.31	<0.001	0.125	<0.0001	<0.001	0.01	<1	<2	<2	<2	<2	<2	<1	-	-	-	-	-	-	-	-	-	-	-	-	<5000
		6/06/2023	ROPUS	ES2319028	156	**43**	-	-	-	-	**0.05**	<0.01	<0.01	<0.01	**2.6**	2.6	**<0.01**	**50**	**0.29**	0.002	<0.0001	0.007	0.009	8.31	0.007	0.495	<0.0001	0.006	0.022	<1	<2	<2	<2	<2	<2	<1	-	-	-	-	-	-	-	-	-	-	-	-	<5000
		8/04/2021	BADDS	ES2112843	558	**25**	-	-	145		0.01	0.28	<0.01	**0.28**	**2.3**	2	**0.02**	**73**	**0.26**	0.001	<0.0001	<0.001	0.004	2.25	0.001	0.218	<0.0001	0.002	0.01	<1	<2	<2	<2	<2	<2	<1	<5	<20	<20	<100	<100	<100	<100	<100	<20	<50	<100	<50	<50	<5000
		10/06/2021	BADDS	ES2121872	593	**6**	-	-	159		**0.02**	0.18	<0.01	**0.18**	**0.8**	0.6	**<0.01**	**1**	**0.12**	<0.001	<0.0001	<0.001	0.002	0.82	<0.001	0.136	<0.0001	0.002	<0.005	<1	<2	<2	<2	<2	<2	<1	<5	<20	<20	<100	<100	<100	<100	<100	<20	<50	<100	<50	<50	<5000
		9/07/2021	BADDS	ES2125418	346	**10**	-	-	111		<0.01	0.02	<0.01	0.02	0.2	0.2	**<0.01**	**2**	0.02	<0.001	<0.0001	<0.001	0.001	0.82	<0.001	0.094	<0.0001	<0.001	<0.005	<1	<2	<2	<2	<2	<2	<1	<5	<20	<20	<100	<100	<100	<100	<100	<20	<50	<100	<50	<50	<5000
		13/08/2021	BADDS	ES2129574	460	**20**	-	-	135		**0.05**	0.02	<0.01	0.02	**0.4**	0.4	**<0.01**	**7**	**0.04**	<0.001	<0.0001	<0.001	0.001	0.75	<0.001	0.17	<0.0001	0.001	<0.005	<1	<2	<2	<2	<2	<2	<1	<5	<20	<20	<100	<100	<100	<100	<100	<20	<50	<100	<50	<50	<5000
			M12SWDUP	ES2129574	484	-	-	-	-		-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
		3/09/2021	BADDS	ES2132112	1440	**20**	-	-	348		0.01	5.01	<0.01	**5.01**	**7.3**	2.3	**<0.01**	**122**	**0.26**	0.001	<0.0001	<0.001	0.004	1.07	<0.001	0.117	<0.0001	0.004	0.011	<1	<2	<2	<2	<2	<2	<1	<5	<20	<20	<100	<100	<100	<100	<100	<20	<50	<100	<50	<50	6000
			M12SWDUP	ES2132112	1430	-	-	-	-		-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
		13/10/2021	BADDS	ES2136906	437	**10**	-	-	-		<0.01	<0.01	<0.01	<0.01	**0.6**	0.6	**<0.01**	**10**	**0.08**	<0.001	<0.0001	<0.001	<0.001	0.67	<0.001	0.467	<0.0001	0.002	<0.005	<1	<2	<2	<2	<2	<2	<1	<5	-	-	-	-	-	-	-	-	-	-	-	-	<5000
		9/11/2021	BADDS	ES2140480	760	**44**	-	-	-		**0.07**	0.09	<0.01	**0.09**	**1.7**	1.6	**0.01**	**7**	**0.25**	0.002	<0.0001	0.002	0.005	2.81	0.004	0.984	<0.0001	0.003	0.013	<1	<2	<2	<2	<2	<2	<1	<5	-	-	-	-	-	-	-	-	-	-	-	-	<5000
		7/12/2021	BADDS	ES2144579	474	**32**	52	52	-		**0.08**	0.16	<0.01	**0.16**	**1.8**	1.6	**0.03**	**13**	**0.33**	0.002	<0.0001	0.001	<0.001	2.52	0.001	0.36	<0.0001	0.002	0.01	<1	<2	<2	<2	<2	<2	<1	<5	-	-	-	-	-	-	-	-	-	-	-	-	<5000
		28/06/2022	BADDS	ES2222658	783	**10**	-	-	-		**0.04**	0.12	<0.01	**0.12**	**0.7**	0.6	**<0.01**	**3**	**0.06**	<0.001	<0.0001	<0.001	0.002	1.14	<0.001	0.25	<0.0001	<0.001	<0.005	<1	<2	<2	<2	<2	<2	<1	<5	-	-	-	-	-	-	-	-	-	-	-	-	<5000
		21/07/2022	BADDS	ES2225821	694	**44**	-	-	-		**0.37**	0.95	0.05	**1**	**2.2**	1.2	**<0.01**	**8**	**0.1**	0.002	<0.0001	0.003	0.006	2.93	0.004	0.172	<0.0001	0.005	0.02	<1	<2	<2	<2	<2	<2	<1	<5	-	-	-	-	-	-	-	-	-	-	-	-	<5000
	BADMS	13/10/2021	BADMS	ES2136906	450	**10**	-	-	-		0.01	0.1	<0.01	**0.1**	**0.7**	0.6	**<0.01**	**9**	**0.05**	<0.001	<0.0001	<0.001	<0.001	0.64	<0.001	0.466	<0.0001	0.001	0.011	<1	<2	<2	<2	<2	<2	<1	<5	-	-	-	-	-	-	-	-	-	-	-	-	<5000
		9/11/2021	BADMS	ES2140480	742	**23**	-	-	-		**0.09**	0.11	<0.01	**0.11**	**1.1**	1	**0.01**	**8**	**0.12**	0.001	<0.0001	<0.001	0.002	1.25	<0.001	0.179	<0.0001	0.003	<0.005	<1	<2	<2	<2	<2	<2	<1	<5	-	-	-	-	-	-	-	-	-	-	-	-	<5000
		7/12/2021	BADMS	ES2144579	492	**28**	88[#3]	88[#3]	-		**0.06**	0.17	<0.01	**0.17**	**1.6**	1.4	**0.03**	**11**	**0.33**	0.002	<0.0001	0.002	<0.001	3.08	0.002	0.271	<0.0001	<0.001	0.007	<1	<2	<2	<2	<2	<2	<1	<5	-	-	-	-	-	-	-	-	-	-	-	-	<5000
		28/06/2022	BADMS	ES2222658	924	**7**	-	-	-		**0.13**	0.13	<0.01	**0.13**	**0.8**	0.7	**<0.01**	**5**	**0.06**	<0.001	<0.0001	<0.001	0.001	1.12	<0.001	0.589	<0.0001	<0.001	<0.005	<1	<2	<2	<2	<2	<2	<1	<5	-	-	-	-	-	-	-	-	-	-	-	-	<5000
		21/07/2022	BADMS	ES2225821	658	**32**	-	-	-		**0.38**	0.81	0.04	**0.85**	**2**	1.2	**<0.01**	**2**	**0.09**	0.001	<0.0001	0.002	0.005	2.41	0.002	0.179	<0.0001	0.004	0.024	<1	<2	<2	<2	<2	<2	<1	<5	-	-	-	-	-	-	-	-	-	-	-	-	<5000
	BADUS	7/04/2021	BADUS	ES2112843	460	**14**	-	-	-	143	**0.02**	0.13	<0.01	**0.13**	**1.3**	1.2	**0.06**	**4**	**0.22**	0.002	<0.0001	0.001	0.003	1.31	<0.001	0.242	<0.0001	0.002	0.006	<1	<2	<2	<2	<2	<2	<1	<5	<20	<20	<100	<100	<100	<100	<100	<20	<50	<100	<50	<50	<5000
		8/04/2021	M12SWDUP2	785854	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
		10/05/2021	BADUS	ES2117470	792	**46**	-	-	-	212	**0.05**	0.46	0.01	**0.47**	**1.6**	1.1	**0.02**	**4**	**0.23**	0.002	<0.0001	0.002	0.005	3.13	0.002	0.127	<0.0001	0.004	0.015	<1	<2	<2	<2	<2	<2	<1	<5	<20	<20	<100	<100	<100	<100	<100	<20	<50	<100	<50	<50	<5000
		10/06/2021	BADUS	ES2121872	820	**34**	-	-	-	178	**0.03**	0.26	<0.01	**0.26**	**1.1**	0.8	**<0.01**	**3**	**0.16**	<0.001	<0.0001	0.002	0.008	1.47	0.005	0.168	<0.0001	0.002	0.037	<1	<2	<2	<2	<2	<2	<1	<5	<20	<20	<100	<100	<100	<100	<100	<20	<50	<100	<50	<50	<5000
		9/07/2021	BADUS	ES2125418	322	<5	-	-	-	109	<0.01	0.01	<0.01	0.01	0.1	0.1	**<0.01**	**<1**	<0.01	<0.001	<0.0001	<0.001	<0.001	0.21	<0.001	0.045	<0.0001	<0.001	0.005	<1	<2	<2	<2	<2	<2	<1	<5	<20	<20	<100	<100	<100	<100	<100	<20	<50	<100	<50	<50	<5000
		12/08/2021	BADUS	ES2129574	469	**6**	-	-	-	147	<0.01	0.01	<0.01	0.01	0.2	0.2	**<0.01**	**3**	0.02	<0.001	<0.0001	<0.001	<0.001	0.32	<0.001	0.079	<0.0001	<0.001	0.007	<1	<2	<2	<2	<2	<2	<1	<5	<20	<20	<100	<100	<100	<100	<100	<20	<50	<100	<50	<50	<5000
		3/09/2021	BADUS	ES2132112	750	**26**	-	-	-	174	<0.01	1.83	<0.01	**1.83**	**3.6**	1.8	**0.07**	**118**	**0.33**	0.002	<0.0001	<0.001	0.004	1.34	<0.001	0.092	<0.0001	0.001	0.007	<1	<2	<2	<2	<2	<2	<1	<5	<20	<20	<100	<100	<100	<100	<100	<20	<50	<100	<50	<50	6000
		13/10/2021	BADUS	ES2136906	912	**44**	-	-	-	-	**0.07**	0.05	<0.01	**0.05**	**1.2**	1.1	**<0.01**	**17**	**0.16**	0.001	<0.0001	0.001	0.005	1.78	0.003	0.388	<0.0001	0.002	0.023	<1	<2	<2	<2	<2	<2	<1	<5	-	-	-	-	-	-	-	-	-	-	-	-	<5000
		8/11/2021	BADUS	ES2140337	641	**30**	-	-	-	-	**0.12**	3.33	0.14	**3.47**	**6.3**	2.8	**0.43**	**5**	**0.71**	0.002	<0.0001	<0.001	0.006	1.53	0.002	0.246	<0.0001	0.003	0.017	<1	<2	<2	<2	<2	<2	<1	<5	-	-	-	-	-	-	-	-	-	-	-	-	<5000
		7/12/2021	BADUS	ES2144579	556	**18**	100[#3]	*100*[#3]	-	-	**0.09**	0.15	<0.01	**0.15**	**1.6**	1.5	**0.11**	**2**	**0.43**	0.002	<0.0001	<0.001	<0.001	2.31	0.001	0.43	<0.0001	0.002	0.007	<1	<2	<2	<2	<2	<2	<1	<5	-	-	-	-	-	-	-	-	-	-	-	-	<5000
		8/02/2022	BADUS	ES2204223	946	**12**	-	-	-	-	<0.01	<0.01	<0.01	<0.01	**0.7**	0.7	**<0.01**	**15**	**0.08**	<0.001	<0.0001	<0.001	0.005	1.25	<0.001	0.306	<0.0001	0.002	<0.005	<1	<2	<2	<2	<2	<2	<1	<5	-	-	-	-	-	-	-	-	-	-	-	-	<5000
		17/03/2022	BADUS	ES2209565	536	**14**	-	-	-	-	**0.34**	0.34	0.03	**0.37**	**2**	1.6	**0.06**	**6**	**0.22**	0.005	<0.0001	0.002	0.004	1.28	<0.001	0.31	<0.0001	0.004	0.007	<1	<2	<2	<2	<2	<2	<1	<5	-	-	-	-	-	-	-	-	-	-	-	-	<5000
		12/04/2022	SWDUP2	880872	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	0.003	<0.0002	0.004	0.009	-	0.004	-	<0.0001	0.005	0.017	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
		12/04/2022	BADUS	ES2212858	433	**101**	-	-	-	-	**0.08**	0.39	0.01	**0.4**	**2.3**	1.9	**0.15**	**<2**[#2]	**0.49**	0.002	<0.0001	0.004	0.009	5.07	0.004	0.17	<0.0001	0.005	0.02	<1	<2	<2	<2	<2	<2	<1	<5	-	-	-	-	-	-	-	-	-	-	-	-	<5000
		27/05/2022	BADUS	ES2218614	720	**25**	-	-	-	-	**0.05**	0.4	<0.01	**0.4**	**1.4**	1	**<0.01**	**2**	**0.15**	<0.001	<0.0001	<0.001	0.005	1.39	0.002	0.229	<0.0001	0.002	0.028	<1	<2	<2	<2	<2	<2	<1	<5	-	-	-	-	-	-	-	-	-	-	-	-	<5000
		27/06/2022	BADUS	ES2222572	1690	**12**	-	-	-	-	**0.02**	0.54	<0.01	**0.54**	**1.3**	0.8	**<0.01**	**28**	**0.04**	<0.001	<0.0001	<0.001	0.002	0.64	<0.001	0.47	<0.0001	0.002	<0.005	<1	<2	<2	<2	<2	<2	<1	<5	-	-	-	-	-	-	-	-	-	-	-	-	<5000
			SWDUP1	ES2222572	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	<0.001	<0.0001	<0.001	0.001	-	<0.001	-	<0.0001	0.002	<0.005	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
		20/07/2022	BADUS	ES2225657	854	**21**	-	-	-	-	**0.06**	0.8	0.02	**0.82**	**1.7**	0.9	**<0.01**	**1**	**0.09**	<0.001	<0.0001	0.001	0.003	1.86	<0.001	0.273	<0.0001	0.002	0.006	<1	<2	<2	<2	<2	<2	<1	<5	-	-	-	-	-	-	-	-	-	-	-	-	<5000
	COSDS	8/04/2021	COSDS	ES2112843	297	**35**	-	-	-	57	**0.02**	0.12	<0.01	**0.12**	**0.6**	0.5	**<0.01**	**5**	**0.07**	<0.001	<0.0001	0.002	0.002	2.31	0.001	0.135	<0.0001	0.001	0.007	<1	<2	<2	<2	<2	<2	<1	<5	<20	<20	<100	<100	<100	<100	<100	<20	<50	<100	<50	<50	<5000
		10/05/2021	COSDS	ES2117470	866	**428**	-	-	-	93	**0.02**	0.14	<0.01	**0.14**	**1.8**	1.7	**<0.01**	**7**	**0.43**	0.002	<0.0001	0.002	0.01	2.88	0.006	0.211	<0.0001	0.006	0.021	<1	<2	<2	<2	<2	<2	<1	<5	<20	<20	<100	<100	<100	<100	<100	<20	<50	<100	<50	<50	<5000
		10/06/2021	COSDS	ES2121872	478	**23**	-	-	-	81	0.01	0.25	<0.01	**0.25**	**0.6**	0.3	**<0.01**	**2**	**0.05**	<0.001	<0.0001	<0.001	0.001	0.59	<0.001	0.07	<0.0001	<0.001	<0.005	<1	<2	<2	<2	<2	<2	<1	<5	<20	<20	<100	<100	<100	<100	<100	<20	<50	<100	<50	<50	<5000
		9/07/2021	COSDS	ES2125418	646	**10**	-	-	-	140	<0.01	0.2	<0.01	**0.2**	**0.4**	0.2	**<0.01**	**<1**	<0.01	<0.001	<0.0001	<0.001	<0.001	0.76	<0.001	0.072	<0.0001	<0.001	<0.005	<1	<2	<2	<2	<2	<2	<1	<5	<20	<20	<100	<100	<100	<100	<100	<20	<50	<100	<50	<50	<5000
		12/08/2021	COSDS	ES2129574	1160	**12**	-	-	-	230	**0.03**	0.02	<0.01	0.02	0.3	0.3	**<0.01**	**2**	0.02	<0.001	<0.0001	<0.001	<0.001	0.31	<0.001	0.078	<0.0001	<0.001	<0.005	<1	<2	<2	<2	<2	<2	<1	<5	<20	<20	<100	<100	<100	<100	<100	<20	<50	<100	<50	<50	<5000
		3/09/2021	COSDS	ES2132112	824	**23**	-	-	-	163	0.01	0.21	<0.01	**0.21**	**0.4**	0.2	**<0.01**	**<1**	0.02	<0.001	<0.0001	<0.001	0.002	1.03	<0.001	0.047	<0.0001	<0.001	<0.005	<1	<2	<2	<2	<2	<2	<1	<5	<20	<20	<100	<100	<100	<100	<100	<20	<50	<100	<50	<50	<5000
		13/10/2021	SWDUP2	833147	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	<0.001	<0.0002	<0.001	0.004	-	<0.001	-	<0.0001	0.004	0.012	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
		13/10/2021	COSDS	ES2136906	837	**24**	-	-	-	-	**0.02**	0.14	<0.01	**0.14**	**0.6**	0.5	**<0.01**	**6**	**0.05**	<0.001	<0.0001	<0.001	0.002	1.32	<0.001	0.168	<0.0001	0.002	0.007	<1	<2	<2	<2	<2	<2	<1	<5	-	-	-	-	-	-	-	-	-	-	-	-	<5000
		9/11/2021	COSDS	ES2140480	600	**81**	-	-	-	-	**0.05**	0.3	<0.01	**0.3**	**1.2**	0.9	**<0.01**	**2**	**0.11**	0.001	<0.0001	0.003	0.006	3.17	0.003	0.16	<0.0001	0.004	0.011	<1	<2	<2	<2	<2	<2	<1	<5	-	-	-	-	-	-	-	-	-	-	-	-	<5000
		7/12/2021	COSDS	ES2144579	462	**17**	84[#3]	84[#3]	-	-	**0.08**	0.47	0.01	**0.48**	**1.2**	0.7	**<0.01**	**4**	**0.05**	<0.001	<0.0001	<0.001	<0.001	1.43	<0.001	0.4	<0.0001	<0.001	0.006	<1	<2	<2	<2	<2	<2	<1	<5	-	-	-	-	-	-	-	-	-	-	-	-	<5000
		8/02/2022	COSDS	ES2204223	624	**9**	-	-	-	-	**0.02**	0.03	<0.01	0.03	**0.4**	0.4	**<0.01**	**2**	<0.01	<0.001	<0.0001	<0.001	<0.001	0.64	<0.001	0.395	<0.0001	0.001	<0.005	<1	<2	<2	<2	<2	<2	<1	<5	-	-	-	-	-	-	-	-	-	-	-	-	<5000
		17/03/2022	COSDS	ES2209565	382	**22**	-	-	-	-	**0.06**	0.09	<0.01	**0.09**	**1.2**	1.1	**<0.01**	**5**	**0.09**	0.001	<0.0001	<0.001	0.002	2.21	<0.001	0.613	<0.0001	<0.001	<0.005	<1	<2	<2	<2	<2	<2	<1	<5	-	-	-	-	-	-	-	-	-	-	-	-	<5000
		27/05/2022	COSDS	ES2218614	497	**46**	-	-	-	-	**0.04**	0.36	<0.01	**0.36**	**1**	0.6	**<0.01**	**1**	**0.07**	<0.001	<0.0001	<0.001	0.003	1.06	<0.001	0.198	<0.0001	0.002	<0.005	<1	<2	<2	<2	<2	<2	<1	<5	-	-	-	-	-	-	-	-	-	-	-	-	<5000
		27/06/2022	COSDS	ES2222572	1070	**14**	-	-	-	-	**0.06**	0.13	<0.01	**0.13**	**0.7**	0.6	**<0.01**	**9**	**0.04**	<0.001	<0.0001	<0.001	0.002	1.06	<0.001	0.689	<0.0001	0.002	<0.005	<1	<2	<2	<2	<2	<2	<1	<5	-	-	-	-	-	-	-	-	-	-	-	-	<5000
		21/07/2022	COSDS	ES2225821	354	**22**	-	-	-	-	**0.03**	0.16	<0.01	**0.16**	**0.6**	0.4	**<0.01**	**<1**	**0.04**	<0.001	<0.0001	<0.001	0.002	1.66	<0.001	0.207	<0.0001	0.002	0.007	<1	<2	<2	<2	<2	<2	<1	<5	-	-	-	-	-	-	-	-	-	-	-	-	<5000
	COSUS	8/04/2021	COSUS	ES2112843	272	**36**	-	-	-	50	**0.02**	0.13	<0.01	**0.13**	**0.6**	0.5	**<0.01**	**5**	**0.06**	<0.001	<0.0001	<0.001	0.001	0.61	<0.001	0.118	<0.0001	<0.001	<0.005	<1	<2	<2	<2	<2	<2	<1	<5	<20	<20	<100	<100	<100	<100	<100	<20	<50	<100	<50	<50	<5000
		10/05/2021	COSUS	ES2117470	536	**180**	-	-	-	88	**0.02**	0.16	<0.01	**0.16**	**1**	0.8	**<0.01**	**4**	**0.19**	0.003	<0.0001	0.009	0.005	1.68	0.003	0.102	<0.0001	0.006	0.015	<1	<2	<2	<2	<2	<2	<1	<5	<20	<20	<100	<100	<100	<100	<100	<20	<50	<100	<50	<50	<5000
		10/06/2021	COSUS	ES2121872	510	**77**	-	-	-	65	<0.01	0.27	<0.01	**0.27**	**0.6**	0.3	**<0.01**	**1**	0.02	<0.001	<0.0001	<0.001	<0.001	0.44	<0.001	0.049	<0.0001	<0.001	<0.005	<1	<2	<2	<2	<2	<2	<1	<5	<20	<20	<100	<100	<100	<100	<100	<20	<50	<100	<50	<50	<5000
		9/07/2021	COSUS	ES2125418	680	**14**	-	-	-	154	<0.01	0.05	<0.01	**0.05**	0.2	0.2	**<0.01**	**<1**	<0.01	<0.001	<0.0001	<0.001	0.001	0.55	<0.001	0.054	<0.0001	<0.001	0.024	<1	<2	<2	<2	<2	<2	<1	<5	<20	<20	<100	<100	<100	<100	<100	<20	<50	<100	<50	<50	<5000
		12/08/2021	COSUS	ES2129574	1190	<5	-	-	-	226	**0.11**	0.05	<0.01	**0.05**	**0.4**	0.3	**<0.01**	**6**	<0.01	<0.001	<0.0001	<0.001	<0.001	0.31	<0.001	0.282	<0.0001	<0.001	<0.005	<1	<2	<2	<2	<2	<2	<1	<5	<20	<20	<100	<100	<100	<100	<100	<20	<50	<100	<50	<50	7000
		3/09/2021	COSUS	ES2132112	968	**30**	-	-	-	186	0.01	0.16	<0.01	**0.16**	**0.5**	0.3	**<0.01**	**2**	0.01	<0.001	<0.0001	<0.001	0.002	0.85	<0.001	0.042	<0.0001	<0.001	<0.005	<1	<2	<2	<2	<2	<2	<1	<5	<20	<20	<100	<100	<100	<100	<100	<20	<50	<100	<50	<50	5000
		13/10/2021	COSUS	ES2136906	755	**24**	-	-	-	-	**0.06**	0.15	<0.01	**0.15**	**0.8**	0.6	**<0.01**	**15**	**0.04**	<0.001	<0.0001	<0.001	0.002	0.6	<0.001	0.187	<0.0001	<0.001	<0.005	<1	<2	<2	<2	<2	<2	<1	<5	-	-	-	-	-	-	-	-	-	-	-	-	<5000
		9/11/2021	COSUS	ES2140480	588	**94**	-	-	-	-	**0.05**	0.35	<0.01	**0.35**	**1.4**	1.1	**<0.01**	**4**	**0.13**	0.001	<0.0001	0.003	0.006	3.01	0.003	0.197	<0.0001	0.003	0.011	<1	<2	<2	<2	<2	<2	<1	<5	-	-	-	-	-	-	-	-	-	-	-	-	<5000
		7/12/2021	COSUS	ES2144579	457	**17**	200	*200*	-	-	**0.12**	0.29	0.02	**0.31**	**1**	0.7	**<0.01**	**2**	**0.05**	0.001	<0.0001	<0.001	<0.001	0.51	<0.001	0.563	<0.0001	<0.001	<0.005	<1	<2	<2	<2	<2	<2	<1	<5	-	-	-	-	-	-	-	-	-	-	-	-	<5000

	Inorganics		Biological		Acidity & Alkalinity		Nutrients									Metals										BTEXN							TRH - NEPM 2013							TRH - NEPM 1999					TPH
	Total Dissolved Solids	Total Suspended Solids	E.coli	Thermotolerant (Faecal) Coliforms	Hardness as CaCO3	Hardness as CaCO3 (Filtered)	Ammonia as N	Nitrate (as N)	Nitrite (as N)	Nitrogen (Total Oxidised) (as N)	Nitrogen (Total)	Kjeldahl Nitrogen Total	Reactive Phosphorus as P	Chlorophyll a	Phosphorus (Total)	Arsenic	Cadmium	Chromium (III+VI)	Copper	Iron	Lead	Manganese	Mercury	Nickel	Zinc	Benzene	Toluene	Ethylbenzene	Xylene (o)	Xylene (m & p)	Xylene Total	BTEX (Sum of Total) - Lab Calc	Naphthalene (BTEXN suite)	F1 (C6-C10 minus BTEX)	C6-C10 Fraction	F2 (>C10-C16 minus Naphthalene)	>C10-C16 Fraction	F3 (>C16-C34 Fraction)	F4 (>C34-C40 Fraction)	>C10-C40 (Sum of Total)	C6-C9 Fraction	C10-C14 Fraction	C15-C28 Fraction	C29-C36 Fraction	C10-C36 (Sum of Total)	Oil & Grease
	mg/L	mg/L	orgs/100mL	orgs/100mL	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L
EQL	10	5	1	1	1	1	0.01	0.01	0.01	0.01	0.1	0.1	0.01	1	0.01	0.001	0.0001	0.001	0.001	0.05	0.001	0.001	0.0001	0.001	0.005	1	2	2	2	2	2	1	5	20	20	100	100	100	100	100	20	50	100	50	50	5000
ADWG 2011 Health (v3.7 updated 2022)								11.29[#1]	0.91[#2]							0.01	0.002		2		0.01	0.5	0.001	0.02		1	800	300			600															
ANZECC 2000 - Lowland Rivers (NSW coastal rivers)		**6**					**0.01166[#3]**			**0.04**	**0.35**		**0.008**	**0.003**	**0.025**																															
ANZECC 2000 - Stock Watering	*5000[#4]*			*100*				*90[#5]*	*9.1[#6]*							*0.5*	*0.01*	*1*	*1[#7]*		*0.1*		*0.002*	*1*	*20*																			
ANZG (2018) - FW - 95% (updated 26 July 2021)							*0.9[#8]*	*2.4[#9]*								*0.013[#10]*	0.0002	*0.001[#11]*	0.0014		0.0034	1.9	0.0006	0.011	0.008	950	180	80	350				16												

Package	Location Code	Sample Date	Field ID	Lab Report Number																																											
		8/02/2022	COSUS	ES2204223	606	**12**	-	-	-	-	**0.04**	0.06	<0.01	**0.06**	**0.5**	0.4	**<0.01**	**2**	0.02	<0.001	<0.0001	<0.001	0.001	0.7	<0.001	0.438	<0.0001	0.007	<0.005	<1	<2	<2	<2	<2	<2	<1	<5	-	-	-	-	-	-	-	-	-	-	<5000
		17/03/2022	COSUS	ES2209565	401	**34**	-	-	-	-	**0.06**	0.11	<0.01	**0.11**	**1.3**	1.2	**<0.01**	**6**	**0.12**	0.001	<0.0001	0.001	0.002	2.58	<0.001	0.635	<0.0001	0.002	<0.005	<1	<2	<2	<2	<2	<2	<1	<5	-	-	-	-	-	-	-	-	-	-	<5000
		27/05/2022	COSUS	ES2218614	537	**32**	-	-	-	-	**0.04**	0.38	<0.01	**0.38**	**1.2**	0.8	**<0.01**	**1**	**0.07**	0.001	<0.0001	0.001	0.004	1.56	0.001	0.194	<0.0001	0.002	0.008	<1	<2	<2	<2	<2	<2	<1	<5	-	-	-	-	-	-	-	-	-	-	<5000
		27/06/2022	COSUS	ES2222572	1200	**9**	-	-	-	-	**0.03**	0.12	<0.01	**0.12**	**0.6**	0.5	**<0.01**	**9**	0.02	<0.001	<0.0001	<0.001	0.001	0.63	<0.001	0.478	<0.0001	0.001	<0.005	<1	<2	<2	<2	<2	<2	<1	<5	-	-	-	-	-	-	-	-	-	-	<5000
		21/07/2022	COSUS	ES2225821	316	**15**	-	-	-	-	0.01	0.15	<0.01	**0.15**	**0.4**	0.3	**<0.01**	**2**	**0.04**	<0.001	<0.0001	<0.001	0.001	0.97	<0.001	0.165	<0.0001	0.001	<0.005	<1	<2	<2	<2	<2	<2	<1	<5	-	-	-	-	-	-	-	-	-	-	<5000
		3/03/2023	SWDUP2	969408	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	0.001	<0.0002	<0.001	0.001	-	<0.001	-	<0.0001	0.001	<0.005	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-

Statistical Summary

Number of Results	206	202	13	17	4	63	202	202	202	202	202	202	202	201	202	226	226	226	226	203	226	203	226	226	226	202	202	202	202	202	202	202	186	63	63	63	63	63	63	63	63	63	63	63	63	202
Number of Detects	206	168	13	17	4	63	164	152	51	152	201	201	79	171	196	120	2	85	173	203	80	203	0	164	130	0	1	0	0	0	0	1	0	0	0	0	0	2	1	2	0	0	2	2	2	8
Minimum Concentration	54	<5	6	6	46	21	<0.01	<0.01	<0.01	<0.01	0.1	0.1	<0.01	<1	<0.01	<0.001	<0.0001	<0.001	<0.001	0.08	<0.001	0.025	<0.0001	<0.001	<0.005	<1	<2	<2	<2	<2	<2	<1	<5	<20	<20	<100	<100	<100	<100	<100	<20	<50	<100	<50	<50	<5000
Minimum Detect	54	5	6	6	46	21	0.01	0.01	0.01	0.01	0.1	0.1	0.01	1	0.01	0.001	0.0002	0.001	0.001	0.08	0.001	0.025	ND	0.001	0.005	ND	4	ND	ND	ND	ND	4	ND	ND	ND	ND	ND	370	250	370	ND	ND	230	210	440	5000
Maximum Concentration	4830	4700	440	700	222	975	1.12	12.8	0.45	12.9	21.2	21.2	1.52	207	4.46	0.012	0.0007	0.037	0.133	44.2	0.07	15.7	<0.0001	0.215	0.828	<1	4	<2	<2	<2	<2	4	<5	<20	<20	<100	<100	690	250	940	<20	<50	370	460	830	11000
Maximum Detect	4830	4700	440	700	222	975	1.12	12.8	0.45	12.9	21.2	21.2	1.52	207	4.46	0.012	0.0007	0.037	0.133	44.2	0.07	15.7	ND	0.215	0.828	ND	4	ND	ND	ND	ND	4	ND	ND	ND	ND	ND	690	250	940	ND	ND	370	460	830	11000
Average Concentration	645	71	109	140	104	178	0.07	0.68	0.016	0.69	2.1	1.4	0.085	14	0.26	0.0012	0.000056	0.0017	0.0046	2.6	0.002	0.43	0.00005	0.0032	0.015	0.5	1	1	1	1	1	0.52	2.5	10	10	50	50	65	53	69	10	25	58	35	44	2658
Median Concentration	496.5	14	86	84	73.5	147	0.03	0.105	0.005	0.11	1.3	1.1	0.005	5	0.1	0.001	0.00005	0.0005	0.003	1.39	0.0005	0.202	0.00005	0.002	0.006	0.5	1	1	1	1	1	0.5	2.5	10	10	50	50	50	50	50	10	25	50	25	25	2500
Standard Deviation	648	366	111	190	80	181	0.14	1.6	0.046	1.6	3	2.4	0.22	26	0.5	0.0013	0.000045	0.0037	0.011	4.7	0.0061	1.3	0	0.015	0.059	0	0.21	0	0	0	0	0.25	0	0	0	0	0	90	25	119	0	0	46	59	113	861

The Baseline monitoring period for M12 - West and M12 - Central ended in July 2022, and M12 - East in June 2023

Env Stds Comments

#1:Guideline value calculated by dividing Nitrate (as Nitrate) value (50 mg/L) by 4.427
#2:Guideline value calculated by dividing Nitrite (as Nitrite) value (0.3 mg/L) by molecular weight (3.2967033).
#3:Calculated from ammonia NH4
#4:Loss of production expected at 5000 mg/L for beef cattle, 4000 mg/L dairy cattle, 10000 mg/L sheep, 6000 mg/L horses and pigs, 3000 mg/L poultry
#5:400 mg/L divided by molecular weight, stock may tolerate higher nitrate concentrations if nitrate in feed are not high, water containing >1500 mg/L (as NO3) is likely to be toxic.
#6:30 mg/L divided by molecular weight
#7:>0.5 mg/L hazardous to sheep, >1 mg/L for cattle, >5 mg/L pigs and poulty
#8:Measured as NH3-N at pH 8
#9:Values taken from "Updating nitrate toxicity effects on freshwater aquatic species, 2013"
#10:In absence of total As guideline, As (V) guideline has been adopted.
#11:In absence of total Cr guideline, Cr (VI) guideline has been adopted.

Data Comments

#1 Quantification of linear and branched isomers has been conducted as a single total response using the relative response factor for the corresponding linear/branched standard.
#2 Reported Analyte LOR is higher than Requested Analyte LOR
#3 Result value is an approximate.

| | | | | | PAHs - standard 16 | | | | | | | | | | | | | | | | | PAHs - extended | | | | | Phenols - Halogenated | | | | | | | Phenols - Non-Halogenated | | | | | OC Pesticides | | | | | | | | | | | | | | | | |

| | | | | | PAHs - standard 16 | | | | | | | | | | | | | | | | | PAHs - extended | | | | | Phenols - Halogenated | | | | | | | Phenols - Non-Halogenated | | | | | OC Pesticides | | | | | | | | | | | | | | | | |

| | | | | | PAHs - standard 16 | | | | | | | | | | | | | | | | | | PAHs - extended | | | | | Phenols - Halogenated | | | | | | | Phenols - Non-Halogenated | | | | | OC Pesticides | | | | | | | | | | | | | | | | | |

| | | | | PAHs - standard 16 | | | | | | | | | | | | | | | | | | PAHs - extended | | | | | Phenols - Halogenated | | | | | | | Phenols - Non-Halogenated | | | | | OC Pesticides | | | | | | | | | | | | | | | | | |

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| | | | | | Chlorinated Hydrocarbons | | | | |

| | | | | | Chlorinated Hydrocarbons | | | | |

| | | | | | Chlorinated Hydrocarbons | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | Fungicides | Halogenated Hydrocarbons | | PCBs | | | | | | | SVOCs | VOCs | | | | | | | | | | | | | | | | | | |

| | | | | Chlorinated Hydrocarbons | | | |

					PFAS - Perfluoroalkyl Carboxylic Acids											PFAS - Perfluoroalkyl Sulfonic Acids								PFAS - Perfluoroalkyl Sulfonamide							PFAS - Fluorotelomer Sulfonic Acids				PFAS - Sums				
					Perfluorobutanoic acid (PFBA)	Perfluoropentanoic acid (PFPeA)	Perfluorohexanoic acid (PFHxA)	Perfluoroheptanoic acid (PFHpA)	Perfluorooctanoic acid (PFOA)	Perfluorononanoic acid (PFNA)	Perfluorodecanoic acid (PFDA)	Perfluoroundecanoic acid (PFUnDA)	Perfluorododecanoic acid (PFDoDA)	Perfluorotridecanoic acid (PFTrDA)	Perfluorotetradecanoic acid (PFTeDA)	Perfluoropropanesulfonic acid (PFPrS)	Perfluorobutane sulfonic acid (PFBS)	Perfluoropentane sulfonic acid (PFPeS)	Perfluorohexane sulfonic acid (PFHxS)	Perfluoroheptane sulfonic acid (PFHpS)	Perfluorooctane sulfonic acid (PFOS)	Perfluorononanesulfonic acid (PFNS)	Perfluorodecanesulfonic acid (PFDS)	Perfluorooctane sulfonamide (FOSA)	N-Methyl perfluorooctane sulfonamide (MeFOSA)	N-Ethyl perfluorooctane sulfonamide (EtFOSA)	N-Methyl perfluorooctane sulfonamidoacetic acid (MeFOSAA)	N-Methyl perfluorooctane sulfonamidoethanol (MEFOSE)	N-Ethyl perfluorooctane sulfonamidoethanol (EtFOSE)	N-Ethyl perfluorooctane sulfonamidoacetic acid (EtFOSAA)	4:2 Fluorotelomer sulfonic acid (4:2 FTS)	6:2 Fluorotelomer Sulfonate (6:2 FTS)	8:2 Fluorotelomer sulfonic acid (8:2 FTS)	10:2 Fluorotelomer sulfonic acid (10:2 FTS)	Sum of PFHxS and PFOS	Sum of US EPA PFAS (PFOS + PFOA)*	PFAS (Sum of Total)	Sum of enHealth PFAS (PFHxS + PFOS + PFOA)*	PFAS (Sum of Total)(WA DER List)
					µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L
EQL					0.1	0.02	0.02	0.02	0.01	0.02	0.02	0.02	0.02	0.02	0.05	0.01	0.02	0.02	0.01	0.02	0.01	0.01	0.02	0.02	0.05	0.05	0.02	0.05	0.05	0.02	0.05	0.05	0.05	0.05	0.05	0.01	0.01	0.01	0.01	0.01
PFAS NEMP 2.0 2020 Freshwater - 95% - slightly to moderately disturbed systems									220												0.13																			
PFAS NEMP 2.0 2020 Health Drinking Water									**0.56**										**0.07**		**0.07**															**0.07**				
PFAS NEMP 2.0 2020 Recreational Water									10										2		2															2				
Package	**Location Code**	**Sample Date**	**Field ID**	**Lab Report Number**																																					
M12 - West	BADDS	08-Apr-21	BADDS	ES2112843	<0.1	<0.02	<0.02	<0.02	0.01	<0.02	<0.02	<0.02	<0.02	<0.02	<0.05	-	<0.02	<0.02	<0.02	<0.02	<0.01	-	<0.02	<0.02	<0.05	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	<0.05	<0.05	<0.05	<0.01	-	0.01	-	0.01
	BADMS	28-Jun-22	BADMS	ES2222658	<0.1	<0.02	<0.02	<0.02	<0.01	<0.02	<0.02	<0.02	<0.02	<0.02	<0.05	-	<0.02	<0.02	<0.01	<0.02	<0.01	-	<0.02	<0.02	<0.05	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	<0.05	<0.05	<0.05	<0.01	-	<0.01	-	<0.01
	BADUS	07-Apr-21	BADUS	ES2112843	<0.1	0.03	0.03	<0.02	0.01	<0.02	<0.02	<0.02	<0.02	<0.02	<0.05	-	<0.02	<0.02	<0.02	<0.02	<0.01	-	<0.02	<0.02	<0.05	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	<0.05	<0.05	<0.05	<0.01	-	0.07	-	0.07
		08-Apr-21	M12SWDUP2	785854	<0.05	<0.05	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.01	<0.05	<0.01	<0.01	<0.01	<0.01	<0.1	<0.01	<0.05
		10-May-21	BADUS	ES2117470	<0.1	<0.02	<0.02	<0.02	<0.01	<0.02	<0.02	<0.02	<0.02	<0.02	<0.05	-	<0.02	<0.02	<0.02	<0.02	<0.01	-	<0.02	<0.02	<0.05	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	<0.05	<0.05	<0.05	<0.01	-	<0.01	-	<0.01
	COSDS	08-Apr-21	COSDS	ES2112843	<0.1	<0.02	<0.02	<0.02	<0.01	<0.02	<0.02	<0.02	<0.02	<0.02	<0.05	-	<0.02	<0.02	<0.02	<0.02	<0.01	-	<0.02	<0.02	<0.05	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	<0.05	<0.05	<0.05	<0.01	-	<0.01	-	<0.01
		10-May-21	COSDS	ES2117470	<0.1	<0.02	<0.02	<0.02	<0.01	<0.02	<0.02	<0.02	<0.02	<0.02	<0.05	-	<0.02	<0.02	<0.02	<0.02	<0.01	-	<0.02	<0.02	<0.05	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	<0.05	<0.05	<0.05	<0.01	-	<0.01	-	<0.01
	COSUS	08-Apr-21	COSUS	ES2112843	<0.1	<0.02	<0.02	<0.02	<0.01	<0.02	<0.02	<0.02	<0.02	<0.02	<0.05	-	<0.02	<0.02	<0.02	<0.02	<0.01	-	<0.02	<0.02	<0.05	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	<0.05	<0.05	<0.05	<0.01	-	<0.01	-	<0.01
		10-May-21	COSUS	ES2117470	<0.1	<0.02	<0.02	<0.02	<0.01	<0.02	<0.02	<0.02	<0.02	<0.02	<0.05	-	<0.02	<0.02	<0.02	<0.02	<0.01	-	<0.02	<0.02	<0.05	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	<0.05	<0.05	<0.05	<0.01	-	<0.01	-	<0.01
M12 - Central	KEMDS	08-Apr-21	KEMDS	ES2112843	<0.1	<0.02	<0.02	<0.02	<0.01	<0.02	<0.02	<0.02	<0.02	<0.02	<0.05	-	<0.02	<0.02	<0.02	<0.02	<0.01	-	<0.02	<0.02	<0.05	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	<0.05	<0.05	<0.05	<0.01	-	<0.01	-	<0.01
		10-May-21	KEMDS	ES2117470	<0.1	<0.02	<0.02	<0.02	<0.01	<0.02	<0.02	<0.02	<0.02	<0.02	<0.05	-	<0.02	<0.02	<0.02	<0.02	<0.01	-	<0.02	<0.02	<0.05	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	<0.05	<0.05	<0.05	<0.01	-	<0.01	-	<0.01
	KEMUS	07-Apr-21	KEMUS	ES2112843	<0.1	0.02	0.03	<0.02	0.03	<0.02	<0.02	<0.02	<0.02	<0.02	<0.05	-	<0.02	<0.02	<0.02	<0.02	0.02	-	<0.02	<0.02	<0.05	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	<0.05	<0.05	<0.05	0.02	-	0.1	-	0.1
		10-May-21	M12SWDUP2	795054	<0.05	0.01	0.02	<0.01	0.02[#1]	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	0.01[#1]	<0.01	<0.01	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.01	<0.05	<0.01	<0.01	0.01	0.03	<0.1	0.03	0.06
		10-May-21	KEMUS	ES2117470	<0.1	<0.02	<0.02	<0.02	0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.05	-	<0.02	<0.02	<0.02	<0.02	<0.01	-	<0.02	<0.02	<0.05	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	<0.05	<0.05	<0.05	<0.01	-	0.02	-	0.02
			M12SWDUP	ES2117470	<0.1	<0.02	<0.02	<0.02	0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.05	-	<0.02	<0.02	<0.02	<0.02	<0.01	-	<0.02	<0.02	<0.05	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	<0.05	<0.05	<0.05	<0.01	-	0.02	-	0.02
	SOUDS	08-Apr-21	SOUDS	ES2112843	<0.1	0.02	0.04	<0.02	0.01	<0.02	<0.02	<0.02	<0.02	<0.02	<0.05	-	<0.02	<0.02	<0.02	<0.02	0.01	-	<0.02	<0.02	<0.05	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	<0.05	<0.05	<0.05	0.01	-	0.08	-	0.08
		10-May-21	SOUDS	ES2117470	<0.1	<0.02	0.02	<0.02	<0.01	<0.02	<0.02	<0.02	<0.02	<0.02	<0.05	-	<0.02	<0.02	<0.02	<0.02	<0.01	-	<0.02	<0.02	<0.05	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	<0.05	<0.05	<0.05	<0.01	-	0.02	-	0.02
	SOUUS	08-Apr-21	SOUUS	ES2112843	<0.1	0.02	0.04	<0.02	0.01	<0.02	<0.02	<0.02	<0.02	<0.02	<0.05	-	<0.02	<0.02	<0.02	<0.02	0.01	-	<0.02	<0.02	<0.05	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	<0.05	<0.05	<0.05	0.01	-	0.08	-	0.08
		10-May-21	SOUUS	ES2117470	<0.1	<0.02	0.02	<0.02	<0.01	<0.02	<0.02	<0.02	<0.02	<0.02	<0.05	-	<0.02	<0.02	<0.02	<0.02	<0.01	-	<0.02	<0.02	<0.05	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	<0.05	<0.05	<0.05	<0.01	-	0.02	-	0.02
M12 - East	HINDS	08-Apr-21	HINDS	ES2112843	<0.1	<0.02	<0.02	<0.02	<0.01	<0.02	<0.02	<0.02	<0.02	<0.02	<0.05	-	<0.02	<0.02	<0.02	<0.02	<0.01	-	<0.02	<0.02	<0.05	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	<0.05	<0.05	<0.05	<0.01	-	<0.01	-	<0.01
		10-May-21	HINDS	ES2117470	<0.1	<0.02	<0.02	<0.02	<0.01	<0.02	<0.02	<0.02	<0.02	<0.02	<0.05	-	<0.02	<0.02	<0.02	<0.02	<0.01	-	<0.02	<0.02	<0.05	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	<0.05	<0.05	<0.05	<0.01	-	<0.01	-	<0.01
	HINUS	07-Apr-21	HINUS	ES2112843	<0.1	<0.02	<0.02	<0.02	<0.01	<0.02	<0.02	<0.02	<0.02	<0.02	<0.05	-	<0.02	<0.02	<0.02	<0.02	<0.01	-	<0.02	<0.02	<0.05	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	<0.05	<0.05	<0.05	<0.01	-	<0.01	-	<0.01
		10-May-21	HINUS	ES2117470	<0.1	<0.02	<0.02	<0.02	<0.01	<0.02	<0.02	<0.02	<0.02	<0.02	<0.05	-	<0.02	<0.02	<0.02	<0.02	<0.01	-	<0.02	<0.02	<0.05	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	<0.05	<0.05	<0.05	<0.01	-	<0.01	-	<0.01
	ROPDS	07-Apr-21	ROPUS	ES2112843	0.1	0.47	0.47	0.15	0.18	<0.02	0.02	<0.02	<0.02	<0.02	<0.05	-	<0.02	<0.02	<0.02	<0.02	<0.01	-	<0.02	<0.02	<0.05	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	<0.05	<0.05	<0.05	<0.01	-	1.39	-	1.37
		10-May-21	ROPDS	ES2117470	<0.1	0.04	0.05	0.03	0.05	<0.02	<0.02	<0.02	<0.02	<0.02	<0.05	-	<0.02	<0.02	<0.02	<0.02	<0.01	-	<0.02	<0.02	<0.05	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	<0.05	<0.05	<0.05	<0.01	-	0.17	-	0.17
	ROPUS	07-Apr-21	M12SWDUP	ES2112843	<0.1	<0.02	<0.02	<0.02	<0.01	<0.02	<0.02	<0.02	<0.02	<0.02	<0.05	-	<0.02	<0.02	<0.02	<0.02	<0.01	-	<0.02	<0.02	<0.05	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	<0.05	<0.05	<0.05	<0.01	-	<0.01	-	<0.01
			ROPDS	ES2112843	<0.1	<0.02	<0.02	<0.02	<0.01	<0.02	<0.02	<0.02	<0.02	<0.02	<0.05	-	<0.02	<0.02	<0.02	<0.02	<0.01	-	<0.02	<0.02	<0.05	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	<0.05	<0.05	<0.05	<0.01	-	<0.01	-	<0.01
		10-May-21	ROPUS	ES2117470	<0.1	<0.02	<0.02	<0.02	<0.01	<0.02	<0.02	<0.02	<0.02	<0.02	<0.05	-	<0.02	<0.02	<0.02	<0.02	<0.01	-	<0.02	<0.02	<0.05	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	<0.05	<0.05	<0.05	<0.01	-	<0.01	-	<0.01

Statistical Summary

Number of Results	28	28	28	28	28	28	28	28	28	28	28	2	28	28	28	28	28	2	28	28	28	28	28	28	28	28	28	28	28	28	28	28	28	2	28	2	28
Number of Detects	1	7	9	2	10	0	1	0	0	0	0	0	0	0	0	0	4	0	0	0	0	0	0	0	0	0	0	0	0	0	4	1	11	1	12		
Minimum Concentration	<0.05	0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.02	<0.05	<0.05	<0.02	<0.05	<0.05	<0.05	<0.02	<0.01	<0.05	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01
Minimum Detect	0.1	0.01	0.02	0.03	0.01	ND	0.02	ND	ND	ND	ND	ND	ND	ND	ND	ND	0.01	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	0.01	0.03	0.01	0.03	0.01		
Maximum Concentration	0.1	0.47	0.47	0.15	0.18	<0.02	0.02	<0.02	<0.02	<0.02	<0.05	<0.01	<0.02	<0.02	<0.02	<0.02	0.02	<0.01	<0.02	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	0.02	0.03	1.39	0.03	1.37		
Maximum Detect	0.1	0.47	0.47	0.15	0.18	ND	0.02	ND	ND	ND	ND	ND	ND	ND	ND	ND	0.02	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	0.02	0.03	1.39	0.03	1.37		
Average Concentration	0.05	0.03	0.032	0.015	0.016	0.0096	0.01	0.0096	0.0096	0.0096	0.024		0.0096	0.0096	0.0095	0.0096	0.0061		0.0096	0.011	0.025	0.025	0.011	0.025	0.025	0.011	0.024	0.025	0.024	0.024	0.0061		0.077		0.076		
Geometric Average	0.049	0.014	0.015	0.011	0.0084	0.0095	0.0098	0.0095	0.0095	0.0095	0.022		0.0095	0.0095	0.0093	0.0095	0.0057		0.0095	0.011	0.025	0.025	0.011	0.025	0.025	0.011	0.022	0.025	0.022	0.022	0.0057		0.015		0.015		
Median Concentration	0.05	0.01	0.01	0.01	0.005	0.01	0.01	0.01	0.01	0.01	0.025	0.005	0.01	0.01	0.01	0.01	0.005	0.005	0.01	0.01	0.025	0.025	0.01	0.025	0.025	0.01	0.025	0.025	0.025	0.025	0.005	0.0175	0.005	0.0175	0.005		
Standard Deviation	0.012	0.087	0.087	0.027	0.034	0.0013	0.0024	0.0013	0.0013	0.0013	0.0052		0.0013	0.0013	0.0016	0.0013	0.0031		0.0013	0.0039	0	0	0.0039	0	0	0.0039	0.0052	0	0.0052	0.0052	0.0031		0.26		0.26		
Geometric Standard Deviation	1.3	2.2	2.4	1.8	2.4	1.2	1.3	1.2	1.2	1.2	1.5		1.2	1.2	1.2	1.2	1.4		1.2	1.3			1.3			1.3	1.5		1.5	1.5	1.4	3.6	4.4	3.6	4.4		

*A Non-Detect multiplier of 0.5 has been applied.

Data Comments

#1 Quantification of linear and branched isomers has been conducted as a single total response using the relative response factor for the corresponding linear/branched standard.

						Inorganics		Biological	Acidity & Alkalinity	Nutrients								Metals										BTEXN								TPH
						Total Dissolved Solids	Total Suspended Solids	Thermotolerant (Faecal) Coliforms	Hardness as CaCO3	Ammonia as N	Nitrate (as N)	Nitrite (as N)	Nitrogen (Total Oxidised) (as N)	Nitrogen (Total)	Kjeldahl Nitrogen Total	Reactive Phosphorus as P	Chlorophyll a	Phosphorus (Total)	Arsenic	Cadmium	Chromium (III+VI)	Copper	Iron	Lead	Manganese	Mercury	Nickel	Zinc	Benzene	Toluene	Ethylbenzene	Xylene (o)	Xylene (m & p)	Xylene Total	BTEX (Sum of Total) - Lab Calc	Naphthalene (BTEXN suite)	Oil & Grease
						mg/L	mg/L	orgs/100mL	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L
EQL						10	5	1	1	0.01	0.01	0.01	0.01	0.1	0.1	0.01	1	0.01	0.001	0.0001	0.001	0.001	0.05	0.001	0.001	0.0001	0.001	0.005	1	2	2	2	2	2	1	5	5000
ADWG 2011 Health (v3.7 updated 2022)											11.29[#1]	0.91[#2]							0.01	0.002		2		0.01	0.5	0.001	0.02		1	800	300			600			
ANZECC 2000 - Lowland Rivers (NSW coastal rivers)							**6**			**0.0116**[#3]			**0.04**	**0.35**		**0.008**	**0.003**	**0.025**																		
ANZECC 2000 - Stock Watering						*5000*[#4]		*100*			*90*[#5]	*9.1*[#6]							*0.5*	*0.01*	*1*	*1*[#7]		*0.1*		*0.002*	*1*	*20*								
ANZG (2018) - FW - 95% (updated 26 July 2021)										0.9[#8]	2.4[#9]								0.013[#10]	0.0002	0.001[#11]	0.0014		0.0034	1.9	0.0006	0.011	0.008	950	180	80	350				16	

Package	Location	Sample Date	Field ID	Sample Type	Lab report Number																																
M12 - Central	KEMDS	16/08/2022	KEMDS	Normal	ES2229137	1610	**6**	-	-	**0.02**	3.57	0.01	**3.58**	**4.7**	1.1	**0.28**	**2**	**0.32**	<0.001	<0.0001	<0.001	0.004	0.26	<0.001	0.098	<0.0001	0.002	0.011	<1	<2	<2	<2	<2	<2	<1	<5	<5000
		20/09/2022	KEMDS	Normal	ES2233731	724	**14**	-	-	**0.03**	2.08	0.01	**2.09**	**3.4**	1.3	**0.28**	**14**	**0.4**	<0.001	<0.0001	0.001	0.005	1.38	<0.001	0.1	<0.0001	0.003	0.012	<1	<2	<2	<2	<2	<2	<1	<5	<5000
		19/10/2022	KEMDS	Normal	ES2237608	1160	**15**	-	-	**0.04**	2.4	0.02	**2.42**	**4.1**	1.7	**0.33**	**2**	**0.45**	0.001	<0.0001	<0.001	0.004	0.53	<0.001	0.123	<0.0001	0.002	0.01	<1	<2	<2	<2	<2	<2	<1	<5	<5000
		13/12/2022	KEMDS	Normal	ES2245059	2390	**19**	-	-	**0.05**	1.98	0.04	**2.02**	**3.2**	1.2	**0.28**	**15**	**0.35**	0.001	<0.0001	<0.001	0.002	0.4	<0.001	0.146	<0.0001	0.002	0.006	<1	<2	<2	<2	<2	<2	<1	<5	<5000
		17/01/2023	KEMDS	Normal	ES2301422	859	<5	37	-	**0.03**	1	0.02	**1.02**	**1.4**	0.4	**0.48**	**<1**	**0.48**	0.001	<0.0001	<0.001	0.003	0.16	<0.001	0.081	<0.0001	0.002	0.005	<1	<2	<2	<2	<2	<2	<1	<5	<5000
		17/01/2023	SWDUP1	Field_D	ES2301422	-	-	-	-	-	-	-	-	-	-	-	-	-	<0.001	<0.0001	<0.001	0.002	-	<0.001	-	<0.0001	0.002	0.006	-	-	-	-	-	-	-	-	-
		7/02/2023	KEMDS	Normal	ES2304061	820	**8**	-	-	**0.09**	0.63	0.01	**0.64**	**1.7**	1.1	**0.4**	**6**	**0.56**	0.002	<0.0001	<0.001	0.004	0.74	<0.001	0.114	<0.0001	0.002	<0.005	<1	<2	<2	<2	<2	<2	<1	<5	<5000
		2/03/2023	KEMDS	Normal	ES2307008	786	**6**	-	-	**0.04**	2.44	0.02	**2.46**	**3.4**	0.9	**0.44**	**6**	**0.58**	0.002	<0.0001	<0.001	0.004	0.45	<0.001	0.05	<0.0001	0.002	0.008	<1	<2	<2	<2	<2	<2	<1	-	<5000
		5/04/2023	SWDUP2	Interlab_D	979752	-	-	-	-	-	-	-	-	-	-	-	-	-	<0.01	<0.002	<0.01	<0.01	-	<0.01	-	<0.001	<0.01	<0.05	-	-	-	-	-	-	-	-	-
		5/04/2023	KEMDS	Normal	ES2311425	1170	**7**	-	312	0.01	3.5	0.01	**3.51**	**4.6**	1.1	**0.56**	**2**	**0.69**	<0.001	<0.0001	<0.001	0.003	0.5	<0.001	0.021	<0.0001	0.002	0.007	<1	<2	<2	<2	<2	<2	<1	-	<5000
		1/05/2023	KEMDS	Normal	ES2314384	480	**48**	-	-	**0.04**	3.23	0.02	**3.25**	**4.6**	1.4	**0.45**	**3**	**0.71**	0.002	0.0003	0.002	0.008	1.88	0.002	0.036	<0.0001	0.003	0.036	<1	5	<2	<2	<2	<2	5	-	<5000
		6/06/2023	KEMDS	Normal	ES2319028	1200	<5	-	-	**0.1**	4.74	0.01	**4.75**	**6**	1.3	**0.43**	**<1**	**0.7**	<0.001	<0.0001	<0.001	0.004	0.17	<0.001	0.05	<0.0001	0.002	0.016	<1	<2	<2	<2	<2	<2	<1	-	<5000
		4/07/2023	KEMDS	Normal	ES2322320	1630	**6**	-	-	0.01	9.02	<0.01	**9.02**	**11.1**	2.1	**0.81**	**16**	**0.86**	<0.001	<0.0001	<0.001	0.004	0.16	<0.001	0.016	<0.0001	0.002	0.015	<1	<2	<2	<2	<2	<2	<1	-	<5000
		8/08/2023	KEMDS	Normal	ES2326795	1540	<5	-	-	**0.04**	3.5	<0.01	**3.5**	**4.4**	0.9	**0.39**	**20**	**0.34**	<0.001	<0.0001	<0.001	0.002	0.15	<0.001	0.027	<0.0001	0.002	0.009	<1	<2	<2	<2	<2	<2	<1	-	<5000
		5/09/2023	KEMDS	Normal	ES2330280	624	**16**	-	-	**0.04**	2.4	<0.01	**2.4**	**3.5**	1.1	**0.44**	**3**	**0.47**	<0.001	<0.0001	<0.001	0.005	1	<0.001	0.042	<0.0001	<0.001	0.011	<1	<2	<2	<2	<2	<2	<1	-	<5000
	KEMUS	16/08/2022	SWDUP2	Interlab_D	915049	-	-	-	-	-	-	-	-	-	-	-	-	-	0.001	<0.0002	0.001	0.005	-	<0.001	-	<0.0001	0.002	0.011	-	-	-	-	-	-	-	-	-
		16/08/2022	KEMUS	Normal	ES2229137	1660	<5	-	-	**0.02**	3.77	0.02	**3.79**	**4.8**	1	**0.31**	**1**	**0.36**	<0.001	<0.0001	<0.001	0.004	0.26	<0.001	0.1	<0.0001	0.002	0.009	<1	<2	<2	<2	<2	<2	<1	<5	<5000
		20/09/2022	SWDUP2	Interlab_D	925349	-	-	-	-	-	-	-	-	-	-	-	-	-	0.001	<0.0002	0.001	0.005	-	0.001	-	<0.0001	0.002	0.012	-	-	-	-	-	-	-	-	-
		20/09/2022	KEMUS	Normal	ES2233731	750	**22**	-	-	**0.03**	1.92	0.02	**1.94**	**3.2**	1.3	**0.31**	**15**	**0.48**	<0.001	<0.0001	0.001	0.005	1.31	0.001	0.127	<0.0001	0.002	0.012	<1	<2	<2	<2	<2	<2	<1	<5	<5000
		19/10/2022	KEMUS	Normal	ES2237608	1160	**8**	-	-	<0.01	0.42	0.02	**0.44**	**1.8**	1.4	**0.35**	**2**	**0.45**	0.002	<0.0001	<0.001	0.005	0.45	<0.001	0.16	<0.0001	0.002	0.01	<1	<2	<2	<2	<2	<2	<1	<5	<5000
		13/12/2022	KEMUS	Normal	ES2245059	2490	**22**	-	-	**0.04**	3.07	0.07	**3.14**	**4.3**	1.2	**0.44**	**12**	**0.48**	0.001	<0.0001	<0.001	0.004	0.28	<0.001	0.09	<0.0001	0.002	0.007	<1	<2	<2	<2	<2	<2	<1	<5	<5000
		14/12/2022	SWDUP2	Interlab_D	951385	-	-	-	-	-	-	-	-	-	-	-	-	-	0.001	<0.0002	<0.001	0.003	-	<0.001	-	<0.0001	0.003	0.022	-	-	-	-	-	-	-	-	-
		17/01/2023	KEMUS	Normal	ES2301422	780	<5	*540*	-	**0.03**	1.05	0.03	**1.08**	**1.6**	0.5	**0.44**	**2**	**0.45**	<0.001	<0.0001	<0.001	0.003	0.26	<0.001	0.117	<0.0001	0.001	0.007	<1	<2	<2	<2	<2	<2	<1	<5	<5000
		7/02/2023	KEMUS	Normal	ES2304061	815	**9**	-	-	**0.02**	0.46	0.02	**0.48**	**1.7**	1.2	**0.4**	**15**	**0.59**	0.002	<0.0001	<0.001	0.003	0.74	<0.001	0.159	<0.0001	0.002	<0.005	<1	<2	<2	<2	<2	<2	<1	<5	<5000
		2/03/2023	KEMUS	Normal	ES2307008	805	**19**	-	-	**0.02**	2.43	0.03	**2.46**	**3.6**	1.1	**0.45**	**16**	**0.6**	0.002	<0.0001	<0.001	0.005	0.6	<0.001	0.099	<0.0001	0.003	0.01	<1	<2	<2	<2	<2	<2	<1	-	<5000
		5/04/2023	KEMUS	Normal	ES2311425	1050	**8**	-	298	**0.03**	3.02	0.01	**3.03**	**4.2**	1.2	**0.55**	**2**	**0.67**	<0.001	<0.0001	<0.001	0.002	0.42	<0.001	0.028	<0.0001	0.002	0.007	<1	<2	<2	<2	<2	<2	<1	-	<5000
		1/05/2023	KEMUS	Normal	ES2314384	500	**35**	-	-	**0.04**	3.42	0.02	**3.44**	**5.4**	2	**0.47**	**5**	**0.72**	0.002	<0.0001	0.002	0.007	1.89	0.002	0.034	<0.0001	0.002	0.018	<1	2	<2	<2	<2	2	-	<5000
		1/05/2023	SWDUP1	Field_D	ES2314384	-	-	-	-	-	-	-	-	-	-	-	-	-	0.001	<0.0001	0.002	0.007	-	0.002	-	<0.0001	0.002	0.019	-	-	-	-	-	-	-	-	-
		6/06/2023	KEMUS	Normal	ES2319028	1420	<5	-	-	**0.04**	5.31	0.01	**5.32**	**6.1**	0.8	**0.52**	**1**	**0.56**	<0.001	<0.0001	<0.001	0.004	0.26	<0.001	0.075	<0.0001	0.002	0.015	<1	<2	<2	<2	<2	<2	<1	-	<5000
		4/07/2023	KEMUS	Normal	ES2322320	736	**12**	-	-	**0.17**	3.66	<0.01	**3.66**	**4.8**	1.1	**0.4**	**8**	**0.4**	<0.001	<0.0001	<0.001	0.002	0.27	<0.001	0.022	<0.0001	0.001	0.017	<1	<2	<2	<2	<2	<2	<1	-	<5000
			SWDUP1	Field_D	ES2322320	-	-	-	-	-	-	-	-	-	-	-	-	-	<0.001	<0.0001	<0.001	0.002	-	<0.001	-	<0.0001	0.002	0.017	-	-	-	-	-	-	-	-	-
		8/08/2023	SWDUP2	Interlab_D	1015966	-	-	-	-	-	-	-	-	-	-	-	-	-	0.001	<0.0002	<0.001	0.003	-	<0.001	-	<0.0001	0.002	0.011	-	-	-	-	-	-	-	-	-
		8/08/2023	KEMUS	Normal	ES2326795	1740	**18**	-	-	**0.02**	4	<0.01	**4**	**5**	1	**0.47**	**70**	**0.44**	<0.001	<0.0001	<0.001	0.003	0.43	0.003	0.053	<0.0001	0.002	0.014	<1	<2	<2	<2	<2	<2	<1	-	<5000
		5/09/2023	KEMUS	Normal	ES2330280	657	**27**	-	-	**0.03**	2.58	<0.01	**2.58**	**3.9**	1.3	**0.46**	**3**	**0.51**	<0.001	<0.0001	<0.001	0.004	0.93	<0.001	0.052	<0.0001	<0.001	0.008	<1	<2	<2	<2	<2	<2	<1	-	<5000
SOUDS		16/08/2022	SOUDS	Normal	ES2229137	793	**31**	-	-	**2.49**	2.29	0.13	**2.42**	**6.3**	3.9	**0.01**	**40**	**0.15**	<0.001	<0.0001	<0.001	0.004	1.83	<0.001	0.628	<0.0001	0.003	0.013	<1	<2	<2	<2	<2	<2	<1	<5	<5000
			SWDUP1	Field_D	ES2229137	-	-	-	-	-	-	-	-	-	-	-	-	-	<0.001	<0.0001	<0.001	0.003	-	<0.001	-	<0.0001	0.004	0.006	-	-	-	-	-	-	-	-	-
		20/09/2022	SOUDS	Normal	ES2233731	954	**22**	-	-	**0.6**	1.9	0.12	**2.02**	**3.8**	1.8	**0.08**	**28**	**0.23**	<0.001	<0.0001	<0.001	0.003	0.61	<0.001	0.306	<0.0001	0.002	0.005	<1	<2	<2	<2	<2	<2	<1	<5	<5000
		18/10/2022	SOUDS	Normal	ES2237608	595	**67**	-	-	**0.09**	1.23	0.03	**1.26**	**3**	1.7	**0.05**	**4**	**0.34**	0.002	<0.0001	0.002	0.006	2.45	0.003	0.298	<0.0001	0.003	0.012	<1	<2	<2	<2	<2	<2	<1	<5	<5000
		13/12/2022	SOUDS	Normal	ES2245059	572	**58**	-	-	<0.01	<0.01	<0.01	<0.01	**1.1**	1.1	**<0.01**	**13**	**0.1**	0.001	<0.0001	<0.001	0.003	1.24	<0.001	0.442	<0.0001	0.003	<0.005	<1	<2	<2	<2	<2	<2	<1	<5	<5000
		17/01/2023	SOUDS	Normal	ES2301422	1520	**24**	11	-	0.01	<0.01	<0.01	<0.01	**0.8**	0.8	**<0.01**	**6**	**0.07**	<0.001	<0.0001	<0.001	0.002	1.07	<0.001	0.388	<0.0001	0.002	<0.005	<1	<2	<2	<2	<2	<2	<1	<5	<5000
		7/02/2023	SOUDS	Normal	ES2304061	484	**40**	-	-	**0.02**	0.81	0.02	**0.83**	**2.1**	1.3	**0.05**	**8**	**0.27**	0.002	<0.0001	0.002	0.006	3.04	0.002	0.228	<0.0001	0.003	0.008	<1	<2	<2	<2	<2	<2	<1	<5	<5000
		2/03/2023	SOUDS	Normal	ES2307008	416	**29**	-	-	0.01	0.09	0.02	**0.11**	**1.1**	1	**0.01**	**110**	**0.13**	0.001	<0.0001	<0.001	0.004	1.35	<0.001	0.187	<0.0001	0.003	<0.005	<1	<2	<2	<2	<2	<2	<1	-	<5000
		5/04/2023	SOUDS	Normal	ES2311425	668	**16**	-	229	**0.02**	0.92	0.03	**0.95**	**2.6**	1.6	**0.01**	**23**	**0.14**	<0.001	<0.0001	<0.001	0.002	0.9	<0.001	0.181	<0.0001	0.003	<0.005	<1	<2	<2	<2	<2	<2	<1	-	<5000
		1/05/2023	SOUDS	Normal	ES2314384	552	**42**	-	-	**0.13**	7.23	0.08	**7.31**	**8.9**	1.6	**0.6**	**9**	**0.83**	0.002	<0.0001	0.001	0.006	1.74	0.002	0.176	<0.0001	0.002	0.035	<1	<2	<2	<2	<2	<2	<1	-	<5000
		6/06/2023	SOUDS	Normal	ES2319028	558	**18**	-	-	**0.02**	2.05	<0.01	**2.05**	**3**	1	**0.05**	**12**	**0.11**	<0.001	<0.0001	<0.001	0.003	0.71	<0.001	0.058	<0.0001	0.002	0.02	<1	<2	<2	<2	<2	<2	<1	-	<5000
		4/07/2023	SOUDS	Normal	ES2322320	613	**32**	-	-	**0.02**	1.1	<0.01	**1.1**	**2.3**	1.2	**<0.01**	**20**	**0.06**	<0.001	<0.0001	<0.001	0.002	0.53	<0.001	0.073	<0.0001	0.002	0.008	<1	<2	<2	<2	<2	<2	<1	-	<5000
		8/08/2023	SOUDS	Normal	ES2326795	764	**27**	-	-	0.01	0.05	<0.01	**0.05**	**0.8**	0.7	**<0.01**	**16**	<0.01	<0.001	<0.0001	<0.001	0.002	0.76	<0.001	0.126	<0.0001	0.003	0.005	<1	<2	<2	<2	<2	<2	<1	-	<5000
		6/09/2023	SOUDS	Normal	ES2330280	844	**63**	-	-	**0.05**	1.66	0.07	**1.73**	**4.8**	3.1	**0.01**	**174**	**0.42**	<0.001	<0.0001	0.001	0.004	1.55	<0.001	0.149	<0.0001	0.004	0.007	<1	<2	<2	<2	<2	<2	<1	-	<5000
SOUUS		16/08/2022	SOUUS	Normal	ES2229137	638	**34**	-	-	**2.56**	2.3	0.12	**2.42**	**6.6**	4.2	**0.02**	**22**	**0.17**	<0.001	<0.0001	<0.001	0.003	1.5	<0.001	0.698	<0.0001	0.004	0.008	<1	<2	<2	<2	<2	<2	<1	<5	<5000
		20/09/2022	SOUUS	Normal	ES2233731	960	**18**	-	-	**0.55**	1.86	0.11	**1.97**	**4**	2	**0.08**	**35**	**0.28**	<0.001	<0.0001	<0.001	0.004	1.45	<0.001	0.283	<0.0001	0.003	0.007	<1	<2	<2	<2	<2	<2	<1	<5	<5000
			SWDUP1	Field_D	ES2233731	-	-	-	-	-	-	-	-	-	-	-	-	-	<0.001	<0.0001	<0.001	0.003	-	<0.001	-	<0.0001	0.002	0.006	-	-	-	-	-	-	-	-	-
		18/10/2022	SOUUS	Normal	ES2237608	625	**72**	-	-	**0.09**	1.24	0.03	**1.27**	**3.3**	2	**0.05**	**4**	**0.37**	0.001	<0.0001	<0.001	0.005	1.63	0.003	0.338	<0.0001	0.002	0.01	<1	<2	<2	<2	<2	<2	<1	<5	<5000
		13/12/2022	SOUUS	Normal	ES2245059	586	**42**	-	-	<0.01	<0.01	<0.01	<0.01	**1.1**	1.1	**<0.01**	**12**	**0.1**	0.001	<0.0001	<0.001	0.002	1.43	<0.001	0.484	<0.0001	0.003	<0.005	<1	<2	<2	<2	<2	<2	<1	<5	<5000
		17/01/2023	SOUUS	Normal	ES2301422	1590	**20**	93	-	**0.03**	0.02	0.01	0.03	0.2	0.2	**<0.01**	**13**	**0.05**	<0.001	<0.0001	<0.001	0.002	0.61	<0.001	0.324	<0.0001	0.002	<0.005	<1	<2	<2	<2	<2	<2	<1	<5	<5000
		7/02/2023	SOUUS	Normal	ES2304061	480	**48**	-	-	**0.04**	0.87	0.02	**0.89**	**2.2**	1.3	**0.08**	**4**	**0.3**	0.002	<0.0001	0.002	0.005	3.47	0.002	0.24	<0.0001	0.003	0.009	<1	<2	<2	<2	<2	<2	<1	<5	<5000
		2/03/2023	SOUUS	Normal	ES2307008	429	**26**	-	-	**0.02**	0.24	0.01	**0.25**	**1.2**	1	**0.02**	**53**	**0.12**	0.001	<0.0001	0.001	0.003	1.32	<0.001	0.213	<0.0001	0.003	0.008	<1	<2	<2	<2	<2	<2	<1	-	<5000
		5/04/2023	SOUUS	Normal	ES2311425	676	**18**	-	227	**0.03**	0.89	0.04	**0.93**	**1.7**	0.8	**<0.01**	**26**	**0.04**	<0.001	<0.0001	<0.001	<0.001	0.82	<0.001	0.224	<0.0001	0.003	<0.005	<1	<2	<2	<2	<2	<2	<1	-	<5000
			SWDUP1	Field_D	ES2311425	-	-	-	-	-	-	-	-	-	-	-	-	-	<0.001	<0.0001	<0.001	<0.001	-	<0.001	-	<0.0001	0.003	<0.005	-	-	-	-	-	-	-	-	-
		1/05/2023	SOUUS	Normal	ES2314384	518	**38**	-	-	**0.14**	6.73	0.08	**6.81**	**8.7**	1.9	**0.58**	**8**	**0.86**	0.002	<0.0001	0.001	0.006	1.9	0.002	0.189	<0.0001	0.002	0.023	<1	<2	<2	<2	<2	<2	<1	-	<5000
		6/06/2023	SOUUS	Normal	ES2319028	530	**14**	-	-	**0.02**	1.98	<0.01	**1.98**	**3**	1	**0.05**	**15**	**0.13**	<0.001	<0.0001	<0.001	0.002	0.83	<0.001	0.115	<0.0001	0.003	0.015	<1	<2	<2	<2	<2	<2	<1	-	<5000
			SWDUP1	Field_D	ES2319028	-	-	-	-	-	-	-	-	-	-	-	-	-	<0.001	<0.0001	<0.001	0.002	-	<0.001	-	<0.0001	0.003	0.016	-	-	-	-	-	-	-	-	-
		4/07/2023	SOUUS	Normal	ES2322320	612	**22**	-	-	**0.02**	1.06	<0.01	**1.06**	**2.3**	1.2	**<0.01**	**38**	**0.05**	<0.001	<0.0001	<0.001	<0.001	0.55	<0.001	0.125	<0.0001	0.003	0.011	<1	<2	<2	<2	<2	<2	<1	-	<5000
		8/08/2023	SOUUS	Normal	ES2326795	734	**20**	-	-	**0.02**	0.11	<0.01	**0.11**	**0.7**	0.6	**<0.01**	**19**	0.02	<0.001	<0.0001	<0.001	0.001	0.49	<0.001	0.11	<0.0001	0.003	<0.005	<1	<2	<2	<2	<2	<2	<1	-	<5000
		6/09/2023	SOUUS	Normal	ES2330280	886	**40**	-	-	**0.04**	1.72	0.06	**1.78**	**6.4**	4.6	**0.04**	**155**	**0.32**	<0.001	<0.0001	<0.001	0.003	0.84	<0.001	0.154	<0.0001	0.003	<0.005	<1	<2	<2	<2	<2	<2	<1	-	<5000

						Inorganics		Biological	Acidity & Alkalinity	Nutrients									Metals										BTEXN								TPH
						Total Dissolved Solids	Total Suspended Solids	Thermotolerant (Faecal) Coliforms	Hardness as CaCO3	Ammonia as N	Nitrate (as N)	Nitrite (as N)	Nitrogen (Total Oxidised) (as N)	Nitrogen (Total)	Kjeldahl Nitrogen Total	Reactive Phosphorus as P	Chlorophyll a	Phosphorus (Total)	Arsenic	Cadmium	Chromium (III+VI)	Copper	Iron	Lead	Manganese	Mercury	Nickel	Zinc	Benzene	Toluene	Ethylbenzene	Xylene (o)	Xylene (m & p)	Xylene Total	BTEX (Sum of Total) - Lab Calc	Naphthalene (BTEXN suite)	Oil & Grease
						mg/L	mg/L	orgs/100mL	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L
EQL						10	5	1	1	0.01	0.01	0.01	0.01	0.1	0.1	0.01	1	0.01	0.001	0.0001	0.001	0.001	0.05	0.001	0.001	0.0001	0.001	0.005	1	2	2	2	2	2	1	5	5000
ADWG 2011 Health (v3.7 updated 2022)											11.29[#1]	0.91[#2]							0.01	0.002		2		0.01	0.5	0.001	0.02		1	800	300			600			
ANZECC 2000 - Lowland Rivers (NSW coastal rivers)							**6**			**0.01165**[#3]			**0.04**	**0.35**		**0.008**	**0.003**	**0.025**																		
ANZECC 2000 - Stock Watering						*5000*[#4]		*100*			*90*[#5]	*9.1*[#6]							*0.5*	*0.01*	*1*	*1*[#7]		*0.1*		*0.002*	*1*	*20*								
ANZG (2018) - FW - 95% (updated 26 July 2021)										0.9[#8]	2.4[#9]								0.013[#10]	0.0002	0.001[#11]	0.0014		0.0034	1.9	0.0006	0.011	0.008	950	180	80	350				16	
Package	**Location**	**Sample Date**	**Field ID**	**Sample Type**	**Lab report Number**																															
M12 - East	HINDS	4/07/2023	HINDS	Normal	ES2322320	245	**24**	-	-	<0.01	<0.01	<0.01	<0.01	**0.9**	0.9	**<0.01**	**45**	**0.04**	<0.001	<0.0001	<0.001	<0.001	0.86	<0.001	0.184	<0.0001	<0.001	0.018	<1	<2	<2	<2	<2	<2	<1	-	<5000
		8/08/2023	HINDS	Normal	ES2326795	309	**14**	-	-	0.01	<0.01	<0.01	<0.01	**0.9**	0.9	**<0.01**	**11**	<0.01	<0.001	<0.0001	<0.001	<0.001	0.53	<0.001	0.307	<0.0001	<0.001	<0.005	<1	<2	<2	<2	<2	<2	<1	-	<5000
			SWDUP1	Field_D	ES2326795	-	-	-	-	-	-	-	-	-	-	-	-	-	<0.001	<0.0001	<0.001	<0.001	-	<0.001	-	<0.0001	<0.001	<0.005	-	-	-	-	-	-	-	-	-
		6/09/2023	SWDUP2	Interlab_D	1024024	-	-	-	-	-	-	-	-	-	-	-	-	-	0.002	0.0002	<0.001	0.002	-	<0.001	-	<0.0001	0.001	<0.005	-	-	-	-	-	-	-	-	-
		6/09/2023	HINDS	Normal	ES2330280	304	**7**	-	-	**0.15**	0.1	0.01	**0.11**	**1.1**	1	**<0.01**	**2**	**0.06**	<0.001	<0.0001	<0.001	0.001	1.03	<0.001	0.404	<0.0001	0.001	<0.005	<1	<2	<2	<2	<2	<2	<1	-	<5000
	HINUS	4/07/2023	HINUS	Normal	ES2322320	323	**7**	-	-	<0.01	0.01	<0.01	0.01	**0.7**	0.7	**<0.01**	**3**	0.02	<0.001	<0.0001	<0.001	<0.001	0.84	<0.001	0.112	<0.0001	<0.001	<0.005	<1	<2	<2	<2	<2	<2	<1	-	<5000
		8/08/2023	HINUS	Normal	ES2326795	373	5	-	-	0.01	<0.01	<0.01	<0.01	**1.5**	1.5	**<0.01**	**15**	**0.06**	0.001	<0.0001	<0.001	<0.001	1.45	<0.001	0.34	<0.0001	<0.001	<0.005	<1	<2	<2	<2	<2	<2	<1	-	<5000
		6/09/2023	HINUS	Normal	ES2330280	368	**7**	-	-	**0.03**	<0.01	<0.01	<0.01	**1.2**	1.2	**<0.01**	**2**	**0.08**	<0.001	<0.0001	<0.001	<0.001	3.06	<0.001	0.443	<0.0001	<0.001	<0.005	<1	<2	<2	<2	<2	<2	<1	-	<5000
	ROPDS	4/07/2023	ROPDS	Normal	ES2322320	2480	**6**	-	-	**0.03**	0.37	<0.01	**0.37**	**0.9**	0.5	**<0.01**	**1**	0.02	<0.001	<0.0001	<0.001	<0.001	0.1	<0.001	0.437	<0.0001	0.001	<0.005	<1	<2	<2	<2	<2	<2	<1	-	<5000
		8/08/2023	ROPDS	Normal	ES2326795	3230	<5	-	-	0.01	0.03	<0.01	0.03	**0.5**	0.5	**0.02**	**10**	<0.01	<0.001	<0.0001	<0.001	<0.001	0.06	<0.001	0.28	<0.0001	<0.001	0.006	<1	<2	<2	<2	<2	<2	<1	-	<5000
		6/09/2023	ROPDS	Normal	ES2330280	2920	**12**	-	-	**0.02**	<0.01	<0.01	<0.01	**0.6**	0.6	**<0.01**	**7**	**0.03**	<0.001	<0.0001	<0.001	0.002	0.3	<0.001	0.755	<0.0001	<0.001	0.007	<1	<2	<2	<2	<2	<2	<1	-	<5000
	ROPUS	4/07/2023	ROPUS	Normal	ES2322320	164	**1030**	-	-	**0.11**	<0.01	<0.01	<0.01	**9.3**	9.3	**<0.01**	**101**	**1.32**	0.011	0.0002	0.058	0.074	65.5	0.064	1.43	<0.0001	0.043	0.17	<1	<2	<2	<2	<2	<2	<1	-	<5000
		8/08/2023	ROPUS	Normal	ES2326795	234	**53**	-	-	**0.94**	<0.01	<0.01	<0.01	**1.7**	1.7	**<0.01**	**2**	<0.01	0.002	<0.0001	0.003	0.003	5.26	0.003	1.36	<0.0001	0.003	0.011	<1	<2	<2	<2	<2	<2	<1	-	<5000
		6/09/2023	ROPUS	Normal	ES2330280	210	**35**	-	-	**1.09**	0.03	<0.01	0.03	**3.5**	3.5	**<0.01**	**103**	**0.14**	0.002	<0.0001	0.002	0.002	4.06	0.001	0.579	<0.0001	0.003	<0.005	<1	<2	<2	<2	<2	<2	<1	-	<5000
M12 - West	BADDS	16/08/2022	BADDS	Normal	ES2229137	518	**32**	-	-	<0.01	0.33	<0.01	**0.33**	**0.9**	0.6	**<0.01**	**13**	**0.06**	<0.001	<0.0001	<0.001	0.002	1.26	<0.001	0.211	<0.0001	0.002	<0.005	<1	<2	<2	<2	<2	<2	<1	<5	<5000
		20/09/2022	BADDS	Normal	ES2233731	590	**10**	-	-	**0.36**	0.71	0.05	**0.76**	**1.9**	1.1	**<0.01**	**18**	**0.06**	<0.001	<0.0001	<0.001	0.002	0.47	<0.001	0.166	<0.0001	0.001	<0.005	<1	<2	<2	<2	<2	<2	<1	<5	<5000
		18/10/2022	BADDS	Normal	ES2237608	466	**43**	-	-	**0.04**	0.48	0.01	**0.49**	**1.3**	0.8	**<0.01**	**2**	**0.12**	0.001	<0.0001	0.001	0.004	2.11	0.002	0.166	<0.0001	0.002	0.008	<1	<2	<2	<2	<2	<2	<1	<5	<5000
		15/12/2022	BADDS	Normal	ES2245593	1180	**12**	-	-	**0.02**	<0.01	<0.01	<0.01	**0.7**	0.7	**<0.01**	**5**	**0.04**	<0.001	<0.0001	<0.001	<0.001	0.46	<0.001	0.16	<0.0001	0.002	0.011	<1	<2	<2	<2	<2	<2	<1	<5	<5000
		18/01/2023	BADDS	Normal	ES2301697	638	**18**	30	-	<0.01	<0.01	<0.01	<0.01	**0.4**	0.4	**0.01**	**3**	**0.05**	<0.001	<0.0001	<0.001	<0.001	0.47	<0.001	0.245	<0.0001	<0.001	0.007	<1	<2	<2	<2	<2	<2	<1	<5	<5000
		8/02/2023	BADDS	Normal	ES2304061	1210	**26**	-	-	**0.03**	<0.01	<0.01	<0.01	**1**	1	**<0.01**	**23**	**0.1**	<0.001	<0.0001	<0.001	0.002	0.96	<0.001	0.322	<0.0001	0.003	0.018	<1	<2	<2	<2	<2	<2	<1	<5	<5000
		3/03/2023	BADDS	Normal	ES2307154	1180	**31**	-	-	<0.01	<0.01	<0.01	<0.01	**0.7**	0.7	**<0.01**	**12**	**0.04**	0.001	<0.0001	<0.001	0.002	1	<0.001	0.403	<0.0001	0.003	0.013	<1	<2	<2	<2	<2	<2	<1	-	<5000
		4/04/2023	BADDS	Normal	ES2311425	964	**27**	-	298	0.01	0.13	<0.01	**0.13**	**0.5**	0.4	**<0.01**	**6**	**0.03**	<0.001	<0.0001	<0.001	<0.001	0.95	<0.001	0.15	<0.0001	0.002	0.017	<1	<2	<2	<2	<2	<2	<1	-	<5000
		2/05/2023	BADDS	Normal	ES2314384	678	**94**	-	-	**0.08**	2.09	0.05	**2.14**	**3.1**	1	**<0.01**	**<1**	**0.19**	0.002	<0.0001	0.004	0.009	4.79	0.004	0.154	<0.0001	0.005	0.035	<1	<2	<2	<2	<2	<2	<1	-	<5000
		7/06/2023	BADDS	Normal	ES2319028	796	**32**	-	-	**0.03**	0.3	<0.01	**0.3**	**0.8**	0.5	**<0.01**	**13**	**0.04**	<0.001	<0.0001	0.001	0.002	1.4	<0.001	0.16	<0.0001	0.002	0.029	<1	<2	<2	<2	<2	<2	<1	-	<5000
		7/07/2023	SWDUP2	Interlab_D	1006932	-	-	-	-	-	-	-	-	-	-	-	-	-	<0.001	<0.0002	<0.001	0.002	-	<0.001	-	<0.0001	0.001	0.012	-	-	-	-	-	-	-	-	-
		7/07/2023	BADDS	Normal	ES2322911	520	**17**	-	-	0.01	0.13	<0.01	**0.13**	**0.6**	0.5	**<0.01**	**6**	**0.08**	<0.001	<0.0001	<0.001	0.001	0.43	<0.001	0.082	<0.0001	0.002	0.012	<1	<2	<2	<2	<2	<2	<1	-	<5000
		9/08/2023	BADDS	Normal	ES2326795	850	**18**	-	-	**0.02**	0.02	<0.01	0.02	**0.6**	0.6	**<0.01**	**12**	**0.06**	<0.001	<0.0001	<0.001	<0.001	0.78	<0.001	0.127	<0.0001	0.001	0.013	<1	<2	<2	<2	<2	<2	<1	-	<5000
		5/09/2023	BADDS	Normal	ES2330280	648	**63**	-	-	**0.02**	0.67	0.02	**0.69**	**1.4**	0.7	**0.04**	**11**	**0.08**	<0.001	<0.0001	0.002	0.004	1.83	<0.001	0.153	<0.0001	0.003	<0.005	<1	<2	<2	<2	<2	<2	<1	-	8000
	BADMS	16/08/2022	BADMS	Normal	ES2229137	760	**20**	-	-	**0.02**	0.3	<0.01	**0.3**	**0.9**	0.6	**<0.01**	**16**	**0.06**	<0.001	<0.0001	<0.001	0.002	1.07	<0.001	0.325	<0.0001	0.001	<0.005	<1	<2	<2	<2	<2	<2	<1	<5	<5000
		20/09/2022	BADMS	Normal	ES2233731	613	**16**	-	-	**0.3**	0.65	0.04	**0.69**	**1.6**	0.9	**<0.01**	**11**	**0.07**	<0.001	<0.0001	<0.001	0.002	0.74	<0.001	0.201	<0.0001	0.002	<0.005	<1	<2	<2	<2	<2	<2	<1	<5	<5000
		18/10/2022	BADMS	Normal	ES2237608	544	**39**	-	-	**0.05**	0.5	0.02	**0.52**	**1.5**	1	**<0.01**	**<1**	**0.1**	<0.001	<0.0001	<0.001	0.002	0.93	<0.001	0.21	<0.0001	0.002	<0.005	<1	<2	<2	<2	<2	<2	<1	<5	<5000
		15/12/2022	BADMS	Normal	ES2245593	1140	**18**	-	-	**0.02**	<0.01	<0.01	<0.01	**0.9**	0.9	**<0.01**	**7**	**0.06**	<0.001	<0.0001	<0.001	<0.001	0.7	<0.001	0.562	<0.0001	0.002	<0.005	<1	<2	<2	<2	<2	<2	<1	<5	<5000
		18/01/2023	BADMS	Normal	ES2301697	596	**6**	14[#1]	-	**0.02**	<0.01	<0.01	<0.01	**0.6**	0.6	**<0.01**	**6**	**0.05**	<0.001	<0.0001	<0.001	<0.001	0.54	<0.001	0.521	<0.0001	<0.001	<0.005	<1	<2	<2	<2	<2	<2	<1	<5	<5000
		8/02/2023	BADMS	Normal	ES2304061	1150	**28**	-	-	**0.02**	<0.01	<0.01	<0.01	**1.2**	1.2	**<0.01**	**25**	**0.11**	0.001	<0.0001	<0.001	0.002	0.95	<0.001	0.653	<0.0001	0.003	<0.005	<1	<2	<2	<2	<2	<2	<1	<5	<5000
		3/03/2023	BADMS	Normal	ES2307154	1180	**23**	-	-	0.01	<0.01	<0.01	<0.01	**0.9**	0.9	**<0.01**	**30**	**0.06**	0.002	<0.0001	<0.001	0.001	0.76	<0.001	0.601	<0.0001	0.002	<0.005	<1	<2	<2	<2	<2	<2	<1	-	<5000
		4/04/2023	BADMS	Normal	ES2311425	942	**24**	-	298	**0.02**	0.14	0.01	**0.15**	**1**	0.8	**<0.01**	**12**	**0.08**	<0.001	<0.0001	<0.001	<0.001	0.92	<0.001	0.194	<0.0001	0.002	<0.005	<1	<2	<2	<2	<2	<2	<1	-	<5000
		2/05/2023	BADMS	Normal	ES2314384	718	**117**	-	-	**0.08**	2.23	0.06	**2.29**	**3.5**	1.2	**<0.01**	**1**	**0.13**	0.002	<0.0001	0.004	0.008	4.7	0.004	0.156	<0.0001	0.004	0.019	<1	<2	<2	<2	<2	<2	<1	-	<5000
		7/06/2023	BADMS	Normal	ES2319028	778	**23**	-	-	**0.03**	0.29	<0.01	**0.29**	**0.9**	0.6	**<0.01**	**8**	**0.05**	<0.001	<0.0001	0.001	0.003	1.38	<0.001	0.242	<0.0001	0.002	0.012	<1	<2	<2	<2	<2	<2	<1	-	<5000
		7/07/2023	BADMS	Normal	ES2322911	489	**20**	-	-	**0.02**	0.16	<0.01	**0.16**	**0.8**	0.6	**<0.01**	**8**	**0.1**	<0.001	<0.0001	0.003	0.002	1.02	<0.001	0.111	<0.0001	0.002	0.009	<1	<2	<2	<2	<2	<2	<1	-	<5000
		9/08/2023	BADMS	Normal	ES2326795	818	**33**	-	-	<0.01	0.07	<0.01	**0.07**	**0.9**	0.8	**<0.01**	**26**	**0.04**	<0.001	<0.0001	<0.001	<0.001	0.92	<0.001	0.205	<0.0001	0.002	0.007	<1	<2	<2	<2	<2	<2	<1	-	<5000
		5/09/2023	BADMS	Normal	ES2330280	720	**55**	-	-	**0.03**	1.34	0.03	**1.37**	**2.5**	1.1	**<0.01**	**13**	**0.16**	<0.001	<0.0001	0.002	0.004	2.08	0.001	0.164	<0.0001	0.002	0.008	<1	<2	<2	<2	<2	<2	<1	-	8000
	BADUS	16/08/2022	BADUS	Normal	ES2229137	825	**26**	-	-	<0.01	0.22	<0.01	**0.22**	**1.2**	1	**<0.01**	**65**	**0.1**	<0.001	<0.0001	<0.001	0.001	1.15	<0.001	0.447	<0.0001	0.002	0.005	<1	<2	<2	<2	<2	<2	<1	<5	<5000
		20/09/2022	BADUS	Normal	ES2233731	1320	**27**	-	-	**2.69**	1.51	0.17	**1.68**	**7**	5.3	**<0.01**	**145**	**0.25**	<0.001	<0.0001	<0.001	0.004	1.03	<0.001	0.485	<0.0001	0.003	0.006	<1	<2	<2	<2	<2	<2	<1	<5	9000
		19/10/2022	BADUS	Normal	ES2237608	719	**18**	-	-	**0.09**	0.46	0.02	**0.48**	**1.5**	1	**<0.01**	**5**	**0.12**	<0.001	<0.0001	<0.001	0.002	1.12	<0.001	0.216	<0.0001	0.002	<0.005	<1	<2	<2	<2	<2	<2	<1	<5	<5000
		15/12/2022	BADUS	Normal	ES2245593	762	**12**	-	-	**0.05**	0.04	<0.01	**0.04**	**0.7**	0.7	**0.02**	**3**	**0.1**	<0.001	<0.0001	<0.001	<0.001	0.87	<0.001	0.256	<0.0001	0.001	<0.005	<1	<2	<2	<2	<2	<2	<1	<5	<5000
		18/01/2023	BADUS	Normal	ES2301697	630	**28**	*190*	-	**0.02**	0.02	<0.01	0.02	**0.7**	0.7	**0.02**	**6**	**0.14**	0.002	<0.0001	0.002	<0.001	0.94	<0.001	1.92	<0.0001	<0.001	<0.005	<1	<2	<2	<2	<2	<2	<1	<5	<5000
			SWDUP2	Interlab_D	957071	-	-	-	-	-	-	-	-	-	-	-	-	-	0.002	<0.0002	0.001	0.001	-	<0.001	-	<0.0001	<0.001	<0.005	-	-	-	-	-	-	-	-	-
		8/02/2023	BADUS	Normal	ES2304061	974	**24**	-	-	**0.02**	0.13	<0.01	**0.13**	**0.8**	0.7	**<0.01**	**8**	**0.07**	0.001	<0.0001	0.001	0.005	1.03	<0.001	0.279	<0.0001	0.002	<0.005	<1	<2	<2	<2	<2	<2	<1	<5	<5000
			SWDUP2	Interlab_D	962102	-	-	-	-	-	-	-	-	-	-	-	-	-	0.001	<0.0002	0.004	0.006	-	<0.001	-	<0.0001	0.002	<0.005	-	-	-	-	-	-	-	-	-
		3/03/2023	BADUS	Normal	ES2307154	862	**11**	-	-	0.01	<0.01	<0.01	<0.01	**1.1**	1.1	**<0.01**	**27**	**0.11**	0.002	<0.0001	<0.001	0.001	0.74	<0.001	0.732	<0.0001	0.002	<0.005	<1	<2	<2	<2	<2	<2	<1	-	<5000
		4/04/2023	BADUS	Normal	ES2311425	1120	**20**	-	308	<0.01	0.14	<0.01	**0.14**	**1.1**	1	**<0.01**	**21**	**0.09**	<0.001	<0.0001	<0.001	<0.001	1.01	<0.001	0.303	<0.0001	0.002	<0.005	<1	<2	<2	<2	<2	<2	<1	-	<5000
		2/05/2023	BADUS	Normal	ES2314384	720	**86**	-	-	**0.14**	2.1	0.09	**2.19**	**3.4**	1.2	**<0.01**	**1**	**0.09**	0.001	<0.0001	0.003	0.007	4.03	0.003	0.22	<0.0001	0.004	0.016	<1	<2	<2	<2	<2	<2	<1	-	<5000
		7/06/2023	BADUS	Normal	ES2319028	594	**18**	-	-	**0.04**	0.18	<0.01	**0.18**	**0.6**	0.4	**<0.01**	**16**	**0.04**	<0.001	<0.0001	<0.001	<0.001	0.81	<0.001	0.3	<0.0001	0.001	0.008	<1	<2	<2	<2	<2	<2	<1	-	<5000
		7/07/2023	BADUS	Normal	ES2322911	906	**7**	-	-	**0.06**	0.24	0.03	**0.27**	**0.8**	0.5	**<0.01**	**6**	**0.05**	0.001	<0.0001	0.012	0.001	0.4	<0.001	0.114	<0.0001	<0.001	0.011	<1	<2	<2	<2	<2	<2	<1	-	<5000
		9/08/2023	BADUS	Normal	ES2326795	680	**10**	-	-	0.01	0.05	<0.01	**0.05**	**0.6**	0.5	**<0.01**	**7**	<0.01	<0.001	<0.0001	<0.001	<0.001	0.48	<0.001	0.23	<0.0001	<0.001	0.005	<1	<2	<2	<2	<2	<2	<1	-	<5000
		5/09/2023	BADUS	Normal	ES2330280	495	**40**	-	-	**0.02**	0.03	<0.01	0.03	**0.8**	0.8	**<0.01**	**17**	**0.13**	<0.001	<0.0001	0.002	0.004	3.09	0.002	0.228	<0.0001	0.003	0.012	<1	<2	<2	<2	<2	<2	<1	-	12,000
			SWDUP1	Field_D	ES2330280	-	-	-	-	-	-	-	-	-	-	-	-	-	<0.001	<0.0001	0.003	0.004	-	0.002	-	<0.0001	0.001	0.01	-	-	-	-	-	-	-	-	-

						Inorganics		Biological	Acidity & Alkalinity	Nutrients									Metals										BTEXN								TPH
						Total Dissolved Solids	Total Suspended Solids	Thermotolerant (Faecal) Coliforms	Hardness as CaCO3	Ammonia as N	Nitrate (as N)	Nitrite (as N)	Nitrogen (Total Oxidised) (as N)	Nitrogen (Total)	Kjeldahl Nitrogen Total	Reactive Phosphorus as P	Chlorophyll a	Phosphorus (Total)	Arsenic	Cadmium	Chromium (III+VI)	Copper	Iron	Lead	Manganese	Mercury	Nickel	Zinc	Benzene	Toluene	Ethylbenzene	Xylene (o)	Xylene (m & p)	Xylene Total	BTEX (Sum of Total) - Lab Calc	Naphthalene (BTEXN suite)	Oil & Grease
						mg/L	mg/L	orgs/100mL	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L
EQL						10	5	1	1	0.01	0.01	0.01	0.01	0.1	0.1	0.01	1	0.01	0.001	0.0001	0.001	0.05	0.001	0.001	0.0001	0.001	0.005	1	2	2	2	2	2	1	5	5000
ADWG 2011 Health (v3.7 updated 2022)											11.29[#1]	0.91[#2]							0.01	0.002		2		0.01	0.5	0.001	0.02		1	800	300			600			
ANZECC 2000 - Lowland Rivers (NSW coastal rivers)							**6**			**0.01165[#3]**			**0.04**	**0.35**		**0.008**	**0.003**	**0.025**																		
ANZECC 2000 - Stock Watering						*5000[#4]*		*100*			*90[#5]*	*9.1[#6]*							*0.5*	*0.01*	*1*	*1[#7]*		*0.1*		*0.002*	*1*	*20*								
ANZG (2018) - FW - 95% (updated 26 July 2021)										0.9[#8]	2.4[#9]								0.013[#10]	0.0002	0.001[#11]	0.0014		0.0034	1.9	0.0006	0.011	0.008	950	180	80	350				16	
Package	**Location**	**Sample Date**	**Field ID**	**Sample Type**	**Lab report Number**																															
	COSDS	16/08/2022	COSDS	Normal	ES2229137	426	**16**	-	-	**0.08**	0.11	<0.01	**0.11**	**0.7**	0.6	**<0.01**	**6**	**0.05**	<0.001	<0.0001	<0.001	0.001	1.89	<0.001	0.42	<0.0001	0.002	0.007	<1	<2	<2	<2	<2	<2	<1	<5	<5000
		19/09/2022	COSDS	Normal	ES2233731	352	**16**	-	-	**0.03**	0.16	<0.01	**0.16**	**0.5**	0.3	**<0.01**	**4**	**0.04**	<0.001	<0.0001	<0.001	0.001	0.66	<0.001	0.13	<0.0001	<0.001	<0.005	<1	<2	<2	<2	<2	<2	<1	<5	<5000
		21/10/2022	COSDS	Normal	ES2237964	232	**21**	-	-	0.01	0.16	<0.01	**0.16**	**0.5**	0.3	**<0.01**	**<1**	**0.03**	<0.001	<0.0001	<0.001	<0.001	0.71	<0.001	0.161	<0.0001	<0.001	<0.005	<1	<2	<2	<2	<2	<2	<1	<5	<5000
		15/12/2022	COSDS	Normal	ES2245593	1000	**32**	-	-	**0.02**	<0.01	<0.01	<0.01	**1.1**	1.1	**<0.01**	**24**	**0.12**	<0.001	<0.0001	<0.001	<0.001	1.4	<0.001	1.94	<0.0001	0.002	0.005	<1	<2	<2	<2	<2	<2	<1	<5	<5000
		18/01/2023	COSDS	Normal	ES2301697	639	**28**	72	-	**0.02**	<0.01	<0.01	<0.01	**0.9**	0.9	**<0.01**	**11**	**0.07**	<0.001	<0.0001	<0.001	0.001	0.8	<0.001	1.15	<0.0001	<0.001	0.012	<1	<2	<2	<2	<2	<2	<1	<5	<5000
		8/02/2023	COSDS	Normal	ES2304061	821	**16**	-	-	**0.1**	0.13	0.02	**0.15**	**1**	0.8	**<0.01**	**9**	**0.06**	<0.001	<0.0001	<0.001	0.002	1.31	<0.001	0.544	<0.0001	0.002	0.073	<1	<2	<2	<2	<2	<2	<1	<5	<5000
		3/03/2023	COSDS	Normal	ES2307154	752	**48**	-	-	**0.02**	<0.01	<0.01	<0.01	**0.8**	0.8	**<0.01**	**10**	**0.07**	0.002	<0.0001	0.002	0.002	2.06	0.001	1.19	<0.0001	0.003	0.011	<1	<2	<2	<2	<2	<2	<1	-	<5000
		4/04/2023	COSDS	Normal	ES2311425	1240	**42**	-	308	<0.01	0.02	<0.01	0.02	**0.4**	0.4	**<0.01**	**9**	**0.04**	<0.001	<0.0001	<0.001	<0.001	0.82	<0.001	1.22	<0.0001	0.001	0.012	<1	<2	<2	<2	<2	<2	<1	-	<5000
		2/05/2023	COSDS	Normal	ES2314384	519	**54**	-	-	**0.06**	0.44	0.01	**0.45**	**1.2**	0.7	**<0.01**	**7**	**0.13**	<0.001	<0.0001	0.002	0.004	2.29	0.002	0.132	<0.0001	0.002	0.023	<1	<2	<2	<2	<2	<2	<1	-	<5000
		7/06/2023	COSDS	Normal	ES2319028	550	**37**	-	-	**0.04**	0.12	<0.01	**0.12**	**0.4**	0.3	**<0.01**	**5**	0.02	<0.001	<0.0001	<0.001	0.001	1.04	<0.001	0.185	<0.0001	0.001	0.033	<1	<2	<2	<2	<2	<2	<1	-	<5000
		9/08/2023	COSDS	Normal	ES2326795	1240	**26**	-	-	<0.01	0.02	<0.01	0.02	**0.5**	0.5	**<0.01**	**64**	<0.01	<0.001	<0.0001	<0.001	<0.001	1.14	<0.001	0.552	<0.0001	0.001	0.011	<1	<2	<2	<2	<2	<2	<1	-	<5000
		5/09/2023	COSDS	Normal	ES2330280	604	**89**	-	-	**0.04**	0.48	0.03	**0.51**	**1.8**	1.3	**<0.01**	**11**	**0.16**	0.001	<0.0001	0.004	0.006	4.35	0.002	0.385	<0.0001	0.004	0.013	<1	<2	<2	<2	<2	<2	<1	-	14,000
	COSUS	16/08/2022	COSUS	Normal	ES2229137	634	**16**	-	-	**0.06**	0.12	<0.01	**0.12**	**0.7**	0.6	**<0.01**	**7**	**0.05**	<0.001	<0.0001	<0.001	0.001	1.18	<0.001	0.401	<0.0001	0.001	<0.005	<1	<2	<2	<2	<2	<2	<1	<5	<5000
		19/09/2022	COSUS	Normal	ES2233731	400	**28**	-	-	**0.03**	0.14	<0.01	**0.14**	**0.8**	0.7	**<0.01**	**4**	**0.06**	<0.001	<0.0001	<0.001	0.002	0.94	<0.001	0.174	<0.0001	0.001	<0.005	<1	<2	<2	<2	<2	<2	<1	<5	<5000
		21/10/2022	COSUS	Normal	ES2237964	242	**21**	-	-	<0.01	0.18	<0.01	**0.18**	**0.5**	0.3	**<0.01**	**<1**	0.02	<0.001	<0.0001	<0.001	<0.001	0.41	<0.001	0.11	<0.0001	<0.001	<0.005	<1	<2	<2	<2	<2	<2	<1	<5	<5000
		15/12/2022	COSUS	Normal	ES2245593	1190	**11**	-	-	**0.02**	<0.01	<0.01	<0.01	**0.8**	0.8	**<0.01**	**28**	**0.07**	<0.001	<0.0001	<0.001	<0.001	1.46	<0.001	2.35	<0.0001	<0.001	<0.005	<1	<2	<2	<2	<2	<2	<1	<5	5000
		18/01/2023	COSUS	Normal	ES2301697	1740	**25**	$10^{\#1}$	-	**0.02**	0.01	<0.01	0.01	**0.9**	0.9	**<0.01**	**15**	**0.07**	0.001	<0.0001	<0.001	<0.001	1.8	<0.001	3.7	<0.0001	0.001	<0.005	<1	<2	<2	<2	<2	<2	<1	<5	<5000
		8/02/2023	COSUS	Normal	ES2304061	743	**11**	-	-	**0.14**	0.08	0.02	**0.1**	**0.9**	0.8	**<0.01**	**13**	**0.06**	<0.001	<0.0001	<0.001	0.001	1.07	<0.001	0.575	<0.0001	0.001	<0.005	<1	<2	<2	<2	<2	<2	<1	<5	<5000
		3/03/2023	COSUS	Normal	ES2307154	719	**30**	-	-	**0.06**	0.01	<0.01	0.01	**0.8**	0.8	**<0.01**	**7**	**0.03**	0.001	<0.0001	0.001	0.002	1.62	<0.001	2.81	<0.0001	0.002	<0.005	<1	<2	<2	<2	<2	<2	<1	-	<5000
		4/04/2023	COSUS	Normal	ES2311425	1320	**223**	-	328	**0.08**	0.06	<0.01	**0.06**	**1.3**	1.2	**<0.01**	**4**	**0.19**	0.002	<0.0001	0.004	0.008	5.14	0.004	2.41	<0.0001	0.006	0.014	<1	<2	<2	<2	<2	<2	<1	-	<5000
		2/05/2023	COSUS	Normal	ES2314384	496	**31**	-	-	**0.05**	0.38	0.01	**0.39**	**1**	0.6	**<0.01**	**3**	**0.08**	<0.001	<0.0001	0.002	0.003	1.6	<0.001	0.107	<0.0001	0.002	0.006	<1	<2	<2	<2	<2	<2	<1	-	<5000
			SWDUP2	Interlab_D	986190	-	-	-	-	-	-	-	-	-	-	-	-	-	<0.001	<0.0002	0.001	0.002	-	<0.001	-	<0.0001	<0.001	<0.005	-	-	-	-	-	-	-	-	-
		7/06/2023	SWDUP2	Interlab_D	997826	-	-	-	-	-	-	-	-	-	-	-	-	-	<0.001	<0.0002	<0.001	0.002	-	<0.001	-	<0.0001	<0.001	<0.005	-	-	-	-	-	-	-	-	-
		7/06/2023	COSUS	Normal	ES2319028	552	**10**	-	-	**0.04**	0.14	<0.01	**0.14**	**0.4**	0.3	**<0.01**	**2**	<0.01	<0.001	<0.0001	<0.001	<0.001	0.56	<0.001	0.145	<0.0001	0.001	<0.005	<1	<2	<2	<2	<2	<2	<1	-	<5000
		9/08/2023	COSUS	Normal	ES2326795	3720	**21**	-	-	**0.34**	<0.01	<0.01	<0.01	**0.9**	0.9	**<0.01**	**389**	0.02	<0.001	<0.0001	<0.001	<0.001	3.14	<0.001	3.6	<0.0001	<0.001	0.006	<1	<2	<2	<2	<2	<2	<1	-	<5000
		5/09/2023	COSUS	Normal	ES2330280	2580	**14**	-	-	**0.15**	0.04	<0.01	**0.04**	**0.6**	0.6	**<0.01**	**4**	**0.1**	<0.001	<0.0001	<0.001	<0.001	1.4	<0.001	1.72	<0.0001	<0.001	<0.005	<1	<2	<2	<2	<2	<2	<1	-	<5000
Statistical Summary																																				
Number of Results						127	127	9	9	127	127	127	127	127	127	127	127	127	147	147	147	147	127	147	127	147	147	147	127	127	127	127	127	127	127	54	127
Number of Detects						127	120	9	9	112	103	56	103	127	127	48	121	120	49	3	40	112	127	26	127	0	121	93	0	2	0	0	0	0	2	0	6
Minimum Concentration						164	<5	10	227	<0.01	<0.01	<0.01	<0.01	0.2	0.2	<0.01	<1	<0.01	<0.001	<0.0001	<0.001	<0.001	0.06	<0.001	0.016	<0.0001	<0.001	<0.005	<1	<2	<2	<2	<2	<2	<1	<5	<5000
Minimum Detect						164	5	10	227	0.01	0.01	0.01	0.01	0.2	0.2	0.01	1	0.02	0.001	0.0002	0.001	0.001	0.06	0.001	0.016	ND	0.001	0.005	ND	2	ND	ND	ND	ND	2	ND	5000
Maximum Concentration						3720	1030	540	328	2.69	9.02	0.17	9.02	11.1	9.3	0.81	389	1.32	0.011	<0.002	0.058	0.074	65.5	0.064	3.7	<0.001	0.043	0.17	<1	5	<2	<2	<2	<2	5	<5	14000
Maximum Detect						3720	1030	540	328	2.69	9.02	0.17	9.02	11.1	9.3	0.81	389	1.32	0.011	0.0003	0.058	0.074	65.5	0.064	3.7	ND	0.043	0.17	ND	5	ND	ND	ND	ND	5	ND	14000
Average Concentration						892	35	111	290	0.13	1	0.019	1.1	2.2	1.2	0.11	21	0.2	0.00092	0.000063	0.0014	0.0031	1.8	0.0013	0.42	0.000053	0.0022	0.01	0.5	1	1	1	1	1	0.55	2.5	2823
Median Concentration						734	21	37	298	0.03	0.24	0.005	0.27	1.2	1	0.005	9	0.1	0.0005	0.00005	0.0005	0.002	0.95	0.0005	0.205	0.00005	0.002	0.007	0.5	1	1	1	1	1	0.5	2.5	2500
Standard Deviation						592	93	171	36	0.41	1.6	0.029	1.6	2.1	1.1	0.19	44	0.24	0.0011	0.000083	0.0049	0.0062	5.8	0.0053	0.64	0.000037	0.0035	0.016	0	0.37	0	0	0	0	0.42	0	1589

Construction monitoring period started in August 2022 for M12 - West and Central packages, and July 2023 for M12 - East Package

Env Stds Comments

#1:Guideline value calculated by dividing Nitrate (as Nitrate) value (50 mg/L) by 4.427
#2:Guideline value calculated by dividing Nitrite (as Nitrite) value (0.3 mg/L) by molecular weight (3.2967033).
#3:Calculated from ammonia NH4
#4:Loss of production expected at 5000 mg/L for beef cattle, 4000 mg/L dairy cattle, 10000 mg/L sheep, 6000 mg/L horses and pigs, 3000 mg/L poultry
#5:400 mg/L divided by molecular weight, stock may tolerate higher nitrate concentrations if nitrate in feed are not high, water containing >1500 mg/L (as NO3) is likely to be toxic.
#6:30 mg/L divided by molecular weight
#7:>0.5 mg/L hazardous to sheep, >1 mg/L for cattle, >5 mg/L pigs and poulty
#8:Measured as NH3-N at pH 8
#9:Values taken from "Updating nitrate toxicity effects on freshwater aquatic species, 2013"
#10:In absence of total As guideline, As (V) guideline has been adopted.
#11:In absence of total Cr guideline, Cr (VI) guideline has been adopted.

Data Comments

#1 Result value is an approximate.

| | | | | | | PAHs - standard 16 | | | | | | | | | | | | | | | | | | | | Phenols - Halogenated | | | | | | | Phenols - Non-Halogenated | | | | | OC Pesticides | | | | | | | | | | | | | | | | | | |

| | | | | | | PAHs - standard 16 | | | | | | | | | | | | | | | | | | | | Phenols - Halogenated | | | | | | | Phenols - Non-Halogenated | | | | | OC Pesticides | | | | | | | | | | | | | | | | | | |

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	OP Pesticides																																						Pesticides					
	Bensulide	Naftalofos	Azinphos methyl	Bolstar (Sulprofos)	Bromophos-ethyl	Carbophenothion	Azinphos Ethyl	Chlorfenvinphos	Chlorpyrifos	Chlorpyrifos-methyl	Coumaphos	Demeton-O	Demeton-S	Demeton-S-methyl	Diazinon	Dichlorvos	Dimethoate	Disulfoton	EPN	Ethion	Ethoprop	Fenamiphos	Fenitrothion	Fensulfothion	Fenthion	Malathion	Methidathion	Methyl parathion	Mevinphos (Phosdrin)	Monocrotophos	Omethoate	Parathion	Phorate	Pirimiphos-ethyl	Pirimiphos-methyl	Profenofos	Prothiofos	Pyrazophos	Ronnel	Sulfotepp	Terbufos	Thiometon	Trichloronate	Tetrachlorvinphos	Acephate	Demeton-O & Demeton-S	Formothion	Temephos	Trichlorfon	Triazophos
	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L
EQL	0.1	1	0.02	0.05	0.1	0.02	0.02	0.02	0.02	0.2	0.01	0.02	0.02	0.02	0.01	0.2	0.02	0.05	0.05	0.02	0.01	0.01	2	0.01	0.05	0.02	0.1	0.5	0.02	0.02	0.01	0.2	0.1	0.01	0.01	0.01	0.1	0.1	10	0.005	0.01	0.5	0.5	0.01	0.5	0.02	20	0.02	0.02	0.005
ADWG 2011 Health (v3.7 updated 2022)			30	10	10	0.5		2	10						4	5	7	4		4	1	0.5	7	10	7	70	6	0.7	5	2	1	20		0.5	90	0.3		20			0.9	4		100	8		50	400	7	
ANZECC 2000 - Lowland Rivers (NSW coastal rivers)																																																
ANZECC 2000 - Stock Watering																																															
ANZG (2018) - FW - 95% (updated 26 July 2021)			0.02						0.01						0.01		0.15						0.2			0.05						0.004																

Package	Location	Sample Date	Field ID	Sample Type	Lab report Number																																														
M12 - East	HINDS	4/07/2023	HINDS	Normal	ES2322320	<0.1	<1	<0.02	<0.05	<0.1	<0.02	<0.02	<0.02	<0.02	<0.2	<0.01	<0.02	<0.02	<0.02	<0.01	<0.2	<0.02	<0.05	<0.05	<0.02	<0.01	<0.01	<2	<0.01	<0.05	<0.02	<0.1	<0.5	<0.02	<0.02	<0.01	<0.2	<0.1	<0.01	<0.01	<0.01	<0.1	<0.1	<10	<0.005	<0.01	<0.5	<0.5	<0.01	<0.5	<0.02	<20	<0.02	<0.02	<0.005
		8/08/2023	HINDS	Normal	ES2326795	<0.1	<1	<0.02	<0.05	<0.1	<0.02	<0.02	<0.02	<0.02	<0.2	<0.01	<0.02	<0.02	<0.02	<0.01	<0.2	<0.02	<0.05	<0.05	<0.02	<0.01	<0.01	<2	<0.01	<0.05	<0.02	<0.1	<0.5	<0.02	<0.02	<0.01	<0.2	<0.1	<0.01	<0.01	<0.01	<0.1	<0.1	<10	<0.005	<0.01	<0.5	<0.5	<0.01	<0.5	<0.02	<20	<0.02	<0.02	<0.005
			SWDUP1	Field_D	ES2326795	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
		6/09/2023	SWDUP2	Interlab_D	1024024	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
		6/09/2023	HINDS	Normal	ES2330280	<0.1	<1	<0.02	<0.05	<0.1	<0.02	<0.02	<0.02	<0.02	<0.2	<0.01	<0.02	<0.02	<0.02	<0.01	<0.2	<0.02	<0.05	<0.05	<0.02	<0.01	<0.01	<2	<0.01	<0.05	<0.02	<0.1	<0.5	<0.02	<0.02	<0.01	<0.2	<0.1	<0.01	<0.01	<0.01	<0.1	<0.1	<10	<0.005	<0.01	<0.5	<0.5	<0.01	<0.5	<0.02	<20	<0.02	<0.02	<0.005
	HINUS	4/07/2023	HINUS	Normal	ES2322320	<0.1	<1	<0.02	<0.05	<0.1	<0.02	<0.02	<0.02	<0.02	<0.2	<0.01	<0.02	<0.02	<0.02	<0.01	<0.2	<0.02	<0.05	<0.05	<0.02	<0.01	<0.01	<2	<0.01	<0.05	<0.02	<0.1	<0.5	<0.02	<0.02	<0.01	<0.2	<0.1	<0.01	<0.01	<0.01	<0.1	<0.1	<10	<0.005	<0.01	<0.5	<0.5	<0.01	<0.5	<0.02	<20	<0.02	<0.02	<0.005
		8/08/2023	HINUS	Normal	ES2326795	<0.1	<1	<0.02	<0.05	<0.1	<0.02	<0.02	<0.02	<0.02	<0.2	<0.01	<0.02	<0.02	<0.02	<0.01	<0.2	<0.02	<0.05	<0.05	<0.02	<0.01	<0.01	<2	<0.01	<0.05	<0.02	<0.1	<0.5	<0.02	<0.02	<0.01	<0.2	<0.1	<0.01	<0.01	<0.01	<0.1	<0.1	<10	<0.005	<0.01	<0.5	<0.5	<0.01	<0.5	<0.02	<20	<0.02	<0.02	<0.005
		6/09/2023	HINUS	Normal	ES2330280	<0.1	<1	<0.02	<0.05	<0.1	<0.02	<0.02	<0.02	<0.02	<0.2	<0.01	<0.02	<0.02	<0.02	<0.01	<0.2	<0.02	<0.05	<0.05	<0.02	<0.01	<0.01	<2	<0.01	<0.05	<0.02	<0.1	<0.5	<0.02	<0.02	<0.01	<0.2	<0.1	<0.01	<0.01	<0.01	<0.1	<0.1	<10	<0.005	<0.01	<0.5	<0.5	<0.01	<0.5	<0.02	<20	<0.02	<0.02	<0.005
	ROPDS	4/07/2023	ROPDS	Normal	ES2322320	<0.1	<1	<0.02	<0.05	<0.1	<0.02	<0.02	<0.02	<0.02	<0.2	<0.01	<0.02	<0.02	<0.02	<0.01	<0.2	<0.02	<0.05	<0.05	<0.02	<0.01	<0.01	<2	<0.01	<0.05	<0.02	<0.1	<0.5	<0.02	<0.02	<0.01	<0.2	<0.1	<0.01	<0.01	<0.01	<0.1	<0.1	<10	<0.005	<0.01	<0.5	<0.5	<0.01	<0.5	<0.02	<20	<0.02	<0.02	<0.005
		8/08/2023	ROPDS	Normal	ES2326795	<0.1	<1	<0.02	<0.05	<0.1	<0.02	<0.02	<0.02	<0.02	<0.2	<0.01	<0.02	<0.02	<0.02	<0.01	<0.2	<0.02	<0.05	<0.05	<0.02	<0.01	<0.01	<2	<0.01	<0.05	<0.02	<0.1	<0.5	<0.02	<0.02	<0.01	<0.2	<0.1	<0.01	<0.01	<0.01	<0.1	<0.1	<10	<0.005	<0.01	<0.5	<0.5	<0.01	<0.5	<0.02	<20	<0.02	<0.02	<0.005
		6/09/2023	ROPDS	Normal	ES2330280	<0.1	<1	<0.02	<0.05	<0.1	<0.02	<0.02	<0.02	<0.02	<0.2	<0.01	<0.02	<0.02	<0.02	<0.01	<0.2	<0.02	<0.05	<0.05	<0.02	<0.01	<0.01	<2	<0.01	<0.05	<0.02	<0.1	<0.5	<0.02	<0.02	<0.01	<0.2	<0.1	<0.01	<0.01	<0.01	<0.1	<0.1	<10	<0.005	<0.01	<0.5	<0.5	<0.01	<0.5	<0.02	<20	<0.02	<0.02	<0.005
	ROPUS	4/07/2023	ROPUS	Normal	ES2322320	<0.1	<1	<0.02	<0.05	<0.1	<0.02	<0.02	<0.02	<0.02	<0.2	<0.01	<0.02	<0.02	<0.02	<0.01	<0.2	<0.02	<0.05	<0.05	<0.02	<0.01	<0.01	<2	<0.01	<0.05	<0.02	<0.1	<0.5	<0.02	<0.02	<0.01	<0.2	<0.1	<0.01	<0.01	<0.01	<0.1	<0.1	<10	<0.005	<0.01	<0.5	<0.5	<0.01	<0.5	<0.02	<20	<0.02	<0.02	<0.005
		8/08/2023	ROPUS	Normal	ES2326795	<0.1	<1	<0.02	<0.05	<0.1	<0.02	<0.02	<0.02	<0.02	<0.2	<0.01	<0.02	<0.02	<0.02	<0.01	<0.2	<0.02	<0.05	<0.05	<0.02	<0.01	<0.01	<2	<0.01	<0.05	<0.02	<0.1	<0.5	<0.02	<0.02	<0.01	<0.2	<0.1	<0.01	<0.01	<0.01	<0.1	<0.1	<10	<0.005	<0.01	<0.5	<0.5	<0.01	<0.5	<0.02	<20	<0.02	<0.02	<0.005
		6/09/2023	ROPUS	Normal	ES2330280	<0.1	<1	<0.02	<0.05	<0.1	<0.02	<0.02	<0.02	<0.02	<0.2	<0.01	<0.02	<0.02	<0.02	<0.01	<0.2	<0.02	<0.05	<0.05	<0.02	<0.01	<0.01	<2	<0.01	<0.05	<0.02	<0.1	<0.5	<0.02	<0.02	<0.01	<0.2	<0.1	<0.01	<0.01	<0.01	<0.1	<0.1	<10	<0.005	<0.01	<0.5	<0.5	<0.01	<0.5	<0.02	<20	<0.02	<0.02	<0.005
M12 - West	BADDS	16/08/2022	BADDS	Normal	ES2229137	<0.1	<1	<0.02	<0.05	<0.1	<0.02	<0.02	<0.02	<0.02	<0.2	<0.01	<0.02	<0.02	<0.02	<0.01	<0.2	<0.02	<0.05	<0.05	<0.02	<0.01	<0.01	<2	<0.01	<0.05	<0.02	<0.1	<0.5	<0.02	<0.02	<0.01	<0.2	<0.1	<0.01	<0.01	<0.01	<0.1	<0.1	<10	<0.005	<0.01	<0.5	<0.5	<0.01	<0.5	<0.02	<20	<0.02	<0.02	<0.005
		20/09/2022	BADDS	Normal	ES2233731	<0.1	<1	<0.02	<0.05	<0.1	<0.02	<0.02	<0.02	<0.02	<0.2	<0.01	<0.02	<0.02	<0.02	<0.01	<0.2	<0.02	<0.05	<0.05	<0.02	<0.01	<0.01	<2	<0.01	<0.05	<0.02	<0.1	<0.5	<0.02	<0.02	<0.01	<0.2	<0.1	<0.01	<0.01	<0.01	<0.1	<0.1	<10	<0.005	<0.01	<0.5	<0.5	<0.01	<0.5	<0.02	<20	<0.02	<0.02	<0.005
		18/10/2022	BADDS	Normal	ES2237608	<0.1	<1	<0.02	<0.05	<0.1	<0.02	<0.02	<0.02	<0.02	<0.2	<0.01	<0.02	<0.02	<0.02	<0.01	<0.2	<0.02	<0.05	<0.05	<0.02	<0.01	<0.01	<2	<0.01	<0.05	<0.02	<0.1	<0.5	<0.02	<0.02	<0.01	<0.2	<0.1	<0.01	<0.01	<0.01	<0.1	<0.1	<10	<0.005	<0.01	<0.5	<0.5	<0.01	<0.5	<0.02	<20	<0.02	<0.02	<0.005
		15/12/2022	BADDS	Normal	ES2245593	<0.1	<1	<0.02	<0.05	<0.1	<0.02	<0.02	<0.02	<0.02	<0.2	<0.01	<0.02	<0.02	<0.02	<0.01	<0.2	<0.02	<0.05	<0.05	<0.02	<0.01	<0.01	<2	<0.01	<0.05	<0.02	<0.1	<0.5	<0.02	<0.02	<0.01	<0.2	<0.1	<0.01	<0.01	<0.01	<0.1	<0.1	<10	<0.005	<0.01	<0.5	<0.5	<0.01	<0.5	<0.02	<20	<0.02	<0.02	<0.005
		18/01/2023	BADDS	Normal	ES2301697	<0.1	<1	<0.02	<0.05	<0.1	<0.02	<0.02	<0.02	<0.02	<0.2	<0.01	<0.02	<0.02	<0.02	<0.01	<0.2	<0.02	<0.05	<0.05	<0.02	<0.01	<0.01	<2	<0.01	<0.05	<0.02	<0.1	<0.5	<0.02	<0.02	<0.01	<0.2	<0.1	<0.01	<0.01	<0.01	<0.1	<0.1	<10	<0.005	<0.01	<0.5	<0.5	<0.01	<0.5	<0.02	<20	<0.02	<0.02	<0.005
		8/02/2023	BADDS	Normal	ES2304061	<0.1	<1	<0.02	<0.05	<0.1	<0.02	<0.02	<0.02	<0.02	<0.2	<0.01	<0.02	<0.02	<0.02	<0.01	<0.2	<0.02	<0.05	<0.05	<0.02	<0.01	<0.01	<2	<0.01	<0.05	<0.02	<0.1	<0.5	<0.02	<0.02	<0.01	<0.2	<0.1	<0.01	<0.01	<0.01	<0.1	<0.1	<10	<0.005	<0.01	<0.5	<0.5	<0.01	<0.5	<0.02	<20	<0.02	<0.02	<0.005
		3/03/2023	BADDS	Normal	ES2307154	<0.1	<1	<0.02	<0.05	<0.1	<0.02	<0.02	<0.02	<0.02	<0.2	<0.01	<0.02	<0.02	<0.02	<0.01	<0.2	<0.02	<0.05	<0.05	<0.02	<0.01	<0.01	<2	<0.01	<0.05	<0.02	<0.1	<0.5	<0.02	<0.02	<0.01	<0.2	<0.1	<0.01	<0.01	<0.01	<0.1	<0.1	<10	<0.005	<0.01	<0.5	<0.5	<0.01	<0.5	<0.02	<20	<0.02	<0.02	<0.005
		4/04/2023	BADDS	Normal	ES2311425	<0.1	<1	<0.02	<0.05	<0.1	<0.02	<0.02	<0.02	<0.02	<0.2	<0.01	<0.02	<0.02	<0.02	<0.01	<0.2	<0.02	<0.05	<0.05	<0.02	<0.01	<0.01	<2	<0.01	<0.05	<0.02	<0.1	<0.5	<0.02	<0.02	<0.01	<0.2	<0.1	<0.01	<0.01	<0.01	<0.1	<0.1	<10	<0.005	<0.01	<0.5	<0.5	<0.01	<0.5	<0.02	<20	<0.02	<0.02	<0.005
		2/05/2023	BADDS	Normal	ES2314384	<0.1	<1	<0.02	<0.05	<0.1	<0.02	<0.02	<0.02	<0.02	<0.2	<0.01	<0.02	<0.02	<0.02	<0.01	<0.2	<0.02	<0.05	<0.05	<0.02	<0.01	<0.01	<2	<0.01	<0.05	<0.02	<0.1	<0.5	<0.02	<0.02	<0.01	<0.2	<0.1	<0.01	<0.01	<0.01	<0.1	<0.1	<10	<0.005	<0.01	<0.5	<0.5	<0.01	<0.5	<0.02	<20	<0.02	<0.02	<0.005
		7/06/2023	BADDS	Normal	ES2319028	<0.1	<1	<0.02	<0.05	<0.1	<0.02	<0.02	<0.02	<0.02	<0.2	<0.01	<0.02	<0.02	<0.02	<0.01	<0.2	<0.02	<0.05	<0.05	<0.02	<0.01	<0.01	<2	<0.01	<0.05	<0.02	<0.1	<0.5	<0.02	<0.02	<0.01	<0.2	<0.1	<0.01	<0.01	<0.01	<0.1	<0.1	<10	<0.005	<0.01	<0.5	<0.5	<0.01	<0.5	<0.02	<20	<0.02	<0.02	<0.005
		7/07/2023	SWDUP2	Interlab_D	1006932	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
		7/07/2023	BADDS	Normal	ES2322911	<0.1	<1	<0.02	<0.05	<0.1	<0.02	<0.02	<0.02	<0.02	<0.2	<0.01	<0.02	<0.02	<0.02	<0.01	<0.2	<0.02	<0.05	<0.05	<0.02	<0.01	<0.01	<2	<0.01	<0.05	<0.02	<0.1	<0.5	<0.02	<0.02	<0.01	<0.2	<0.1	<0.01	<0.01	<0.01	<0.1	<0.1	<10	<0.005	<0.01	<0.5	<0.5	<0.01	<0.5	<0.02	<20	<0.02	<0.02	<0.005
		9/08/2023	BADDS	Normal	ES2326795	<0.1	<1	<0.02	<0.05	<0.1	<0.02	<0.02	<0.02	<0.02	<0.2	<0.01	<0.02	<0.02	<0.02	<0.01	<0.2	<0.02	<0.05	<0.05	<0.02	<0.01	<0.01	<2	<0.01	<0.05	<0.02	<0.1	<0.5	<0.02	<0.02	<0.01	<0.2	<0.1	<0.01	<0.01	<0.01	<0.1	<0.1	<10	<0.005	<0.01	<0.5	<0.5	<0.01	<0.5	<0.02	<20	<0.02	<0.02	<0.005
		5/09/2023	BADDS	Normal	ES2330280	<0.1	<1	<0.02	<0.05	<0.1	<0.02	<0.02	<0.02	<0.02	<0.2	<0.01	<0.02	<0.02	<0.02	<0.01	<0.2	<0.02	<0.05	<0.05	<0.02	<0.01	<0.01	<2	<0.01	<0.05	<0.02	<0.1	<0.5	<0.02	<0.02	<0.01	<0.2	<0.1	<0.01	<0.01	<0.01	<0.1	<0.1	<10	<0.005	<0.01	<0.5	<0.5	<0.01	<0.5	<0.02	<20	<0.02	<0.02	<0.005
	BADMS	16/08/2022	BADMS	Normal	ES2229137	<0.1	<1	<0.02	<0.05	<0.1	<0.02	<0.02	<0.02	<0.02	<0.2	<0.01	<0.02	<0.02	<0.02	<0.01	<0.2	<0.02	<0.05	<0.05	<0.02	<0.01	<0.01	<2	<0.01	<0.05	<0.02	<0.1	<0.5	<0.02	<0.02	<0.01	<0.2	<0.1	<0.01	<0.01	<0.01	<0.1	<0.1	<10	<0.005	<0.01	<0.5	<0.5	<0.01	<0.5	<0.02	<20	<0.02	<0.02	<0.005
		20/09/2022	BADMS	Normal	ES2233731	<0.1	<1	<0.02	<0.05	<0.1	<0.02	<0.02	<0.02	<0.02	<0.2	<0.01	<0.02	<0.02	<0.02	<0.01	<0.2	<0.02	<0.05	<0.05	<0.02	<0.01	<0.01	<2	<0.01	<0.05	<0.02	<0.1	<0.5	<0.02	<0.02	<0.01	<0.2	<0.1	<0.01	<0.01	<0.01	<0.1	<0.1	<10	<0.005	<0.01	<0.5	<0.5	<0.01	<0.5	<0.02	<20	<0.02	<0.02	<0.005
		18/10/2022	BADMS	Normal	ES2237608	<0.1	<1	<0.02	<0.05	<0.1	<0.02	<0.02	<0.02	<0.02	<0.2	<0.01	<0.02	<0.02	<0.02	<0.01	<0.2	<0.02	<0.05	<0.05	<0.02	<0.01	<0.01	<2	<0.01	<0.05	<0.02	<0.1	<0.5	<0.02	<0.02	<0.01	<0.2	<0.1	<0.01	<0.01	<0.01	<0.1	<0.1	<10	<0.005	<0.01	<0.5	<0.5	<0.01	<0.5	<0.02	<20	<0.02	<0.02	<0.005
		15/12/2022	BADMS	Normal	ES2245593	<0.1	<1	<0.02	<0.05	<0.1	<0.02	<0.02	<0.02	<0.02	<0.2	<0.01	<0.02	<0.02	<0.02	<0.01	<0.2	<0.02	<0.05	<0.05	<0.02	<0.01	<0.01	<2	<0.01	<0.05	<0.02	<0.1	<0.5	<0.02	<0.02	<0.01	<0.2	<0.1	<0.01	<0.01	<0.01	<0.1	<0.1	<10	<0.005	<0.01	<0.5	<0.5	<0.01	<0.5	<0.02	<20	<0.02	<0.02	<0.005
		18/01/2023	BADMS	Normal	ES2301697	<0.1	<1	<0.02	<0.05	<0.1	<0.02	<0.02	<0.02	<0.02	<0.2	<0.01	<0.02	<0.02	<0.02	<0.01	<0.2	<0.02	<0.05	<0.05	<0.02	<0.01	<0.01	<2	<0.01	<0.05	<0.02	<0.1	<0.5	<0.02	<0.02	<0.01	<0.2	<0.1	<0.01	<0.01	<0.01	<0.1	<0.1	<10	<0.005	<0.01	<0.5	<0.5	<0.01	<0.5	<0.02	<20	<0.02	<0.02	<0.005
		8/02/2023	BADMS	Normal	ES2304061	<0.1	<1	<0.02	<0.05	<0.1	<0.02	<0.02	<0.02	<0.02	<0.2	<0.01	<0.02	<0.02	<0.02	<0.01	<0.2	<0.02	<0.05	<0.05	<0.02	<0.01	<0.01	<2	<0.01	<0.05	<0.02	<0.1	<0.5	<0.02	<0.02	<0.01	<0.2	<0.1	<0.01	<0.01	<0.01	<0.1	<0.1	<10	<0.005	<0.01	<0.5	<0.5	<0.01	<0.5	<0.02	<20	<0.02	<0.02	<0.005
		3/03/2023	BADMS	Normal	ES2307154	<0.1	<1	<0.02	<0.05	<0.1	<0.02	<0.02	<0.02	<0.02	<0.2	<0.01	<0.02	<0.02	<0.02	<0.01	<0.2	<0.02	<0.05	<0.05	<0.02	<0.01	<0.01	<2	<0.01	<0.05	<0.02	<0.1	<0.5	<0.02	<0.02	<0.01	<0.2	<0.1	<0.01	<0.01	<0.01	<0.1	<0.1	<10	<0.005	<0.01	<0.5	<0.5	<0.01	<0.5	<0.02	<20	<0.02	<0.02	<0.005
		4/04/2023	BADMS	Normal	ES2311425	<0.1	<1	<0.02	<0.05	<0.1	<0.02	<0.02	<0.02	<0.02	<0.2	<0.01	<0.02	<0.02	<0.02	<0.01	<0.2	<0.02	<0.05	<0.05	<0.02	<0.01	<0.01	<2	<0.01	<0.05	<0.02	<0.1	<0.5	<0.02	<0.02	<0.01	<0.2	<0.1	<0.01	<0.01	<0.01	<0.1	<0.1	<10	<0.005	<0.01	<0.5	<0.5	<0.01	<0.5	<0.02	<20	<0.02	<0.02	<0.005
		2/05/2023	BADMS	Normal	ES2314384	<0.1	<1	<0.02	<0.05	<0.1	<0.02	<0.02	<0.02	<0.02	<0.2	<0.01	<0.02	<0.02	<0.02	<0.01	<0.2	<0.02	<0.05	<0.05	<0.02	<0.01	<0.01	<2	<0.01	<0.05	<0.02	<0.1	<0.5	<0.02	<0.02	<0.01	<0.2	<0.1	<0.01	<0.01	<0.01	<0.1	<0.1	<10	<0.005	<0.01	<0.5	<0.5	<0.01	<0.5	<0.02	<20	<0.02	<0.02	<0.005
		7/06/2023	BADMS	Normal	ES2319028	<0.1	<1	<0.02	<0.05	<0.1	<0.02	<0.02	<0.02	<0.02	<0.2	<0.01	<0.02	<0.02	<0.02	<0.01	<0.2	<0.02	<0.05	<0.05	<0.02	<0.01	<0.01	<2	<0.01	<0.05	<0.02	<0.1	<0.5	<0.02	<0.02	<0.01	<0.2	<0.1	<0.01	<0.01	<0.01	<0.1	<0.1	<10	<0.005	<0.01	<0.5	<0.5	<0.01	<0.5	<0.02	<20	<0.02	<0.02	<0.005
		7/07/2023	BADMS	Normal	ES2322911	<0.1	<1	<0.02	<0.05	<0.1	<0.02	<0.02	<0.02	<0.02	<0.2	<0.01	<0.02	<0.02	<0.02	<0.01	<0.2	<0.02	<0.05	<0.05	<0.02	<0.01	<0.01	<2	<0.01	<0.05	<0.02	<0.1	<0.5	<0.02	<0.02	<0.01	<0.2	<0.1	<0.01	<0.01	<0.01	<0.1	<0.1	<10	<0.005	<0.01	<0.5	<0.5	<0.01	<0.5	<0.02	<20	<0.02	<0.02	<0.005
		9/08/2023	BADMS	Normal	ES2326795	<0.1	<1	<0.02	<0.05	<0.1	<0.02	<0.02	<0.02	<0.02	<0.2	<0.01	<0.02	<0.02	<0.02	<0.01	<0.2	<0.02	<0.05	<0.05	<0.02	<0.01	<0.01	<2	<0.01	<0.05	<0.02	<0.1	<0.5	<0.02	<0.02	<0.01	<0.2	<0.1	<0.01	<0.01	<0.01	<0.1	<0.1	<10	<0.005	<0.01	<0.5	<0.5	<0.01	<0.5	<0.02	<20	<0.02	<0.02	<0.005
		5/09/2023	BADMS	Normal	ES2330280	<0.1	<1	<0.02	<0.05	<0.1	<0.02	<0.02	<0.02	<0.02	<0.2	<0.01	<0.02	<0.02	<0.02	<0.01	<0.2	<0.02	<0.05	<0.05	<0.02	<0.01	<0.01	<2	<0.01	<0.05	<0.02	<0.1	<0.5	<0.02	<0.02	<0.01	<0.2	<0.1	<0.01	<0.01	<0.01	<0.1	<0.1	<10	<0.005	<0.01	<0.5	<0.5	<0.01	<0.5	<0.02	<20	<0.02	<0.02	<0.005
	BADUS	16/08/2022	BADUS	Normal	ES2229137	<0.1	<1	<0.02	<0.05	<0.1	<0.02	<0.02	<0.02	<0.02	<0.2	<0.01	<0.02	<0.02	<0.02	<0.01	<0.2	<0.02	<0.05	<0.05	<0.02	<0.01	<0.01	<2	<0.01	<0.05	<0.02	<0.1	<0.5	<0.02	<0.02	<0.01	<0.2	<0.1	<0.01	<0.01	<0.01	<0.1	<0.1	<10	<0.005	<0.01	<0.5	<0.5	<0.01	<0.5	<0.02	<20	<0.02	<0.02	<0.005
		20/09/2022	BADUS	Normal	ES2233731	<0.1	<1	<0.02	<0.05	<0.1	<0.02	<0.02	<0.02	<0.02	<0.2	<0.01	<0.02	0.02	<0.02	<0.01	<0.2	<0.02	<0.05	<0.05	<0.02	<0.01	<0.01	<2	<0.01	<0.05	<0.02	<0.1	<0.5	<0.02	<0.02	<0.01	<0.2	<0.1	<0.01	<0.01	<0.01	<0.1	<0.1	<10	<0.005	<0.01	<0.5	<0.5	<0.01	<0.5	<0.02	<20	<0.02	<0.02	<0.005
		19/10/2022	BADUS	Normal	ES2237608	<0.1	<1	<0.02	<0.05	<0.1	<0.02	<0.02	<0.02	<0.02	<0.2	<0.01	<0.02	<0.02	<0.02	<0.01	<0.2	<0.02	<0.05	<0.05	<0.02	<0.01	<0.01	<2	<0.01	<0.05	<0.02	<0.1	<0.5	<0.02	<0.02	<0.01	<0.2	<0.1	<0.01	<0.01	<0.01	<0.1	<0.1	<10	<0.005	<0.01	<0.5	<0.5	<0.01	<0.5	<0.02	<20	<0.02	<0.02	<0.005
		15/12/2022	BADUS	Normal	ES2245593	<0.1	<1	<0.02	<0.05	<0.1	<0.02	<0.02	<0.02	<0.02	<0.2	<0.01	<0.02	<0.02	<0.02	<0.01	<0.2	<0.02	<0.05	<0.05	<0.02	<0.01	<0.01	<2	<0.01	<0.05	<0.02	<0.1	<0.5	<0.02	<0.02	<0.01	<0.2	<0.1	<0.01	<0.01	<0.01	<0.1	<0.1	<10	<0.005	<0.01	<0.5	<0.5	<0.01	<0.5	<0.02	<20	<0.02	<0.02	<0.005
		18/01/2023	BADUS	Normal	ES2301697	<0.1	<1	<0.02	<0.05	<0.1	<0.02	<0.02	<0.02	<0.02	<0.2	<0.01	<0.02	<0.02	<0.02	<0.01	<0.2	<0.02	<0.05	<0.05	<0.02	<0.01	<0.01	<2	<0.01	<0.05	<0.02	<0.1	<0.5	<0.02	<0.02	<0.01	<0.2	<0.1	<0.01	<0.01	<0.01	<0.1	<0.1	<10	<0.005	<0.01

| | | | | | | OP Pesticides | | | | | |

| | | | | | | Chlorinated Hydrocarbons | | | | | | | | | | | | | | | | | | | | | | | | | | | | Fungicides | Halogenated Hydrocarbons | | PCBs | | | | | | | VOCs | | | | | | | | | | | | | | | | | | |

| | | | | | | Chlorinated Hydrocarbons | | | | | | | | | | | | | | | | | | | | | | | | | | | | Fungicides | Halogenated Hydrocarbons | | PCBs | | | | | | | VOCs | | | | | | | | | | | | | | | | | | | | | | | | | | | |
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Appendix B
Table B5
Analytical Results for Construction Monitoring Period (August 2023 to September 203)

| | | | | | | Chlorinated Hydrocarbons | | | | | |

	Inorganics		Biological	Acidity & Alkalinity	Nutrients							Metals										BTEXN							TRH - NEPM 2013								TRH - NEPM 1999								TPH	PAHs - standard 16															
	Total Dissolved Solids	Total Suspended Solids	Thermotolerant (Faecal) Coliforms	Hardness as CaCO3 (Filtered)	Ammonia as N	Nitrate (as N)	Nitrite (as N)	Nitrogen (Total Oxidised) (as N)	Nitrogen (Total)	Kjeldahl Nitrogen Total	Reactive Phosphorus as P	Chlorophyll a	Phosphorus (Total)	Arsenic	Cadmium	Chromium (III+IV)	Copper	Iron	Lead	Manganese	Mercury	Nickel	Zinc	Benzene	Toluene	Ethylbenzene	Xylene (o)	Xylene (m & p)	Xylene Total	BTEX (Sum of Total) - Lab Calc	Naphthalene (BTEXN suite)	Naphthalene	F1 (C6-C10 minus BTEX)	C6-C10 Fraction	F2 (>C10-C16 minus Naphthalene)	>C10-C16 Fraction	F3 (>C16-C34 Fraction)	F4 (>C34-C40 Fraction)	>C10-C40 (Sum of Total)	C6-C9 Fraction	C10-C14 Fraction	C15-C28 Fraction	C29-C36 Fraction	C10-C36 (Sum of Total)	Oil & Grease	Acenaphthene	Acenaphthylene	Anthracene	Benz(a)anthracene	Benzo(a)pyrene	Benzo(b+j)fluoranthene	Benzo(b,j+k)fluoranthene	Benzo(g,h,i)perylene	Chrysene	Dibenz(a,h)anthracene	Fluoranthene	Fluorene	Indeno(1,2,3-c,d)pyrene	Naphthalene PAH	Phenanthrene	Pyrene	PAHs (Sum of total) - Lab calc	Total 8 PAHs (as BaP TEQ)(zero LOR) - Lab Calc
	mg/L	mg/L	orgs/100mL	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L
EQL	10	5	1	1	0.01	0.01	0.01	0.01	0.1	0.1	0.01	1	0.01	0.001	0.0001	0.001	0.001	0.05	0.001	0.001	0.001	0.005	0.005	1	2	2	2	2	1	5	1	20	20	100	100	100	100	100	20	50	100	50	50	5000	0.1	0.1	0.1	0.1	0.05	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.05	0.05
ADWG 2011 Health (v3.7 updated 2022)						11.29[#1]	0.91[#2]							0.01	0.002		2		0.01	0.5	0.001	0.02		1	800	300		2	2	600																																		0.01		
ANZECC 2000 - Lowland Rivers (NSW coastal rivers)		**6**			**0.116[#3]**			**0.04**	**0.35**		**0.008**	**0.003**	**0.025**																																																		
ANZECC 2000 - Stock Watering	5000[#4]		100			90[#5]	9.1[#6]							0.5	0.01	1	1[#7]		0.1			0.002	1	20																																						
ANZG (2018) - FW - 95% (updated 26 July 2021)					0.9[#8]	2.4[#9]								0.013[#10]	0.0002	0.001[#11]	0.0014		0.0034	1.9	0.0006	0.011	0.008	950	180	80	350				16	16																																			
PFAS NEMP 2.0 2020 Freshwater - 95% - slightly to moderately disturbed systems																																																																					
PFAS NEMP 2.0 2020 Health Drinking Water																																																																				
PFAS NEMP 2.0 2020 Recreational Water																																																																				

| Paackage | Location Code | Sample Date | Field ID | Lab Report Number | | | | | | | | | | | | | | | | | | |

| | | | PAHs - extended | | | | | Phenols - Halogenated | | | | | | | Phenols - Non-Halogenated | | | | OC Pesticides | | | | | | |

| | | | | | | | | Pesticides | | | | | | | |

							PFAS - Sums					PFAS - Perfluoroalkyl Carboxylic Acids												PFAS - Perfluoroalkyl Sulfonic Acids								PFAS - Perfluoroalkyl Sulfonamide							PFAS - Fluorotelomer Sulfonic Acids			
							Sum of PFHxS and PFOS	Sum of US EPA PFAS (PFOS + PFOA)*	PFAS (Sum of Total)	Sum of enHealth PFAS (PFHxS + PFOS + PFOA)*	PFAS (Sum of Total)(WA DER List)	Perfluorobutanoic acid (PFBA)	Perfluoropentanoic acid (PFPeA)	Perfluorohexanoic acid (PFHxA)	Perfluoroheptanoic acid (PFHpA)	Perfluorooctanoic acid (PFOA)	Perfluorononanoic acid (PFNA)	Perfluorodecanoic acid (PFDA)	Perfluoroundecanoic acid (PFUnDA)	Perfluorododecanoic acid (PFDoDA)	Perfluorotridecanoic acid (PFTrDA)	Perfluorotetradecanoic acid (PFTeDA)	Perfluoropropanesulfonic acid (PFPrS)	Perfluorobutane sulfonic acid (PFBS)	Perfluoropentane sulfonic acid (PFPeS)	Perfluorohexane sulfonic acid (PFHxS)	Perfluoroheptane sulfonic acid (PFHpS)	Perfluorooctane sulfonic acid (PFOS)	Perfluorononanesulfonic acid (PFNS)	Perfluorodecanesulfonic acid (PFDS)	Perfluorooctane sulfonamide (FOSA)	N-Methyl perfluorooctane sulfonamide (MeFOSA)	N-Ethyl perfluorooctane sulfonamide (EtFOSA)	N-Methyl perfluorooctane sulfonamidoacetic acid (MeFOSAA)	N-Methyl perfluorooctane sulfonamidoethanol (MEFOSE)	N-Ethyl perfluorooctane sulfonamidoethanol (BEFOSE)	N-Ethyl perfluorooctane sulfonamidoacetic acid (EtFOSAA)	4:2 Fluorotelomer sulfonic acid (4:2 FTS)	6:2 Fluorotelomer Sulfonate (6:2 FTS)	8:2 Fluorotelomer sulfonic acid (8:2 FTS)	10:2 Fluorotelomer sulfonic acid (10:2 FTS)
							µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L
EQL							0.01	0.01	0.01	0.01	0.01	0.1	0.02	0.02	0.02	0.01	0.02	0.02	0.02	0.02	0.02	0.05	0.01	0.02	0.02	0.01	0.02	0.01	0.01	0.02	0.02	0.05	0.05	0.02	0.05	0.05	0.02	0.05	0.05	0.05	0.05
ADWG 2011 Health (v3.7 updated 2022)							0.07									0.56																										
ANZECC 2000 - Lowland Rivers (NSW coastal rivers)																																										
ANZECC 2000 - Stock Watering																																										
ANZG (2018) - FW - 95% (updated 26 July 2021)																																										
PFAS NEMP 2.0 2020 Freshwater - 95% - slightly to moderately disturbed syst																220												0.13														
PFAS NEMP 2.0 2020 Health Drinking Water							0.07									0.56										0.07		0.07														
PFAS NEMP 2.0 2020 Recreational Water							2									10										2		2														
Paackage	**Location Code**	**Sample Date**	**Field ID**	**Lab Report Number**																																							
M12 - Central	KEMDS	25/08/2021	KEMDS	ES2130958	<0.01	-	<0.01	-	<0.01	<0.1	<0.02	<0.02	<0.02	<0.01	<0.02	<0.02	<0.02	<0.02	<0.02	<0.05	-	<0.02	<0.02	<0.02	<0.02	<0.01	-	<0.02	<0.02	<0.05	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	<0.05	<0.05	<0.05
		29/11/2021	KEMDS	ES2143283	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
		14/01/2022	KEMDS	ES2201178	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
		5/07/2022	SWDUP2	903385	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
		5/07/2022	KEMDS	ES2223581	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
		14/11/2022	KEMDS	ES2241134	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
		31/08/2023	KEMDS	ES2329639	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
			SWDUP1	ES2329639	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
	KEMUS	25/08/2021	KEMUS	ES2130958	<0.01	-	0.01	-	0.01	<0.1	<0.02	<0.02	<0.02	0.01	<0.02	<0.02	<0.02	<0.02	<0.02	<0.05	-	<0.02	<0.02	<0.02	<0.02	<0.01	-	<0.02	<0.02	<0.05	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	<0.05	<0.05	<0.05
		29/11/2021	KEMUS	ES2143283	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
		14/01/2022	KEMUS	ES2201178	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
		5/07/2022	KEMUS	ES2223581	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
		14/11/2022	SWDUP2	941927	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
		14/11/2022	KEMUS	ES2241134	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
		31/08/2023	SWDUP2	1022291	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
		31/08/2023	KEMUS	ES2329639	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
	SOUDS	25/08/2021	M12WWDI	ES2130958	<0.01	-	<0.01	-	<0.01	<0.1	<0.02	<0.02	<0.02	<0.01	<0.02	<0.02	<0.02	<0.02	<0.02	<0.05	-	<0.02	<0.02	<0.02	<0.02	<0.01	-	<0.02	<0.02	<0.05	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	<0.05	<0.05	<0.05
			SOUDS	ES2130958	<0.01	-	0.02	-	0.02	<0.1	<0.02	0.02	<0.02	<0.01	<0.02	<0.02	<0.02	<0.02	<0.02	<0.05	-	<0.02	<0.02	<0.02	<0.02	<0.01	-	<0.02	<0.02	<0.05	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	<0.05	<0.05	<0.05
		29/11/2021	SOUDS	ES2143283	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
		14/01/2022	SOUDS	ES2201178	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
			SWDUP1	ES2201178	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
		6/07/2022	SOUDS	ES2223704	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
		15/11/2022	SOUDS	ES2241447	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
		31/08/2023	SOUDS	ES2329639	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
	SOUUS	25/08/2021	SOUUS	ES2130958	<0.01	-	<0.01	-	<0.01	<0.1	<0.02	<0.02	<0.02	<0.01	<0.02	<0.02	<0.02	<0.02	<0.02	<0.05	-	<0.02	<0.02	<0.02	<0.02	<0.01	-	<0.02	<0.02	<0.05	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	<0.05	<0.05	<0.05
		29/11/2021	SOUUS	ES2143283	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
		14/01/2022	SOUUS	ES2201178	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
		6/07/2022	SOUUS	ES2223704	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
		15/11/2022	SOUUS	ES2241447	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
		31/08/2023	SOUUS	ES2329639	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
M12 - East	HINDS	25/08/2021	HINDS	ES2130958	<0.01	-	<0.01	-	<0.01	<0.1	<0.02	<0.02	<0.02	<0.01	<0.02	<0.02	<0.02	<0.02	<0.02	<0.05	-	<0.02	<0.02	<0.02	<0.02	<0.01	-	<0.02	<0.02	<0.05	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	<0.05	<0.05	<0.05
		29/11/2021	SWDUP2	845654	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
		29/11/2021	HINDS	ES2143283	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
		14/01/2022	HINDS	ES2201178	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
		5/07/2022	HINDS	ES2223581	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
		14/11/2022	HINDS	ES2241134	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
		31/08/2023	HINDS	ES2329639	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
	HINUS	25/08/2021	HINUS	ES2130958	<0.01	-	<0.01	-	<0.01	<0.1	<0.02	<0.02	<0.02	<0.01	<0.02	<0.02	<0.02	<0.02	<0.02	<0.05	-	<0.02	<0.02	<0.02	<0.02	<0.01	-	<0.02	<0.02	<0.05	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	<0.05	<0.05	<0.05
		29/11/2021	HINUS	ES2143283	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
		14/01/2022	HINUS	ES2201178	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
		5/07/2022	HINUS	ES2223581	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
		14/11/2022	HINUS	ES2241134	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
			SWDUP1	ES2241134	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
		31/08/2023	HINUS	ES2329639	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
	ROPDS	25/08/2021	ROPUS	ES2130958	<0.01	-	0.01	-	0.01	<0.1	<0.02	<0.02	<0.02	0.01	<0.02	<0.02	<0.02	<0.02	<0.02	<0.05	-	<0.02	<0.02	<0.02	<0.02	<0.01	-	<0.02	<0.02	<0.05	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	<0.05	<0.05	<0.05
		29/11/2021	ROPDS	ES2143283	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
		14/01/2022	ROPDS	ES2201178	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
		5/07/2022	ROPDS	ES2223581	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
		14/11/2022	ROPDS	ES2241134	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
		31/08/2023	ROPDS	ES2329639	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
	ROPUS	29/11/2021	ROPUS	ES2143283	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
		14/01/2022	ROPUS	ES2201178	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
		5/07/2022	ROPUS	ES2223581	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
		15/11/2022	ROPUS	ES2241447	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
		31/08/2023	ROPUS	ES2329639	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
M12 - West	BADDS	25/08/2021	M12WWDI	619596	<0.01	<0.01	<0.1	<0.01	0.05	<0.05	0.02	0.03	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.01	<0.05	<0.01	<0.01
		25/08/2021	BADDS	ES2130958	<0.01	-	0.03	-	0.03	<0.1	<0.02	0.03	<0.02	<0.01	<0.02	<0.02	<0.02	<0.02	<0.02	<0.05	-	<0.02	<0.02	<0.02	<0.02	<0.01	-	<0.02	<0.02	<0.05	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	<0.05	<0.05	<0.05
		29/11/2021	BADDS	ES2143283	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
		14/01/2022	BADDS	ES2201178	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
		6/07/2022	BADDS	ES2223704	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
		15/11/2022	BADDS	ES2241447	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
		31/08/2023	BADDS	ES2329639	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
	BADMS	29/11/2021	BADMS	ES2143283	<0.01	-	<0.01	-	<0.01	<0.1	<0.02	<0.02	<0.02	<0.01	<0.02	<0.02	<0.02	<0.02	<0.02	<0.05	-	<0.02	<0.02	<0.01	<0.02	<0.01	-	<0.02	<0.02	<0.05	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	<0.05	<0.05	<0.05
			SWDUP1	ES2143283	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
		14/01/2022	BADMS	ES2201178	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
		6/07/2022	BADMS	ES2223704	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
		15/11/2022	BADMS	ES2241447	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
		31/08/2023	BADMS	ES2329639	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
	BADUS	25/08/2021	BADUS	ES2130958	<0.01	-	<0.01	-	<0.01	<0.1	<0.02	<0.02	<0.02	<0.01	<0.02	<0.02	<0.02	<0.02	<0.02	<0.05	-	<0.02	<0.02	<0.02	<0.02	<0.01	-	<0.02	<0.02	<0.05	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	<0.05	<0.05	<0.05
		29/11/2021	BADUS	ES2143283	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
		14/01/2022	SWDUP2	856978	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
		14/01/2022	BADUS	ES2201178	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
		5/07/2022	BADUS	ES2223581	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
			SWDUP1	ES2223581	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
		14/11/2022	BADUS	ES2241134	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
		31/08/2023	BADUS	ES2329639	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
	COSDS	25/08/2021	COSDS	ES2130958	<0.01	-	<0.01	-	<0.01	<0.1	<0.02	<0.02	<0.02	<0.01	<0.02	<0.02	<0.02	<0.02	<0.02	<0.05	-	<0.02	<0.02	<0.02	<0.02	<0.01	-	<0.02	<0.02	<0.05	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	<0.05	<0.05	<0.05
		29/11/2021	COSDS	ES2143283	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
		14/01/2022	COSDS	ES2201178	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
		5/07/2022	COSDS	ES2223581	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
		14/11/2022	COSDS	ES2241134	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
		31/08/2023	COSDS	ES2329639	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
	COSUS	25/08/2021	COSUS	ES2130958	<0.01	-	<0.01	-	<0.01	<0.1	<0.02	<0.02	<0.02	<0.01	<0.02	<0.02	<0.02	<0.02	<0.02	<0.05	-	<0.02	<0.02	<0.02	<0.02	<0.01	-	<0.02	<0.02	<0.05	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	<0.05	<0.05	<0.05
		29/11/2021	COSUS	ES2143283	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
		14/01/2022	COSUS	ES2201178	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
		5/07/2022	COSUS	ES2223581	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
		14/11/2022	COSUS	ES2241134	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
		31/08/2023	COSUS	ES2329639	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-

Statistical Summary

Number of Results	14	1	14	1	14	14	14	14	14	14	14	14	14	14	14	14	1	14	14	14	14	14	1	14	14	14	14	14	14	14	14	14	14	14	14	14	14	14	14	14	14	14
Number of Detects	0	0	4	0	5	0	1	3	0	2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Minimum Concentration	<0.01	<0.01	<0.01	<0.01	<0.01	<0.05	<0.02	<0.02	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.05	<0.05	<0.05	<0.02	<0.05	<0.05	<0.05	<0.05	<0.01	<0.05	<0.01	<0.01
Minimum Detect	ND	ND	0.01	ND	0.01	ND	0.02	0.02	ND	0.01	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Maximum Concentration	<0.01	<0.01	<0.1	<0.01	0.05	<0.1	0.02	0.03	<0.02	0.01	<0.02	<0.02	<0.02	<0.02	<0.02	<0.05	<0.01	<0.02	<0.02	<0.02	<0.02	<0.01	<0.01	<0.02	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05
Maximum Detect	ND	ND	0.03	ND	0.05	ND	0.02	0.03	ND	0.01	ND	ND	ND	ND	ND	0.024	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Average Concentration	0.005		0.012		0.012	0.048	0.011	0.014	0.0096	0.0057	0.0096	0.0096	0.0096	0.0096	0.0096	0.024		0.0096	0.0096	0.0093	0.0096	0.005		0.0096	0.011	0.025	0.025	0.011	0.025	0.025	0.011	0.024	0.025	0.024	0.024							
Median Concentration	0.005	0.005	0.005	0.005	0.005	0.05	0.01	0.01	0.01	0.005	0.01	0.01	0.01	0.01	0.01	0.025	0.005	0.01	0.01	0.01	0.01	0.005	0.005	0.01	0.01	0.025	0.025	0.01	0.025	0.025	0.01	0.025	0.025	0.025	0.025							
Standard Deviation	0		0.013		0.013	0.0067	0.0027	0.0074	0.0013	0.0018	0.0013	0.0013	0.0013	0.0013	0.0013	0.0053		0.0013	0.0013	0.0018	0.0013	0		0.0013	0.004	0	0	0.004	0	0	0.004	0.0053	0	0.0053	0.0053							

Env Stds Comments
#1:Guideline value calculated by dividing Nitrate (as Nitrate) value (50 mg/L) by 4.427
#2:Guideline value calculated by dividing Nitrite (as Nitrite) value (0.3 mg/L) by molecular weight (3.2967033).
#3:Calculated from ammonia NH4
#4:Loss of production expected at 5000 mg/L for beef cattle, 4000 mg/L dairy cattle, 10000 mg/L sheep, 6000 mg/L horses and pigs, 3000 mg/L poultry
#5:400 mg/L divided by molecular weight, stock may tolerate higher nitrate concentrations if nitrate in feed are not high, water containing >1500 mg/L (as NO3) is likely to be toxic.
#6:30 mg/L divided by molecular weight
#7:>0.5 mg/L hazardous to sheep, >1 mg/L for cattle, >5 mg/L pigs and poulty
#8:Measured as NH3-N at pH 8
#9:Values taken from "Updating nitrate toxicity effects on freshwater aquatic species, 2013"
#10:In absence of total As guideline, As (V) guideline has been adopted.
#11:In absence of total Cr guideline, Cr (VI) guideline has been adopted.

Data Comments
#1 Reported Analyte LOR is higher than Requested Analyte LOR

						Inorganics		Acidity & Alkalinity	Nutrients									Metals										BTEXN							TPH
						Total Dissolved Solids	Total Suspended Solids	Hardness as CaCO3	Ammonia as N	Nitrate (as N)	Nitrite (as N)	Nitrogen (Total Oxidised) (as N)	Nitrogen (Total)	Kjeldahl Nitrogen Total	Reactive Phosphorus as P	Chlorophyll a	Phosphorus (Total)	Arsenic	Cadmium	Chromium (III+VI)	Copper	Iron	Lead	Manganese	Mercury	Nickel	Zinc	Benzene	Toluene	Ethylbenzene	Xylene (o)	Xylene (m & p)	Xylene Total	BTEX (Sum of Total) - Lab Calc	Oil & Grease
						mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L
EQL						10	5	1	0.01	0.01	0.01	0.01	0.1	0.1	0.01	1	0.01	0.001	0.0001	0.001	0.001	0.05	0.001	0.001	0.0001	0.001	0.005	1	2	2	2	2	2	1	5000
ADWG 2011 Health (v3.7 updated 2022)										11.29[#1]	0.91[#2]							0.01	0.002		2		0.01	0.5	0.001	0.02		1	800	300			600		
ANZECC 2000 - Lowland Rivers (NSW coastal rivers)							**6**		**0.01165**[#3]			**0.04**	**0.35**		**0.008**	**0.003**	**0.025**																		
ANZECC 2000 - Stock Watering						*5000*[#4]				*90*[#5]	*9.1*[#6]							*0.5*	*0.01*	*1*	*1*[#7]		*0.1*		*0.002*	*1*	*20*								
ANZG (2018) - FW - 95% (updated 26 July 2021)									0.9[#8]	2.4[#9]								0.013[#10]	0.0002	0.001[#11]	0.0014		0.0034	1.9	0.0006	0.011	0.008	950	180	80	350				
Package	**Location**	**Sample Date**	**Field ID**	**Sample Type**	**Lab Report Number**																														
M12 - Central	KEMDS	5/04/2023	SWDUP2	Interlab_D	979752	-	-	-	-	-	-	-	-	-	-	-	-	<0.01	<0.002	<0.01	<0.01	-	<0.01	-	<0.001	<0.01	<0.05	-	-	-	-	-	-	-	-
		5/04/2023	KEMDS	Normal	ES2311425	1170	**7**	312	0.01	3.5	0.01	**3.51**	**4.6**	1.1	**0.56**	**2**	**0.69**	<0.001	<0.0001	<0.001	0.003	0.5	<0.001	0.021	<0.0001	0.002	0.007	<1	<2	<2	<2	<2	<2	<1	<5000
		1/05/2023	KEMDS	Normal	ES2314384	480	**48**	-	**0.04**	3.23	0.02	**3.25**	**4.6**	1.4	**0.45**	**3**	**0.71**	0.002	0.0003	0.002	0.008	1.88	0.002	0.036	<0.0001	0.003	0.036	<1	5	<2	<2	<2	<2	5	<5000
		6/06/2023	KEMDS	Normal	ES2319028	1200	<5	-	**0.1**	4.74	0.01	**4.75**	**6**	1.3	**0.43**	**<1**	**0.7**	<0.001	<0.0001	<0.001	0.004	0.17	<0.001	0.05	<0.0001	0.002	0.016	<1	<2	<2	<2	<2	<2	<1	<5000
		4/07/2023	KEMDS	Normal	ES2322320	1630	**6**	-	0.01	9.02	<0.01	**9.02**	**11.1**	2.1	**0.81**	**16**	**0.86**	<0.001	<0.0001	<0.001	0.004	0.16	<0.001	0.016	<0.0001	0.002	0.015	<1	<2	<2	<2	<2	<2	<1	<5000
		8/08/2023	KEMDS	Normal	ES2326795	1540	<5	-	**0.04**	3.5	<0.01	**3.5**	**4.4**	0.9	**0.39**	**20**	**0.34**	<0.001	<0.0001	<0.001	0.002	0.15	<0.001	0.027	<0.0001	0.002	0.009	<1	<2	<2	<2	<2	<2	<1	<5000
		5/09/2023	KEMDS	Normal	ES2330280	624	**16**	-	**0.04**	2.4	<0.01	**2.4**	**3.5**	1.1	**0.44**	**3**	**0.47**	<0.001	<0.0001	<0.001	0.005	1	<0.001	0.042	<0.0001	<0.001	0.011	<1	<2	<2	<2	<2	<2	<1	<5000
	KEMUS	5/04/2023	KEMUS	Normal	ES2311425	1050	**8**	298	**0.03**	3.02	0.01	**3.03**	**4.2**	1.2	**0.55**	**2**	**0.67**	<0.001	<0.0001	<0.001	0.002	0.42	<0.001	0.028	<0.0001	0.002	0.007	<1	<2	<2	<2	<2	<2	<1	<5000
		1/05/2023	KEMUS	Normal	ES2314384	500	**35**	-	**0.04**	3.42	0.02	**3.44**	**5.4**	2	**0.47**	**5**	**0.72**	0.002	<0.0001	0.002	0.007	1.89	0.002	0.034	<0.0001	0.002	0.018	<1	2	<2	<2	<2	<2	2	<5000
		1/05/2023	SWDUP1	Field_D	ES2314384	-	-	-	-	-	-	-	-	-	-	-	-	0.001	<0.0001	0.002	0.007	-	0.002	-	<0.0001	0.002	0.019	-	-	-	-	-	-	-	-
		6/06/2023	KEMUS	Normal	ES2319028	1420	<5	-	**0.04**	5.31	0.01	**5.32**	**6.1**	0.8	**0.52**	**1**	**0.56**	<0.001	<0.0001	<0.001	0.004	0.26	<0.001	0.075	<0.0001	0.002	0.015	<1	<2	<2	<2	<2	<2	<1	<5000
		4/07/2023	KEMUS	Normal	ES2322320	736	**12**	-	**0.17**	3.66	<0.01	**3.66**	**4.8**	1.1	**0.4**	**8**	**0.4**	<0.001	<0.0001	<0.001	0.002	0.27	<0.001	0.022	<0.0001	0.001	0.017	<1	<2	<2	<2	<2	<2	<1	<5000
			SWDUP1	Field_D	ES2322320	-	-	-	-	-	-	-	-	-	-	-	-	<0.001	<0.0001	<0.001	0.002	-	<0.001	-	<0.0001	0.002	0.017	-	-	-	-	-	-	-	-
		8/08/2023	SWDUP2	Interlab_D	1015966	-	-	-	-	-	-	-	-	-	-	-	-	0.001	<0.0002	<0.001	0.003	-	<0.001	-	<0.0001	0.002	0.011	-	-	-	-	-	-	-	-
		8/08/2023	KEMUS	Normal	ES2326795	1740	**18**	-	**0.02**	4	<0.01	**4**	**5**	1	**0.47**	**70**	**0.44**	<0.001	<0.0001	<0.001	0.003	0.43	0.003	0.053	<0.0001	0.002	0.014	<1	<2	<2	<2	<2	<2	<1	<5000
		5/09/2023	KEMUS	Normal	ES2330280	657	**27**	-	**0.03**	2.58	<0.01	**2.58**	**3.9**	1.3	**0.46**	**3**	**0.51**	<0.001	<0.0001	<0.001	0.004	0.93	<0.001	0.052	<0.0001	<0.001	0.008	<1	<2	<2	<2	<2	<2	<1	<5000
	SOUDS	5/04/2023	SOUDS	Normal	ES2311425	668	**16**	229	**0.02**	0.92	0.03	**0.95**	**2.6**	1.6	**0.01**	**23**	**0.14**	<0.001	<0.0001	<0.001	0.002	0.9	<0.001	0.181	<0.0001	0.003	<0.005	<1	<2	<2	<2	<2	<2	<1	<5000
		1/05/2023	SOUDS	Normal	ES2314384	552	**42**	-	**0.13**	7.23	0.08	**7.31**	**8.9**	1.6	**0.6**	**9**	**0.83**	0.002	<0.0001	0.001	0.006	1.74	0.002	0.176	<0.0001	0.002	0.035	<1	<2	<2	<2	<2	<2	<1	<5000
		6/06/2023	SOUDS	Normal	ES2319028	558	**18**	-	**0.02**	2.05	<0.01	**2.05**	**3**	1	**0.05**	**12**	**0.11**	<0.001	<0.0001	<0.001	0.003	0.71	<0.001	0.058	<0.0001	0.002	0.02	<1	<2	<2	<2	<2	<2	<1	<5000
		4/07/2023	SOUDS	Normal	ES2322320	613	**32**	-	**0.02**	1.1	<0.01	**1.1**	**2.3**	1.2	**<0.01**	**20**	**0.06**	<0.001	<0.0001	<0.001	0.002	0.53	<0.001	0.073	<0.0001	0.002	0.008	<1	<2	<2	<2	<2	<2	<1	<5000
		8/08/2023	SOUDS	Normal	ES2326795	764	**27**	-	0.01	0.05	<0.01	**0.05**	**0.8**	0.7	**<0.01**	**16**	<0.01	<0.001	<0.0001	<0.001	0.002	0.76	<0.001	0.126	<0.0001	0.003	0.005	<1	<2	<2	<2	<2	<2	<1	<5000
		6/09/2023	SOUDS	Normal	ES2330280	844	**63**	-	**0.05**	1.66	0.07	**1.73**	**4.8**	3.1	**0.01**	**174**	**0.42**	<0.001	<0.0001	0.001	0.004	1.55	<0.001	0.149	<0.0001	0.004	0.007	<1	<2	<2	<2	<2	<2	<1	<5000
	SOUUS	5/04/2023	SOUUS	Normal	ES2311425	676	**18**	227	**0.03**	0.89	0.04	**0.93**	**1.7**	0.8	**<0.01**	**26**	**0.04**	<0.001	<0.0001	<0.001	<0.001	0.82	<0.001	0.224	<0.0001	0.003	<0.005	<1	<2	<2	<2	<2	<2	<1	<5000
			SWDUP1	Field_D	ES2311425	-	-	-	-	-	-	-	-	-	-	-	-	<0.001	<0.0001	<0.001	<0.001	-	<0.001	-	<0.0001	0.003	<0.005	-	-	-	-	-	-	-	-
		1/05/2023	SOUUS	Normal	ES2314384	518	**38**	-	**0.14**	6.73	0.08	**6.81**	**8.7**	1.9	**0.58**	**8**	**0.86**	0.002	<0.0001	0.001	0.006	1.9	0.002	0.189	<0.0001	0.002	0.023	<1	<2	<2	<2	<2	<2	<1	<5000
		6/06/2023	SOUUS	Normal	ES2319028	530	**14**	-	**0.02**	1.98	<0.01	**1.98**	**3**	1	**0.05**	**15**	**0.13**	<0.001	<0.0001	<0.001	0.002	0.83	<0.001	0.115	<0.0001	0.003	0.015	<1	<2	<2	<2	<2	<2	<1	<5000
			SWDUP1	Field_D	ES2319028	-	-	-	-	-	-	-	-	-	-	-	-	<0.001	<0.0001	<0.001	0.002	-	<0.001	-	<0.0001	0.003	0.016	-	-	-	-	-	-	-	-
		4/07/2023	SOUUS	Normal	ES2322320	612	**22**	-	**0.02**	1.06	<0.01	**1.06**	**2.3**	1.2	**<0.01**	**38**	**0.05**	<0.001	<0.0001	<0.001	<0.001	0.55	<0.001	0.125	<0.0001	0.003	0.011	<1	<2	<2	<2	<2	<2	<1	<5000
		8/08/2023	SOUUS	Normal	ES2326795	734	**20**	-	**0.02**	0.11	<0.01	**0.11**	**0.7**	0.6	**<0.01**	**19**	0.02	<0.001	<0.0001	<0.001	0.001	0.49	<0.001	0.11	<0.0001	0.003	<0.005	<1	<2	<2	<2	<2	<2	<1	<5000
		6/09/2023	SOUUS	Normal	ES2330280	886	**40**	-	**0.04**	1.72	0.06	**1.78**	**6.4**	4.6	**0.04**	**155**	**0.32**	<0.001	<0.0001	<0.001	0.003	0.84	<0.001	0.154	<0.0001	0.003	<0.005	<1	<2	<2	<2	<2	<2	<1	<5000
M12 - East	HINDS	4/04/2023	HINDS	Normal	ES2311425	245	5	64	**0.02**	0.04	<0.01	**0.04**	**1.2**	1.2	**<0.01**	**25**	**0.08**	<0.001	<0.0001	<0.001	<0.001	0.52	<0.001	0.191	<0.0001	0.002	<0.005	<1	<2	<2	<2	<2	<2	<1	<5000
		1/05/2023	HINDS	Normal	ES2314384	235	**16**	-	0.01	<0.01	<0.01	<0.01	**1.9**	1.9	**<0.01**	**27**	**0.15**	0.001	<0.0001	<0.001	<0.001	1.32	<0.001	0.609	<0.0001	<0.001	<0.005	<1	<2	<2	<2	<2	<2	<1	<5000
		6/06/2023	HINDS	Normal	ES2319028	244	**7**	-	**0.02**	0.01	<0.01	0.01	**1**	1	**<0.01**	**48**	**0.05**	<0.001	<0.0001	<0.001	<0.001	0.86	<0.001	0.279	<0.0001	0.001	0.005	<1	<2	<2	<2	<2	<2	<1	<5000
		4/07/2023	HINDS	Normal	ES2322320	245	**24**	-	<0.01	<0.01	<0.01	<0.01	**0.9**	0.9	**<0.01**	**45**	**0.04**	<0.001	<0.0001	<0.001	<0.001	0.86	<0.001	0.184	<0.0001	<0.001	0.018	<1	<2	<2	<2	<2	<2	<1	<5000
		8/08/2023	HINDS	Normal	ES2326795	309	**14**	-	0.01	<0.01	<0.01	<0.01	**0.9**	0.9	**<0.01**	**11**	<0.01	<0.001	<0.0001	<0.001	<0.001	0.53	<0.001	0.307	<0.0001	<0.001	<0.005	<1	<2	<2	<2	<2	<2	<1	<5000
			SWDUP1	Field_D	ES2326795	-	-	-	-	-	-	-	-	-	-	-	-	<0.001	<0.0001	<0.001	<0.001	-	<0.001	-	<0.0001	<0.001	<0.005	-	-	-	-	-	-	-	-
		6/09/2023	SWDUP2	Interlab_D	1024024	-	-	-	-	-	-	-	-	-	-	-	-	0.002	0.0002	<0.001	0.002	-	<0.001	-	<0.0001	0.001	<0.005	-	-	-	-	-	-	-	-
		6/09/2023	HINDS	Normal	ES2330280	304	**7**	-	**0.15**	0.1	0.01	**0.11**	**1.1**	1	**<0.01**	**2**	**0.06**	<0.001	<0.0001	<0.001	0.001	1.03	<0.001	0.404	<0.0001	0.001	<0.005	<1	<2	<2	<2	<2	<2	<1	<5000
	HINUS	4/04/2023	HINUS	Normal	ES2311425	264	**11**	83	<0.01	0.02	<0.01	0.02	**1.1**	1.1	**<0.01**	**11**	**0.06**	<0.001	<0.0001	<0.001	<0.001	1.24	<0.001	0.123	<0.0001	0.001	<0.005	<1	<2	<2	<2	<2	<2	<1	<5000
		1/05/2023	HINUS	Normal	ES2314384	278	**15**	-	0.01	<0.01	<0.01	<0.01	**1**	1	**<0.01**	**6**	**0.06**	0.001	<0.0001	<0.001	<0.001	1.01	<0.001	0.19	<0.0001	<0.001	0.007	<1	4	<2	<2	<2	<2	4	<5000
		6/06/2023	HINUS	Normal	ES2319028	308	**24**	-	**0.04**	<0.01	<0.01	<0.01	**0.7**	0.7	**<0.01**	**4**	0.02	<0.001	<0.0001	<0.001	<0.001	0.6	<0.001	0.123	<0.0001	<0.001	<0.005	<1	<2	<2	<2	<2	<2	<1	<5000
		4/07/2023	HINUS	Normal	ES2322320	323	**7**	-	<0.01	0.01	<0.01	0.01	**0.7**	0.7	**<0.01**	**3**	0.02	<0.001	<0.0001	<0.001	<0.001	0.84	<0.001	0.112	<0.0001	<0.001	<0.005	<1	<2	<2	<2	<2	<2	<1	<5000
		8/08/2023	HINUS	Normal	ES2326795	373	5	-	0.01	<0.01	<0.01	<0.01	**1.5**	1.5	**<0.01**	**15**	**0.06**	0.001	<0.0001	<0.001	<0.001	1.45	<0.001	0.34	<0.0001	<0.001	<0.005	<1	<2	<2	<2	<2	<2	<1	<5000
		6/09/2023	HINUS	Normal	ES2330280	368	**7**	-	**0.03**	<0.01	<0.01	<0.01	**1.2**	1.2	**<0.01**	**2**	**0.08**	<0.001	<0.0001	<0.001	<0.001	3.06	<0.001	0.443	<0.0001	<0.001	<0.005	<1	<2	<2	<2	<2	<2	<1	<5000
	ROPDS	4/04/2023	ROPDS	Normal	ES2311425	655	<5	222	**0.02**	0.21	<0.01	**0.21**	**0.7**	0.5	**<0.01**	**2**	**0.04**	<0.001	<0.0001	<0.001	<0.001	0.16	<0.001	0.418	<0.0001	0.001	0.01	<1	<2	<2	<2	<2	<2	<1	<5000
		1/05/2023	ROPDS	Normal	ES2314384	356	<5	-	**0.04**	0.13	<0.01	**0.13**	**0.4**	0.3	**0.02**	**<1**	**0.05**	0.002	<0.0001	0.004	0.005	5.7	0.004	0.376	<0.0001	0.003	0.016	<1	<2	<2	<2	<2	<2	<1	<5000
		6/06/2023	ROPDS	Normal	ES2319028	2390	<5	-	**0.03**	0.02	<0.01	0.02	**0.4**	0.4	**0.02**	**<1**	0.02	<0.001	<0.0001	<0.001	<0.001	0.08	<0.001	0.516	<0.0001	<0.001	0.012	<1	<2	<2	<2	<2	<2	<1	<5000
		4/07/2023	ROPDS	Normal	ES2322320	2480	**6**	-	**0.03**	0.37	<0.01	**0.37**	**0.9**	0.5	**<0.01**	**1**	0.02	<0.001	<0.0001	<0.001	<0.001	0.1	<0.001	0.437	<0.0001	0.001	<0.005	<1	<2	<2	<2	<2	<2	<1	<5000
		8/08/2023	ROPDS	Normal	ES2326795	3230	<5	-	0.01	0.03	<0.01	0.03	**0.5**	0.5	**0.02**	**10**	<0.01	<0.001	<0.0001	<0.001	<0.001	0.06	<0.001	0.28	<0.0001	<0.001	0.006	<1	<2	<2	<2	<2	<2	<1	<5000
		6/09/2023	ROPDS	Normal	ES2330280	2920	**12**	-	**0.02**	<0.01	<0.01	<0.01	**0.6**	0.6	**<0.01**	**7**	**0.03**	<0.001	<0.0001	<0.001	0.002	0.3	<0.001	0.755	<0.0001	<0.001	0.007	<1	<2	<2	<2	<2	<2	<1	<5000
	ROPUS	4/04/2023	ROPUS	Normal	ES2311425	169	**60**	46	**0.06**	0.01	<0.01	0.01	**0.7**	0.7	**<0.01**	**30**	**0.06**	<0.001	<0.0001	0.002	<0.001	3.81	0.001	0.215	<0.0001	0.002	<0.005	<1	<2	<2	<2	<2	<2	<1	<5000
		1/05/2023	ROPUS	Normal	ES2314384	152	**1060**	-	**0.02**	<0.01	<0.01	<0.01	**2.2**	2.2	**<0.01**	**138**	**0.22**	<0.001	<0.0001	<0.001	0.004	0.31	<0.001	0.125	<0.0001	<0.001	0.01	<1	<2	<2	<2	<2	<2	<1	<5000
		6/06/2023	ROPUS	Normal	ES2319028	156	**43**	-	**0.05**	<0.01	<0.01	<0.01	**2.6**	2.6	**<0.01**	**50**	**0.29**	0.002	<0.0001	0.007	0.009	8.31	0.007	0.495	<0.0001	0.006	0.022	<1	<2	<2	<2	<2	<2	<1	<5000
		4/07/2023	ROPUS	Normal	ES2322320	164	**1030**	-	**0.11**	<0.01	<0.01	<0.01	**9.3**	9.3	**<0.01**	**101**	**1.32**	0.011	0.0002	0.058	0.074	65.5	0.064	1.43	<0.0001	0.043	0.17	<1	<2	<2	<2	<2	<2	<1	<5000
		8/08/2023	ROPUS	Normal	ES2326795	234	**53**	-	**0.94**	<0.01	<0.01	<0.01	**1.7**	1.7	**<0.01**	**2**	<0.01	0.002	<0.0001	0.003	0.003	5.26	0.003	1.36	<0.0001	0.003	0.011	<1	<2	<2	<2	<2	<2	<1	<5000
		6/09/2023	ROPUS	Normal	ES2330280	210	**35**	-	**1.09**	0.03	<0.01	0.03	**3.5**	3.5	**<0.01**	**103**	**0.14**	0.002	<0.0001	0.002	0.002	4.06	0.001	0.579	<0.0001	0.003	<0.005	<1	<2	<2	<2	<2	<2	<1	<5000

						Inorganics		Acidity & Alkalinity	Nutrients									Metals											BTEXN							TPH
						Total Dissolved Solids	Total Suspended Solids	Hardness as CaCO3	Ammonia as N	Nitrate (as N)	Nitrite (as N)	Nitrogen (Total Oxidised) (as N)	Nitrogen (Total)	Kjeldahl Nitrogen Total	Reactive Phosphorus as P	Chlorophyll a	Phosphorus (Total)	Arsenic	Cadmium	Chromium (III+VI)	Copper	Iron	Lead	Manganese	Mercury	Nickel	Zinc	Benzene	Toluene	Ethylbenzene	Xylene (o)	Xylene (m & p)	Xylene Total	BTEX (Sum of Total) - Lab Calc	Oil & Grease
						mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L
EQL						10	5	1	0.01	0.01	0.01	0.01	0.1	0.1	0.01	1	0.01	0.001	0.0001	0.001	0.001	0.05	0.001	0.001	0.0001	0.001	0.005	1	2	2	2	2	2	1	5000
ADWG 2011 Health (v3.7 updated 2022)										11.29[#1]	0.91[#2]							0.01	0.002		2		0.01	0.5	0.001	0.02		1	800	300			600		
ANZECC 2000 - Lowland Rivers (NSW coastal rivers)							**6**		**0.01165[#3]**			**0.04**	**0.35**		**0.008**	**0.003**	**0.025**																		
ANZECC 2000 - Stock Watering						*5000[#4]*				*90[#5]*	*9.1[#6]*							*0.5*	*0.01*	*1*	*1[#7]*		*0.1*		*0.002*	*1*	*20*								
ANZG (2018) - FW - 95% (updated 26 July 2021)									0.9[#8]	2.4[#9]								0.013[#10]	0.0002	0.001[#11]	0.0014		0.0034	1.9	0.0006	0.011	0.008	950	180	80	350				
Package	**Location**	**Sample Date**	**Field ID**	**Sample Type**	**Lab Report Number**																														
M12 - West	BADDS	4/04/2023	BADDS	Normal	ES2311425	964	**27**	298	0.01	0.13	<0.01	**0.13**	**0.5**	0.4	**<0.01**	**6**	**0.03**	<0.001	<0.0001	<0.001	<0.001	0.95	<0.001	0.15	<0.0001	0.002	0.017	<1	<2	<2	<2	<2	<2	<1	<5000
		2/05/2023	BADDS	Normal	ES2314384	678	**94**	-	**0.08**	2.09	0.05	**2.14**	**3.1**	1	**<0.01**	**<1**	**0.19**	0.002	<0.0001	0.004	0.009	4.79	0.004	0.154	<0.0001	0.005	0.035	<1	<2	<2	<2	<2	<2	<1	<5000
		7/06/2023	BADDS	Normal	ES2319028	796	**32**	-	**0.03**	0.3	<0.01	**0.3**	**0.8**	0.5	**<0.01**	**13**	**0.04**	<0.001	<0.0001	0.001	0.002	1.4	<0.001	0.16	<0.0001	0.002	0.029	<1	<2	<2	<2	<2	<2	<1	<5000
		7/07/2023	SWDUP2	Interlab_D	1006932	-	-	-	-	-	-	-	-	-	-	-	-	<0.001	<0.0002	<0.001	0.002	-	<0.001	-	<0.0001	0.001	0.012	-	-	-	-	-	-	-	-
		7/07/2023	BADDS	Normal	ES2322911	520	**17**	-	0.01	0.13	<0.01	**0.13**	**0.6**	0.5	**<0.01**	**6**	**0.08**	<0.001	<0.0001	<0.001	0.001	0.43	<0.001	0.082	<0.0001	0.002	0.012	<1	<2	<2	<2	<2	<2	<1	<5000
		9/08/2023	BADDS	Normal	ES2326795	850	**18**	-	**0.02**	0.02	<0.01	0.02	**0.6**	0.6	**<0.01**	**12**	**0.06**	<0.001	<0.0001	<0.001	<0.001	0.78	<0.001	0.127	<0.0001	0.001	0.013	<1	<2	<2	<2	<2	<2	<1	<5000
		5/09/2023	BADDS	Normal	ES2330280	648	**63**	-	**0.02**	0.67	0.02	**0.69**	**1.4**	0.7	**0.04**	**11**	**0.08**	<0.001	<0.0001	0.002	0.004	1.83	<0.001	0.153	<0.0001	0.003	<0.005	<1	<2	<2	<2	<2	<2	<1	8000
	BADMS	4/04/2023	BADMS	Normal	ES2311425	942	**24**	298	**0.02**	0.14	0.01	**0.15**	**1**	0.8	**<0.01**	**12**	**0.08**	<0.001	<0.0001	<0.001	<0.001	0.92	<0.001	0.194	<0.0001	0.002	<0.005	<1	<2	<2	<2	<2	<2	<1	<5000
		2/05/2023	BADMS	Normal	ES2314384	718	**117**	-	**0.08**	2.23	0.06	**2.29**	**3.5**	1.2	**<0.01**	**1**	**0.13**	0.002	<0.0001	0.004	0.008	4.7	0.004	0.156	<0.0001	0.004	0.019	<1	<2	<2	<2	<2	<2	<1	<5000
		7/06/2023	BADMS	Normal	ES2319028	778	**23**	-	**0.03**	0.29	<0.01	**0.29**	**0.9**	0.6	**<0.01**	**8**	**0.05**	<0.001	<0.0001	0.001	0.003	1.38	<0.001	0.242	<0.0001	0.002	0.012	<1	<2	<2	<2	<2	<2	<1	<5000
		7/07/2023	BADMS	Normal	ES2322911	489	**20**	-	**0.02**	0.16	<0.01	**0.16**	**0.8**	0.6	**<0.01**	**8**	**0.1**	<0.001	<0.0001	0.003	0.002	1.02	<0.001	0.111	<0.0001	0.002	0.009	<1	<2	<2	<2	<2	<2	<1	<5000
		9/08/2023	BADMS	Normal	ES2326795	818	**33**	-	<0.01	0.07	<0.01	**0.07**	**0.9**	0.8	**<0.01**	**26**	**0.04**	<0.001	<0.0001	<0.001	<0.001	0.92	<0.001	0.205	<0.0001	0.002	0.007	<1	<2	<2	<2	<2	<2	<1	<5000
		5/09/2023	BADMS	Normal	ES2330280	720	**55**	-	**0.03**	1.34	0.03	**1.37**	**2.5**	1.1	**<0.01**	**13**	**0.16**	<0.001	<0.0001	0.002	0.004	2.08	0.001	0.164	<0.0001	0.002	0.008	<1	<2	<2	<2	<2	<2	<1	8000
	BADUS	4/04/2023	BADUS	Normal	ES2311425	1120	**20**	308	<0.01	0.14	<0.01	**0.14**	**1.1**	1	**<0.01**	**21**	**0.09**	<0.001	<0.0001	<0.001	<0.001	1.01	<0.001	0.303	<0.0001	0.002	<0.005	<1	<2	<2	<2	<2	<2	<1	<5000
		2/05/2023	BADUS	Normal	ES2314384	720	**86**	-	**0.14**	2.1	0.09	**2.19**	**3.4**	1.2	**<0.01**	**1**	**0.09**	0.001	<0.0001	0.003	0.007	4.03	0.003	0.22	<0.0001	0.004	0.016	<1	<2	<2	<2	<2	<2	<1	<5000
		7/06/2023	BADUS	Normal	ES2319028	594	**18**	-	**0.04**	0.18	<0.01	**0.18**	**0.6**	0.4	**<0.01**	**16**	**0.04**	<0.001	<0.0001	<0.001	<0.001	0.81	<0.001	0.3	<0.0001	0.001	0.008	<1	<2	<2	<2	<2	<2	<1	<5000
		7/07/2023	BADUS	Normal	ES2322911	906	**7**	-	**0.06**	0.24	0.03	**0.27**	**0.8**	0.5	**<0.01**	**6**	**0.05**	0.001	<0.0001	0.012	0.001	0.4	<0.001	0.114	<0.0001	<0.001	0.011	<1	<2	<2	<2	<2	<2	<1	<5000
		9/08/2023	BADUS	Normal	ES2326795	680	**10**	-	0.01	0.05	<0.01	**0.05**	**0.6**	0.5	**<0.01**	**7**	<0.01	<0.001	<0.0001	<0.001	<0.001	0.48	<0.001	0.23	<0.0001	<0.001	0.005	<1	<2	<2	<2	<2	<2	<1	<5000
		5/09/2023	BADUS	Normal	ES2330280	495	**40**	-	**0.02**	0.03	<0.01	0.03	**0.8**	0.8	**<0.01**	**17**	**0.13**	<0.001	<0.0001	0.002	0.004	3.09	0.002	0.228	<0.0001	0.003	0.012	<1	<2	<2	<2	<2	<2	<1	12,000
			SWDUP1	Field_D	ES2330280	-	-	-	-	-	-	-	-	-	-	-	-	<0.001	<0.0001	0.003	0.004	-	0.002	-	<0.0001	0.001	0.01	-	-	-	-	-	-	-	-
	COSDS	4/04/2023	COSDS	Normal	ES2311425	1240	**42**	308	<0.01	0.02	<0.01	0.02	**0.4**	0.4	**<0.01**	**9**	**0.04**	<0.001	<0.0001	<0.001	<0.001	0.82	<0.001	1.22	<0.0001	0.001	0.012	<1	<2	<2	<2	<2	<2	<1	<5000
		2/05/2023	COSDS	Normal	ES2314384	519	**54**	-	**0.06**	0.44	0.01	**0.45**	**1.2**	0.7	**<0.01**	**7**	**0.13**	<0.001	<0.0001	0.002	0.004	2.29	0.002	0.132	<0.0001	0.002	0.023	<1	<2	<2	<2	<2	<2	<1	<5000
		7/06/2023	COSDS	Normal	ES2319028	550	**37**	-	**0.04**	0.12	<0.01	**0.12**	**0.4**	0.3	**<0.01**	**5**	0.02	<0.001	<0.0001	<0.001	0.001	1.04	<0.001	0.185	<0.0001	0.001	0.033	<1	<2	<2	<2	<2	<2	<1	<5000
		9/08/2023	COSDS	Normal	ES2326795	1240	**26**	-	<0.01	0.02	<0.01	0.02	**0.5**	0.5	**<0.01**	**64**	<0.01	<0.001	<0.0001	<0.001	<0.001	1.14	<0.001	0.552	<0.0001	0.001	0.011	<1	<2	<2	<2	<2	<2	<1	<5000
		5/09/2023	COSDS	Normal	ES2330280	604	**89**	-	**0.04**	0.48	0.03	**0.51**	**1.8**	1.3	**<0.01**	**11**	**0.16**	0.001	<0.0001	0.004	0.006	4.35	0.002	0.385	<0.0001	0.004	0.013	<1	<2	<2	<2	<2	<2	<1	14,000
	COSUS	4/04/2023	COSUS	Normal	ES2311425	1320	**223**	328	**0.08**	0.06	<0.01	**0.06**	**1.3**	1.2	**<0.01**	**4**	**0.19**	0.002	<0.0001	0.004	0.008	5.14	0.004	2.41	<0.0001	0.006	0.014	<1	<2	<2	<2	<2	<2	<1	<5000
		2/05/2023	COSUS	Normal	ES2314384	496	**31**	-	**0.05**	0.38	0.01	**0.39**	**1**	0.6	**<0.01**	**3**	**0.08**	<0.001	<0.0001	0.002	0.003	1.6	<0.001	0.107	<0.0001	0.002	0.006	<1	<2	<2	<2	<2	<2	<1	<5000
			SWDUP2	Interlab_D	986190	-	-	-	-	-	-	-	-	-	-	-	-	<0.001	<0.0002	0.001	0.002	-	<0.001	-	<0.0001	<0.001	<0.005	-	-	-	-	-	-	-	-
		7/06/2023	SWDUP2	Interlab_D	997826	-	-	-	-	-	-	-	-	-	-	-	-	<0.001	<0.0002	<0.001	0.002	-	<0.001	-	<0.0001	<0.001	<0.005	-	-	-	-	-	-	-	-
		7/06/2023	COSUS	Normal	ES2319028	552	**10**	-	**0.04**	0.14	<0.01	**0.14**	**0.4**	0.3	**<0.01**	**2**	<0.01	<0.001	<0.0001	<0.001	<0.001	0.56	<0.001	0.145	<0.0001	0.001	<0.005	<1	<2	<2	<2	<2	<2	<1	<5000
		9/08/2023	COSUS	Normal	ES2326795	3720	**21**	-	**0.34**	<0.01	<0.01	<0.01	**0.9**	0.9	**<0.01**	**389**	0.02	<0.001	<0.0001	<0.001	<0.001	3.14	<0.001	3.6	<0.0001	<0.001	0.006	<1	<2	<2	<2	<2	<2	<1	<5000
		5/09/2023	COSUS	Normal	ES2330280	2580	**14**	-	**0.15**	0.04	<0.01	**0.04**	**0.6**	0.6	**<0.01**	**4**	**0.1**	<0.001	<0.0001	<0.001	<0.001	1.4	<0.001	1.72	<0.0001	<0.001	<0.005	<1	<2	<2	<2	<2	<2	<1	<5000
Statistical Summary																																			
Number of Results						76	76	13	76	76	76	76	76	76	76	76	76	88	88	88	88	76	88	76	88	88	88	76	76	76	76	76	76	76	76
Number of Detects						76	69	13	69	63	23	63	76	76	23	72	69	21	3	28	55	76	21	76	0	66	61	0	3	0	0	0	0	3	4
Minimum Concentration						152	<5	46	<0.01	<0.01	<0.01	<0.01	0.4	0.3	<0.01	<1	<0.01	<0.001	<0.0001	<0.001	<0.001	0.06	<0.001	0.016	<0.0001	<0.001	<0.005	<1	<2	<2	<2	<2	<2	<1	<5000
Minimum Detect						152	5	46	0.01	0.01	0.01	0.01	0.4	0.3	0.01	1	0.02	0.001	0.0002	0.001	0.001	0.06	0.001	0.016	ND	0.001	0.005	ND	2	ND	ND	ND	ND	2	8000
Maximum Concentration						3720	1060	328	1.09	9.02	0.09	9.02	11.1	9.3	0.81	389	1.32	0.011	<0.002	0.058	0.074	65.5	0.064	3.6	<0.001	0.043	0.17	<1	5	<2	<2	<2	<2	5	14000
Maximum Detect						3720	1060	328	1.09	9.02	0.09	9.02	11.1	9.3	0.81	389	1.32	0.011	0.0003	0.058	0.074	65.5	0.064	3.6	ND	0.043	0.17	ND	5	ND	ND	ND	ND	5	14000
Average Concentration						836	56	232	0.069	1.1	0.014	1.2	2.3	1.2	0.1	26	0.2	0.00092	0.000069	0.0019	0.0033	2.4	0.0018	0.34	0.000055	0.0024	0.012	0.5	1.1	1	1	1	1	0.63	2921
Median Concentration						651.5	20	298	0.03	0.14	0.005	0.145	1.2	1	0.005	9.5	0.08	0.0005	0.00005	0.0005	0.002	0.925	0.0005	0.1785	0.00005	0.002	0.0095	0.5	1	1	1	1	1	0.5	2500
Standard Deviation						712	167	102	0.17	1.9	0.02	1.9	2.3	1.2	0.2	54	0.27	0.0013	0.00011	0.0063	0.008	7.5	0.0068	0.55	0.000048	0.0046	0.019	0	0.58	0	0	0	0	0.67	1896

Env Stds Comments

#1:Guideline value calculated by dividing Nitrate (as Nitrate) value (50 mg/L) by 4.427
#2:Guideline value calculated by dividing Nitrite (as Nitrite) value (0.3 mg/L) by molecular weight (3.2967033).
#3:Calculated from ammonia NH4
#4:Loss of production expected at 5000 mg/L for beef cattle, 4000 mg/L dairy cattle, 10000 mg/L sheep, 6000 mg/L horses and pigs, 3000 mg/L poultry
#5:400 mg/L divided by molecular weight, stock may tolerate higher nitrate concentrations if nitrate in feed are not high, water containing >1500 mg/L (as NO3) is likely to be toxic.
#6:30 mg/L divided by molecular weight
#7:>0.5 mg/L hazardous to sheep, >1 mg/L for cattle, >5 mg/L pigs and poulty
#8:Measured as NH3-N at pH 8
#9:Values taken from "Updating nitrate toxicity effects on freshwater aquatic species, 2013"
#10:In absence of total As guideline, As (V) guideline has been adopted.
#11:In absence of total Cr guideline, Cr (VI) guideline has been adopted.

| | | | | | | PAHs - standard 16 | | | | | | | | | | | | | | | | Phenols - Halogenated | | | | | | | Phenols - Non-Halogenated | | | | | OC Pesticides | | | | | | | | | | | | | | | |

| | | | | | PAHs - standard 16 | | | | | | | | | | | | | | | | | | Phenols - Halogenated | | | | | | | Phenols - Non-Halogenated | | | | | OC Pesticides | | | | | | | | | | | | | | | | | |

					OP Pesticides																																							Pesticides					
					Bensulide	Naftalofos	Azinphos methyl	Bolstar (Sulprofos)	Bromophos-ethyl	Carbophenothion	Azinphos Ethyl	Chlorfenvinphos	Chlorpyrifos	Chlorpyrifos-methyl	Coumaphos	Demeton-O	Demeton-S	Demeton-S-methyl	Diazinon	Dichlorvos	Dimethoate	Disulfoton	EPN	Ethion	Ethoprop	Fenamiphos	Fenitrothion	Fensulfothion	Fenthion	Malathion	Methidathion	Methyl parathion	Mevinphos (Phosdrin)	Monocrotophos	Omethoate	Parathion	Phorate	Pirimiphos-ethyl	Pirimiphos-methyl	Profenofos	Prothiofos	Pyrazophos	Ronnel	Sulfotepp	Terbufos	Thiometon	Trichloronate	Tetrachlorvinphos	Acephate	Demeton-O & Demeton-S	Formothion	Temephos	Trichlorfon	Triazophos
					µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L
EQL					0.1	1	0.02	0.05	0.1	0.02	0.02	0.02	0.02	0.2	0.01	0.02	0.02	0.02	0.01	0.2	0.02	0.05	0.05	0.02	0.01	0.01	2	0.01	0.05	0.02	0.1	0.5	0.02	0.02	0.01	0.2	0.1	0.01	0.01	0.01	0.1	0.1	10	0.005	0.01	0.5	0.5	0.01	0.5	0.02	20	0.02	0.02	0.005
ADWG 2011 Health (v3.7 updated 2022)							30	10	10	0.5		2	10						4	5	7	4		4	1	0.5	7	10	7	70	6	0.7	5	2	1	20		0.5	90	0.3		20			0.9	4		100	8		50	400	7	
ANZECC 2000 - Lowland Rivers (NSW coastal rivers)																																																				
ANZECC 2000 - Stock Watering																																																			
ANZG (2018) - FW - 95% (updated 26 July 2021)							0.02						0.01						0.01		0.15						0.2			0.05					0.004																		
Package	**Location**	**Sample Date**	**Field ID**	**Sample Type**	**Lab Report Number**																																															
M12 - Central	KEMDS	5/04/2023	SWDUP2	Interlab_D	979752	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
		5/04/2023	KEMDS	Normal	ES2311425	<0.1	<1	<0.02	<0.05	<0.1	<0.02	<0.02	<0.02	<0.02	<0.2	<0.01	<0.02	<0.02	<0.02	0.01	<0.2	0.04	<0.05	<0.05	<0.02	<0.01	<0.01	<2	<0.01	<0.05	<0.02	<0.1	<0.5	<0.02	<0.02	<0.01	<0.2	<0.1	<0.01	<0.01	<0.01	<0.1	<0.1	<10	<0.005	<0.01	<0.5	<0.5	<0.01	<0.5	<0.02	<20	<0.02	<0.02	<0.005
		1/05/2023	KEMDS	Normal	ES2314384	<0.1	<1	<0.02	<0.05	<0.1	<0.02	<0.02	<0.02	<0.02	<0.2	<0.01	<0.02	<0.02	<0.02	<0.01	<0.2	0.13	<0.05	<0.05	<0.02	<0.01	<0.01	<2	<0.01	<0.05	0.02	<0.1	<0.5	<0.02	<0.02	<0.01	<0.2	<0.1	<0.01	<0.01	<0.01	<0.1	<0.1	<10	<0.005	<0.01	<0.5	<0.5	<0.01	<0.5	<0.02	<20	<0.02	<0.02	<0.005
		6/06/2023	KEMDS	Normal	ES2319028	<0.1	<1	<0.02	<0.05	<0.1	<0.02	<0.02	<0.02	<0.02	<0.2	<0.01	<0.02	<0.02	<0.02	<0.01	<0.2	0.06	<0.05	<0.05	<0.02	<0.01	<0.01	<2	<0.01	<0.05	<0.02	<0.1	<0.5	<0.02	<0.02	<0.01	<0.2	<0.1	<0.01	<0.01	<0.01	<0.1	<0.1	<10	<0.005	<0.01	<0.5	<0.5	<0.01	<0.5	<0.02	<20	<0.02	<0.02	<0.005
		4/07/2023	KEMDS	Normal	ES2322320	<0.1	<1	<0.02	<0.05	<0.1	<0.02	<0.02	<0.02	<0.02	<0.2	<0.01	<0.02	<0.02	<0.02	<0.01	<0.2	0.41	<0.05	<0.05	<0.02	<0.01	<0.01	<2	<0.01	<0.05	<0.02	<0.1	<0.5	<0.02	<0.02	<0.01	<0.2	<0.1	<0.01	<0.01	<0.01	<0.1	<0.1	<10	<0.005	<0.01	<0.5	<0.5	<0.01	<0.5	<0.02	<20	<0.02	<0.02	<0.005
		8/08/2023	KEMDS	Normal	ES2326795	<0.1	<1	<0.02	<0.05	<0.1	<0.02	<0.02	<0.02	<0.02	<0.2	<0.01	<0.02	<0.02	<0.02	<0.01	<0.2	0.04	<0.05	<0.05	<0.02	<0.01	<0.01	<2	<0.01	<0.05	<0.02	<0.1	<0.5	<0.02	<0.02	<0.01	<0.2	<0.1	<0.01	<0.01	<0.01	<0.1	<0.1	<10	<0.005	<0.01	<0.5	<0.5	<0.01	<0.5	<0.02	<20	<0.02	<0.02	<0.005
		5/09/2023	KEMDS	Normal	ES2330280	<0.1	<1	<0.02	<0.05	<0.1	<0.02	<0.02	<0.02	<0.02	<0.2	<0.01	<0.02	<0.02	<0.02	<0.01	<0.2	0.09	<0.05	<0.05	<0.02	<0.01	<0.01	<2	<0.01	<0.05	<0.02	<0.1	<0.5	<0.02	<0.02	<0.01	<0.2	<0.1	<0.01	<0.01	<0.01	<0.1	<0.1	<10	<0.005	<0.01	<0.5	<0.5	<0.01	<0.5	<0.02	<20	<0.02	<0.02	<0.005
	KEMUS	5/04/2023	KEMUS	Normal	ES2311425	<0.1	<1	<0.02	<0.05	<0.1	<0.02	<0.02	<0.02	<0.02	<0.2	<0.01	<0.02	<0.02	<0.02	0.01	<0.2	0.14	<0.05	<0.05	<0.02	<0.01	<0.01	<2	<0.01	<0.05	<0.02	<0.1	<0.5	<0.02	<0.02	<0.01	<0.2	<0.1	<0.01	<0.01	<0.01	<0.1	<0.1	<10	<0.005	<0.01	<0.5	<0.5	<0.01	<0.5	<0.02	<20	<0.02	<0.02	<0.005
		1/05/2023	KEMUS	Normal	ES2314384	<0.1	<1	<0.02	<0.05	<0.1	<0.02	<0.02	<0.02	<0.02	<0.2	<0.01	<0.02	<0.02	<0.02	<0.01	<0.2	0.19	<0.05	<0.05	<0.02	<0.01	<0.01	<2	<0.01	<0.05	0.05	<0.1	<0.5	<0.02	<0.02	<0.01	<0.2	<0.1	<0.01	<0.01	<0.01	<0.1	<0.1	<10	<0.005	<0.01	<0.5	<0.5	<0.01	<0.5	<0.02	<20	<0.02	<0.02	<0.005
		1/05/2023	SWDUP1	Field_D	ES2314384	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
		6/06/2023	KEMUS	Normal	ES2319028	<0.1	<1	<0.02	<0.05	<0.1	<0.02	<0.02	<0.02	<0.02	<0.2	<0.01	<0.02	<0.02	<0.02	<0.01	<0.2	0.09	<0.05	<0.05	<0.02	<0.01	<0.01	<2	<0.01	<0.05	<0.02	<0.1	<0.5	<0.02	<0.02	<0.01	<0.2	<0.1	<0.01	<0.01	<0.01	<0.1	<0.1	<10	<0.005	<0.01	<0.5	<0.5	<0.01	<0.5	<0.02	<20	<0.02	<0.02	<0.005
		4/07/2023	KEMUS	Normal	ES2322320	<0.1	<1	<0.02	<0.05	<0.1	<0.02	<0.02	<0.02	<0.02	<0.2	<0.01	<0.02	<0.02	<0.02	<0.01	<0.2	0.13	<0.05	<0.05	<0.02	<0.01	<0.01	<2	<0.01	<0.05	<0.02	<0.1	<0.5	<0.02	<0.02	<0.01	<0.2	<0.1	<0.01	<0.01	<0.01	<0.1	<0.1	<10	<0.005	<0.01	<0.5	<0.5	<0.01	<0.5	<0.02	<20	<0.02	<0.02	<0.005
			SWDUP1	Field_D	ES2322320	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
		8/08/2023	SWDUP2	Interlab_D	1015966	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
		8/08/2023	KEMUS	Normal	ES2326795	<0.1	<1	<0.02	<0.05	<0.1	<0.02	<0.02	<0.02	<0.02	<0.2	<0.01	<0.02	<0.02	<0.02	<0.01	<0.2	0.07	<0.05	<0.05	<0.02	<0.01	<0.01	<2	<0.01	<0.05	<0.02	<0.1	<0.5	<0.02	<0.02	<0.01	<0.2	<0.1	<0.01	<0.01	<0.01	<0.1	<0.1	<10	<0.005	<0.01	<0.5	<0.5	<0.01	<0.5	<0.02	<20	<0.02	<0.02	<0.005
		5/09/2023	KEMUS	Normal	ES2330280	<0.1	<1	<0.02	<0.05	<0.1	<0.02	<0.02	<0.02	<0.02	<0.2	<0.01	<0.02	<0.02	<0.02	<0.01	<0.2	0.09	<0.05	<0.05	<0.02	<0.01	<0.01	<2	<0.01	<0.05	<0.02	<0.1	<0.5	<0.02	<0.02	<0.01	<0.2	<0.1	<0.01	<0.01	<0.01	<0.1	<0.1	<10	<0.005	<0.01	<0.5	<0.5	<0.01	<0.5	<0.02	<20	<0.02	<0.02	<0.005
	SOUDS	5/04/2023	SOUDS	Normal	ES2311425	<0.1	<1	<0.02	<0.05	<0.1	<0.02	<0.02	<0.02	<0.02	<0.2	<0.01	<0.02	<0.02	<0.02	<0.01	<0.2	0.02	<0.05	<0.05	<0.02	<0.01	<0.01	<2	<0.01	<0.05	<0.02	<0.1	<0.5	<0.02	<0.02	<0.01	<0.2	<0.1	<0.01	<0.01	<0.01	<0.1	<0.1	<10	<0.005	<0.01	<0.5	<0.5	<0.01	<0.5	<0.02	<20	<0.02	<0.02	<0.005
		1/05/2023	SOUDS	Normal	ES2314384	<0.1	<1	<0.02	<0.05	<0.1	<0.02	<0.02	<0.02	<0.02	<0.2	<0.01	<0.02	<0.02	<0.02	0.02	<0.2	0.1	<0.05	<0.05	<0.02	<0.01	<0.01	<2	<0.01	<0.05	0.04	<0.1	<0.5	<0.02	<0.02	<0.01	<0.2	<0.1	<0.01	<0.01	<0.01	<0.1	<0.1	<10	<0.005	<0.01	<0.5	<0.5	<0.01	<0.5	<0.02	<20	<0.02	<0.02	<0.005
		6/06/2023	SOUDS	Normal	ES2319028	<0.1	<1	<0.02	<0.05	<0.1	<0.02	<0.02	<0.02	<0.02	<0.2	<0.01	<0.02	<0.02	<0.02	<0.01	<0.2	<0.02	<0.05	<0.05	<0.02	<0.01	<0.01	<2	<0.01	<0.05	<0.02	<0.1	<0.5	<0.02	<0.02	<0.01	<0.2	<0.1	<0.01	<0.01	<0.01	<0.1	<0.1	<10	<0.005	<0.01	<0.5	<0.5	<0.01	<0.5	<0.02	<20	<0.02	<0.02	<0.005
		4/07/2023	SOUDS	Normal	ES2322320	<0.1	<1	<0.02	<0.05	<0.1	<0.02	<0.02	<0.02	<0.02	<0.2	<0.01	<0.02	<0.02	<0.02	<0.01	<0.2	<0.02	<0.05	<0.05	<0.02	<0.01	<0.01	<2	<0.01	<0.05	<0.02	<0.1	<0.5	<0.02	<0.02	<0.01	<0.2	<0.1	<0.01	<0.01	<0.01	<0.1	<0.1	<10	<0.005	<0.01	<0.5	<0.5	<0.01	<0.5	<0.02	<20	<0.02	<0.02	<0.005
		8/08/2023	SOUDS	Normal	ES2326795	<0.1	<1	<0.02	<0.05	<0.1	<0.02	<0.02	<0.02	<0.02	<0.2	<0.01	<0.02	<0.02	<0.02	<0.01	<0.2	<0.02	<0.05	<0.05	<0.02	<0.01	<0.01	<2	<0.01	<0.05	<0.02	<0.1	<0.5	<0.02	<0.02	<0.01	<0.2	<0.1	<0.01	<0.01	<0.01	<0.1	<0.1	<10	<0.005	<0.01	<0.5	<0.5	<0.01	<0.5	<0.02	<20	<0.02	<0.02	<0.005
		6/09/2023	SOUDS	Normal	ES2330280	<0.1	<1	<0.02	<0.05	<0.1	<0.02	<0.02	<0.02	<0.02	<0.2	<0.01	<0.02	<0.02	<0.02	0.01	<0.2	0.19	<0.05	<0.05	<0.02	<0.01	<0.01	<2	<0.01	<0.05	<0.02	<0.1	<0.5	<0.02	<0.02	<0.01	<0.2	<0.1	<0.01	<0.01	<0.01	<0.1	<0.1	<10	<0.005	<0.01	<0.5	<0.5	<0.01	<0.5	<0.02	<20	<0.02	<0.02	<0.005
	SOUUS	5/04/2023	SOUUS	Normal	ES2311425	<0.1	<1	<0.02	<0.05	<0.1	<0.02	<0.02	<0.02	<0.02	<0.2	<0.01	<0.02	<0.02	<0.02	<0.01	<0.2	0.03	<0.05	<0.05	<0.02	<0.01	<0.01	<2	<0.01	<0.05	<0.02	<0.1	<0.5	<0.02	<0.02	<0.01	<0.2	<0.1	<0.01	<0.01	<0.01	<0.1	<0.1	<10	<0.005	<0.01	<0.5	<0.5	<0.01	<0.5	<0.02	<20	<0.02	<0.02	<0.005
			SWDUP1	Field_D	ES2311425	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
		1/05/2023	SOUUS	Normal	ES2314384	<0.1	<1	<0.02	<0.05	<0.1	<0.02	<0.02	<0.02	<0.02	<0.2	<0.01	<0.02	<0.02	<0.02	0.02	<0.2	0.11	<0.05	<0.05	<0.02	<0.01	<0.01	<2	<0.01	<0.05	0.03	<0.1	<0.5	<0.02	<0.02	<0.01	<0.2	<0.1	<0.01	<0.01	<0.01	<0.1	<0.1	<10	<0.005	<0.01	<0.5	<0.5	<0.01	<0.5	<0.02	<20	<0.02	<0.02	<0.005
		6/06/2023	SOUUS	Normal	ES2319028	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
			SWDUP1	Field_D	ES2319028	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
		4/07/2023	SOUUS	Normal	ES2322320	<0.1	<1	<0.02	<0.05	<0.1	<0.02	<0.02	<0.02	<0.02	<0.2	<0.01	<0.02	<0.02	<0.02	0.01	<0.2	<0.02	<0.05	<0.05	<0.02	<0.01	<0.01	<2	<0.01	<0.05	<0.02	<0.1	<0.5	<0.02	<0.02	<0.01	<0.2	<0.1	<0.01	<0.01	<0.01	<0.1	<0.1	<10	<0.005	<0.01	<0.5	<0.5	<0.01	<0.5	<0.02	<20	<0.02	<0.02	<0.005
		8/08/2023	SOUUS	Normal	ES2326795	<0.1	<1	<0.02	<0.05	<0.1	<0.02	<0.02	<0.02	<0.02	<0.2	<0.01	<0.02	<0.02	<0.02	<0.01	<0.2	<0.02	<0.05	<0.05	<0.02	<0.01	<0.01	<2	<0.01	<0.05	<0.02	<0.1	<0.5	<0.02	<0.02	<0.01	<0.2	<0.1	<0.01	<0.01	<0.01	<0.1	<0.1	<10	<0.005	<0.01	<0.5	<0.5	<0.01	<0.5	<0.02	<20	<0.02	<0.02	<0.005
		6/09/2023	SOUUS	Normal	ES2330280	<0.1	<1	<0.02	<0.05	<0.1	<0.02	<0.02	<0.02	<0.02	<0.2	<0.01	<0.02	<0.02	<0.02	<0.01	<0.2	<0.02	<0.05	<0.05	<0.02	<0.01	<0.01	<2	<0.01	<0.05	<0.02	<0.1	<0.5	<0.02	<0.02	<0.01	<0.2	<0.1	<0.01	<0.01	<0.01	<0.1	<0.1	<10	<0.005	<0.01	<0.5	<0.5	<0.01	<0.5	<0.02	<20	<0.02	<0.02	<0.005
M12 - East	HINDS	4/04/2023	HINDS	Normal	ES2311425	<0.1	<1	<0.02	<0.05	<0.1	<0.02	<0.02	<0.02	<0.02	<0.2	<0.01	<0.02	<0.02	<0.02	<0.01	<0.2	<0.02	<0.05	<0.05	<0.02	<0.01	<0.01	<2	<0.01	<0.05	<0.02	<0.1	<0.5	<0.02	<0.02	<0.01	<0.2	<0.1	<0.01	<0.01	<0.01	<0.1	<0.1	<10	<0.005	<0.01	<0.5	<0.5	<0.01	<0.5	<0.02	<20	<0.02	<0.02	<0.005
		1/05/2023	HINDS	Normal	ES2314384	<0.1	<1	<0.02	<0.05	<0.1	<0.02	<0.02	<0.02	<0.02	<0.2	<0.01	<0.02	<0.02	<0.02	<0.01	<0.2	<0.02	<0.05	<0.05	<0.02	<0.01	<0.01	<2	<0.01	<0.05	<0.02	<0.1	<0.5	<0.02	<0.02	<0.01	<0.2	<0.1	<0.01	<0.01	<0.01	<0.1	<0.1	<10	<0.005	<0.01	<0.5	<0.5	<0.01	<0.5	<0.02	<20	<0.02	<0.02	<0.005
		6/06/2023	HINDS	Normal	ES2319028	<0.1	<1	<0.02	<0.05	<0.1	<0.02	<0.02	<0.02	<0.02	<0.2	<0.01	<0.02	<0.02	<0.02	<0.01	<0.2	<0.02	<0.05	<0.05	<0.02	<0.01	<0.01	<2	<0.01	<0.05	<0.02	<0.1	<0.5	<0.02	<0.02	<0.01	<0.2	<0.1	<0.01	<0.01	<0.01	<0.1	<0.1	<10	<0.005	<0.01	<0.5	<0.5	<0.01	<0.5	<0.02	<20	<0.02	<0.02	<0.005
		4/07/2023	HINDS	Normal	ES2322320	<0.1	<1	<0.02	<0.05	<0.1	<0.02	<0.02	<0.02	<0.02	<0.2	<0.01	<0.02	<0.02	<0.02	<0.01	<0.2	<0.02	<0.05	<0.05	<0.02	<0.01	<0.01	<2	<0.01	<0.05	<0.02	<0.1	<0.5	<0.02	<0.02	<0.01	<0.2	<0.1	<0.01	<0.01	<0.01	<0.1	<0.1	<10	<0.005	<0.01	<0.5	<0.5	<0.01	<0.5	<0.02	<20	<0.02	<0.02	<0.005
		8/08/2023	HINDS	Normal	ES2326795	<0.1	<1	<0.02	<0.05	<0.1	<0.02	<0.02	<0.02	<0.02	<0.2	<0.01	<0.02	<0.02	<0.02	<0.01	<0.2	<0.02	<0.05	<0.05	<0.02	<0.01	<0.01	<2	<0.01	<0.05	<0.02	<0.1	<0.5	<0.02	<0.02	<0.01	<0.2	<0.1	<0.01	<0.01	<0.01	<0.1	<0.1	<10	<0.005	<0.01	<0.5	<0.5	<0.01	<0.5	<0.02	<20	<0.02	<0.02	<0.005
			SWDUP1	Field_D	ES2326795	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
		6/09/2023	SWDUP2	Interlab_D	1024024	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
		6/09/2023	HINDS	Normal	ES2330280	<0.1	<1	<0.02	<0.05	<0.1	<0.02	<0.02	<0.02	<0.02	<0.2	<0.01	<0.02	<0.02	<0.02	<0.01	<0.2	<0.02	<0.05	<0.05	<0.02	<0.01	<0.01	<2	<0.01	<0.05	<0.02	<0.1	<0.5	<0.02	<0.02	<0.01	<0.2	<0.1	<0.01	<0.01	<0.01	<0.1	<0.1	<10	<0.005	<0.01	<0.5	<0.5	<0.01	<0.5	<0.02	<20	<0.02	<0.02	<0.005
	HINUS	4/04/2023	HINUS	Normal	ES2311425	<0.1	<1	<0.02	<0.05	<0.1	<0.02	<0.02	<0.02	<0.02	<0.2	<0.01	<0.02	<0.02	<0.02	<0.01	<0.2	<0.02	<0.05	<0.05	<0.02	<0.01	<0.01	<2	<0.01	<0.05	<0.02	<0.1	<0.5	<0.02	<0.02	<0.01	<0.2	<0.1	<0.01	<0.01	<0.01	<0.1	<0.1	<10	<0.005	<0.01	<0.5	<0.5	<0.01	<0.5	<0.02	<20	<0.02	<0.02	<0.005
		1/05/2023	HINUS	Normal	ES2314384	<0.1	<1	<0.02	<0.05	<0.1	<0.02	<0.02	<0.02	<0.02	<0.2	<0.01	<0.02	<0.02	<0.02	<0.01	<0.2	<0.02	<0.05	<0.05	<0.02	<0.01	<0.01	<2	<0.01	<0.05	<0.02	<0.1	<0.5	<0.02	<0.02	<0.01	<0.2	<0.1	<0.01	<0.01	<0.01	<0.1	<0.1	<10	<0.005	<0.01	<0.5	<0.5	<0.01	<0.5	<0.02	<20	<0.02	<0.02	<0.005
		6/06/2023	HINUS	Normal	ES2319028	<0.1	<1	<0.02	<0.05	<0.1	<0.02	<0.02	<0.02	<0.02	<0.2	<0.01	<0.02	<0.02	<0.02	<0.01	<0.2	<0.02	<0.05	<0.05	<0.02	<0.01	<0.01	<2	<0.01	<0.05	<0.02	<0.1	<0.5	<0.02	<0.02	<0.01	<0.2	<0.1	<0.01	<0.01	<0.01	<0.1	<0.1	<10	<0.005	<0.01	<0.5	<0.5	<0.01	<0.5	<0.02	<20	<0.02	<0.02	<0.005
		4/07/2023	HINUS	Normal	ES2322320	<0.1	<1	<0.02	<0.05	<0.1	<0.02	<0.02	<0.02	<0.02	<0.2	<0.01	<0.02	<0.02	<0.02	<0.01	<0.2	<0.02	<0.05	<0.05	<0.02	<0.01	<0.01	<2	<0.01	<0.05	<0.02	<0.1	<0.5	<0.02	<0.02	<0.01	<0.2	<0.1	<0.01	<0.01	<0.01	<0.1	<0.1	<10	<0.005	<0.01	<0.5	<0.5	<0.01	<0.5	<0.02	<20	<0.02	<0.02	<0.005
		8/08/2023	HINUS	Normal	ES2326795	<0.1	<1	<0.02	<0.05	<0.1	<0.02	<0.02	<0.02	<0.02	<0.2	<0.01	<0.02	<0.02	<0.02	<0.01	<0.2	<0.02	<0.05	<0.05	<0.02	<0.01	<0.01	<2	<0.01	<0.05	<0.02	<0.1	<0.5	<0.02	<0.02	<0.01	<0.2	<0.1	<0.01	<0.01	<0.01	<0.1	<0.1	<10	<0.005	<0.01	<0.5	<0.5	<0.01	<0.5	<0.02	<20	<0.02	<0.02	<0.005
		6/09/2023	HINUS	Normal	ES2330280	<0.1	<1	<0.02	<0.05	<0.1	<0.02	<0.02	<0.02	<0.02	<0.2	<0.01	<0.02	<0.02	<0.02	<0.01	<0.2	<0.02	<0.05	<0.05	<0.02	<0.01	<0.01	<2	<0.01	<0.05	<0.02	<0.1	<0.5	<0.02	<0.02	<0.01	<0.2	<0.1	<0.01	<0.01	<0.01	<0.1	<0.1	<10	<0.005	<0.01	<0.5	<0.5	<0.01	<0.5	<0.02	<20	<0.02	<0.02	<0.005
	ROPDS	4/04/2023	ROPDS	Normal	ES2311425	<0.1	<1	<0.02	<0.05	<0.1	<0.02	<0.02	<0.02	<0.02	<0.2	<0.01	<0.02	<0.02	<0.02	<0.01	<0.2	<0.02	<0.05	<0.05	<0.02	<0.01	<0.01	<2	<0.01	<0.05	<0.02	<0.1	<0.5	<0.02	<0.02	<0.01	<0.2	<0.1	<0.01	<0.01	<0.01	<0.1	<0.1	<10	<0.005	<0.01	<0.5	<0.5	<0.01	<0.5	<0.02	<20	<0.02	<0.02	<0.005
		1/05/2023	ROPDS	Normal	ES2314384	<0.1	<1	<0.02	<0.05	<0.1	<0.02	<0.02	<0.02	<0.02	<0.2	<0.01	<0.02	<0.02	<0.02	<0.01	<0.2	<0.02	<0.05	<0.05	<0.02	<0.01	<0.01	<2	<0.01	<0.05	<0.02	<0.1	<0.5	<0.02	<0.02	<0.01	<0.2	<0.1	<0.01	<0.01	<0.01	<0.1	<0.1	<10	<0.005	<0.01	<0.5	<0.5	<0.01	<0.5	<0.02	<20	<0.02	<0.02	<0.005
		6/06/2023	ROPDS	Normal	ES2319028	<0.1	<1	<0.02	<0.05	<0.1	<0.02	<0.02	<0.02	<0.02	<0.2	<0.01	<0.02	<0.02	<0.02	<0.01	<0.2	<0.02	<0.05	<0.05	<0.02	<0.01	<0.01	<2	<0.01	<0.05	<0.02	<0.1	<0.5	<0.02	<0.02	<0.01	<0.2	<0.1	<0.01	<0.01	<0.01	<0.1	<0.1	<10	<0.005	<0.01	<0.5	<0.5	<0.01	<0.5	<0.02	<20	<0.02	<0.02	<0.005
		4/07/2023	ROPDS	Normal	ES2322320	<0.1	<1	<0.02	<0.05	<0.1	<0.02	<0.02	<0.02	<0.02	<0.2	<0.01	<0.02	<0.02	<0.02	<0.01	<0.2	<0.02	<0.05	<0.05	<0.02	<0.01	<0.01	<2	<0.01	<0.05	<0.02	<0.1	<0.5	<0.02	<0.02	<0.01	<0.2	<0.1	<0.01	<0.01	<0.01	<0.1	<0.1	<10	<0.005	<0.01	<0.5	<0.5	<0.01	<0.5	<0.02	<20	<0.02	<0.02	<0.005
		8/08/2023	ROPDS	Normal	ES2326795	<0.1	<1	<0.02	<0.05	<0.1	<0.02	<0.02	<0.02	<0.02	<0.2	<0.01	<0.02	<0.02	<0.02	<0.01	<0.2	<0.02	<0.05	<0.05	<0.02	<0.01	<0.01	<2	<0.01	<0.05	<0.02	<0.1	<0.5	<0.02	<0.02	<0.01	<0.2	<0.1	<0.01	<0.01	<0.01	<0.1	<0.1	<10	<0.005	<0.01	<0.5	<0.5	<0.01	<0.5	<0.02	<20	<0.02	<0.02	<0.005
		6/09/2023	ROPDS	Normal	ES2330280	<0.1	<1	<0.02	<0.05	<0.1	<0.02	<0.02	<0.02	<0.02	<0.2	<0.01	<0.02	<0.02	<0.02	<0.01	<0.2	<0.02	<0.05	<0.05	<0.02	<0.01	<0.01	<2	<0.01	<0.05	<0.02	<0.1	<0.5	<0.02	<0.02

| | | | | | OP Pesticides | | | | |

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Package	Location	Sampling Event	Sample date	Dissolved oxygen (mg/L)	Dissolved Oxygen (%S)	Electrical conductivity (µS/cm)	pH (pH units)	Redox potential (mV)	Corrected redox potential (mV)*	Temperature (°C)	Turbidity (NTU)	Observations
West	BADDS	Event 25 - April 2021	08/04/2021	3.44	37.1	882	7.68	156.4	361.4	19.1	48.55	Brown
West	BADDS	Event 27 - June 2021	10/06/2021	7.71	65.3	686	7.1	93.2	298.2	8.1	7.7	Turbid, brown
West	BADDS	Event 28 - July 2021	09/07/2021	7.2	61.5	432.7	10	90.7	295.7	8.5	25.3	Clear
West	BADDS	Event 29 - August 2021	13/08/2021	6.78	59.6	610	7.41	54.8	259.8	9.7	17.95	Brown
West	BADDS	WW Event 1 - 25 August 2021	25/08/2021	8.6	77.2	1.21	7.24	169.1	374.1	10.6		Brown
West	BADDS	Event 30 - September 2021	03/09/2021	10.8	100.4	2007	8.1	79.7	284.7	12.1	16.8	Clear
West	BADDS	Event 31 - October 2021	13/10/2021	1.81	17.9	649	7.02	145.3	350.3	14.9		Brown, turbid
West	BADDS	Event 32 - November 2021	09/11/2021	5.31	56.5	1256	7.16	68.7	273.7	18.4	13.25	Cloudy pale brown, Moderate turbidity
West	BADDS	WW Event 2 - 29 November 2021	29/11/2021	4.31	44.9	516	7.21	109	314	17.3		Highly turbid, brown
West	BADDS	Event 33 - December 2021	07/12/2021	3.33	35.9	737	7.02	104.9	309.9	19.0	102.2	Very turbid, brown, high sediment load
West	BADDS	WW Event 3 - 14 January 2022	14/01/2022	9.4	111.0	464	7.59	76.8	281.8	23.7	294.31	Brown, murky, high sediment
West	BADDS	Event 34 - February 2022	08/02/2022	-	-	-	-	-	-	-	-	No access to sample location
West	BADDS	Event 35 - March 2022	17/03/2022	-	-	-	-	-	-	-	-	No access to sample location
West	BADDS	Event 36 - April 2022	12/04/2022	-	-	-	-	-	-	-	-	No access to sample location
West	BADDS	Event 37 - May 2022	27/05/2022	-	-	-	-	-	-	-	-	No access to sample location
West	BADDS	Event 38 - June 2022	28/06/2022	8.78	75.76	956	7.00	74.1	279.1	8.9	19.50	Yellow/brown, very cloudy
West	BADDS	WW Event 4 - 5-6 July 2022	5/07/2022	9.38	88.79	258	6.95	248.0	453.0	12.9	123.00	Brown, very cloudy, no sheen, no odour
West	BADDS	Event 39 - July 2022	21/07/2022	9.25	83.47	1164	7.04	62.3	267.3	10.8	-	Green/brown, turbid, no sheen, no odour
West	BADMS	Event 31 - October 2021	13/10/2021	4.05	39.8	685	7.19	143.5	348.5	14.6		Green, slightly turbid
West	BADMS	Event 32 - November 2021	09/11/2021	5.42	57.6	1263	7.15	74.6	279.6	18.3	11.31	Pale brown, very cloudy
West	BADMS	WW Event 2 - 29 November 2021	29/11/2021	6.24	64.9	521	7.26	112.3	317.3	17.3		Highly turbid, light brown
West	BADMS	Event 33 - December 2021	07/12/2021	5.76	61.9	766	7.13	106.2	311.2	18.9	97.95	Very turbid, brown, high sediment load
West	BADMS	WW Event 3 - 14 January 2022	14/01/2022	8	95.2	489.7	7.97	70.4	275.4	24.1	230.56	Brown, turbid
West	BADMS	Event 34 - February 2022	08/02/2022	-	-	-	-	-	-	-	-	No access to sample location
West	BADMS	Event 35 - March 2022	17/03/2022	-	-	-	-	-	-	-	-	No access to sample location
West	BADMS	Event 36 - April 2022	12/04/2022	-	-	-	-	-	-	-	-	No access to sample location
West	BADMS	Event 37 - May 2022	27/05/2022	-	-	-	-	-	-	-	-	No access to sample location
West	BADMS	Event 38 - June 2022	28/06/2022	7.73	67.2	1108	6.86	70.2	275.2	9.2	11.1	Brown, very cloudy
West	BADMS	WW Event 4 - 5-6 July 2022	5/07/2022	9.59	90.4	247	7.07	239	444	12.7	484	Brown, very cloudy, no sheen, no odour
West	BADMS	Event 39 - July 2022	21/07/2022	9.73	87.6	1079	7.03	122	327	10.7	78.85	Green/brown, turbid, no sheen, no odour
West	BADUS	Event 25 - April 2021	07/04/2021	4.23	46.1	809	8.04	21.33	226.33	19.6	21.33	Brown
West	BADUS	Event 26 - May 2021	10/05/2021	5.13	52.4	1388	7.24	132.3	337.3	16.4	90.1	Brown
West	BADUS	Event 27 - June 2021	10/06/2021	6.05	51.3	928	7.23	92	297	8.2	13.5	Turbid, brown
West	BADUS	Event 28 - July 2021	09/07/2021	8.21	72.5	417.3	9.65	104.3	309.3	9.9	9.49	Turbid, brown
West	BADUS	Event 29 - August 2021	12/08/2021	11.76	118.1	675	7.69	101.4	306.4	15.6	6.96	Slightly green
West	BADUS	WW Event 1 - 25 August 2021	25/08/2021	7.19	63.7	1471	7.21	141.2	346.2	10.0		Brown
West	BADUS	Event 30 - September 2021	03/09/2021	10.1	94.5	1057	7.75	119.1	324.1	12.4	28.9	Green to brown tinge
West	BADUS	Event 31 - October 2021	13/10/2021	2.97	29.4	1081	8.99	-75.4	129.6	15.0		Green, sooty, high turbidity
West	BADUS	Event 32 - November 2021	09/11/2021	5.02	53.2	1254	7.14	144.2	349.2	18.2	12.22	Turbid, brown, high sediment
West	BADUS	WW Event 2 - 29 November 2021	29/11/2021	5.99	63.4	516	7.26	60.1	265.1	18.1		Highly turbid, brown
West	BADUS	Event 33 - December 2021	07/12/2021	3.51	39.7	912	7.12	126.1	331.1	21.4	65.6	Brown, turbid, low sediment
West	BADUS	WW Event 3 - 14 January 2022	14/01/2022	9.24	109.6	440.7	7.58	111	316	23.9	322	Brown, murky, high sediment
West	BADUS	Event 34 - February 2022	08/02/2022	6.66	77.6	1546	7.15	111.2	316.2	23.0	24.15	Brown, murky, high sediment
West	BADUS	Event 35 - March 2022	17/03/2022	2.01	22.1	834	7.79	110.9	315.9	20.1	7.72	Green, brown water, moderatley turbid
West	BADUS	Event 36 - April 2022	12/04/2022	6.45	71.5	514	7.13	77.9	282.9	20.4	189.8	Light brown, turbid, no odour, no sheen
West	BADUS	Event 37 - May 2022	27/05/2022	9.62	92.7	983	7.1	101.9	306.9	13.7	15.19	Brown, cloudy, no odour, no sheen
West	BADUS	Event 38 - June 2022	28/06/2022	12.6	112.9	2253	7.27	144	349	10.5	8.6	Brown/green colour
West	BADUS	WW Event 4 - 5-6 July 2022	5/07/2022	9.57	90.0	128.4	7	142	347	12.6	945	
West	BADUS	Event 39 - July 2022	21/07/2022	9.82	88.0	1280	6.9	132	337	10.5	36.45	
West	COSDS	Event 25 - April 2021	08/04/2021	6.7	73.7	494	8.72	85	290	20.0	85.21	Brown
West	COSDS	Event 26 - May 2021	10/05/2021	6.33	64.4	645	7.49	105.6	310.6	16.2	125.3	Light brown
West	COSDS	Event 27 - June 2021	10/06/2021	9.68	84.1	590	7.31	50.5	255.5	9.2	45.7	Turbid, brown
West	COSDS	Event 28 - July 2021	09/07/2021	8.1	68.6	826	10.3	107.6	312.6	8.1	27.1	Brown
West	COSDS	Event 29 - August 2021	12/08/2021	11.61	105.5	1448	7.75	95.9	300.9	11.1	6.6	Clear
West	COSDS	WW Event 1 - 25 August 2021	25/08/2021	8.3	74.7	489.5	7.46	1480	1685	10.7		Brown
West	COSDS	Event 30 - September 2021	03/09/2021	9.46	94.2	1293	8.26	93.3	298.3	15.2	23.8	Green tinge
West	COSDS	Event 31 - October 2021	13/10/2021	7.1	69.9	1154	6.46	-20.2	184.8	14.7	-	Green/brown, turbid
West	COSDS	Event 32 - November 2021	09/11/2021	7.04	74.0	905	7.34	83	288	17.8	152.39	Pale brown, high turbidity
West	COSDS	WW Event 2 - 29 November 2021	29/11/2021	6.06	63.2	555	7.2	83.7	288.7	17.4		Very turbid, light brown
West	COSDS	Event 33 - December 2021	07/12/2021	5.92	65.0	738	7.27	117.9	322.9	19.9	63.53	Brown, turbid, high sediment load
West	COSDS	WW Event 3 - 14 January 2022	14/01/2022	10.89	129.1	485.4	7.75	88.7	293.7	23.9	234.17	Brown, turbid, high sediment load
West	COSDS	Event 34 - February 2022	08/02/2022	6.28	68.8	1028	7.27	132.9	337.9	19.8	11.35	Green tinge, low sediment
West	COSDS	Event 35 - March 2022	17/03/2022	2.07	22.4	586	7.87	97.7	302.7	19.2	29.67	Brown water, no odour or sheen, moderatley turbid
West	COSDS	Event 36 - April 2022	12/04/2022	-	-	-	-	-	-	-	-	No access to sample location
West	COSDS	Event 37 - May 2022	27/05/2022	9.55	92.42	671	7.29	76.3	281.3	13.9	23.43	Brown, very cloudy, no sheen, no odour
West	COSDS	Event 38 - June 2022	28/06/2022	8.04	69.21	1413	7.24	177.0	382.0	8.8	15.14	Yellow/green/brown, very cloudy
West	COSDS	WW Event 4 - 5-6 July 2022	5/07/2022	9.86	92.92	133	7.20	133.0	338.0	12.7	421.00	
West	COSDS	Event 39 - July 2022	21/07/2022	10.19	91.96	605	6.76	103.2	308.2	10.8	38.73	Green/brown, turbid, no sheen, no odour
West	COSUS	Event 25 - April 2021	08/04/2021	5.88	64.9	473.9	7.77	125.4	330.4	20.2	75.04	Brown
West	COSUS	Event 26 - May 2021	10/05/2021	6.42	65.4	674	7.41	158.7	363.7	16.3	135.28	Turbid, brown
West	COSUS	Event 27 - June 2021	10/06/2021	9.93	87.3	602	7.55	69.5	274.5	9.7	42.2	Turbid, brown
West	COSUS	Event 28 - July 2021	09/07/2021	7.98	68.5	895	10.12	101.8	306.8	8.7	31.58	Green
West	COSUS	Event 29 - August 2021	12/08/2021	7.91	70.7	1491	7.61	89.5	294.5	10.4	5.46	Clear
West	COSUS	WW Event 1 - 25 August 2021	25/08/2021	7.69	69.2	539	7.54	148.9	353.9	10.7		Brown
West	COSUS	Event 30 - September 2021	03/09/2021	9.29	93.5	1492	8.52	85.4	290.4	15.7	25.21	Green tinge
West	COSUS	Event 31 - October 2021	13/10/2021	5.38	53.6	981	8.67	-70.7	134.3	15.2	-	Green, turbid
West	COSUS	Event 32 - November 2021	09/11/2021	5.87	62.1	942	7.33	75.8	280.8	18.1	139.78	Pale creamy brown, very cloudy

Package	Location	Sampling Event	Sample date	Dissolved oxygen (mg/L)	Dissolved Oxygen (%S)	Electrical conductivity (µS/cm)	pH (pH units)	Redox potential (mV)	Corrected redox potential (mV)*	Temperature (°C)	Turbidity (NTU)	Observations
West	COSUS	WW Event 2 - 29 November 2021	29/11/2021	4.71	49.3	580	7.57	60.8	265.8	17.6		Highly turbid, light brown
West	COSUS	Event 33 - December 2021	07/12/2021	4.3	46.8	774	7.18	96.7	301.7	19.5	51.3	Brown, very turbid, high sediment load
West	COSUS	WW Event 3 - 14 January 2022	14/01/2022	10.55	124.6	495.4	7.94	81.4	286.4	23.7	243.48	Brown, turbid, high sediment load
West	COSUS	Event 34 - February 2022	08/02/2022	3.67	40.0	927	7.09	103.1	308.1	19.6	19.23	Green tinge, no sediment
West	COSUS	Event 35 - March 2022	17/03/2022	2.14	23.5	649	7.98	87.1	292.1	19.9	44.95	Brown, turbid water, no odour or sheen, low sediment load
West	COSUS	Event 36 - April 2022	12/04/2022	-	-	-	-	-	-	-	-	No access to sample location
West	COSUS	Event 37 - May 2022	27/05/2022	8.99	87.96	692	7.27	92.2	297.2	14.4	28.52	Brown, very cloudy, no sheen, no odour
West	COSUS	Event 38 - June 2022	28/06/2022	7.02	60.14	1516	7.44	183.0	388.0	8.6	10.00	Dark green/brown, very cloudy
West	COSUS	WW Event 4 - 5-6 July 2022	5/07/2022	9.78	92.16	146	7.20	127.0	332.0	12.7	445.00	
West	COSUS	Event 39 - July 2022	21/07/2022	10.28	92.13	529	6.72	115.6	320.6	10.5	26.98	Green/grey, turbid, no sheen, no odour
East	HINDS	Event 25 - April 2021	08/04/2021	3.14	36.3	137.2	7.28	84.2	289.2	22.6	35.14	Light brown
East	HINDS	Event 26 - May 2021	10/05/2021	4.17	45.4	140.1	7.61	131.3	336.3	19.5	78.69	Clear
East	HINDS	Event 27 - June 2021	10/06/2021	6.72	59.4	127.7	8.33	50.5	255.5	9.9	30.4	Clear
East	HINDS	Event 28 - July 2021	09/07/2021	7.05	63.8	135.2	8.95	30.2	235.2	10.9	45.29	Brown
East	HINDS	WW Event 1 - 25 August 2021	25/08/2021	11.1	101.6	147.8	7.67	197	402	11.4		Turbid, brown
East	HINDS	Event 30 - September 2021	03/09/2021	9.71	97.7	300.7	9.05	-4.2	200.8	15.7	20.4	Clear
East	HINDS	Event 31 - October 2021	13/10/2021	6.6	68.1	214.2	7.37	134.4	339.4	16.9	-	Brown, mostly clear
East	HINDS	Event 32 - November 2021	09/11/2021	6.64	74.6	244	7.38	14.9	219.9	21.1	11.52	Slightly cloudy, slime on surface
East	HINDS	WW Event 2 - 29 November 2021	29/11/2021	3.03	33.2	226.3	7.2	78.5	283.5	19.8		Light brown, moderate turbidity
East	HINDS	Event 33 - December 2021	07/12/2021	10.41	116.5	249.3	7.63	107.4	312.4	20.9	106.55	Slight brown tinge
East	HINDS	WW Event 3 - 14 January 2022	14/01/2022	3.93	47.1	290	8.05	-77.4	127.6	24.5	33.47	Brown
East	HINDS	Event 34 - February 2022	08/02/2022	2.6	29.0	269.4	6.98	-13	192	20.7	19.01	Green, fairly clear, no sediment
East	HINDS	Event 35 - March 2022	17/03/2022	2.47	25.5	158.1	7.94	-176.7	28.3	16.9	56.76	Fairly clear, slight brown colour
East	HINDS	Event 36 - April 2022	12/04/2022	8.50	96.45	137	7.48	55.2	260.2	21.6	80.60	Green/light brown water, low sediment, no sheen, no odour
East	HINDS	Event 37 - May 2022	27/05/2022	2.67	26.35	238	6.71	143.6	348.6	14.8	21.87	Brown, very cloudy, no sheen, no odour
East	HINDS	Event 38 - June 2022	28/06/2022	9.18	80.93	243	7.62	192.0	397.0	9.8	33.56	Brown, very cloudy
East	HINDS	WW Event 4 - 5-6 July 2022	5/07/2022	9.51	90.42	66	6.90	156.0	361.0	13.1	108.00	
East	HINDS	Event 39 - July 2022	21/07/2022	8.99	84.53	173	7.00	94.2	299.2	12.6	69.90	
East	HINDS	Event 40 - August 2022	15/08/2022	8.63	83.70	223	6.80	101.3	306.3	14.0	1908.42	Green tinge, no odour or sheen
East	HINDS	Event 41 - September 2022	20/09/2022	5.86	40.07	293	7.08	101.2	306.2	16.5	39.00	Brown, very cloudy, no sediment, no odour/sheen
East	HINDS	Event 42 - October 2022	19/10/2022	5.18	54.90	188	7.04	116.4	321.4	18.2	84.11	Pale brown, very cloudy, no sediment, no odour/sheen.
East	HINDS	WW Event 5 - 14-15 November 2022	14/11/2022	6.23	74.15	358	7.63	85.4	290.4	24.1	81.60	Brown, turbid, no odour/sheen.
East	HINDS	Event 43 - December 2022	13/12/2022	10.06	118.6	279	8.01	111	316	23.6	13.37	Green-brown, very cloudy, no odour/sheen.
East	HINDS	Event 44 - January 2023	17/01/2023	8.62	106.7	272	8.18	79.7	284.7	26.2	3.8	Brown, somewhat cloudy, no odour/sheen.
East	HINDS	Event 45 - February 2023	07/02/2023	9.91	126.0	403	8.77	66.8	271.8	27.7	3.73	Pale brown tinge, mostly clear, no odour/sheen.
East	HINDS	Event 46 - March 2023	02/03/2023	9.35	114.0	585	8	-696.8	-491.8	25.4	2.19	Clear, no sediment, no odour/sheen.
East	HINDS	Event 47 - April 2023	4/04/2023	7.23	79.7	358	8	126.4	331.4	20.0	22.25	Brown, turbid, no odour/sheen.
East	HINDS	Event 48 - May 2023	1/05/2023	7.88	83.6	402.7	7.1	130.8	335.8	18.1	207.26	Pale yellow tinge, no odour, no sheen, scum on surface of pond.
East	HINDS	Event 49 - June 2023	6/06/2023	432	8.5	9.63	96.1	68.1	273.1	15.3	3.38	Pale yellow-tinge, mostly clear, no odour, no sheen
East	HINUS	Event 25 - April 2021	07/04/2021	3.09	34.4	133.7	7.76	-40.3	164.7	20.7	12.83	Light brown
East	HINUS	Event 26 - May 2021	10/05/2021	5.43	57.3	175.5	7.24	76.6	281.6	18.0	52.15	Clear to green
East	HINUS	Event 27 - June 2021	10/06/2021	8.48	73.2	156.1	7.78	-5.2	199.8	8.9	34	Clear
East	HINUS	Event 28 - July 2021	09/07/2021	5.23	44.3	193.1	10.46	-63.2	141.8	8.1	13.53	Clear
East	HINUS	WW Event 1 - 25 August 2021	25/08/2021	7.28	64.0	352	7.14	220	425	9.7		Turbid, brown
East	HINUS	Event 31 - October 2021	13/10/2021	3.78	38.4	311.9	6.9	104	309	16.2	-	Slight green tinge, fairly clear
East	HINUS	Event 32 - November 2021	09/11/2021	8.33	99.0	1364	7.46	59.8	264.8	24.0	27.57	Brown tinge, silty sediment
East	HINUS	WW Event 2 - 29 November 2021	29/11/2021	3.65	42.6	520	7.23	-7	198	23.1		Light brown, moderate turbidity
East	HINUS	Event 33 - December 2021	07/12/2021	7.67	85.3	515	7.02	0.1	205.1	20.6	228.79	Slight brown tinge, low sediment
East	HINUS	WW Event 3 - 14 January 2022	14/01/2022	2.13	24.9	281.6	7.19	-27.3	177.7	23.2	283.96	Brown, very turbid, muddy
East	HINUS	Event 34 - February 2022	08/02/2022	7.62	86.5	359.5	7.1	24.4	229.4	21.6	81.7	Fairly clear
East	HINUS	Event 35 - March 2022	17/03/2022	2.22	25.0	140.9	7.6	-6.9	198.1	21.3	64.42	Brown water, turbid, heavily eroded banks
East	HINUS	Event 36 - April 2022	12/04/2022	-	-	-	-	-	-	-	-	No access to sample location
East	HINUS	Event 37 - May 2022	27/05/2022	5.12	48.36	285	6.70	31.0	236.0	12.8	27.38	Dark brown, very cloudy, no sheen, no odour
East	HINUS	Event 38 - June 2022	28/06/2022	9.86	84.07	303	7.06	15.2	220.2	8.4	49.86	Brown/green, very cloudy
East	HINUS	WW Event 4 - 5-6 July 2022	5/07/2022	9.49	90.43	62	6.70	158.0	363.0	13.2	178.00	Cloudy, brown, non-transparent, no sheen, no odour
East	HINUS	Event 39 - July 2022	21/07/2022	9.80	86.40	187	6.64	55.2	260.2	9.8	1980.00	
East	HINUS	Event 40 - August 2022	15/08/2022	9.55	89.99	261	6.64	-6.2	198.8	12.7	2788.91	Green/brown, slightly turbid, no odour or sheen
East	HINUS	Event 41 - September 2022	20/09/2022	16.02	109.54	361	8.82	46.6	251.6	17.5	62.02	Green-brown, no sediment, very cloudy, no odour/sheen
East	HINUS	Event 42 - October 2022	19/10/2022	1.75	17.90	136	6.87	5.1	210.07	16.6	267.45	Pale brown, very cloudy, non-transparent, no sediment, no odour/sheen.
East	HINUS	WW Event 5 - 14-15 November 2022	14/11/2022	1.13	12.65	274	6.85	-42.9	162.1	20.9	254.00	Green-brown, very turbid, no odour/sheen.
East	HINUS	Event 43 - December 2022	13/12/2022	15.71	189.8	248	8.89	136.8	341.8	24.9	7.72	Green-brown, turbid, no odour/sheen
East	HINUS	Event 44 - January 2023	17/01/2023	11.22	144.2	285	7.68	1.4	206.4	28.3	100.97	Green-brown, very turbid, no odour/sheen.
East	HINUS	Event 45 - February 2023	07/02/2023	7.33	90.7	433	7.42	46.7	251.7	26.2	40.61	Green-brown, turbid, no odour/sheen.
East	HINUS	Event 46 - March 2023	02/03/2023	8.38	104.8	703	7.95	272.6	477.6	26.8	3.92	Clear, no sediment, no odour/sheen.
East	HINUS	Event 47 - April 2023	4/04/2023	12.58	151.4	471.4	9.08	110.1	315.1	24.4	63.52	Green-brown, turbid, no odour/sheen.
East	HINUS	Event 48 - May 2023	1/05/2023	6.49	67.1	466	6.98	117.4	322.4	16.9	75.07	Pale yellow tinge, no odour, no sheen.
East	HINUS	Event 49 - June 2023	6/06/2023	604	8.5	9.75	96.5	8.7	213.7	15.2	91.81	Pale yellow-tinge, no odour, no sheen, no sediment
Central	KEMDS	Event 25 - April 2021	08/04/2021	0.5	5.3	225.2	6.88	-72.4	132.6	18.4	32.54	Brown
Central	KEMDS	Event 26 - May 2021	10/05/2021	8.8	87.2	218.5	6.82	-120.3	84.7	15.0	28.53	Turbid
Central	KEMDS	Event 27 - June 2021	10/06/2021	1.04	8.5	187.6	6.83	110.3	315.3	6.9	11	Clear
Central	KEMDS	Event 28 - July 2021	09/07/2021	0.52	4.5	170.5	9.09	-73.6	131.4	8.7	41.5	Clear
Central	KEMDS	WW Event 1 - 25 August 2021	25/08/2021	2.9	26.8	176.4	7.39	143.9	348.9	11.8		
Central	KEMDS	Event 30 - September 2021	03/09/2021	0.8	7.7	174	6.83	89.1	294.1	13.6	35.1	Organic odour
Central	KEMDS	Event 31 - October 2021	13/10/2021	0.26	2.5	148.5	9.69	159.9	364.9	14.5		Green tinge
Central	KEMDS	Event 32 - November 2021	09/11/2021	5.69	60.3	1181	7.36	78	283	18.2	22.6	Pale brown, cloudy
Central	KEMDS	WW Event 2 - 29 November 2021	29/11/2021	5.69	59.0	793	7.45	108.5	313.5	17.1		Highly turbid, Small foam patches, brown

Package	Location	Sampling Event	Sample date	Dissolved oxygen (mg/L)	Dissolved Oxygen (%S)	Electrical conductivity (µS/cm)	pH (pH units)	Redox potential (mV)	Corrected redox potential (mV)*	Temperature (°C)	Turbidity (NTU)	Observations
Central	KEMDS	Event 33 - December 2021	07/12/2021	5.8	63.9	1634	7.3	126.3	331.3	20.1	14.61	Brown, turbid, low sediment
Central	KEMDS	WW Event 3 - 14 January 2022	14/01/2022	8.29	97.0	523	7.68	122	327	23.2	64.33	Brown, turbid
Central	KEMDS	Event 34 - February 2022	08/02/2022	5.86	65.3	2481	7.39	134.7	339.7	20.7	4.9	Brown, turbid
Central	KEMDS	Event 35 - March 2022	17/03/2022	1.9	20.8	1118	7.9	109.4	314.4	19.7	13.39	Brown, turbid, no odour or sheen
Central	KEMDS	Event 36 - April 2022	12/04/2022	-	-	-	-	-	-	-	-	No access to sample location
Central	KEMDS	Event 37 - May 2022	27/05/2022	8.18	79.51	1144	7.24	117.0	322.0	14.1	4.27	Brown, very cloudy, no sheen, no odour
Central	KEMDS	Event 38 - June 2022	28/06/2022	10.34	89.65	2322	7.52	149.0	354.0	9.1	1.63	Dark green/brown
Central	KEMDS	WW Event 4 - 5-6 July 2022	5/07/2022	9.16	86.71	161	7.17	144.0	349.0	12.9	213.00	
Central	KEMDS	Event 39 - July 2022	21/07/2022	9.60	84.43	1466	7.02	118.3	323.3	9.7	19.25	
Central	KEMUS	Event 25 - April 2021	07/04/2021	4.09	44.6	1726	7.49	135.6	340.6	19.6	8.06	Clear
Central	KEMUS	Event 26 - May 2021	10/05/2021	4.94	51.0	885	7.41	128.6	333.6	16.9	123.25	Brown, organic odour
Central	KEMUS	Event 27 - June 2021	10/06/2021	7.2	61.4	1996	7.29	120.4	325.4	8.4	2.8	Clear
Central	KEMUS	Event 28 - July 2021	09/07/2021	6.79	57.8	1230	9.96	60.4	265.4	8.3	12.5	Clear
Central	KEMUS	WW Event 1 - 25 August 2021	25/08/2021	10.69	94.0	477	7.1	175.4	380.4	9.7		Turbid, brown
Central	KEMUS	Event 30 - September 2021	03/09/2021	6.54	60.3	1207	7.8	56.9	261.9	11.7	38.4	Clear
Central	KEMUS	Event 31 - October 2021	13/10/2021	3.4	33.6	1801	7.37	131.6	336.6	14.8	-	Brown/green colour
Central	KEMUS	Event 32 - November 2021	09/11/2021	0.8	8.5	141.9	6.5	-81.1	123.9	18.1	148.5	Duck weed, pale brown, murky
Central	KEMUS	WW Event 2 - 29 November 2021	29/11/2021	5.03	52.8	838	7.54	60.3	265.3	17.7		Highly turbid, Brown
Central	KEMUS	Event 33 - December 2021	07/12/2021	5.26	57.4	1644	7.15	96.4	301.4	19.6	13.99	Brown, fairly turbid
Central	KEMUS	WW Event 3 - 14 January 2022	14/01/2022	8.12	93.9	487.2	7.36	59.9	264.9	22.6	69.05	Brown, very turbid, high sediment load, foamy sheen
Central	KEMUS	Event 34 - February 2022	08/02/2022	5.16	56.7	2286	7.4	100.2	305.2	20.0	5.84	Clear, slight green tinge
Central	KEMUS	Event 35 - March 2022	17/03/2022	2.27	24.3	1077	7.62	74.2	279.2	18.7	17.22	Brown, turbid, no odour or sheen
Central	KEMUS	Event 36 - April 2022	12/04/2022	6.67	73.2	768	7.32	55.2	260.2	19.9	38	Yellow tinge/clear, no sediment, no sheen, no odour
Central	KEMUS	Event 37 - May 2022	27/05/2022	8.24	79.22	1146	7.17	76.7	281.7	13.6	5.12	Dark brown/green, very cloudy, no sheen, no odour
Central	KEMUS	Event 38 - June 2022	28/06/2022	10.41	90.26	2100	7.53	143.0	348.0	9.1	1.45	Dark green/brown, cloudy
Central	KEMUS	WW Event 4 - 5-6 July 2022	5/07/2022	7.08	67.47	229	7.01	172.0	377.0	13.2	203.00	Cloudy, brown, non-transparent, no sheen, no odour
Central	KEMUS	Event 39 - July 2022	21/07/2022	9.80	86.60	1532	7.00	104.0	309.0	9.9	17.00	
East	ROPDS	Event 25 - April 2021	07/04/2021	6.97	76.9	6757	7.01	80.9	285.9	20.2	12.8	Brown
East	ROPDS	Event 26 - May 2021	10/05/2021	4.55	46.3	2410	7.38	142.5	347.5	16.2	112.33	Clear, biological sheen
East	ROPDS	Event 27 - June 2021	10/06/2021	6.97	61.3	2966	7.46	93.7	298.7	9.7	9.3	Clear
East	ROPDS	Event 28 - July 2021	10/07/2021	9.5	83.4	4093	9.56	84.4	289.4	9.6	282.7	Clear to brown
East	ROPDS	WW Event 1 - 25 August 2021	25/08/2021	0.75	6.9	564	7.15	148.4	353.4	11.8		Brown
East	ROPDS	Event 30 - September 2021	03/09/2021	10.48	102.1	4537	7.66	125.9	330.9	14.2	176.8	Green
East	ROPDS	Event 31 - October 2021	13/10/2021	6.46	65.3	392.2	9.63	48.7	253.7	15.9	-	Biological sheen, grey tinge
East	ROPDS	Event 32 - November 2021	09/11/2021	8.77	91.5	696	7.34	92.1	297.1	17.4	20.46	Green tinge, heavy algae
East	ROPDS	WW Event 2 - 29 November 2021	29/11/2021	5.45	57.1	807	7.75	97.1	302.1	17.6		Light brown, slightly turbid, light sheen (potentially organic)
East	ROPDS	Event 33 - December 2021	07/12/2021	2.93	31.6	5336	7.07	100.7	305.7	19.0	17.73	Brown tinge, fairly clear
East	ROPDS	WW Event 3 - 14 January 2022	14/01/2022	9.07	103.9	330.8	8.11	52.6	257.6	22.1	33.4	Brown, swampy odour, foamy sheen
East	ROPDS	Event 34 - February 2022	08/02/2022	4.26	45.3	980	7.36	13.2	218.2	18.3	42.2	Fairly clear
East	ROPDS	Event 35 - March 2022	17/03/2022	2.42	25.2	1150	7.72	44.5	249.5	17.3	2.68	Brown, low sediment
East	ROPDS	Event 36 - April 2022	12/04/2022	4.56	48.84	724	7.32	49.3	254.3	18.7	72.50	Brown, black sediment no odour, no sheen
East	ROPDS	Event 37 - May 2022	27/05/2022	1.68	16.22	2967	6.65	-23.1	181.9	13.8	0.93	Brown, cloudy, no odour, no sheen
East	ROPDS	Event 38 - June 2022	28/06/2022	9.56	84.08	5710	7.49	220.1	425.1	9.7	0.22	Brown, mostly clear
East	ROPDS	WW Event 4 - 5-6 July 2022	5/07/2022	9.82	93.99	111	7.28	134.0	339.0	13.4	111.00	
East	ROPDS	Event 39 - July 2022	21/07/2022	8.62	76.89	2943	7.09	193.4	398.4	10.3	3.36	Clear, no sheen, no odour
East	ROPDS	Event 40 - August 2022	15/08/2022	14.60	135.12	5067	7.25	111.0	316.0	11.9	6.22	Green/brown, turbid, green algae on surface, no odour or sheen
East	ROPDS	Event 41 - September 2022	21/09/2022	8.83	60.37	2735	7.74	112.9	317.9	13.5	1.43	Clear, no odour or sheen, some algae
East	ROPDS	Event 42 - October 2022	18/10/2022	7.39	75.80	3328	7.54	219.9	424.9	16.6	0.74	Brown-green, transparent, no sediment, no odour/sheen
East	ROPDS	WW Event 5 - 14-15 November 2022	14/11/2022	6.33	69.04	1044	7.73	79.2	284.2	19.6	255.09	Dark grey, turbid, no odour/sheen.
East	ROPDS	Event 43 - December 2022	13/12/2022	4.27	43.7	895	7.72	133.3	338.3	16.5	11.09	Green-brown, turbid, no odour/sheen.
East	ROPDS	Event 44 - January 2023	17/01/2023	3.35	37.4	1363	7.33	75.8	280.8	20.8	0.54	Brown, mostly clear, no odour/sheen.
East	ROPDS	Event 45 - February 2023	07/02/2023	6.07	69.4	1294	7.52	106	311	22.0	0.94	Brown tinge, mostly clear, black on bottom, no odour, very slight sheen.
East	ROPDS	Event 46 - March 2023	02/03/2023	5.43	61.6	2270	7.33	176.5	381.5	21.6	-1.7	Clear, slightly cloudy, no sediment, no odour/sheen.
East	ROPDS	Event 47 - April 2023	4/04/2023	6.44	69.7	1063	7.5	95	300	19.1	25.57	Slight yellow tinge, mostly clear, no odour/sheen.
East	ROPDS	Event 48 - May 2023	1/05/2023	7.82	74.3	518	7.1	122.3	327.3	13.0	205.29	Clear, no odour, no sheen.
East	ROPDS	Event 49 - June 2023	6/06/2023	4357	7.6	5.97	56.9	204.5	409.5	12.6	-5.2	Pale yellow tinge, slightly turbid, no odour, no sheen, no sediment
East	ROPUS	Event 25 - April 2021	07/04/2021	5.06	57.2	127.8	8.14	92.9	297.9	21.4	9.93	Orange to brown
East	ROPUS	Event 26 - May 2021	10/05/2021	4.28	44.7	135.4	7.12	130.8	335.8	17.5	89.28	Red to brown, biological sheen
East	ROPUS	Event 27 - June 2021	10/06/2021	7.15	61.7	108	7.71	67.1	272.1	8.9	5.3	Clear
East	ROPUS	Event 28 - July 2021	09/07/2021	8.21	73.9	122.7	10.66	24.3	229.3	10.7	35.3	Green
East	ROPUS	Event 32 - November 2021	09/11/2021	8.22	97.8	186.6	9.84	30.6	235.6	24.1	39.93	Turbid, brown
East	ROPUS	WW Event 2 - 29 November 2021	29/11/2021	2.8	29.8	127	6.69	80.9	285.9	18.4		Slightly turbid, light brown
East	ROPUS	Event 33 - December 2021	07/12/2021	8.75	97.0	175.4	8.75	24.1	229.1	20.4	28.73	Brown, fairly clear, high sediment load
East	ROPUS	WW Event 3 - 14 January 2022	14/01/2022	3.13	36.6	153.4	7.5	-107.4	97.6	23.2	1753.58	Very turbid, brown, high sediment load
East	ROPUS	Event 34 - February 2022	08/02/2022	4.09	45.1	201.1	6.74	89.6	294.6	20.2	18.33	Brown, slightly turbid
East	ROPUS	Event 35 - March 2022	17/03/2022	2.32	25.6	90.1	7.78	42.1	247.1	20.1	67.54	Brown, turbid, no odour or sheen
East	ROPUS	Event 36 - April 2022	12/04/2022	-	-	-	-	-	-	-	-	No access to sample location
East	ROPUS	Event 37 - May 2022	27/05/2022	4.82	46.75	143	6.78	-18.4	186.6	14.0	29.85	Brown, cloudy, no odour, no sheen
East	ROPUS	Event 38 - June 2022	28/06/2022	6.20	52.99	167	7.01	81.9	286.9	8.5	121.30	Green/brown, very cloudy
East	ROPUS	WW Event 4 - 5-6 July 2022	5/07/2022	8.43	80.33	35	6.69	122.0	327.0	13.2	78.30	
East	ROPUS	Event 39 - July 2022	21/07/2022	6.77	60.25	124	6.57	45.3	250.3	10.2	48.44	Grey, turbid, no sheen, no odour
East	ROPUS	Event 40 - August 2022	15/08/2022	12.61	125.26	204	6.94	-24.5	180.5	15.1	12515.40	Green/brown, turbid, green algae on surface, no odour or sheen
East	ROPUS	Event 41 - September 2022	21/09/2022	7.28	49.78	237	7.26	-45.9	159.1	16.4	95.66	Brown, cloudy, no odour or sheen, some algae
East	ROPUS	Event 42 - October 2022	19/10/2022	2.91	30.90	142	6.86	-12.9	192.1	18.3	113.64	Pale brown-green, very cloudy, no odour/sheen
East	ROPUS	WW Event 5 - 14-15 November 2022	15/11/2022	12.94	154.30	255	9.16	47.3	252.3	24.2	150.00	Pale brown tinge, mostly clear, no odour/sheen.
East	ROPUS	Event 43 - December 2022	13/12/2022	13.45	156.2	217.7	8.73	93	298	22.8	6.16	Green-brown, clear with visibly thick sediment layer on bottom, no odour/sheen
East	ROPUS	Event 44 - January 2023	17/01/2023	10.15	118.1	218	7.57	53.2	258.2	22.9	10.86	Brown, mostly clear, no odour/sheen.

Package	Location	Sampling Event	Sample date	Dissolved oxygen (mg/L)	Dissolved Oxygen (%S)	Electrical conductivity (µS/cm)	pH (pH units)	Redox potential (mV)	Corrected redox potential (mV)*	Temperature (°C)	Turbidity (NTU)	Observations
East	ROPUS	Event 45 - February 2023	07/02/2023	14.02	173.8	316.3	7.92	73.6	278.6	26.3	52.3	Brown, turbid, no odour/sheen.
East	ROPUS	Event 46 - March 2023	02/03/2023	15.2	182.3	415	7.84	-394.6	-189.6	24.5	16.82	Light brown/yellow tinge, cloudy, no sediment, no odour/sheen.
East	ROPUS	Event 47 - April 2023	4/04/2023	10.12	120.9	270	8.07	105.5	310.5	24.1	201.5	Green-brown, turbid, no odour/sheen.
East	ROPUS	Event 48 - May 2023	1/05/2023	10.52	102.3	229.5	7.02	114.6	319.6	14.1	203.08	Light brown, mostly clear, no odour, no sheen.
East	ROPUS	Event 49 - June 2023	6/06/2023	306.6	8.0	7.06	67.3	108.9	313.9	13.2	40.44	Pale yellow tinge, slightly turbid, no odour, no sheen, some sediment
Central	SOUDS	Event 25 - April 2021	08/04/2021	7.6	83.6	855	7.8	168.2	373.2	20.0	50.31	Brown
Central	SOUDS	Event 26 - May 2021	10/05/2021	5.19	53.8	988	7.17	109.3	314.3	17.1	113.55	Turbid, brown
Central	SOUDS	Event 27 - June 2021	10/06/2021	8.13	69.7	742	7.32	87.1	292.1	8.6	17	Brown
Central	SOUDS	Event 28 - July 2021	09/07/2021	6.66	57.1	1168	10.07	102.6	307.6	8.6	11	Clear
Central	SOUDS	Event 29 - August 2021	13/08/2021	2.18	20.7	1224	8.97	74.9	279.9	13.0	13.4	Green to brown
Central	SOUDS	WW Event 1 - 25 August 2021	25/08/2021	8.66	76.7	696	7.23	161.9	366.9	10.0		
Central	SOUDS	Event 30 - September 2021	03/09/2021	8.85	82.5	924	7.89	89.8	294.8	12.2	62.1	Brown
Central	SOUDS	Event 31 - October 2021	13/10/2021	6.52	65.7	1014	7.47	128.9	333.9	15.8	-	Brown, turbid
Central	SOUDS	Event 32 - November 2021	09/11/2021	5.03	53.2	888	7.21	83.3	288.3	18.1	26.81	Pale brown, cloudy, moderate turbidity
Central	SOUDS	WW Event 2 - 29 November 2021	29/11/2021	3.95	41.6	484.3	7.35	110.3	315.3	17.9		Highly turbid, light brown
Central	SOUDS	Event 33 - December 2021	07/12/2021	5.32	58.6	753	7.14	114	319	20.1	79.34	Brown, low sediment
Central	SOUDS	WW Event 3 - 14 January 2022	14/01/2022	5.34	62.8	340.2	7.28	86.2	291.2	23.5	125.74	Brown, turbid, high sediment load
Central	SOUDS	Event 34 - February 2022	08/02/2022	4.53	51.4	987	7.3	105.5	310.5	21.6	44.64	Slight green tinge, fairly clear
Central	SOUDS	Event 35 - March 2022	17/03/2022	2.26	24.8	694	8	78.3	283.3	19.8	100.87	Brown, turbid, high sediment load
Central	SOUDS	Event 36 - April 2022	12/04/2022	-	-	-	-	-	-	-	-	No access to sample location
Central	SOUDS	Event 37 - May 2022	27/05/2022	-	-	-	-	-	-	-	-	No access to sample location
Central	SOUDS	Event 38 - June 2022	28/06/2022	10.74	92.01	1084	7.26	118.9	323.9	8.6	34.45	Dark green/brown, very cloudy
Central	SOUDS	WW Event 4 - 5-6 July 2022	6/07/2022	8.80	83.67	240	7.08	222.0	427.0	13.1	355.00	
Central	SOUDS	Event 39 - July 2022	21/07/2022	11.00	99.73	870	6.78	112.3	317.3	11.0	-	Green/brown, turbid, no sheen, no odour
Central	SOUUS	Event 25 - April 2021	08/04/2021	5.7	62.0	858	7.5	168.5	373.5	19.5	40.64	Brown
Central	SOUUS	Event 26 - May 2021	10/05/2021	5.06	52.3	984	7.23	110.2	315.2	17	120.33	Turbid, brown
Central	SOUUS	Event 27 - June 2021	10/06/2021	8.69	74.4	738	7.41	83.5	288.5	8.6	16.6	Brown
Central	SOUUS	Event 28 - July 2021	09/07/2021	6.64	56.6	1161	9.98	96.6	301.6	8.4	13.26	Clear
Central	SOUUS	Event 29 - August 2021	13/08/2021	2.04	18.5	1155	8.5	84.7	289.7	11	12.34	Green
Central	SOUUS	WW Event 1 - 25 August 2021	25/08/2021	8.25	73.6	703	7.23	172.4	377.4	10.3		Brown
Central	SOUUS	Event 30 - September 2021	03/09/2021	9.55	90.4	974	7.92	90.6	295.6	12.9	86.3	
Central	SOUUS	Event 31 - October 2021	13/10/2021	5.75	58.0	1003	7.51	118.4	323.4	15.8	-	Brown, turbid
Central	SOUUS	Event 32 - November 2021	09/11/2021	5.1	54.0	887	7.19	70.7	275.7	18.1	26.85	Pale brown, cloudy, moderate turbidity
Central	SOUUS	WW Event 2 - 29 November 2021	29/11/2021	4.2	44.3	486	7.37	107.2	312.2	17.9		Very turbid, light brown
Central	SOUUS	Event 33 - December 2021	07/12/2021	5.33	58.8	760	7.17	115.4	320.4	20.2	41.46	Brown, turbid, high sediment load
Central	SOUUS	WW Event 3 - 14 January 2022	14/01/2022	6.67	78.8	344.6	7.49	77.7	282.7	23.7	155.17	Brown, turbid, high sediment load
Central	SOUUS	Event 34 - February 2022	08/02/2022	5.48	61.9	994	7.41	85.9	290.9	21.4	21.63	Slightly green
Central	SOUUS	Event 35 - March 2022	17/03/2022	2.21	24.2	689	7.62	82.6	287.6	19.8	83.92	Brown, turbid, high sediment load
Central	SOUUS	Event 36 - April 2022	12/04/2022	-	-	-	-	-	-	-	-	No access to sample location
Central	SOUUS	Event 37 - May 2022	27/05/2022	-	-	-	-	-	-	-	-	No access to sample location
Central	SOUUS	Event 38 - June 2022	28/06/2022	9.90	84.00	1077	7.26	122.7	327.7	8.2	24.45	Dark green/brown, very cloudy
Central	SOUUS	WW Event 4 - 5-6 July 2022	6/07/2022	8.89	84.34	240	7.09	223.0	428	13.0	366.00	Cloudy, brown, non-transparent, no sheen, no odour
Central	SOUUS	Event 39 - July 2022	21/07/2022	8.64	76.71	859	6.73	99.7	304.7	10.1	-	Green/brown, turbid, no sheen, no odour

*Corrected for standard hydrogen electrode (SHE) by adding 205 mV to YSI redox potential reading
Note: Baseline period for West and Central Package ended in July 2022, Baseline period for East package ended in June 2023

Package	Location	Sampling Event	Sample date	Dissolved oxygen (mg/L)	Dissolved Oxygen (%S)	Electrical conductivity (µS/cm)	pH (pH units)	Redox potential (mV)	Corrected redox potential (mV)*	Temperature (°C)	Turbidity (NTU)	Observations
West	BADDS	Event 40 - August 2022	16/08/2022	9.60	87.84	964	6.61	88.6	293.6	11.4	43.78	Brown, cloudy, no odour, no sheen
West	BADDS	Event 41 - September 2022	20/09/2022	7.91	54.08	872	7.13	105.8	310.8	13.5	18.11	Green-brown, very cloudy, no sediment, no odour/sheen
West	BADDS	Event 42 - October 2022	18/10/2022	7.14	73.40	683	6.98	145.8	350.8	16.7	144.72	Pale brown, very cloudy, no sediment, no odour/sheen.
West	BADDS	WW Event 5 - 14-15 November 2022	15/11/2022	6.22	68.10	1027	7.30	83.5	288.5	19.8	1700.00	Pale brown, very turbid, no odour/sheen.
West	BADDS	Event 43 - December 2022	15/12/2022	6.04	65.0	1717	7.42	186.6	391.6	18.9	6.09	Green-brown, turbid, no odour/sheen.
West	BADDS	Event 44 - January 2023	18/01/2023	4.87	57.4	828	7.17	98.2	303.2	23.6	192.7	Green-brown, turbid, no odour/sheen.
West	BADDS	Event 45 - February 2023	08/02/2023	7.53	89.1	1952	7.47	104.1	309.1	23.8	32.6	Green-brown, turbid, no odour
West	BADDS	Event 46 - March 2023	03/03/2023	1.03	11.8	1936	7.09	-2.9	202.1	22.0	93.49	Light green/brown tinge, cloudy, no sediment, no odour/sheen.
West	BADDS	Event 47 - April 2023	4/04/2023	4.27	44.5	1329	7.62	100.1	305.1	17.1	183.95	Green-brown, turbid, no odour/sheen.
West	BADDS	Event 48 - May 2023	2/05/2023	8.26	85.8	1053	6.93	148.3	353.3	16.9	339.8	Light brown/grey tinge, partly cloudy, no odour, no sheen.
West	BADDS	Event 49 - June 2023	7/06/2023	7	67.1	1568	7.6	123.9	328.9	13.4	47.59	Pale yellow-tinge, slightly turbid, no odour, no sheen, no sediment
West	BADDS	Event 50 - July 2023	7/07/2023	8.26	27.4	700	7.48	294.4	499.4	9.4	40.33	Pale yellow green-tinge, mostly clear, no odour, no sheen, no sediment
West	BADDS	Event 51 - August 2023	9/08/2023	7.9	71.9	1188	7.37	105.5	310.5	11.3	36.63	Pale yellow tinge, mostly clear, no odour, no sheen, location moved slightly downstream.
West	BADDS	WW Event 6 - 31 August 2023	31/08/2023	7.17	69.7	999	7.38	84	289	13.7	165.28	Pale brown, highly turbid, no odour or sheen.
West	BADDS	Event 52 - September 2023	5/09/2023	5.99	57.2	914	7.23	178.3	383.3	13.3	127.46	Brown, highly turbid, no odour or sheen.
West	BADMS	Event 40 - August 2022	16/08/2022	8.85	81.2	1168	6.49	118.9	323.9	11.5	29.25	Green/brown, cloudy, no odour or sheen
West	BADMS	Event 41 - September 2022	20/09/2022	8.19	56.0	903	7.03	105.8	310.8	14.0	21.32	Yellow-brown, very cloudy, no sediment, no odour/sheen.
West	BADMS	Event 42 - October 2022	18/10/2022	6.78	70.30	835	6.95	145.6	350.6	17.1	80.70	Pale brown, very cloudy, no sediment, no odour/sheen.
West	BADMS	WW Event 5 - 14-15 November 2022	15/11/2022	6.12	67.02	993	7.68	42.3	247.3	19.8	1500.00	Pale brown, very turbid, no odour/sheen.
West	BADMS	Event 43 - December 2022	15/12/2022	3.5	37.1	1697	7.28	191.3	396.3	18.2	8.62	Green-brown, very cloudy, no odour/sheen.
West	BADMS	Event 44 - January 2023	18/01/2023	2.71	31.8	785	7.06	78.7	283.7	23.3	5.33	Clear, no odour/sheen.
West	BADMS	Event 45 - February 2023	08/02/2023	4.06	46.6	1849	7.21	101.3	306.3	22.2	36.92	Green-brown, turbid, no odour, slight sheen.
West	BADMS	Event 46 - March 2023	03/03/2023	1.96	22.2	1820	7.26	113.8	318.8	21.5	19.18	Slight yellow tinge, cloudy, no sediment, organic sheen, no odour.
West	BADMS	Event 47 - April 2023	4/04/2023	3.23	33.7	1350	7.48	95	300	17.4	153.87	Green-yellow tinge, mostly clear, no odour/sheen
West	BADMS	Event 48 - May 2023	2/05/2023	7	68.4	977	6.81	142	347	14.2	232.41	Light brown, cloudy, no odour, no shee, light sediment load on surface of creek.
West	BADMS	Event 49 - June 2023	7/06/2023	6	58.3	1539	7.5	125.4	330.4	13.0	53.43	Pale yellow-green tinge, slightly turbid, no odour, no sheen, no sediment
West	BADMS	Event 50 - July 2023	7/07/2023	7.81	69.1	665	7.37	279.4	484.4	9.8	42.34	Green-brown tinge, mostly clear, no odour, no sheen, no sediment
West	BADMS	Event 51 - August 2023	9/08/2023	7.48	68.4	1227	8.4	90.7	295.7	11.7	46.11	Pale yellow tinge, mostly clear, no odour, no sheen, location moved slightly upstream.
West	BADMS	WW Event 6 - 31 August 2023	31/08/2023	7.1	68.8	772	7.73	71.3	276.3	13.6	168.29	Pale brown, highly turbid, no odour or sheen.
West	BADMS	Event 52 - September 2023	5/09/2023	6.47	62.3	995	7.23	146.7	351.7	13.5	103.48	Brown, highly turbid, no odour or sheen.
West	BADUS	Event 40 - August 2022	16/08/2022	10.34	92.2	1487	6.66	97.6	302.6	10.3	32.32	Light brown, cloudy, some algae, no odour
West	BADUS	Event 41 - September 2022	20/09/2022	13.54	92.6	1940	7.62	13.55	218.55	15.7	22.56	Green-brown, very cloudy, no sediment, no odour/sheen
West	BADUS	Event 42 - October 2022	19/10/2022	6.23	68.20	1013	6.94	181.0	386	19.8	45.85	Green-brown, very cloudy, no sediment, odour/sheen
West	BADUS	WW Event 5 - 14-15 November 2022	14/11/2022	2.90	31.31	2180	6.92	8.7	213.68	19.1	101.20	Dark brown, turbid, no odour/sheen.
West	BADUS	Event 43 - December 2022	15/12/2022	6.29	69.2	1163	7.29	121.2	326.2	20.0	11.14	Green-brown, cloudy, no odour/sheen.
West	BADUS	Event 44 - January 2023	18/01/2023	5.11	57.4	797	7.2	2.1	207.1	21.1	5.3	Brown tinge, clear, no odour/sheen.
West	BADUS	Event 45 - February 2023	08/02/2023	8.81	106.8	1698	7.72	88	293	25.1	48.57	Green-brown, turbid, no odour/sheen.
West	BADUS	Event 46 - March 2023	03/03/2023	3.38	38.2	1317	7.37	72.8	277.8	21.4	13.78	Slightly cloudy, no sediment, no odour/sheen.
West	BADUS	Event 47 - April 2023	4/04/2023	4.75	49.5	1477	7.81	112.4	317.4	17.1	150.86	Green-brown, turbid, no odour/sheen
West	BADUS	Event 48 - May 2023	2/05/2023	8.24	84.2	1040	6.95	150.1	355.1	16.2	370.94	Pale yellow tinge, no odour, no sheen.
West	BADUS	Event 49 - June 2023	6/06/2023	5.26	48.0	1064	7.71	98.5	303.5	11.1	17.24	Pale yellow tinge, mostly clear, no odour, brittle sheen, no sediment, scum on surface
West	BADUS	Event 50 - July 2023	7/07/2023	13.42	122.2	1158	8.74	272.4	477.4	11.0	20.47	Pale yellow-tinge, no odour, no sheen, no sediment
West	BADUS	Event 51 - August 2023	8/08/2023	9.72	90.7	997	7.4	114.6	319.6	12.4	94.25	Clear, no odour, no sheen.
West	BADUS	WW Event 6 - 31 August 2023	31/08/2023	7.11	70.6	864	7.36	77.1	282.1	14.7	152	Green-brown, turbid,, no odour or sheen.
West	BADUS	Event 52 - September 2023	5/09/2023	9.48	96.8	743	7.37	170.2	375.2	16.4	62.74	Brown, moderately turbid, no odour. sludgy rust coloured sheen
West	COSDS	Event 40 - August 2022	16/08/2022	9.14	84.01	608	6.64	98.6	303.6	11.6	133.25	Brown, cloudy, slight organic sheen, no odour
West	COSDS	Event 41 - September 2022	19/09/2022	9.01	61.61	511	7.50	76.1	281.1	15.1	30.74	Pale yellow-brown, very cloudy, no sediment, no odour/sheen.
West	COSDS	Event 42 - October 2022	21/10/2022	7.52	80.70	472	8.43	57.9	262.9	18.8	46.80	Green-light-brown , no odour/sheen.
West	COSDS	WW Event 5 - 14-15 November 2022	14/11/2022	5.35	59.06	1075	7.30	78.4	283.4	20.2	196.00	Brown, very turbid, no odour/sheen.
West	COSDS	Event 43 - December 2022	15/12/2022	5.68	62.8	1542	7.41	125.3	330.3	20.3	17.11	Green-brown, very cloudy, no odour/sheen.
West	COSDS	Event 44 - January 2023	18/01/2023	7.85	105.5	910	7.36	62	267	30.9	33.4	Green-brown, turbid, no odour/sheen.
West	COSDS	Event 45 - February 2023	08/02/2023	6.47	75.4	1315	7.41	107.7	312.7	23.0	36.2	Green-brown, turbid, no odour/sheen.
West	COSDS	Event 46 - March 2023	03/03/2023	3.33	38.2	1485	7.47	99.5	304.5	22.1	51.01	Slightly cloudy, no sediment, no odour, slight organic sheen.
West	COSDS	Event 47 - April 2023	4/04/2023	4.23	44.3	1478	8.01	112.8	317.8	17.3	198.57	Green-brown, turbid, no odour, slight organic sheen.
West	COSDS	Event 48 - May 2023	2/05/2023	8.21	84.6	809	7.02	116.2	321.2	16.6	296.55	Pale yellow tinge, no odour, no sheen.
West	COSDS	Event 49 - June 2023	7/06/2023	8.39	83.5	1012	7.92	77.3	282.3	15.1	20.4	Clear, no odour, no sheen, no sediment
West	COSDS	Event 50 - July 2023	7/07/2023									No access. Exclusion zone in place around Cosgroves Creek since 26-06-23. Crane lifting super Ts for bridge construction.
West	COSDS	Event 51 - August 2023	9/08/2023	7.79	71.2	1797	7.68	58.3	263.3	11.8	28.74	Mostly clear, oily sheen, slight unidentifiable odour, location moved slightly downstream.
West	COSDS	WW Event 6 - 31 August 2023	31/08/2023	3.94	37.2	513	8.06	51.9	256.9	12.5	789	Green-brown, turbid, no odour or sheen.
West	COSDS	Event 52 - September 2023	5/09/2023	6.49	61.2	867	7.56	104.3	309.3	12.8	212.06	Brown, highly turbid, no odour or sheen.
West	COSUS	Event 40 - August 2022	16/08/2022	6.70	60.46	927	6.60	102.9	307.9	10.8	29.77	Brown, cloudy, no odour, no sheen
West	COSUS	Event 41 - September 2022	19/09/2022	8.70	59.49	590	7.43	161.3	366.3	15.0	40.50	Yellow-brown, very cloudy, no sediment, no odour/sheen
West	COSUS	Event 42 - October 2022	21/10/2022	7.97	86.90	445	8.45	68.1	273.1	19.0	34.02	Green-light-brown, very cloudy, no odour/sheen
West	COSUS	WW Event 5 - 14-15 November 2022	14/11/2022	6.22	67.30	1937	7.33	99.8	304.8	19.2	1230.00	Brown, turbid, no odour/sheen.
West	COSUS	Event 43 - December 2022	15/12/2022	4.55	49.4	1742	7.3	112.6	317.6	19.4	3.98	Brown, clear, no odour/sheen.
West	COSUS	Event 44 - January 2023	18/01/2023	1.41	16.1	2073	7.13	-69.1	135.9	22.0	92.83	Pale yellow-tinge, clear, no odour/sheen.
West	COSUS	Event 45 - February 2023	08/02/2023	6.26	73.7	1300	7.39	82.4	287.4	23.5	28.55	Green-brown, turbid, no odour/sheen.
West	COSUS	Event 46 - March 2023	03/03/2023	3.26	37.4	1317	7.42	95.5	300.5	22.1	18.58	Mostly clear, no sediment, no odour/sheen.
West	COSUS	Event 47 - April 2023	4/04/2023	3.26	32.5	1640	7.97	119.2	324.2	16.7	528	Brown, turbid, no odour/sheen.
West	COSUS	Event 48 - May 2023	2/05/2023	7.52	74.9	772	7.01	94.9	299.9	15.1	58.91	Pale yellow tinge, no odour, no sheen.
West	COSUS	Event 49 - June 2023	7/06/2023	6.65	64.2	1002	7.9	58.4	263.4	13.7	11.92	Clear, no odour, no sheen, no sediment
West	COSUS	Event 50 - July 2023	7/07/2023									No access. Exclusion zone in place around Cosgroves Creek since 26-06-23. Crane lifting super Ts for bridge construction.
West	COSUS	Event 51 - August 2023	9/08/2023	3.19	30.1	4902	6.74	-24.8	180.2	12.5	20.98	Pale yellow-tinge, mostly clear, no odour, no sheen, location moved further upstream.
West	COSUS	WW Event 6 - 31 August 2023	31/08/2023	2.98	28.2	2428	7.36	64.5	269.5	12.6	771	Green-brown, turbid, no odour or sheen.

Package	Location	Sampling Event	Sample date	Dissolved oxygen (mg/L)	Dissolved Oxygen (%S)	Electrical conductivity (µS/cm)	pH (pH units)	Redox potential (mV)	Corrected redox potential (mV)*	Temperature (°C)	Turbidity (NTU)	Observations
West	COSUS	Event 52 - September 2023	5/09/2023	3.15	30.6	4120	7.01	116.2	321.2	12.5	25.09	Green-brown, slightly turbid, no odour or sheen.
East	HINDS	Event 50 - July 2023	4/07/2023	11.71	111.6	376.9	8.08	245.5	450.5	13.1	18.22	Pale yellow tinge, mostly clear, no ododur, no sheen, no sediment
East	HINDS	Event 51 - August 2023	8/08/2023	6.97	67.1	407.2	7.19	111	316	14.7	12.02	Clear, no odour, no sheen.
East	HINDS	WW Event 6 - 31 August 2023	31/08/2023	6.18	62.9	402	7.29	56.3	261.3	15.9	12.98	Green-brown tinge, slightly cloudy, no odour/sheen.
East	HINDS	Event 52 - September 2023	6/09/2023	8.9	91.6	457.3	7.72	67.3	272.3	16.7	10.13	light green Brown, moderately turbid, no odour, no sheen
East	HINUS	Event 50 - July 2023	4/07/2023	15.64	146.3	435.5	8.81	277.6	482.6	12.3	35.47	Clear, no odour, no sheen, no sediment
East	HINUS	Event 51 - August 2023	8/08/2023	0.6	5.6	529	7.62	105.7	310.7	14.6	45.08	Clear, no odour, slight surface sheen.
East	HINUS	WW Event 6 - 31 August 2023	31/08/2023	7.44	73.8	473.4	7.08	5.4	210.4	14.5	129	Brown, highly turbid, no odour or sheen.
East	HINUS	Event 52 - September 2023	6/09/2023	5.76	56.6	529	7.52	-2.4	202.6	14.5	51.41	Brown, highly turbid, no odour, no sheen
Central	KEMDS	Event 40 - August 2022	16/08/2022	8.87	79.67	2093	6.88	114.0	319.0	10.6	5.41	Light brown, cloudy, no odour/sheen
Central	KEMDS	Event 41 - September 2022	20/09/2022	7.47	51.08	1071	7.27	727.0	932.0	14.2	36.78	Green-brown, very cloudy, no sediment, no odour/sheen
Central	KEMDS	Event 42 - October 2022	19/10/2022	6.21	64.50	1533	7.14	207.6	412.6	17.2	19.91	Green-brown, no sediment, no odour/sheen
Central	KEMDS	WW Event 5 - 14-15 November 2022	14/11/2022	5.76	63.46	4427	7.34	103.7	308.7	20.1	214.00	Brown, turbid, no odour/sheen.
Central	KEMDS	Event 43 - December 2022	13/12/2022	5.05	54.7	205	7.5	47.7	252.7	19.3	23.3	Green-brown, very cloudy, no odour/sheen.
Central	KEMDS	Event 44 - January 2023	17/01/2023	3.97	45.7	1200	7.33	45.6	250.6	22.4	3.63	Brown, mostly clear, no odour/sheen.
Central	KEMDS	Event 45 - February 2023	07/02/2023	5.2	62.4	1345	7.53	108	313	24.5	23.23	Green-brown, turbid, no odour/sheen.
Central	KEMDS	Event 46 - March 2023	02/03/2023	4.43	50.7	1982	7.82	172.5	377.5	22.0	4.17	Brown tinge, slightly cloudy, no sediment, no odour/sheen.
Central	KEMDS	Event 47 - April 2023	5/04/2023	4.99	52.4	1072	7.84	130	335	17.5	66.2	Green-brown, turbid, no odour/sheen.
Central	KEMDS	Event 48 - May 2023	1/05/2023	4.77	48.1	709	7.03	95.2	300.2	15.5	93.63	Brown, turbid, no odour, no sheen.
Central	KEMDS	Event 49 - June 2023	6/06/2023	5	47.0	2213	7.15	131.4	336.4	12.3	5.4	Pale yellow-grey tinge, slightly turbid, no odour, no sheen, no sediment
Central	KEMDS	Event 50 - July 2023	4/07/2023	10.67	94.2	2180	7.59	268.9	473.9	9.9	5.89	Mostly clear, no odour, no sheen, no sediment
Central	KEMDS	Event 51 - August 2023	8/08/2023	7.98	72.5	1982	7.35	152.4	357.4	11.4	5.53	Green tinge, mostly clear, no odour, green scum and algae on surface.
Central	KEMDS	WW Event 6 - 31 August 2023	31/08/2023	7.44	70.8	7.44	7.39	70.5	275.5	12.7	82.86	Pale brown, slightly cloudy, no odour or sheen.
Central	KEMDS	Event 52 - September 2023	5/09/2023	6.8	65	939	7.29	203.1	408.1	13.2	33.9	Brown, moderately turbid, no odour. brown sludge caught on dead tree

Package	Location	Sampling Event	Sample date	Dissolved oxygen (mg/L)	Dissolved Oxygen (%S)	Electrical conductivity (µS/cm)	pH (pH units)	Redox potential (mV)	Corrected redox potential (mV)*	Temperature (°C)	Turbidity (NTU)	Observations
Central	KEMUS	Event 40 - August 2022	16/08/2022	8.72	78.69	2110	6.54	118.3	323.3	10.8	4.98	Light brown, cloudy, slight organic sheen, no odours
Central	KEMUS	Event 41 - September 2022	20/09/2022	7.79	53.26	1054	7.17	86.6	291.6	14.2	44.40	Green-brown, very cloudy, no sediment, no odour/sheen.
Central	KEMUS	Event 42 - October 2022	19/10/2022	6.58	69.60	1669	7.12	167.5	372.5	18.1	16.99	Green-brown, very cloudy, no sediment, no odour/sheen.
Central	KEMUS	WW Event 5 - 14-15 November 2022	14/11/2022	5.74	62.48	1081	7.12	65.4	270.4	19.5	563.00	Brown, very turbid
Central	KEMUS	Event 43 - December 2022	13/12/2022	6.68	73.6	3838	7.61	184	389	20.1	7.26	Green-brown, very cloudy, no odour/sheen.
Central	KEMUS	Event 44 - January 2023	17/01/2023	3.58	41.3	1120	7.06	86.6	291.6	22.5	5.07	Green-brown, cloudy, no odour/sheen.
Central	KEMUS	Event 45 - February 2023	07/02/2023	5.89	70.5	1314	7.24	130.4	335.4	24.4	16.69	Green-brown, turbid, no odour/sheen.
Central	KEMUS	Event 46 - March 2023	02/03/2023	4.96	56.7	1994	7.65	54	259	22.0	9.67	Yellow-green tinge, cloudy, no sediment, organic sheen, no odour.
Central	KEMUS	Event 47 - April 2023	5/04/2023	5.27	55.4	1401	8.35	26.2	231.2	17.8	63.36	Green-brown, turbid, no odour/sheen.
Central	KEMUS	Event 48 - May 2023	1/05/2023	8.01	80.7	758	6.96	142.6	347.6	15.6	78.19	Pale brown tinge, no odour, no sheen.
Central	KEMUS	Event 49 - June 2023	6/06/2023	5.85	55.4	2644	7.53	109.1	314.1	12.6	-0.72	Pale-yellow tinge, clear, no odour, no sheen, some sediment
Central	KEMUS	Event 50 - July 2023	4/07/2023	9.34	92.8	1124	7.61	361.9	566.9	12.5	7.93	Pale yellow tinge, mostly clear, no odour, no sheen, no sediment
Central	KEMUS	Event 51 - August 2023	8/08/2023	8.8	80.3	2252	7.4	66.4	271.4	11.3	18.31	Pale green tinge, mostly clear, oily sheen and algae on surface.
Central	KEMUS	WW Event 6 - 31 August 2023	31/08/2023	7.49	72.2	1152	7.41	68.1	273.1	13.3	61.64	Brown, cloudy, no odour or sheen.
Central	KEMUS	Event 52 - September 2023	5/09/2023	5.97	57.6	935	7.18	217.6	422.6	13.7	34.97	Brown, moderately turbid, no odour. brown sludge caught on dead tree
East	ROPDS	Event 50 - July 2023	4/07/2023	10.24	94.4	3295	7.56	321.4	526.4	11.1	10.41	Pale yellow-tinge, mostly clear, no odour, no sheen, no sediment
East	ROPDS	Event 51 - August 2023	8/08/2023	8.88	82.0	4214	7.62	179.5	384.5	11.4	0.44	Mostly clear, no odour, slight sheen.
East	ROPDS	WW Event 6 - 31 August 2023	31/08/2023	4.87	47.2	724	7.14	-109	96	13.6	45.89	Green-brown tinge, slightly cloudy, no odour/sheen.
East	ROPDS	Event 52 - September 2023	6/09/2023	7.41	72.6	3791	7.49	125.3	330.3	13.9	8.77	Green brown, slightly turbid, no odour, no sheen
East	ROPUS	Event 50 - July 2023	4/07/2023	10.14	96.6	225.8	7.33	98.9	303.9	13.2		Brown, turbid, organic odour, no sheen, no sediment
East	ROPUS	Event 51 - August 2023	8/08/2023	3.22	31.4	285.5	6.91	110.4	315.4	14.5	75.85	Pale yellow tinge, mostly clear, no odour, no sheen.
East	ROPUS	WW Event 6 - 31 August 2023	31/08/2023	1.41	14.3	219	6.66	-60.5	144.5	15.6	190.95	Brown, turbid, no odour or sheen.
East	ROPUS	Event 52 - September 2023	6/09/2023	5.16	54.4	284.9	7.09	66.9	271.9	18.2	130.56	Green brown, highly turbid, no odour, silver sheen. large amount of cow fecal matter
Central	SOUDS	Event 40 - August 2022	16/08/2022	9.27	86.4	1123	6.7	104.4	309.4	12.2	619.39	Brown, cloudy, no odour, no sheen
Central	SOUDS	Event 41 - September 2022	20/09/2022	11.46	78.4	1455	7.57	91.3	296.3	14.1	35.54	Brown, very cloudy, no sediment, no odour/sheen
Central	SOUDS	Event 42 - October 2022	18/10/2022	6.61	67.80	700	7.06	145.3	350.3	16.6	268.50	Brown, very cloudy, non-transparent, no sediment, no odour/sheen.
Central	SOUDS	WW Event 5 - 14-15 November 2022	15/11/2022	5.35	58.47	1159	7.18	90.1	295.1	19.7	355.00	Brown, turbid, no odour/sheen.
Central	SOUDS	Event 43 - December 2022	13/12/2022	4.99	54.3	952	7.28	142.1	347.1	19.5	24	
Central	SOUDS	Event 44 - January 2023	17/01/2023	8.09	96.6	1869	7.77	23.9	228.9	24.3	16.73	Green-brown, turbid, no odour/sheen.
Central	SOUDS	Event 45 - February 2023	07/02/2023	5.97	70.5	736	7.18	86.7	291.7	23.7	99.3	Brown, turbid, no odour/sheen.
Central	SOUDS	Event 46 - March 2023	02/03/2023	6.56	76.5	1104	6.67	267.6	472.6	23.0	19.29	Light brown, cloudy, no sediment, no odour/sheen.
Central	SOUDS	Event 47 - April 2023	5/04/2023	5.94	63.2	858	8.05	111.6	316.6	18.3	101.84	Brown, turbid, no odour/sheen.
Central	SOUDS	Event 48 - May 2023	1/05/2023	6.73	68.3	861	6.88	52	257	15.9	47.77	Pale yellow tinge, no odour, no sheen.
Central	SOUDS	Event 49 - June 2023	6/06/2023	8.17	77.3	1049	7.6	223.8	428.8	12.7	26.2	Pale yellow, mostly clear, slight organic odour, no sheen, no sediment
Central	SOUDS	Event 50 - July 2023	4/07/2023	11.25	100.6	862	7.91	265.7	470.7	10.3	18.77	Green-brown tinge, clear, no odour, no sheen, no sediment
Central	SOUDS	Event 51 - August 2023	8/08/2023	9.98	92.6	1080	7.57	90	295	12.4	17.42	Pale green tinge, mostly clear, no odour, no sheen, location moved further downstream.
Central	SOUDS	WW Event 6 - 31 August 2023	31/08/2023	6.69	62.7	698	7.54	76.8	281.8	12.3	182	Brown, highly turbid,, no odour or sheen.
Central	SOUDS	Event 52 - September 2023	6/09/2023	11.14	107.3	1201	8.27	106.6	311.6	13.5	76.13	Green-brown, highly turbid, no odour or sheen.
Central	SOUUS	Event 40 - August 2022	16/08/2022	8.79	86.00	1198	6.70	100.6	305.6	14.4	940.95	Brown, cloudy, no odour, no sheen
Central	SOUUS	Event 41 - September 2022	20/09/2022	8.05	77.22	1451	7.35	105.5	310.5	13.5	41.45	Brown, very cloudy, no sediment, no odour/sheen
Central	SOUUS	Event 42 - October 2022	18/10/2022	6.32	63.30	709	6.99	137.3	342.3	15.5	290.85	Brown, very cloudy, no sediment, no odour/sheen.
Central	SOUUS	WW Event 5 - 14-15 November 2022	15/11/2022	5.33	58.37	1137	7.10	98.2	303.2	19.8	357.00	Brown, very turbid, no odour/sheen.
Central	SOUUS	Event 43 - December 2022	13/12/2022	4.99	54.32	952	7.28	142.1	347.1	19.5	24	Green-brown, turbid, no odour/sheen.
Central	SOUUS	Event 44 - January 2023	17/01/2023	7.53	88.8	1885	7.66	40.7	245.7	23.6	19.59	Green-brown, turbid, no odour/sheen.
Central	SOUUS	Event 45 - February 2023	07/02/2023	5.26	62.0	736	7.04	107.8	312.8	23.6		Brown, turbid, no odour/sheen.
Central	SOUUS	Event 46 - March 2023	02/03/2023	10.09	118.1	1100	7.25	99.6	304.6	23.2	24.83	Green-brown, cloudy, no sediment, no odour/sheen.
Central	SOUUS	Event 47 - April 2023	4/04/2023	5.48	57.9	826	8.03	121.3	326.3	17.9	96.36	Green-brown, turbid, no odour/sheen
Central	SOUUS	Event 48 - May 2023	1/05/2023	7.28	76.0	892	6.9	148.2	353.2	17.3	296.25	Pale yellow tinge, no odour, no sheen.
Central	SOUUS	Event 49 - June 2023	6/06/2023	8.05	75.5	1059	7.6	181	386	12.3	22.65	Pale yellow tinge, slightly turbid, no odour, no sheen, no sediment
Central	SOUUS	Event 50 - July 2023	4/07/2023	10.94	97.1	865	7.61	292.7	497.7	9.9	18.44	Pale-yellow tinge, mostly clear, no odour, no sheen, no sediment
Central	SOUUS	Event 51 - August 2023	8/08/2023	9.74	88.6	1028	7.61	92	297	11.6	16.82	Pale green tinge, mostly clear, no odour, no sheen.
Central	SOUUS	WW Event 6 - 31 August 2023	31/08/2023	6.8	65.1	710	7.42	74	279	13	142	Brown, cloudy, no odour or sheen
Central	SOUUS	Event 52 - September 2023	6/09/2023	10.17	95.8	1227	8.06	92.7	297.7	12.5	36.41	Green-brown, mostly clear, no odour or sheen.

Note: Baseline period for West and Central Package ended in July 2022, Baseline period for East package ended in June 2023

Package	Location	Sampling Event	Sample date	Dissolved oxygen (mg/L)	Dissolved Oxygen (%S)	Electrical conductivity (µS/cm)	pH (pH units)	Redox potential (mV)	Corrected redox potential (mV)*	Temperature (°C)	Turbidity (NTU)	Observations
West	BADDS	Event 47 - April 2023	4/04/2023	4.27	44.5	1329	7.62	100.1	305.1	17.1	183.95	Green-brown, turbid, no odour/sheen.
West	BADDS	Event 48 - May 2023	2/05/2023	8.26	85.8	1053	6.93	148.3	353.3	16.9	339.8	Light brown/grey tinge, partly cloudy, no odour, no sheen.
West	BADDS	Event 49 - June 2023	7/06/2023	7	67.1	1568	7.6	123.9	328.9	13.4	47.59	Pale yellow-tinge, slightly turbid, no odour, no sheen, no sediment
West	BADDS	Event 50 - July 2023	7/07/2023	8.26	27.4	700	7.48	294.4	499.4	9.4	40.33	Pale yellow green-tinge, mostly clear, no odour, no sheen, no sediment
West	BADDS	Event 51 - August 2023	9/08/2023	7.9	71.9	1188	7.37	105.5	310.5	11.3	36.63	Pale yellow tinge, mostly clear, no odour, no sheen, location moved slightly downstream.
West	BADDS	WW Event 6 - 31 August 2023	31/08/2023	7.17	69.7	999	7.38	84	289	13.7	165.28	Pale brown, highly turbid, no odour or sheen.
West	BADDS	Event 52 - September 2023	5/09/2023	5.99	57.2	914	7.23	178.3	383.3	13.3	127.46	Brown, highly turbid, no odour or sheen.
West	BADMS	Event 47 - April 2023	4/04/2023	3.23	33.7	1350	7.48	95	300	17.4	153.87	Green-yellow tinge, mostly clear, no odour/sheen
West	BADMS	Event 48 - May 2023	2/05/2023	7	68.4	977	6.81	142	347	14.2	232.41	Light brown, cloudy, no odour, no shee, light sediment load on surface of creek.
West	BADMS	Event 49 - June 2023	7/06/2023	6	58.3	1539	7.5	125.4	330.4	13.0	53.43	Pale yellow-green tinge, slightly turbid, no odour, no sheen, no sediment
West	BADMS	Event 50 - July 2023	7/07/2023	7.81	69.1	665	7.37	279.4	484.4	9.8	42.34	Green-brown tinge, mostly clear, no odour, no sheen, no sediment
West	BADMS	Event 51 - August 2023	9/08/2023	7.48	68.4	1227	8.4	90.7	295.7	11.7	46.11	Pale yellow tinge, mostly clear, no odour, no sheen, location moved slightly upstream.
West	BADMS	WW Event 6 - 31 August 2023	31/08/2023	7.1	68.8	772	7.73	71.3	276.3	13.6	168.29	Pale brown, highly turbid, no odour or sheen.
West	BADMS	Event 52 - September 2023	5/09/2023	6.47	62.3	995	7.23	146.7	351.7	13.5	103.48	Brown, highly turbid, no odour or sheen.
West	BADUS	Event 47 - April 2023	4/04/2023	4.75	49.5	1477	7.81	112.4	317.4	17.1	150.86	Green-brown, turbid, no odour/sheen
West	BADUS	Event 48 - May 2023	2/05/2023	8.24	84.2	1040	6.95	150.1	355.1	16.2	370.94	Pale yellow tinge, no odour, no sheen.
West	BADUS	Event 49 - June 2023	6/06/2023	5.26	48.0	1064	7.71	98.5	303.5	11.1	17.24	Pale yellow tinge, mostly clear, no odour, brittle sheen, no sediment, scum on surface
West	BADUS	Event 50 - July 2023	7/07/2023	13.42	122.2	1158	8.74	272.4	477.4	11.0	20.47	Pale yellow-tinge, no odour, no sheen, no sediment
West	BADUS	Event 51 - August 2023	8/08/2023	9.72	90.7	997	7.4	114.6	319.6	12.4	94.25	Clear, no odour, no sheen.
West	BADUS	WW Event 6 - 31 August 2023	31/08/2023	7.11	70.6	864	7.36	77.1	282.1	14.7	152	Green-brown, turbid,, no odour or sheen.
West	BADUS	Event 52 - September 2023	5/09/2023	9.48	96.8	743	7.37	170.2	375.2	16.4	62.74	Brown, moderately turbid, no odour. sludgy rust coloured sheen
West	COSDS	Event 47 - April 2023	4/04/2023	4.23	44.3	1478	8.01	112.8	317.8	17.3	198.57	Green-brown, turbid, no odour, slight organic sheen.
West	COSDS	Event 48 - May 2023	2/05/2023	8.21	84.6	809	7.02	116.2	321.2	16.6	296.55	Pale yellow tinge, no odour, no sheen.
West	COSDS	Event 49 - June 2023	7/06/2023	8.39	83.5	1012	7.92	77.3	282.3	15.1	20.4	Clear, no odour, no sheen, no sediment
West	COSDS	Event 50 - July 2023	7/07/2023									No access. Exclusion zone in place around Cosgroves Creek since 26-06-23. Crane lifting super Ts for bridge construction.
West	COSDS	Event 51 - August 2023	9/08/2023	7.79	71.2	1797	7.68	58.3	263.3	11.8	28.74	Mostly clear, oily sheen, slight unidentifiable odour, location moved slightly downstream.
West	COSDS	WW Event 6 - 31 August 2023	31/08/2023	3.94	37.2	513	8.06	51.9	256.9	12.5	789	Green-brown, turbid, no odour or sheen.
West	COSDS	Event 52 - September 2023	5/09/2023	6.49	61.2	867	7.56	104.3	309.3	12.8	212.06	Brown, highly turbid, no odour or sheen.
West	COSUS	Event 47 - April 2023	4/04/2023	3.26	32.5	1640	7.97	119.2	324.2	16.7	528	Brown, turbid, no odour/sheen.
West	COSUS	Event 48 - May 2023	2/05/2023	7.52	74.9	772	7.01	94.9	299.9	15.1	58.91	Pale yellow tinge, no odour, no sheen.
West	COSUS	Event 49 - June 2023	7/06/2023	6.65	64.2	1002	7.9	58.4	263.4	13.7	11.92	Clear, no odour, no sheen, no sediment
West	COSUS	Event 50 - July 2023	7/07/2023									No access. Exclusion zone in place around Cosgroves Creek since 26-06-23. Crane lifting super Ts for bridge construction.
West	COSUS	Event 51 - August 2023	9/08/2023	3.19	30.1	4902	6.74	-24.8	180.2	12.5	20.98	Pale yellow-tinge, mostly clear, no odour, no sheen, location moved further upstream.
West	COSUS	WW Event 6 - 31 August 2023	31/08/2023	2.98	28.2	2428	7.36	64.5	269.5	12.6	771	Green-brown, turbid, no odour or sheen.
West	COSUS	Event 52 - September 2023	5/09/2023	3.15	30.6	4120	7.01	116.2	321.2	12.5	25.09	Green-brown, slightly turbid, no odour or sheen.
East	HINDS	Event 47 - April 2023	4/04/2023	7.23	79.7	358	8	126.4	331.4	20.0	22.25	Brown, turbid, no odour/sheen.
East	HINDS	Event 48 - May 2023	1/05/2023	7.88	83.6	402.7	7.1	130.8	335.8	18.1	207.26	Pale yellow tinge, no odour, no sheen, scum on surface of pond.
East	HINDS	Event 49 - June 2023	6/06/2023	9.63	96.1	432	8.54	68.1	273.1	15.3	3.38	Pale yellow-tinge, mostly clear, no odour, no sheen
East	HINDS	Event 50 - July 2023	4/07/2023	11.71	111.6	376.9	8.08	245.5	450.5	13.1	18.22	Pale yellow tinge, mostly clear, no ododur, no sheen, no sediment
East	HINDS	Event 51 - August 2023	8/08/2023	6.97	67.1	407.2	7.19	111	316	14.7	12.02	Clear, no odour, no sheen.
East	HINDS	WW Event 6 - 31 August 2023	31/08/2023	6.18	62.9	402	7.29	56.3	261.3	15.9	12.98	Green-brown tinge, slightly cloudy, no odour/sheen.
East	HINDS	Event 52 - September 2023	6/09/2023	8.9	91.6	457.3	7.72	67.3	272.3	16.7	10.13	light green Brown, moderately turbid, no odour, no sheen
East	HINUS	Event 47 - April 2023	4/04/2023	12.58	151.4	471.4	9.08	110.1	315.1	24.4	63.52	Green-brown, turbid, no odour/sheen.
East	HINUS	Event 48 - May 2023	1/05/2023	6.49	67.1	466	6.98	117.4	322.4	16.9	75.07	Pale yellow tinge, no odour, no sheen.
East	HINUS	Event 49 - June 2023	6/06/2023	9.75	96.5	604	8.54	8.7	213.7	15.2	91.81	Pale yellow-tinge, no odour, no sheen, no sediment
East	HINUS	Event 50 - July 2023	4/07/2023	15.64	146.3	435.5	8.81	277.6	482.6	12.3	35.47	Clear, no odour, no sheen, no sediment
East	HINUS	Event 51 - August 2023	8/08/2023	0.6	5.6	529	7.62	105.7	310.7	14.6	45.08	Clear, no odour, slight surface sheen.
East	HINUS	WW Event 6 - 31 August 2023	31/08/2023	7.44	73.8	473.4	7.08	5.4	210.4	14.5	129	Brown, highly turbid, no odour or sheen.
East	HINUS	Event 52 - September 2023	6/09/2023	5.76	56.6	529	7.52	-2.4	202.6	14.5	51.41	Brown, highly turbid, no odour, no sheen
Central	KEMDS	Event 47 - April 2023	5/04/2023	4.99	52.4	1072	7.84	130	335	17.5	66.2	Green-brown, turbid, no odour/sheen.
Central	KEMDS	Event 48 - May 2023	1/05/2023	4.77	48.1	709	7.03	95.2	300.2	15.5	93.63	Brown, turbid, no odour, no sheen.
Central	KEMDS	Event 49 - June 2023	6/06/2023	5	47.0	2213	7.15	131.4	336.4	12.3	5.4	Pale yellow-grey tinge, slightly turbid, no odour, no sheen, no sediment
Central	KEMDS	Event 50 - July 2023	4/07/2023	10.67	94.2	2180	7.59	268.9	473.9	9.9	5.89	Mostly clear, no odour, no sheen, no sediment
Central	KEMDS	Event 51 - August 2023	8/08/2023	7.98	72.5	1982	7.35	152.4	357.4	11.4	5.53	Green tinge, mostly clear, no odour, green scum and algae on surface.
Central	KEMDS	WW Event 6 - 31 August 2023	31/08/2023	7.44	70.8	7.44	7.39	70.5	275.5	12.7	82.86	Pale brown, slightly cloudy, no odour or sheen.
Central	KEMDS	Event 52 - September 2023	5/09/2023	6.8	65	939	7.29	203.1	408.1	13.2	33.9	Brown, moderately turbid, no odour. brown sludge caught on dead tree

Package	Location	Sampling Event	Sample date	Dissolved oxygen (mg/L)	Dissolved Oxygen (%S)	Electrical conductivity (µS/cm)	pH (pH units)	Redox potential (mV)	Corrected redox potential (mV)*	Temperature (°C)	Turbidity (NTU)	Observations
Central	KEMUS	Event 47 - April 2023	5/04/2023	5.27	55.4	1401	8.35	26.2	231.2	17.8	63.36	Green-brown, turbid, no odour/sheen.
Central	KEMUS	Event 48 - May 2023	1/05/2023	8.01	80.7	758	6.96	142.6	347.6	15.6	78.19	Pale brown tinge, no odour, no sheen.
Central	KEMUS	Event 49 - June 2023	6/06/2023	5.85	55.4	2644	7.53	109.1	314.1	12.6	-0.72	Pale-yellow tinge, clear, no odour, no sheen, some sediment
Central	KEMUS	Event 50 - July 2023	4/07/2023	9.34	92.8	1124	7.61	361.9	566.9	12.5	7.93	Pale yellow tinge, mostly clear, no odour, no sheen, no sediment
Central	KEMUS	Event 51 - August 2023	8/08/2023	8.8	80.3	2252	7.4	66.4	271.4	11.3	18.31	Pale green tinge, mostly clear, oily sheen and algae on surface.
Central	KEMUS	WW Event 6 - 31 August 2023	31/08/2023	7.49	72.2	1152	7.41	68.1	273.1	13.3	61.64	Brown, cloudy, no odour or sheen.
Central	KEMUS	Event 52 - September 2023	5/09/2023	5.97	57.6	935	7.18	217.6	422.6	13.7	34.97	Brown, moderately turbid, no odour. brown sludge caught on dead tree
East	ROPDS	Event 47 - April 2023	4/04/2023	6.44	69.7	1063	7.5	95	300	19.1	25.57	Slight yellow tinge, mostly clear, no odour/sheen.
East	ROPDS	Event 48 - May 2023	1/05/2023	7.82	74.3	518	7.1	122.3	327.3	13.0	205.29	Clear, no odour, no sheen.
East	ROPDS	Event 49 - June 2023	6/06/2023	5.97	56.9	4357	7.59	204.5	409.5	12.6	-5.2	Pale yellow tinge, slightly turbid, no odour, no sheen, no sediment
East	ROPDS	Event 50 - July 2023	4/07/2023	10.24	94.4	3295	7.56	321.4	526.4	11.1	10.41	Pale yellow-tinge, mostly clear, no odour, no sheen, no sediment
East	ROPDS	Event 51 - August 2023	8/08/2023	8.88	82.0	4214	7.62	179.5	384.5	11.4	0.44	Mostly clear, no odour, slight sheen.
East	ROPDS	WW Event 6 - 31 August 2023	31/08/2023	4.87	47.2	724	7.14	-109	96	13.6	45.89	Green-brown tinge, slightly cloudy, no odour/sheen.
East	ROPDS	Event 52 - September 2023	6/09/2023	7.41	72.6	3791	7.49	125.3	330.3	13.9	8.77	Green brown, slightly turbid, no odour, no sheen
East	ROPUS	Event 47 - April 2023	4/04/2023	10.12	120.9	270	8.07	105.5	310.5	24.1	201.5	Green-brown, turbid, no odour/sheen.
East	ROPUS	Event 48 - May 2023	1/05/2023	10.52	102.3	229.5	7.02	114.6	319.6	14.1	203.08	Light brown, mostly clear, no odour, no sheen.
East	ROPUS	Event 49 - June 2023	6/06/2023	7.06	67.3	306.6	8.02	108.9	313.9	13.2	40.44	Pale yellow tinge, slightly turbid, no odour, no sheen, some sediment
East	ROPUS	Event 50 - July 2023	4/07/2023	10.14	96.6	225.8	7.33	98.9	303.9	13.2		Brown, turbid, organic odour, no sheen, no sediment
East	ROPUS	Event 51 - August 2023	8/08/2023	3.22	31.4	285.5	6.91	110.4	315.4	14.5	75.85	Pale yellow tinge, mostly clear, no odour, no sheen.
East	ROPUS	WW Event 6 - 31 August 2023	31/08/2023	1.41	14.3	219	6.66	-60.5	144.5	15.6	190.95	Brown, turbid, no odour or sheen.
East	ROPUS	Event 52 - September 2023	6/09/2023	5.16	54.4	284.9	7.09	66.9	271.9	18.2	130.56	Green brown, highly turbid, no odour, silver sheen. large amount of cow fecal matter
Central	SOUDS	Event 47 - April 2023	5/04/2023	5.94	63.2	858	8.05	111.6	316.6	18.3	101.84	Brown, turbid, no odour/sheen.
Central	SOUDS	Event 48 - May 2023	1/05/2023	6.73	68.3	861	6.88	52	257	15.9	47.77	Pale yellow tinge, no odour, no sheen.
Central	SOUDS	Event 49 - June 2023	6/06/2023	8.17	77.3	1049	7.6	223.8	428.8	12.7	26.2	Pale yellow, mostly clear, slight organic odour, no sheen, no sediment
Central	SOUDS	Event 50 - July 2023	4/07/2023	11.25	100.6	862	7.91	265.7	470.7	10.3	18.77	Green-brown tinge, clear, no odour, no sheen, no sediment
Central	SOUDS	Event 51 - August 2023	8/08/2023	9.98	92.6	1080	7.57	90	295	12.4	17.42	Pale green tinge, mostly clear, no odour, no sheen, location moved further downstream.
Central	SOUDS	WW Event 6 - 31 August 2023	31/08/2023	6.69	62.7	698	7.54	76.8	281.8	12.3	182	Brown, highly turbid,, no odour or sheen.
Central	SOUDS	Event 52 - September 2023	6/09/2023	11.14	107.3	1201	8.27	106.6	311.6	13.5	76.13	Green-brown, highly turbid, no odour or sheen.
Central	SOUUS	Event 47 - April 2023	4/04/2023	5.48	57.9	826	8.03	121.3	326.3	17.9	96.36	Green-brown, turbid, no odour/sheen
Central	SOUUS	Event 48 - May 2023	1/05/2023	7.28	76.0	892	6.9	148.2	353.2	17.3	296.25	Pale yellow tinge, no odour, no sheen.
Central	SOUUS	Event 49 - June 2023	6/06/2023	8.05	75.5	1059	7.6	181	386	12.3	22.65	Pale yellow tinge, slightly turbid, no odour, no sheen, no sediment
Central	SOUUS	Event 50 - July 2023	4/07/2023	10.94	97.1	865	7.61	292.7	497.7	9.9	18.44	Pale-yellow tinge, mostly clear, no odour, no sheen, no sediment
Central	SOUUS	Event 51 - August 2023	8/08/2023	9.74	88.6	1028	7.61	92	297	11.6	16.82	Pale green tinge, mostly clear, no odour, no sheen.
Central	SOUUS	WW Event 6 - 31 August 2023	31/08/2023	6.8	65.1	710	7.42	74	279	13	142	Brown, cloudy, no odour or sheen
Central	SOUUS	Event 52 - September 2023	6/09/2023	10.17	95.8	1227	8.06	92.7	297.7	12.5	36.41	Green-brown, mostly clear, no odour or sheen.

Appendix B
Table B11
Heavy metal concentrations and hardness-modified trigger values (HMTV)

Zone	Location	Date	Hardness mg/L	Cadmium µg/L		Chromium µg/L		Copper µg/L		Lead µg/L		Nickel µg/L		Zinc µg/L	
ANZECC (2000) Freshwater Trigger Value				*0.2*	***HMTV***	*1.0*	***HMTV***	*1.4*	***HMTV***	*3.4*	***HMTV***	*11*	***HMTV***	*8*	***HMTV***
M12 - West	BADDS	4/04/2023	298	<0.1	*1.5*	<1	*6.6*	<1	*10*	<1	*63*	2	*77*	17	*56*
	BADMS	4/04/2023	298	<0.1	*1.5*	<1	*6.6*	<1	*10*	<1	*63*	2	*77*	<5	*56*
	BADUS	4/04/2023	308	<0.1	*1.6*	<1	*6.8*	<1	*10*	<1	*65*	2	*80*	<5	*58*
	COSDS	4/04/2023	308	<0.1	*1.6*	<1	*6.8*	<1	*10*	<1	*65*	1	*80*	12	*58*
	COSUS	4/04/2023	328	<0.1	*1.7*	4	*7.1*	8	*11*	8	*71*	6	*84*	14	*61*
M12 - Central	KEMDS	5/04/2023	312	<0.1	*1.6*	<1	*6.8*	3	*10*	<1	*67*	2	*81*	7	*59*
	KEMUS	5/04/2023	298	<0.1	*1.5*	<1	*6.6*	2	*10*	<1	*63*	2	*77*	7	*56*
	SOUDS	5/04/2023	229	<0.1	*1.2*	<1	*5.3*	2	*8*	<1	*45*	3	*62*	<5	*45*
	SOUUS	5/04/2023	227	<0.1	*1.2*	<1	*5.3*	<1	*8*	<1	*44*	3	*61*	<5	*45*
M12 - East	HINDS	4/04/2023	64	<0.1	*0.4*	<1	*1.9*	<1	*3*	<1	*9*	2	*21*	<5	*15*
	HINUS	4/04/2023	83	<0.1	*0.5*	<1	*2.3*	<1	*3*	<1	*12*	1	*26*	<5	*19*
	ROPDS	4/04/2023	222	<0.1	*1.2*	<1	*5.2*	<1	*8*	<1	*43*	1	*60*	10	*44*
	ROPUS	4/04/2023	46	<0.1	*0.3*	2	*1.4*	<1	*2*	1	*6*	2	*16*	<5	*12*

= Exceeds HMTV

Appendix C

Graphs of recorded field parameters

pH

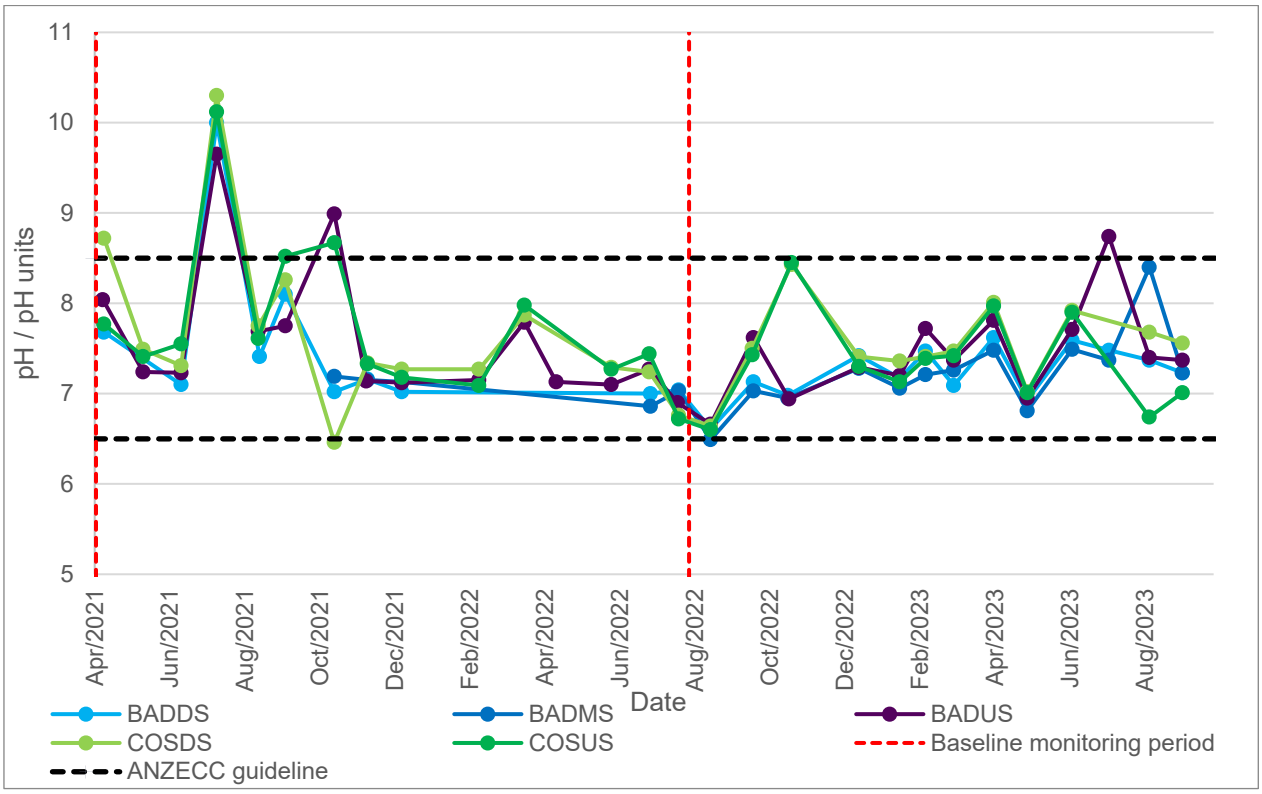

Figure 1 *Summary of field recorded pH in the M12 – West package (April 2021 to September 2023)*

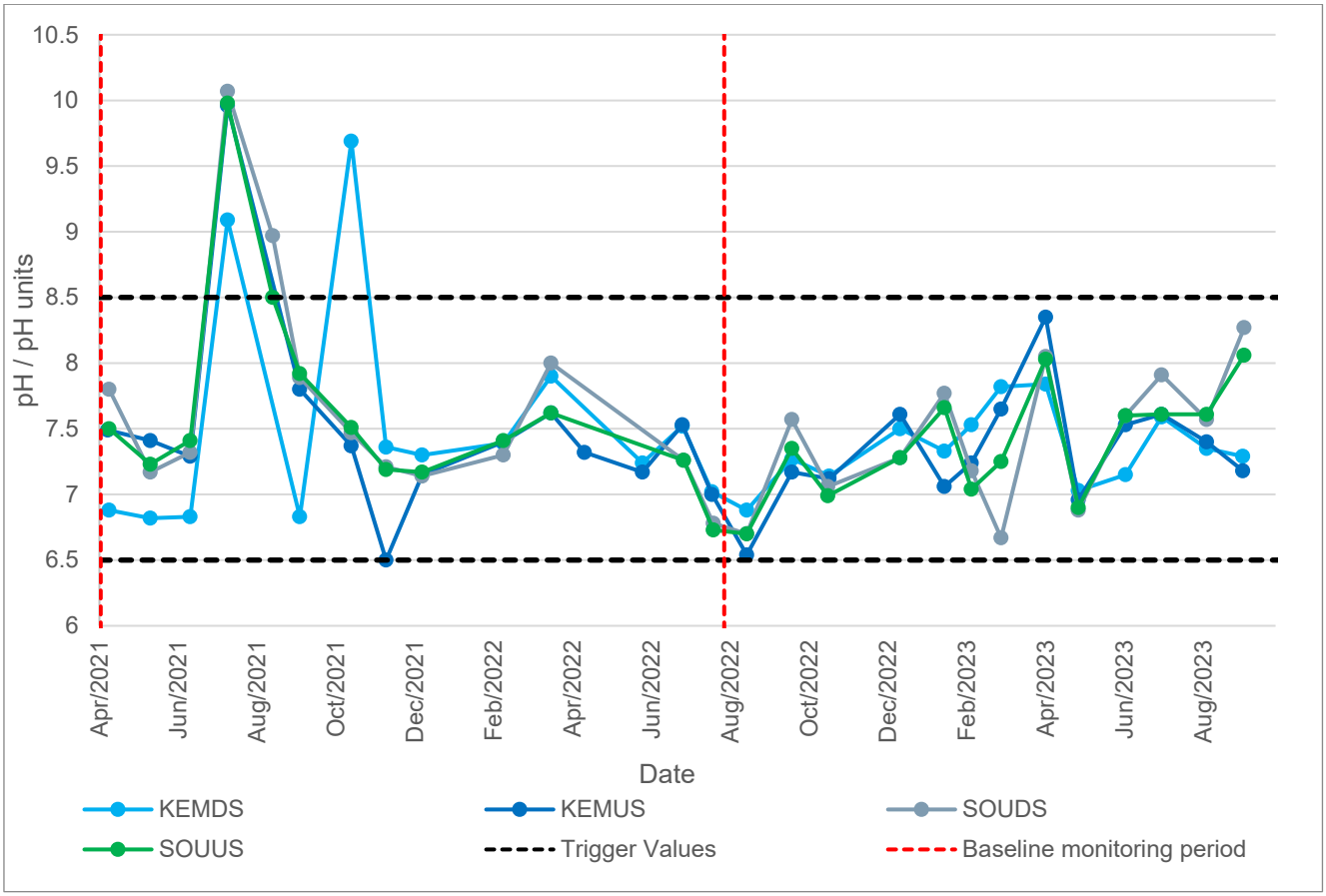

Figure 2 *Summary of field recorded pH in the M12 – Central package (April 2021 to September 2023)*

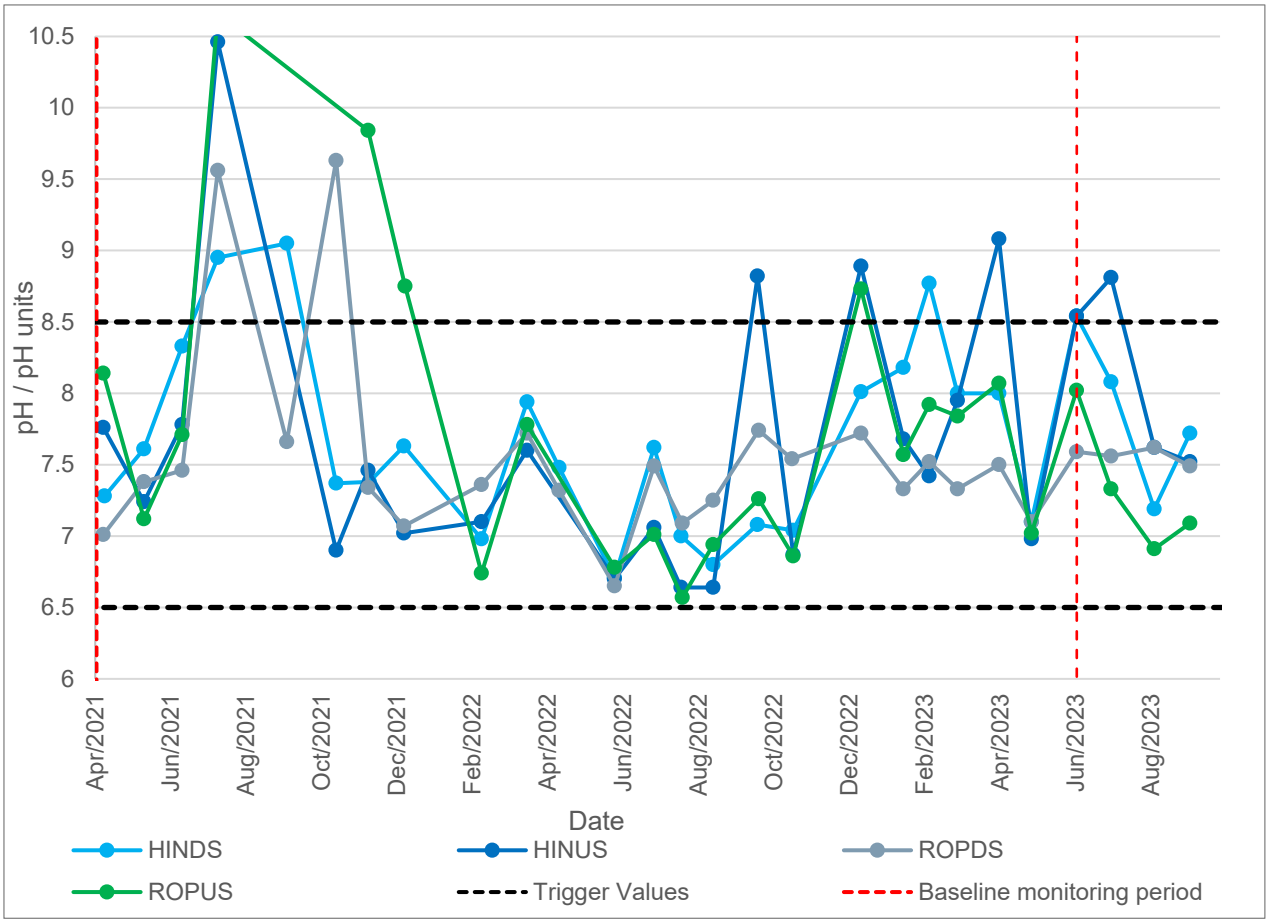

Figure 3 *Summary of field recorded pH in the M12 – East package (April 2021 to September 2023)*

Electrical Conductivity

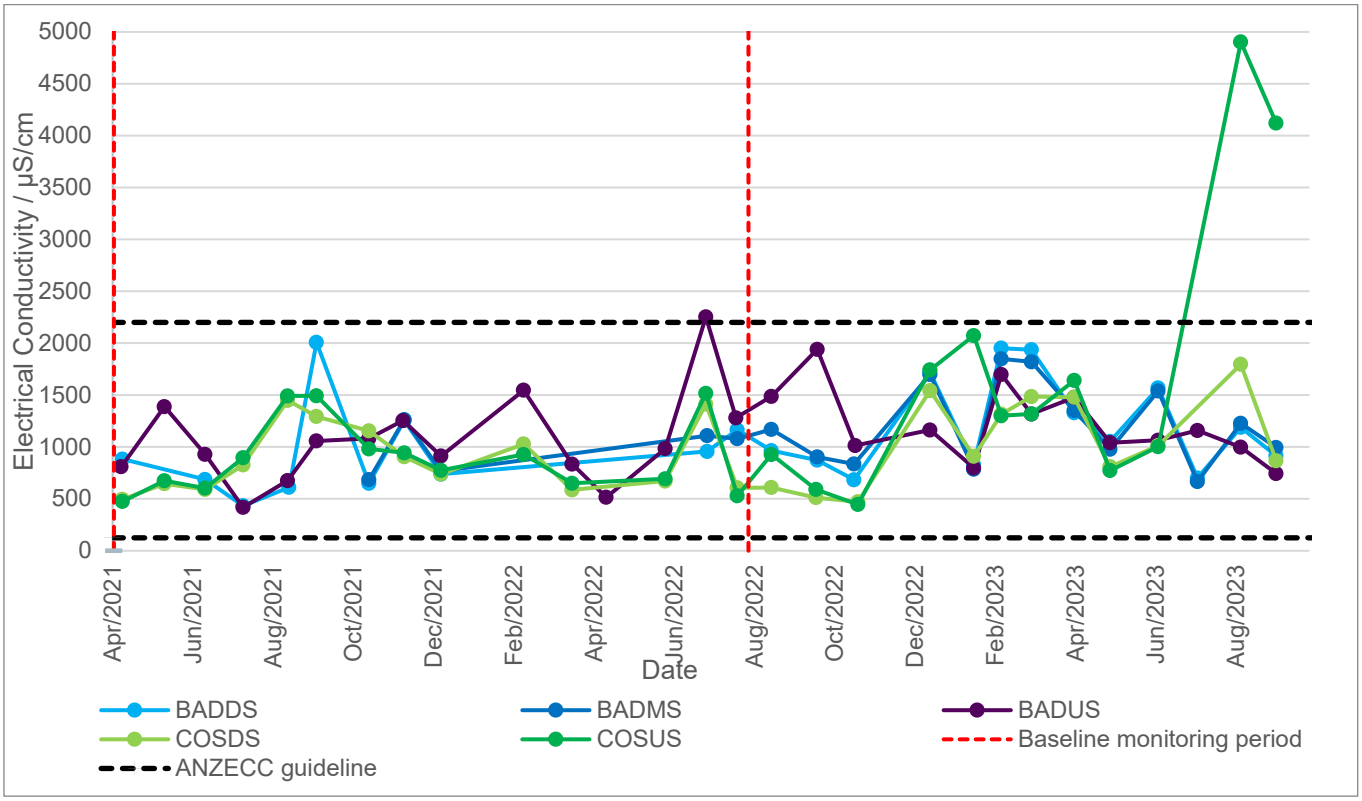

Figure 4 *Summary of field recorded electrical conductivity in the M12 – West package (April 2021 to September 2023)*

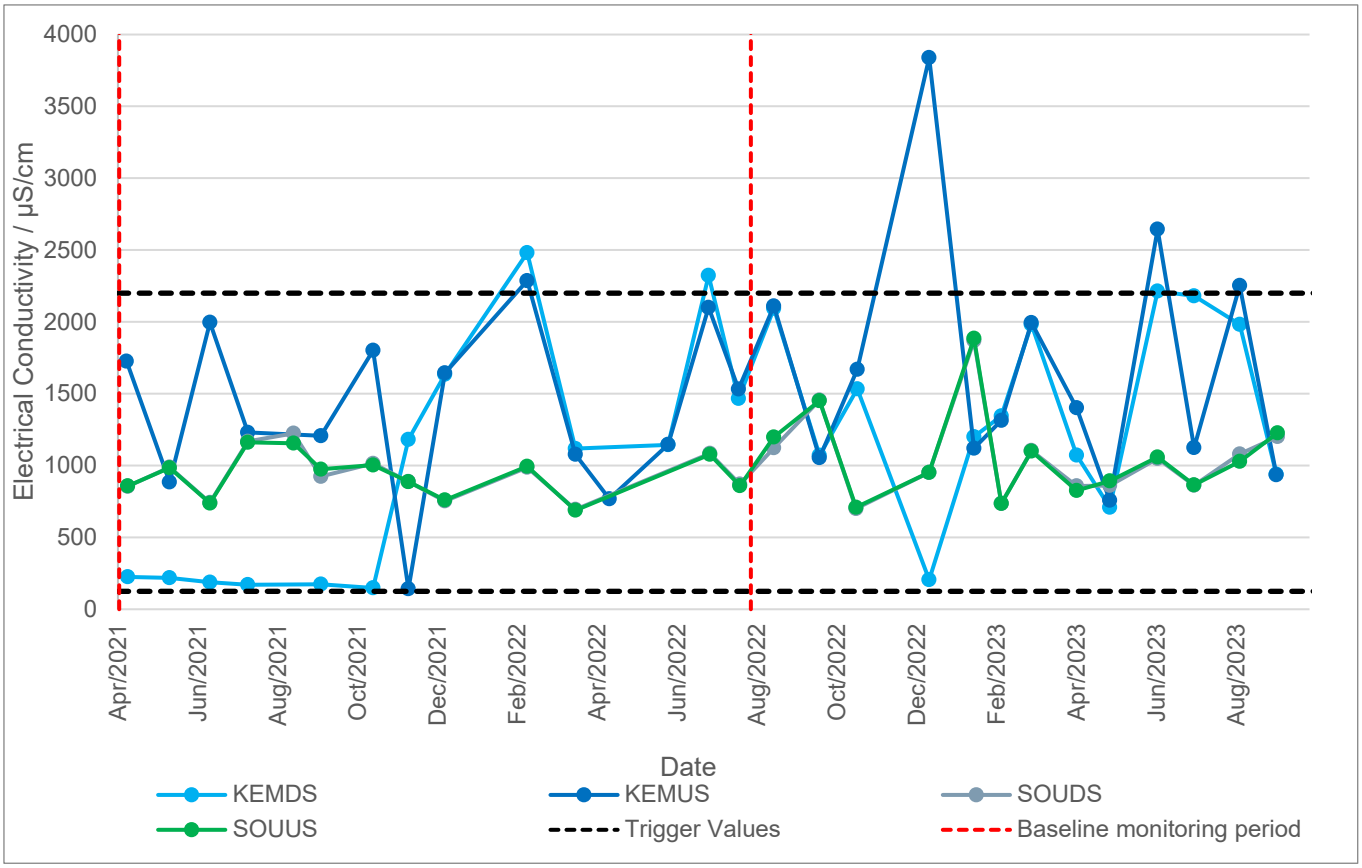

Figure 5 ***Summary of field recorded electrical conductivity in the M12 – Central package (April 2021 to September 2023)***

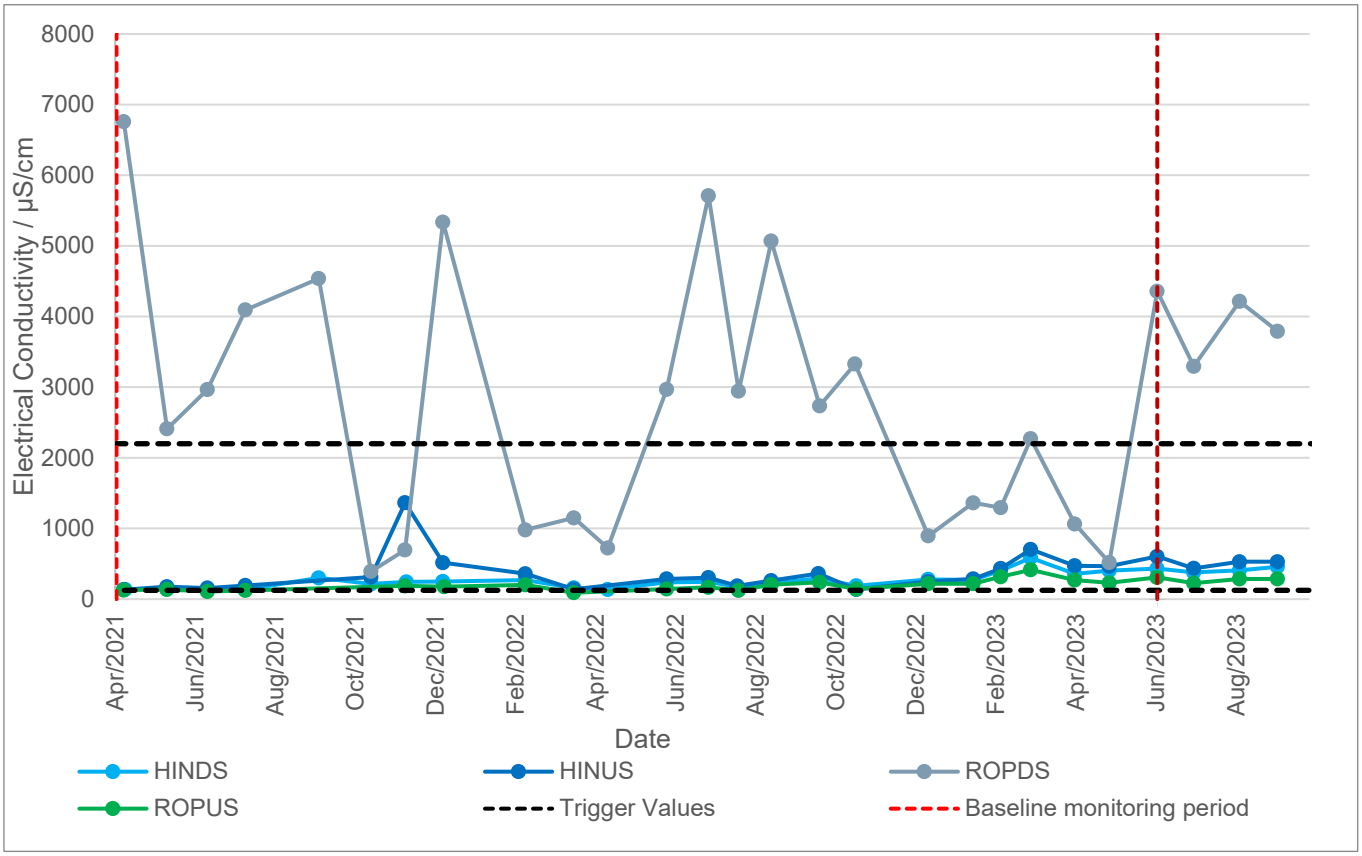

Figure 6 ***Summary of field recorded electrical conductivity in the M12 – East package (April 2021 to September 2023)***

Dissolved Oxygen

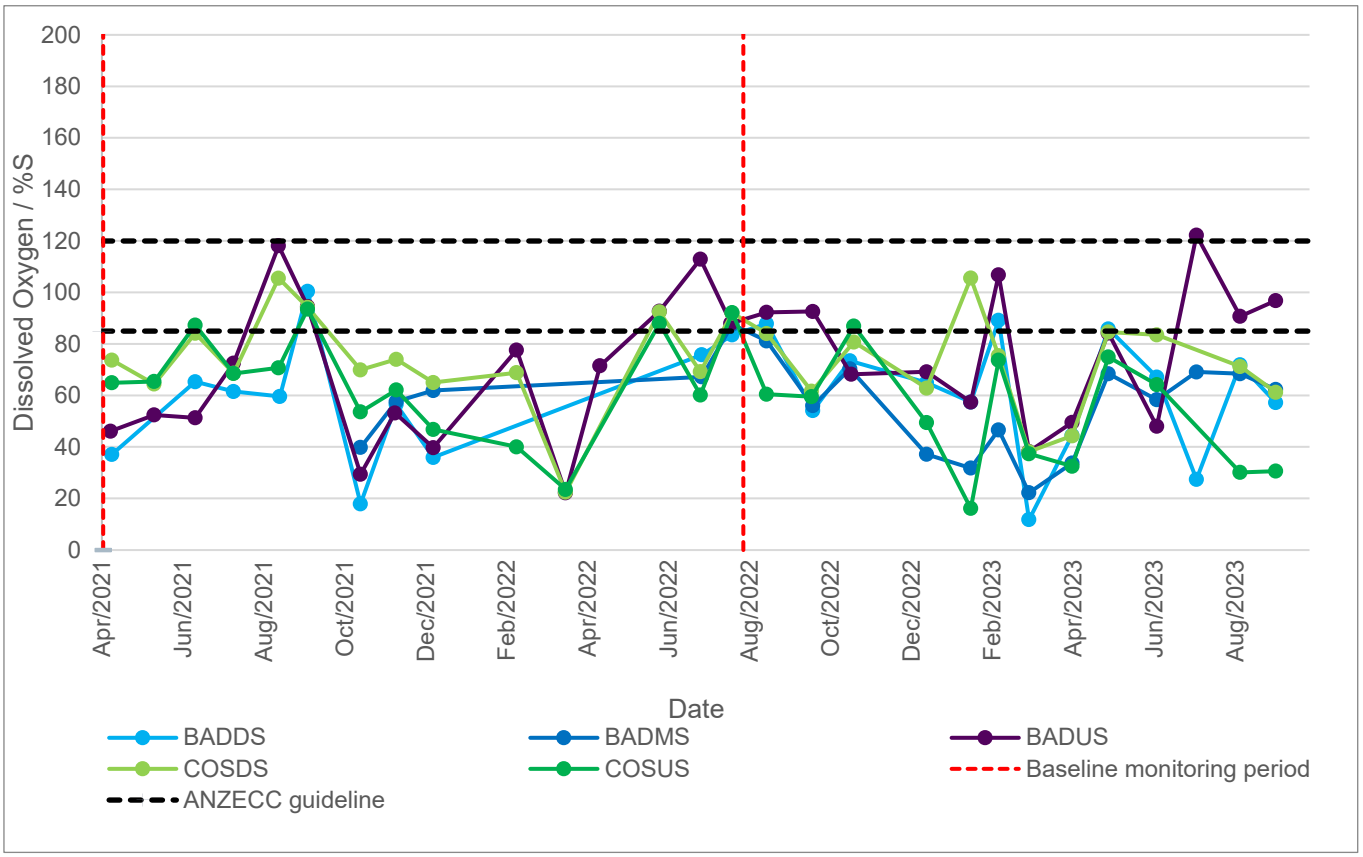

Figure 7 *Summary of field recorded dissolved oxygen (% S) in the M12 – West package (April 2021 to September 2023)*

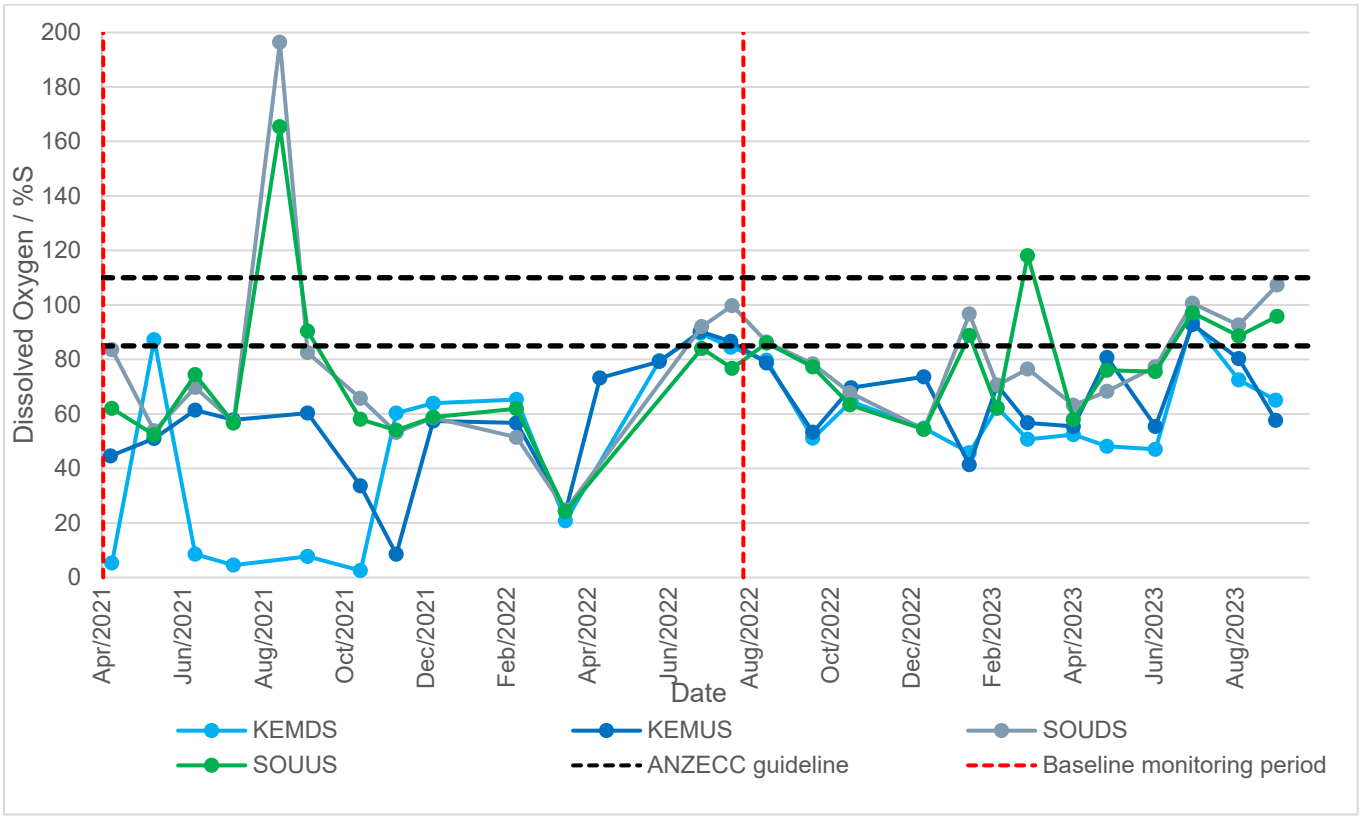

Figure 8 *Summary of field recorded dissolved oxygen (% S) in the M12 – Central package (April 2021 to September 2023)*

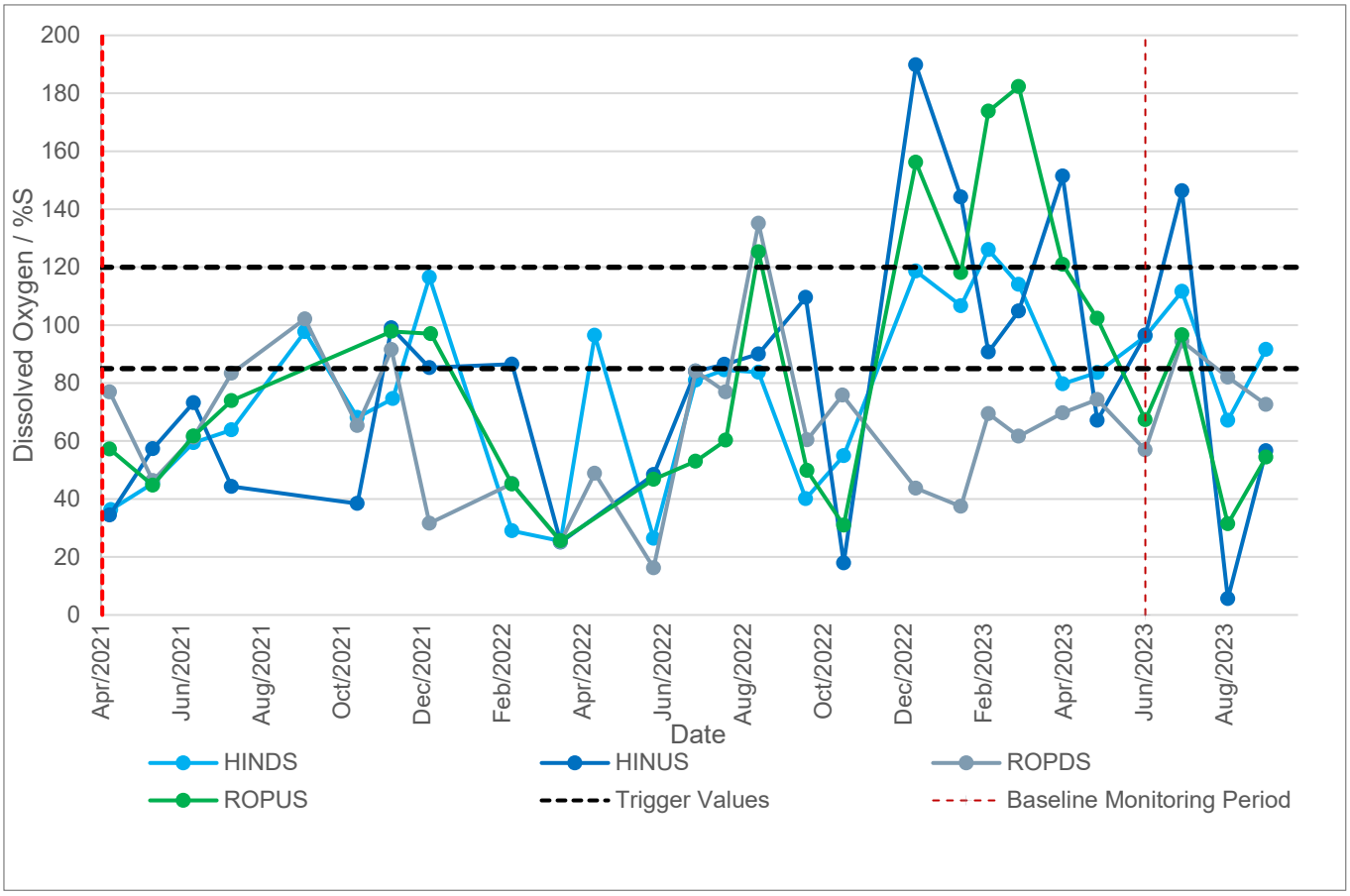

Figure 9 *Summary of field recorded dissolved oxygen (% S) in the M12 –East package (April 2021 to September 2023)*

Turbidity

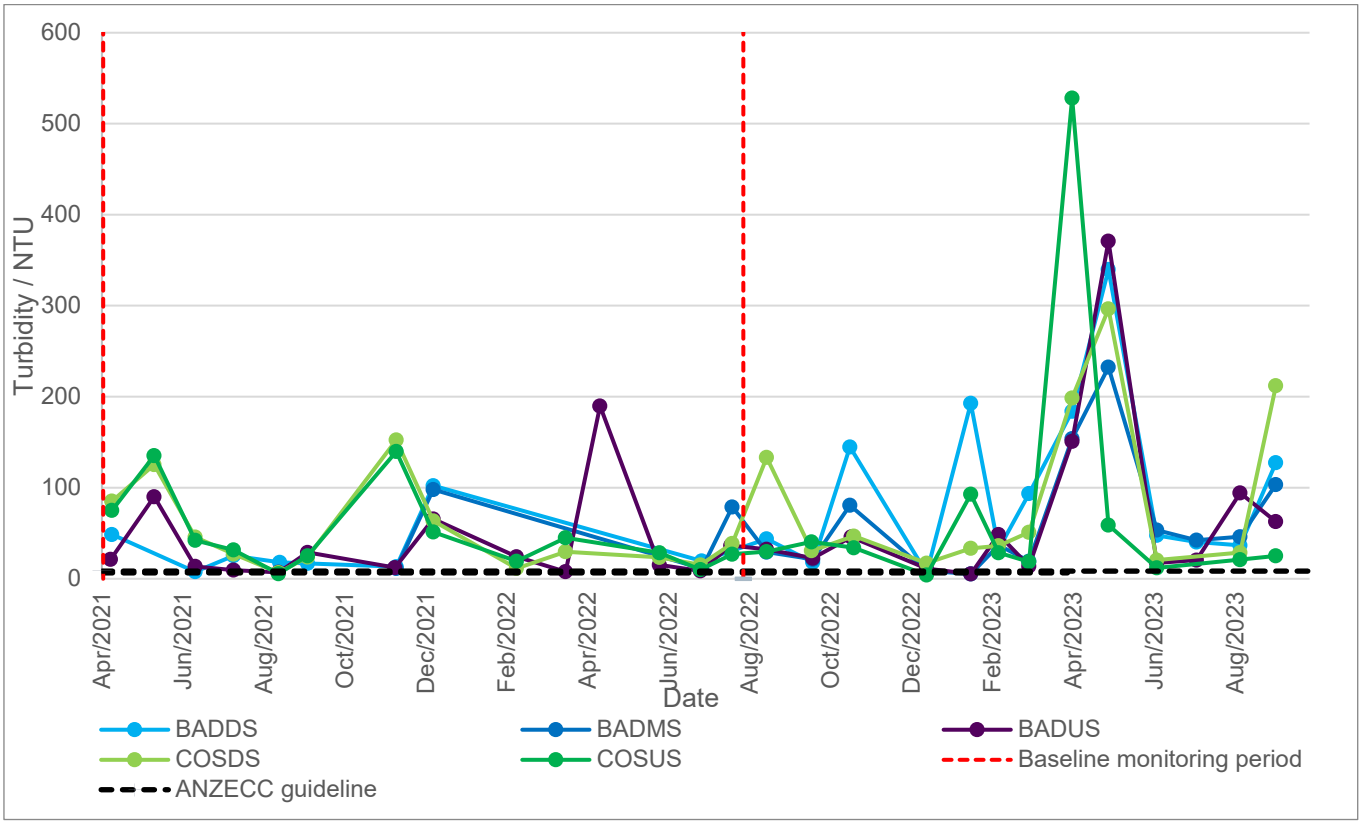

Figure 10 *Summary of field recorded turbidity in the M12 –West package (April 2021 to September 2023)*

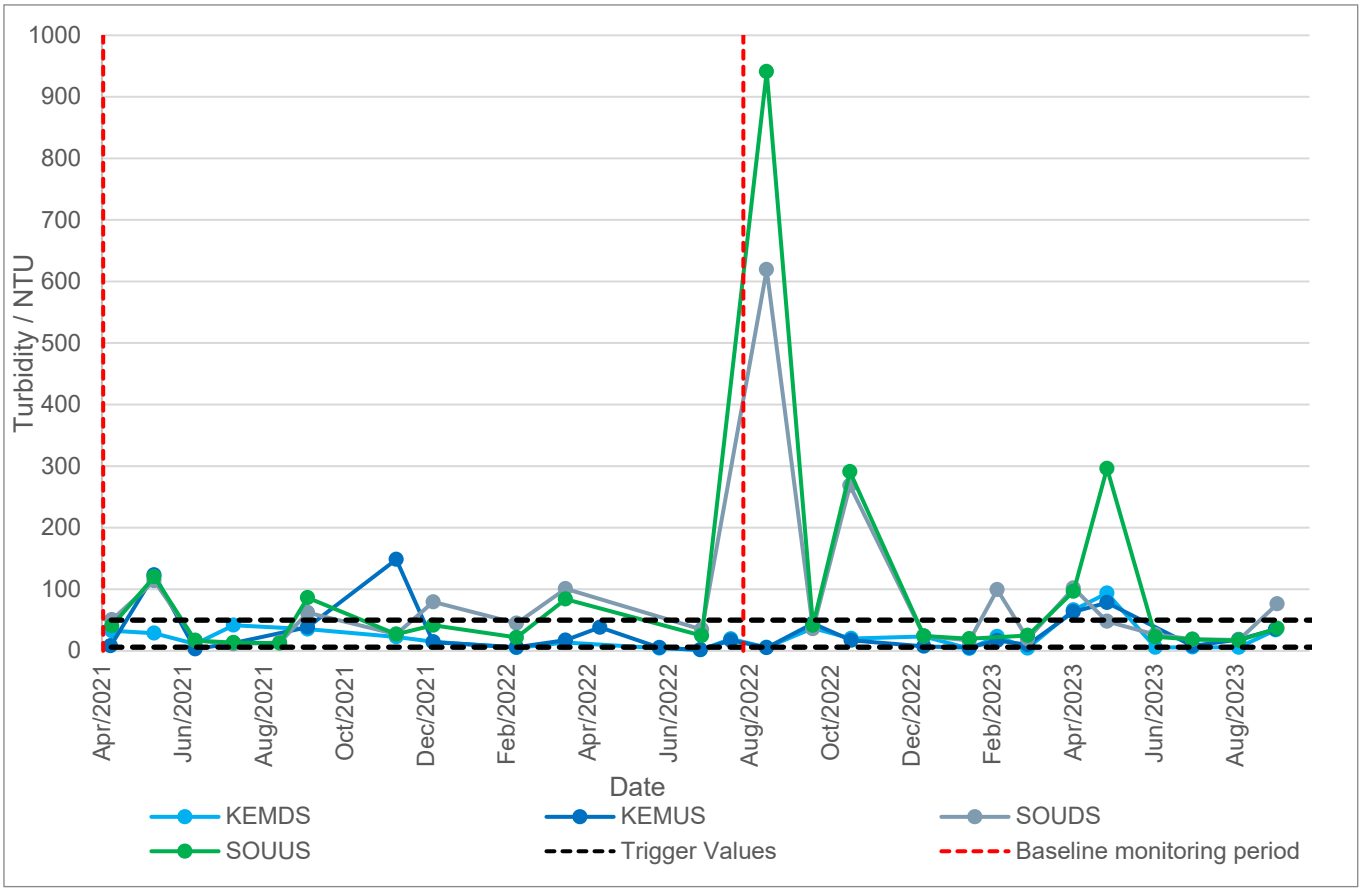

Figure 11 *Summary of field recorded turbidity in the M12 –Central package (April 2021 to September 2023)*

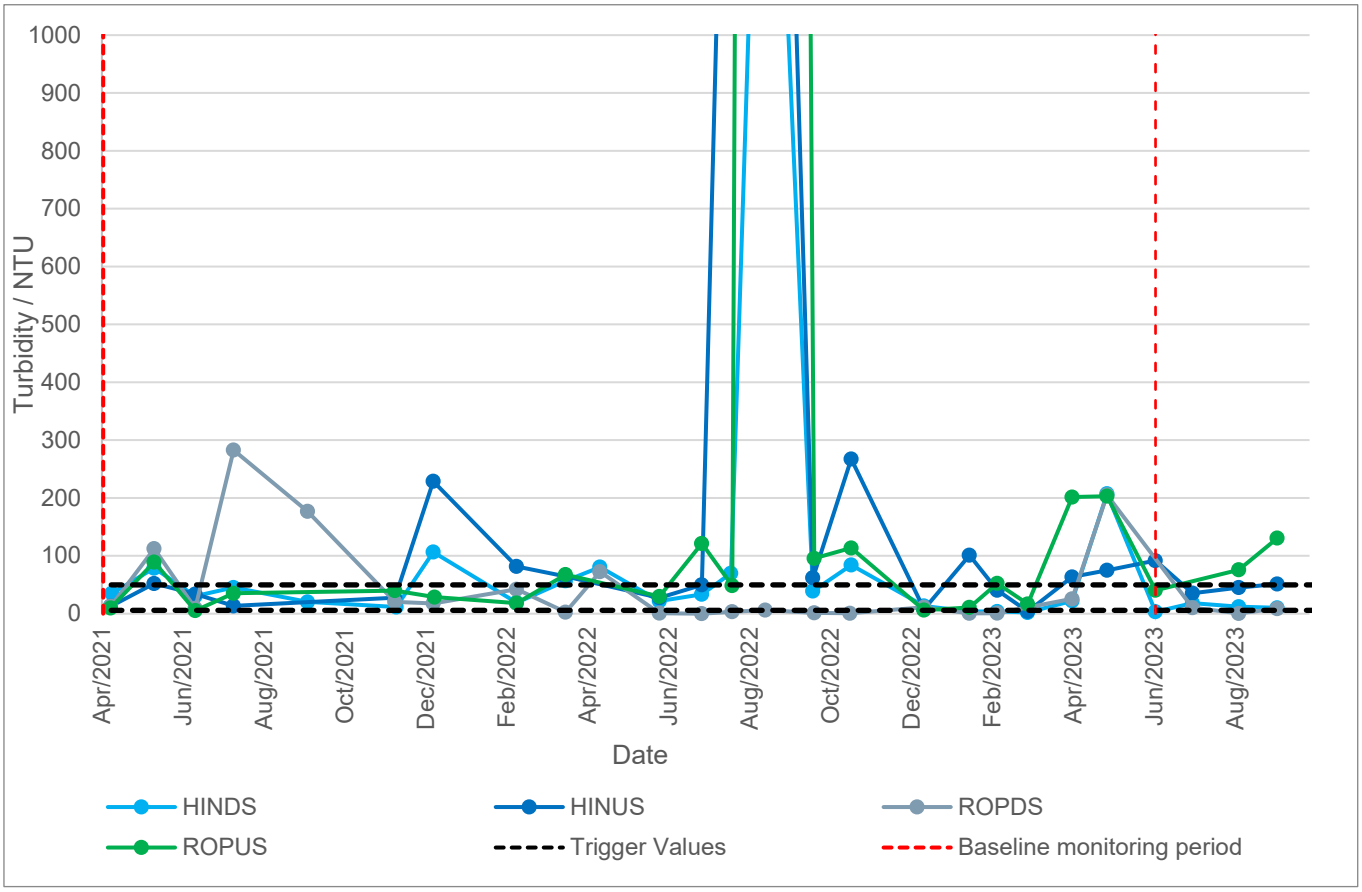

Figure 12 *Summary of field recorded turbidity in the M12 –East package (April 2021 to September 2023)*

Appendix D

Box and whisker plots

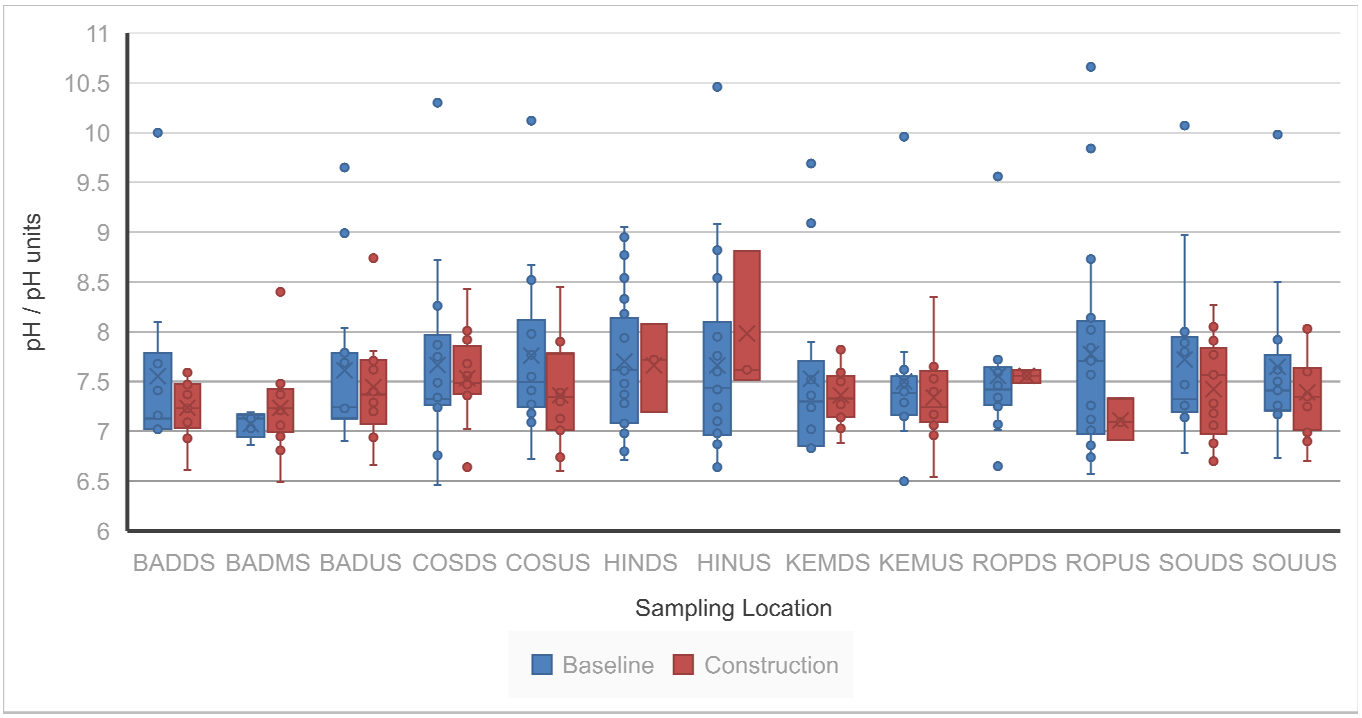

Figure 13 ***Summary of field recorded pH for the baseline and construction phases to September 2023***

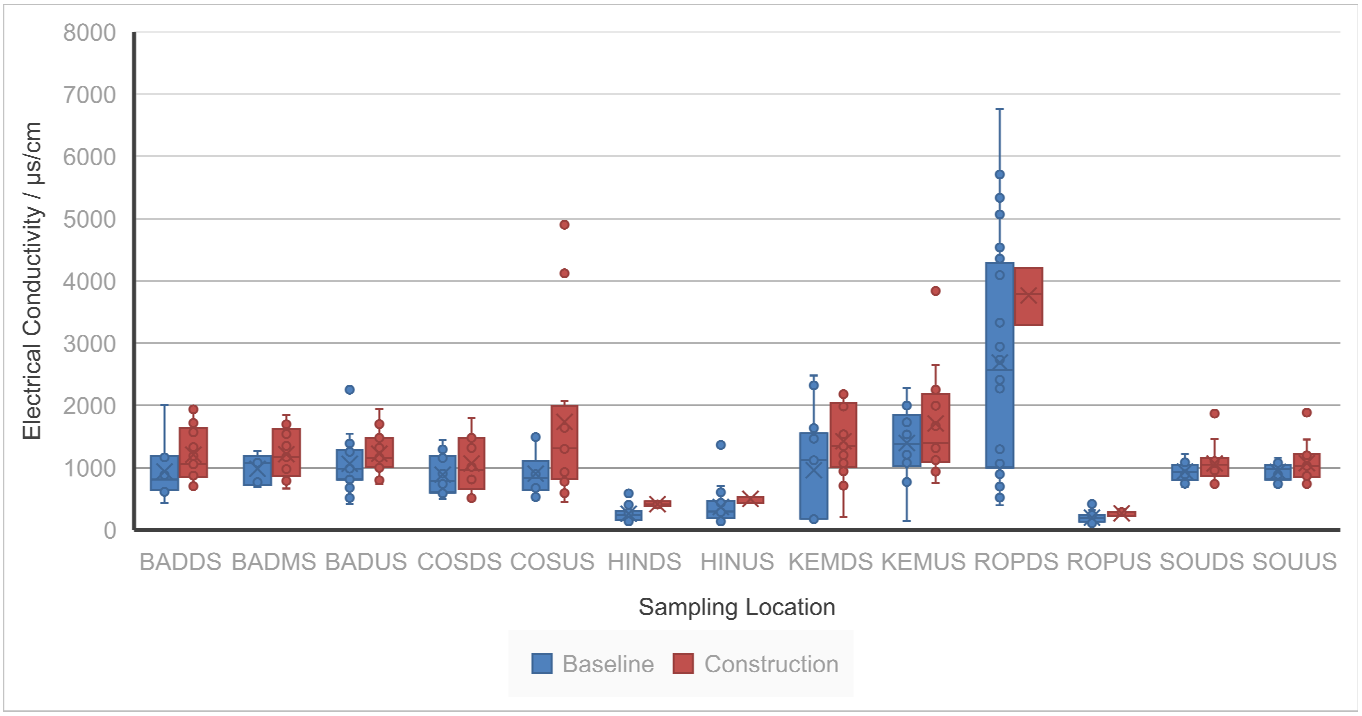

Figure 14 ***Summary of field recorded electrical conductivity for the baseline and construction phases to September 2023***

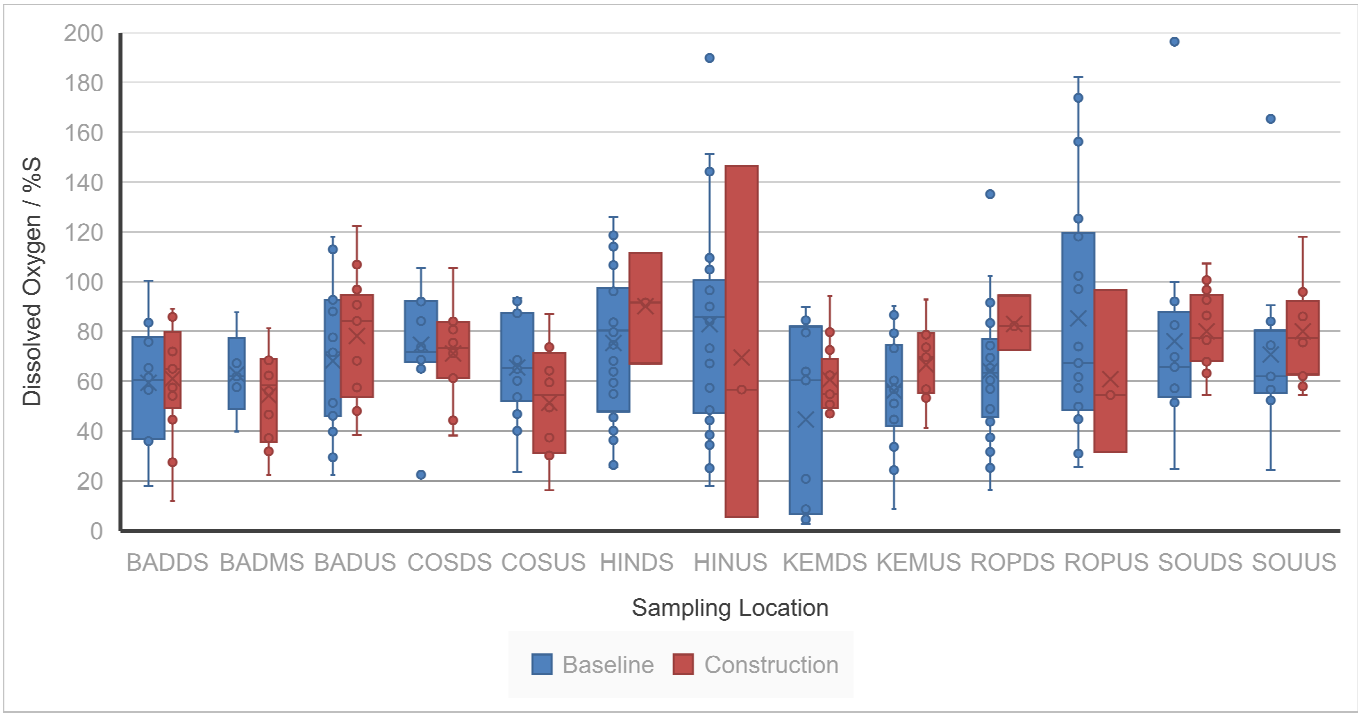

Figure 15 ***Summary of field recorded dissolved oxygen for the baseline and construction phases to September 2023***

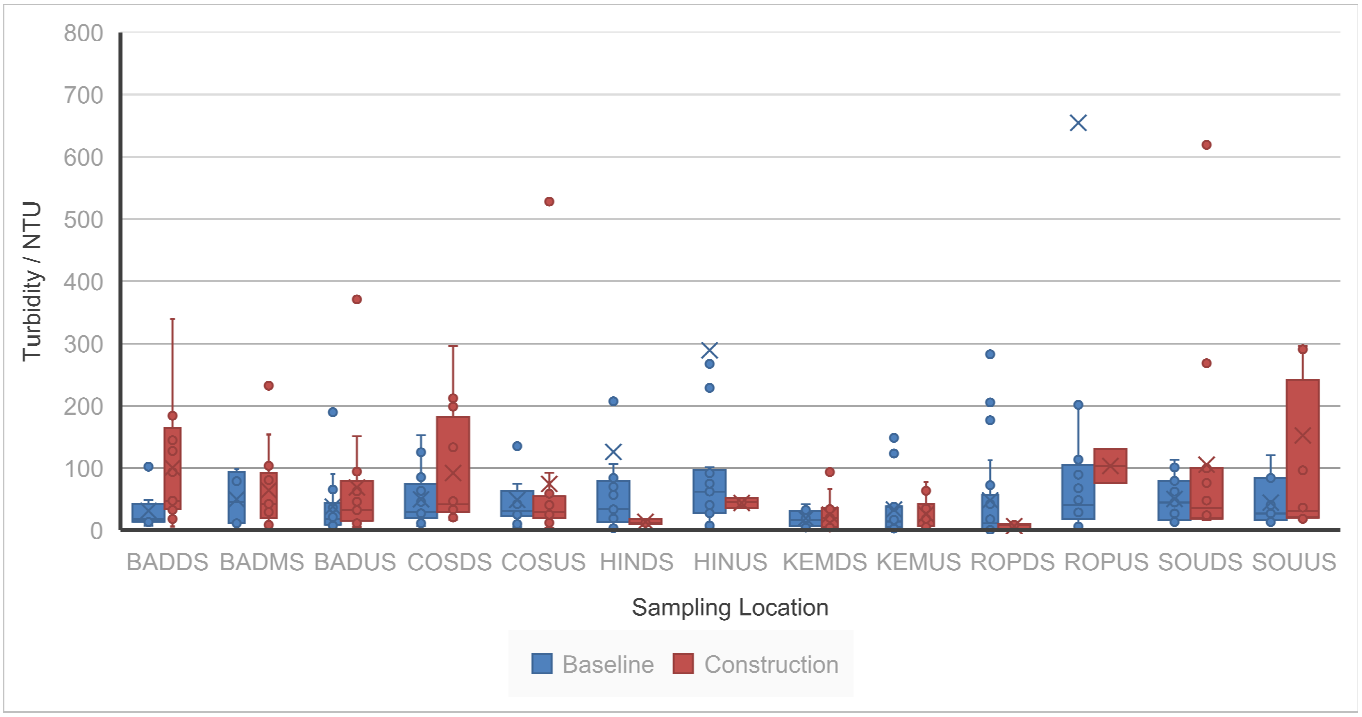

Figure 16 ***Summary of field recorded turbidity for the baseline and construction phases to September 2023***

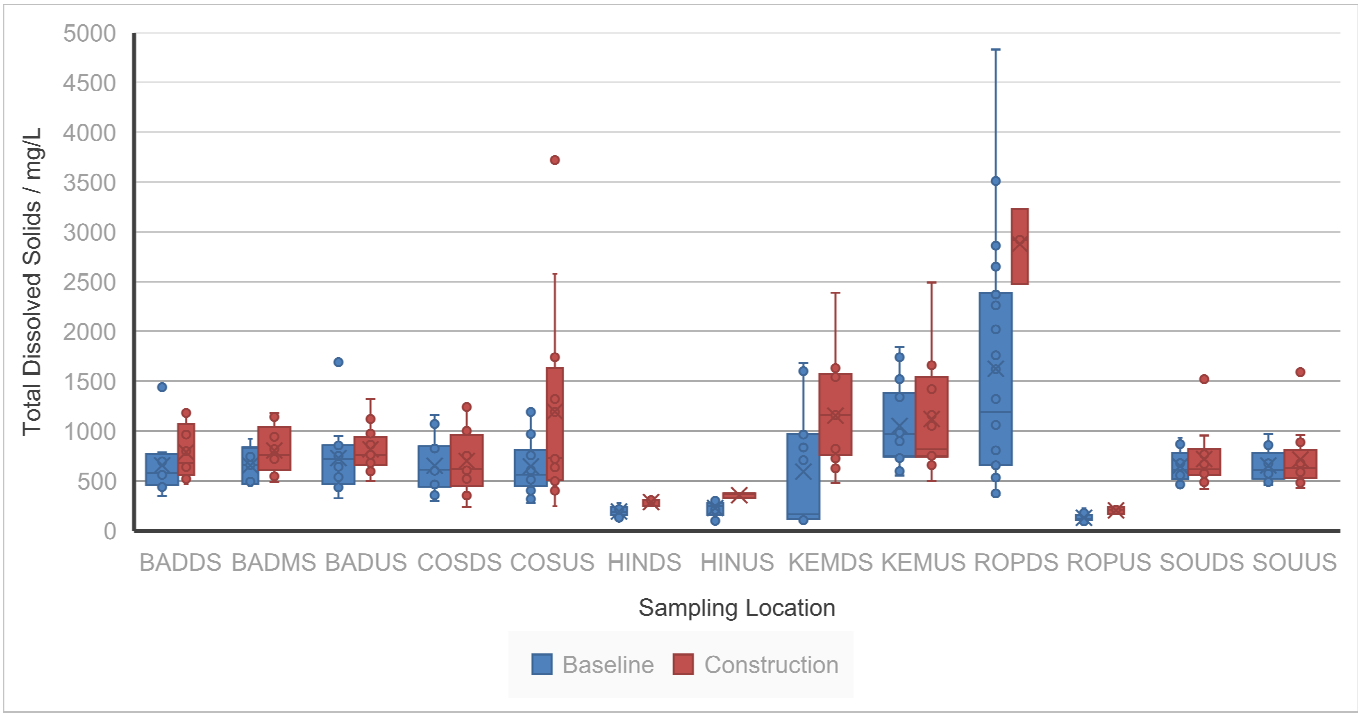

Figure 17 ***Summary of total dissolved solids concentrations for the baseline and construction phases to September 2023***

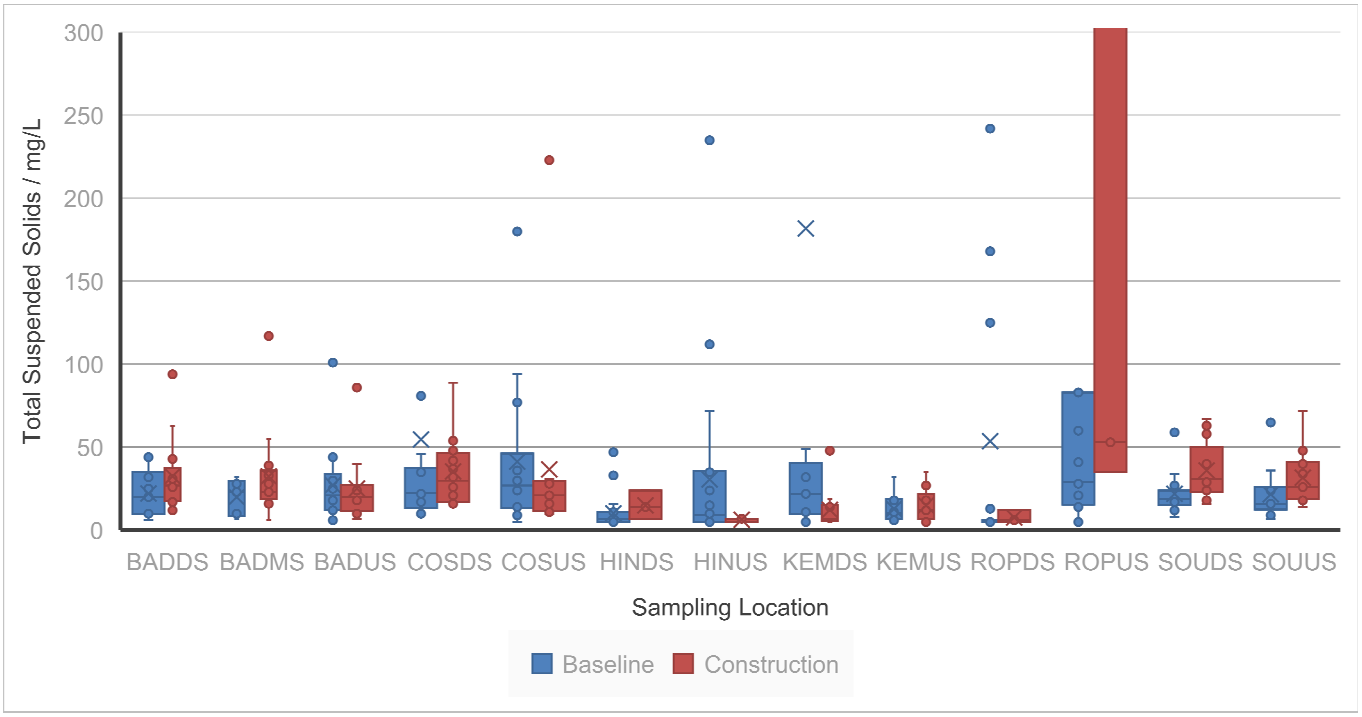

Figure 18 ***Summary of total suspended solids concentrations for the baseline and construction phases to September 2023***

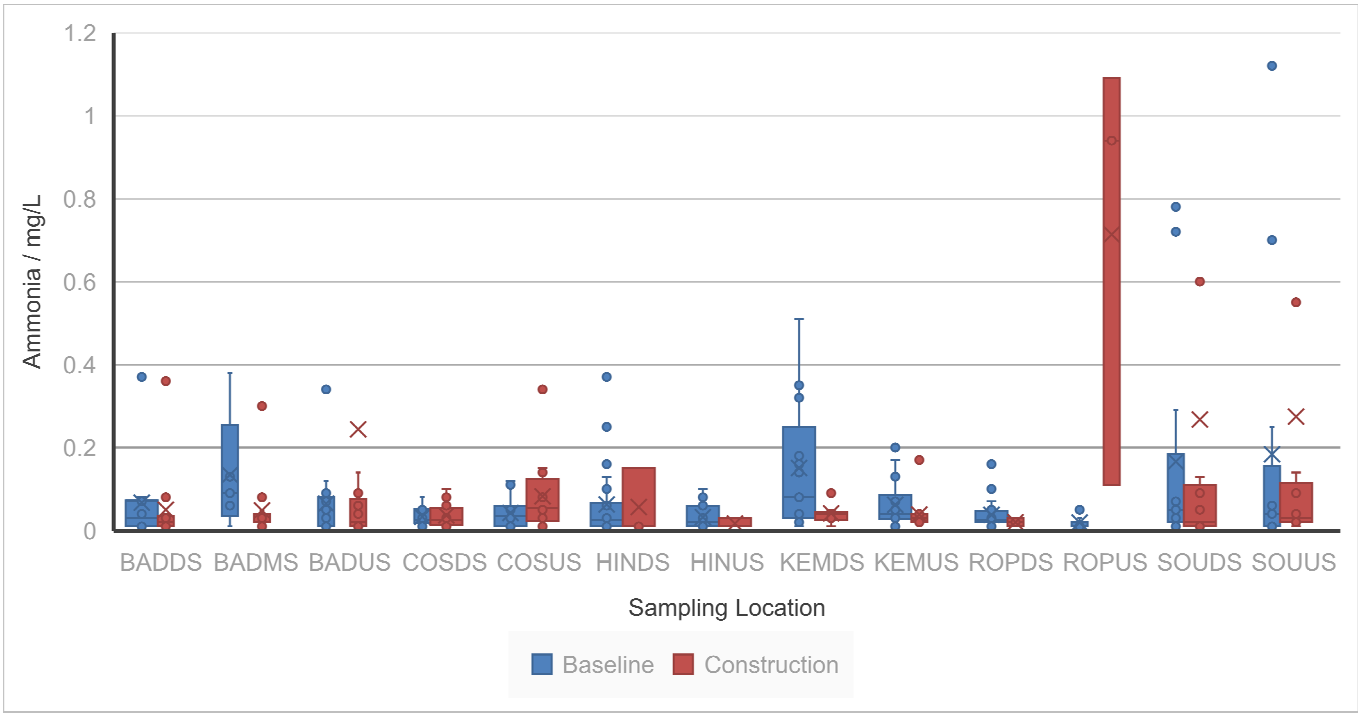

Figure 19 ***Summary of ammonia concentrations for the baseline and construction phases to September 2023***

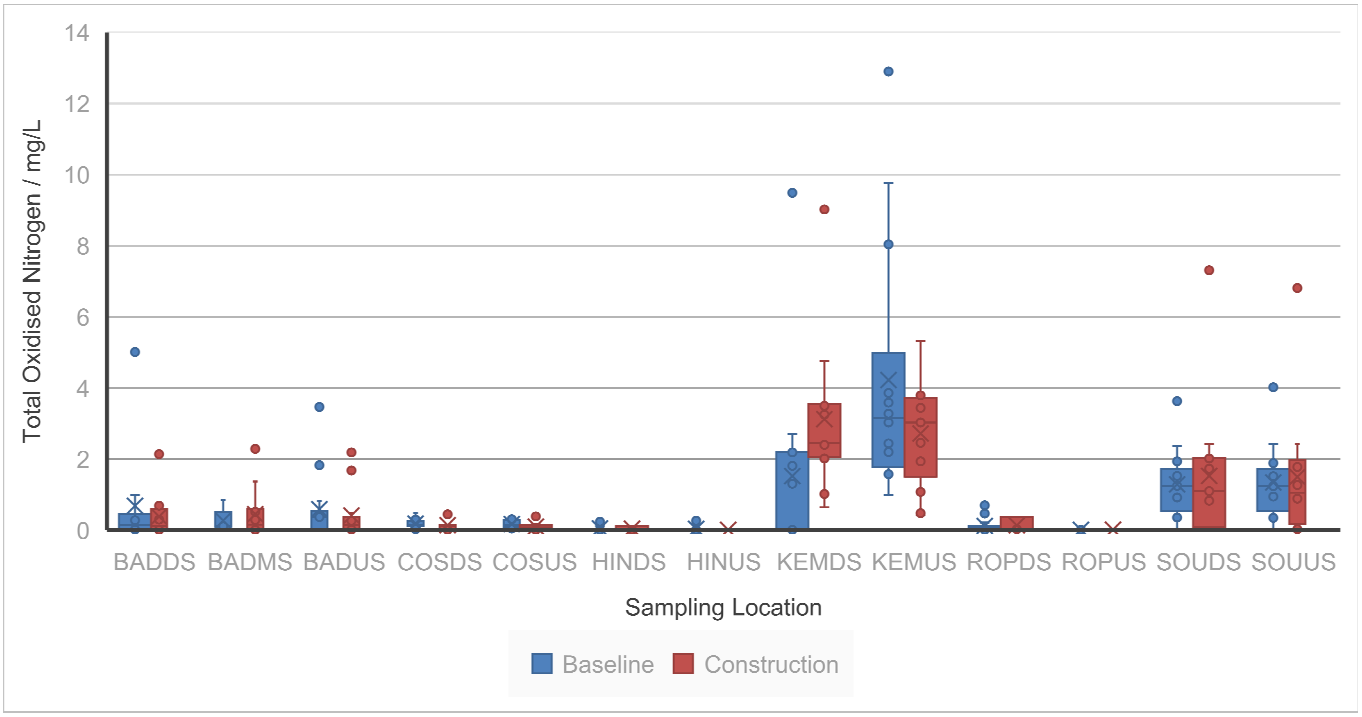

Figure 20 ***Summary of total oxidised nitrogen concentrations for the baseline and construction phases to September 2023***

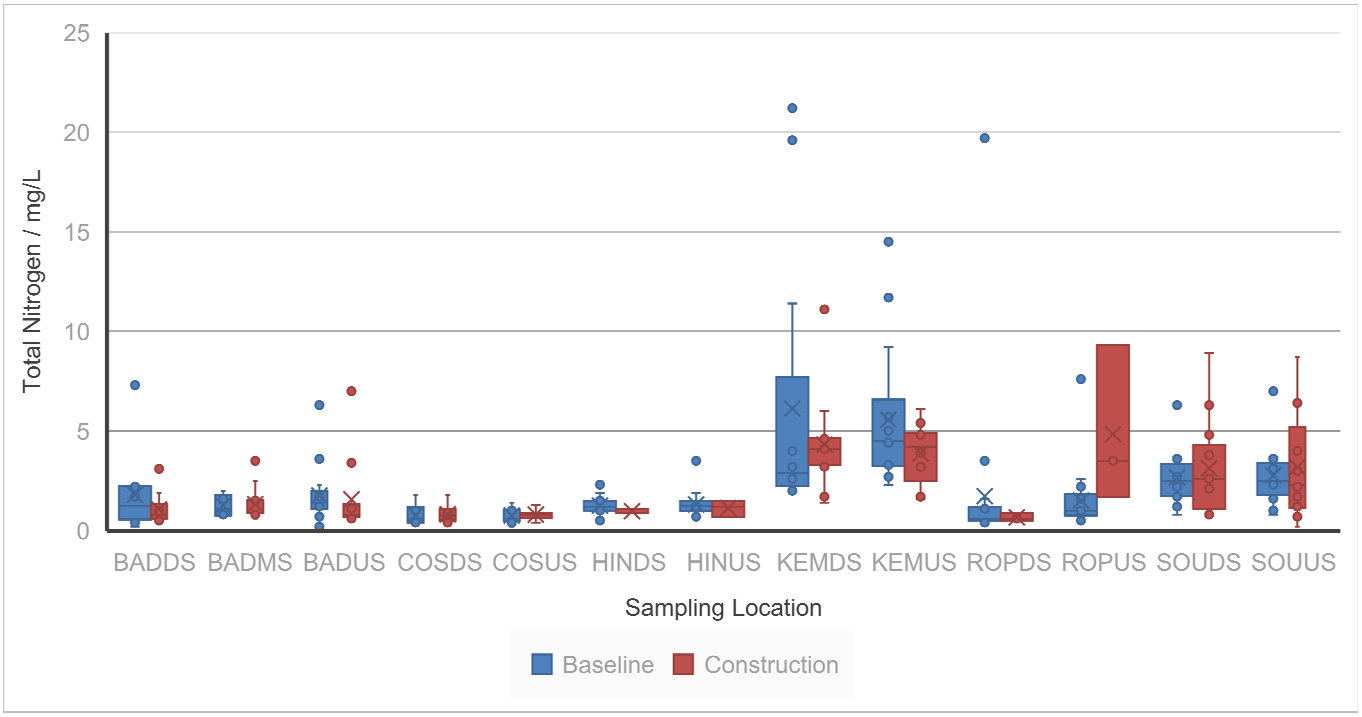

Figure 21 *Summary of total nitrogen concentrations for the baseline and construction phases to September 2023*

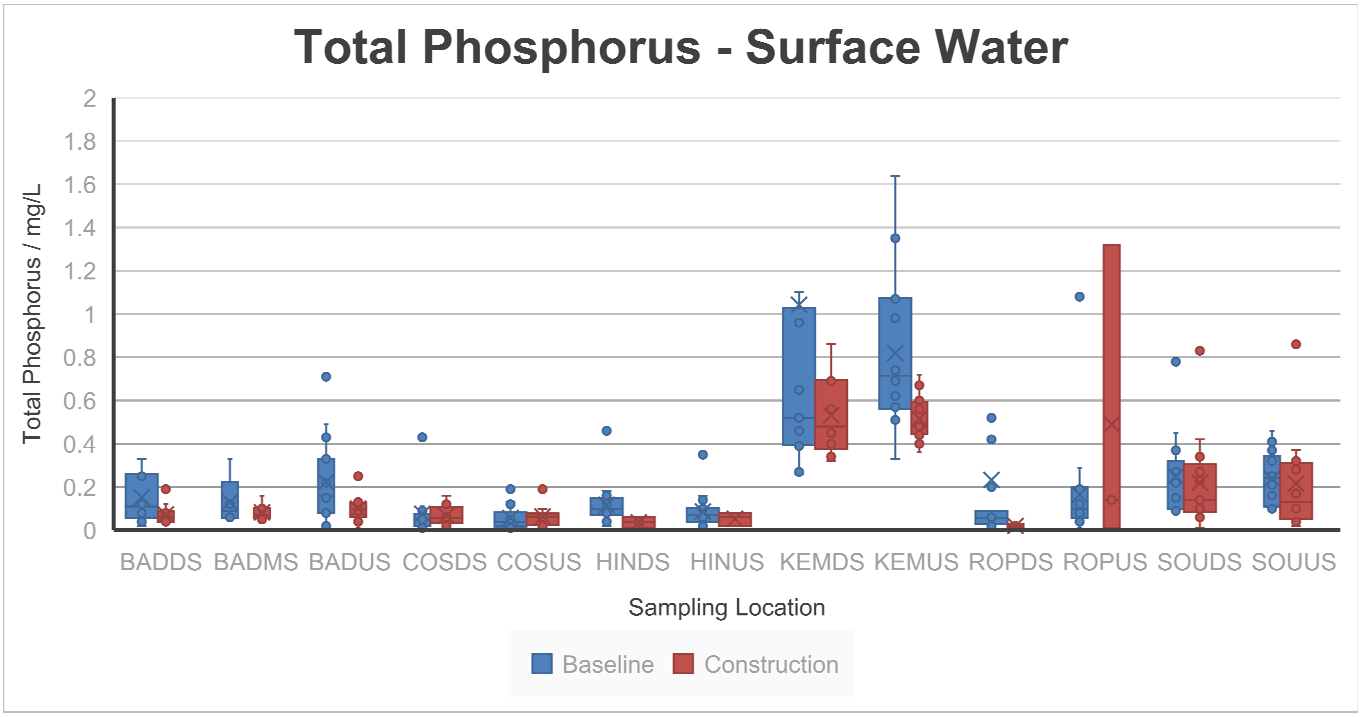

Figure 22 *Summary of total phosphorus concentrations for the baseline and construction phases to September 2023*

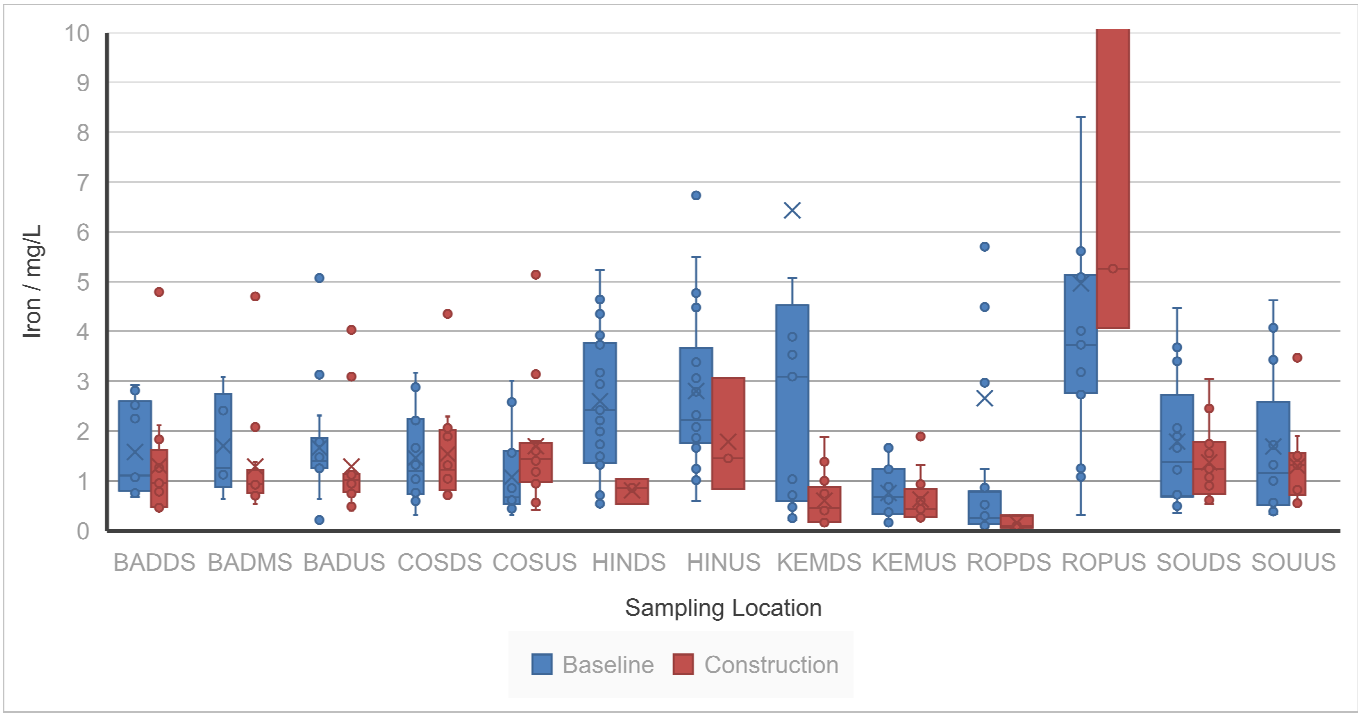

Figure 23 ***Summary of iron concentrations for the baseline and construction phases to September 2023***

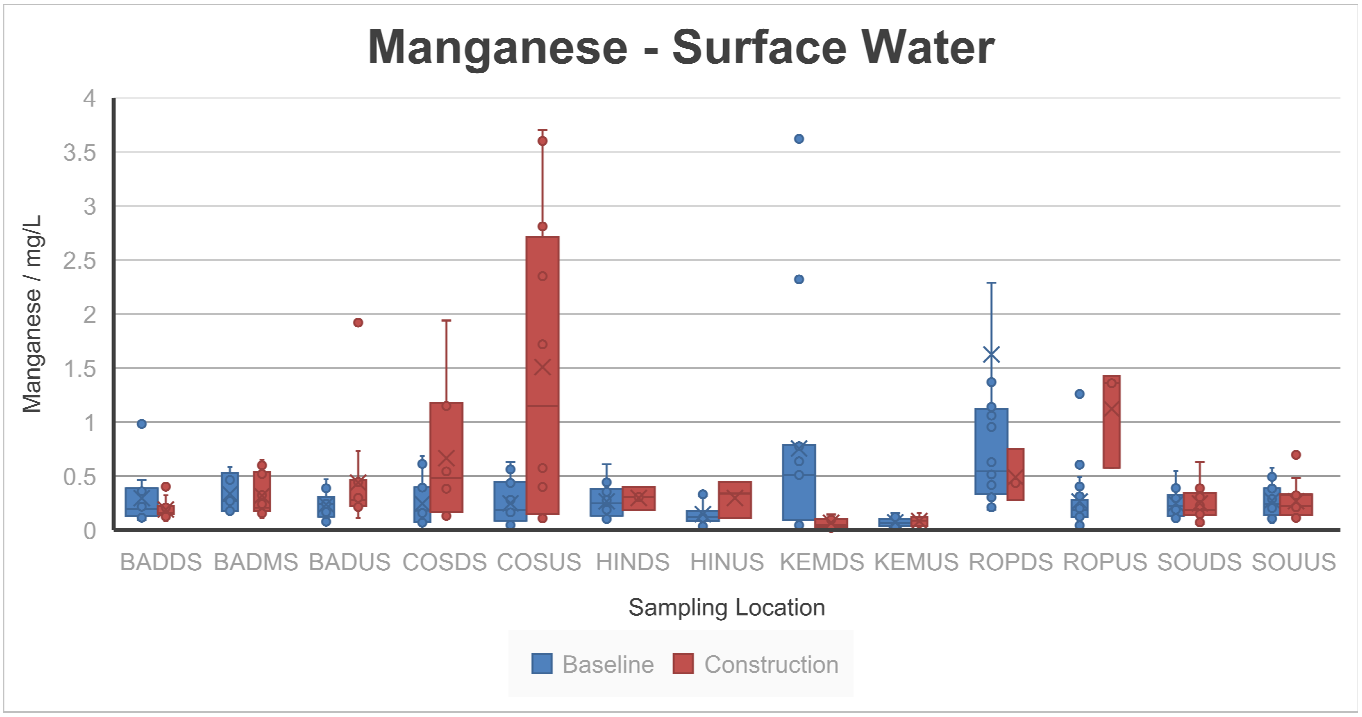

Figure 24 ***Summary of manganese concentrations for the baseline and construction phases to September 2023***

Appendix E

Calibration certificates

Oil / Water Interface Meter

airmet

Air-Met Scientific Pty Ltd
1300 137 067

Instrument **Geotech Interface Meter (60M)**
Serial No. **3953**

Item	Test	Pass	Comments
Battery	Compartment	✓	Beeper noise is soft
	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: **Dom Ta**

Calibration date: **24/03/2023**

Next calibration due: **23/05/2023**

Multi Parameter Water Meter

Instrument **YSI Pro DSS**
Serial No **21K104033**

Air-Met Scientific Pty Ltd
1300 137 067

Item	Test	Pass	Comments
Battery	Charge Condition	✓	
	Fuses	✓	
	Capacity	✓	
	Recharge OK?	✓	
Switch/keypad	Operation	✓	
Display	Intensity	✓	
	Operation (segments)	✓	
Grill Filter	Condition	✓	
	Seal	✓	
PCB	Condition	✓	
Connectors	Condition	✓	
Sensor	1. pH/ORP	✓	
	2. Turbidity	✓	
	3. Conductivity	✓	
	4. D.O	✓	
	5. Temp	✓	
	6. Depth	✓	
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	Standard Solutions	Certified	Solution Bottle Number	Instrument Reading
1. pH 7.00	pH 7.00		393774	pH 6.98
2. pH 4.00	pH 4.00		394432	pH 3.96
3. mV	234.06mV		398884 / 400204	233.2mV
4. EC	2760uS/cm		385789	2765uS/cm
6. D.O	0%		391223	0.40%
7. Temp	23.6°C			23.1°C
8.Tubidity	100 NTU		396426	98.02 NTU

Calibrated by: **Christopher Young**

Calibration date: **28/03/2023**

Next calibration due: **28/09/2023**

Oil / Water Interface Meter

Instrument: **Interface Meter (60M)**
Serial No: **483915**

airmet
Air-Met Scientific Pty Ltd
1300 137 067

Item	Test	Pass	Comments
Battery	Compartment	✓	
	Capacity	✓	
Probe	Cleaned/Decon.	✓	
	Operation	✓	
Connectors	Condition	✓	
		✓	
Tape Check	Cleaned	✓	
	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: **Dom Ta**

Calibration date: **21/04/2023**

Next calibration due: **20/06/2023**

Multi Parameter Water Meter

Instrument **YSI Pro DSS**
Serial No. **21K101476**

airmet

Air-Met Scientific Pty. Ltd
1300 137 067

Item	Test	Pass	Comments
Battery	Charge Condition	✓	
	Fuses	✓	
	Capacity	✓	
	Recharge OK?	✓	
Switch/keypad	Operation	✓	
Display	Intensity	✓	
	Operation (segments)	✓	
Grill Filter	Condition	✓	
	Seal	✓	
PCB	Condition	✓	
Connectors	Condition	✓	
Sensor	1. pH/ORP	✓	
	2. Turbidity	✓	
	3. Conductivity	✓	
	4. D.O	✓	
	5. Temp	✓	
	6. Depth	x	
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 7.00		pH 7.00	NIST	393774	pH 6.95
2. pH 4.00		pH 4.00	NIST	399527	pH 4.03
3. mV		232.96mV	NIST	398884/400204	233.2mV
4. EC		2760uS	NIST	396172	2768uS
6. D.O		0.0%	NIST	391223	0.00%
7. Temp		23.6 °C	NIST	MultiTherm	23.3 °C
8.Tubidity		100NTU	NIST	396426	99.80 NTU

Calibrated by: **Yu Jiang**

Calibration date: **26/04/2023**

Next calibration due: **27/10/2023**

Multi Parameter Water Meter

Instrument	**YSI Pro DSS**
Serial No.	**21K101476**

airmet

Air-Met Scientific Pty Ltd
1300 137 067

Item	Test	Pass	Comments
Battery	Charge Condition	✓	
	Fuses	✓	
	Capacity	✓	
	Recharge OK?	✓	
Switch/keypad	Operation	✓	
Display	Intensity	✓	
	Operation (segments)	✓	
Grill Filter	Condition	✓	
	Seal	✓	
PCB	Condition	✓	
Connectors	Condition	✓	
Sensor	1. pH/ORP	✓	
	2. Turbidity	✓	
	3. Conductivity	✓	
	4. D.O	✓	
	5. Temp	✓	
	6. Depth	x	
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 7.00		pH 7.00	NIST	399304	pH 6.89
2. pH 4.00		pH 4.00	NIST	399527	pH 3.91
3. ORP		236.48mV	NIST	A393379/B393380	235.8mV
4. EC		2760uS	NIST	401089	2767uS
6. D.O		0.0%	NIST	12110	-0.5%
7. Temp		21.5°C	NIST	MultiTherm	21.5°C
8.Tubidity		100NTU	NIST	396426	98.5NTU

Calibrated by: **Jesse Stenroos**

Calibration date: **30/05/2023**

Next calibration due: **29/06/2023**

Oil / Water Interface Meter

Instrument **Geotech Interface Meter (60m)**
Serial No. **3882**

airmet
Air Met Scientific Pty Ltd
1300 137 067

Item	Test	Pass	Comments
Battery	Compartment	✓	
	Capacity	✓	
Probe	Cleaned/Decon.	✓	
	Operation	✓	
Connectors	Condition	✓	
Tape Check Connectors	Cleaned	✓	
	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: **Yu Jiang**

Calibration date: **03-May-23**

Next calibration due: **03-Jul-23**

Multi Parameter Water Meter

Instrument **YSI Pro DSS**
Serial No. **15D101557**

Air-Met Scientific Pty Ltd
1300 137 067

Item	Test	Pass	Comments
Battery	Charge Condition	✓	
	Fuses	✓	
	Capacity	✓	
	Recharge OK?	✓	
Switch/keypad	Operation	✓	
Display	Intensity	✓	
	Operation (segments)	✓	
Grill Filter	Condition	✓	
	Seal	✓	
PCB	Condition	✓	
Connectors	Condition	✓	
Sensor			
	1. Turbidity	✓	
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. EC		2760uS/cm		401089	2759uS/cm
2. Temp		22.7°C		Testo	22.7°C
3. pH 4		pH 4.00		399527	pH 3.95
4. pH 7		pH 7.00		399304	pH 7
5. DO		0.00%		12110	-0.3%
6.Turbidity		100NTU		402593	101.5NTU
7. ORP		234.06mV		A393379/B398193	234.3mV

Calibrated by: **Jesse Stenroos**

Calibration date: **30/06/2023**

Next calibration due: **30/07/2023**

Oil / Water Interface Meter

Instrument Geotech Interface Meter (60M)
Serial No. 3911

airmet
Air-Met Scientific Pty Ltd
1300 137 067

Item	Test	Pass	Comments
Battery	Compartment	✓	
	Capacity above 7.9v	✓	
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: Guido Camera

Calibration date: 14/06/2023

Next calibration due: 13/08/2023

Multi Parameter Water Meter

Instrument **YSI Pro DSS**
Serial No. **21K101477**

Air-Met Scientific Pty Ltd
1300 137 067

Item	Test	Pass	Comments
Battery	Charge Condition	✓	
	Fuses	✓	
	Capacity	✓	
	Recharge OK?	✓	
Switch/keypad	Operation	✓	
Display	Intensity	✓	
	Operation (segments)	✓	
Grill Filter	Condition	✓	
	Seal	✓	
PCB	Condition	✓	
Connectors	Condition	✓	
Sensor	1. pH	✓	
	2. Turbidity	x	
	3. Conductivity	✓	
	4. D.O	✓	
	5. Temp	✓	
	6. Depth	x	
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 7.00		pH 7.00		399304	pH 6.99
2. pH 4.00		pH 4.00		399527	pH 4.09
3. ORP		233.84 mV		A393379/B398193	233.7 mV
4. EC		2760mS		401089	2764 mS
5. D.O		0.0%		399958	-0.4%
6. Temp		22.8°C		MultiTherm	20.8°C
&. Turbidity		100NTU		396426	100.52 NTU

Calibrated by: **Izack Muhlbock**

Calibration date: **31/07/2023**

Next calibration due: **30/08/2023**

Oil / Water Interface Meter

airmet
Air-Met Scientific Pty Ltd
1300 137 067

Instrument Geotech Interface Meter (60M)
Serial No. 5810

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: Guido Camera

Calibration date: 2/08/2023

Next calibration due: 1/10/2023

Multi Parameter Water Meter

Instrument **YSI Pro DSS**
Serial No. **21K101477**

airmet

Air-Met Scientific Pty Ltd
1300 137 067

Item	Test	Pass	Comments
Battery	Charge Condition	✓	
	Fuses	✓	
	Capacity	✓	
	Recharge OK?	✓	
Switch/keypad	Operation	✓	
Display	Intensity	✓	
	Operation (segments)	✓	
Grill Filter	Condition	✓	
	Seal	✓	
PCB	Condition	✓	
Connectors	Condition	✓	
Sensor	1. pH	✓	
	2. Turbidity	✓	
	3. Conductivity	✓	
	4. D.O	✓	
	5. Temp	✓	
	6. Depth	✓	
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 7.00		pH 7.00		399304	pH 7.09
2. pH 4.00		pH 4.00		399527	pH 3.96
3. ORP		234.94 mV		A393379/B398193	235 mV
4. EC		2760mS		401089	2764 mS
5. D.O		0.0%		399958	-0.4%
6. Temp		22.3°C		MultiTherm	22.3°C
&. Turbidity		100NTU		396426	99.59 NTU

Calibrated by: **Amanda Neale**

Calibration date: **29/08/2023**

Next calibration due: **28/09/2023**

Oil / Water Interface Meter

Instrument Geotech Interface Meter (60m)
Serial No. 3961

airmet
Air-Met Scientific Pty Ltd
1300 137 067

Item	Test	Pass	Comments
Battery	Compartment	✓	
	Capacity	✓	8.84 V
Probe	Cleaned/Decon.	✓	
	Operation	✓	
Connectors			
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: Guido Camera

Calibration date: 09-Aug-23

Next calibration due: 08-Oct-23

Multi Parameter Water Meter

Instrument **YSI Pro DSS**
Serial No. **21K101479**

airmet

Air-Met Scientific Pty Ltd
1300 137 067

Item	Test	Pass	Comments
Battery	Charge Condition	✓	
	Fuses	✓	
	Capacity	✓	
	Recharge OK?	✓	
Switch/keypad	Operation	✓	
Display	Intensity	✓	
	Operation (segments)	✓	
Grill Filter	Condition	✓	
	Seal	✓	
PCB	Condition	✓	
Connectors	Condition	✓	
Sensor	1. pH	✓	
	2. Turbidity	✓	
	3. Conductivity	✓	
	4. D.O	✓	
	5. Temp	✓	
	6. Depth	✓	
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. EC		2760uS/cm		401089	2764uS/cm
2. Temp		22.5°C		Instrument Temp	22.5°C
3. pH 4		pH 4.00		399527	pH 4.09
4. pH 7		pH 7.00		399304	pH 7.02
5. DO		0.00%		399958	0.0%
6.Turbidity		100NTU		406442	99.6NTU
7. ORP		234.50mV		A393379/B398193	235.70mV

Calibrated by: **Amanda Neale**

Calibration date: **29/08/2023**

Next calibration due: **28/09/2023**

Appendix F

Field sheets

SURFACE WATER SAMPLING RECORD

PROJECT NO.	12554717	**SURFACE WATER ID:**	BADDS
PROJECT NAME:	M12 Motorway	**DATE:**	04-04-2023
CLIENT:	Transport for NSW	**TIME:**	7:37
SITE:	M12 - West	**LOGGED BY:**	E. Smith / T. Nham
COORDINATES/GPS *(if applicable)*	-33.8568676379326, 150.757776857932		
SAMPLING METHOD *(ie grab, bucket)*	Grab sample		
DETAILED SAMPLE LOCATION DESCRIPTION	Badgery's Creek - Downstream		

ENVIRONMENTAL OBSERVATIONS

WEATHER	Sunny
VEGETATION	Dense weeds covering banks
SLOPE	Steep on both sides
EROSION	No
OTHER	Green-brown, turbid, no odour/sheen.

FIELD MEASUREMENTS

TEMPERATURE (°C)	17.1
CONDUCTIVITY (µS/cm)	1329
pH	7.62
DO (ppm)	4.27
DO (%S)	44.5
REDOX (mV)	100.1
TURBIDITY (NTU)	183.95

HYDROLOGICAL DATA

FLOW MEASUREMENT	Very slight, 0.05 m/s
CROSS SECTION WIDTH (m)	5
DEPTH (m)	1
OTHER	

SAMPLE NO.	NO. OF CONTAINERS	PRESERVATIVE	DUPLICATE	COMMENTS
BADDS	11	Yes	No	

FIELD SUPERVISOR	E. Smith	**CHECKED (SIGN & DATE)**	esmith 06-04-2023

SURFACE WATER SAMPLING RECORD

PROJECT NO.	12554717	**SURFACE WATER ID:**	BADMS
PROJECT NAME:	M12 Motorway	**DATE:**	04-04-2023
CLIENT:	Transport for NSW	**TIME:**	7:26
SITE:	M12 - West	**LOGGED BY:**	E. Smith / T. Nham
COORDINATES/GPS *(if applicable)*	-33.859555514706, 150.75473582078		
SAMPLING METHOD *(ie grab, bucket)*	Grab sample		
DETAILED SAMPLE LOCATION DESCRIPTION	Badgery's Creek - Midstream		

ENVIRONMENTAL OBSERVATIONS

WEATHER	Sunny
VEGETATION	Grass and low shrubs on banks
SLOPE	Moderate in both wells
EROSION	No
OTHER	Green-yellow tinge, mostly clear, no odour/sheen

FIELD MEASUREMENTS

TEMPERATURE (°C)	17.4
CONDUCTIVITY (µS/cm)	1350
pH	7.48
DO (%S)	33.7
REDOX (mV)	95.0
TURBIDITY (NTU)	153.87

HYDROLOGICAL DATA

FLOW MEASUREMENT	Moderate, 0.2 m/s
CROSS SECTION WIDTH (m)	5
DEPTH (m)	<1
OTHER	

SAMPLE NO.	NO. OF CONTAINERS	PRESERVATIVE	DUPLICATE	COMMENTS
BADMS	11	Yes	No	

FIELD SUPERVISOR **CHECKED (SIGN & DATE)**

SURFACE WATER SAMPLING RECORD

PROJECT NO.	12554717	**SURFACE WATER ID:**	BADUS
PROJECT NAME:	M12 Motorway	**DATE:**	04-04-2023
CLIENT:	Transport for NSW	**TIME:**	8:41
SITE:	M12 - West	**LOGGED BY:**	E. Smith / T. Nham
COORDINATES/GPS *(if applicable)*	-33.8738120940615, 150.754813158426		
SAMPLING METHOD *(ie grab, bucket)*	Grab sample		
DETAILED SAMPLE LOCATION DESCRIPTION	Badgery's Creek - Upstream		

ENVIRONMENTAL OBSERVATIONS

WEATHER	Sunny
VEGETATION	Grass and weeds on banks, trees overhanging creek
SLOPE	Steep on both sides
EROSION	No
OTHER	Green-brown, turbid, no odour/sheen

FIELD MEASUREMENTS

TEMPERATURE (°C)	17.1
CONDUCTIVITY (µS/cm)	1477
pH	7.81
DO (ppm)	4.75
DO (%S)	49.5
REDOX (mV)	112.4
TURBIDITY (NTU)	150.86

HYDROLOGICAL DATA

FLOW MEASUREMENT	Slight, 0.5 m/s
CROSS SECTION WIDTH (m)	5
DEPTH (m)	1
OTHER	Sampled on other side of Creek due to concrete barriers on either side of Elizabeth Dr approaching bridge.

SAMPLE NO.	NO. OF CONTAINERS	PRESERVATIVE	DUPLICATE	COMMENTS
BADUS	11	Yes	No	

FIELD SUPERVISOR	E. Smith	**CHECKED (SIGN & DATE)**	esmith 06-04-2023

SURFACE WATER SAMPLING RECORD

PROJECT NO.	12554717	**SURFACE WATER ID:**	COSDS
PROJECT NAME:	M12 Motorway	**DATE:**	04-04-2023
CLIENT:	Transport for NSW	**TIME:**	8:04
SITE:	M12 - West	**LOGGED BY:**	E. Smith / T. Nham
COORDINATES/GPS *(if applicable)*	-33.8572573122049, 150.732788594288		
SAMPLING METHOD *(ie grab, bucket)*	Grab sample		
DETAILED SAMPLE LOCATION DESCRIPTION	Cosgroves Creek - Downstream		

ENVIRONMENTAL OBSERVATIONS

WEATHER	Sunny
VEGETATION	Dense weeds on bank
SLOPE	Steep on both sides
EROSION	No
OTHER	Green-brown, turbid, no odour, slight organic sheen.

FIELD MEASUREMENTS

TEMPERATURE (°C)	17.3
CONDUCTIVITY (µS/cm)	1478
pH	8.01
DO (ppm)	4.23
DO (%S)	44.3
REDOX (mV)	112.8
TURBIDITY (NTU)	198.57

HYDROLOGICAL DATA

FLOW MEASUREMENT	Stagnant, no flow
CROSS SECTION WIDTH (m)	1
DEPTH (m)	0.3
OTHER	Very low water level compared to previous rounds

SAMPLE NO.	NO. OF CONTAINERS	PRESERVATIVE	DUPLICATE	COMMENTS
COSDS	11	Yes	No	

FIELD SUPERVISOR	E. Smith	**CHECKED (SIGN & DATE)**	esmith 06-04-2023

SURFACE WATER SAMPLING RECORD

PROJECT NO.	12554717	**SURFACE WATER ID:**	COSUS
PROJECT NAME:	M12 Motorway	**DATE:**	04-04-2023
CLIENT:	Transport for NSW	**TIME:**	8:14
SITE:	M12 - West	**LOGGED BY:**	E. Smith / T. Nham
COORDINATES/GPS *(if applicable)*	-33.8596027431528, 150.729091683614		
SAMPLING METHOD *(ie grab, bucket)*	Grab sample		
DETAILED SAMPLE LOCATION DESCRIPTION	Cosgroves Creek - Upstream		

ENVIRONMENTAL OBSERVATIONS

WEATHER	Sunny
VEGETATION	Grass, trees on banks
SLOPE	Steep on both sides
EROSION	No
OTHER	Brown, turbid, no odour/sheen.

FIELD MEASUREMENTS

TEMPERATURE (°C)	16.7
CONDUCTIVITY (µS/cm)	1640
pH	7.97
DO (ppm)	3.26
DO (%S)	32.5
REDOX (mV)	119.2
TURBIDITY (NTU)	528.00

HYDROLOGICAL DATA

FLOW MEASUREMENT	Extremely slight, 0.01 m/s
CROSS SECTION WIDTH (m)	3
DEPTH (m)	<0.5
OTHER	Very low water level compared to previous rounds

SAMPLE NO.	NO. OF CONTAINERS	PRESERVATIVE	DUPLICATE	COMMENTS
COSUS	11	Yes	No	

FIELD SUPERVISOR	E. Smith	**CHECKED (SIGN & DATE)**	esmith 06-04-2023

SURFACE WATER SAMPLING RECORD

PROJECT NO.	12554717	**SURFACE WATER ID:**	HINDS
PROJECT NAME:	M12 Motorway	**DATE:**	04-04-2023
CLIENT:	Transport for NSW	**TIME:**	04-04-23
SITE:	M12 - East	**LOGGED BY:**	E. Smith / T. Nham
COORDINATES/GPS *(if applicable)*	-33.8940857502266, 150.841997294191		
SAMPLING METHOD *(ie grab, bucket)*	Grab sample		
DETAILED SAMPLE LOCATION DESCRIPTION	Hinchinbrook Creek - Downstream		

ENVIRONMENTAL OBSERVATIONS

WEATHER	Sunny
VEGETATION	Grass on banks
SLOPE	Moderate
EROSION	Yes, bank erosion
OTHER	Brown, turbid, no odour/sheen.

FIELD MEASUREMENTS

TEMPERATURE (°C)	20.0
CONDUCTIVITY (µS/cm)	358
pH	8.00
DO (ppm)	7.23
DO (%S)	79.7
REDOX (mV)	126.4
TURBIDITY (NTU)	22.25

HYDROLOGICAL DATA

FLOW MEASUREMENT	Stagnant
CROSS SECTION WIDTH (m)	100
DEPTH (m)	>1
OTHER	

SAMPLE NO.	NO. OF CONTAINERS	PRESERVATIVE	DUPLICATE	COMMENTS
HINDS	11	Yes	No	

FIELD SUPERVISOR	E. Smith	**CHECKED (SIGN & DATE)**	esmith 06-04-2023

SURFACE WATER SAMPLING RECORD

PROJECT NO.	12554717	**SURFACE WATER ID:**	HINUS
PROJECT NAME:	M12 Motorway	**DATE:**	04-04-2023
CLIENT:	Transport for NSW	**TIME:**	15:34
SITE:	M12 - East	**LOGGED BY:**	E. Smith / T. Nham
COORDINATES/GPS *(if applicable)*	-33.885917091217, 150.822297157323		
SAMPLING METHOD *(ie grab, bucket)*	Grab sample		
DETAILED SAMPLE LOCATION DESCRIPTION	Hinchinbrook Creek - Upstream		

ENVIRONMENTAL OBSERVATIONS

WEATHER	Sunny
VEGETATION	Grass, tall reeds, algae visible on bottom
SLOPE	None
EROSION	No
OTHER	Green-brown, turbid, no odour/sheen.

FIELD MEASUREMENTS

TEMPERATURE (°C)	24.4
CONDUCTIVITY (µS/cm)	471
pH	9.08
DO (ppm)	12.58
DO (%S)	151.4
REDOX (mV)	110.1
TURBIDITY (NTU)	63.52

HYDROLOGICAL DATA

FLOW MEASUREMENT	Stagnant, no flow
CROSS SECTION WIDTH (m)	50
DEPTH (m)	>0.5
OTHER	

SAMPLE NO.	NO. OF CONTAINERS	PRESERVATIVE	DUPLICATE	COMMENTS
HINUS	11	Yes	No	

FIELD SUPERVISOR	E. Smith	**CHECKED (SIGN & DATE)**	esmith 06-04-2023

SURFACE WATER SAMPLING RECORD

PROJECT NO.	12554717	**SURFACE WATER ID:**	KEMDS
PROJECT NAME:	M12 Motorway	**DATE:**	05-04-2023
CLIENT:	Transport for NSW	**TIME:**	9:00
SITE:	M12 - Central	**LOGGED BY:**	E. Smith / T. Nham
COORDINATES/GPS *(if applicable)*	-33.8744916131181, 150.798975039418		
SAMPLING METHOD *(ie grab, bucket)*	Grab sample		
DETAILED SAMPLE LOCATION DESCRIPTION	Kemps Creek - Downstream		

ENVIRONMENTAL OBSERVATIONS

WEATHER	Sunny
VEGETATION	Grass on banks, trees overhanging creek
SLOPE	None
EROSION	No
OTHER	Green-brown, turbid, no odour/sheen.

FIELD MEASUREMENTS

TEMPERATURE (°C)	17.5
CONDUCTIVITY (µS/cm)	1072
pH	7.84
DO (ppm)	4.99
DO (%S)	52.4
REDOX (mV)	130.0
TURBIDITY (NTU)	66.20

HYDROLOGICAL DATA

FLOW MEASUREMENT	Slight, 0.1 m/s
CROSS SECTION WIDTH (m)	3
DEPTH (m)	1
OTHER	

SAMPLE NO.	NO. OF CONTAINERS	PRESERVATIVE	DUPLICATE	COMMENTS
KEMDS	11	Yes	SWDUP2	Eurofins duplicate metals

FIELD SUPERVISOR	E. Smith	**CHECKED (SIGN & DATE)**	esmith 06-04-2023

SURFACE WATER SAMPLING RECORD

PROJECT NO.	12554717	**SURFACE WATER ID:**	KEMUS
PROJECT NAME:	M12 Motorway	**DATE:**	05-04-2023
CLIENT:	Transport for NSW	**TIME:**	11:46
SITE:	M12 - Central	**LOGGED BY:**	E. Smith / T. Nham

COORDINATES/GPS *(if applicable)* -33.881000984653, 150.798710837019

SAMPLING METHOD *(ie grab, bucket)* Grab sample

DETAILED SAMPLE LOCATION DESCRIPTION Kemps Creek - Upstream

ENVIRONMENTAL OBSERVATIONS

WEATHER	Cloudy
VEGETATION	Weeds on banks, trees overhanging creek
SLOPE	None
EROSION	No
OTHER	Green-brown, turbid, no odour/sheen.

FIELD MEASUREMENTS

TEMPERATURE (°C)	17.8
CONDUCTIVITY (µS/cm)	1401
pH	8.35
DO (ppm)	5.27
DO (%S)	55.4
REDOX (mV)	26.2
TURBIDITY (NTU)	63.36

HYDROLOGICAL DATA

FLOW MEASUREMENT	Very slight, 0.05 m/s
CROSS SECTION WIDTH (m)	5
DEPTH (m)	>1
OTHER	

SAMPLE NO.	NO. OF CONTAINERS	PRESERVATIVE	DUPLICATE	COMMENTS
KEMUS	11	Yes	No	

FIELD SUPERVISOR E. Smith **CHECKED (SIGN & DATE)** esmith 06-04-2023

SURFACE WATER SAMPLING RECORD

PROJECT NO.	12554717	**SURFACE WATER ID:**	ROPDS
PROJECT NAME:	M12 Motorway	**DATE:**	04-04-2023
CLIENT:	Transport for NSW	**TIME:**	13:03
SITE:	M12 - East	**LOGGED BY:**	E. Smith / T. Nham
COORDINATES/GPS *(if applicable)*	-33.8661214462004, 150.84622034034		
SAMPLING METHOD *(ie grab, bucket)*	Grab sample		
DETAILED SAMPLE LOCATION DESCRIPTION	Ropes Creek - Downstream		

ENVIRONMENTAL OBSERVATIONS

WEATHER	Cloudy, humid
VEGETATION	Grass and weeds surrounding, tall reeds in water
SLOPE	None
EROSION	No
OTHER	Slight yellow tinge, mostly clear, no odour/sheen.

FIELD MEASUREMENTS

TEMPERATURE (°C)	19.1
CONDUCTIVITY (µS/cm)	1063
pH	7.50
DO (ppm)	6.44
DO (%S)	69.7
REDOX (mV)	95.0
TURBIDITY (NTU)	25.57

HYDROLOGICAL DATA

FLOW MEASUREMENT	Stagnant
CROSS SECTION WIDTH (m)	2
DEPTH (m)	1
OTHER	From sampling point, pond looks black, potentially due to sediment on bottom.

SAMPLE NO.	NO. OF CONTAINERS	PRESERVATIVE	DUPLICATE	COMMENTS
ROPDS	11	Yes	No	

FIELD SUPERVISOR	E. Smith	**CHECKED (SIGN & DATE)**	esmith 06-04-2023

SURFACE WATER SAMPLING RECORD

PROJECT NO.	12554717	**SURFACE WATER ID:**	ROPUS
PROJECT NAME:	M12 Motorway	**DATE:**	04-04-2023
CLIENT:	Transport for NSW	**TIME:**	13:33
SITE:	M12 - East	**LOGGED BY:**	E. Smith / T. Nham
COORDINATES/GPS *(if applicable)*	-33.8661748475932, 150.849684345683		
SAMPLING METHOD *(ie grab, bucket)*	Grab sample		
DETAILED SAMPLE LOCATION DESCRIPTION	Ropes Creek - Upstream		

ENVIRONMENTAL OBSERVATIONS

WEATHER	Sunny
VEGETATION	Reeds in water
SLOPE	None
EROSION	No
OTHER	Green-brown, turbid, no odour/sheen.

FIELD MEASUREMENTS

TEMPERATURE (°C)	24.1
CONDUCTIVITY (µS/cm)	270
pH	8.07
DO (ppm)	10.12
DO (%S)	120.9
REDOX (mV)	105.5
TURBIDITY (NTU)	201.50

HYDROLOGICAL DATA

FLOW MEASUREMENT	No
CROSS SECTION WIDTH (m)	50
DEPTH (m)	1
OTHER	Turbidity measured from sample decanted into a cup, not in situ reading.

SAMPLE NO.	NO. OF CONTAINERS	PRESERVATIVE	DUPLICATE	COMMENTS
ROPUS	11	Yes	No	

FIELD SUPERVISOR	E. Smith	**CHECKED (SIGN & DATE)**	esmith 06-04-2023

SURFACE WATER SAMPLING RECORD

PROJECT NO.	12554717	**SURFACE WATER ID:**	SOUDS
PROJECT NAME:	M12 Motorway	**DATE:**	05-04-2023
CLIENT:	Transport for NSW	**TIME:**	7:46
SITE:	M12 - Central	**LOGGED BY:**	E. Smith / T. Nham
COORDINATES/GPS *(if applicable)*	-33.8601918874489, 150.768886308687		
SAMPLING METHOD *(ie grab, bucket)*	Grab sample		
DETAILED SAMPLE LOCATION DESCRIPTION	South Creek - Downstream		

ENVIRONMENTAL OBSERVATIONS

WEATHER	Sunny
VEGETATION	Grass on banks, trees on northern side, vegetation cleared on southern side with rock walls installed
SLOPE	Steep on both sides with southern side built up with ongoing construction activities
EROSION	None
OTHER	Brown, turbid, no odour/sheen.

FIELD MEASUREMENTS

TEMPERATURE (°C)	18.3
CONDUCTIVITY (µS/cm)	858
pH	8.05
DO (ppm)	5.94
DO (%S)	63.2
REDOX (mV)	111.6
TURBIDITY (NTU)	101.84

HYDROLOGICAL DATA

FLOW MEASUREMENT	Veryv slight, 0.05 m/s
CROSS SECTION WIDTH (m)	12
DEPTH (m)	1
OTHER	

SAMPLE NO.	NO. OF CONTAINERS	PRESERVATIVE	DUPLICATE	COMMENTS
SOUDS	11	Yes	No	

FIELD SUPERVISOR	E. Smith	**CHECKED (SIGN & DATE)**	esmith 06-04-2023

SURFACE WATER SAMPLING RECORD

PROJECT NO.	12554717	**SURFACE WATER ID:**	SOUUS
PROJECT NAME:	M12 Motorway	**DATE:**	04-04-2023
CLIENT:	Transport for NSW	**TIME:**	8:05
SITE:	M12 - Central	**LOGGED BY:**	E. Smith / T. Nham

COORDINATES/GPS *(if applicable)* -33.8618105129283, 150.770918661765

SAMPLING METHOD *(ie grab, bucket)* Grab sample

DETAILED SAMPLE LOCATION DESCRIPTION South Creek - Upstream

ENVIRONMENTAL OBSERVATIONS

WEATHER	Sunny
VEGETATION	Grass on both slopes of bank
SLOPE	Steep
EROSION	No
OTHER	Green-brown, turbid, no odour/sheen

FIELD MEASUREMENTS

TEMPERATURE (°C)	17.9
CONDUCTIVITY (µS/cm)	826
pH	8.03
DO (ppm)	5.48
DO (%S)	57.9
REDOX (mV)	121.3
TURBIDITY (NTU)	96.36

HYDROLOGICAL DATA

FLOW MEASUREMENT	Very slight, 0.05m/s
CROSS SECTION WIDTH (m)	12
DEPTH (m)	>1
OTHER	

SAMPLE NO.	NO. OF CONTAINERS	PRESERVATIVE	DUPLICATE	COMMENTS
SOUUS	11	Yes	SWDUP1	ALS duplicate metals

FIELD SUPERVISOR E. Smith **CHECKED (SIGN & DATE)** esmith 06-04-2023

SURFACE WATER SAMPLING RECORD

PROJECT NO.	12554717	**SURFACE WATER ID:**	BADDS
PROJECT NAME:	M12 Motorway	**DATE:**	01-05-2023
CLIENT:	Transport for NSW	**TIME:**	11:22
SITE:	M12 - West	**LOGGED BY:**	E. Smith / A. Duval
COORDINATES/GPS *(if applicable)*	-33.8568676379326, 150.757776857932		
SAMPLING METHOD *(ie grab, bucket)*	Grab		
DETAILED SAMPLE LOCATION DESCRIPTION	Badgery's Creek - Downstream		

ENVIRONMENTAL OBSERVATIONS

WEATHER	Clear
VEGETATION	Shrubs, some debris in channel
SLOPE	None
EROSION	None
OTHER	Light brown/grey tinge, partly cloudy, no odour, no sheen

FIELD MEASUREMENTS

TEMPERATURE (°C)	16.9
CONDUCTIVITY (µS/cm)	1053
pH	6.93
DO (ppm)	8.26
DO (%S)	85.8
REDOX (mV)	148.3
TURBIDITY (NTU)	339.80

HYDROLOGICAL DATA

FLOW MEASUREMENT	0.05m/s
CROSS SECTION WIDTH (m)	10
DEPTH (m)	>1
OTHER	

SAMPLE NO.	NO. OF CONTAINERS	PRESERVATIVE	DUPLICATE	COMMENTS
BADDS	11	Yes	No	

FIELD SUPERVISOR	E. Smith	**CHECKED (SIGN & DATE)**	esmith 02/05/2023

SURFACE WATER SAMPLING RECORD

PROJECT NO.	12554717	**SURFACE WATER ID:**	BADMS
PROJECT NAME:	M12 Motorway	**DATE:**	01-05-2023
CLIENT:	Transport for NSW	**TIME:**	11:38
SITE:	M12 - West	**LOGGED BY:**	E. Smith / A. Duval
COORDINATES/GPS *(if applicable)*	-33.859555514706, 150.75473582078		
SAMPLING METHOD *(ie grab, bucket)*	Grab		
DETAILED SAMPLE LOCATION DESCRIPTION	Badgery's Creek - Midstream		

ENVIRONMENTAL OBSERVATIONS

WEATHER	Clear
VEGETATION	Shrubs
SLOPE	None
EROSION	None
OTHER	Light brown, cloudy, no odour, no shee, light sediment load on surface of creek

FIELD MEASUREMENTS

TEMPERATURE (°C)	14.2
CONDUCTIVITY (µS/cm)	977
pH	6.81
DO (ppm)	7.00
DO (%S)	68.4
REDOX (mV)	142.0
TURBIDITY (NTU)	232.41

HYDROLOGICAL DATA

FLOW MEASUREMENT	0.10m/s
CROSS SECTION WIDTH (m)	5
DEPTH (m)	~1
OTHER	

SAMPLE NO.	NO. OF CONTAINERS	PRESERVATIVE	DUPLICATE	COMMENTS
BADMS	11	No	No	

FIELD SUPERVISOR	E. Smith	**CHECKED (SIGN & DATE)**	esmith 02/05/2023

SURFACE WATER SAMPLING RECORD

PROJECT NO.	12554717	**SURFACE WATER ID:**	BADUS
PROJECT NAME:	M12 Motorway	**DATE:**	01-05-2023
CLIENT:	Transport for NSW	**TIME:**	11:59
SITE:	M12 - West	**LOGGED BY:**	E. Smith / A. Duval
COORDINATES/GPS *(if applicable)*	-33.8738120940615, 150.754813158426		
SAMPLING METHOD *(ie grab, bucket)*	Grab		
DETAILED SAMPLE LOCATION DESCRIPTION	Badgery's Creek - Upstream		

ENVIRONMENTAL OBSERVATIONS

WEATHER	Clear
VEGETATION	Grasses and shrubs
SLOPE	None
EROSION	None
OTHER	Pale yellow tinge, no, no sheen

FIELD MEASUREMENTS

TEMPERATURE (°C)	16.2
CONDUCTIVITY (µS/cm)	1040
pH	6.95
DO (ppm)	8.24
DO (%S)	84.2
REDOX (mV)	150.1
TURBIDITY (NTU)	370.94

HYDROLOGICAL DATA

FLOW MEASUREMENT	0.1m/s
CROSS SECTION WIDTH (m)	3
DEPTH (m)	<1
OTHER	

SAMPLE NO.	NO. OF CONTAINERS	PRESERVATIVE	DUPLICATE	COMMENTS
BADUS	11	No	No	

FIELD SUPERVISOR	E. Smith	**CHECKED (SIGN & DATE)**	esmith 02/05/2023

SURFACE WATER SAMPLING RECORD

PROJECT NO.	12554717	**SURFACE WATER ID:**	COSDS
PROJECT NAME:	M12 Motorway	**DATE:**	01-05-2023
CLIENT:	Transport for NSW	**TIME:**	10:56
SITE:	M12 - West	**LOGGED BY:**	E. Smith / A. Duval
COORDINATES/GPS *(if applicable)*	-33.8572573122049, 150.732788594288		
SAMPLING METHOD *(ie grab, bucket)*	Grab		
DETAILED SAMPLE LOCATION DESCRIPTION	Cosgroves Creek - Downstream		

ENVIRONMENTAL OBSERVATIONS

WEATHER	Clear
VEGETATION	Shrubs, grasses
SLOPE	None
EROSION	None
OTHER	Pale yellow tinge, no odour, no sheen

FIELD MEASUREMENTS

TEMPERATURE (°C)	16.6
CONDUCTIVITY (µS/cm)	809
pH	7.02
DO (ppm)	8.21
DO (%S)	84.6
REDOX (mV)	116.2
TURBIDITY (NTU)	296.55

HYDROLOGICAL DATA

FLOW MEASUREMENT	0.05m/s
CROSS SECTION WIDTH (m)	5
DEPTH (m)	>1
OTHER	

SAMPLE NO.	NO. OF CONTAINERS	PRESERVATIVE	DUPLICATE	COMMENTS
COSDS	11	Yes	No	

FIELD SUPERVISOR	E. Smith	**CHECKED (SIGN & DATE)**	esmith 02/05/2023

SURFACE WATER SAMPLING RECORD

PROJECT NO.	12554717	**SURFACE WATER ID:**	COSUS
PROJECT NAME:	M12 Motorway	**DATE:**	01-05-2023
CLIENT:	Transport for NSW	**TIME:**	10:42
SITE:	M12 - West	**LOGGED BY:**	E. Smith / A. Duval
COORDINATES/GPS *(if applicable)*	-33.8596027431528, 150.729091683614		
SAMPLING METHOD *(ie grab, bucket)*	Grab		
DETAILED SAMPLE LOCATION DESCRIPTION	Cosgroves Creek - Upstream		

ENVIRONMENTAL OBSERVATIONS

WEATHER	Clear
VEGETATION	Shrubs
SLOPE	None
EROSION	None
OTHER	Pale yellow tinge, no odour, no sheen

FIELD MEASUREMENTS

TEMPERATURE (°C)	15.1
CONDUCTIVITY (µS/cm)	772
pH	7.01
DO (ppm)	7.52
DO (%S)	74.9
REDOX (mV)	94.9
TURBIDITY (NTU)	58.91

HYDROLOGICAL DATA

FLOW MEASUREMENT	0.25m/s
CROSS SECTION WIDTH (m)	5
DEPTH (m)	<1
OTHER	

SAMPLE NO.	NO. OF CONTAINERS	PRESERVATIVE	DUPLICATE	COMMENTS
COSUS	11	Yes	SWDUP2	
SWDUP2	1	Yes		Eurofins metals

FIELD SUPERVISOR	E. Smith	**CHECKED (SIGN & DATE)**	esmith 02/05/2023

SURFACE WATER SAMPLING RECORD

PROJECT NO.	12554717	**SURFACE WATER ID:**	HINDS
PROJECT NAME:	M12 Motorway	**DATE:**	01-05-2023
CLIENT:	Transport for NSW	**TIME:**	9:28
SITE:	M12 - East	**LOGGED BY:**	E. Smith / A. Duval
COORDINATES/GPS *(if applicable)*	-33.8940857502266, 150.841997294191		
SAMPLING METHOD *(ie grab, bucket)*	Grab		
DETAILED SAMPLE LOCATION DESCRIPTION	Hinchinbrook Creek - Downstream		

ENVIRONMENTAL OBSERVATIONS

WEATHER	Clear
VEGETATION	Shrubs and grasses
SLOPE	None
EROSION	None
OTHER	Pale yellow tinge, no odour, no sheen, scum on surface of pond

FIELD MEASUREMENTS

TEMPERATURE (°C)	18.1
CONDUCTIVITY (µS/cm)	403
pH	7.10
DO (ppm)	7.88
DO (%S)	83.6
REDOX (mV)	130.8
TURBIDITY (NTU)	207.26

HYDROLOGICAL DATA

FLOW MEASUREMENT	No flow, pond
CROSS SECTION WIDTH (m)	100m, pond
DEPTH (m)	>1
OTHER	

SAMPLE NO.	NO. OF CONTAINERS	PRESERVATIVE	DUPLICATE	COMMENTS
HINDS	11	Yes	No	

FIELD SUPERVISOR	E. Smith	**CHECKED (SIGN & DATE)**	esmith 02/05/2023

SURFACE WATER SAMPLING RECORD

PROJECT NO.	12554717	**SURFACE WATER ID:**	HINUS
PROJECT NAME:	M12 Motorway	**DATE:**	01-05-2023
CLIENT:	Transport for NSW	**TIME:**	10:33
SITE:	M12 - East	**LOGGED BY:**	E. Smith / A. Duval
COORDINATES/GPS *(if applicable)*	-33.885917091217, 150.822297157323		
SAMPLING METHOD *(ie grab, bucket)*	Grab		
DETAILED SAMPLE LOCATION DESCRIPTION	Hinchinbrook Creek - Upstream		

ENVIRONMENTAL OBSERVATIONS

WEATHER	Clear
VEGETATION	Grasses and shrubs
SLOPE	None
EROSION	None
OTHER	Pale yellow tinge, no odour, no sheen

FIELD MEASUREMENTS

TEMPERATURE (°C)	16.9
CONDUCTIVITY (µS/cm)	466
pH	6.98
DO (ppm)	6.49
DO (%S)	67.1
REDOX (mV)	117.4
TURBIDITY (NTU)	75.07

HYDROLOGICAL DATA

FLOW MEASUREMENT	No flow, pond
CROSS SECTION WIDTH (m)	50m, pond
DEPTH (m)	>1m
OTHER	

SAMPLE NO.	NO. OF CONTAINERS	PRESERVATIVE	DUPLICATE	COMMENTS
HINUS	11	Yes	No	

FIELD SUPERVISOR	E. Smith	**CHECKED (SIGN & DATE)**	esmith 02/05/2023

SURFACE WATER SAMPLING RECORD

PROJECT NO.	12554717	**SURFACE WATER ID:**	KEMDS
PROJECT NAME:	M12 Motorway	**DATE:**	01-05-2023
CLIENT:	Transport for NSW	**TIME:**	7:28
SITE:	M12 - Central	**LOGGED BY:**	E. Smith / A. Duval
COORDINATES/GPS *(if applicable)*	-33.8744916131181, 150.798975039418		
SAMPLING METHOD *(ie grab, bucket)*	Grab		
DETAILED SAMPLE LOCATION DESCRIPTION	Kemps Creek - Downstream		

ENVIRONMENTAL OBSERVATIONS

WEATHER	Clear
VEGETATION	Shrubs, grasses
SLOPE	None
EROSION	None
OTHER	Brown, turbid, no odour, no sheen

FIELD MEASUREMENTS

TEMPERATURE (°C)	15.5
CONDUCTIVITY (µS/cm)	709
pH	7.03
DO (ppm)	4.77
DO (%S)	48.1
REDOX (mV)	95.2
TURBIDITY (NTU)	93.63

HYDROLOGICAL DATA

FLOW MEASUREMENT	0.5m/s
CROSS SECTION WIDTH (m)	10m
DEPTH (m)	>1
OTHER	Higher flow than normal, approximately NE flow

SAMPLE NO.	NO. OF CONTAINERS	PRESERVATIVE	DUPLICATE	COMMENTS
KEMDS	11	Yes	No	

FIELD SUPERVISOR	E. Smith	**CHECKED (SIGN & DATE)**	esmith 02/05/2023

SURFACE WATER SAMPLING RECORD

PROJECT NO.	12554717	**SURFACE WATER ID:**	KEMUS
PROJECT NAME:	M12 Motorway	**DATE:**	01-05-2023
CLIENT:	Transport for NSW	**TIME:**	11:17
SITE:	M12 - Central	**LOGGED BY:**	E. Smith / A. Duval
COORDINATES/GPS *(if applicable)*	-33.881000984653, 150.798710837019		
SAMPLING METHOD *(ie grab, bucket)*	Grab		
DETAILED SAMPLE LOCATION DESCRIPTION	Kemps Creek - Upstream		

ENVIRONMENTAL OBSERVATIONS

WEATHER	Clear
VEGETATION	Grasses
SLOPE	None
EROSION	None
OTHER	Pale brown tinge, no odour, no sheen

FIELD MEASUREMENTS

TEMPERATURE (°C)	15.6
CONDUCTIVITY (µS/cm)	758
pH	6.96
DO (ppm)	8.01
DO (%S)	80.7
REDOX (mV)	142.6
TURBIDITY (NTU)	78.19

HYDROLOGICAL DATA

FLOW MEASUREMENT	0.1m/s
CROSS SECTION WIDTH (m)	5
DEPTH (m)	<1
OTHER	

SAMPLE NO.	NO. OF CONTAINERS	PRESERVATIVE	DUPLICATE	COMMENTS
KEMUS	11	Yes	SWDUP1	
SWDUP1	1	Yes		ALS Metals

FIELD SUPERVISOR	E. Smith	**CHECKED (SIGN & DATE)**	esmith 02/05/2023

SURFACE WATER SAMPLING RECORD

PROJECT NO.	12554717	**SURFACE WATER ID:**	ROPDS
PROJECT NAME:	M12 Motorway	**DATE:**	01-05-2023
CLIENT:	Transport for NSW	**TIME:**	8:05
SITE:	M12 - East	**LOGGED BY:**	E. Smith / A. Duval
COORDINATES/GPS *(if applicable)*	-33.8661214462004, 150.84622034034		
SAMPLING METHOD *(ie grab, bucket)*	Grab		
DETAILED SAMPLE LOCATION DESCRIPTION	Ropes Creek - Downstream		

ENVIRONMENTAL OBSERVATIONS

WEATHER	Clear
VEGETATION	Reeds, shrubs
SLOPE	None
EROSION	None
OTHER	Clear, no odour, no sheen

FIELD MEASUREMENTS

TEMPERATURE (°C)	13.0
CONDUCTIVITY (µS/cm)	518
pH	7.10
DO (ppm)	7.82
DO (%S)	74.3
REDOX (mV)	122.3
TURBIDITY (NTU)	205.29

HYDROLOGICAL DATA

FLOW MEASUREMENT	Stagnant, 0m/s
CROSS SECTION WIDTH (m)	10
DEPTH (m)	<1
OTHER	

SAMPLE NO.	NO. OF CONTAINERS	PRESERVATIVE	DUPLICATE	COMMENTS
ROPDS	11	Yes	No	

FIELD SUPERVISOR	E. Smith	**CHECKED (SIGN & DATE)**	esmith 02/05/2023

SURFACE WATER SAMPLING RECORD

PROJECT NO.	12554717	**SURFACE WATER ID:**	ROPUS
PROJECT NAME:	M12 Motorway	**DATE:**	01-05-2023
CLIENT:	Transport for NSW	**TIME:**	8:40
SITE:	M12 - East	**LOGGED BY:**	E. Smith / A. Duval
COORDINATES/GPS *(if applicable)*	-33.8661748475932, 150.849684345683		
SAMPLING METHOD *(ie grab, bucket)*	Grab		
DETAILED SAMPLE LOCATION DESCRIPTION	Ropes Creek - Upstream		

ENVIRONMENTAL OBSERVATIONS

WEATHER	Clear
VEGETATION	Reeds
SLOPE	None
EROSION	None
OTHER	Light brown, mostly clear, no odour, no sheen

FIELD MEASUREMENTS

TEMPERATURE (°C)	14.1
CONDUCTIVITY (µS/cm)	230
pH	7.02
DO (ppm)	10.52
DO (%S)	102.3
REDOX (mV)	114.6
TURBIDITY (NTU)	203.08

HYDROLOGICAL DATA

FLOW MEASUREMENT	No flow, pond
CROSS SECTION WIDTH (m)	50x50
DEPTH (m)	<1
OTHER	

SAMPLE NO.	NO. OF CONTAINERS	PRESERVATIVE	DUPLICATE	COMMENTS
ROPUS	11	Yes	No	

FIELD SUPERVISOR	E. Smith	**CHECKED (SIGN & DATE)**	esmith 02/05/2023

SURFACE WATER SAMPLING RECORD

PROJECT NO.	12554717	**SURFACE WATER ID:**	SOUDS
PROJECT NAME:	M12 Motorway	**DATE:**	01-05-2023
CLIENT:	Transport for NSW	**TIME:**	12:47
SITE:	M12 - Central	**LOGGED BY:**	E. Smith / A. Duval
COORDINATES/GPS *(if applicable)*	-33.8601918874489, 150.768886308687		
SAMPLING METHOD *(ie grab, bucket)*	Grab		
DETAILED SAMPLE LOCATION DESCRIPTION	South Creek - Downstream		

ENVIRONMENTAL OBSERVATIONS

WEATHER	Clear
VEGETATION	Grasses and shrubs
SLOPE	None
EROSION	None
OTHER	Pale yellow tinge, no odour, no sheen

FIELD MEASUREMENTS

TEMPERATURE (°C)	15.9
CONDUCTIVITY (µS/cm)	861
pH	6.88
DO (ppm)	6.73
DO (%S)	68.3
REDOX (mV)	52.0
TURBIDITY (NTU)	47.77

HYDROLOGICAL DATA

FLOW MEASUREMENT	0.2m/s
CROSS SECTION WIDTH (m)	15
DEPTH (m)	>1
OTHER	

SAMPLE NO.	NO. OF CONTAINERS	PRESERVATIVE	DUPLICATE	COMMENTS
SOUDS	11	Yes	No	

FIELD SUPERVISOR	E. Smith	**CHECKED (SIGN & DATE)**	esmith 02/05/2023

SURFACE WATER SAMPLING RECORD

PROJECT NO.	12554717	**SURFACE WATER ID:**	SOUUS
PROJECT NAME:	M12 Motorway	**DATE:**	01-05-2023
CLIENT:	Transport for NSW	**TIME:**	12:25
SITE:	M12 - Central	**LOGGED BY:**	E. Smith / A. Duval
COORDINATES/GPS *(if applicable)*	-33.8618105129283, 150.770918661765		
SAMPLING METHOD *(ie grab, bucket)*	Grab		
DETAILED SAMPLE LOCATION DESCRIPTION	South Creek - Upstream		

ENVIRONMENTAL OBSERVATIONS

WEATHER	Clear
VEGETATION	Shrubs and grasses
SLOPE	None
EROSION	None
OTHER	Pale yellow tinge, no odour, no sheen

FIELD MEASUREMENTS

TEMPERATURE (°C)	17.3
CONDUCTIVITY (µS/cm)	892
pH	6.90
DO (ppm)	7.28
DO (%S)	76.0
REDOX (mV)	148.2
TURBIDITY (NTU)	296.25

HYDROLOGICAL DATA

FLOW MEASUREMENT	0.05m/s
CROSS SECTION WIDTH (m)	20
DEPTH (m)	>1
OTHER	

SAMPLE NO.	NO. OF CONTAINERS	PRESERVATIVE	DUPLICATE	COMMENTS
SOUUS	11	Yes	No	

FIELD SUPERVISOR	E. Smith	**CHECKED (SIGN & DATE)**	esmith 02/05/2023

SURFACE WATER SAMPLING RECORD

PROJECT NO.	12554717	**SURFACE WATER ID:**	BADDS
PROJECT NAME:	M12 Motorway	**DATE:**	07-06-2023
CLIENT:	Transport for NSW	**TIME:**	10:15
SITE:	M12 - West	**LOGGED BY:**	E. Smith / A. Duval

COORDINATES/GPS *(if applicable)* -33.8568676379326, 150.757776857932

SAMPLING METHOD *(ie grab, bucket)* Grab

DETAILED SAMPLE LOCATION DESCRIPTION Badgery's Creek - Downstream

ENVIRONMENTAL OBSERVATIONS

WEATHER	Clear
VEGETATION	Shrubs
SLOPE	None
EROSION	None
OTHER	Pale yellow-tinge, slightly turbid, no odour, no sheen, no sediment

FIELD MEASUREMENTS

TEMPERATURE (°C)	13.4
DO (mg/L)	7
DO (%S)	67.10
CONDUCTIVITY (µS/cm)	1568.00
pH	7.6
REDOX (mV)	123.9
TURBIDITY (NTU)	47.59

HYDROLOGICAL DATA

FLOW MEASUREMENT	Stagnant
CROSS SECTION WIDTH (m)	10
DEPTH (m)	>1
OTHER	

SAMPLE NO.	NO. OF CONTAINERS	PRESERVATIVE	DUPLICATE	COMMENTS
BADDS	11	Yes	No	

FIELD SUPERVISOR E. Smith **CHECKED (SIGN & DATE)** esmith 08-06-2023

SURFACE WATER SAMPLING RECORD

PROJECT NO.	12554717	**SURFACE WATER ID:**	BADMS
PROJECT NAME:	M12 Motorway	**DATE:**	07-06-2023
CLIENT:	Transport for NSW	**TIME:**	10:31
SITE:	M12 - West	**LOGGED BY:**	E. Smith / A. Duval

COORDINATES/GPS *(if applicable)* -33.859555514706, 150.75473582078

SAMPLING METHOD *(ie grab, bucket)* Grab

DETAILED SAMPLE LOCATION DESCRIPTION Badgery's Creek - Midstream

ENVIRONMENTAL OBSERVATIONS

WEATHER	Overcast
VEGETATION	Shrubs
SLOPE	None
EROSION	None
OTHER	Pale yellow-green tinge, slightly turbid, no odour, no sheen, no sediment

FIELD MEASUREMENTS

TEMPERATURE (°C)	13.0
DO (mg/L)	6
DO (%S)	58.30
CONDUCTIVITY (µS/cm)	1539.00
pH	7.5
REDOX (mV)	125.4
TURBIDITY (NTU)	53.43

HYDROLOGICAL DATA

FLOW MEASUREMENT	0.1m/s
CROSS SECTION WIDTH (m)	3
DEPTH (m)	<1
OTHER	

SAMPLE NO.	NO. OF CONTAINERS	PRESERVATIVE	DUPLICATE	COMMENTS
BADMS	11	Yes	No	

FIELD SUPERVISOR E. Smith **CHECKED (SIGN & DATE)** esmith 08-06-2023

SURFACE WATER SAMPLING RECORD

PROJECT NO.	12554717	**SURFACE WATER ID:**	BADUS
PROJECT NAME:	M12 Motorway	**DATE:**	06-06-2023
CLIENT:	Transport for NSW	**TIME:**	7:51
SITE:	M12 - West	**LOGGED BY:**	E. Smith / A. Duval

COORDINATES/GPS *(if applicable)* -33.8738120940615, 150.754813158426

SAMPLING METHOD *(ie grab, bucket)* Grab

DETAILED SAMPLE LOCATION DESCRIPTION Badgery's Creek - Upstream

ENVIRONMENTAL OBSERVATIONS

WEATHER	Foggy
VEGETATION	Shrubs
SLOPE	None
EROSION	None
OTHER	Pale yellow tinge, mostly clear, no odour, brittle sheen, no sediment, scum on surface

FIELD MEASUREMENTS

TEMPERATURE (°C)	11.1
DO (mg/L)	5
DO (%S)	48.00
CONDUCTIVITY (µS/cm)	1064.00
pH	7.7
REDOX (mV)	98.5
TURBIDITY (NTU)	17.24

HYDROLOGICAL DATA

FLOW MEASUREMENT	0.01m/s
CROSS SECTION WIDTH (m)	4
DEPTH (m)	<1
OTHER	

SAMPLE NO.	NO. OF CONTAINERS	PRESERVATIVE	DUPLICATE	COMMENTS
BADUS	11	Yes	No	

FIELD SUPERVISOR E. Smith **CHECKED (SIGN & DATE)** esmith 08-06-2023

SURFACE WATER SAMPLING RECORD

PROJECT NO.	12554717	**SURFACE WATER ID:**	COSDS
PROJECT NAME:	M12 Motorway	**DATE:**	07-06-2023
CLIENT:	Transport for NSW	**TIME:**	14:02
SITE:	M12 - West	**LOGGED BY:**	E. Smith / A. Duval
COORDINATES/GPS *(if applicable)*	-33.8572573122049, 150.732788594288		
SAMPLING METHOD *(ie grab, bucket)*	Grab		
DETAILED SAMPLE LOCATION DESCRIPTION	Cosgroves Creek - Downstream		

ENVIRONMENTAL OBSERVATIONS

WEATHER	Clear
VEGETATION	Shrubs
SLOPE	None
EROSION	None
OTHER	Clear, no odour, no sheen, no sediment

FIELD MEASUREMENTS

TEMPERATURE (°C)	15.1
DO (mg/L)	8
DO (%S)	83.50
CONDUCTIVITY (µS/cm)	1012.00
pH	7.9
REDOX (mV)	77.3
TURBIDITY (NTU)	20.40

HYDROLOGICAL DATA

FLOW MEASUREMENT	0.01m/s
CROSS SECTION WIDTH (m)	5
DEPTH (m)	>1
OTHER	

SAMPLE NO.	NO. OF CONTAINERS	PRESERVATIVE	DUPLICATE	COMMENTS
COSDS	11	Yes	No	

FIELD SUPERVISOR	E. Smith	**CHECKED (SIGN & DATE)**	esmith 08-06-2023

SURFACE WATER SAMPLING RECORD

PROJECT NO.	12554717	**SURFACE WATER ID:**	COSUS
PROJECT NAME:	M12 Motorway	**DATE:**	07-06-2023
CLIENT:	Transport for NSW	**TIME:**	13:47
SITE:	M12 - West	**LOGGED BY:**	E. Smith / A. Duval
COORDINATES/GPS *(if applicable)*	-33.8596027431528, 150.729091683614		
SAMPLING METHOD *(ie grab, bucket)*	Grab		
DETAILED SAMPLE LOCATION DESCRIPTION	Cosgroves Creek - Upstream		

ENVIRONMENTAL OBSERVATIONS

WEATHER	Clear
VEGETATION	Shrubs
SLOPE	None
EROSION	None
OTHER	Clear, no odour, no sheen, no sediment

FIELD MEASUREMENTS

TEMPERATURE (°C)	13.7
DO (mg/L)	7
DO (%S)	64.20
CONDUCTIVITY (µS/cm)	1002.00
pH	7.9
REDOX (mV)	58.4
TURBIDITY (NTU)	11.92

HYDROLOGICAL DATA

FLOW MEASUREMENT	0.25m/s
CROSS SECTION WIDTH (m)	3
DEPTH (m)	<1
OTHER	Lower water level than normal

SAMPLE NO.	NO. OF CONTAINERS	PRESERVATIVE	DUPLICATE	COMMENTS
COSUS	11	Yes	SWDUP2	
SWDUP2	1	Yes		Eurofins Metals

FIELD SUPERVISOR	E. Smith	**CHECKED (SIGN & DATE)**	esmith 08-06-2023

SURFACE WATER SAMPLING RECORD

PROJECT NO.	12554717	**SURFACE WATER ID:**	HINDS
PROJECT NAME:	M12 Motorway	**DATE:**	06-06-2023
CLIENT:	Transport for NSW	**TIME:**	14:53
SITE:	M12 - East	**LOGGED BY:**	E. Smith / A. Duval
COORDINATES/GPS *(if applicable)*	-33.8940857502266, 150.841997294191		
SAMPLING METHOD *(ie grab, bucket)*	Grab		
DETAILED SAMPLE LOCATION DESCRIPTION	Hinchinbrook Creek - Downstream		

ENVIRONMENTAL OBSERVATIONS

WEATHER	Overcast
VEGETATION	Grassy
SLOPE	None
EROSION	None
OTHER	Pale yellow-tinge, mostly clear, no odour, no sheen

FIELD MEASUREMENTS

TEMPERATURE (°C)	15.3
DO (mg/L)	10
DO (%S)	96.10
CONDUCTIVITY (µS/cm)	432.00
pH	8.5
REDOX (mV)	68.1
TURBIDITY (NTU)	3.38

HYDROLOGICAL DATA

FLOW MEASUREMENT	Stagnant (lake)
CROSS SECTION WIDTH (m)	100
DEPTH (m)	>1
OTHER	Water level lower than normal

SAMPLE NO.	NO. OF CONTAINERS	PRESERVATIVE	DUPLICATE	COMMENTS
HINDS	11	Yes	No	

FIELD SUPERVISOR	E. Smith	**CHECKED (SIGN & DATE)**	esmith 08-06-2023

SURFACE WATER SAMPLING RECORD

PROJECT NO.	12554717	**SURFACE WATER ID:**	HINUS
PROJECT NAME:	M12 Motorway	**DATE:**	06-06-2023
CLIENT:	Transport for NSW	**TIME:**	14:07
SITE:	M12 - East	**LOGGED BY:**	E. Smith / A. Duval
COORDINATES/GPS *(if applicable)*	-33.885917091217, 150.822297157323		
SAMPLING METHOD *(ie grab, bucket* **)**	Grab		
DETAILED SAMPLE LOCATION DESCRIPTION	Hinchinbrook Creek - Upstream		

ENVIRONMENTAL OBSERVATIONS

WEATHER	Overcast
VEGETATION	Shrubs, grasses
SLOPE	None
EROSION	None
OTHER	Pale yellow-tinge, no odour, no sheen, no sediment

FIELD MEASUREMENTS

TEMPERATURE (°C)	15.2
DO (mg/L)	10
DO (%S)	96.50
CONDUCTIVITY (µS/cm)	604.00
pH	8.5
REDOX (mV)	8.7
TURBIDITY (NTU)	91.81

HYDROLOGICAL DATA

FLOW MEASUREMENT	Stagnant, dam
CROSS SECTION WIDTH (m)	50
DEPTH (m)	>1
OTHER	

SAMPLE NO.	NO. OF CONTAINERS	PRESERVATIVE	DUPLICATE	COMMENTS
HINUS	11	Yes	No	

FIELD SUPERVISOR	E. Smith	**CHECKED (SIGN & DATE)**	esmith 08-06-2023

SURFACE WATER SAMPLING RECORD

PROJECT NO.	12554717	**SURFACE WATER ID:**	KEMDS
PROJECT NAME:	M12 Motorway	**DATE:**	06-06-2023
CLIENT:	Transport for NSW	**TIME:**	7:41
SITE:	M12 - Central	**LOGGED BY:**	E. Smith / A. Duval
COORDINATES/GPS *(if applicable)*	-33.8744916131181, 150.798975039418		
SAMPLING METHOD *(ie grab, bucket)*	Grab		
DETAILED SAMPLE LOCATION DESCRIPTION	Kemps Creek - Downstream		

ENVIRONMENTAL OBSERVATIONS

WEATHER	Overcast
VEGETATION	Shrubs
SLOPE	None
EROSION	None
OTHER	Pale yellow-grey tinge, slightly turbid, no odour, no sheen, no sediment

FIELD MEASUREMENTS

TEMPERATURE (°C)	12.3
DO (mg/L)	5
DO (%S)	47.00
CONDUCTIVITY (µS/cm)	2213.00
pH	7.2
REDOX (mV)	131.4
TURBIDITY (NTU)	5.40

HYDROLOGICAL DATA

FLOW MEASUREMENT	No flow
CROSS SECTION WIDTH (m)	1.5
DEPTH (m)	<1
OTHER	

SAMPLE NO.	NO. OF CONTAINERS	PRESERVATIVE	DUPLICATE	COMMENTS
KEMDS	11	Yes	No	

FIELD SUPERVISOR	E. Smith	**CHECKED (SIGN & DATE)**	esmith 08-06-2023

SURFACE WATER SAMPLING RECORD

PROJECT NO.	12554717	**SURFACE WATER ID:**	KEMUS
PROJECT NAME:	M12 Motorway	**DATE:**	06-06-2023
CLIENT:	Transport for NSW	**TIME:**	16:06
SITE:	M12 - Central	**LOGGED BY:**	E. Smith / A. Duval
COORDINATES/GPS *(if applicable)*	-33.881000984653, 150.798710837019		
SAMPLING METHOD *(ie grab, bucket)*	Grab		
DETAILED SAMPLE LOCATION DESCRIPTION	Kemps Creek - Upstream		

ENVIRONMENTAL OBSERVATIONS

WEATHER	Overcast
VEGETATION	Grasses
SLOPE	No
EROSION	No
OTHER	Pale-yellow tinge, clear, no odour, no sheen, some sediment

FIELD MEASUREMENTS

TEMPERATURE (°C)	12.6
DO (mg/L)	6
DO (%S)	55.40
CONDUCTIVITY (µS/cm)	2644.00
pH	7.5
REDOX (mV)	109.1
TURBIDITY (NTU)	-0.72

HYDROLOGICAL DATA

FLOW MEASUREMENT	0.01m/s
CROSS SECTION WIDTH (m)	5
DEPTH (m)	<1
OTHER	Water level lower than normal. Turbidity lower than expected, suspect YSI error

SAMPLE NO.	NO. OF CONTAINERS	PRESERVATIVE	DUPLICATE	COMMENTS
KEMUS	11	Yes	No	

FIELD SUPERVISOR	E. Smith	**CHECKED (SIGN & DATE)**	esmith 08-06-2023

SURFACE WATER SAMPLING RECORD

PROJECT NO.	12554717	**SURFACE WATER ID:**	ROPDS
PROJECT NAME:	M12 Motorway	**DATE:**	06-06-2023
CLIENT:	Transport for NSW	**TIME:**	8:18
SITE:	M12 - East	**LOGGED BY:**	E. Smith / A. Duval
COORDINATES/GPS *(if applicable)*	-33.8661214462004, 150.84622034034		
SAMPLING METHOD *(ie grab, bucket)*	Grab		
DETAILED SAMPLE LOCATION DESCRIPTION	Ropes Creek - Downstream		

ENVIRONMENTAL OBSERVATIONS

WEATHER	Overcast
VEGETATION	Reeds and shrubs
SLOPE	None
EROSION	None
OTHER	Pale yellow tinge, slightly turbid, no odour, no sheen, no sediment

FIELD MEASUREMENTS

TEMPERATURE (°C)	12.6
DO (mg/L)	6
DO (%S)	56.90
CONDUCTIVITY (µS/cm)	4357.00
pH	7.6
REDOX (mV)	204.5
TURBIDITY (NTU)	-5.20

HYDROLOGICAL DATA

FLOW MEASUREMENT	No
CROSS SECTION WIDTH (m)	5
DEPTH (m)	<1
OTHER	Negative turbidity observed confirmed. Potential YSI error. Water level lower than normal

SAMPLE NO.	NO. OF CONTAINERS	PRESERVATIVE	DUPLICATE	COMMENTS
ROPDS	11	Yes	No	

FIELD SUPERVISOR	E. Smith	**CHECKED (SIGN & DATE)**	esmith 08-06-2023

SURFACE WATER SAMPLING RECORD

PROJECT NO.	12554717	**SURFACE WATER ID:**	ROPUS
PROJECT NAME:	M12 Motorway	**DATE:**	06-06-2023
CLIENT:	Transport for NSW	**TIME:**	9:02
SITE:	M12 - East	**LOGGED BY:**	E. Smith / A. Duval
COORDINATES/GPS *(if applicable)*	-33.8661748475932, 150.849684345683		
SAMPLING METHOD *(ie grab, bucket)*	Grab		
DETAILED SAMPLE LOCATION DESCRIPTION	Ropes Creek - Upstream		

ENVIRONMENTAL OBSERVATIONS

WEATHER	Overcast
VEGETATION	Reeds
SLOPE	None
EROSION	None
OTHER	Pale yellow tinge, slightly turbid, no odour, no sheen, some sediment

FIELD MEASUREMENTS

TEMPERATURE (°C)	13.2
DO (mg/L)	7
DO (%S)	67.30
CONDUCTIVITY (µS/cm)	306.60
pH	8.0
REDOX (mV)	108.9
TURBIDITY (NTU)	40.44

HYDROLOGICAL DATA

FLOW MEASUREMENT	Stagnant (dam)
CROSS SECTION WIDTH (m)	50
DEPTH (m)	<1
OTHER	Water level lower than normal

SAMPLE NO.	NO. OF CONTAINERS	PRESERVATIVE	DUPLICATE	COMMENTS
ROPUS	11	Yes	No	

FIELD SUPERVISOR	E. Smith	**CHECKED (SIGN & DATE)**	esmith 08-06-2023

SURFACE WATER SAMPLING RECORD

PROJECT NO.	12554717	**SURFACE WATER ID:**	SOUDS
PROJECT NAME:	M12 Motorway	**DATE:**	06-06-2023
CLIENT:	Transport for NSW	**TIME:**	10:34
SITE:	M12 - Central	**LOGGED BY:**	E. Smith / A. Duval
COORDINATES/GPS *(if applicable)*	-33.8601918874489, 150.768886308687		
SAMPLING METHOD *(ie grab, bucket)*	Grab		
DETAILED SAMPLE LOCATION DESCRIPTION	South Creek - Downstream		

ENVIRONMENTAL OBSERVATIONS

WEATHER	Overcast
VEGETATION	Shrubs and grasses
SLOPE	None
EROSION	None
OTHER	Pale yellow, mostly clear, slight organic odour, no sheen, no sediment

FIELD MEASUREMENTS

TEMPERATURE (°C)	12.7
DO (mg/L)	8
DO (%S)	77.30
CONDUCTIVITY (µS/cm)	1049.00
pH	7.6
REDOX (mV)	223.8
TURBIDITY (NTU)	26.20

HYDROLOGICAL DATA

FLOW MEASUREMENT	0.05m/s
CROSS SECTION WIDTH (m)	10
DEPTH (m)	<1
OTHER	Water level lower than normal

SAMPLE NO.	NO. OF CONTAINERS	PRESERVATIVE	DUPLICATE	COMMENTS
SOUDS	11	No	No	

FIELD SUPERVISOR	E. Smith	**CHECKED (SIGN & DATE)**	esmith 08-06-2023

SURFACE WATER SAMPLING RECORD

PROJECT NO.	12554717	**SURFACE WATER ID:**	SOUUS
PROJECT NAME:	M12 Motorway	**DATE:**	06-06-2023
CLIENT:	Transport for NSW	**TIME:**	10:54
SITE:	M12 - Central	**LOGGED BY:**	E. Smith / A. Duval
COORDINATES/GPS *(if applicable)*	-33.8618105129283, 150.770918661765		
SAMPLING METHOD *(ie grab, bucket)*	Grab		
DETAILED SAMPLE LOCATION DESCRIPTION	South Creek - Upstream		

ENVIRONMENTAL OBSERVATIONS

WEATHER	Overcast
VEGETATION	Shrubs
SLOPE	None
EROSION	None
OTHER	Pale yellow tinge, slightly turbid, no odour, no sheen, no sediment

FIELD MEASUREMENTS

TEMPERATURE (°C)	12.3
DO (mg/L)	8
DO (%S)	75.50
CONDUCTIVITY (µS/cm)	1059.00
pH	7.6
REDOX (mV)	181.0
TURBIDITY (NTU)	22.65

HYDROLOGICAL DATA

FLOW MEASUREMENT	0.01m/s
CROSS SECTION WIDTH (m)	10
DEPTH (m)	>1
OTHER	Water level lower than normal

SAMPLE NO.	NO. OF CONTAINERS	PRESERVATIVE	DUPLICATE	COMMENTS
SOUUS	11	Yes	SWDUP1	
SWDUP1	1	Yes		ALS Metals

FIELD SUPERVISOR	E. Smith	**CHECKED (SIGN & DATE)**	esmith 08-06-2023

SURFACE WATER SAMPLING RECORD

PROJECT NO.	12554717	**SURFACE WATER ID:**	BADDS
PROJECT NAME:	M12 Motorway	**DATE:**	07-07-2023
CLIENT:	Transport for NSW	**TIME:**	11:40
SITE:	M12 - West	**LOGGED BY:**	E. Smith / A. Duval
COORDINATES/GPS *(if applicable)*	-33.8568676379326, 150.757776857932		
SAMPLING METHOD *(ie grab, bucket)*	Grab		
DETAILED SAMPLE LOCATION DESCRIPTION	Badgery's Creek - Downstream		

ENVIRONMENTAL OBSERVATIONS

WEATHER	Clear
VEGETATION	Shrubs
SLOPE	None
EROSION	None
OTHER	Pale yellow green-tinge, mostly clear, no odour, no sheen, no sediment

FIELD MEASUREMENTS

TEMPERATURE (°C)	9.4
DO (mg/L)	8.26
DO (%S)	27.40
CONDUCTIVITY (µS/cm)	700
pH	7.5
REDOX (mV)	294.4
TURBIDITY (NTU)	40.33

HYDROLOGICAL DATA

FLOW MEASUREMENT	Stagnant
CROSS SECTION WIDTH (m)	5
DEPTH (m)	<1
OTHER	

SAMPLE ID	NO. OF CONTAINERS	PRESERVATIVE	DUPLICATE	COMMENTS
BADDS	11	Yes	SWDUP2	
SWDUP2	1	Yes		Eurofins Metals

FIELD SUPERVISOR	E. Smith	**CHECKED (SIGN & DATE)**	esmith 07-07-23

SURFACE WATER SAMPLING RECORD

PROJECT NO.	12554717	**SURFACE WATER ID:**	BADMS
PROJECT NAME:	M12 Motorway	**DATE:**	07-07-2023
CLIENT:	Transport for NSW	**TIME:**	11:57
SITE:	M12 - West	**LOGGED BY:**	E. Smith / A. Duval
COORDINATES/GPS *(if applicable)*	-33.859555514706, 150.75473582078		
SAMPLING METHOD *(ie grab, bucket)*	Grab		
DETAILED SAMPLE LOCATION DESCRIPTION	Badgery's Creek - Midstream		

ENVIRONMENTAL OBSERVATIONS

WEATHER	Clear
VEGETATION	Shrubs
SLOPE	None
EROSION	None
OTHER	Green-brown tinge, mostly clear, no odour, no sheen, no sediment

FIELD MEASUREMENTS

TEMPERATURE (°C)	9.8
DO (mg/L)	7.81
DO (%S)	69.10
CONDUCTIVITY (µS/cm)	665
pH	7.4
REDOX (mV)	279.4
TURBIDITY (NTU)	42.34

HYDROLOGICAL DATA

FLOW MEASUREMENT	0.05m/s
CROSS SECTION WIDTH (m)	5
DEPTH (m)	<1
OTHER	

SAMPLE ID	NO. OF CONTAINERS	PRESERVATIVE	DUPLICATE	COMMENTS
BADMS	11	Yes	No	

FIELD SUPERVISOR	E. Smith	**CHECKED (SIGN & DATE)**	esmith 07-07-23

SURFACE WATER SAMPLING RECORD

PROJECT NO.	12554717	**SURFACE WATER ID:**	BADUS
PROJECT NAME:	M12 Motorway	**DATE:**	07-07-2023
CLIENT:	Transport for NSW	**TIME:**	13:07
SITE:	M12 - West	**LOGGED BY:**	E. Smith / A. Duval
COORDINATES/GPS *(if applicable)*	-33.8738120940615, 150.754813158426		
SAMPLING METHOD *(ie grab, bucket)*	Grab		
DETAILED SAMPLE LOCATION DESCRIPTION	Badgery's Creek - Upstream		

ENVIRONMENTAL OBSERVATIONS

WEATHER	Clear
VEGETATION	Shrubs
SLOPE	None
EROSION	None
OTHER	Pale yellow-tinge, no odour, no sheen, no sediment

FIELD MEASUREMENTS

TEMPERATURE (°C)	11.0
DO (mg/L)	13.42
DO (%S)	122.20
CONDUCTIVITY (µS/cm)	1158
pH	8.7
REDOX (mV)	272.4
TURBIDITY (NTU)	20.47

HYDROLOGICAL DATA

FLOW MEASUREMENT	0.01m/s
CROSS SECTION WIDTH (m)	5
DEPTH (m)	<1
OTHER	Brown foamy substance on surface 5m upstream

SAMPLE ID	NO. OF CONTAINERS	PRESERVATIVE	DUPLICATE	COMMENTS
BADUS	11	Yes	No	

FIELD SUPERVISOR	E. Smith	**CHECKED (SIGN & DATE)**	esmith 07-07-23

SURFACE WATER SAMPLING RECORD

PROJECT NO.	12554717	**SURFACE WATER ID:**	COSDS
PROJECT NAME:	M12 Motorway	**DATE:**	07-07-2023
CLIENT:	Transport for NSW	**TIME:**	12:15
SITE:	M12 - West	**LOGGED BY:**	E. Smith / A. Duval
COORDINATES/GPS *(if applicable)*	-33.8572573122049, 150.732788594288		
SAMPLING METHOD *(ie grab, bucket)*	Grab		
DETAILED SAMPLE LOCATION DESCRIPTION	Cosgroves Creek - Downstream		

ENVIRONMENTAL OBSERVATIONS

WEATHER	
VEGETATION	
SLOPE	
EROSION	
OTHER	No access. Exclusion zone in place around Cosgroves Creek since 26-06-23. Crane lifting super Ts for bridge construction.

FIELD MEASUREMENTS

TEMPERATURE (°C)	
DO (mg/L)	
DO (%S)	
CONDUCTIVITY (µS/cm)	
pH	
REDOX (mV)	
TURBIDITY (NTU)	

HYDROLOGICAL DATA

FLOW MEASUREMENT	
CROSS SECTION WIDTH (m)	
DEPTH (m)	
OTHER	

SAMPLE ID	NO. OF CONTAINERS	PRESERVATIVE	DUPLICATE	COMMENTS

FIELD SUPERVISOR	E. Smith	**CHECKED (SIGN & DATE)**	esmith 07-07-23

SURFACE WATER SAMPLING RECORD

PROJECT NO.	12554717	**SURFACE WATER ID:**	COSDS
PROJECT NAME:	M12 Motorway	**DATE:**	07-07-2023
CLIENT:	Transport for NSW	**TIME:**	12:15
SITE:	M12 - West	**LOGGED BY:**	E. Smith / A. Duval
COORDINATES/GPS *(if applicable)*	-33.8572573122049, 150.732788594288		
SAMPLING METHOD *(ie grab, bucket)*	Grab		
DETAILED SAMPLE LOCATION DESCRIPTION	Cosgroves Creek - Downstream		

ENVIRONMENTAL OBSERVATIONS

WEATHER	
VEGETATION	
SLOPE	
EROSION	
OTHER	No access. Exclusion zone in place around Cosgroves Creek since 26-06-23. Crane lifting super Ts for bridge construction.

FIELD MEASUREMENTS

TEMPERATURE (°C)	
DO (mg/L)	
DO (%S)	
CONDUCTIVITY (µS/cm)	
pH	
REDOX (mV)	
TURBIDITY (NTU)	

HYDROLOGICAL DATA

FLOW MEASUREMENT	
CROSS SECTION WIDTH (m)	
DEPTH (m)	
OTHER	

SAMPLE ID	NO. OF CONTAINERS	PRESERVATIVE	DUPLICATE	COMMENTS

FIELD SUPERVISOR	E. Smith	**CHECKED (SIGN & DATE)**	esmith 07-07-23

SURFACE WATER SAMPLING RECORD

PROJECT NO.	12554717	**SURFACE WATER ID:**	HINDS
PROJECT NAME:	M12 Motorway	**DATE:**	04-07-2023
CLIENT:	Transport for NSW	**TIME:**	11:36
SITE:	M12 - East	**LOGGED BY:**	E. Smith / A. Duval
COORDINATES/GPS *(if applicable)*	-33.8940857502266, 150.841997294191		
SAMPLING METHOD *(ie grab, bucket)*	Grab		
DETAILED SAMPLE LOCATION DESCRIPTION	Hinchinbrook Creek - Downstream		

ENVIRONMENTAL OBSERVATIONS

WEATHER	Drizzle
VEGETATION	Grasses
SLOPE	None
EROSION	None
OTHER	Pale yellow tinge, mostly clear, no ododur, no sheen, no sediment

FIELD MEASUREMENTS

TEMPERATURE (°C)	13.1
DO (mg/L)	11.71
DO (%S)	111.60
CONDUCTIVITY (µS/cm)	377
pH	8.1
REDOX (mV)	245.5
TURBIDITY (NTU)	18.22

HYDROLOGICAL DATA

FLOW MEASUREMENT	Stagnant
CROSS SECTION WIDTH (m)	100
DEPTH (m)	>1
OTHER	Lake/pond, water level lower than usual

SAMPLE ID	NO. OF CONTAINERS	PRESERVATIVE	DUPLICATE	COMMENTS
HINDS	11	No	No	

FIELD SUPERVISOR	E. Smith	**CHECKED (SIGN & DATE)**	esmith 07-07-23

SURFACE WATER SAMPLING RECORD

PROJECT NO.	12554717	**SURFACE WATER ID:**	HINUS
PROJECT NAME:	M12 Motorway	**DATE:**	04-07-2023
CLIENT:	Transport for NSW	**TIME:**	13:23
SITE:	M12 - East	**LOGGED BY:**	E. Smith / A. Duval
COORDINATES/GPS *(if applicable)*	-33.885917091217, 150.822297157323		
SAMPLING METHOD *(ie grab, bucket)*	Grab		
DETAILED SAMPLE LOCATION DESCRIPTION	Hinchinbrook Creek - Upstream		

ENVIRONMENTAL OBSERVATIONS

WEATHER	Drizzle
VEGETATION	Reeds, grasses
SLOPE	None
EROSION	None
OTHER	Clear, no odour, no sheen, no sediment

FIELD MEASUREMENTS

TEMPERATURE (°C)	12.3
DO (mg/L)	15.64
DO (%S)	146.30
CONDUCTIVITY (µS/cm)	436
pH	8.8
REDOX (mV)	277.6
TURBIDITY (NTU)	35.47

HYDROLOGICAL DATA

FLOW MEASUREMENT	Stagnant
CROSS SECTION WIDTH (m)	50
DEPTH (m)	>1
OTHER	Pond/dam

SAMPLE ID	NO. OF CONTAINERS	PRESERVATIVE	DUPLICATE	COMMENTS
HINUS	11	Yes	No	

FIELD SUPERVISOR	E. Smith	**CHECKED (SIGN & DATE)**	esmith 07-07-23

SURFACE WATER SAMPLING RECORD

PROJECT NO.	12554717	**SURFACE WATER ID:**	KEMDS
PROJECT NAME:	M12 Motorway	**DATE:**	04-07-2023
CLIENT:	Transport for NSW	**TIME:**	9:40
SITE:	M12 - Central	**LOGGED BY:**	E. Smith / A. Duval
COORDINATES/GPS *(if applicable)*	-33.8744916131181, 150.798975039418		
SAMPLING METHOD *(ie grab, bucket)*	Grab		
DETAILED SAMPLE LOCATION DESCRIPTION	Kemps Creek - Downstream		

ENVIRONMENTAL OBSERVATIONS

WEATHER	Drizzle
VEGETATION	Shrubs, grasses
SLOPE	None
EROSION	None
OTHER	Mostly clear, no odour, no sheen, no sediment

FIELD MEASUREMENTS

TEMPERATURE (°C)	9.9
DO (mg/L)	10.67
DO (%S)	94.20
CONDUCTIVITY (µS/cm)	2180
pH	7.6
REDOX (mV)	268.9
TURBIDITY (NTU)	5.89

HYDROLOGICAL DATA

FLOW MEASUREMENT	0.01m/s
CROSS SECTION WIDTH (m)	2
DEPTH (m)	<1
OTHER	

SAMPLE ID	NO. OF CONTAINERS	PRESERVATIVE	DUPLICATE	COMMENTS
KEMDS	11	Yes	No	

FIELD SUPERVISOR	E. Smith	**CHECKED (SIGN & DATE)**	esmith 07-07-23

SURFACE WATER SAMPLING RECORD

PROJECT NO.	12554717	**SURFACE WATER ID:**	KEMUS
PROJECT NAME:	M12 Motorway	**DATE:**	04-07-2023
CLIENT:	Transport for NSW	**TIME:**	12:02
SITE:	M12 - Central	**LOGGED BY:**	E. Smith / A. Duval
COORDINATES/GPS *(if applicable)*	-33.881000984653, 150.798710837019		
SAMPLING METHOD *(ie grab, bucket)*	Grab		
DETAILED SAMPLE LOCATION DESCRIPTION	Kemps Creek - Upstream		

ENVIRONMENTAL OBSERVATIONS

WEATHER	Drizzle
VEGETATION	Grasses
SLOPE	None
EROSION	None
OTHER	Pale yellow tinge, mostly clear, no odour, no sheen, no sediment

FIELD MEASUREMENTS

TEMPERATURE (°C)	12.5
DO (mg/L)	9.34
DO (%S)	92.80
CONDUCTIVITY (µS/cm)	1124
pH	7.6
REDOX (mV)	361.9
TURBIDITY (NTU)	7.93

HYDROLOGICAL DATA

FLOW MEASUREMENT	0.05m/s
CROSS SECTION WIDTH (m)	<10
DEPTH (m)	>1
OTHER	

SAMPLE ID	NO. OF CONTAINERS	PRESERVATIVE	DUPLICATE	COMMENTS
KEMUS	11	Yes	SWDUP1	ALS Metals
SWDUP1	1	Yes		

FIELD SUPERVISOR	E. Smith	**CHECKED (SIGN & DATE)**	esmith 07-07-23

SURFACE WATER SAMPLING RECORD

PROJECT NO.	12554717	**SURFACE WATER ID:**	ROPDS
PROJECT NAME:	M12 Motorway	**DATE:**	04-07-2023
CLIENT:	Transport for NSW	**TIME:**	10:03
SITE:	M12 - East	**LOGGED BY:**	E. Smith / A. Duval
COORDINATES/GPS *(if applicable)*	-33.8661214462004, 150.84622034034		
SAMPLING METHOD *(ie grab, bucket)*	Grab		
DETAILED SAMPLE LOCATION DESCRIPTION	Ropes Creek - Downstream		

ENVIRONMENTAL OBSERVATIONS

WEATHER	Drizzle
VEGETATION	Reeds, shrubs
SLOPE	None
EROSION	None
OTHER	Pale yellow-tinge, mostly clear, no odour, no sheen, no sediment

FIELD MEASUREMENTS

TEMPERATURE (°C)	11.1
DO (mg/L)	10.24
DO (%S)	94.40
CONDUCTIVITY (µS/cm)	3295
pH	7.6
REDOX (mV)	321.4
TURBIDITY (NTU)	10.41

HYDROLOGICAL DATA

FLOW MEASUREMENT	No flow
CROSS SECTION WIDTH (m)	5
DEPTH (m)	>1
OTHER	

SAMPLE ID	NO. OF CONTAINERS	PRESERVATIVE	DUPLICATE	COMMENTS
ROPDS	11	Yes	No	

FIELD SUPERVISOR	E. Smith	**CHECKED (SIGN & DATE)**	esmith 07-07-23

SURFACE WATER SAMPLING RECORD

PROJECT NO.	12554717	**SURFACE WATER ID:**	ROPUS
PROJECT NAME:	M12 Motorway	**DATE:**	04-07-2023
CLIENT:	Transport for NSW	**TIME:**	10:54
SITE:	M12 - East	**LOGGED BY:**	E. Smith / A. Duval
COORDINATES/GPS *(if applicable)*	-33.8661748475932, 150.849684345683		
SAMPLING METHOD *(ie grab, bucket)*	Grab		
DETAILED SAMPLE LOCATION DESCRIPTION	Ropes Creek - Upstream		

ENVIRONMENTAL OBSERVATIONS

WEATHER	Drizzle
VEGETATION	Shrubs
SLOPE	None
EROSION	None
OTHER	Brown, turbid, organic odour, no sheen, no sediment

FIELD MEASUREMENTS

TEMPERATURE (°C)	13.2
DO (mg/L)	10.14
DO (%S)	96.60
CONDUCTIVITY (µS/cm)	226
pH	7.3
REDOX (mV)	98.9
TURBIDITY (NTU)	

HYDROLOGICAL DATA

FLOW MEASUREMENT	Stagnant
CROSS SECTION WIDTH (m)	50
DEPTH (m)	<1
OTHER	Dam/pond

SAMPLE ID	NO. OF CONTAINERS	PRESERVATIVE	DUPLICATE	COMMENTS
ROPUS	11	Yes	No	

FIELD SUPERVISOR	E. Smith	**CHECKED (SIGN & DATE)**	esmith 07-07-23

SURFACE WATER SAMPLING RECORD

PROJECT NO.	12554717	**SURFACE WATER ID:**	SOUDS
PROJECT NAME:	M12 Motorway	**DATE:**	04-07-2023
CLIENT:	Transport for NSW	**TIME:**	7:45
SITE:	M12 - Central	**LOGGED BY:**	E. Smith / A. Duval
COORDINATES/GPS *(if applicable)*	-33.8601918874489, 150.768886308687		
SAMPLING METHOD *(ie grab, bucket)*	Grab		
DETAILED SAMPLE LOCATION DESCRIPTION	South Creek - Downstream		

ENVIRONMENTAL OBSERVATIONS

WEATHER	Drizzle
VEGETATION	Shrubs
SLOPE	None
EROSION	None
OTHER	Green-brown tinge, clear, no odour, no sheen, no sediment

FIELD MEASUREMENTS

TEMPERATURE (°C)	10.3
DO (mg/L)	11.25
DO (%S)	100.60
CONDUCTIVITY (µS/cm)	862
pH	7.9
REDOX (mV)	265.7
TURBIDITY (NTU)	18.77

HYDROLOGICAL DATA

FLOW MEASUREMENT	Stagnant
CROSS SECTION WIDTH (m)	~10
DEPTH (m)	<1
OTHER	

SAMPLE ID	NO. OF CONTAINERS	PRESERVATIVE	DUPLICATE	COMMENTS
SOUDS	11	Yes	No	

FIELD SUPERVISOR	E. Smith	**CHECKED (SIGN & DATE)**	esmith 07-07-23

SURFACE WATER SAMPLING RECORD

PROJECT NO.	12554717	**SURFACE WATER ID:**	SOUUS
PROJECT NAME:	M12 Motorway	**DATE:**	04-07-2023
CLIENT:	Transport for NSW	**TIME:**	8:04
SITE:	M12 - Central	**LOGGED BY:**	E. Smith / A. Duval
COORDINATES/GPS *(if applicable)*	-33.8618105129283, 150.770918661765		
SAMPLING METHOD *(ie grab, bucket)*	Grab		
DETAILED SAMPLE LOCATION DESCRIPTION	South Creek - Upstream		

ENVIRONMENTAL OBSERVATIONS

WEATHER	Drizzle
VEGETATION	Shrubs
SLOPE	None
EROSION	None
OTHER	Pale-yellow tinge, mostly clear, no odour, no sheen, no sediment

FIELD MEASUREMENTS

TEMPERATURE (°C)	9.9
DO (mg/L)	10.94
DO (%S)	97.10
CONDUCTIVITY (µS/cm)	865
pH	7.6
REDOX (mV)	292.7
TURBIDITY (NTU)	18.44

HYDROLOGICAL DATA

FLOW MEASUREMENT	Stagnant
CROSS SECTION WIDTH (m)	>10
DEPTH (m)	~1
OTHER	

SAMPLE ID	NO. OF CONTAINERS	PRESERVATIVE	DUPLICATE	COMMENTS
SOUUS	11	Yes	No	

FIELD SUPERVISOR	E. Smith	**CHECKED (SIGN & DATE)**	esmith 07-07-23

SURFACE WATER SAMPLING RECORD

PROJECT NO.	12554717	**SURFACE WATER ID:**	BADDS
PROJECT NAME:	M12 Motorway	**DATE:**	09/08/2023
CLIENT:	Transport for NSW	**TIME:**	14:25
SITE:	M12 - West	**LOGGED BY:**	E. Smith / A. Duval
COORDINATES/GPS *(if applicable)*			
SAMPLING METHOD *(ie grab, bucket* **)**	Grab		
DETAILED SAMPLE LOCATION DESCRIPTION	Badgery's Creek - Downstream		

ENVIRONMENTAL OBSERVATIONS

WEATHER	Clear
VEGETATION	Shrubs
SLOPE	None
EROSION	None
OTHER	Pale yellow tinge, mostly clear, no odour, no sheen, location moved slightly downstream

FIELD MEASUREMENTS

TEMPERATURE (°C)	11.3
DO (mg/L)	7.90
DO (%S)	71.9
CONDUCTIVITY (µS/cm)	1188
pH	7.37
REDOX (mV)	105.5
TURBIDITY (NTU)	36.6

HYDROLOGICAL DATA

FLOW MEASUREMENT	~0.005m/s
CROSS SECTION WIDTH (m)	<5
DEPTH (m)	<1
OTHER	

SAMPLE NO.	NO. OF CONTAINERS	PRESERVATIVE	DUPLICATE	COMMENTS
BADDS	11	Yes	No	

FIELD SUPERVISOR	E. Smith	**CHECKED (SIGN & DATE)**	esmith 10-08-2023

SURFACE WATER SAMPLING RECORD

PROJECT NO.	12554717	**SURFACE WATER ID:**	BADMS
PROJECT NAME:	M12 Motorway	**DATE:**	09/08/2023
CLIENT:	Transport for NSW	**TIME:**	14:02
SITE:	M12 - West	**LOGGED BY:**	E. Smith / A. Duval
COORDINATES/GPS *(if applicable)*			
SAMPLING METHOD *(ie grab, bucket* **)**	Grab		
DETAILED SAMPLE LOCATION DESCRIPTION	Badgery's Creek - Midstream		

ENVIRONMENTAL OBSERVATIONS

WEATHER	Clear
VEGETATION	Shrubs
SLOPE	None
EROSION	None
OTHER	Pale yellow tinge, mostly clear, no odour, no sheen, location moved slightly upstream

FIELD MEASUREMENTS

TEMPERATURE (°C)	11.7
DO (mg/L)	7.48
DO (%S)	68.4
CONDUCTIVITY (µS/cm)	1227
pH	8.40
REDOX (mV)	90.7
TURBIDITY (NTU)	46.1

HYDROLOGICAL DATA

FLOW MEASUREMENT	Stagnant
CROSS SECTION WIDTH (m)	<10
DEPTH (m)	<1
OTHER	

SAMPLE NO.	NO. OF CONTAINERS	PRESERVATIVE	DUPLICATE	COMMENTS
BADMS	11	Yes	No	

FIELD SUPERVISOR	E. Smith	**CHECKED (SIGN & DATE)**	esmith 10-08-2023

SURFACE WATER SAMPLING RECORD

PROJECT NO.	12554717	**SURFACE WATER ID:**	BADUS
PROJECT NAME:	M12 Motorway	**DATE:**	08/08/2023
CLIENT:	Transport for NSW	**TIME:**	15:10
SITE:	M12 - West	**LOGGED BY:**	E. Smith / A. Duval
COORDINATES/GPS *(if applicable)*	-33.8738120940615, 150.754813158426		
SAMPLING METHOD *(ie grab, bucket)*	Grab		
DETAILED SAMPLE LOCATION DESCRIPTION	Badgery's Creek - Upstream		

ENVIRONMENTAL OBSERVATIONS

WEATHER	Clear
VEGETATION	Shrubs, cleared vegetation and trees likely associated with WSA construction directly to the west of the bank
SLOPE	None
EROSION	None
OTHER	Clear, no odour, no sheen

FIELD MEASUREMENTS

TEMPERATURE (°C)	12.4
DO (mg/L)	9.72
DO (%S)	90.7
CONDUCTIVITY (µS/cm)	997
pH	7.40
REDOX (mV)	114.6
TURBIDITY (NTU)	94.3

HYDROLOGICAL DATA

FLOW MEASUREMENT	0.01m/s
CROSS SECTION WIDTH (m)	<5
DEPTH (m)	<1
OTHER	

SAMPLE NO.	NO. OF CONTAINERS	PRESERVATIVE	DUPLICATE	COMMENTS
BADUS	11	Yes	No	

FIELD SUPERVISOR	E. Smith	**CHECKED (SIGN & DATE)**	esmith 10-08-2023

SURFACE WATER SAMPLING RECORD

PROJECT NO.	12554717	**SURFACE WATER ID:**	COSDS
PROJECT NAME:	M12 Motorway	**DATE:**	09/08/2023
CLIENT:	Transport for NSW	**TIME:**	11:47
SITE:	M12 - West	**LOGGED BY:**	E. Smith / A. Duval
COORDINATES/GPS *(if applicable)*			
SAMPLING METHOD *(ie grab, bucket* **)**	Grab		
DETAILED SAMPLE LOCATION DESCRIPTION	Cosgroves Creek - Downstream		

ENVIRONMENTAL OBSERVATIONS

WEATHER	Clear
VEGETATION	Shrubs
SLOPE	None
EROSION	None
OTHER	Mostly clear, oily sheen, slight unidentifiable odour, location moved slightly downstream

FIELD MEASUREMENTS

TEMPERATURE (°C)	11.8
DO (mg/L)	7.79
DO (%S)	71.2
CONDUCTIVITY (µS/cm)	1797
pH	7.68
REDOX (mV)	58.3
TURBIDITY (NTU)	28.7

HYDROLOGICAL DATA

FLOW MEASUREMENT	Stagnant
CROSS SECTION WIDTH (m)	<10
DEPTH (m)	>1
OTHER	

SAMPLE NO.	NO. OF CONTAINERS	PRESERVATIVE	DUPLICATE	COMMENTS
COSDS	11	Yes	No	

FIELD SUPERVISOR	E. Smith	**CHECKED (SIGN & DATE)**	esmith 10-08-2023

SURFACE WATER SAMPLING RECORD

PROJECT NO.	12554717	**SURFACE WATER ID:**	COSUS
PROJECT NAME:	M12 Motorway	**DATE:**	09/08/2023
CLIENT:	Transport for NSW	**TIME:**	11:34
SITE:	M12 - West	**LOGGED BY:**	E. Smith / A. Duval
COORDINATES/GPS *(if applicable)*			
SAMPLING METHOD *(ie grab, bucket* **)**	Grab		
DETAILED SAMPLE LOCATION DESCRIPTION	Cosgroves Creek - Upstream		

ENVIRONMENTAL OBSERVATIONS

WEATHER	Clear
VEGETATION	Shrubs
SLOPE	None
EROSION	None
OTHER	Pale yellow-tinge, mostly clear, no odour, no sheen, location moved further upstream

FIELD MEASUREMENTS

TEMPERATURE (°C)	12.5
DO (mg/L)	3.19
DO (%S)	30.1
CONDUCTIVITY (µS/cm)	4902
pH	6.74
REDOX (mV)	-24.8
TURBIDITY (NTU)	21.0

HYDROLOGICAL DATA

FLOW MEASUREMENT	Stagnant
CROSS SECTION WIDTH (m)	<5
DEPTH (m)	<1
OTHER	

SAMPLE NO.	NO. OF CONTAINERS	PRESERVATIVE	DUPLICATE	COMMENTS
COSUS	11	Yes	No	

FIELD SUPERVISOR	E. Smith	**CHECKED (SIGN & DATE)**	esmith 10-08-2023

SURFACE WATER SAMPLING RECORD

PROJECT NO.	12554717	**SURFACE WATER ID:**	HINDS
PROJECT NAME:	M12 Motorway	**DATE:**	08/08/2023
CLIENT:	Transport for NSW	**TIME:**	13:06
SITE:	M12 - East	**LOGGED BY:**	E. Smith / A. Duval
COORDINATES/GPS *(if applicable)*	-33.8940857502266, 150.841997294191		
SAMPLING METHOD *(ie grab, bucket)*	Grab		
DETAILED SAMPLE LOCATION DESCRIPTION	Hinchinbrook Creek - Downstream		

ENVIRONMENTAL OBSERVATIONS

WEATHER	Clear
VEGETATION	Grasses
SLOPE	None
EROSION	None
OTHER	Clear, no odour, no sheen

FIELD MEASUREMENTS

TEMPERATURE (°C)	14.7
DO (mg/L)	6.97
DO (%S)	67.1
CONDUCTIVITY (µS/cm)	407
pH	7.19
REDOX (mV)	111.0
TURBIDITY (NTU)	12.0

HYDROLOGICAL DATA

FLOW MEASUREMENT	Stagnant, pond
CROSS SECTION WIDTH (m)	>100
DEPTH (m)	>1
OTHER	Lower than typical water level

SAMPLE NO.	NO. OF CONTAINERS	PRESERVATIVE	DUPLICATE	COMMENTS
HINDS	11	Yes	SWDUP1	
SWDUP1	1	Yes		ALS Metals

FIELD SUPERVISOR	E. Smith	**CHECKED (SIGN & DATE)**	esmith 10-08-2023

SURFACE WATER SAMPLING RECORD

PROJECT NO.	12554717	**SURFACE WATER ID:**	HINUS
PROJECT NAME:	M12 Motorway	**DATE:**	08/08/2023
CLIENT:	Transport for NSW	**TIME:**	12:18
SITE:	M12 - East	**LOGGED BY:**	E. Smith / A. Duval
COORDINATES/GPS *(if applicable)*	-33.885917091217, 150.822297157323		
SAMPLING METHOD *(ie grab, bucket)*	Grab		
DETAILED SAMPLE LOCATION DESCRIPTION	Hinchinbrook Creek - Upstream		

ENVIRONMENTAL OBSERVATIONS

WEATHER	Clear
VEGETATION	Shrubs, reeds
SLOPE	None
EROSION	None
OTHER	Clear, no odour, slight surface sheen

FIELD MEASUREMENTS

TEMPERATURE (°C)	14.6
DO (mg/L)	0.60
DO (%S)	5.6
CONDUCTIVITY (µS/cm)	529
pH	7.62
REDOX (mV)	105.7
TURBIDITY (NTU)	45.1

HYDROLOGICAL DATA

FLOW MEASUREMENT	Stagnant, pond
CROSS SECTION WIDTH (m)	~50
DEPTH (m)	<3
OTHER	Water level lower than typical

SAMPLE NO.	NO. OF CONTAINERS	PRESERVATIVE	DUPLICATE	COMMENTS
HINUS	11	Yes	No	

FIELD SUPERVISOR	E. Smith	**CHECKED (SIGN & DATE)**	esmith 10-08-2023

SURFACE WATER SAMPLING RECORD

PROJECT NO.	12554717	**SURFACE WATER ID:**	KEMDS
PROJECT NAME:	M12 Motorway	**DATE:**	08/08/2023
CLIENT:	Transport for NSW	**TIME:**	9:40
SITE:	M12 - Central	**LOGGED BY:**	E. Smith / A. Duval
COORDINATES/GPS *(if applicable)*	-33.8744916131181, 150.798975039418		
SAMPLING METHOD *(ie grab, bucket)*	Grab		
DETAILED SAMPLE LOCATION DESCRIPTION	Kemps Creek - Downstream		

ENVIRONMENTAL OBSERVATIONS

WEATHER	Clear
VEGETATION	Shrubs
SLOPE	None
EROSION	None
OTHER	Green tinge, mostly clear, no odour, green scum and algae on surface

FIELD MEASUREMENTS

TEMPERATURE (°C)	11.4
DO (mg/L)	7.98
DO (%S)	72.5
CONDUCTIVITY (µS/cm)	1982
pH	7.35
REDOX (mV)	152.4
TURBIDITY (NTU)	5.5

HYDROLOGICAL DATA

FLOW MEASUREMENT	Stagnant
CROSS SECTION WIDTH (m)	~3
DEPTH (m)	<1
OTHER	Green scum and algae on surface

SAMPLE NO.	NO. OF CONTAINERS	PRESERVATIVE	DUPLICATE	COMMENTS
KEMDS	11	Yes	No	

FIELD SUPERVISOR	E. Smith	**CHECKED (SIGN & DATE)**	esmith 10-08-2023

SURFACE WATER SAMPLING RECORD

PROJECT NO.	12554717	**SURFACE WATER ID:**	KEMUS
PROJECT NAME:	M12 Motorway	**DATE:**	08/08/2023
CLIENT:	Transport for NSW	**TIME:**	13:28
SITE:	M12 - Central	**LOGGED BY:**	E. Smith / A. Duval
COORDINATES/GPS *(if applicable)*	-33.881000984653, 150.798710837019		
SAMPLING METHOD *(ie grab, bucket)*	Grab		
DETAILED SAMPLE LOCATION DESCRIPTION	Kemps Creek - Upstream		

ENVIRONMENTAL OBSERVATIONS

WEATHER	Clear
VEGETATION	Shrubs
SLOPE	None
EROSION	None
OTHER	Pale green tinge, mostly clear, oily sheen and algae on surface

FIELD MEASUREMENTS

TEMPERATURE (°C)	11.3
DO (mg/L)	8.80
DO (%S)	80.3
CONDUCTIVITY (µS/cm)	2252
pH	7.40
REDOX (mV)	66.4
TURBIDITY (NTU)	18.3

HYDROLOGICAL DATA

FLOW MEASUREMENT	Stagnant
CROSS SECTION WIDTH (m)	<5
DEPTH (m)	<1
OTHER	

SAMPLE NO.	NO. OF CONTAINERS	PRESERVATIVE	DUPLICATE	COMMENTS
KEMUS	11	Yes	SWDUP2	
SWDUP2	1	Yes		Eurofins Metals

FIELD SUPERVISOR	E. Smith	**CHECKED (SIGN & DATE)**	esmith 10-08-2023

SURFACE WATER SAMPLING RECORD

PROJECT NO.	12554717	**SURFACE WATER ID:**	ROPDS
PROJECT NAME:	M12 Motorway	**DATE:**	08/08/2023
CLIENT:	Transport for NSW	**TIME:**	9:56
SITE:	M12 - East	**LOGGED BY:**	E. Smith / A. Duval
COORDINATES/GPS *(if applicable)*	-33.8661214462004, 150.84622034034		
SAMPLING METHOD *(ie grab, bucket)*	Grab		
DETAILED SAMPLE LOCATION DESCRIPTION	Ropes Creek - Downstream		

ENVIRONMENTAL OBSERVATIONS

WEATHER	Clear
VEGETATION	Reeds
SLOPE	None
EROSION	None
OTHER	Mostly clear, no odour, slight sheen

FIELD MEASUREMENTS

TEMPERATURE (°C)	11.4
DO (mg/L)	8.88
DO (%S)	82.0
CONDUCTIVITY (µS/cm)	4214
pH	7.62
REDOX (mV)	179.5
TURBIDITY (NTU)	0.4

HYDROLOGICAL DATA

FLOW MEASUREMENT	Stagnant
CROSS SECTION WIDTH (m)	>5
DEPTH (m)	<1
OTHER	

SAMPLE NO.	NO. OF CONTAINERS	PRESERVATIVE	DUPLICATE	COMMENTS
ROPDS	11	Yes	No	

FIELD SUPERVISOR	E. Smith	**CHECKED (SIGN & DATE)**	esmith 10-08-2023

SURFACE WATER SAMPLING RECORD

PROJECT NO.	12554717	**SURFACE WATER ID:**	ROPUS
PROJECT NAME:	M12 Motorway	**DATE:**	08/08/2023
CLIENT:	Transport for NSW	**TIME:**	10:35
SITE:	M12 - East	**LOGGED BY:**	E. Smith / A. Duval
COORDINATES/GPS *(if applicable)*	-33.8661748475932, 150.849684345683		
SAMPLING METHOD *(ie grab, bucket)*	Grab		
DETAILED SAMPLE LOCATION DESCRIPTION	Ropes Creek - Upstream		

ENVIRONMENTAL OBSERVATIONS

WEATHER	Clear
VEGETATION	Reeds
SLOPE	None
EROSION	None
OTHER	Pale yellow tinge, mostly clear, no odour, no sheen

FIELD MEASUREMENTS

TEMPERATURE (°C)	14.5
DO (mg/L)	3.22
DO (%S)	31.4
CONDUCTIVITY (µS/cm)	286
pH	6.91
REDOX (mV)	110.4
TURBIDITY (NTU)	75.9

HYDROLOGICAL DATA

FLOW MEASUREMENT	Stagnant, pond
CROSS SECTION WIDTH (m)	~100
DEPTH (m)	>1
OTHER	

SAMPLE NO.	NO. OF CONTAINERS	PRESERVATIVE	DUPLICATE	COMMENTS
ROPUS	11	Yes	No	

FIELD SUPERVISOR	E. Smith	**CHECKED (SIGN & DATE)**	esmith 10-08-2023

SURFACE WATER SAMPLING RECORD

PROJECT NO.	12554717	**SURFACE WATER ID:**	SOUDS
PROJECT NAME:	M12 Motorway	**DATE:**	08/08/2023
CLIENT:	Transport for NSW	**TIME:**	8/08/2023
SITE:	M12 - Central	**LOGGED BY:**	E. Smith / A. Duval
COORDINATES/GPS *(if applicable)*	-33.8601918874489, 150.768886308687		
SAMPLING METHOD *(ie grab, bucket)*	Grab		
DETAILED SAMPLE LOCATION DESCRIPTION	South Creek - Downstream		

ENVIRONMENTAL OBSERVATIONS

WEATHER	Clear
VEGETATION	Reeds, shrubs
SLOPE	None
EROSION	None
OTHER	Pale green tinge, mostly clear, no odour, no sheen, location moved further downstream as per agreement with TfNSW.

FIELD MEASUREMENTS

TEMPERATURE (°C)	12.4
DO (mg/L)	9.98
DO (%S)	92.6
CONDUCTIVITY (µS/cm)	1080
pH	7.57
REDOX (mV)	90.0
TURBIDITY (NTU)	17.4

HYDROLOGICAL DATA

FLOW MEASUREMENT	Stagnant
CROSS SECTION WIDTH (m)	~25
DEPTH (m)	>1
OTHER	

SAMPLE NO.	NO. OF CONTAINERS	PRESERVATIVE	DUPLICATE	COMMENTS
SOUDS	11	Yes	No	

FIELD SUPERVISOR	E. Smith	**CHECKED (SIGN & DATE)**	esmith 10-08-2023

SURFACE WATER SAMPLING RECORD

PROJECT NO.	12554717	**SURFACE WATER ID:**	SOUUS
PROJECT NAME:	M12 Motorway	**DATE:**	08/08/2023
CLIENT:	Transport for NSW	**TIME:**	8:22
SITE:	M12 - Central	**LOGGED BY:**	E. Smith / A. Duval
COORDINATES/GPS *(if applicable)*			
SAMPLING METHOD *(ie grab, bucket* **)**	Grab		
DETAILED SAMPLE LOCATION DESCRIPTION	South Creek - Upstream		

ENVIRONMENTAL OBSERVATIONS

WEATHER	Clear
VEGETATION	Shrubs
SLOPE	None
EROSION	None
OTHER	Pale green tinge, mostly clear, no odour, no sheen.

FIELD MEASUREMENTS

TEMPERATURE (°C)	11.6
DO (mg/L)	9.74
DO (%S)	88.6
CONDUCTIVITY (µS/cm)	1028
pH	7.61
REDOX (mV)	92.0
TURBIDITY (NTU)	16.8

HYDROLOGICAL DATA

FLOW MEASUREMENT	Stagnant
CROSS SECTION WIDTH (m)	>10
DEPTH (m)	>1
OTHER	

SAMPLE NO.	NO. OF CONTAINERS	PRESERVATIVE	DUPLICATE	COMMENTS
SOUUS	11	Yes	No	

FIELD SUPERVISOR	E. Smith	**CHECKED (SIGN & DATE)**	esmith 10-08-2023

SURFACE WATER SAMPLING RECORD

PROJECT NO.	12554717	**SURFACE WATER ID:**	BADDS
PROJECT NAME:	M12 Motorway	**DATE:**	31/08/2023
CLIENT:	Transport for NSW	**TIME:**	16:15
SITE:	M12 - West	**LOGGED BY:**	E. Smith / J. Miller

COORDINATES/GPS *(if applicable)* -33.8568676379326, 150.757776857932

SAMPLING METHOD *(ie grab, bucket)* Grab

DETAILED SAMPLE LOCATION DESCRIPTION Badgery's Creek - Downstream

ENVIRONMENTAL OBSERVATIONS

WEATHER	Sunny
VEGETATION	Low shrubbery on banks, trees overhanging
SLOPE	Moderate on both sides
EROSION	No
OTHER	Pale brown, highly turbid, no odour or sheen.

FIELD MEASUREMENTS

TEMPERATURE (°C)	13.7
DO (mg/L)	7.17
DO (%S)	69.7
CONDUCTIVITY (µS/cm)	999
pH	7.4
REDOX (mV)	84.0
TURBIDITY (NTU)	165

HYDROLOGICAL DATA

FLOW MEASUREMENT	No flow
CROSS SECTION WIDTH (m)	5
DEPTH (m)	>0.5
OTHER	

SAMPLE NO.	NO. OF CONTAINERS	PRESERVATIVE	DUPLICATE	COMMENTS
BADDS	11	Yes	No	

FIELD SUPERVISOR E. Smith **CHECKED (SIGN & DATE)** esmith 01.09.2023

SURFACE WATER SAMPLING RECORD

PROJECT NO.	12554717	**SURFACE WATER ID:**	BADMS
PROJECT NAME:	M12 Motorway	**DATE:**	31/08/2023
CLIENT:	Transport for NSW	**TIME:**	15:50
SITE:	M12 - West	**LOGGED BY:**	E. Smith / J. Miller

COORDINATES/GPS *(if applicable)* -33.859555514706, 150.75473582078

SAMPLING METHOD *(ie grab, bucket)* Grab

DETAILED SAMPLE LOCATION DESCRIPTION Badgery's Creek - Midstream

ENVIRONMENTAL OBSERVATIONS

WEATHER	Sunny
VEGETATION	Grass and low shrubbery on slopes, trees overhanging
SLOPE	Moderate on both sides
EROSION	No
OTHER	Pale brown, highly turbid, no odour or sheen.

FIELD MEASUREMENTS

TEMPERATURE (°C)	13.6
DO (mg/L)	7.10
DO (%S)	68.8
CONDUCTIVITY (µS/cm)	772
pH	7.7
REDOX (mV)	71.3
TURBIDITY (NTU)	168

HYDROLOGICAL DATA

FLOW MEASUREMENT	Slight, 0.05 m/s
CROSS SECTION WIDTH (m)	7
DEPTH (m)	>0.5
OTHER	

SAMPLE NO.	NO. OF CONTAINERS	PRESERVATIVE	DUPLICATE	COMMENTS
BADMS	11	Yes	No	

FIELD SUPERVISOR E. Smith **CHECKED (SIGN & DATE)** esmith 01.09.2023

SURFACE WATER SAMPLING RECORD

PROJECT NO.	12554717	**SURFACE WATER ID:**	BADUS
PROJECT NAME:	M12 Motorway	**DATE:**	31/08/2023
CLIENT:	Transport for NSW	**TIME:**	4:50
SITE:	M12 - West	**LOGGED BY:**	E. Smith / J. Miller

COORDINATES/GPS *(if applicable)* -33.8738120940615, 150.754813158426

SAMPLING METHOD *(ie grab, bucket)* Grab

DETAILED SAMPLE LOCATION DESCRIPTION Badgery's Creek - Upstream

ENVIRONMENTAL OBSERVATIONS

WEATHER	Sunny
VEGETATION	Low shrubbery, grass, trees overhanging
SLOPE	Moderate
EROSION	No
OTHER	Green-brown, turbid,, no odour or sheen.

FIELD MEASUREMENTS

TEMPERATURE (°C)	14.7
DO (mg/L)	7.11
DO (%S)	70.6
CONDUCTIVITY (µS/cm)	864
pH	7.4
REDOX (mV)	77.1
TURBIDITY (NTU)	152

HYDROLOGICAL DATA

FLOW MEASUREMENT	Slight, 0.05 m/s
CROSS SECTION WIDTH (m)	4
DEPTH (m)	<0.5
OTHER	

SAMPLE NO.	NO. OF CONTAINERS	PRESERVATIVE	DUPLICATE	COMMENTS
BADUS	11	Yes	No	

FIELD SUPERVISOR E. Smith **CHECKED (SIGN & DATE)** esmith 01.09.2023

SURFACE WATER SAMPLING RECORD

PROJECT NO.	12554717	**SURFACE WATER ID:**	COSDS
PROJECT NAME:	M12 Motorway	**DATE:**	31/08/2023
CLIENT:	Transport for NSW	**TIME:**	15:15
SITE:	M12 - West	**LOGGED BY:**	E. Smith / J. Miller

COORDINATES/GPS *(if applicable)* -33.8572573122049, 150.732788594288

SAMPLING METHOD *(ie grab, bucket)* Grab

DETAILED SAMPLE LOCATION DESCRIPTION Cosgroves Creek - Downstream

ENVIRONMENTAL OBSERVATIONS

WEATHER	Sunny
VEGETATION	Grass and low shrubbery on banks, trees overhanging stream
SLOPE	Steep on both sides
EROSION	No
OTHER	Green-brown, turbid, no odour or sheen.

FIELD MEASUREMENTS

TEMPERATURE (°C)	12.5
DO (mg/L)	3.94
DO (%S)	37.2
CONDUCTIVITY (µS/cm)	513
pH	8.1
REDOX (mV)	51.9
TURBIDITY (NTU)	789

HYDROLOGICAL DATA

FLOW MEASUREMENT	No flow
CROSS SECTION WIDTH (m)	3
DEPTH (m)	<0.5
OTHER	

SAMPLE NO.	NO. OF CONTAINERS	PRESERVATIVE	DUPLICATE	COMMENTS
COSDS	11	Yes	No	

FIELD SUPERVISOR E. Smith **CHECKED (SIGN & DATE)** esmith 01.09.2023

SURFACE WATER SAMPLING RECORD

PROJECT NO.	12554717	**SURFACE WATER ID:**	COSUS
PROJECT NAME:	M12 Motorway	**DATE:**	31/08/2023
CLIENT:	Transport for NSW	**TIME:**	15:00
SITE:	M12 - West	**LOGGED BY:**	E. Smith / J. Miller

COORDINATES/GPS *(if applicable)* -33.8596027431528, 150.729091683614

SAMPLING METHOD *(ie grab, bucket)* Grab

DETAILED SAMPLE LOCATION DESCRIPTION Cosgroves Creek - Upstream

ENVIRONMENTAL OBSERVATIONS

WEATHER	Sunny
VEGETATION	Grass and low shrubbery on banks, trees overhanging stream
SLOPE	Steep on both sides
EROSION	No
OTHER	Green-brown, turbid, no odour or sheen.

FIELD MEASUREMENTS

TEMPERATURE (°C)	12.6
DO (mg/L)	2.98
DO (%S)	28.2
CONDUCTIVITY (µS/cm)	2428
pH	7.4
REDOX (mV)	64.5
TURBIDITY (NTU)	771

HYDROLOGICAL DATA

FLOW MEASUREMENT	Very slight, 0.01 m/s
CROSS SECTION WIDTH (m)	1.5
DEPTH (m)	0.5
OTHER	

SAMPLE NO.	NO. OF CONTAINERS	PRESERVATIVE	DUPLICATE	COMMENTS
COSUS	11	Yes	No	

FIELD SUPERVISOR E. Smith **CHECKED (SIGN & DATE)** esmith 01.09.2023

SURFACE WATER SAMPLING RECORD

PROJECT NO.	12554717	**SURFACE WATER ID:**	HINDS
PROJECT NAME:	M12 Motorway	**DATE:**	31/08/2023
CLIENT:	Transport for NSW	**TIME:**	10:45
SITE:	M12 - East	**LOGGED BY:**	E. Smith / J. Miller

COORDINATES/GPS *(if applicable)* -33.8940857502266, 150.841997294191

SAMPLING METHOD *(ie grab, bucket)* Grab

DETAILED SAMPLE LOCATION DESCRIPTION Hinchinbrook Creek - Downstream

ENVIRONMENTAL OBSERVATIONS

WEATHER	Sunny
VEGETATION	Grass on slopes, some plant debris floating on edges of water
SLOPE	Moderate
EROSION	None
OTHER	Green-brown tinge, slightly cloudy, no odour/sheen.

FIELD MEASUREMENTS

TEMPERATURE (°C)	15.9
DO (mg/L)	6.18
DO (%S)	62.9
CONDUCTIVITY (µS/cm)	402
pH	7.3
REDOX (mV)	56.3
TURBIDITY (NTU)	13

HYDROLOGICAL DATA

FLOW MEASUREMENT	Slight, 0.05 m/s
CROSS SECTION WIDTH (m)	200
DEPTH (m)	>1
OTHER	

SAMPLE NO.	NO. OF CONTAINERS	PRESERVATIVE	DUPLICATE	COMMENTS
HINDS	11	Yes	No	

FIELD SUPERVISOR E. Smith **CHECKED (SIGN & DATE)** esmith 01.09.2023

SURFACE WATER SAMPLING RECORD

PROJECT NO.	12554717	**SURFACE WATER ID:**	HINUS
PROJECT NAME:	M12 Motorway	**DATE:**	31/08/2023
CLIENT:	Transport for NSW	**TIME:**	12:45
SITE:	M12 - East	**LOGGED BY:**	E. Smith / J. Miller

COORDINATES/GPS *(if applicable)* -33.885917091217, 150.822297157323

SAMPLING METHOD *(ie grab, bucket)* Grab

DETAILED SAMPLE LOCATION DESCRIPTION Hinchinbrook Creek - Upstream

ENVIRONMENTAL OBSERVATIONS

WEATHER	Sunny
VEGETATION	Grass surrounding, reeds in water body
SLOPE	Slight
EROSION	None
OTHER	Brown, highly turbid, no odour or sheen.

FIELD MEASUREMENTS

TEMPERATURE (°C)	14.5
DO (mg/L)	7.44
DO (%S)	73.8
CONDUCTIVITY (µS/cm)	473
pH	7.1
REDOX (mV)	5.4
TURBIDITY (NTU)	129

HYDROLOGICAL DATA

FLOW MEASUREMENT	None (pond)
CROSS SECTION WIDTH (m)	25
DEPTH (m)	>0.5
OTHER	Water level higher than last few rounds, some earthworks around in WSPT near location with no soil trap fencing, is clearly affected by heavy rainfall with visible soil being flushed out of area into sampling location.

SAMPLE NO.	NO. OF CONTAINERS	PRESERVATIVE	DUPLICATE	COMMENTS
HINUS	11	Yes	No	

FIELD SUPERVISOR E. Smith **CHECKED (SIGN & DATE)** esmith 01.09.2023

SURFACE WATER SAMPLING RECORD

PROJECT NO.	12554717	**SURFACE WATER ID:**	KEMDS
PROJECT NAME:	M12 Motorway	**DATE:**	31/08/2023
CLIENT:	Transport for NSW	**TIME:**	13:09
SITE:	M12 - Central	**LOGGED BY:**	E. Smith / J. Miller

COORDINATES/GPS *(if applicable)* -33.8744916131181, 150.798975039418

SAMPLING METHOD *(ie grab, bucket)* Grab

DETAILED SAMPLE LOCATION DESCRIPTION Kemps Creek - Downstream

ENVIRONMENTAL OBSERVATIONS

WEATHER	Sunny
VEGETATION	Grass and low shrubbery present around creek, lots of tree coverage and tree debris in water
SLOPE	None
EROSION	None
OTHER	Pale brown, slightly cloudy, no odour or sheen.

FIELD MEASUREMENTS

TEMPERATURE (°C)	12.7
DO (mg/L)	7.44
DO (%S)	70.8
CONDUCTIVITY (µS/cm)	7
pH	7.4
REDOX (mV)	70.5
TURBIDITY (NTU)	83

HYDROLOGICAL DATA

FLOW MEASUREMENT	Moderate, 0.2 m/s
CROSS SECTION WIDTH (m)	4
DEPTH (m)	>0.5
OTHER	Water level higher than previous rounds and much faster flowing

SAMPLE NO.	NO. OF CONTAINERS	PRESERVATIVE	DUPLICATE	COMMENTS
KEMDS	11	Yes	SWDUP1	ALS metals

FIELD SUPERVISOR E. Smith **CHECKED (SIGN & DATE)** esmith 01.09.2023

SURFACE WATER SAMPLING RECORD

PROJECT NO.	12554717	**SURFACE WATER ID:**	KEMUS
PROJECT NAME:	M12 Motorway	**DATE:**	31/08/2023
CLIENT:	Transport for NSW	**TIME:**	13:30
SITE:	M12 - Central	**LOGGED BY:**	E. Smith / J. Miller

COORDINATES/GPS *(if applicable)* -33.881000984653, 150.798710837019

SAMPLING METHOD *(ie grab, bucket)* Grab

DETAILED SAMPLE LOCATION DESCRIPTION Kemps Creek - Upstream

ENVIRONMENTAL OBSERVATIONS

WEATHER	Sunny
VEGETATION	Trees overhanging, low shrubbery on bank
SLOPE	Slight
EROSION	None
OTHER	Brown, cloudy, no odour or sheen.

FIELD MEASUREMENTS

TEMPERATURE (°C)	13.3
DO (mg/L)	7.49
DO (%S)	72.2
CONDUCTIVITY (µS/cm)	1152
pH	7.4
REDOX (mV)	68.1
TURBIDITY (NTU)	62

HYDROLOGICAL DATA

FLOW MEASUREMENT	Slight, 0.05 m/s
CROSS SECTION WIDTH (m)	5
DEPTH (m)	>0.5
OTHER	Water level is slightly higher than previous rounds

SAMPLE NO.	NO. OF CONTAINERS	PRESERVATIVE	DUPLICATE	COMMENTS
KEMUS	11	Yes	SWDUP2	EF metals

FIELD SUPERVISOR E. Smith **CHECKED (SIGN & DATE)** esmith 01.09.2023

SURFACE WATER SAMPLING RECORD

PROJECT NO.	12554717	**SURFACE WATER ID:**	ROPDS
PROJECT NAME:	M12 Motorway	**DATE:**	31/08/2023
CLIENT:	Transport for NSW	**TIME:**	11:26
SITE:	M12 - East	**LOGGED BY:**	E. Smith / J. Miller

COORDINATES/GPS *(if applicable)* -33.8661214462004, 150.84622034034

SAMPLING METHOD *(ie grab, bucket)* Grab

DETAILED SAMPLE LOCATION DESCRIPTION Ropes Creek - Downstream

ENVIRONMENTAL OBSERVATIONS

WEATHER	Sunny
VEGETATION	Tall reeds in water, some trees overhanging, plant debris in water
SLOPE	Steep from Wallgrove Rd
EROSION	No
OTHER	Green-brown tinge, slightly cloudy, no odour/sheen.

FIELD MEASUREMENTS

TEMPERATURE (°C)	13.6
DO (mg/L)	4.87
DO (%S)	47.2
CONDUCTIVITY (µS/cm)	724
pH	7.1
REDOX (mV)	-109.0
TURBIDITY (NTU)	46

HYDROLOGICAL DATA

FLOW MEASUREMENT	Very slight, 0.01 m/s
CROSS SECTION WIDTH (m)	2
DEPTH (m)	>1
OTHER	

SAMPLE NO.	NO. OF CONTAINERS	PRESERVATIVE	DUPLICATE	COMMENTS
ROPDS	11	Yes	No	

FIELD SUPERVISOR E. Smith **CHECKED (SIGN & DATE)** esmith 01.09.2023

SURFACE WATER SAMPLING RECORD

PROJECT NO.	12554717	**SURFACE WATER ID:**	ROPUS
PROJECT NAME:	M12 Motorway	**DATE:**	31/08/2023
CLIENT:	Transport for NSW	**TIME:**	12:05
SITE:	M12 - East	**LOGGED BY:**	E. Smith / J. Miller

COORDINATES/GPS *(if applicable)* -33.8661748475932, 150.849684345683

SAMPLING METHOD *(ie grab, bucket)* Grab

DETAILED SAMPLE LOCATION DESCRIPTION Ropes Creek - Upstream

ENVIRONMENTAL OBSERVATIONS

WEATHER	Sunny
VEGETATION	Grass on banks, reeds in water
SLOPE	Slight on western side, none on eastern side
EROSION	None
OTHER	Brown, turbid, no odour or sheen.

FIELD MEASUREMENTS

TEMPERATURE (°C)	15.6
DO (mg/L)	1.41
DO (%S)	14.3
CONDUCTIVITY (µS/cm)	219
pH	6.7
REDOX (mV)	-60.5
TURBIDITY (NTU)	191

HYDROLOGICAL DATA

FLOW MEASUREMENT	None
CROSS SECTION WIDTH (m)	40
DEPTH (m)	<0.5
OTHER	

SAMPLE NO.	NO. OF CONTAINERS	PRESERVATIVE	DUPLICATE	COMMENTS
ROPUS	11	Yes	No	

FIELD SUPERVISOR E. Smith **CHECKED (SIGN & DATE)** esmith 01.09.2023

SURFACE WATER SAMPLING RECORD

PROJECT NO.	12554717	**SURFACE WATER ID:**	SOUDS
PROJECT NAME:	M12 Motorway	**DATE:**	31/08/2023
CLIENT:	Transport for NSW	**TIME:**	14:20
SITE:	M12 - Central	**LOGGED BY:**	E. Smith / J. Miller

COORDINATES/GPS *(if applicable)* -33.8601918874489, 150.768886308687

SAMPLING METHOD *(ie grab, bucket)* Grab

DETAILED SAMPLE LOCATION DESCRIPTION South Creek - Downstream

ENVIRONMENTAL OBSERVATIONS

WEATHER	Sunny
VEGETATION	Grass on banks
SLOPE	Steep on both sides
EROSION	No
OTHER	Brown, highly turbid,, no odour or sheen.

FIELD MEASUREMENTS

TEMPERATURE (°C)	12.3
DO (mg/L)	6.69
DO (%S)	62.7
CONDUCTIVITY (µS/cm)	698
pH	7.5
REDOX (mV)	76.8
TURBIDITY (NTU)	182

HYDROLOGICAL DATA

FLOW MEASUREMENT	Slight, 0.05 m/s
CROSS SECTION WIDTH (m)	15
DEPTH (m)	>0.5
OTHER	Higher water level than recent monitoring rounds

SAMPLE NO.	NO. OF CONTAINERS	PRESERVATIVE	DUPLICATE	COMMENTS
SOUDS	11	Yes	No	

FIELD SUPERVISOR E. Smith **CHECKED (SIGN & DATE)** esmith 01.09.2023

SURFACE WATER SAMPLING RECORD

PROJECT NO.	12554717	**SURFACE WATER ID:**	SOUUS
PROJECT NAME:	M12 Motorway	**DATE:**	31/08/2023
CLIENT:	Transport for NSW	**TIME:**	14:00
SITE:	M12 - Central	**LOGGED BY:**	E. Smith / J. Miller

COORDINATES/GPS *(if applicable)* -33.8618105129283, 150.770918661765

SAMPLING METHOD *(ie grab, bucket)* Grab

DETAILED SAMPLE LOCATION DESCRIPTION South Creek - Upstream

ENVIRONMENTAL OBSERVATIONS

WEATHER	Sunny
VEGETATION	Grass on slopes
SLOPE	Steep on northern side, moderate on southern side
EROSION	No
OTHER	Brown, cloudy, no odour or sheen

FIELD MEASUREMENTS

TEMPERATURE (°C)	13.0
DO (mg/L)	6.80
DO (%S)	65.1
CONDUCTIVITY (µS/cm)	710
pH	7.4
REDOX (mV)	74.0
TURBIDITY (NTU)	142

HYDROLOGICAL DATA

FLOW MEASUREMENT	None
CROSS SECTION WIDTH (m)	12
DEPTH (m)	>0.5
OTHER	

SAMPLE NO.	NO. OF CONTAINERS	PRESERVATIVE	DUPLICATE	COMMENTS
SOUUS	11	Yes	No	

FIELD SUPERVISOR E. Smith **CHECKED (SIGN & DATE)** esmith 01.09.2023

SURFACE WATER SAMPLING RECORD

PROJECT NO.	12554717	**SURFACE WATER ID:**	BADDS
PROJECT NAME:	M12 Motorway	**DATE:**	05/09/2023
CLIENT:	Transport for NSW	**TIME:**	12:46
SITE:	M12 - West	**LOGGED BY:**	E. Smith / J. Miller

COORDINATES/GPS *(if applicable)* -33.8568676379326, 150.757776857932

SAMPLING METHOD *(ie grab, bucket)* Grab

DETAILED SAMPLE LOCATION DESCRIPTION Badgery's Creek - Downstream

ENVIRONMENTAL OBSERVATIONS

WEATHER	Sunny
VEGETATION	trees overhanging, grassed banks, dead trees in water
SLOPE	slight
EROSION	No
OTHER	Brown, highly turbid, no odour or sheen.

FIELD MEASUREMENTS

TEMPERATURE (°C)	13.3
DO (mg/L)	5.99
DO (%S)	57.2
CONDUCTIVITY (µS/cm)	914
pH	7.23
REDOX (mV)	178.3
TURBIDITY (NTU)	127.46

HYDROLOGICAL DATA

FLOW MEASUREMENT	low flow. <0.1m per second
CROSS SECTION WIDTH (m)	8
DEPTH (m)	<1.0
OTHER	

SAMPLE NO.	NO. OF CONTAINERS	PRESERVATIVE	DUPLICATE	COMMENTS
BADDS	11	Yes	No	

FIELD SUPERVISOR E. Smith **CHECKED (SIGN & DATE)** esmith 06-09-2023

SURFACE WATER SAMPLING RECORD

PROJECT NO.	12554717	**SURFACE WATER ID:**	BADMS
PROJECT NAME:	M12 Motorway	**DATE:**	05/09/2023
CLIENT:	Transport for NSW	**TIME:**	12:29
SITE:	M12 - West	**LOGGED BY:**	E. Smith / J. Miller

COORDINATES/GPS *(if applicable)* -33.859555514706, 150.75473582078

SAMPLING METHOD *(ie grab, bucket)* Grab

DETAILED SAMPLE LOCATION DESCRIPTION Badgery's Creek - Midstream

ENVIRONMENTAL OBSERVATIONS

WEATHER	Sunny
VEGETATION	trees overhanging, grassed banks
SLOPE	slight
EROSION	No, sampled from destroyed concrete bridge
OTHER	Brown, highly turbid, no odour or sheen.

FIELD MEASUREMENTS

TEMPERATURE (°C)	13.5
DO (mg/L)	6.47
DO (%S)	62.3
CONDUCTIVITY (µS/cm)	995
pH	7.23
REDOX (mV)	146.7
TURBIDITY (NTU)	103.48

HYDROLOGICAL DATA

FLOW MEASUREMENT	very slight. <0.1m per second
CROSS SECTION WIDTH (m)	5
DEPTH (m)	<1.0
OTHER	

SAMPLE NO.	NO. OF CONTAINERS	PRESERVATIVE	DUPLICATE	COMMENTS
BADMS	11	Yes	No	

FIELD SUPERVISOR E. Smith **CHECKED (SIGN & DATE)** esmith 06-09-2023

SURFACE WATER SAMPLING RECORD

PROJECT NO.	12554717	**SURFACE WATER ID:**	BADUS
PROJECT NAME:	M12 Motorway	**DATE:**	05/09/2023
CLIENT:	Transport for NSW	**TIME:**	13:47
SITE:	M12 - West	**LOGGED BY:**	E. Smith / J. Miller

COORDINATES/GPS *(if applicable)* -33.8738120940615, 150.754813158426

SAMPLING METHOD *(ie grab, bucket)* Grab

DETAILED SAMPLE LOCATION DESCRIPTION Badgery's Creek - Upstream

ENVIRONMENTAL OBSERVATIONS

WEATHER	Sunny
VEGETATION	trees overhanging, grassed banks, dead trees in water
SLOPE	slight
EROSION	low
OTHER	Brown, moderately turbid, no odour. sludgy rust coloured sheen

FIELD MEASUREMENTS

TEMPERATURE (°C)	16.4
DO (mg/L)	9.48
DO (%S)	96.8
CONDUCTIVITY (µS/cm)	743
pH	7.37
REDOX (mV)	170.2
TURBIDITY (NTU)	62.74

HYDROLOGICAL DATA

FLOW MEASUREMENT	low flow. <0.1m per second
CROSS SECTION WIDTH (m)	4
DEPTH (m)	<1.0
OTHER	

SAMPLE NO.	NO. OF CONTAINERS	PRESERVATIVE	DUPLICATE	COMMENTS
BADUS	11	Yes	SWDUP1	

FIELD SUPERVISOR E. Smith **CHECKED (SIGN & DATE)** esmith 06-09-2023

SURFACE WATER SAMPLING RECORD

PROJECT NO.	12554717	**SURFACE WATER ID:**	COSDS
PROJECT NAME:	M12 Motorway	**DATE:**	05/09/2023
CLIENT:	Transport for NSW	**TIME:**	12:07
SITE:	M12 - West	**LOGGED BY:**	E. Smith / J. Miller

COORDINATES/GPS *(if applicable)* -33.8572573122049, 150.732788594288

SAMPLING METHOD *(ie grab, bucket)* Grab

DETAILED SAMPLE LOCATION DESCRIPTION Cosgroves Creek - Downstream

ENVIRONMENTAL OBSERVATIONS

WEATHER	Sunny
VEGETATION	Trees overhanging, grass on banks, tree debris in stream
SLOPE	Steep
EROSION	No
OTHER	Brown, highly turbid, no odour or sheen.

FIELD MEASUREMENTS

TEMPERATURE (°C)	12.8
DO (mg/L)	6.49
DO (%S)	61.2
CONDUCTIVITY (µS/cm)	867
pH	7.56
REDOX (mV)	104.3
TURBIDITY (NTU)	212.06

HYDROLOGICAL DATA

FLOW MEASUREMENT	no flow
CROSS SECTION WIDTH (m)	3
DEPTH (m)	<1.0
OTHER	

SAMPLE NO.	NO. OF CONTAINERS	PRESERVATIVE	DUPLICATE	COMMENTS
COSDS	11	Yes	No	

FIELD SUPERVISOR E. Smith **CHECKED (SIGN & DATE)** esmith 06-09-2023

SURFACE WATER SAMPLING RECORD

PROJECT NO.	12554717	**SURFACE WATER ID:**	COSUS
PROJECT NAME:	M12 Motorway	**DATE:**	05/09/2023
CLIENT:	Transport for NSW	**TIME:**	11:55
SITE:	M12 - West	**LOGGED BY:**	E. Smith / J. Miller

COORDINATES/GPS *(if applicable)* -33.8596027431528, 150.729091683614

SAMPLING METHOD *(ie grab, bucket)* Grab

DETAILED SAMPLE LOCATION DESCRIPTION Cosgroves Creek - Upstream

ENVIRONMENTAL OBSERVATIONS

WEATHER	Sunny
VEGETATION	Trees overhanging, grass on banks, tree debris in stream
SLOPE	Moderate
EROSION	No
OTHER	Green-brown, slightly turbid, no odour or sheen.

FIELD MEASUREMENTS

TEMPERATURE (°C)	12.5
DO (mg/L)	3.15
DO (%S)	30.6
CONDUCTIVITY (µS/cm)	4120
pH	7.01
REDOX (mV)	116.2
TURBIDITY (NTU)	25.09

HYDROLOGICAL DATA

FLOW MEASUREMENT	Very slight, 0.05 m/s
CROSS SECTION WIDTH (m)	2
DEPTH (m)	<0.5
OTHER	

SAMPLE NO.	NO. OF CONTAINERS	PRESERVATIVE	DUPLICATE	COMMENTS
COSUS	11	Yes	No	

FIELD SUPERVISOR E. Smith **CHECKED (SIGN & DATE)** esmith 06-09-2023

SURFACE WATER SAMPLING RECORD

PROJECT NO.	12554717	**SURFACE WATER ID:**	HINDS
PROJECT NAME:	M12 Motorway	**DATE:**	06/09/2023
CLIENT:	Transport for NSW	**TIME:**	10:37
SITE:	M12 - East	**LOGGED BY:**	E. Smith / J. Miller

COORDINATES/GPS *(if applicable)* -33.8940857502266, 150.841997294191

SAMPLING METHOD *(ie grab, bucket)* Grab

DETAILED SAMPLE LOCATION DESCRIPTION Hinchinbrook Creek - Downstream

ENVIRONMENTAL OBSERVATIONS

WEATHER	Sunny
VEGETATION	Dense grass, floating plant debris, algae growth in water
SLOPE	slight
EROSION	low
OTHER	light green Brown, moderately turbid, no odour, no sheen

FIELD MEASUREMENTS

TEMPERATURE (°C)	16.7
DO (mg/L)	8.90
DO (%S)	91.6
CONDUCTIVITY (µS/cm)	457
pH	7.72
REDOX (mV)	67.3
TURBIDITY (NTU)	10.13

HYDROLOGICAL DATA

FLOW MEASUREMENT	no flow
CROSS SECTION WIDTH (m)	200
DEPTH (m)	>1.0m
OTHER	

SAMPLE NO.	NO. OF CONTAINERS	PRESERVATIVE	DUPLICATE	COMMENTS
HINDS	11	Yes	SWDUP2	

FIELD SUPERVISOR E. Smith **CHECKED (SIGN & DATE)** esmith 06-09-2023

SURFACE WATER SAMPLING RECORD

PROJECT NO.	12554717	**SURFACE WATER ID:**	HINUS
PROJECT NAME:	M12 Motorway	**DATE:**	06/09/2023
CLIENT:	Transport for NSW	**TIME:**	9:41
SITE:	M12 - East	**LOGGED BY:**	E. Smith / J. Miller

COORDINATES/GPS *(if applicable)* -33.885917091217, 150.822297157323

SAMPLING METHOD *(ie grab, bucket)* Grab

DETAILED SAMPLE LOCATION DESCRIPTION Hinchinbrook Creek - Upstream

ENVIRONMENTAL OBSERVATIONS

WEATHER	Sunny
VEGETATION	Dense grass, reeds and water rushes
SLOPE	slight
EROSION	low
OTHER	Brown, highly turbid, no odour, no sheen

FIELD MEASUREMENTS

TEMPERATURE (°C)	14.5
DO (mg/L)	5.76
DO (%S)	56.6
CONDUCTIVITY (µS/cm)	529
pH	7.52
REDOX (mV)	-2.4
TURBIDITY (NTU)	51.41

HYDROLOGICAL DATA

FLOW MEASUREMENT	no flow
CROSS SECTION WIDTH (m)	30
DEPTH (m)	<1.0
OTHER	

SAMPLE NO.	NO. OF CONTAINERS	PRESERVATIVE	DUPLICATE	COMMENTS
HINUS	11	Yes	No	

FIELD SUPERVISOR E. Smith **CHECKED (SIGN & DATE)** esmith 06-09-2023

SURFACE WATER SAMPLING RECORD

PROJECT NO.	12554717	**SURFACE WATER ID:**	KEMDS
PROJECT NAME:	M12 Motorway	**DATE:**	05/09/2023
CLIENT:	Transport for NSW	**TIME:**	14:16
SITE:	M12 - Central	**LOGGED BY:**	E. Smith / J. Miller

COORDINATES/GPS *(if applicable)* -33.8744916131181, 150.798975039418

SAMPLING METHOD *(ie grab, bucket)* Grab

DETAILED SAMPLE LOCATION DESCRIPTION Kemps Creek - Downstream

ENVIRONMENTAL OBSERVATIONS

WEATHER	Sunny
VEGETATION	trees overhanging, dense ground cover, dead trees in water
SLOPE	slight
EROSION	low
OTHER	Brown, moderately turbid, no odour. brown sludge caught on dead tree

FIELD MEASUREMENTS

TEMPERATURE (°C)	13.2
DO (mg/L)	6.80
DO (%S)	65.0
CONDUCTIVITY (µS/cm)	939
pH	7.29
REDOX (mV)	203.1
TURBIDITY (NTU)	33.90

HYDROLOGICAL DATA

FLOW MEASUREMENT	low flow. <0.5m per second
CROSS SECTION WIDTH (m)	2
DEPTH (m)	<1.0
OTHER	

SAMPLE NO.	NO. OF CONTAINERS	PRESERVATIVE	DUPLICATE	COMMENTS
KEMDS	11	Yes	No	

FIELD SUPERVISOR E. Smith **CHECKED (SIGN & DATE)** esmith 06-09-2023

SURFACE WATER SAMPLING RECORD

PROJECT NO.	12554717	**SURFACE WATER ID:**	KEMUS
PROJECT NAME:	M12 Motorway	**DATE:**	05/09/2023
CLIENT:	Transport for NSW	**TIME:**	14:35
SITE:	M12 - Central	**LOGGED BY:**	E. Smith / J. Miller

COORDINATES/GPS *(if applicable)* -33.881000984653, 150.798710837019

SAMPLING METHOD *(ie grab, bucket)* Grab

DETAILED SAMPLE LOCATION DESCRIPTION Kemps Creek - Upstream

ENVIRONMENTAL OBSERVATIONS

WEATHER	Sunny
VEGETATION	trees overhanging, sporadic ground cover, dead trees in water, heavy tree litter on banks
SLOPE	slight
EROSION	low
OTHER	Brown, moderately turbid, no odour. brown sludge caught on dead tree

FIELD MEASUREMENTS

TEMPERATURE (°C)	13.7
DO (mg/L)	5.97
DO (%S)	57.6
CONDUCTIVITY (µS/cm)	935
pH	7.18
REDOX (mV)	217.6
TURBIDITY (NTU)	34.97

HYDROLOGICAL DATA

FLOW MEASUREMENT	no flow
CROSS SECTION WIDTH (m)	5
DEPTH (m)	<1.0
OTHER	

SAMPLE NO.	NO. OF CONTAINERS	PRESERVATIVE	DUPLICATE	COMMENTS
KEMUS	11	Yes	No	

FIELD SUPERVISOR E. Smith **CHECKED (SIGN & DATE)** esmith 06-09-2023

SURFACE WATER SAMPLING RECORD

PROJECT NO.	12554717	**SURFACE WATER ID:**	ROPDS
PROJECT NAME:	M12 Motorway	**DATE:**	06/09/2023
CLIENT:	Transport for NSW	**TIME:**	11:00
SITE:	M12 - East	**LOGGED BY:**	E. Smith / J. Miller

COORDINATES/GPS *(if applicable)* -33.8661214462004, 150.84622034034

SAMPLING METHOD *(ie grab, bucket)* Grab

DETAILED SAMPLE LOCATION DESCRIPTION Ropes Creek - Downstream

ENVIRONMENTAL OBSERVATIONS

WEATHER	Sunny
VEGETATION	Dense grass, reeds and water rushes
SLOPE	steep
EROSION	low
OTHER	Green brown, slightly turbid, no odour, no sheen

FIELD MEASUREMENTS

TEMPERATURE (°C)	13.9
DO (mg/L)	7.41
DO (%S)	72.6
CONDUCTIVITY (µS/cm)	3791
pH	7.49
REDOX (mV)	125.3
TURBIDITY (NTU)	8.77

HYDROLOGICAL DATA

FLOW MEASUREMENT	no flow
CROSS SECTION WIDTH (m)	2
DEPTH (m)	<1.0
OTHER	

SAMPLE NO.	NO. OF CONTAINERS	PRESERVATIVE	DUPLICATE	COMMENTS
ROPDS	11	Yes	No	

FIELD SUPERVISOR E. Smith **CHECKED (SIGN & DATE)** esmith 06-09-2023

SURFACE WATER SAMPLING RECORD

PROJECT NO.	12554717	**SURFACE WATER ID:**	ROPUS
PROJECT NAME:	M12 Motorway	**DATE:**	06/09/2023
CLIENT:	Transport for NSW	**TIME:**	11:31
SITE:	M12 - East	**LOGGED BY:**	E. Smith / J. Miller

COORDINATES/GPS *(if applicable)* -33.8661748475932, 150.849684345683

SAMPLING METHOD *(ie grab, bucket)* Grab

DETAILED SAMPLE LOCATION DESCRIPTION Ropes Creek - Upstream

ENVIRONMENTAL OBSERVATIONS

WEATHER	Sunny
VEGETATION	Dense grass, reeds and water rushes
SLOPE	slight
EROSION	low
OTHER	Green brown, highly turbid, no odour, silver sheen. large amount of cow fecal matter

FIELD MEASUREMENTS

TEMPERATURE (°C)	18.2
DO (mg/L)	5.16
DO (%S)	54.4
CONDUCTIVITY (µS/cm)	285
pH	7.09
REDOX (mV)	66.9
TURBIDITY (NTU)	130.56

HYDROLOGICAL DATA

FLOW MEASUREMENT	no flow
CROSS SECTION WIDTH (m)	30
DEPTH (m)	<1.0
OTHER	

SAMPLE NO.	NO. OF CONTAINERS	PRESERVATIVE	DUPLICATE	COMMENTS
ROPUS	11	Yes	No	

FIELD SUPERVISOR E. Smith **CHECKED (SIGN & DATE)** esmith 06-09-2023

SURFACE WATER SAMPLING RECORD

PROJECT NO.	12554717	**SURFACE WATER ID:**	SOUDS
PROJECT NAME:	M12 Motorway	**DATE:**	06/09/2023
CLIENT:	Transport for NSW	**TIME:**	7:45
SITE:	M12 - Central	**LOGGED BY:**	E. Smith / J. Miller

COORDINATES/GPS *(if applicable)* -33.8601918874489, 150.768886308687

SAMPLING METHOD *(ie grab, bucket)* Grab

DETAILED SAMPLE LOCATION DESCRIPTION South Creek - Downstream

ENVIRONMENTAL OBSERVATIONS

WEATHER	Clear skies, sunny
VEGETATION	Grass on banks
SLOPE	Steep on northern side, moderate on southern side
EROSION	No
OTHER	Green-brown, highly turbid, no odour or sheen.

FIELD MEASUREMENTS

TEMPERATURE (°C)	13.5
DO (mg/L)	11.14
DO (%S)	107.3
CONDUCTIVITY (µS/cm)	1201
pH	8.27
REDOX (mV)	106.6
TURBIDITY (NTU)	76.13

HYDROLOGICAL DATA

FLOW MEASUREMENT	Very slight, 0.01 m/s
CROSS SECTION WIDTH (m)	12
DEPTH (m)	>0.5
OTHER	Sydney Water treatment plant is being built on site adjacent to M12 Central. SWC Environmental Advisor indicated they have basins on site which diacharge into South Creek slightly downstream on the old bridge (i.e. between SOUUS and SOUDS) which has been operating for months. Water is more turbid than upstream.

SAMPLE NO.	NO. OF CONTAINERS	PRESERVATIVE	DUPLICATE	COMMENTS
SOUDS	11	Yes	No	

FIELD SUPERVISOR E. Smith **CHECKED (SIGN & DATE)** esmith 06-09-2023

SURFACE WATER SAMPLING RECORD

PROJECT NO.	12554717	**SURFACE WATER ID:**	SOUUS
PROJECT NAME:	M12 Motorway	**DATE:**	06/09/2023
CLIENT:	Transport for NSW	**TIME:**	7:31
SITE:	M12 - Central	**LOGGED BY:**	E. Smith / J. Miller

COORDINATES/GPS *(if applicable)* -33.8618105129283, 150.770918661765

SAMPLING METHOD *(ie grab, bucket)* Grab

DETAILED SAMPLE LOCATION DESCRIPTION South Creek - Upstream

ENVIRONMENTAL OBSERVATIONS

WEATHER	Clear skies, sunny
VEGETATION	Grass on banks
SLOPE	Steep on northern side, moderate on southern side
EROSION	No
OTHER	Green-brown, mostly clear, no odour or sheen.

FIELD MEASUREMENTS

TEMPERATURE (°C)	12.5
DO (mg/L)	10.17
DO (%S)	95.8
CONDUCTIVITY (µS/cm)	1227
pH	8.06
REDOX (mV)	92.7
TURBIDITY (NTU)	36.41

HYDROLOGICAL DATA

FLOW MEASUREMENT	Very slight, 0.01 m/s
CROSS SECTION WIDTH (m)	12
DEPTH (m)	>0.5
OTHER	

SAMPLE NO.	NO. OF CONTAINERS	PRESERVATIVE	DUPLICATE	COMMENTS
SOUUS	11	Yes	No	

FIELD SUPERVISOR E. Smith **CHECKED (SIGN & DATE)** esmith 06-09-2023

Appendix G

Laboratory reports

CHAIN OF CUSTODY

ALS Environmental

ALS Laboratory: please tick →

□BRISBANE 32 Shand Street Stafford QLD 4053 PO Box 1796 Fortitude Valley QLD 4006 Ph: 07 3243 7222 E: samples.brisbane@alsglobal.com

□MACKAY 78 Harbour Road MUKKA QLD 4740 PO Box 5347 Ph: 07 4944 0177 E: samples.mackay@alsglobal.com

□ADELAIDE 21 Burma Road PARALOWIE SA 5108 PO Box 2101 Paralowie DC SA 5108 Ph: 08 8359 0890 E: samples.adelaide@alsglobal.com

□PERTH 10 Hod Way Malaga WA 6090 Ph: 08 9209 7655 E: samples.perth@alsglobal.com

□TOWNSVILLE 14-15 Desma Court Bohle QLD 4818 PO Box 1549 Ph: 07 4796 0600 E: samples.townsville@alsglobal.com

□NEWCASTLE 5/585 Maitland Road Mayfield West NSW 2304 PO Box 2101 Ph: 02 4968 9433 E: samples.newcastle@alsglobal.com

□WAGGA WAGGA 2 Apollo Street Wagga Wagga NSW 2650 PO Box 8082 Ph: 02 6971 9696 E: samples.wagga@alsglobal.com

□ALBURY 2 Dean Street Albury NSW 2640 PO Box 8082 Ph: 02 6041 1611 E: samples.albury@alsglobal.com

□NOWRA 4/5 Geary Place North Nowra NSW 2541 PO Box 1026 Ph: 02 4422 2711 E: samples.nowra@alsglobal.com

□SYDNEY 277-289 Woodpark Road Smithfield NSW 2164 Ph: 02 8784 8555 E: samples.sydney@alsglobal.com

Environmental Division Sydney

Work Order Reference

ES2311425

Telephone : +61-2-8784 8555

CLIENT: GHD Pty Ltd	**TURNAROUND REQUIREMENT:** ☐ Standard TAT (List due date): STANDARD TAT		**FOR LAB**
OFFICE: Sydney	(Standard TAT may be longer for some tests e.g., Ultra Trace Organics) ☐ Non Standard or urgent TAT (List due date):		Custody Se… N/A
PROJECT: M12 Surface Water	**ALS QUOTE NO.:** SY/322/21	**COC SEQUENCE NUMBER (Circle)**	Free ice / fr… N/A
ORDER NUMBER: 12554717		COC: 1 2 3 4 5 6 7	Random Sa…
PROJECT MANAGER: Henry Luo	**CONTACT PH: Henry Luo** 0414 090 002	OF: 1 2 3 4 5 6 7	Other comm…

SAMPLER: Terry Nham, Emily Smith	**SAMPLER MOBILE:** 0403 251 883	**RELINQUISHED BY:** Emily Smith-GHD	**RECEIVED BY:** Jack	**RELINQUISHED**
COC emailed to ALS? (YES / NO)	**EDD FORMAT (or default):** ESDAT	DATE/TIME: 5/4/23 2:15pm	DATE/TIME: 05/04/23 1415	DATE/TIME:
Email Reports to: henry.luo@ghd.com , ghdlabreports@ghd.com; terry.nham@ghd.com, emily.smith@ghd.com				

COMMENTS/SPECIAL HANDLING/STORAGE OR DISPOSAL:

ALS USE	SAMPLE DETAILS MATRIX: SOLID (S) WATER (W)			CONTAINER INFORMATION		ANALYSIS REQUIRED including SUITES (NB. Suite Codes must be listed to attract suite price) Where **Metals** are required, specify **Total** (unfiltered bottle required) or **Dissolved** (field filtered bottle required).												
LAB ID	SAMPLE ID	DATE / TIME	MATRIX	Comments	TOTAL CONTAINERS	W-02T (8 total metals)	EG020T (total Fe, Mn)	NT-08A (total N, No2, No3, NH3, Total P, reactive P)	EP008 (chlorophyll a)	EP020 (oil & grease)	UTO-9W Ultra trace OC/OP	EP074DEFG (VOC - fugigants, Hal aliphatics, Hal Aromatics, THM)	HARDNESS	W-14A (PAH/phenols)	EA015H (TDS), EA025H (TSS)	EP080 (BTEXN)	Ultra trace OPP (EP234AX)	Super Utra Trace PCB's (EP1318-ST)	PFAS - full suite (EP231X)
1	BADDS	4/4/23	Water		11	X	X	X	X	X	X	X	X	X	X	X			
2	BADMS	4/4/23	Water		11	X	X	X	X	X	X	X	X	X	X	X			
3	BADUS	4/4/23	Water		11	X	X	X	X	X	X	X	X	X	X	X			
4	COSDS	4/4/23	Water		11	X	X	X	X	X	X	X	X	X	X	X			
5	COSUS	4/4/23	Water		11	X	X	X	X	X	X	X	X	X	X	X			
6	HINDS	4/4/23	Water		11	X	X	X	X	X	X	X	X	X	X	X			
7	HINUS	4/4/23	Water		11	X	X	X	X	X	X	X	X	X	X	X			
8	KEMDS	5/4/23	Water		11	X	X	X	X	X	X	X	X	X	X	X			
9	KEMUS	5/4/23	Water		11	X	X	X	X	X	X	X	X	X	X	X			
10	ROPDS	4/4/23	Water		11	X	X	X	X	X	X	X	X	X	X	X			
11	ROPUS	4/4/23	Water		11	X	X	X	X	X	X	X	X	X	X	X			
12	SOUDS	5/4/23	Water		11	X	X	X	X	X	X	X	X	X	X	X			
13	SOUUS	5/4/23	Water		11	X	X	X	X	X	X	X	X	X	X	X			
14	SWDUP1	5/4/23	Water		1	X													
—	SWDUP2	5/4/23	Water	FORWARD TO EUROFINS WITH ATTACHED COC	1														
—	GWDUP2	4/4/23	Water		1														

HT

eurofins | mgt

☑ **Sydney**
Unit F3 - 6 Building F, 16 Mars Road, Lane Cove
Phone: +612 9900 8400
Email: enviro.syd@mgtlabmark.com.au

☐ **Brisbane**
Unit 1-21 Smallwood Place, Murrarie
Phone: +617 3902 4600
Email: enviro.bris@mgtlabmark.com.au

☐ **Melbourne**
2 Kingston Town Close, Oakleigh, VIC 3166
Phone: +613 8564 5000 Fax: +613 8564 5090
Email: enquiries.melb@mgtlabmark.com.au

CHAIN OF CUSTODY RECORD

CLIENT DETAILS

Company Name : GHD Pty Ltd, Sydney	**Contact Name :** Terry Nham 0403 251 883	**Purchase Order :** 12554717	**COC Number :**
Office Address :	**Project Manager:** Henry Luo	**PROJECT Number :** 12554717	**Eurofins | mgt quote ID :**
Level 15, 133 Castlereagh Street, Sydney NSW 2000	**Email for results :** emily.smith@ghd.com; terry.nham@ghd.com; henry.luo@ghd.com; ghdlabreports@ghd.com	**PROJECT Name :** M12 Water Sampling	**Data output format:** ESDAT

Special Directions & Comments :

Sent from ALS

Eurofins | mgt DI water batch number:

	Sample ID	Date	Matrix	Dissolved metals	Total metals					
1	SWDUP2	5/4/23	water		X					
2	GWDUP2	5/4/23	water	X						
3										
4										
5										
6										
7										
8										
9										
10										

Some common holding times (with correct preservation).
For further information contact the lab

Waters		Soils	
BTEX, MAH, VOC	14 days	BTEX, MAH, VOC	14 days
TRH, PAH, Phenols, Pesticides	7 days	TRH, PAH, Phenols, Pesticides	14 days
Heavy Metals	6 months	Heavy Metals	6 months
Mercury, CrVI	28 days	Mercury, CrVI	28 days
Microbiological testing	24 hours	Microbiological testing	72 hours
BOD, Nitrate, Nitrite, Total N	2 days	Anions	28 days
Solids - TSS, TDS etc	7 days	SPOCAS, pH Field and FOX, CrS	24 hours
Ferrous iron	7 days	ASLP, TCLP	7 days

Containers:

500P	250P	60P	1LA	40mL vial	200mL A	Jar	Bag

Sample comments:

Laboratory Staff

Relinquished By: ~~Terry Nham (GHD)~~ Emily Smith (GHD)
Date & Time : 5/4/23 2:15 pm
Signature: eSmith

Received By:
Date & Time :
Signature:

Method Of Shipment

☐ Courier
☐ Hand Delivered
☐ Postal
Courier Consignment # :

Temperature on arrival:

Report number:

SAMPLE RECEIPT NOTIFICATION (SRN)

Work Order : **ES2311425**

Client	: **GHD PTY LTD**	Laboratory	: Environmental Division Sydney
Contact	: MR HENRY LUO	Contact	: Sarah Mathew
Address	: LEVEL 15, 133 CASTLEREAGH STREET SYDNEY NSW, AUSTRALIA 2000	Address	: 277-289 Woodpark Road Smithfield NSW Australia 2164
E-mail	: henry.luo@ghd.com	E-mail	: sarah.mathew@alsglobal.com
Telephone	: +61 02 9239 7100	Telephone	: +61-2-8784 8555
Facsimile	: +61 02 9239 7199	Facsimile	: +61-2-8784 8500
Project	: 12554717	Page	: 1 of 3
Order number	: ----	Quote number	: ES2021GHDSER0026 (SY/322/21)
C-O-C number	: ----	QC Level	: NEPM 2013 B3 & ALS QC Standard
Site	: M12 Surface Water		
Sampler	: EMILY SMITH, TERRY NHAM		

Dates

Date Samples Received	: 05-Apr-2023 14:15	Issue Date	: 05-Apr-2023
Client Requested Due Date	: 14-Apr-2023	Scheduled Reporting Date	: **14-Apr-2023**

Delivery Details

Mode of Delivery	: Client Drop Off	Security Seal	: Not Available
No. of coolers/boxes	: 8	Temperature	: 2.0'C - Ice present
Receipt Detail	:	No. of samples received / analysed	: 14 / 14

General Comments

- This report contains the following information:
  - Sample Container(s)/Preservation Non-Compliances
  - Summary of Sample(s) and Requested Analysis
  - Proactive Holding Time Report
  - Requested Deliverables
- **Samples SWDUP2 and GWDUP2 have been forwarded to Eurofins.**
- **Please refer to the Proactive Holding Time Report table below which summarises breaches of recommended holding times that have occurred prior to samples/instructions being received at the laboratory. The laboratory will process these samples unless instructions are received from you indicating you do not wish to proceed. The absence of this summary table indicates that all samples have been received within the recommended holding times for the analysis requested.**
- Please direct any queries you have regarding this work order to the above ALS laboratory contact.
- Analytical work for this work order will be conducted at ALS Sydney.
- Sample Disposal - Aqueous (3 weeks), Solid (2 months ± 1 week) from receipt of samples.
- Please be aware that APHA/NEPM recommends water and soil samples be chilled to less than or equal to 6°C for chemical analysis, and less than or equal to 10°C but unfrozen for Microbiological analysis. Where samples are received above this temperature, it should be taken into consideration when interpreting results. Refer to ALS EnviroMail 85 for ALS recommendations of the best practice for chilling samples after sampling and for maintaining a cool temperature during transit.

Sample Container(s)/Preservation Non-Compliances

All comparisons are made against pretreatment/preservation AS, APHA, USEPA standards.

- **No sample container / preservation non-compliance exists.**

Summary of Sample(s) and Requested Analysis

Some items described below may be part of a laboratory process necessary for the execution of client requested tasks. Packages may contain additional analyses, such as the determination of moisture content and preparation tasks, that are included in the package.
If no sampling time is provided, the sampling time will default 00:00 on the date of sampling. If no sampling date is provided, the sampling date will be assumed by the laboratory and displayed in brackets without a time component

Matrix: **WATER**

Laboratory sample ID	Sampling date / time	Sample ID	WATER - EG020T Total Metals by ICP/MS (including digestion)	WATER - EP008 Chlorophyll a	WATER - EP020 Oil & Grease (O&G)	WATER - EP074DEFG VOC - Fumigants, Hal Aliphatics, Hal Aromatics,	WATER - NT-08A Total Nitrogen + NO2 + NO3 + NH3 + Total P +	WATER - UTO-9W Ultratrace OC/OP (extended) Pesticides	WATER - W-02T 8 metals (Total)
ES2311425-001	04-Apr-2023 00:00	BADDS	✓	✓	✓	✓	✓	✓	✓
ES2311425-002	04-Apr-2023 00:00	BADMS	✓	✓	✓	✓	✓	✓	✓
ES2311425-003	04-Apr-2023 00:00	BADUS	✓	✓	✓	✓	✓	✓	✓
ES2311425-004	04-Apr-2023 00:00	COSDS	✓	✓	✓	✓	✓	✓	✓
ES2311425-005	04-Apr-2023 00:00	COSUS	✓	✓	✓	✓	✓	✓	✓
ES2311425-006	04-Apr-2023 00:00	HINDS	✓	✓	✓	✓	✓	✓	✓
ES2311425-007	04-Apr-2023 00:00	HINUS	✓	✓	✓	✓	✓	✓	✓
ES2311425-008	05-Apr-2023 00:00	KEMDS	✓	✓	✓	✓	✓	✓	✓
ES2311425-009	05-Apr-2023 00:00	KEMUS	✓	✓	✓	✓	✓	✓	✓
ES2311425-010	04-Apr-2023 00:00	ROPDS	✓	✓	✓	✓	✓	✓	✓
ES2311425-011	04-Apr-2023 00:00	ROPUS	✓	✓	✓	✓	✓	✓	✓
ES2311425-012	05-Apr-2023 00:00	SOUDS	✓	✓	✓	✓	✓	✓	✓
ES2311425-013	05-Apr-2023 00:00	SOUUS	✓	✓	✓	✓	✓	✓	✓
ES2311425-014	05-Apr-2023 00:00	SWDUP1							✓

Matrix: **WATER**

Laboratory sample ID	Sampling date / time	Sample ID	WATER - EA015H Total Dissolved Solids - Standard Level	WATER - EA025H Suspended Solids - Standard Level	WATER - EA065 Total Hardness as CaCO3	WATER - EP080 BTEXN	WATER - W-14A PAH/Phenols (SIM)
ES2311425-001	04-Apr-2023 00:00	BADDS	✓	✓	✓	✓	✓
ES2311425-002	04-Apr-2023 00:00	BADMS	✓	✓	✓	✓	✓
ES2311425-003	04-Apr-2023 00:00	BADUS	✓	✓	✓	✓	✓
ES2311425-004	04-Apr-2023 00:00	COSDS	✓	✓	✓	✓	✓
ES2311425-005	04-Apr-2023 00:00	COSUS	✓	✓	✓	✓	✓
ES2311425-006	04-Apr-2023 00:00	HINDS	✓	✓	✓	✓	✓
ES2311425-007	04-Apr-2023 00:00	HINUS	✓	✓	✓	✓	✓
ES2311425-008	05-Apr-2023 00:00	KEMDS	✓	✓	✓	✓	✓
ES2311425-009	05-Apr-2023 00:00	KEMUS	✓	✓	✓	✓	✓
ES2311425-010	04-Apr-2023 00:00	ROPDS	✓	✓	✓	✓	✓

			WATER - EA015H Total Dissolved Solids - Standard Level	WATER - EA025H Suspended Solids - Standard Level	WATER - EA065 Total Hardness as CaCO3	WATER - EP080 BTEXN	WATER - W-14A PAH/Phenols (SIM)
ES2311425-011	04-Apr-2023 00:00	ROPUS	✓	✓	✓	✓	✓
ES2311425-012	05-Apr-2023 00:00	SOUDS	✓	✓	✓	✓	✓
ES2311425-013	05-Apr-2023 00:00	SOUUS	✓	✓	✓	✓	✓

Proactive Holding Time Report

Sample(s) have been received within the recommended holding times for the requested analysis.

Requested Deliverables

Accounts Payable Australia		
- A4 - AU Tax Invoice (INV)	Email	accountspayableAU@ghd.com
EMILY SMITH		
- *AU Certificate of Analysis - NATA (COA)	Email	emily.smith@ghd.com
- *AU Interpretive QC Report - DEFAULT (Anon QCI Rep) (QCI)	Email	emily.smith@ghd.com
- *AU QC Report - DEFAULT (Anon QC Rep) - NATA (QC)	Email	emily.smith@ghd.com
- A4 - AU Sample Receipt Notification - Environmental HT (SRN)	Email	emily.smith@ghd.com
- Chain of Custody (CoC) (COC)	Email	emily.smith@ghd.com
- EDI Format - ESDAT (ESDAT)	Email	emily.smith@ghd.com
- EDI Format - XTab (XTAB)	Email	emily.smith@ghd.com
- Electronic SRN for ESdat (ESRN_ESDAT)	Email	emily.smith@ghd.com
GHD LAB REPORTS		
- *AU Certificate of Analysis - NATA (COA)	Email	GHDLabreports@ghd.com
- *AU Interpretive QC Report - DEFAULT (Anon QCI Rep) (QCI)	Email	GHDLabreports@ghd.com
- *AU QC Report - DEFAULT (Anon QC Rep) - NATA (QC)	Email	GHDLabreports@ghd.com
- A4 - AU Sample Receipt Notification - Environmental HT (SRN)	Email	GHDLabreports@ghd.com
- Chain of Custody (CoC) (COC)	Email	GHDLabreports@ghd.com
- EDI Format - ESDAT (ESDAT)	Email	GHDLabreports@ghd.com
- EDI Format - XTab (XTAB)	Email	GHDLabreports@ghd.com
- Electronic SRN for ESdat (ESRN_ESDAT)	Email	GHDLabreports@ghd.com
HENRY LUO		
- *AU Certificate of Analysis - NATA (COA)	Email	henry.luo@ghd.com
- *AU Interpretive QC Report - DEFAULT (Anon QCI Rep) (QCI)	Email	henry.luo@ghd.com
- *AU QC Report - DEFAULT (Anon QC Rep) - NATA (QC)	Email	henry.luo@ghd.com
- A4 - AU Sample Receipt Notification - Environmental HT (SRN)	Email	henry.luo@ghd.com
- Chain of Custody (CoC) (COC)	Email	henry.luo@ghd.com
- EDI Format - ESDAT (ESDAT)	Email	henry.luo@ghd.com
- EDI Format - XTab (XTAB)	Email	henry.luo@ghd.com
- Electronic SRN for ESdat (ESRN_ESDAT)	Email	henry.luo@ghd.com
TERRY NHAM		
- *AU Certificate of Analysis - NATA (COA)	Email	terry.nham@ghd.com
- *AU Interpretive QC Report - DEFAULT (Anon QCI Rep) (QCI)	Email	terry.nham@ghd.com
- *AU QC Report - DEFAULT (Anon QC Rep) - NATA (QC)	Email	terry.nham@ghd.com
- A4 - AU Sample Receipt Notification - Environmental HT (SRN)	Email	terry.nham@ghd.com
- Chain of Custody (CoC) (COC)	Email	terry.nham@ghd.com
- EDI Format - ESDAT (ESDAT)	Email	terry.nham@ghd.com
- EDI Format - XTab (XTAB)	Email	terry.nham@ghd.com
- Electronic SRN for ESdat (ESRN_ESDAT)	Email	terry.nham@ghd.com

CERTIFICATE OF ANALYSIS

Work Order	: **ES2311425**	Page	: 1 of 24
Client	: **GHD PTY LTD**	Laboratory	: Environmental Division Sydney
Contact	: MR HENRY LUO	Contact	: Sarah Mathew
Address	: LEVEL 15, 133 CASTLEREAGH STREET SYDNEY NSW, AUSTRALIA 2000	Address	: 277-289 Woodpark Road Smithfield NSW Australia 2164
Telephone	: +61 02 9239 7100	Telephone	: +61-2-8784 8555
Project	: 12554717	Date Samples Received	: 05-Apr-2023 14:15
Order number	: ----	Date Analysis Commenced	: 06-Apr-2023
C-O-C number	: ----	Issue Date	: 17-Apr-2023 10:53
Sampler	: EMILY SMITH, TERRY NHAM		
Site	: M12 Surface Water		
Quote number	: SY/322/21		
No. of samples received	: 14		
No. of samples analysed	: 14		

Accreditation No. 825
Accredited for compliance with
ISO/IEC 17025 - Testing

This report supersedes any previous report(s) with this reference. Results apply to the sample(s) as submitted, unless the sampling was conducted by ALS. This document shall not be reproduced, except in full.

This Certificate of Analysis contains the following information:

- General Comments
- Analytical Results
- Surrogate Control Limits

Additional information pertinent to this report will be found in the following separate attachments: Quality Control Report, QA/QC Compliance Assessment to assist with Quality Review and Sample Receipt Notification.

Signatories

This document has been electronically signed by the authorized signatories below. Electronic signing is carried out in compliance with procedures specified in 21 CFR Part 11.

Signatories	*Position*	*Accreditation Category*
Ankit Joshi	Senior Chemist - Inorganics	Sydney Inorganics, Smithfield, NSW
Edwandy Fadjar	Organic Coordinator	Sydney Organics, Smithfield, NSW
Franco Lentini	LCMS Coordinator	Sydney Organics, Smithfield, NSW
Sanjeshni Jyoti	Senior Chemist Volatiles	Sydney Organics, Smithfield, NSW
Wisam Marassa	Inorganics Coordinator	Sydney Inorganics, Smithfield, NSW

General Comments

The analytical procedures used by ALS have been developed from established internationally recognised procedures such as those published by the USEPA, APHA, AS and NEPM. In house developed procedures are fully validated and are often at the client request.

Where moisture determination has been performed, results are reported on a dry weight basis.

Where a reported less than (<) result is higher than the LOR, this may be due to primary sample extract/digestate dilution and/or insufficient sample for analysis.

Where the LOR of a reported result differs from standard LOR, this may be due to high moisture content, insufficient sample (reduced weight employed) or matrix interference.

When sampling time information is not provided by the client, sampling dates are shown without a time component. In these instances, the time component has been assumed by the laboratory for processing purposes.

Where a result is required to meet compliance limits the associated uncertainty must be considered. Refer to the ALS Contract for details.

Key : CAS Number = CAS registry number from database maintained by Chemical Abstracts Services. The Chemical Abstracts Service is a division of the American Chemical Society.
LOR = Limit of reporting
^ = This result is computed from individual analyte detections at or above the level of reporting
ø = ALS is not NATA accredited for these tests.
~ = Indicates an estimated value.

- EP234: Poor matrix spike recovery for particular compounds due to matrix interferences and high matrix spike recovery has been noted for particular compounds due to ion enhancement.
- EP075 (SIM): Where reported, Benzo(a)pyrene Toxicity Equivalent Quotient (TEQ) per the NEPM (2013) is the sum total of the concentration of the eight carcinogenic PAHs multiplied by their Toxicity Equivalence Factor (TEF) relative to Benzo(a)pyrene. TEF values are provided in brackets as follows: Benz(a)anthracene (0.1), Chrysene (0.01), Benzo(b+j) & Benzo(k)fluoranthene (0.1), Benzo(a)pyrene (1.0), Indeno(1.2.3.cd)pyrene (0.1), Dibenz(a.h)anthracene (1.0), Benzo(g.h.i)perylene (0.01). Less than LOR results for 'TEQ Zero' are treated as zero.
- EP131A: Where reported, Total Chlordane (sum) is the sum of the reported concentrations of cis-Chlordane and trans-Chlordane at or above the LOR.
- EP080: Where reported, Total Xylenes is the sum of the reported concentrations of m&p-Xylene and o-Xylene at or above the LOR.
- EP074: Where reported, Total Trihalomethanes is the sum of the reported concentrations of all Trihalomethanes at or above the LOR.
- EP074: Where reported, Total Trimethylbenzenes is the sum of the reported concentrations of 1.2.3-Trimethylbenzene, 1.2.4-Trimethylbenzene and 1.3.5-Trimethylbenzene at or above the LOR.
- EP075(SIM): Where reported, Total Cresol is the sum of the reported concentrations of 2-Methylphenol and 3- & 4-Methylphenol at or above the LOR.
- Sodium Adsorption Ratio (where reported): Where results for Na, Ca or Mg are <LOR, a concentration at half the reported LOR is incorporated into the SAR calculation. This represents a conservative approach for Na relative to the assumption that <LOR = zero concentration and a conservative approach for Ca & Mg relative to the assumption that <LOR is equivalent to the LOR concentration.

Analytical Results

Sub-Matrix: WATER (Matrix: WATER)				Sample ID	BADDS	BADMS	BADUS	COSDS	COSUS
				Sampling date / time	04-Apr-2023 00:00	04-Apr-2023 00:00	04-Apr-2023 00:00	04-Apr-2023 00:00	04-Apr-2023 00:00
Compound	CAS Number	LOR	Unit		ES2311425-001	ES2311425-002	ES2311425-003	ES2311425-004	ES2311425-005
					Result	Result	Result	Result	Result
EA015: Total Dissolved Solids dried at 180 ± 5 °C									
Total Dissolved Solids @180°C	----	10	mg/L		**964**	**942**	**1120**	**1240**	**1320**
EA025: Total Suspended Solids dried at 104 ± 2°C									
Suspended Solids (SS)	----	5	mg/L		**27**	**24**	**20**	**42**	**223**
EA065: Total Hardness as CaCO3									
Total Hardness as CaCO3	----	1	mg/L		**298**	**298**	**308**	**308**	**328**
EG020T: Total Metals by ICP-MS									
Arsenic	7440-38-2	0.001	mg/L		<0.001	<0.001	<0.001	<0.001	**0.002**
Cadmium	7440-43-9	0.0001	mg/L		<0.0001	<0.0001	<0.0001	<0.0001	<0.0001
Chromium	7440-47-3	0.001	mg/L		<0.001	<0.001	<0.001	<0.001	**0.004**
Copper	7440-50-8	0.001	mg/L		<0.001	<0.001	<0.001	<0.001	**0.008**
Nickel	7440-02-0	0.001	mg/L		**0.002**	**0.002**	**0.002**	**0.001**	**0.006**
Lead	7439-92-1	0.001	mg/L		<0.001	<0.001	<0.001	<0.001	**0.004**
Zinc	7440-66-6	0.005	mg/L		**0.017**	<0.005	<0.005	**0.012**	**0.014**
Manganese	7439-96-5	0.001	mg/L		**0.150**	**0.194**	**0.303**	**1.22**	**2.41**
Iron	7439-89-6	0.05	mg/L		**0.95**	**0.92**	**1.01**	**0.82**	**5.14**
EG035T: Total Recoverable Mercury by FIMS									
Mercury	7439-97-6	0.0001	mg/L		<0.0001	<0.0001	<0.0001	<0.0001	<0.0001
EK055G: Ammonia as N by Discrete Analyser									
Ammonia as N	7664-41-7	0.01	mg/L		**0.01**	**0.02**	<0.01	<0.01	**0.08**
EK057G: Nitrite as N by Discrete Analyser									
Nitrite as N	14797-65-0	0.01	mg/L		<0.01	**0.01**	<0.01	<0.01	<0.01
EK058G: Nitrate as N by Discrete Analyser									
Nitrate as N	14797-55-8	0.01	mg/L		**0.13**	**0.14**	**0.14**	**0.02**	**0.06**
EK059G: Nitrite plus Nitrate as N (NOx) by Discrete Analyser									
Nitrite + Nitrate as N	----	0.01	mg/L		**0.13**	**0.15**	**0.14**	**0.02**	**0.06**
EK061G: Total Kjeldahl Nitrogen By Discrete Analyser									
Total Kjeldahl Nitrogen as N	----	0.1	mg/L		**0.4**	**0.8**	**1.0**	**0.4**	**1.2**
EK062G: Total Nitrogen as N (TKN + NOx) by Discrete Analyser									
^ Total Nitrogen as N	----	0.1	mg/L		**0.5**	**1.0**	**1.1**	**0.4**	**1.3**
EK067G: Total Phosphorus as P by Discrete Analyser									
Total Phosphorus as P	----	0.01	mg/L		**0.03**	**0.08**	**0.09**	**0.04**	**0.19**
EK071G: Reactive Phosphorus as P by discrete analyser									
Reactive Phosphorus as P	14265-44-2	0.01	mg/L		<0.01	<0.01	<0.01	<0.01	<0.01

Analytical Results

Sub-Matrix: WATER (Matrix: WATER)			Sample ID	BADDS	BADMS	BADUS	COSDS	COSUS
			Sampling date / time	04-Apr-2023 00:00	04-Apr-2023 00:00	04-Apr-2023 00:00	04-Apr-2023 00:00	04-Apr-2023 00:00
Compound	CAS Number	LOR	Unit	ES2311425-001	ES2311425-002	ES2311425-003	ES2311425-004	ES2311425-005
				Result	Result	Result	Result	Result
EP008: Chlorophyll a & Pheophytin a								
Chlorophyll a	----	1	mg/m³	**6**	**12**	**21**	**9**	**4**
EP020: Oil and Grease (O&G)								
Oil & Grease	----	5	mg/L	<5	<5	<5	<5	<5
EP074D: Fumigants								
2.2-Dichloropropane	594-20-7	5	µg/L	<5	<5	<5	<5	<5
1.2-Dichloropropane	78-87-5	5	µg/L	<5	<5	<5	<5	<5
cis-1.3-Dichloropropylene	10061-01-5	5	µg/L	<5	<5	<5	<5	<5
trans-1.3-Dichloropropylene	10061-02-6	5	µg/L	<5	<5	<5	<5	<5
1.2-Dibromoethane (EDB)	106-93-4	5	µg/L	<5	<5	<5	<5	<5
EP074E: Halogenated Aliphatic Compounds								
Dichlorodifluoromethane	75-71-8	50	µg/L	<50	<50	<50	<50	<50
Chloromethane	74-87-3	50	µg/L	<50	<50	<50	<50	<50
Vinyl chloride	75-01-4	50	µg/L	<50	<50	<50	<50	<50
Bromomethane	74-83-9	50	µg/L	<50	<50	<50	<50	<50
Chloroethane	75-00-3	50	µg/L	<50	<50	<50	<50	<50
Trichlorofluoromethane	75-69-4	50	µg/L	<50	<50	<50	<50	<50
1.1-Dichloroethene	75-35-4	5	µg/L	<5	<5	<5	<5	<5
Iodomethane	74-88-4	5	µg/L	<5	<5	<5	<5	<5
trans-1.2-Dichloroethene	156-60-5	5	µg/L	<5	<5	<5	<5	<5
1.1-Dichloroethane	75-34-3	5	µg/L	<5	<5	<5	<5	<5
cis-1.2-Dichloroethene	156-59-2	5	µg/L	<5	<5	<5	<5	<5
1.1.1-Trichloroethane	71-55-6	5	µg/L	<5	<5	<5	<5	<5
1.1-Dichloropropylene	563-58-6	5	µg/L	<5	<5	<5	<5	<5
Carbon Tetrachloride	56-23-5	5	µg/L	<5	<5	<5	<5	<5
1.2-Dichloroethane	107-06-2	5	µg/L	<5	<5	<5	<5	<5
Trichloroethene	79-01-6	5	µg/L	<5	<5	<5	<5	<5
Dibromomethane	74-95-3	5	µg/L	<5	<5	<5	<5	<5
1.1.2-Trichloroethane	79-00-5	5	µg/L	<5	<5	<5	<5	<5
1.3-Dichloropropane	142-28-9	5	µg/L	<5	<5	<5	<5	<5
Tetrachloroethene	127-18-4	5	µg/L	<5	<5	<5	<5	<5
1.1.1.2-Tetrachloroethane	630-20-6	5	µg/L	<5	<5	<5	<5	<5
trans-1.4-Dichloro-2-butene	110-57-6	5	µg/L	<5	<5	<5	<5	<5
cis-1.4-Dichloro-2-butene	1476-11-5	5	µg/L	<5	<5	<5	<5	<5
1.1.2.2-Tetrachloroethane	79-34-5	5	µg/L	<5	<5	<5	<5	<5

Analytical Results

Sub-Matrix: WATER (Matrix: WATER)				Sample ID	BADDS	BADMS	BADUS	COSDS	COSUS
				Sampling date / time	04-Apr-2023 00:00	04-Apr-2023 00:00	04-Apr-2023 00:00	04-Apr-2023 00:00	04-Apr-2023 00:00
Compound	CAS Number	LOR	Unit		ES2311425-001	ES2311425-002	ES2311425-003	ES2311425-004	ES2311425-005
					Result	Result	Result	Result	Result
EP074E: Halogenated Aliphatic Compounds - Continued									
1.2.3-Trichloropropane	96-18-4	5	µg/L		<5	<5	<5	<5	<5
Pentachloroethane	76-01-7	5	µg/L		<5	<5	<5	<5	<5
1.2-Dibromo-3-chloropropane	96-12-8	5	µg/L		<5	<5	<5	<5	<5
Hexachlorobutadiene	87-68-3	5	µg/L		<5	<5	<5	<5	<5
EP074F: Halogenated Aromatic Compounds									
Chlorobenzene	108-90-7	5	µg/L		<5	<5	<5	<5	<5
Bromobenzene	108-86-1	5	µg/L		<5	<5	<5	<5	<5
2-Chlorotoluene	95-49-8	5	µg/L		<5	<5	<5	<5	<5
4-Chlorotoluene	106-43-4	5	µg/L		<5	<5	<5	<5	<5
1.3-Dichlorobenzene	541-73-1	5	µg/L		<5	<5	<5	<5	<5
1.4-Dichlorobenzene	106-46-7	5	µg/L		<5	<5	<5	<5	<5
1.2-Dichlorobenzene	95-50-1	5	µg/L		<5	<5	<5	<5	<5
1.2.4-Trichlorobenzene	120-82-1	5	µg/L		<5	<5	<5	<5	<5
1.2.3-Trichlorobenzene	87-61-6	5	µg/L		<5	<5	<5	<5	<5
EP074G: Trihalomethanes									
Chloroform	67-66-3	5	µg/L		<5	<5	<5	<5	<5
Bromodichloromethane	75-27-4	5	µg/L		<5	<5	<5	<5	<5
Dibromochloromethane	124-48-1	5	µg/L		<5	<5	<5	<5	<5
Bromoform	75-25-2	5	µg/L		<5	<5	<5	<5	<5
EP075(SIM)A: Phenolic Compounds									
Phenol	108-95-2	1.0	µg/L		<1.0	<1.0	<1.0	<1.0	<1.0
2-Chlorophenol	95-57-8	1.0	µg/L		<1.0	<1.0	<1.0	<1.0	<1.0
2-Methylphenol	95-48-7	1.0	µg/L		<1.0	<1.0	<1.0	<1.0	<1.0
3- & 4-Methylphenol	1319-77-3	2.0	µg/L		<2.0	<2.0	<2.0	<2.0	<2.0
2-Nitrophenol	88-75-5	1.0	µg/L		<1.0	<1.0	<1.0	<1.0	<1.0
2.4-Dimethylphenol	105-67-9	1.0	µg/L		<1.0	<1.0	<1.0	<1.0	<1.0
2.4-Dichlorophenol	120-83-2	1.0	µg/L		<1.0	<1.0	<1.0	<1.0	<1.0
2.6-Dichlorophenol	87-65-0	1.0	µg/L		<1.0	<1.0	<1.0	<1.0	<1.0
4-Chloro-3-methylphenol	59-50-7	1.0	µg/L		<1.0	<1.0	<1.0	<1.0	<1.0
2.4.6-Trichlorophenol	88-06-2	1.0	µg/L		<1.0	<1.0	<1.0	<1.0	<1.0
2.4.5-Trichlorophenol	95-95-4	1.0	µg/L		<1.0	<1.0	<1.0	<1.0	<1.0
Pentachlorophenol	87-86-5	2.0	µg/L		<2.0	<2.0	<2.0	<2.0	<2.0
EP075(SIM)B: Polynuclear Aromatic Hydrocarbons									
Naphthalene	91-20-3	1.0	µg/L		<1.0	<1.0	<1.0	<1.0	<1.0

Analytical Results

Sub-Matrix: WATER (Matrix: WATER)				Sample ID	BADDS	BADMS	BADUS	COSDS	COSUS
				Sampling date / time	04-Apr-2023 00:00	04-Apr-2023 00:00	04-Apr-2023 00:00	04-Apr-2023 00:00	04-Apr-2023 00:00
Compound	CAS Number	LOR	Unit		ES2311425-001	ES2311425-002	ES2311425-003	ES2311425-004	ES2311425-005
					Result	Result	Result	Result	Result
EP075(SIM)B: Polynuclear Aromatic Hydrocarbons - Continued									
Acenaphthylene	208-96-8	1.0	µg/L		<1.0	<1.0	<1.0	<1.0	<1.0
Acenaphthene	83-32-9	1.0	µg/L		<1.0	<1.0	<1.0	<1.0	<1.0
Fluorene	86-73-7	1.0	µg/L		<1.0	<1.0	<1.0	<1.0	<1.0
Phenanthrene	85-01-8	1.0	µg/L		<1.0	<1.0	<1.0	<1.0	<1.0
Anthracene	120-12-7	1.0	µg/L		<1.0	<1.0	<1.0	<1.0	<1.0
Fluoranthene	206-44-0	1.0	µg/L		<1.0	<1.0	<1.0	<1.0	<1.0
Pyrene	129-00-0	1.0	µg/L		<1.0	<1.0	<1.0	<1.0	<1.0
Benz(a)anthracene	56-55-3	1.0	µg/L		<1.0	<1.0	<1.0	<1.0	<1.0
Chrysene	218-01-9	1.0	µg/L		<1.0	<1.0	<1.0	<1.0	<1.0
Benzo(b+j)fluoranthene	205-99-2 205-82-3	1.0	µg/L		<1.0	<1.0	<1.0	<1.0	<1.0
Benzo(k)fluoranthene	207-08-9	1.0	µg/L		<1.0	<1.0	<1.0	<1.0	<1.0
Benzo(a)pyrene	50-32-8	0.5	µg/L		<0.5	<0.5	<0.5	<0.5	<0.5
Indeno(1.2.3.cd)pyrene	193-39-5	1.0	µg/L		<1.0	<1.0	<1.0	<1.0	<1.0
Dibenz(a.h)anthracene	53-70-3	1.0	µg/L		<1.0	<1.0	<1.0	<1.0	<1.0
Benzo(g.h.i)perylene	191-24-2	1.0	µg/L		<1.0	<1.0	<1.0	<1.0	<1.0
^ Sum of polycyclic aromatic hydrocarbons	----	0.5	µg/L		<0.5	<0.5	<0.5	<0.5	<0.5
^ Benzo(a)pyrene TEQ (zero)	----	0.5	µg/L		<0.5	<0.5	<0.5	<0.5	<0.5
EP080: BTEXN									
Benzene	71-43-2	1	µg/L		<1	<1	<1	<1	<1
Toluene	108-88-3	2	µg/L		<2	<2	<2	<2	<2
Ethylbenzene	100-41-4	2	µg/L		<2	<2	<2	<2	<2
meta- & para-Xylene	108-38-3 106-42-3	2	µg/L		<2	<2	<2	<2	<2
ortho-Xylene	95-47-6	2	µg/L		<2	<2	<2	<2	<2
^ Total Xylenes	----	2	µg/L		<2	<2	<2	<2	<2
^ Sum of BTEX	----	1	µg/L		<1	<1	<1	<1	<1
Naphthalene	91-20-3	5	µg/L		<5	<5	<5	<5	<5
EP131A: Organochlorine Pesticides									
Aldrin	309-00-2	0.010	µg/L		<0.010	<0.010	<0.010	<0.010	<0.010
alpha-BHC	319-84-6	0.010	µg/L		<0.010	<0.010	<0.010	<0.010	<0.010
beta-BHC	319-85-7	0.010	µg/L		<0.010	<0.010	<0.010	<0.010	<0.010
delta-BHC	319-86-8	0.010	µg/L		<0.010	<0.010	<0.010	<0.010	<0.010
4.4`-DDD	72-54-8	0.010	µg/L		<0.010	<0.010	<0.010	<0.010	<0.010
4.4`-DDE	72-55-9	0.010	µg/L		<0.010	<0.010	<0.010	<0.010	<0.010
4.4`-DDT	50-29-3	0.010	µg/L		<0.010	<0.010	<0.010	<0.010	<0.010

Analytical Results

Sub-Matrix: WATER (Matrix: WATER)				Sample ID	BADDS	BADMS	BADUS	COSDS	COSUS
				Sampling date / time	04-Apr-2023 00:00	04-Apr-2023 00:00	04-Apr-2023 00:00	04-Apr-2023 00:00	04-Apr-2023 00:00
Compound	CAS Number	LOR	Unit		ES2311425-001	ES2311425-002	ES2311425-003	ES2311425-004	ES2311425-005
					Result	Result	Result	Result	Result
EP131A: Organochlorine Pesticides - Continued									
^ **Sum of DDD + DDE + DDT**	72-54-8/72-55-9/50-2	0.010	µg/L		<0.010	<0.010	<0.010	<0.010	<0.010
Dieldrin	60-57-1	0.010	µg/L		<0.010	<0.010	<0.010	<0.010	<0.010
alpha-Endosulfan	959-98-8	0.010	µg/L		<0.010	<0.010	<0.010	<0.010	<0.010
beta-Endosulfan	33213-65-9	0.010	µg/L		<0.010	<0.010	<0.010	<0.010	<0.010
Endosulfan sulfate	1031-07-8	0.010	µg/L		<0.010	<0.010	<0.010	<0.010	<0.010
^ **Endosulfan (sum)**	115-29-7	0.010	µg/L		<0.010	<0.010	<0.010	<0.010	<0.010
Endrin	72-20-8	0.010	µg/L		<0.010	<0.010	<0.010	<0.010	<0.010
Endrin aldehyde	7421-93-4	0.010	µg/L		<0.010	<0.010	<0.010	<0.010	<0.010
Endrin ketone	53494-70-5	0.010	µg/L		<0.010	<0.010	<0.010	<0.010	<0.010
Heptachlor	76-44-8	0.005	µg/L		<0.005	<0.005	<0.005	<0.005	<0.005
Heptachlor epoxide	1024-57-3	0.010	µg/L		<0.010	<0.010	<0.010	<0.010	<0.010
Hexachlorobenzene (HCB)	118-74-1	0.010	µg/L		<0.010	<0.010	<0.010	<0.010	<0.010
gamma-BHC	58-89-9	0.010	µg/L		<0.010	<0.010	<0.010	<0.010	<0.010
Methoxychlor	72-43-5	0.010	µg/L		<0.010	<0.010	<0.010	<0.010	<0.010
cis-Chlordane	5103-71-9	0.010	µg/L		<0.010	<0.010	<0.010	<0.010	<0.010
trans-Chlordane	5103-74-2	0.010	µg/L		<0.010	<0.010	<0.010	<0.010	<0.010
^ **Total Chlordane (sum)**	----	0.010	µg/L		<0.010	<0.010	<0.010	<0.010	<0.010
Oxychlordane	27304-13-8	0.010	µg/L		<0.010	<0.010	<0.010	<0.010	<0.010
EP234A: OP Pesticides									
Acephate	30560-19-1	0.5	µg/L		<0.5	<0.5	<0.5	<0.5	<0.5
Azinphos-methyl	86-50-0	0.02	µg/L		<0.02	<0.02	<0.02	<0.02	<0.02
Azinphos-ethyl	2642-71-9	0.02	µg/L		<0.02	<0.02	<0.02	<0.02	<0.02
Bensulide	741-58-2	0.1	µg/L		<0.1	<0.1	<0.1	<0.1	<0.1
Bromophos-ethyl	4824-78-6	0.10	µg/L		<0.10	<0.10	<0.10	<0.10	<0.10
Carbofenothion	786-19-6	0.02	µg/L		<0.02	<0.02	<0.02	<0.02	<0.02
Chlorfenvinphos	470-90-6	0.02	µg/L		<0.02	<0.02	<0.02	<0.02	<0.02
Chlorpyrifos	2921-88-2	0.02	µg/L		<0.02	<0.02	<0.02	<0.02	<0.02
Chlorpyrifos-methyl	5598-13-0	0.2	µg/L		<0.2	<0.2	<0.2	<0.2	<0.2
Coumaphos	56-72-4	0.01	µg/L		<0.01	<0.01	<0.01	<0.01	<0.01
Demeton-O	298-03-3	0.02	µg/L		<0.02	<0.02	<0.02	<0.02	<0.02
Demeton-O & Demeton-S	298-03-3/126-75-0	0.02	µg/L		<0.02	<0.02	<0.02	<0.02	<0.02
Demeton-S	126-75-0	0.02	µg/L		<0.02	<0.02	<0.02	<0.02	<0.02
Demeton-S-methyl	919-86-8	0.02	µg/L		<0.02	<0.02	<0.02	<0.02	<0.02
Diazinon	333-41-5	0.01	µg/L		<0.01	<0.01	<0.01	<0.01	<0.01

Analytical Results

Sub-Matrix: WATER (Matrix: WATER)				Sample ID	BADDS	BADMS	BADUS	COSDS	COSUS
				Sampling date / time	04-Apr-2023 00:00	04-Apr-2023 00:00	04-Apr-2023 00:00	04-Apr-2023 00:00	04-Apr-2023 00:00
Compound	CAS Number	LOR	Unit		ES2311425-001	ES2311425-002	ES2311425-003	ES2311425-004	ES2311425-005
					Result	Result	Result	Result	Result
EP234A: OP Pesticides - Continued									
Dichlorvos	62-73-7	0.20	µg/L		<0.20	<0.20	<0.20	<0.20	<0.20
Dimethoate	60-51-5	0.02	µg/L		<0.02	<0.02	<0.02	<0.02	<0.02
Disulfoton	298-04-4	0.05	µg/L		<0.05	<0.05	<0.05	<0.05	<0.05
EPN	2104-64-5	0.05	µg/L		<0.05	<0.05	<0.05	<0.05	<0.05
Ethion	563-12-2	0.02	µg/L		<0.02	<0.02	<0.02	<0.02	<0.02
Ethoprophos	13194-48-4	0.01	µg/L		<0.01	<0.01	<0.01	<0.01	<0.01
Fenamiphos	22224-92-6	0.01	µg/L		<0.01	<0.01	<0.01	<0.01	<0.01
Fenchlorphos (Ronnel)	299-84-3	10	µg/L		<10	<10	<10	<10	<10
Fenitrothion	122-14-5	2	µg/L		<2	<2	<2	<2	<2
Fensulfothion	115-90-2	0.01	µg/L		<0.01	<0.01	<0.01	<0.01	<0.01
Fenthion	55-38-9	0.05	µg/L		<0.05	<0.05	<0.05	<0.05	<0.05
Formothion	2540-82-1	20	µg/L		<20	<20	<20	<20	<20
Fosetyl Aluminium	39148-24-8	10	µg/L		<10	<10	<10	<10	<10
Malathion	121-75-5	0.02	µg/L		<0.02	<0.02	<0.02	<0.02	<0.02
Methidathion	950-37-8	0.1	µg/L		<0.1	<0.1	<0.1	<0.1	<0.1
Mevinphos	7786-34-7	0.02	µg/L		<0.02	<0.02	<0.02	<0.02	<0.02
Monocrotophos	6923-22-4	0.02	µg/L		<0.02	<0.02	<0.02	<0.02	<0.02
Naftalofos	1491-41-4	1.0	µg/L		<1.0	<1.0	<1.0	<1.0	<1.0
Omethoate	1113-02-6	0.01	µg/L		<0.01	<0.01	<0.01	<0.01	<0.01
Parathion	56-38-2	0.2	µg/L		<0.2	<0.2	<0.2	<0.2	<0.2
Parathion-methyl	298-00-0	0.5	µg/L		<0.5	<0.5	<0.5	<0.5	<0.5
Phorate	298-02-2	0.1	µg/L		<0.1	<0.1	<0.1	<0.1	<0.1
Pirimiphos-ethyl	23505-41-1	0.01	µg/L		<0.01	<0.01	<0.01	<0.01	<0.01
Pirimiphos-methyl	29232-93-7	0.01	µg/L		<0.01	<0.01	<0.01	<0.01	<0.01
Profenofos	41198-08-7	0.01	µg/L		<0.01	<0.01	<0.01	<0.01	<0.01
Prothiofos	34643-46-4	0.1	µg/L		<0.1	<0.1	<0.1	<0.1	<0.1
Pyrazophos	13457-18-6	0.1	µg/L		<0.1	<0.1	<0.1	<0.1	<0.1
Sulfotep	3689-24-5	0.005	µg/L		<0.005	<0.005	<0.005	<0.005	<0.005
Sulprofos	35400-43-2	0.05	µg/L		<0.05	<0.05	<0.05	<0.05	<0.05
Temephos	3383-96-8	0.02	µg/L		<0.02	<0.02	<0.02	<0.02	<0.02
Terbufos	13071-79-9	0.01	µg/L		<0.01	<0.01	<0.01	<0.01	<0.01
Tetrachlorvinphos	22248-79-9	0.01	µg/L		<0.01	<0.01	<0.01	<0.01	<0.01
Thiometon	640-15-3	0.5	µg/L		<0.5	<0.5	<0.5	<0.5	<0.5
Triazophos	24017-47-8	0.005	µg/L		<0.005	<0.005	<0.005	<0.005	<0.005

Analytical Results

Sub-Matrix: WATER (Matrix: WATER)				Sample ID	BADDS	BADMS	BADUS	COSDS	COSUS
				Sampling date / time	04-Apr-2023 00:00	04-Apr-2023 00:00	04-Apr-2023 00:00	04-Apr-2023 00:00	04-Apr-2023 00:00
Compound	CAS Number	LOR	Unit		ES2311425-001	ES2311425-002	ES2311425-003	ES2311425-004	ES2311425-005
					Result	Result	Result	Result	Result
EP234A: OP Pesticides - Continued									
Trichlorfon	52-68-6	0.02	µg/L		<0.02	<0.02	<0.02	<0.02	<0.02
Trichloronate	327-98-0	0.5	µg/L		<0.5	<0.5	<0.5	<0.5	<0.5
EP074S: VOC Surrogates									
1.2-Dichloroethane-D4	17060-07-0	5	%		119	112	117	116	111
Toluene-D8	2037-26-5	5	%		113	107	115	110	109
4-Bromofluorobenzene	460-00-4	5	%		105	102	105	101	99.7
EP075(SIM)S: Phenolic Compound Surrogates									
Phenol-d6	13127-88-3	1.0	%		25.5	28.7	23.4	29.5	24.6
2-Chlorophenol-D4	93951-73-6	1.0	%		53.6	57.5	47.4	55.4	47.9
2.4.6-Tribromophenol	118-79-6	1.0	%		57.6	58.0	48.3	59.2	45.4
EP075(SIM)T: PAH Surrogates									
2-Fluorobiphenyl	321-60-8	1.0	%		66.6	63.2	53.9	68.1	53.3
Anthracene-d10	1719-06-8	1.0	%		72.9	71.5	61.3	70.6	58.8
4-Terphenyl-d14	1718-51-0	1.0	%		74.7	70.9	62.5	75.5	60.2
EP080S: TPH(V)/BTEX Surrogates									
1.2-Dichloroethane-D4	17060-07-0	2	%		117	111	114	114	109
Toluene-D8	2037-26-5	2	%		109	104	112	106	105
4-Bromofluorobenzene	460-00-4	2	%		111	107	112	106	105
EP131S: OC Pesticide Surrogate									
Dibromo-DDE	21655-73-2	0.010	%		89.9	95.1	101	101	92.8

Analytical Results

Sub-Matrix: WATER (Matrix: WATER)				Sample ID	HINDS	HINUS	KEMDS	KEMUS	ROPDS
				Sampling date / time	04-Apr-2023 00:00	04-Apr-2023 00:00	05-Apr-2023 00:00	05-Apr-2023 00:00	04-Apr-2023 00:00
Compound	CAS Number	LOR	Unit		ES2311425-006	ES2311425-007	ES2311425-008	ES2311425-009	ES2311425-010
					Result	Result	Result	Result	Result
EA015: Total Dissolved Solids dried at 180 ± 5 °C									
Total Dissolved Solids @180°C	----	10	mg/L		245	264	1170	1050	655
EA025: Total Suspended Solids dried at 104 ± 2°C									
Suspended Solids (SS)	----	5	mg/L		5	11	7	8	<5
EA065: Total Hardness as CaCO3									
Total Hardness as CaCO3	----	1	mg/L		64	83	312	298	222
EG020T: Total Metals by ICP-MS									
Arsenic	7440-38-2	0.001	mg/L		<0.001	<0.001	<0.001	<0.001	<0.001
Cadmium	7440-43-9	0.0001	mg/L		<0.0001	<0.0001	<0.0001	<0.0001	<0.0001
Chromium	7440-47-3	0.001	mg/L		<0.001	<0.001	<0.001	<0.001	<0.001
Copper	7440-50-8	0.001	mg/L		<0.001	<0.001	0.003	0.002	<0.001
Nickel	7440-02-0	0.001	mg/L		0.002	0.001	0.002	0.002	0.001
Lead	7439-92-1	0.001	mg/L		<0.001	<0.001	<0.001	<0.001	<0.001
Zinc	7440-66-6	0.005	mg/L		<0.005	<0.005	0.007	0.007	0.010
Manganese	7439-96-5	0.001	mg/L		0.191	0.123	0.021	0.028	0.418
Iron	7439-89-6	0.05	mg/L		0.52	1.24	0.50	0.42	0.16
EG035T: Total Recoverable Mercury by FIMS									
Mercury	7439-97-6	0.0001	mg/L		<0.0001	<0.0001	<0.0001	<0.0001	<0.0001
EK055G: Ammonia as N by Discrete Analyser									
Ammonia as N	7664-41-7	0.01	mg/L		0.02	<0.01	0.01	0.03	0.02
EK057G: Nitrite as N by Discrete Analyser									
Nitrite as N	14797-65-0	0.01	mg/L		<0.01	<0.01	0.01	0.01	<0.01
EK058G: Nitrate as N by Discrete Analyser									
Nitrate as N	14797-55-8	0.01	mg/L		0.04	0.02	3.50	3.02	0.21
EK059G: Nitrite plus Nitrate as N (NOx) by Discrete Analyser									
Nitrite + Nitrate as N	----	0.01	mg/L		0.04	0.02	3.51	3.03	0.21
EK061G: Total Kjeldahl Nitrogen By Discrete Analyser									
Total Kjeldahl Nitrogen as N	----	0.1	mg/L		1.2	1.1	1.1	1.2	0.5
EK062G: Total Nitrogen as N (TKN + NOx) by Discrete Analyser									
^ Total Nitrogen as N	----	0.1	mg/L		1.2	1.1	4.6	4.2	0.7
EK067G: Total Phosphorus as P by Discrete Analyser									
Total Phosphorus as P	----	0.01	mg/L		0.08	0.06	0.69	0.67	0.04
EK071G: Reactive Phosphorus as P by discrete analyser									
Reactive Phosphorus as P	14265-44-2	0.01	mg/L		<0.01	<0.01	0.56	0.55	<0.01

Analytical Results

Sub-Matrix: WATER (Matrix: WATER)			Sample ID	HINDS	HINUS	KEMDS	KEMUS	ROPDS
			Sampling date / time	04-Apr-2023 00:00	04-Apr-2023 00:00	05-Apr-2023 00:00	05-Apr-2023 00:00	04-Apr-2023 00:00
Compound	CAS Number	LOR	Unit	ES2311425-006	ES2311425-007	ES2311425-008	ES2311425-009	ES2311425-010
				Result	Result	Result	Result	Result
EP008: Chlorophyll a & Pheophytin a								
Chlorophyll a	----	1	mg/m³	**25**	**11**	**2**	**2**	**2**
EP020: Oil and Grease (O&G)								
Oil & Grease	----	5	mg/L	<5	<5	<5	<5	<5
EP074D: Fumigants								
2.2-Dichloropropane	594-20-7	5	µg/L	<5	<5	<5	<5	<5
1.2-Dichloropropane	78-87-5	5	µg/L	<5	<5	<5	<5	<5
cis-1.3-Dichloropropylene	10061-01-5	5	µg/L	<5	<5	<5	<5	<5
trans-1.3-Dichloropropylene	10061-02-6	5	µg/L	<5	<5	<5	<5	<5
1.2-Dibromoethane (EDB)	106-93-4	5	µg/L	<5	<5	<5	<5	<5
EP074E: Halogenated Aliphatic Compounds								
Dichlorodifluoromethane	75-71-8	50	µg/L	<50	<50	<50	<50	<50
Chloromethane	74-87-3	50	µg/L	<50	<50	<50	<50	<50
Vinyl chloride	75-01-4	50	µg/L	<50	<50	<50	<50	<50
Bromomethane	74-83-9	50	µg/L	<50	<50	<50	<50	<50
Chloroethane	75-00-3	50	µg/L	<50	<50	<50	<50	<50
Trichlorofluoromethane	75-69-4	50	µg/L	<50	<50	<50	<50	<50
1.1-Dichloroethene	75-35-4	5	µg/L	<5	<5	<5	<5	<5
Iodomethane	74-88-4	5	µg/L	<5	<5	<5	<5	<5
trans-1.2-Dichloroethene	156-60-5	5	µg/L	<5	<5	<5	<5	<5
1.1-Dichloroethane	75-34-3	5	µg/L	<5	<5	<5	<5	<5
cis-1.2-Dichloroethene	156-59-2	5	µg/L	<5	<5	<5	<5	<5
1.1.1-Trichloroethane	71-55-6	5	µg/L	<5	<5	<5	<5	<5
1.1-Dichloropropylene	563-58-6	5	µg/L	<5	<5	<5	<5	<5
Carbon Tetrachloride	56-23-5	5	µg/L	<5	<5	<5	<5	<5
1.2-Dichloroethane	107-06-2	5	µg/L	<5	<5	<5	<5	<5
Trichloroethene	79-01-6	5	µg/L	<5	<5	<5	<5	<5
Dibromomethane	74-95-3	5	µg/L	<5	<5	<5	<5	<5
1.1.2-Trichloroethane	79-00-5	5	µg/L	<5	<5	<5	<5	<5
1.3-Dichloropropane	142-28-9	5	µg/L	<5	<5	<5	<5	<5
Tetrachloroethene	127-18-4	5	µg/L	<5	<5	<5	<5	<5
1.1.1.2-Tetrachloroethane	630-20-6	5	µg/L	<5	<5	<5	<5	<5
trans-1.4-Dichloro-2-butene	110-57-6	5	µg/L	<5	<5	<5	<5	<5
cis-1.4-Dichloro-2-butene	1476-11-5	5	µg/L	<5	<5	<5	<5	<5
1.1.2.2-Tetrachloroethane	79-34-5	5	µg/L	<5	<5	<5	<5	<5

Analytical Results

Sub-Matrix: WATER (Matrix: WATER)				Sample ID	HINDS	HINUS	KEMDS	KEMUS	ROPDS
				Sampling date / time	04-Apr-2023 00:00	04-Apr-2023 00:00	05-Apr-2023 00:00	05-Apr-2023 00:00	04-Apr-2023 00:00
Compound	CAS Number	LOR	Unit		ES2311425-006	ES2311425-007	ES2311425-008	ES2311425-009	ES2311425-010
					Result	Result	Result	Result	Result
EP074E: Halogenated Aliphatic Compounds - Continued									
1.2.3-Trichloropropane	96-18-4	5	µg/L		<5	<5	<5	<5	<5
Pentachloroethane	76-01-7	5	µg/L		<5	<5	<5	<5	<5
1.2-Dibromo-3-chloropropane	96-12-8	5	µg/L		<5	<5	<5	<5	<5
Hexachlorobutadiene	87-68-3	5	µg/L		<5	<5	<5	<5	<5
EP074F: Halogenated Aromatic Compounds									
Chlorobenzene	108-90-7	5	µg/L		<5	<5	<5	<5	<5
Bromobenzene	108-86-1	5	µg/L		<5	<5	<5	<5	<5
2-Chlorotoluene	95-49-8	5	µg/L		<5	<5	<5	<5	<5
4-Chlorotoluene	106-43-4	5	µg/L		<5	<5	<5	<5	<5
1.3-Dichlorobenzene	541-73-1	5	µg/L		<5	<5	<5	<5	<5
1.4-Dichlorobenzene	106-46-7	5	µg/L		<5	<5	<5	<5	<5
1.2-Dichlorobenzene	95-50-1	5	µg/L		<5	<5	<5	<5	<5
1.2.4-Trichlorobenzene	120-82-1	5	µg/L		<5	<5	<5	<5	<5
1.2.3-Trichlorobenzene	87-61-6	5	µg/L		<5	<5	<5	<5	<5
EP074G: Trihalomethanes									
Chloroform	67-66-3	5	µg/L		<5	<5	<5	<5	<5
Bromodichloromethane	75-27-4	5	µg/L		<5	<5	<5	<5	<5
Dibromochloromethane	124-48-1	5	µg/L		<5	<5	<5	<5	<5
Bromoform	75-25-2	5	µg/L		<5	<5	<5	<5	<5
EP075(SIM)A: Phenolic Compounds									
Phenol	108-95-2	1.0	µg/L		<1.0	<1.0	<1.0	<1.0	<1.0
2-Chlorophenol	95-57-8	1.0	µg/L		<1.0	<1.0	<1.0	<1.0	<1.0
2-Methylphenol	95-48-7	1.0	µg/L		<1.0	<1.0	<1.0	<1.0	<1.0
3- & 4-Methylphenol	1319-77-3	2.0	µg/L		<2.0	<2.0	<2.0	<2.0	<2.0
2-Nitrophenol	88-75-5	1.0	µg/L		<1.0	<1.0	<1.0	<1.0	<1.0
2.4-Dimethylphenol	105-67-9	1.0	µg/L		<1.0	<1.0	<1.0	<1.0	<1.0
2.4-Dichlorophenol	120-83-2	1.0	µg/L		<1.0	<1.0	<1.0	<1.0	<1.0
2.6-Dichlorophenol	87-65-0	1.0	µg/L		<1.0	<1.0	<1.0	<1.0	<1.0
4-Chloro-3-methylphenol	59-50-7	1.0	µg/L		<1.0	<1.0	<1.0	<1.0	<1.0
2.4.6-Trichlorophenol	88-06-2	1.0	µg/L		<1.0	<1.0	<1.0	<1.0	<1.0
2.4.5-Trichlorophenol	95-95-4	1.0	µg/L		<1.0	<1.0	<1.0	<1.0	<1.0
Pentachlorophenol	87-86-5	2.0	µg/L		<2.0	<2.0	<2.0	<2.0	<2.0
EP075(SIM)B: Polynuclear Aromatic Hydrocarbons									
Naphthalene	91-20-3	1.0	µg/L		<1.0	<1.0	<1.0	<1.0	<1.0

Analytical Results

Sub-Matrix: WATER (Matrix: WATER)				Sample ID	HINDS	HINUS	KEMDS	KEMUS	ROPDS
				Sampling date / time	04-Apr-2023 00:00	04-Apr-2023 00:00	05-Apr-2023 00:00	05-Apr-2023 00:00	04-Apr-2023 00:00
Compound	CAS Number	LOR	Unit		ES2311425-006	ES2311425-007	ES2311425-008	ES2311425-009	ES2311425-010
					Result	Result	Result	Result	Result
EP075(SIM)B: Polynuclear Aromatic Hydrocarbons - Continued									
Acenaphthylene	208-96-8	1.0	µg/L		<1.0	<1.0	<1.0	<1.0	<1.0
Acenaphthene	83-32-9	1.0	µg/L		<1.0	<1.0	<1.0	<1.0	<1.0
Fluorene	86-73-7	1.0	µg/L		<1.0	<1.0	<1.0	<1.0	<1.0
Phenanthrene	85-01-8	1.0	µg/L		<1.0	<1.0	<1.0	<1.0	<1.0
Anthracene	120-12-7	1.0	µg/L		<1.0	<1.0	<1.0	<1.0	<1.0
Fluoranthene	206-44-0	1.0	µg/L		<1.0	<1.0	<1.0	<1.0	<1.0
Pyrene	129-00-0	1.0	µg/L		<1.0	<1.0	<1.0	<1.0	<1.0
Benz(a)anthracene	56-55-3	1.0	µg/L		<1.0	<1.0	<1.0	<1.0	<1.0
Chrysene	218-01-9	1.0	µg/L		<1.0	<1.0	<1.0	<1.0	<1.0
Benzo(b+j)fluoranthene	205-99-2 205-82-3	1.0	µg/L		<1.0	<1.0	<1.0	<1.0	<1.0
Benzo(k)fluoranthene	207-08-9	1.0	µg/L		<1.0	<1.0	<1.0	<1.0	<1.0
Benzo(a)pyrene	50-32-8	0.5	µg/L		<0.5	<0.5	<0.5	<0.5	<0.5
Indeno(1.2.3.cd)pyrene	193-39-5	1.0	µg/L		<1.0	<1.0	<1.0	<1.0	<1.0
Dibenz(a.h)anthracene	53-70-3	1.0	µg/L		<1.0	<1.0	<1.0	<1.0	<1.0
Benzo(g.h.i)perylene	191-24-2	1.0	µg/L		<1.0	<1.0	<1.0	<1.0	<1.0
^ Sum of polycyclic aromatic hydrocarbons	----	0.5	µg/L		<0.5	<0.5	<0.5	<0.5	<0.5
^ Benzo(a)pyrene TEQ (zero)	----	0.5	µg/L		<0.5	<0.5	<0.5	<0.5	<0.5
EP080: BTEXN									
Benzene	71-43-2	1	µg/L		<1	<1	<1	<1	<1
Toluene	108-88-3	2	µg/L		<2	<2	<2	<2	<2
Ethylbenzene	100-41-4	2	µg/L		<2	<2	<2	<2	<2
meta- & para-Xylene	108-38-3 106-42-3	2	µg/L		<2	<2	<2	<2	<2
ortho-Xylene	95-47-6	2	µg/L		<2	<2	<2	<2	<2
^ Total Xylenes	----	2	µg/L		<2	<2	<2	<2	<2
^ Sum of BTEX	----	1	µg/L		<1	<1	<1	<1	<1
Naphthalene	91-20-3	5	µg/L		<5	<5	<5	<5	<5
EP131A: Organochlorine Pesticides									
Aldrin	309-00-2	0.010	µg/L		<0.010	<0.010	<0.010	<0.010	<0.010
alpha-BHC	319-84-6	0.010	µg/L		<0.010	<0.010	<0.010	<0.010	<0.010
beta-BHC	319-85-7	0.010	µg/L		<0.010	<0.010	<0.010	<0.010	<0.010
delta-BHC	319-86-8	0.010	µg/L		<0.010	<0.010	<0.010	<0.010	<0.010
4.4`-DDD	72-54-8	0.010	µg/L		<0.010	<0.010	<0.010	<0.010	<0.010
4.4`-DDE	72-55-9	0.010	µg/L		<0.010	<0.010	<0.010	<0.010	<0.010
4.4`-DDT	50-29-3	0.010	µg/L		<0.010	<0.010	<0.010	<0.010	<0.010

Analytical Results

Sub-Matrix: WATER (Matrix: WATER)				Sample ID	HINDS	HINUS	KEMDS	KEMUS	ROPDS
				Sampling date / time	04-Apr-2023 00:00	04-Apr-2023 00:00	05-Apr-2023 00:00	05-Apr-2023 00:00	04-Apr-2023 00:00
Compound	CAS Number	LOR	Unit		ES2311425-006	ES2311425-007	ES2311425-008	ES2311425-009	ES2311425-010
					Result	Result	Result	Result	Result
EP131A: Organochlorine Pesticides - Continued									
^ **Sum of DDD + DDE + DDT**	72-54-8/72-55-9/50-2	0.010	µg/L		<0.010	<0.010	<0.010	<0.010	<0.010
Dieldrin	60-57-1	0.010	µg/L		<0.010	<0.010	<0.010	<0.010	<0.010
alpha-Endosulfan	959-98-8	0.010	µg/L		<0.010	<0.010	<0.010	<0.010	<0.010
beta-Endosulfan	33213-65-9	0.010	µg/L		<0.010	<0.010	<0.010	<0.010	<0.010
Endosulfan sulfate	1031-07-8	0.010	µg/L		<0.010	<0.010	<0.010	<0.010	<0.010
^ **Endosulfan (sum)**	115-29-7	0.010	µg/L		<0.010	<0.010	<0.010	<0.010	<0.010
Endrin	72-20-8	0.010	µg/L		<0.010	<0.010	<0.010	<0.010	<0.010
Endrin aldehyde	7421-93-4	0.010	µg/L		<0.010	<0.010	<0.010	<0.010	<0.010
Endrin ketone	53494-70-5	0.010	µg/L		<0.010	<0.010	<0.010	<0.010	<0.010
Heptachlor	76-44-8	0.005	µg/L		<0.005	<0.005	<0.005	<0.005	<0.005
Heptachlor epoxide	1024-57-3	0.010	µg/L		<0.010	<0.010	<0.010	<0.010	<0.010
Hexachlorobenzene (HCB)	118-74-1	0.010	µg/L		<0.010	<0.010	<0.010	<0.010	<0.010
gamma-BHC	58-89-9	0.010	µg/L		<0.010	<0.010	<0.010	<0.010	<0.010
Methoxychlor	72-43-5	0.010	µg/L		<0.010	<0.010	<0.010	<0.010	<0.010
cis-Chlordane	5103-71-9	0.010	µg/L		<0.010	<0.010	<0.010	<0.010	<0.010
trans-Chlordane	5103-74-2	0.010	µg/L		<0.010	<0.010	<0.010	<0.010	<0.010
^ **Total Chlordane (sum)**	----	0.010	µg/L		<0.010	<0.010	<0.010	<0.010	<0.010
Oxychlordane	27304-13-8	0.010	µg/L		<0.010	<0.010	<0.010	<0.010	<0.010
EP234A: OP Pesticides									
Acephate	30560-19-1	0.5	µg/L		<0.5	<0.5	<0.5	<0.5	<0.5
Azinphos-methyl	86-50-0	0.02	µg/L		<0.02	<0.02	<0.02	<0.02	<0.02
Azinphos-ethyl	2642-71-9	0.02	µg/L		<0.02	<0.02	<0.02	<0.02	<0.02
Bensulide	741-58-2	0.1	µg/L		<0.1	<0.1	<0.1	<0.1	<0.1
Bromophos-ethyl	4824-78-6	0.10	µg/L		<0.10	<0.10	<0.10	<0.10	<0.10
Carbofenothion	786-19-6	0.02	µg/L		<0.02	<0.02	<0.02	<0.02	<0.02
Chlorfenvinphos	470-90-6	0.02	µg/L		<0.02	<0.02	<0.02	<0.02	<0.02
Chlorpyrifos	2921-88-2	0.02	µg/L		<0.02	<0.02	<0.02	<0.02	<0.02
Chlorpyrifos-methyl	5598-13-0	0.2	µg/L		<0.2	<0.2	<0.2	<0.2	<0.2
Coumaphos	56-72-4	0.01	µg/L		<0.01	<0.01	<0.01	<0.01	<0.01
Demeton-O	298-03-3	0.02	µg/L		<0.02	<0.02	<0.02	<0.02	<0.02
Demeton-O & Demeton-S	298-03-3/126-75-0	0.02	µg/L		<0.02	<0.02	<0.02	<0.02	<0.02
Demeton-S	126-75-0	0.02	µg/L		<0.02	<0.02	<0.02	<0.02	<0.02
Demeton-S-methyl	919-86-8	0.02	µg/L		<0.02	<0.02	<0.02	<0.02	<0.02
Diazinon	333-41-5	0.01	µg/L		<0.01	<0.01	**0.01**	**0.01**	<0.01

Analytical Results

Sub-Matrix: WATER (Matrix: WATER)				Sample ID	HINDS	HINUS	KEMDS	KEMUS	ROPDS
				Sampling date / time	04-Apr-2023 00:00	04-Apr-2023 00:00	05-Apr-2023 00:00	05-Apr-2023 00:00	04-Apr-2023 00:00
Compound	CAS Number	LOR	Unit		ES2311425-006	ES2311425-007	ES2311425-008	ES2311425-009	ES2311425-010
					Result	Result	Result	Result	Result
EP234A: OP Pesticides - Continued									
Dichlorvos	62-73-7	0.20	µg/L		<0.20	<0.20	<0.20	<0.20	<0.20
Dimethoate	60-51-5	0.02	µg/L		<0.02	<0.02	**0.04**	**0.14**	<0.02
Disulfoton	298-04-4	0.05	µg/L		<0.05	<0.05	<0.05	<0.05	<0.05
EPN	2104-64-5	0.05	µg/L		<0.05	<0.05	<0.05	<0.05	<0.05
Ethion	563-12-2	0.02	µg/L		<0.02	<0.02	<0.02	<0.02	<0.02
Ethoprophos	13194-48-4	0.01	µg/L		<0.01	<0.01	<0.01	<0.01	<0.01
Fenamiphos	22224-92-6	0.01	µg/L		<0.01	<0.01	<0.01	<0.01	<0.01
Fenchlorphos (Ronnel)	299-84-3	10	µg/L		<10	<10	<10	<10	<10
Fenitrothion	122-14-5	2	µg/L		<2	<2	<2	<2	<2
Fensulfothion	115-90-2	0.01	µg/L		<0.01	<0.01	<0.01	<0.01	<0.01
Fenthion	55-38-9	0.05	µg/L		<0.05	<0.05	<0.05	<0.05	<0.05
Formothion	2540-82-1	20	µg/L		<20	<20	<20	<20	<20
Fosetyl Aluminium	39148-24-8	10	µg/L		<10	<10	<10	<10	<10
Malathion	121-75-5	0.02	µg/L		<0.02	<0.02	<0.02	<0.02	<0.02
Methidathion	950-37-8	0.1	µg/L		<0.1	<0.1	<0.1	<0.1	<0.1
Mevinphos	7786-34-7	0.02	µg/L		<0.02	<0.02	<0.02	<0.02	<0.02
Monocrotophos	6923-22-4	0.02	µg/L		<0.02	<0.02	<0.02	<0.02	<0.02
Naftalofos	1491-41-4	1.0	µg/L		<1.0	<1.0	<1.0	<1.0	<1.0
Omethoate	1113-02-6	0.01	µg/L		<0.01	<0.01	<0.01	<0.01	<0.01
Parathion	56-38-2	0.2	µg/L		<0.2	<0.2	<0.2	<0.2	<0.2
Parathion-methyl	298-00-0	0.5	µg/L		<0.5	<0.5	<0.5	<0.5	<0.5
Phorate	298-02-2	0.1	µg/L		<0.1	<0.1	<0.1	<0.1	<0.1
Pirimiphos-ethyl	23505-41-1	0.01	µg/L		<0.01	<0.01	<0.01	<0.01	<0.01
Pirimiphos-methyl	29232-93-7	0.01	µg/L		<0.01	<0.01	<0.01	<0.01	<0.01
Profenofos	41198-08-7	0.01	µg/L		<0.01	<0.01	<0.01	<0.01	<0.01
Prothiofos	34643-46-4	0.1	µg/L		<0.1	<0.1	<0.1	<0.1	<0.1
Pyrazophos	13457-18-6	0.1	µg/L		<0.1	<0.1	<0.1	<0.1	<0.1
Sulfotep	3689-24-5	0.005	µg/L		<0.005	<0.005	<0.005	<0.005	<0.005
Sulprofos	35400-43-2	0.05	µg/L		<0.05	<0.05	<0.05	<0.05	<0.05
Temephos	3383-96-8	0.02	µg/L		<0.02	<0.02	<0.02	<0.02	<0.02
Terbufos	13071-79-9	0.01	µg/L		<0.01	<0.01	<0.01	<0.01	<0.01
Tetrachlorvinphos	22248-79-9	0.01	µg/L		<0.01	<0.01	<0.01	<0.01	<0.01
Thiometon	640-15-3	0.5	µg/L		<0.5	<0.5	<0.5	<0.5	<0.5
Triazophos	24017-47-8	0.005	µg/L		<0.005	<0.005	<0.005	<0.005	<0.005

Analytical Results

Sub-Matrix: WATER (Matrix: WATER)				Sample ID	HINDS	HINUS	KEMDS	KEMUS	ROPDS
				Sampling date / time	04-Apr-2023 00:00	04-Apr-2023 00:00	05-Apr-2023 00:00	05-Apr-2023 00:00	04-Apr-2023 00:00
Compound	CAS Number	LOR	Unit		ES2311425-006	ES2311425-007	ES2311425-008	ES2311425-009	ES2311425-010
					Result	Result	Result	Result	Result
EP234A: OP Pesticides - Continued									
Trichlorfon	52-68-6	0.02	µg/L		<0.02	<0.02	<0.02	<0.02	<0.02
Trichloronate	327-98-0	0.5	µg/L		<0.5	<0.5	<0.5	<0.5	<0.5
EP074S: VOC Surrogates									
1.2-Dichloroethane-D4	17060-07-0	5	%		104	123	118	117	116
Toluene-D8	2037-26-5	5	%		102	123	116	114	108
4-Bromofluorobenzene	460-00-4	5	%		90.0	110	109	103	99.8
EP075(SIM)S: Phenolic Compound Surrogates									
Phenol-d6	13127-88-3	1.0	%		28.8	25.8	26.7	29.3	28.4
2-Chlorophenol-D4	93951-73-6	1.0	%		67.1	42.5	55.0	57.9	59.5
2.4.6-Tribromophenol	118-79-6	1.0	%		69.1	38.3	61.8	57.8	64.2
EP075(SIM)T: PAH Surrogates									
2-Fluorobiphenyl	321-60-8	1.0	%		77.1	64.3	64.7	63.5	71.1
Anthracene-d10	1719-06-8	1.0	%		84.7	72.2	75.4	77.1	75.4
4-Terphenyl-d14	1718-51-0	1.0	%		89.4	78.0	77.5	79.2	77.8
EP080S: TPH(V)/BTEX Surrogates									
1.2-Dichloroethane-D4	17060-07-0	2	%		102	121	116	115	114
Toluene-D8	2037-26-5	2	%		98.8	121	112	109	106
4-Bromofluorobenzene	460-00-4	2	%		96.6	117	113	109	105
EP131S: OC Pesticide Surrogate									
Dibromo-DDE	21655-73-2	0.010	%		117	110	94.2	108	100

Analytical Results

Sub-Matrix: WATER (Matrix: WATER)				Sample ID	ROPUS	SOUDS	SOUUS	SWDUP1	----
				Sampling date / time	04-Apr-2023 00:00	05-Apr-2023 00:00	05-Apr-2023 00:00	05-Apr-2023 00:00	----
Compound	CAS Number	LOR	Unit		ES2311425-011	ES2311425-012	ES2311425-013	ES2311425-014	--------
					Result	Result	Result	Result	----
EA015: Total Dissolved Solids dried at 180 ± 5 °C									
Total Dissolved Solids @180°C	----	10	mg/L		**169**	**668**	**676**	**----**	**----**
EA025: Total Suspended Solids dried at 104 ± 2°C									
Suspended Solids (SS)	----	5	mg/L		**60**	**16**	**18**	**----**	**----**
EA065: Total Hardness as CaCO3									
Total Hardness as CaCO3	----	1	mg/L		**46**	**229**	**227**	**----**	**----**
EG020T: Total Metals by ICP-MS									
Arsenic	7440-38-2	0.001	mg/L		<0.001	<0.001	<0.001	<0.001	**----**
Cadmium	7440-43-9	0.0001	mg/L		<0.0001	<0.0001	<0.0001	<0.0001	**----**
Chromium	7440-47-3	0.001	mg/L		**0.002**	<0.001	<0.001	<0.001	**----**
Copper	7440-50-8	0.001	mg/L		<0.001	**0.002**	<0.001	<0.001	**----**
Nickel	7440-02-0	0.001	mg/L		**0.002**	**0.003**	**0.003**	**0.003**	**----**
Lead	7439-92-1	0.001	mg/L		**0.001**	<0.001	<0.001	<0.001	**----**
Zinc	7440-66-6	0.005	mg/L		<0.005	<0.005	<0.005	<0.005	**----**
Manganese	7439-96-5	0.001	mg/L		**0.215**	**0.181**	**0.224**	**----**	**----**
Iron	7439-89-6	0.05	mg/L		**3.81**	**0.90**	**0.82**	**----**	**----**
EG035T: Total Recoverable Mercury by FIMS									
Mercury	7439-97-6	0.0001	mg/L		<0.0001	<0.0001	<0.0001	<0.0001	**----**
EK055G: Ammonia as N by Discrete Analyser									
Ammonia as N	7664-41-7	0.01	mg/L		**0.06**	**0.02**	**0.03**	**----**	**----**
EK057G: Nitrite as N by Discrete Analyser									
Nitrite as N	14797-65-0	0.01	mg/L		<0.01	**0.03**	**0.04**	**----**	**----**
EK058G: Nitrate as N by Discrete Analyser									
Nitrate as N	14797-55-8	0.01	mg/L		**0.01**	**0.92**	**0.89**	**----**	**----**
EK059G: Nitrite plus Nitrate as N (NOx) by Discrete Analyser									
Nitrite + Nitrate as N	----	0.01	mg/L		**0.01**	**0.95**	**0.93**	**----**	**----**
EK061G: Total Kjeldahl Nitrogen By Discrete Analyser									
Total Kjeldahl Nitrogen as N	----	0.1	mg/L		**0.7**	**1.6**	**0.8**	**----**	**----**
EK062G: Total Nitrogen as N (TKN + NOx) by Discrete Analyser									
^ Total Nitrogen as N	----	0.1	mg/L		**0.7**	**2.6**	**1.7**	**----**	**----**
EK067G: Total Phosphorus as P by Discrete Analyser									
Total Phosphorus as P	----	0.01	mg/L		**0.06**	**0.14**	**0.04**	**----**	**----**
EK071G: Reactive Phosphorus as P by discrete analyser									
Reactive Phosphorus as P	14265-44-2	0.01	mg/L		<0.01	**0.01**	<0.01	**----**	**----**

Analytical Results

Sub-Matrix: WATER (Matrix: WATER)			Sample ID	ROPUS	SOUDS	SOUUS	SWDUP1	----
			Sampling date / time	04-Apr-2023 00:00	05-Apr-2023 00:00	05-Apr-2023 00:00	05-Apr-2023 00:00	----
Compound	CAS Number	LOR	Unit	ES2311425-011	ES2311425-012	ES2311425-013	ES2311425-014	--------
				Result	Result	Result	Result	----
EP008: Chlorophyll a & Pheophytin a								
Chlorophyll a	----	1	mg/m³	**30**	**23**	**26**	**----**	**----**
EP020: Oil and Grease (O&G)								
Oil & Grease	----	5	mg/L	<5	<5	<5	**----**	**----**
EP074D: Fumigants								
2.2-Dichloropropane	594-20-7	5	µg/L	<5	<5	<5	**----**	**----**
1.2-Dichloropropane	78-87-5	5	µg/L	<5	<5	<5	**----**	**----**
cis-1.3-Dichloropropylene	10061-01-5	5	µg/L	<5	<5	<5	**----**	**----**
trans-1.3-Dichloropropylene	10061-02-6	5	µg/L	<5	<5	<5	**----**	**----**
1.2-Dibromoethane (EDB)	106-93-4	5	µg/L	<5	<5	<5	**----**	**----**
EP074E: Halogenated Aliphatic Compounds								
Dichlorodifluoromethane	75-71-8	50	µg/L	<50	<50	<50	**----**	**----**
Chloromethane	74-87-3	50	µg/L	<50	<50	<50	**----**	**----**
Vinyl chloride	75-01-4	50	µg/L	<50	<50	<50	**----**	**----**
Bromomethane	74-83-9	50	µg/L	<50	<50	<50	**----**	**----**
Chloroethane	75-00-3	50	µg/L	<50	<50	<50	**----**	**----**
Trichlorofluoromethane	75-69-4	50	µg/L	<50	<50	<50	**----**	**----**
1.1-Dichloroethene	75-35-4	5	µg/L	<5	<5	<5	**----**	**----**
Iodomethane	74-88-4	5	µg/L	<5	<5	<5	**----**	**----**
trans-1.2-Dichloroethene	156-60-5	5	µg/L	<5	<5	<5	**----**	**----**
1.1-Dichloroethane	75-34-3	5	µg/L	<5	<5	<5	**----**	**----**
cis-1.2-Dichloroethene	156-59-2	5	µg/L	<5	<5	<5	**----**	**----**
1.1.1-Trichloroethane	71-55-6	5	µg/L	<5	<5	<5	**----**	**----**
1.1-Dichloropropylene	563-58-6	5	µg/L	<5	<5	<5	**----**	**----**
Carbon Tetrachloride	56-23-5	5	µg/L	<5	<5	<5	**----**	**----**
1.2-Dichloroethane	107-06-2	5	µg/L	<5	<5	<5	**----**	**----**
Trichloroethene	79-01-6	5	µg/L	<5	<5	<5	**----**	**----**
Dibromomethane	74-95-3	5	µg/L	<5	<5	<5	**----**	**----**
1.1.2-Trichloroethane	79-00-5	5	µg/L	<5	<5	<5	**----**	**----**
1.3-Dichloropropane	142-28-9	5	µg/L	<5	<5	<5	**----**	**----**
Tetrachloroethene	127-18-4	5	µg/L	<5	<5	<5	**----**	**----**
1.1.1.2-Tetrachloroethane	630-20-6	5	µg/L	<5	<5	<5	**----**	**----**
trans-1.4-Dichloro-2-butene	110-57-6	5	µg/L	<5	<5	<5	**----**	**----**
cis-1.4-Dichloro-2-butene	1476-11-5	5	µg/L	<5	<5	<5	**----**	**----**
1.1.2.2-Tetrachloroethane	79-34-5	5	µg/L	<5	<5	<5	**----**	**----**

Analytical Results

Sub-Matrix: WATER (Matrix: WATER)				Sample ID	ROPUS	SOUDS	SOUUS	SWDUP1	----
				Sampling date / time	04-Apr-2023 00:00	05-Apr-2023 00:00	05-Apr-2023 00:00	05-Apr-2023 00:00	----
Compound	CAS Number	LOR	Unit		ES2311425-011	ES2311425-012	ES2311425-013	ES2311425-014	--------
					Result	Result	Result	Result	----
EP074E: Halogenated Aliphatic Compounds - Continued									
1.2.3-Trichloropropane	96-18-4	5	µg/L		<5	<5	<5	----	----
Pentachloroethane	76-01-7	5	µg/L		<5	<5	<5	----	----
1.2-Dibromo-3-chloropropane	96-12-8	5	µg/L		<5	<5	<5	----	----
Hexachlorobutadiene	87-68-3	5	µg/L		<5	<5	<5	----	----
EP074F: Halogenated Aromatic Compounds									
Chlorobenzene	108-90-7	5	µg/L		<5	<5	<5	----	----
Bromobenzene	108-86-1	5	µg/L		<5	<5	<5	----	----
2-Chlorotoluene	95-49-8	5	µg/L		<5	<5	<5	----	----
4-Chlorotoluene	106-43-4	5	µg/L		<5	<5	<5	----	----
1.3-Dichlorobenzene	541-73-1	5	µg/L		<5	<5	<5	----	----
1.4-Dichlorobenzene	106-46-7	5	µg/L		<5	<5	<5	----	----
1.2-Dichlorobenzene	95-50-1	5	µg/L		<5	<5	<5	----	----
1.2.4-Trichlorobenzene	120-82-1	5	µg/L		<5	<5	<5	----	----
1.2.3-Trichlorobenzene	87-61-6	5	µg/L		<5	<5	<5	----	----
EP074G: Trihalomethanes									
Chloroform	67-66-3	5	µg/L		<5	<5	<5	----	----
Bromodichloromethane	75-27-4	5	µg/L		<5	<5	<5	----	----
Dibromochloromethane	124-48-1	5	µg/L		<5	<5	<5	----	----
Bromoform	75-25-2	5	µg/L		<5	<5	<5	----	----
EP075(SIM)A: Phenolic Compounds									
Phenol	108-95-2	1.0	µg/L		<1.0	<1.0	<1.0	----	----
2-Chlorophenol	95-57-8	1.0	µg/L		<1.0	<1.0	<1.0	----	----
2-Methylphenol	95-48-7	1.0	µg/L		<1.0	<1.0	<1.0	----	----
3- & 4-Methylphenol	1319-77-3	2.0	µg/L		<2.0	<2.0	<2.0	----	----
2-Nitrophenol	88-75-5	1.0	µg/L		<1.0	<1.0	<1.0	----	----
2.4-Dimethylphenol	105-67-9	1.0	µg/L		<1.0	<1.0	<1.0	----	----
2.4-Dichlorophenol	120-83-2	1.0	µg/L		<1.0	<1.0	<1.0	----	----
2.6-Dichlorophenol	87-65-0	1.0	µg/L		<1.0	<1.0	<1.0	----	----
4-Chloro-3-methylphenol	59-50-7	1.0	µg/L		<1.0	<1.0	<1.0	----	----
2.4.6-Trichlorophenol	88-06-2	1.0	µg/L		<1.0	<1.0	<1.0	----	----
2.4.5-Trichlorophenol	95-95-4	1.0	µg/L		<1.0	<1.0	<1.0	----	----
Pentachlorophenol	87-86-5	2.0	µg/L		<2.0	<2.0	<2.0	----	----
EP075(SIM)B: Polynuclear Aromatic Hydrocarbons									
Naphthalene	91-20-3	1.0	µg/L		<1.0	<1.0	<1.0	----	----

Analytical Results

Sub-Matrix: WATER (Matrix: WATER)				Sample ID	ROPUS	SOUDS	SOUUS	SWDUP1	----
				Sampling date / time	04-Apr-2023 00:00	05-Apr-2023 00:00	05-Apr-2023 00:00	05-Apr-2023 00:00	----
Compound	CAS Number	LOR	Unit		ES2311425-011	ES2311425-012	ES2311425-013	ES2311425-014	--------
					Result	Result	Result	Result	----
EP075(SIM)B: Polynuclear Aromatic Hydrocarbons - Continued									
Acenaphthylene	208-96-8	1.0	µg/L		<1.0	<1.0	<1.0	----	----
Acenaphthene	83-32-9	1.0	µg/L		<1.0	<1.0	<1.0	----	----
Fluorene	86-73-7	1.0	µg/L		<1.0	<1.0	<1.0	----	----
Phenanthrene	85-01-8	1.0	µg/L		<1.0	<1.0	<1.0	----	----
Anthracene	120-12-7	1.0	µg/L		<1.0	<1.0	<1.0	----	----
Fluoranthene	206-44-0	1.0	µg/L		<1.0	<1.0	<1.0	----	----
Pyrene	129-00-0	1.0	µg/L		<1.0	<1.0	<1.0	----	----
Benz(a)anthracene	56-55-3	1.0	µg/L		<1.0	<1.0	<1.0	----	----
Chrysene	218-01-9	1.0	µg/L		<1.0	<1.0	<1.0	----	----
Benzo(b+j)fluoranthene	205-99-2 205-82-3	1.0	µg/L		<1.0	<1.0	<1.0	----	----
Benzo(k)fluoranthene	207-08-9	1.0	µg/L		<1.0	<1.0	<1.0	----	----
Benzo(a)pyrene	50-32-8	0.5	µg/L		<0.5	<0.5	<0.5	----	----
Indeno(1.2.3.cd)pyrene	193-39-5	1.0	µg/L		<1.0	<1.0	<1.0	----	----
Dibenz(a.h)anthracene	53-70-3	1.0	µg/L		<1.0	<1.0	<1.0	----	----
Benzo(g.h.i)perylene	191-24-2	1.0	µg/L		<1.0	<1.0	<1.0	----	----
^ Sum of polycyclic aromatic hydrocarbons	----	0.5	µg/L		<0.5	<0.5	<0.5	----	----
^ Benzo(a)pyrene TEQ (zero)	----	0.5	µg/L		<0.5	<0.5	<0.5	----	----
EP080: BTEXN									
Benzene	71-43-2	1	µg/L		<1	<1	<1	----	----
Toluene	108-88-3	2	µg/L		<2	<2	<2	----	----
Ethylbenzene	100-41-4	2	µg/L		<2	<2	<2	----	----
meta- & para-Xylene	108-38-3 106-42-3	2	µg/L		<2	<2	<2	----	----
ortho-Xylene	95-47-6	2	µg/L		<2	<2	<2	----	----
^ Total Xylenes	----	2	µg/L		<2	<2	<2	----	----
^ Sum of BTEX	----	1	µg/L		<1	<1	<1	----	----
Naphthalene	91-20-3	5	µg/L		<5	<5	<5	----	----
EP131A: Organochlorine Pesticides									
Aldrin	309-00-2	0.010	µg/L		<0.010	<0.010	<0.010	----	----
alpha-BHC	319-84-6	0.010	µg/L		<0.010	<0.010	<0.010	----	----
beta-BHC	319-85-7	0.010	µg/L		<0.010	<0.010	<0.010	----	----
delta-BHC	319-86-8	0.010	µg/L		<0.010	<0.010	<0.010	----	----
4.4`-DDD	72-54-8	0.010	µg/L		<0.010	<0.010	<0.010	----	----
4.4`-DDE	72-55-9	0.010	µg/L		<0.010	<0.010	<0.010	----	----
4.4`-DDT	50-29-3	0.010	µg/L		<0.010	<0.010	<0.010	----	----

Analytical Results

Sub-Matrix: WATER (Matrix: WATER)				Sample ID	ROPUS	SOUDS	SOUUS	SWDUP1	----
				Sampling date / time	04-Apr-2023 00:00	05-Apr-2023 00:00	05-Apr-2023 00:00	05-Apr-2023 00:00	----
Compound	CAS Number	LOR	Unit		ES2311425-011	ES2311425-012	ES2311425-013	ES2311425-014	--------
					Result	Result	Result	Result	----
EP131A: Organochlorine Pesticides - Continued									
^ Sum of DDD + DDE + DDT	72-54-8/72-55-9/50-2	0.010	µg/L		<0.010	<0.010	<0.010	----	----
Dieldrin	60-57-1	0.010	µg/L		<0.010	<0.010	<0.010	----	----
alpha-Endosulfan	959-98-8	0.010	µg/L		<0.010	<0.010	<0.010	----	----
beta-Endosulfan	33213-65-9	0.010	µg/L		<0.010	<0.010	<0.010	----	----
Endosulfan sulfate	1031-07-8	0.010	µg/L		<0.010	<0.010	<0.010	----	----
^ Endosulfan (sum)	115-29-7	0.010	µg/L		<0.010	<0.010	<0.010	----	----
Endrin	72-20-8	0.010	µg/L		<0.010	<0.010	<0.010	----	----
Endrin aldehyde	7421-93-4	0.010	µg/L		<0.010	<0.010	<0.010	----	----
Endrin ketone	53494-70-5	0.010	µg/L		<0.010	<0.010	<0.010	----	----
Heptachlor	76-44-8	0.005	µg/L		<0.005	<0.005	<0.005	----	----
Heptachlor epoxide	1024-57-3	0.010	µg/L		<0.010	<0.010	<0.010	----	----
Hexachlorobenzene (HCB)	118-74-1	0.010	µg/L		<0.010	<0.010	<0.010	----	----
gamma-BHC	58-89-9	0.010	µg/L		<0.010	<0.010	<0.010	----	----
Methoxychlor	72-43-5	0.010	µg/L		<0.010	<0.010	<0.010	----	----
cis-Chlordane	5103-71-9	0.010	µg/L		<0.010	<0.010	<0.010	----	----
trans-Chlordane	5103-74-2	0.010	µg/L		<0.010	<0.010	<0.010	----	----
^ Total Chlordane (sum)	----	0.010	µg/L		<0.010	<0.010	<0.010	----	----
Oxychlordane	27304-13-8	0.010	µg/L		<0.010	<0.010	<0.010	----	----
EP234A: OP Pesticides									
Acephate	30560-19-1	0.5	µg/L		<0.5	<0.5	<0.5	----	----
Azinphos-methyl	86-50-0	0.02	µg/L		<0.02	<0.02	<0.02	----	----
Azinphos-ethyl	2642-71-9	0.02	µg/L		<0.02	<0.02	<0.02	----	----
Bensulide	741-58-2	0.1	µg/L		<0.1	<0.1	<0.1	----	----
Bromophos-ethyl	4824-78-6	0.10	µg/L		<0.10	<0.10	<0.10	----	----
Carbofenothion	786-19-6	0.02	µg/L		<0.02	<0.02	<0.02	----	----
Chlorfenvinphos	470-90-6	0.02	µg/L		<0.02	<0.02	<0.02	----	----
Chlorpyrifos	2921-88-2	0.02	µg/L		<0.02	<0.02	<0.02	----	----
Chlorpyrifos-methyl	5598-13-0	0.2	µg/L		<0.2	<0.2	<0.2	----	----
Coumaphos	56-72-4	0.01	µg/L		<0.01	<0.01	<0.01	----	----
Demeton-O	298-03-3	0.02	µg/L		<0.02	<0.02	<0.02	----	----
Demeton-O & Demeton-S	298-03-3/126-75-0	0.02	µg/L		<0.02	<0.02	<0.02	----	----
Demeton-S	126-75-0	0.02	µg/L		<0.02	<0.02	<0.02	----	----
Demeton-S-methyl	919-86-8	0.02	µg/L		<0.02	<0.02	<0.02	----	----
Diazinon	333-41-5	0.01	µg/L		<0.01	<0.01	<0.01	----	----

Analytical Results

Sub-Matrix: WATER (Matrix: WATER)				Sample ID	ROPUS	SOUDS	SOUUS	SWDUP1	----
				Sampling date / time	04-Apr-2023 00:00	05-Apr-2023 00:00	05-Apr-2023 00:00	05-Apr-2023 00:00	----
Compound	CAS Number	LOR	Unit		ES2311425-011	ES2311425-012	ES2311425-013	ES2311425-014	--------
					Result	Result	Result	Result	----
EP234A: OP Pesticides - Continued									
Dichlorvos	62-73-7	0.20	µg/L		<0.20	<0.20	<0.20	----	----
Dimethoate	60-51-5	0.02	µg/L		<0.02	**0.02**	**0.03**	----	----
Disulfoton	298-04-4	0.05	µg/L		<0.05	<0.05	<0.05	----	----
EPN	2104-64-5	0.05	µg/L		<0.05	<0.05	<0.05	----	----
Ethion	563-12-2	0.02	µg/L		<0.02	<0.02	<0.02	----	----
Ethoprophos	13194-48-4	0.01	µg/L		<0.01	<0.01	<0.01	----	----
Fenamiphos	22224-92-6	0.01	µg/L		<0.01	<0.01	<0.01	----	----
Fenchlorphos (Ronnel)	299-84-3	10	µg/L		<10	<10	<10	----	----
Fenitrothion	122-14-5	2	µg/L		<2	<2	<2	----	----
Fensulfothion	115-90-2	0.01	µg/L		<0.01	<0.01	<0.01	----	----
Fenthion	55-38-9	0.05	µg/L		<0.05	<0.05	<0.05	----	----
Formothion	2540-82-1	20	µg/L		<20	<20	<20	----	----
Fosetyl Aluminium	39148-24-8	10	µg/L		<10	<10	<10	----	----
Malathion	121-75-5	0.02	µg/L		<0.02	<0.02	<0.02	----	----
Methidathion	950-37-8	0.1	µg/L		<0.1	<0.1	<0.1	----	----
Mevinphos	7786-34-7	0.02	µg/L		<0.02	<0.02	<0.02	----	----
Monocrotophos	6923-22-4	0.02	µg/L		<0.02	<0.02	<0.02	----	----
Naftalofos	1491-41-4	1.0	µg/L		<1.0	<1.0	<1.0	----	----
Omethoate	1113-02-6	0.01	µg/L		<0.01	<0.01	<0.01	----	----
Parathion	56-38-2	0.2	µg/L		<0.2	<0.2	<0.2	----	----
Parathion-methyl	298-00-0	0.5	µg/L		<0.5	<0.5	<0.5	----	----
Phorate	298-02-2	0.1	µg/L		<0.1	<0.1	<0.1	----	----
Pirimiphos-ethyl	23505-41-1	0.01	µg/L		<0.01	<0.01	<0.01	----	----
Pirimiphos-methyl	29232-93-7	0.01	µg/L		<0.01	<0.01	<0.01	----	----
Profenofos	41198-08-7	0.01	µg/L		<0.01	<0.01	<0.01	----	----
Prothiofos	34643-46-4	0.1	µg/L		<0.1	<0.1	<0.1	----	----
Pyrazophos	13457-18-6	0.1	µg/L		<0.1	<0.1	<0.1	----	----
Sulfotep	3689-24-5	0.005	µg/L		<0.005	<0.005	<0.005	----	----
Sulprofos	35400-43-2	0.05	µg/L		<0.05	<0.05	<0.05	----	----
Temephos	3383-96-8	0.02	µg/L		<0.02	<0.02	<0.02	----	----
Terbufos	13071-79-9	0.01	µg/L		<0.01	<0.01	<0.01	----	----
Tetrachlorvinphos	22248-79-9	0.01	µg/L		<0.01	<0.01	<0.01	----	----
Thiometon	640-15-3	0.5	µg/L		<0.5	<0.5	<0.5	----	----
Triazophos	24017-47-8	0.005	µg/L		<0.005	<0.005	<0.005	----	----

Analytical Results

Sub-Matrix: WATER (Matrix: WATER)			Sample ID	ROPUS	SOUDS	SOUUS	SWDUP1	----
			Sampling date / time	04-Apr-2023 00:00	05-Apr-2023 00:00	05-Apr-2023 00:00	05-Apr-2023 00:00	----
Compound	CAS Number	LOR	Unit	ES2311425-011	ES2311425-012	ES2311425-013	ES2311425-014	--------
				Result	Result	Result	Result	----
EP234A: OP Pesticides - Continued								
Trichlorfon	52-68-6	0.02	µg/L	<0.02	<0.02	<0.02	----	----
Trichloronate	327-98-0	0.5	µg/L	<0.5	<0.5	<0.5	----	----
EP074S: VOC Surrogates								
1.2-Dichloroethane-D4	17060-07-0	5	%	**110**	**123**	**119**	----	----
Toluene-D8	2037-26-5	5	%	**114**	**122**	**116**	----	----
4-Bromofluorobenzene	460-00-4	5	%	**99.1**	**110**	**106**	----	----
EP075(SIM)S: Phenolic Compound Surrogates								
Phenol-d6	13127-88-3	1.0	%	**29.6**	**29.1**	**24.7**	----	----
2-Chlorophenol-D4	93951-73-6	1.0	%	**51.9**	**56.4**	**54.0**	----	----
2.4.6-Tribromophenol	118-79-6	1.0	%	**45.1**	**57.3**	**56.1**	----	----
EP075(SIM)T: PAH Surrogates								
2-Fluorobiphenyl	321-60-8	1.0	%	**66.2**	**65.4**	**66.6**	----	----
Anthracene-d10	1719-06-8	1.0	%	**93.8**	**71.6**	**70.9**	----	----
4-Terphenyl-d14	1718-51-0	1.0	%	**76.2**	**73.4**	**74.8**	----	----
EP080S: TPH(V)/BTEX Surrogates								
1.2-Dichloroethane-D4	17060-07-0	2	%	**108**	**121**	**117**	----	----
Toluene-D8	2037-26-5	2	%	**110**	**118**	**112**	----	----
4-Bromofluorobenzene	460-00-4	2	%	**106**	**116**	**110**	----	----
EP131S: OC Pesticide Surrogate								
Dibromo-DDE	21655-73-2	0.010	%	**93.5**	**103**	**98.4**	----	----

Surrogate Control Limits

Sub-Matrix: WATER		Recovery Limits (%)	
Compound	*CAS Number*	*Low*	*High*
EP074S: VOC Surrogates			
1.2-Dichloroethane-D4	17060-07-0	78	133
Toluene-D8	2037-26-5	79	129
4-Bromofluorobenzene	460-00-4	81	124
EP075(SIM)S: Phenolic Compound Surrogates			
Phenol-d6	13127-88-3	10	44
2-Chlorophenol-D4	93951-73-6	14	94
2.4.6-Tribromophenol	118-79-6	17	125
EP075(SIM)T: PAH Surrogates			
2-Fluorobiphenyl	321-60-8	20	104
Anthracene-d10	1719-06-8	27	113
4-Terphenyl-d14	1718-51-0	32	112
EP080S: TPH(V)/BTEX Surrogates			
1.2-Dichloroethane-D4	17060-07-0	72	143
Toluene-D8	2037-26-5	75	131
4-Bromofluorobenzene	460-00-4	73	137
EP131S: OC Pesticide Surrogate			
Dibromo-DDE	21655-73-2	14	166

QUALITY CONTROL REPORT

Work Order	: **ES2311425**	Page	: 1 of 23
Client	: **GHD PTY LTD**	Laboratory	: Environmental Division Sydney
Contact	: MR HENRY LUO	Contact	: Sarah Mathew
Address	: LEVEL 15, 133 CASTLEREAGH STREET SYDNEY NSW, AUSTRALIA 2000	Address	: 277-289 Woodpark Road Smithfield NSW Australia 2164
Telephone	: +61 02 9239 7100	Telephone	: +61-2-8784 8555
Project	: 12554717	Date Samples Received	: 05-Apr-2023
Order number	: ----	Date Analysis Commenced	: 06-Apr-2023
C-O-C number	: ----	Issue Date	: 17-Apr-2023
Sampler	: EMILY SMITH, TERRY NHAM		
Site	: M12 Surface Water		
Quote number	: SY/322/21		
No. of samples received	: 14		
No. of samples analysed	: 14		

Accreditation No. 825
Accredited for compliance with
ISO/IEC 17025 - Testing

This report supersedes any previous report(s) with this reference. Results apply to the sample(s) as submitted, unless the sampling was conducted by ALS. This document shall not be reproduced, except in full.

This Quality Control Report contains the following information:

- Laboratory Duplicate (DUP) Report; Relative Percentage Difference (RPD) and Acceptance Limits
- Method Blank (MB) and Laboratory Control Spike (LCS) Report; Recovery and Acceptance Limits
- Matrix Spike (MS) Report; Recovery and Acceptance Limits

Signatories

This document has been electronically signed by the authorized signatories below. Electronic signing is carried out in compliance with procedures specified in 21 CFR Part 11.

Signatories	*Position*	*Accreditation Category*
Ankit Joshi	Senior Chemist - Inorganics	Sydney Inorganics, Smithfield, NSW
Edwandy Fadjar	Organic Coordinator	Sydney Organics, Smithfield, NSW
Franco Lentini	LCMS Coordinator	Sydney Organics, Smithfield, NSW
Sanjeshni Jyoti	Senior Chemist Volatiles	Sydney Organics, Smithfield, NSW
Wisam Marassa	Inorganics Coordinator	Sydney Inorganics, Smithfield, NSW

General Comments

The analytical procedures used by ALS have been developed from established internationally recognised procedures such as those published by the USEPA, APHA, AS and NEPM. In house developed procedures are fully validated and are often at the client request.

Where moisture determination has been performed, results are reported on a dry weight basis.

Where a reported less than (<) result is higher than the LOR, this may be due to primary sample extract/digestate dilution and/or insufficient sample for analysis. Where the LOR of a reported result differs from standard LOR, this may be due to high moisture content, insufficient sample (reduced weight employed) or matrix interference.

Key : Anonymous = Refers to samples which are not specifically part of this work order but formed part of the QC process lot
CAS Number = CAS registry number from database maintained by Chemical Abstracts Services. The Chemical Abstracts Service is a division of the American Chemical Society.
LOR = Limit of reporting
RPD = Relative Percentage Difference
# = Indicates failed QC

Laboratory Duplicate (DUP) Report

The quality control term Laboratory Duplicate refers to a randomly selected intralaboratory split. Laboratory duplicates provide information regarding method precision and sample heterogeneity. The permitted ranges for the Relative Percent Deviation (RPD) of Laboratory Duplicates are specified in ALS Method QWI-EN/38 and are dependent on the magnitude of results in comparison to the level of reporting: Result < 10 times LOR: No Limit; Result between 10 and 20 times LOR: 0% - 50%; Result > 20 times LOR: 0% - 20%.

Sub-Matrix: **WATER**

				Laboratory Duplicate (DUP) Report					
Laboratory sample ID	Sample ID	Method: Compound	CAS Number	LOR	Unit	Original Result	Duplicate Result	RPD (%)	Acceptable RPD (%)
EA015: Total Dissolved Solids dried at 180 ± 5 °C (QC Lot: 4981933)									
ES2311257-001	Anonymous	EA015H: Total Dissolved Solids @180°C	----	10	mg/L	926	942	1.8	0% - 20%
ES2311425-011	ROPUS	EA015H: Total Dissolved Solids @180°C	----	10	mg/L	169	172	1.8	0% - 50%
EA015: Total Dissolved Solids dried at 180 ± 5 °C (QC Lot: 4986522)									
ES2311350-001	Anonymous	EA015H: Total Dissolved Solids @180°C	----	10	mg/L	1490	1600	7.5	0% - 20%
ES2311436-002	Anonymous	EA015H: Total Dissolved Solids @180°C	----	10	mg/L	237	237	0.0	0% - 20%
EA025: Total Suspended Solids dried at 104 ± 2°C (QC Lot: 4981934)									
ES2311257-001	Anonymous	EA025H: Suspended Solids (SS)	----	5	mg/L	14	12	21.4	No Limit
ES2311425-011	ROPUS	EA025H: Suspended Solids (SS)	----	5	mg/L	60	58	3.0	0% - 50%
EA025: Total Suspended Solids dried at 104 ± 2°C (QC Lot: 4986523)									
ES2311350-001	Anonymous	EA025H: Suspended Solids (SS)	----	5	mg/L	522	559	6.7	0% - 20%
ES2311436-002	Anonymous	EA025H: Suspended Solids (SS)	----	5	mg/L	<5	<5	0.0	No Limit
EG020T: Total Metals by ICP-MS (QC Lot: 4984088)									
ES2311326-002	Anonymous	EG020A-T: Cadmium	7440-43-9	0.0001	mg/L	<0.0001	<0.0001	0.0	No Limit
		EG020A-T: Arsenic	7440-38-2	0.001	mg/L	<0.001	<0.001	0.0	No Limit
		EG020A-T: Chromium	7440-47-3	0.001	mg/L	0.039	0.038	0.0	0% - 20%
		EG020A-T: Copper	7440-50-8	0.001	mg/L	0.002	0.002	0.0	No Limit
		EG020A-T: Lead	7439-92-1	0.001	mg/L	<0.001	<0.001	0.0	No Limit
		EG020A-T: Manganese	7439-96-5	0.001	mg/L	0.062	0.057	8.1	0% - 20%
		EG020A-T: Nickel	7440-02-0	0.001	mg/L	0.004	0.002	50.7	No Limit
		EG020A-T: Zinc	7440-66-6	0.005	mg/L	0.016	0.015	0.0	No Limit
		EG020A-T: Iron	7439-89-6	0.05	mg/L	0.69	0.69	0.0	0% - 50%
ES2311425-009	KEMUS	EG020A-T: Cadmium	7440-43-9	0.0001	mg/L	<0.0001	<0.0001	0.0	No Limit
		EG020A-T: Arsenic	7440-38-2	0.001	mg/L	<0.001	<0.001	0.0	No Limit

Sub-Matrix: **WATER**

Laboratory sample ID	Sample ID	Method: Compound	CAS Number	Laboratory Duplicate (DUP) Report					
				LOR	Unit	Original Result	Duplicate Result	RPD (%)	Acceptable RPD (%)
EG020T: Total Metals by ICP-MS (QC Lot: 4984088) - continued									
ES2311425-009	KEMUS	EG020A-T: Chromium	7440-47-3	0.001	mg/L	<0.001	<0.001	0.0	No Limit
		EG020A-T: Copper	7440-50-8	0.001	mg/L	0.002	0.002	0.0	No Limit
		EG020A-T: Lead	7439-92-1	0.001	mg/L	<0.001	<0.001	0.0	No Limit
		EG020A-T: Manganese	7439-96-5	0.001	mg/L	0.028	0.027	0.0	0% - 20%
		EG020A-T: Nickel	7440-02-0	0.001	mg/L	0.002	0.002	0.0	No Limit
		EG020A-T: Zinc	7440-66-6	0.005	mg/L	0.007	0.007	0.0	No Limit
		EG020A-T: Iron	7439-89-6	0.05	mg/L	0.42	0.42	0.0	No Limit
EG035T: Total Recoverable Mercury by FIMS (QC Lot: 4982611)									
ES2311416-003	Anonymous	EG035T: Mercury	7439-97-6	0.0001	mg/L	<0.0001	<0.0001	0.0	No Limit
ES2311425-008	KEMDS	EG035T: Mercury	7439-97-6	0.0001	mg/L	<0.0001	<0.0001	0.0	No Limit
EK055G: Ammonia as N by Discrete Analyser (QC Lot: 4981178)									
ES2311311-001	Anonymous	EK055G: Ammonia as N	7664-41-7	0.01	mg/L	0.07	0.07	0.0	No Limit
ES2311311-010	Anonymous	EK055G: Ammonia as N	7664-41-7	0.01	mg/L	<0.01	<0.01	0.0	No Limit
EK055G: Ammonia as N by Discrete Analyser (QC Lot: 4981181)									
ES2311425-009	KEMUS	EK055G: Ammonia as N	7664-41-7	0.01	mg/L	0.03	0.04	30.6	No Limit
ES2311432-002	Anonymous	EK055G: Ammonia as N	7664-41-7	0.01	mg/L	<0.01	<0.01	0.0	No Limit
EK057G: Nitrite as N by Discrete Analyser (QC Lot: 4977175)									
ES2311256-011	Anonymous	EK057G: Nitrite as N	14797-65-0	0.01	mg/L	0.02	0.02	0.0	No Limit
ES2311425-001	BADDS	EK057G: Nitrite as N	14797-65-0	0.01	mg/L	<0.01	<0.01	0.0	No Limit
EK057G: Nitrite as N by Discrete Analyser (QC Lot: 4977586)									
ES2311432-003	Anonymous	EK057G: Nitrite as N	14797-65-0	0.01	mg/L	<0.01	<0.01	0.0	No Limit
ES2310029-001	Anonymous	EK057G: Nitrite as N	14797-65-0	0.01	mg/L	<0.01	<0.01	0.0	No Limit
EK057G: Nitrite as N by Discrete Analyser (QC Lot: 4979241)									
ME2300651-001	Anonymous	EK057G: Nitrite as N	14797-65-0	0.01	mg/L	<0.01	<0.01	0.0	No Limit
ES2311425-008	KEMDS	EK057G: Nitrite as N	14797-65-0	0.01	mg/L	0.01	0.01	0.0	No Limit
EK059G: Nitrite plus Nitrate as N (NOx) by Discrete Analyser (QC Lot: 4981180)									
ES2311425-009	KEMUS	EK059G: Nitrite + Nitrate as N	----	0.01	mg/L	3.03	3.01	0.6	0% - 20%
ES2311432-002	Anonymous	EK059G: Nitrite + Nitrate as N	----	0.01	mg/L	12.6	12.6	0.6	0% - 20%
EK061G: Total Kjeldahl Nitrogen By Discrete Analyser (QC Lot: 4981177)									
ES2311425-001	BADDS	EK061G: Total Kjeldahl Nitrogen as N	----	0.1	mg/L	0.4	0.7	52.5	No Limit
ES2311425-011	ROPUS	EK061G: Total Kjeldahl Nitrogen as N	----	0.1	mg/L	0.7	1.0	29.8	No Limit
EK067G: Total Phosphorus as P by Discrete Analyser (QC Lot: 4981176)									
ES2311425-001	BADDS	EK067G: Total Phosphorus as P	----	0.01	mg/L	0.03	0.07	77.2	No Limit
ES2311425-011	ROPUS	EK067G: Total Phosphorus as P	----	0.01	mg/L	0.06	0.07	0.0	No Limit
EK071G: Reactive Phosphorus as P by discrete analyser (QC Lot: 4977176)									
ES2311425-001	BADDS	EK071G: Reactive Phosphorus as P	14265-44-2	0.01	mg/L	<0.01	<0.01	0.0	No Limit
EK071G: Reactive Phosphorus as P by discrete analyser (QC Lot: 4977587)									
ES2311432-002	Anonymous	EK071G: Reactive Phosphorus as P	14265-44-2	0.01	mg/L	<0.01	<0.01	0.0	No Limit

Sub-Matrix: **WATER**

				Laboratory Duplicate (DUP) Report					
Laboratory sample ID	*Sample ID*	*Method: Compound*	*CAS Number*	*LOR*	*Unit*	*Original Result*	*Duplicate Result*	*RPD (%)*	*Acceptable RPD (%)*
EK071G: Reactive Phosphorus as P by discrete analyser (QC Lot: 4977587) - continued									
ES2310029-001	Anonymous	EK071G: Reactive Phosphorus as P	14265-44-2	0.01	mg/L	<0.01	<0.01	0.0	No Limit
EK071G: Reactive Phosphorus as P by discrete analyser (QC Lot: 4979242)									
ME2300684-008	Anonymous	EK071G: Reactive Phosphorus as P	14265-44-2	0.01	mg/L	0.02	0.02	0.0	No Limit
ES2311425-008	KEMDS	EK071G: Reactive Phosphorus as P	14265-44-2	0.01	mg/L	0.56	0.57	0.0	0% - 20%
EP074D: Fumigants (QC Lot: 4982384)									
ES2311167-001	Anonymous	EP074: 2.2-Dichloropropane	594-20-7	5	µg/L	<5	<5	0.0	No Limit
		EP074: 1.2-Dichloropropane	78-87-5	5	µg/L	<5	<5	0.0	No Limit
		EP074: cis-1.3-Dichloropropylene	10061-01-5	5	µg/L	<5	<5	0.0	No Limit
		EP074: trans-1.3-Dichloropropylene	10061-02-6	5	µg/L	<5	<5	0.0	No Limit
		EP074: 1.2-Dibromoethane (EDB)	106-93-4	5	µg/L	<5	<5	0.0	No Limit
ES2311425-007	HINUS	EP074: 2.2-Dichloropropane	594-20-7	5	µg/L	<5	<5	0.0	No Limit
		EP074: 1.2-Dichloropropane	78-87-5	5	µg/L	<5	<5	0.0	No Limit
		EP074: cis-1.3-Dichloropropylene	10061-01-5	5	µg/L	<5	<5	0.0	No Limit
		EP074: trans-1.3-Dichloropropylene	10061-02-6	5	µg/L	<5	<5	0.0	No Limit
		EP074: 1.2-Dibromoethane (EDB)	106-93-4	5	µg/L	<5	<5	0.0	No Limit
EP074E: Halogenated Aliphatic Compounds (QC Lot: 4982384)									
ES2311167-001	Anonymous	EP074: 1.1-Dichloroethene	75-35-4	5	µg/L	<5	<5	0.0	No Limit
		EP074: Iodomethane	74-88-4	5	µg/L	<5	<5	0.0	No Limit
		EP074: trans-1.2-Dichloroethene	156-60-5	5	µg/L	<5	<5	0.0	No Limit
		EP074: 1.1-Dichloroethane	75-34-3	5	µg/L	<5	<5	0.0	No Limit
		EP074: cis-1.2-Dichloroethene	156-59-2	5	µg/L	<5	<5	0.0	No Limit
		EP074: 1.1.1-Trichloroethane	71-55-6	5	µg/L	<5	<5	0.0	No Limit
		EP074: 1.1-Dichloropropylene	563-58-6	5	µg/L	<5	<5	0.0	No Limit
		EP074: Carbon Tetrachloride	56-23-5	5	µg/L	<5	<5	0.0	No Limit
		EP074: 1.2-Dichloroethane	107-06-2	5	µg/L	<5	<5	0.0	No Limit
		EP074: Trichloroethene	79-01-6	5	µg/L	<5	<5	0.0	No Limit
		EP074: Dibromomethane	74-95-3	5	µg/L	<5	<5	0.0	No Limit
		EP074: 1.1.2-Trichloroethane	79-00-5	5	µg/L	<5	<5	0.0	No Limit
		EP074: 1.3-Dichloropropane	142-28-9	5	µg/L	<5	<5	0.0	No Limit
		EP074: Tetrachloroethene	127-18-4	5	µg/L	<5	<5	0.0	No Limit
		EP074: 1.1.1.2-Tetrachloroethane	630-20-6	5	µg/L	<5	<5	0.0	No Limit
		EP074: trans-1.4-Dichloro-2-butene	110-57-6	5	µg/L	<5	<5	0.0	No Limit
		EP074: cis-1.4-Dichloro-2-butene	1476-11-5	5	µg/L	<5	<5	0.0	No Limit
		EP074: 1.1.2.2-Tetrachloroethane	79-34-5	5	µg/L	<5	<5	0.0	No Limit
		EP074: 1.2.3-Trichloropropane	96-18-4	5	µg/L	<5	<5	0.0	No Limit
		EP074: Pentachloroethane	76-01-7	5	µg/L	<5	<5	0.0	No Limit
		EP074: 1.2-Dibromo-3-chloropropane	96-12-8	5	µg/L	<5	<5	0.0	No Limit
		EP074: Hexachlorobutadiene	87-68-3	5	µg/L	<5	<5	0.0	No Limit
		EP074: Dichlorodifluoromethane	75-71-8	50	µg/L	<50	<50	0.0	No Limit
		EP074: Chloromethane	74-87-3	50	µg/L	<50	<50	0.0	No Limit

Sub-Matrix: **WATER**

				Laboratory Duplicate (DUP) Report					
Laboratory sample ID	*Sample ID*	*Method: Compound*	*CAS Number*	*LOR*	*Unit*	*Original Result*	*Duplicate Result*	*RPD (%)*	*Acceptable RPD (%)*
EP074E: Halogenated Aliphatic Compounds (QC Lot: 4982384) - continued									
ES2311167-001	Anonymous	EP074: Vinyl chloride	75-01-4	50	µg/L	<50	<50	0.0	No Limit
		EP074: Bromomethane	74-83-9	50	µg/L	<50	<50	0.0	No Limit
		EP074: Chloroethane	75-00-3	50	µg/L	<50	<50	0.0	No Limit
		EP074: Trichlorofluoromethane	75-69-4	50	µg/L	<50	<50	0.0	No Limit
ES2311425-007	HINUS	EP074: 1.1-Dichloroethene	75-35-4	5	µg/L	<5	<5	0.0	No Limit
		EP074: Iodomethane	74-88-4	5	µg/L	<5	<5	0.0	No Limit
		EP074: trans-1.2-Dichloroethene	156-60-5	5	µg/L	<5	<5	0.0	No Limit
		EP074: 1.1-Dichloroethane	75-34-3	5	µg/L	<5	<5	0.0	No Limit
		EP074: cis-1.2-Dichloroethene	156-59-2	5	µg/L	<5	<5	0.0	No Limit
		EP074: 1.1.1-Trichloroethane	71-55-6	5	µg/L	<5	<5	0.0	No Limit
		EP074: 1.1-Dichloropropylene	563-58-6	5	µg/L	<5	<5	0.0	No Limit
		EP074: Carbon Tetrachloride	56-23-5	5	µg/L	<5	<5	0.0	No Limit
		EP074: 1.2-Dichloroethane	107-06-2	5	µg/L	<5	<5	0.0	No Limit
		EP074: Trichloroethene	79-01-6	5	µg/L	<5	<5	0.0	No Limit
		EP074: Dibromomethane	74-95-3	5	µg/L	<5	<5	0.0	No Limit
		EP074: 1.1.2-Trichloroethane	79-00-5	5	µg/L	<5	<5	0.0	No Limit
		EP074: 1.3-Dichloropropane	142-28-9	5	µg/L	<5	<5	0.0	No Limit
		EP074: Tetrachloroethene	127-18-4	5	µg/L	<5	<5	0.0	No Limit
		EP074: 1.1.1.2-Tetrachloroethane	630-20-6	5	µg/L	<5	<5	0.0	No Limit
		EP074: trans-1.4-Dichloro-2-butene	110-57-6	5	µg/L	<5	<5	0.0	No Limit
		EP074: cis-1.4-Dichloro-2-butene	1476-11-5	5	µg/L	<5	<5	0.0	No Limit
		EP074: 1.1.2.2-Tetrachloroethane	79-34-5	5	µg/L	<5	<5	0.0	No Limit
		EP074: 1.2.3-Trichloropropane	96-18-4	5	µg/L	<5	<5	0.0	No Limit
		EP074: Pentachloroethane	76-01-7	5	µg/L	<5	<5	0.0	No Limit
		EP074: 1.2-Dibromo-3-chloropropane	96-12-8	5	µg/L	<5	<5	0.0	No Limit
		EP074: Hexachlorobutadiene	87-68-3	5	µg/L	<5	<5	0.0	No Limit
		EP074: Dichlorodifluoromethane	75-71-8	50	µg/L	<50	<50	0.0	No Limit
		EP074: Chloromethane	74-87-3	50	µg/L	<50	<50	0.0	No Limit
		EP074: Vinyl chloride	75-01-4	50	µg/L	<50	<50	0.0	No Limit
		EP074: Bromomethane	74-83-9	50	µg/L	<50	<50	0.0	No Limit
		EP074: Chloroethane	75-00-3	50	µg/L	<50	<50	0.0	No Limit
		EP074: Trichlorofluoromethane	75-69-4	50	µg/L	<50	<50	0.0	No Limit
EP074F: Halogenated Aromatic Compounds (QC Lot: 4982384)									
ES2311167-001	Anonymous	EP074: Chlorobenzene	108-90-7	5	µg/L	<5	<5	0.0	No Limit
		EP074: Bromobenzene	108-86-1	5	µg/L	<5	<5	0.0	No Limit
		EP074: 2-Chlorotoluene	95-49-8	5	µg/L	<5	<5	0.0	No Limit
		EP074: 4-Chlorotoluene	106-43-4	5	µg/L	<5	<5	0.0	No Limit
		EP074: 1.3-Dichlorobenzene	541-73-1	5	µg/L	<5	<5	0.0	No Limit
		EP074: 1.4-Dichlorobenzene	106-46-7	5	µg/L	<5	<5	0.0	No Limit
		EP074: 1.2-Dichlorobenzene	95-50-1	5	µg/L	<5	<5	0.0	No Limit

Sub-Matrix: **WATER**

				Laboratory Duplicate (DUP) Report					
Laboratory sample ID	*Sample ID*	*Method: Compound*	*CAS Number*	*LOR*	*Unit*	*Original Result*	*Duplicate Result*	*RPD (%)*	*Acceptable RPD (%)*
EP074F: Halogenated Aromatic Compounds (QC Lot: 4982384) - continued									
ES2311167-001	Anonymous	EP074: 1.2.4-Trichlorobenzene	120-82-1	5	µg/L	<5	<5	0.0	No Limit
		EP074: 1.2.3-Trichlorobenzene	87-61-6	5	µg/L	<5	<5	0.0	No Limit
ES2311425-007	HINUS	EP074: Chlorobenzene	108-90-7	5	µg/L	<5	<5	0.0	No Limit
		EP074: Bromobenzene	108-86-1	5	µg/L	<5	<5	0.0	No Limit
		EP074: 2-Chlorotoluene	95-49-8	5	µg/L	<5	<5	0.0	No Limit
		EP074: 4-Chlorotoluene	106-43-4	5	µg/L	<5	<5	0.0	No Limit
		EP074: 1.3-Dichlorobenzene	541-73-1	5	µg/L	<5	<5	0.0	No Limit
		EP074: 1.4-Dichlorobenzene	106-46-7	5	µg/L	<5	<5	0.0	No Limit
		EP074: 1.2-Dichlorobenzene	95-50-1	5	µg/L	<5	<5	0.0	No Limit
		EP074: 1.2.4-Trichlorobenzene	120-82-1	5	µg/L	<5	<5	0.0	No Limit
		EP074: 1.2.3-Trichlorobenzene	87-61-6	5	µg/L	<5	<5	0.0	No Limit
EP074G: Trihalomethanes (QC Lot: 4982384)									
ES2311167-001	Anonymous	EP074: Chloroform	67-66-3	5	µg/L	<5	<5	0.0	No Limit
		EP074: Bromodichloromethane	75-27-4	5	µg/L	<5	<5	0.0	No Limit
		EP074: Dibromochloromethane	124-48-1	5	µg/L	<5	<5	0.0	No Limit
		EP074: Bromoform	75-25-2	5	µg/L	<5	<5	0.0	No Limit
ES2311425-007	HINUS	EP074: Chloroform	67-66-3	5	µg/L	<5	<5	0.0	No Limit
		EP074: Bromodichloromethane	75-27-4	5	µg/L	<5	<5	0.0	No Limit
		EP074: Dibromochloromethane	124-48-1	5	µg/L	<5	<5	0.0	No Limit
		EP074: Bromoform	75-25-2	5	µg/L	<5	<5	0.0	No Limit
EP075(SIM)A: Phenolic Compounds (QC Lot: 4976746)									
ES2311425-001	BADDS	EP075(SIM): Phenol	108-95-2	1	µg/L	<1.0	<1.0	0.0	No Limit
		EP075(SIM): 2-Chlorophenol	95-57-8	1	µg/L	<1.0	<1.0	0.0	No Limit
		EP075(SIM): 2-Methylphenol	95-48-7	1	µg/L	<1.0	<1.0	0.0	No Limit
		EP075(SIM): 2-Nitrophenol	88-75-5	1	µg/L	<1.0	<1.0	0.0	No Limit
		EP075(SIM): 2.4-Dimethylphenol	105-67-9	1	µg/L	<1.0	<1.0	0.0	No Limit
		EP075(SIM): 2.4-Dichlorophenol	120-83-2	1	µg/L	<1.0	<1.0	0.0	No Limit
		EP075(SIM): 2.6-Dichlorophenol	87-65-0	1	µg/L	<1.0	<1.0	0.0	No Limit
		EP075(SIM): 4-Chloro-3-methylphenol	59-50-7	1	µg/L	<1.0	<1.0	0.0	No Limit
		EP075(SIM): 2.4.6-Trichlorophenol	88-06-2	1	µg/L	<1.0	<1.0	0.0	No Limit
		EP075(SIM): 2.4.5-Trichlorophenol	95-95-4	1	µg/L	<1.0	<1.0	0.0	No Limit
		EP075(SIM): 3- & 4-Methylphenol	1319-77-3	2	µg/L	<2.0	<2.0	0.0	No Limit
		EP075(SIM): Pentachlorophenol	87-86-5	2	µg/L	<2.0	<2.0	0.0	No Limit
ES2311425-011	ROPUS	EP075(SIM): Phenol	108-95-2	1	µg/L	<1.0	<1.0	0.0	No Limit
		EP075(SIM): 2-Chlorophenol	95-57-8	1	µg/L	<1.0	<1.0	0.0	No Limit
		EP075(SIM): 2-Methylphenol	95-48-7	1	µg/L	<1.0	<1.0	0.0	No Limit
		EP075(SIM): 2-Nitrophenol	88-75-5	1	µg/L	<1.0	<1.0	0.0	No Limit
		EP075(SIM): 2.4-Dimethylphenol	105-67-9	1	µg/L	<1.0	<1.0	0.0	No Limit
		EP075(SIM): 2.4-Dichlorophenol	120-83-2	1	µg/L	<1.0	<1.0	0.0	No Limit
		EP075(SIM): 2.6-Dichlorophenol	87-65-0	1	µg/L	<1.0	<1.0	0.0	No Limit

Sub-Matrix: **WATER**

				Laboratory Duplicate (DUP) Report					
Laboratory sample ID	*Sample ID*	*Method: Compound*	*CAS Number*	*LOR*	*Unit*	*Original Result*	*Duplicate Result*	*RPD (%)*	*Acceptable RPD (%)*
EP075(SIM)A: Phenolic Compounds (QC Lot: 4976746) - continued									
ES2311425-011	ROPUS	EP075(SIM): 4-Chloro-3-methylphenol	59-50-7	1	µg/L	<1.0	<1.0	0.0	No Limit
		EP075(SIM): 2.4.6-Trichlorophenol	88-06-2	1	µg/L	<1.0	<1.0	0.0	No Limit
		EP075(SIM): 2.4.5-Trichlorophenol	95-95-4	1	µg/L	<1.0	<1.0	0.0	No Limit
		EP075(SIM): 3- & 4-Methylphenol	1319-77-3	2	µg/L	<2.0	<2.0	0.0	No Limit
		EP075(SIM): Pentachlorophenol	87-86-5	2	µg/L	<2.0	<2.0	0.0	No Limit
EP075(SIM)B: Polynuclear Aromatic Hydrocarbons (QC Lot: 4976746)									
ES2311425-001	BADDS	EP075(SIM): Benzo(a)pyrene	50-32-8	0.5	µg/L	<0.5	<0.5	0.0	No Limit
		EP075(SIM): Naphthalene	91-20-3	1	µg/L	<1.0	<1.0	0.0	No Limit
		EP075(SIM): Acenaphthylene	208-96-8	1	µg/L	<1.0	<1.0	0.0	No Limit
		EP075(SIM): Acenaphthene	83-32-9	1	µg/L	<1.0	<1.0	0.0	No Limit
		EP075(SIM): Fluorene	86-73-7	1	µg/L	<1.0	<1.0	0.0	No Limit
		EP075(SIM): Phenanthrene	85-01-8	1	µg/L	<1.0	<1.0	0.0	No Limit
		EP075(SIM): Anthracene	120-12-7	1	µg/L	<1.0	<1.0	0.0	No Limit
		EP075(SIM): Fluoranthene	206-44-0	1	µg/L	<1.0	<1.0	0.0	No Limit
		EP075(SIM): Pyrene	129-00-0	1	µg/L	<1.0	<1.0	0.0	No Limit
		EP075(SIM): Benz(a)anthracene	56-55-3	1	µg/L	<1.0	<1.0	0.0	No Limit
		EP075(SIM): Chrysene	218-01-9	1	µg/L	<1.0	<1.0	0.0	No Limit
		EP075(SIM): Benzo(b+j)fluoranthene	205-99-2 205-82-3	1	µg/L	<1.0	<1.0	0.0	No Limit
		EP075(SIM): Benzo(k)fluoranthene	207-08-9	1	µg/L	<1.0	<1.0	0.0	No Limit
		EP075(SIM): Indeno(1.2.3.cd)pyrene	193-39-5	1	µg/L	<1.0	<1.0	0.0	No Limit
		EP075(SIM): Dibenz(a.h)anthracene	53-70-3	1	µg/L	<1.0	<1.0	0.0	No Limit
		EP075(SIM): Benzo(g.h.i)perylene	191-24-2	1	µg/L	<1.0	<1.0	0.0	No Limit
ES2311425-011	ROPUS	EP075(SIM): Benzo(a)pyrene	50-32-8	0.5	µg/L	<0.5	<0.5	0.0	No Limit
		EP075(SIM): Naphthalene	91-20-3	1	µg/L	<1.0	<1.0	0.0	No Limit
		EP075(SIM): Acenaphthylene	208-96-8	1	µg/L	<1.0	<1.0	0.0	No Limit
		EP075(SIM): Acenaphthene	83-32-9	1	µg/L	<1.0	<1.0	0.0	No Limit
		EP075(SIM): Fluorene	86-73-7	1	µg/L	<1.0	<1.0	0.0	No Limit
		EP075(SIM): Phenanthrene	85-01-8	1	µg/L	<1.0	<1.0	0.0	No Limit
		EP075(SIM): Anthracene	120-12-7	1	µg/L	<1.0	<1.0	0.0	No Limit
		EP075(SIM): Fluoranthene	206-44-0	1	µg/L	<1.0	<1.0	0.0	No Limit
		EP075(SIM): Pyrene	129-00-0	1	µg/L	<1.0	<1.0	0.0	No Limit
		EP075(SIM): Benz(a)anthracene	56-55-3	1	µg/L	<1.0	<1.0	0.0	No Limit
		EP075(SIM): Chrysene	218-01-9	1	µg/L	<1.0	<1.0	0.0	No Limit
		EP075(SIM): Benzo(b+j)fluoranthene	205-99-2 205-82-3	1	µg/L	<1.0	<1.0	0.0	No Limit
		EP075(SIM): Benzo(k)fluoranthene	207-08-9	1	µg/L	<1.0	<1.0	0.0	No Limit
		EP075(SIM): Indeno(1.2.3.cd)pyrene	193-39-5	1	µg/L	<1.0	<1.0	0.0	No Limit
		EP075(SIM): Dibenz(a.h)anthracene	53-70-3	1	µg/L	<1.0	<1.0	0.0	No Limit
		EP075(SIM): Benzo(g.h.i)perylene	191-24-2	1	µg/L	<1.0	<1.0	0.0	No Limit

Sub-Matrix: **WATER**

				Laboratory Duplicate (DUP) Report					
Laboratory sample ID	*Sample ID*	*Method: Compound*	*CAS Number*	*LOR*	*Unit*	*Original Result*	*Duplicate Result*	*RPD (%)*	*Acceptable RPD (%)*
EP080: BTEXN (QC Lot: 4982383)									
ES2311167-001	Anonymous	EP080: Benzene	71-43-2	1	µg/L	<1	<1	0.0	No Limit
		EP080: Toluene	108-88-3	2	µg/L	<2	<2	0.0	No Limit
		EP080: Ethylbenzene	100-41-4	2	µg/L	<2	<2	0.0	No Limit
		EP080: meta- & para-Xylene	108-38-3 106-42-3	2	µg/L	<2	<2	0.0	No Limit
		EP080: ortho-Xylene	95-47-6	2	µg/L	<2	<2	0.0	No Limit
		EP080: Naphthalene	91-20-3	5	µg/L	<5	<5	0.0	No Limit
ES2311425-007	HINUS	EP080: Benzene	71-43-2	1	µg/L	<1	<1	0.0	No Limit
		EP080: Toluene	108-88-3	2	µg/L	<2	<2	0.0	No Limit
		EP080: Ethylbenzene	100-41-4	2	µg/L	<2	<2	0.0	No Limit
		EP080: meta- & para-Xylene	108-38-3 106-42-3	2	µg/L	<2	<2	0.0	No Limit
		EP080: ortho-Xylene	95-47-6	2	µg/L	<2	<2	0.0	No Limit
		EP080: Naphthalene	91-20-3	5	µg/L	<5	<5	0.0	No Limit
EP131A: Organochlorine Pesticides (QC Lot: 4976744)									
ES2311425-001	BADDS	EP131A: Heptachlor	76-44-8	0.005	µg/L	<0.005	<0.005	0.0	No Limit
		EP131A: Aldrin	309-00-2	0.01	µg/L	<0.010	<0.010	0.0	No Limit
		EP131A: alpha-BHC	319-84-6	0.01	µg/L	<0.010	<0.010	0.0	No Limit
		EP131A: beta-BHC	319-85-7	0.01	µg/L	<0.010	<0.010	0.0	No Limit
		EP131A: delta-BHC	319-86-8	0.01	µg/L	<0.010	<0.010	0.0	No Limit
		EP131A: 4.4`-DDD	72-54-8	0.01	µg/L	<0.010	<0.010	0.0	No Limit
		EP131A: 4.4`-DDE	72-55-9	0.01	µg/L	<0.010	<0.010	0.0	No Limit
		EP131A: 4.4`-DDT	50-29-3	0.01	µg/L	<0.010	<0.010	0.0	No Limit
		EP131A: Dieldrin	60-57-1	0.01	µg/L	<0.010	<0.010	0.0	No Limit
		EP131A: alpha-Endosulfan	959-98-8	0.01	µg/L	<0.010	<0.010	0.0	No Limit
		EP131A: beta-Endosulfan	33213-65-9	0.01	µg/L	<0.010	<0.010	0.0	No Limit
		EP131A: Endosulfan sulfate	1031-07-8	0.01	µg/L	<0.010	<0.010	0.0	No Limit
		EP131A: Endrin	72-20-8	0.01	µg/L	<0.010	<0.010	0.0	No Limit
		EP131A: Endosulfan (sum)	115-29-7	0.01	µg/L	<0.010	<0.010	0.0	No Limit
		EP131A: Endrin aldehyde	7421-93-4	0.01	µg/L	<0.010	<0.010	0.0	No Limit
		EP131A: Endrin ketone	53494-70-5	0.01	µg/L	<0.010	<0.010	0.0	No Limit
		EP131A: Heptachlor epoxide	1024-57-3	0.01	µg/L	<0.010	<0.010	0.0	No Limit
		EP131A: Hexachlorobenzene (HCB)	118-74-1	0.01	µg/L	<0.010	<0.010	0.0	No Limit
		EP131A: gamma-BHC	58-89-9	0.01	µg/L	<0.010	<0.010	0.0	No Limit
		EP131A: Methoxychlor	72-43-5	0.01	µg/L	<0.010	<0.010	0.0	No Limit
		EP131A: cis-Chlordane	5103-71-9	0.01	µg/L	<0.010	<0.010	0.0	No Limit
		EP131A: trans-Chlordane	5103-74-2	0.01	µg/L	<0.010	<0.010	0.0	No Limit
		EP131A: Total Chlordane (sum)	----	0.01	µg/L	<0.010	<0.010	0.0	No Limit
		EP131A: Sum of DDD + DDE + DDT	72-54-8/72-55-9/50-2	0.01	µg/L	<0.010	<0.010	0.0	No Limit

Sub-Matrix: **WATER**

Laboratory sample ID	Sample ID	Method: Compound	CAS Number	Laboratory Duplicate (DUP) Report					
				LOR	Unit	Original Result	Duplicate Result	RPD (%)	Acceptable RPD (%)
EP131A: Organochlorine Pesticides (QC Lot: 4976744) - continued									
ES2311425-006	HINDS	EP131A: Heptachlor	76-44-8	0.005	µg/L	<0.005	<0.005	0.0	No Limit
		EP131A: Aldrin	309-00-2	0.01	µg/L	<0.010	<0.010	0.0	No Limit
		EP131A: alpha-BHC	319-84-6	0.01	µg/L	<0.010	<0.010	0.0	No Limit
		EP131A: beta-BHC	319-85-7	0.01	µg/L	<0.010	<0.010	0.0	No Limit
		EP131A: delta-BHC	319-86-8	0.01	µg/L	<0.010	<0.010	0.0	No Limit
		EP131A: 4.4`-DDD	72-54-8	0.01	µg/L	<0.010	<0.010	0.0	No Limit
		EP131A: 4.4`-DDE	72-55-9	0.01	µg/L	<0.010	<0.010	0.0	No Limit
		EP131A: 4.4`-DDT	50-29-3	0.01	µg/L	<0.010	<0.010	0.0	No Limit
		EP131A: Dieldrin	60-57-1	0.01	µg/L	<0.010	<0.010	0.0	No Limit
		EP131A: alpha-Endosulfan	959-98-8	0.01	µg/L	<0.010	<0.010	0.0	No Limit
		EP131A: beta-Endosulfan	33213-65-9	0.01	µg/L	<0.010	<0.010	0.0	No Limit
		EP131A: Endosulfan sulfate	1031-07-8	0.01	µg/L	<0.010	<0.010	0.0	No Limit
		EP131A: Endrin	72-20-8	0.01	µg/L	<0.010	<0.010	0.0	No Limit
		EP131A: Endosulfan (sum)	115-29-7	0.01	µg/L	<0.010	<0.010	0.0	No Limit
		EP131A: Endrin aldehyde	7421-93-4	0.01	µg/L	<0.010	<0.010	0.0	No Limit
		EP131A: Endrin ketone	53494-70-5	0.01	µg/L	<0.010	<0.010	0.0	No Limit
		EP131A: Heptachlor epoxide	1024-57-3	0.01	µg/L	<0.010	<0.010	0.0	No Limit
		EP131A: Hexachlorobenzene (HCB)	118-74-1	0.01	µg/L	<0.010	<0.010	0.0	No Limit
		EP131A: gamma-BHC	58-89-9	0.01	µg/L	<0.010	<0.010	0.0	No Limit
		EP131A: Methoxychlor	72-43-5	0.01	µg/L	<0.010	<0.010	0.0	No Limit
		EP131A: cis-Chlordane	5103-71-9	0.01	µg/L	<0.010	<0.010	0.0	No Limit
		EP131A: trans-Chlordane	5103-74-2	0.01	µg/L	<0.010	<0.010	0.0	No Limit
		EP131A: Total Chlordane (sum)	----	0.01	µg/L	<0.010	<0.010	0.0	No Limit
		EP131A: Sum of DDD + DDE + DDT	72-54-8/72-55-9/50-2	0.01	µg/L	<0.010	<0.010	0.0	No Limit
EP234A: OP Pesticides (QC Lot: 4976914)									
ES2311425-001	BADDS	EP234-1x: Bensulide	741-58-2	0.1	µg/L	<0.1	<0.1	0.0	No Limit
		EP234-1x: Methidathion	950-37-8	0.1	µg/L	<0.1	<0.1	0.0	No Limit
		EP234-1x: Pyrazophos	13457-18-6	0.1	µg/L	<0.1	<0.1	0.0	No Limit
		EP234-1x: Acephate	30560-19-1	0.5	µg/L	<0.5	<0.5	0.0	No Limit
		EP234-1x: Thiometon	640-15-3	0.5	µg/L	<0.5	<0.5	0.0	No Limit
		EP234-1x: Naftalofos	1491-41-4	1	µg/L	<1.0	<1.0	0.0	No Limit
		EP234-1x: Fosetyl Aluminium	39148-24-8	10	µg/L	<10	<10	0.0	No Limit
		EP234-1x: Formothion	2540-82-1	20	µg/L	<20	<20	0.0	No Limit
ES2311425-011	ROPUS	EP234-1x: Bensulide	741-58-2	0.1	µg/L	<0.1	<0.1	0.0	No Limit
		EP234-1x: Methidathion	950-37-8	0.1	µg/L	<0.1	<0.1	0.0	No Limit
		EP234-1x: Pyrazophos	13457-18-6	0.1	µg/L	<0.1	<0.1	0.0	No Limit
		EP234-1x: Acephate	30560-19-1	0.5	µg/L	<0.5	<0.5	0.0	No Limit
		EP234-1x: Thiometon	640-15-3	0.5	µg/L	<0.5	<0.5	0.0	No Limit
		EP234-1x: Naftalofos	1491-41-4	1	µg/L	<1.0	<1.0	0.0	No Limit

Sub-Matrix: **WATER**

				Laboratory Duplicate (DUP) Report					
Laboratory sample ID	*Sample ID*	*Method: Compound*	*CAS Number*	*LOR*	*Unit*	*Original Result*	*Duplicate Result*	*RPD (%)*	*Acceptable RPD (%)*
EP234A: OP Pesticides (QC Lot: 4976914) - continued									
ES2311425-011	ROPUS	EP234-1x: Fosetyl Aluminium	39148-24-8	10	µg/L	<10	<10	0.0	No Limit
		EP234-1x: Formothion	2540-82-1	20	µg/L	<20	<20	0.0	No Limit
EP234A: OP Pesticides (QC Lot: 4976915)									
ES2311425-001	BADDS	EP234-1: Sulfotep	3689-24-5	0.005	µg/L	<0.005	<0.005	0.0	No Limit
		EP234-1: Triazophos	24017-47-8	0.005	µg/L	<0.005	<0.005	0.0	No Limit
		EP234-1: Coumaphos	56-72-4	0.01	µg/L	<0.01	<0.01	0.0	No Limit
		EP234-1: Diazinon	333-41-5	0.01	µg/L	<0.01	<0.01	0.0	No Limit
		EP234-1: Ethoprophos	13194-48-4	0.01	µg/L	<0.01	<0.01	0.0	No Limit
		EP234-1: Fenamiphos	22224-92-6	0.01	µg/L	<0.01	<0.01	0.0	No Limit
		EP234-1: Fensulfothion	115-90-2	0.01	µg/L	<0.01	<0.01	0.0	No Limit
		EP234-1: Omethoate	1113-02-6	0.01	µg/L	<0.01	<0.01	0.0	No Limit
		EP234-1: Pirimiphos-ethyl	23505-41-1	0.01	µg/L	<0.01	<0.01	0.0	No Limit
		EP234-1: Pirimiphos-methyl	29232-93-7	0.01	µg/L	<0.01	<0.01	0.0	No Limit
		EP234-1: Profenofos	41198-08-7	0.01	µg/L	<0.01	<0.01	0.0	No Limit
		EP234-1: Terbufos	13071-79-9	0.01	µg/L	<0.01	<0.01	0.0	No Limit
		EP234-1: Tetrachlorvinphos	22248-79-9	0.01	µg/L	<0.01	<0.01	0.0	No Limit
		EP234-1: Azinphos-methyl	86-50-0	0.02	µg/L	<0.02	<0.02	0.0	No Limit
		EP234-1: Azinphos-ethyl	2642-71-9	0.02	µg/L	<0.02	<0.02	0.0	No Limit
		EP234-1: Carbofenothion	786-19-6	0.02	µg/L	<0.02	<0.02	0.0	No Limit
		EP234-1: Chlorfenvinphos	470-90-6	0.02	µg/L	<0.02	<0.02	0.0	No Limit
		EP234-1: Chlorpyrifos	2921-88-2	0.02	µg/L	<0.02	<0.02	0.0	No Limit
		EP234-1: Demeton-O	298-03-3	0.02	µg/L	<0.02	<0.02	0.0	No Limit
		EP234-1: Demeton-O & Demeton-S	298-03-3/126-75-0	0.02	µg/L	<0.02	<0.02	0.0	No Limit
		EP234-1: Demeton-S	126-75-0	0.02	µg/L	<0.02	<0.02	0.0	No Limit
		EP234-1: Demeton-S-methyl	919-86-8	0.02	µg/L	<0.02	<0.02	0.0	No Limit
		EP234-1: Dimethoate	60-51-5	0.02	µg/L	<0.02	<0.02	0.0	No Limit
		EP234-1: Ethion	563-12-2	0.02	µg/L	<0.02	<0.02	0.0	No Limit
		EP234-1: Malathion	121-75-5	0.02	µg/L	<0.02	<0.02	0.0	No Limit
		EP234-1: Mevinphos	7786-34-7	0.02	µg/L	<0.02	<0.02	0.0	No Limit
		EP234-1: Monocrotophos	6923-22-4	0.02	µg/L	<0.02	<0.02	0.0	No Limit
		EP234-1: Temephos	3383-96-8	0.02	µg/L	<0.02	<0.02	0.0	No Limit
		EP234-1: Trichlorfon	52-68-6	0.02	µg/L	<0.02	<0.02	0.0	No Limit
		EP234-1: Disulfoton	298-04-4	0.05	µg/L	<0.05	<0.05	0.0	No Limit
		EP234-1: EPN	2104-64-5	0.05	µg/L	<0.05	<0.05	0.0	No Limit
		EP234-1: Fenthion	55-38-9	0.05	µg/L	<0.05	<0.05	0.0	No Limit
		EP234-1: Sulprofos	35400-43-2	0.05	µg/L	<0.05	<0.05	0.0	No Limit
		EP234-1: Bromophos-ethyl	4824-78-6	0.1	µg/L	<0.10	<0.10	0.0	No Limit
		EP234-1: Phorate	298-02-2	0.1	µg/L	<0.1	<0.1	0.0	No Limit
		EP234-1: Prothiofos	34643-46-4	0.1	µg/L	<0.1	<0.1	0.0	No Limit

Sub-Matrix: **WATER**

				Laboratory Duplicate (DUP) Report					
Laboratory sample ID	*Sample ID*	*Method: Compound*	*CAS Number*	*LOR*	*Unit*	*Original Result*	*Duplicate Result*	*RPD (%)*	*Acceptable RPD (%)*
EP234A: OP Pesticides (QC Lot: 4976915) - continued									
ES2311425-001	BADDS	EP234-1: Chlorpyrifos-methyl	5598-13-0	0.2	µg/L	<0.2	<0.2	0.0	No Limit
		EP234-1: Dichlorvos	62-73-7	0.2	µg/L	<0.20	<0.20	0.0	No Limit
		EP234-1: Parathion	56-38-2	0.2	µg/L	<0.2	<0.2	0.0	No Limit
		EP234-1: Parathion-methyl	298-00-0	0.5	µg/L	<0.5	<0.5	0.0	No Limit
		EP234-1: Trichloronate	327-98-0	0.5	µg/L	<0.5	<0.5	0.0	No Limit
		EP234-1: Fenchlorphos (Ronnel)	299-84-3	10	µg/L	<10	<10	0.0	No Limit
		EP234-1: Fenitrothion	122-14-5	2	µg/L	<2	<2	0.0	No Limit
ES2311425-011	ROPUS	EP234-1: Sulfotep	3689-24-5	0.005	µg/L	<0.005	<0.005	0.0	No Limit
		EP234-1: Triazophos	24017-47-8	0.005	µg/L	<0.005	<0.005	0.0	No Limit
		EP234-1: Coumaphos	56-72-4	0.01	µg/L	<0.01	<0.01	0.0	No Limit
		EP234-1: Diazinon	333-41-5	0.01	µg/L	<0.01	<0.01	0.0	No Limit
		EP234-1: Ethoprophos	13194-48-4	0.01	µg/L	<0.01	<0.01	0.0	No Limit
		EP234-1: Fenamiphos	22224-92-6	0.01	µg/L	<0.01	<0.01	0.0	No Limit
		EP234-1: Fensulfothion	115-90-2	0.01	µg/L	<0.01	<0.01	0.0	No Limit
		EP234-1: Omethoate	1113-02-6	0.01	µg/L	<0.01	<0.01	0.0	No Limit
		EP234-1: Pirimiphos-ethyl	23505-41-1	0.01	µg/L	<0.01	<0.01	0.0	No Limit
		EP234-1: Pirimiphos-methyl	29232-93-7	0.01	µg/L	<0.01	<0.01	0.0	No Limit
		EP234-1: Profenofos	41198-08-7	0.01	µg/L	<0.01	<0.01	0.0	No Limit
		EP234-1: Terbufos	13071-79-9	0.01	µg/L	<0.01	<0.01	0.0	No Limit
		EP234-1: Tetrachlorvinphos	22248-79-9	0.01	µg/L	<0.01	<0.01	0.0	No Limit
		EP234-1: Azinphos-methyl	86-50-0	0.02	µg/L	<0.02	<0.02	0.0	No Limit
		EP234-1: Azinphos-ethyl	2642-71-9	0.02	µg/L	<0.02	<0.02	0.0	No Limit
		EP234-1: Carbofenothion	786-19-6	0.02	µg/L	<0.02	<0.02	0.0	No Limit
		EP234-1: Chlorfenvinphos	470-90-6	0.02	µg/L	<0.02	<0.02	0.0	No Limit
		EP234-1: Chlorpyrifos	2921-88-2	0.02	µg/L	<0.02	<0.02	0.0	No Limit
		EP234-1: Demeton-O	298-03-3	0.02	µg/L	<0.02	<0.02	0.0	No Limit
		EP234-1: Demeton-O & Demeton-S	298-03-3/126-75-0	0.02	µg/L	<0.02	<0.02	0.0	No Limit
		EP234-1: Demeton-S	126-75-0	0.02	µg/L	<0.02	<0.02	0.0	No Limit
		EP234-1: Demeton-S-methyl	919-86-8	0.02	µg/L	<0.02	<0.02	0.0	No Limit
		EP234-1: Dimethoate	60-51-5	0.02	µg/L	<0.02	<0.02	0.0	No Limit
		EP234-1: Ethion	563-12-2	0.02	µg/L	<0.02	<0.02	0.0	No Limit
		EP234-1: Malathion	121-75-5	0.02	µg/L	<0.02	<0.02	0.0	No Limit
		EP234-1: Mevinphos	7786-34-7	0.02	µg/L	<0.02	<0.02	0.0	No Limit
		EP234-1: Monocrotophos	6923-22-4	0.02	µg/L	<0.02	<0.02	0.0	No Limit
		EP234-1: Temephos	3383-96-8	0.02	µg/L	<0.02	<0.02	0.0	No Limit
		EP234-1: Trichlorfon	52-68-6	0.02	µg/L	<0.02	<0.02	0.0	No Limit
		EP234-1: Disulfoton	298-04-4	0.05	µg/L	<0.05	<0.05	0.0	No Limit
		EP234-1: EPN	2104-64-5	0.05	µg/L	<0.05	<0.05	0.0	No Limit
		EP234-1: Fenthion	55-38-9	0.05	µg/L	<0.05	<0.05	0.0	No Limit

Sub-Matrix: **WATER**

				Laboratory Duplicate (DUP) Report					
Laboratory sample ID	*Sample ID*	*Method: Compound*	*CAS Number*	*LOR*	*Unit*	*Original Result*	*Duplicate Result*	*RPD (%)*	*Acceptable RPD (%)*
EP234A: OP Pesticides (QC Lot: 4976915) - continued									
ES2311425-011	ROPUS	EP234-1: Sulprofos	35400-43-2	0.05	µg/L	<0.05	<0.05	0.0	No Limit
		EP234-1: Bromophos-ethyl	4824-78-6	0.1	µg/L	<0.10	<0.10	0.0	No Limit
		EP234-1: Phorate	298-02-2	0.1	µg/L	<0.1	<0.1	0.0	No Limit
		EP234-1: Prothiofos	34643-46-4	0.1	µg/L	<0.1	<0.1	0.0	No Limit
		EP234-1: Chlorpyrifos-methyl	5598-13-0	0.2	µg/L	<0.2	<0.2	0.0	No Limit
		EP234-1: Dichlorvos	62-73-7	0.2	µg/L	<0.20	<0.20	0.0	No Limit
		EP234-1: Parathion	56-38-2	0.2	µg/L	<0.2	<0.2	0.0	No Limit
		EP234-1: Parathion-methyl	298-00-0	0.5	µg/L	<0.5	<0.5	0.0	No Limit
		EP234-1: Trichloronate	327-98-0	0.5	µg/L	<0.5	<0.5	0.0	No Limit
		EP234-1: Fenchlorphos (Ronnel)	299-84-3	10	µg/L	<10	<10	0.0	No Limit
		EP234-1: Fenitrothion	122-14-5	2	µg/L	<2	<2	0.0	No Limit

Method Blank (MB) and Laboratory Control Sample (LCS) Report

The quality control term Method / Laboratory Blank refers to an analyte free matrix to which all reagents are added in the same volumes or proportions as used in standard sample preparation. The purpose of this QC parameter is to monitor potential laboratory contamination. The quality control term Laboratory Control Sample (LCS) refers to a certified reference material, or a known interference free matrix spiked with target analytes. The purpose of this QC parameter is to monitor method precision and accuracy independent of sample matrix. Dynamic Recovery Limits are based on statistical evaluation of processed LCS.

Sub-Matrix: **WATER**

				Method Blank (MB) Report	Laboratory Control Spike (LCS) Report			
					Spike	Spike Recovery (%)	Acceptable Limits (%)	
Method: Compound	CAS Number	LOR	Unit	Result	Concentration	LCS	Low	High
EA015: Total Dissolved Solids dried at 180 ± 5 °C (QCLot: 4981933)								
EA015H: Total Dissolved Solids @180°C	----	10	mg/L	<10	2000 mg/L	96.8	87.0	109
				<10	293 mg/L	106	75.2	126
				<10	2340 mg/L	105	83.0	124
EA015: Total Dissolved Solids dried at 180 ± 5 °C (QCLot: 4986522)								
EA015H: Total Dissolved Solids @180°C	----	10	mg/L	<10	2000 mg/L	96.0	87.0	109
				<10	293 mg/L	102	75.2	126
				<10	2340 mg/L	105	83.0	124
EA025: Total Suspended Solids dried at 104 ± 2°C (QCLot: 4981934)								
EA025H: Suspended Solids (SS)	----	5	mg/L	<5	150 mg/L	97.0	83.0	129
				<5	1000 mg/L	94.4	82.0	110
				<5	825 mg/L	110	83.0	118
EA025: Total Suspended Solids dried at 104 ± 2°C (QCLot: 4986523)								
EA025H: Suspended Solids (SS)	----	5	mg/L	<5	150 mg/L	89.3	83.0	129
				<5	1000 mg/L	93.2	82.0	110
				<5	825 mg/L	109	83.0	118
EG020T: Total Metals by ICP-MS (QCLot: 4984088)								
EG020A-T: Arsenic	7440-38-2	0.001	mg/L	<0.001	0.1 mg/L	95.6	82.0	114
EG020A-T: Cadmium	7440-43-9	0.0001	mg/L	<0.0001	0.1 mg/L	96.6	84.0	112
EG020A-T: Chromium	7440-47-3	0.001	mg/L	<0.001	0.1 mg/L	95.1	86.0	116
EG020A-T: Copper	7440-50-8	0.001	mg/L	<0.001	0.1 mg/L	93.7	83.0	118
EG020A-T: Lead	7439-92-1	0.001	mg/L	<0.001	0.1 mg/L	95.2	85.0	115
EG020A-T: Manganese	7439-96-5	0.001	mg/L	<0.001	0.1 mg/L	91.8	85.0	113
EG020A-T: Nickel	7440-02-0	0.001	mg/L	<0.001	0.1 mg/L	90.7	84.0	116
EG020A-T: Zinc	7440-66-6	0.005	mg/L	<0.005	0.1 mg/L	97.7	79.0	117
EG020A-T: Iron	7439-89-6	0.05	mg/L	<0.05	0.5 mg/L	93.9	85.0	117
EG035T: Total Recoverable Mercury by FIMS (QCLot: 4982611)								
EG035T: Mercury	7439-97-6	0.0001	mg/L	<0.0001	0.01 mg/L	96.1	77.0	111
EK055G: Ammonia as N by Discrete Analyser (QCLot: 4981178)								
EK055G: Ammonia as N	7664-41-7	0.01	mg/L	<0.01	1 mg/L	97.2	90.0	114
EK055G: Ammonia as N by Discrete Analyser (QCLot: 4981181)								
EK055G: Ammonia as N	7664-41-7	0.01	mg/L	<0.01	1 mg/L	102	90.0	114

Sub-Matrix: **WATER**

Method: Compound	CAS Number	LOR	Unit	Method Blank (MB) Report: Result	Laboratory Control Spike (LCS) Report: Spike Concentration	Spike Recovery (%): LCS	Acceptable Limits (%): Low	Acceptable Limits (%): High
EK057G: Nitrite as N by Discrete Analyser (QCLot: 4977175)								
EK057G: Nitrite as N	14797-65-0	0.01	mg/L	<0.01	0.5 mg/L	104	82.0	114
EK057G: Nitrite as N by Discrete Analyser (QCLot: 4977586)								
EK057G: Nitrite as N	14797-65-0	0.01	mg/L	<0.01	0.5 mg/L	102	82.0	114
EK057G: Nitrite as N by Discrete Analyser (QCLot: 4979241)								
EK057G: Nitrite as N	14797-65-0	0.01	mg/L	<0.01	0.5 mg/L	102	82.0	114
EK059G: Nitrite plus Nitrate as N (NOx) by Discrete Analyser (QCLot: 4981180)								
EK059G: Nitrite + Nitrate as N	----	0.01	mg/L	<0.01	0.5 mg/L	108	91.0	113
EK061G: Total Kjeldahl Nitrogen By Discrete Analyser (QCLot: 4981177)								
EK061G: Total Kjeldahl Nitrogen as N	----	0.1	mg/L	<0.1	10 mg/L	86.8	69.0	101
				<0.1	1 mg/L	98.5	70.0	118
				<0.1	5 mg/L	101	70.0	130
EK067G: Total Phosphorus as P by Discrete Analyser (QCLot: 4981176)								
EK067G: Total Phosphorus as P	----	0.01	mg/L	<0.01	4.42 mg/L	96.3	71.3	126
				<0.01	0.442 mg/L	101	71.3	126
				<0.01	1 mg/L	106	71.3	126
EK071G: Reactive Phosphorus as P by discrete analyser (QCLot: 4977176)								
EK071G: Reactive Phosphorus as P	14265-44-2	0.01	mg/L	<0.01	0.5 mg/L	96.6	85.0	117
EK071G: Reactive Phosphorus as P by discrete analyser (QCLot: 4977587)								
EK071G: Reactive Phosphorus as P	14265-44-2	0.01	mg/L	<0.01	0.5 mg/L	95.6	85.0	117
EK071G: Reactive Phosphorus as P by discrete analyser (QCLot: 4979242)								
EK071G: Reactive Phosphorus as P	14265-44-2	0.01	mg/L	<0.01	0.5 mg/L	102	85.0	117
EP008: Chlorophyll (QCLot: 4978079)								
EP008: Chlorophyll a	----	1	mg/m³	<1	20 mg/m³	87.4	70.0	130
EP020: Oil and Grease (O&G) (QCLot: 4985712)								
EP020: Oil & Grease	----	5	mg/L	<5	5000 mg/L	97.0	81.0	121
EP074D: Fumigants (QCLot: 4982384)								
EP074: 2.2-Dichloropropane	594-20-7	5	µg/L	<5	10 µg/L	102	68.0	122
EP074: 1.2-Dichloropropane	78-87-5	5	µg/L	<5	10 µg/L	101	76.0	118
EP074: cis-1.3-Dichloropropylene	10061-01-5	5	µg/L	<5	10 µg/L	94.6	62.0	120
EP074: trans-1.3-Dichloropropylene	10061-02-6	5	µg/L	<5	10 µg/L	96.0	60.0	114
EP074: 1.2-Dibromoethane (EDB)	106-93-4	5	µg/L	<5	10 µg/L	105	69.0	117
EP074E: Halogenated Aliphatic Compounds (QCLot: 4982384)								
EP074: Dichlorodifluoromethane	75-71-8	50	µg/L	<50	100 µg/L	90.3	60.6	138
EP074: Chloromethane	74-87-3	50	µg/L	<50	100 µg/L	96.5	67.4	130

Sub-Matrix: **WATER**

Method: Compound	CAS Number	LOR	Unit	Method Blank (MB) Report	Laboratory Control Spike (LCS) Report			
					Spike	Spike Recovery (%)	Acceptable Limits (%)	
				Result	Concentration	LCS	Low	High
EP074E: Halogenated Aliphatic Compounds (QCLot: 4982384) - continued								
EP074: Vinyl chloride	75-01-4	50	µg/L	<50	100 µg/L	101	69.4	129
EP074: Bromomethane	74-83-9	50	µg/L	<50	100 µg/L	108	56.0	140
EP074: Chloroethane	75-00-3	50	µg/L	<50	100 µg/L	113	61.0	139
EP074: Trichlorofluoromethane	75-69-4	50	µg/L	<50	100 µg/L	114	69.0	131
EP074: 1.1-Dichloroethene	75-35-4	5	µg/L	<5	10 µg/L	103	70.0	124
EP074: Iodomethane	74-88-4	5	µg/L	<5	10 µg/L	87.1	70.2	128
EP074: trans-1.2-Dichloroethene	156-60-5	5	µg/L	<5	10 µg/L	98.3	74.0	118
EP074: 1.1-Dichloroethane	75-34-3	5	µg/L	<5	10 µg/L	103	74.0	120
EP074: cis-1.2-Dichloroethene	156-59-2	5	µg/L	<5	10 µg/L	102	77.0	119
EP074: 1.1.1-Trichloroethane	71-55-6	5	µg/L	<5	10 µg/L	107	67.0	119
EP074: 1.1-Dichloropropylene	563-58-6	5	µg/L	<5	10 µg/L	104	73.0	119
EP074: Carbon Tetrachloride	56-23-5	5	µg/L	<5	10 µg/L	106	62.0	120
EP074: 1.2-Dichloroethane	107-06-2	5	µg/L	<5	10 µg/L	108	73.0	123
EP074: Trichloroethene	79-01-6	5	µg/L	<5	10 µg/L	102	76.0	118
EP074: Dibromomethane	74-95-3	5	µg/L	<5	10 µg/L	100	73.0	119
EP074: 1.1.2-Trichloroethane	79-00-5	5	µg/L	<5	10 µg/L	108	72.0	126
EP074: 1.3-Dichloropropane	142-28-9	5	µg/L	<5	10 µg/L	102	71.0	129
EP074: Tetrachloroethene	127-18-4	5	µg/L	<5	10 µg/L	110	72.0	124
EP074: 1.1.1.2-Tetrachloroethane	630-20-6	5	µg/L	<5	10 µg/L	105	66.0	114
EP074: trans-1.4-Dichloro-2-butene	110-57-6	5	µg/L	<5	10 µg/L	93.7	60.0	120
EP074: cis-1.4-Dichloro-2-butene	1476-11-5	5	µg/L	<5	10 µg/L	94.6	70.6	128
EP074: 1.1.2.2-Tetrachloroethane	79-34-5	5	µg/L	<5	10 µg/L	106	70.0	124
EP074: 1.2.3-Trichloropropane	96-18-4	5	µg/L	<5	10 µg/L	118	74.0	126
EP074: Pentachloroethane	76-01-7	5	µg/L	<5	10 µg/L	99.4	71.8	126
EP074: 1.2-Dibromo-3-chloropropane	96-12-8	5	µg/L	<5	10 µg/L	102	66.4	136
EP074: Hexachlorobutadiene	87-68-3	5	µg/L	<5	10 µg/L	117	58.0	130
EP074F: Halogenated Aromatic Compounds (QCLot: 4982384)								
EP074: Chlorobenzene	108-90-7	5	µg/L	<5	10 µg/L	102	79.0	117
EP074: Bromobenzene	108-86-1	5	µg/L	<5	10 µg/L	111	76.0	116
EP074: 2-Chlorotoluene	95-49-8	5	µg/L	<5	10 µg/L	109	73.0	119
EP074: 4-Chlorotoluene	106-43-4	5	µg/L	<5	10 µg/L	104	73.0	119
EP074: 1.3-Dichlorobenzene	541-73-1	5	µg/L	<5	10 µg/L	107	75.0	117
EP074: 1.4-Dichlorobenzene	106-46-7	5	µg/L	<5	10 µg/L	104	74.0	118
EP074: 1.2-Dichlorobenzene	95-50-1	5	µg/L	<5	10 µg/L	102	75.0	117

Sub-Matrix: **WATER**

Method: Compound	CAS Number	LOR	Unit	Method Blank (MB) Report: Result	Laboratory Control Spike (LCS) Report: Spike Concentration	Spike Recovery (%): LCS	Acceptable Limits (%): Low	Acceptable Limits (%): High
EP074F: Halogenated Aromatic Compounds (QCLot: 4982384) - continued								
EP074: 1.2.4-Trichlorobenzene	120-82-1	5	µg/L	<5	10 µg/L	90.3	61.0	125
EP074: 1.2.3-Trichlorobenzene	87-61-6	5	µg/L	<5	10 µg/L	100	67.0	123
EP074G: Trihalomethanes (QCLot: 4982384)								
EP074: Chloroform	67-66-3	5	µg/L	<5	10 µg/L	106	72.0	120
EP074: Bromodichloromethane	75-27-4	5	µg/L	<5	10 µg/L	103	64.0	118
EP074: Dibromochloromethane	124-48-1	5	µg/L	<5	10 µg/L	102	65.0	115
EP074: Bromoform	75-25-2	5	µg/L	<5	10 µg/L	101	73.5	126
EP075(SIM)A: Phenolic Compounds (QCLot: 4976746)								
EP075(SIM): Phenol	108-95-2	1	µg/L	<1.0	5 µg/L	36.0	24.5	61.9
EP075(SIM): 2-Chlorophenol	95-57-8	1	µg/L	<1.0	5 µg/L	66.9	52.0	90.0
EP075(SIM): 2-Methylphenol	95-48-7	1	µg/L	<1.0	5 µg/L	67.2	51.0	91.0
EP075(SIM): 3- & 4-Methylphenol	1319-77-3	2	µg/L	<2.0	10 µg/L	56.2	44.0	88.0
EP075(SIM): 2-Nitrophenol	88-75-5	1	µg/L	<1.0	5 µg/L	74.7	48.0	100
EP075(SIM): 2.4-Dimethylphenol	105-67-9	1	µg/L	<1.0	5 µg/L	71.7	49.0	99.0
EP075(SIM): 2.4-Dichlorophenol	120-83-2	1	µg/L	<1.0	5 µg/L	73.7	53.0	105
EP075(SIM): 2.6-Dichlorophenol	87-65-0	1	µg/L	<1.0	5 µg/L	70.8	57.0	105
EP075(SIM): 4-Chloro-3-methylphenol	59-50-7	1	µg/L	<1.0	5 µg/L	71.1	53.0	99.0
EP075(SIM): 2.4.6-Trichlorophenol	88-06-2	1	µg/L	<1.0	5 µg/L	72.8	50.0	106
EP075(SIM): 2.4.5-Trichlorophenol	95-95-4	1	µg/L	<1.0	5 µg/L	75.8	51.0	105
EP075(SIM): Pentachlorophenol	87-86-5	2	µg/L	<2.0	10 µg/L	47.3	10.0	95.0
EP075(SIM)B: Polynuclear Aromatic Hydrocarbons (QCLot: 4976746)								
EP075(SIM): Naphthalene	91-20-3	1	µg/L	<1.0	5 µg/L	72.5	50.0	94.0
EP075(SIM): Acenaphthylene	208-96-8	1	µg/L	<1.0	5 µg/L	76.3	63.6	114
EP075(SIM): Acenaphthene	83-32-9	1	µg/L	<1.0	5 µg/L	84.7	62.2	113
EP075(SIM): Fluorene	86-73-7	1	µg/L	<1.0	5 µg/L	84.4	63.9	115
EP075(SIM): Phenanthrene	85-01-8	1	µg/L	<1.0	5 µg/L	84.5	62.6	116
EP075(SIM): Anthracene	120-12-7	1	µg/L	<1.0	5 µg/L	87.8	64.3	116
EP075(SIM): Fluoranthene	206-44-0	1	µg/L	<1.0	5 µg/L	91.2	63.6	118
EP075(SIM): Pyrene	129-00-0	1	µg/L	<1.0	5 µg/L	93.7	63.1	118
EP075(SIM): Benz(a)anthracene	56-55-3	1	µg/L	<1.0	5 µg/L	99.4	64.1	117
EP075(SIM): Chrysene	218-01-9	1	µg/L	<1.0	5 µg/L	95.7	62.5	116
EP075(SIM): Benzo(b+j)fluoranthene	205-99-2 205-82-3	1	µg/L	<1.0	5 µg/L	86.9	61.7	119
EP075(SIM): Benzo(k)fluoranthene	207-08-9	1	µg/L	<1.0	5 µg/L	90.2	63.0	115

Sub-Matrix: **WATER**

Method: Compound	CAS Number	LOR	Unit	Method Blank (MB) Report: Result	Laboratory Control Spike (LCS) Report: Spike Concentration	Spike Recovery (%): LCS	Acceptable Limits (%): Low	Acceptable Limits (%): High
EP075(SIM)B: Polynuclear Aromatic Hydrocarbons (QCLot: 4976746) - continued								
EP075(SIM): Benzo(a)pyrene	50-32-8	0.5	µg/L	<0.5	5 µg/L	99.8	63.3	117
EP075(SIM): Indeno(1.2.3.cd)pyrene	193-39-5	1	µg/L	<1.0	5 µg/L	97.9	59.9	118
EP075(SIM): Dibenz(a.h)anthracene	53-70-3	1	µg/L	<1.0	5 µg/L	97.7	61.2	117
EP075(SIM): Benzo(g.h.i)perylene	191-24-2	1	µg/L	<1.0	5 µg/L	99.9	59.1	118
EP080: BTEXN (QCLot: 4982383)								
EP080: Benzene	71-43-2	1	µg/L	<1	10 µg/L	104	68.3	119
EP080: Toluene	108-88-3	2	µg/L	<2	10 µg/L	106	73.5	120
EP080: Ethylbenzene	100-41-4	2	µg/L	<2	10 µg/L	112	73.8	122
EP080: meta- & para-Xylene	108-38-3 106-42-3	2	µg/L	<2	10 µg/L	114	73.0	122
EP080: ortho-Xylene	95-47-6	2	µg/L	<2	10 µg/L	112	76.4	123
EP080: Naphthalene	91-20-3	5	µg/L	<5	10 µg/L	103	75.5	124
EP131A: Organochlorine Pesticides (QCLot: 4976744)								
EP131A: Aldrin	309-00-2	0.01	µg/L	<0.010	1.1 µg/L	109	34.0	145
EP131A: alpha-BHC	319-84-6	0.01	µg/L	<0.010	1.1 µg/L	98.3	27.2	131
EP131A: beta-BHC	319-85-7	0.01	µg/L	<0.010	1.1 µg/L	87.2	28.6	133
EP131A: delta-BHC	319-86-8	0.01	µg/L	<0.010	1.1 µg/L	110	36.0	131
EP131A: 4.4`-DDD	72-54-8	0.01	µg/L	<0.010	1.1 µg/L	70.1	36.0	142
EP131A: 4.4`-DDE	72-55-9	0.01	µg/L	<0.010	1.1 µg/L	104	30.4	112
EP131A: 4.4`-DDT	50-29-3	0.01	µg/L	<0.010	1.1 µg/L	117	29.5	142
EP131A: Dieldrin	60-57-1	0.01	µg/L	<0.010	1.1 µg/L	102	28.1	122
EP131A: alpha-Endosulfan	959-98-8	0.01	µg/L	<0.010	1.1 µg/L	108	34.0	119
EP131A: beta-Endosulfan	33213-65-9	0.01	µg/L	<0.010	1.1 µg/L	87.9	31.6	128
EP131A: Endosulfan sulfate	1031-07-8	0.01	µg/L	<0.010	1.1 µg/L	89.8	35.0	159
EP131A: Endrin	72-20-8	0.01	µg/L	<0.010	1.1 µg/L	108	21.5	165
EP131A: Endosulfan (sum)	115-29-7	0.01	µg/L	<0.010	----	----	----	----
EP131A: Endrin aldehyde	7421-93-4	0.01	µg/L	<0.010	1.1 µg/L	108	22.7	123
EP131A: Endrin ketone	53494-70-5	0.01	µg/L	<0.010	1.1 µg/L	115	16.3	144
EP131A: Heptachlor	76-44-8	0.005	µg/L	<0.005	1.1 µg/L	111	33.0	160
EP131A: Heptachlor epoxide	1024-57-3	0.01	µg/L	<0.010	1.1 µg/L	109	33.0	117
EP131A: Hexachlorobenzene (HCB)	118-74-1	0.01	µg/L	<0.010	1.1 µg/L	121	23.6	126
EP131A: gamma-BHC	58-89-9	0.01	µg/L	<0.010	1.1 µg/L	109	28.7	134
EP131A: Methoxychlor	72-43-5	0.01	µg/L	<0.010	1.1 µg/L	102	29.5	150
EP131A: cis-Chlordane	5103-71-9	0.01	µg/L	<0.010	1.1 µg/L	108	27.0	116

Sub-Matrix: **WATER**

Method: Compound	CAS Number	LOR	Unit	Method Blank (MB) Report: Result	Laboratory Control Spike (LCS) Report: Spike Concentration	Spike Recovery (%): LCS	Acceptable Limits (%): Low	Acceptable Limits (%): High
EP131A: Organochlorine Pesticides (QCLot: 4976744) - continued								
EP131A: trans-Chlordane	5103-74-2	0.01	µg/L	<0.010	1.1 µg/L	109	31.2	119
EP131A: Total Chlordane (sum)	----	0.01	µg/L	<0.010	----	----	----	----
EP131A: Sum of DDD + DDE + DDT	72-54-8/72-5 5-9/50-2	0.01	µg/L	<0.010	----	----	----	----
EP234A: OP Pesticides (QCLot: 4976914)								
EP234-1x: Acephate	30560-19-1	0.5	µg/L	<0.5	5 µg/L	102	70.0	130
EP234-1x: Bensulide	741-58-2	0.1	µg/L	<0.1	5 µg/L	119	70.0	130
EP234-1x: Formothion	2540-82-1	20	µg/L	<20	----	----	----	----
EP234-1x: Fosetyl Aluminium	39148-24-8	10	µg/L	<10	5 µg/L	95.1	70.0	130
EP234-1x: Methidathion	950-37-8	0.1	µg/L	<0.1	5 µg/L	102	70.0	130
EP234-1x: Naftalofos	1491-41-4	1	µg/L	<1.0	5 µg/L	89.6	70.0	130
EP234-1x: Pyrazophos	13457-18-6	0.1	µg/L	<0.1	5 µg/L	104	70.0	130
EP234-1x: Thiometon	640-15-3	0.5	µg/L	<0.5	5 µg/L	101	70.0	130
EP234A: OP Pesticides (QCLot: 4976915)								
EP234-1: Azinphos-methyl	86-50-0	0.02	µg/L	<0.02	0.2 µg/L	83.4	77.0	129
EP234-1: Azinphos-ethyl	2642-71-9	0.02	µg/L	<0.02	0.2 µg/L	93.9	75.0	135
EP234-1: Bromophos-ethyl	4824-78-6	0.1	µg/L	<0.10	1 µg/L	84.8	70.0	130
EP234-1: Carbofenothion	786-19-6	0.02	µg/L	<0.02	0.2 µg/L	95.8	70.0	130
EP234-1: Chlorfenvinphos	470-90-6	0.02	µg/L	<0.02	0.2 µg/L	103	74.0	134
EP234-1: Chlorpyrifos	2921-88-2	0.02	µg/L	<0.02	0.2 µg/L	87.5	70.0	130
EP234-1: Chlorpyrifos-methyl	5598-13-0	0.2	µg/L	<0.2	2 µg/L	92.9	70.0	130
EP234-1: Coumaphos	56-72-4	0.01	µg/L	<0.01	0.1 µg/L	90.6	70.0	130
EP234-1: Demeton-O	298-03-3	0.02	µg/L	<0.02	0.05 µg/L	107	64.0	134
EP234-1: Demeton-O & Demeton-S	298-03-3/12 6-75-0	0.02	µg/L	<0.02	0.1 µg/L	97.6	79.0	127
EP234-1: Demeton-S	126-75-0	0.02	µg/L	<0.02	0.05 µg/L	88.4	63.0	135
EP234-1: Demeton-S-methyl	919-86-8	0.02	µg/L	<0.02	0.2 µg/L	93.6	70.0	128
EP234-1: Diazinon	333-41-5	0.01	µg/L	<0.01	0.1 µg/L	98.9	68.0	138
EP234-1: Dichlorvos	62-73-7	0.2	µg/L	<0.20	2 µg/L	113	76.0	128
EP234-1: Dimethoate	60-51-5	0.02	µg/L	<0.02	0.2 µg/L	99.0	75.0	127
EP234-1: Disulfoton	298-04-4	0.05	µg/L	<0.05	0.5 µg/L	100	72.0	134
EP234-1: EPN	2104-64-5	0.05	µg/L	<0.05	0.5 µg/L	109	70.0	130
EP234-1: Ethion	563-12-2	0.02	µg/L	<0.02	0.2 µg/L	88.6	70.0	130
EP234-1: Ethoprophos	13194-48-4	0.01	µg/L	<0.01	0.1 µg/L	78.6	78.0	128
EP234-1: Fenamiphos	22224-92-6	0.01	µg/L	<0.01	0.1 µg/L	96.3	71.0	135

Sub-Matrix: **WATER**

Method: Compound	CAS Number	LOR	Unit	Method Blank (MB) Report: Result	Laboratory Control Spike (LCS) Report: Spike Concentration	Spike Recovery (%): LCS	Acceptable Limits (%): Low	Acceptable Limits (%): High
EP234A: OP Pesticides (QCLot: 4976915) - continued								
EP234-1: Fenchlorphos (Ronnel)	299-84-3	10	µg/L	<10	100 µg/L	121	70.0	130
EP234-1: Fenitrothion	122-14-5	2	µg/L	<2	20 µg/L	127	64.0	136
EP234-1: Fensulfothion	115-90-2	0.01	µg/L	<0.01	0.1 µg/L	95.5	79.0	125
EP234-1: Fenthion	55-38-9	0.05	µg/L	<0.05	0.5 µg/L	110	70.0	130
EP234-1: Malathion	121-75-5	0.02	µg/L	<0.02	0.2 µg/L	99.4	70.0	130
EP234-1: Mevinphos	7786-34-7	0.02	µg/L	<0.02	0.2 µg/L	99.0	77.0	123
EP234-1: Monocrotophos	6923-22-4	0.02	µg/L	<0.02	0.2 µg/L	102	75.0	129
EP234-1: Omethoate	1113-02-6	0.01	µg/L	<0.01	0.1 µg/L	97.5	74.0	130
EP234-1: Parathion	56-38-2	0.2	µg/L	<0.2	2 µg/L	92.4	69.0	139
EP234-1: Parathion-methyl	298-00-0	0.5	µg/L	<0.5	20 µg/L	128	66.0	140
EP234-1: Phorate	298-02-2	0.1	µg/L	<0.1	1 µg/L	95.5	68.0	136
EP234-1: Pirimiphos-ethyl	23505-41-1	0.01	µg/L	<0.01	0.1 µg/L	97.2	70.0	130
EP234-1: Pirimiphos-methyl	29232-93-7	0.01	µg/L	<0.01	0.1 µg/L	96.9	71.0	137
EP234-1: Profenofos	41198-08-7	0.01	µg/L	<0.01	0.1 µg/L	102	70.0	130
EP234-1: Prothiofos	34643-46-4	0.1	µg/L	<0.1	1 µg/L	73.6	70.0	130
EP234-1: Sulfotep	3689-24-5	0.005	µg/L	<0.005	0.05 µg/L	106	71.0	137
EP234-1: Sulprofos	35400-43-2	0.05	µg/L	<0.05	0.5 µg/L	92.8	70.0	130
EP234-1: Temephos	3383-96-8	0.02	µg/L	<0.02	0.2 µg/L	108	70.0	130
EP234-1: Terbufos	13071-79-9	0.01	µg/L	<0.01	0.1 µg/L	96.4	70.0	130
EP234-1: Tetrachlorvinphos	22248-79-9	0.01	µg/L	<0.01	0.1 µg/L	98.3	74.0	128
EP234-1: Triazophos	24017-47-8	0.005	µg/L	<0.005	0.05 µg/L	111	77.0	131
EP234-1: Trichlorfon	52-68-6	0.02	µg/L	<0.02	0.2 µg/L	95.0	70.0	130
EP234-1: Trichloronate	327-98-0	0.5	µg/L	<0.5	5 µg/L	85.3	63.0	139

Matrix Spike (MS) Report

The quality control term Matrix Spike (MS) refers to an intralaboratory split sample spiked with a representative set of target analytes. The purpose of this QC parameter is to monitor potential matrix effects on analyte recoveries. Static Recovery Limits as per laboratory Data Quality Objectives (DQOs). Ideal recovery ranges stated may be waived in the event of sample matrix interference.

Sub-Matrix: **WATER**

Laboratory sample ID	Sample ID	Method: Compound	CAS Number	Matrix Spike (MS) Report: Spike Concentration	SpikeRecovery(%): MS	Acceptable Limits (%): Low	Acceptable Limits (%): High
EG020T: Total Metals by ICP-MS (QCLot: 4984088)							
ES2311326-003	Anonymous	EG020A-T: Arsenic	7440-38-2	1 mg/L	120	70.0	130
		EG020A-T: Cadmium	7440-43-9	0.25 mg/L	121	70.0	130
		EG020A-T: Chromium	7440-47-3	1 mg/L	117	70.0	130
		EG020A-T: Copper	7440-50-8	1 mg/L	124	70.0	130

Sub-Matrix: **WATER**

				Matrix Spike (MS) Report			
				Spike	SpikeRecovery(%)	Acceptable Limits (%)	
Laboratory sample ID	Sample ID	Method: Compound	CAS Number	Concentration	MS	Low	High
EG020T: Total Metals by ICP-MS (QCLot: 4984088) - continued							
ES2311326-003	Anonymous	EG020A-T: Lead	7439-92-1	1 mg/L	123	70.0	130
		EG020A-T: Manganese	7439-96-5	1 mg/L	116	70.0	130
		EG020A-T: Nickel	7440-02-0	1 mg/L	117	70.0	130
		EG020A-T: Zinc	7440-66-6	1 mg/L	121	70.0	130
EG035T: Total Recoverable Mercury by FIMS (QCLot: 4982611)							
ES2311416-004	Anonymous	EG035T: Mercury	7439-97-6	0.01 mg/L	93.4	70.0	130
EK055G: Ammonia as N by Discrete Analyser (QCLot: 4981178)							
ES2311311-001	Anonymous	EK055G: Ammonia as N	7664-41-7	1 mg/L	85.0	70.0	130
EK055G: Ammonia as N by Discrete Analyser (QCLot: 4981181)							
ES2311425-009	KEMUS	EK055G: Ammonia as N	7664-41-7	1 mg/L	92.9	70.0	130
EK057G: Nitrite as N by Discrete Analyser (QCLot: 4977175)							
ES2311256-011	Anonymous	EK057G: Nitrite as N	14797-65-0	0.5 mg/L	105	70.0	130
EK057G: Nitrite as N by Discrete Analyser (QCLot: 4977586)							
ES2310029-001	Anonymous	EK057G: Nitrite as N	14797-65-0	0.5 mg/L	110	70.0	130
EK057G: Nitrite as N by Discrete Analyser (QCLot: 4979241)							
ES2311425-008	KEMDS	EK057G: Nitrite as N	14797-65-0	0.5 mg/L	100	70.0	130
EK059G: Nitrite plus Nitrate as N (NOx) by Discrete Analyser (QCLot: 4981180)							
ES2311425-009	KEMUS	EK059G: Nitrite + Nitrate as N	----	0.5 mg/L	# Not Determined	70.0	130
EK061G: Total Kjeldahl Nitrogen By Discrete Analyser (QCLot: 4981177)							
ES2311425-002	BADMS	EK061G: Total Kjeldahl Nitrogen as N	----	5 mg/L	90.7	70.0	130
EK067G: Total Phosphorus as P by Discrete Analyser (QCLot: 4981176)							
ES2311425-002	BADMS	EK067G: Total Phosphorus as P	----	1 mg/L	98.5	70.0	130
EK071G: Reactive Phosphorus as P by discrete analyser (QCLot: 4977176)							
ES2311425-001	BADDS	EK071G: Reactive Phosphorus as P	14265-44-2	0.5 mg/L	96.7	70.0	130
EK071G: Reactive Phosphorus as P by discrete analyser (QCLot: 4977587)							
ES2310029-001	Anonymous	EK071G: Reactive Phosphorus as P	14265-44-2	0.5 mg/L	102	70.0	130
EK071G: Reactive Phosphorus as P by discrete analyser (QCLot: 4979242)							
ES2311425-008	KEMDS	EK071G: Reactive Phosphorus as P	14265-44-2	0.5 mg/L	79.1	70.0	130
EP074E: Halogenated Aliphatic Compounds (QCLot: 4982384)							
ES2311167-001	Anonymous	EP074: 1.1-Dichloroethene	75-35-4	25 µg/L	116	70.0	130
		EP074: Trichloroethene	79-01-6	25 µg/L	108	70.0	130
EP074F: Halogenated Aromatic Compounds (QCLot: 4982384)							
ES2311167-001	Anonymous	EP074: Chlorobenzene	108-90-7	25 µg/L	106	70.0	130

Sub-Matrix: **WATER**

				Matrix Spike (MS) Report			
				Spike	SpikeRecovery(%)	Acceptable Limits (%)	
Laboratory sample ID	*Sample ID*	*Method: Compound*	*CAS Number*	*Concentration*	*MS*	*Low*	*High*
EP075(SIM)A: Phenolic Compounds (QCLot: 4976746)							
ES2311425-002	BADMS	EP075(SIM): Phenol	108-95-2	20 µg/L	32.2	20.0	130
		EP075(SIM): 2-Chlorophenol	95-57-8	20 µg/L	81.3	60.0	130
		EP075(SIM): 2-Nitrophenol	88-75-5	20 µg/L	74.2	60.0	130
		EP075(SIM): 4-Chloro-3-methylphenol	59-50-7	20 µg/L	75.8	70.0	130
		EP075(SIM): Pentachlorophenol	87-86-5	20 µg/L	50.4	20.0	130
EP075(SIM)B: Polynuclear Aromatic Hydrocarbons (QCLot: 4976746)							
ES2311425-002	BADMS	EP075(SIM): Acenaphthene	83-32-9	20 µg/L	90.8	70.0	130
		EP075(SIM): Pyrene	129-00-0	20 µg/L	87.5	70.0	130
EP080: BTEXN (QCLot: 4982383)							
ES2311167-001	Anonymous	EP080: Benzene	71-43-2	25 µg/L	100	70.0	130
		EP080: Toluene	108-88-3	25 µg/L	100	70.0	130
		EP080: Ethylbenzene	100-41-4	25 µg/L	108	70.0	130
		EP080: meta- & para-Xylene	108-38-3 106-42-3	25 µg/L	107	70.0	130
		EP080: ortho-Xylene	95-47-6	25 µg/L	114	70.0	130
		EP080: Naphthalene	91-20-3	25 µg/L	108	70.0	130
EP131A: Organochlorine Pesticides (QCLot: 4976744)							
ES2311425-002	BADMS	EP131A: Aldrin	309-00-2	1.1 µg/L	86.7	35.8	139
		EP131A: alpha-BHC	319-84-6	1.1 µg/L	100	19.7	153
		EP131A: beta-BHC	319-85-7	1.1 µg/L	83.9	43.8	136
		EP131A: delta-BHC	319-86-8	1.1 µg/L	111	37.4	144
		EP131A: 4.4`-DDD	72-54-8	1.1 µg/L	96.0	37.5	145
		EP131A: 4.4`-DDE	72-55-9	1.1 µg/L	105	30.5	146
		EP131A: 4.4`-DDT	50-29-3	1.1 µg/L	108	31.0	151
		EP131A: Dieldrin	60-57-1	1.1 µg/L	104	34.4	145
		EP131A: alpha-Endosulfan	959-98-8	1.1 µg/L	111	30.2	141
		EP131A: beta-Endosulfan	33213-65-9	1.1 µg/L	110	30.3	148
		EP131A: Endosulfan sulfate	1031-07-8	1.1 µg/L	94.5	19.1	150
		EP131A: Endrin	72-20-8	1.1 µg/L	99.8	13.0	165
		EP131A: Endrin aldehyde	7421-93-4	1.1 µg/L	97.7	28.3	134
		EP131A: Endrin ketone	53494-70-5	1.1 µg/L	120	15.1	146
		EP131A: Heptachlor	76-44-8	1.1 µg/L	110	33.2	148
		EP131A: Heptachlor epoxide	1024-57-3	1.1 µg/L	106	36.0	143
		EP131A: Hexachlorobenzene (HCB)	118-74-1	1.1 µg/L	112	14.0	146
		EP131A: gamma-BHC	58-89-9	1.1 µg/L	108	27.2	147
		EP131A: Methoxychlor	72-43-5	1.1 µg/L	96.3	34.4	150
		EP131A: cis-Chlordane	5103-71-9	1.1 µg/L	103	15.4	152
		EP131A: trans-Chlordane	5103-74-2	1.1 µg/L	116	45.1	140

Sub-Matrix: **WATER**

				Matrix Spike (MS) Report			
				Spike	SpikeRecovery(%)	Acceptable Limits (%)	
Laboratory sample ID	*Sample ID*	*Method: Compound*	*CAS Number*	*Concentration*	*MS*	*Low*	*High*
EP234A: OP Pesticides (QCLot: 4976914)							
ES2311425-001	BADDS	EP234-1x: Acephate	30560-19-1	5 µg/L	96.5	70.0	130
		EP234-1x: Bensulide	741-58-2	5 µg/L	109	70.0	130
		EP234-1x: Fosetyl Aluminium	39148-24-8	5 µg/L	# 1.6	70.0	130
		EP234-1x: Methidathion	950-37-8	5 µg/L	96.4	70.0	130
		EP234-1x: Naftalofos	1491-41-4	5 µg/L	95.0	70.0	130
		EP234-1x: Pyrazophos	13457-18-6	5 µg/L	106	70.0	130
		EP234-1x: Thiometon	640-15-3	5 µg/L	89.9	70.0	130
EP234A: OP Pesticides (QCLot: 4976915)							
ES2311425-001	BADDS	EP234-1: Azinphos-methyl	86-50-0	0.2 µg/L	76.2	70.0	130
		EP234-1: Azinphos-ethyl	2642-71-9	0.2 µg/L	95.0	70.0	130
		EP234-1: Bromophos-ethyl	4824-78-6	1 µg/L	86.2	70.0	130
		EP234-1: Carbofenothion	786-19-6	0.2 µg/L	96.4	70.0	130
		EP234-1: Chlorfenvinphos	470-90-6	0.2 µg/L	94.2	70.0	130
		EP234-1: Chlorpyrifos	2921-88-2	0.2 µg/L	92.0	70.0	130
		EP234-1: Chlorpyrifos-methyl	5598-13-0	2 µg/L	75.5	58.0	136
		EP234-1: Coumaphos	56-72-4	0.1 µg/L	96.3	70.0	130
		EP234-1: Demeton-O	298-03-3	0.05 µg/L	90.8	70.0	130
		EP234-1: Demeton-O & Demeton-S	298-03-3/126-75-0	0.1 µg/L	90.1	69.0	129
		EP234-1: Demeton-S	126-75-0	0.05 µg/L	89.4	70.0	130
		EP234-1: Demeton-S-methyl	919-86-8	0.2 µg/L	84.5	70.0	130
		EP234-1: Diazinon	333-41-5	0.1 µg/L	91.0	70.0	130
		EP234-1: Dichlorvos	62-73-7	2 µg/L	113	70.0	130
		EP234-1: Dimethoate	60-51-5	0.2 µg/L	91.6	69.0	131
		EP234-1: Disulfoton	298-04-4	0.5 µg/L	93.2	70.0	130
		EP234-1: EPN	2104-64-5	0.5 µg/L	97.9	70.0	130
		EP234-1: Ethion	563-12-2	0.2 µg/L	104	70.0	130
		EP234-1: Ethoprophos	13194-48-4	0.1 µg/L	75.3	70.0	132
		EP234-1: Fenamiphos	22224-92-6	0.1 µg/L	97.4	70.0	130
		EP234-1: Fenchlorphos (Ronnel)	299-84-3	100 µg/L	95.0	71.0	133
		EP234-1: Fenitrothion	122-14-5	20 µg/L	74.0	64.0	136
		EP234-1: Fensulfothion	115-90-2	0.1 µg/L	108	83.0	123
		EP234-1: Fenthion	55-38-9	0.5 µg/L	104	70.0	130
		EP234-1: Malathion	121-75-5	0.2 µg/L	93.6	70.0	130
		EP234-1: Mevinphos	7786-34-7	0.2 µg/L	86.8	69.0	125
		EP234-1: Monocrotophos	6923-22-4	0.2 µg/L	93.3	70.0	128
		EP234-1: Omethoate	1113-02-6	0.1 µg/L	87.1	70.0	130
		EP234-1: Parathion	56-38-2	2 µg/L	75.8	70.0	130
		EP234-1: Parathion-methyl	298-00-0	20 µg/L	# 46.3	70.0	140

Sub-Matrix: **WATER**

				Matrix Spike (MS) Report			
				Spike	SpikeRecovery(%)	Acceptable Limits (%)	
Laboratory sample ID	*Sample ID*	*Method: Compound*	*CAS Number*	*Concentration*	*MS*	*Low*	*High*
EP234A: OP Pesticides (QCLot: 4976915) - continued							
ES2311425-001	BADDS	EP234-1: Phorate	298-02-2	1 µg/L	96.2	70.0	130
		EP234-1: Pirimiphos-ethyl	23505-41-1	0.1 µg/L	93.3	70.0	130
		EP234-1: Pirimiphos-methyl	29232-93-7	0.1 µg/L	91.6	70.0	130
		EP234-1: Profenofos	41198-08-7	0.1 µg/L	79.3	70.0	130
		EP234-1: Prothiofos	34643-46-4	1 µg/L	70.3	70.0	130
		EP234-1: Sulfotep	3689-24-5	0.05 µg/L	99.6	63.0	135
		EP234-1: Sulprofos	35400-43-2	0.5 µg/L	93.4	70.0	130
		EP234-1: Temephos	3383-96-8	0.2 µg/L	108	70.0	130
		EP234-1: Terbufos	13071-79-9	0.1 µg/L	88.2	70.0	130
		EP234-1: Tetrachlorvinphos	22248-79-9	0.1 µg/L	96.8	77.0	125
		EP234-1: Triazophos	24017-47-8	0.05 µg/L	94.4	74.0	132
		EP234-1: Trichlorfon	52-68-6	0.2 µg/L	# 44.6	70.0	130
		EP234-1: Trichloronate	327-98-0	5 µg/L	90.0	63.0	139

QA/QC Compliance Assessment to assist with Quality Review

Work Order	: **ES2311425**	Page	: 1 of 13
Client	: **GHD PTY LTD**	Laboratory	: Environmental Division Sydney
Contact	: MR HENRY LUO	Telephone	: +61-2-8784 8555
Project	: 12554717	Date Samples Received	: 05-Apr-2023
Site	: M12 Surface Water	Issue Date	: 17-Apr-2023
Sampler	: EMILY SMITH, TERRY NHAM	No. of samples received	: 14
Order number	: ----	No. of samples analysed	: 14

This report is automatically generated by the ALS LIMS through interpretation of the ALS Quality Control Report and several Quality Assurance parameters measured by ALS. This automated reporting highlights any non-conformances, facilitates faster and more accurate data validation and is designed to assist internal expert and external Auditor review. Many components of this report contribute to the overall DQO assessment and reporting for guideline compliance.

Brief method summaries and references are also provided to assist in traceability.

Summary of Outliers

Outliers : Quality Control Samples

This report highlights outliers flagged in the Quality Control (QC) Report.

- **NO Method Blank value outliers occur.**
- **NO Duplicate outliers occur.**
- **NO Laboratory Control outliers occur.**
- **Matrix Spike outliers exist - please see following pages for full details.**
- **For all regular sample matrices, NO surrogate recovery outliers occur.**

Outliers : Analysis Holding Time Compliance

- **Analysis Holding Time Outliers exist - please see following pages for full details.**

Outliers : Frequency of Quality Control Samples

- **Quality Control Sample Frequency Outliers exist - please see following pages for full details.**

Outliers : Quality Control Samples

Duplicates, Method Blanks, Laboratory Control Samples and Matrix Spikes

Matrix: **WATER**

Compound Group Name	Laboratory Sample ID	Client Sample ID	Analyte	CAS Number	Data	Limits	Comment
Matrix Spike (MS) Recoveries							
EK059G: Nitrite plus Nitrate as N (NOx) by Discrete Ar	ES2311425--009	KEMUS	**Nitrite + Nitrate as N**	----	Not Determined	----	**MS recovery not determined, background level greater than or equal to 4x spike level.**
EP234A: OP Pesticides	ES2311425--001	BADDS	**Parathion-methyl**	298-00-0	46.3 %	70.0-140%	**Recovery less than lower data quality objective**
EP234A: OP Pesticides	ES2311425--001	BADDS	**Trichlorfon**	52-68-6	44.6 %	70.0-130%	**Recovery less than lower data quality objective**
EP234A: OP Pesticides	ES2311425--001	BADDS	**Fosetyl Aluminium**	39148-24-8	1.6 %	70.0-130%	**Recovery less than lower data quality objective**

Outliers : Analysis Holding Time Compliance

Matrix: **WATER**

Method / Container / Client Sample ID(s)		Extraction / Preparation			Analysis		
		Date extracted	Due for extraction	Days overdue	Date analysed	Due for analysis	Days overdue
EK057G: Nitrite as N by Discrete Analyser							
Clear Plastic Bottle - Natural							
BADDS,	BADMS,	----	----	----	11-Apr-2023	06-Apr-2023	**5**
BADUS,	COSDS,						
COSUS,	HINDS,						
HINUS,	ROPDS						
Clear Plastic Bottle - Natural							
KEMDS,	KEMUS,	----	----	----	11-Apr-2023	07-Apr-2023	**4**
SOUDS,	SOUUS						
EK071G: Reactive Phosphorus as P by discrete analyser							
Clear Plastic Bottle - Natural							
BADDS,	BADMS,	----	----	----	11-Apr-2023	06-Apr-2023	**5**
BADUS,	COSDS,						
COSUS,	HINDS,						
HINUS,	ROPDS						
Clear Plastic Bottle - Natural							
KEMDS,	KEMUS,	----	----	----	11-Apr-2023	07-Apr-2023	**4**
SOUDS,	SOUUS						

Outliers : Frequency of Quality Control Samples

Matrix: **WATER**

Quality Control Sample Type / Method	Count		Rate (%)		Quality Control Specification
	QC	Regular	Actual	Expected	
	3				
Laboratory Control Samples (LCS)					
Oil and Grease	3	40	7.50	8.00	NEPM 2013 B3 & ALS QC Standard

Analysis Holding Time Compliance

If samples are identified below as having been analysed or extracted outside of recommended holding times, this should be taken into consideration when interpreting results.

This report summarizes extraction / preparation and analysis times and compares each with ALS recommended holding times (referencing USEPA SW 846, APHA, AS and NEPM) based on the sample container provided. Dates reported represent first date of extraction or analysis and preclude subsequent dilutions and reruns. A listing of breaches (if any) is provided herein.

Holding time for leachate methods (e.g. TCLP) vary according to the analytes reported. Assessment compares the leach date with the shortest analyte holding time for the equivalent soil method. These are: organics 14 days, mercury 28 days & other metals 180 days. A recorded breach does not guarantee a breach for all non-volatile parameters.

Holding times for ***VOC in soils*** vary according to analytes of interest. Vinyl Chloride and Styrene holding time is 7 days; others 14 days. A recorded breach does not guarantee a breach for all VOC analytes and should be verified in case the reported breach is a false positive or Vinyl Chloride and Styrene are not key analytes of interest/concern.

Matrix: **WATER** Evaluation: × = Holding time breach ; ✓ = Within holding time.

Method / Container / Client Sample ID(s)	Sample Date	Extraction / Preparation			Analysis		
		Date extracted	Due for extraction	Evaluation	Date analysed	Due for analysis	Evaluation
EA015: Total Dissolved Solids dried at 180 ± 5 °C							
Clear Plastic Bottle - Natural (EA015H)							
BADDS, BADMS, BADUS, COSDS, COSUS, HINDS, HINUS, ROPDS, ROPUS	**04-Apr-2023**	**----**	----	**----**	**11-Apr-2023**	11-Apr-2023	✓
Clear Plastic Bottle - Natural (EA015H)							
KEMDS, KEMUS, SOUDS, SOUUS	**05-Apr-2023**	**----**	----	**----**	**12-Apr-2023**	12-Apr-2023	✓
EA025: Total Suspended Solids dried at 104 ± 2°C							
Clear Plastic Bottle - Natural (EA025H)							
BADDS, BADMS, BADUS, COSDS, COSUS, HINDS, HINUS, ROPDS, ROPUS	**04-Apr-2023**	**----**	----	**----**	**11-Apr-2023**	11-Apr-2023	✓
Clear Plastic Bottle - Natural (EA025H)							
KEMDS, KEMUS, SOUDS, SOUUS	**05-Apr-2023**	**----**	----	**----**	**12-Apr-2023**	12-Apr-2023	✓
EG020T: Total Metals by ICP-MS							
Clear Plastic Bottle - Nitric Acid; Unfiltered (EG020A-T)							
BADDS, BADMS, BADUS, COSDS, COSUS, HINDS, HINUS, ROPDS, ROPUS	**04-Apr-2023**	**12-Apr-2023**	01-Oct-2023	✓	**12-Apr-2023**	01-Oct-2023	✓
Clear Plastic Bottle - Nitric Acid; Unfiltered (EG020A-T)							
KEMDS, KEMUS, SOUDS, SOUUS, SWDUP1	**05-Apr-2023**	**12-Apr-2023**	02-Oct-2023	✓	**12-Apr-2023**	02-Oct-2023	✓

Matrix: **WATER**

Evaluation: × = Holding time breach ; ✓ = Within holding time.

Method / Container / Client Sample ID(s)	Sample Date	Extraction / Preparation			Analysis		
		Date extracted	Due for extraction	Evaluation	Date analysed	Due for analysis	Evaluation
EG035T: Total Recoverable Mercury by FIMS							
Clear Plastic Bottle - Nitric Acid; Unfiltered (EG035T)							
BADDS, BADMS, BADUS, COSDS, COSUS, HINDS, HINUS, ROPDS, ROPUS	**04-Apr-2023**	**----**	----	----	**13-Apr-2023**	02-May-2023	✓
Clear Plastic Bottle - Nitric Acid; Unfiltered (EG035T)							
KEMDS, KEMUS, SOUDS, SOUUS, SWDUP1	**05-Apr-2023**	**----**	----	----	**13-Apr-2023**	03-May-2023	✓
EK055G: Ammonia as N by Discrete Analyser							
Clear Plastic Bottle - Sulfuric Acid (EK055G)							
BADDS, BADMS, BADUS, COSDS, COSUS, HINDS, HINUS, ROPDS, ROPUS	**04-Apr-2023**	**----**	----	----	**13-Apr-2023**	02-May-2023	✓
Clear Plastic Bottle - Sulfuric Acid (EK055G)							
KEMDS, KEMUS, SOUDS, SOUUS	**05-Apr-2023**	**----**	----	----	**13-Apr-2023**	03-May-2023	✓
EK057G: Nitrite as N by Discrete Analyser							
Clear Plastic Bottle - Natural (EK057G)							
BADDS, BADMS, BADUS, COSDS, COSUS, HINDS, HINUS, ROPDS	**04-Apr-2023**	**----**	----	----	**11-Apr-2023**	06-Apr-2023	×
Clear Plastic Bottle - Natural (EK057G)							
ROPUS	**04-Apr-2023**	**----**	----	----	**06-Apr-2023**	06-Apr-2023	✓
Clear Plastic Bottle - Natural (EK057G)							
KEMDS, KEMUS, SOUDS, SOUUS	**05-Apr-2023**	**----**	----	----	**11-Apr-2023**	07-Apr-2023	×
EK059G: Nitrite plus Nitrate as N (NOx) by Discrete Analyser							
Clear Plastic Bottle - Sulfuric Acid (EK059G)							
BADDS, BADMS, BADUS, COSDS, COSUS, HINDS, HINUS, ROPDS, ROPUS	**04-Apr-2023**	**----**	----	----	**13-Apr-2023**	02-May-2023	✓
Clear Plastic Bottle - Sulfuric Acid (EK059G)							
KEMDS, KEMUS, SOUDS, SOUUS	**05-Apr-2023**	**----**	----	----	**13-Apr-2023**	03-May-2023	✓

Matrix: **WATER**

Evaluation: × = Holding time breach ; ✓ = Within holding time.

Method / Container / Client Sample ID(s)	Sample Date	Extraction / Preparation			Analysis		
		Date extracted	Due for extraction	Evaluation	Date analysed	Due for analysis	Evaluation
EK061G: Total Kjeldahl Nitrogen By Discrete Analyser							
Clear Plastic Bottle - Sulfuric Acid (EK061G)							
ROPDS	**04-Apr-2023**	**11-Apr-2023**	02-May-2023	✓	**12-Apr-2023**	02-May-2023	✓
Clear Plastic Bottle - Sulfuric Acid (EK061G)							
BADDS, BADMS, BADUS, COSDS, COSUS, HINDS, HINUS, ROPUS	**04-Apr-2023**	**11-Apr-2023**	02-May-2023	✓	**13-Apr-2023**	02-May-2023	✓
Clear Plastic Bottle - Sulfuric Acid (EK061G)							
KEMDS, KEMUS	**05-Apr-2023**	**11-Apr-2023**	03-May-2023	✓	**12-Apr-2023**	03-May-2023	✓
Clear Plastic Bottle - Sulfuric Acid (EK061G)							
SOUDS, SOUUS	**05-Apr-2023**	**11-Apr-2023**	03-May-2023	✓	**13-Apr-2023**	03-May-2023	✓
EK067G: Total Phosphorus as P by Discrete Analyser							
Clear Plastic Bottle - Sulfuric Acid (EK067G)							
ROPDS	**04-Apr-2023**	**11-Apr-2023**	02-May-2023	✓	**12-Apr-2023**	02-May-2023	✓
Clear Plastic Bottle - Sulfuric Acid (EK067G)							
BADDS, BADMS, BADUS, COSDS, COSUS, HINDS, HINUS, ROPUS	**04-Apr-2023**	**11-Apr-2023**	02-May-2023	✓	**13-Apr-2023**	02-May-2023	✓
Clear Plastic Bottle - Sulfuric Acid (EK067G)							
KEMDS, KEMUS	**05-Apr-2023**	**11-Apr-2023**	03-May-2023	✓	**12-Apr-2023**	03-May-2023	✓
Clear Plastic Bottle - Sulfuric Acid (EK067G)							
SOUDS, SOUUS	**05-Apr-2023**	**11-Apr-2023**	03-May-2023	✓	**13-Apr-2023**	03-May-2023	✓
EK071G: Reactive Phosphorus as P by discrete analyser							
Clear Plastic Bottle - Natural (EK071G)							
BADDS, BADMS, BADUS, COSDS, COSUS, HINDS, HINUS, ROPDS	**04-Apr-2023**	**----**	----	----	**11-Apr-2023**	06-Apr-2023	×
Clear Plastic Bottle - Natural (EK071G)							
ROPUS	**04-Apr-2023**	**----**	----	----	**06-Apr-2023**	06-Apr-2023	✓
Clear Plastic Bottle - Natural (EK071G)							
KEMDS, KEMUS, SOUDS, SOUUS	**05-Apr-2023**	**----**	----	----	**11-Apr-2023**	07-Apr-2023	×

Matrix: **WATER**

Evaluation: × = Holding time breach ; ✓ = Within holding time.

Method / Container / Client Sample ID(s)	Sample Date	Extraction / Preparation			Analysis		
		Date extracted	Due for extraction	Evaluation	Date analysed	Due for analysis	Evaluation
EP008: Chlorophyll a & Pheophytin a							
Amber Glass Bottle - Unpreserved (EP008)							
BADDS, BADMS, BADUS, COSDS, COSUS, HINDS, HINUS, ROPDS, ROPUS	**04-Apr-2023**	**----**	----	----	**06-Apr-2023**	06-Apr-2023	✓
Amber Glass Bottle - Unpreserved (EP008)							
KEMDS, KEMUS, SOUDS, SOUUS	**05-Apr-2023**	**----**	----	----	**06-Apr-2023**	07-Apr-2023	✓
EP020: Oil and Grease (O&G)							
Amber Jar - Sulfuric Acid or Sodium Bisulfate (EP020)							
BADDS, BADMS, BADUS, COSDS, COSUS, HINDS, HINUS, ROPDS, ROPUS	**04-Apr-2023**	**----**	----	----	**12-Apr-2023**	02-May-2023	✓
Amber Jar - Sulfuric Acid or Sodium Bisulfate (EP020)							
KEMDS, KEMUS, SOUDS, SOUUS	**05-Apr-2023**	**----**	----	----	**12-Apr-2023**	03-May-2023	✓
EP074D: Fumigants							
Amber VOC Vial - Sulfuric Acid (EP074)							
BADDS, BADMS, BADUS, COSDS, COSUS, HINDS, HINUS, ROPDS, ROPUS	**04-Apr-2023**	**12-Apr-2023**	18-Apr-2023	✓	**13-Apr-2023**	18-Apr-2023	✓
Amber VOC Vial - Sulfuric Acid (EP074)							
KEMDS	**05-Apr-2023**	**12-Apr-2023**	19-Apr-2023	✓	**12-Apr-2023**	19-Apr-2023	✓
Amber VOC Vial - Sulfuric Acid (EP074)							
KEMUS, SOUDS, SOUUS	**05-Apr-2023**	**12-Apr-2023**	19-Apr-2023	✓	**13-Apr-2023**	19-Apr-2023	✓

Matrix: **WATER**

Evaluation: × = Holding time breach ; ✓ = Within holding time.

Method / Container / Client Sample ID(s)	Sample Date	Extraction / Preparation			Analysis		
		Date extracted	Due for extraction	Evaluation	Date analysed	Due for analysis	Evaluation
EP074E: Halogenated Aliphatic Compounds							
Amber VOC Vial - Sulfuric Acid (EP074) BADDS, BADMS, BADUS, COSDS, COSUS, HINDS, HINUS, ROPDS, ROPUS	**04-Apr-2023**	**12-Apr-2023**	18-Apr-2023	✓	**13-Apr-2023**	18-Apr-2023	✓
Amber VOC Vial - Sulfuric Acid (EP074) KEMDS	**05-Apr-2023**	**12-Apr-2023**	19-Apr-2023	✓	**12-Apr-2023**	19-Apr-2023	✓
Amber VOC Vial - Sulfuric Acid (EP074) KEMUS, SOUDS, SOUUS	**05-Apr-2023**	**12-Apr-2023**	19-Apr-2023	✓	**13-Apr-2023**	19-Apr-2023	✓
EP074F: Halogenated Aromatic Compounds							
Amber VOC Vial - Sulfuric Acid (EP074) BADDS, BADMS, BADUS, COSDS, COSUS, HINDS, HINUS, ROPDS, ROPUS	**04-Apr-2023**	**12-Apr-2023**	18-Apr-2023	✓	**13-Apr-2023**	18-Apr-2023	✓
Amber VOC Vial - Sulfuric Acid (EP074) KEMDS	**05-Apr-2023**	**12-Apr-2023**	19-Apr-2023	✓	**12-Apr-2023**	19-Apr-2023	✓
Amber VOC Vial - Sulfuric Acid (EP074) KEMUS, SOUDS, SOUUS	**05-Apr-2023**	**12-Apr-2023**	19-Apr-2023	✓	**13-Apr-2023**	19-Apr-2023	✓
EP074G: Trihalomethanes							
Amber VOC Vial - Sulfuric Acid (EP074) BADDS, BADMS, BADUS, COSDS, COSUS, HINDS, HINUS, ROPDS, ROPUS	**04-Apr-2023**	**12-Apr-2023**	18-Apr-2023	✓	**13-Apr-2023**	18-Apr-2023	✓
Amber VOC Vial - Sulfuric Acid (EP074) KEMDS	**05-Apr-2023**	**12-Apr-2023**	19-Apr-2023	✓	**12-Apr-2023**	19-Apr-2023	✓
Amber VOC Vial - Sulfuric Acid (EP074) KEMUS, SOUDS, SOUUS	**05-Apr-2023**	**12-Apr-2023**	19-Apr-2023	✓	**13-Apr-2023**	19-Apr-2023	✓

Matrix: **WATER**

Evaluation: × = Holding time breach ; ✓ = Within holding time.

Method / Container / Client Sample ID(s)	Sample Date	Extraction / Preparation			Analysis		
		Date extracted	Due for extraction	Evaluation	Date analysed	Due for analysis	Evaluation
EP075(SIM)A: Phenolic Compounds							
Amber Glass Bottle - Unpreserved (EP075(SIM))							
BADDS, BADMS, BADUS, COSDS, COSUS, HINDS, HINUS, ROPDS, ROPUS	**04-Apr-2023**	**11-Apr-2023**	11-Apr-2023	✓	**13-Apr-2023**	21-May-2023	✓
Amber Glass Bottle - Unpreserved (EP075(SIM))							
KEMDS, KEMUS, SOUDS, SOUUS	**05-Apr-2023**	**11-Apr-2023**	12-Apr-2023	✓	**13-Apr-2023**	21-May-2023	✓
EP075(SIM)B: Polynuclear Aromatic Hydrocarbons							
Amber Glass Bottle - Unpreserved (EP075(SIM))							
BADDS, BADMS, BADUS, COSDS, COSUS, HINDS, HINUS, ROPDS, ROPUS	**04-Apr-2023**	**11-Apr-2023**	11-Apr-2023	✓	**13-Apr-2023**	21-May-2023	✓
Amber Glass Bottle - Unpreserved (EP075(SIM))							
KEMDS, KEMUS, SOUDS, SOUUS	**05-Apr-2023**	**11-Apr-2023**	12-Apr-2023	✓	**13-Apr-2023**	21-May-2023	✓
EP080: BTEXN							
Amber VOC Vial - Sulfuric Acid (EP080)							
BADDS, BADMS, BADUS, COSDS, COSUS, HINDS, HINUS, ROPDS, ROPUS	**04-Apr-2023**	**12-Apr-2023**	18-Apr-2023	✓	**13-Apr-2023**	18-Apr-2023	✓
Amber VOC Vial - Sulfuric Acid (EP080)							
KEMDS	**05-Apr-2023**	**12-Apr-2023**	19-Apr-2023	✓	**12-Apr-2023**	19-Apr-2023	✓
Amber VOC Vial - Sulfuric Acid (EP080)							
KEMUS, SOUDS, SOUUS	**05-Apr-2023**	**12-Apr-2023**	19-Apr-2023	✓	**13-Apr-2023**	19-Apr-2023	✓

Matrix: **WATER**

Evaluation: × = Holding time breach ; ✓ = Within holding time.

Method / Container / Client Sample ID(s)	Sample Date	Extraction / Preparation			Analysis		
		Date extracted	Due for extraction	Evaluation	Date analysed	Due for analysis	Evaluation
EP131A: Organochlorine Pesticides							
Amber Glass Bottle - Unpreserved (EP131A)							
BADDS, BADMS, BADUS, COSDS, COSUS, HINDS, HINUS, ROPDS	**04-Apr-2023**	**06-Apr-2023**	11-Apr-2023	✓	**15-Apr-2023**	16-May-2023	✓
Amber Glass Bottle - Unpreserved (EP131A)							
ROPUS	**04-Apr-2023**	**06-Apr-2023**	11-Apr-2023	✓	**16-Apr-2023**	16-May-2023	✓
Amber Glass Bottle - Unpreserved (EP131A)							
KEMDS, KEMUS	**05-Apr-2023**	**06-Apr-2023**	12-Apr-2023	✓	**15-Apr-2023**	16-May-2023	✓
Amber Glass Bottle - Unpreserved (EP131A)							
SOUDS, SOUUS	**05-Apr-2023**	**06-Apr-2023**	12-Apr-2023	✓	**16-Apr-2023**	16-May-2023	✓
EP234A: OP Pesticides							
Amber Glass Bottle - Unpreserved (EP234-1x)							
BADDS, BADMS, BADUS, COSDS, COSUS, HINDS, HINUS, ROPDS, ROPUS	**04-Apr-2023**	**----**	----	----	**06-Apr-2023**	11-Apr-2023	✓
Amber Glass Bottle - Unpreserved (EP234-1x)							
KEMDS, KEMUS, SOUDS, SOUUS	**05-Apr-2023**	**----**	----	----	**06-Apr-2023**	12-Apr-2023	✓

Quality Control Parameter Frequency Compliance

The following report summarises the frequency of laboratory QC samples analysed within the analytical lot(s) in which the submitted sample(s) was(were) processed. Actual rate should be greater than or equal to the expected rate. A listing of breaches is provided in the Summary of Outliers.

Matrix: **WATER**

Evaluation: × = Quality Control frequency not within specification ; ✓ = Quality Control frequency within specification.

Quality Control Sample Type		Count		Rate (%)			Quality Control Specification
Analytical Methods	*Method*	*QC*	*Regular*	***Actual***	***Expected***	*Evaluation*	
Laboratory Duplicates (DUP)							
Ammonia as N by Discrete analyser	EK055G	4	31	**12.90**	**10.00**	✓	NEPM 2013 B3 & ALS QC Standard
Nitrite and Nitrate as N (NOx) by Discrete Analyser	EK059G	2	19	**10.53**	**10.00**	✓	NEPM 2013 B3 & ALS QC Standard
Nitrite as N by Discrete Analyser	EK057G	6	50	**12.00**	**10.00**	✓	NEPM 2013 B3 & ALS QC Standard
Organochlorine Pesticides (Ultra-trace)	EP131A	2	18	**11.11**	**10.00**	✓	NEPM 2013 B3 & ALS QC Standard
PAH/Phenols (GC/MS - SIM)	EP075(SIM)	2	13	**15.38**	**10.00**	✓	NEPM 2013 B3 & ALS QC Standard
Pesticides by LCMSMS (Positive Ion Mode)	EP234-1	2	15	**13.33**	**10.00**	✓	NEPM 2013 B3 & ALS QC Standard
Pesticides by LCMSMS (Positive Ion Mode) - extended	EP234-1x	2	13	**15.38**	**10.00**	✓	NEPM 2013 B3 & ALS QC Standard
Reactive Phosphorus as P-By Discrete Analyser	EK071G	5	45	**11.11**	**10.00**	✓	NEPM 2013 B3 & ALS QC Standard
Suspended Solids (High Level)	EA025H	4	39	**10.26**	**10.00**	✓	NEPM 2013 B3 & ALS QC Standard
Total Dissolved Solids (High Level)	EA015H	4	39	**10.26**	**10.00**	✓	NEPM 2013 B3 & ALS QC Standard
Total Kjeldahl Nitrogen as N By Discrete Analyser	EK061G	2	19	**10.53**	**10.00**	✓	NEPM 2013 B3 & ALS QC Standard
Total Mercury by FIMS	EG035T	2	20	**10.00**	**10.00**	✓	NEPM 2013 B3 & ALS QC Standard
Total Metals by ICP-MS - Suite A	EG020A-T	2	15	**13.33**	**10.00**	✓	NEPM 2013 B3 & ALS QC Standard
Total Phosphorus as P By Discrete Analyser	EK067G	2	19	**10.53**	**10.00**	✓	NEPM 2013 B3 & ALS QC Standard
TRH Volatiles/BTEX	EP080	2	17	**11.76**	**10.00**	✓	NEPM 2013 B3 & ALS QC Standard
Volatile Organic Compounds	EP074	2	20	**10.00**	**10.00**	✓	NEPM 2013 B3 & ALS QC Standard
Laboratory Control Samples (LCS)							
Ammonia as N by Discrete analyser	EK055G	2	31	**6.45**	**5.00**	✓	NEPM 2013 B3 & ALS QC Standard
Chlorophyll a and Pheophytin a	EP008	1	20	**5.00**	**5.00**	✓	NEPM 2013 B3 & ALS QC Standard
Nitrite and Nitrate as N (NOx) by Discrete Analyser	EK059G	1	19	**5.26**	**5.00**	✓	NEPM 2013 B3 & ALS QC Standard
Nitrite as N by Discrete Analyser	EK057G	3	50	**6.00**	**5.00**	✓	NEPM 2013 B3 & ALS QC Standard
Oil and Grease	EP020	3	40	**7.50**	**8.00**	×	NEPM 2013 B3 & ALS QC Standard
Organochlorine Pesticides (Ultra-trace)	EP131A	1	18	**5.56**	**5.00**	✓	NEPM 2013 B3 & ALS QC Standard
PAH/Phenols (GC/MS - SIM)	EP075(SIM)	1	13	**7.69**	**5.00**	✓	NEPM 2013 B3 & ALS QC Standard
Pesticides by LCMSMS (Positive Ion Mode)	EP234-1	1	15	**6.67**	**5.00**	✓	NEPM 2013 B3 & ALS QC Standard
Pesticides by LCMSMS (Positive Ion Mode) - extended	EP234-1x	1	13	**7.69**	**5.00**	✓	NEPM 2013 B3 & ALS QC Standard
Reactive Phosphorus as P-By Discrete Analyser	EK071G	3	45	**6.67**	**5.00**	✓	NEPM 2013 B3 & ALS QC Standard
Suspended Solids (High Level)	EA025H	6	39	**15.38**	**15.00**	✓	NEPM 2013 B3 & ALS QC Standard
Total Dissolved Solids (High Level)	EA015H	6	39	**15.38**	**15.00**	✓	NEPM 2013 B3 & ALS QC Standard
Total Kjeldahl Nitrogen as N By Discrete Analyser	EK061G	3	19	**15.79**	**15.00**	✓	NEPM 2013 B3 & ALS QC Standard
Total Mercury by FIMS	EG035T	1	20	**5.00**	**5.00**	✓	NEPM 2013 B3 & ALS QC Standard
Total Metals by ICP-MS - Suite A	EG020A-T	1	15	**6.67**	**5.00**	✓	NEPM 2013 B3 & ALS QC Standard
Total Phosphorus as P By Discrete Analyser	EK067G	3	19	**15.79**	**15.00**	✓	NEPM 2013 B3 & ALS QC Standard
TRH Volatiles/BTEX	EP080	1	17	**5.88**	**5.00**	✓	NEPM 2013 B3 & ALS QC Standard
Volatile Organic Compounds	EP074	1	20	**5.00**	**5.00**	✓	NEPM 2013 B3 & ALS QC Standard
Method Blanks (MB)							

Matrix: **WATER**

Evaluation: × = Quality Control frequency not within specification ; ✓ = Quality Control frequency within specification.

Quality Control Sample Type		Count		Rate (%)			Quality Control Specification
Analytical Methods	*Method*	*QC*	*Regular*	***Actual***	***Expected***	*Evaluation*	
Method Blanks (MB) - Continued							
Ammonia as N by Discrete analyser	EK055G	2	31	**6.45**	**5.00**	✓	NEPM 2013 B3 & ALS QC Standard
Chlorophyll a and Pheophytin a	EP008	1	20	**5.00**	**5.00**	✓	NEPM 2013 B3 & ALS QC Standard
Nitrite and Nitrate as N (NOx) by Discrete Analyser	EK059G	1	19	**5.26**	**5.00**	✓	NEPM 2013 B3 & ALS QC Standard
Nitrite as N by Discrete Analyser	EK057G	3	50	**6.00**	**5.00**	✓	NEPM 2013 B3 & ALS QC Standard
Oil and Grease	EP020	3	40	**7.50**	**6.00**	✓	NEPM 2013 B3 & ALS QC Standard
Organochlorine Pesticides (Ultra-trace)	EP131A	1	18	**5.56**	**5.00**	✓	NEPM 2013 B3 & ALS QC Standard
PAH/Phenols (GC/MS - SIM)	EP075(SIM)	1	13	**7.69**	**5.00**	✓	NEPM 2013 B3 & ALS QC Standard
Pesticides by LCMSMS (Positive Ion Mode)	EP234-1	1	15	**6.67**	**5.00**	✓	NEPM 2013 B3 & ALS QC Standard
Pesticides by LCMSMS (Positive Ion Mode) - extended	EP234-1x	1	13	**7.69**	**5.00**	✓	NEPM 2013 B3 & ALS QC Standard
Reactive Phosphorus as P-By Discrete Analyser	EK071G	3	45	**6.67**	**5.00**	✓	NEPM 2013 B3 & ALS QC Standard
Suspended Solids (High Level)	EA025H	2	39	**5.13**	**5.00**	✓	NEPM 2013 B3 & ALS QC Standard
Total Dissolved Solids (High Level)	EA015H	2	39	**5.13**	**5.00**	✓	NEPM 2013 B3 & ALS QC Standard
Total Kjeldahl Nitrogen as N By Discrete Analyser	EK061G	1	19	**5.26**	**5.00**	✓	NEPM 2013 B3 & ALS QC Standard
Total Mercury by FIMS	EG035T	1	20	**5.00**	**5.00**	✓	NEPM 2013 B3 & ALS QC Standard
Total Metals by ICP-MS - Suite A	EG020A-T	1	15	**6.67**	**5.00**	✓	NEPM 2013 B3 & ALS QC Standard
Total Phosphorus as P By Discrete Analyser	EK067G	1	19	**5.26**	**5.00**	✓	NEPM 2013 B3 & ALS QC Standard
TRH Volatiles/BTEX	EP080	1	17	**5.88**	**5.00**	✓	NEPM 2013 B3 & ALS QC Standard
Volatile Organic Compounds	EP074	1	20	**5.00**	**5.00**	✓	NEPM 2013 B3 & ALS QC Standard
Matrix Spikes (MS)							
Ammonia as N by Discrete analyser	EK055G	2	31	**6.45**	**5.00**	✓	NEPM 2013 B3 & ALS QC Standard
Nitrite and Nitrate as N (NOx) by Discrete Analyser	EK059G	1	19	**5.26**	**5.00**	✓	NEPM 2013 B3 & ALS QC Standard
Nitrite as N by Discrete Analyser	EK057G	3	50	**6.00**	**5.00**	✓	NEPM 2013 B3 & ALS QC Standard
Organochlorine Pesticides (Ultra-trace)	EP131A	1	18	**5.56**	**5.00**	✓	NEPM 2013 B3 & ALS QC Standard
PAH/Phenols (GC/MS - SIM)	EP075(SIM)	1	13	**7.69**	**5.00**	✓	NEPM 2013 B3 & ALS QC Standard
Pesticides by LCMSMS (Positive Ion Mode)	EP234-1	1	15	**6.67**	**5.00**	✓	NEPM 2013 B3 & ALS QC Standard
Pesticides by LCMSMS (Positive Ion Mode) - extended	EP234-1x	1	13	**7.69**	**5.00**	✓	NEPM 2013 B3 & ALS QC Standard
Reactive Phosphorus as P-By Discrete Analyser	EK071G	3	45	**6.67**	**5.00**	✓	NEPM 2013 B3 & ALS QC Standard
Total Kjeldahl Nitrogen as N By Discrete Analyser	EK061G	1	19	**5.26**	**5.00**	✓	NEPM 2013 B3 & ALS QC Standard
Total Mercury by FIMS	EG035T	1	20	**5.00**	**5.00**	✓	NEPM 2013 B3 & ALS QC Standard
Total Metals by ICP-MS - Suite A	EG020A-T	1	15	**6.67**	**5.00**	✓	NEPM 2013 B3 & ALS QC Standard
Total Phosphorus as P By Discrete Analyser	EK067G	1	19	**5.26**	**5.00**	✓	NEPM 2013 B3 & ALS QC Standard
TRH Volatiles/BTEX	EP080	1	17	**5.88**	**5.00**	✓	NEPM 2013 B3 & ALS QC Standard
Volatile Organic Compounds	EP074	1	20	**5.00**	**5.00**	✓	NEPM 2013 B3 & ALS QC Standard

Brief Method Summaries

The analytical procedures used by the Environmental Division have been developed from established internationally recognized procedures such as those published by the US EPA, APHA, AS and NEPM. In house developed procedures are employed in the absence of documented standards or by client request. The following report provides brief descriptions of the analytical procedures employed for results reported in the Certificate of Analysis. Sources from which ALS methods have been developed are provided within the Method Descriptions.

Analytical Methods	Method	Matrix	Method Descriptions
Total Dissolved Solids (High Level)	EA015H	WATER	In house: Referenced to APHA 2540C. A gravimetric procedure that determines the amount of `filterable` residue in an aqueous sample. A well-mixed sample is filtered through a glass fibre filter (1.2um). The filtrate is evaporated to dryness and dried to constant weight at 180+/-5C. This method is compliant with NEPM Schedule B(3)
Suspended Solids (High Level)	EA025H	WATER	In house: Referenced to APHA 2540D. A gravimetric procedure employed to determine the amount of `non-filterable` residue in a aqueous sample. The prescribed GFC (1.2um) filter is rinsed with deionised water, oven dried and weighed prior to analysis. A well-mixed sample is filtered through a glass fibre filter (1.2um). The residue on the filter paper is dried at 104+/-2C . This method is compliant with NEPM Schedule B(3)
Hardness as CaCO3	EA065	WATER	In house: Referenced to APHA 2340 B. This method is compliant with NEPM Schedule B(3)
Total Metals by ICP-MS - Suite A	EG020A-T	WATER	In house: Referenced to APHA 3125; USEPA SW846 - 6020, ALS QWI-EN/EG020. The ICPMS technique utilizes a highly efficient argon plasma to ionize selected elements. Ions are then passed into a high vacuum mass spectrometer, which separates the analytes based on their distinct mass to charge ratios prior to their measurement by a discrete dynode ion detector.
Total Mercury by FIMS	EG035T	WATER	In house: Referenced to APHA 3112 Hg - B (Flow-injection (SnCl2)(Cold Vapour generation) AAS) FIM-AAS is an automated flameless atomic absorption technique. A bromate/bromide reagent is used to oxidise any organic mercury compounds in the unfiltered sample. The ionic mercury is reduced online to atomic mercury vapour by SnCl2 which is then purged into a heated quartz cell. Quantification is by comparing absorbance against a calibration curve. This method is compliant with NEPM Schedule B(3).
Ammonia as N by Discrete analyser	EK055G	WATER	In house: Referenced to APHA 4500-NH3 G Ammonia is determined by direct colorimetry by Discrete Analyser. This method is compliant with NEPM Schedule B(3)
Nitrite as N by Discrete Analyser	EK057G	WATER	In house: Referenced to APHA 4500-NO2- B. Nitrite is determined by direct colourimetry by Discrete Analyser. This method is compliant with NEPM Schedule B(3)
Nitrate as N by Discrete Analyser	EK058G	WATER	In house: Referenced to APHA 4500-NO3- F. Nitrate is reduced to nitrite by way of a chemical reduction followed by quantification by Discrete Analyser. Nitrite is determined seperately by direct colourimetry and result for Nitrate calculated as the difference between the two results. This method is compliant with NEPM Schedule B(3)
Nitrite and Nitrate as N (NOx) by Discrete Analyser	EK059G	WATER	In house: Referenced to APHA 4500-NO3- F. Combined oxidised Nitrogen (NO2+NO3) is determined by Chemical Reduction and direct colourimetry by Discrete Analyser. This method is compliant with NEPM Schedule B(3)
Total Kjeldahl Nitrogen as N By Discrete Analyser	EK061G	WATER	In house: Referenced to APHA 4500-Norg D (In house). An aliquot of sample is digested using a high temperature Kjeldahl digestion to convert nitrogenous compounds to ammonia. Ammonia is determined colorimetrically by discrete analyser. This method is compliant with NEPM Schedule B(3)
Total Nitrogen as N (TKN + Nox) By Discrete Analyser	EK062G	WATER	In house: Referenced to APHA 4500-Norg / 4500-NO3-. This method is compliant with NEPM Schedule B(3)
Total Phosphorus as P By Discrete Analyser	EK067G	WATER	In house: Referenced to APHA 4500-P H, Jirka et al, Zhang et al. This procedure involves sulphuric acid digestion of a sample aliquot to break phosphorus down to orthophosphate. The orthophosphate reacts with ammonium molybdate and antimony potassium tartrate to form a complex which is then reduced and its concentration measured at 880nm using discrete analyser. This method is compliant with NEPM Schedule B(3)

Analytical Methods	Method	Matrix	Method Descriptions
Reactive Phosphorus as P-By Discrete Analyser	EK071G	WATER	In house: Referenced to APHA 4500-P F Ammonium molybdate and potassium antimonyl tartrate reacts in acid medium with othophosphate to form a heteropoly acid -phosphomolybdic acid - which is reduced to intensely coloured molybdenum blue by ascorbic acid. Quantification is by Discrete Analyser. This method is compliant with NEPM Schedule B(3)
Chlorophyll a and Pheophytin a	EP008	WATER	In house: Referenced to APHA 10200 H. The pigments are extracted into aqueous acetone. The optical density of the extract before and after acidification at both 664 nm and 665 nm is determined spectrometrically.
Oil and Grease	EP020	WATER	In house: Referenced to APHA 5520 B. Oil & grease is a gravimetric procedure to determine the amount of dissolved or emulsified oil & grease residue in an aqueous sample. The sample is serially extracted three times n-hexane. The resultant extracts are combined, dehydrated and concentrated prior to gravimetric determination. This method is compliant with NEPM Schedule B(3)
Volatile Organic Compounds	EP074	WATER	In house: Referenced to USEPA SW 846 - 8260 Water samples are directly purged prior to analysis by Capillary GC/MS and quantification is by comparison against an established 5 point calibration curve. This method is compliant with NEPM Schedule B(3)
PAH/Phenols (GC/MS - SIM)	EP075(SIM)	WATER	In house: Referenced to USEPA SW 846 - 8270 Sample extracts are analysed by Capillary GC/MS in SIM Mode and quantification is by comparison against an established 5 point calibration curve. This method is compliant with NEPM Schedule B(3)
TRH Volatiles/BTEX	EP080	WATER	In house: Referenced to USEPA SW 846 - 8260 Water samples are directly purged prior to analysis by Capillary GC/MS and quantification is by comparison against an established 5 point calibration curve. Alternatively, a sample is equilibrated in a headspace vial and a portion of the headspace determined by GCMS analysis. This method is compliant with the QC requirements of NEPM Schedule B(3)
Organochlorine Pesticides (Ultra-trace)	EP131A	WATER	In house: Referenced to USEPA Method 3640 (GPC cleanup),3620 (Florisil), 8081/8082 (GC/µECD/uECD). This method is compliant with NEPM Schedule B(3)
Pesticides by LCMSMS (Positive Ion Mode)	EP234-1	WATER	In house: LC-MSMS, direct injection. A sample is filtered and injected directly onto the LC-MSMS. Analysis is by LC/MSMS, ESI Positive Mode.
Pesticides by LCMSMS (Positive Ion Mode) - extended	EP234-1x	WATER	In house: LC-MSMS, direct injection. A sample is filtered and injected directly onto the LC-MSMS. Analysis is by LC/MSMS, ESI Positive Mode.

Preparation Methods	Method	Matrix	Method Descriptions
TKN/TP Digestion	EK061/EK067	WATER	In house: Referenced to APHA 4500 Norg - D; APHA 4500 P - H. This method is compliant with NEPM Schedule B(3)
Digestion for Total Recoverable Metals	EN25	WATER	In house: Referenced to USEPA SW846-3005. Method 3005 is a Nitric/Hydrochloric acid digestion procedure used to prepare surface and ground water samples for analysis by ICPAES or ICPMS. This method is compliant with NEPM Schedule B(3)
Separatory Funnel Extraction of Liquids	ORG14	WATER	In house: Referenced to USEPA SW 846 - 3510 100 mL to 1L of sample is transferred to a separatory funnel and serially extracted three times using DCM for each extract. The resultant extracts are combined, dehydrated and concentrated for analysis. This method is compliant with NEPM Schedule B(3) . ALS default excludes sediment which may be resident in the container.
Sep. Funnel Extraction of Liquids (Ultra-trace pesticides.)	ORG14-UTP	WATER	In house: Referenced to USEPA 3510 Samples are extracted into dichloromethane, concentrated and exchanged into an apporpriate solvent for GPC and florisil cleanup as required. This method is compliant with NEPM Schedule B(3) . ALS default excludes sediment which may be resident in the container.
Volatiles Water Preparation	ORG16-W	WATER	A 5 mL aliquot or 5 mL of a diluted sample is added to a 40 mL VOC vial for purging.

CHAIN OF CUSTODY

ALS Laboratory: please tick →

Lab / Analyst: Eurofins - SWDUP2 GWDUP2

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ALBURY 31 Dalton Street Albury NSW 2640 Ph: 02 6043 5933 E: samples.albury@alsglobal.com
Environmental Division Sydney
Work Order Reference
ES2311425
Telephone : +61-2-8784 8555

Reporting Client / Date:

CLIENT: GHD Pty Ltd	TURNAROUND REQUIREMENT: ☐ Standard TAT (List due date): Courier / STANDARD TAT		FOR LAB
OFFICE: Sydney	(Standard TAT may be longer for some tests e.g., Ultra Trace Organics) ☐ Non Standard or urgent TAT (List due date):		Custody Se
PROJECT: M12 Surface Water	ALS QUOTE NO.: SY/322/21	COC SEQUENCE NUMBER (Circle)	Free Ice / fr
ORDER NUMBER: 12554717		COC: 1 2 3 4 5 6 7	Random Sa
PROJECT MANAGER: Henry Luo	CONTACT PH: Henry Luo 0414 090 002	OF: 1 2 3 4 5 6 7	Other comm
SAMPLER: Terry Nham, Emily Smith	SAMPLER MOBILE: 0403 251 883	RELINQUISHED BY:	RECEIVED BY:
COC emailed to ALS? (YES / NO)	EDD FORMAT (or default): ESDAT	Emily Smith - GHD	Jack
Email Reports to: henry.luo@ghd.com , ghdlabreports@ghd.com; terry.nham@ghd.com, emily.smith@ghd.com		DATE/TIME: 5/4/23 2:15pm	DATE/TIME: 05/04/23 1415

Attached By PO / Internal Sheet

RELINQUISHED: Zack DATE/TIME: 12pm 6/4/23

Standard

3/4 8/05

COMMENTS/SPECIAL HANDLING/STORAGE OR DISPOSAL:

ALS USE	SAMPLE DETAILS MATRIX: SOLID (S) WATER (W)				CONTAINER INFORMATION	ANALYSIS REQUIRED Including SUITES (NB. Suite Codes must be listed to attract suite price) Where Metals are required, specify Total (unfiltered bottle required) or Dissolved (field filtered bottle required).													
LAB ID	SAMPLE ID	DATE / TIME	MATRIX	Comments	TOTAL CONTAINERS	W-02T (8 total metals)	EG020T (total Fe, Mn)	NT-08A (total N, No2, No3, NH3, Total P, reactive P)	EP008 (chlorophyll a)	EP020 (oil & grease)	UTO-9W Ultra trace OC/OP	EP074DEFG (VOC - fugigants, Hal aliphatics, Hal Aromatics, THM)	[redacted] HARDNESS	W-14A (PAH/phenols)	EA015H (TDS), EA025H (TSS)	EP080 (BTEXN)	Ultra trace OPP (EP234AX)	Super Ultra Trace PCB's (EP1318-ST)	PFAS - full suite (EP231X)
1	BADDS	4/4/23	Water		11	X	X	X	X	X	X	X	X	X	X	X			
2	BADMS	4/4/23	Water		11	X	X	X	X	X	X	X	X	X	X	X			
3	BADUS	4/4/23	Water		11	X	X	X	X	X	X	X	X	X	X	X			
4	COSDS	4/4/23	Water		11	X	X	X	X	X	X	X	X	X	X	X			
5	COSUS	4/4/23	Water		11	X	X	X	X	X	X	X	X	X	X	X			
6	HINDS	4/4/23	Water		11	X	X	X	X	X	X	X	X	X	X	X			
7	HINUS	4/4/23	Water		11	X	X	X	X	X	X	X	X	X	X	X			
8	KEMDS	5/4/23	Water		11	X	X	X	X	X	X	X	X	X	X	X			
9	KEMUS	5/4/23	Water		11	X	X	X	X	X	X	X	X	X	X	X			
10	ROPDS	4/4/23	Water		11	X	X	X	X	X	X	X	X	X	X	X			
11	ROPUS	4/4/23	Water		11	X	X	X	X	X	X	X	X	X	X	X			
12	SOUDS	5/4/23	Water		11	X	X	X	X	X	X	X	X	X	X	X			
13	SOUUS	5/4/23	Water		11	X	X	X	X	X	X	X	X	X	X	X			
14	SWDUP1	5/4/23	Water		1	X													
—	SWDUP 2	5/4/23	Water	FORWARD TO EUROFINS WITH ATTACHED COC	1														
—	GWDUP 2	4/4/23	Water		1														

HT

979752

eurofins mgt

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CHAIN OF CUSTODY RECORD

CLIENT DETAILS Page 1 of 1

Company Name : GHD Pty Ltd, Sydney	**Contact Name :** Terry Nham 0403 251 883	**Purchase Order :** 12554717	**COC Number :**
Office Address :	**Project Manager:** Henry Luo	**PROJECT Number :** 12554717	**Eurofins | mgt quote ID :**
Level 15, 133 Castlereagh Street, Sydney NSW 2000	**Email for results :** emily.smith@ghd.com; terry.nham@ghd.com; henry.luo@ghd.com; ghdlabreports@ghd.com	**PROJECT Name :** M12 Water Sampling	**Data output format:** ESDAT

Special Directions & Comments :

Sent from ALS

Eurofins | mgt DI water batch number:

	Sample ID	Date	Matrix	Dissolved metals	Total metals					
1	SWDUP2	5/4/23	water		X					
2	GWDUP2	5/4/23	water	X						
3										
4										
5										
6										
7										
8										
9										
10										

Some common holding times (with correct preservation).
For further information contact the lab

Waters		Soils	
BTEX, MAH, VOC	14 days	BTEX, MAH, VOC	14 days
TRH, PAH, Phenols, Pesticides	7 days	TRH, PAH, Phenols, Pesticides	14 days
Heavy Metals	6 months	Heavy Metals	6 months
Mercury, CrVI	28 days	Mercury, CrVI	28 days
Microbiological testing	24 hours	Microbiological testing	72 hours
BOD, Nitrate, Nitrite, Total N	2 days	Anions	28 days
Solids - TSS, TDS etc	7 days	SPOCAS, pH Field and FOX, CrS	24 hours
Ferrous iron	7 days	ASLP, TCLP	7 days

Containers:								Sample comments:
500P	250P	60P	1LA	40mL vial	200mL A	Jar	Bag	

Laboratory Staff		Method Of Shipment	
Relinquished By: ~~Terry Nham (GHD)~~ Emily Smith (GHD)	**Received By:**	☐ Courier ☐ Hand Delivered ☐ Postal	**Temperature on arrival:**
Date & Time : 5/4/23 2:15 pm	**Date & Time :**	**Courier Consignment # :**	**Report number:**
Signature: eSmith	**Signature:**		

979752

eurofins | Environment Testing

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Christchurch 7675
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IANZ# 1290

Sample Receipt Advice

Company name:	GHD Pty Ltd NSW
Contact name:	Henry Luo
Project name:	M12 WATER SAMPLING
Project ID:	12554717
Turnaround time:	5 Day
Date/Time received	Apr 6, 2023 5:05 PM
Eurofins reference	979752

Sample Information

✓	A detailed list of analytes logged into our LIMS, is included in the attached summary table.
✓	Sample Temperature of chilled sample on the batch as recorded by Eurofins Sample Receipt : 3.1 degrees Celsius.
✓	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.
X	Split sample sent to requested external lab.
X	Some samples have been subcontracted.
N/A	Custody Seals intact (if used).

Notes

Contact

If you have any questions with respect to these samples, please contact your Analytical Services Manager:

Quinn Raw on phone : or by email: QuinnRaw@eurofins.com

Results will be delivered electronically via email to Henry Luo - henry.luo@ghd.com.

Note: A copy of these results will also be delivered to the general GHD Pty Ltd NSW email address.

GHD Pty Ltd NSW
Level 15, 133 Castlereagh Street
Sydney
NSW 2000

NATA Accredited
Accreditation Number 1261
Site Number 18217

Accredited for compliance with ISO/IEC 17025 – Testing
NATA is a signatory to the ILAC Mutual Recognition Arrangement for the mutual recognition of the equivalence of testing, medical testing, calibration, inspection, proficiency testing scheme providers and reference materials producers reports and certificates.

Attention: **Henry Luo**

Report **979752-W**
Project name M12 WATER SAMPLING
Project ID 12554717
Received Date Apr 06, 2023

Client Sample ID			**SWDUP2**	**GWDUP2**
Sample Matrix			**Water**	**Water**
Eurofins Sample No.			**S23-Ap0020709**	**S23-Ap0020710**
Date Sampled			**Apr 05, 2023**	**Apr 05, 2023**
Test/Reference	LOR	Unit		
Heavy Metals				
Arsenic	0.001	mg/L	< 0.01	-
Arsenic (filtered)	0.001	mg/L	-	0.001
Cadmium	0.0002	mg/L	< 0.002	-
Cadmium (filtered)	0.0002	mg/L	-	< 0.0002
Chromium	0.001	mg/L	< 0.01	-
Chromium (filtered)	0.001	mg/L	-	< 0.001
Copper	0.001	mg/L	< 0.01	-
Copper (filtered)	0.001	mg/L	-	0.004
Lead	0.001	mg/L	< 0.01	-
Lead (filtered)	0.001	mg/L	-	< 0.001
Mercury	0.0001	mg/L	< 0.001	-
Mercury (filtered)	0.0001	mg/L	-	< 0.0001
Nickel	0.001	mg/L	< 0.01	-
Nickel (filtered)	0.001	mg/L	-	0.005
Zinc	0.005	mg/L	< 0.05	-
Zinc (filtered)	0.005	mg/L	-	0.008

Sample History

Where samples are submitted/analysed over several days, the last date of extraction is reported.

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
Metals M8	Sydney	Apr 13, 2023	28 Days
- Method: LTM-MET-3040 Metals in Waters, Soils & Sediments by ICP-MS			
Metals M8 filtered	Sydney	Apr 13, 2023	28 Days
- Method: LTM-MET-3040 Metals in Waters, Soils & Sediments by ICP-MS			

eurofins

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IANZ# 1290

Company Name: GHD Pty Ltd NSW
Address: Level 15, 133 Castlereagh Street
Sydney
NSW 2000

Project Name: M12 WATER SAMPLING
Project ID: 12554717

Order No.: 12554717
Report #: 979752
Phone: 02 9239 7100
Fax: 02 9239 7199

Received: Apr 6, 2023 5:05 PM
Due: Apr 17, 2023
Priority: 5 Day
Contact Name: Henry Luo

Eurofins Analytical Services Manager : Quinn Raw

Sample Detail						Metals M8	Metals M8 filtered
Sydney Laboratory - NATA # 1261 Site # 18217						X	X
External Laboratory							
No	**Sample ID**	**Sample Date**	**Sampling Time**	**Matrix**	**LAB ID**		
1	SWDUP2	Apr 05, 2023		Water	S23-Ap0020709	X	
2	GWDUP2	Apr 05, 2023		Water	S23-Ap0020710		X
Test Counts						1	1

eurofins | Environment Testing

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.

Units

mg/kg: milligrams per kilogram
mg/L: milligrams per litre
µg/L: micrograms per litre
ppm: parts per million
ppb: parts per billion
%: Percentage
org/100 mL: Organisms per 100 millilitres
NTU: Nephelometric Turbidity Units
MPN/100 mL: Most Probable Number of organisms per 100 millilitres
CFU: Colony forming unit

Terms

APHA	American Public Health Association
COC	Chain of Custody
CP	Client Parent - QC was performed on samples pertaining to this report
CRM	Certified Reference Material (ISO17034) - reported as percent recovery.
Dry	Where a moisture has been determined on a solid sample the result is expressed on a dry basis.
Duplicate	A second piece of analysis from the same sample and reported in the same units as the result to show comparison.
LOR	Limit of Reporting.
LCS	Laboratory Control Sample - 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.
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.
RPD	Relative Percent Difference between two Duplicate pieces of analysis.
SPIKE	Addition of the analyte to the sample and reported as percentage recovery.
SRA	Sample Receipt Advice
Surr - Surrogate	The addition of a like compound to the analyte target and reported as percentage recovery.
TBTO	Tributyltin oxide (*bis*-tributyltin oxide) - individual tributyltin compounds cannot be identified separately in the environment however free tributyltin was measured and its values were converted stoichiometrically into tributyltin oxide for comparison with regulatory limits.
TCLP	Toxicity Characteristic Leaching Procedure
TEQ	Toxic Equivalency Quotient or Total Equivalence
QSM	US Department of Defense Quality Systems Manual Version 5.4
US EPA	United States Environmental Protection Agency
WA DWER	Sum of PFBA, PFPeA, PFHxA, PFHpA, PFOA, PFBS, PFHxS, PFOS, 6:2 FTSA, 8:2 FTSA

QC - Acceptance Criteria

The acceptance criteria should be used as a guide only and may be different when site specific Sampling Analysis and Quality Plan (SAQP) have been implemented

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%

NOTE: pH duplicates are reported as a range not as RPD

Surrogate Recoveries: Recoveries must lie between 20-130% for Speciated Phenols & 50-150% for PFAS

PFAS field samples that contain surrogate recoveries in excess of the QC limit designated in QSM 5.4 where no positive PFAS results have been reported have been reviewed and no data was affected.

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. 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.
4. Recovery Data (Spikes & Surrogates) - where chromatographic interference does not allow the determination of recovery the term "INT" appears against that analyte.
5. For Matrix Spikes and LCS results a dash "-" in the report means that the specific analyte was not added to the QC sample.
6. 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	
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	
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	
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							
Arsenic	%	90			80-120	Pass	
Arsenic (filtered)	%	107			80-120	Pass	
Cadmium	%	92			80-120	Pass	
Cadmium (filtered)	%	103			80-120	Pass	
Chromium	%	96			80-120	Pass	
Chromium (filtered)	%	105			80-120	Pass	
Copper	%	94			80-120	Pass	
Copper (filtered)	%	105			80-120	Pass	
Lead	%	92			80-120	Pass	
Lead (filtered)	%	102			80-120	Pass	
Mercury	%	98			80-120	Pass	
Mercury (filtered)	%	110			80-120	Pass	
Nickel	%	99			80-120	Pass	
Nickel (filtered)	%	106			80-120	Pass	
Zinc	%	92			80-120	Pass	
Zinc (filtered)	%	112			80-120	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	S23-Ap0025500	NCP	mg/L	0.002	0.004	61	30%	Fail	
Copper	S23-Ap0025500	NCP	mg/L	< 0.001	< 0.001	<1	30%	Pass	
Mercury	S23-Ap0025500	NCP	mg/L	< 0.0001	< 0.0001	<1	30%	Pass	
Zinc	R23-Ap0009206	NCP	mg/L	0.053	0.063	18	30%	Pass	
Duplicate									
Heavy Metals				Result 1	Result 2	RPD			
Arsenic (filtered)	S23-Ap0022063	NCP	mg/L	0.011	0.011	3.6	30%	Pass	
Cadmium (filtered)	S23-Ap0023831	NCP	mg/L	< 0.0002	< 0.0002	<1	30%	Pass	
Copper (filtered)	S23-Ap0022063	NCP	mg/L	0.002	0.003	11	30%	Pass	
Lead (filtered)	S23-Ap0022063	NCP	mg/L	< 0.001	< 0.001	<1	30%	Pass	
Mercury (filtered)	S23-Ap0022063	NCP	mg/L	< 0.0001	< 0.0001	<1	30%	Pass	
Nickel (filtered)	S23-Ap0022063	NCP	mg/L	0.005	0.005	14	30%	Pass	
Zinc (filtered)	S23-Ap0022063	NCP	mg/L	0.006	0.006	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:

Bonnie Pu	Analytical Services Manager
Mickael Ros	Senior Analyst-Metal

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

ALS Environmental

ALS Laboratory: please tick →

☐ BRISBANE 32 Shand Street Stafford QLD 4053 PO Box 1796 Fortitude Valley QLD 4006 Ph: 07 3243 7222 E: samples.brisbane@alsglobal.com
☐ MACKAY 78 Harbour Road Mackay QLD 4740 Ph: 07 4944 0177 E: samples.mackay@alsglobal.com
☐ TOWNSVILLE Unit 1, 2-4 Kenny Street Portsville QLD 4817 Ph: 07 4796 0600 E: samples.townsville@alsglobal.com
☐ GLADSTONE 1/2 Kitchener Road Gladstone QLD 4680 Ph: 07 4971 3636 E: samples.gladstone@alsglobal.com
☐ SYDNEY 277-289 Woodpark Road Smithfield NSW 2164 Ph: 02 8784 8555 E: samples.sydney@alsglobal.com
☐ NEWCASTLE 5 Rose Gum Road Warabrook NSW 2304 Ph: 02 4014 2500 E: samples.newcastle@alsglobal.com
☐ ADELAIDE 21 Burma Road Pooraka SA 5095 Ph: 08 8359 0890 E: samples.adelaide@alsglobal.com
☐ PERTH 10 Hod Way Malaga WA 6090 Ph: 08 9209 7655 E: samples.perth@alsglobal.com

Environmental Division Sydney

Work Order Reference

ES2314384

Telephone : +61-2-8784 8555

CLIENT: GHD Pty Ltd	**TURNAROUND REQUIREMENTS** (Standard TAT may be longer for some tests e.g., Ultra Trace Organics) ☐ Standard TAT **(List due date):**	STANDARD TAT	FO
OFFICE: Sydney	☐ Non Standard or urgent TAT **(List due date):**		Cus
PROJECT: M12 Surface Water	**ALS QUOTE NO.:** SY/322/21	**COC SEQUENCE NUMBER (Circle)**	Fre
ORDER NUMBER: 12554717		COC: 1 2 3 4 5 6 7	Ran
PROJECT MANAGER: Henry Luo	**CONTACT PH:** Henry Luo 0414 090 002	OF: 1 2 3 4 5 6 7	Oth

SAMPLER: Emily Smith	**SAMPLER MOBILE:** 0431 522 928	**RELINQUISHED BY:** Emily Smith	**RECEIVED BY:** Jack
COC emailed to ALS? (YES / NO)	**EDD FORMAT (or default):** ESDAT	DATE/TIME: 2/5/23 3:30pm	DATE/TIME: 02/05/23 1530
Email Reports to: henry.luo@ghd.com , ghdlabreports@ghd.com; terry.nham@ghd.com, emily.smith@ghd.com; andrew.duval@ghd.com			

COMMENTS/SPECIAL HANDLING/STORAGE OR DISPOSAL:

ALS USE	SAMPLE DETAILS MATRIX: SOLID (S) WATER (W)			CONTAINER INFORMATION		ANALYSIS REQUIRED including SUITES (NB. Suite Codes must be listed to attract suite price) Where **Metals** are required, specify **Total** (unfiltered bottle required) or **Dissolved** (field filtered bottle required).													
LAB ID	SAMPLE ID	DATE / TIME	MATRIX	Comments	TOTAL CONTAINERS	W-02T (8 total metals)	EG020T (total Fe, Mn)	NT-08A (total N, No2, No3, NH3, Total P, reactive P)	EP008 (chlorophyll a)	EP020 (oil & grease)	UTO-9W Ultra trace OC/OP	EP074DEFG (VOC - fumigants, Hal aliphatics, Hal Aromatics, THM)	MW006 (FC) Thermotolerant Coliforms	W-14A (PAH/phenols)	EA015H (TDS), EA025H (TSS)	EP080 (BTEXN)	Ultra trace OPP (EP234AX)	Super Utra Trace PCB's (EP1318-ST)	PFAS - full suite (EP231X)
1	BADDS	2/5/23	Water		11	X	X	X	X	X	X	X		X	X	X		X	
2	BADMS	2/5/23	Water		11	X	X	X	X	X	X	X		X	X	X		X	
3	BADUS	2/5/23	Water		11	X	X	X	X	X	X	X		X	X	X		X	
4	COSDS	2/5/23	Water		11	X	X	X	X	X	X	X		X	X	X		X	
5	COSUS	2/5/23	Water		11	X	X	X	X	X	X	X		X	X	X		X	
6	HINDS	1/5/23	Water		11	X	X	X	X	X	X	X		X	X	X		X	
7	HINUS	1/5/23	Water		11	X	X	X	X	X	X	X		X	X	X		X	
8	KEMDS	1/5/23	Water		11	X	X	X	X	X	X	X		X	X	X		X	
9	KEMUS	1/5/23	Water		11	X	X	X	X	X	X	X		X	X	X		X	
10	ROPDS	1/5/23	Water		11	X	X	X	X	X	X	X		X	X	X		X	
11	ROPUS	1/5/23	Water		11	X	X	X	X	X	X	X		X	X	X		X	
12	SOUDS	1/5/23	Water		11	X	X	X	X	X	X	X		X	X	X		X	
13	SOUUS	1/5/23	Water		11	X	X	X	X	X	X	X		X	X	X		X	
14	SWDUP1	1/5/23	Water		1	X													
—	SWDUP2	2/5/23	Water	PLEASE FORWARD TO EUROFINS WITH ATTACHED COC	1														
—	GWDUP2	2/5/23	Water	PLEASE FORWARD TO EUROFINS WITH ATTACHED COC	1														

HT

eurofins | mgt

☑ **Sydney**
Unit F3 - 6 Building F, 16 Mars Road, Lane Cove
Phone: +612 9900 8400
Email: enviro.syd@mgtlabmark.com.au

☐ **Brisbane**
Unit 1-21 Smallwood Place, Murrarie
Phone: +617 3902 4600
Email: enviro.bris@mgtlabmark.com.au

☐ **Melbourne**
2 Kingston Town Close, Oakleigh, VIC 3166
Phone: +613 8564 5000 Fax: +613 8564 5090
Email: enquiries.melb@mgtlabmark.com.au

CHAIN OF CUSTODY RECORD

CLIENT DETAILS

Company Name : GHD Pty Ltd, Sydney	**Contact Name :** Emily Smith 0431 522 928	**Purchase Order :** 12554717	**COC Number :**
Office Address :	**Project Manager:** Henry Luo 0414 090 002	**PROJECT Number :** 12554717	**Eurofins | mgt quote ID :**
Level 15, 133 Castlereagh Street, Sydney NSW 2000	**Email for results :** emily.smith@ghd.com; terry.nham@ghd.com; henry.luo@ghd.com; ghdlabreports@ghd.com	**PROJECT Name :** M12 Water Sampling	**Data output format:** ESDAT

Special Directions & Comments :

Sent from ALS

Eurofins | mgt DI water batch number:

	Sample ID	Date	Matrix	Dissolved metals	Total metals					
1	SWDUP2	2/5/23	Water		X					
2	GWDUP2	2/5/23	Water	X						
3										
4										
5										
6										
7										
8										
9										
10										

Some common holding times (with correct preservation).
For further information contact the lab

Waters		Soils	
BTEX, MAH, VOC	14 days	BTEX, MAH, VOC	14 days
TRH, PAH, Phenols, Pesticides	7 days	TRH, PAH, Phenols, Pesticides	14 days
Heavy Metals	6 months	Heavy Metals	6 months
Mercury, CrVI	28 days	Mercury, CrVI	28 days
Microbiological testing	24 hours	Microbiological testing	72 hours
BOD, Nitrate, Nitrite, Total N	2 days	Anions	28 days
Solids - TSS, TDS etc	7 days	SPOCAS, pH Field and FOX, CrS	24 hours
Ferrous iron	7 days	ASLP, TCLP	7 days

Containers:

500P	250P	60P	1LA	40mL vial	200mL A	Jar	Bag

Sample comments:

Laboratory Staff

Relinquished By: Emily Smith	**Received By:**
Date & Time : 2/5/23 3:30pm	**Date & Time :**
Signature: eSmith	**Signature:**

Method Of Shipment

☐ Courier
☐ Hand Delivered
☐ Postal
☐

Courier Consignment # :

Temperature on arrival:

Report number:

CHAIN OF CUSTODY

ALS Environmental

ALS Laboratory: please tick →

☐BRISBANE 32 Shand Street Stafford QLD 4053 Ph: 07 3243 7222 E: samples.brisbane@alsglobal.com
☐MACKAY 78 Harbour Road Mackay QLD 4740 Ph: 07 4944 0177 E: samples.mackay@alsglobal.com
☐TOWNSVILLE 14-15 Desma Court Garbutt QLD 4814 Ph: 07 4796 0600 E: samples.townsville@alsglobal.com
☐GLADSTONE 1/2 Kitchener Drive Gladstone QLD 4680 Ph: 07 4972 9626 E: gladstone@alsglobal.com
☐SYDNEY 277-289 Woodpark Road Smithfield NSW 2164 Ph: 02 8784 8555 E: samples.sydney@alsglobal.com
☐NEWCASTLE 5/19 Asquith Street Mayfield West NSW 2304 Ph: 02 4968 9433 E: samples.newcastle@alsglobal.com
☐WOLLONGONG 99 Kenny Street Wollongong NSW 2500 Ph: 02 4225 3125 E: samples.wollongong@alsglobal.com
☐ORANGE 1/10 Warrendine Street Orange NSW 2800 Ph: 02 6371 9000 E: samples.orange@alsglobal.com
☐DUBBO 10 Hilder Street Dubbo NSW 2830 Ph: 02 6882 0700 E: samples.dubbo@alsglobal.com
☐ALBURY 1/1 Dean Street Albury NSW 2640 Ph: 02 6021 0411 E: samples.albury@alsglobal.com
☐TAMWORTH 10 Hod Way Tamworth NSW 2340 Ph: 02 6755 8225 E: samples.tamworth@alsglobal.com
☐MUDGEE 4 Swift Street Mudgee NSW 2850 Ph: 02 6372 6735 E: samples.mudgee@alsglobal.com
☐GLENNIES CREEK 27 Dunlop Road Glennies Creek NSW 2330 Ph: 02 4990 2070 E: samples.gleniescreek@alsglobal.com
☐WAGGA WAGGA 2 Apollo Street Wagga Wagga NSW 2650 Ph: 02 6971 9696 E: samples.waggawagga@alsglobal.com
☐HUNTER VALLEY 4 Fortune Drive Seaham NSW 2324 Ph: 02 4014 2500 E: samples.huntervalley@alsglobal.com
☐PERTH 10 Hod Way Malaga WA 6090 Ph: 08 9209 7655 E: samples.perth@alsglobal.com

Environmental Division Sydney

Work Order Reference

ES2314384

Telephone : +61-2-8784 8555

CLIENT: GHD Pty Ltd	**TURNAROUND REQUIREMENTS:** ☐ Standard TAT (List due date):	STANDARD TAT	FO
OFFICE: Sydney	(Standard TAT may be longer for some tests e.g.. Ultra Trace Organics) ☐ Non Standard or urgent TAT (List due date):		Cus
PROJECT: M12 Surface Water	**ALS QUOTE NO.:** SY/322/21	COC SEQUENCE NUMBER (Circle)	Fre
ORDER NUMBER: 12554717		COC: 1 2 3 4 5 6 7	Ran
PROJECT MANAGER: Henry Luo	**CONTACT PH:** Henry Luo 0414 090 002	OF: 1 2 3 4 5 6 7	Oth

SAMPLER: Emily Smith	**SAMPLER MOBILE:** 0431 522 928	**RELINQUISHED BY:** Emily Smith	**RECEIVED BY:** Jack	**RELINQU**
COC emailed to ALS? (YES / NO)	**EDD FORMAT (or default):** ESDAT	DATE/TIME: 2/5/23 3:30pm	DATE/TIME: 02/05/23 1530	DATE/TI
Email Reports to: henry.luo@ghd.com , ghdlabreports@ghd.com; terry.nham@ghd.com, emily.smith@ghd.com; andrew.duval@ghd.com				

COMMENTS/SPECIAL HANDLING/STORAGE OR DISPOSAL:

ALS USE	SAMPLE DETAILS MATRIX: SOLID (S) WATER (W)			CONTAINER INFORMATION		ANALYSIS REQUIRED including SUITES (NB. Suite Codes must be listed to attract suite price) Where **Metals** are required, specify **Total** (unfiltered bottle required) or **Dissolved** (field filtered bottle required).													
LAB ID	SAMPLE ID	DATE / TIME	MATRIX	Comments	TOTAL CONTAINERS	W-02T (8 total metals)	EG020T (total Fe, Mn)	NT-08A (total N, No2, No3, NH3, Total P, reactive P)	EP008 (chlorophyll a)	EP020 (oil & grease)	UTO-9W Ultra trace OC/OP	EP074DEFG (VOC - fumigants, Hal aliphatics, Hal Aromatics, THM)	MW006 (FC) Thermotolerant Coliforms	W-14A (PAH/phenols)	EA015H (TDS), EA025H (TSS)	EP080 (BTEXN)	Ultra trace OPP (EP234AX)	Super Utra Trace PCB's (EP1318-ST)	PFAS - full suite (EP231X)
1	BADDS	2/5/23	Water		11	X	X	X	X	X	X	X		X	X	X		X	
2	BADMS	2/5/23	Water		11	X	X	X	X	X	X	X		X	X	X		X	
3	BADUS	2/5/23	Water		11	X	X	X	X	X	X	X		X	X	X		X	
4	COSDS	2/5/23	Water		11	X	X	X	X	X	X	X		X	X	X		X	
5	COSUS	2/5/23	Water		11	X	X	X	X	X	X	X		X	X	X		X	
6	HINDS	1/5/23	Water		11	X	X	X	X	X	X	X		X	X	X		X	
7	HINUS	1/5/23	Water		11	X	X	X	X	X	X	X		X	X	X		X	
8	KEMDS	1/5/23	Water		11	X	X	X	X	X	X	X		X	X	X		X	
9	KEMUS	1/5/23	Water		11	X	X	X	X	X	X	X		X	X	X		X	
10	ROPDS	1/5/23	Water		11	X	X	X	X	X	X	X		X	X	X		X	
11	ROPUS	1/5/23	Water		11	X	X	X	X	X	X	X		X	X	X		X	
12	SOUDS	1/5/23	Water		11	X	X	X	X	X	X	X		X	X	X		X	
13	SOUUS	1/5/23	Water		11	X	X	X	X	X	X	X		X	X	X		X	
14	SWDUP1	1/5/23	Water		1	X													
—	SWDUP2	2/5/23	Water	PLEASE FORWARD TO EUROFINS WITH ATTACHED COC	1														
—	GWDUP2	2/5/23	Water	PLEASE FORWARD TO EUROFINS WITH ATTACHED COC	1														

HT

SAMPLE RECEIPT NOTIFICATION (SRN)

Work Order : **ES2314384**

Client	: **GHD PTY LTD**	Laboratory	: Environmental Division Sydney
Contact	: MR HENRY LUO	Contact	: Sarah Mathew
Address	: LEVEL 15, 133 CASTLEREAGH STREET SYDNEY NSW, AUSTRALIA 2000	Address	: 277-289 Woodpark Road Smithfield NSW Australia 2164
E-mail	: henry.luo@ghd.com	E-mail	: sarah.mathew@alsglobal.com
Telephone	: +61 02 9239 7100	Telephone	: +61-2-8784 8555
Facsimile	: +61 02 9239 7199	Facsimile	: +61-2-8784 8500
Project	: M12 SURFACE WATER	Page	: 1 of 3
Order number	: 12554717	Quote number	: ES2021GHDSER0026 (SY/322/21)
C-O-C number	: ----	QC Level	: NEPM 2013 B3 & ALS QC Standard
Site	:		
Sampler	: Emily Smith		

Dates

Date Samples Received	: 02-May-2023 15:30	Issue Date	: 02-May-2023
Client Requested Due Date	: 09-May-2023	Scheduled Reporting Date	: **09-May-2023**

Delivery Details

Mode of Delivery	: Undefined	Security Seal	: Not Available
No. of coolers/boxes	: ----	Temperature	: ----
Receipt Detail	:	No. of samples received / analysed	: 14 / 14

General Comments

- This report contains the following information:
  - Sample Container(s)/Preservation Non-Compliances
  - Summary of Sample(s) and Requested Analysis
  - Proactive Holding Time Report
  - Requested Deliverables
- **Sample ID SWDUP2 & GWDUP2 will be forwarded to Eurofins as per COC.**
- **Please refer to the Proactive Holding Time Report table below which summarises breaches of recommended holding times that have occurred prior to samples/instructions being received at the laboratory. The laboratory will process these samples unless instructions are received from you indicating you do not wish to proceed. The absence of this summary table indicates that all samples have been received within the recommended holding times for the analysis requested.**
- **Sample(s) requiring volatile organic compound analysis received in airtight containers (ZHE).**
- Please direct any queries you have regarding this work order to the above ALS laboratory contact.
- Analytical work for this work order will be conducted at ALS Sydney.
- Sample Disposal - Aqueous (3 weeks), Solid (2 months ± 1 week) from receipt of samples.
- Please be aware that APHA/NEPM recommends water and soil samples be chilled to less than or equal to 6°C for chemical analysis, and less than or equal to 10°C but unfrozen for Microbiological analysis. Where samples are received above this temperature, it should be taken into consideration when interpreting results. Refer to ALS EnviroMail 85 for ALS recommendations of the best practice for chilling samples after sampling and for maintaining a cool temperature during transit.

Sample Container(s)/Preservation Non-Compliances

All comparisons are made against pretreatment/preservation AS, APHA, USEPA standards.

- **No sample container / preservation non-compliance exists.**

Summary of Sample(s) and Requested Analysis

Some items described below may be part of a laboratory process necessary for the execution of client requested tasks. Packages may contain additional analyses, such as the determination of moisture content and preparation tasks, that are included in the package.
If no sampling time is provided, the sampling time will default 00:00 on the date of sampling. If no sampling date is provided, the sampling date will be assumed by the laboratory and displayed in brackets without a time component

Matrix: **WATER**

Laboratory sample ID	Sampling date / time	Sample ID	WATER - EA025H Suspended Solids - Standard Level	WATER - EG020T Total Metals by ICP/MS (including digestion)	WATER - EP020 Oil & Grease (O&G)	WATER - NT-08A Total Nitrogen + NO2 + NO3 + NH3 + Total P +	WATER - UTO-9W Ultratrace OC/OP (extended) Pesticides	WATER - W-02T 8 metals (Total)	WATER - W-14A PAH/Phenols (SIM)
ES2314384-001	02-May-2023 00:00	BADDS	✓	✓	✓	✓	✓	✓	✓
ES2314384-002	02-May-2023 00:00	BADMS	✓	✓	✓	✓	✓	✓	✓
ES2314384-003	02-May-2023 00:00	BADUS	✓	✓	✓	✓	✓	✓	✓
ES2314384-004	02-May-2023 00:00	COSDS	✓	✓	✓	✓	✓	✓	✓
ES2314384-005	02-May-2023 00:00	COSUS	✓	✓	✓	✓	✓	✓	✓
ES2314384-006	01-May-2023 00:00	HINDS	✓	✓	✓	✓	✓	✓	✓
ES2314384-007	01-May-2023 00:00	HINUS	✓	✓	✓	✓	✓	✓	✓
ES2314384-008	01-May-2023 00:00	KEMDS	✓	✓	✓	✓	✓	✓	✓
ES2314384-009	01-May-2023 00:00	KEMUS	✓	✓	✓	✓	✓	✓	✓
ES2314384-010	01-May-2023 00:00	ROPDS	✓	✓	✓	✓	✓	✓	✓
ES2314384-011	01-May-2023 00:00	ROPUS	✓	✓	✓	✓	✓	✓	✓
ES2314384-012	01-May-2023 00:00	SOUDS	✓	✓	✓	✓	✓	✓	✓
ES2314384-013	01-May-2023 00:00	SOUUS	✓	✓	✓	✓	✓	✓	✓
ES2314384-014	01-May-2023 00:00	SWDUP1						✓	

Matrix: **WATER**

Laboratory sample ID	Sampling date / time	Sample ID	WATER - EA015H Total Dissolved Solids - Standard Level	WATER - EP008 Chlorophyll a	WATER - EP074DEFG VOC - Fumigants, Hal Aliphatics, Hal Aromatics,	WATER - EP080 BTEXN	WATER - EP131B-ST Super Ultra Trace PCB's to Meet ANZECC and
ES2314384-001	02-May-2023 00:00	BADDS	✓	✓	✓	✓	✓
ES2314384-002	02-May-2023 00:00	BADMS	✓	✓	✓	✓	✓
ES2314384-003	02-May-2023 00:00	BADUS	✓	✓	✓	✓	✓
ES2314384-004	02-May-2023 00:00	COSDS	✓	✓	✓	✓	✓
ES2314384-005	02-May-2023 00:00	COSUS	✓	✓	✓	✓	✓
ES2314384-006	01-May-2023 00:00	HINDS	✓	✓	✓	✓	✓
ES2314384-007	01-May-2023 00:00	HINUS	✓	✓	✓	✓	✓
ES2314384-008	01-May-2023 00:00	KEMDS	✓	✓	✓	✓	✓
ES2314384-009	01-May-2023 00:00	KEMUS	✓	✓	✓	✓	✓
ES2314384-010	01-May-2023 00:00	ROPDS	✓	✓	✓	✓	✓

			WATER - EA015H Total Dissolved Solids - Standard Level	WATER - EP008 Chlorophyll a	WATER - EP074DEFG VOC - Fumigants, Hal Aliphatics, Hal Aromatics,	WATER - EP080 BTEXN	WATER - EP131B-ST Super Ultra Trace PCB's to Meet ANZECC and
ES2314384-011	01-May-2023 00:00	ROPUS	✓	✓	✓	✓	✓
ES2314384-012	01-May-2023 00:00	SOUDS	✓	✓	✓	✓	✓
ES2314384-013	01-May-2023 00:00	SOUUS	✓	✓	✓	✓	✓

Proactive Holding Time Report

Sample(s) have been received within the recommended holding times for the requested analysis.

Requested Deliverables

Accounts Payable Australia

- A4 - AU Tax Invoice (INV)	Email	accountspayableAU@ghd.com

ANDREW DUVAL

- *AU Certificate of Analysis - NATA (COA)	Email	andrew.duval@ghd.com
- *AU Interpretive QC Report - DEFAULT (Anon QCI Rep) (QCI)	Email	andrew.duval@ghd.com
- *AU QC Report - DEFAULT (Anon QC Rep) - NATA (QC)	Email	andrew.duval@ghd.com
- A4 - AU Sample Receipt Notification - Environmental HT (SRN)	Email	andrew.duval@ghd.com
- Chain of Custody (CoC) (COC)	Email	andrew.duval@ghd.com
- EDI Format - ESDAT (ESDAT)	Email	andrew.duval@ghd.com
- EDI Format - XTab (XTAB)	Email	andrew.duval@ghd.com
- Electronic SRN for ESdat (ESRN_ESDAT)	Email	andrew.duval@ghd.com

EMILY SMITH

- *AU Certificate of Analysis - NATA (COA)	Email	emily.smith@ghd.com
- *AU Interpretive QC Report - DEFAULT (Anon QCI Rep) (QCI)	Email	emily.smith@ghd.com
- *AU QC Report - DEFAULT (Anon QC Rep) - NATA (QC)	Email	emily.smith@ghd.com
- A4 - AU Sample Receipt Notification - Environmental HT (SRN)	Email	emily.smith@ghd.com
- Chain of Custody (CoC) (COC)	Email	emily.smith@ghd.com
- EDI Format - ESDAT (ESDAT)	Email	emily.smith@ghd.com
- EDI Format - XTab (XTAB)	Email	emily.smith@ghd.com
- Electronic SRN for ESdat (ESRN_ESDAT)	Email	emily.smith@ghd.com

HENRY LUO

- *AU Certificate of Analysis - NATA (COA)	Email	henry.luo@ghd.com
- *AU Interpretive QC Report - DEFAULT (Anon QCI Rep) (QCI)	Email	henry.luo@ghd.com
- *AU QC Report - DEFAULT (Anon QC Rep) - NATA (QC)	Email	henry.luo@ghd.com
- A4 - AU Sample Receipt Notification - Environmental HT (SRN)	Email	henry.luo@ghd.com
- Chain of Custody (CoC) (COC)	Email	henry.luo@ghd.com
- EDI Format - ESDAT (ESDAT)	Email	henry.luo@ghd.com
- EDI Format - XTab (XTAB)	Email	henry.luo@ghd.com
- Electronic SRN for ESdat (ESRN_ESDAT)	Email	henry.luo@ghd.com

TERRY NHAM

- *AU Certificate of Analysis - NATA (COA)	Email	terry.nham@ghd.com
- *AU Interpretive QC Report - DEFAULT (Anon QCI Rep) (QCI)	Email	terry.nham@ghd.com
- *AU QC Report - DEFAULT (Anon QC Rep) - NATA (QC)	Email	terry.nham@ghd.com
- A4 - AU Sample Receipt Notification - Environmental HT (SRN)	Email	terry.nham@ghd.com
- Chain of Custody (CoC) (COC)	Email	terry.nham@ghd.com
- EDI Format - ESDAT (ESDAT)	Email	terry.nham@ghd.com
- EDI Format - XTab (XTAB)	Email	terry.nham@ghd.com
- Electronic SRN for ESdat (ESRN_ESDAT)	Email	terry.nham@ghd.com

CERTIFICATE OF ANALYSIS

Work Order	: **ES2314384**	Page	: 1 of 24
Client	: **GHD PTY LTD**	Laboratory	: Environmental Division Sydney
Contact	: MR HENRY LUO	Contact	: Sarah Mathew
Address	: LEVEL 15, 133 CASTLEREAGH STREET SYDNEY NSW, AUSTRALIA 2000	Address	: 277-289 Woodpark Road Smithfield NSW Australia 2164
Telephone	: +61 02 9239 7100	Telephone	: +61-2-8784 8555
Project	: M12 SURFACE WATER	Date Samples Received	: 02-May-2023 15:30
Order number	: 12554717	Date Analysis Commenced	: 02-May-2023
C-O-C number	: ----	Issue Date	: 09-May-2023 16:41
Sampler	: Emily Smith		
Site	:		
Quote number	: SY/322/21		
No. of samples received	: 14		
No. of samples analysed	: 14		

Accreditation No. 825
Accredited for compliance with
ISO/IEC 17025 - Testing

This report supersedes any previous report(s) with this reference. Results apply to the sample(s) as submitted, unless the sampling was conducted by ALS. This document shall not be reproduced, except in full.

This Certificate of Analysis contains the following information:

- General Comments
- Analytical Results
- Surrogate Control Limits

Additional information pertinent to this report will be found in the following separate attachments: Quality Control Report, QA/QC Compliance Assessment to assist with Quality Review and Sample Receipt Notification.

Signatories

This document has been electronically signed by the authorized signatories below. Electronic signing is carried out in compliance with procedures specified in 21 CFR Part 11.

Signatories	*Position*	*Accreditation Category*
Ankit Joshi	Senior Chemist - Inorganics	Sydney Inorganics, Smithfield, NSW
Edwandy Fadjar	Organic Coordinator	Sydney Organics, Smithfield, NSW
Franco Lentini	LCMS Coordinator	Sydney Organics, Smithfield, NSW

General Comments

The analytical procedures used by ALS have been developed from established internationally recognised procedures such as those published by the USEPA, APHA, AS and NEPM. In house developed procedures are fully validated and are often at the client request.

Where moisture determination has been performed, results are reported on a dry weight basis.

Where a reported less than (<) result is higher than the LOR, this may be due to primary sample extract/digestate dilution and/or insufficient sample for analysis.

Where the LOR of a reported result differs from standard LOR, this may be due to high moisture content, insufficient sample (reduced weight employed) or matrix interference.

When sampling time information is not provided by the client, sampling dates are shown without a time component. In these instances, the time component has been assumed by the laboratory for processing purposes.

Where a result is required to meet compliance limits the associated uncertainty must be considered. Refer to the ALS Contract for details.

Key : CAS Number = CAS registry number from database maintained by Chemical Abstracts Services. The Chemical Abstracts Service is a division of the American Chemical Society.
LOR = Limit of reporting
^ = This result is computed from individual analyte detections at or above the level of reporting
ø = ALS is not NATA accredited for these tests.
~ = Indicates an estimated value.

- EP075 (SIM): Where reported, Benzo(a)pyrene Toxicity Equivalent Quotient (TEQ) per the NEPM (2013) is the sum total of the concentration of the eight carcinogenic PAHs multiplied by their Toxicity Equivalence Factor (TEF) relative to Benzo(a)pyrene. TEF values are provided in brackets as follows: Benz(a)anthracene (0.1), Chrysene (0.01), Benzo(b+j) & Benzo(k)fluoranthene (0.1), Benzo(a)pyrene (1.0), Indeno(1.2.3.cd)pyrene (0.1), Dibenz(a.h)anthracene (1.0), Benzo(g.h.i)perylene (0.01). Less than LOR results for 'TEQ Zero' are treated as zero.
- EP131A: Where reported, Total Chlordane (sum) is the sum of the reported concentrations of cis-Chlordane and trans-Chlordane at or above the LOR.
- EP080: Where reported, Total Xylenes is the sum of the reported concentrations of m&p-Xylene and o-Xylene at or above the LOR.
- EP074: Where reported, Total Trihalomethanes is the sum of the reported concentrations of all Trihalomethanes at or above the LOR.
- EP074: Where reported, Total Trimethylbenzenes is the sum of the reported concentrations of 1.2.3-Trimethylbenzene, 1.2.4-Trimethylbenzene and 1.3.5-Trimethylbenzene at or above the LOR.
- EP075(SIM): Where reported, Total Cresol is the sum of the reported concentrations of 2-Methylphenol and 3- & 4-Methylphenol at or above the LOR.
- EP234: Poor matrix spike recovery for particular compounds due to matrix interferences and high matrix spike recovery has been noted for particular compounds due to ion enhancement.

Analytical Results

Sub-Matrix: WATER (Matrix: WATER)			Sample ID	BADDS	BADMS	BADUS	COSDS	COSUS
			Sampling date / time	02-May-2023 00:00	02-May-2023 00:00	02-May-2023 00:00	02-May-2023 00:00	02-May-2023 00:00
Compound	CAS Number	LOR	Unit	ES2314384-001	ES2314384-002	ES2314384-003	ES2314384-004	ES2314384-005
				Result	Result	Result	Result	Result
EA015: Total Dissolved Solids dried at 180 ± 5 °C								
Total Dissolved Solids @180°C	----	10	mg/L	**678**	**718**	**720**	**519**	**496**
EA025: Total Suspended Solids dried at 104 ± 2°C								
Suspended Solids (SS)	----	5	mg/L	**94**	**117**	**86**	**54**	**31**
EG020T: Total Metals by ICP-MS								
Arsenic	7440-38-2	0.001	mg/L	**0.002**	**0.002**	**0.001**	<0.001	<0.001
Cadmium	7440-43-9	0.0001	mg/L	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001
Chromium	7440-47-3	0.001	mg/L	**0.004**	**0.004**	**0.003**	**0.002**	**0.002**
Copper	7440-50-8	0.001	mg/L	**0.009**	**0.008**	**0.007**	**0.004**	**0.003**
Nickel	7440-02-0	0.001	mg/L	**0.005**	**0.004**	**0.004**	**0.002**	**0.002**
Lead	7439-92-1	0.001	mg/L	**0.004**	**0.004**	**0.003**	**0.002**	<0.001
Zinc	7440-66-6	0.005	mg/L	**0.035**	**0.019**	**0.016**	**0.023**	**0.006**
Manganese	7439-96-5	0.001	mg/L	**0.154**	**0.156**	**0.220**	**0.132**	**0.107**
Iron	7439-89-6	0.05	mg/L	**4.79**	**4.70**	**4.03**	**2.29**	**1.60**
EG035T: Total Recoverable Mercury by FIMS								
Mercury	7439-97-6	0.0001	mg/L	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001
EK055G: Ammonia as N by Discrete Analyser								
Ammonia as N	7664-41-7	0.01	mg/L	**0.08**	**0.08**	**0.14**	**0.06**	**0.05**
EK057G: Nitrite as N by Discrete Analyser								
Nitrite as N	14797-65-0	0.01	mg/L	**0.05**	**0.06**	**0.09**	**0.01**	**0.01**
EK058G: Nitrate as N by Discrete Analyser								
Nitrate as N	14797-55-8	0.01	mg/L	**2.09**	**2.23**	**2.10**	**0.44**	**0.38**
EK059G: Nitrite plus Nitrate as N (NOx) by Discrete Analyser								
Nitrite + Nitrate as N	----	0.01	mg/L	**2.14**	**2.29**	**2.19**	**0.45**	**0.39**
EK061G: Total Kjeldahl Nitrogen By Discrete Analyser								
Total Kjeldahl Nitrogen as N	----	0.1	mg/L	**1.0**	**1.2**	**1.2**	**0.7**	**0.6**
EK062G: Total Nitrogen as N (TKN + NOx) by Discrete Analyser								
^ Total Nitrogen as N	----	0.1	mg/L	**3.1**	**3.5**	**3.4**	**1.2**	**1.0**
EK067G: Total Phosphorus as P by Discrete Analyser								
Total Phosphorus as P	----	0.01	mg/L	**0.19**	**0.13**	**0.09**	**0.13**	**0.08**
EK071G: Reactive Phosphorus as P by discrete analyser								
Reactive Phosphorus as P	14265-44-2	0.01	mg/L	<0.01	<0.01	<0.01	<0.01	<0.01
EP008: Chlorophyll a & Pheophytin a								
Chlorophyll a	----	1	mg/m³	<1	**1**	**1**	**7**	**3**

Analytical Results

Sub-Matrix: WATER (Matrix: WATER)			Sample ID	BADDS	BADMS	BADUS	COSDS	COSUS
			Sampling date / time	02-May-2023 00:00	02-May-2023 00:00	02-May-2023 00:00	02-May-2023 00:00	02-May-2023 00:00
Compound	CAS Number	LOR	Unit	ES2314384-001	ES2314384-002	ES2314384-003	ES2314384-004	ES2314384-005
				Result	Result	Result	Result	Result
EP020: Oil and Grease (O&G)								
Oil & Grease	----	5	mg/L	<5	<5	<5	<5	<5
EP074D: Fumigants								
2.2-Dichloropropane	594-20-7	5	µg/L	<5	<5	<5	<5	<5
1.2-Dichloropropane	78-87-5	5	µg/L	<5	<5	<5	<5	<5
cis-1.3-Dichloropropylene	10061-01-5	5	µg/L	<5	<5	<5	<5	<5
trans-1.3-Dichloropropylene	10061-02-6	5	µg/L	<5	<5	<5	<5	<5
1.2-Dibromoethane (EDB)	106-93-4	5	µg/L	<5	<5	<5	<5	<5
EP074E: Halogenated Aliphatic Compounds								
Dichlorodifluoromethane	75-71-8	50	µg/L	<50	<50	<50	<50	<50
Chloromethane	74-87-3	50	µg/L	<50	<50	<50	<50	<50
Vinyl chloride	75-01-4	50	µg/L	<50	<50	<50	<50	<50
Bromomethane	74-83-9	50	µg/L	<50	<50	<50	<50	<50
Chloroethane	75-00-3	50	µg/L	<50	<50	<50	<50	<50
Trichlorofluoromethane	75-69-4	50	µg/L	<50	<50	<50	<50	<50
1.1-Dichloroethene	75-35-4	5	µg/L	<5	<5	<5	<5	<5
Iodomethane	74-88-4	5	µg/L	<5	<5	<5	<5	<5
trans-1.2-Dichloroethene	156-60-5	5	µg/L	<5	<5	<5	<5	<5
1.1-Dichloroethane	75-34-3	5	µg/L	<5	<5	<5	<5	<5
cis-1.2-Dichloroethene	156-59-2	5	µg/L	<5	<5	<5	<5	<5
1.1.1-Trichloroethane	71-55-6	5	µg/L	<5	<5	<5	<5	<5
1.1-Dichloropropylene	563-58-6	5	µg/L	<5	<5	<5	<5	<5
Carbon Tetrachloride	56-23-5	5	µg/L	<5	<5	<5	<5	<5
1.2-Dichloroethane	107-06-2	5	µg/L	<5	<5	<5	<5	<5
Trichloroethene	79-01-6	5	µg/L	<5	<5	<5	<5	<5
Dibromomethane	74-95-3	5	µg/L	<5	<5	<5	<5	<5
1.1.2-Trichloroethane	79-00-5	5	µg/L	<5	<5	<5	<5	<5
1.3-Dichloropropane	142-28-9	5	µg/L	<5	<5	<5	<5	<5
Tetrachloroethene	127-18-4	5	µg/L	<5	<5	<5	<5	<5
1.1.1.2-Tetrachloroethane	630-20-6	5	µg/L	<5	<5	<5	<5	<5
trans-1.4-Dichloro-2-butene	110-57-6	5	µg/L	<5	<5	<5	<5	<5
cis-1.4-Dichloro-2-butene	1476-11-5	5	µg/L	<5	<5	<5	<5	<5
1.1.2.2-Tetrachloroethane	79-34-5	5	µg/L	<5	<5	<5	<5	<5
1.2.3-Trichloropropane	96-18-4	5	µg/L	<5	<5	<5	<5	<5
Pentachloroethane	76-01-7	5	µg/L	<5	<5	<5	<5	<5

Analytical Results

Sub-Matrix: WATER (Matrix: WATER)				Sample ID	BADDS	BADMS	BADUS	COSDS	COSUS
				Sampling date / time	02-May-2023 00:00	02-May-2023 00:00	02-May-2023 00:00	02-May-2023 00:00	02-May-2023 00:00
Compound	CAS Number	LOR	Unit		ES2314384-001	ES2314384-002	ES2314384-003	ES2314384-004	ES2314384-005
					Result	Result	Result	Result	Result
EP074E: Halogenated Aliphatic Compounds - Continued									
1.2-Dibromo-3-chloropropane	96-12-8	5	µg/L		<5	<5	<5	<5	<5
Hexachlorobutadiene	87-68-3	5	µg/L		<5	<5	<5	<5	<5
EP074F: Halogenated Aromatic Compounds									
Chlorobenzene	108-90-7	5	µg/L		<5	<5	<5	<5	<5
Bromobenzene	108-86-1	5	µg/L		<5	<5	<5	<5	<5
2-Chlorotoluene	95-49-8	5	µg/L		<5	<5	<5	<5	<5
4-Chlorotoluene	106-43-4	5	µg/L		<5	<5	<5	<5	<5
1.3-Dichlorobenzene	541-73-1	5	µg/L		<5	<5	<5	<5	<5
1.4-Dichlorobenzene	106-46-7	5	µg/L		<5	<5	<5	<5	<5
1.2-Dichlorobenzene	95-50-1	5	µg/L		<5	<5	<5	<5	<5
1.2.4-Trichlorobenzene	120-82-1	5	µg/L		<5	<5	<5	<5	<5
1.2.3-Trichlorobenzene	87-61-6	5	µg/L		<5	<5	<5	<5	<5
EP074G: Trihalomethanes									
Chloroform	67-66-3	5	µg/L		<5	<5	<5	<5	<5
Bromodichloromethane	75-27-4	5	µg/L		<5	<5	<5	<5	<5
Dibromochloromethane	124-48-1	5	µg/L		<5	<5	<5	<5	<5
Bromoform	75-25-2	5	µg/L		<5	<5	<5	<5	<5
EP075(SIM)A: Phenolic Compounds									
Phenol	108-95-2	1.0	µg/L		<1.0	<1.0	<1.0	<1.0	<1.0
2-Chlorophenol	95-57-8	1.0	µg/L		<1.0	<1.0	<1.0	<1.0	<1.0
2-Methylphenol	95-48-7	1.0	µg/L		<1.0	<1.0	<1.0	<1.0	<1.0
3- & 4-Methylphenol	1319-77-3	2.0	µg/L		<2.0	<2.0	<2.0	<2.0	<2.0
2-Nitrophenol	88-75-5	1.0	µg/L		<1.0	<1.0	<1.0	<1.0	<1.0
2.4-Dimethylphenol	105-67-9	1.0	µg/L		<1.0	<1.0	<1.0	<1.0	<1.0
2.4-Dichlorophenol	120-83-2	1.0	µg/L		<1.0	<1.0	<1.0	<1.0	<1.0
2.6-Dichlorophenol	87-65-0	1.0	µg/L		<1.0	<1.0	<1.0	<1.0	<1.0
4-Chloro-3-methylphenol	59-50-7	1.0	µg/L		<1.0	<1.0	<1.0	<1.0	<1.0
2.4.6-Trichlorophenol	88-06-2	1.0	µg/L		<1.0	<1.0	<1.0	<1.0	<1.0
2.4.5-Trichlorophenol	95-95-4	1.0	µg/L		<1.0	<1.0	<1.0	<1.0	<1.0
Pentachlorophenol	87-86-5	2.0	µg/L		<2.0	<2.0	<2.0	<2.0	<2.0
EP075(SIM)B: Polynuclear Aromatic Hydrocarbons									
Naphthalene	91-20-3	1.0	µg/L		<1.0	<1.0	<1.0	<1.0	<1.0
Acenaphthylene	208-96-8	1.0	µg/L		<1.0	<1.0	<1.0	<1.0	<1.0
Acenaphthene	83-32-9	1.0	µg/L		<1.0	<1.0	<1.0	<1.0	<1.0

Analytical Results

Sub-Matrix: WATER (Matrix: WATER)			Sample ID	BADDS	BADMS	BADUS	COSDS	COSUS
			Sampling date / time	02-May-2023 00:00	02-May-2023 00:00	02-May-2023 00:00	02-May-2023 00:00	02-May-2023 00:00
Compound	CAS Number	LOR	Unit	ES2314384-001	ES2314384-002	ES2314384-003	ES2314384-004	ES2314384-005
				Result	Result	Result	Result	Result
EP075(SIM)B: Polynuclear Aromatic Hydrocarbons - Continued								
Fluorene	86-73-7	1.0	µg/L	<1.0	<1.0	<1.0	<1.0	<1.0
Phenanthrene	85-01-8	1.0	µg/L	<1.0	<1.0	<1.0	<1.0	<1.0
Anthracene	120-12-7	1.0	µg/L	<1.0	<1.0	<1.0	<1.0	<1.0
Fluoranthene	206-44-0	1.0	µg/L	<1.0	<1.0	<1.0	<1.0	<1.0
Pyrene	129-00-0	1.0	µg/L	<1.0	<1.0	<1.0	<1.0	<1.0
Benz(a)anthracene	56-55-3	1.0	µg/L	<1.0	<1.0	<1.0	<1.0	<1.0
Chrysene	218-01-9	1.0	µg/L	<1.0	<1.0	<1.0	<1.0	<1.0
Benzo(b+j)fluoranthene	205-99-2 205-82-3	1.0	µg/L	<1.0	<1.0	<1.0	<1.0	<1.0
Benzo(k)fluoranthene	207-08-9	1.0	µg/L	<1.0	<1.0	<1.0	<1.0	<1.0
Benzo(a)pyrene	50-32-8	0.5	µg/L	<0.5	<0.5	<0.5	<0.5	<0.5
Indeno(1.2.3.cd)pyrene	193-39-5	1.0	µg/L	<1.0	<1.0	<1.0	<1.0	<1.0
Dibenz(a.h)anthracene	53-70-3	1.0	µg/L	<1.0	<1.0	<1.0	<1.0	<1.0
Benzo(g.h.i)perylene	191-24-2	1.0	µg/L	<1.0	<1.0	<1.0	<1.0	<1.0
^ Sum of polycyclic aromatic hydrocarbons	----	0.5	µg/L	<0.5	<0.5	<0.5	<0.5	<0.5
^ Benzo(a)pyrene TEQ (zero)	----	0.5	µg/L	<0.5	<0.5	<0.5	<0.5	<0.5
EP080: BTEXN								
Benzene	71-43-2	1	µg/L	<1	<1	<1	<1	<1
Toluene	108-88-3	2	µg/L	<2	<2	<2	<2	<2
Ethylbenzene	100-41-4	2	µg/L	<2	<2	<2	<2	<2
meta- & para-Xylene	108-38-3 106-42-3	2	µg/L	<2	<2	<2	<2	<2
ortho-Xylene	95-47-6	2	µg/L	<2	<2	<2	<2	<2
^ Total Xylenes	----	2	µg/L	<2	<2	<2	<2	<2
^ Sum of BTEX	----	1	µg/L	<1	<1	<1	<1	<1
Naphthalene	91-20-3	5	µg/L	<5	<5	<5	<5	<5
EP131A: Organochlorine Pesticides								
Aldrin	309-00-2	0.010	µg/L	<0.010	<0.010	<0.010	<0.010	<0.010
alpha-BHC	319-84-6	0.010	µg/L	<0.010	<0.010	<0.010	<0.010	<0.010
beta-BHC	319-85-7	0.010	µg/L	<0.010	<0.010	<0.010	<0.010	<0.010
delta-BHC	319-86-8	0.010	µg/L	<0.010	<0.010	<0.010	<0.010	<0.010
4.4`-DDD	72-54-8	0.010	µg/L	<0.010	<0.010	<0.010	<0.010	<0.010
4.4`-DDE	72-55-9	0.010	µg/L	<0.010	<0.010	<0.010	<0.010	<0.010
4.4`-DDT	50-29-3	0.010	µg/L	<0.010	<0.010	<0.010	<0.010	<0.010
^ Sum of DDD + DDE + DDT	72-54-8/72-55-9/50-29-2	0.010	µg/L	<0.010	<0.010	<0.010	<0.010	<0.010

Analytical Results

Sub-Matrix: WATER (Matrix: WATER)				Sample ID	BADDS	BADMS	BADUS	COSDS	COSUS
				Sampling date / time	02-May-2023 00:00	02-May-2023 00:00	02-May-2023 00:00	02-May-2023 00:00	02-May-2023 00:00
Compound	CAS Number	LOR	Unit		ES2314384-001	ES2314384-002	ES2314384-003	ES2314384-004	ES2314384-005
					Result	Result	Result	Result	Result
EP131A: Organochlorine Pesticides - Continued									
Dieldrin	60-57-1	0.010	µg/L		<0.010	<0.010	<0.010	<0.010	<0.010
alpha-Endosulfan	959-98-8	0.010	µg/L		<0.010	<0.010	<0.010	<0.010	<0.010
beta-Endosulfan	33213-65-9	0.010	µg/L		<0.010	<0.010	<0.010	<0.010	<0.010
Endosulfan sulfate	1031-07-8	0.010	µg/L		<0.010	<0.010	<0.010	<0.010	<0.010
^ Endosulfan (sum)	115-29-7	0.010	µg/L		<0.010	<0.010	<0.010	<0.010	<0.010
Endrin	72-20-8	0.010	µg/L		<0.010	<0.010	<0.010	<0.010	<0.010
Endrin aldehyde	7421-93-4	0.010	µg/L		<0.010	<0.010	<0.010	<0.010	<0.010
Endrin ketone	53494-70-5	0.010	µg/L		<0.010	<0.010	<0.010	<0.010	<0.010
Heptachlor	76-44-8	0.005	µg/L		<0.005	<0.005	<0.005	<0.005	<0.005
Heptachlor epoxide	1024-57-3	0.010	µg/L		<0.010	<0.010	<0.010	<0.010	<0.010
Hexachlorobenzene (HCB)	118-74-1	0.010	µg/L		<0.010	<0.010	<0.010	<0.010	<0.010
gamma-BHC	58-89-9	0.010	µg/L		<0.010	<0.010	<0.010	<0.010	<0.010
Methoxychlor	72-43-5	0.010	µg/L		<0.010	<0.010	<0.010	<0.010	<0.010
cis-Chlordane	5103-71-9	0.010	µg/L		<0.010	<0.010	<0.010	<0.010	<0.010
trans-Chlordane	5103-74-2	0.010	µg/L		<0.010	<0.010	<0.010	<0.010	<0.010
^ Total Chlordane (sum)	----	0.010	µg/L		<0.010	<0.010	<0.010	<0.010	<0.010
Oxychlordane	27304-13-8	0.010	µg/L		<0.010	<0.010	<0.010	<0.010	<0.010
EP131B: Polychlorinated Biphenyls (as Aroclors)									
Total Polychlorinated biphenyls	----	0.005	µg/L		<0.005	<0.005	<0.005	<0.005	<0.005
Aroclor 1016	12674-11-2	0.005	µg/L		<0.005	<0.005	<0.005	<0.005	<0.005
Aroclor 1221	11104-28-2	0.005	µg/L		<0.005	<0.005	<0.005	<0.005	<0.005
Aroclor 1232	11141-16-5	0.005	µg/L		<0.005	<0.005	<0.005	<0.005	<0.005
Aroclor 1242	53469-21-9	0.005	µg/L		<0.005	<0.005	<0.005	<0.005	<0.005
Aroclor 1248	12672-29-6	0.005	µg/L		<0.005	<0.005	<0.005	<0.005	<0.005
Aroclor 1254	11097-69-1	0.005	µg/L		<0.005	<0.005	<0.005	<0.005	<0.005
Aroclor 1260	11096-82-5	0.005	µg/L		<0.005	<0.005	<0.005	<0.005	<0.005
EP234A: OP Pesticides									
Acephate	30560-19-1	0.5	µg/L		<0.5	<0.5	<0.5	<0.5	<0.5
Azinphos-methyl	86-50-0	0.02	µg/L		<0.02	<0.02	<0.02	<0.02	<0.02
Azinphos-ethyl	2642-71-9	0.02	µg/L		<0.02	<0.02	<0.02	<0.02	<0.02
Bensulide	741-58-2	0.1	µg/L		<0.1	<0.1	<0.1	<0.1	<0.1
Bromophos-ethyl	4824-78-6	0.10	µg/L		<0.10	<0.10	<0.10	<0.10	<0.10
Carbofenothion	786-19-6	0.02	µg/L		<0.02	<0.02	<0.02	<0.02	<0.02
Chlorfenvinphos	470-90-6	0.02	µg/L		<0.02	<0.02	<0.02	<0.02	<0.02

Analytical Results

Sub-Matrix: WATER (Matrix: WATER)				Sample ID	BADDS	BADMS	BADUS	COSDS	COSUS
				Sampling date / time	02-May-2023 00:00	02-May-2023 00:00	02-May-2023 00:00	02-May-2023 00:00	02-May-2023 00:00
Compound	CAS Number	LOR	Unit		ES2314384-001	ES2314384-002	ES2314384-003	ES2314384-004	ES2314384-005
					Result	Result	Result	Result	Result
EP234A: OP Pesticides - Continued									
Chlorpyrifos	2921-88-2	0.02	µg/L		<0.02	<0.02	<0.02	<0.02	<0.02
Chlorpyrifos-methyl	5598-13-0	0.2	µg/L		<0.2	<0.2	<0.2	<0.2	<0.2
Coumaphos	56-72-4	0.01	µg/L		<0.01	<0.01	<0.01	<0.01	<0.01
Demeton-O	298-03-3	0.02	µg/L		<0.02	<0.02	<0.02	<0.02	<0.02
Demeton-O & Demeton-S	298-03-3/126-75-0	0.02	µg/L		<0.02	<0.02	<0.02	<0.02	<0.02
Demeton-S	126-75-0	0.02	µg/L		<0.02	<0.02	<0.02	<0.02	<0.02
Demeton-S-methyl	919-86-8	0.02	µg/L		<0.02	<0.02	<0.02	<0.02	<0.02
Diazinon	333-41-5	0.01	µg/L		<0.01	<0.01	<0.01	<0.01	<0.01
Dichlorvos	62-73-7	0.20	µg/L		<0.20	<0.20	<0.20	<0.20	<0.20
Dimethoate	60-51-5	0.02	µg/L		<0.02	<0.02	<0.02	<0.02	<0.02
Disulfoton	298-04-4	0.05	µg/L		<0.05	<0.05	<0.05	<0.05	<0.05
EPN	2104-64-5	0.05	µg/L		<0.05	<0.05	<0.05	<0.05	<0.05
Ethion	563-12-2	0.02	µg/L		<0.02	<0.02	<0.02	<0.02	<0.02
Ethoprophos	13194-48-4	0.01	µg/L		<0.01	<0.01	<0.01	<0.01	<0.01
Fenamiphos	22224-92-6	0.01	µg/L		<0.01	<0.01	<0.01	<0.01	<0.01
Fenchlorphos (Ronnel)	299-84-3	10	µg/L		<10	<10	<10	<10	<10
Fenitrothion	122-14-5	2	µg/L		<2	<2	<2	<2	<2
Fensulfothion	115-90-2	0.01	µg/L		<0.01	<0.01	<0.01	<0.01	<0.01
Fenthion	55-38-9	0.05	µg/L		<0.05	<0.05	<0.05	<0.05	<0.05
Formothion	2540-82-1	20	µg/L		<20	<20	<20	<20	<20
Fosetyl Aluminium	39148-24-8	10	µg/L		<10	<10	<10	<10	<10
Malathion	121-75-5	0.02	µg/L		<0.02	<0.02	<0.02	<0.02	<0.02
Methidathion	950-37-8	0.1	µg/L		<0.1	<0.1	<0.1	<0.1	<0.1
Mevinphos	7786-34-7	0.02	µg/L		<0.02	<0.02	<0.02	<0.02	<0.02
Monocrotophos	6923-22-4	0.02	µg/L		<0.02	<0.02	<0.02	<0.02	<0.02
Naftalofos	1491-41-4	1.0	µg/L		<1.0	<1.0	<1.0	<1.0	<1.0
Omethoate	1113-02-6	0.01	µg/L		<0.01	<0.01	<0.01	<0.01	<0.01
Parathion	56-38-2	0.2	µg/L		<0.2	<0.2	<0.2	<0.2	<0.2
Parathion-methyl	298-00-0	0.5	µg/L		<0.5	<0.5	<0.5	<0.5	<0.5
Phorate	298-02-2	0.1	µg/L		<0.1	<0.1	<0.1	<0.1	<0.1
Pirimiphos-ethyl	23505-41-1	0.01	µg/L		<0.01	<0.01	<0.01	<0.01	<0.01
Pirimiphos-methyl	29232-93-7	0.01	µg/L		<0.01	<0.01	<0.01	<0.01	<0.01
Profenofos	41198-08-7	0.01	µg/L		<0.01	<0.01	<0.01	<0.01	<0.01
Prothiofos	34643-46-4	0.1	µg/L		<0.1	<0.1	<0.1	<0.1	<0.1
Pyrazophos	13457-18-6	0.1	µg/L		<0.1	<0.1	<0.1	<0.1	<0.1

Analytical Results

Sub-Matrix: WATER (Matrix: WATER)				Sample ID	BADDS	BADMS	BADUS	COSDS	COSUS
				Sampling date / time	02-May-2023 00:00	02-May-2023 00:00	02-May-2023 00:00	02-May-2023 00:00	02-May-2023 00:00
Compound	CAS Number	LOR	Unit		ES2314384-001	ES2314384-002	ES2314384-003	ES2314384-004	ES2314384-005
					Result	Result	Result	Result	Result
EP234A: OP Pesticides - Continued									
Sulfotep	3689-24-5	0.005	µg/L		<0.005	<0.005	<0.005	<0.005	<0.005
Sulprofos	35400-43-2	0.05	µg/L		<0.05	<0.05	<0.05	<0.05	<0.05
Temephos	3383-96-8	0.02	µg/L		<0.02	<0.02	<0.02	<0.02	<0.02
Terbufos	13071-79-9	0.01	µg/L		<0.01	<0.01	<0.01	<0.01	<0.01
Tetrachlorvinphos	22248-79-9	0.01	µg/L		<0.01	<0.01	<0.01	<0.01	<0.01
Thiometon	640-15-3	0.5	µg/L		<0.5	<0.5	<0.5	<0.5	<0.5
Triazophos	24017-47-8	0.005	µg/L		<0.005	<0.005	<0.005	<0.005	<0.005
Trichlorfon	52-68-6	0.02	µg/L		<0.02	<0.02	<0.02	<0.02	<0.02
Trichloronate	327-98-0	0.5	µg/L		<0.5	<0.5	<0.5	<0.5	<0.5
EP074S: VOC Surrogates									
1.2-Dichloroethane-D4	17060-07-0	5	%		**101**	**110**	**112**	**112**	**111**
Toluene-D8	2037-26-5	5	%		**93.3**	**104**	**100**	**97.8**	**102**
4-Bromofluorobenzene	460-00-4	5	%		**96.4**	**106**	**102**	**103**	**102**
EP075(SIM)S: Phenolic Compound Surrogates									
Phenol-d6	13127-88-3	1.0	%		**17.2**	**17.2**	**18.7**	**21.4**	**20.5**
2-Chlorophenol-D4	93951-73-6	1.0	%		**39.9**	**38.7**	**41.9**	**45.9**	**47.2**
2.4.6-Tribromophenol	118-79-6	1.0	%		**51.2**	**52.3**	**50.3**	**59.6**	**61.1**
EP075(SIM)T: PAH Surrogates									
2-Fluorobiphenyl	321-60-8	1.0	%		**51.8**	**48.4**	**54.3**	**59.5**	**60.1**
Anthracene-d10	1719-06-8	1.0	%		**60.7**	**60.8**	**61.0**	**71.4**	**72.8**
4-Terphenyl-d14	1718-51-0	1.0	%		**67.8**	**70.2**	**64.4**	**77.6**	**79.1**
EP080S: TPH(V)/BTEX Surrogates									
1.2-Dichloroethane-D4	17060-07-0	2	%		**116**	**126**	**128**	**129**	**127**
Toluene-D8	2037-26-5	2	%		**108**	**119**	**115**	**112**	**117**
4-Bromofluorobenzene	460-00-4	2	%		**103**	**110**	**107**	**105**	**106**
EP131S: OC Pesticide Surrogate									
Dibromo-DDE	21655-73-2	0.010	%		**107**	**91.9**	**93.3**	**83.7**	**82.7**
EP131T: PCB Surrogate									
Decachlorobiphenyl	2051-24-3	0.010	%		**113**	**118**	**120**	**120**	**122**

Analytical Results

Sub-Matrix: WATER (Matrix: WATER)			Sample ID	HINDS	HINUS	KEMDS	KEMUS	ROPDS
			Sampling date / time	01-May-2023 00:00	01-May-2023 00:00	01-May-2023 00:00	01-May-2023 00:00	01-May-2023 00:00
Compound	CAS Number	LOR	Unit	ES2314384-006	ES2314384-007	ES2314384-008	ES2314384-009	ES2314384-010
				Result	Result	Result	Result	Result
EA015: Total Dissolved Solids dried at 180 ± 5 °C								
Total Dissolved Solids @180°C	----	10	mg/L	**235**	**278**	**480**	**500**	**356**
EA025: Total Suspended Solids dried at 104 ± 2°C								
Suspended Solids (SS)	----	5	mg/L	**16**	**15**	**48**	**35**	<5
EG020T: Total Metals by ICP-MS								
Arsenic	7440-38-2	0.001	mg/L	**0.001**	**0.001**	**0.002**	**0.002**	**0.002**
Cadmium	7440-43-9	0.0001	mg/L	<0.0001	<0.0001	**0.0003**	<0.0001	<0.0001
Chromium	7440-47-3	0.001	mg/L	<0.001	<0.001	**0.002**	**0.002**	**0.004**
Copper	7440-50-8	0.001	mg/L	<0.001	<0.001	**0.008**	**0.007**	**0.005**
Nickel	7440-02-0	0.001	mg/L	<0.001	<0.001	**0.003**	**0.002**	**0.003**
Lead	7439-92-1	0.001	mg/L	<0.001	<0.001	**0.002**	**0.002**	**0.004**
Zinc	7440-66-6	0.005	mg/L	<0.005	**0.007**	**0.036**	**0.018**	**0.016**
Manganese	7439-96-5	0.001	mg/L	**0.609**	**0.190**	**0.036**	**0.034**	**0.376**
Iron	7439-89-6	0.05	mg/L	**1.32**	**1.01**	**1.88**	**1.89**	**5.70**
EG035T: Total Recoverable Mercury by FIMS								
Mercury	7439-97-6	0.0001	mg/L	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001
EK055G: Ammonia as N by Discrete Analyser								
Ammonia as N	7664-41-7	0.01	mg/L	**0.01**	**0.01**	**0.04**	**0.04**	**0.04**
EK057G: Nitrite as N by Discrete Analyser								
Nitrite as N	14797-65-0	0.01	mg/L	<0.01	<0.01	**0.02**	**0.02**	<0.01
EK058G: Nitrate as N by Discrete Analyser								
Nitrate as N	14797-55-8	0.01	mg/L	<0.01	<0.01	**3.23**	**3.42**	**0.13**
EK059G: Nitrite plus Nitrate as N (NOx) by Discrete Analyser								
Nitrite + Nitrate as N	----	0.01	mg/L	<0.01	<0.01	**3.25**	**3.44**	**0.13**
EK061G: Total Kjeldahl Nitrogen By Discrete Analyser								
Total Kjeldahl Nitrogen as N	----	0.1	mg/L	**1.9**	**1.0**	**1.4**	**2.0**	**0.3**
EK062G: Total Nitrogen as N (TKN + NOx) by Discrete Analyser								
^ Total Nitrogen as N	----	0.1	mg/L	**1.9**	**1.0**	**4.6**	**5.4**	**0.4**
EK067G: Total Phosphorus as P by Discrete Analyser								
Total Phosphorus as P	----	0.01	mg/L	**0.15**	**0.06**	**0.71**	**0.72**	**0.05**
EK071G: Reactive Phosphorus as P by discrete analyser								
Reactive Phosphorus as P	14265-44-2	0.01	mg/L	<0.01	<0.01	**0.45**	**0.47**	**0.02**
EP008: Chlorophyll a & Pheophytin a								
Chlorophyll a	----	1	mg/m³	**27**	**6**	**3**	**5**	<1

Analytical Results

Sub-Matrix: WATER (Matrix: WATER)				Sample ID	HINDS	HINUS	KEMDS	KEMUS	ROPDS
				Sampling date / time	01-May-2023 00:00	01-May-2023 00:00	01-May-2023 00:00	01-May-2023 00:00	01-May-2023 00:00
Compound	CAS Number	LOR	Unit		ES2314384-006	ES2314384-007	ES2314384-008	ES2314384-009	ES2314384-010
					Result	Result	Result	Result	Result
EP020: Oil and Grease (O&G)									
Oil & Grease	----	5	mg/L		<5	<5	<5	<5	<5
EP074D: Fumigants									
2.2-Dichloropropane	594-20-7	5	µg/L		<5	<5	<5	<5	<5
1.2-Dichloropropane	78-87-5	5	µg/L		<5	<5	<5	<5	<5
cis-1.3-Dichloropropylene	10061-01-5	5	µg/L		<5	<5	<5	<5	<5
trans-1.3-Dichloropropylene	10061-02-6	5	µg/L		<5	<5	<5	<5	<5
1.2-Dibromoethane (EDB)	106-93-4	5	µg/L		<5	<5	<5	<5	<5
EP074E: Halogenated Aliphatic Compounds									
Dichlorodifluoromethane	75-71-8	50	µg/L		<50	<50	<50	<50	<50
Chloromethane	74-87-3	50	µg/L		<50	<50	<50	<50	<50
Vinyl chloride	75-01-4	50	µg/L		<50	<50	<50	<50	<50
Bromomethane	74-83-9	50	µg/L		<50	<50	<50	<50	<50
Chloroethane	75-00-3	50	µg/L		<50	<50	<50	<50	<50
Trichlorofluoromethane	75-69-4	50	µg/L		<50	<50	<50	<50	<50
1.1-Dichloroethene	75-35-4	5	µg/L		<5	<5	<5	<5	<5
Iodomethane	74-88-4	5	µg/L		<5	<5	<5	<5	<5
trans-1.2-Dichloroethene	156-60-5	5	µg/L		<5	<5	<5	<5	<5
1.1-Dichloroethane	75-34-3	5	µg/L		<5	<5	<5	<5	<5
cis-1.2-Dichloroethene	156-59-2	5	µg/L		<5	<5	<5	<5	<5
1.1.1-Trichloroethane	71-55-6	5	µg/L		<5	<5	<5	<5	<5
1.1-Dichloropropylene	563-58-6	5	µg/L		<5	<5	<5	<5	<5
Carbon Tetrachloride	56-23-5	5	µg/L		<5	<5	<5	<5	<5
1.2-Dichloroethane	107-06-2	5	µg/L		<5	<5	<5	<5	<5
Trichloroethene	79-01-6	5	µg/L		<5	<5	<5	<5	<5
Dibromomethane	74-95-3	5	µg/L		<5	<5	<5	<5	<5
1.1.2-Trichloroethane	79-00-5	5	µg/L		<5	<5	<5	<5	<5
1.3-Dichloropropane	142-28-9	5	µg/L		<5	<5	<5	<5	<5
Tetrachloroethene	127-18-4	5	µg/L		<5	<5	<5	<5	<5
1.1.1.2-Tetrachloroethane	630-20-6	5	µg/L		<5	<5	<5	<5	<5
trans-1.4-Dichloro-2-butene	110-57-6	5	µg/L		<5	<5	<5	<5	<5
cis-1.4-Dichloro-2-butene	1476-11-5	5	µg/L		<5	<5	<5	<5	<5
1.1.2.2-Tetrachloroethane	79-34-5	5	µg/L		<5	<5	<5	<5	<5
1.2.3-Trichloropropane	96-18-4	5	µg/L		<5	<5	<5	<5	<5
Pentachloroethane	76-01-7	5	µg/L		<5	<5	<5	<5	<5

Analytical Results

Sub-Matrix: WATER (Matrix: WATER)				Sample ID	HINDS	HINUS	KEMDS	KEMUS	ROPDS
				Sampling date / time	01-May-2023 00:00	01-May-2023 00:00	01-May-2023 00:00	01-May-2023 00:00	01-May-2023 00:00
Compound	CAS Number	LOR	Unit		ES2314384-006	ES2314384-007	ES2314384-008	ES2314384-009	ES2314384-010
					Result	Result	Result	Result	Result
EP074E: Halogenated Aliphatic Compounds - Continued									
1.2-Dibromo-3-chloropropane	96-12-8	5	µg/L		<5	<5	<5	<5	<5
Hexachlorobutadiene	87-68-3	5	µg/L		<5	<5	<5	<5	<5
EP074F: Halogenated Aromatic Compounds									
Chlorobenzene	108-90-7	5	µg/L		<5	<5	<5	<5	<5
Bromobenzene	108-86-1	5	µg/L		<5	<5	<5	<5	<5
2-Chlorotoluene	95-49-8	5	µg/L		<5	<5	<5	<5	<5
4-Chlorotoluene	106-43-4	5	µg/L		<5	<5	<5	<5	<5
1.3-Dichlorobenzene	541-73-1	5	µg/L		<5	<5	<5	<5	<5
1.4-Dichlorobenzene	106-46-7	5	µg/L		<5	<5	<5	<5	<5
1.2-Dichlorobenzene	95-50-1	5	µg/L		<5	<5	<5	<5	<5
1.2.4-Trichlorobenzene	120-82-1	5	µg/L		<5	<5	<5	<5	<5
1.2.3-Trichlorobenzene	87-61-6	5	µg/L		<5	<5	<5	<5	<5
EP074G: Trihalomethanes									
Chloroform	67-66-3	5	µg/L		<5	<5	<5	<5	<5
Bromodichloromethane	75-27-4	5	µg/L		<5	<5	<5	<5	<5
Dibromochloromethane	124-48-1	5	µg/L		<5	<5	<5	<5	<5
Bromoform	75-25-2	5	µg/L		<5	<5	<5	<5	<5
EP075(SIM)A: Phenolic Compounds									
Phenol	108-95-2	1.0	µg/L		<1.0	<1.0	<1.0	<1.0	<1.0
2-Chlorophenol	95-57-8	1.0	µg/L		<1.0	<1.0	<1.0	<1.0	<1.0
2-Methylphenol	95-48-7	1.0	µg/L		<1.0	<1.0	<1.0	<1.0	<1.0
3- & 4-Methylphenol	1319-77-3	2.0	µg/L		<2.0	<2.0	<2.0	<2.0	<2.0
2-Nitrophenol	88-75-5	1.0	µg/L		<1.0	<1.0	<1.0	<1.0	<1.0
2.4-Dimethylphenol	105-67-9	1.0	µg/L		<1.0	<1.0	<1.0	<1.0	<1.0
2.4-Dichlorophenol	120-83-2	1.0	µg/L		<1.0	<1.0	<1.0	<1.0	<1.0
2.6-Dichlorophenol	87-65-0	1.0	µg/L		<1.0	<1.0	<1.0	<1.0	<1.0
4-Chloro-3-methylphenol	59-50-7	1.0	µg/L		<1.0	<1.0	<1.0	<1.0	<1.0
2.4.6-Trichlorophenol	88-06-2	1.0	µg/L		<1.0	<1.0	<1.0	<1.0	<1.0
2.4.5-Trichlorophenol	95-95-4	1.0	µg/L		<1.0	<1.0	<1.0	<1.0	<1.0
Pentachlorophenol	87-86-5	2.0	µg/L		<2.0	<2.0	<2.0	<2.0	<2.0
EP075(SIM)B: Polynuclear Aromatic Hydrocarbons									
Naphthalene	91-20-3	1.0	µg/L		<1.0	<1.0	<1.0	<1.0	<1.0
Acenaphthylene	208-96-8	1.0	µg/L		<1.0	<1.0	<1.0	<1.0	<1.0
Acenaphthene	83-32-9	1.0	µg/L		<1.0	<1.0	<1.0	<1.0	<1.0

Analytical Results

Sub-Matrix: WATER (Matrix: WATER)				Sample ID	HINDS	HINUS	KEMDS	KEMUS	ROPDS
				Sampling date / time	01-May-2023 00:00	01-May-2023 00:00	01-May-2023 00:00	01-May-2023 00:00	01-May-2023 00:00
Compound	CAS Number	LOR	Unit		ES2314384-006	ES2314384-007	ES2314384-008	ES2314384-009	ES2314384-010
					Result	Result	Result	Result	Result
EP075(SIM)B: Polynuclear Aromatic Hydrocarbons - Continued									
Fluorene	86-73-7	1.0	µg/L		<1.0	<1.0	<1.0	<1.0	<1.0
Phenanthrene	85-01-8	1.0	µg/L		<1.0	<1.0	<1.0	<1.0	<1.0
Anthracene	120-12-7	1.0	µg/L		<1.0	<1.0	<1.0	<1.0	<1.0
Fluoranthene	206-44-0	1.0	µg/L		<1.0	<1.0	<1.0	<1.0	<1.0
Pyrene	129-00-0	1.0	µg/L		<1.0	<1.0	<1.0	<1.0	<1.0
Benz(a)anthracene	56-55-3	1.0	µg/L		<1.0	<1.0	<1.0	<1.0	<1.0
Chrysene	218-01-9	1.0	µg/L		<1.0	<1.0	<1.0	<1.0	<1.0
Benzo(b+j)fluoranthene	205-99-2 205-82-3	1.0	µg/L		<1.0	<1.0	<1.0	<1.0	<1.0
Benzo(k)fluoranthene	207-08-9	1.0	µg/L		<1.0	<1.0	<1.0	<1.0	<1.0
Benzo(a)pyrene	50-32-8	0.5	µg/L		<0.5	<0.5	<0.5	<0.5	<0.5
Indeno(1.2.3.cd)pyrene	193-39-5	1.0	µg/L		<1.0	<1.0	<1.0	<1.0	<1.0
Dibenz(a.h)anthracene	53-70-3	1.0	µg/L		<1.0	<1.0	<1.0	<1.0	<1.0
Benzo(g.h.i)perylene	191-24-2	1.0	µg/L		<1.0	<1.0	<1.0	<1.0	<1.0
^ **Sum of polycyclic aromatic hydrocarbons**	----	0.5	µg/L		<0.5	<0.5	<0.5	<0.5	<0.5
^ **Benzo(a)pyrene TEQ (zero)**	----	0.5	µg/L		<0.5	<0.5	<0.5	<0.5	<0.5
EP080: BTEXN									
Benzene	71-43-2	1	µg/L		<1	<1	<1	<1	<1
Toluene	108-88-3	2	µg/L		<2	**4**	**5**	**2**	<2
Ethylbenzene	100-41-4	2	µg/L		<2	<2	<2	<2	<2
meta- & para-Xylene	108-38-3 106-42-3	2	µg/L		<2	<2	<2	<2	<2
ortho-Xylene	95-47-6	2	µg/L		<2	<2	<2	<2	<2
^ **Total Xylenes**	----	2	µg/L		<2	<2	<2	<2	<2
^ **Sum of BTEX**	----	1	µg/L		<1	**4**	**5**	**2**	<1
Naphthalene	91-20-3	5	µg/L		<5	<5	<5	<5	<5
EP131A: Organochlorine Pesticides									
Aldrin	309-00-2	0.010	µg/L		<0.010	<0.010	<0.010	<0.010	<0.010
alpha-BHC	319-84-6	0.010	µg/L		<0.010	<0.010	<0.010	<0.010	<0.010
beta-BHC	319-85-7	0.010	µg/L		<0.010	<0.010	<0.010	<0.010	<0.010
delta-BHC	319-86-8	0.010	µg/L		<0.010	<0.010	<0.010	<0.010	<0.010
4.4`-DDD	72-54-8	0.010	µg/L		<0.010	<0.010	<0.010	<0.010	<0.010
4.4`-DDE	72-55-9	0.010	µg/L		<0.010	<0.010	<0.010	<0.010	<0.010
4.4`-DDT	50-29-3	0.010	µg/L		<0.010	<0.010	<0.010	<0.010	<0.010
^ **Sum of DDD + DDE + DDT**	72-54-8/72-55-9/50-29-2	0.010	µg/L		<0.010	<0.010	<0.010	<0.010	<0.010

Analytical Results

Sub-Matrix: WATER (Matrix: WATER)				Sample ID	HINDS	HINUS	KEMDS	KEMUS	ROPDS
				Sampling date / time	01-May-2023 00:00	01-May-2023 00:00	01-May-2023 00:00	01-May-2023 00:00	01-May-2023 00:00
Compound	CAS Number	LOR	Unit		ES2314384-006	ES2314384-007	ES2314384-008	ES2314384-009	ES2314384-010
					Result	Result	Result	Result	Result
EP131A: Organochlorine Pesticides - Continued									
Dieldrin	60-57-1	0.010	µg/L		<0.010	<0.010	<0.010	<0.010	<0.010
alpha-Endosulfan	959-98-8	0.010	µg/L		<0.010	<0.010	<0.010	<0.010	<0.010
beta-Endosulfan	33213-65-9	0.010	µg/L		<0.010	<0.010	<0.010	<0.010	<0.010
Endosulfan sulfate	1031-07-8	0.010	µg/L		<0.010	<0.010	<0.010	<0.010	<0.010
^ Endosulfan (sum)	115-29-7	0.010	µg/L		<0.010	<0.010	<0.010	<0.010	<0.010
Endrin	72-20-8	0.010	µg/L		<0.010	<0.010	<0.010	<0.010	<0.010
Endrin aldehyde	7421-93-4	0.010	µg/L		<0.010	<0.010	<0.010	<0.010	<0.010
Endrin ketone	53494-70-5	0.010	µg/L		<0.010	<0.010	<0.010	<0.010	<0.010
Heptachlor	76-44-8	0.005	µg/L		<0.005	<0.005	<0.005	<0.005	<0.005
Heptachlor epoxide	1024-57-3	0.010	µg/L		<0.010	<0.010	<0.010	<0.010	<0.010
Hexachlorobenzene (HCB)	118-74-1	0.010	µg/L		<0.010	<0.010	<0.010	<0.010	<0.010
gamma-BHC	58-89-9	0.010	µg/L		<0.010	<0.010	<0.010	<0.010	<0.010
Methoxychlor	72-43-5	0.010	µg/L		<0.010	<0.010	<0.010	<0.010	<0.010
cis-Chlordane	5103-71-9	0.010	µg/L		<0.010	<0.010	<0.010	<0.010	<0.010
trans-Chlordane	5103-74-2	0.010	µg/L		<0.010	<0.010	<0.010	<0.010	<0.010
^ Total Chlordane (sum)	----	0.010	µg/L		<0.010	<0.010	<0.010	<0.010	<0.010
Oxychlordane	27304-13-8	0.010	µg/L		<0.010	<0.010	<0.010	<0.010	<0.010
EP131B: Polychlorinated Biphenyls (as Aroclors)									
Total Polychlorinated biphenyls	----	0.005	µg/L		<0.005	<0.005	<0.005	<0.005	<0.005
Aroclor 1016	12674-11-2	0.005	µg/L		<0.005	<0.005	<0.005	<0.005	<0.005
Aroclor 1221	11104-28-2	0.005	µg/L		<0.005	<0.005	<0.005	<0.005	<0.005
Aroclor 1232	11141-16-5	0.005	µg/L		<0.005	<0.005	<0.005	<0.005	<0.005
Aroclor 1242	53469-21-9	0.005	µg/L		<0.005	<0.005	<0.005	<0.005	<0.005
Aroclor 1248	12672-29-6	0.005	µg/L		<0.005	<0.005	<0.005	<0.005	<0.005
Aroclor 1254	11097-69-1	0.005	µg/L		<0.005	<0.005	<0.005	<0.005	<0.005
Aroclor 1260	11096-82-5	0.005	µg/L		<0.005	<0.005	<0.005	<0.005	<0.005
EP234A: OP Pesticides									
Acephate	30560-19-1	0.5	µg/L		<0.5	<0.5	<0.5	<0.5	<0.5
Azinphos-methyl	86-50-0	0.02	µg/L		<0.02	<0.02	<0.02	<0.02	<0.02
Azinphos-ethyl	2642-71-9	0.02	µg/L		<0.02	<0.02	<0.02	<0.02	<0.02
Bensulide	741-58-2	0.1	µg/L		<0.1	<0.1	<0.1	<0.1	<0.1
Bromophos-ethyl	4824-78-6	0.10	µg/L		<0.10	<0.10	<0.10	<0.10	<0.10
Carbofenothion	786-19-6	0.02	µg/L		<0.02	<0.02	<0.02	<0.02	<0.02
Chlorfenvinphos	470-90-6	0.02	µg/L		<0.02	<0.02	<0.02	<0.02	<0.02

Analytical Results

Sub-Matrix: WATER (Matrix: WATER)				Sample ID	HINDS	HINUS	KEMDS	KEMUS	ROPDS
				Sampling date / time	01-May-2023 00:00	01-May-2023 00:00	01-May-2023 00:00	01-May-2023 00:00	01-May-2023 00:00
Compound	CAS Number	LOR	Unit		ES2314384-006	ES2314384-007	ES2314384-008	ES2314384-009	ES2314384-010
					Result	Result	Result	Result	Result
EP234A: OP Pesticides - Continued									
Chlorpyrifos	2921-88-2	0.02	µg/L		<0.02	<0.02	<0.02	<0.02	<0.02
Chlorpyrifos-methyl	5598-13-0	0.2	µg/L		<0.2	<0.2	<0.2	<0.2	<0.2
Coumaphos	56-72-4	0.01	µg/L		<0.01	<0.01	<0.01	<0.01	<0.01
Demeton-O	298-03-3	0.02	µg/L		<0.02	<0.02	<0.02	<0.02	<0.02
Demeton-O & Demeton-S	298-03-3/126-75-0	0.02	µg/L		<0.02	<0.02	<0.02	<0.02	<0.02
Demeton-S	126-75-0	0.02	µg/L		<0.02	<0.02	<0.02	<0.02	<0.02
Demeton-S-methyl	919-86-8	0.02	µg/L		<0.02	<0.02	<0.02	<0.02	<0.02
Diazinon	333-41-5	0.01	µg/L		<0.01	<0.01	<0.01	<0.01	<0.01
Dichlorvos	62-73-7	0.20	µg/L		<0.20	<0.20	<0.20	<0.20	<0.20
Dimethoate	60-51-5	0.02	µg/L		<0.02	<0.02	**0.13**	**0.19**	<0.02
Disulfoton	298-04-4	0.05	µg/L		<0.05	<0.05	<0.05	<0.05	<0.05
EPN	2104-64-5	0.05	µg/L		<0.05	<0.05	<0.05	<0.05	<0.05
Ethion	563-12-2	0.02	µg/L		<0.02	<0.02	<0.02	<0.02	<0.02
Ethoprophos	13194-48-4	0.01	µg/L		<0.01	<0.01	<0.01	<0.01	<0.01
Fenamiphos	22224-92-6	0.01	µg/L		<0.01	<0.01	<0.01	<0.01	<0.01
Fenchlorphos (Ronnel)	299-84-3	10	µg/L		<10	<10	<10	<10	<10
Fenitrothion	122-14-5	2	µg/L		<2	<2	<2	<2	<2
Fensulfothion	115-90-2	0.01	µg/L		<0.01	<0.01	<0.01	<0.01	<0.01
Fenthion	55-38-9	0.05	µg/L		<0.05	<0.05	<0.05	<0.05	<0.05
Formothion	2540-82-1	20	µg/L		<20	<20	<20	<20	<20
Fosetyl Aluminium	39148-24-8	10	µg/L		<10	<10	<10	<10	<10
Malathion	121-75-5	0.02	µg/L		<0.02	<0.02	**0.02**	**0.05**	<0.02
Methidathion	950-37-8	0.1	µg/L		<0.1	<0.1	<0.1	<0.1	<0.1
Mevinphos	7786-34-7	0.02	µg/L		<0.02	<0.02	<0.02	<0.02	<0.02
Monocrotophos	6923-22-4	0.02	µg/L		<0.02	<0.02	<0.02	<0.02	<0.02
Naftalofos	1491-41-4	1.0	µg/L		<1.0	<1.0	<1.0	<1.0	<1.0
Omethoate	1113-02-6	0.01	µg/L		<0.01	<0.01	<0.01	<0.01	<0.01
Parathion	56-38-2	0.2	µg/L		<0.2	<0.2	<0.2	<0.2	<0.2
Parathion-methyl	298-00-0	0.5	µg/L		<0.5	<0.5	<0.5	<0.5	<0.5
Phorate	298-02-2	0.1	µg/L		<0.1	<0.1	<0.1	<0.1	<0.1
Pirimiphos-ethyl	23505-41-1	0.01	µg/L		<0.01	<0.01	<0.01	<0.01	<0.01
Pirimiphos-methyl	29232-93-7	0.01	µg/L		<0.01	<0.01	<0.01	<0.01	<0.01
Profenofos	41198-08-7	0.01	µg/L		<0.01	<0.01	<0.01	<0.01	<0.01
Prothiofos	34643-46-4	0.1	µg/L		<0.1	<0.1	<0.1	<0.1	<0.1
Pyrazophos	13457-18-6	0.1	µg/L		<0.1	<0.1	<0.1	<0.1	<0.1

Analytical Results

Sub-Matrix: WATER (Matrix: WATER)				Sample ID	HINDS	HINUS	KEMDS	KEMUS	ROPDS
				Sampling date / time	01-May-2023 00:00	01-May-2023 00:00	01-May-2023 00:00	01-May-2023 00:00	01-May-2023 00:00
Compound	CAS Number	LOR	Unit		ES2314384-006	ES2314384-007	ES2314384-008	ES2314384-009	ES2314384-010
					Result	Result	Result	Result	Result
EP234A: OP Pesticides - Continued									
Sulfotep	3689-24-5	0.005	µg/L		<0.005	<0.005	<0.005	<0.005	<0.005
Sulprofos	35400-43-2	0.05	µg/L		<0.05	<0.05	<0.05	<0.05	<0.05
Temephos	3383-96-8	0.02	µg/L		<0.02	<0.02	<0.02	<0.02	<0.02
Terbufos	13071-79-9	0.01	µg/L		<0.01	<0.01	<0.01	<0.01	<0.01
Tetrachlorvinphos	22248-79-9	0.01	µg/L		<0.01	<0.01	<0.01	<0.01	<0.01
Thiometon	640-15-3	0.5	µg/L		<0.5	<0.5	<0.5	<0.5	<0.5
Triazophos	24017-47-8	0.005	µg/L		<0.005	<0.005	<0.005	<0.005	<0.005
Trichlorfon	52-68-6	0.02	µg/L		<0.02	<0.02	<0.02	<0.02	<0.02
Trichloronate	327-98-0	0.5	µg/L		<0.5	<0.5	<0.5	<0.5	<0.5
EP074S: VOC Surrogates									
1.2-Dichloroethane-D4	17060-07-0	5	%		**113**	**116**	**117**	**119**	**103**
Toluene-D8	2037-26-5	5	%		**105**	**110**	**104**	**107**	**93.8**
4-Bromofluorobenzene	460-00-4	5	%		**106**	**113**	**107**	**108**	**94.2**
EP075(SIM)S: Phenolic Compound Surrogates									
Phenol-d6	13127-88-3	1.0	%		**21.3**	**16.2**	**22.9**	**17.8**	**15.3**
2-Chlorophenol-D4	93951-73-6	1.0	%		**46.5**	**37.2**	**52.0**	**39.2**	**34.2**
2.4.6-Tribromophenol	118-79-6	1.0	%		**57.0**	**46.0**	**61.4**	**56.0**	**41.7**
EP075(SIM)T: PAH Surrogates									
2-Fluorobiphenyl	321-60-8	1.0	%		**58.3**	**48.4**	**63.8**	**50.5**	**47.3**
Anthracene-d10	1719-06-8	1.0	%		**66.9**	**60.5**	**73.3**	**64.6**	**53.6**
4-Terphenyl-d14	1718-51-0	1.0	%		**70.6**	**68.4**	**80.9**	**69.7**	**57.5**
EP080S: TPH(V)/BTEX Surrogates									
1.2-Dichloroethane-D4	17060-07-0	2	%		**130**	**135**	**134**	**134**	**118**
Toluene-D8	2037-26-5	2	%		**122**	**130**	**120**	**123**	**108**
4-Bromofluorobenzene	460-00-4	2	%		**112**	**122**	**112**	**113**	**97.8**
EP131S: OC Pesticide Surrogate									
Dibromo-DDE	21655-73-2	0.010	%		**78.9**	**114**	**83.0**	**87.4**	**83.2**
EP131T: PCB Surrogate									
Decachlorobiphenyl	2051-24-3	0.010	%		**120**	**127**	**127**	**124**	**127**

Analytical Results

Sub-Matrix: WATER (Matrix: WATER)			Sample ID	ROPUS	SOUDS	SOUUS	SWDUP1	----
			Sampling date / time	01-May-2023 00:00	01-May-2023 00:00	01-May-2023 00:00	01-May-2023 00:00	----
Compound	CAS Number	LOR	Unit	ES2314384-011	ES2314384-012	ES2314384-013	ES2314384-014	--------
				Result	Result	Result	Result	----
EA015: Total Dissolved Solids dried at 180 ± 5 °C								
Total Dissolved Solids @180°C	----	10	mg/L	**152**	**552**	**518**	**----**	**----**
EA025: Total Suspended Solids dried at 104 ± 2°C								
Suspended Solids (SS)	----	5	mg/L	**1060**	**42**	**38**	**----**	**----**
EG020T: Total Metals by ICP-MS								
Arsenic	7440-38-2	0.001	mg/L	<0.001	**0.002**	**0.002**	**0.001**	**----**
Cadmium	7440-43-9	0.0001	mg/L	<0.0001	<0.0001	<0.0001	<0.0001	**----**
Chromium	7440-47-3	0.001	mg/L	<0.001	**0.001**	**0.001**	**0.002**	**----**
Copper	7440-50-8	0.001	mg/L	**0.004**	**0.006**	**0.006**	**0.007**	**----**
Nickel	7440-02-0	0.001	mg/L	<0.001	**0.002**	**0.002**	**0.002**	**----**
Lead	7439-92-1	0.001	mg/L	<0.001	**0.002**	**0.002**	**0.002**	**----**
Zinc	7440-66-6	0.005	mg/L	**0.010**	**0.035**	**0.023**	**0.019**	**----**
Manganese	7439-96-5	0.001	mg/L	**0.125**	**0.176**	**0.189**	**----**	**----**
Iron	7439-89-6	0.05	mg/L	**0.31**	**1.74**	**1.90**	**----**	**----**
EG035T: Total Recoverable Mercury by FIMS								
Mercury	7439-97-6	0.0001	mg/L	<0.0001	<0.0001	<0.0001	<0.0001	**----**
EK055G: Ammonia as N by Discrete Analyser								
Ammonia as N	7664-41-7	0.01	mg/L	**0.02**	**0.13**	**0.14**	**----**	**----**
EK057G: Nitrite as N by Discrete Analyser								
Nitrite as N	14797-65-0	0.01	mg/L	<0.01	**0.08**	**0.08**	**----**	**----**
EK058G: Nitrate as N by Discrete Analyser								
Nitrate as N	14797-55-8	0.01	mg/L	<0.01	**7.23**	**6.73**	**----**	**----**
EK059G: Nitrite plus Nitrate as N (NOx) by Discrete Analyser								
Nitrite + Nitrate as N	----	0.01	mg/L	<0.01	**7.31**	**6.81**	**----**	**----**
EK061G: Total Kjeldahl Nitrogen By Discrete Analyser								
Total Kjeldahl Nitrogen as N	----	0.1	mg/L	**2.2**	**1.6**	**1.9**	**----**	**----**
EK062G: Total Nitrogen as N (TKN + NOx) by Discrete Analyser								
^ Total Nitrogen as N	----	0.1	mg/L	**2.2**	**8.9**	**8.7**	**----**	**----**
EK067G: Total Phosphorus as P by Discrete Analyser								
Total Phosphorus as P	----	0.01	mg/L	**0.22**	**0.83**	**0.86**	**----**	**----**
EK071G: Reactive Phosphorus as P by discrete analyser								
Reactive Phosphorus as P	14265-44-2	0.01	mg/L	<0.01	**0.60**	**0.58**	**----**	**----**
EP008: Chlorophyll a & Pheophytin a								
Chlorophyll a	----	1	mg/m³	**138**	**9**	**8**	**----**	**----**

Analytical Results

Sub-Matrix: WATER (Matrix: WATER)				Sample ID	ROPUS	SOUDS	SOUUS	SWDUP1	----
				Sampling date / time	01-May-2023 00:00	01-May-2023 00:00	01-May-2023 00:00	01-May-2023 00:00	----
Compound	CAS Number	LOR	Unit		ES2314384-011	ES2314384-012	ES2314384-013	ES2314384-014	--------
					Result	Result	Result	Result	----
EP020: Oil and Grease (O&G)									
Oil & Grease	----	5	mg/L		<5	<5	<5	----	----
EP074D: Fumigants									
2.2-Dichloropropane	594-20-7	5	µg/L		<5	<5	<5	----	----
1.2-Dichloropropane	78-87-5	5	µg/L		<5	<5	<5	----	----
cis-1.3-Dichloropropylene	10061-01-5	5	µg/L		<5	<5	<5	----	----
trans-1.3-Dichloropropylene	10061-02-6	5	µg/L		<5	<5	<5	----	----
1.2-Dibromoethane (EDB)	106-93-4	5	µg/L		<5	<5	<5	----	----
EP074E: Halogenated Aliphatic Compounds									
Dichlorodifluoromethane	75-71-8	50	µg/L		<50	<50	<50	----	----
Chloromethane	74-87-3	50	µg/L		<50	<50	<50	----	----
Vinyl chloride	75-01-4	50	µg/L		<50	<50	<50	----	----
Bromomethane	74-83-9	50	µg/L		<50	<50	<50	----	----
Chloroethane	75-00-3	50	µg/L		<50	<50	<50	----	----
Trichlorofluoromethane	75-69-4	50	µg/L		<50	<50	<50	----	----
1.1-Dichloroethene	75-35-4	5	µg/L		<5	<5	<5	----	----
Iodomethane	74-88-4	5	µg/L		<5	<5	<5	----	----
trans-1.2-Dichloroethene	156-60-5	5	µg/L		<5	<5	<5	----	----
1.1-Dichloroethane	75-34-3	5	µg/L		<5	<5	<5	----	----
cis-1.2-Dichloroethene	156-59-2	5	µg/L		<5	<5	<5	----	----
1.1.1-Trichloroethane	71-55-6	5	µg/L		<5	<5	<5	----	----
1.1-Dichloropropylene	563-58-6	5	µg/L		<5	<5	<5	----	----
Carbon Tetrachloride	56-23-5	5	µg/L		<5	<5	<5	----	----
1.2-Dichloroethane	107-06-2	5	µg/L		<5	<5	<5	----	----
Trichloroethene	79-01-6	5	µg/L		<5	<5	<5	----	----
Dibromomethane	74-95-3	5	µg/L		<5	<5	<5	----	----
1.1.2-Trichloroethane	79-00-5	5	µg/L		<5	<5	<5	----	----
1.3-Dichloropropane	142-28-9	5	µg/L		<5	<5	<5	----	----
Tetrachloroethene	127-18-4	5	µg/L		<5	<5	<5	----	----
1.1.1.2-Tetrachloroethane	630-20-6	5	µg/L		<5	<5	<5	----	----
trans-1.4-Dichloro-2-butene	110-57-6	5	µg/L		<5	<5	<5	----	----
cis-1.4-Dichloro-2-butene	1476-11-5	5	µg/L		<5	<5	<5	----	----
1.1.2.2-Tetrachloroethane	79-34-5	5	µg/L		<5	<5	<5	----	----
1.2.3-Trichloropropane	96-18-4	5	µg/L		<5	<5	<5	----	----
Pentachloroethane	76-01-7	5	µg/L		<5	<5	<5	----	----

Analytical Results

Sub-Matrix: WATER (Matrix: WATER)				Sample ID	ROPUS	SOUDS	SOUUS	SWDUP1	----
				Sampling date / time	01-May-2023 00:00	01-May-2023 00:00	01-May-2023 00:00	01-May-2023 00:00	----
Compound	CAS Number	LOR	Unit		ES2314384-011	ES2314384-012	ES2314384-013	ES2314384-014	--------
					Result	Result	Result	Result	----
EP074E: Halogenated Aliphatic Compounds - Continued									
1.2-Dibromo-3-chloropropane	96-12-8	5	µg/L		<5	<5	<5	----	----
Hexachlorobutadiene	87-68-3	5	µg/L		<5	<5	<5	----	----
EP074F: Halogenated Aromatic Compounds									
Chlorobenzene	108-90-7	5	µg/L		<5	<5	<5	----	----
Bromobenzene	108-86-1	5	µg/L		<5	<5	<5	----	----
2-Chlorotoluene	95-49-8	5	µg/L		<5	<5	<5	----	----
4-Chlorotoluene	106-43-4	5	µg/L		<5	<5	<5	----	----
1.3-Dichlorobenzene	541-73-1	5	µg/L		<5	<5	<5	----	----
1.4-Dichlorobenzene	106-46-7	5	µg/L		<5	<5	<5	----	----
1.2-Dichlorobenzene	95-50-1	5	µg/L		<5	<5	<5	----	----
1.2.4-Trichlorobenzene	120-82-1	5	µg/L		<5	<5	<5	----	----
1.2.3-Trichlorobenzene	87-61-6	5	µg/L		<5	<5	<5	----	----
EP074G: Trihalomethanes									
Chloroform	67-66-3	5	µg/L		<5	<5	<5	----	----
Bromodichloromethane	75-27-4	5	µg/L		<5	<5	<5	----	----
Dibromochloromethane	124-48-1	5	µg/L		<5	<5	<5	----	----
Bromoform	75-25-2	5	µg/L		<5	<5	<5	----	----
EP075(SIM)A: Phenolic Compounds									
Phenol	108-95-2	1.0	µg/L		<1.0	<1.0	<1.0	----	----
2-Chlorophenol	95-57-8	1.0	µg/L		<1.0	<1.0	<1.0	----	----
2-Methylphenol	95-48-7	1.0	µg/L		<1.0	<1.0	<1.0	----	----
3- & 4-Methylphenol	1319-77-3	2.0	µg/L		<2.0	<2.0	<2.0	----	----
2-Nitrophenol	88-75-5	1.0	µg/L		<1.0	<1.0	<1.0	----	----
2.4-Dimethylphenol	105-67-9	1.0	µg/L		<1.0	<1.0	<1.0	----	----
2.4-Dichlorophenol	120-83-2	1.0	µg/L		<1.0	<1.0	<1.0	----	----
2.6-Dichlorophenol	87-65-0	1.0	µg/L		<1.0	<1.0	<1.0	----	----
4-Chloro-3-methylphenol	59-50-7	1.0	µg/L		<1.0	<1.0	<1.0	----	----
2.4.6-Trichlorophenol	88-06-2	1.0	µg/L		<1.0	<1.0	<1.0	----	----
2.4.5-Trichlorophenol	95-95-4	1.0	µg/L		<1.0	<1.0	<1.0	----	----
Pentachlorophenol	87-86-5	2.0	µg/L		<2.0	<2.0	<2.0	----	----
EP075(SIM)B: Polynuclear Aromatic Hydrocarbons									
Naphthalene	91-20-3	1.0	µg/L		<1.0	<1.0	<1.0	----	----
Acenaphthylene	208-96-8	1.0	µg/L		<1.0	<1.0	<1.0	----	----
Acenaphthene	83-32-9	1.0	µg/L		<1.0	<1.0	<1.0	----	----

Analytical Results

Sub-Matrix: WATER (Matrix: WATER)			Sample ID	ROPUS	SOUDS	SOUUS	SWDUP1	----
			Sampling date / time	01-May-2023 00:00	01-May-2023 00:00	01-May-2023 00:00	01-May-2023 00:00	----
Compound	CAS Number	LOR	Unit	ES2314384-011	ES2314384-012	ES2314384-013	ES2314384-014	--------
				Result	Result	Result	Result	----
EP075(SIM)B: Polynuclear Aromatic Hydrocarbons - Continued								
Fluorene	86-73-7	1.0	µg/L	<1.0	<1.0	<1.0	----	----
Phenanthrene	85-01-8	1.0	µg/L	<1.0	<1.0	<1.0	----	----
Anthracene	120-12-7	1.0	µg/L	<1.0	<1.0	<1.0	----	----
Fluoranthene	206-44-0	1.0	µg/L	<1.0	<1.0	<1.0	----	----
Pyrene	129-00-0	1.0	µg/L	<1.0	<1.0	<1.0	----	----
Benz(a)anthracene	56-55-3	1.0	µg/L	<1.0	<1.0	<1.0	----	----
Chrysene	218-01-9	1.0	µg/L	<1.0	<1.0	<1.0	----	----
Benzo(b+j)fluoranthene	205-99-2 205-82-3	1.0	µg/L	<1.0	<1.0	<1.0	----	----
Benzo(k)fluoranthene	207-08-9	1.0	µg/L	<1.0	<1.0	<1.0	----	----
Benzo(a)pyrene	50-32-8	0.5	µg/L	<0.5	<0.5	<0.5	----	----
Indeno(1.2.3.cd)pyrene	193-39-5	1.0	µg/L	<1.0	<1.0	<1.0	----	----
Dibenz(a.h)anthracene	53-70-3	1.0	µg/L	<1.0	<1.0	<1.0	----	----
Benzo(g.h.i)perylene	191-24-2	1.0	µg/L	<1.0	<1.0	<1.0	----	----
^ **Sum of polycyclic aromatic hydrocarbons**	----	0.5	µg/L	<0.5	<0.5	<0.5	----	----
^ **Benzo(a)pyrene TEQ (zero)**	----	0.5	µg/L	<0.5	<0.5	<0.5	----	----
EP080: BTEXN								
Benzene	71-43-2	1	µg/L	<1	<1	<1	----	----
Toluene	108-88-3	2	µg/L	<2	<2	<2	----	----
Ethylbenzene	100-41-4	2	µg/L	<2	<2	<2	----	----
meta- & para-Xylene	108-38-3 106-42-3	2	µg/L	<2	<2	<2	----	----
ortho-Xylene	95-47-6	2	µg/L	<2	<2	<2	----	----
^ **Total Xylenes**	----	2	µg/L	<2	<2	<2	----	----
^ **Sum of BTEX**	----	1	µg/L	<1	<1	<1	----	----
Naphthalene	91-20-3	5	µg/L	<5	<5	<5	----	----
EP131A: Organochlorine Pesticides								
Aldrin	309-00-2	0.010	µg/L	<0.010	<0.010	<0.010	----	----
alpha-BHC	319-84-6	0.010	µg/L	<0.010	<0.010	<0.010	----	----
beta-BHC	319-85-7	0.010	µg/L	<0.010	<0.010	<0.010	----	----
delta-BHC	319-86-8	0.010	µg/L	<0.010	<0.010	<0.010	----	----
4.4`-DDD	72-54-8	0.010	µg/L	<0.010	<0.010	<0.010	----	----
4.4`-DDE	72-55-9	0.010	µg/L	<0.010	<0.010	<0.010	----	----
4.4`-DDT	50-29-3	0.010	µg/L	<0.010	<0.010	<0.010	----	----
^ **Sum of DDD + DDE + DDT**	72-54-8/72-55-9/50-29-3	0.010	µg/L	<0.010	<0.010	<0.010	----	----

Analytical Results

Sub-Matrix: WATER (Matrix: WATER)				Sample ID	ROPUS	SOUDS	SOUUS	SWDUP1	----
				Sampling date / time	01-May-2023 00:00	01-May-2023 00:00	01-May-2023 00:00	01-May-2023 00:00	----
Compound	CAS Number	LOR	Unit		ES2314384-011	ES2314384-012	ES2314384-013	ES2314384-014	--------
					Result	Result	Result	Result	----
EP131A: Organochlorine Pesticides - Continued									
Dieldrin	60-57-1	0.010	µg/L		<0.010	<0.010	<0.010	----	----
alpha-Endosulfan	959-98-8	0.010	µg/L		<0.010	<0.010	<0.010	----	----
beta-Endosulfan	33213-65-9	0.010	µg/L		<0.010	<0.010	<0.010	----	----
Endosulfan sulfate	1031-07-8	0.010	µg/L		<0.010	<0.010	<0.010	----	----
^ Endosulfan (sum)	115-29-7	0.010	µg/L		<0.010	<0.010	<0.010	----	----
Endrin	72-20-8	0.010	µg/L		<0.010	<0.010	<0.010	----	----
Endrin aldehyde	7421-93-4	0.010	µg/L		<0.010	<0.010	<0.010	----	----
Endrin ketone	53494-70-5	0.010	µg/L		<0.010	<0.010	<0.010	----	----
Heptachlor	76-44-8	0.005	µg/L		<0.005	<0.005	<0.005	----	----
Heptachlor epoxide	1024-57-3	0.010	µg/L		<0.010	<0.010	<0.010	----	----
Hexachlorobenzene (HCB)	118-74-1	0.010	µg/L		<0.010	<0.010	<0.010	----	----
gamma-BHC	58-89-9	0.010	µg/L		<0.010	<0.010	<0.010	----	----
Methoxychlor	72-43-5	0.010	µg/L		<0.010	<0.010	<0.010	----	----
cis-Chlordane	5103-71-9	0.010	µg/L		<0.010	<0.010	<0.010	----	----
trans-Chlordane	5103-74-2	0.010	µg/L		<0.010	<0.010	<0.010	----	----
^ Total Chlordane (sum)	----	0.010	µg/L		<0.010	<0.010	<0.010	----	----
Oxychlordane	27304-13-8	0.010	µg/L		<0.010	<0.010	<0.010	----	----
EP131B: Polychlorinated Biphenyls (as Aroclors)									
Total Polychlorinated biphenyls	----	0.005	µg/L		<0.005	<0.005	<0.005	----	----
Aroclor 1016	12674-11-2	0.005	µg/L		<0.005	<0.005	<0.005	----	----
Aroclor 1221	11104-28-2	0.005	µg/L		<0.005	<0.005	<0.005	----	----
Aroclor 1232	11141-16-5	0.005	µg/L		<0.005	<0.005	<0.005	----	----
Aroclor 1242	53469-21-9	0.005	µg/L		<0.005	<0.005	<0.005	----	----
Aroclor 1248	12672-29-6	0.005	µg/L		<0.005	<0.005	<0.005	----	----
Aroclor 1254	11097-69-1	0.005	µg/L		<0.005	<0.005	<0.005	----	----
Aroclor 1260	11096-82-5	0.005	µg/L		<0.005	<0.005	<0.005	----	----
EP234A: OP Pesticides									
Acephate	30560-19-1	0.5	µg/L		<0.5	<0.5	<0.5	----	----
Azinphos-methyl	86-50-0	0.02	µg/L		<0.02	<0.02	<0.02	----	----
Azinphos-ethyl	2642-71-9	0.02	µg/L		<0.02	<0.02	<0.02	----	----
Bensulide	741-58-2	0.1	µg/L		<0.1	<0.1	<0.1	----	----
Bromophos-ethyl	4824-78-6	0.10	µg/L		<0.10	<0.10	<0.10	----	----
Carbofenothion	786-19-6	0.02	µg/L		<0.02	<0.02	<0.02	----	----
Chlorfenvinphos	470-90-6	0.02	µg/L		<0.02	<0.02	<0.02	----	----

Analytical Results

Sub-Matrix: WATER (Matrix: WATER)				Sample ID	ROPUS	SOUDS	SOUUS	SWDUP1	----
				Sampling date / time	01-May-2023 00:00	01-May-2023 00:00	01-May-2023 00:00	01-May-2023 00:00	----
Compound	CAS Number	LOR	Unit		ES2314384-011	ES2314384-012	ES2314384-013	ES2314384-014	--------
					Result	Result	Result	Result	----
EP234A: OP Pesticides - Continued									
Chlorpyrifos	2921-88-2	0.02	µg/L		<0.02	<0.02	<0.02	----	----
Chlorpyrifos-methyl	5598-13-0	0.2	µg/L		<0.2	<0.2	<0.2	----	----
Coumaphos	56-72-4	0.01	µg/L		<0.01	<0.01	<0.01	----	----
Demeton-O	298-03-3	0.02	µg/L		<0.02	<0.02	<0.02	----	----
Demeton-O & Demeton-S	298-03-3/126-75-0	0.02	µg/L		<0.02	<0.02	<0.02	----	----
Demeton-S	126-75-0	0.02	µg/L		<0.02	<0.02	<0.02	----	----
Demeton-S-methyl	919-86-8	0.02	µg/L		<0.02	<0.02	<0.02	----	----
Diazinon	333-41-5	0.01	µg/L		<0.01	**0.02**	**0.02**	----	----
Dichlorvos	62-73-7	0.20	µg/L		<0.20	<0.20	<0.20	----	----
Dimethoate	60-51-5	0.02	µg/L		<0.02	**0.10**	**0.11**	----	----
Disulfoton	298-04-4	0.05	µg/L		<0.05	<0.05	<0.05	----	----
EPN	2104-64-5	0.05	µg/L		<0.05	<0.05	<0.05	----	----
Ethion	563-12-2	0.02	µg/L		<0.02	<0.02	<0.02	----	----
Ethoprophos	13194-48-4	0.01	µg/L		<0.01	<0.01	<0.01	----	----
Fenamiphos	22224-92-6	0.01	µg/L		<0.01	<0.01	<0.01	----	----
Fenchlorphos (Ronnel)	299-84-3	10	µg/L		<10	<10	<10	----	----
Fenitrothion	122-14-5	2	µg/L		<2	<2	<2	----	----
Fensulfothion	115-90-2	0.01	µg/L		<0.01	<0.01	<0.01	----	----
Fenthion	55-38-9	0.05	µg/L		<0.05	<0.05	<0.05	----	----
Formothion	2540-82-1	20	µg/L		<20	<20	<20	----	----
Fosetyl Aluminium	39148-24-8	10	µg/L		<10	<10	<10	----	----
Malathion	121-75-5	0.02	µg/L		<0.02	**0.04**	**0.03**	----	----
Methidathion	950-37-8	0.1	µg/L		<0.1	<0.1	<0.1	----	----
Mevinphos	7786-34-7	0.02	µg/L		<0.02	<0.02	<0.02	----	----
Monocrotophos	6923-22-4	0.02	µg/L		<0.02	<0.02	<0.02	----	----
Naftalofos	1491-41-4	1.0	µg/L		<1.0	<1.0	<1.0	----	----
Omethoate	1113-02-6	0.01	µg/L		<0.01	<0.01	<0.01	----	----
Parathion	56-38-2	0.2	µg/L		<0.2	<0.2	<0.2	----	----
Parathion-methyl	298-00-0	0.5	µg/L		<0.5	<0.5	<0.5	----	----
Phorate	298-02-2	0.1	µg/L		<0.1	<0.1	<0.1	----	----
Pirimiphos-ethyl	23505-41-1	0.01	µg/L		<0.01	<0.01	<0.01	----	----
Pirimiphos-methyl	29232-93-7	0.01	µg/L		<0.01	<0.01	<0.01	----	----
Profenofos	41198-08-7	0.01	µg/L		<0.01	<0.01	<0.01	----	----
Prothiofos	34643-46-4	0.1	µg/L		<0.1	<0.1	<0.1	----	----
Pyrazophos	13457-18-6	0.1	µg/L		<0.1	<0.1	<0.1	----	----

Analytical Results

Sub-Matrix: WATER (Matrix: WATER)				Sample ID	ROPUS	SOUDS	SOUUS	SWDUP1	----
				Sampling date / time	01-May-2023 00:00	01-May-2023 00:00	01-May-2023 00:00	01-May-2023 00:00	----
Compound	CAS Number	LOR	Unit		ES2314384-011	ES2314384-012	ES2314384-013	ES2314384-014	--------
					Result	Result	Result	Result	----
EP234A: OP Pesticides - Continued									
Sulfotep	3689-24-5	0.005	µg/L		<0.005	<0.005	<0.005	----	----
Sulprofos	35400-43-2	0.05	µg/L		<0.05	<0.05	<0.05	----	----
Temephos	3383-96-8	0.02	µg/L		<0.02	<0.02	<0.02	----	----
Terbufos	13071-79-9	0.01	µg/L		<0.01	<0.01	<0.01	----	----
Tetrachlorvinphos	22248-79-9	0.01	µg/L		<0.01	<0.01	<0.01	----	----
Thiometon	640-15-3	0.5	µg/L		<0.5	<0.5	<0.5	----	----
Triazophos	24017-47-8	0.005	µg/L		<0.005	<0.005	<0.005	----	----
Trichlorfon	52-68-6	0.02	µg/L		<0.02	<0.02	<0.02	----	----
Trichloronate	327-98-0	0.5	µg/L		<0.5	<0.5	<0.5	----	----
EP074S: VOC Surrogates									
1.2-Dichloroethane-D4	17060-07-0	5	%		**121**	**114**	**113**	----	----
Toluene-D8	2037-26-5	5	%		**103**	**102**	**104**	----	----
4-Bromofluorobenzene	460-00-4	5	%		**108**	**106**	**104**	----	----
EP075(SIM)S: Phenolic Compound Surrogates									
Phenol-d6	13127-88-3	1.0	%		**20.6**	**17.7**	**16.8**	----	----
2-Chlorophenol-D4	93951-73-6	1.0	%		**46.4**	**39.6**	**37.2**	----	----
2.4.6-Tribromophenol	118-79-6	1.0	%		**64.7**	**51.0**	**50.5**	----	----
EP075(SIM)T: PAH Surrogates									
2-Fluorobiphenyl	321-60-8	1.0	%		**58.1**	**50.5**	**49.9**	----	----
Anthracene-d10	1719-06-8	1.0	%		**73.6**	**59.4**	**58.7**	----	----
4-Terphenyl-d14	1718-51-0	1.0	%		**80.4**	**66.9**	**61.3**	----	----
EP080S: TPH(V)/BTEX Surrogates									
1.2-Dichloroethane-D4	17060-07-0	2	%		**138**	**131**	**130**	----	----
Toluene-D8	2037-26-5	2	%		**119**	**118**	**119**	----	----
4-Bromofluorobenzene	460-00-4	2	%		**112**	**109**	**110**	----	----
EP131S: OC Pesticide Surrogate									
Dibromo-DDE	21655-73-2	0.010	%		**83.2**	**86.6**	**115**	----	----
EP131T: PCB Surrogate									
Decachlorobiphenyl	2051-24-3	0.010	%		**122**	**120**	**118**	----	----

Surrogate Control Limits

Sub-Matrix: WATER		Recovery Limits (%)	
Compound	*CAS Number*	*Low*	*High*
EP074S: VOC Surrogates			
1.2-Dichloroethane-D4	17060-07-0	78	133
Toluene-D8	2037-26-5	79	129
4-Bromofluorobenzene	460-00-4	81	124
EP075(SIM)S: Phenolic Compound Surrogates			
Phenol-d6	13127-88-3	10	44
2-Chlorophenol-D4	93951-73-6	14	94
2.4.6-Tribromophenol	118-79-6	17	125
EP075(SIM)T: PAH Surrogates			
2-Fluorobiphenyl	321-60-8	20	104
Anthracene-d10	1719-06-8	27	113
4-Terphenyl-d14	1718-51-0	32	112
EP080S: TPH(V)/BTEX Surrogates			
1.2-Dichloroethane-D4	17060-07-0	72	143
Toluene-D8	2037-26-5	75	131
4-Bromofluorobenzene	460-00-4	73	137
EP131S: OC Pesticide Surrogate			
Dibromo-DDE	21655-73-2	14	166
EP131T: PCB Surrogate			
Decachlorobiphenyl	2051-24-3	10	164

QUALITY CONTROL REPORT

Work Order	: **ES2314384**	Page	: 1 of 20
Client	: **GHD PTY LTD**	Laboratory	: Environmental Division Sydney
Contact	: MR HENRY LUO	Contact	: Sarah Mathew
Address	: LEVEL 15, 133 CASTLEREAGH STREET SYDNEY NSW, AUSTRALIA 2000	Address	: 277-289 Woodpark Road Smithfield NSW Australia 2164
Telephone	: +61 02 9239 7100	Telephone	: +61-2-8784 8555
Project	: M12 SURFACE WATER	Date Samples Received	: 02-May-2023
Order number	: 12554717	Date Analysis Commenced	: 02-May-2023
C-O-C number	: ----	Issue Date	: 09-May-2023
Sampler	: Emily Smith		
Site	:		
Quote number	: SY/322/21		
No. of samples received	: 14		
No. of samples analysed	: 14		

Accreditation No. 825
Accredited for compliance with
ISO/IEC 17025 - Testing

This report supersedes any previous report(s) with this reference. Results apply to the sample(s) as submitted, unless the sampling was conducted by ALS. This document shall not be reproduced, except in full.

This Quality Control Report contains the following information:

- Laboratory Duplicate (DUP) Report; Relative Percentage Difference (RPD) and Acceptance Limits
- Method Blank (MB) and Laboratory Control Spike (LCS) Report; Recovery and Acceptance Limits
- Matrix Spike (MS) Report; Recovery and Acceptance Limits

Signatories

This document has been electronically signed by the authorized signatories below. Electronic signing is carried out in compliance with procedures specified in 21 CFR Part 11.

Signatories	*Position*	*Accreditation Category*
Ankit Joshi	Senior Chemist - Inorganics	Sydney Inorganics, Smithfield, NSW
Edwandy Fadjar	Organic Coordinator	Sydney Organics, Smithfield, NSW
Franco Lentini	LCMS Coordinator	Sydney Organics, Smithfield, NSW

General Comments

The analytical procedures used by ALS have been developed from established internationally recognised procedures such as those published by the USEPA, APHA, AS and NEPM. In house developed procedures are fully validated and are often at the client request.

Where moisture determination has been performed, results are reported on a dry weight basis.

Where a reported less than (<) result is higher than the LOR, this may be due to primary sample extract/digestate dilution and/or insufficient sample for analysis. Where the LOR of a reported result differs from standard LOR, this may be due to high moisture content, insufficient sample (reduced weight employed) or matrix interference.

Key : Anonymous = Refers to samples which are not specifically part of this work order but formed part of the QC process lot
CAS Number = CAS registry number from database maintained by Chemical Abstracts Services. The Chemical Abstracts Service is a division of the American Chemical Society.
LOR = Limit of reporting
RPD = Relative Percentage Difference
# = Indicates failed QC

Laboratory Duplicate (DUP) Report

The quality control term Laboratory Duplicate refers to a randomly selected intralaboratory split. Laboratory duplicates provide information regarding method precision and sample heterogeneity. The permitted ranges for the Relative Percent Deviation (RPD) of Laboratory Duplicates are specified in ALS Method QWI-EN/38 and are dependent on the magnitude of results in comparison to the level of reporting: Result < 10 times LOR: No Limit; Result between 10 and 20 times LOR: 0% - 50%; Result > 20 times LOR: 0% - 20%.

Sub-Matrix: **WATER**

				Laboratory Duplicate (DUP) Report					
Laboratory sample ID	*Sample ID*	*Method: Compound*	*CAS Number*	*LOR*	*Unit*	*Original Result*	*Duplicate Result*	*RPD (%)*	*Acceptable RPD (%)*
EA015: Total Dissolved Solids dried at 180 ± 5 °C (QC Lot: 5026591)									
ES2314224-001	Anonymous	EA015H: Total Dissolved Solids @180°C	----	10	mg/L	115	128	10.7	0% - 50%
ES2314384-008	KEMDS	EA015H: Total Dissolved Solids @180°C	----	10	mg/L	480	498	3.6	0% - 20%
ES2314403-004	Anonymous	EA015H: Total Dissolved Solids @180°C	----	10	mg/L	833	796	4.6	0% - 20%
ES2314403-014	Anonymous	EA015H: Total Dissolved Solids @180°C	----	10	mg/L	1600	1610	0.9	0% - 20%
EA025: Total Suspended Solids dried at 104 ± 2°C (QC Lot: 5026592)									
ES2314224-001	Anonymous	EA025H: Suspended Solids (SS)	----	5	mg/L	30	29	4.3	No Limit
ES2314384-008	KEMDS	EA025H: Suspended Solids (SS)	----	5	mg/L	48	46	3.7	No Limit
ES2314403-004	Anonymous	EA025H: Suspended Solids (SS)	----	5	mg/L	104	101	2.2	0% - 20%
ES2314403-014	Anonymous	EA025H: Suspended Solids (SS)	----	5	mg/L	53	54	2.8	0% - 50%
EG020T: Total Metals by ICP-MS (QC Lot: 5029320)									
ES2314384-008	KEMDS	EG020A-T: Cadmium	7440-43-9	0.0001	mg/L	0.0003	<0.0001	97.2	No Limit
		EG020A-T: Arsenic	7440-38-2	0.001	mg/L	0.002	0.002	0.0	No Limit
		EG020A-T: Chromium	7440-47-3	0.001	mg/L	0.002	0.002	0.0	No Limit
		EG020A-T: Copper	7440-50-8	0.001	mg/L	0.008	0.008	0.0	No Limit
		EG020A-T: Lead	7439-92-1	0.001	mg/L	0.002	0.002	0.0	No Limit
		EG020A-T: Manganese	7439-96-5	0.001	mg/L	0.036	0.035	0.0	0% - 20%
		EG020A-T: Nickel	7440-02-0	0.001	mg/L	0.003	0.002	0.0	No Limit
		EG020A-T: Zinc	7440-66-6	0.005	mg/L	0.036	0.029	21.2	No Limit
		EG020A-T: Iron	7439-89-6	0.05	mg/L	1.88	1.86	0.8	0% - 20%
ES2314224-001	Anonymous	EG020A-T: Cadmium	7440-43-9	0.0001	mg/L	<0.0001	<0.0001	0.0	No Limit
		EG020A-T: Arsenic	7440-38-2	0.001	mg/L	0.003	0.003	0.0	No Limit
		EG020A-T: Chromium	7440-47-3	0.001	mg/L	<0.001	<0.001	0.0	No Limit
		EG020A-T: Copper	7440-50-8	0.001	mg/L	0.004	0.004	0.0	No Limit
		EG020A-T: Lead	7439-92-1	0.001	mg/L	0.003	0.003	0.0	No Limit

Sub-Matrix: **WATER**

				Laboratory Duplicate (DUP) Report					
Laboratory sample ID	*Sample ID*	*Method: Compound*	*CAS Number*	*LOR*	*Unit*	*Original Result*	*Duplicate Result*	*RPD (%)*	*Acceptable RPD (%)*
EG020T: Total Metals by ICP-MS (QC Lot: 5029320) - continued									
ES2314224-001	Anonymous	EG020A-T: Manganese	7439-96-5	0.001	mg/L	0.085	0.083	2.1	0% - 20%
		EG020A-T: Nickel	7440-02-0	0.001	mg/L	0.001	0.001	0.0	No Limit
		EG020A-T: Zinc	7440-66-6	0.005	mg/L	0.139	0.138	0.0	0% - 20%
		EG020A-T: Iron	7439-89-6	0.05	mg/L	0.90	1.04	15.0	0% - 20%
EG035T: Total Recoverable Mercury by FIMS (QC Lot: 5029334)									
ES2314347-003	Anonymous	EG035T: Mercury	7439-97-6	0.0001	mg/L	<0.1 µg/L	<0.0001	0.0	No Limit
ES2314384-007	HINUS	EG035T: Mercury	7439-97-6	0.0001	mg/L	<0.0001	<0.0001	0.0	No Limit
EK055G: Ammonia as N by Discrete Analyser (QC Lot: 5029066)									
ES2314384-001	BADDS	EK055G: Ammonia as N	7664-41-7	0.01	mg/L	0.08	0.08	0.0	No Limit
ES2314384-010	ROPDS	EK055G: Ammonia as N	7664-41-7	0.01	mg/L	0.04	0.03	0.0	No Limit
EK057G: Nitrite as N by Discrete Analyser (QC Lot: 5023154)									
ES2314122-002	Anonymous	EK057G: Nitrite as N	14797-65-0	0.01	mg/L	0.01	0.02	52.6	No Limit
ES2314122-011	Anonymous	EK057G: Nitrite as N	14797-65-0	0.01	mg/L	0.02	0.02	0.0	No Limit
EK057G: Nitrite as N by Discrete Analyser (QC Lot: 5026996)									
ES2314431-001	Anonymous	EK057G: Nitrite as N	14797-65-0	0.01	mg/L	<0.01	<0.01	0.0	No Limit
ES2314305-001	Anonymous	EK057G: Nitrite as N	14797-65-0	0.01	mg/L	<0.10	<0.10	0.0	No Limit
EK059G: Nitrite plus Nitrate as N (NOx) by Discrete Analyser (QC Lot: 5029067)									
ES2314384-001	BADDS	EK059G: Nitrite + Nitrate as N	----	0.01	mg/L	2.14	2.08	2.8	0% - 20%
ES2314384-010	ROPDS	EK059G: Nitrite + Nitrate as N	----	0.01	mg/L	0.13	0.13	0.0	0% - 50%
EK061G: Total Kjeldahl Nitrogen By Discrete Analyser (QC Lot: 5029070)									
ES2314384-001	BADDS	EK061G: Total Kjeldahl Nitrogen as N	----	0.1	mg/L	1.0	1.0	0.0	No Limit
ES2314384-011	ROPUS	EK061G: Total Kjeldahl Nitrogen as N	----	0.1	mg/L	2.2	1.9	16.5	0% - 20%
EK067G: Total Phosphorus as P by Discrete Analyser (QC Lot: 5029069)									
ES2314384-001	BADDS	EK067G: Total Phosphorus as P	----	0.01	mg/L	0.19	0.15	22.0	0% - 50%
ES2314384-011	ROPUS	EK067G: Total Phosphorus as P	----	0.01	mg/L	0.22	0.20	12.4	0% - 20%
EK071G: Reactive Phosphorus as P by discrete analyser (QC Lot: 5023153)									
ES2314122-002	Anonymous	EK071G: Reactive Phosphorus as P	14265-44-2	0.01	mg/L	9.04	9.21	1.8	0% - 20%
ES2314122-011	Anonymous	EK071G: Reactive Phosphorus as P	14265-44-2	0.01	mg/L	<0.01	<0.01	0.0	No Limit
EK071G: Reactive Phosphorus as P by discrete analyser (QC Lot: 5023155)									
ES2314384-010	ROPDS	EK071G: Reactive Phosphorus as P	14265-44-2	0.01	mg/L	0.02	0.02	0.0	No Limit
EW2301942-005	Anonymous	EK071G: Reactive Phosphorus as P	14265-44-2	0.01	mg/L	<0.01	<0.01	0.0	No Limit
EK071G: Reactive Phosphorus as P by discrete analyser (QC Lot: 5026997)									
ES2314384-005	COSUS	EK071G: Reactive Phosphorus as P	14265-44-2	0.01	mg/L	<0.01	<0.01	0.0	No Limit
ES2314305-001	Anonymous	EK071G: Reactive Phosphorus as P	14265-44-2	0.01	mg/L	8.49	9.00	5.8	0% - 20%
EP074D: Fumigants (QC Lot: 5027158)									
ES2314050-001	Anonymous	EP074: 2.2-Dichloropropane	594-20-7	5	µg/L	<5	<5	0.0	No Limit
		EP074: 1.2-Dichloropropane	78-87-5	5	µg/L	<5	<5	0.0	No Limit
		EP074: cis-1.3-Dichloropropylene	10061-01-5	5	µg/L	<5	<5	0.0	No Limit

Sub-Matrix: **WATER**

				Laboratory Duplicate (DUP) Report					
Laboratory sample ID	*Sample ID*	*Method: Compound*	*CAS Number*	*LOR*	*Unit*	*Original Result*	*Duplicate Result*	*RPD (%)*	*Acceptable RPD (%)*
EP074D: Fumigants (QC Lot: 5027158) - continued									
ES2314050-001	Anonymous	EP074: trans-1.3-Dichloropropylene	10061-02-6	5	µg/L	<5	<5	0.0	No Limit
		EP074: 1.2-Dibromoethane (EDB)	106-93-4	5	µg/L	<5	<5	0.0	No Limit
ES2314384-007	HINUS	EP074: 2.2-Dichloropropane	594-20-7	5	µg/L	<5	<5	0.0	No Limit
		EP074: 1.2-Dichloropropane	78-87-5	5	µg/L	<5	<5	0.0	No Limit
		EP074: cis-1.3-Dichloropropylene	10061-01-5	5	µg/L	<5	<5	0.0	No Limit
		EP074: trans-1.3-Dichloropropylene	10061-02-6	5	µg/L	<5	<5	0.0	No Limit
		EP074: 1.2-Dibromoethane (EDB)	106-93-4	5	µg/L	<5	<5	0.0	No Limit
EP074E: Halogenated Aliphatic Compounds (QC Lot: 5027158)									
ES2314050-001	Anonymous	EP074: 1.1-Dichloroethene	75-35-4	5	µg/L	<5	<5	0.0	No Limit
		EP074: Iodomethane	74-88-4	5	µg/L	<5	<5	0.0	No Limit
		EP074: trans-1.2-Dichloroethene	156-60-5	5	µg/L	<5	<5	0.0	No Limit
		EP074: 1.1-Dichloroethane	75-34-3	5	µg/L	<5	<5	0.0	No Limit
		EP074: cis-1.2-Dichloroethene	156-59-2	5	µg/L	<5	<5	0.0	No Limit
		EP074: 1.1.1-Trichloroethane	71-55-6	5	µg/L	<5	<5	0.0	No Limit
		EP074: 1.1-Dichloropropylene	563-58-6	5	µg/L	<5	<5	0.0	No Limit
		EP074: Carbon Tetrachloride	56-23-5	5	µg/L	<5	<5	0.0	No Limit
		EP074: 1.2-Dichloroethane	107-06-2	5	µg/L	<5	<5	0.0	No Limit
		EP074: Trichloroethene	79-01-6	5	µg/L	<5	<5	0.0	No Limit
		EP074: Dibromomethane	74-95-3	5	µg/L	<5	<5	0.0	No Limit
		EP074: 1.1.2-Trichloroethane	79-00-5	5	µg/L	<5	<5	0.0	No Limit
		EP074: 1.3-Dichloropropane	142-28-9	5	µg/L	<5	<5	0.0	No Limit
		EP074: Tetrachloroethene	127-18-4	5	µg/L	<5	<5	0.0	No Limit
		EP074: 1.1.1.2-Tetrachloroethane	630-20-6	5	µg/L	<5	<5	0.0	No Limit
		EP074: trans-1.4-Dichloro-2-butene	110-57-6	5	µg/L	<5	<5	0.0	No Limit
		EP074: cis-1.4-Dichloro-2-butene	1476-11-5	5	µg/L	<5	<5	0.0	No Limit
		EP074: 1.1.2.2-Tetrachloroethane	79-34-5	5	µg/L	<5	<5	0.0	No Limit
		EP074: 1.2.3-Trichloropropane	96-18-4	5	µg/L	<5	<5	0.0	No Limit
		EP074: Pentachloroethane	76-01-7	5	µg/L	<5	<5	0.0	No Limit
		EP074: 1.2-Dibromo-3-chloropropane	96-12-8	5	µg/L	<5	<5	0.0	No Limit
		EP074: Hexachlorobutadiene	87-68-3	5	µg/L	<5	<5	0.0	No Limit
		EP074: Dichlorodifluoromethane	75-71-8	50	µg/L	<50	<50	0.0	No Limit
		EP074: Chloromethane	74-87-3	50	µg/L	<50	<50	0.0	No Limit
		EP074: Vinyl chloride	75-01-4	50	µg/L	<50	<50	0.0	No Limit
		EP074: Bromomethane	74-83-9	50	µg/L	<50	<50	0.0	No Limit
		EP074: Chloroethane	75-00-3	50	µg/L	<50	<50	0.0	No Limit
		EP074: Trichlorofluoromethane	75-69-4	50	µg/L	<50	<50	0.0	No Limit
ES2314384-007	HINUS	EP074: 1.1-Dichloroethene	75-35-4	5	µg/L	<5	<5	0.0	No Limit
		EP074: Iodomethane	74-88-4	5	µg/L	<5	<5	0.0	No Limit
		EP074: trans-1.2-Dichloroethene	156-60-5	5	µg/L	<5	<5	0.0	No Limit
		EP074: 1.1-Dichloroethane	75-34-3	5	µg/L	<5	<5	0.0	No Limit

Sub-Matrix: **WATER**

				Laboratory Duplicate (DUP) Report					
Laboratory sample ID	*Sample ID*	*Method: Compound*	*CAS Number*	*LOR*	*Unit*	*Original Result*	*Duplicate Result*	*RPD (%)*	*Acceptable RPD (%)*
EP074E: Halogenated Aliphatic Compounds (QC Lot: 5027158) - continued									
ES2314384-007	HINUS	EP074: cis-1.2-Dichloroethene	156-59-2	5	µg/L	<5	<5	0.0	No Limit
		EP074: 1.1.1-Trichloroethane	71-55-6	5	µg/L	<5	<5	0.0	No Limit
		EP074: 1.1-Dichloropropylene	563-58-6	5	µg/L	<5	<5	0.0	No Limit
		EP074: Carbon Tetrachloride	56-23-5	5	µg/L	<5	<5	0.0	No Limit
		EP074: 1.2-Dichloroethane	107-06-2	5	µg/L	<5	<5	0.0	No Limit
		EP074: Trichloroethene	79-01-6	5	µg/L	<5	<5	0.0	No Limit
		EP074: Dibromomethane	74-95-3	5	µg/L	<5	<5	0.0	No Limit
		EP074: 1.1.2-Trichloroethane	79-00-5	5	µg/L	<5	<5	0.0	No Limit
		EP074: 1.3-Dichloropropane	142-28-9	5	µg/L	<5	<5	0.0	No Limit
		EP074: Tetrachloroethene	127-18-4	5	µg/L	<5	<5	0.0	No Limit
		EP074: 1.1.1.2-Tetrachloroethane	630-20-6	5	µg/L	<5	<5	0.0	No Limit
		EP074: trans-1.4-Dichloro-2-butene	110-57-6	5	µg/L	<5	<5	0.0	No Limit
		EP074: cis-1.4-Dichloro-2-butene	1476-11-5	5	µg/L	<5	<5	0.0	No Limit
		EP074: 1.1.2.2-Tetrachloroethane	79-34-5	5	µg/L	<5	<5	0.0	No Limit
		EP074: 1.2.3-Trichloropropane	96-18-4	5	µg/L	<5	<5	0.0	No Limit
		EP074: Pentachloroethane	76-01-7	5	µg/L	<5	<5	0.0	No Limit
		EP074: 1.2-Dibromo-3-chloropropane	96-12-8	5	µg/L	<5	<5	0.0	No Limit
		EP074: Hexachlorobutadiene	87-68-3	5	µg/L	<5	<5	0.0	No Limit
		EP074: Dichlorodifluoromethane	75-71-8	50	µg/L	<50	<50	0.0	No Limit
		EP074: Chloromethane	74-87-3	50	µg/L	<50	<50	0.0	No Limit
		EP074: Vinyl chloride	75-01-4	50	µg/L	<50	<50	0.0	No Limit
		EP074: Bromomethane	74-83-9	50	µg/L	<50	<50	0.0	No Limit
		EP074: Chloroethane	75-00-3	50	µg/L	<50	<50	0.0	No Limit
		EP074: Trichlorofluoromethane	75-69-4	50	µg/L	<50	<50	0.0	No Limit
EP074F: Halogenated Aromatic Compounds (QC Lot: 5027158)									
ES2314050-001	Anonymous	EP074: Chlorobenzene	108-90-7	5	µg/L	<5	<5	0.0	No Limit
		EP074: Bromobenzene	108-86-1	5	µg/L	<5	<5	0.0	No Limit
		EP074: 2-Chlorotoluene	95-49-8	5	µg/L	<5	<5	0.0	No Limit
		EP074: 4-Chlorotoluene	106-43-4	5	µg/L	<5	<5	0.0	No Limit
		EP074: 1.3-Dichlorobenzene	541-73-1	5	µg/L	<5	<5	0.0	No Limit
		EP074: 1.4-Dichlorobenzene	106-46-7	5	µg/L	<5	<5	0.0	No Limit
		EP074: 1.2-Dichlorobenzene	95-50-1	5	µg/L	<5	<5	0.0	No Limit
		EP074: 1.2.4-Trichlorobenzene	120-82-1	5	µg/L	<5	<5	0.0	No Limit
		EP074: 1.2.3-Trichlorobenzene	87-61-6	5	µg/L	<5	<5	0.0	No Limit
ES2314384-007	HINUS	EP074: Chlorobenzene	108-90-7	5	µg/L	<5	<5	0.0	No Limit
		EP074: Bromobenzene	108-86-1	5	µg/L	<5	<5	0.0	No Limit
		EP074: 2-Chlorotoluene	95-49-8	5	µg/L	<5	<5	0.0	No Limit
		EP074: 4-Chlorotoluene	106-43-4	5	µg/L	<5	<5	0.0	No Limit
		EP074: 1.3-Dichlorobenzene	541-73-1	5	µg/L	<5	<5	0.0	No Limit
		EP074: 1.4-Dichlorobenzene	106-46-7	5	µg/L	<5	<5	0.0	No Limit

Sub-Matrix: **WATER**

				Laboratory Duplicate (DUP) Report					
Laboratory sample ID	*Sample ID*	*Method: Compound*	*CAS Number*	*LOR*	*Unit*	*Original Result*	*Duplicate Result*	*RPD (%)*	*Acceptable RPD (%)*
EP074F: Halogenated Aromatic Compounds (QC Lot: 5027158) - continued									
ES2314384-007	HINUS	EP074: 1.2-Dichlorobenzene	95-50-1	5	µg/L	<5	<5	0.0	No Limit
		EP074: 1.2.4-Trichlorobenzene	120-82-1	5	µg/L	<5	<5	0.0	No Limit
		EP074: 1.2.3-Trichlorobenzene	87-61-6	5	µg/L	<5	<5	0.0	No Limit
EP074G: Trihalomethanes (QC Lot: 5027158)									
ES2314050-001	Anonymous	EP074: Chloroform	67-66-3	5	µg/L	<5	<5	0.0	No Limit
		EP074: Bromodichloromethane	75-27-4	5	µg/L	<5	<5	0.0	No Limit
		EP074: Dibromochloromethane	124-48-1	5	µg/L	<5	<5	0.0	No Limit
		EP074: Bromoform	75-25-2	5	µg/L	<5	<5	0.0	No Limit
ES2314384-007	HINUS	EP074: Chloroform	67-66-3	5	µg/L	<5	<5	0.0	No Limit
		EP074: Bromodichloromethane	75-27-4	5	µg/L	<5	<5	0.0	No Limit
		EP074: Dibromochloromethane	124-48-1	5	µg/L	<5	<5	0.0	No Limit
		EP074: Bromoform	75-25-2	5	µg/L	<5	<5	0.0	No Limit
EP075(SIM)A: Phenolic Compounds (QC Lot: 5024167)									
ES2314384-001	BADDS	EP075(SIM): Phenol	108-95-2	1	µg/L	<1.0	<1.0	0.0	No Limit
		EP075(SIM): 2-Chlorophenol	95-57-8	1	µg/L	<1.0	<1.0	0.0	No Limit
		EP075(SIM): 2-Methylphenol	95-48-7	1	µg/L	<1.0	<1.0	0.0	No Limit
		EP075(SIM): 2-Nitrophenol	88-75-5	1	µg/L	<1.0	<1.0	0.0	No Limit
		EP075(SIM): 2.4-Dimethylphenol	105-67-9	1	µg/L	<1.0	<1.0	0.0	No Limit
		EP075(SIM): 2.4-Dichlorophenol	120-83-2	1	µg/L	<1.0	<1.0	0.0	No Limit
		EP075(SIM): 2.6-Dichlorophenol	87-65-0	1	µg/L	<1.0	<1.0	0.0	No Limit
		EP075(SIM): 4-Chloro-3-methylphenol	59-50-7	1	µg/L	<1.0	<1.0	0.0	No Limit
		EP075(SIM): 2.4.6-Trichlorophenol	88-06-2	1	µg/L	<1.0	<1.0	0.0	No Limit
		EP075(SIM): 2.4.5-Trichlorophenol	95-95-4	1	µg/L	<1.0	<1.0	0.0	No Limit
		EP075(SIM): 3- & 4-Methylphenol	1319-77-3	2	µg/L	<2.0	<2.0	0.0	No Limit
		EP075(SIM): Pentachlorophenol	87-86-5	2	µg/L	<2.0	<2.0	0.0	No Limit
ES2314384-011	ROPUS	EP075(SIM): Phenol	108-95-2	1	µg/L	<1.0	<1.0	0.0	No Limit
		EP075(SIM): 2-Chlorophenol	95-57-8	1	µg/L	<1.0	<1.0	0.0	No Limit
		EP075(SIM): 2-Methylphenol	95-48-7	1	µg/L	<1.0	<1.0	0.0	No Limit
		EP075(SIM): 2-Nitrophenol	88-75-5	1	µg/L	<1.0	<1.0	0.0	No Limit
		EP075(SIM): 2.4-Dimethylphenol	105-67-9	1	µg/L	<1.0	<1.0	0.0	No Limit
		EP075(SIM): 2.4-Dichlorophenol	120-83-2	1	µg/L	<1.0	<1.0	0.0	No Limit
		EP075(SIM): 2.6-Dichlorophenol	87-65-0	1	µg/L	<1.0	<1.0	0.0	No Limit
		EP075(SIM): 4-Chloro-3-methylphenol	59-50-7	1	µg/L	<1.0	<1.0	0.0	No Limit
		EP075(SIM): 2.4.6-Trichlorophenol	88-06-2	1	µg/L	<1.0	<1.0	0.0	No Limit
		EP075(SIM): 2.4.5-Trichlorophenol	95-95-4	1	µg/L	<1.0	<1.0	0.0	No Limit
		EP075(SIM): 3- & 4-Methylphenol	1319-77-3	2	µg/L	<2.0	<2.0	0.0	No Limit
		EP075(SIM): Pentachlorophenol	87-86-5	2	µg/L	<2.0	<2.0	0.0	No Limit
EP075(SIM)B: Polynuclear Aromatic Hydrocarbons (QC Lot: 5024167)									
ES2314384-001	BADDS	EP075(SIM): Benzo(a)pyrene	50-32-8	0.5	µg/L	<0.5	<0.5	0.0	No Limit
		EP075(SIM): Naphthalene	91-20-3	1	µg/L	<1.0	<1.0	0.0	No Limit

Sub-Matrix: **WATER**

				Laboratory Duplicate (DUP) Report					
Laboratory sample ID	*Sample ID*	*Method: Compound*	*CAS Number*	*LOR*	*Unit*	*Original Result*	*Duplicate Result*	*RPD (%)*	*Acceptable RPD (%)*
EP075(SIM)B: Polynuclear Aromatic Hydrocarbons (QC Lot: 5024167) - continued									
ES2314384-001	BADDS	EP075(SIM): Acenaphthylene	208-96-8	1	µg/L	<1.0	<1.0	0.0	No Limit
		EP075(SIM): Acenaphthene	83-32-9	1	µg/L	<1.0	<1.0	0.0	No Limit
		EP075(SIM): Fluorene	86-73-7	1	µg/L	<1.0	<1.0	0.0	No Limit
		EP075(SIM): Phenanthrene	85-01-8	1	µg/L	<1.0	<1.0	0.0	No Limit
		EP075(SIM): Anthracene	120-12-7	1	µg/L	<1.0	<1.0	0.0	No Limit
		EP075(SIM): Fluoranthene	206-44-0	1	µg/L	<1.0	<1.0	0.0	No Limit
		EP075(SIM): Pyrene	129-00-0	1	µg/L	<1.0	<1.0	0.0	No Limit
		EP075(SIM): Benz(a)anthracene	56-55-3	1	µg/L	<1.0	<1.0	0.0	No Limit
		EP075(SIM): Chrysene	218-01-9	1	µg/L	<1.0	<1.0	0.0	No Limit
		EP075(SIM): Benzo(b+j)fluoranthene	205-99-2 205-82-3	1	µg/L	<1.0	<1.0	0.0	No Limit
		EP075(SIM): Benzo(k)fluoranthene	207-08-9	1	µg/L	<1.0	<1.0	0.0	No Limit
		EP075(SIM): Indeno(1.2.3.cd)pyrene	193-39-5	1	µg/L	<1.0	<1.0	0.0	No Limit
		EP075(SIM): Dibenz(a.h)anthracene	53-70-3	1	µg/L	<1.0	<1.0	0.0	No Limit
		EP075(SIM): Benzo(g.h.i)perylene	191-24-2	1	µg/L	<1.0	<1.0	0.0	No Limit
ES2314384-011	ROPUS	EP075(SIM): Benzo(a)pyrene	50-32-8	0.5	µg/L	<0.5	<0.5	0.0	No Limit
		EP075(SIM): Naphthalene	91-20-3	1	µg/L	<1.0	<1.0	0.0	No Limit
		EP075(SIM): Acenaphthylene	208-96-8	1	µg/L	<1.0	<1.0	0.0	No Limit
		EP075(SIM): Acenaphthene	83-32-9	1	µg/L	<1.0	<1.0	0.0	No Limit
		EP075(SIM): Fluorene	86-73-7	1	µg/L	<1.0	<1.0	0.0	No Limit
		EP075(SIM): Phenanthrene	85-01-8	1	µg/L	<1.0	<1.0	0.0	No Limit
		EP075(SIM): Anthracene	120-12-7	1	µg/L	<1.0	<1.0	0.0	No Limit
		EP075(SIM): Fluoranthene	206-44-0	1	µg/L	<1.0	<1.0	0.0	No Limit
		EP075(SIM): Pyrene	129-00-0	1	µg/L	<1.0	<1.0	0.0	No Limit
		EP075(SIM): Benz(a)anthracene	56-55-3	1	µg/L	<1.0	<1.0	0.0	No Limit
		EP075(SIM): Chrysene	218-01-9	1	µg/L	<1.0	<1.0	0.0	No Limit
		EP075(SIM): Benzo(b+j)fluoranthene	205-99-2 205-82-3	1	µg/L	<1.0	<1.0	0.0	No Limit
		EP075(SIM): Benzo(k)fluoranthene	207-08-9	1	µg/L	<1.0	<1.0	0.0	No Limit
		EP075(SIM): Indeno(1.2.3.cd)pyrene	193-39-5	1	µg/L	<1.0	<1.0	0.0	No Limit
		EP075(SIM): Dibenz(a.h)anthracene	53-70-3	1	µg/L	<1.0	<1.0	0.0	No Limit
		EP075(SIM): Benzo(g.h.i)perylene	191-24-2	1	µg/L	<1.0	<1.0	0.0	No Limit
EP080: BTEXN (QC Lot: 5027157)									
ES2314050-001	Anonymous	EP080: Benzene	71-43-2	1	µg/L	<1	<1	0.0	No Limit
		EP080: Toluene	108-88-3	2	µg/L	<2	<2	0.0	No Limit
		EP080: Ethylbenzene	100-41-4	2	µg/L	<2	<2	0.0	No Limit
		EP080: meta- & para-Xylene	108-38-3 106-42-3	2	µg/L	<2	<2	0.0	No Limit
		EP080: ortho-Xylene	95-47-6	2	µg/L	<2	<2	0.0	No Limit
		EP080: Naphthalene	91-20-3	5	µg/L	<5	<5	0.0	No Limit

Sub-Matrix: **WATER**

				Laboratory Duplicate (DUP) Report					
Laboratory sample ID	*Sample ID*	*Method: Compound*	*CAS Number*	*LOR*	*Unit*	*Original Result*	*Duplicate Result*	*RPD (%)*	*Acceptable RPD (%)*
EP080: BTEXN (QC Lot: 5027157) - continued									
ES2314384-007	HINUS	EP080: Benzene	71-43-2	1	µg/L	<1	<1	0.0	No Limit
		EP080: Toluene	108-88-3	2	µg/L	4	4	0.0	No Limit
		EP080: Ethylbenzene	100-41-4	2	µg/L	<2	<2	0.0	No Limit
		EP080: meta- & para-Xylene	108-38-3 106-42-3	2	µg/L	<2	<2	0.0	No Limit
		EP080: ortho-Xylene	95-47-6	2	µg/L	<2	<2	0.0	No Limit
		EP080: Naphthalene	91-20-3	5	µg/L	<5	<5	0.0	No Limit
EP234A: OP Pesticides (QC Lot: 5023536)									
ES2314384-004	COSDS	EP234-1: Sulfotep	3689-24-5	0.005	µg/L	<0.005	<0.005	0.0	No Limit
		EP234-1: Triazophos	24017-47-8	0.005	µg/L	<0.005	<0.005	0.0	No Limit
		EP234-1: Coumaphos	56-72-4	0.01	µg/L	<0.01	<0.01	0.0	No Limit
		EP234-1: Diazinon	333-41-5	0.01	µg/L	<0.01	<0.01	0.0	No Limit
		EP234-1: Ethoprophos	13194-48-4	0.01	µg/L	<0.01	<0.01	0.0	No Limit
		EP234-1: Fenamiphos	22224-92-6	0.01	µg/L	<0.01	<0.01	0.0	No Limit
		EP234-1: Fensulfothion	115-90-2	0.01	µg/L	<0.01	<0.01	0.0	No Limit
		EP234-1: Omethoate	1113-02-6	0.01	µg/L	<0.01	<0.01	0.0	No Limit
		EP234-1: Pirimiphos-ethyl	23505-41-1	0.01	µg/L	<0.01	<0.01	0.0	No Limit
		EP234-1: Pirimiphos-methyl	29232-93-7	0.01	µg/L	<0.01	<0.01	0.0	No Limit
		EP234-1: Profenofos	41198-08-7	0.01	µg/L	<0.01	<0.01	0.0	No Limit
		EP234-1: Terbufos	13071-79-9	0.01	µg/L	<0.01	<0.01	0.0	No Limit
		EP234-1: Tetrachlorvinphos	22248-79-9	0.01	µg/L	<0.01	<0.01	0.0	No Limit
		EP234-1: Azinphos-methyl	86-50-0	0.02	µg/L	<0.02	<0.02	0.0	No Limit
		EP234-1: Azinphos-ethyl	2642-71-9	0.02	µg/L	<0.02	<0.02	0.0	No Limit
		EP234-1: Carbofenothion	786-19-6	0.02	µg/L	<0.02	<0.02	0.0	No Limit
		EP234-1: Chlorfenvinphos	470-90-6	0.02	µg/L	<0.02	<0.02	0.0	No Limit
		EP234-1: Chlorpyrifos	2921-88-2	0.02	µg/L	<0.02	<0.02	0.0	No Limit
		EP234-1: Demeton-O	298-03-3	0.02	µg/L	<0.02	<0.02	0.0	No Limit
		EP234-1: Demeton-O & Demeton-S	298-03-3/126-75-0	0.02	µg/L	<0.02	<0.02	0.0	No Limit
		EP234-1: Demeton-S	126-75-0	0.02	µg/L	<0.02	<0.02	0.0	No Limit
		EP234-1: Demeton-S-methyl	919-86-8	0.02	µg/L	<0.02	<0.02	0.0	No Limit
		EP234-1: Dimethoate	60-51-5	0.02	µg/L	<0.02	<0.02	0.0	No Limit
		EP234-1: Ethion	563-12-2	0.02	µg/L	<0.02	<0.02	0.0	No Limit
		EP234-1: Malathion	121-75-5	0.02	µg/L	<0.02	<0.02	0.0	No Limit
		EP234-1: Mevinphos	7786-34-7	0.02	µg/L	<0.02	<0.02	0.0	No Limit
		EP234-1: Monocrotophos	6923-22-4	0.02	µg/L	<0.02	<0.02	0.0	No Limit
		EP234-1: Temephos	3383-96-8	0.02	µg/L	<0.02	<0.02	0.0	No Limit
		EP234-1: Trichlorfon	52-68-6	0.02	µg/L	<0.02	<0.02	0.0	No Limit
		EP234-1: Disulfoton	298-04-4	0.05	µg/L	<0.05	<0.05	0.0	No Limit
		EP234-1: EPN	2104-64-5	0.05	µg/L	<0.05	<0.05	0.0	No Limit

Sub-Matrix: **WATER**

				Laboratory Duplicate (DUP) Report					
Laboratory sample ID	*Sample ID*	*Method: Compound*	*CAS Number*	*LOR*	*Unit*	*Original Result*	*Duplicate Result*	*RPD (%)*	*Acceptable RPD (%)*
EP234A: OP Pesticides (QC Lot: 5023536) - continued									
ES2314384-004	COSDS	EP234-1: Fenthion	55-38-9	0.05	µg/L	<0.05	<0.05	0.0	No Limit
		EP234-1: Sulprofos	35400-43-2	0.05	µg/L	<0.05	<0.05	0.0	No Limit
		EP234-1: Bromophos-ethyl	4824-78-6	0.1	µg/L	<0.10	<0.10	0.0	No Limit
		EP234-1: Phorate	298-02-2	0.1	µg/L	<0.1	<0.1	0.0	No Limit
		EP234-1: Prothiofos	34643-46-4	0.1	µg/L	<0.1	<0.1	0.0	No Limit
		EP234-1: Chlorpyrifos-methyl	5598-13-0	0.2	µg/L	<0.2	<0.2	0.0	No Limit
		EP234-1: Dichlorvos	62-73-7	0.2	µg/L	<0.20	<0.20	0.0	No Limit
		EP234-1: Parathion	56-38-2	0.2	µg/L	<0.2	<0.2	0.0	No Limit
		EP234-1: Parathion-methyl	298-00-0	0.5	µg/L	<0.5	<0.5	0.0	No Limit
		EP234-1: Trichloronate	327-98-0	0.5	µg/L	<0.5	<0.5	0.0	No Limit
		EP234-1: Fenchlorphos (Ronnel)	299-84-3	10	µg/L	<10	<10	0.0	No Limit
		EP234-1: Fenitrothion	122-14-5	2	µg/L	<2	<2	0.0	No Limit
ES2314219-001	Anonymous	EP234-1: Sulfotep	3689-24-5	0.005	µg/L	<0.005	<0.005	0.0	No Limit
		EP234-1: Triazophos	24017-47-8	0.005	µg/L	<0.005	<0.005	0.0	No Limit
		EP234-1: Coumaphos	56-72-4	0.01	µg/L	<0.01	<0.01	0.0	No Limit
		EP234-1: Diazinon	333-41-5	0.01	µg/L	<0.01	<0.01	0.0	No Limit
		EP234-1: Ethoprophos	13194-48-4	0.01	µg/L	<0.01	<0.01	0.0	No Limit
		EP234-1: Fenamiphos	22224-92-6	0.01	µg/L	<0.01	<0.01	0.0	No Limit
		EP234-1: Fensulfothion	115-90-2	0.01	µg/L	<0.01	<0.01	0.0	No Limit
		EP234-1: Omethoate	1113-02-6	0.01	µg/L	<0.01	<0.01	0.0	No Limit
		EP234-1: Pirimiphos-ethyl	23505-41-1	0.01	µg/L	<0.01	<0.01	0.0	No Limit
		EP234-1: Pirimiphos-methyl	29232-93-7	0.01	µg/L	<0.01	<0.01	0.0	No Limit
		EP234-1: Profenofos	41198-08-7	0.01	µg/L	<0.01	<0.01	0.0	No Limit
		EP234-1: Terbufos	13071-79-9	0.01	µg/L	<0.01	<0.01	0.0	No Limit
		EP234-1: Tetrachlorvinphos	22248-79-9	0.01	µg/L	<0.01	<0.01	0.0	No Limit
		EP234-1: Azinphos-methyl	86-50-0	0.02	µg/L	<0.02	<0.02	0.0	No Limit
		EP234-1: Azinphos-ethyl	2642-71-9	0.02	µg/L	<0.02	<0.02	0.0	No Limit
		EP234-1: Carbofenothion	786-19-6	0.02	µg/L	<0.02	<0.02	0.0	No Limit
		EP234-1: Chlorfenvinphos	470-90-6	0.02	µg/L	<0.02	<0.02	0.0	No Limit
		EP234-1: Chlorpyrifos	2921-88-2	0.02	µg/L	<0.02	<0.02	0.0	No Limit
		EP234-1: Demeton-O	298-03-3	0.02	µg/L	<0.02	<0.02	0.0	No Limit
		EP234-1: Demeton-O & Demeton-S	298-03-3/126-75-0	0.02	µg/L	<0.02	<0.02	0.0	No Limit
		EP234-1: Demeton-S	126-75-0	0.02	µg/L	<0.02	<0.02	0.0	No Limit
		EP234-1: Demeton-S-methyl	919-86-8	0.02	µg/L	<0.02	<0.02	0.0	No Limit
		EP234-1: Dimethoate	60-51-5	0.02	µg/L	<0.02	<0.02	0.0	No Limit
		EP234-1: Ethion	563-12-2	0.02	µg/L	<0.02	<0.02	0.0	No Limit
		EP234-1: Malathion	121-75-5	0.02	µg/L	<0.02	<0.02	0.0	No Limit
		EP234-1: Mevinphos	7786-34-7	0.02	µg/L	<0.02	<0.02	0.0	No Limit
		EP234-1: Monocrotophos	6923-22-4	0.02	µg/L	<0.02	<0.02	0.0	No Limit

Sub-Matrix: **WATER**

				Laboratory Duplicate (DUP) Report					
Laboratory sample ID	*Sample ID*	*Method: Compound*	*CAS Number*	*LOR*	*Unit*	*Original Result*	*Duplicate Result*	*RPD (%)*	*Acceptable RPD (%)*
EP234A: OP Pesticides (QC Lot: 5023536) - continued									
ES2314219-001	Anonymous	EP234-1: Temephos	3383-96-8	0.02	µg/L	<0.02	<0.02	0.0	No Limit
		EP234-1: Trichlorfon	52-68-6	0.02	µg/L	<0.02	<0.02	0.0	No Limit
		EP234-1: Disulfoton	298-04-4	0.05	µg/L	<0.05	<0.05	0.0	No Limit
		EP234-1: EPN	2104-64-5	0.05	µg/L	<0.05	<0.05	0.0	No Limit
		EP234-1: Fenthion	55-38-9	0.05	µg/L	<0.05	<0.05	0.0	No Limit
		EP234-1: Sulprofos	35400-43-2	0.05	µg/L	<0.05	<0.05	0.0	No Limit
		EP234-1: Bromophos-ethyl	4824-78-6	0.1	µg/L	<0.10	<0.10	0.0	No Limit
		EP234-1: Phorate	298-02-2	0.1	µg/L	<0.1	<0.1	0.0	No Limit
		EP234-1: Prothiofos	34643-46-4	0.1	µg/L	<0.1	<0.1	0.0	No Limit
		EP234-1: Chlorpyrifos-methyl	5598-13-0	0.2	µg/L	<0.2	<0.2	0.0	No Limit
		EP234-1: Dichlorvos	62-73-7	0.2	µg/L	<0.20	<0.20	0.0	No Limit
		EP234-1: Parathion	56-38-2	0.2	µg/L	<0.2	<0.2	0.0	No Limit
		EP234-1: Parathion-methyl	298-00-0	0.5	µg/L	<2.0	<2.0	0.0	No Limit
		EP234-1: Trichloronate	327-98-0	0.5	µg/L	<0.5	<0.5	0.0	No Limit
		EP234-1: Fenchlorphos (Ronnel)	299-84-3	10	µg/L	<10	<10	0.0	No Limit
		EP234-1: Fenitrothion	122-14-5	2	µg/L	<2	<2	0.0	No Limit
EP234A: OP Pesticides (QC Lot: 5023537)									
ES2314384-004	COSDS	EP234-1x: Bensulide	741-58-2	0.1	µg/L	<0.1	<0.1	0.0	No Limit
		EP234-1x: Methidathion	950-37-8	0.1	µg/L	<0.1	<0.1	0.0	No Limit
		EP234-1x: Pyrazophos	13457-18-6	0.1	µg/L	<0.1	<0.1	0.0	No Limit
		EP234-1x: Acephate	30560-19-1	0.5	µg/L	<0.5	<0.5	0.0	No Limit
		EP234-1x: Thiometon	640-15-3	0.5	µg/L	<0.5	<0.5	0.0	No Limit
		EP234-1x: Naftalofos	1491-41-4	1	µg/L	<1.0	<1.0	0.0	No Limit
		EP234-1x: Fosetyl Aluminium	39148-24-8	10	µg/L	<10	<10	0.0	No Limit
		EP234-1x: Formothion	2540-82-1	20	µg/L	<20	<20	0.0	No Limit
ES2314219-001	Anonymous	EP234-1x: Bensulide	741-58-2	0.1	µg/L	<0.1	<0.1	0.0	No Limit
		EP234-1x: Methidathion	950-37-8	0.1	µg/L	<0.1	<0.1	0.0	No Limit
		EP234-1x: Pyrazophos	13457-18-6	0.1	µg/L	<0.1	<0.1	0.0	No Limit
		EP234-1x: Acephate	30560-19-1	0.5	µg/L	<0.5	<0.5	0.0	No Limit
		EP234-1x: Thiometon	640-15-3	0.5	µg/L	<0.5	<0.5	0.0	No Limit
		EP234-1x: Naftalofos	1491-41-4	1	µg/L	<1.0	<1.0	0.0	No Limit
		EP234-1x: Fosetyl Aluminium	39148-24-8	10	µg/L	<10	<10	0.0	No Limit
		EP234-1x: Formothion	2540-82-1	20	µg/L	<20	<20	0.0	No Limit

Method Blank (MB) and Laboratory Control Sample (LCS) Report

The quality control term Method / Laboratory Blank refers to an analyte free matrix to which all reagents are added in the same volumes or proportions as used in standard sample preparation. The purpose of this QC parameter is to monitor potential laboratory contamination. The quality control term Laboratory Control Sample (LCS) refers to a certified reference material, or a known interference free matrix spiked with target analytes. The purpose of this QC parameter is to monitor method precision and accuracy independent of sample matrix. Dynamic Recovery Limits are based on statistical evaluation of processed LCS.

Sub-Matrix: **WATER**

				Method Blank (MB) Report	Laboratory Control Spike (LCS) Report			
					Spike	Spike Recovery (%)	Acceptable Limits (%)	
Method: Compound	CAS Number	LOR	Unit	Result	Concentration	LCS	Low	High
EA015: Total Dissolved Solids dried at 180 ± 5 °C (QCLot: 5026591)								
EA015H: Total Dissolved Solids @180°C	----	10	mg/L	<10	2000 mg/L	90.1	87.0	109
				<10	293 mg/L	104	75.2	126
				<10	2340 mg/L	104	83.0	124
EA025: Total Suspended Solids dried at 104 ± 2°C (QCLot: 5026592)								
EA025H: Suspended Solids (SS)	----	5	mg/L	<5	150 mg/L	101	83.0	129
				<5	1000 mg/L	90.2	82.0	110
				<5	825 mg/L	106	83.0	118
EG020T: Total Metals by ICP-MS (QCLot: 5029320)								
EG020A-T: Arsenic	7440-38-2	0.001	mg/L	<0.001	0.1 mg/L	92.9	82.0	114
EG020A-T: Cadmium	7440-43-9	0.0001	mg/L	<0.0001	0.1 mg/L	93.4	84.0	112
EG020A-T: Chromium	7440-47-3	0.001	mg/L	<0.001	0.1 mg/L	90.6	86.0	116
EG020A-T: Copper	7440-50-8	0.001	mg/L	<0.001	0.1 mg/L	90.9	83.0	118
EG020A-T: Lead	7439-92-1	0.001	mg/L	<0.001	0.1 mg/L	91.0	85.0	115
EG020A-T: Manganese	7439-96-5	0.001	mg/L	<0.001	0.1 mg/L	92.0	85.0	113
EG020A-T: Nickel	7440-02-0	0.001	mg/L	<0.001	0.1 mg/L	89.9	84.0	116
EG020A-T: Zinc	7440-66-6	0.005	mg/L	<0.005	0.1 mg/L	91.0	79.0	117
EG020A-T: Iron	7439-89-6	0.05	mg/L	<0.05	0.5 mg/L	94.6	85.0	117
EG035T: Total Recoverable Mercury by FIMS (QCLot: 5029334)								
EG035T: Mercury	7439-97-6	0.0001	mg/L	<0.0001	0.01 mg/L	94.6	77.0	111
EK055G: Ammonia as N by Discrete Analyser (QCLot: 5029066)								
EK055G: Ammonia as N	7664-41-7	0.01	mg/L	<0.01	1 mg/L	98.7	90.0	114
EK057G: Nitrite as N by Discrete Analyser (QCLot: 5023154)								
EK057G: Nitrite as N	14797-65-0	0.01	mg/L	<0.01	0.5 mg/L	99.4	82.0	114
EK057G: Nitrite as N by Discrete Analyser (QCLot: 5026996)								
EK057G: Nitrite as N	14797-65-0	0.01	mg/L	<0.01	0.5 mg/L	99.1	82.0	114
EK059G: Nitrite plus Nitrate as N (NOx) by Discrete Analyser (QCLot: 5029067)								
EK059G: Nitrite + Nitrate as N	----	0.01	mg/L	<0.01	0.5 mg/L	97.9	91.0	113
EK061G: Total Kjeldahl Nitrogen By Discrete Analyser (QCLot: 5029070)								

Sub-Matrix: **WATER**

Method: Compound	CAS Number	LOR	Unit	Method Blank (MB) Report: Result	Laboratory Control Spike (LCS) Report: Spike Concentration	Spike Recovery (%): LCS	Acceptable Limits (%): Low	Acceptable Limits (%): High
EK061G: Total Kjeldahl Nitrogen By Discrete Analyser (QCLot: 5029070) - continued								
EK061G: Total Kjeldahl Nitrogen as N	----	0.1	mg/L	<0.1	10 mg/L	80.2	69.0	101
				<0.1	1 mg/L	78.2	70.0	118
				<0.1	5 mg/L	85.8	70.0	130
EK067G: Total Phosphorus as P by Discrete Analyser (QCLot: 5029069)								
EK067G: Total Phosphorus as P	----	0.01	mg/L	<0.01	4.42 mg/L	88.7	71.3	126
				<0.01	0.442 mg/L	97.1	71.3	126
				<0.01	1 mg/L	106	71.3	126
EK071G: Reactive Phosphorus as P by discrete analyser (QCLot: 5023153)								
EK071G: Reactive Phosphorus as P	14265-44-2	0.01	mg/L	<0.01	0.5 mg/L	91.7	85.0	117
EK071G: Reactive Phosphorus as P by discrete analyser (QCLot: 5023155)								
EK071G: Reactive Phosphorus as P	14265-44-2	0.01	mg/L	<0.01	0.5 mg/L	93.0	85.0	117
EK071G: Reactive Phosphorus as P by discrete analyser (QCLot: 5026997)								
EK071G: Reactive Phosphorus as P	14265-44-2	0.01	mg/L	<0.01	0.5 mg/L	90.8	85.0	117
EP008: Chlorophyll (QCLot: 5025678)								
EP008: Chlorophyll a	----	1	mg/m³	<1	20 mg/m³	128	70.0	130
EP008: Chlorophyll (QCLot: 5025884)								
EP008: Chlorophyll a	----	1	mg/m³	<1	20 mg/m³	128	70.0	130
EP020: Oil and Grease (O&G) (QCLot: 5032925)								
EP020: Oil & Grease	----	5	mg/L	<5	5000 mg/L	89.6	81.0	121
				<5	4000 mg/L	79.8	70.0	110
EP074D: Fumigants (QCLot: 5027158)								
EP074: 2.2-Dichloropropane	594-20-7	5	µg/L	<5	10 µg/L	89.0	68.0	122
EP074: 1.2-Dichloropropane	78-87-5	5	µg/L	<5	10 µg/L	96.5	76.0	118
EP074: cis-1.3-Dichloropropylene	10061-01-5	5	µg/L	<5	10 µg/L	92.4	62.0	120
EP074: trans-1.3-Dichloropropylene	10061-02-6	5	µg/L	<5	10 µg/L	96.0	60.0	114
EP074: 1.2-Dibromoethane (EDB)	106-93-4	5	µg/L	<5	10 µg/L	96.5	69.0	117
EP074E: Halogenated Aliphatic Compounds (QCLot: 5027158)								
EP074: Dichlorodifluoromethane	75-71-8	50	µg/L	<50	100 µg/L	94.4	60.6	138
EP074: Chloromethane	74-87-3	50	µg/L	<50	100 µg/L	97.8	67.4	130
EP074: Vinyl chloride	75-01-4	50	µg/L	<50	100 µg/L	82.3	69.4	129
EP074: Bromomethane	74-83-9	50	µg/L	<50	100 µg/L	84.8	56.0	140
EP074: Chloroethane	75-00-3	50	µg/L	<50	100 µg/L	85.4	61.0	139
EP074: Trichlorofluoromethane	75-69-4	50	µg/L	<50	100 µg/L	82.7	69.0	131
EP074: 1.1-Dichloroethene	75-35-4	5	µg/L	<5	10 µg/L	88.5	70.0	124

Sub-Matrix: **WATER**

Method: Compound	CAS Number	LOR	Unit	Method Blank (MB) Report	Laboratory Control Spike (LCS) Report		
				Result	Spike Concentration	Spike Recovery (%)	Acceptable Limits (%)
						LCS	Low	High
EP074E: Halogenated Aliphatic Compounds (QCLot: 5027158) - continued								
EP074: Iodomethane	74-88-4	5	µg/L	<5	10 µg/L	77.1	70.2	128
EP074: trans-1.2-Dichloroethene	156-60-5	5	µg/L	<5	10 µg/L	93.5	74.0	118
EP074: 1.1-Dichloroethane	75-34-3	5	µg/L	<5	10 µg/L	93.2	74.0	120
EP074: cis-1.2-Dichloroethene	156-59-2	5	µg/L	<5	10 µg/L	95.0	77.0	119
EP074: 1.1.1-Trichloroethane	71-55-6	5	µg/L	<5	10 µg/L	89.0	67.0	119
EP074: 1.1-Dichloropropylene	563-58-6	5	µg/L	<5	10 µg/L	93.6	73.0	119
EP074: Carbon Tetrachloride	56-23-5	5	µg/L	<5	10 µg/L	85.6	62.0	120
EP074: 1.2-Dichloroethane	107-06-2	5	µg/L	<5	10 µg/L	98.4	73.0	123
EP074: Trichloroethene	79-01-6	5	µg/L	<5	10 µg/L	93.4	76.0	118
EP074: Dibromomethane	74-95-3	5	µg/L	<5	10 µg/L	99.7	73.0	119
EP074: 1.1.2-Trichloroethane	79-00-5	5	µg/L	<5	10 µg/L	98.5	72.0	126
EP074: 1.3-Dichloropropane	142-28-9	5	µg/L	<5	10 µg/L	100	71.0	129
EP074: Tetrachloroethene	127-18-4	5	µg/L	<5	10 µg/L	93.0	72.0	124
EP074: 1.1.1.2-Tetrachloroethane	630-20-6	5	µg/L	<5	10 µg/L	92.2	66.0	114
EP074: trans-1.4-Dichloro-2-butene	110-57-6	5	µg/L	<5	10 µg/L	96.8	60.0	120
EP074: cis-1.4-Dichloro-2-butene	1476-11-5	5	µg/L	<5	10 µg/L	90.6	70.6	128
EP074: 1.1.2.2-Tetrachloroethane	79-34-5	5	µg/L	<5	10 µg/L	98.0	70.0	124
EP074: 1.2.3-Trichloropropane	96-18-4	5	µg/L	<5	10 µg/L	97.6	74.0	126
EP074: Pentachloroethane	76-01-7	5	µg/L	<5	10 µg/L	86.0	71.8	126
EP074: 1.2-Dibromo-3-chloropropane	96-12-8	5	µg/L	<5	10 µg/L	94.7	66.4	136
EP074: Hexachlorobutadiene	87-68-3	5	µg/L	<5	10 µg/L	94.9	58.0	130
EP074F: Halogenated Aromatic Compounds (QCLot: 5027158)								
EP074: Chlorobenzene	108-90-7	5	µg/L	<5	10 µg/L	95.8	79.0	117
EP074: Bromobenzene	108-86-1	5	µg/L	<5	10 µg/L	94.2	76.0	116
EP074: 2-Chlorotoluene	95-49-8	5	µg/L	<5	10 µg/L	90.7	73.0	119
EP074: 4-Chlorotoluene	106-43-4	5	µg/L	<5	10 µg/L	90.8	73.0	119
EP074: 1.3-Dichlorobenzene	541-73-1	5	µg/L	<5	10 µg/L	93.7	75.0	117
EP074: 1.4-Dichlorobenzene	106-46-7	5	µg/L	<5	10 µg/L	93.5	74.0	118
EP074: 1.2-Dichlorobenzene	95-50-1	5	µg/L	<5	10 µg/L	93.9	75.0	117
EP074: 1.2.4-Trichlorobenzene	120-82-1	5	µg/L	<5	10 µg/L	95.2	61.0	125
EP074: 1.2.3-Trichlorobenzene	87-61-6	5	µg/L	<5	10 µg/L	100	67.0	123
EP074G: Trihalomethanes (QCLot: 5027158)								
EP074: Chloroform	67-66-3	5	µg/L	<5	10 µg/L	101	72.0	120
EP074: Bromodichloromethane	75-27-4	5	µg/L	<5	10 µg/L	92.5	64.0	118

Sub-Matrix: **WATER**

Method: Compound	CAS Number	LOR	Unit	Method Blank (MB) Report	Laboratory Control Spike (LCS) Report		
					Spike	Spike Recovery (%)	Acceptable Limits (%)
				Result	Concentration	LCS	Low	High
EP074G: Trihalomethanes (QCLot: 5027158) - continued								
EP074: Dibromochloromethane	124-48-1	5	µg/L	<5	10 µg/L	89.1	65.0	115
EP074: Bromoform	75-25-2	5	µg/L	<5	10 µg/L	91.8	73.5	126
EP075(SIM)A: Phenolic Compounds (QCLot: 5024167)								
EP075(SIM): Phenol	108-95-2	1	µg/L	<1.0	5 µg/L	28.4	24.5	61.9
EP075(SIM): 2-Chlorophenol	95-57-8	1	µg/L	<1.0	5 µg/L	54.8	52.0	90.0
EP075(SIM): 2-Methylphenol	95-48-7	1	µg/L	<1.0	5 µg/L	51.3	51.0	91.0
EP075(SIM): 3- & 4-Methylphenol	1319-77-3	2	µg/L	<2.0	10 µg/L	50.1	44.0	88.0
EP075(SIM): 2-Nitrophenol	88-75-5	1	µg/L	<1.0	5 µg/L	74.3	48.0	100
EP075(SIM): 2.4-Dimethylphenol	105-67-9	1	µg/L	<1.0	5 µg/L	63.5	49.0	99.0
EP075(SIM): 2.4-Dichlorophenol	120-83-2	1	µg/L	<1.0	5 µg/L	77.9	53.0	105
EP075(SIM): 2.6-Dichlorophenol	87-65-0	1	µg/L	<1.0	5 µg/L	77.6	57.0	105
EP075(SIM): 4-Chloro-3-methylphenol	59-50-7	1	µg/L	<1.0	5 µg/L	80.5	53.0	99.0
EP075(SIM): 2.4.6-Trichlorophenol	88-06-2	1	µg/L	<1.0	5 µg/L	66.0	50.0	106
EP075(SIM): 2.4.5-Trichlorophenol	95-95-4	1	µg/L	<1.0	5 µg/L	70.2	51.0	105
EP075(SIM): Pentachlorophenol	87-86-5	2	µg/L	<2.0	10 µg/L	69.9	10.0	95.0
EP075(SIM)B: Polynuclear Aromatic Hydrocarbons (QCLot: 5024167)								
EP075(SIM): Naphthalene	91-20-3	1	µg/L	<1.0	5 µg/L	72.6	50.0	94.0
EP075(SIM): Acenaphthylene	208-96-8	1	µg/L	<1.0	5 µg/L	70.7	63.6	114
EP075(SIM): Acenaphthene	83-32-9	1	µg/L	<1.0	5 µg/L	68.6	62.2	113
EP075(SIM): Fluorene	86-73-7	1	µg/L	<1.0	5 µg/L	74.6	63.9	115
EP075(SIM): Phenanthrene	85-01-8	1	µg/L	<1.0	5 µg/L	83.4	62.6	116
EP075(SIM): Anthracene	120-12-7	1	µg/L	<1.0	5 µg/L	67.8	64.3	116
EP075(SIM): Fluoranthene	206-44-0	1	µg/L	<1.0	5 µg/L	87.6	63.6	118
EP075(SIM): Pyrene	129-00-0	1	µg/L	<1.0	5 µg/L	87.5	63.1	118
EP075(SIM): Benz(a)anthracene	56-55-3	1	µg/L	<1.0	5 µg/L	67.5	64.1	117
EP075(SIM): Chrysene	218-01-9	1	µg/L	<1.0	5 µg/L	71.0	62.5	116
EP075(SIM): Benzo(b+j)fluoranthene	205-99-2 205-82-3	1	µg/L	<1.0	5 µg/L	67.6	61.7	119
EP075(SIM): Benzo(k)fluoranthene	207-08-9	1	µg/L	<1.0	5 µg/L	74.8	63.0	115
EP075(SIM): Benzo(a)pyrene	50-32-8	0.5	µg/L	<0.5	5 µg/L	65.6	63.3	117
EP075(SIM): Indeno(1.2.3.cd)pyrene	193-39-5	1	µg/L	<1.0	5 µg/L	73.4	59.9	118
EP075(SIM): Dibenz(a.h)anthracene	53-70-3	1	µg/L	<1.0	5 µg/L	72.5	61.2	117
EP075(SIM): Benzo(g.h.i)perylene	191-24-2	1	µg/L	<1.0	5 µg/L	74.2	59.1	118
EP080: BTEXN (QCLot: 5027157)								

Sub-Matrix: **WATER**

Method: Compound	CAS Number	LOR	Unit	Method Blank (MB) Report	Laboratory Control Spike (LCS) Report			
					Spike	Spike Recovery (%)	Acceptable Limits (%)	
				Result	Concentration	LCS	Low	High
EP080: BTEXN (QCLot: 5027157) - continued								
EP080: Benzene	71-43-2	1	µg/L	<1	10 µg/L	104	68.3	119
EP080: Toluene	108-88-3	2	µg/L	<2	10 µg/L	95.4	73.5	120
EP080: Ethylbenzene	100-41-4	2	µg/L	<2	10 µg/L	101	73.8	122
EP080: meta- & para-Xylene	108-38-3 106-42-3	2	µg/L	<2	10 µg/L	100	73.0	122
EP080: ortho-Xylene	95-47-6	2	µg/L	<2	10 µg/L	106	76.4	123
EP080: Naphthalene	91-20-3	5	µg/L	<5	10 µg/L	102	75.5	124
EP131A: Organochlorine Pesticides (QCLot: 5024141)								
EP131A: Aldrin	309-00-2	0.01	µg/L	<0.010	1.1 µg/L	110	34.0	145
EP131A: alpha-BHC	319-84-6	0.01	µg/L	<0.010	1.1 µg/L	117	27.2	131
EP131A: beta-BHC	319-85-7	0.01	µg/L	<0.010	1.1 µg/L	79.8	28.6	133
EP131A: delta-BHC	319-86-8	0.01	µg/L	<0.010	1.1 µg/L	108	36.0	131
EP131A: 4.4`-DDD	72-54-8	0.01	µg/L	<0.010	1.1 µg/L	67.2	36.0	142
EP131A: 4.4`-DDE	72-55-9	0.01	µg/L	<0.010	1.1 µg/L	72.9	30.4	112
EP131A: 4.4`-DDT	50-29-3	0.01	µg/L	<0.010	1.1 µg/L	110	29.5	142
EP131A: Dieldrin	60-57-1	0.01	µg/L	<0.010	1.1 µg/L	106	28.1	122
EP131A: alpha-Endosulfan	959-98-8	0.01	µg/L	<0.010	1.1 µg/L	110	34.0	119
EP131A: beta-Endosulfan	33213-65-9	0.01	µg/L	<0.010	1.1 µg/L	95.4	31.6	128
EP131A: Endosulfan sulfate	1031-07-8	0.01	µg/L	<0.010	1.1 µg/L	92.6	35.0	159
EP131A: Endrin	72-20-8	0.01	µg/L	<0.010	1.1 µg/L	112	21.5	165
EP131A: Endosulfan (sum)	115-29-7	0.01	µg/L	<0.022	----	----	----	----
EP131A: Endrin aldehyde	7421-93-4	0.01	µg/L	<0.010	1.1 µg/L	91.3	22.7	123
EP131A: Endrin ketone	53494-70-5	0.01	µg/L	<0.010	1.1 µg/L	102	16.3	144
EP131A: Heptachlor	76-44-8	0.005	µg/L	<0.005	1.1 µg/L	114	33.0	160
EP131A: Heptachlor epoxide	1024-57-3	0.01	µg/L	<0.010	1.1 µg/L	106	33.0	117
EP131A: Hexachlorobenzene (HCB)	118-74-1	0.01	µg/L	<0.010	1.1 µg/L	105	23.6	126
EP131A: gamma-BHC	58-89-9	0.01	µg/L	<0.010	1.1 µg/L	111	28.7	134
EP131A: Methoxychlor	72-43-5	0.01	µg/L	<0.010	1.1 µg/L	104	29.5	150
EP131A: cis-Chlordane	5103-71-9	0.01	µg/L	<0.010	1.1 µg/L	108	27.0	116
EP131A: trans-Chlordane	5103-74-2	0.01	µg/L	<0.010	1.1 µg/L	113	31.2	119
EP131A: Total Chlordane (sum)	----	0.01	µg/L	<0.022	----	----	----	----
EP131A: Sum of DDD + DDE + DDT	72-54-8/72-5 5-9/50-2	0.01	µg/L	<0.022	----	----	----	----
EP131B: Polychlorinated Biphenyls (as Aroclors) (QCLot: 5024142)								
EP131B-ST: Aroclor 1254	11097-69-1	0.005	µg/L	<0.005	0.00022 µg/L	86.5	61.6	123

Sub-Matrix: **WATER**

Method: Compound	CAS Number	LOR	Unit	Method Blank (MB) Report	Laboratory Control Spike (LCS) Report			
					Spike	Spike Recovery (%)	Acceptable Limits (%)	
				Result	Concentration	LCS	Low	High
EP234A: OP Pesticides (QCLot: 5023536)								
EP234-1: Azinphos-methyl	86-50-0	0.02	µg/L	<0.02	0.2 µg/L	102	77.0	129
EP234-1: Azinphos-ethyl	2642-71-9	0.02	µg/L	<0.02	0.2 µg/L	90.3	75.0	135
EP234-1: Bromophos-ethyl	4824-78-6	0.1	µg/L	<0.10	1 µg/L	104	70.0	130
EP234-1: Carbofenothion	786-19-6	0.02	µg/L	<0.02	0.2 µg/L	99.7	70.0	130
EP234-1: Chlorfenvinphos	470-90-6	0.02	µg/L	<0.02	0.2 µg/L	107	74.0	134
EP234-1: Chlorpyrifos	2921-88-2	0.02	µg/L	<0.02	0.2 µg/L	104	70.0	130
EP234-1: Chlorpyrifos-methyl	5598-13-0	0.2	µg/L	<0.2	2 µg/L	93.7	70.0	130
EP234-1: Coumaphos	56-72-4	0.01	µg/L	<0.01	0.1 µg/L	101	70.0	130
EP234-1: Demeton-O	298-03-3	0.02	µg/L	<0.02	0.05 µg/L	104	64.0	134
EP234-1: Demeton-O & Demeton-S	298-03-3/126-75-0	0.02	µg/L	<0.02	0.1 µg/L	111	79.0	127
EP234-1: Demeton-S	126-75-0	0.02	µg/L	<0.02	0.05 µg/L	117	63.0	135
EP234-1: Demeton-S-methyl	919-86-8	0.02	µg/L	<0.02	0.2 µg/L	118	70.0	128
EP234-1: Diazinon	333-41-5	0.01	µg/L	<0.01	0.1 µg/L	109	68.0	138
EP234-1: Dichlorvos	62-73-7	0.2	µg/L	<0.20	2 µg/L	93.5	76.0	128
EP234-1: Dimethoate	60-51-5	0.02	µg/L	<0.02	0.2 µg/L	107	75.0	127
EP234-1: Disulfoton	298-04-4	0.05	µg/L	<0.05	0.5 µg/L	118	72.0	134
EP234-1: EPN	2104-64-5	0.05	µg/L	<0.05	0.5 µg/L	81.4	70.0	130
EP234-1: Ethion	563-12-2	0.02	µg/L	<0.02	0.2 µg/L	92.1	70.0	130
EP234-1: Ethoprophos	13194-48-4	0.01	µg/L	<0.01	0.1 µg/L	84.9	78.0	128
EP234-1: Fenamiphos	22224-92-6	0.01	µg/L	<0.01	0.1 µg/L	105	71.0	135
EP234-1: Fenchlorphos (Ronnel)	299-84-3	10	µg/L	<10	100 µg/L	129	70.0	130
EP234-1: Fenitrothion	122-14-5	2	µg/L	<2	20 µg/L	95.3	64.0	136
EP234-1: Fensulfothion	115-90-2	0.01	µg/L	<0.01	0.1 µg/L	107	79.0	125
EP234-1: Fenthion	55-38-9	0.05	µg/L	<0.05	0.5 µg/L	112	70.0	130
EP234-1: Malathion	121-75-5	0.02	µg/L	<0.02	0.2 µg/L	109	70.0	130
EP234-1: Mevinphos	7786-34-7	0.02	µg/L	<0.02	0.2 µg/L	111	77.0	123
EP234-1: Monocrotophos	6923-22-4	0.02	µg/L	<0.02	0.2 µg/L	117	75.0	129
EP234-1: Omethoate	1113-02-6	0.01	µg/L	<0.01	0.1 µg/L	110	74.0	130
EP234-1: Parathion	56-38-2	0.2	µg/L	<0.2	2 µg/L	93.0	69.0	139
EP234-1: Parathion-methyl	298-00-0	0.5	µg/L	<0.5	20 µg/L	92.6	66.0	140
EP234-1: Phorate	298-02-2	0.1	µg/L	<0.1	1 µg/L	110	68.0	136
EP234-1: Pirimiphos-ethyl	23505-41-1	0.01	µg/L	<0.01	0.1 µg/L	101	70.0	130
EP234-1: Pirimiphos-methyl	29232-93-7	0.01	µg/L	<0.01	0.1 µg/L	104	71.0	137
EP234-1: Profenofos	41198-08-7	0.01	µg/L	<0.01	0.1 µg/L	110	70.0	130

Sub-Matrix: **WATER**

Method: Compound	CAS Number	LOR	Unit	Method Blank (MB) Report: Result	Laboratory Control Spike (LCS) Report: Spike Concentration	Spike Recovery (%): LCS	Acceptable Limits (%): Low	Acceptable Limits (%): High
EP234A: OP Pesticides (QCLot: 5023536) - continued								
EP234-1: Prothiofos	34643-46-4	0.1	µg/L	<0.1	1 µg/L	125	70.0	130
EP234-1: Sulfotep	3689-24-5	0.005	µg/L	<0.005	0.05 µg/L	103	71.0	137
EP234-1: Sulprofos	35400-43-2	0.05	µg/L	<0.05	0.5 µg/L	111	70.0	130
EP234-1: Temephos	3383-96-8	0.02	µg/L	<0.02	0.2 µg/L	84.4	70.0	130
EP234-1: Terbufos	13071-79-9	0.01	µg/L	<0.01	0.1 µg/L	111	70.0	130
EP234-1: Tetrachlorvinphos	22248-79-9	0.01	µg/L	<0.01	0.1 µg/L	117	74.0	128
EP234-1: Triazophos	24017-47-8	0.005	µg/L	<0.005	0.05 µg/L	102	77.0	131
EP234-1: Trichlorfon	52-68-6	0.02	µg/L	<0.02	0.2 µg/L	93.8	70.0	130
EP234-1: Trichloronate	327-98-0	0.5	µg/L	<0.5	5 µg/L	117	63.0	139
EP234A: OP Pesticides (QCLot: 5023537)								
EP234-1x: Acephate	30560-19-1	0.5	µg/L	<0.5	5 µg/L	112	70.0	130
EP234-1x: Bensulide	741-58-2	0.1	µg/L	<0.1	5 µg/L	95.0	70.0	130
EP234-1x: Formothion	2540-82-1	20	µg/L	<20	----	----	----	----
EP234-1x: Fosetyl Aluminium	39148-24-8	10	µg/L	<10	5 µg/L	98.2	70.0	130
EP234-1x: Methidathion	950-37-8	0.1	µg/L	<0.1	5 µg/L	102	70.0	130
EP234-1x: Naftalofos	1491-41-4	1	µg/L	<1.0	5 µg/L	95.0	70.0	130
EP234-1x: Pyrazophos	13457-18-6	0.1	µg/L	<0.1	5 µg/L	108	70.0	130
EP234-1x: Thiometon	640-15-3	0.5	µg/L	<0.5	5 µg/L	101	70.0	130

Matrix Spike (MS) Report

The quality control term Matrix Spike (MS) refers to an intralaboratory split sample spiked with a representative set of target analytes. The purpose of this QC parameter is to monitor potential matrix effects on analyte recoveries. Static Recovery Limits as per laboratory Data Quality Objectives (DQOs). Ideal recovery ranges stated may be waived in the event of sample matrix interference.

Sub-Matrix: **WATER**

Laboratory sample ID	Sample ID	Method: Compound	CAS Number	Matrix Spike (MS) Report: Spike Concentration	SpikeRecovery(%): MS	Acceptable Limits (%): Low	Acceptable Limits (%): High
EG020T: Total Metals by ICP-MS (QCLot: 5029320)							
ES2314224-002	Anonymous	EG020A-T: Arsenic	7440-38-2	1 mg/L	95.9	70.0	130
		EG020A-T: Cadmium	7440-43-9	0.25 mg/L	97.5	70.0	130
		EG020A-T: Chromium	7440-47-3	1 mg/L	94.8	70.0	130
		EG020A-T: Copper	7440-50-8	1 mg/L	94.5	70.0	130
		EG020A-T: Lead	7439-92-1	1 mg/L	92.3	70.0	130
		EG020A-T: Manganese	7439-96-5	1 mg/L	94.6	70.0	130
		EG020A-T: Nickel	7440-02-0	1 mg/L	92.7	70.0	130
		EG020A-T: Zinc	7440-66-6	1 mg/L	93.9	70.0	130
EG035T: Total Recoverable Mercury by FIMS (QCLot: 5029334)							

Sub-Matrix: **WATER**

				Matrix Spike (MS) Report			
				Spike	SpikeRecovery(%)	Acceptable Limits (%)	
Laboratory sample ID	Sample ID	Method: Compound	CAS Number	Concentration	MS	Low	High
EG035T: Total Recoverable Mercury by FIMS (QCLot: 5029334) - continued							
ES2314347-004	Anonymous	EG035T: Mercury	7439-97-6	0.01 mg/L	90.0	70.0	130
EK055G: Ammonia as N by Discrete Analyser (QCLot: 5029066)							
ES2314384-001	BADDS	EK055G: Ammonia as N	7664-41-7	1 mg/L	108	70.0	130
EK057G: Nitrite as N by Discrete Analyser (QCLot: 5023154)							
ES2314122-002	Anonymous	EK057G: Nitrite as N	14797-65-0	0.5 mg/L	112	70.0	130
EK057G: Nitrite as N by Discrete Analyser (QCLot: 5026996)							
ES2314305-001	Anonymous	EK057G: Nitrite as N	14797-65-0	0.5 mg/L	110	70.0	130
EK059G: Nitrite plus Nitrate as N (NOx) by Discrete Analyser (QCLot: 5029067)							
ES2314384-001	BADDS	EK059G: Nitrite + Nitrate as N	----	0.5 mg/L	# Not Determined	70.0	130
EK061G: Total Kjeldahl Nitrogen By Discrete Analyser (QCLot: 5029070)							
ES2314384-002	BADMS	EK061G: Total Kjeldahl Nitrogen as N	----	25 mg/L	81.6	70.0	130
EK067G: Total Phosphorus as P by Discrete Analyser (QCLot: 5029069)							
ES2314384-002	BADMS	EK067G: Total Phosphorus as P	----	1 mg/L	106	70.0	130
EK071G: Reactive Phosphorus as P by discrete analyser (QCLot: 5023153)							
ES2314122-002	Anonymous	EK071G: Reactive Phosphorus as P	14265-44-2	0.5 mg/L	# Not Determined	70.0	130
EK071G: Reactive Phosphorus as P by discrete analyser (QCLot: 5023155)							
ES2314384-010	ROPDS	EK071G: Reactive Phosphorus as P	14265-44-2	0.5 mg/L	96.4	70.0	130
EK071G: Reactive Phosphorus as P by discrete analyser (QCLot: 5026997)							
ES2314305-001	Anonymous	EK071G: Reactive Phosphorus as P	14265-44-2	0.5 mg/L	# Not Determined	70.0	130
EP074E: Halogenated Aliphatic Compounds (QCLot: 5027158)							
ES2314050-001	Anonymous	EP074: 1.1-Dichloroethene	75-35-4	25 µg/L	76.2	70.0	130
		EP074: Trichloroethene	79-01-6	25 µg/L	82.4	70.0	130
EP074F: Halogenated Aromatic Compounds (QCLot: 5027158)							
ES2314050-001	Anonymous	EP074: Chlorobenzene	108-90-7	25 µg/L	89.9	70.0	130
EP075(SIM)A: Phenolic Compounds (QCLot: 5024167)							
ES2314384-002	BADMS	EP075(SIM): Phenol	108-95-2	20 µg/L	27.2	20.0	130
		EP075(SIM): 2-Chlorophenol	95-57-8	20 µg/L	61.7	60.0	130
		EP075(SIM): 2-Nitrophenol	88-75-5	20 µg/L	73.6	60.0	130
		EP075(SIM): 4-Chloro-3-methylphenol	59-50-7	20 µg/L	73.4	70.0	130
		EP075(SIM): Pentachlorophenol	87-86-5	20 µg/L	41.9	20.0	130
EP075(SIM)B: Polynuclear Aromatic Hydrocarbons (QCLot: 5024167)							

Sub-Matrix: **WATER**

				Matrix Spike (MS) Report			
				Spike	SpikeRecovery(%)	Acceptable Limits (%)	
Laboratory sample ID	Sample ID	Method: Compound	CAS Number	Concentration	MS	Low	High
EP075(SIM)B: Polynuclear Aromatic Hydrocarbons (QCLot: 5024167) - continued							
ES2314384-002	BADMS	EP075(SIM): Acenaphthene	83-32-9	20 µg/L	71.9	70.0	130
		EP075(SIM): Pyrene	129-00-0	20 µg/L	80.0	70.0	130
EP080: BTEXN (QCLot: 5027157)							
ES2314050-001	Anonymous	EP080: Benzene	71-43-2	25 µg/L	98.7	70.0	130
		EP080: Toluene	108-88-3	25 µg/L	93.3	70.0	130
		EP080: Ethylbenzene	100-41-4	25 µg/L	88.8	70.0	130
		EP080: meta- & para-Xylene	108-38-3 106-42-3	25 µg/L	84.8	70.0	130
		EP080: ortho-Xylene	95-47-6	25 µg/L	89.4	70.0	130
		EP080: Naphthalene	91-20-3	25 µg/L	86.1	70.0	130
EP234A: OP Pesticides (QCLot: 5023536)							
ES2314219-001	Anonymous	EP234-1: Azinphos-methyl	86-50-0	0.2 µg/L	107	70.0	130
		EP234-1: Azinphos-ethyl	2642-71-9	0.2 µg/L	93.6	70.0	130
		EP234-1: Bromophos-ethyl	4824-78-6	1 µg/L	# 69.3	70.0	130
		EP234-1: Carbofenothion	786-19-6	0.2 µg/L	94.0	70.0	130
		EP234-1: Chlorfenvinphos	470-90-6	0.2 µg/L	97.3	70.0	130
		EP234-1: Chlorpyrifos	2921-88-2	0.2 µg/L	99.3	70.0	130
		EP234-1: Chlorpyrifos-methyl	5598-13-0	2 µg/L	61.6	58.0	136
		EP234-1: Coumaphos	56-72-4	0.1 µg/L	98.8	70.0	130
		EP234-1: Demeton-O	298-03-3	0.05 µg/L	97.6	70.0	130
		EP234-1: Demeton-O & Demeton-S	298-03-3/126-75-0	0.1 µg/L	105	69.0	129
		EP234-1: Demeton-S	126-75-0	0.05 µg/L	113	70.0	130
		EP234-1: Demeton-S-methyl	919-86-8	0.2 µg/L	114	70.0	130
		EP234-1: Diazinon	333-41-5	0.1 µg/L	101	70.0	130
		EP234-1: Dichlorvos	62-73-7	2 µg/L	89.6	70.0	130
		EP234-1: Dimethoate	60-51-5	0.2 µg/L	115	69.0	131
		EP234-1: Disulfoton	298-04-4	0.5 µg/L	93.9	70.0	130
		EP234-1: EPN	2104-64-5	0.5 µg/L	# 47.6	70.0	130
		EP234-1: Ethion	563-12-2	0.2 µg/L	93.2	70.0	130
		EP234-1: Ethoprophos	13194-48-4	0.1 µg/L	# 61.2	70.0	132
		EP234-1: Fenamiphos	22224-92-6	0.1 µg/L	106	70.0	130
		EP234-1: Fenchlorphos (Ronnel)	299-84-3	100 µg/L	127	71.0	133
		EP234-1: Fenitrothion	122-14-5	20 µg/L	65.2	64.0	136
		EP234-1: Fensulfothion	115-90-2	0.1 µg/L	103	83.0	123
		EP234-1: Fenthion	55-38-9	0.5 µg/L	107	70.0	130
		EP234-1: Malathion	121-75-5	0.2 µg/L	103	70.0	130
		EP234-1: Mevinphos	7786-34-7	0.2 µg/L	100	69.0	125
		EP234-1: Monocrotophos	6923-22-4	0.2 µg/L	118	70.0	128

Sub-Matrix: **WATER**

				Matrix Spike (MS) Report			
				Spike	SpikeRecovery(%)	Acceptable Limits (%)	
Laboratory sample ID	Sample ID	Method: Compound	CAS Number	Concentration	MS	Low	High
EP234A: OP Pesticides (QCLot: 5023536) - continued							
ES2314219-001	Anonymous	EP234-1: Omethoate	1113-02-6	0.1 µg/L	98.9	70.0	130
		EP234-1: Parathion	56-38-2	2 µg/L	77.5	70.0	130
		EP234-1: Parathion-methyl	298-00-0	20 µg/L	# 43.7	70.0	140
		EP234-1: Phorate	298-02-2	1 µg/L	94.6	70.0	130
		EP234-1: Pirimiphos-ethyl	23505-41-1	0.1 µg/L	95.9	70.0	130
		EP234-1: Pirimiphos-methyl	29232-93-7	0.1 µg/L	100	70.0	130
		EP234-1: Profenofos	41198-08-7	0.1 µg/L	91.5	70.0	130
		EP234-1: Prothiofos	34643-46-4	1 µg/L	108	70.0	130
		EP234-1: Sulfotep	3689-24-5	0.05 µg/L	107	63.0	135
		EP234-1: Sulprofos	35400-43-2	0.5 µg/L	100	70.0	130
		EP234-1: Temephos	3383-96-8	0.2 µg/L	92.0	70.0	130
		EP234-1: Terbufos	13071-79-9	0.1 µg/L	97.2	70.0	130
		EP234-1: Tetrachlorvinphos	22248-79-9	0.1 µg/L	97.5	77.0	125
		EP234-1: Triazophos	24017-47-8	0.05 µg/L	105	74.0	132
		EP234-1: Trichlorfon	52-68-6	0.2 µg/L	70.2	70.0	130
		EP234-1: Trichloronate	327-98-0	5 µg/L	68.4	63.0	139
EP234A: OP Pesticides (QCLot: 5023537)							
ES2314219-001	Anonymous	EP234-1x: Acephate	30560-19-1	5 µg/L	108	70.0	130
		EP234-1x: Bensulide	741-58-2	5 µg/L	106	70.0	130
		EP234-1x: Fosetyl Aluminium	39148-24-8	5 µg/L	76.4	70.0	130
		EP234-1x: Methidathion	950-37-8	5 µg/L	91.8	70.0	130
		EP234-1x: Naftalofos	1491-41-4	5 µg/L	109	70.0	130
		EP234-1x: Pyrazophos	13457-18-6	5 µg/L	106	70.0	130
		EP234-1x: Thiometon	640-15-3	5 µg/L	91.4	70.0	130

QA/QC Compliance Assessment to assist with Quality Review

Work Order	: **ES2314384**	Page	: 1 of 13
Client	: **GHD PTY LTD**	Laboratory	: Environmental Division Sydney
Contact	: MR HENRY LUO	Telephone	: +61-2-8784 8555
Project	: M12 SURFACE WATER	Date Samples Received	: 02-May-2023
Site	:	Issue Date	: 09-May-2023
Sampler	: Emily Smith	No. of samples received	: 14
Order number	: 12554717	No. of samples analysed	: 14

This report is automatically generated by the ALS LIMS through interpretation of the ALS Quality Control Report and several Quality Assurance parameters measured by ALS. This automated reporting highlights any non-conformances, facilitates faster and more accurate data validation and is designed to assist internal expert and external Auditor review. Many components of this report contribute to the overall DQO assessment and reporting for guideline compliance.

Brief method summaries and references are also provided to assist in traceability.

Summary of Outliers

Outliers : Quality Control Samples

This report highlights outliers flagged in the Quality Control (QC) Report.

- **NO Method Blank value outliers occur.**
- **NO Duplicate outliers occur.**
- **NO Laboratory Control outliers occur.**
- **Matrix Spike outliers exist - please see following pages for full details.**
- **For all regular sample matrices, NO surrogate recovery outliers occur.**

Outliers : Analysis Holding Time Compliance

- **Analysis Holding Time Outliers exist - please see following pages for full details.**

Outliers : Frequency of Quality Control Samples

- **Quality Control Sample Frequency Outliers exist - please see following pages for full details.**

Outliers : Quality Control Samples

Duplicates, Method Blanks, Laboratory Control Samples and Matrix Spikes

Matrix: **WATER**

Compound Group Name	Laboratory Sample ID	Client Sample ID	Analyte	CAS Number	Data	Limits	Comment
Matrix Spike (MS) Recoveries							
EK059G: Nitrite plus Nitrate as N (NOx) by Discrete Ar	ES2314384--001	BADDS	**Nitrite + Nitrate as N**	----	Not Determined	----	**MS recovery not determined, background level greater than or equal to 4x spike level.**
EK071G: Reactive Phosphorus as P by discrete analyse	ES2314122--002	Anonymous	**Reactive Phosphorus as P**	14265-44-2	Not Determined	----	**MS recovery not determined, background level greater than or equal to 4x spike level.**
EK071G: Reactive Phosphorus as P by discrete analyse	ES2314305--001	Anonymous	**Reactive Phosphorus as P**	14265-44-2	Not Determined	----	**MS recovery not determined, background level greater than or equal to 4x spike level.**
EP234A: OP Pesticides	ES2314219--001	Anonymous	**Bromophos-ethyl**	4824-78-6	69.3 %	70.0-130%	**Recovery less than lower data quality objective**
EP234A: OP Pesticides	ES2314219--001	Anonymous	**EPN**	2104-64-5	47.6 %	70.0-130%	**Recovery less than lower data quality objective**
EP234A: OP Pesticides	ES2314219--001	Anonymous	**Ethoprophos**	13194-48-4	61.2 %	70.0-132%	**Recovery less than lower data quality objective**
EP234A: OP Pesticides	ES2314219--001	Anonymous	**Parathion-methyl**	298-00-0	43.7 %	70.0-140%	**Recovery less than lower data quality objective**

Outliers : Analysis Holding Time Compliance

Matrix: **WATER**

Method / Container / Client Sample ID(s)	Extraction / Preparation			Analysis		
	Date extracted	Due for extraction	Days overdue	Date analysed	Due for analysis	Days overdue
EK057G: Nitrite as N by Discrete Analyser						
Clear Plastic Bottle - Natural						
BADDS, BADMS, BADUS, COSDS, COSUS	----	----	----	05-May-2023	04-May-2023	**1**
EK071G: Reactive Phosphorus as P by discrete analyser						
Clear Plastic Bottle - Natural						
BADDS, BADMS, BADUS, COSDS, COSUS	----	----	----	05-May-2023	04-May-2023	**1**

Outliers : Frequency of Quality Control Samples

Matrix: **WATER**

Quality Control Sample Type / Method	Count		Rate (%)		Quality Control Specification
	QC	Regular	Actual	Expected	
Laboratory Duplicates (DUP)					
Organochlorine Pesticides (Ultra-trace)	0	13	0.00	10.00	NEPM 2013 B3 & ALS QC Standard

Matrix: **WATER**

Quality Control Sample Type / Method	Count QC	Count Regular	Rate (%) Actual	Rate (%) Expected	Quality Control Specification
Laboratory Duplicates (DUP) - Continued					
PCB's (Ultra-trace) for Catchment Monitoring	0	13	0.00	10.00	NEPM 2013 B3 & ALS QC Standard
Matrix Spikes (MS)					
Organochlorine Pesticides (Ultra-trace)	0	13	0.00	5.00	NEPM 2013 B3 & ALS QC Standard
PCB's (Ultra-trace) for Catchment Monitoring	0	13	0.00	5.00	NEPM 2013 B3 & ALS QC Standard

Analysis Holding Time Compliance

If samples are identified below as having been analysed or extracted outside of recommended holding times, this should be taken into consideration when interpreting results.

This report summarizes extraction / preparation and analysis times and compares each with ALS recommended holding times (referencing USEPA SW 846, APHA, AS and NEPM) based on the sample container provided. Dates reported represent first date of extraction or analysis and preclude subsequent dilutions and reruns. A listing of breaches (if any) is provided herein.

Holding time for leachate methods (e.g. TCLP) vary according to the analytes reported. Assessment compares the leach date with the shortest analyte holding time for the equivalent soil method. These are: organics 14 days, mercury 28 days & other metals 180 days. A recorded breach does not guarantee a breach for all non-volatile parameters.

Holding times for ***VOC in soils*** vary according to analytes of interest. Vinyl Chloride and Styrene holding time is 7 days; others 14 days. A recorded breach does not guarantee a breach for all VOC analytes and should be verified in case the reported breach is a false positive or Vinyl Chloride and Styrene are not key analytes of interest/concern.

Matrix: **WATER**

Evaluation: × = Holding time breach ; ✓ = Within holding time.

Method / *Container / Client Sample ID(s)*	*Sample Date*	*Extraction / Preparation* Date extracted	Due for extraction	Evaluation	*Analysis* Date analysed	Due for analysis	Evaluation
EA015: Total Dissolved Solids dried at 180 ± 5 °C							
Clear Plastic Bottle - Natural (EA015H)							
HINDS, HINUS, KEMDS, KEMUS, ROPDS, ROPUS, SOUDS, SOUUS	**01-May-2023**	**----**	----	----	**04-May-2023**	08-May-2023	✓
Clear Plastic Bottle - Natural (EA015H)							
BADDS, BADMS, BADUS, COSDS, COSUS	**02-May-2023**	**----**	----	----	**04-May-2023**	09-May-2023	✓
EA025: Total Suspended Solids dried at 104 ± 2°C							
Clear Plastic Bottle - Natural (EA025H)							
HINDS, HINUS, KEMDS, KEMUS, ROPDS, ROPUS, SOUDS, SOUUS	**01-May-2023**	**----**	----	----	**04-May-2023**	08-May-2023	✓
Clear Plastic Bottle - Natural (EA025H)							
BADDS, BADMS, BADUS, COSDS, COSUS	**02-May-2023**	**----**	----	----	**04-May-2023**	09-May-2023	✓

Matrix: **WATER**

Evaluation: × = Holding time breach ; ✓ = Within holding time.

Method / Container / Client Sample ID(s)	Sample Date	Extraction / Preparation			Analysis		
		Date extracted	Due for extraction	Evaluation	Date analysed	Due for analysis	Evaluation
EG020T: Total Metals by ICP-MS							
Clear Plastic Bottle - Nitric Acid; Unfiltered (EG020A-T)							
HINDS, HINUS, KEMDS, KEMUS, ROPDS, ROPUS, SOUDS, SOUUS, SWDUP1	**01-May-2023**	**05-May-2023**	28-Oct-2023	✓	**05-May-2023**	28-Oct-2023	✓
Clear Plastic Bottle - Nitric Acid; Unfiltered (EG020A-T)							
BADDS, BADMS, BADUS, COSDS, COSUS	**02-May-2023**	**05-May-2023**	29-Oct-2023	✓	**05-May-2023**	29-Oct-2023	✓
EG035T: Total Recoverable Mercury by FIMS							
Clear Plastic Bottle - Nitric Acid; Unfiltered (EG035T)							
HINDS, HINUS, KEMDS, KEMUS, ROPDS, ROPUS, SOUDS, SOUUS, SWDUP1	**01-May-2023**	**----**	----	----	**07-May-2023**	29-May-2023	✓
Clear Plastic Bottle - Nitric Acid; Unfiltered (EG035T)							
BADDS, BADMS, BADUS, COSDS, COSUS	**02-May-2023**	**----**	----	----	**07-May-2023**	30-May-2023	✓
EK055G: Ammonia as N by Discrete Analyser							
Clear Plastic Bottle - Sulfuric Acid (EK055G)							
HINDS, HINUS, KEMDS, KEMUS, ROPDS, ROPUS, SOUDS, SOUUS	**01-May-2023**	**----**	----	----	**08-May-2023**	29-May-2023	✓
Clear Plastic Bottle - Sulfuric Acid (EK055G)							
BADDS, BADMS, BADUS, COSDS, COSUS	**02-May-2023**	**----**	----	----	**08-May-2023**	30-May-2023	✓
EK057G: Nitrite as N by Discrete Analyser							
Clear Plastic Bottle - Natural (EK057G)							
HINDS, HINUS, KEMDS, KEMUS, ROPDS, ROPUS, SOUDS, SOUUS	**01-May-2023**	**----**	----	----	**03-May-2023**	03-May-2023	✓
Clear Plastic Bottle - Natural (EK057G)							
BADDS, BADMS, BADUS, COSDS, COSUS	**02-May-2023**	**----**	----	----	**05-May-2023**	04-May-2023	✘

Matrix: **WATER**

Evaluation: × = Holding time breach ; ✓ = Within holding time.

Method / Container / Client Sample ID(s)	Sample Date	Extraction / Preparation			Analysis		
		Date extracted	Due for extraction	Evaluation	Date analysed	Due for analysis	Evaluation
EK059G: Nitrite plus Nitrate as N (NOx) by Discrete Analyser							
Clear Plastic Bottle - Sulfuric Acid (EK059G)							
HINDS, HINUS, KEMDS, KEMUS, ROPDS, ROPUS, SOUDS, SOUUS	**01-May-2023**	**----**	----	**----**	**08-May-2023**	29-May-2023	✓
Clear Plastic Bottle - Sulfuric Acid (EK059G)							
BADDS, BADMS, BADUS, COSDS, COSUS	**02-May-2023**	**----**	----	**----**	**08-May-2023**	30-May-2023	✓
EK061G: Total Kjeldahl Nitrogen By Discrete Analyser							
Clear Plastic Bottle - Sulfuric Acid (EK061G)							
HINDS, HINUS, KEMDS, KEMUS, ROPDS, ROPUS, SOUDS, SOUUS	**01-May-2023**	**05-May-2023**	29-May-2023	✓	**06-May-2023**	29-May-2023	✓
Clear Plastic Bottle - Sulfuric Acid (EK061G)							
BADDS, BADMS, BADUS, COSDS, COSUS	**02-May-2023**	**05-May-2023**	30-May-2023	✓	**06-May-2023**	30-May-2023	✓
EK067G: Total Phosphorus as P by Discrete Analyser							
Clear Plastic Bottle - Sulfuric Acid (EK067G)							
HINDS, HINUS, KEMDS, KEMUS, ROPDS, ROPUS, SOUDS, SOUUS	**01-May-2023**	**05-May-2023**	29-May-2023	✓	**06-May-2023**	29-May-2023	✓
Clear Plastic Bottle - Sulfuric Acid (EK067G)							
BADDS, BADMS, BADUS, COSDS, COSUS	**02-May-2023**	**05-May-2023**	30-May-2023	✓	**06-May-2023**	30-May-2023	✓
EK071G: Reactive Phosphorus as P by discrete analyser							
Clear Plastic Bottle - Natural (EK071G)							
HINDS, HINUS, KEMDS, KEMUS, ROPDS, ROPUS, SOUDS, SOUUS	**01-May-2023**	**----**	----	**----**	**03-May-2023**	03-May-2023	✓
Clear Plastic Bottle - Natural (EK071G)							
BADDS, BADMS, BADUS, COSDS, COSUS	**02-May-2023**	**----**	----	**----**	**05-May-2023**	04-May-2023	✘

Matrix: **WATER**

Evaluation: × = Holding time breach ; ✓ = Within holding time.

Method / Container / Client Sample ID(s)		Sample Date	Extraction / Preparation			Analysis		
			Date extracted	Due for extraction	Evaluation	Date analysed	Due for analysis	Evaluation
EP008: Chlorophyll a & Pheophytin a								
Opaque Plastic Bottle - Unpreserved (EP008)								
HINDS,	HINUS,	**01-May-2023**	**----**	----	----	**03-May-2023**	03-May-2023	✓
KEMDS,	KEMUS,							
ROPDS,	ROPUS,							
SOUDS,	SOUUS							
Opaque Plastic Bottle - Unpreserved (EP008)								
BADDS,	BADMS,	**02-May-2023**	**----**	----	----	**03-May-2023**	04-May-2023	✓
BADUS,	COSDS,							
COSUS								
EP020: Oil and Grease (O&G)								
Amber Jar - Sulfuric Acid or Sodium Bisulfate (EP020)								
HINDS,	HINUS,	**01-May-2023**	**----**	----	----	**08-May-2023**	29-May-2023	✓
KEMDS,	KEMUS,							
ROPDS,	ROPUS,							
SOUDS,	SOUUS							
Amber Jar - Sulfuric Acid or Sodium Bisulfate (EP020)								
BADDS,	BADMS,	**02-May-2023**	**----**	----	----	**08-May-2023**	30-May-2023	✓
BADUS,	COSDS,							
COSUS								
EP074D: Fumigants								
Amber VOC Vial - Sulfuric Acid (EP074)								
HINDS,	HINUS,	**01-May-2023**	**05-May-2023**	15-May-2023	✓	**05-May-2023**	15-May-2023	✓
KEMDS,	KEMUS,							
ROPDS,	ROPUS,							
SOUDS,	SOUUS							
Amber VOC Vial - Sulfuric Acid (EP074)								
BADDS,	BADMS,	**02-May-2023**	**05-May-2023**	16-May-2023	✓	**05-May-2023**	16-May-2023	✓
BADUS,	COSDS,							
COSUS								
EP074E: Halogenated Aliphatic Compounds								
Amber VOC Vial - Sulfuric Acid (EP074)								
HINDS,	HINUS,	**01-May-2023**	**05-May-2023**	15-May-2023	✓	**05-May-2023**	15-May-2023	✓
KEMDS,	KEMUS,							
ROPDS,	ROPUS,							
SOUDS,	SOUUS							
Amber VOC Vial - Sulfuric Acid (EP074)								
BADDS,	BADMS,	**02-May-2023**	**05-May-2023**	16-May-2023	✓	**05-May-2023**	16-May-2023	✓
BADUS,	COSDS,							
COSUS								

Matrix: **WATER**

Evaluation: × = Holding time breach ; ✓ = Within holding time.

Method / Container / Client Sample ID(s)	Sample Date	Extraction / Preparation			Analysis		
		Date extracted	Due for extraction	Evaluation	Date analysed	Due for analysis	Evaluation
EP074F: Halogenated Aromatic Compounds							
Amber VOC Vial - Sulfuric Acid (EP074)							
HINDS, HINUS, KEMDS, KEMUS, ROPDS, ROPUS, SOUDS, SOUUS	**01-May-2023**	**05-May-2023**	15-May-2023	✓	**05-May-2023**	15-May-2023	✓
Amber VOC Vial - Sulfuric Acid (EP074)							
BADDS, BADMS, BADUS, COSDS, COSUS	**02-May-2023**	**05-May-2023**	16-May-2023	✓	**05-May-2023**	16-May-2023	✓
EP074G: Trihalomethanes							
Amber VOC Vial - Sulfuric Acid (EP074)							
HINDS, HINUS, KEMDS, KEMUS, ROPDS, ROPUS, SOUDS, SOUUS	**01-May-2023**	**05-May-2023**	15-May-2023	✓	**05-May-2023**	15-May-2023	✓
Amber VOC Vial - Sulfuric Acid (EP074)							
BADDS, BADMS, BADUS, COSDS, COSUS	**02-May-2023**	**05-May-2023**	16-May-2023	✓	**05-May-2023**	16-May-2023	✓
EP075(SIM)A: Phenolic Compounds							
Amber Glass Bottle - Unpreserved (EP075(SIM))							
HINDS, HINUS, KEMDS, KEMUS, ROPDS, ROPUS, SOUDS, SOUUS	**01-May-2023**	**05-May-2023**	08-May-2023	✓	**08-May-2023**	14-Jun-2023	✓
Amber Glass Bottle - Unpreserved (EP075(SIM))							
BADDS, BADMS, BADUS, COSDS, COSUS	**02-May-2023**	**05-May-2023**	09-May-2023	✓	**08-May-2023**	14-Jun-2023	✓
EP075(SIM)B: Polynuclear Aromatic Hydrocarbons							
Amber Glass Bottle - Unpreserved (EP075(SIM))							
HINDS, HINUS, KEMDS, KEMUS, ROPDS, ROPUS, SOUDS, SOUUS	**01-May-2023**	**05-May-2023**	08-May-2023	✓	**08-May-2023**	14-Jun-2023	✓
Amber Glass Bottle - Unpreserved (EP075(SIM))							
BADDS, BADMS, BADUS, COSDS, COSUS	**02-May-2023**	**05-May-2023**	09-May-2023	✓	**08-May-2023**	14-Jun-2023	✓

Matrix: **WATER**

Evaluation: × = Holding time breach ; ✓ = Within holding time.

Method / Container / Client Sample ID(s)	Sample Date	Extraction / Preparation			Analysis		
		Date extracted	Due for extraction	Evaluation	Date analysed	Due for analysis	Evaluation
EP080: BTEXN							
Amber VOC Vial - Sulfuric Acid (EP080)							
HINDS, HINUS, KEMDS, KEMUS, ROPDS, ROPUS, SOUDS, SOUUS	**01-May-2023**	**05-May-2023**	15-May-2023	✓	**05-May-2023**	15-May-2023	✓
Amber VOC Vial - Sulfuric Acid (EP080)							
BADDS, BADMS, BADUS, COSDS, COSUS	**02-May-2023**	**05-May-2023**	16-May-2023	✓	**05-May-2023**	16-May-2023	✓
EP131A: Organochlorine Pesticides							
Amber Glass Bottle - Unpreserved (EP131A)							
HINDS, HINUS, KEMDS, KEMUS, ROPDS, ROPUS, SOUDS, SOUUS	**01-May-2023**	**08-May-2023**	08-May-2023	✓	**08-May-2023**	17-Jun-2023	✓
Amber Glass Bottle - Unpreserved (EP131A)							
BADDS, BADMS, BADUS, COSDS, COSUS	**02-May-2023**	**08-May-2023**	09-May-2023	✓	**08-May-2023**	17-Jun-2023	✓
EP131B: Polychlorinated Biphenyls (as Aroclors)							
Amber Glass Bottle - Unpreserved (EP131B-ST)							
HINDS, HINUS, KEMDS, KEMUS, ROPDS, ROPUS, SOUDS, SOUUS	**01-May-2023**	**08-May-2023**	08-May-2023	✓	**08-May-2023**	17-Jun-2023	✓
Amber Glass Bottle - Unpreserved (EP131B-ST)							
BADDS, BADMS, BADUS, COSDS, COSUS	**02-May-2023**	**08-May-2023**	09-May-2023	✓	**08-May-2023**	17-Jun-2023	✓
EP234A: OP Pesticides							
Amber Glass Bottle - Unpreserved (EP234-1x)							
HINDS, HINUS, KEMDS, KEMUS, ROPDS, ROPUS, SOUDS, SOUUS	**01-May-2023**	**----**	----	**----**	**04-May-2023**	08-May-2023	✓
Amber Glass Bottle - Unpreserved (EP234-1x)							
BADDS, BADMS, BADUS, COSDS, COSUS	**02-May-2023**	**----**	----	**----**	**04-May-2023**	09-May-2023	✓

Quality Control Parameter Frequency Compliance

The following report summarises the frequency of laboratory QC samples analysed within the analytical lot(s) in which the submitted sample(s) was(were) processed. Actual rate should be greater than or equal to the expected rate. A listing of breaches is provided in the Summary of Outliers.

Matrix: **WATER**

Evaluation: × = Quality Control frequency not within specification ; ✓ = Quality Control frequency within specification.

Quality Control Sample Type		Count		Rate (%)			Quality Control Specification
Analytical Methods	*Method*	*QC*	*Regular*	***Actual***	***Expected***	*Evaluation*	
Laboratory Duplicates (DUP)							
Ammonia as N by Discrete analyser	EK055G	2	19	**10.53**	**10.00**	✓	NEPM 2013 B3 & ALS QC Standard
Nitrite and Nitrate as N (NOx) by Discrete Analyser	EK059G	2	20	**10.00**	**10.00**	✓	NEPM 2013 B3 & ALS QC Standard
Nitrite as N by Discrete Analyser	EK057G	4	40	**10.00**	**10.00**	✓	NEPM 2013 B3 & ALS QC Standard
Organochlorine Pesticides (Ultra-trace)	EP131A	0	13	**0.00**	**10.00**	×	NEPM 2013 B3 & ALS QC Standard
PAH/Phenols (GC/MS - SIM)	EP075(SIM)	2	15	**13.33**	**10.00**	✓	NEPM 2013 B3 & ALS QC Standard
PCB's (Ultra-trace) for Catchment Monitoring	EP131B-ST	0	13	**0.00**	**10.00**	×	NEPM 2013 B3 & ALS QC Standard
Pesticides by LCMSMS (Positive Ion Mode)	EP234-1	2	20	**10.00**	**10.00**	✓	NEPM 2013 B3 & ALS QC Standard
Pesticides by LCMSMS (Positive Ion Mode) - extended	EP234-1x	2	18	**11.11**	**10.00**	✓	NEPM 2013 B3 & ALS QC Standard
Reactive Phosphorus as P-By Discrete Analyser	EK071G	6	48	**12.50**	**10.00**	✓	NEPM 2013 B3 & ALS QC Standard
Suspended Solids (High Level)	EA025H	4	40	**10.00**	**10.00**	✓	NEPM 2013 B3 & ALS QC Standard
Total Dissolved Solids (High Level)	EA015H	4	40	**10.00**	**10.00**	✓	NEPM 2013 B3 & ALS QC Standard
Total Kjeldahl Nitrogen as N By Discrete Analyser	EK061G	2	20	**10.00**	**10.00**	✓	NEPM 2013 B3 & ALS QC Standard
Total Mercury by FIMS	EG035T	2	19	**10.53**	**10.00**	✓	NEPM 2013 B3 & ALS QC Standard
Total Metals by ICP-MS - Suite A	EG020A-T	2	20	**10.00**	**10.00**	✓	NEPM 2013 B3 & ALS QC Standard
Total Phosphorus as P By Discrete Analyser	EK067G	2	20	**10.00**	**10.00**	✓	NEPM 2013 B3 & ALS QC Standard
TRH Volatiles/BTEX	EP080	2	17	**11.76**	**10.00**	✓	NEPM 2013 B3 & ALS QC Standard
Volatile Organic Compounds	EP074	2	20	**10.00**	**10.00**	✓	NEPM 2013 B3 & ALS QC Standard
Laboratory Control Samples (LCS)							
Ammonia as N by Discrete analyser	EK055G	1	19	**5.26**	**5.00**	✓	NEPM 2013 B3 & ALS QC Standard
Chlorophyll a and Pheophytin a	EP008	2	16	**12.50**	**5.00**	✓	NEPM 2013 B3 & ALS QC Standard
Nitrite and Nitrate as N (NOx) by Discrete Analyser	EK059G	1	20	**5.00**	**5.00**	✓	NEPM 2013 B3 & ALS QC Standard
Nitrite as N by Discrete Analyser	EK057G	2	40	**5.00**	**5.00**	✓	NEPM 2013 B3 & ALS QC Standard
Oil and Grease	EP020	4	47	**8.51**	**8.00**	✓	NEPM 2013 B3 & ALS QC Standard
Organochlorine Pesticides (Ultra-trace)	EP131A	1	13	**7.69**	**5.00**	✓	NEPM 2013 B3 & ALS QC Standard
PAH/Phenols (GC/MS - SIM)	EP075(SIM)	1	15	**6.67**	**5.00**	✓	NEPM 2013 B3 & ALS QC Standard
PCB's (Ultra-trace) for Catchment Monitoring	EP131B-ST	1	13	**7.69**	**5.00**	✓	NEPM 2013 B3 & ALS QC Standard
Pesticides by LCMSMS (Positive Ion Mode)	EP234-1	1	20	**5.00**	**5.00**	✓	NEPM 2013 B3 & ALS QC Standard
Pesticides by LCMSMS (Positive Ion Mode) - extended	EP234-1x	1	18	**5.56**	**5.00**	✓	NEPM 2013 B3 & ALS QC Standard
Reactive Phosphorus as P-By Discrete Analyser	EK071G	3	48	**6.25**	**5.00**	✓	NEPM 2013 B3 & ALS QC Standard
Suspended Solids (High Level)	EA025H	5	40	**12.50**	**12.50**	✓	NEPM 2013 B3 & ALS QC Standard
Total Dissolved Solids (High Level)	EA015H	5	40	**12.50**	**12.50**	✓	NEPM 2013 B3 & ALS QC Standard
Total Kjeldahl Nitrogen as N By Discrete Analyser	EK061G	3	20	**15.00**	**15.00**	✓	NEPM 2013 B3 & ALS QC Standard
Total Mercury by FIMS	EG035T	1	19	**5.26**	**5.00**	✓	NEPM 2013 B3 & ALS QC Standard
Total Metals by ICP-MS - Suite A	EG020A-T	1	20	**5.00**	**5.00**	✓	NEPM 2013 B3 & ALS QC Standard
Total Phosphorus as P By Discrete Analyser	EK067G	3	20	**15.00**	**15.00**	✓	NEPM 2013 B3 & ALS QC Standard
TRH Volatiles/BTEX	EP080	1	17	**5.88**	**5.00**	✓	NEPM 2013 B3 & ALS QC Standard

Matrix: **WATER**

Evaluation: × = Quality Control frequency not within specification ; ✓ = Quality Control frequency within specification.

Quality Control Sample Type		Count		Rate (%)			Quality Control Specification
Analytical Methods	*Method*	*QC*	*Regular*	***Actual***	***Expected***	*Evaluation*	
Laboratory Control Samples (LCS) - Continued							
Volatile Organic Compounds	EP074	1	20	**5.00**	**5.00**	✓	NEPM 2013 B3 & ALS QC Standard
Method Blanks (MB)							
Ammonia as N by Discrete analyser	EK055G	1	19	**5.26**	**5.00**	✓	NEPM 2013 B3 & ALS QC Standard
Chlorophyll a and Pheophytin a	EP008	2	16	**12.50**	**5.00**	✓	NEPM 2013 B3 & ALS QC Standard
Nitrite and Nitrate as N (NOx) by Discrete Analyser	EK059G	1	20	**5.00**	**5.00**	✓	NEPM 2013 B3 & ALS QC Standard
Nitrite as N by Discrete Analyser	EK057G	2	40	**5.00**	**5.00**	✓	NEPM 2013 B3 & ALS QC Standard
Oil and Grease	EP020	3	47	**6.38**	**6.00**	✓	NEPM 2013 B3 & ALS QC Standard
Organochlorine Pesticides (Ultra-trace)	EP131A	1	13	**7.69**	**5.00**	✓	NEPM 2013 B3 & ALS QC Standard
PAH/Phenols (GC/MS - SIM)	EP075(SIM)	1	15	**6.67**	**5.00**	✓	NEPM 2013 B3 & ALS QC Standard
PCB's (Ultra-trace) for Catchment Monitoring	EP131B-ST	1	13	**7.69**	**5.00**	✓	NEPM 2013 B3 & ALS QC Standard
Pesticides by LCMSMS (Positive Ion Mode)	EP234-1	1	20	**5.00**	**5.00**	✓	NEPM 2013 B3 & ALS QC Standard
Pesticides by LCMSMS (Positive Ion Mode) - extended	EP234-1x	1	18	**5.56**	**5.00**	✓	NEPM 2013 B3 & ALS QC Standard
Reactive Phosphorus as P-By Discrete Analyser	EK071G	3	48	**6.25**	**5.00**	✓	NEPM 2013 B3 & ALS QC Standard
Suspended Solids (High Level)	EA025H	2	40	**5.00**	**5.00**	✓	NEPM 2013 B3 & ALS QC Standard
Total Dissolved Solids (High Level)	EA015H	2	40	**5.00**	**5.00**	✓	NEPM 2013 B3 & ALS QC Standard
Total Kjeldahl Nitrogen as N By Discrete Analyser	EK061G	1	20	**5.00**	**5.00**	✓	NEPM 2013 B3 & ALS QC Standard
Total Mercury by FIMS	EG035T	1	19	**5.26**	**5.00**	✓	NEPM 2013 B3 & ALS QC Standard
Total Metals by ICP-MS - Suite A	EG020A-T	1	20	**5.00**	**5.00**	✓	NEPM 2013 B3 & ALS QC Standard
Total Phosphorus as P By Discrete Analyser	EK067G	1	20	**5.00**	**5.00**	✓	NEPM 2013 B3 & ALS QC Standard
TRH Volatiles/BTEX	EP080	1	17	**5.88**	**5.00**	✓	NEPM 2013 B3 & ALS QC Standard
Volatile Organic Compounds	EP074	1	20	**5.00**	**5.00**	✓	NEPM 2013 B3 & ALS QC Standard
Matrix Spikes (MS)							
Ammonia as N by Discrete analyser	EK055G	1	19	**5.26**	**5.00**	✓	NEPM 2013 B3 & ALS QC Standard
Nitrite and Nitrate as N (NOx) by Discrete Analyser	EK059G	1	20	**5.00**	**5.00**	✓	NEPM 2013 B3 & ALS QC Standard
Nitrite as N by Discrete Analyser	EK057G	2	40	**5.00**	**5.00**	✓	NEPM 2013 B3 & ALS QC Standard
Organochlorine Pesticides (Ultra-trace)	EP131A	0	13	**0.00**	**5.00**	×	NEPM 2013 B3 & ALS QC Standard
PAH/Phenols (GC/MS - SIM)	EP075(SIM)	1	15	**6.67**	**5.00**	✓	NEPM 2013 B3 & ALS QC Standard
PCB's (Ultra-trace) for Catchment Monitoring	EP131B-ST	0	13	**0.00**	**5.00**	×	NEPM 2013 B3 & ALS QC Standard
Pesticides by LCMSMS (Positive Ion Mode)	EP234-1	1	20	**5.00**	**5.00**	✓	NEPM 2013 B3 & ALS QC Standard
Pesticides by LCMSMS (Positive Ion Mode) - extended	EP234-1x	1	18	**5.56**	**5.00**	✓	NEPM 2013 B3 & ALS QC Standard
Reactive Phosphorus as P-By Discrete Analyser	EK071G	3	48	**6.25**	**5.00**	✓	NEPM 2013 B3 & ALS QC Standard
Total Kjeldahl Nitrogen as N By Discrete Analyser	EK061G	1	20	**5.00**	**5.00**	✓	NEPM 2013 B3 & ALS QC Standard
Total Mercury by FIMS	EG035T	1	19	**5.26**	**5.00**	✓	NEPM 2013 B3 & ALS QC Standard
Total Metals by ICP-MS - Suite A	EG020A-T	1	20	**5.00**	**5.00**	✓	NEPM 2013 B3 & ALS QC Standard
Total Phosphorus as P By Discrete Analyser	EK067G	1	20	**5.00**	**5.00**	✓	NEPM 2013 B3 & ALS QC Standard
TRH Volatiles/BTEX	EP080	1	17	**5.88**	**5.00**	✓	NEPM 2013 B3 & ALS QC Standard
Volatile Organic Compounds	EP074	1	20	**5.00**	**5.00**	✓	NEPM 2013 B3 & ALS QC Standard

Brief Method Summaries

The analytical procedures used by the Environmental Division have been developed from established internationally recognized procedures such as those published by the US EPA, APHA, AS and NEPM. In house developed procedures are employed in the absence of documented standards or by client request. The following report provides brief descriptions of the analytical procedures employed for results reported in the Certificate of Analysis. Sources from which ALS methods have been developed are provided within the Method Descriptions.

Analytical Methods	Method	Matrix	Method Descriptions
Total Dissolved Solids (High Level)	EA015H	WATER	In house: Referenced to APHA 2540C. A gravimetric procedure that determines the amount of `filterable` residue in an aqueous sample. A well-mixed sample is filtered through a glass fibre filter (1.2um). The filtrate is evaporated to dryness and dried to constant weight at 180+/-5C. This method is compliant with NEPM Schedule B(3)
Suspended Solids (High Level)	EA025H	WATER	In house: Referenced to APHA 2540D. A gravimetric procedure employed to determine the amount of `non-filterable` residue in a aqueous sample. The prescribed GFC (1.2um) filter is rinsed with deionised water, oven dried and weighed prior to analysis. A well-mixed sample is filtered through a glass fibre filter (1.2um). The residue on the filter paper is dried at 104+/-2C . This method is compliant with NEPM Schedule B(3)
Total Metals by ICP-MS - Suite A	EG020A-T	WATER	In house: Referenced to APHA 3125; USEPA SW846 - 6020, ALS QWI-EN/EG020. The ICPMS technique utilizes a highly efficient argon plasma to ionize selected elements. Ions are then passed into a high vacuum mass spectrometer, which separates the analytes based on their distinct mass to charge ratios prior to their measurement by a discrete dynode ion detector.
Total Mercury by FIMS	EG035T	WATER	In house: Referenced to APHA 3112 Hg - B (Flow-injection (SnCl2)(Cold Vapour generation) AAS) FIM-AAS is an automated flameless atomic absorption technique. A bromate/bromide reagent is used to oxidise any organic mercury compounds in the unfiltered sample. The ionic mercury is reduced online to atomic mercury vapour by SnCl2 which is then purged into a heated quartz cell. Quantification is by comparing absorbance against a calibration curve. This method is compliant with NEPM Schedule B(3).
Ammonia as N by Discrete analyser	EK055G	WATER	In house: Referenced to APHA 4500-NH3 G Ammonia is determined by direct colorimetry by Discrete Analyser. This method is compliant with NEPM Schedule B(3)
Nitrite as N by Discrete Analyser	EK057G	WATER	In house: Referenced to APHA 4500-NO2- B. Nitrite is determined by direct colourimetry by Discrete Analyser. This method is compliant with NEPM Schedule B(3)
Nitrate as N by Discrete Analyser	EK058G	WATER	In house: Referenced to APHA 4500-NO3- F. Nitrate is reduced to nitrite by way of a chemical reduction followed by quantification by Discrete Analyser. Nitrite is determined seperately by direct colourimetry and result for Nitrate calculated as the difference between the two results. This method is compliant with NEPM Schedule B(3)
Nitrite and Nitrate as N (NOx) by Discrete Analyser	EK059G	WATER	In house: Referenced to APHA 4500-NO3- F. Combined oxidised Nitrogen (NO2+NO3) is determined by Chemical Reduction and direct colourimetry by Discrete Analyser. This method is compliant with NEPM Schedule B(3)
Total Kjeldahl Nitrogen as N By Discrete Analyser	EK061G	WATER	In house: Referenced to APHA 4500-Norg D (In house). An aliquot of sample is digested using a high temperature Kjeldahl digestion to convert nitrogenous compounds to ammonia. Ammonia is determined colorimetrically by discrete analyser. This method is compliant with NEPM Schedule B(3)
Total Nitrogen as N (TKN + Nox) By Discrete Analyser	EK062G	WATER	In house: Referenced to APHA 4500-Norg / 4500-NO3-. This method is compliant with NEPM Schedule B(3)
Total Phosphorus as P By Discrete Analyser	EK067G	WATER	In house: Referenced to APHA 4500-P H, Jirka et al, Zhang et al. This procedure involves sulphuric acid digestion of a sample aliquot to break phosphorus down to orthophosphate. The orthophosphate reacts with ammonium molybdate and antimony potassium tartrate to form a complex which is then reduced and its concentration measured at 880nm using discrete analyser. This method is compliant with NEPM Schedule B(3)

Analytical Methods	Method	Matrix	Method Descriptions
Reactive Phosphorus as P-By Discrete Analyser	EK071G	WATER	In house: Referenced to APHA 4500-P F Ammonium molybdate and potassium antimonyl tartrate reacts in acid medium with othophosphate to form a heteropoly acid -phosphomolybdic acid - which is reduced to intensely coloured molybdenum blue by ascorbic acid. Quantification is by Discrete Analyser. This method is compliant with NEPM Schedule B(3)
Chlorophyll a and Pheophytin a	EP008	WATER	In house: Referenced to APHA 10200 H. The pigments are extracted into aqueous acetone. The optical density of the extract before and after acidification at both 664 nm and 665 nm is determined spectrometrically.
Oil and Grease	EP020	WATER	In house: Referenced to APHA 5520 B. Oil & grease is a gravimetric procedure to determine the amount of dissolved or emulsified oil & grease residue in an aqueous sample. The sample is serially extracted three times n-hexane. The resultant extracts are combined, dehydrated and concentrated prior to gravimetric determination. This method is compliant with NEPM Schedule B(3)
Volatile Organic Compounds	EP074	WATER	In house: Referenced to USEPA SW 846 - 8260 Water samples are directly purged prior to analysis by Capillary GC/MS and quantification is by comparison against an established 5 point calibration curve. This method is compliant with NEPM Schedule B(3)
PAH/Phenols (GC/MS - SIM)	EP075(SIM)	WATER	In house: Referenced to USEPA SW 846 - 8270 Sample extracts are analysed by Capillary GC/MS in SIM Mode and quantification is by comparison against an established 5 point calibration curve. This method is compliant with NEPM Schedule B(3)
TRH Volatiles/BTEX	EP080	WATER	In house: Referenced to USEPA SW 846 - 8260 Water samples are directly purged prior to analysis by Capillary GC/MS and quantification is by comparison against an established 5 point calibration curve. Alternatively, a sample is equilibrated in a headspace vial and a portion of the headspace determined by GCMS analysis. This method is compliant with the QC requirements of NEPM Schedule B(3)
Organochlorine Pesticides (Ultra-trace)	EP131A	WATER	In house: Referenced to USEPA Method 3640 (GPC cleanup),3620 (Florisil), 8081/8082 (GC/µECD/uECD). This method is compliant with NEPM Schedule B(3)
PCB's (Ultra-trace) for Catchment Monitoring	EP131B-ST	WATER	In house: Referenced to USEPA Method 3640 (GPC cleanup),3620 (Florisil), 8081/8082 (GC/µECD/µECD). This method is compliant with NEPM Schedule B(3)
Pesticides by LCMSMS (Positive Ion Mode)	EP234-1	WATER	In house: LC-MSMS, direct injection. A sample is filtered and injected directly onto the LC-MSMS. Analysis is by LC/MSMS, ESI Positive Mode.
Pesticides by LCMSMS (Positive Ion Mode) - extended	EP234-1x	WATER	In house: LC-MSMS, direct injection. A sample is filtered and injected directly onto the LC-MSMS. Analysis is by LC/MSMS, ESI Positive Mode.

Preparation Methods	Method	Matrix	Method Descriptions
TKN/TP Digestion	EK061/EK067	WATER	In house: Referenced to APHA 4500 Norg - D; APHA 4500 P - H. This method is compliant with NEPM Schedule B(3)
Digestion for Total Recoverable Metals	EN25	WATER	In house: Referenced to USEPA SW846-3005. Method 3005 is a Nitric/Hydrochloric acid digestion procedure used to prepare surface and ground water samples for analysis by ICPAES or ICPMS. This method is compliant with NEPM Schedule B(3)
Separatory Funnel Extraction of Liquids	ORG14	WATER	In house: Referenced to USEPA SW 846 - 3510 100 mL to 1L of sample is transferred to a separatory funnel and serially extracted three times using DCM for each extract. The resultant extracts are combined, dehydrated and concentrated for analysis. This method is compliant with NEPM Schedule B(3) . ALS default excludes sediment which may be resident in the container.
Sep. Funnel Extraction of Liquids (Ultra-trace pesticides.)	ORG14-UTP	WATER	In house: Referenced to USEPA 3510 Samples are extracted into dichloromethane, concentrated and exchanged into an apporpriate solvent for GPC and florisil cleanup as required. This method is compliant with NEPM Schedule B(3) . ALS default excludes sediment which may be resident in the container.

Preparation Methods	*Method*	*Matrix*	*Method Descriptions*
Volatiles Water Preparation	ORG16-W	WATER	A 5 mL aliquot or 5 mL of a diluted sample is added to a 40 mL VOC vial for purging.

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CHAIN OF CUSTODY RECORD

CLIENT DETAILS

Company Name : GHD Pty Ltd, Sydney
Office Address :
Level 15, 133 Castlereagh Street, Sydney NSW 2000

Contact Name : Emily Smith 0431 522 928
Project Manager: Henry Luo 0414 090 002
Email for results : emily.smith@ghd.com; terry.nham@ghd.com; henry.luo@ghd.com; ghdlabreports@ghd.com

Purchase Order : 12554717
PROJECT Number : 12554717
PROJECT Name : M12 Water Sampling

COC Number :
Eurofins | mgt quote ID :
Data output format: ESDAT

Special Directions & Comments :

Sent from ALS

Eurofins | mgt DI water batch number:

	Sample ID	Date	Matrix	Dissolved metals	Total metals
1	SWDUP2	2/5/23	Water		X
2	GWDUP2	2/5/23	Water	X	
3					
4					
5					
6					
7					
8					
9					
10					

Analytes

Laboratory Staff:
Laboratory Analysis Forwarded By / Date: SWDUP2, GWDUP2 Eurofins
Organised By / Date:
Relinquished By Date:
Courier / Courier:
WO No: 23 4981
Attached By PO Internal Shop:

Some common holding times (with correct preservation).
For further information contact the lab

Waters		Soils	
BTEX, MAH, VOC	14 days	BTEX, MAH, VOC	14 days
TRH, PAH, Phenols, Pesticides	7 days	TRH, PAH, Phenols, Pesticides	14 days
Heavy Metals	6 months	Heavy Metals	6 months
Mercury, CrVI	28 days	Mercury, CrVI	28 days
Microbiological testing	24 hours	Microbiological testing	72 hours
BOD, Nitrate, Nitrite, Total N	2 days	Anions	28 days
Solids - TSS, TDS etc	7 days	SPOCAS, pH Field and FOX, CrS	24 hours
Ferrous iron	7 days	ASLP, TCLP	7 days

Containers:

500P	250P	60P	1LA	40mL vial	200mL A	Jar	Bag

Sample comments:

Relinquished By: Emily Smith
Date & Time : 2/5/23 3.30pm
Signature: eSmith

Received By:
Date & Time : 7/05 9:00
Signature:

Method Of Shipment
☐ Courier
☐ Hand Delivered
☐ Postal
Courier Consignment # :

Temperature on arrival: 3.9

Report number: 986190

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NATA# 1261 Site# 1254	NATA# 1261 Site# 25403	NATA# 1261 Site# 18217	NATA# 1261 Site# 25466	NATA# 1261 Site# 20794	Site# 25079 & 25289

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IANZ# 1327	IANZ# 1290

Sample Receipt Advice

Company name:	GHD Pty Ltd NSW
Contact name:	Emily Smith
Project name:	M12 WATER SAMPLING
Project ID:	12554717
Turnaround time:	5 Day
Date/Time received	May 3, 2023 4:00 PM
Eurofins reference	986190

Sample Information

✓	A detailed list of analytes logged into our LIMS, is included in the attached summary table.
✓	Sample Temperature of chilled sample on the batch as recorded by Eurofins Sample Receipt : 3.4 degrees Celsius.
✓	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.
X	Split sample sent to requested external lab.
X	Some samples have been subcontracted.
N/A	Custody Seals intact (if used).

Notes

Contact

If you have any questions with respect to these samples, please contact your Analytical Services Manager:

Bonnie Pu on phone : or by email: BonniePu@eurofins.com

Results will be delivered electronically via email to Emily Smith - emily.smith@ghd.com.

Note: A copy of these results will also be delivered to the general GHD Pty Ltd NSW email address.

GHD Pty Ltd NSW
Level 15, 133 Castlereagh Street
Sydney
NSW 2000

NATA Accredited
Accreditation Number 1261
Site Number 18217

Accredited for compliance with ISO/IEC 17025 – Testing
NATA is a signatory to the ILAC Mutual Recognition Arrangement for the mutual recognition of the equivalence of testing, medical testing, calibration, inspection, proficiency testing scheme providers and reference materials producers reports and certificates.

Attention: **Emily Smith**

Report **986190-W**
Project name M12 WATER SAMPLING
Project ID 12554717
Received Date May 03, 2023

Client Sample ID			**SWDUP2**	**GWDUP2**
Sample Matrix			**Water**	**Water**
Eurofins Sample No.			**S23-My0008656**	**S23-My0008657**
Date Sampled			**May 02, 2023**	**May 02, 2023**
Test/Reference	LOR	Unit		
Heavy Metals				
Arsenic	0.001	mg/L	< 0.001	-
Arsenic (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
Copper	0.001	mg/L	0.002	-
Copper (filtered)	0.001	mg/L	-	0.006
Lead	0.001	mg/L	< 0.001	-
Lead (filtered)	0.001	mg/L	-	< 0.001
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	-	0.008
Zinc	0.005	mg/L	< 0.005	-
Zinc (filtered)	0.005	mg/L	-	0.025

Sample History

Where samples are submitted/analysed over several days, the last date of extraction is reported.

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
Metals M8	Sydney	May 04, 2023	28 Days
- Method: LTM-MET-3040 Metals in Waters, Soils & Sediments by ICP-MS			
Metals M8 filtered	Sydney	May 04, 2023	28 Days
- Method: LTM-MET-3040 Metals in Waters, Soils & Sediments by ICP-MS			

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IANZ# 1290

Company Name: GHD Pty Ltd NSW
Address: Level 15, 133 Castlereagh Street
Sydney
NSW 2000

Project Name: M12 WATER SAMPLING
Project ID: 12554717

Order No.:
Report #: 986190
Phone: 02 9239 7100
Fax: 02 9239 7199

Received: May 3, 2023 4:00 PM
Due: May 10, 2023
Priority: 5 Day
Contact Name: Emily Smith

Eurofins Analytical Services Manager : Bonnie Pu

Sample Detail						Metals M8	Metals M8 filtered
Sydney Laboratory - NATA # 1261 Site # 18217						X	X
External Laboratory							
No	**Sample ID**	**Sample Date**	**Sampling Time**	**Matrix**	**LAB ID**		
1	SWDUP2	May 02, 2023		Water	S23-My0008656	X	
2	GWDUP2	May 02, 2023		Water	S23-My0008657		X
Test Counts						1	1

eurofins | Environment Testing

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.

Units

mg/kg: milligrams per kilogram
mg/L: milligrams per litre
µg/L: micrograms per litre
ppm: parts per million
ppb: parts per billion
%: Percentage
org/100 mL: Organisms per 100 millilitres
NTU: Nephelometric Turbidity Units
MPN/100 mL: Most Probable Number of organisms per 100 millilitres
CFU: Colony forming unit

Terms

APHA	American Public Health Association
COC	Chain of Custody
CP	Client Parent - QC was performed on samples pertaining to this report
CRM	Certified Reference Material (ISO17034) - reported as percent recovery.
Dry	Where a moisture has been determined on a solid sample the result is expressed on a dry basis.
Duplicate	A second piece of analysis from the same sample and reported in the same units as the result to show comparison.
LOR	Limit of Reporting.
LCS	Laboratory Control Sample - 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.
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.
RPD	Relative Percent Difference between two Duplicate pieces of analysis.
SPIKE	Addition of the analyte to the sample and reported as percentage recovery.
SRA	Sample Receipt Advice
Surr - Surrogate	The addition of a like compound to the analyte target and reported as percentage recovery.
TBTO	Tributyltin oxide (*bis*-tributyltin oxide) - individual tributyltin compounds cannot be identified separately in the environment however free tributyltin was measured and its values were converted stoichiometrically into tributyltin oxide for comparison with regulatory limits.
TCLP	Toxicity Characteristic Leaching Procedure
TEQ	Toxic Equivalency Quotient or Total Equivalence
QSM	US Department of Defense Quality Systems Manual Version 5.4
US EPA	United States Environmental Protection Agency
WA DWER	Sum of PFBA, PFPeA, PFHxA, PFHpA, PFOA, PFBS, PFHxS, PFOS, 6:2 FTSA, 8:2 FTSA

QC - Acceptance Criteria

The acceptance criteria should be used as a guide only and may be different when site specific Sampling Analysis and Quality Plan (SAQP) have been implemented

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%

NOTE: pH duplicates are reported as a range not as RPD

Surrogate Recoveries: Recoveries must lie between 20-130% for Speciated Phenols & 50-150% for PFAS

PFAS field samples that contain surrogate recoveries in excess of the QC limit designated in QSM 5.4 where no positive PFAS results have been reported have been reviewed and no data was affected.

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. 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.
4. Recovery Data (Spikes & Surrogates) - where chromatographic interference does not allow the determination of recovery the term "INT" appears against that analyte.
5. For Matrix Spikes and LCS results a dash "-" in the report means that the specific analyte was not added to the QC sample.
6. 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	
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	
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	
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							
Arsenic	%	90			80-120	Pass	
Arsenic (filtered)	%	94			80-120	Pass	
Cadmium	%	88			80-120	Pass	
Cadmium (filtered)	%	94			80-120	Pass	
Chromium	%	81			80-120	Pass	
Chromium (filtered)	%	83			80-120	Pass	
Copper	%	81			80-120	Pass	
Copper (filtered)	%	83			80-120	Pass	
Lead	%	87			80-120	Pass	
Lead (filtered)	%	87			80-120	Pass	
Mercury	%	97			80-120	Pass	
Mercury (filtered)	%	99			80-120	Pass	
Nickel	%	87			80-120	Pass	
Nickel (filtered)	%	90			80-120	Pass	
Zinc	%	88			80-120	Pass	
Zinc (filtered)	%	91			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	N23-My0002941	NCP	%	107			75-125	Pass	
Cadmium	N23-My0002941	NCP	%	98			75-125	Pass	
Chromium	N23-My0002941	NCP	%	93			75-125	Pass	
Copper	N23-My0002941	NCP	%	87			75-125	Pass	
Lead	N23-My0002941	NCP	%	89			75-125	Pass	
Mercury	N23-My0002941	NCP	%	92			75-125	Pass	
Nickel	N23-My0002941	NCP	%	89			75-125	Pass	
Zinc	N23-My0002941	NCP	%	93			75-125	Pass	
Spike - % Recovery									
Heavy Metals				Result 1					
Arsenic (filtered)	S23-My0006619	NCP	%	93			75-125	Pass	
Cadmium (filtered)	S23-My0006619	NCP	%	89			75-125	Pass	

Test	Lab Sample ID	QA Source	Units	Result 1			Acceptance Limits	Pass Limits	Qualifying Code
Copper (filtered)	S23-My0003197	NCP	%	81			75-125	Pass	
Lead (filtered)	S23-My0003197	NCP	%	85			75-125	Pass	
Mercury (filtered)	S23-My0006619	NCP	%	88			75-125	Pass	
Nickel (filtered)	S23-My0006619	NCP	%	81			75-125	Pass	
Zinc (filtered)	S23-My0006619	NCP	%	84			75-125	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	S23-My0002357	NCP	mg/L	0.006	0.006	2.4	30%	Pass	
Cadmium	S23-My0002357	NCP	mg/L	< 0.0002	0.0002	6.5	30%	Pass	
Chromium	S23-My0002357	NCP	mg/L	0.006	0.008	27	30%	Pass	
Copper	S23-My0002357	NCP	mg/L	0.044	0.046	4.9	30%	Pass	
Lead	S23-My0002357	NCP	mg/L	0.034	0.035	2.9	30%	Pass	
Mercury	S23-My0002357	NCP	mg/L	< 0.0001	< 0.0001	<1	30%	Pass	
Nickel	S23-My0002357	NCP	mg/L	0.017	0.019	7.3	30%	Pass	
Zinc	S23-My0002357	NCP	mg/L	0.069	0.074	6.2	30%	Pass	
Duplicate									
Heavy Metals				Result 1	Result 2	RPD			
Arsenic (filtered)	S23-My0008630	NCP	mg/L	< 0.001	< 0.001	<1	30%	Pass	
Cadmium (filtered)	S23-My0008630	NCP	mg/L	< 0.0002	< 0.0002	<1	30%	Pass	
Chromium (filtered)	S23-My0008630	NCP	mg/L	0.057	0.056	1.8	30%	Pass	
Copper (filtered)	S23-My0008630	NCP	mg/L	0.001	0.001	2.5	30%	Pass	
Lead (filtered)	S23-My0008630	NCP	mg/L	< 0.001	< 0.001	<1	30%	Pass	
Mercury (filtered)	S23-My0008630	NCP	mg/L	< 0.0001	< 0.0001	<1	30%	Pass	
Nickel (filtered)	S23-My0008630	NCP	mg/L	< 0.001	< 0.001	<1	30%	Pass	
Zinc (filtered)	S23-My0008630	NCP	mg/L	0.015	0.014	1.5	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:

Bonnie Pu	Analytical Services Manager
Fang Yee Tan	Senior Analyst-Metal

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

ALS Environmental

ALS Laboratory: please tick →

☐ BRISBANE 32 Shand Street Stafford QLD 4053 Ph: 07 3243 7222 E: samples.brisbane@alsglobal.com
☐ GLADSTONE 10 Kitchener Road Gladstone QLD 4680 Ph: 07 4796 0600 E: samples.gladstone@alsglobal.com
☐ MACKAY 78 Harbour Road Mackay QLD 4740 Ph: 07 4944 0177 E: samples.mackay@alsglobal.com
☐ NEWCASTLE 5 Rose Gum Road Warabrook NSW 2304 Ph: 02 4968 9433 E: samples.newcastle@alsglobal.com
☐ ORANGE 1/9 Hickory Place North Bowra NSW 2541 Ph: 02 6393 8658 E: samples.orange@alsglobal.com
☐ PERTH 10 Hod Way Malaga WA 6090 Ph: 08 9209 7655 E: samples.perth@alsglobal.com
☐ SYDNEY 277-289 Woodpark Road Smithfield NSW 2164 Ph: 02 8784 8555 E: samples.sydney@alsglobal.com
☐ TOWNSVILLE 14-15 Desma Court Bohle QLD 4818 Ph: 07 4796 0600 E: samples.townsville@alsglobal.com

Environmental Division
Sydney
Work Order Reference
ES2319028

Telephone : +61-2-8784 8555

CLIENT: GHD Pty Ltd	**TURNAROUND REQUIREMENT:** ☐ Standard TAT **(List due date):**	STANDARD TAT	**FOR LABOR**
OFFICE: Sydney	(Standard TAT may be longer for some tests e.g.. Ultra Trace Organics) ☐ Non Standard or urgent TAT **(List due date):**		Custody Seal I
PROJECT: M12 Surface Water	**ALS QUOTE NO.:** SY/322/21	**COC SEQUENCE NUMBER (Circle)**	Free ice / froze
ORDER NUMBER: 12554717		COC: 1 2 3 4 5 6 7	Random Samp
PROJECT MANAGER: Henry Luo	**CONTACT PH:** Henry Luo 0414 090 002	OF: 1 2 3 4 5 6 7	Other commen

SAMPLER: Emily Smith	**SAMPLER MOBILE:** 0431 522 928	**RELINQUISHED BY:** Andrew Duval	**RECEIVED BY:**
COC emailed to ALS? (YES / NO)	**EDD FORMAT (or default):** ESDAT	DATE/TIME: 7/6/23 4:00pm	DATE/TIME: 7/6/23 15:55
Email Reports to: henry.luo@ghd.com , ghdlabreports@ghd.com; terry.nham@ghd.com, emily.smith@ghd.com; andrew.duval@ghd.com			**RELINQUISHED B** DATE/TIME:

COMMENTS/SPECIAL HANDLING/STORAGE OR DISPOSAL:

ALS USE	SAMPLE DETAILS MATRIX: SOLID (S) WATER (W)			CONTAINER INFORMATION		ANALYSIS REQUIRED including SUITES (NB. Suite Codes must be listed to attract suite price) Where **Metals** are required, specify **Total** (unfiltered bottle required) or **Dissolved** (field filtered bottle required).													
LAB ID	SAMPLE ID	DATE / TIME	MATRIX	Comments	TOTAL CONTAINERS	W-02T (8 total metals)	EG020T (total Fe, Mn)	NT-08A (total N, No2, No3, NH3, Total P, reactive P)	EP008 (chlorophyll a)	EP020 (oil & grease)	UTO-9W Ultra trace OP Only	EP074DEFG (VOC - fumigants, Hal aliphatics, Hal Aromatics, THM)	MW006 (FC) Thermotolerant Coliforms	W-14A (PAH/phenols)	EA015H (TDS), EA025H (TSS)	EP080 (BTEXN)	Ultra trace OPP (EP234AX)	Super Utra Trace PCB's (EP1318-ST)	PFAS - full suite (EP231X)
1	BADDS	7/6/23	Water		11	X	X	X	X	X	X	X		X	X	X			
2	BADMS	7/6/23	Water		11	X	X	X	X	X	X	X		X	X	X			
3	BADUS	7/6/23	Water		11	X	X	X	X	X	X	X		X	X	X			
4	COSDS	7/6/23	Water		11	X	X	X	X	X	X	X		X	X	X			
5	COSUS	7/6/23	Water		11	X	X	X	X	X	X	X		X	X	X			
6	HINDS	6/6/23	Water		11	X	X	X	X	X	X	X		X	X	X			
7	HINUS	6/6/23	Water		11	X	X	X	X	X	X	X		X	X	X			
8	KEMDS	6/6/23	Water		11	X	X	X	X	X	X	X		X	X	X			
9	KEMUS	6/6/23	Water		11	X	X	X	X	X	X	X		X	X	X			
10	ROPDS	6/6/23	Water		11	X	X	X	X	X	X	X		X	X	X			
11	ROPUS	6/6/23	Water		11	X	X	X	X	X	X	X		X	X	X			
12	SOUDS	6/6/23	Water		11	X	X	X	X	X	X	X		X	X	X			
13	SOUUS	6/6/23	Water		11	X	X	X	X	X	X	X		X	X	X			
14	SWDUP1	6/6/23	Water		1	X													
-	SWDUP2	7/6/23	Water	PLEASE FORWARD TO EUROFINS WITH ATTACHED COC	1				HT										
-	GWDUP2	7/6/23	Water	PLEASE FORWARD TO EUROFINS WITH ATTACHED COC	1														

CHAIN OF CUSTODY

ALS Environmental

ALS Laboratory: please tick →

☐ MACKAY 78 Harbour Road MACKAY QLD 4740 Ph: 07 4944 0177 E: samples.mackay@alsglobal.com
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☐ ORANGE 10 Hod Way Orange NSW 2800 Ph: 02 6360 1600 E: samples.orange@alsglobal.com
☐ ALBURY 31 Dean Street Albury NSW 2640 Ph: 02 6041 1480 E: samples.albury@alsglobal.com
☐ WAGGA WAGGA 2 Bellevue Road Wagga Wagga NSW 2650 Ph: 02 6933 8100 E: samples.wagga@alsglobal.com
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☐ PENRITH 4-20 Eastern Road Penrith NSW 2750 Ph: 02 4725 2400 E: samples.penrith@alsglobal.com
☐ BROKEN HILL 1/2 Kitchener Drive Broken Hill NSW 2880 Ph: 08 8287 4743 E: samples.brokenhill@alsglobal.com
☐ PERTH 10 Hod Way Malaga WA 6090 Ph: 08 9209 7655 E: samples.perth@alsglobal.com

Environmental Division Sydney
Work Order Reference
ES2319028

Telephone : +61-2-8784 8555

CLIENT: GHD Pty Ltd	**TURNAROUND REQUIREMENTS** ☐ Standard TAT (List due date):	STANDARD TAT	**FOR LABOR**
OFFICE: Sydney	(Standard TAT may be longer for some tests e.g.. Ultra Trace Organics) ☐ Non Standard or urgent TAT (List due date):		Custody Seal I
PROJECT: M12 Surface Water	**ALS QUOTE NO.:** SY/322/21	COC SEQUENCE NUMBER (Circle)	Free ice / froze
ORDER NUMBER: 12554717		COC: 1 2 3 4 5 6 7	Random Samp
PROJECT MANAGER: Henry Luo	**CONTACT PH:** Henry Luo 0414 090 002	OF: 1 2 3 4 5 6 7	Other commen

SAMPLER: Emily Smith	**SAMPLER MOBILE:** 0431 522 928	**RELINQUISHED BY:** Andrew Duval	**RECEIVED BY:**
COC emailed to ALS? (YES / NO)	**EDD FORMAT (or default):** ESDAT	DATE/TIME: 7/6/23 4:00pm	DATE/TIME: 7/6/23 15:55
Email Reports to: henry.luo@ghd.com , ghdlabreports@ghd.com; terry.nham@ghd.com, emily.smith@ghd.com; andrew.duval@ghd.com			**RELINQUISHED B** DATE/TIME:

COMMENTS/SPECIAL HANDLING/STORAGE OR DISPOSAL:

ALS USE	SAMPLE DETAILS MATRIX: SOLID (S) WATER (W)			CONTAINER INFORMATION		ANALYSIS REQUIRED including SUITES (NB. Suite Codes must be listed to attract suite price) Where **Metals** are required, specify **Total** (unfiltered bottle required) or **Dissolved** (field filtered bottle required).													
LAB ID	SAMPLE ID	DATE / TIME	MATRIX	Comments	TOTAL CONTAINERS	W-02T (8 total metals)	EG020T (total Fe, Mn)	NT-08A (total N, No2, No3, NH3, Total P, reactive P)	EP008 (chlorophyll a)	EP020 (oil & grease)	UTO-9W Ultra trace OP Only	EP074DEFG (VOC - fumigants, Hal aliphatics, Hal Aromatics, THM)	MW006 (FC) Thermotolerant Coliforms	W-14A (PAH/phenols)	EA015H (TDS), EA026H (TSS)	EP080 (BTEXN)	Ultra trace OPP (EP234AX)	Super Ultra Trace PCB's (EP1318-ST)	PFAS - full suite (EP231X)
1	BADDS	7/6/23	Water		11	X	X	X	X	X	X	X		X	X	X			
2	BADMS	7/6/23	Water		11	X	X	X	X	X	X	X		X	X	X			
3	BADUS	7/6/23	Water		11	X	X	X	X	X	X	X		X	X	X			
4	COSDS	7/6/23	Water		11	X	X	X	X	X	X	X		X	X	X			
5	COSUS	7/6/23	Water		11	X	X	X	X	X	X	X		X	X	X			
6	HINDS	6/6/23	Water		11	X	X	X	X	X	X	X		X	X	X			
7	HINUS	6/6/23	Water		11	X	X	X	X	X	X	X		X	X	X			
8	KEMDS	6/6/23	Water		11	X	X	X	X	X	X	X		X	X	X			
9	KEMUS	6/6/23	Water		11	X	X	X	X	X	X	X		X	X	X			
10	ROPDS	6/6/23	Water		11	X	X	X	X	X	X	X		X	X	X			
11	ROPUS	6/6/23	Water		11	X	X	X	X	X	X	X		X	X	X			
12	SOUDS	6/6/23	Water		11	X	X	X	X	X	X	X		X	X	X			
13	SOUUS	6/6/23	Water		11	X	X	X	X	X	X	X		X	X	X			
14	SWDUP1	6/6/23	Water		1	X													
-	SWDUP2	7/6/23	Water	PLEASE FORWARD TO EUROFINS WITH ATTACHED COC	1														
-	GWDUP2	7/6/23	Water	PLEASE FORWARD TO EUROFINS WITH ATTACHED COC	1														

HT

Subcon (Forward / Split WO)

Lab / Analysis: Eurofins - SWDUP2 GWDUP2

Organised By / Date:

Relinquished By / Date:

Connote / Courier:

eurofins | mgt

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Phone: +613 8564 5000 Fax: +613 8564 5090
Email: enquiries.melb@mgtlabmark.com.au

CHAIN OF CUSTODY RECORD

CLIENT DETAILS

Company Name : GHD Pty Ltd, Sydney	**Contact Name :** Emily Smith 0431 522 928	**Purchase Order :** 12554717	**COC Number :**
Office Address :	**Project Manager: Henry Luo** 0414 090 002	**PROJECT Number :** 12554717	**Eurofins | mgt quote ID :**
Level 15, 133 Castlereagh Street, Sydney NSW 2000	**Email for results :** emily.smith@ghd.com; terry.nham@ghd.com; henry.luo@ghd.com; ghdlabreports@ghd.com	**PROJECT Name :** M12 Water Sampling	**Data output format:** ESDAT

Special Directions & Comments :

Sent from ALS

Eurofins | mgt DI water batch number:

	Sample ID	Date	Matrix	Dissolved metals	Total metals					
1	SWDUP2	7/6/23	Water		X					
2	GWDUP2	7/6/23	Water	X						
3										
4										
5										
6										
7										
8										
9										
10										

Analytes

Some common holding times (with correct preservation).
For further information contact the lab

Waters		Soils	
BTEX, MAH, VOC	14 days	BTEX, MAH, VOC	14 days
TRH, PAH, Phenols, Pesticides	7 days	TRH, PAH, Phenols, Pesticides	14 days
Heavy Metals	6 months	Heavy Metals	6 months
Mercury, CrVI	28 days	Mercury, CrVI	28 days
Microbiological testing	24 hours	Microbiological testing	72 hours
BOD, Nitrate, Nitrite, Total N	2 days	Anions	28 days
Solids - TSS, TDS etc	7 days	SPOCAS, pH Field and FOX, CrS	24 hours
Ferrous iron	7 days	ASLP, TCLP	7 days

Containers:

500P	250P	60P	1LA	40mL vial	200mL A	Jar	Bag

Sample comments:

Laboratory Staff

Relinquished By: Andrew Duval	**Received By:**
Date & Time : 7/6/23 4pm	**Date & Time :**
Signature: Duval	**Signature:**

Method Of Shipment

☐ Courier
☐ Hand Delivered
☐ Postal
☐
Courier Consignment # :

Temperature on arrival:

Report number:

SAMPLE RECEIPT NOTIFICATION (SRN)

Work Order : **ES2319028**

Client	: **GHD PTY LTD**	Laboratory	: Environmental Division Sydney
Contact	: MR HENRY LUO	Contact	: Sarah Mathew
Address	: LEVEL 15, 133 CASTLEREAGH STREET SYDNEY NSW, AUSTRALIA 2000	Address	: 277-289 Woodpark Road Smithfield NSW Australia 2164
E-mail	: henry.luo@ghd.com	E-mail	: sarah.mathew@alsglobal.com
Telephone	: +61 02 9239 7100	Telephone	: +61-2-8784 8555
Facsimile	: +61 02 9239 7199	Facsimile	: +61-2-8784 8500
Project	: 12554717	Page	: 1 of 4
Order number	: 12554717	Quote number	: ES2021GHDSER0026 (SY/322/21)
C-O-C number	: ----	QC Level	: NEPM 2013 B3 & ALS QC Standard
Site	: ----		
Sampler	: EMILY SMITH		

Dates

Date Samples Received	: 07-Jun-2023 15:55	Issue Date	: 08-Jun-2023
Client Requested Due Date	: 15-Jun-2023	Scheduled Reporting Date	: **15-Jun-2023**

Delivery Details

Mode of Delivery	: Client Drop Off	Security Seal	: Not Available
No. of coolers/boxes	: 7	Temperature	: 7.8'C
Receipt Detail	:	No. of samples received / analysed	: 14 / 14

General Comments

- This report contains the following information:
  - Sample Container(s)/Preservation Non-Compliances
  - Summary of Sample(s) and Requested Analysis
  - Proactive Holding Time Report
  - Requested Deliverables
- This is an updated SRN with corrected project name.
- **Samples SWDUP2 and GWDUP2 have been forwarded to Eurofins**
- **Please refer to the Proactive Holding Time Report table below which summarises breaches of recommended holding times that have occurred prior to samples/instructions being received at the laboratory. The laboratory will process these samples unless instructions are received from you indicating you do not wish to proceed. The absence of this summary table indicates that all samples have been received within the recommended holding times for the analysis requested.**
- **Sample(s) requiring volatile organic compound analysis received in airtight containers (ZHE).**
- Please direct any queries you have regarding this work order to the above ALS laboratory contact.
- Analytical work for this work order will be conducted at ALS Sydney.
- Sample Disposal - Aqueous (3 weeks), Solid (2 months ± 1 week) from receipt of samples.
- Please be aware that APHA/NEPM recommends water and soil samples be chilled to less than or equal to 6°C for chemical analysis, and less than or equal to 10°C but unfrozen for Microbiological analysis. Where samples are received above this temperature, it should be taken into consideration when interpreting results. Refer to ALS EnviroMail 85 for ALS recommendations of the best practice for chilling samples after sampling and for maintaining a cool temperature during transit.

Sample Container(s)/Preservation Non-Compliances

All comparisons are made against pretreatment/preservation AS, APHA, USEPA standards.

- **No sample container / preservation non-compliance exists.**

Summary of Sample(s) and Requested Analysis

Some items described below may be part of a laboratory process necessary for the execution of client requested tasks. Packages may contain additional analyses, such as the determination of moisture content and preparation tasks, that are included in the package.
If no sampling time is provided, the sampling time will default 00:00 on the date of sampling. If no sampling date is provided, the sampling date will be assumed by the laboratory and displayed in brackets without a time component

Matrix: **WATER**

Laboratory sample ID	Sampling date / time	Sample ID	WATER - EG020T Total Metals by ICP/MS (including digestion)	WATER - EP008 Chlorophyll a	WATER - EP020 Oil & Grease (O&G)	WATER - EP074DEFG VOC - Fumigants, Hal Aliphatics, Hal Aromatics,	WATER - NT-08A Total Nitrogen + NO2 + NO3 + NH3 + Total P +	WATER - W-02T 8 metals (Total)	WATER - W-14A PAH/Phenols (SIM)
ES2319028-001	07-Jun-2023 00:00	BADDS	✓	✓	✓	✓	✓	✓	✓
ES2319028-002	07-Jun-2023 00:00	BADMS	✓	✓	✓	✓	✓	✓	✓
ES2319028-003	07-Jun-2023 00:00	BADUS	✓	✓	✓	✓	✓	✓	✓
ES2319028-004	07-Jun-2023 00:00	COSDS	✓	✓	✓	✓	✓	✓	✓
ES2319028-005	07-Jun-2023 00:00	COSUS	✓	✓	✓	✓	✓	✓	✓
ES2319028-006	06-Jun-2023 00:00	HINDS	✓	✓	✓	✓	✓	✓	✓
ES2319028-007	06-Jun-2023 00:00	HINUS	✓	✓	✓	✓	✓	✓	✓
ES2319028-008	06-Jun-2023 00:00	KEMDS	✓	✓	✓	✓	✓	✓	✓
ES2319028-009	06-Jun-2023 00:00	KEMUS	✓	✓	✓	✓	✓	✓	✓
ES2319028-010	06-Jun-2023 00:00	ROPDS	✓	✓	✓	✓	✓	✓	✓
ES2319028-011	06-Jun-2023 00:00	ROPUS	✓	✓	✓	✓	✓	✓	✓
ES2319028-012	06-Jun-2023 00:00	SOUDS	✓	✓	✓	✓	✓	✓	✓
ES2319028-013	06-Jun-2023 00:00	SOUUS	✓	✓	✓	✓	✓	✓	✓
ES2319028-014	06-Jun-2023 00:00	SWDUP1						✓	

Matrix: **WATER**

Laboratory sample ID	Sampling date / time	Sample ID	WATER - EA015H Total Dissolved Solids - Standard Level	WATER - EA025H Suspended Solids - Standard Level	WATER - EP080 BTEXN	WATER - EP234AX Organophosphorus Pesticides - Extended List (50
ES2319028-001	07-Jun-2023 00:00	BADDS	✓	✓	✓	✓
ES2319028-002	07-Jun-2023 00:00	BADMS	✓	✓	✓	✓
ES2319028-003	07-Jun-2023 00:00	BADUS	✓	✓	✓	✓
ES2319028-004	07-Jun-2023 00:00	COSDS	✓	✓	✓	✓
ES2319028-005	07-Jun-2023 00:00	COSUS	✓	✓	✓	✓
ES2319028-006	06-Jun-2023 00:00	HINDS	✓	✓	✓	✓
ES2319028-007	06-Jun-2023 00:00	HINUS	✓	✓	✓	✓
ES2319028-008	06-Jun-2023 00:00	KEMDS	✓	✓	✓	✓
ES2319028-009	06-Jun-2023 00:00	KEMUS	✓	✓	✓	✓
ES2319028-010	06-Jun-2023 00:00	ROPDS	✓	✓	✓	✓

			WATER - EA015H Total Dissolved Solids - Standard Level	WATER - EA025H Suspended Solids - Standard Level	WATER - EP080 BTEXN	WATER - EP234AX Organophosphorus Pesticides - Extended List (50
ES2319028-011	06-Jun-2023 00:00	ROPUS	✓	✓	✓	✓
ES2319028-012	06-Jun-2023 00:00	SOUDS	✓	✓	✓	✓
ES2319028-013	06-Jun-2023 00:00	SOUUS	✓	✓	✓	✓

Proactive Holding Time Report

Sample(s) have been received within the recommended holding times for the requested analysis.

Requested Deliverables

Accounts Payable Australia

- A4 - AU Tax Invoice (INV)	Email	accountspayableAU@ghd.com

ANDREW DUVAL

- *AU Certificate of Analysis - NATA (COA)	Email	andrew.duval@ghd.com
- *AU Interpretive QC Report - DEFAULT (Anon QCI Rep) (QCI)	Email	andrew.duval@ghd.com
- *AU QC Report - DEFAULT (Anon QC Rep) - NATA (QC)	Email	andrew.duval@ghd.com
- A4 - AU Sample Receipt Notification - Environmental HT (SRN)	Email	andrew.duval@ghd.com
- Chain of Custody (CoC) (COC)	Email	andrew.duval@ghd.com
- EDI Format - ESDAT (ESDAT)	Email	andrew.duval@ghd.com
- EDI Format - XTab (XTAB)	Email	andrew.duval@ghd.com
- Electronic SRN for ESdat (ESRN_ESDAT)	Email	andrew.duval@ghd.com

EMILY SMITH

- *AU Certificate of Analysis - NATA (COA)	Email	emily.smith@ghd.com
- *AU Interpretive QC Report - DEFAULT (Anon QCI Rep) (QCI)	Email	emily.smith@ghd.com
- *AU QC Report - DEFAULT (Anon QC Rep) - NATA (QC)	Email	emily.smith@ghd.com
- A4 - AU Sample Receipt Notification - Environmental HT (SRN)	Email	emily.smith@ghd.com
- Chain of Custody (CoC) (COC)	Email	emily.smith@ghd.com
- EDI Format - ESDAT (ESDAT)	Email	emily.smith@ghd.com
- EDI Format - XTab (XTAB)	Email	emily.smith@ghd.com
- Electronic SRN for ESdat (ESRN_ESDAT)	Email	emily.smith@ghd.com

GHD LAB REPORTS

- *AU Certificate of Analysis - NATA (COA)	Email	ghdlabreports@ghd.com
- *AU Interpretive QC Report - DEFAULT (Anon QCI Rep) (QCI)	Email	ghdlabreports@ghd.com
- *AU QC Report - DEFAULT (Anon QC Rep) - NATA (QC)	Email	ghdlabreports@ghd.com
- A4 - AU Sample Receipt Notification - Environmental HT (SRN)	Email	ghdlabreports@ghd.com
- Chain of Custody (CoC) (COC)	Email	ghdlabreports@ghd.com
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- EDI Format - XTab (XTAB)	Email	ghdlabreports@ghd.com
- Electronic SRN for ESdat (ESRN_ESDAT)	Email	ghdlabreports@ghd.com

HENRY LUO

- *AU Certificate of Analysis - NATA (COA)	Email	henry.luo@ghd.com
- *AU Interpretive QC Report - DEFAULT (Anon QCI Rep) (QCI)	Email	henry.luo@ghd.com
- *AU QC Report - DEFAULT (Anon QC Rep) - NATA (QC)	Email	henry.luo@ghd.com
- A4 - AU Sample Receipt Notification - Environmental HT (SRN)	Email	henry.luo@ghd.com
- Chain of Custody (CoC) (COC)	Email	henry.luo@ghd.com
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- EDI Format - XTab (XTAB)	Email	henry.luo@ghd.com
- Electronic SRN for ESdat (ESRN_ESDAT)	Email	henry.luo@ghd.com

TERRY NHAM

- *AU Certificate of Analysis - NATA (COA)	Email	terry.nham@ghd.com
- *AU Interpretive QC Report - DEFAULT (Anon QCI Rep) (QCI)	Email	terry.nham@ghd.com
- *AU QC Report - DEFAULT (Anon QC Rep) - NATA (QC)	Email	terry.nham@ghd.com
- A4 - AU Sample Receipt Notification - Environmental HT (SRN)	Email	terry.nham@ghd.com
- Chain of Custody (CoC) (COC)	Email	terry.nham@ghd.com
- EDI Format - ESDAT (ESDAT)	Email	terry.nham@ghd.com
- EDI Format - XTab (XTAB)	Email	terry.nham@ghd.com
- Electronic SRN for ESdat (ESRN_ESDAT)	Email	terry.nham@ghd.com

CERTIFICATE OF ANALYSIS

Work Order	: **ES2319028**	Page	: 1 of 21
Client	: **GHD PTY LTD**	Laboratory	: Environmental Division Sydney
Contact	: MR HENRY LUO	Contact	: Sarah Mathew
Address	: LEVEL 15, 133 CASTLEREAGH STREET SYDNEY NSW, AUSTRALIA 2000	Address	: 277-289 Woodpark Road Smithfield NSW Australia 2164
Telephone	: +61 02 9239 7100	Telephone	: +61-2-8784 8555
Project	: 12554717	Date Samples Received	: 07-Jun-2023 15:55
Order number	: 12554717	Date Analysis Commenced	: 07-Jun-2023
C-O-C number	: ----	Issue Date	: 15-Jun-2023 16:19
Sampler	: EMILY SMITH		
Site	: ----		
Quote number	: SY/322/21		
No. of samples received	: 14		
No. of samples analysed	: 14		

Accreditation No. 825
Accredited for compliance with
ISO/IEC 17025 - Testing

This report supersedes any previous report(s) with this reference. Results apply to the sample(s) as submitted, unless the sampling was conducted by ALS. This document shall not be reproduced, except in full.

This Certificate of Analysis contains the following information:

- General Comments
- Analytical Results
- Surrogate Control Limits

Additional information pertinent to this report will be found in the following separate attachments: Quality Control Report, QA/QC Compliance Assessment to assist with Quality Review and Sample Receipt Notification.

Signatories

This document has been electronically signed by the authorized signatories below. Electronic signing is carried out in compliance with procedures specified in 21 CFR Part 11.

Signatories	*Position*	*Accreditation Category*
Ankit Joshi	Senior Chemist - Inorganics	Sydney Inorganics, Smithfield, NSW
Edwandy Fadjar	Organic Coordinator	Sydney Organics, Smithfield, NSW
Franco Lentini	LCMS Coordinator	Sydney Organics, Smithfield, NSW
Sanjeshni Jyoti	Senior Chemist Volatiles	Sydney Organics, Smithfield, NSW

General Comments

The analytical procedures used by ALS have been developed from established internationally recognised procedures such as those published by the USEPA, APHA, AS and NEPM. In house developed procedures are fully validated and are often at the client request.

Where moisture determination has been performed, results are reported on a dry weight basis.

Where a reported less than (<) result is higher than the LOR, this may be due to primary sample extract/digestate dilution and/or insufficient sample for analysis.

Where the LOR of a reported result differs from standard LOR, this may be due to high moisture content, insufficient sample (reduced weight employed) or matrix interference.

When sampling time information is not provided by the client, sampling dates are shown without a time component. In these instances, the time component has been assumed by the laboratory for processing purposes.

Where a result is required to meet compliance limits the associated uncertainty must be considered. Refer to the ALS Contract for details.

Key : CAS Number = CAS registry number from database maintained by Chemical Abstracts Services. The Chemical Abstracts Service is a division of the American Chemical Society.
LOR = Limit of reporting
^ = This result is computed from individual analyte detections at or above the level of reporting
ø = ALS is not NATA accredited for these tests.
~ = Indicates an estimated value.

- EP075 (SIM): Where reported, Benzo(a)pyrene Toxicity Equivalent Quotient (TEQ) per the NEPM (2013) is the sum total of the concentration of the eight carcinogenic PAHs multiplied by their Toxicity Equivalence Factor (TEF) relative to Benzo(a)pyrene. TEF values are provided in brackets as follows: Benz(a)anthracene (0.1), Chrysene (0.01), Benzo(b+j) & Benzo(k)fluoranthene (0.1), Benzo(a)pyrene (1.0), Indeno(1.2.3.cd)pyrene (0.1), Dibenz(a.h)anthracene (1.0), Benzo(g.h.i)perylene (0.01). Less than LOR results for 'TEQ Zero' are treated as zero.
- EP131A: Where reported, Total Chlordane (sum) is the sum of the reported concentrations of cis-Chlordane and trans-Chlordane at or above the LOR.
- EP080: Where reported, Total Xylenes is the sum of the reported concentrations of m&p-Xylene and o-Xylene at or above the LOR.
- EP074: Where reported, Total Trihalomethanes is the sum of the reported concentrations of all Trihalomethanes at or above the LOR.
- EP074: Where reported, Total Trimethylbenzenes is the sum of the reported concentrations of 1.2.3-Trimethylbenzene, 1.2.4-Trimethylbenzene and 1.3.5-Trimethylbenzene at or above the LOR.
- EP075(SIM): Where reported, Total Cresol is the sum of the reported concentrations of 2-Methylphenol and 3- & 4-Methylphenol at or above the LOR.
- EP234: Poor matrix spike recovery for particular compounds due to matrix interferences and high matrix spike recovery has been noted for particular compounds due to ion enhancement.

Analytical Results

Sub-Matrix: WATER (Matrix: WATER)				Sample ID	BADDS	BADMS	BADUS	COSDS	COSUS
				Sampling date / time	07-Jun-2023 00:00	07-Jun-2023 00:00	07-Jun-2023 00:00	07-Jun-2023 00:00	07-Jun-2023 00:00
Compound	CAS Number	LOR	Unit		ES2319028-001	ES2319028-002	ES2319028-003	ES2319028-004	ES2319028-005
					Result	Result	Result	Result	Result
EA015: Total Dissolved Solids dried at 180 ± 5 °C									
Total Dissolved Solids @180°C	----	10	mg/L		796	778	594	550	552
EA025: Total Suspended Solids dried at 104 ± 2°C									
Suspended Solids (SS)	----	5	mg/L		32	23	18	37	10
EG020T: Total Metals by ICP-MS									
Arsenic	7440-38-2	0.001	mg/L		<0.001	<0.001	<0.001	<0.001	<0.001
Cadmium	7440-43-9	0.0001	mg/L		<0.0001	<0.0001	<0.0001	<0.0001	<0.0001
Chromium	7440-47-3	0.001	mg/L		0.001	0.001	<0.001	<0.001	<0.001
Copper	7440-50-8	0.001	mg/L		0.002	0.003	<0.001	0.001	<0.001
Nickel	7440-02-0	0.001	mg/L		0.002	0.002	0.001	0.001	0.001
Lead	7439-92-1	0.001	mg/L		<0.001	<0.001	<0.001	<0.001	<0.001
Zinc	7440-66-6	0.005	mg/L		0.029	0.012	0.008	0.033	<0.005
Manganese	7439-96-5	0.001	mg/L		0.160	0.242	0.300	0.185	0.145
Iron	7439-89-6	0.05	mg/L		1.40	1.38	0.81	1.04	0.56
EG035T: Total Recoverable Mercury by FIMS									
Mercury	7439-97-6	0.0001	mg/L		<0.0001	<0.0001	<0.0001	<0.0001	<0.0001
EK055G: Ammonia as N by Discrete Analyser									
Ammonia as N	7664-41-7	0.01	mg/L		0.03	0.03	0.04	0.04	0.04
EK057G: Nitrite as N by Discrete Analyser									
Nitrite as N	14797-65-0	0.01	mg/L		<0.01	<0.01	<0.01	<0.01	<0.01
EK058G: Nitrate as N by Discrete Analyser									
Nitrate as N	14797-55-8	0.01	mg/L		0.30	0.29	0.18	0.12	0.14
EK059G: Nitrite plus Nitrate as N (NOx) by Discrete Analyser									
Nitrite + Nitrate as N	----	0.01	mg/L		0.30	0.29	0.18	0.12	0.14
EK061G: Total Kjeldahl Nitrogen By Discrete Analyser									
Total Kjeldahl Nitrogen as N	----	0.1	mg/L		0.5	0.6	0.4	0.3	0.3
EK062G: Total Nitrogen as N (TKN + NOx) by Discrete Analyser									
^ Total Nitrogen as N	----	0.1	mg/L		0.8	0.9	0.6	0.4	0.4
EK067G: Total Phosphorus as P by Discrete Analyser									
Total Phosphorus as P	----	0.01	mg/L		0.04	0.05	0.04	0.02	<0.01
EK071G: Reactive Phosphorus as P by discrete analyser									
Reactive Phosphorus as P	14265-44-2	0.01	mg/L		<0.01	<0.01	<0.01	<0.01	<0.01
EP008: Chlorophyll a & Pheophytin a									
Chlorophyll a	----	1	mg/m³		13	8	16	5	2

Analytical Results

Sub-Matrix: WATER (Matrix: WATER)			Sample ID	BADDS	BADMS	BADUS	COSDS	COSUS
			Sampling date / time	07-Jun-2023 00:00	07-Jun-2023 00:00	07-Jun-2023 00:00	07-Jun-2023 00:00	07-Jun-2023 00:00
Compound	CAS Number	LOR	Unit	ES2319028-001	ES2319028-002	ES2319028-003	ES2319028-004	ES2319028-005
				Result	Result	Result	Result	Result
EP020: Oil and Grease (O&G)								
Oil & Grease	----	5	mg/L	<5	<5	<5	<5	<5
EP074D: Fumigants								
2.2-Dichloropropane	594-20-7	5	µg/L	<5	<5	<5	<5	<5
1.2-Dichloropropane	78-87-5	5	µg/L	<5	<5	<5	<5	<5
cis-1.3-Dichloropropylene	10061-01-5	5	µg/L	<5	<5	<5	<5	<5
trans-1.3-Dichloropropylene	10061-02-6	5	µg/L	<5	<5	<5	<5	<5
1.2-Dibromoethane (EDB)	106-93-4	5	µg/L	<5	<5	<5	<5	<5
EP074E: Halogenated Aliphatic Compounds								
Dichlorodifluoromethane	75-71-8	50	µg/L	<50	<50	<50	<50	<50
Chloromethane	74-87-3	50	µg/L	<50	<50	<50	<50	<50
Vinyl chloride	75-01-4	50	µg/L	<50	<50	<50	<50	<50
Bromomethane	74-83-9	50	µg/L	<50	<50	<50	<50	<50
Chloroethane	75-00-3	50	µg/L	<50	<50	<50	<50	<50
Trichlorofluoromethane	75-69-4	50	µg/L	<50	<50	<50	<50	<50
1.1-Dichloroethene	75-35-4	5	µg/L	<5	<5	<5	<5	<5
Iodomethane	74-88-4	5	µg/L	<5	<5	<5	<5	<5
trans-1.2-Dichloroethene	156-60-5	5	µg/L	<5	<5	<5	<5	<5
1.1-Dichloroethane	75-34-3	5	µg/L	<5	<5	<5	<5	<5
cis-1.2-Dichloroethene	156-59-2	5	µg/L	<5	<5	<5	<5	<5
1.1.1-Trichloroethane	71-55-6	5	µg/L	<5	<5	<5	<5	<5
1.1-Dichloropropylene	563-58-6	5	µg/L	<5	<5	<5	<5	<5
Carbon Tetrachloride	56-23-5	5	µg/L	<5	<5	<5	<5	<5
1.2-Dichloroethane	107-06-2	5	µg/L	<5	<5	<5	<5	<5
Trichloroethene	79-01-6	5	µg/L	<5	<5	<5	<5	<5
Dibromomethane	74-95-3	5	µg/L	<5	<5	<5	<5	<5
1.1.2-Trichloroethane	79-00-5	5	µg/L	<5	<5	<5	<5	<5
1.3-Dichloropropane	142-28-9	5	µg/L	<5	<5	<5	<5	<5
Tetrachloroethene	127-18-4	5	µg/L	<5	<5	<5	<5	<5
1.1.1.2-Tetrachloroethane	630-20-6	5	µg/L	<5	<5	<5	<5	<5
trans-1.4-Dichloro-2-butene	110-57-6	5	µg/L	<5	<5	<5	<5	<5
cis-1.4-Dichloro-2-butene	1476-11-5	5	µg/L	<5	<5	<5	<5	<5
1.1.2.2-Tetrachloroethane	79-34-5	5	µg/L	<5	<5	<5	<5	<5
1.2.3-Trichloropropane	96-18-4	5	µg/L	<5	<5	<5	<5	<5
Pentachloroethane	76-01-7	5	µg/L	<5	<5	<5	<5	<5

Analytical Results

Sub-Matrix: WATER (Matrix: WATER)				Sample ID	BADDS	BADMS	BADUS	COSDS	COSUS
				Sampling date / time	07-Jun-2023 00:00	07-Jun-2023 00:00	07-Jun-2023 00:00	07-Jun-2023 00:00	07-Jun-2023 00:00
Compound	CAS Number	LOR	Unit		ES2319028-001	ES2319028-002	ES2319028-003	ES2319028-004	ES2319028-005
					Result	Result	Result	Result	Result
EP074E: Halogenated Aliphatic Compounds - Continued									
1.2-Dibromo-3-chloropropane	96-12-8	5	µg/L		<5	<5	<5	<5	<5
Hexachlorobutadiene	87-68-3	5	µg/L		<5	<5	<5	<5	<5
EP074F: Halogenated Aromatic Compounds									
Chlorobenzene	108-90-7	5	µg/L		<5	<5	<5	<5	<5
Bromobenzene	108-86-1	5	µg/L		<5	<5	<5	<5	<5
2-Chlorotoluene	95-49-8	5	µg/L		<5	<5	<5	<5	<5
4-Chlorotoluene	106-43-4	5	µg/L		<5	<5	<5	<5	<5
1.3-Dichlorobenzene	541-73-1	5	µg/L		<5	<5	<5	<5	<5
1.4-Dichlorobenzene	106-46-7	5	µg/L		<5	<5	<5	<5	<5
1.2-Dichlorobenzene	95-50-1	5	µg/L		<5	<5	<5	<5	<5
1.2.4-Trichlorobenzene	120-82-1	5	µg/L		<5	<5	<5	<5	<5
1.2.3-Trichlorobenzene	87-61-6	5	µg/L		<5	<5	<5	<5	<5
EP074G: Trihalomethanes									
Chloroform	67-66-3	5	µg/L		<5	<5	<5	<5	<5
Bromodichloromethane	75-27-4	5	µg/L		<5	<5	<5	<5	<5
Dibromochloromethane	124-48-1	5	µg/L		<5	<5	<5	<5	<5
Bromoform	75-25-2	5	µg/L		<5	<5	<5	<5	<5
EP075(SIM)A: Phenolic Compounds									
Phenol	108-95-2	1.0	µg/L		<1.0	<1.0	<1.0	<1.0	<1.0
2-Chlorophenol	95-57-8	1.0	µg/L		<1.0	<1.0	<1.0	<1.0	<1.0
2-Methylphenol	95-48-7	1.0	µg/L		<1.0	<1.0	<1.0	<1.0	<1.0
3- & 4-Methylphenol	1319-77-3	2.0	µg/L		<2.0	<2.0	<2.0	<2.0	<2.0
2-Nitrophenol	88-75-5	1.0	µg/L		<1.0	<1.0	<1.0	<1.0	<1.0
2.4-Dimethylphenol	105-67-9	1.0	µg/L		<1.0	<1.0	<1.0	<1.0	<1.0
2.4-Dichlorophenol	120-83-2	1.0	µg/L		<1.0	<1.0	<1.0	<1.0	<1.0
2.6-Dichlorophenol	87-65-0	1.0	µg/L		<1.0	<1.0	<1.0	<1.0	<1.0
4-Chloro-3-methylphenol	59-50-7	1.0	µg/L		<1.0	<1.0	<1.0	<1.0	<1.0
2.4.6-Trichlorophenol	88-06-2	1.0	µg/L		<1.0	<1.0	<1.0	<1.0	<1.0
2.4.5-Trichlorophenol	95-95-4	1.0	µg/L		<1.0	<1.0	<1.0	<1.0	<1.0
Pentachlorophenol	87-86-5	2.0	µg/L		<2.0	<2.0	<2.0	<2.0	<2.0
EP075(SIM)B: Polynuclear Aromatic Hydrocarbons									
Naphthalene	91-20-3	1.0	µg/L		<1.0	<1.0	<1.0	<1.0	<1.0
Acenaphthylene	208-96-8	1.0	µg/L		<1.0	<1.0	<1.0	<1.0	<1.0
Acenaphthene	83-32-9	1.0	µg/L		<1.0	<1.0	<1.0	<1.0	<1.0

Analytical Results

Sub-Matrix: WATER (Matrix: WATER)				Sample ID	BADDS	BADMS	BADUS	COSDS	COSUS
				Sampling date / time	07-Jun-2023 00:00	07-Jun-2023 00:00	07-Jun-2023 00:00	07-Jun-2023 00:00	07-Jun-2023 00:00
Compound	CAS Number	LOR	Unit		ES2319028-001	ES2319028-002	ES2319028-003	ES2319028-004	ES2319028-005
					Result	Result	Result	Result	Result
EP075(SIM)B: Polynuclear Aromatic Hydrocarbons - Continued									
Fluorene	86-73-7	1.0	µg/L		<1.0	<1.0	<1.0	<1.0	<1.0
Phenanthrene	85-01-8	1.0	µg/L		<1.0	<1.0	<1.0	<1.0	<1.0
Anthracene	120-12-7	1.0	µg/L		<1.0	<1.0	<1.0	<1.0	<1.0
Fluoranthene	206-44-0	1.0	µg/L		<1.0	<1.0	<1.0	<1.0	<1.0
Pyrene	129-00-0	1.0	µg/L		<1.0	<1.0	<1.0	<1.0	<1.0
Benz(a)anthracene	56-55-3	1.0	µg/L		<1.0	<1.0	<1.0	<1.0	<1.0
Chrysene	218-01-9	1.0	µg/L		<1.0	<1.0	<1.0	<1.0	<1.0
Benzo(b+j)fluoranthene	205-99-2 205-82-3	1.0	µg/L		<1.0	<1.0	<1.0	<1.0	<1.0
Benzo(k)fluoranthene	207-08-9	1.0	µg/L		<1.0	<1.0	<1.0	<1.0	<1.0
Benzo(a)pyrene	50-32-8	0.5	µg/L		<0.5	<0.5	<0.5	<0.5	<0.5
Indeno(1.2.3.cd)pyrene	193-39-5	1.0	µg/L		<1.0	<1.0	<1.0	<1.0	<1.0
Dibenz(a.h)anthracene	53-70-3	1.0	µg/L		<1.0	<1.0	<1.0	<1.0	<1.0
Benzo(g.h.i)perylene	191-24-2	1.0	µg/L		<1.0	<1.0	<1.0	<1.0	<1.0
^ **Sum of polycyclic aromatic hydrocarbons**	----	0.5	µg/L		<0.5	<0.5	<0.5	<0.5	<0.5
^ **Benzo(a)pyrene TEQ (zero)**	----	0.5	µg/L		<0.5	<0.5	<0.5	<0.5	<0.5
EP080: BTEXN									
Benzene	71-43-2	1	µg/L		<1	<1	<1	<1	<1
Toluene	108-88-3	2	µg/L		<2	<2	<2	<2	<2
Ethylbenzene	100-41-4	2	µg/L		<2	<2	<2	<2	<2
meta- & para-Xylene	108-38-3 106-42-3	2	µg/L		<2	<2	<2	<2	<2
ortho-Xylene	95-47-6	2	µg/L		<2	<2	<2	<2	<2
^ **Total Xylenes**	----	2	µg/L		<2	<2	<2	<2	<2
^ **Sum of BTEX**	----	1	µg/L		<1	<1	<1	<1	<1
Naphthalene	91-20-3	5	µg/L		<5	<5	<5	<5	<5
EP234A: OP Pesticides									
Acephate	30560-19-1	0.5	µg/L		<0.5	<0.5	<0.5	<0.5	<0.5
Azinphos-methyl	86-50-0	0.02	µg/L		<0.02	<0.02	<0.02	<0.02	<0.02
Azinphos-ethyl	2642-71-9	0.02	µg/L		<0.02	<0.02	<0.02	<0.02	<0.02
Bensulide	741-58-2	0.1	µg/L		<0.1	<0.1	<0.1	<0.1	<0.1
Bromophos-ethyl	4824-78-6	0.10	µg/L		<0.10	<0.10	<0.10	<0.10	<0.10
Carbofenothion	786-19-6	0.02	µg/L		<0.02	<0.02	<0.02	<0.02	<0.02
Chlorfenvinphos	470-90-6	0.02	µg/L		<0.02	<0.02	<0.02	<0.02	<0.02
Chlorpyrifos	2921-88-2	0.02	µg/L		<0.02	<0.02	<0.02	<0.02	<0.02
Chlorpyrifos-methyl	5598-13-0	0.2	µg/L		<0.2	<0.2	<0.2	<0.2	<0.2

Analytical Results

Sub-Matrix: WATER (Matrix: WATER)				Sample ID	BADDS	BADMS	BADUS	COSDS	COSUS
				Sampling date / time	07-Jun-2023 00:00	07-Jun-2023 00:00	07-Jun-2023 00:00	07-Jun-2023 00:00	07-Jun-2023 00:00
Compound	CAS Number	LOR	Unit		ES2319028-001	ES2319028-002	ES2319028-003	ES2319028-004	ES2319028-005
					Result	Result	Result	Result	Result
EP234A: OP Pesticides - Continued									
Coumaphos	56-72-4	0.01	µg/L		<0.01	<0.01	<0.01	<0.01	<0.01
Demeton-O	298-03-3	0.02	µg/L		<0.02	<0.02	<0.02	<0.02	<0.02
Demeton-O & Demeton-S	298-03-3/126-75-0	0.02	µg/L		<0.02	<0.02	<0.02	<0.02	<0.02
Demeton-S	126-75-0	0.02	µg/L		<0.02	<0.02	<0.02	<0.02	<0.02
Demeton-S-methyl	919-86-8	0.02	µg/L		<0.02	<0.02	<0.02	<0.02	<0.02
Diazinon	333-41-5	0.01	µg/L		<0.01	<0.01	<0.01	<0.01	<0.01
Dichlorvos	62-73-7	0.20	µg/L		<0.20	<0.20	<0.20	<0.20	<0.20
Dimethoate	60-51-5	0.02	µg/L		<0.02	<0.02	<0.02	<0.02	<0.02
Disulfoton	298-04-4	0.05	µg/L		<0.05	<0.05	<0.05	<0.05	<0.05
EPN	2104-64-5	0.05	µg/L		<0.05	<0.05	<0.05	<0.05	<0.05
Ethion	563-12-2	0.02	µg/L		<0.02	<0.02	<0.02	<0.02	<0.02
Ethoprophos	13194-48-4	0.01	µg/L		<0.01	<0.01	<0.01	<0.01	<0.01
Fenamiphos	22224-92-6	0.01	µg/L		<0.01	<0.01	<0.01	<0.01	<0.01
Fenchlorphos (Ronnel)	299-84-3	10	µg/L		<10	<10	<10	<10	<10
Fenitrothion	122-14-5	2	µg/L		<2	<2	<2	<2	<2
Fensulfothion	115-90-2	0.01	µg/L		<0.01	<0.01	<0.01	<0.01	<0.01
Fenthion	55-38-9	0.05	µg/L		<0.05	<0.05	<0.05	<0.05	<0.05
Formothion	2540-82-1	20	µg/L		<20	<20	<20	<20	<20
Fosetyl Aluminium	39148-24-8	10	µg/L		<10	<10	<10	<10	<10
Malathion	121-75-5	0.02	µg/L		<0.02	<0.02	<0.02	<0.02	<0.02
Methidathion	950-37-8	0.1	µg/L		<0.1	<0.1	<0.1	<0.1	<0.1
Mevinphos	7786-34-7	0.02	µg/L		<0.02	<0.02	<0.02	<0.02	<0.02
Monocrotophos	6923-22-4	0.02	µg/L		<0.02	<0.02	<0.02	<0.02	<0.02
Naftalofos	1491-41-4	1.0	µg/L		<1.0	<1.0	<1.0	<1.0	<1.0
Omethoate	1113-02-6	0.01	µg/L		<0.01	<0.01	<0.01	<0.01	<0.01
Parathion	56-38-2	0.2	µg/L		<0.2	<0.2	<0.2	<0.2	<0.2
Parathion-methyl	298-00-0	0.5	µg/L		<0.5	<0.5	<0.5	<0.5	<0.5
Phorate	298-02-2	0.1	µg/L		<0.1	<0.1	<0.1	<0.1	<0.1
Pirimiphos-ethyl	23505-41-1	0.01	µg/L		<0.01	<0.01	<0.01	<0.01	<0.01
Pirimiphos-methyl	29232-93-7	0.01	µg/L		<0.01	<0.01	<0.01	<0.01	<0.01
Profenofos	41198-08-7	0.01	µg/L		<0.01	<0.01	<0.01	<0.01	<0.01
Prothiofos	34643-46-4	0.1	µg/L		<0.1	<0.1	<0.1	<0.1	<0.1
Pyrazophos	13457-18-6	0.1	µg/L		<0.1	<0.1	<0.1	<0.1	<0.1
Sulfotep	3689-24-5	0.005	µg/L		<0.005	<0.005	<0.005	<0.005	<0.005
Sulprofos	35400-43-2	0.05	µg/L		<0.05	<0.05	<0.05	<0.05	<0.05

Analytical Results

Sub-Matrix: WATER (Matrix: WATER)				Sample ID	BADDS	BADMS	BADUS	COSDS	COSUS
				Sampling date / time	07-Jun-2023 00:00	07-Jun-2023 00:00	07-Jun-2023 00:00	07-Jun-2023 00:00	07-Jun-2023 00:00
Compound	CAS Number	LOR	Unit		ES2319028-001	ES2319028-002	ES2319028-003	ES2319028-004	ES2319028-005
					Result	Result	Result	Result	Result
EP234A: OP Pesticides - Continued									
Temephos	3383-96-8	0.02	µg/L		<0.02	<0.02	<0.02	<0.02	<0.02
Terbufos	13071-79-9	0.01	µg/L		<0.01	<0.01	<0.01	<0.01	<0.01
Tetrachlorvinphos	22248-79-9	0.01	µg/L		<0.01	<0.01	<0.01	<0.01	<0.01
Thiometon	640-15-3	0.5	µg/L		<0.5	<0.5	<0.5	<0.5	<0.5
Triazophos	24017-47-8	0.005	µg/L		<0.005	<0.005	<0.005	<0.005	<0.005
Trichlorfon	52-68-6	0.02	µg/L		<0.02	<0.02	<0.02	<0.02	<0.02
Trichloronate	327-98-0	0.5	µg/L		<0.5	<0.5	<0.5	<0.5	<0.5
EP074S: VOC Surrogates									
1.2-Dichloroethane-D4	17060-07-0	5	%		**115**	**113**	**113**	**112**	**109**
Toluene-D8	2037-26-5	5	%		**124**	**121**	**122**	**119**	**112**
4-Bromofluorobenzene	460-00-4	5	%		**117**	**114**	**114**	**112**	**107**
EP075(SIM)S: Phenolic Compound Surrogates									
Phenol-d6	13127-88-3	1.0	%		**21.6**	**18.7**	**26.7**	**23.3**	**21.3**
2-Chlorophenol-D4	93951-73-6	1.0	%		**45.1**	**40.0**	**55.4**	**48.8**	**44.4**
2.4.6-Tribromophenol	118-79-6	1.0	%		**41.5**	**35.3**	**52.5**	**38.6**	**38.5**
EP075(SIM)T: PAH Surrogates									
2-Fluorobiphenyl	321-60-8	1.0	%		**54.0**	**50.6**	**67.5**	**60.4**	**56.3**
Anthracene-d10	1719-06-8	1.0	%		**70.1**	**58.0**	**84.9**	**70.5**	**67.5**
4-Terphenyl-d14	1718-51-0	1.0	%		**77.1**	**60.5**	**91.5**	**75.4**	**71.1**
EP080S: TPH(V)/BTEX Surrogates									
1.2-Dichloroethane-D4	17060-07-0	2	%		**110**	**109**	**108**	**108**	**104**
Toluene-D8	2037-26-5	2	%		**107**	**104**	**106**	**103**	**96.7**
4-Bromofluorobenzene	460-00-4	2	%		**107**	**104**	**104**	**102**	**98.2**

Analytical Results

Sub-Matrix: WATER (Matrix: WATER)				Sample ID	HINDS	HINUS	KEMDS	KEMUS	ROPDS
				Sampling date / time	06-Jun-2023 00:00	06-Jun-2023 00:00	06-Jun-2023 00:00	06-Jun-2023 00:00	06-Jun-2023 00:00
Compound	CAS Number	LOR	Unit		ES2319028-006	ES2319028-007	ES2319028-008	ES2319028-009	ES2319028-010
					Result	Result	Result	Result	Result
EA015: Total Dissolved Solids dried at 180 ± 5 °C									
Total Dissolved Solids @180°C	----	10	mg/L		**244**	**308**	**1200**	**1420**	**2390**
EA025: Total Suspended Solids dried at 104 ± 2°C									
Suspended Solids (SS)	----	5	mg/L		**7**	**24**	<5	<5	<5
EG020T: Total Metals by ICP-MS									
Arsenic	7440-38-2	0.001	mg/L		<0.001	<0.001	<0.001	<0.001	<0.001
Cadmium	7440-43-9	0.0001	mg/L		<0.0001	<0.0001	<0.0001	<0.0001	<0.0001
Chromium	7440-47-3	0.001	mg/L		<0.001	<0.001	<0.001	<0.001	<0.001
Copper	7440-50-8	0.001	mg/L		<0.001	<0.001	**0.004**	**0.004**	<0.001
Nickel	7440-02-0	0.001	mg/L		**0.001**	<0.001	**0.002**	**0.002**	<0.001
Lead	7439-92-1	0.001	mg/L		<0.001	<0.001	<0.001	<0.001	<0.001
Zinc	7440-66-6	0.005	mg/L		**0.005**	<0.005	**0.016**	**0.015**	**0.012**
Manganese	7439-96-5	0.001	mg/L		**0.279**	**0.123**	**0.050**	**0.075**	**0.516**
Iron	7439-89-6	0.05	mg/L		**0.86**	**0.60**	**0.17**	**0.26**	**0.08**
EG035T: Total Recoverable Mercury by FIMS									
Mercury	7439-97-6	0.0001	mg/L		<0.0001	<0.0001	<0.0001	<0.0001	<0.0001
EK055G: Ammonia as N by Discrete Analyser									
Ammonia as N	7664-41-7	0.01	mg/L		**0.02**	**0.04**	**0.10**	**0.04**	**0.03**
EK057G: Nitrite as N by Discrete Analyser									
Nitrite as N	14797-65-0	0.01	mg/L		<0.01	<0.01	**0.01**	**0.01**	<0.01
EK058G: Nitrate as N by Discrete Analyser									
Nitrate as N	14797-55-8	0.01	mg/L		**0.01**	<0.01	**4.74**	**5.31**	**0.02**
EK059G: Nitrite plus Nitrate as N (NOx) by Discrete Analyser									
Nitrite + Nitrate as N	----	0.01	mg/L		**0.01**	<0.01	**4.75**	**5.32**	**0.02**
EK061G: Total Kjeldahl Nitrogen By Discrete Analyser									
Total Kjeldahl Nitrogen as N	----	0.1	mg/L		**1.0**	**0.7**	**1.3**	**0.8**	**0.4**
EK062G: Total Nitrogen as N (TKN + NOx) by Discrete Analyser									
^ Total Nitrogen as N	----	0.1	mg/L		**1.0**	**0.7**	**6.0**	**6.1**	**0.4**
EK067G: Total Phosphorus as P by Discrete Analyser									
Total Phosphorus as P	----	0.01	mg/L		**0.05**	**0.02**	**0.70**	**0.56**	**0.02**
EK071G: Reactive Phosphorus as P by discrete analyser									
Reactive Phosphorus as P	14265-44-2	0.01	mg/L		<0.01	<0.01	**0.43**	**0.52**	**0.02**
EP008: Chlorophyll a & Pheophytin a									
Chlorophyll a	----	1	mg/m³		**48**	**4**	<1	**1**	<1

Analytical Results

Sub-Matrix: WATER (Matrix: WATER)				Sample ID	HINDS	HINUS	KEMDS	KEMUS	ROPDS
				Sampling date / time	06-Jun-2023 00:00	06-Jun-2023 00:00	06-Jun-2023 00:00	06-Jun-2023 00:00	06-Jun-2023 00:00
Compound	CAS Number	LOR	Unit		ES2319028-006	ES2319028-007	ES2319028-008	ES2319028-009	ES2319028-010
					Result	Result	Result	Result	Result
EP020: Oil and Grease (O&G)									
Oil & Grease	----	5	mg/L		<5	<5	<5	<5	<5
EP074D: Fumigants									
2.2-Dichloropropane	594-20-7	5	µg/L		<5	<5	<5	<5	<5
1.2-Dichloropropane	78-87-5	5	µg/L		<5	<5	<5	<5	<5
cis-1.3-Dichloropropylene	10061-01-5	5	µg/L		<5	<5	<5	<5	<5
trans-1.3-Dichloropropylene	10061-02-6	5	µg/L		<5	<5	<5	<5	<5
1.2-Dibromoethane (EDB)	106-93-4	5	µg/L		<5	<5	<5	<5	<5
EP074E: Halogenated Aliphatic Compounds									
Dichlorodifluoromethane	75-71-8	50	µg/L		<50	<50	<50	<50	<50
Chloromethane	74-87-3	50	µg/L		<50	<50	<50	<50	<50
Vinyl chloride	75-01-4	50	µg/L		<50	<50	<50	<50	<50
Bromomethane	74-83-9	50	µg/L		<50	<50	<50	<50	<50
Chloroethane	75-00-3	50	µg/L		<50	<50	<50	<50	<50
Trichlorofluoromethane	75-69-4	50	µg/L		<50	<50	<50	<50	<50
1.1-Dichloroethene	75-35-4	5	µg/L		<5	<5	<5	<5	<5
Iodomethane	74-88-4	5	µg/L		<5	<5	<5	<5	<5
trans-1.2-Dichloroethene	156-60-5	5	µg/L		<5	<5	<5	<5	<5
1.1-Dichloroethane	75-34-3	5	µg/L		<5	<5	<5	<5	<5
cis-1.2-Dichloroethene	156-59-2	5	µg/L		<5	<5	<5	<5	<5
1.1.1-Trichloroethane	71-55-6	5	µg/L		<5	<5	<5	<5	<5
1.1-Dichloropropylene	563-58-6	5	µg/L		<5	<5	<5	<5	<5
Carbon Tetrachloride	56-23-5	5	µg/L		<5	<5	<5	<5	<5
1.2-Dichloroethane	107-06-2	5	µg/L		<5	<5	<5	<5	<5
Trichloroethene	79-01-6	5	µg/L		<5	<5	<5	<5	<5
Dibromomethane	74-95-3	5	µg/L		<5	<5	<5	<5	<5
1.1.2-Trichloroethane	79-00-5	5	µg/L		<5	<5	<5	<5	<5
1.3-Dichloropropane	142-28-9	5	µg/L		<5	<5	<5	<5	<5
Tetrachloroethene	127-18-4	5	µg/L		<5	<5	<5	<5	<5
1.1.1.2-Tetrachloroethane	630-20-6	5	µg/L		<5	<5	<5	<5	<5
trans-1.4-Dichloro-2-butene	110-57-6	5	µg/L		<5	<5	<5	<5	<5
cis-1.4-Dichloro-2-butene	1476-11-5	5	µg/L		<5	<5	<5	<5	<5
1.1.2.2-Tetrachloroethane	79-34-5	5	µg/L		<5	<5	<5	<5	<5
1.2.3-Trichloropropane	96-18-4	5	µg/L		<5	<5	<5	<5	<5
Pentachloroethane	76-01-7	5	µg/L		<5	<5	<5	<5	<5

Analytical Results

Sub-Matrix: WATER (Matrix: WATER)				Sample ID	HINDS	HINUS	KEMDS	KEMUS	ROPDS
				Sampling date / time	06-Jun-2023 00:00	06-Jun-2023 00:00	06-Jun-2023 00:00	06-Jun-2023 00:00	06-Jun-2023 00:00
Compound	CAS Number	LOR	Unit		ES2319028-006	ES2319028-007	ES2319028-008	ES2319028-009	ES2319028-010
					Result	Result	Result	Result	Result
EP074E: Halogenated Aliphatic Compounds - Continued									
1.2-Dibromo-3-chloropropane	96-12-8	5	µg/L		<5	<5	<5	<5	<5
Hexachlorobutadiene	87-68-3	5	µg/L		<5	<5	<5	<5	<5
EP074F: Halogenated Aromatic Compounds									
Chlorobenzene	108-90-7	5	µg/L		<5	<5	<5	<5	<5
Bromobenzene	108-86-1	5	µg/L		<5	<5	<5	<5	<5
2-Chlorotoluene	95-49-8	5	µg/L		<5	<5	<5	<5	<5
4-Chlorotoluene	106-43-4	5	µg/L		<5	<5	<5	<5	<5
1.3-Dichlorobenzene	541-73-1	5	µg/L		<5	<5	<5	<5	<5
1.4-Dichlorobenzene	106-46-7	5	µg/L		<5	<5	<5	<5	<5
1.2-Dichlorobenzene	95-50-1	5	µg/L		<5	<5	<5	<5	<5
1.2.4-Trichlorobenzene	120-82-1	5	µg/L		<5	<5	<5	<5	<5
1.2.3-Trichlorobenzene	87-61-6	5	µg/L		<5	<5	<5	<5	<5
EP074G: Trihalomethanes									
Chloroform	67-66-3	5	µg/L		<5	<5	<5	<5	<5
Bromodichloromethane	75-27-4	5	µg/L		<5	<5	<5	<5	<5
Dibromochloromethane	124-48-1	5	µg/L		<5	<5	<5	<5	<5
Bromoform	75-25-2	5	µg/L		<5	<5	<5	<5	<5
EP075(SIM)A: Phenolic Compounds									
Phenol	108-95-2	1.0	µg/L		<1.0	<1.0	<1.0	<1.0	<1.0
2-Chlorophenol	95-57-8	1.0	µg/L		<1.0	<1.0	<1.0	<1.0	<1.0
2-Methylphenol	95-48-7	1.0	µg/L		<1.0	<1.0	<1.0	<1.0	<1.0
3- & 4-Methylphenol	1319-77-3	2.0	µg/L		<2.0	<2.0	<2.0	<2.0	<2.0
2-Nitrophenol	88-75-5	1.0	µg/L		<1.0	<1.0	<1.0	<1.0	<1.0
2.4-Dimethylphenol	105-67-9	1.0	µg/L		<1.0	<1.0	<1.0	<1.0	<1.0
2.4-Dichlorophenol	120-83-2	1.0	µg/L		<1.0	<1.0	<1.0	<1.0	<1.0
2.6-Dichlorophenol	87-65-0	1.0	µg/L		<1.0	<1.0	<1.0	<1.0	<1.0
4-Chloro-3-methylphenol	59-50-7	1.0	µg/L		<1.0	<1.0	<1.0	<1.0	<1.0
2.4.6-Trichlorophenol	88-06-2	1.0	µg/L		<1.0	<1.0	<1.0	<1.0	<1.0
2.4.5-Trichlorophenol	95-95-4	1.0	µg/L		<1.0	<1.0	<1.0	<1.0	<1.0
Pentachlorophenol	87-86-5	2.0	µg/L		<2.0	<2.0	<2.0	<2.0	<2.0
EP075(SIM)B: Polynuclear Aromatic Hydrocarbons									
Naphthalene	91-20-3	1.0	µg/L		<1.0	<1.0	<1.0	<1.0	<1.0
Acenaphthylene	208-96-8	1.0	µg/L		<1.0	<1.0	<1.0	<1.0	<1.0
Acenaphthene	83-32-9	1.0	µg/L		<1.0	<1.0	<1.0	<1.0	<1.0

Analytical Results

Sub-Matrix: WATER (Matrix: WATER)				Sample ID	HINDS	HINUS	KEMDS	KEMUS	ROPDS
				Sampling date / time	06-Jun-2023 00:00	06-Jun-2023 00:00	06-Jun-2023 00:00	06-Jun-2023 00:00	06-Jun-2023 00:00
Compound	CAS Number	LOR	Unit		ES2319028-006	ES2319028-007	ES2319028-008	ES2319028-009	ES2319028-010
					Result	Result	Result	Result	Result
EP075(SIM)B: Polynuclear Aromatic Hydrocarbons - Continued									
Fluorene	86-73-7	1.0	µg/L		<1.0	<1.0	<1.0	<1.0	<1.0
Phenanthrene	85-01-8	1.0	µg/L		<1.0	<1.0	<1.0	<1.0	<1.0
Anthracene	120-12-7	1.0	µg/L		<1.0	<1.0	<1.0	<1.0	<1.0
Fluoranthene	206-44-0	1.0	µg/L		<1.0	<1.0	<1.0	<1.0	<1.0
Pyrene	129-00-0	1.0	µg/L		<1.0	<1.0	<1.0	<1.0	<1.0
Benz(a)anthracene	56-55-3	1.0	µg/L		<1.0	<1.0	<1.0	<1.0	<1.0
Chrysene	218-01-9	1.0	µg/L		<1.0	<1.0	<1.0	<1.0	<1.0
Benzo(b+j)fluoranthene	205-99-2 205-82-3	1.0	µg/L		<1.0	<1.0	<1.0	<1.0	<1.0
Benzo(k)fluoranthene	207-08-9	1.0	µg/L		<1.0	<1.0	<1.0	<1.0	<1.0
Benzo(a)pyrene	50-32-8	0.5	µg/L		<0.5	<0.5	<0.5	<0.5	<0.5
Indeno(1.2.3.cd)pyrene	193-39-5	1.0	µg/L		<1.0	<1.0	<1.0	<1.0	<1.0
Dibenz(a.h)anthracene	53-70-3	1.0	µg/L		<1.0	<1.0	<1.0	<1.0	<1.0
Benzo(g.h.i)perylene	191-24-2	1.0	µg/L		<1.0	<1.0	<1.0	<1.0	<1.0
^ **Sum of polycyclic aromatic hydrocarbons**	----	0.5	µg/L		<0.5	<0.5	<0.5	<0.5	<0.5
^ **Benzo(a)pyrene TEQ (zero)**	----	0.5	µg/L		<0.5	<0.5	<0.5	<0.5	<0.5
EP080: BTEXN									
Benzene	71-43-2	1	µg/L		<1	<1	<1	<1	<1
Toluene	108-88-3	2	µg/L		<2	<2	<2	<2	<2
Ethylbenzene	100-41-4	2	µg/L		<2	<2	<2	<2	<2
meta- & para-Xylene	108-38-3 106-42-3	2	µg/L		<2	<2	<2	<2	<2
ortho-Xylene	95-47-6	2	µg/L		<2	<2	<2	<2	<2
^ **Total Xylenes**	----	2	µg/L		<2	<2	<2	<2	<2
^ **Sum of BTEX**	----	1	µg/L		<1	<1	<1	<1	<1
Naphthalene	91-20-3	5	µg/L		<5	<5	<5	<5	<5
EP234A: OP Pesticides									
Acephate	30560-19-1	0.5	µg/L		<0.5	<0.5	<0.5	<0.5	<0.5
Azinphos-methyl	86-50-0	0.02	µg/L		<0.02	<0.02	<0.02	<0.02	<0.02
Azinphos-ethyl	2642-71-9	0.02	µg/L		<0.02	<0.02	<0.02	<0.02	<0.02
Bensulide	741-58-2	0.1	µg/L		<0.1	<0.1	<0.1	<0.1	<0.1
Bromophos-ethyl	4824-78-6	0.10	µg/L		<0.10	<0.10	<0.10	<0.10	<0.10
Carbofenothion	786-19-6	0.02	µg/L		<0.02	<0.02	<0.02	<0.02	<0.02
Chlorfenvinphos	470-90-6	0.02	µg/L		<0.02	<0.02	<0.02	<0.02	<0.02
Chlorpyrifos	2921-88-2	0.02	µg/L		<0.02	<0.02	<0.02	<0.02	<0.02
Chlorpyrifos-methyl	5598-13-0	0.2	µg/L		<0.2	<0.2	<0.2	<0.2	<0.2

Analytical Results

Sub-Matrix: WATER (Matrix: WATER)				Sample ID	HINDS	HINUS	KEMDS	KEMUS	ROPDS
				Sampling date / time	06-Jun-2023 00:00	06-Jun-2023 00:00	06-Jun-2023 00:00	06-Jun-2023 00:00	06-Jun-2023 00:00
Compound	CAS Number	LOR	Unit		ES2319028-006	ES2319028-007	ES2319028-008	ES2319028-009	ES2319028-010
					Result	Result	Result	Result	Result
EP234A: OP Pesticides - Continued									
Coumaphos	56-72-4	0.01	µg/L		<0.01	<0.01	<0.01	<0.01	<0.01
Demeton-O	298-03-3	0.02	µg/L		<0.02	<0.02	<0.02	<0.02	<0.02
Demeton-O & Demeton-S	298-03-3/126-75-0	0.02	µg/L		<0.02	<0.02	<0.02	<0.02	<0.02
Demeton-S	126-75-0	0.02	µg/L		<0.02	<0.02	<0.02	<0.02	<0.02
Demeton-S-methyl	919-86-8	0.02	µg/L		<0.02	<0.02	<0.02	<0.02	<0.02
Diazinon	333-41-5	0.01	µg/L		<0.01	<0.01	<0.01	<0.01	<0.01
Dichlorvos	62-73-7	0.20	µg/L		<0.20	<0.20	<0.20	<0.20	<0.20
Dimethoate	60-51-5	0.02	µg/L		<0.02	<0.02	**0.06**	**0.09**	<0.02
Disulfoton	298-04-4	0.05	µg/L		<0.05	<0.05	<0.05	<0.05	<0.05
EPN	2104-64-5	0.05	µg/L		<0.05	<0.05	<0.05	<0.05	<0.05
Ethion	563-12-2	0.02	µg/L		<0.02	<0.02	<0.02	<0.02	<0.02
Ethoprophos	13194-48-4	0.01	µg/L		<0.01	<0.01	<0.01	<0.01	<0.01
Fenamiphos	22224-92-6	0.01	µg/L		<0.01	<0.01	<0.01	<0.01	<0.01
Fenchlorphos (Ronnel)	299-84-3	10	µg/L		<10	<10	<10	<10	<10
Fenitrothion	122-14-5	2	µg/L		<2	<2	<2	<2	<2
Fensulfothion	115-90-2	0.01	µg/L		<0.01	<0.01	<0.01	<0.01	<0.01
Fenthion	55-38-9	0.05	µg/L		<0.05	<0.05	<0.05	<0.05	<0.05
Formothion	2540-82-1	20	µg/L		<20	<20	<20	<20	<20
Fosetyl Aluminium	39148-24-8	10	µg/L		<10	<10	<10	<10	<10
Malathion	121-75-5	0.02	µg/L		<0.02	<0.02	<0.02	<0.02	<0.02
Methidathion	950-37-8	0.1	µg/L		<0.1	<0.1	<0.1	<0.1	<0.1
Mevinphos	7786-34-7	0.02	µg/L		<0.02	<0.02	<0.02	<0.02	<0.02
Monocrotophos	6923-22-4	0.02	µg/L		<0.02	<0.02	<0.02	<0.02	<0.02
Naftalofos	1491-41-4	1.0	µg/L		<1.0	<1.0	<1.0	<1.0	<1.0
Omethoate	1113-02-6	0.01	µg/L		<0.01	<0.01	<0.01	<0.01	<0.01
Parathion	56-38-2	0.2	µg/L		<0.2	<0.2	<0.2	<0.2	<0.2
Parathion-methyl	298-00-0	0.5	µg/L		<0.5	<0.5	<0.5	<0.5	<0.5
Phorate	298-02-2	0.1	µg/L		<0.1	<0.1	<0.1	<0.1	<0.1
Pirimiphos-ethyl	23505-41-1	0.01	µg/L		<0.01	<0.01	<0.01	<0.01	<0.01
Pirimiphos-methyl	29232-93-7	0.01	µg/L		<0.01	<0.01	<0.01	<0.01	<0.01
Profenofos	41198-08-7	0.01	µg/L		<0.01	<0.01	<0.01	<0.01	<0.01
Prothiofos	34643-46-4	0.1	µg/L		<0.1	<0.1	<0.1	<0.1	<0.1
Pyrazophos	13457-18-6	0.1	µg/L		<0.1	<0.1	<0.1	<0.1	<0.1
Sulfotep	3689-24-5	0.005	µg/L		<0.005	<0.005	<0.005	<0.005	<0.005
Sulprofos	35400-43-2	0.05	µg/L		<0.05	<0.05	<0.05	<0.05	<0.05

Analytical Results

Sub-Matrix: WATER (Matrix: WATER)				Sample ID	HINDS	HINUS	KEMDS	KEMUS	ROPDS
				Sampling date / time	06-Jun-2023 00:00	06-Jun-2023 00:00	06-Jun-2023 00:00	06-Jun-2023 00:00	06-Jun-2023 00:00
Compound	CAS Number	LOR	Unit		ES2319028-006	ES2319028-007	ES2319028-008	ES2319028-009	ES2319028-010
					Result	Result	Result	Result	Result
EP234A: OP Pesticides - Continued									
Temephos	3383-96-8	0.02	µg/L		<0.02	<0.02	<0.02	<0.02	<0.02
Terbufos	13071-79-9	0.01	µg/L		<0.01	<0.01	<0.01	<0.01	<0.01
Tetrachlorvinphos	22248-79-9	0.01	µg/L		<0.01	<0.01	<0.01	<0.01	<0.01
Thiometon	640-15-3	0.5	µg/L		<0.5	<0.5	<0.5	<0.5	<0.5
Triazophos	24017-47-8	0.005	µg/L		<0.005	<0.005	<0.005	<0.005	<0.005
Trichlorfon	52-68-6	0.02	µg/L		<0.02	<0.02	<0.02	<0.02	<0.02
Trichloronate	327-98-0	0.5	µg/L		<0.5	<0.5	<0.5	<0.5	<0.5
EP074S: VOC Surrogates									
1.2-Dichloroethane-D4	17060-07-0	5	%		**102**	**118**	**119**	**116**	**127**
Toluene-D8	2037-26-5	5	%		**105**	**124**	**121**	**117**	**129**
4-Bromofluorobenzene	460-00-4	5	%		**97.6**	**116**	**115**	**109**	**118**
EP075(SIM)S: Phenolic Compound Surrogates									
Phenol-d6	13127-88-3	1.0	%		**22.6**	**19.3**	**24.3**	**22.3**	**25.5**
2-Chlorophenol-D4	93951-73-6	1.0	%		**47.9**	**34.7**	**51.8**	**47.8**	**52.0**
2.4.6-Tribromophenol	118-79-6	1.0	%		**40.4**	**36.3**	**52.6**	**42.5**	**46.4**
EP075(SIM)T: PAH Surrogates									
2-Fluorobiphenyl	321-60-8	1.0	%		**61.0**	**53.4**	**63.4**	**59.2**	**65.4**
Anthracene-d10	1719-06-8	1.0	%		**76.6**	**65.6**	**74.7**	**70.3**	**79.0**
4-Terphenyl-d14	1718-51-0	1.0	%		**77.6**	**65.9**	**76.6**	**70.6**	**82.0**
EP080S: TPH(V)/BTEX Surrogates									
1.2-Dichloroethane-D4	17060-07-0	2	%		**97.7**	**114**	**115**	**111**	**122**
Toluene-D8	2037-26-5	2	%		**90.7**	**107**	**105**	**101**	**112**
4-Bromofluorobenzene	460-00-4	2	%		**90.6**	**105**	**104**	**100**	**109**

Analytical Results

Sub-Matrix: WATER (Matrix: WATER)			Sample ID	ROPUS	SOUDS	SOUUS	SWDUP1	----
			Sampling date / time	06-Jun-2023 00:00	06-Jun-2023 00:00	06-Jun-2023 00:00	06-Jun-2023 00:00	----
Compound	CAS Number	LOR	Unit	ES2319028-011	ES2319028-012	ES2319028-013	ES2319028-014	--------
				Result	Result	Result	Result	----
EA015: Total Dissolved Solids dried at 180 ± 5 °C								
Total Dissolved Solids @180°C	----	10	mg/L	**156**	**558**	**530**	**----**	**----**
EA025: Total Suspended Solids dried at 104 ± 2°C								
Suspended Solids (SS)	----	5	mg/L	**43**	**18**	**14**	**----**	**----**
EG020T: Total Metals by ICP-MS								
Arsenic	7440-38-2	0.001	mg/L	**0.002**	<0.001	<0.001	<0.001	**----**
Cadmium	7440-43-9	0.0001	mg/L	<0.0001	<0.0001	<0.0001	<0.0001	**----**
Chromium	7440-47-3	0.001	mg/L	**0.007**	<0.001	<0.001	<0.001	**----**
Copper	7440-50-8	0.001	mg/L	**0.009**	**0.003**	**0.002**	**0.002**	**----**
Nickel	7440-02-0	0.001	mg/L	**0.006**	**0.002**	**0.003**	**0.003**	**----**
Lead	7439-92-1	0.001	mg/L	**0.007**	<0.001	<0.001	<0.001	**----**
Zinc	7440-66-6	0.005	mg/L	**0.022**	**0.020**	**0.015**	**0.016**	**----**
Manganese	7439-96-5	0.001	mg/L	**0.495**	**0.058**	**0.115**	**----**	**----**
Iron	7439-89-6	0.05	mg/L	**8.31**	**0.71**	**0.83**	**----**	**----**
EG035T: Total Recoverable Mercury by FIMS								
Mercury	7439-97-6	0.0001	mg/L	<0.0001	<0.0001	<0.0001	<0.0001	**----**
EK055G: Ammonia as N by Discrete Analyser								
Ammonia as N	7664-41-7	0.01	mg/L	**0.05**	**0.02**	**0.02**	**----**	**----**
EK057G: Nitrite as N by Discrete Analyser								
Nitrite as N	14797-65-0	0.01	mg/L	<0.01	<0.01	<0.01	**----**	**----**
EK058G: Nitrate as N by Discrete Analyser								
Nitrate as N	14797-55-8	0.01	mg/L	<0.01	**2.05**	**1.98**	**----**	**----**
EK059G: Nitrite plus Nitrate as N (NOx) by Discrete Analyser								
Nitrite + Nitrate as N	----	0.01	mg/L	<0.01	**2.05**	**1.98**	**----**	**----**
EK061G: Total Kjeldahl Nitrogen By Discrete Analyser								
Total Kjeldahl Nitrogen as N	----	0.1	mg/L	**2.6**	**1.0**	**1.0**	**----**	**----**
EK062G: Total Nitrogen as N (TKN + NOx) by Discrete Analyser								
^ Total Nitrogen as N	----	0.1	mg/L	**2.6**	**3.0**	**3.0**	**----**	**----**
EK067G: Total Phosphorus as P by Discrete Analyser								
Total Phosphorus as P	----	0.01	mg/L	**0.29**	**0.11**	**0.13**	**----**	**----**
EK071G: Reactive Phosphorus as P by discrete analyser								
Reactive Phosphorus as P	14265-44-2	0.01	mg/L	<0.01	**0.05**	**0.05**	**----**	**----**
EP008: Chlorophyll a & Pheophytin a								
Chlorophyll a	----	1	mg/m³	**50**	**12**	**15**	**----**	**----**

Analytical Results

Sub-Matrix: WATER (Matrix: WATER)			Sample ID	ROPUS	SOUDS	SOUUS	SWDUP1	----
			Sampling date / time	06-Jun-2023 00:00	06-Jun-2023 00:00	06-Jun-2023 00:00	06-Jun-2023 00:00	----
Compound	CAS Number	LOR	Unit	ES2319028-011	ES2319028-012	ES2319028-013	ES2319028-014	--------
				Result	Result	Result	Result	----
EP020: Oil and Grease (O&G)								
Oil & Grease	----	5	mg/L	<5	<5	<5	----	----
EP074D: Fumigants								
2.2-Dichloropropane	594-20-7	5	µg/L	<5	<5	<5	----	----
1.2-Dichloropropane	78-87-5	5	µg/L	<5	<5	<5	----	----
cis-1.3-Dichloropropylene	10061-01-5	5	µg/L	<5	<5	<5	----	----
trans-1.3-Dichloropropylene	10061-02-6	5	µg/L	<5	<5	<5	----	----
1.2-Dibromoethane (EDB)	106-93-4	5	µg/L	<5	<5	<5	----	----
EP074E: Halogenated Aliphatic Compounds								
Dichlorodifluoromethane	75-71-8	50	µg/L	<50	<50	<50	----	----
Chloromethane	74-87-3	50	µg/L	<50	<50	<50	----	----
Vinyl chloride	75-01-4	50	µg/L	<50	<50	<50	----	----
Bromomethane	74-83-9	50	µg/L	<50	<50	<50	----	----
Chloroethane	75-00-3	50	µg/L	<50	<50	<50	----	----
Trichlorofluoromethane	75-69-4	50	µg/L	<50	<50	<50	----	----
1.1-Dichloroethene	75-35-4	5	µg/L	<5	<5	<5	----	----
Iodomethane	74-88-4	5	µg/L	<5	<5	<5	----	----
trans-1.2-Dichloroethene	156-60-5	5	µg/L	<5	<5	<5	----	----
1.1-Dichloroethane	75-34-3	5	µg/L	<5	<5	<5	----	----
cis-1.2-Dichloroethene	156-59-2	5	µg/L	<5	<5	<5	----	----
1.1.1-Trichloroethane	71-55-6	5	µg/L	<5	<5	<5	----	----
1.1-Dichloropropylene	563-58-6	5	µg/L	<5	<5	<5	----	----
Carbon Tetrachloride	56-23-5	5	µg/L	<5	<5	<5	----	----
1.2-Dichloroethane	107-06-2	5	µg/L	<5	<5	<5	----	----
Trichloroethene	79-01-6	5	µg/L	<5	<5	<5	----	----
Dibromomethane	74-95-3	5	µg/L	<5	<5	<5	----	----
1.1.2-Trichloroethane	79-00-5	5	µg/L	<5	<5	<5	----	----
1.3-Dichloropropane	142-28-9	5	µg/L	<5	<5	<5	----	----
Tetrachloroethene	127-18-4	5	µg/L	<5	<5	<5	----	----
1.1.1.2-Tetrachloroethane	630-20-6	5	µg/L	<5	<5	<5	----	----
trans-1.4-Dichloro-2-butene	110-57-6	5	µg/L	<5	<5	<5	----	----
cis-1.4-Dichloro-2-butene	1476-11-5	5	µg/L	<5	<5	<5	----	----
1.1.2.2-Tetrachloroethane	79-34-5	5	µg/L	<5	<5	<5	----	----
1.2.3-Trichloropropane	96-18-4	5	µg/L	<5	<5	<5	----	----
Pentachloroethane	76-01-7	5	µg/L	<5	<5	<5	----	----

Analytical Results

Sub-Matrix: WATER (Matrix: WATER)				Sample ID	ROPUS	SOUDS	SOUUS	SWDUP1	----
				Sampling date / time	06-Jun-2023 00:00	06-Jun-2023 00:00	06-Jun-2023 00:00	06-Jun-2023 00:00	----
Compound	CAS Number	LOR	Unit		ES2319028-011	ES2319028-012	ES2319028-013	ES2319028-014	--------
					Result	Result	Result	Result	----
EP074E: Halogenated Aliphatic Compounds - Continued									
1.2-Dibromo-3-chloropropane	96-12-8	5	µg/L		<5	<5	<5	----	----
Hexachlorobutadiene	87-68-3	5	µg/L		<5	<5	<5	----	----
EP074F: Halogenated Aromatic Compounds									
Chlorobenzene	108-90-7	5	µg/L		<5	<5	<5	----	----
Bromobenzene	108-86-1	5	µg/L		<5	<5	<5	----	----
2-Chlorotoluene	95-49-8	5	µg/L		<5	<5	<5	----	----
4-Chlorotoluene	106-43-4	5	µg/L		<5	<5	<5	----	----
1.3-Dichlorobenzene	541-73-1	5	µg/L		<5	<5	<5	----	----
1.4-Dichlorobenzene	106-46-7	5	µg/L		<5	<5	<5	----	----
1.2-Dichlorobenzene	95-50-1	5	µg/L		<5	<5	<5	----	----
1.2.4-Trichlorobenzene	120-82-1	5	µg/L		<5	<5	<5	----	----
1.2.3-Trichlorobenzene	87-61-6	5	µg/L		<5	<5	<5	----	----
EP074G: Trihalomethanes									
Chloroform	67-66-3	5	µg/L		<5	<5	<5	----	----
Bromodichloromethane	75-27-4	5	µg/L		<5	<5	<5	----	----
Dibromochloromethane	124-48-1	5	µg/L		<5	<5	<5	----	----
Bromoform	75-25-2	5	µg/L		<5	<5	<5	----	----
EP075(SIM)A: Phenolic Compounds									
Phenol	108-95-2	1.0	µg/L		<1.0	<1.0	<1.0	----	----
2-Chlorophenol	95-57-8	1.0	µg/L		<1.0	<1.0	<1.0	----	----
2-Methylphenol	95-48-7	1.0	µg/L		<1.0	<1.0	<1.0	----	----
3- & 4-Methylphenol	1319-77-3	2.0	µg/L		<2.0	<2.0	<2.0	----	----
2-Nitrophenol	88-75-5	1.0	µg/L		<1.0	<1.0	<1.0	----	----
2.4-Dimethylphenol	105-67-9	1.0	µg/L		<1.0	<1.0	<1.0	----	----
2.4-Dichlorophenol	120-83-2	1.0	µg/L		<1.0	<1.0	<1.0	----	----
2.6-Dichlorophenol	87-65-0	1.0	µg/L		<1.0	<1.0	<1.0	----	----
4-Chloro-3-methylphenol	59-50-7	1.0	µg/L		<1.0	<1.0	<1.0	----	----
2.4.6-Trichlorophenol	88-06-2	1.0	µg/L		<1.0	<1.0	<1.0	----	----
2.4.5-Trichlorophenol	95-95-4	1.0	µg/L		<1.0	<1.0	<1.0	----	----
Pentachlorophenol	87-86-5	2.0	µg/L		<2.0	<2.0	<2.0	----	----
EP075(SIM)B: Polynuclear Aromatic Hydrocarbons									
Naphthalene	91-20-3	1.0	µg/L		<1.0	<1.0	<1.0	----	----
Acenaphthylene	208-96-8	1.0	µg/L		<1.0	<1.0	<1.0	----	----
Acenaphthene	83-32-9	1.0	µg/L		<1.0	<1.0	<1.0	----	----

Analytical Results

Sub-Matrix: WATER (Matrix: WATER)				Sample ID	ROPUS	SOUDS	SOUUS	SWDUP1	----
				Sampling date / time	06-Jun-2023 00:00	06-Jun-2023 00:00	06-Jun-2023 00:00	06-Jun-2023 00:00	----
Compound	CAS Number	LOR	Unit		ES2319028-011	ES2319028-012	ES2319028-013	ES2319028-014	--------
					Result	Result	Result	Result	----
EP075(SIM)B: Polynuclear Aromatic Hydrocarbons - Continued									
Fluorene	86-73-7	1.0	µg/L		<1.0	<1.0	<1.0	----	----
Phenanthrene	85-01-8	1.0	µg/L		<1.0	<1.0	<1.0	----	----
Anthracene	120-12-7	1.0	µg/L		<1.0	<1.0	<1.0	----	----
Fluoranthene	206-44-0	1.0	µg/L		<1.0	<1.0	<1.0	----	----
Pyrene	129-00-0	1.0	µg/L		<1.0	<1.0	<1.0	----	----
Benz(a)anthracene	56-55-3	1.0	µg/L		<1.0	<1.0	<1.0	----	----
Chrysene	218-01-9	1.0	µg/L		<1.0	<1.0	<1.0	----	----
Benzo(b+j)fluoranthene	205-99-2 205-82-3	1.0	µg/L		<1.0	<1.0	<1.0	----	----
Benzo(k)fluoranthene	207-08-9	1.0	µg/L		<1.0	<1.0	<1.0	----	----
Benzo(a)pyrene	50-32-8	0.5	µg/L		<0.5	<0.5	<0.5	----	----
Indeno(1.2.3.cd)pyrene	193-39-5	1.0	µg/L		<1.0	<1.0	<1.0	----	----
Dibenz(a.h)anthracene	53-70-3	1.0	µg/L		<1.0	<1.0	<1.0	----	----
Benzo(g.h.i)perylene	191-24-2	1.0	µg/L		<1.0	<1.0	<1.0	----	----
^ **Sum of polycyclic aromatic hydrocarbons**	----	0.5	µg/L		<0.5	<0.5	<0.5	----	----
^ **Benzo(a)pyrene TEQ (zero)**	----	0.5	µg/L		<0.5	<0.5	<0.5	----	----
EP080: BTEXN									
Benzene	71-43-2	1	µg/L		<1	<1	<1	----	----
Toluene	108-88-3	2	µg/L		<2	<2	<2	----	----
Ethylbenzene	100-41-4	2	µg/L		<2	<2	<2	----	----
meta- & para-Xylene	108-38-3 106-42-3	2	µg/L		<2	<2	<2	----	----
ortho-Xylene	95-47-6	2	µg/L		<2	<2	<2	----	----
^ **Total Xylenes**	----	2	µg/L		<2	<2	<2	----	----
^ **Sum of BTEX**	----	1	µg/L		<1	<1	<1	----	----
Naphthalene	91-20-3	5	µg/L		<5	<5	<5	----	----
EP234A: OP Pesticides									
Acephate	30560-19-1	0.5	µg/L		<0.5	<0.5	----	----	----
Azinphos-methyl	86-50-0	0.02	µg/L		<0.02	<0.02	----	----	----
Azinphos-ethyl	2642-71-9	0.02	µg/L		<0.02	<0.02	----	----	----
Bensulide	741-58-2	0.1	µg/L		<0.1	<0.1	----	----	----
Bromophos-ethyl	4824-78-6	0.10	µg/L		<0.10	<0.10	----	----	----
Carbofenothion	786-19-6	0.02	µg/L		<0.02	<0.02	----	----	----
Chlorfenvinphos	470-90-6	0.02	µg/L		<0.02	<0.02	----	----	----
Chlorpyrifos	2921-88-2	0.02	µg/L		<0.02	<0.02	----	----	----
Chlorpyrifos-methyl	5598-13-0	0.2	µg/L		<0.2	<0.2	----	----	----

Analytical Results

Sub-Matrix: WATER (Matrix: WATER)				Sample ID	ROPUS	SOUDS	SOUUS	SWDUP1	----
				Sampling date / time	06-Jun-2023 00:00	06-Jun-2023 00:00	06-Jun-2023 00:00	06-Jun-2023 00:00	----
Compound	CAS Number	LOR	Unit		ES2319028-011	ES2319028-012	ES2319028-013	ES2319028-014	--------
					Result	Result	Result	Result	----
EP234A: OP Pesticides - Continued									
Coumaphos	56-72-4	0.01	µg/L		<0.01	<0.01	----	----	----
Demeton-O	298-03-3	0.02	µg/L		<0.02	<0.02	----	----	----
Demeton-O & Demeton-S	298-03-3/126-75-0	0.02	µg/L		<0.02	<0.02	----	----	----
Demeton-S	126-75-0	0.02	µg/L		<0.02	<0.02	----	----	----
Demeton-S-methyl	919-86-8	0.02	µg/L		<0.02	<0.02	----	----	----
Diazinon	333-41-5	0.01	µg/L		<0.01	<0.01	----	----	----
Dichlorvos	62-73-7	0.20	µg/L		<0.20	<0.20	----	----	----
Dimethoate	60-51-5	0.02	µg/L		<0.02	<0.02	----	----	----
Disulfoton	298-04-4	0.05	µg/L		<0.05	<0.05	----	----	----
EPN	2104-64-5	0.05	µg/L		<0.05	<0.05	----	----	----
Ethion	563-12-2	0.02	µg/L		<0.02	<0.02	----	----	----
Ethoprophos	13194-48-4	0.01	µg/L		<0.01	<0.01	----	----	----
Fenamiphos	22224-92-6	0.01	µg/L		<0.01	<0.01	----	----	----
Fenchlorphos (Ronnel)	299-84-3	10	µg/L		<10	<10	----	----	----
Fenitrothion	122-14-5	2	µg/L		<2	<2	----	----	----
Fensulfothion	115-90-2	0.01	µg/L		<0.01	<0.01	----	----	----
Fenthion	55-38-9	0.05	µg/L		<0.05	<0.05	----	----	----
Formothion	2540-82-1	20	µg/L		<20	<20	----	----	----
Fosetyl Aluminium	39148-24-8	10	µg/L		<10	<10	----	----	----
Malathion	121-75-5	0.02	µg/L		<0.02	<0.02	----	----	----
Methidathion	950-37-8	0.1	µg/L		<0.1	<0.1	----	----	----
Mevinphos	7786-34-7	0.02	µg/L		<0.02	<0.02	----	----	----
Monocrotophos	6923-22-4	0.02	µg/L		<0.02	<0.02	----	----	----
Naftalofos	1491-41-4	1.0	µg/L		<1.0	<1.0	----	----	----
Omethoate	1113-02-6	0.01	µg/L		<0.01	<0.01	----	----	----
Parathion	56-38-2	0.2	µg/L		<0.2	<0.2	----	----	----
Parathion-methyl	298-00-0	0.5	µg/L		<0.5	<0.5	----	----	----
Phorate	298-02-2	0.1	µg/L		<0.1	<0.1	----	----	----
Pirimiphos-ethyl	23505-41-1	0.01	µg/L		<0.01	<0.01	----	----	----
Pirimiphos-methyl	29232-93-7	0.01	µg/L		<0.01	<0.01	----	----	----
Profenofos	41198-08-7	0.01	µg/L		<0.01	<0.01	----	----	----
Prothiofos	34643-46-4	0.1	µg/L		<0.1	<0.1	----	----	----
Pyrazophos	13457-18-6	0.1	µg/L		<0.1	<0.1	----	----	----
Sulfotep	3689-24-5	0.005	µg/L		<0.005	<0.005	----	----	----
Sulprofos	35400-43-2	0.05	µg/L		<0.05	<0.05	----	----	----

Analytical Results

Sub-Matrix: WATER (Matrix: WATER)				Sample ID	ROPUS	SOUDS	SOUUS	SWDUP1	----
				Sampling date / time	06-Jun-2023 00:00	06-Jun-2023 00:00	06-Jun-2023 00:00	06-Jun-2023 00:00	----
Compound	CAS Number	LOR	Unit		ES2319028-011	ES2319028-012	ES2319028-013	ES2319028-014	--------
					Result	Result	Result	Result	----
EP234A: OP Pesticides - Continued									
Temephos	3383-96-8	0.02	µg/L		<0.02	<0.02	----	----	----
Terbufos	13071-79-9	0.01	µg/L		<0.01	<0.01	----	----	----
Tetrachlorvinphos	22248-79-9	0.01	µg/L		<0.01	<0.01	----	----	----
Thiometon	640-15-3	0.5	µg/L		<0.5	<0.5	----	----	----
Triazophos	24017-47-8	0.005	µg/L		<0.005	<0.005	----	----	----
Trichlorfon	52-68-6	0.02	µg/L		<0.02	<0.02	----	----	----
Trichloronate	327-98-0	0.5	µg/L		<0.5	<0.5	----	----	----
EP074S: VOC Surrogates									
1.2-Dichloroethane-D4	17060-07-0	5	%		**96.3**	**118**	**116**	----	----
Toluene-D8	2037-26-5	5	%		**100**	**121**	**118**	----	----
4-Bromofluorobenzene	460-00-4	5	%		**91.3**	**112**	**111**	----	----
EP075(SIM)S: Phenolic Compound Surrogates									
Phenol-d6	13127-88-3	1.0	%		**22.3**	**19.9**	**17.8**	----	----
2-Chlorophenol-D4	93951-73-6	1.0	%		**47.4**	**41.8**	**39.4**	----	----
2.4.6-Tribromophenol	118-79-6	1.0	%		**51.6**	**36.7**	**40.6**	----	----
EP075(SIM)T: PAH Surrogates									
2-Fluorobiphenyl	321-60-8	1.0	%		**58.3**	**52.4**	**50.0**	----	----
Anthracene-d10	1719-06-8	1.0	%		**70.8**	**63.3**	**59.0**	----	----
4-Terphenyl-d14	1718-51-0	1.0	%		**72.5**	**63.6**	**57.3**	----	----
EP080S: TPH(V)/BTEX Surrogates									
1.2-Dichloroethane-D4	17060-07-0	2	%		**92.4**	**114**	**112**	----	----
Toluene-D8	2037-26-5	2	%		**86.7**	**105**	**102**	----	----
4-Bromofluorobenzene	460-00-4	2	%		**84.8**	**102**	**101**	----	----

Surrogate Control Limits

Sub-Matrix: WATER		Recovery Limits (%)	
Compound	*CAS Number*	*Low*	*High*
EP074S: VOC Surrogates			
1.2-Dichloroethane-D4	17060-07-0	78	133
Toluene-D8	2037-26-5	79	129
4-Bromofluorobenzene	460-00-4	81	124
EP075(SIM)S: Phenolic Compound Surrogates			
Phenol-d6	13127-88-3	10	44
2-Chlorophenol-D4	93951-73-6	14	94
2.4.6-Tribromophenol	118-79-6	17	125
EP075(SIM)T: PAH Surrogates			
2-Fluorobiphenyl	321-60-8	20	104
Anthracene-d10	1719-06-8	27	113
4-Terphenyl-d14	1718-51-0	32	112
EP080S: TPH(V)/BTEX Surrogates			
1.2-Dichloroethane-D4	17060-07-0	72	143
Toluene-D8	2037-26-5	75	131
4-Bromofluorobenzene	460-00-4	73	137

QUALITY CONTROL REPORT

Work Order	: **ES2319028**	Page	: 1 of 25
Client	: **GHD PTY LTD**	Laboratory	: Environmental Division Sydney
Contact	: MR HENRY LUO	Contact	: Sarah Mathew
Address	: LEVEL 15, 133 CASTLEREAGH STREET SYDNEY NSW, AUSTRALIA 2000	Address	: 277-289 Woodpark Road Smithfield NSW Australia 2164
Telephone	: +61 02 9239 7100	Telephone	: +61-2-8784 8555
Project	: 12554717	Date Samples Received	: 07-Jun-2023
Order number	: 12554717	Date Analysis Commenced	: 07-Jun-2023
C-O-C number	: ----	Issue Date	: 15-Jun-2023
Sampler	: EMILY SMITH		
Site	: ----		
Quote number	: SY/322/21		
No. of samples received	: 14		
No. of samples analysed	: 14		

Accreditation No. 825
Accredited for compliance with
ISO/IEC 17025 - Testing

This report supersedes any previous report(s) with this reference. Results apply to the sample(s) as submitted, unless the sampling was conducted by ALS. This document shall not be reproduced, except in full.

This Quality Control Report contains the following information:

- Laboratory Duplicate (DUP) Report; Relative Percentage Difference (RPD) and Acceptance Limits
- Method Blank (MB) and Laboratory Control Spike (LCS) Report; Recovery and Acceptance Limits
- Matrix Spike (MS) Report; Recovery and Acceptance Limits

Signatories

This document has been electronically signed by the authorized signatories below. Electronic signing is carried out in compliance with procedures specified in 21 CFR Part 11.

Signatories	*Position*	*Accreditation Category*
Ankit Joshi	Senior Chemist - Inorganics	Sydney Inorganics, Smithfield, NSW
Edwandy Fadjar	Organic Coordinator	Sydney Organics, Smithfield, NSW
Franco Lentini	LCMS Coordinator	Sydney Organics, Smithfield, NSW
Sanjeshni Jyoti	Senior Chemist Volatiles	Sydney Organics, Smithfield, NSW

General Comments

The analytical procedures used by ALS have been developed from established internationally recognised procedures such as those published by the USEPA, APHA, AS and NEPM. In house developed procedures are fully validated and are often at the client request.

Where moisture determination has been performed, results are reported on a dry weight basis.

Where a reported less than (<) result is higher than the LOR, this may be due to primary sample extract/digestate dilution and/or insufficient sample for analysis. Where the LOR of a reported result differs from standard LOR, this may be due to high moisture content, insufficient sample (reduced weight employed) or matrix interference.

Key : Anonymous = Refers to samples which are not specifically part of this work order but formed part of the QC process lot
CAS Number = CAS registry number from database maintained by Chemical Abstracts Services. The Chemical Abstracts Service is a division of the American Chemical Society.
LOR = Limit of reporting
RPD = Relative Percentage Difference
# = Indicates failed QC

Laboratory Duplicate (DUP) Report

The quality control term Laboratory Duplicate refers to a randomly selected intralaboratory split. Laboratory duplicates provide information regarding method precision and sample heterogeneity. The permitted ranges for the Relative Percent Deviation (RPD) of Laboratory Duplicates are specified in ALS Method QWI-EN/38 and are dependent on the magnitude of results in comparison to the level of reporting: Result < 10 times LOR: No Limit; Result between 10 and 20 times LOR: 0% - 50%; Result > 20 times LOR: 0% - 20%.

Sub-Matrix: **WATER**

				Laboratory Duplicate (DUP) Report					
Laboratory sample ID	*Sample ID*	*Method: Compound*	*CAS Number*	*LOR*	*Unit*	*Original Result*	*Duplicate Result*	*RPD (%)*	*Acceptable RPD (%)*
EA015: Total Dissolved Solids dried at 180 ± 5 °C (QC Lot: 5103384)									
ES2318784-001	Anonymous	EA015H: Total Dissolved Solids @180°C	----	10	mg/L	34200	36500	6.4	0% - 20%
ES2318962-008	Anonymous	EA015H: Total Dissolved Solids @180°C	----	10	mg/L	286	282	1.2	0% - 20%
ES2318995-020	Anonymous	EA015H: Total Dissolved Solids @180°C	----	10	mg/L	2870	2830	1.2	0% - 20%
ES2319028-006	HINDS	EA015H: Total Dissolved Solids @180°C	----	10	mg/L	244	262	7.5	0% - 20%
EA015: Total Dissolved Solids dried at 180 ± 5 °C (QC Lot: 5106786)									
ES2319028-001	BADDS	EA015H: Total Dissolved Solids @180°C	----	10	mg/L	796	806	1.2	0% - 20%
ES2319212-005	Anonymous	EA015H: Total Dissolved Solids @180°C	----	10	mg/L	84	85	0.0	No Limit
ES2319215-006	Anonymous	EA015H: Total Dissolved Solids @180°C	----	10	mg/L	73	69	6.0	No Limit
ES2319450-004	Anonymous	EA015H: Total Dissolved Solids @180°C	----	10	mg/L	80	86	7.0	No Limit
EA025: Total Suspended Solids dried at 104 ± 2°C (QC Lot: 5103385)									
ES2318784-001	Anonymous	EA025H: Suspended Solids (SS)	----	5	mg/L	176	158	11.4	0% - 20%
ES2318962-008	Anonymous	EA025H: Suspended Solids (SS)	----	5	mg/L	<5	<5	0.0	No Limit
ES2318995-020	Anonymous	EA025H: Suspended Solids (SS)	----	5	mg/L	10	10	0.0	No Limit
ES2319028-006	HINDS	EA025H: Suspended Solids (SS)	----	5	mg/L	7	10	38.8	No Limit
EA025: Total Suspended Solids dried at 104 ± 2°C (QC Lot: 5106787)									
ES2319028-001	BADDS	EA025H: Suspended Solids (SS)	----	5	mg/L	32	26	18.0	No Limit
ES2319212-005	Anonymous	EA025H: Suspended Solids (SS)	----	5	mg/L	<5	<5	0.0	No Limit
ES2319215-006	Anonymous	EA025H: Suspended Solids (SS)	----	5	mg/L	<5	<5	0.0	No Limit
ES2319450-004	Anonymous	EA025H: Suspended Solids (SS)	----	5	mg/L	9	10	15.8	No Limit
EG020T: Total Metals by ICP-MS (QC Lot: 5101704)									
ES2319028-001	BADDS	EG020A-T: Cadmium	7440-43-9	0.0001	mg/L	<0.0001	<0.0001	0.0	No Limit
		EG020A-T: Arsenic	7440-38-2	0.001	mg/L	<0.001	<0.001	0.0	No Limit
		EG020A-T: Chromium	7440-47-3	0.001	mg/L	0.001	0.001	0.0	No Limit

Sub-Matrix: **WATER**

				Laboratory Duplicate (DUP) Report					
Laboratory sample ID	*Sample ID*	*Method: Compound*	*CAS Number*	*LOR*	*Unit*	*Original Result*	*Duplicate Result*	*RPD (%)*	*Acceptable RPD (%)*
EG020T: Total Metals by ICP-MS (QC Lot: 5101704) - continued									
ES2319028-001	BADDS	EG020A-T: Copper	7440-50-8	0.001	mg/L	0.002	0.003	0.0	No Limit
		EG020A-T: Lead	7439-92-1	0.001	mg/L	<0.001	<0.001	0.0	No Limit
		EG020A-T: Manganese	7439-96-5	0.001	mg/L	0.160	0.167	3.8	0% - 20%
		EG020A-T: Nickel	7440-02-0	0.001	mg/L	0.002	0.002	0.0	No Limit
		EG020A-T: Zinc	7440-66-6	0.005	mg/L	0.029	0.032	8.3	No Limit
		EG020A-T: Iron	7439-89-6	0.05	mg/L	1.40	1.46	4.4	0% - 20%
ES2319028-011	ROPUS	EG020A-T: Cadmium	7440-43-9	0.0001	mg/L	<0.0001	<0.0001	0.0	No Limit
		EG020A-T: Arsenic	7440-38-2	0.001	mg/L	0.002	0.002	0.0	No Limit
		EG020A-T: Chromium	7440-47-3	0.001	mg/L	0.007	0.008	0.0	No Limit
		EG020A-T: Copper	7440-50-8	0.001	mg/L	0.009	0.009	0.0	No Limit
		EG020A-T: Lead	7439-92-1	0.001	mg/L	0.007	0.008	0.0	No Limit
		EG020A-T: Manganese	7439-96-5	0.001	mg/L	0.495	0.521	5.1	0% - 20%
		EG020A-T: Nickel	7440-02-0	0.001	mg/L	0.006	0.007	0.0	No Limit
		EG020A-T: Zinc	7440-66-6	0.005	mg/L	0.022	0.024	5.2	No Limit
		EG020A-T: Iron	7439-89-6	0.05	mg/L	8.31	9.05	8.5	0% - 20%
EG035T: Total Recoverable Mercury by FIMS (QC Lot: 5101135)									
ES2318881-001	Anonymous	EG035T: Mercury	7439-97-6	0.0001	mg/L	<0.0001	<0.0001	0.0	No Limit
ES2319028-010	ROPDS	EG035T: Mercury	7439-97-6	0.0001	mg/L	<0.0001	<0.0001	0.0	No Limit
EK055G: Ammonia as N by Discrete Analyser (QC Lot: 5106626)									
ES2319027-001	Anonymous	EK055G: Ammonia as N	7664-41-7	0.01	mg/L	1.10	1.09	0.0	0% - 20%
ES2319028-008	KEMDS	EK055G: Ammonia as N	7664-41-7	0.01	mg/L	0.10	0.11	0.0	0% - 50%
EK057G: Nitrite as N by Discrete Analyser (QC Lot: 5098296)									
ES2319028-008	KEMDS	EK057G: Nitrite as N	14797-65-0	0.01	mg/L	0.01	0.01	0.0	No Limit
ES2319027-001	Anonymous	EK057G: Nitrite as N	14797-65-0	0.01	mg/L	<0.01	<0.01	0.0	No Limit
EK059G: Nitrite plus Nitrate as N (NOx) by Discrete Analyser (QC Lot: 5106627)									
ES2319027-001	Anonymous	EK059G: Nitrite + Nitrate as N	----	0.01	mg/L	0.06	0.06	0.0	No Limit
ES2319028-008	KEMDS	EK059G: Nitrite + Nitrate as N	----	0.01	mg/L	4.75	4.74	0.0	0% - 20%
EK061G: Total Kjeldahl Nitrogen By Discrete Analyser (QC Lot: 5106622)									
ES2318998-001	Anonymous	EK061G: Total Kjeldahl Nitrogen as N	----	0.1	mg/L	6.5	6.6	2.1	No Limit
ES2319028-008	KEMDS	EK061G: Total Kjeldahl Nitrogen as N	----	0.1	mg/L	1.3	1.3	0.0	0% - 50%
EK067G: Total Phosphorus as P by Discrete Analyser (QC Lot: 5106623)									
ES2318998-001	Anonymous	EK067G: Total Phosphorus as P	----	0.01	mg/L	1.27	1.30	2.3	0% - 50%
ES2319028-008	KEMDS	EK067G: Total Phosphorus as P	----	0.01	mg/L	0.70	0.72	2.7	0% - 20%
EK071G: Reactive Phosphorus as P by discrete analyser (QC Lot: 5098297)									
ES2319028-008	KEMDS	EK071G: Reactive Phosphorus as P	14265-44-2	0.01	mg/L	0.43	0.44	3.2	0% - 20%
ES2319027-001	Anonymous	EK071G: Reactive Phosphorus as P	14265-44-2	0.01	mg/L	<0.01	<0.01	0.0	No Limit
EP074D: Fumigants (QC Lot: 5099381)									
ES2319028-001	BADDS	EP074: 2.2-Dichloropropane	594-20-7	5	µg/L	<5	<5	0.0	No Limit

Sub-Matrix: **WATER**

				Laboratory Duplicate (DUP) Report					
Laboratory sample ID	*Sample ID*	*Method: Compound*	*CAS Number*	*LOR*	*Unit*	*Original Result*	*Duplicate Result*	*RPD (%)*	*Acceptable RPD (%)*
EP074D: Fumigants (QC Lot: 5099381) - continued									
ES2319028-001	BADDS	EP074: 1.2-Dichloropropane	78-87-5	5	µg/L	<5	<5	0.0	No Limit
		EP074: cis-1.3-Dichloropropylene	10061-01-5	5	µg/L	<5	<5	0.0	No Limit
		EP074: trans-1.3-Dichloropropylene	10061-02-6	5	µg/L	<5	<5	0.0	No Limit
		EP074: 1.2-Dibromoethane (EDB)	106-93-4	5	µg/L	<5	<5	0.0	No Limit
ES2319028-005	COSUS	EP074: 2.2-Dichloropropane	594-20-7	5	µg/L	<5	<5	0.0	No Limit
		EP074: 1.2-Dichloropropane	78-87-5	5	µg/L	<5	<5	0.0	No Limit
		EP074: cis-1.3-Dichloropropylene	10061-01-5	5	µg/L	<5	<5	0.0	No Limit
		EP074: trans-1.3-Dichloropropylene	10061-02-6	5	µg/L	<5	<5	0.0	No Limit
		EP074: 1.2-Dibromoethane (EDB)	106-93-4	5	µg/L	<5	<5	0.0	No Limit
EP074E: Halogenated Aliphatic Compounds (QC Lot: 5099381)									
ES2319028-001	BADDS	EP074: 1.1-Dichloroethene	75-35-4	5	µg/L	<5	<5	0.0	No Limit
		EP074: Iodomethane	74-88-4	5	µg/L	<5	<5	0.0	No Limit
		EP074: trans-1.2-Dichloroethene	156-60-5	5	µg/L	<5	<5	0.0	No Limit
		EP074: 1.1-Dichloroethane	75-34-3	5	µg/L	<5	<5	0.0	No Limit
		EP074: cis-1.2-Dichloroethene	156-59-2	5	µg/L	<5	<5	0.0	No Limit
		EP074: 1.1.1-Trichloroethane	71-55-6	5	µg/L	<5	<5	0.0	No Limit
		EP074: 1.1-Dichloropropylene	563-58-6	5	µg/L	<5	<5	0.0	No Limit
		EP074: Carbon Tetrachloride	56-23-5	5	µg/L	<5	<5	0.0	No Limit
		EP074: 1.2-Dichloroethane	107-06-2	5	µg/L	<5	<5	0.0	No Limit
		EP074: Trichloroethene	79-01-6	5	µg/L	<5	<5	0.0	No Limit
		EP074: Dibromomethane	74-95-3	5	µg/L	<5	<5	0.0	No Limit
		EP074: 1.1.2-Trichloroethane	79-00-5	5	µg/L	<5	<5	0.0	No Limit
		EP074: 1.3-Dichloropropane	142-28-9	5	µg/L	<5	<5	0.0	No Limit
		EP074: Tetrachloroethene	127-18-4	5	µg/L	<5	<5	0.0	No Limit
		EP074: 1.1.1.2-Tetrachloroethane	630-20-6	5	µg/L	<5	<5	0.0	No Limit
		EP074: trans-1.4-Dichloro-2-butene	110-57-6	5	µg/L	<5	<5	0.0	No Limit
		EP074: cis-1.4-Dichloro-2-butene	1476-11-5	5	µg/L	<5	<5	0.0	No Limit
		EP074: 1.1.2.2-Tetrachloroethane	79-34-5	5	µg/L	<5	<5	0.0	No Limit
		EP074: 1.2.3-Trichloropropane	96-18-4	5	µg/L	<5	<5	0.0	No Limit
		EP074: Pentachloroethane	76-01-7	5	µg/L	<5	<5	0.0	No Limit
		EP074: 1.2-Dibromo-3-chloropropane	96-12-8	5	µg/L	<5	<5	0.0	No Limit
		EP074: Hexachlorobutadiene	87-68-3	5	µg/L	<5	<5	0.0	No Limit
		EP074: Dichlorodifluoromethane	75-71-8	50	µg/L	<50	<50	0.0	No Limit
		EP074: Chloromethane	74-87-3	50	µg/L	<50	<50	0.0	No Limit
		EP074: Vinyl chloride	75-01-4	50	µg/L	<50	<50	0.0	No Limit
		EP074: Bromomethane	74-83-9	50	µg/L	<50	<50	0.0	No Limit
		EP074: Chloroethane	75-00-3	50	µg/L	<50	<50	0.0	No Limit
		EP074: Trichlorofluoromethane	75-69-4	50	µg/L	<50	<50	0.0	No Limit
ES2319028-005	COSUS	EP074: 1.1-Dichloroethene	75-35-4	5	µg/L	<5	<5	0.0	No Limit
		EP074: Iodomethane	74-88-4	5	µg/L	<5	<5	0.0	No Limit

Sub-Matrix: **WATER**

				Laboratory Duplicate (DUP) Report					
Laboratory sample ID	*Sample ID*	*Method: Compound*	*CAS Number*	*LOR*	*Unit*	*Original Result*	*Duplicate Result*	*RPD (%)*	*Acceptable RPD (%)*
EP074E: Halogenated Aliphatic Compounds (QC Lot: 5099381) - continued									
ES2319028-005	COSUS	EP074: trans-1.2-Dichloroethene	156-60-5	5	µg/L	<5	<5	0.0	No Limit
		EP074: 1.1-Dichloroethane	75-34-3	5	µg/L	<5	<5	0.0	No Limit
		EP074: cis-1.2-Dichloroethene	156-59-2	5	µg/L	<5	<5	0.0	No Limit
		EP074: 1.1.1-Trichloroethane	71-55-6	5	µg/L	<5	<5	0.0	No Limit
		EP074: 1.1-Dichloropropylene	563-58-6	5	µg/L	<5	<5	0.0	No Limit
		EP074: Carbon Tetrachloride	56-23-5	5	µg/L	<5	<5	0.0	No Limit
		EP074: 1.2-Dichloroethane	107-06-2	5	µg/L	<5	<5	0.0	No Limit
		EP074: Trichloroethene	79-01-6	5	µg/L	<5	<5	0.0	No Limit
		EP074: Dibromomethane	74-95-3	5	µg/L	<5	<5	0.0	No Limit
		EP074: 1.1.2-Trichloroethane	79-00-5	5	µg/L	<5	<5	0.0	No Limit
		EP074: 1.3-Dichloropropane	142-28-9	5	µg/L	<5	<5	0.0	No Limit
		EP074: Tetrachloroethene	127-18-4	5	µg/L	<5	<5	0.0	No Limit
		EP074: 1.1.1.2-Tetrachloroethane	630-20-6	5	µg/L	<5	<5	0.0	No Limit
		EP074: trans-1.4-Dichloro-2-butene	110-57-6	5	µg/L	<5	<5	0.0	No Limit
		EP074: cis-1.4-Dichloro-2-butene	1476-11-5	5	µg/L	<5	<5	0.0	No Limit
		EP074: 1.1.2.2-Tetrachloroethane	79-34-5	5	µg/L	<5	<5	0.0	No Limit
		EP074: 1.2.3-Trichloropropane	96-18-4	5	µg/L	<5	<5	0.0	No Limit
		EP074: Pentachloroethane	76-01-7	5	µg/L	<5	<5	0.0	No Limit
		EP074: 1.2-Dibromo-3-chloropropane	96-12-8	5	µg/L	<5	<5	0.0	No Limit
		EP074: Hexachlorobutadiene	87-68-3	5	µg/L	<5	<5	0.0	No Limit
		EP074: Dichlorodifluoromethane	75-71-8	50	µg/L	<50	<50	0.0	No Limit
		EP074: Chloromethane	74-87-3	50	µg/L	<50	<50	0.0	No Limit
		EP074: Vinyl chloride	75-01-4	50	µg/L	<50	<50	0.0	No Limit
		EP074: Bromomethane	74-83-9	50	µg/L	<50	<50	0.0	No Limit
		EP074: Chloroethane	75-00-3	50	µg/L	<50	<50	0.0	No Limit
		EP074: Trichlorofluoromethane	75-69-4	50	µg/L	<50	<50	0.0	No Limit
EP074F: Halogenated Aromatic Compounds (QC Lot: 5099381)									
ES2319028-001	BADDS	EP074: Chlorobenzene	108-90-7	5	µg/L	<5	<5	0.0	No Limit
		EP074: Bromobenzene	108-86-1	5	µg/L	<5	<5	0.0	No Limit
		EP074: 2-Chlorotoluene	95-49-8	5	µg/L	<5	<5	0.0	No Limit
		EP074: 4-Chlorotoluene	106-43-4	5	µg/L	<5	<5	0.0	No Limit
		EP074: 1.3-Dichlorobenzene	541-73-1	5	µg/L	<5	<5	0.0	No Limit
		EP074: 1.4-Dichlorobenzene	106-46-7	5	µg/L	<5	<5	0.0	No Limit
		EP074: 1.2-Dichlorobenzene	95-50-1	5	µg/L	<5	<5	0.0	No Limit
		EP074: 1.2.4-Trichlorobenzene	120-82-1	5	µg/L	<5	<5	0.0	No Limit
		EP074: 1.2.3-Trichlorobenzene	87-61-6	5	µg/L	<5	<5	0.0	No Limit
ES2319028-005	COSUS	EP074: Chlorobenzene	108-90-7	5	µg/L	<5	<5	0.0	No Limit
		EP074: Bromobenzene	108-86-1	5	µg/L	<5	<5	0.0	No Limit
		EP074: 2-Chlorotoluene	95-49-8	5	µg/L	<5	<5	0.0	No Limit
		EP074: 4-Chlorotoluene	106-43-4	5	µg/L	<5	<5	0.0	No Limit

Sub-Matrix: **WATER**

				Laboratory Duplicate (DUP) Report					
Laboratory sample ID	*Sample ID*	*Method: Compound*	*CAS Number*	*LOR*	*Unit*	*Original Result*	*Duplicate Result*	*RPD (%)*	*Acceptable RPD (%)*
EP074F: Halogenated Aromatic Compounds (QC Lot: 5099381) - continued									
ES2319028-005	COSUS	EP074: 1.3-Dichlorobenzene	541-73-1	5	µg/L	<5	<5	0.0	No Limit
		EP074: 1.4-Dichlorobenzene	106-46-7	5	µg/L	<5	<5	0.0	No Limit
		EP074: 1.2-Dichlorobenzene	95-50-1	5	µg/L	<5	<5	0.0	No Limit
		EP074: 1.2.4-Trichlorobenzene	120-82-1	5	µg/L	<5	<5	0.0	No Limit
		EP074: 1.2.3-Trichlorobenzene	87-61-6	5	µg/L	<5	<5	0.0	No Limit
EP074G: Trihalomethanes (QC Lot: 5099381)									
ES2319028-001	BADDS	EP074: Chloroform	67-66-3	5	µg/L	<5	<5	0.0	No Limit
		EP074: Bromodichloromethane	75-27-4	5	µg/L	<5	<5	0.0	No Limit
		EP074: Dibromochloromethane	124-48-1	5	µg/L	<5	<5	0.0	No Limit
		EP074: Bromoform	75-25-2	5	µg/L	<5	<5	0.0	No Limit
ES2319028-005	COSUS	EP074: Chloroform	67-66-3	5	µg/L	<5	<5	0.0	No Limit
		EP074: Bromodichloromethane	75-27-4	5	µg/L	<5	<5	0.0	No Limit
		EP074: Dibromochloromethane	124-48-1	5	µg/L	<5	<5	0.0	No Limit
		EP074: Bromoform	75-25-2	5	µg/L	<5	<5	0.0	No Limit
EP075(SIM)A: Phenolic Compounds (QC Lot: 5099399)									
ES2319028-001	BADDS	EP075(SIM): Phenol	108-95-2	1	µg/L	<1.0	<1.0	0.0	No Limit
		EP075(SIM): 2-Chlorophenol	95-57-8	1	µg/L	<1.0	<1.0	0.0	No Limit
		EP075(SIM): 2-Methylphenol	95-48-7	1	µg/L	<1.0	<1.0	0.0	No Limit
		EP075(SIM): 2-Nitrophenol	88-75-5	1	µg/L	<1.0	<1.0	0.0	No Limit
		EP075(SIM): 2.4-Dimethylphenol	105-67-9	1	µg/L	<1.0	<1.0	0.0	No Limit
		EP075(SIM): 2.4-Dichlorophenol	120-83-2	1	µg/L	<1.0	<1.0	0.0	No Limit
		EP075(SIM): 2.6-Dichlorophenol	87-65-0	1	µg/L	<1.0	<1.0	0.0	No Limit
		EP075(SIM): 4-Chloro-3-methylphenol	59-50-7	1	µg/L	<1.0	<1.0	0.0	No Limit
		EP075(SIM): 2.4.6-Trichlorophenol	88-06-2	1	µg/L	<1.0	<1.0	0.0	No Limit
		EP075(SIM): 2.4.5-Trichlorophenol	95-95-4	1	µg/L	<1.0	<1.0	0.0	No Limit
		EP075(SIM): 3- & 4-Methylphenol	1319-77-3	2	µg/L	<2.0	<2.0	0.0	No Limit
		EP075(SIM): Pentachlorophenol	87-86-5	2	µg/L	<2.0	<2.0	0.0	No Limit
ES2319028-011	ROPUS	EP075(SIM): Phenol	108-95-2	1	µg/L	<1.0	<1.0	0.0	No Limit
		EP075(SIM): 2-Chlorophenol	95-57-8	1	µg/L	<1.0	<1.0	0.0	No Limit
		EP075(SIM): 2-Methylphenol	95-48-7	1	µg/L	<1.0	<1.0	0.0	No Limit
		EP075(SIM): 2-Nitrophenol	88-75-5	1	µg/L	<1.0	<1.0	0.0	No Limit
		EP075(SIM): 2.4-Dimethylphenol	105-67-9	1	µg/L	<1.0	<1.0	0.0	No Limit
		EP075(SIM): 2.4-Dichlorophenol	120-83-2	1	µg/L	<1.0	<1.0	0.0	No Limit
		EP075(SIM): 2.6-Dichlorophenol	87-65-0	1	µg/L	<1.0	<1.0	0.0	No Limit
		EP075(SIM): 4-Chloro-3-methylphenol	59-50-7	1	µg/L	<1.0	<1.0	0.0	No Limit
		EP075(SIM): 2.4.6-Trichlorophenol	88-06-2	1	µg/L	<1.0	<1.0	0.0	No Limit
		EP075(SIM): 2.4.5-Trichlorophenol	95-95-4	1	µg/L	<1.0	<1.0	0.0	No Limit
		EP075(SIM): 3- & 4-Methylphenol	1319-77-3	2	µg/L	<2.0	<2.0	0.0	No Limit
		EP075(SIM): Pentachlorophenol	87-86-5	2	µg/L	<2.0	<2.0	0.0	No Limit
EP075(SIM)B: Polynuclear Aromatic Hydrocarbons (QC Lot: 5099399)									

Sub-Matrix: **WATER**

Laboratory sample ID	Sample ID	Method: Compound	CAS Number	Laboratory Duplicate (DUP) Report					
				LOR	Unit	Original Result	Duplicate Result	RPD (%)	Acceptable RPD (%)
EP075(SIM)B: Polynuclear Aromatic Hydrocarbons (QC Lot: 5099399) - continued									
ES2319028-001	BADDS	EP075(SIM): Benzo(a)pyrene	50-32-8	0.5	µg/L	<0.5	<0.5	0.0	No Limit
		EP075(SIM): Naphthalene	91-20-3	1	µg/L	<1.0	<1.0	0.0	No Limit
		EP075(SIM): Acenaphthylene	208-96-8	1	µg/L	<1.0	<1.0	0.0	No Limit
		EP075(SIM): Acenaphthene	83-32-9	1	µg/L	<1.0	<1.0	0.0	No Limit
		EP075(SIM): Fluorene	86-73-7	1	µg/L	<1.0	<1.0	0.0	No Limit
		EP075(SIM): Phenanthrene	85-01-8	1	µg/L	<1.0	<1.0	0.0	No Limit
		EP075(SIM): Anthracene	120-12-7	1	µg/L	<1.0	<1.0	0.0	No Limit
		EP075(SIM): Fluoranthene	206-44-0	1	µg/L	<1.0	<1.0	0.0	No Limit
		EP075(SIM): Pyrene	129-00-0	1	µg/L	<1.0	<1.0	0.0	No Limit
		EP075(SIM): Benz(a)anthracene	56-55-3	1	µg/L	<1.0	<1.0	0.0	No Limit
		EP075(SIM): Chrysene	218-01-9	1	µg/L	<1.0	<1.0	0.0	No Limit
		EP075(SIM): Benzo(b+j)fluoranthene	205-99-2 205-82-3	1	µg/L	<1.0	<1.0	0.0	No Limit
		EP075(SIM): Benzo(k)fluoranthene	207-08-9	1	µg/L	<1.0	<1.0	0.0	No Limit
		EP075(SIM): Indeno(1.2.3.cd)pyrene	193-39-5	1	µg/L	<1.0	<1.0	0.0	No Limit
		EP075(SIM): Dibenz(a.h)anthracene	53-70-3	1	µg/L	<1.0	<1.0	0.0	No Limit
		EP075(SIM): Benzo(g.h.i)perylene	191-24-2	1	µg/L	<1.0	<1.0	0.0	No Limit
ES2319028-011	ROPUS	EP075(SIM): Benzo(a)pyrene	50-32-8	0.5	µg/L	<0.5	<0.5	0.0	No Limit
		EP075(SIM): Naphthalene	91-20-3	1	µg/L	<1.0	<1.0	0.0	No Limit
		EP075(SIM): Acenaphthylene	208-96-8	1	µg/L	<1.0	<1.0	0.0	No Limit
		EP075(SIM): Acenaphthene	83-32-9	1	µg/L	<1.0	<1.0	0.0	No Limit
		EP075(SIM): Fluorene	86-73-7	1	µg/L	<1.0	<1.0	0.0	No Limit
		EP075(SIM): Phenanthrene	85-01-8	1	µg/L	<1.0	<1.0	0.0	No Limit
		EP075(SIM): Anthracene	120-12-7	1	µg/L	<1.0	<1.0	0.0	No Limit
		EP075(SIM): Fluoranthene	206-44-0	1	µg/L	<1.0	<1.0	0.0	No Limit
		EP075(SIM): Pyrene	129-00-0	1	µg/L	<1.0	<1.0	0.0	No Limit
		EP075(SIM): Benz(a)anthracene	56-55-3	1	µg/L	<1.0	<1.0	0.0	No Limit
		EP075(SIM): Chrysene	218-01-9	1	µg/L	<1.0	<1.0	0.0	No Limit
		EP075(SIM): Benzo(b+j)fluoranthene	205-99-2 205-82-3	1	µg/L	<1.0	<1.0	0.0	No Limit
		EP075(SIM): Benzo(k)fluoranthene	207-08-9	1	µg/L	<1.0	<1.0	0.0	No Limit
		EP075(SIM): Indeno(1.2.3.cd)pyrene	193-39-5	1	µg/L	<1.0	<1.0	0.0	No Limit
		EP075(SIM): Dibenz(a.h)anthracene	53-70-3	1	µg/L	<1.0	<1.0	0.0	No Limit
		EP075(SIM): Benzo(g.h.i)perylene	191-24-2	1	µg/L	<1.0	<1.0	0.0	No Limit
EP080: BTEXN (QC Lot: 5099380)									
ES2319028-001	BADDS	EP080: Benzene	71-43-2	1	µg/L	<1	<1	0.0	No Limit
		EP080: Toluene	108-88-3	2	µg/L	<2	<2	0.0	No Limit
		EP080: Ethylbenzene	100-41-4	2	µg/L	<2	<2	0.0	No Limit
		EP080: meta- & para-Xylene	108-38-3 106-42-3	2	µg/L	<2	<2	0.0	No Limit

Sub-Matrix: **WATER**

				Laboratory Duplicate (DUP) Report					
Laboratory sample ID	*Sample ID*	*Method: Compound*	*CAS Number*	*LOR*	*Unit*	*Original Result*	*Duplicate Result*	*RPD (%)*	*Acceptable RPD (%)*
EP080: BTEXN (QC Lot: 5099380) - continued									
ES2319028-001	BADDS	EP080: ortho-Xylene	95-47-6	2	µg/L	<2	<2	0.0	No Limit
		EP080: Naphthalene	91-20-3	5	µg/L	<5	<5	0.0	No Limit
ES2319028-005	COSUS	EP080: Benzene	71-43-2	1	µg/L	<1	<1	0.0	No Limit
		EP080: Toluene	108-88-3	2	µg/L	<2	<2	0.0	No Limit
		EP080: Ethylbenzene	100-41-4	2	µg/L	<2	<2	0.0	No Limit
		EP080: meta- & para-Xylene	108-38-3 106-42-3	2	µg/L	<2	<2	0.0	No Limit
		EP080: ortho-Xylene	95-47-6	2	µg/L	<2	<2	0.0	No Limit
		EP080: Naphthalene	91-20-3	5	µg/L	<5	<5	0.0	No Limit
EP234A: OP Pesticides (QC Lot: 5098986)									
EB2316997-001	Anonymous	EP234-1: Sulfotep	3689-24-5	0.005	µg/L	<0.005	<0.005	0.0	No Limit
		EP234-1: Triazophos	24017-47-8	0.005	µg/L	<0.005	<0.005	0.0	No Limit
		EP234-1: Coumaphos	56-72-4	0.01	µg/L	<0.01	<0.01	0.0	No Limit
		EP234-1: Diazinon	333-41-5	0.01	µg/L	<0.01	<0.01	0.0	No Limit
		EP234-1: Ethoprophos	13194-48-4	0.01	µg/L	<0.01	<0.01	0.0	No Limit
		EP234-1: Fenamiphos	22224-92-6	0.01	µg/L	<0.01	<0.01	0.0	No Limit
		EP234-1: Fensulfothion	115-90-2	0.01	µg/L	<0.01	<0.01	0.0	No Limit
		EP234-1: Omethoate	1113-02-6	0.01	µg/L	<0.01	<0.01	0.0	No Limit
		EP234-1: Pirimiphos-ethyl	23505-41-1	0.01	µg/L	<0.01	<0.01	0.0	No Limit
		EP234-1: Pirimiphos-methyl	29232-93-7	0.01	µg/L	<0.01	<0.01	0.0	No Limit
		EP234-1: Profenofos	41198-08-7	0.01	µg/L	<0.01	<0.01	0.0	No Limit
		EP234-1: Terbufos	13071-79-9	0.01	µg/L	<0.01	<0.01	0.0	No Limit
		EP234-1: Tetrachlorvinphos	22248-79-9	0.01	µg/L	<0.01	<0.01	0.0	No Limit
		EP234-1: Azinphos-methyl	86-50-0	0.02	µg/L	<0.02	<0.02	0.0	No Limit
		EP234-1: Azinphos-ethyl	2642-71-9	0.02	µg/L	<0.02	<0.02	0.0	No Limit
		EP234-1: Carbofenothion	786-19-6	0.02	µg/L	<0.02	<0.02	0.0	No Limit
		EP234-1: Chlorfenvinphos	470-90-6	0.02	µg/L	<0.02	<0.02	0.0	No Limit
		EP234-1: Chlorpyrifos	2921-88-2	0.02	µg/L	<0.02	<0.02	0.0	No Limit
		EP234-1: Demeton-O	298-03-3	0.02	µg/L	<0.02	<0.02	0.0	No Limit
		EP234-1: Demeton-O & Demeton-S	298-03-3/126-75-0	0.02	µg/L	<0.02	<0.02	0.0	No Limit
		EP234-1: Demeton-S	126-75-0	0.02	µg/L	<0.02	<0.02	0.0	No Limit
		EP234-1: Demeton-S-methyl	919-86-8	0.02	µg/L	<0.02	<0.02	0.0	No Limit
		EP234-1: Dimethoate	60-51-5	0.02	µg/L	<0.02	<0.02	0.0	No Limit
		EP234-1: Ethion	563-12-2	0.02	µg/L	<0.02	<0.02	0.0	No Limit
		EP234-1: Malathion	121-75-5	0.02	µg/L	<0.02	<0.02	0.0	No Limit
		EP234-1: Mevinphos	7786-34-7	0.02	µg/L	<0.02	<0.02	0.0	No Limit
		EP234-1: Monocrotophos	6923-22-4	0.02	µg/L	<0.02	<0.02	0.0	No Limit
		EP234-1: Temephos	3383-96-8	0.02	µg/L	<0.02	<0.02	0.0	No Limit
		EP234-1: Trichlorfon	52-68-6	0.02	µg/L	<0.02	<0.02	0.0	No Limit

Sub-Matrix: **WATER**

Laboratory sample ID	Sample ID	Method: Compound	CAS Number	Laboratory Duplicate (DUP) Report					
				LOR	Unit	Original Result	Duplicate Result	RPD (%)	Acceptable RPD (%)
EP234A: OP Pesticides (QC Lot: 5098986) - continued									
EB2316997-001	Anonymous	EP234-1: Disulfoton	298-04-4	0.05	µg/L	<0.05	<0.05	0.0	No Limit
		EP234-1: EPN	2104-64-5	0.05	µg/L	<0.05	<0.05	0.0	No Limit
		EP234-1: Fenthion	55-38-9	0.05	µg/L	<0.05	<0.05	0.0	No Limit
		EP234-1: Sulprofos	35400-43-2	0.05	µg/L	<0.05	<0.05	0.0	No Limit
		EP234-1: Bromophos-ethyl	4824-78-6	0.1	µg/L	<0.10	<0.10	0.0	No Limit
		EP234-1: Phorate	298-02-2	0.1	µg/L	<0.1	<0.1	0.0	No Limit
		EP234-1: Prothiofos	34643-46-4	0.1	µg/L	<0.1	<0.1	0.0	No Limit
		EP234-1: Chlorpyrifos-methyl	5598-13-0	0.2	µg/L	<0.2	<0.2	0.0	No Limit
		EP234-1: Dichlorvos	62-73-7	0.2	µg/L	<0.20	<0.20	0.0	No Limit
		EP234-1: Parathion	56-38-2	0.2	µg/L	<0.2	<0.2	0.0	No Limit
		EP234-1: Parathion-methyl	298-00-0	0.5	µg/L	<2.0	<2.0	0.0	No Limit
		EP234-1: Trichloronate	327-98-0	0.5	µg/L	<0.5	<0.5	0.0	No Limit
		EP234-1: Fenchlorphos (Ronnel)	299-84-3	10	µg/L	<10	<10	0.0	No Limit
		EP234-1: Fenitrothion	122-14-5	2	µg/L	<2	<2	0.0	No Limit
EP2307325-002	Anonymous	EP234-1: Sulfotep	3689-24-5	0.005	µg/L	<0.005	<0.005	0.0	No Limit
		EP234-1: Triazophos	24017-47-8	0.005	µg/L	<0.005	<0.005	0.0	No Limit
		EP234-1: Coumaphos	56-72-4	0.01	µg/L	<0.01	<0.01	0.0	No Limit
		EP234-1: Diazinon	333-41-5	0.01	µg/L	<0.01	<0.01	0.0	No Limit
		EP234-1: Ethoprophos	13194-48-4	0.01	µg/L	<0.01	<0.01	0.0	No Limit
		EP234-1: Fenamiphos	22224-92-6	0.01	µg/L	<0.01	<0.01	0.0	No Limit
		EP234-1: Fensulfothion	115-90-2	0.01	µg/L	<0.01	<0.01	0.0	No Limit
		EP234-1: Omethoate	1113-02-6	0.01	µg/L	<0.01	<0.01	0.0	No Limit
		EP234-1: Pirimiphos-ethyl	23505-41-1	0.01	µg/L	<0.01	<0.01	0.0	No Limit
		EP234-1: Pirimiphos-methyl	29232-93-7	0.01	µg/L	<0.01	<0.01	0.0	No Limit
		EP234-1: Profenofos	41198-08-7	0.01	µg/L	<0.01	<0.01	0.0	No Limit
		EP234-1: Terbufos	13071-79-9	0.01	µg/L	<0.01	<0.01	0.0	No Limit
		EP234-1: Tetrachlorvinphos	22248-79-9	0.01	µg/L	<0.01	<0.01	0.0	No Limit
		EP234-1: Azinphos-methyl	86-50-0	0.02	µg/L	<0.02	<0.02	0.0	No Limit
		EP234-1: Azinphos-ethyl	2642-71-9	0.02	µg/L	<0.02	<0.02	0.0	No Limit
		EP234-1: Carbofenothion	786-19-6	0.02	µg/L	<0.02	<0.02	0.0	No Limit
		EP234-1: Chlorfenvinphos	470-90-6	0.02	µg/L	<0.02	<0.02	0.0	No Limit
		EP234-1: Chlorpyrifos	2921-88-2	0.02	µg/L	<0.02	<0.02	0.0	No Limit
		EP234-1: Demeton-O	298-03-3	0.02	µg/L	<0.02	<0.02	0.0	No Limit
		EP234-1: Demeton-O & Demeton-S	298-03-3/126-75-0	0.02	µg/L	<0.02	<0.02	0.0	No Limit
		EP234-1: Demeton-S	126-75-0	0.02	µg/L	<0.02	<0.02	0.0	No Limit
		EP234-1: Demeton-S-methyl	919-86-8	0.02	µg/L	<0.02	<0.02	0.0	No Limit
		EP234-1: Dimethoate	60-51-5	0.02	µg/L	<0.02	<0.02	0.0	No Limit
		EP234-1: Ethion	563-12-2	0.02	µg/L	<0.02	<0.02	0.0	No Limit
		EP234-1: Malathion	121-75-5	0.02	µg/L	<0.02	<0.02	0.0	No Limit

Sub-Matrix: **WATER**

				Laboratory Duplicate (DUP) Report					
Laboratory sample ID	*Sample ID*	*Method: Compound*	*CAS Number*	*LOR*	*Unit*	*Original Result*	*Duplicate Result*	*RPD (%)*	*Acceptable RPD (%)*
EP234A: OP Pesticides (QC Lot: 5098986) - continued									
EP2307325-002	Anonymous	EP234-1: Mevinphos	7786-34-7	0.02	µg/L	<0.02	<0.02	0.0	No Limit
		EP234-1: Monocrotophos	6923-22-4	0.02	µg/L	<0.02	<0.02	0.0	No Limit
		EP234-1: Temephos	3383-96-8	0.02	µg/L	<0.02	<0.02	0.0	No Limit
		EP234-1: Trichlorfon	52-68-6	0.02	µg/L	<0.02	<0.02	0.0	No Limit
		EP234-1: Disulfoton	298-04-4	0.05	µg/L	<0.05	<0.05	0.0	No Limit
		EP234-1: EPN	2104-64-5	0.05	µg/L	<0.05	<0.05	0.0	No Limit
		EP234-1: Fenthion	55-38-9	0.05	µg/L	<0.05	<0.05	0.0	No Limit
		EP234-1: Sulprofos	35400-43-2	0.05	µg/L	<0.05	<0.05	0.0	No Limit
		EP234-1: Bromophos-ethyl	4824-78-6	0.1	µg/L	<0.10	<0.10	0.0	No Limit
		EP234-1: Phorate	298-02-2	0.1	µg/L	<0.1	<0.1	0.0	No Limit
		EP234-1: Prothiofos	34643-46-4	0.1	µg/L	<0.1	<0.1	0.0	No Limit
		EP234-1: Chlorpyrifos-methyl	5598-13-0	0.2	µg/L	<0.2	<0.2	0.0	No Limit
		EP234-1: Dichlorvos	62-73-7	0.2	µg/L	<0.20	<0.20	0.0	No Limit
		EP234-1: Parathion	56-38-2	0.2	µg/L	<0.2	<0.2	0.0	No Limit
		EP234-1: Parathion-methyl	298-00-0	0.5	µg/L	<2.0	<2.0	0.0	No Limit
		EP234-1: Trichloronate	327-98-0	0.5	µg/L	<0.5	<0.5	0.0	No Limit
		EP234-1: Fenchlorphos (Ronnel)	299-84-3	10	µg/L	<10	<10	0.0	No Limit
		EP234-1: Fenitrothion	122-14-5	2	µg/L	<2	<2	0.0	No Limit
EP234A: OP Pesticides (QC Lot: 5098987)									
EB2316997-001	Anonymous	EP234-1x: Bensulide	741-58-2	0.1	µg/L	<0.1	<0.1	0.0	No Limit
		EP234-1x: Methidathion	950-37-8	0.1	µg/L	<0.1	<0.1	0.0	No Limit
		EP234-1x: Pyrazophos	13457-18-6	0.1	µg/L	<0.1	<0.1	0.0	No Limit
		EP234-1x: Acephate	30560-19-1	0.5	µg/L	<0.5	<0.5	0.0	No Limit
		EP234-1x: Thiometon	640-15-3	0.5	µg/L	<0.5	<0.5	0.0	No Limit
		EP234-1x: Naftalofos	1491-41-4	1	µg/L	<1.0	<1.0	0.0	No Limit
		EP234-1x: Fosetyl Aluminium	39148-24-8	10	µg/L	<10	<10	0.0	No Limit
		EP234-1x: Formothion	2540-82-1	20	µg/L	<20	<20	0.0	No Limit
EP2307325-002	Anonymous	EP234-1x: Bensulide	741-58-2	0.1	µg/L	<0.1	<0.1	0.0	No Limit
		EP234-1x: Methidathion	950-37-8	0.1	µg/L	<0.1	<0.1	0.0	No Limit
		EP234-1x: Pyrazophos	13457-18-6	0.1	µg/L	<0.1	<0.1	0.0	No Limit
		EP234-1x: Acephate	30560-19-1	0.5	µg/L	<0.5	<0.5	0.0	No Limit
		EP234-1x: Thiometon	640-15-3	0.5	µg/L	<0.5	<0.5	0.0	No Limit
		EP234-1x: Naftalofos	1491-41-4	1	µg/L	<1.0	<1.0	0.0	No Limit
		EP234-1x: Fosetyl Aluminium	39148-24-8	10	µg/L	<10	<10	0.0	No Limit
		EP234-1x: Formothion	2540-82-1	20	µg/L	<20	<20	0.0	No Limit
EP234A: OP Pesticides (QC Lot: 5101712)									
ES2319028-001	BADDS	EP234-1: Sulfotep	3689-24-5	0.005	µg/L	<0.005	<0.005	0.0	No Limit
		EP234-1: Triazophos	24017-47-8	0.005	µg/L	<0.005	<0.005	0.0	No Limit
		EP234-1: Coumaphos	56-72-4	0.01	µg/L	<0.01	<0.01	0.0	No Limit
		EP234-1: Diazinon	333-41-5	0.01	µg/L	<0.01	<0.01	0.0	No Limit

Sub-Matrix: **WATER**

				Laboratory Duplicate (DUP) Report					
Laboratory sample ID	*Sample ID*	*Method: Compound*	*CAS Number*	*LOR*	*Unit*	*Original Result*	*Duplicate Result*	*RPD (%)*	*Acceptable RPD (%)*
EP234A: OP Pesticides (QC Lot: 5101712) - continued									
ES2319028-001	BADDS	EP234-1: Ethoprophos	13194-48-4	0.01	µg/L	<0.01	<0.01	0.0	No Limit
		EP234-1: Fenamiphos	22224-92-6	0.01	µg/L	<0.01	<0.01	0.0	No Limit
		EP234-1: Fensulfothion	115-90-2	0.01	µg/L	<0.01	<0.01	0.0	No Limit
		EP234-1: Omethoate	1113-02-6	0.01	µg/L	<0.01	<0.01	0.0	No Limit
		EP234-1: Pirimiphos-ethyl	23505-41-1	0.01	µg/L	<0.01	<0.01	0.0	No Limit
		EP234-1: Pirimiphos-methyl	29232-93-7	0.01	µg/L	<0.01	<0.01	0.0	No Limit
		EP234-1: Profenofos	41198-08-7	0.01	µg/L	<0.01	<0.01	0.0	No Limit
		EP234-1: Terbufos	13071-79-9	0.01	µg/L	<0.01	<0.01	0.0	No Limit
		EP234-1: Tetrachlorvinphos	22248-79-9	0.01	µg/L	<0.01	<0.01	0.0	No Limit
		EP234-1: Azinphos-methyl	86-50-0	0.02	µg/L	<0.02	<0.02	0.0	No Limit
		EP234-1: Azinphos-ethyl	2642-71-9	0.02	µg/L	<0.02	<0.02	0.0	No Limit
		EP234-1: Carbofenothion	786-19-6	0.02	µg/L	<0.02	<0.02	0.0	No Limit
		EP234-1: Chlorfenvinphos	470-90-6	0.02	µg/L	<0.02	<0.02	0.0	No Limit
		EP234-1: Chlorpyrifos	2921-88-2	0.02	µg/L	<0.02	<0.02	0.0	No Limit
		EP234-1: Demeton-O	298-03-3	0.02	µg/L	<0.02	<0.02	0.0	No Limit
		EP234-1: Demeton-O & Demeton-S	298-03-3/126-75-0	0.02	µg/L	<0.02	<0.02	0.0	No Limit
		EP234-1: Demeton-S	126-75-0	0.02	µg/L	<0.02	<0.02	0.0	No Limit
		EP234-1: Demeton-S-methyl	919-86-8	0.02	µg/L	<0.02	<0.02	0.0	No Limit
		EP234-1: Dimethoate	60-51-5	0.02	µg/L	<0.02	<0.02	0.0	No Limit
		EP234-1: Ethion	563-12-2	0.02	µg/L	<0.02	<0.02	0.0	No Limit
		EP234-1: Malathion	121-75-5	0.02	µg/L	<0.02	<0.02	0.0	No Limit
		EP234-1: Mevinphos	7786-34-7	0.02	µg/L	<0.02	<0.02	0.0	No Limit
		EP234-1: Monocrotophos	6923-22-4	0.02	µg/L	<0.02	<0.02	0.0	No Limit
		EP234-1: Temephos	3383-96-8	0.02	µg/L	<0.02	<0.02	0.0	No Limit
		EP234-1: Trichlorfon	52-68-6	0.02	µg/L	<0.02	<0.02	0.0	No Limit
		EP234-1: Disulfoton	298-04-4	0.05	µg/L	<0.05	<0.05	0.0	No Limit
		EP234-1: EPN	2104-64-5	0.05	µg/L	<0.05	<0.05	0.0	No Limit
		EP234-1: Fenthion	55-38-9	0.05	µg/L	<0.05	<0.05	0.0	No Limit
		EP234-1: Sulprofos	35400-43-2	0.05	µg/L	<0.05	<0.05	0.0	No Limit
		EP234-1: Bromophos-ethyl	4824-78-6	0.1	µg/L	<0.10	<0.10	0.0	No Limit
		EP234-1: Phorate	298-02-2	0.1	µg/L	<0.1	<0.1	0.0	No Limit
		EP234-1: Prothiofos	34643-46-4	0.1	µg/L	<0.1	<0.1	0.0	No Limit
		EP234-1: Chlorpyrifos-methyl	5598-13-0	0.2	µg/L	<0.2	<0.2	0.0	No Limit
		EP234-1: Dichlorvos	62-73-7	0.2	µg/L	<0.20	<0.20	0.0	No Limit
		EP234-1: Parathion	56-38-2	0.2	µg/L	<0.2	<0.2	0.0	No Limit
		EP234-1: Parathion-methyl	298-00-0	0.5	µg/L	<0.5	<0.5	0.0	No Limit
		EP234-1: Trichloronate	327-98-0	0.5	µg/L	<0.5	<0.5	0.0	No Limit
		EP234-1: Fenchlorphos (Ronnel)	299-84-3	10	µg/L	<10	<10	0.0	No Limit
		EP234-1: Fenitrothion	122-14-5	2	µg/L	<2	<2	0.0	No Limit

Sub-Matrix: **WATER**

Laboratory sample ID	Sample ID	Method: Compound	CAS Number	Laboratory Duplicate (DUP) Report					
				LOR	Unit	Original Result	Duplicate Result	RPD (%)	Acceptable RPD (%)
EP234A: OP Pesticides (QC Lot: 5101712) - continued									
ES2319051-002	Anonymous	EP234-1: Sulfotep	3689-24-5	0.005	µg/L	<0.005	<0.005	0.0	No Limit
		EP234-1: Triazophos	24017-47-8	0.005	µg/L	<0.005	<0.005	0.0	No Limit
		EP234-1: Coumaphos	56-72-4	0.01	µg/L	<0.01	<0.01	0.0	No Limit
		EP234-1: Diazinon	333-41-5	0.01	µg/L	<0.01	<0.01	0.0	No Limit
		EP234-1: Ethoprophos	13194-48-4	0.01	µg/L	<0.01	<0.01	0.0	No Limit
		EP234-1: Fenamiphos	22224-92-6	0.01	µg/L	<0.01	<0.01	0.0	No Limit
		EP234-1: Fensulfothion	115-90-2	0.01	µg/L	<0.01	<0.01	0.0	No Limit
		EP234-1: Omethoate	1113-02-6	0.01	µg/L	<0.01	<0.01	0.0	No Limit
		EP234-1: Pirimiphos-ethyl	23505-41-1	0.01	µg/L	<0.01	<0.01	0.0	No Limit
		EP234-1: Pirimiphos-methyl	29232-93-7	0.01	µg/L	<0.01	<0.01	0.0	No Limit
		EP234-1: Profenofos	41198-08-7	0.01	µg/L	<0.01	<0.01	0.0	No Limit
		EP234-1: Terbufos	13071-79-9	0.01	µg/L	<0.01	<0.01	0.0	No Limit
		EP234-1: Tetrachlorvinphos	22248-79-9	0.01	µg/L	<0.01	<0.01	0.0	No Limit
		EP234-1: Azinphos-methyl	86-50-0	0.02	µg/L	<0.02	<0.02	0.0	No Limit
		EP234-1: Azinphos-ethyl	2642-71-9	0.02	µg/L	<0.02	<0.02	0.0	No Limit
		EP234-1: Carbofenothion	786-19-6	0.02	µg/L	<0.02	<0.02	0.0	No Limit
		EP234-1: Chlorfenvinphos	470-90-6	0.02	µg/L	<0.02	<0.02	0.0	No Limit
		EP234-1: Chlorpyrifos	2921-88-2	0.02	µg/L	<0.02	<0.02	0.0	No Limit
		EP234-1: Demeton-O	298-03-3	0.02	µg/L	<0.02	<0.02	0.0	No Limit
		EP234-1: Demeton-O & Demeton-S	298-03-3/126-75-0	0.02	µg/L	<0.02	<0.02	0.0	No Limit
		EP234-1: Demeton-S	126-75-0	0.02	µg/L	<0.02	<0.02	0.0	No Limit
		EP234-1: Demeton-S-methyl	919-86-8	0.02	µg/L	<0.02	<0.02	0.0	No Limit
		EP234-1: Dimethoate	60-51-5	0.02	µg/L	<0.02	<0.02	0.0	No Limit
		EP234-1: Ethion	563-12-2	0.02	µg/L	<0.02	<0.02	0.0	No Limit
		EP234-1: Malathion	121-75-5	0.02	µg/L	<0.02	<0.02	0.0	No Limit
		EP234-1: Mevinphos	7786-34-7	0.02	µg/L	<0.02	<0.02	0.0	No Limit
		EP234-1: Monocrotophos	6923-22-4	0.02	µg/L	<0.02	<0.02	0.0	No Limit
		EP234-1: Temephos	3383-96-8	0.02	µg/L	<0.02	<0.02	0.0	No Limit
		EP234-1: Trichlorfon	52-68-6	0.02	µg/L	<0.02	<0.02	0.0	No Limit
		EP234-1: Disulfoton	298-04-4	0.05	µg/L	<0.05	<0.05	0.0	No Limit
		EP234-1: EPN	2104-64-5	0.05	µg/L	<0.05	<0.05	0.0	No Limit
		EP234-1: Fenthion	55-38-9	0.05	µg/L	<0.05	<0.05	0.0	No Limit
		EP234-1: Sulprofos	35400-43-2	0.05	µg/L	<0.05	<0.05	0.0	No Limit
		EP234-1: Bromophos-ethyl	4824-78-6	0.1	µg/L	<0.10	<0.10	0.0	No Limit
		EP234-1: Phorate	298-02-2	0.1	µg/L	<0.1	<0.1	0.0	No Limit
		EP234-1: Prothiofos	34643-46-4	0.1	µg/L	<0.1	<0.1	0.0	No Limit
		EP234-1: Chlorpyrifos-methyl	5598-13-0	0.2	µg/L	<0.2	<0.2	0.0	No Limit
		EP234-1: Dichlorvos	62-73-7	0.2	µg/L	<0.20	<0.20	0.0	No Limit
		EP234-1: Parathion	56-38-2	0.2	µg/L	<0.2	<0.2	0.0	No Limit

Sub-Matrix: **WATER**

				Laboratory Duplicate (DUP) Report					
Laboratory sample ID	*Sample ID*	*Method: Compound*	*CAS Number*	*LOR*	*Unit*	*Original Result*	*Duplicate Result*	*RPD (%)*	*Acceptable RPD (%)*
EP234A: OP Pesticides (QC Lot: 5101712) - continued									
ES2319051-002	Anonymous	EP234-1: Parathion-methyl	298-00-0	0.5	µg/L	<0.5	<0.5	0.0	No Limit
		EP234-1: Trichloronate	327-98-0	0.5	µg/L	<0.5	<0.5	0.0	No Limit
		EP234-1: Fenchlorphos (Ronnel)	299-84-3	10	µg/L	<10	<10	0.0	No Limit
		EP234-1: Fenitrothion	122-14-5	2	µg/L	<2	<2	0.0	No Limit
EP234A: OP Pesticides (QC Lot: 5101713)									
ES2319028-001	BADDS	EP234-1x: Bensulide	741-58-2	0.1	µg/L	<0.1	<0.1	0.0	No Limit
		EP234-1x: Methidathion	950-37-8	0.1	µg/L	<0.1	<0.1	0.0	No Limit
		EP234-1x: Pyrazophos	13457-18-6	0.1	µg/L	<0.1	<0.1	0.0	No Limit
		EP234-1x: Acephate	30560-19-1	0.5	µg/L	<0.5	<0.5	0.0	No Limit
		EP234-1x: Thiometon	640-15-3	0.5	µg/L	<0.5	<0.5	0.0	No Limit
		EP234-1x: Naftalofos	1491-41-4	1	µg/L	<1.0	<1.0	0.0	No Limit
		EP234-1x: Fosetyl Aluminium	39148-24-8	10	µg/L	<10	<10	0.0	No Limit
		EP234-1x: Formothion	2540-82-1	20	µg/L	<20	<20	0.0	No Limit
ES2319051-002	Anonymous	EP234-1x: Bensulide	741-58-2	0.1	µg/L	<0.1	<0.1	0.0	No Limit
		EP234-1x: Methidathion	950-37-8	0.1	µg/L	<0.1	<0.1	0.0	No Limit
		EP234-1x: Pyrazophos	13457-18-6	0.1	µg/L	<0.1	<0.1	0.0	No Limit
		EP234-1x: Acephate	30560-19-1	0.5	µg/L	<0.5	<0.5	0.0	No Limit
		EP234-1x: Thiometon	640-15-3	0.5	µg/L	<0.5	<0.5	0.0	No Limit
		EP234-1x: Naftalofos	1491-41-4	1	µg/L	<1.0	<1.0	0.0	No Limit
		EP234-1x: Fosetyl Aluminium	39148-24-8	10	µg/L	<10	<10	0.0	No Limit
		EP234-1x: Formothion	2540-82-1	20	µg/L	<20	<20	0.0	No Limit

Method Blank (MB) and Laboratory Control Sample (LCS) Report

The quality control term Method / Laboratory Blank refers to an analyte free matrix to which all reagents are added in the same volumes or proportions as used in standard sample preparation. The purpose of this QC parameter is to monitor potential laboratory contamination. The quality control term Laboratory Control Sample (LCS) refers to a certified reference material, or a known interference free matrix spiked with target analytes. The purpose of this QC parameter is to monitor method precision and accuracy independent of sample matrix. Dynamic Recovery Limits are based on statistical evaluation of processed LCS.

Sub-Matrix: **WATER**

				Method Blank (MB) Report	Laboratory Control Spike (LCS) Report			
					Spike	Spike Recovery (%)	Acceptable Limits (%)	
Method: Compound	CAS Number	LOR	Unit	Result	Concentration	LCS	Low	High
EA015: Total Dissolved Solids dried at 180 ± 5 °C (QCLot: 5103384)								
EA015H: Total Dissolved Solids @180°C	----	10	mg/L	<10	2000 mg/L	92.4	87.0	109
				<10	293 mg/L	90.4	75.2	126
				<10	2320 mg/L	104	83.0	124
EA015: Total Dissolved Solids dried at 180 ± 5 °C (QCLot: 5106786)								
EA015H: Total Dissolved Solids @180°C	----	10	mg/L	<10	2000 mg/L	98.1	87.0	109
				<10	293 mg/L	81.4	75.2	126
				<10	2320 mg/L	103	83.0	124
EA025: Total Suspended Solids dried at 104 ± 2°C (QCLot: 5103385)								
EA025H: Suspended Solids (SS)	----	5	mg/L	<5	150 mg/L	98.3	83.0	129
				<5	1000 mg/L	91.5	82.0	110
				<5	926 mg/L	92.5	83.0	118
EA025: Total Suspended Solids dried at 104 ± 2°C (QCLot: 5106787)								
EA025H: Suspended Solids (SS)	----	5	mg/L	<5	150 mg/L	112	83.0	129
				<5	1000 mg/L	90.6	82.0	110
				<5	926 mg/L	102	83.0	118
EG020T: Total Metals by ICP-MS (QCLot: 5101704)								
EG020A-T: Arsenic	7440-38-2	0.001	mg/L	<0.001	0.1 mg/L	98.0	82.0	114
EG020A-T: Cadmium	7440-43-9	0.0001	mg/L	<0.0001	0.1 mg/L	100	84.0	112
EG020A-T: Chromium	7440-47-3	0.001	mg/L	<0.001	0.1 mg/L	99.9	86.0	116
EG020A-T: Copper	7440-50-8	0.001	mg/L	<0.001	0.1 mg/L	95.6	83.0	118
EG020A-T: Lead	7439-92-1	0.001	mg/L	<0.001	0.1 mg/L	101	85.0	115
EG020A-T: Manganese	7439-96-5	0.001	mg/L	<0.001	0.1 mg/L	99.6	85.0	113
EG020A-T: Nickel	7440-02-0	0.001	mg/L	<0.001	0.1 mg/L	95.0	84.0	116
EG020A-T: Zinc	7440-66-6	0.005	mg/L	<0.005	0.1 mg/L	99.5	79.0	117
EG020A-T: Iron	7439-89-6	0.05	mg/L	<0.05	0.5 mg/L	102	85.0	117
EG035T: Total Recoverable Mercury by FIMS (QCLot: 5101135)								
EG035T: Mercury	7439-97-6	0.0001	mg/L	<0.0001	0.01 mg/L	95.8	77.0	111
EK055G: Ammonia as N by Discrete Analyser (QCLot: 5106626)								
EK055G: Ammonia as N	7664-41-7	0.01	mg/L	<0.01	1 mg/L	105	90.0	114
EK057G: Nitrite as N by Discrete Analyser (QCLot: 5098296)								
EK057G: Nitrite as N	14797-65-0	0.01	mg/L	<0.01	0.5 mg/L	106	82.0	114

Sub-Matrix: **WATER**

Method: Compound	CAS Number	LOR	Unit	Method Blank (MB) Report: Result	Laboratory Control Spike (LCS) Report: Spike Concentration	Spike Recovery (%): LCS	Acceptable Limits (%): Low	Acceptable Limits (%): High
EK059G: Nitrite plus Nitrate as N (NOx) by Discrete Analyser (QCLot: 5106627)								
EK059G: Nitrite + Nitrate as N	----	0.01	mg/L	<0.01	0.5 mg/L	106	91.0	113
EK061G: Total Kjeldahl Nitrogen By Discrete Analyser (QCLot: 5106622)								
EK061G: Total Kjeldahl Nitrogen as N	----	0.1	mg/L	<0.1	10 mg/L	97.6	69.0	101
				<0.1	1 mg/L	86.9	70.0	118
				<0.1	5 mg/L	92.2	70.0	130
EK067G: Total Phosphorus as P by Discrete Analyser (QCLot: 5106623)								
EK067G: Total Phosphorus as P	----	0.01	mg/L	<0.01	4.42 mg/L	89.2	71.3	126
				<0.01	0.442 mg/L	112	71.3	126
				<0.01	1 mg/L	106	70.0	130
EK071G: Reactive Phosphorus as P by discrete analyser (QCLot: 5098297)								
EK071G: Reactive Phosphorus as P	14265-44-2	0.01	mg/L	<0.01	0.5 mg/L	101	85.0	117
EP008: Chlorophyll (QCLot: 5098834)								
EP008: Chlorophyll a	----	1	mg/m³	<1	20 mg/m³	97.7	70.0	130
EP020: Oil and Grease (O&G) (QCLot: 5108207)								
EP020: Oil & Grease	----	5	mg/L	<5	5000 mg/L	94.4	81.0	121
				<5	4000 mg/L	79.0	70.0	110
EP074D: Fumigants (QCLot: 5099381)								
EP074: 2.2-Dichloropropane	594-20-7	5	µg/L	<5	10 µg/L	98.5	68.0	122
EP074: 1.2-Dichloropropane	78-87-5	5	µg/L	<5	10 µg/L	99.1	76.0	118
EP074: cis-1.3-Dichloropropylene	10061-01-5	5	µg/L	<5	10 µg/L	96.0	62.0	120
EP074: trans-1.3-Dichloropropylene	10061-02-6	5	µg/L	<5	10 µg/L	103	60.0	114
EP074: 1.2-Dibromoethane (EDB)	106-93-4	5	µg/L	<5	10 µg/L	105	69.0	117
EP074E: Halogenated Aliphatic Compounds (QCLot: 5099381)								
EP074: Dichlorodifluoromethane	75-71-8	50	µg/L	<50	100 µg/L	88.0	60.6	138
EP074: Chloromethane	74-87-3	50	µg/L	<50	100 µg/L	94.9	67.4	130
EP074: Vinyl chloride	75-01-4	50	µg/L	<50	100 µg/L	94.6	69.4	129
EP074: Bromomethane	74-83-9	50	µg/L	<50	100 µg/L	97.8	56.0	140
EP074: Chloroethane	75-00-3	50	µg/L	<50	100 µg/L	96.9	61.0	139
EP074: Trichlorofluoromethane	75-69-4	50	µg/L	<50	100 µg/L	99.0	69.0	131
EP074: 1.1-Dichloroethene	75-35-4	5	µg/L	<5	10 µg/L	98.5	70.0	124
EP074: Iodomethane	74-88-4	5	µg/L	<5	10 µg/L	100	70.2	128
EP074: trans-1.2-Dichloroethene	156-60-5	5	µg/L	<5	10 µg/L	96.5	74.0	118
EP074: 1.1-Dichloroethane	75-34-3	5	µg/L	<5	10 µg/L	101	74.0	120
EP074: cis-1.2-Dichloroethene	156-59-2	5	µg/L	<5	10 µg/L	99.0	77.0	119

Sub-Matrix: **WATER**

Method: Compound	CAS Number	LOR	Unit	Method Blank (MB) Report: Result	Laboratory Control Spike (LCS) Report: Spike Concentration	Spike Recovery (%): LCS	Acceptable Limits (%): Low	Acceptable Limits (%): High
EP074E: Halogenated Aliphatic Compounds (QCLot: 5099381) - continued								
EP074: 1.1.1-Trichloroethane	71-55-6	5	µg/L	<5	10 µg/L	97.3	67.0	119
EP074: 1.1-Dichloropropylene	563-58-6	5	µg/L	<5	10 µg/L	97.3	73.0	119
EP074: Carbon Tetrachloride	56-23-5	5	µg/L	<5	10 µg/L	93.4	62.0	120
EP074: 1.2-Dichloroethane	107-06-2	5	µg/L	<5	10 µg/L	106	73.0	123
EP074: Trichloroethene	79-01-6	5	µg/L	<5	10 µg/L	96.2	76.0	118
EP074: Dibromomethane	74-95-3	5	µg/L	<5	10 µg/L	103	73.0	119
EP074: 1.1.2-Trichloroethane	79-00-5	5	µg/L	<5	10 µg/L	110	72.0	126
EP074: 1.3-Dichloropropane	142-28-9	5	µg/L	<5	10 µg/L	106	71.0	129
EP074: Tetrachloroethene	127-18-4	5	µg/L	<5	10 µg/L	104	72.0	124
EP074: 1.1.1.2-Tetrachloroethane	630-20-6	5	µg/L	<5	10 µg/L	100	66.0	114
EP074: trans-1.4-Dichloro-2-butene	110-57-6	5	µg/L	<5	10 µg/L	98.9	60.0	120
EP074: cis-1.4-Dichloro-2-butene	1476-11-5	5	µg/L	<5	10 µg/L	97.1	70.6	128
EP074: 1.1.2.2-Tetrachloroethane	79-34-5	5	µg/L	<5	10 µg/L	107	70.0	124
EP074: 1.2.3-Trichloropropane	96-18-4	5	µg/L	<5	10 µg/L	98.9	74.0	126
EP074: Pentachloroethane	76-01-7	5	µg/L	<5	10 µg/L	95.6	71.8	126
EP074: 1.2-Dibromo-3-chloropropane	96-12-8	5	µg/L	<5	10 µg/L	96.3	66.4	136
EP074: Hexachlorobutadiene	87-68-3	5	µg/L	<5	10 µg/L	107	58.0	130
EP074F: Halogenated Aromatic Compounds (QCLot: 5099381)								
EP074: Chlorobenzene	108-90-7	5	µg/L	<5	10 µg/L	101	79.0	117
EP074: Bromobenzene	108-86-1	5	µg/L	<5	10 µg/L	99.0	76.0	116
EP074: 2-Chlorotoluene	95-49-8	5	µg/L	<5	10 µg/L	96.5	73.0	119
EP074: 4-Chlorotoluene	106-43-4	5	µg/L	<5	10 µg/L	96.6	73.0	119
EP074: 1.3-Dichlorobenzene	541-73-1	5	µg/L	<5	10 µg/L	99.9	75.0	117
EP074: 1.4-Dichlorobenzene	106-46-7	5	µg/L	<5	10 µg/L	97.6	74.0	118
EP074: 1.2-Dichlorobenzene	95-50-1	5	µg/L	<5	10 µg/L	101	75.0	117
EP074: 1.2.4-Trichlorobenzene	120-82-1	5	µg/L	<5	10 µg/L	104	61.0	125
EP074: 1.2.3-Trichlorobenzene	87-61-6	5	µg/L	<5	10 µg/L	115	67.0	123
EP074G: Trihalomethanes (QCLot: 5099381)								
EP074: Chloroform	67-66-3	5	µg/L	<5	10 µg/L	112	72.0	120
EP074: Bromodichloromethane	75-27-4	5	µg/L	<5	10 µg/L	97.2	64.0	118
EP074: Dibromochloromethane	124-48-1	5	µg/L	<5	10 µg/L	100	65.0	115
EP074: Bromoform	75-25-2	5	µg/L	<5	10 µg/L	99.4	73.5	126
EP075(SIM)A: Phenolic Compounds (QCLot: 5099399)								
EP075(SIM): Phenol	108-95-2	1	µg/L	<1.0	5 µg/L	34.8	24.5	61.9

Sub-Matrix: **WATER**

Method: Compound	CAS Number	LOR	Unit	Method Blank (MB) Report: Result	Laboratory Control Spike (LCS) Report: Spike Concentration	Spike Recovery (%): LCS	Acceptable Limits (%): Low	Acceptable Limits (%): High
EP075(SIM)A: Phenolic Compounds (QCLot: 5099399) - continued								
EP075(SIM): 2-Chlorophenol	95-57-8	1	µg/L	<1.0	5 µg/L	72.6	52.0	90.0
EP075(SIM): 2-Methylphenol	95-48-7	1	µg/L	<1.0	5 µg/L	68.2	51.0	91.0
EP075(SIM): 3- & 4-Methylphenol	1319-77-3	2	µg/L	<2.0	10 µg/L	61.6	44.0	88.0
EP075(SIM): 2-Nitrophenol	88-75-5	1	µg/L	<1.0	5 µg/L	66.6	48.0	100
EP075(SIM): 2.4-Dimethylphenol	105-67-9	1	µg/L	<1.0	5 µg/L	73.4	49.0	99.0
EP075(SIM): 2.4-Dichlorophenol	120-83-2	1	µg/L	<1.0	5 µg/L	72.2	53.0	105
EP075(SIM): 2.6-Dichlorophenol	87-65-0	1	µg/L	<1.0	5 µg/L	73.7	57.0	105
EP075(SIM): 4-Chloro-3-methylphenol	59-50-7	1	µg/L	<1.0	5 µg/L	72.7	53.0	99.0
EP075(SIM): 2.4.6-Trichlorophenol	88-06-2	1	µg/L	<1.0	5 µg/L	79.6	50.0	106
EP075(SIM): 2.4.5-Trichlorophenol	95-95-4	1	µg/L	<1.0	5 µg/L	71.7	51.0	105
EP075(SIM): Pentachlorophenol	87-86-5	2	µg/L	<2.0	10 µg/L	42.2	10.0	95.0
EP075(SIM)B: Polynuclear Aromatic Hydrocarbons (QCLot: 5099399)								
EP075(SIM): Naphthalene	91-20-3	1	µg/L	<1.0	5 µg/L	66.6	50.0	94.0
EP075(SIM): Acenaphthylene	208-96-8	1	µg/L	<1.0	5 µg/L	75.5	63.6	114
EP075(SIM): Acenaphthene	83-32-9	1	µg/L	<1.0	5 µg/L	74.8	62.2	113
EP075(SIM): Fluorene	86-73-7	1	µg/L	<1.0	5 µg/L	75.7	63.9	115
EP075(SIM): Phenanthrene	85-01-8	1	µg/L	<1.0	5 µg/L	76.1	62.6	116
EP075(SIM): Anthracene	120-12-7	1	µg/L	<1.0	5 µg/L	74.5	64.3	116
EP075(SIM): Fluoranthene	206-44-0	1	µg/L	<1.0	5 µg/L	76.8	63.6	118
EP075(SIM): Pyrene	129-00-0	1	µg/L	<1.0	5 µg/L	76.8	63.1	118
EP075(SIM): Benz(a)anthracene	56-55-3	1	µg/L	<1.0	5 µg/L	74.8	64.1	117
EP075(SIM): Chrysene	218-01-9	1	µg/L	<1.0	5 µg/L	72.8	62.5	116
EP075(SIM): Benzo(b+j)fluoranthene	205-99-2 205-82-3	1	µg/L	<1.0	5 µg/L	72.5	61.7	119
EP075(SIM): Benzo(k)fluoranthene	207-08-9	1	µg/L	<1.0	5 µg/L	94.0	63.0	115
EP075(SIM): Benzo(a)pyrene	50-32-8	0.5	µg/L	<0.5	5 µg/L	78.7	63.3	117
EP075(SIM): Indeno(1.2.3.cd)pyrene	193-39-5	1	µg/L	<1.0	5 µg/L	69.5	59.9	118
EP075(SIM): Dibenz(a.h)anthracene	53-70-3	1	µg/L	<1.0	5 µg/L	72.6	61.2	117
EP075(SIM): Benzo(g.h.i)perylene	191-24-2	1	µg/L	<1.0	5 µg/L	77.0	59.1	118
EP080: BTEXN (QCLot: 5099380)								
EP080: Benzene	71-43-2	1	µg/L	<1	10 µg/L	99.0	68.3	119
EP080: Toluene	108-88-3	2	µg/L	<2	10 µg/L	104	73.5	120
EP080: Ethylbenzene	100-41-4	2	µg/L	<2	10 µg/L	98.2	73.8	122
EP080: meta- & para-Xylene	108-38-3 106-42-3	2	µg/L	<2	10 µg/L	101	73.0	122

Sub-Matrix: **WATER**

Method: Compound	CAS Number	LOR	Unit	Method Blank (MB) Report: Result	Laboratory Control Spike (LCS) Report: Spike Concentration	Spike Recovery (%): LCS	Acceptable Limits (%): Low	Acceptable Limits (%): High
EP080: BTEXN (QCLot: 5099380) - continued								
EP080: ortho-Xylene	95-47-6	2	µg/L	<2	10 µg/L	104	76.4	123
EP080: Naphthalene	91-20-3	5	µg/L	<5	10 µg/L	97.1	75.5	124
EP234A: OP Pesticides (QCLot: 5098986)								
EP234-1: Azinphos-methyl	86-50-0	0.02	µg/L	<0.02	0.2 µg/L	94.0	77.0	129
EP234-1: Azinphos-ethyl	2642-71-9	0.02	µg/L	<0.02	0.2 µg/L	88.9	75.0	135
EP234-1: Bromophos-ethyl	4824-78-6	0.1	µg/L	<0.10	1 µg/L	99.0	70.0	130
EP234-1: Carbofenothion	786-19-6	0.02	µg/L	<0.02	0.2 µg/L	90.8	70.0	130
EP234-1: Chlorfenvinphos	470-90-6	0.02	µg/L	<0.02	0.2 µg/L	90.8	74.0	134
EP234-1: Chlorpyrifos	2921-88-2	0.02	µg/L	<0.02	0.2 µg/L	86.4	70.0	130
EP234-1: Chlorpyrifos-methyl	5598-13-0	0.2	µg/L	<0.2	2 µg/L	93.8	70.0	130
EP234-1: Coumaphos	56-72-4	0.01	µg/L	<0.01	0.1 µg/L	96.1	70.0	130
EP234-1: Demeton-O	298-03-3	0.02	µg/L	<0.02	0.05 µg/L	82.4	64.0	134
EP234-1: Demeton-O & Demeton-S	298-03-3/126-75-0	0.02	µg/L	<0.02	0.1 µg/L	87.8	79.0	127
EP234-1: Demeton-S	126-75-0	0.02	µg/L	<0.02	0.05 µg/L	93.2	63.0	135
EP234-1: Demeton-S-methyl	919-86-8	0.02	µg/L	<0.02	0.2 µg/L	93.3	70.0	128
EP234-1: Diazinon	333-41-5	0.01	µg/L	<0.01	0.1 µg/L	86.7	68.0	138
EP234-1: Dichlorvos	62-73-7	0.2	µg/L	<0.20	2 µg/L	112	76.0	128
EP234-1: Dimethoate	60-51-5	0.02	µg/L	<0.02	0.2 µg/L	94.8	75.0	127
EP234-1: Disulfoton	298-04-4	0.05	µg/L	<0.05	0.5 µg/L	93.7	72.0	134
EP234-1: EPN	2104-64-5	0.05	µg/L	<0.05	0.5 µg/L	76.9	70.0	130
EP234-1: Ethion	563-12-2	0.02	µg/L	<0.02	0.2 µg/L	101	70.0	130
EP234-1: Ethoprophos	13194-48-4	0.01	µg/L	<0.01	0.1 µg/L	78.8	78.0	128
EP234-1: Fenamiphos	22224-92-6	0.01	µg/L	<0.01	0.1 µg/L	95.2	71.0	135
EP234-1: Fenchlorphos (Ronnel)	299-84-3	10	µg/L	<10	100 µg/L	82.7	70.0	130
EP234-1: Fenitrothion	122-14-5	2	µg/L	<2	20 µg/L	119	64.0	136
EP234-1: Fensulfothion	115-90-2	0.01	µg/L	<0.01	0.1 µg/L	93.0	79.0	125
EP234-1: Fenthion	55-38-9	0.05	µg/L	<0.05	0.5 µg/L	93.7	70.0	130
EP234-1: Malathion	121-75-5	0.02	µg/L	<0.02	0.2 µg/L	95.8	70.0	130
EP234-1: Mevinphos	7786-34-7	0.02	µg/L	<0.02	0.2 µg/L	94.4	77.0	123
EP234-1: Monocrotophos	6923-22-4	0.02	µg/L	<0.02	0.2 µg/L	94.6	75.0	129
EP234-1: Omethoate	1113-02-6	0.01	µg/L	<0.01	0.1 µg/L	94.9	74.0	130
EP234-1: Parathion	56-38-2	0.2	µg/L	<0.2	2 µg/L	136	69.0	139
EP234-1: Parathion-methyl	298-00-0	0.5	µg/L	<0.5	20 µg/L	67.2	66.0	140
EP234-1: Phorate	298-02-2	0.1	µg/L	<0.1	1 µg/L	81.0	68.0	136

Sub-Matrix: **WATER**

Method: Compound	CAS Number	LOR	Unit	Method Blank (MB) Report	Laboratory Control Spike (LCS) Report			
					Spike	Spike Recovery (%)	Acceptable Limits (%)	
				Result	Concentration	LCS	Low	High
EP234A: OP Pesticides (QCLot: 5098986) - continued								
EP234-1: Pirimiphos-ethyl	23505-41-1	0.01	µg/L	<0.01	0.1 µg/L	94.2	70.0	130
EP234-1: Pirimiphos-methyl	29232-93-7	0.01	µg/L	<0.01	0.1 µg/L	87.6	71.0	137
EP234-1: Profenofos	41198-08-7	0.01	µg/L	<0.01	0.1 µg/L	94.6	70.0	130
EP234-1: Prothiofos	34643-46-4	0.1	µg/L	<0.1	1 µg/L	71.1	70.0	130
EP234-1: Sulfotep	3689-24-5	0.005	µg/L	<0.005	0.05 µg/L	95.8	71.0	137
EP234-1: Sulprofos	35400-43-2	0.05	µg/L	<0.05	0.5 µg/L	103	70.0	130
EP234-1: Temephos	3383-96-8	0.02	µg/L	<0.02	0.2 µg/L	96.4	70.0	130
EP234-1: Terbufos	13071-79-9	0.01	µg/L	<0.01	0.1 µg/L	87.4	70.0	130
EP234-1: Tetrachlorvinphos	22248-79-9	0.01	µg/L	<0.01	0.1 µg/L	101	74.0	128
EP234-1: Triazophos	24017-47-8	0.005	µg/L	<0.005	0.05 µg/L	83.0	77.0	131
EP234-1: Trichlorfon	52-68-6	0.02	µg/L	<0.02	0.2 µg/L	72.2	70.0	130
EP234-1: Trichloronate	327-98-0	0.5	µg/L	<0.5	5 µg/L	113	63.0	139
EP234A: OP Pesticides (QCLot: 5098987)								
EP234-1x: Acephate	30560-19-1	0.5	µg/L	<0.5	5 µg/L	99.6	70.0	130
EP234-1x: Bensulide	741-58-2	0.1	µg/L	<0.1	5 µg/L	84.6	70.0	130
EP234-1x: Formothion	2540-82-1	20	µg/L	<20	----	----	----	----
EP234-1x: Fosetyl Aluminium	39148-24-8	10	µg/L	<10	5 µg/L	97.6	70.0	130
EP234-1x: Methidathion	950-37-8	0.1	µg/L	<0.1	5 µg/L	98.6	70.0	130
EP234-1x: Naftalofos	1491-41-4	1	µg/L	<1.0	5 µg/L	104	70.0	130
EP234-1x: Pyrazophos	13457-18-6	0.1	µg/L	<0.1	5 µg/L	93.9	70.0	130
EP234-1x: Thiometon	640-15-3	0.5	µg/L	<0.5	5 µg/L	103	70.0	130
EP234A: OP Pesticides (QCLot: 5101712)								
EP234-1: Azinphos-methyl	86-50-0	0.02	µg/L	<0.02	0.2 µg/L	95.0	77.0	129
EP234-1: Azinphos-ethyl	2642-71-9	0.02	µg/L	<0.02	0.2 µg/L	96.8	75.0	135
EP234-1: Bromophos-ethyl	4824-78-6	0.1	µg/L	<0.10	1 µg/L	128	70.0	130
EP234-1: Carbofenothion	786-19-6	0.02	µg/L	<0.02	0.2 µg/L	99.4	70.0	130
EP234-1: Chlorfenvinphos	470-90-6	0.02	µg/L	<0.02	0.2 µg/L	86.6	74.0	134
EP234-1: Chlorpyrifos	2921-88-2	0.02	µg/L	<0.02	0.2 µg/L	92.0	70.0	130
EP234-1: Chlorpyrifos-methyl	5598-13-0	0.2	µg/L	<0.2	2 µg/L	110	70.0	130
EP234-1: Coumaphos	56-72-4	0.01	µg/L	<0.01	0.1 µg/L	94.6	70.0	130
EP234-1: Demeton-O	298-03-3	0.02	µg/L	<0.02	0.05 µg/L	98.2	64.0	134
EP234-1: Demeton-O & Demeton-S	298-03-3/126-75-0	0.02	µg/L	<0.02	0.1 µg/L	102	79.0	127
EP234-1: Demeton-S	126-75-0	0.02	µg/L	<0.02	0.05 µg/L	105	63.0	135

Sub-Matrix: **WATER**

Method: Compound	CAS Number	LOR	Unit	Method Blank (MB) Report	Laboratory Control Spike (LCS) Report			
					Spike	Spike Recovery (%)	Acceptable Limits (%)	
				Result	Concentration	LCS	Low	High
EP234A: OP Pesticides (QCLot: 5101712) - continued								
EP234-1: Demeton-S-methyl	919-86-8	0.02	µg/L	<0.02	0.2 µg/L	93.2	70.0	128
EP234-1: Diazinon	333-41-5	0.01	µg/L	<0.01	0.1 µg/L	96.6	68.0	138
EP234-1: Dichlorvos	62-73-7	0.2	µg/L	<0.20	2 µg/L	109	76.0	128
EP234-1: Dimethoate	60-51-5	0.02	µg/L	<0.02	0.2 µg/L	103	75.0	127
EP234-1: Disulfoton	298-04-4	0.05	µg/L	<0.05	0.5 µg/L	106	72.0	134
EP234-1: EPN	2104-64-5	0.05	µg/L	<0.05	0.5 µg/L	92.3	70.0	130
EP234-1: Ethion	563-12-2	0.02	µg/L	<0.02	0.2 µg/L	99.8	70.0	130
EP234-1: Ethoprophos	13194-48-4	0.01	µg/L	<0.01	0.1 µg/L	96.3	78.0	128
EP234-1: Fenamiphos	22224-92-6	0.01	µg/L	<0.01	0.1 µg/L	93.8	71.0	135
EP234-1: Fenchlorphos (Ronnel)	299-84-3	10	µg/L	<10	100 µg/L	87.6	70.0	130
EP234-1: Fenitrothion	122-14-5	2	µg/L	<2	20 µg/L	128	64.0	136
EP234-1: Fensulfothion	115-90-2	0.01	µg/L	<0.01	0.1 µg/L	101	79.0	125
EP234-1: Fenthion	55-38-9	0.05	µg/L	<0.05	0.5 µg/L	86.1	70.0	130
EP234-1: Malathion	121-75-5	0.02	µg/L	<0.02	0.2 µg/L	96.6	70.0	130
EP234-1: Mevinphos	7786-34-7	0.02	µg/L	<0.02	0.2 µg/L	104	77.0	123
EP234-1: Monocrotophos	6923-22-4	0.02	µg/L	<0.02	0.2 µg/L	101	75.0	129
EP234-1: Omethoate	1113-02-6	0.01	µg/L	<0.01	0.1 µg/L	98.0	74.0	130
EP234-1: Parathion	56-38-2	0.2	µg/L	<0.2	2 µg/L	74.5	69.0	139
EP234-1: Parathion-methyl	298-00-0	0.5	µg/L	<0.5	20 µg/L	82.7	66.0	140
EP234-1: Phorate	298-02-2	0.1	µg/L	<0.1	1 µg/L	93.4	68.0	136
EP234-1: Pirimiphos-ethyl	23505-41-1	0.01	µg/L	<0.01	0.1 µg/L	91.7	70.0	130
EP234-1: Pirimiphos-methyl	29232-93-7	0.01	µg/L	<0.01	0.1 µg/L	101	71.0	137
EP234-1: Profenofos	41198-08-7	0.01	µg/L	<0.01	0.1 µg/L	96.2	70.0	130
EP234-1: Prothiofos	34643-46-4	0.1	µg/L	<0.1	1 µg/L	76.2	70.0	130
EP234-1: Sulfotep	3689-24-5	0.005	µg/L	<0.005	0.05 µg/L	96.4	71.0	137
EP234-1: Sulprofos	35400-43-2	0.05	µg/L	<0.05	0.5 µg/L	93.3	70.0	130
EP234-1: Temephos	3383-96-8	0.02	µg/L	<0.02	0.2 µg/L	102	70.0	130
EP234-1: Terbufos	13071-79-9	0.01	µg/L	<0.01	0.1 µg/L	97.4	70.0	130
EP234-1: Tetrachlorvinphos	22248-79-9	0.01	µg/L	<0.01	0.1 µg/L	102	74.0	128
EP234-1: Triazophos	24017-47-8	0.005	µg/L	<0.005	0.05 µg/L	98.4	77.0	131
EP234-1: Trichlorfon	52-68-6	0.02	µg/L	<0.02	0.2 µg/L	76.5	70.0	130
EP234-1: Trichloronate	327-98-0	0.5	µg/L	<0.5	5 µg/L	88.9	63.0	139
EP234A: OP Pesticides (QCLot: 5101713)								
EP234-1x: Acephate	30560-19-1	0.5	µg/L	<0.5	5 µg/L	91.6	70.0	130

Sub-Matrix: **WATER**

Method: Compound	CAS Number	LOR	Unit	Method Blank (MB) Report: Result	Laboratory Control Spike (LCS) Report: Spike Concentration	LCS: Spike Recovery (%)	Acceptable Limits (%): Low	Acceptable Limits (%): High
EP234A: OP Pesticides (QCLot: 5101713) - continued								
EP234-1x: Bensulide	741-58-2	0.1	µg/L	<0.1	5 µg/L	90.0	70.0	130
EP234-1x: Formothion	2540-82-1	20	µg/L	<20	----	----	----	----
EP234-1x: Fosetyl Aluminium	39148-24-8	10	µg/L	<10	5 µg/L	90.6	70.0	130
EP234-1x: Methidathion	950-37-8	0.1	µg/L	<0.1	5 µg/L	106	70.0	130
EP234-1x: Naftalofos	1491-41-4	1	µg/L	<1.0	5 µg/L	98.3	70.0	130
EP234-1x: Pyrazophos	13457-18-6	0.1	µg/L	<0.1	5 µg/L	98.2	70.0	130
EP234-1x: Thiometon	640-15-3	0.5	µg/L	<0.5	5 µg/L	103	70.0	130

Matrix Spike (MS) Report

The quality control term Matrix Spike (MS) refers to an intralaboratory split sample spiked with a representative set of target analytes. The purpose of this QC parameter is to monitor potential matrix effects on analyte recoveries. Static Recovery Limits as per laboratory Data Quality Objectives (DQOs). Ideal recovery ranges stated may be waived in the event of sample matrix interference.

Sub-Matrix: **WATER**

Laboratory sample ID	Sample ID	Method: Compound	CAS Number	Matrix Spike (MS) Report: Spike Concentration	SpikeRecovery(%): MS	Acceptable Limits (%): Low	Acceptable Limits (%): High
EG020T: Total Metals by ICP-MS (QCLot: 5101704)							
ES2319028-002	BADMS	EG020A-T: Arsenic	7440-38-2	1 mg/L	104	70.0	130
		EG020A-T: Cadmium	7440-43-9	0.25 mg/L	103	70.0	130
		EG020A-T: Chromium	7440-47-3	1 mg/L	101	70.0	130
		EG020A-T: Copper	7440-50-8	1 mg/L	100	70.0	130
		EG020A-T: Lead	7439-92-1	1 mg/L	112	70.0	130
		EG020A-T: Manganese	7439-96-5	1 mg/L	102	70.0	130
		EG020A-T: Nickel	7440-02-0	1 mg/L	101	70.0	130
		EG020A-T: Zinc	7440-66-6	1 mg/L	102	70.0	130
EG035T: Total Recoverable Mercury by FIMS (QCLot: 5101135)							
ES2319028-001	BADDS	EG035T: Mercury	7439-97-6	0.01 mg/L	91.4	70.0	130
EK055G: Ammonia as N by Discrete Analyser (QCLot: 5106626)							
ES2319027-001	Anonymous	EK055G: Ammonia as N	7664-41-7	1 mg/L	98.3	70.0	130
EK057G: Nitrite as N by Discrete Analyser (QCLot: 5098296)							
ES2319027-001	Anonymous	EK057G: Nitrite as N	14797-65-0	0.5 mg/L	105	70.0	130
EK059G: Nitrite plus Nitrate as N (NOx) by Discrete Analyser (QCLot: 5106627)							
ES2319027-001	Anonymous	EK059G: Nitrite + Nitrate as N	----	0.5 mg/L	96.5	70.0	130
EK061G: Total Kjeldahl Nitrogen By Discrete Analyser (QCLot: 5106622)							
ES2319027-001	Anonymous	EK061G: Total Kjeldahl Nitrogen as N	----	5 mg/L	99.6	70.0	130
EK067G: Total Phosphorus as P by Discrete Analyser (QCLot: 5106623)							
ES2319027-001	Anonymous	EK067G: Total Phosphorus as P	----	1 mg/L	109	70.0	130

Sub-Matrix: **WATER**

				Matrix Spike (MS) Report			
				Spike	SpikeRecovery(%)	Acceptable Limits (%)	
Laboratory sample ID	*Sample ID*	*Method: Compound*	*CAS Number*	*Concentration*	*MS*	*Low*	*High*
EK071G: Reactive Phosphorus as P by discrete analyser (QCLot: 5098297)							
ES2319027-001	Anonymous	EK071G: Reactive Phosphorus as P	14265-44-2	0.5 mg/L	99.2	70.0	130
EP074E: Halogenated Aliphatic Compounds (QCLot: 5099381)							
ES2319028-001	BADDS	EP074: 1.1-Dichloroethene	75-35-4	25 µg/L	102	70.0	130
		EP074: Trichloroethene	79-01-6	25 µg/L	104	70.0	130
EP074F: Halogenated Aromatic Compounds (QCLot: 5099381)							
ES2319028-001	BADDS	EP074: Chlorobenzene	108-90-7	25 µg/L	112	70.0	130
EP075(SIM)A: Phenolic Compounds (QCLot: 5099399)							
ES2319028-002	BADMS	EP075(SIM): Phenol	108-95-2	20 µg/L	33.4	20.0	130
		EP075(SIM): 2-Chlorophenol	95-57-8	20 µg/L	76.0	60.0	130
		EP075(SIM): 2-Nitrophenol	88-75-5	20 µg/L	67.9	60.0	130
		EP075(SIM): 4-Chloro-3-methylphenol	59-50-7	20 µg/L	81.4	70.0	130
		EP075(SIM): Pentachlorophenol	87-86-5	20 µg/L	67.2	20.0	130
EP075(SIM)B: Polynuclear Aromatic Hydrocarbons (QCLot: 5099399)							
ES2319028-002	BADMS	EP075(SIM): Acenaphthene	83-32-9	20 µg/L	78.0	70.0	130
		EP075(SIM): Pyrene	129-00-0	20 µg/L	79.0	70.0	130
EP080: BTEXN (QCLot: 5099380)							
ES2319028-001	BADDS	EP080: Benzene	71-43-2	25 µg/L	119	70.0	130
		EP080: Toluene	108-88-3	25 µg/L	116	70.0	130
		EP080: Ethylbenzene	100-41-4	25 µg/L	116	70.0	130
		EP080: meta- & para-Xylene	108-38-3 106-42-3	25 µg/L	114	70.0	130
		EP080: ortho-Xylene	95-47-6	25 µg/L	115	70.0	130
		EP080: Naphthalene	91-20-3	25 µg/L	102	70.0	130
EP234A: OP Pesticides (QCLot: 5098986)							
EB2316997-001	Anonymous	EP234-1: Azinphos-methyl	86-50-0	0.2 µg/L	90.4	70.0	130
		EP234-1: Azinphos-ethyl	2642-71-9	0.2 µg/L	# 65.6	70.0	130
		EP234-1: Bromophos-ethyl	4824-78-6	1 µg/L	80.1	70.0	130
		EP234-1: Carbofenothion	786-19-6	0.2 µg/L	# 1.2	70.0	130
		EP234-1: Chlorfenvinphos	470-90-6	0.2 µg/L	102	70.0	130
		EP234-1: Chlorpyrifos	2921-88-2	0.2 µg/L	105	70.0	130
		EP234-1: Chlorpyrifos-methyl	5598-13-0	2 µg/L	80.6	58.0	136
		EP234-1: Coumaphos	56-72-4	0.1 µg/L	80.4	70.0	130
		EP234-1: Demeton-O	298-03-3	0.05 µg/L	# 0.0	70.0	130
		EP234-1: Demeton-O & Demeton-S	298-03-3/126-75-0	0.1 µg/L	# 0.0	69.0	129
		EP234-1: Demeton-S	126-75-0	0.05 µg/L	# 0.0	70.0	130
		EP234-1: Demeton-S-methyl	919-86-8	0.2 µg/L	# 0.0	70.0	130

Sub-Matrix: **WATER**

				Matrix Spike (MS) Report			
				Spike	SpikeRecovery(%)	Acceptable Limits (%)	
Laboratory sample ID	Sample ID	Method: Compound	CAS Number	Concentration	MS	Low	High
EP234A: OP Pesticides (QCLot: 5098986) - continued							
EB2316997-001	Anonymous	EP234-1: Diazinon	333-41-5	0.1 µg/L	77.0	70.0	130
		EP234-1: Dichlorvos	62-73-7	2 µg/L	114	70.0	130
		EP234-1: Dimethoate	60-51-5	0.2 µg/L	80.8	69.0	131
		EP234-1: Disulfoton	298-04-4	0.5 µg/L	# 0.3	70.0	130
		EP234-1: EPN	2104-64-5	0.5 µg/L	# 53.8	70.0	130
		EP234-1: Ethion	563-12-2	0.2 µg/L	# 39.6	70.0	130
		EP234-1: Ethoprophos	13194-48-4	0.1 µg/L	94.7	70.0	132
		EP234-1: Fenamiphos	22224-92-6	0.1 µg/L	# 0.0	70.0	130
		EP234-1: Fenchlorphos (Ronnel)	299-84-3	100 µg/L	106	71.0	133
		EP234-1: Fenitrothion	122-14-5	20 µg/L	72.1	64.0	136
		EP234-1: Fensulfothion	115-90-2	0.1 µg/L	# 79.1	83.0	123
		EP234-1: Fenthion	55-38-9	0.5 µg/L	# 0.0	70.0	130
		EP234-1: Malathion	121-75-5	0.2 µg/L	90.0	70.0	130
		EP234-1: Mevinphos	7786-34-7	0.2 µg/L	93.8	69.0	125
		EP234-1: Monocrotophos	6923-22-4	0.2 µg/L	89.5	70.0	128
		EP234-1: Omethoate	1113-02-6	0.1 µg/L	93.4	70.0	130
		EP234-1: Parathion	56-38-2	2 µg/L	127	70.0	130
		EP234-1: Parathion-methyl	298-00-0	20 µg/L	105	70.0	140
		EP234-1: Phorate	298-02-2	1 µg/L	# 0.02	70.0	130
		EP234-1: Pirimiphos-ethyl	23505-41-1	0.1 µg/L	# 30.9	70.0	130
		EP234-1: Pirimiphos-methyl	29232-93-7	0.1 µg/L	# 46.3	70.0	130
		EP234-1: Profenofos	41198-08-7	0.1 µg/L	88.4	70.0	130
		EP234-1: Prothiofos	34643-46-4	1 µg/L	74.2	70.0	130
		EP234-1: Sulfotep	3689-24-5	0.05 µg/L	83.2	63.0	135
		EP234-1: Sulprofos	35400-43-2	0.5 µg/L	# 0.02	70.0	130
		EP234-1: Temephos	3383-96-8	0.2 µg/L	# 29.1	70.0	130
		EP234-1: Terbufos	13071-79-9	0.1 µg/L	# 0.0	70.0	130
		EP234-1: Tetrachlorvinphos	22248-79-9	0.1 µg/L	95.6	77.0	125
		EP234-1: Triazophos	24017-47-8	0.05 µg/L	87.2	74.0	132
		EP234-1: Trichlorfon	52-68-6	0.2 µg/L	120	70.0	130
		EP234-1: Trichloronate	327-98-0	5 µg/L	66.1	63.0	139
EP234A: OP Pesticides (QCLot: 5098987)							
EB2316997-001	Anonymous	EP234-1x: Acephate	30560-19-1	5 µg/L	# 7.3	70.0	130
		EP234-1x: Bensulide	741-58-2	5 µg/L	# 2.1	70.0	130
		EP234-1x: Fosetyl Aluminium	39148-24-8	5 µg/L	# 34.5	70.0	130
		EP234-1x: Methidathion	950-37-8	5 µg/L	98.0	70.0	130
		EP234-1x: Naftalofos	1491-41-4	5 µg/L	90.4	70.0	130
		EP234-1x: Pyrazophos	13457-18-6	5 µg/L	97.1	70.0	130

Sub-Matrix: **WATER**

				Matrix Spike (MS) Report			
				Spike	SpikeRecovery(%)	Acceptable Limits (%)	
Laboratory sample ID	Sample ID	Method: Compound	CAS Number	Concentration	MS	Low	High
EP234A: OP Pesticides (QCLot: 5098987) - continued							
EB2316997-001	Anonymous	EP234-1x: Thiometon	640-15-3	5 µg/L	# Not Determined	70.0	130
EP234A: OP Pesticides (QCLot: 5101712)							
ES2319028-001	BADDS	EP234-1: Azinphos-methyl	86-50-0	0.2 µg/L	100	70.0	130
		EP234-1: Azinphos-ethyl	2642-71-9	0.2 µg/L	111	70.0	130
		EP234-1: Bromophos-ethyl	4824-78-6	1 µg/L	98.7	70.0	130
		EP234-1: Carbofenothion	786-19-6	0.2 µg/L	101	70.0	130
		EP234-1: Chlorfenvinphos	470-90-6	0.2 µg/L	95.8	70.0	130
		EP234-1: Chlorpyrifos	2921-88-2	0.2 µg/L	107	70.0	130
		EP234-1: Chlorpyrifos-methyl	5598-13-0	2 µg/L	123	58.0	136
		EP234-1: Coumaphos	56-72-4	0.1 µg/L	108	70.0	130
		EP234-1: Demeton-O	298-03-3	0.05 µg/L	99.2	70.0	130
		EP234-1: Demeton-O & Demeton-S	298-03-3/126-75-0	0.1 µg/L	107	69.0	129
		EP234-1: Demeton-S	126-75-0	0.05 µg/L	114	70.0	130
		EP234-1: Demeton-S-methyl	919-86-8	0.2 µg/L	81.2	70.0	130
		EP234-1: Diazinon	333-41-5	0.1 µg/L	101	70.0	130
		EP234-1: Dichlorvos	62-73-7	2 µg/L	115	70.0	130
		EP234-1: Dimethoate	60-51-5	0.2 µg/L	101	69.0	131
		EP234-1: Disulfoton	298-04-4	0.5 µg/L	113	70.0	130
		EP234-1: EPN	2104-64-5	0.5 µg/L	118	70.0	130
		EP234-1: Ethion	563-12-2	0.2 µg/L	98.9	70.0	130
		EP234-1: Ethoprophos	13194-48-4	0.1 µg/L	# 152	70.0	132
		EP234-1: Fenamiphos	22224-92-6	0.1 µg/L	110	70.0	130
		EP234-1: Fenchlorphos (Ronnel)	299-84-3	100 µg/L	111	71.0	133
		EP234-1: Fenitrothion	122-14-5	20 µg/L	109	64.0	136
		EP234-1: Fensulfothion	115-90-2	0.1 µg/L	111	83.0	123
		EP234-1: Fenthion	55-38-9	0.5 µg/L	107	70.0	130
		EP234-1: Malathion	121-75-5	0.2 µg/L	108	70.0	130
		EP234-1: Mevinphos	7786-34-7	0.2 µg/L	# 168	69.0	125
		EP234-1: Monocrotophos	6923-22-4	0.2 µg/L	102	70.0	128
		EP234-1: Omethoate	1113-02-6	0.1 µg/L	96.0	70.0	130
		EP234-1: Parathion	56-38-2	2 µg/L	120	70.0	130
		EP234-1: Parathion-methyl	298-00-0	20 µg/L	119	70.0	140
		EP234-1: Phorate	298-02-2	1 µg/L	96.8	70.0	130
		EP234-1: Pirimiphos-ethyl	23505-41-1	0.1 µg/L	104	70.0	130
		EP234-1: Pirimiphos-methyl	29232-93-7	0.1 µg/L	85.1	70.0	130
		EP234-1: Profenofos	41198-08-7	0.1 µg/L	105	70.0	130
		EP234-1: Prothiofos	34643-46-4	1 µg/L	# 65.4	70.0	130

Sub-Matrix: **WATER**

				Matrix Spike (MS) Report			
				Spike	SpikeRecovery(%)	Acceptable Limits (%)	
Laboratory sample ID	*Sample ID*	*Method: Compound*	*CAS Number*	*Concentration*	*MS*	*Low*	*High*
EP234A: OP Pesticides (QCLot: 5101712) - continued							
ES2319028-001	BADDS	EP234-1: Sulfotep	3689-24-5	0.05 µg/L	97.6	63.0	135
		EP234-1: Sulprofos	35400-43-2	0.5 µg/L	98.8	70.0	130
		EP234-1: Temephos	3383-96-8	0.2 µg/L	117	70.0	130
		EP234-1: Terbufos	13071-79-9	0.1 µg/L	101	70.0	130
		EP234-1: Tetrachlorvinphos	22248-79-9	0.1 µg/L	105	77.0	125
		EP234-1: Triazophos	24017-47-8	0.05 µg/L	103	74.0	132
		EP234-1: Trichlorfon	52-68-6	0.2 µg/L	90.7	70.0	130
		EP234-1: Trichloronate	327-98-0	5 µg/L	109	63.0	139
EP234A: OP Pesticides (QCLot: 5101713)							
ES2319028-001	BADDS	EP234-1x: Acephate	30560-19-1	5 µg/L	81.6	70.0	130
		EP234-1x: Bensulide	741-58-2	5 µg/L	115	70.0	130
		EP234-1x: Fosetyl Aluminium	39148-24-8	5 µg/L	# 10.5	70.0	130
		EP234-1x: Methidathion	950-37-8	5 µg/L	116	70.0	130
		EP234-1x: Naftalofos	1491-41-4	5 µg/L	112	70.0	130
		EP234-1x: Pyrazophos	13457-18-6	5 µg/L	118	70.0	130
		EP234-1x: Thiometon	640-15-3	5 µg/L	90.2	70.0	130

QA/QC Compliance Assessment to assist with Quality Review

Work Order	: **ES2319028**	Page	: 1 of 12
Client	: **GHD PTY LTD**	Laboratory	: Environmental Division Sydney
Contact	: MR HENRY LUO	Telephone	: +61-2-8784 8555
Project	: 12554717	Date Samples Received	: 07-Jun-2023
Site	: ----	Issue Date	: 15-Jun-2023
Sampler	: EMILY SMITH	No. of samples received	: 14
Order number	: 12554717	No. of samples analysed	: 14

This report is automatically generated by the ALS LIMS through interpretation of the ALS Quality Control Report and several Quality Assurance parameters measured by ALS. This automated reporting highlights any non-conformances, facilitates faster and more accurate data validation and is designed to assist internal expert and external Auditor review. Many components of this report contribute to the overall DQO assessment and reporting for guideline compliance.

Brief method summaries and references are also provided to assist in traceability.

Summary of Outliers

Outliers : Quality Control Samples

This report highlights outliers flagged in the Quality Control (QC) Report.

- **NO Method Blank value outliers occur.**
- **NO Duplicate outliers occur.**
- **NO Laboratory Control outliers occur.**
- **Matrix Spike outliers exist - please see following pages for full details.**
- **For all regular sample matrices, NO surrogate recovery outliers occur.**

Outliers : Analysis Holding Time Compliance

- **NO Analysis Holding Time Outliers exist.**

Outliers : Frequency of Quality Control Samples

- **NO Quality Control Sample Frequency Outliers exist.**

Outliers : Quality Control Samples

Duplicates, Method Blanks, Laboratory Control Samples and Matrix Spikes

Matrix: **WATER**

Compound Group Name	Laboratory Sample ID	Client Sample ID	Analyte	CAS Number	Data	Limits	Comment
Matrix Spike (MS) Recoveries							
EP234A: OP Pesticides	EB2316997--001	Anonymous	**Azinphos-ethyl**	2642-71-9	65.6 %	70.0-130%	**Recovery less than lower data quality objective**
EP234A: OP Pesticides	EB2316997--001	Anonymous	**Carbofenothion**	786-19-6	1.2 %	70.0-130%	**Recovery less than lower data quality objective**
EP234A: OP Pesticides	EB2316997--001	Anonymous	**Demeton-O**	298-03-3	0.0 %	70.0-130%	**Recovery less than lower data quality objective**
EP234A: OP Pesticides	EB2316997--001	Anonymous	**Demeton-O & Demeton-S**	298-03-3/126-75-0	0.0 %	69.0-129%	**Recovery less than lower data quality objective**
EP234A: OP Pesticides	EB2316997--001	Anonymous	**Demeton-S**	126-75-0	0.0 %	70.0-130%	**Recovery less than lower data quality objective**
EP234A: OP Pesticides	EB2316997--001	Anonymous	**Demeton-S-methyl**	919-86-8	0.0 %	70.0-130%	**Recovery less than lower data quality objective**
EP234A: OP Pesticides	EB2316997--001	Anonymous	**Disulfoton**	298-04-4	0.3 %	70.0-130%	**Recovery less than lower data quality objective**
EP234A: OP Pesticides	EB2316997--001	Anonymous	**EPN**	2104-64-5	53.8 %	70.0-130%	**Recovery less than lower data quality objective**
EP234A: OP Pesticides	EB2316997--001	Anonymous	**Ethion**	563-12-2	39.6 %	70.0-130%	**Recovery less than lower data quality objective**
EP234A: OP Pesticides	ES2319028--001	BADDS	**Ethoprophos**	13194-48-4	152 %	70.0-132%	**Recovery greater than upper data quality objective**
EP234A: OP Pesticides	EB2316997--001	Anonymous	**Fenamiphos**	22224-92-6	0.0 %	70.0-130%	**Recovery less than lower data quality objective**
EP234A: OP Pesticides	EB2316997--001	Anonymous	**Fensulfothion**	115-90-2	79.1 %	83.0-123%	**Recovery less than lower data quality objective**
EP234A: OP Pesticides	EB2316997--001	Anonymous	**Fenthion**	55-38-9	0.0 %	70.0-130%	**Recovery less than lower data quality objective**
EP234A: OP Pesticides	ES2319028--001	BADDS	**Mevinphos**	7786-34-7	168 %	69.0-125%	**Recovery greater than upper data quality objective**
EP234A: OP Pesticides	EB2316997--001	Anonymous	**Phorate**	298-02-2	0.02 %	70.0-130%	**Recovery less than lower data quality objective**
EP234A: OP Pesticides	EB2316997--001	Anonymous	**Pirimiphos-ethyl**	23505-41-1	30.9 %	70.0-130%	**Recovery less than lower data quality objective**
EP234A: OP Pesticides	EB2316997--001	Anonymous	**Pirimiphos-methyl**	29232-93-7	46.3 %	70.0-130%	**Recovery less than lower data quality objective**
EP234A: OP Pesticides	ES2319028--001	BADDS	**Prothiofos**	34643-46-4	65.4 %	70.0-130%	**Recovery less than lower data quality objective**
EP234A: OP Pesticides	EB2316997--001	Anonymous	**Sulprofos**	35400-43-2	0.02 %	70.0-130%	**Recovery less than lower data quality objective**
EP234A: OP Pesticides	EB2316997--001	Anonymous	**Temephos**	3383-96-8	29.1 %	70.0-130%	**Recovery less than lower data quality objective**

Matrix: **WATER**

Compound Group Name	Laboratory Sample ID	Client Sample ID	Analyte	CAS Number	Data	Limits	Comment
Matrix Spike (MS) Recoveries - Continued							
EP234A: OP Pesticides	EB2316997--001	Anonymous	**Terbufos**	13071-79-9	0.0 %	70.0-130%	**Recovery less than lower data quality objective**
EP234A: OP Pesticides	EB2316997--001	Anonymous	**Acephate**	30560-19-1	7.3 %	70.0-130%	**Recovery less than lower data quality objective**
EP234A: OP Pesticides	EB2316997--001	Anonymous	**Bensulide**	741-58-2	2.1 %	70.0-130%	**Recovery less than lower data quality objective**
EP234A: OP Pesticides	EB2316997--001	Anonymous	**Fosetyl Aluminium**	39148-24-8	34.5 %	70.0-130%	**Recovery less than lower data quality objective**
EP234A: OP Pesticides	ES2319028--001	BADDS	**Fosetyl Aluminium**	39148-24-8	10.5 %	70.0-130%	**Recovery less than lower data quality objective**

Analysis Holding Time Compliance

If samples are identified below as having been analysed or extracted outside of recommended holding times, this should be taken into consideration when interpreting results.

This report summarizes extraction / preparation and analysis times and compares each with ALS recommended holding times (referencing USEPA SW 846, APHA, AS and NEPM) based on the sample container provided. Dates reported represent first date of extraction or analysis and preclude subsequent dilutions and reruns. A listing of breaches (if any) is provided herein.

Holding time for leachate methods (e.g. TCLP) vary according to the analytes reported. Assessment compares the leach date with the shortest analyte holding time for the equivalent soil method. These are: organics 14 days, mercury 28 days & other metals 180 days. A recorded breach does not guarantee a breach for all non-volatile parameters.

Holding times for ***VOC in soils*** vary according to analytes of interest. Vinyl Chloride and Styrene holding time is 7 days; others 14 days. A recorded breach does not guarantee a breach for all VOC analytes and should be verified in case the reported breach is a false positive or Vinyl Chloride and Styrene are not key analytes of interest/concern.

Matrix: **WATER**

Evaluation: × = Holding time breach ; ✓ = Within holding time.

Method / ***Container*** / *Client Sample ID(s)*	***Sample Date***	*Extraction / Preparation*			*Analysis*		
		Date extracted	*Due for extraction*	*Evaluation*	***Date analysed***	*Due for analysis*	*Evaluation*
EA015: Total Dissolved Solids dried at 180 ± 5 °C							
Clear Plastic Bottle - Natural (EA015H) HINDS, HINUS, KEMDS, KEMUS, ROPDS, ROPUS, SOUDS, SOUUS	**06-Jun-2023**	**----**	----	----	**09-Jun-2023**	13-Jun-2023	✓
Clear Plastic Bottle - Natural (EA015H) BADUS, COSDS, COSUS	**07-Jun-2023**	**----**	----	----	**09-Jun-2023**	14-Jun-2023	✓
Clear Plastic Bottle - Natural (EA015H) BADDS, BADMS	**07-Jun-2023**	**----**	----	----	**13-Jun-2023**	14-Jun-2023	✓

Matrix: **WATER**

Evaluation: × = Holding time breach ; ✓ = Within holding time.

Method / Container / Client Sample ID(s)	Sample Date	Extraction / Preparation			Analysis		
		Date extracted	Due for extraction	Evaluation	Date analysed	Due for analysis	Evaluation
EA025: Total Suspended Solids dried at 104 ± 2°C							
Clear Plastic Bottle - Natural (EA025H)							
HINDS, HINUS, KEMDS, KEMUS, ROPDS, ROPUS, SOUDS, SOUUS	**06-Jun-2023**	**----**	----	----	**09-Jun-2023**	13-Jun-2023	✓
Clear Plastic Bottle - Natural (EA025H)							
BADUS, COSDS, COSUS	**07-Jun-2023**	**----**	----	----	**09-Jun-2023**	14-Jun-2023	✓
Clear Plastic Bottle - Natural (EA025H)							
BADDS, BADMS	**07-Jun-2023**	**----**	----	----	**13-Jun-2023**	14-Jun-2023	✓
EG020T: Total Metals by ICP-MS							
Clear Plastic Bottle - Nitric Acid; Unfiltered (EG020A-T)							
HINDS, HINUS, KEMDS, KEMUS, ROPDS, ROPUS, SOUDS, SOUUS, SWDUP1	**06-Jun-2023**	**09-Jun-2023**	03-Dec-2023	✓	**09-Jun-2023**	03-Dec-2023	✓
Clear Plastic Bottle - Nitric Acid; Unfiltered (EG020A-T)							
BADDS, BADMS, BADUS, COSDS, COSUS	**07-Jun-2023**	**09-Jun-2023**	04-Dec-2023	✓	**09-Jun-2023**	04-Dec-2023	✓
EG035T: Total Recoverable Mercury by FIMS							
Clear Plastic Bottle - Nitric Acid; Unfiltered (EG035T)							
HINDS, HINUS, KEMDS, KEMUS, ROPDS, ROPUS, SOUDS, SOUUS, SWDUP1	**06-Jun-2023**	**----**	----	----	**11-Jun-2023**	04-Jul-2023	✓
Clear Plastic Bottle - Nitric Acid; Unfiltered (EG035T)							
BADDS, BADMS, BADUS, COSDS, COSUS	**07-Jun-2023**	**----**	----	----	**11-Jun-2023**	05-Jul-2023	✓
EK055G: Ammonia as N by Discrete Analyser							
Clear Plastic Bottle - Sulfuric Acid (EK055G)							
HINDS, HINUS, KEMDS, KEMUS, ROPDS, ROPUS, SOUDS, SOUUS	**06-Jun-2023**	**----**	----	----	**13-Jun-2023**	04-Jul-2023	✓
Clear Plastic Bottle - Sulfuric Acid (EK055G)							
BADDS, BADMS, BADUS, COSDS, COSUS	**07-Jun-2023**	**----**	----	----	**13-Jun-2023**	05-Jul-2023	✓

Matrix: **WATER**

Evaluation: × = Holding time breach ; ✓ = Within holding time.

Method / Container / Client Sample ID(s)	Sample Date	Extraction / Preparation			Analysis		
		Date extracted	Due for extraction	Evaluation	Date analysed	Due for analysis	Evaluation
EK057G: Nitrite as N by Discrete Analyser							
Clear Plastic Bottle - Natural (EK057G)							
HINDS, HINUS, KEMDS, KEMUS, ROPDS, ROPUS, SOUDS, SOUUS	**06-Jun-2023**	**----**	----	----	**08-Jun-2023**	08-Jun-2023	✓
Clear Plastic Bottle - Natural (EK057G)							
BADDS, BADMS, BADUS, COSDS, COSUS	**07-Jun-2023**	**----**	----	----	**08-Jun-2023**	09-Jun-2023	✓
EK059G: Nitrite plus Nitrate as N (NOx) by Discrete Analyser							
Clear Plastic Bottle - Sulfuric Acid (EK059G)							
HINDS, HINUS, KEMDS, KEMUS, ROPDS, ROPUS, SOUDS, SOUUS	**06-Jun-2023**	**----**	----	----	**13-Jun-2023**	04-Jul-2023	✓
Clear Plastic Bottle - Sulfuric Acid (EK059G)							
BADDS, BADMS, BADUS, COSDS, COSUS	**07-Jun-2023**	**----**	----	----	**13-Jun-2023**	05-Jul-2023	✓
EK061G: Total Kjeldahl Nitrogen By Discrete Analyser							
Clear Plastic Bottle - Sulfuric Acid (EK061G)							
HINDS, HINUS, KEMDS, KEMUS, ROPDS, ROPUS, SOUDS, SOUUS	**06-Jun-2023**	**13-Jun-2023**	04-Jul-2023	✓	**13-Jun-2023**	04-Jul-2023	✓
Clear Plastic Bottle - Sulfuric Acid (EK061G)							
BADDS, BADMS, BADUS, COSDS, COSUS	**07-Jun-2023**	**13-Jun-2023**	05-Jul-2023	✓	**13-Jun-2023**	05-Jul-2023	✓
EK067G: Total Phosphorus as P by Discrete Analyser							
Clear Plastic Bottle - Sulfuric Acid (EK067G)							
HINDS, HINUS, KEMDS, KEMUS, ROPDS, ROPUS, SOUDS, SOUUS	**06-Jun-2023**	**13-Jun-2023**	04-Jul-2023	✓	**13-Jun-2023**	04-Jul-2023	✓
Clear Plastic Bottle - Sulfuric Acid (EK067G)							
BADDS, BADMS, BADUS, COSDS, COSUS	**07-Jun-2023**	**13-Jun-2023**	05-Jul-2023	✓	**13-Jun-2023**	05-Jul-2023	✓

Matrix: **WATER**

Evaluation: × = Holding time breach ; ✓ = Within holding time.

Method / Container / Client Sample ID(s)	Sample Date	Extraction / Preparation			Analysis		
		Date extracted	Due for extraction	Evaluation	Date analysed	Due for analysis	Evaluation
EK071G: Reactive Phosphorus as P by discrete analyser							
Clear Plastic Bottle - Natural (EK071G)							
HINDS, HINUS, KEMDS, KEMUS, ROPDS, ROPUS, SOUDS, SOUUS	**06-Jun-2023**	**----**	----	----	**08-Jun-2023**	08-Jun-2023	✓
Clear Plastic Bottle - Natural (EK071G)							
BADDS, BADMS, BADUS, COSDS, COSUS	**07-Jun-2023**	**----**	----	----	**08-Jun-2023**	09-Jun-2023	✓
EP008: Chlorophyll a & Pheophytin a							
White Plastic Bottle - Unpreserved (EP008)							
HINDS, HINUS, KEMDS, KEMUS, ROPDS, ROPUS, SOUDS, SOUUS	**06-Jun-2023**	**----**	----	----	**08-Jun-2023**	08-Jun-2023	✓
White Plastic Bottle - Unpreserved (EP008)							
BADDS, BADMS, BADUS, COSDS, COSUS	**07-Jun-2023**	**----**	----	----	**08-Jun-2023**	09-Jun-2023	✓
EP020: Oil and Grease (O&G)							
Amber Jar - Sulfuric Acid or Sodium Bisulfate (EP020)							
HINDS, HINUS, KEMDS, KEMUS, ROPDS, ROPUS, SOUDS, SOUUS	**06-Jun-2023**	**----**	----	----	**13-Jun-2023**	04-Jul-2023	✓
Amber Jar - Sulfuric Acid or Sodium Bisulfate (EP020)							
BADDS, BADMS, BADUS, COSDS, COSUS	**07-Jun-2023**	**----**	----	----	**13-Jun-2023**	05-Jul-2023	✓
EP074D: Fumigants							
Amber VOC Vial - Sulfuric Acid (EP074)							
HINDS, HINUS, KEMDS, KEMUS, ROPDS, ROPUS, SOUDS, SOUUS	**06-Jun-2023**	**08-Jun-2023**	20-Jun-2023	✓	**08-Jun-2023**	20-Jun-2023	✓
Amber VOC Vial - Sulfuric Acid (EP074)							
BADMS, BADUS, COSDS, COSUS	**07-Jun-2023**	**08-Jun-2023**	21-Jun-2023	✓	**08-Jun-2023**	21-Jun-2023	✓
Amber VOC Vial - Sulfuric Acid (EP074)							
BADDS	**07-Jun-2023**	**08-Jun-2023**	21-Jun-2023	✓	**09-Jun-2023**	21-Jun-2023	✓

Matrix: **WATER**

Evaluation: × = Holding time breach ; ✓ = Within holding time.

Method / Container / Client Sample ID(s)	Sample Date	Extraction / Preparation			Analysis		
		Date extracted	Due for extraction	Evaluation	Date analysed	Due for analysis	Evaluation
EP074E: Halogenated Aliphatic Compounds							
Amber VOC Vial - Sulfuric Acid (EP074) HINDS, HINUS, KEMDS, KEMUS, ROPDS, ROPUS, SOUDS, SOUUS	**06-Jun-2023**	**08-Jun-2023**	20-Jun-2023	✓	**08-Jun-2023**	20-Jun-2023	✓
Amber VOC Vial - Sulfuric Acid (EP074) BADMS, BADUS, COSDS, COSUS	**07-Jun-2023**	**08-Jun-2023**	21-Jun-2023	✓	**08-Jun-2023**	21-Jun-2023	✓
Amber VOC Vial - Sulfuric Acid (EP074) BADDS	**07-Jun-2023**	**08-Jun-2023**	21-Jun-2023	✓	**09-Jun-2023**	21-Jun-2023	✓
EP074F: Halogenated Aromatic Compounds							
Amber VOC Vial - Sulfuric Acid (EP074) HINDS, HINUS, KEMDS, KEMUS, ROPDS, ROPUS, SOUDS, SOUUS	**06-Jun-2023**	**08-Jun-2023**	20-Jun-2023	✓	**08-Jun-2023**	20-Jun-2023	✓
Amber VOC Vial - Sulfuric Acid (EP074) BADMS, BADUS, COSDS, COSUS	**07-Jun-2023**	**08-Jun-2023**	21-Jun-2023	✓	**08-Jun-2023**	21-Jun-2023	✓
Amber VOC Vial - Sulfuric Acid (EP074) BADDS	**07-Jun-2023**	**08-Jun-2023**	21-Jun-2023	✓	**09-Jun-2023**	21-Jun-2023	✓
EP074G: Trihalomethanes							
Amber VOC Vial - Sulfuric Acid (EP074) HINDS, HINUS, KEMDS, KEMUS, ROPDS, ROPUS, SOUDS, SOUUS	**06-Jun-2023**	**08-Jun-2023**	20-Jun-2023	✓	**08-Jun-2023**	20-Jun-2023	✓
Amber VOC Vial - Sulfuric Acid (EP074) BADMS, BADUS, COSDS, COSUS	**07-Jun-2023**	**08-Jun-2023**	21-Jun-2023	✓	**08-Jun-2023**	21-Jun-2023	✓
Amber VOC Vial - Sulfuric Acid (EP074) BADDS	**07-Jun-2023**	**08-Jun-2023**	21-Jun-2023	✓	**09-Jun-2023**	21-Jun-2023	✓
EP075(SIM)A: Phenolic Compounds							
Amber Glass Bottle - Unpreserved (EP075(SIM)) HINDS, HINUS, KEMDS, KEMUS, ROPDS, ROPUS, SOUDS, SOUUS	**06-Jun-2023**	**09-Jun-2023**	13-Jun-2023	✓	**14-Jun-2023**	19-Jul-2023	✓
Amber Glass Bottle - Unpreserved (EP075(SIM)) BADDS, BADMS, BADUS, COSDS, COSUS	**07-Jun-2023**	**09-Jun-2023**	14-Jun-2023	✓	**14-Jun-2023**	19-Jul-2023	✓

Matrix: **WATER**

Evaluation: × = Holding time breach ; ✓ = Within holding time.

Method / Container / Client Sample ID(s)	Sample Date	Extraction / Preparation			Analysis		
		Date extracted	Due for extraction	Evaluation	Date analysed	Due for analysis	Evaluation
EP075(SIM)B: Polynuclear Aromatic Hydrocarbons							
Amber Glass Bottle - Unpreserved (EP075(SIM))							
HINDS, HINUS, KEMDS, KEMUS, ROPDS, ROPUS, SOUDS, SOUUS	**06-Jun-2023**	**09-Jun-2023**	13-Jun-2023	✓	**14-Jun-2023**	19-Jul-2023	✓
Amber Glass Bottle - Unpreserved (EP075(SIM))							
BADDS, BADMS, BADUS, COSDS, COSUS	**07-Jun-2023**	**09-Jun-2023**	14-Jun-2023	✓	**14-Jun-2023**	19-Jul-2023	✓
EP080: BTEXN							
Amber VOC Vial - Sulfuric Acid (EP080)							
HINDS, HINUS, KEMDS, KEMUS, ROPDS, ROPUS, SOUDS, SOUUS	**06-Jun-2023**	**08-Jun-2023**	20-Jun-2023	✓	**08-Jun-2023**	20-Jun-2023	✓
Amber VOC Vial - Sulfuric Acid (EP080)							
BADMS, BADUS, COSDS, COSUS	**07-Jun-2023**	**08-Jun-2023**	21-Jun-2023	✓	**08-Jun-2023**	21-Jun-2023	✓
Amber VOC Vial - Sulfuric Acid (EP080)							
BADDS	**07-Jun-2023**	**08-Jun-2023**	21-Jun-2023	✓	**09-Jun-2023**	21-Jun-2023	✓
EP234A: OP Pesticides							
Amber Glass Bottle - Unpreserved (EP234-1)							
ROPDS, ROPUS, SOUDS	**06-Jun-2023**	**----**	----	----	**09-Jun-2023**	13-Jun-2023	✓
Amber Glass Bottle - Unpreserved (EP234-1x)							
HINDS, HINUS, KEMDS, KEMUS	**06-Jun-2023**	**----**	----	----	**13-Jun-2023**	13-Jun-2023	✓
Amber Glass Bottle - Unpreserved (EP234-1)							
BADDS, BADMS, BADUS, COSDS, COSUS	**07-Jun-2023**	**----**	----	----	**09-Jun-2023**	14-Jun-2023	✓

Quality Control Parameter Frequency Compliance

The following report summarises the frequency of laboratory QC samples analysed within the analytical lot(s) in which the submitted sample(s) was(were) processed. Actual rate should be greater than or equal to the expected rate. A listing of breaches is provided in the Summary of Outliers.

Matrix: **WATER**

Evaluation: × = Quality Control frequency not within specification ; ✓ = Quality Control frequency within specification.

Quality Control Sample Type		Count		Rate (%)			Quality Control Specification
Analytical Methods	*Method*	*QC*	*Regular*	***Actual***	***Expected***	*Evaluation*	
Laboratory Duplicates (DUP)							
Ammonia as N by Discrete analyser	EK055G	2	20	**10.00**	**10.00**	✓	NEPM 2013 B3 & ALS QC Standard
Nitrite and Nitrate as N (NOx) by Discrete Analyser	EK059G	2	20	**10.00**	**10.00**	✓	NEPM 2013 B3 & ALS QC Standard
Nitrite as N by Discrete Analyser	EK057G	2	20	**10.00**	**10.00**	✓	NEPM 2013 B3 & ALS QC Standard
PAH/Phenols (GC/MS - SIM)	EP075(SIM)	2	20	**10.00**	**10.00**	✓	NEPM 2013 B3 & ALS QC Standard
Pesticides by LCMSMS (Positive Ion Mode)	EP234-1	4	29	**13.79**	**10.00**	✓	NEPM 2013 B3 & ALS QC Standard
Pesticides by LCMSMS (Positive Ion Mode) - extended	EP234-1x	4	27	**14.81**	**10.00**	✓	NEPM 2013 B3 & ALS QC Standard
Reactive Phosphorus as P-By Discrete Analyser	EK071G	2	20	**10.00**	**10.00**	✓	NEPM 2013 B3 & ALS QC Standard
Suspended Solids (High Level)	EA025H	8	80	**10.00**	**10.00**	✓	NEPM 2013 B3 & ALS QC Standard
Total Dissolved Solids (High Level)	EA015H	8	80	**10.00**	**10.00**	✓	NEPM 2013 B3 & ALS QC Standard
Total Kjeldahl Nitrogen as N By Discrete Analyser	EK061G	2	20	**10.00**	**10.00**	✓	NEPM 2013 B3 & ALS QC Standard
Total Mercury by FIMS	EG035T	2	20	**10.00**	**10.00**	✓	NEPM 2013 B3 & ALS QC Standard
Total Metals by ICP-MS - Suite A	EG020A-T	2	20	**10.00**	**10.00**	✓	NEPM 2013 B3 & ALS QC Standard
Total Phosphorus as P By Discrete Analyser	EK067G	2	20	**10.00**	**10.00**	✓	NEPM 2013 B3 & ALS QC Standard
TRH Volatiles/BTEX	EP080	2	19	**10.53**	**10.00**	✓	NEPM 2013 B3 & ALS QC Standard
Volatile Organic Compounds	EP074	2	15	**13.33**	**10.00**	✓	NEPM 2013 B3 & ALS QC Standard
Laboratory Control Samples (LCS)							
Ammonia as N by Discrete analyser	EK055G	1	20	**5.00**	**5.00**	✓	NEPM 2013 B3 & ALS QC Standard
Chlorophyll a and Pheophytin a	EP008	1	15	**6.67**	**5.00**	✓	NEPM 2013 B3 & ALS QC Standard
Nitrite and Nitrate as N (NOx) by Discrete Analyser	EK059G	1	20	**5.00**	**5.00**	✓	NEPM 2013 B3 & ALS QC Standard
Nitrite as N by Discrete Analyser	EK057G	1	20	**5.00**	**5.00**	✓	NEPM 2013 B3 & ALS QC Standard
Oil and Grease	EP020	4	46	**8.70**	**8.00**	✓	NEPM 2013 B3 & ALS QC Standard
PAH/Phenols (GC/MS - SIM)	EP075(SIM)	1	20	**5.00**	**5.00**	✓	NEPM 2013 B3 & ALS QC Standard
Pesticides by LCMSMS (Positive Ion Mode)	EP234-1	2	29	**6.90**	**5.00**	✓	NEPM 2013 B3 & ALS QC Standard
Pesticides by LCMSMS (Positive Ion Mode) - extended	EP234-1x	2	27	**7.41**	**5.00**	✓	NEPM 2013 B3 & ALS QC Standard
Reactive Phosphorus as P-By Discrete Analyser	EK071G	1	20	**5.00**	**5.00**	✓	NEPM 2013 B3 & ALS QC Standard
Suspended Solids (High Level)	EA025H	10	80	**12.50**	**12.50**	✓	NEPM 2013 B3 & ALS QC Standard
Total Dissolved Solids (High Level)	EA015H	10	80	**12.50**	**12.50**	✓	NEPM 2013 B3 & ALS QC Standard
Total Kjeldahl Nitrogen as N By Discrete Analyser	EK061G	3	20	**15.00**	**15.00**	✓	NEPM 2013 B3 & ALS QC Standard
Total Mercury by FIMS	EG035T	1	20	**5.00**	**5.00**	✓	NEPM 2013 B3 & ALS QC Standard
Total Metals by ICP-MS - Suite A	EG020A-T	1	20	**5.00**	**5.00**	✓	NEPM 2013 B3 & ALS QC Standard
Total Phosphorus as P By Discrete Analyser	EK067G	3	20	**15.00**	**15.00**	✓	NEPM 2013 B3 & ALS QC Standard
TRH Volatiles/BTEX	EP080	1	19	**5.26**	**5.00**	✓	NEPM 2013 B3 & ALS QC Standard
Volatile Organic Compounds	EP074	1	15	**6.67**	**5.00**	✓	NEPM 2013 B3 & ALS QC Standard
Method Blanks (MB)							
Ammonia as N by Discrete analyser	EK055G	1	20	**5.00**	**5.00**	✓	NEPM 2013 B3 & ALS QC Standard
Chlorophyll a and Pheophytin a	EP008	1	15	**6.67**	**5.00**	✓	NEPM 2013 B3 & ALS QC Standard

Matrix: **WATER**

Evaluation: × = Quality Control frequency not within specification ; ✓ = Quality Control frequency within specification.

Quality Control Sample Type		Count		Rate (%)			Quality Control Specification
Analytical Methods	*Method*	*QC*	*Regular*	***Actual***	***Expected***	*Evaluation*	
Method Blanks (MB) - Continued							
Nitrite and Nitrate as N (NOx) by Discrete Analyser	EK059G	1	20	**5.00**	**5.00**	✓	NEPM 2013 B3 & ALS QC Standard
Nitrite as N by Discrete Analyser	EK057G	1	20	**5.00**	**5.00**	✓	NEPM 2013 B3 & ALS QC Standard
Oil and Grease	EP020	3	46	**6.52**	**6.00**	✓	NEPM 2013 B3 & ALS QC Standard
PAH/Phenols (GC/MS - SIM)	EP075(SIM)	1	20	**5.00**	**5.00**	✓	NEPM 2013 B3 & ALS QC Standard
Pesticides by LCMSMS (Positive Ion Mode)	EP234-1	2	29	**6.90**	**5.00**	✓	NEPM 2013 B3 & ALS QC Standard
Pesticides by LCMSMS (Positive Ion Mode) - extended	EP234-1x	2	27	**7.41**	**5.00**	✓	NEPM 2013 B3 & ALS QC Standard
Reactive Phosphorus as P-By Discrete Analyser	EK071G	1	20	**5.00**	**5.00**	✓	NEPM 2013 B3 & ALS QC Standard
Suspended Solids (High Level)	EA025H	4	80	**5.00**	**5.00**	✓	NEPM 2013 B3 & ALS QC Standard
Total Dissolved Solids (High Level)	EA015H	4	80	**5.00**	**5.00**	✓	NEPM 2013 B3 & ALS QC Standard
Total Kjeldahl Nitrogen as N By Discrete Analyser	EK061G	1	20	**5.00**	**5.00**	✓	NEPM 2013 B3 & ALS QC Standard
Total Mercury by FIMS	EG035T	1	20	**5.00**	**5.00**	✓	NEPM 2013 B3 & ALS QC Standard
Total Metals by ICP-MS - Suite A	EG020A-T	1	20	**5.00**	**5.00**	✓	NEPM 2013 B3 & ALS QC Standard
Total Phosphorus as P By Discrete Analyser	EK067G	1	20	**5.00**	**5.00**	✓	NEPM 2013 B3 & ALS QC Standard
TRH Volatiles/BTEX	EP080	1	19	**5.26**	**5.00**	✓	NEPM 2013 B3 & ALS QC Standard
Volatile Organic Compounds	EP074	1	15	**6.67**	**5.00**	✓	NEPM 2013 B3 & ALS QC Standard
Matrix Spikes (MS)							
Ammonia as N by Discrete analyser	EK055G	1	20	**5.00**	**5.00**	✓	NEPM 2013 B3 & ALS QC Standard
Nitrite and Nitrate as N (NOx) by Discrete Analyser	EK059G	1	20	**5.00**	**5.00**	✓	NEPM 2013 B3 & ALS QC Standard
Nitrite as N by Discrete Analyser	EK057G	1	20	**5.00**	**5.00**	✓	NEPM 2013 B3 & ALS QC Standard
PAH/Phenols (GC/MS - SIM)	EP075(SIM)	1	20	**5.00**	**5.00**	✓	NEPM 2013 B3 & ALS QC Standard
Pesticides by LCMSMS (Positive Ion Mode)	EP234-1	2	29	**6.90**	**5.00**	✓	NEPM 2013 B3 & ALS QC Standard
Pesticides by LCMSMS (Positive Ion Mode) - extended	EP234-1x	2	27	**7.41**	**5.00**	✓	NEPM 2013 B3 & ALS QC Standard
Reactive Phosphorus as P-By Discrete Analyser	EK071G	1	20	**5.00**	**5.00**	✓	NEPM 2013 B3 & ALS QC Standard
Total Kjeldahl Nitrogen as N By Discrete Analyser	EK061G	1	20	**5.00**	**5.00**	✓	NEPM 2013 B3 & ALS QC Standard
Total Mercury by FIMS	EG035T	1	20	**5.00**	**5.00**	✓	NEPM 2013 B3 & ALS QC Standard
Total Metals by ICP-MS - Suite A	EG020A-T	1	20	**5.00**	**5.00**	✓	NEPM 2013 B3 & ALS QC Standard
Total Phosphorus as P By Discrete Analyser	EK067G	1	20	**5.00**	**5.00**	✓	NEPM 2013 B3 & ALS QC Standard
TRH Volatiles/BTEX	EP080	1	19	**5.26**	**5.00**	✓	NEPM 2013 B3 & ALS QC Standard
Volatile Organic Compounds	EP074	1	15	**6.67**	**5.00**	✓	NEPM 2013 B3 & ALS QC Standard

Brief Method Summaries

The analytical procedures used by the Environmental Division have been developed from established internationally recognized procedures such as those published by the US EPA, APHA, AS and NEPM. In house developed procedures are employed in the absence of documented standards or by client request. The following report provides brief descriptions of the analytical procedures employed for results reported in the Certificate of Analysis. Sources from which ALS methods have been developed are provided within the Method Descriptions.

Analytical Methods	Method	Matrix	Method Descriptions
Total Dissolved Solids (High Level)	EA015H	WATER	In house: Referenced to APHA 2540C. A gravimetric procedure that determines the amount of `filterable` residue in an aqueous sample. A well-mixed sample is filtered through a glass fibre filter (1.2um). The filtrate is evaporated to dryness and dried to constant weight at 180+/-5C. This method is compliant with NEPM Schedule B(3)
Suspended Solids (High Level)	EA025H	WATER	In house: Referenced to APHA 2540D. A gravimetric procedure employed to determine the amount of `non-filterable` residue in a aqueous sample. The prescribed GFC (1.2um) filter is rinsed with deionised water, oven dried and weighed prior to analysis. A well-mixed sample is filtered through a glass fibre filter (1.2um). The residue on the filter paper is dried at 104+/-2C . This method is compliant with NEPM Schedule B(3)
Total Metals by ICP-MS - Suite A	EG020A-T	WATER	In house: Referenced to APHA 3125; USEPA SW846 - 6020, ALS QWI-EN/EG020. The ICPMS technique utilizes a highly efficient argon plasma to ionize selected elements. Ions are then passed into a high vacuum mass spectrometer, which separates the analytes based on their distinct mass to charge ratios prior to their measurement by a discrete dynode ion detector.
Total Mercury by FIMS	EG035T	WATER	In house: Referenced to APHA 3112 Hg - B (Flow-injection (SnCl2)(Cold Vapour generation) AAS) FIM-AAS is an automated flameless atomic absorption technique. A bromate/bromide reagent is used to oxidise any organic mercury compounds in the unfiltered sample. The ionic mercury is reduced online to atomic mercury vapour by SnCl2 which is then purged into a heated quartz cell. Quantification is by comparing absorbance against a calibration curve. This method is compliant with NEPM Schedule B(3).
Ammonia as N by Discrete analyser	EK055G	WATER	In house: Referenced to APHA 4500-NH3 G Ammonia is determined by direct colorimetry by Discrete Analyser. This method is compliant with NEPM Schedule B(3)
Nitrite as N by Discrete Analyser	EK057G	WATER	In house: Referenced to APHA 4500-NO2- B. Nitrite is determined by direct colourimetry by Discrete Analyser. This method is compliant with NEPM Schedule B(3)
Nitrate as N by Discrete Analyser	EK058G	WATER	In house: Referenced to APHA 4500-NO3- F. Nitrate is reduced to nitrite by way of a chemical reduction followed by quantification by Discrete Analyser. Nitrite is determined seperately by direct colourimetry and result for Nitrate calculated as the difference between the two results. This method is compliant with NEPM Schedule B(3)
Nitrite and Nitrate as N (NOx) by Discrete Analyser	EK059G	WATER	In house: Referenced to APHA 4500-NO3- F. Combined oxidised Nitrogen (NO2+NO3) is determined by Chemical Reduction and direct colourimetry by Discrete Analyser. This method is compliant with NEPM Schedule B(3)
Total Kjeldahl Nitrogen as N By Discrete Analyser	EK061G	WATER	In house: Referenced to APHA 4500-Norg D (In house). An aliquot of sample is digested using a high temperature Kjeldahl digestion to convert nitrogenous compounds to ammonia. Ammonia is determined colorimetrically by discrete analyser. This method is compliant with NEPM Schedule B(3)
Total Nitrogen as N (TKN + Nox) By Discrete Analyser	EK062G	WATER	In house: Referenced to APHA 4500-Norg / 4500-NO3-. This method is compliant with NEPM Schedule B(3)
Total Phosphorus as P By Discrete Analyser	EK067G	WATER	In house: Referenced to APHA 4500-P H, Jirka et al, Zhang et al. This procedure involves sulphuric acid digestion of a sample aliquot to break phosphorus down to orthophosphate. The orthophosphate reacts with ammonium molybdate and antimony potassium tartrate to form a complex which is then reduced and its concentration measured at 880nm using discrete analyser. This method is compliant with NEPM Schedule B(3)

Analytical Methods	Method	Matrix	Method Descriptions
Reactive Phosphorus as P-By Discrete Analyser	EK071G	WATER	In house: Referenced to APHA 4500-P F Ammonium molybdate and potassium antimonyl tartrate reacts in acid medium with othophosphate to form a heteropoly acid -phosphomolybdic acid - which is reduced to intensely coloured molybdenum blue by ascorbic acid. Quantification is by Discrete Analyser. This method is compliant with NEPM Schedule B(3)
Chlorophyll a and Pheophytin a	EP008	WATER	In house: Referenced to APHA 10200 H. The pigments are extracted into aqueous acetone. The optical density of the extract before and after acidification at both 664 nm and 665 nm is determined spectrometrically.
Oil and Grease	EP020	WATER	In house: Referenced to APHA 5520 B. Oil & grease is a gravimetric procedure to determine the amount of dissolved or emulsified oil & grease residue in an aqueous sample. The sample is serially extracted three times n-hexane. The resultant extracts are combined, dehydrated and concentrated prior to gravimetric determination. This method is compliant with NEPM Schedule B(3)
Volatile Organic Compounds	EP074	WATER	In house: Referenced to USEPA SW 846 - 8260 Water samples are directly purged prior to analysis by Capillary GC/MS and quantification is by comparison against an established 5 point calibration curve. This method is compliant with NEPM Schedule B(3)
PAH/Phenols (GC/MS - SIM)	EP075(SIM)	WATER	In house: Referenced to USEPA SW 846 - 8270 Sample extracts are analysed by Capillary GC/MS in SIM Mode and quantification is by comparison against an established 5 point calibration curve. This method is compliant with NEPM Schedule B(3)
TRH Volatiles/BTEX	EP080	WATER	In house: Referenced to USEPA SW 846 - 8260 Water samples are directly purged prior to analysis by Capillary GC/MS and quantification is by comparison against an established 5 point calibration curve. Alternatively, a sample is equilibrated in a headspace vial and a portion of the headspace determined by GCMS analysis. This method is compliant with the QC requirements of NEPM Schedule B(3)
Organochlorine Pesticides (Ultra-trace)	EP131A	WATER	In house: Referenced to USEPA Method 3640 (GPC cleanup),3620 (Florisil), 8081/8082 (GC/µECD/uECD). This method is compliant with NEPM Schedule B(3)
Pesticides by LCMSMS (Positive Ion Mode)	EP234-1	WATER	In house: LC-MSMS, direct injection. A sample is filtered and injected directly onto the LC-MSMS. Analysis is by LC/MSMS, ESI Positive Mode.
Pesticides by LCMSMS (Positive Ion Mode) - extended	EP234-1x	WATER	In house: LC-MSMS, direct injection. A sample is filtered and injected directly onto the LC-MSMS. Analysis is by LC/MSMS, ESI Positive Mode.

Preparation Methods	Method	Matrix	Method Descriptions
TKN/TP Digestion	EK061/EK067	WATER	In house: Referenced to APHA 4500 Norg - D; APHA 4500 P - H. This method is compliant with NEPM Schedule B(3)
Digestion for Total Recoverable Metals	EN25	WATER	In house: Referenced to USEPA SW846-3005. Method 3005 is a Nitric/Hydrochloric acid digestion procedure used to prepare surface and ground water samples for analysis by ICPAES or ICPMS. This method is compliant with NEPM Schedule B(3)
Separatory Funnel Extraction of Liquids	ORG14	WATER	In house: Referenced to USEPA SW 846 - 3510 100 mL to 1L of sample is transferred to a separatory funnel and serially extracted three times using DCM for each extract. The resultant extracts are combined, dehydrated and concentrated for analysis. This method is compliant with NEPM Schedule B(3) . ALS default excludes sediment which may be resident in the container.
Sep. Funnel Extraction of Liquids (Ultra-trace pesticides.)	ORG14-UTP	WATER	In house: Referenced to USEPA 3510 Samples are extracted into dichloromethane, concentrated and exchanged into an apporpriate solvent for GPC and florisil cleanup as required. This method is compliant with NEPM Schedule B(3) . ALS default excludes sediment which may be resident in the container.
Volatiles Water Preparation	ORG16-W	WATER	A 5 mL aliquot or 5 mL of a diluted sample is added to a 40 mL VOC vial for purging.

CHAIN OF CUSTODY

ALS Laboratory: please tick →

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□ TOWNSVILLE 14-15 Desma Court Bohle QLD 4818 Ph: 07 4796 0600 E: samples.townsville@alsglobal.com
□ WOLLONGONG Unit 1, 2 Switchgear Road Unanderra NSW 2526 Ph: 02 4225 3125 E: samples.wollongong@alsglobal.com
□ GLADSTONE 1/2 Kitchener Drive Callemondah QLD 4680 Ph: 07 4971 9730 E: samples.gladstone@alsglobal.com
□ PERTH 10 Hod Way Malaga WA 6090 Ph: 08 9209 7655 E: samples.perth@alsglobal.com

Environmental Division Sydney
Work Order Reference
ES2319028

8.2

+61-2-8784 8555

CLIENT: GHD Pty Ltd	TURNAROUND REQUIREMENT: (Standard TAT may be longer for some tests e.g., Ultra Trace Organics) ☐ Standard TAT (List due date): ☐ Non Standard or urgent TAT (List due date):	STANDARD TAT	FOR LABOR: Custody Seal I; Free Ice / froze; Random Samp; Other commen
OFFICE: Sydney	ALS QUOTE NO.: SY/322/21	COC SEQUENCE NUMBER (Circle) COC: 1 2 3 4 5 6 7 OF: 1 2 3 4 5 6 7	RELINQUISHED B
PROJECT: M12 Surface Water			
ORDER NUMBER: 12554717	CONTACT PH: Henry Luo 0414 090 002		
PROJECT MANAGER: Henry Luo	SAMPLER MOBILE: 0431 522 928	RELINQUISHED BY: Andrew Duval DATE/TIME: 7/6/23 4:00pm	RECEIVED BY: DATE/TIME: 7/6/23 15:55
SAMPLER: Emily Smith	EDD FORMAT (or default): ESDAT		DATE/TIME: 8/8 12:20
COC emailed to ALS? (YES / NO)			

Email Reports to: henry.luo@ghd.com , ghdlabreports@ghd.com; terry.nham@ghd.com, emily.smith@ghd.com; andrew.duval@ghd.com

COMMENTS/SPECIAL HANDLING/STORAGE OR DISPOSAL:

ANALYSIS REQUIRED including SUITES (NB. Suite Codes must be listed to attract suite price)
Where Metals are required, specify Total (unfiltered bottle required) or Dissolved (field filtered bottle required).

ALS USE	SAMPLE DETAILS MATRIX: SOLID (S) WATER (W)			CONTAINER INFORMATION		W-02T (8 total metals)	EG020T (total Fe, Mn)	NT-08A (total N, NO2, NO3, NH3, Total P, reactive P)	EP008 (chlorophyll a)	EP020 (oil & grease)	UTO-9W Ultra trace OP Only	EP074DEFG (VOC - fumigants, Hal aliphatics, Hal Aromatics, THM)	MW006 (FC) Thermotolerant Coliforms	W-14A (PAH/phenols)	EA015H (TDS), EA025H (TSS)	EP080 (BTEXN)	Ultra trace OPP (EP234AX)	Super Ultra Trace PCB's (EP1318-ST)	PFAS - full suite (EP231X)
LAB ID	SAMPLE ID	DATE / TIME	MATRIX	Comments	TOTAL CONTAINERS														
1	BADDS	7/6/23	Water		11	X	X	X	X	X	X	X		X	X	X			
2	BADMS	7/6/23	Water		11	X	X	X	X	X	X	X		X	X	X			
3	BADUS	7/6/23	Water		11	X	X	X	X	X	X	X		X	X	X			
4	COSDS	7/6/23	Water		11	X	X	X	X	X	X	X		X	X	X			
5	COSUS	7/6/23	Water		11	X	X	X	X	X	X	X		X	X	X			
6	HINDS	6/6/23	Water		11	X	X	X	X	X	X	X		X	X	X			
7	HINUS	6/6/23	Water		11	X	X	X	X	X	X	X		X	X	X			
8	KEMDS	6/6/23	Water		11	X	X	X	X	X	X	X		X	X	X			
9	KEMUS	6/6/23	Water		11	X	X	X	X	X	X	X		X	X	X			
10	ROPDS	6/6/23	Water		11	X	X	X	X	X	X	X		X	X	X			
11	ROPUS	6/6/23	Water		11	X	X	X	X	X	X	X		X	X	X			
12	SOUDS	6/6/23	Water		11	X	X	X	X	X	X	X		X	X	X			
13	SOUUS	6/6/23	Water		1	X													
14	SWDUP1	6/6/23	Water	PLEASE FORWARD TO EUROFINS WITH ATTACHED COC	1														
-	SWDUP2	7/6/23	Water	PLEASE FORWARD TO EUROFINS WITH ATTACHED COC	1														
-	GWDUP2	7/6/23	Water																

HT

Subcon: [illegible] / Split WO:
Lab / Analyst: Euro (03) - SWDUP2 BGW GWDUP2
Organised by / Date:
Relinquished by / Date:
Courier:

I-09782

eurofins | mgt

☑ **Sydney**
Unit F3 - 6 Building F, 16 Mars Road, Lane Cove
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☐ **Melbourne**
2 Kingston Town Close, Oakleigh, VIC 3166
Phone: +613 8564 5000 Fax: +613 8564 5090
Email: enquiries.melb@mgtlabmark.com.au

CHAIN OF CUSTODY RECORD

CLIENT DETAILS

Company Name : GHD Pty Ltd, Sydney

Office Address :

Level 15, 133 Castlereagh Street, Sydney NSW 2000

Contact Name : Emily Smith 0431 522 928

Project Manager: Henry Luo 0414 090 002

Email for results : emily.smith@ghd.com; terry.nham@ghd.com; henry.luo@ghd.com; ghdlabreports@ghd.com

Purchase Order : 12554717

PROJECT Number : 12554717

PROJECT Name : M12 Water Sampling

COC Number :

Eurofins | mgt quote ID :

Data output format: ESDAT

Special Directions & Comments :

Sent from ALS

Eurofins | mgt DI water batch number:

	Sample ID	Date	Matrix	Dissolved metals	Total metals	Analytes						
1	SWDUP2	7/6/23	Water		X							
2	GWDUP2	7/6/23	Water	X								
3												
4												
5												
6												
7												
8												
9												
10												

Some common holding times (with correct preservation).
For further information contact the lab

Waters		Soils	
BTEX, MAH, VOC	14 days	BTEX, MAH, VOC	14 days
TRH, PAH, Phenols, Pesticides	7 days	TRH, PAH, Phenols, Pesticides	14 days
Heavy Metals	6 months	Heavy Metals	6 months
Mercury, CrVI	28 days	Mercury, CrVI	28 days
Microbiological testing	24 hours	Microbiological testing	72 hours
BOD, Nitrate, Nitrite, Total N	2 days	Anions	28 days
Solids - TSS, TDS etc	7 days	SPOCAS, pH Field and FOX, CrS	24 hours
Ferrous iron	7 days	ASLP, TCLP	7 days

Containers:

500P	250P	60P	1LA	40mL vial	200mL A	Jar	Bag

Sample comments:

Laboratory Staff

Relinquished By: Andrew Duval

Date & Time : 7/6/23 4pm

Signature: Duval

Received By:

Date & Time :

Signature:

Method Of Shipment

☐ Courier
☐ Hand Delivered
☐ Postal
Courier Consignment # :

Temperature on arrival:

Report number:

eurofins | Environment Testing

www.eurofins.com.au EnviroSales@eurofins.com

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NATA# 1261 Site# 25403

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Christchurch 7675
Tel: +64 3 343 5201
IANZ# 1290

Sample Receipt Advice

Company name:	GHD Pty Ltd NSW
Contact name:	Emily Smith
Project name:	M12 WATER SAMPLING
Project ID:	12554717
Turnaround time:	5 Day
Date/Time received	Jun 8, 2023 4:20 PM
Eurofins reference	997826

Sample Information

✓	A detailed list of analytes logged into our LIMS, is included in the attached summary table.
✓	Sample Temperature of chilled sample on the batch as recorded by Eurofins Sample Receipt : 8.4 degrees Celsius.
✓	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.
X	Split sample sent to requested external lab.
X	Some samples have been subcontracted.
N/A	Custody Seals intact (if used).

Notes

Contact

If you have any questions with respect to these samples, please contact your Analytical Services Manager:

Bonnie Pu on phone : or by email: BonniePu@eurofins.com

Results will be delivered electronically via email to Emily Smith - emily.smith@ghd.com.

Note: A copy of these results will also be delivered to the general GHD Pty Ltd NSW email address.

GHD Pty Ltd NSW
Level 15, 133 Castlereagh Street
Sydney
NSW 2000

NATA Accredited
Accreditation Number 1261
Site Number 18217

Accredited for compliance with ISO/IEC 17025 – Testing
NATA is a signatory to the ILAC Mutual Recognition Arrangement for the mutual recognition of the equivalence of testing, medical testing, calibration, inspection, proficiency testing scheme providers and reference materials producers reports and certificates.

Attention: **Emily Smith**

Report **997826-W**
Project name M12 WATER SAMPLING
Project ID 12554717
Received Date Jun 08, 2023

Client Sample ID			**SWDUP2**	**GWDUP2**
Sample Matrix			**Water**	**Water**
Eurofins Sample No.			**S23-Jn0024630**	**S23-Jn0024631**
Date Sampled			**Jun 07, 2023**	**Jun 07, 2023**
Test/Reference	LOR	Unit		
Heavy Metals				
Arsenic	0.001	mg/L	< 0.001	-
Arsenic (filtered)	0.001	mg/L	-	0.002
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
Copper	0.001	mg/L	0.002	-
Copper (filtered)	0.001	mg/L	-	< 0.001
Lead	0.001	mg/L	< 0.001	-
Lead (filtered)	0.001	mg/L	-	< 0.001
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	-	0.002
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 is reported.

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
Metals M8	Sydney	Jun 16, 2023	28 Days
- Method: LTM-MET-3040 Metals in Waters, Soils & Sediments by ICP-MS			
Metals M8 filtered	Sydney	Jun 13, 2023	28 Days
- Method: LTM-MET-3040 Metals in Waters, Soils & Sediments by ICP-MS			

eurofins

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Tel: +64 3 343 5201
IANZ# 1290

Company Name: GHD Pty Ltd NSW
Address: Level 15, 133 Castlereagh Street
Sydney
NSW 2000

Project Name: M12 WATER SAMPLING
Project ID: 12554717

Order No.:
Report #: 997826
Phone: 02 9239 7100
Fax: 02 9239 7199

Received: Jun 8, 2023 4:20 PM
Due: Jun 16, 2023
Priority: 5 Day
Contact Name: Emily Smith

Eurofins Analytical Services Manager : Bonnie Pu

Sample Detail						Metals M8	Metals M8 filtered
Melbourne Laboratory - NATA # 1261 Site # 1254						X	X
Sydney Laboratory - NATA # 1261 Site # 18217						X	X
External Laboratory							
No	**Sample ID**	**Sample Date**	**Sampling Time**	**Matrix**	**LAB ID**		
1	SWDUP2	Jun 07, 2023		Water	S23-Jn0024630	X	
2	GWDUP2	Jun 07, 2023		Water	S23-Jn0024631		X
Test Counts						1	1

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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.

Units

mg/kg: milligrams per kilogram	**mg/L:** milligrams per litre	**µg/L:** micrograms per litre
ppm: parts per million	**ppb:** parts per billion	**%:** Percentage
org/100 mL: Organisms per 100 millilitres	**NTU:** Nephelometric Turbidity Units	**MPN/100 mL:** Most Probable Number of organisms per 100 millilitres
CFU: Colony forming unit		

Terms

APHA	American Public Health Association
COC	Chain of Custody
CP	Client Parent - QC was performed on samples pertaining to this report
CRM	Certified Reference Material (ISO17034) - reported as percent recovery.
Dry	Where a moisture has been determined on a solid sample the result is expressed on a dry basis.
Duplicate	A second piece of analysis from the same sample and reported in the same units as the result to show comparison.
LOR	Limit of Reporting.
LCS	Laboratory Control Sample - 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.
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.
RPD	Relative Percent Difference between two Duplicate pieces of analysis.
SPIKE	Addition of the analyte to the sample and reported as percentage recovery.
SRA	Sample Receipt Advice
Surr - Surrogate	The addition of a like compound to the analyte target and reported as percentage recovery.
TBTO	Tributyltin oxide (*bis*-tributyltin oxide) - individual tributyltin compounds cannot be identified separately in the environment however free tributyltin was measured and its values were converted stoichiometrically into tributyltin oxide for comparison with regulatory limits.
TCLP	Toxicity Characteristic Leaching Procedure
TEQ	Toxic Equivalency Quotient or Total Equivalence
QSM	US Department of Defense Quality Systems Manual Version 5.4
US EPA	United States Environmental Protection Agency
WA DWER	Sum of PFBA, PFPeA, PFHxA, PFHpA, PFOA, PFBS, PFHxS, PFOS, 6:2 FTSA, 8:2 FTSA

QC - Acceptance Criteria

The acceptance criteria should be used as a guide only and may be different when site specific Sampling Analysis and Quality Plan (SAQP) have been implemented

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%

NOTE: pH duplicates are reported as a range not as RPD

Surrogate Recoveries: Recoveries must lie between 20-130% for Speciated Phenols & 50-150% for PFAS. SVOCs recoveries 20 – 150%

PFAS field samples that contain surrogate recoveries in excess of the QC limit designated in QSM 5.4 where no positive PFAS results have been reported have been reviewed and no data was affected.

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. 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.
4. Recovery Data (Spikes & Surrogates) - where chromatographic interference does not allow the determination of recovery the term "INT" appears against that analyte.
5. For Matrix Spikes and LCS results a dash "-" in the report means that the specific analyte was not added to the QC sample.
6. 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	
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	
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	
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							
Arsenic	%	93			80-120	Pass	
Arsenic (filtered)	%	83			80-120	Pass	
Cadmium	%	92			80-120	Pass	
Cadmium (filtered)	%	82			80-120	Pass	
Chromium	%	96			80-120	Pass	
Chromium (filtered)	%	83			80-120	Pass	
Copper	%	105			80-120	Pass	
Copper (filtered)	%	85			80-120	Pass	
Lead	%	107			80-120	Pass	
Lead (filtered)	%	85			80-120	Pass	
Mercury	%	104			80-120	Pass	
Mercury (filtered)	%	94			80-120	Pass	
Nickel	%	96			80-120	Pass	
Nickel (filtered)	%	84			80-120	Pass	
Zinc	%	100			80-120	Pass	
Zinc (filtered)	%	84			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	S23-Jn0027532	NCP	%	91			75-125	Pass	
Cadmium	S23-Jn0027532	NCP	%	89			75-125	Pass	
Chromium	S23-Jn0027532	NCP	%	87			75-125	Pass	
Copper	S23-Jn0027532	NCP	%	94			75-125	Pass	
Lead	S23-Jn0027532	NCP	%	96			75-125	Pass	
Mercury	S23-Jn0027532	NCP	%	98			75-125	Pass	
Nickel	S23-Jn0027532	NCP	%	86			75-125	Pass	
Zinc	S23-Jn0027532	NCP	%	93			75-125	Pass	
Spike - % Recovery									
Heavy Metals				Result 1					
Arsenic (filtered)	S23-Jn0027532	NCP	%	91			75-125	Pass	
Cadmium (filtered)	S23-Jn0027532	NCP	%	86			75-125	Pass	

Test	Lab Sample ID	QA Source	Units	Result 1			Acceptance Limits	Pass Limits	Qualifying Code
Chromium (filtered)	S23-Jn0027532	NCP	%	83			75-125	Pass	
Copper (filtered)	S23-Jn0027532	NCP	%	82			75-125	Pass	
Lead (filtered)	S23-Jn0027532	NCP	%	83			75-125	Pass	
Mercury (filtered)	S23-Jn0027532	NCP	%	93			75-125	Pass	
Nickel (filtered)	S23-Jn0027532	NCP	%	81			75-125	Pass	
Zinc (filtered)	S23-Jn0027532	NCP	%	82			75-125	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	R23-Jn0018617	NCP	mg/L	< 0.001	< 0.001	<1	30%	Pass	
Cadmium	R23-Jn0018617	NCP	mg/L	< 0.0002	< 0.0002	<1	30%	Pass	
Chromium	R23-Jn0018617	NCP	mg/L	< 0.001	< 0.001	<1	30%	Pass	
Copper	R23-Jn0018617	NCP	mg/L	0.033	0.033	<1	30%	Pass	
Lead	R23-Jn0018617	NCP	mg/L	< 0.001	< 0.001	<1	30%	Pass	
Mercury	R23-Jn0018617	NCP	mg/L	< 0.0001	< 0.0001	<1	30%	Pass	
Nickel	R23-Jn0018617	NCP	mg/L	< 0.001	< 0.001	<1	30%	Pass	
Zinc	R23-Jn0018617	NCP	mg/L	0.029	0.028	4.9	30%	Pass	
Duplicate									
Heavy Metals				Result 1	Result 2	RPD			
Arsenic (filtered)	R23-Jn0019376	NCP	mg/L	< 0.001	< 0.001	<1	30%	Pass	
Cadmium (filtered)	R23-Jn0019376	NCP	mg/L	< 0.0002	< 0.0002	<1	30%	Pass	
Chromium (filtered)	R23-Jn0019376	NCP	mg/L	< 0.001	< 0.001	<1	30%	Pass	
Copper (filtered)	R23-Jn0019376	NCP	mg/L	0.003	0.003	1.3	30%	Pass	
Lead (filtered)	R23-Jn0019376	NCP	mg/L	< 0.001	< 0.001	<1	30%	Pass	
Mercury (filtered)	R23-Jn0019376	NCP	mg/L	< 0.0001	< 0.0001	<1	30%	Pass	
Nickel (filtered)	R23-Jn0019376	NCP	mg/L	0.002	0.002	2.7	30%	Pass	
Zinc (filtered)	R23-Jn0019376	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

Authorised by:

Adam Bateup	Analytical Services Manager
Fang Yee Tan	Senior Analyst-Metal

Glenn Jackson
Managing Director

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

ALS Environmental

ALS Laboratory: please tick →

☐BRISBANE 32 Shand Street Stafford QLD 4053 PH: 07 3243 7222 E: samples.brisbane@alsglobal.com
☐MACKAY 78 Harbour Road MACKAY QLD 4740 PH: 07 4944 0177 E: samples.mackay@alsglobal.com
☐ADELAIDE 21 Burma Road PARALOWIE SA 5108 PH: 08 8359 0890 E: samples.adelaide@alsglobal.com
☐TOWNSVILLE 14-15 Desma Court BOHLE QLD 4818 PH: 07 4796 0600 E: samples.townsville@alsglobal.com
☐SYDNEY 277-289 Woodpark Road SMITHFIELD NSW 2164 PH: 02 8784 8555 E: samples.sydney@alsglobal.com
☐NEWCASTLE 5 Rose Gum Road Warabrook NSW 2304 PH: 02 4968 9433 E: samples.newcastle@alsglobal.com
☐WOLLONGONG Unit 1, 2 Townson Place North Nowra NSW 2541 PH: 02 4421 0300 E: samples.nowra@alsglobal.com
☐PERTH 10 Hod Way Malaga WA 6090 Ph: 08 9209 7655 E: samples.perth@alsglobal.com

Environmental Division Sydney

Work Order Reference

ES2322320

Telephone : +61-2-8784 8555

CLIENT: GHD Pty Ltd	**TURNAROUND REQUIREMENT:** ☐ Standard TAT (List due date):	STANDARD TAT	**FOR LABORAT**
OFFICE: Sydney	(Standard TAT may be longer for some tests e.g.. Ultra Trace Organics) ☐ Non Standard or urgent TAT (List due date):		Custody Seal Intact
PROJECT: M12 Surface Water	**ALS QUOTE NO.:** SY/322/21	COC SEQUENCE NUMBER (Circle)	Free ice / frozen ice
ORDER NUMBER: 12554717		COC: 1 2 3 4 5 6 7	Random Sample Te
PROJECT MANAGER: Henry Luo	**CONTACT PH:** Henry Luo 0414 090 002	OF: 1 2 3 4 5 6 7	Other comment:

SAMPLER: Emily Smith, Andrew Duval	**SAMPLER MOBILE:** 0431 522 928	**RELINQUISHED BY:** Andrew Duval	**RECEIVED BY:** Zac C
COC emailed to ALS? (YES / NO)	**EDD FORMAT (or default):** ESDAT	DATE/TIME: 5/7/23 9:30	DATE/TIME: 5/7/23 8:30am
Email Reports to: henry.luo@ghd.com , ghdlabreports@ghd.com; terry.nham@ghd.com, emily.smith@ghd.com; andrew.duval@ghd.com		**RELINQUISHED BY:** DATE/TIME:	**RECEIVED BY:** DATE/TIME:

COMMENTS/SPECIAL HANDLING/STORAGE OR DISPOSAL:

ALS USE	SAMPLE DETAILS MATRIX: SOLID (S) WATER (W)			CONTAINER INFORMATION		ANALYSIS REQUIRED including SUITES (NB. Suite Codes must be listed to attract suite price) Where Metals are required, specify Total (unfiltered bottle required) or Dissolved (field filtered bottle required).													
LAB ID	SAMPLE ID	DATE / TIME	MATRIX	Comments	TOTAL CONTAINERS	W-02T (8 total metals)	EG020T (total Fe, Mn)	NT-08A (total N, No2, No3, NH3, Total P, reactive P)	EP008 (chlorophyll a)	EP020 (oil & grease)	UTO-9W Ultra trace OC/OP	EP074DEFG (VOC - fumigants, Hal aliphatics, Hal Aromatics, THM)	MW006 (FC) Thermotolerant Coliforms	W-14A (PAH/phenols)	EA015H (TDS), EA025H (TSS)	EP080 (BTEXN)	Ultra trace OPP (EP234AX)	Super Ultra Trace PCB's (EP1318-ST)	PFAS - full suite (EP231X)
1	HINDS	4/7/23	Water		11	X	X	X	X	X		X	X	X	X	X	X		
2	MINUS	4/7/23	W		11	X	X	X	X	X		X	X	X	X	X	X		
3	KEMDS	4/7/23	W		11	X	X	X	X	X		X	X	X	X	X	X		
4	KEMUS	4/7/23	W		11	X	X	X	X	X		X	X	X	X	X	X		
5	ROPDS	4/7/23	W		11	X	X	X	X	X		X	X	X	X	X	X		
6	ROPUS	4/7/23	W		11	X	X	X	X	X		X	X	X	X	X	X		
7	SOUDS	4/7/23	W		11	X	X	X	X	X		X	X	X	X	X	X		
8	SOUUS	4/7/23	W		11	X	X	X	X	X		X	X	X	X	X	X		
9	SWDUP1	4/7/23	W		1	X													
				HT URGENT															

SAMPLE RECEIPT NOTIFICATION (SRN)

Work Order : **ES2322320**

Client	: **GHD PTY LTD**	Laboratory	: Environmental Division Sydney
Contact	: MR HENRY LUO	Contact	: Sarah Mathew
Address	: LEVEL 15, 133 CASTLEREAGH STREET SYDNEY NSW, AUSTRALIA 2000	Address	: 277-289 Woodpark Road Smithfield NSW Australia 2164
E-mail	: henry.luo@ghd.com	E-mail	: sarah.mathew@alsglobal.com
Telephone	: +61 02 9239 7100	Telephone	: +61-2-8784 8555
Facsimile	: +61 02 9239 7199	Facsimile	: +61-2-8784 8500
Project	: 12554717	Page	: 1 of 3
Order number	: 12554717	Quote number	: ES2021GHDSER0026 (SY/322/21)
C-O-C number	: ----	QC Level	: NEPM 2013 B3 & ALS QC Standard
Site	: ----		
Sampler	: ANDREW DUVAL, EMILY SMITH		

Dates

Date Samples Received	: 05-Jul-2023 08:30	Issue Date	: 05-Jul-2023
Client Requested Due Date	: 11-Jul-2023	Scheduled Reporting Date	: **11-Jul-2023**

Delivery Details

Mode of Delivery	: Client Drop Off	Security Seal	: Not Available
No. of coolers/boxes	: 4	Temperature	: 7.1' C - Ice present
Receipt Detail	:	No. of samples received / analysed	: 9 / 9

General Comments

- This report contains the following information:
  - Sample Container(s)/Preservation Non-Compliances
  - Summary of Sample(s) and Requested Analysis
  - Proactive Holding Time Report
  - Requested Deliverables
- **Micro analysis are not added due to no bottle received.**
- **Please refer to the Proactive Holding Time Report table below which summarises breaches of recommended holding times that have occurred prior to samples/instructions being received at the laboratory. The laboratory will process these samples unless instructions are received from you indicating you do not wish to proceed. The absence of this summary table indicates that all samples have been received within the recommended holding times for the analysis requested.**
- **Sample(s) requiring volatile organic compound analysis received in airtight containers (ZHE).**
- Please direct any queries you have regarding this work order to the above ALS laboratory contact.
- Analytical work for this work order will be conducted at ALS Sydney.
- Sample Disposal - Aqueous (3 weeks), Solid (2 months ± 1 week) from receipt of samples.
- Please be aware that APHA/NEPM recommends water and soil samples be chilled to less than or equal to 6°C for chemical analysis, and less than or equal to 10°C but unfrozen for Microbiological analysis. Where samples are received above this temperature, it should be taken into consideration when interpreting results. Refer to ALS EnviroMail 85 for ALS recommendations of the best practice for chilling samples after sampling and for maintaining a cool temperature during transit.

Sample Container(s)/Preservation Non-Compliances

All comparisons are made against pretreatment/preservation AS, APHA, USEPA standards.

- **No sample container / preservation non-compliance exists.**

Summary of Sample(s) and Requested Analysis

Some items described below may be part of a laboratory process necessary for the execution of client requested tasks. Packages may contain additional analyses, such as the determination of moisture content and preparation tasks, that are included in the package.
If no sampling time is provided, the sampling time will default 00:00 on the date of sampling. If no sampling date is provided, the sampling date will be assumed by the laboratory and displayed in brackets without a time component

Matrix: **WATER**

Laboratory sample ID	Sampling date / time	Sample ID	WATER - EA015H Total Dissolved Solids - Standard Level	WATER - EA025H Suspended Solids - Standard Level	WATER - EG020T Total Metals by ICP/MS (including digestion)	WATER - EP008 Chlorophyll a	WATER - EP020 Oil & Grease (O&G)	WATER - EP074DEFG VOC - Fumigants, Hal Aliphatics, Hal Aromatics,	WATER - W-02T 8 metals (Total)
ES2322320-001	04-Jul-2023 00:00	HINDS	✓	✓	✓	✓	✓	✓	✓
ES2322320-002	04-Jul-2023 00:00	HINUS	✓	✓	✓	✓	✓	✓	✓
ES2322320-003	04-Jul-2023 00:00	KEMDS	✓	✓	✓	✓	✓	✓	✓
ES2322320-004	04-Jul-2023 00:00	KEMUS	✓	✓	✓	✓	✓	✓	✓
ES2322320-005	04-Jul-2023 00:00	ROPDS	✓	✓	✓	✓	✓	✓	✓
ES2322320-006	04-Jul-2023 00:00	ROPUS	✓	✓	✓	✓	✓	✓	✓
ES2322320-007	04-Jul-2023 00:00	SOUDS	✓	✓	✓	✓	✓	✓	✓
ES2322320-008	04-Jul-2023 00:00	SOUUS	✓	✓	✓	✓	✓	✓	✓
ES2322320-009	04-Jul-2023 00:00	SWDUP1							✓

Matrix: **WATER**

Laboratory sample ID	Sampling date / time	Sample ID	WATER - EP080 BTEXN	WATER - EP234AX Organophosphorus Pesticides - Extended List (50	WATER - NT-08A Total Nitrogen + NO2 + NO3 + NH3 + Total P +	WATER - W-14A PAH/Phenols (SIM)
ES2322320-001	04-Jul-2023 00:00	HINDS	✓	✓	✓	✓
ES2322320-002	04-Jul-2023 00:00	HINUS	✓	✓	✓	✓
ES2322320-003	04-Jul-2023 00:00	KEMDS	✓	✓	✓	✓
ES2322320-004	04-Jul-2023 00:00	KEMUS	✓	✓	✓	✓
ES2322320-005	04-Jul-2023 00:00	ROPDS	✓	✓	✓	✓
ES2322320-006	04-Jul-2023 00:00	ROPUS	✓	✓	✓	✓
ES2322320-007	04-Jul-2023 00:00	SOUDS	✓	✓	✓	✓
ES2322320-008	04-Jul-2023 00:00	SOUUS	✓	✓	✓	✓

Proactive Holding Time Report

Sample(s) have been received within the recommended holding times for the requested analysis.

Requested Deliverables

Accounts Payable Australia

- *AU Certificate of Analysis - NATA (COA)	Email	accountspayableAU@ghd.com
- *AU Interpretive QC Report - DEFAULT (Anon QCI Rep) (QCI)	Email	accountspayableAU@ghd.com
- *AU QC Report - DEFAULT (Anon QC Rep) - NATA (QC)	Email	accountspayableAU@ghd.com
- A4 - AU Sample Receipt Notification - Environmental HT (SRN)	Email	accountspayableAU@ghd.com
- A4 - AU Tax Invoice (INV)	Email	accountspayableAU@ghd.com
- Chain of Custody (CoC) (COC)	Email	accountspayableAU@ghd.com
- EDI Format - ESDAT (ESDAT)	Email	accountspayableAU@ghd.com
- EDI Format - XTab (XTAB)	Email	accountspayableAU@ghd.com
- Electronic SRN for ESdat (ESRN_ESDAT)	Email	accountspayableAU@ghd.com

ANDREW DUVAL

- *AU Certificate of Analysis - NATA (COA)	Email	andrew.duval@ghd.com
- *AU Interpretive QC Report - DEFAULT (Anon QCI Rep) (QCI)	Email	andrew.duval@ghd.com
- *AU QC Report - DEFAULT (Anon QC Rep) - NATA (QC)	Email	andrew.duval@ghd.com
- A4 - AU Sample Receipt Notification - Environmental HT (SRN)	Email	andrew.duval@ghd.com
- Chain of Custody (CoC) (COC)	Email	andrew.duval@ghd.com
- EDI Format - ESDAT (ESDAT)	Email	andrew.duval@ghd.com
- EDI Format - XTab (XTAB)	Email	andrew.duval@ghd.com
- Electronic SRN for ESdat (ESRN_ESDAT)	Email	andrew.duval@ghd.com

EMILY SMITH

- *AU Certificate of Analysis - NATA (COA)	Email	emily.smith@ghd.com
- *AU Interpretive QC Report - DEFAULT (Anon QCI Rep) (QCI)	Email	emily.smith@ghd.com
- *AU QC Report - DEFAULT (Anon QC Rep) - NATA (QC)	Email	emily.smith@ghd.com
- A4 - AU Sample Receipt Notification - Environmental HT (SRN)	Email	emily.smith@ghd.com
- Chain of Custody (CoC) (COC)	Email	emily.smith@ghd.com
- EDI Format - ESDAT (ESDAT)	Email	emily.smith@ghd.com
- EDI Format - XTab (XTAB)	Email	emily.smith@ghd.com
- Electronic SRN for ESdat (ESRN_ESDAT)	Email	emily.smith@ghd.com

GHD LAB REPORTS

- *AU Certificate of Analysis - NATA (COA)	Email	ghdlabreports@ghd.com
- *AU Interpretive QC Report - DEFAULT (Anon QCI Rep) (QCI)	Email	ghdlabreports@ghd.com
- *AU QC Report - DEFAULT (Anon QC Rep) - NATA (QC)	Email	ghdlabreports@ghd.com
- A4 - AU Sample Receipt Notification - Environmental HT (SRN)	Email	ghdlabreports@ghd.com
- Chain of Custody (CoC) (COC)	Email	ghdlabreports@ghd.com
- EDI Format - ESDAT (ESDAT)	Email	ghdlabreports@ghd.com
- EDI Format - XTab (XTAB)	Email	ghdlabreports@ghd.com
- Electronic SRN for ESdat (ESRN_ESDAT)	Email	ghdlabreports@ghd.com

HENRY LUO

- *AU Certificate of Analysis - NATA (COA)	Email	henry.luo@ghd.com
- *AU Interpretive QC Report - DEFAULT (Anon QCI Rep) (QCI)	Email	henry.luo@ghd.com
- *AU QC Report - DEFAULT (Anon QC Rep) - NATA (QC)	Email	henry.luo@ghd.com
- A4 - AU Sample Receipt Notification - Environmental HT (SRN)	Email	henry.luo@ghd.com
- Chain of Custody (CoC) (COC)	Email	henry.luo@ghd.com
- EDI Format - ESDAT (ESDAT)	Email	henry.luo@ghd.com
- EDI Format - XTab (XTAB)	Email	henry.luo@ghd.com
- Electronic SRN for ESdat (ESRN_ESDAT)	Email	henry.luo@ghd.com

TERRY NHAM

- *AU Certificate of Analysis - NATA (COA)	Email	terry.nham@ghd.com
- *AU Interpretive QC Report - DEFAULT (Anon QCI Rep) (QCI)	Email	terry.nham@ghd.com
- *AU QC Report - DEFAULT (Anon QC Rep) - NATA (QC)	Email	terry.nham@ghd.com
- A4 - AU Sample Receipt Notification - Environmental HT (SRN)	Email	terry.nham@ghd.com
- Chain of Custody (CoC) (COC)	Email	terry.nham@ghd.com
- EDI Format - ESDAT (ESDAT)	Email	terry.nham@ghd.com
- EDI Format - XTab (XTAB)	Email	terry.nham@ghd.com
- Electronic SRN for ESdat (ESRN_ESDAT)	Email	terry.nham@ghd.com

CERTIFICATE OF ANALYSIS

Work Order	: **ES2322320**	Page	: 1 of 15
Client	: **GHD PTY LTD**	Laboratory	: Environmental Division Sydney
Contact	: MR HENRY LUO	Contact	: Sarah Mathew
Address	: LEVEL 15, 133 CASTLEREAGH STREET SYDNEY NSW, AUSTRALIA 2000	Address	: 277-289 Woodpark Road Smithfield NSW Australia 2164
Telephone	: +61 02 9239 7100	Telephone	: +61-2-8784 8555
Project	: 12554717	Date Samples Received	: 05-Jul-2023 08:30
Order number	: 12554717	Date Analysis Commenced	: 05-Jul-2023
C-O-C number	: ----	Issue Date	: 11-Jul-2023 18:22
Sampler	: ANDREW DUVAL, EMILY SMITH		
Site	: ----		
Quote number	: SY/322/21		
No. of samples received	: 9		
No. of samples analysed	: 9		

Accreditation No. 825
Accredited for compliance with
ISO/IEC 17025 - Testing

This report supersedes any previous report(s) with this reference. Results apply to the sample(s) as submitted, unless the sampling was conducted by ALS. This document shall not be reproduced, except in full.

This Certificate of Analysis contains the following information:

- General Comments
- Analytical Results
- Surrogate Control Limits

Additional information pertinent to this report will be found in the following separate attachments: Quality Control Report, QA/QC Compliance Assessment to assist with Quality Review and Sample Receipt Notification.

Signatories

This document has been electronically signed by the authorized signatories below. Electronic signing is carried out in compliance with procedures specified in 21 CFR Part 11.

Signatories	*Position*	*Accreditation Category*
Ankit Joshi	Senior Chemist - Inorganics	Sydney Inorganics, Smithfield, NSW
Edwandy Fadjar	Organic Coordinator	Sydney Organics, Smithfield, NSW
Franco Lentini	LCMS Coordinator	Sydney Organics, Smithfield, NSW
Wisam Marassa	Inorganics Coordinator	Sydney Inorganics, Smithfield, NSW

General Comments

The analytical procedures used by ALS have been developed from established internationally recognised procedures such as those published by the USEPA, APHA, AS and NEPM. In house developed procedures are fully validated and are often at the client request.

Where moisture determination has been performed, results are reported on a dry weight basis.

Where a reported less than (<) result is higher than the LOR, this may be due to primary sample extract/digestate dilution and/or insufficient sample for analysis.

Where the LOR of a reported result differs from standard LOR, this may be due to high moisture content, insufficient sample (reduced weight employed) or matrix interference.

When sampling time information is not provided by the client, sampling dates are shown without a time component. In these instances, the time component has been assumed by the laboratory for processing purposes.

Where a result is required to meet compliance limits the associated uncertainty must be considered. Refer to the ALS Contract for details.

Key : CAS Number = CAS registry number from database maintained by Chemical Abstracts Services. The Chemical Abstracts Service is a division of the American Chemical Society.
LOR = Limit of reporting
^ = This result is computed from individual analyte detections at or above the level of reporting
ø = ALS is not NATA accredited for these tests.
~ = Indicates an estimated value.

- EP075 (SIM): Where reported, Benzo(a)pyrene Toxicity Equivalent Quotient (TEQ) per the NEPM (2013) is the sum total of the concentration of the eight carcinogenic PAHs multiplied by their Toxicity Equivalence Factor (TEF) relative to Benzo(a)pyrene. TEF values are provided in brackets as follows: Benz(a)anthracene (0.1), Chrysene (0.01), Benzo(b+j) & Benzo(k)fluoranthene (0.1), Benzo(a)pyrene (1.0), Indeno(1.2.3.cd)pyrene (0.1), Dibenz(a.h)anthracene (1.0), Benzo(g.h.i)perylene (0.01). Less than LOR results for 'TEQ Zero' are treated as zero.
- EP080: Where reported, Total Xylenes is the sum of the reported concentrations of m&p-Xylene and o-Xylene at or above the LOR.
- EP074: Where reported, Total Trihalomethanes is the sum of the reported concentrations of all Trihalomethanes at or above the LOR.
- EP074: Where reported, Total Trimethylbenzenes is the sum of the reported concentrations of 1.2.3-Trimethylbenzene, 1.2.4-Trimethylbenzene and 1.3.5-Trimethylbenzene at or above the LOR.
- EP075(SIM): Where reported, Total Cresol is the sum of the reported concentrations of 2-Methylphenol and 3- & 4-Methylphenol at or above the LOR.
- EP234: Poor matrix spike recovery for particular compounds due to matrix interferences and high matrix spike recovery has been noted for particular compounds due to ion enhancement.
- EP080/EP074: The result for sample ES2322320-004 was confirmed by re-analysis.

Analytical Results

Sub-Matrix: WATER (Matrix: WATER)			Sample ID	HINDS	HINUS	KEMDS	KEMUS	ROPDS
			Sampling date / time	04-Jul-2023 00:00	04-Jul-2023 00:00	04-Jul-2023 00:00	04-Jul-2023 00:00	04-Jul-2023 00:00
Compound	CAS Number	LOR	Unit	ES2322320-001	ES2322320-002	ES2322320-003	ES2322320-004	ES2322320-005
				Result	Result	Result	Result	Result
EA015: Total Dissolved Solids dried at 180 ± 5 °C								
Total Dissolved Solids @180°C	----	10	mg/L	**245**	**323**	**1630**	**736**	**2480**
EA025: Total Suspended Solids dried at 104 ± 2°C								
Suspended Solids (SS)	----	5	mg/L	**24**	**7**	**6**	**12**	**6**
EG020T: Total Metals by ICP-MS								
Arsenic	7440-38-2	0.001	mg/L	<0.001	<0.001	<0.001	<0.001	<0.001
Cadmium	7440-43-9	0.0001	mg/L	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001
Chromium	7440-47-3	0.001	mg/L	<0.001	<0.001	<0.001	<0.001	<0.001
Copper	7440-50-8	0.001	mg/L	<0.001	<0.001	**0.004**	**0.002**	<0.001
Nickel	7440-02-0	0.001	mg/L	<0.001	<0.001	**0.002**	**0.001**	**0.001**
Lead	7439-92-1	0.001	mg/L	<0.001	<0.001	<0.001	<0.001	<0.001
Zinc	7440-66-6	0.005	mg/L	**0.018**	<0.005	**0.015**	**0.017**	<0.005
Manganese	7439-96-5	0.001	mg/L	**0.184**	**0.112**	**0.016**	**0.022**	**0.437**
Iron	7439-89-6	0.05	mg/L	**0.86**	**0.84**	**0.16**	**0.27**	**0.10**
EG035T: Total Recoverable Mercury by FIMS								
Mercury	7439-97-6	0.0001	mg/L	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001
EK055G: Ammonia as N by Discrete Analyser								
Ammonia as N	7664-41-7	0.01	mg/L	<0.01	<0.01	**0.01**	**0.17**	**0.03**
EK057G: Nitrite as N by Discrete Analyser								
Nitrite as N	14797-65-0	0.01	mg/L	<0.01	<0.01	<0.01	<0.01	<0.01
EK058G: Nitrate as N by Discrete Analyser								
Nitrate as N	14797-55-8	0.01	mg/L	<0.01	**0.01**	**9.02**	**3.66**	**0.37**
EK059G: Nitrite plus Nitrate as N (NOx) by Discrete Analyser								
Nitrite + Nitrate as N	----	0.01	mg/L	<0.01	**0.01**	**9.02**	**3.66**	**0.37**
EK061G: Total Kjeldahl Nitrogen By Discrete Analyser								
Total Kjeldahl Nitrogen as N	----	0.1	mg/L	**0.9**	**0.7**	**2.1**	**1.1**	**0.5**
EK062G: Total Nitrogen as N (TKN + NOx) by Discrete Analyser								
^ Total Nitrogen as N	----	0.1	mg/L	**0.9**	**0.7**	**11.1**	**4.8**	**0.9**
EK067G: Total Phosphorus as P by Discrete Analyser								
Total Phosphorus as P	----	0.01	mg/L	**0.04**	**0.02**	**0.86**	**0.40**	**0.02**
EK071G: Reactive Phosphorus as P by discrete analyser								
Reactive Phosphorus as P	14265-44-2	0.01	mg/L	<0.01	<0.01	**0.81**	**0.40**	<0.01
EP008: Chlorophyll a & Pheophytin a								
Chlorophyll a	----	1	mg/m³	**45**	**3**	**16**	**8**	**1**

Analytical Results

Sub-Matrix: WATER (Matrix: WATER)			Sample ID	HINDS	HINUS	KEMDS	KEMUS	ROPDS
			Sampling date / time	04-Jul-2023 00:00	04-Jul-2023 00:00	04-Jul-2023 00:00	04-Jul-2023 00:00	04-Jul-2023 00:00
Compound	CAS Number	LOR	Unit	ES2322320-001	ES2322320-002	ES2322320-003	ES2322320-004	ES2322320-005
				Result	Result	Result	Result	Result
EP020: Oil and Grease (O&G)								
Oil & Grease	----	5	mg/L	<5	<5	<5	<5	<5
EP074D: Fumigants								
2.2-Dichloropropane	594-20-7	5	µg/L	<5	<5	<5	<5	<5
1.2-Dichloropropane	78-87-5	5	µg/L	<5	<5	<5	<5	<5
cis-1.3-Dichloropropylene	10061-01-5	5	µg/L	<5	<5	<5	<5	<5
trans-1.3-Dichloropropylene	10061-02-6	5	µg/L	<5	<5	<5	<5	<5
1.2-Dibromoethane (EDB)	106-93-4	5	µg/L	<5	<5	<5	<5	<5
EP074E: Halogenated Aliphatic Compounds								
Dichlorodifluoromethane	75-71-8	50	µg/L	<50	<50	<50	<50	<50
Chloromethane	74-87-3	50	µg/L	<50	<50	<50	<50	<50
Vinyl chloride	75-01-4	50	µg/L	<50	<50	<50	<50	<50
Bromomethane	74-83-9	50	µg/L	<50	<50	<50	<50	<50
Chloroethane	75-00-3	50	µg/L	<50	<50	<50	<50	<50
Trichlorofluoromethane	75-69-4	50	µg/L	<50	<50	<50	<50	<50
1.1-Dichloroethene	75-35-4	5	µg/L	<5	<5	<5	<5	<5
Iodomethane	74-88-4	5	µg/L	<5	<5	<5	<5	<5
trans-1.2-Dichloroethene	156-60-5	5	µg/L	<5	<5	<5	<5	<5
1.1-Dichloroethane	75-34-3	5	µg/L	<5	<5	<5	<5	<5
cis-1.2-Dichloroethene	156-59-2	5	µg/L	<5	<5	<5	<5	<5
1.1.1-Trichloroethane	71-55-6	5	µg/L	<5	<5	<5	<5	<5
1.1-Dichloropropylene	563-58-6	5	µg/L	<5	<5	<5	<5	<5
Carbon Tetrachloride	56-23-5	5	µg/L	<5	<5	<5	<5	<5
1.2-Dichloroethane	107-06-2	5	µg/L	<5	<5	<5	<5	<5
Trichloroethene	79-01-6	5	µg/L	<5	<5	<5	<5	<5
Dibromomethane	74-95-3	5	µg/L	<5	<5	<5	<5	<5
1.1.2-Trichloroethane	79-00-5	5	µg/L	<5	<5	<5	<5	<5
1.3-Dichloropropane	142-28-9	5	µg/L	<5	<5	<5	<5	<5
Tetrachloroethene	127-18-4	5	µg/L	<5	<5	<5	<5	<5
1.1.1.2-Tetrachloroethane	630-20-6	5	µg/L	<5	<5	<5	<5	<5
trans-1.4-Dichloro-2-butene	110-57-6	5	µg/L	<5	<5	<5	<5	<5
cis-1.4-Dichloro-2-butene	1476-11-5	5	µg/L	<5	<5	<5	<5	<5
1.1.2.2-Tetrachloroethane	79-34-5	5	µg/L	<5	<5	<5	<5	<5
1.2.3-Trichloropropane	96-18-4	5	µg/L	<5	<5	<5	<5	<5
Pentachloroethane	76-01-7	5	µg/L	<5	<5	<5	<5	<5

Analytical Results

Sub-Matrix: WATER (Matrix: WATER)				Sample ID	HINDS	HINUS	KEMDS	KEMUS	ROPDS
				Sampling date / time	04-Jul-2023 00:00	04-Jul-2023 00:00	04-Jul-2023 00:00	04-Jul-2023 00:00	04-Jul-2023 00:00
Compound	CAS Number	LOR	Unit		ES2322320-001	ES2322320-002	ES2322320-003	ES2322320-004	ES2322320-005
					Result	Result	Result	Result	Result
EP074E: Halogenated Aliphatic Compounds - Continued									
1.2-Dibromo-3-chloropropane	96-12-8	5	µg/L		<5	<5	<5	<5	<5
Hexachlorobutadiene	87-68-3	5	µg/L		<5	<5	<5	<5	<5
EP074F: Halogenated Aromatic Compounds									
Chlorobenzene	108-90-7	5	µg/L		<5	<5	<5	<5	<5
Bromobenzene	108-86-1	5	µg/L		<5	<5	<5	<5	<5
2-Chlorotoluene	95-49-8	5	µg/L		<5	<5	<5	<5	<5
4-Chlorotoluene	106-43-4	5	µg/L		<5	<5	<5	<5	<5
1.3-Dichlorobenzene	541-73-1	5	µg/L		<5	<5	<5	<5	<5
1.4-Dichlorobenzene	106-46-7	5	µg/L		<5	<5	<5	<5	<5
1.2-Dichlorobenzene	95-50-1	5	µg/L		<5	<5	<5	<5	<5
1.2.4-Trichlorobenzene	120-82-1	5	µg/L		<5	<5	<5	<5	<5
1.2.3-Trichlorobenzene	87-61-6	5	µg/L		<5	<5	<5	<5	<5
EP074G: Trihalomethanes									
Chloroform	67-66-3	5	µg/L		<5	<5	<5	**36**	<5
Bromodichloromethane	75-27-4	5	µg/L		<5	<5	<5	**7**	<5
Dibromochloromethane	124-48-1	5	µg/L		<5	<5	<5	<5	<5
Bromoform	75-25-2	5	µg/L		<5	<5	<5	<5	<5
EP075(SIM)A: Phenolic Compounds									
Phenol	108-95-2	1.0	µg/L		<1.0	<1.0	<1.0	<1.0	<1.0
2-Chlorophenol	95-57-8	1.0	µg/L		<1.0	<1.0	<1.0	<1.0	<1.0
2-Methylphenol	95-48-7	1.0	µg/L		<1.0	<1.0	<1.0	<1.0	<1.0
3- & 4-Methylphenol	1319-77-3	2.0	µg/L		<2.0	<2.0	<2.0	<2.0	<2.0
2-Nitrophenol	88-75-5	1.0	µg/L		<1.0	<1.0	<1.0	<1.0	<1.0
2.4-Dimethylphenol	105-67-9	1.0	µg/L		<1.0	<1.0	<1.0	<1.0	<1.0
2.4-Dichlorophenol	120-83-2	1.0	µg/L		<1.0	<1.0	<1.0	<1.0	<1.0
2.6-Dichlorophenol	87-65-0	1.0	µg/L		<1.0	<1.0	<1.0	<1.0	<1.0
4-Chloro-3-methylphenol	59-50-7	1.0	µg/L		<1.0	<1.0	<1.0	<1.0	<1.0
2.4.6-Trichlorophenol	88-06-2	1.0	µg/L		<1.0	<1.0	<1.0	<1.0	<1.0
2.4.5-Trichlorophenol	95-95-4	1.0	µg/L		<1.0	<1.0	<1.0	<1.0	<1.0
Pentachlorophenol	87-86-5	2.0	µg/L		<2.0	<2.0	<2.0	<2.0	<2.0
EP075(SIM)B: Polynuclear Aromatic Hydrocarbons									
Naphthalene	91-20-3	1.0	µg/L		<1.0	<1.0	<1.0	<1.0	<1.0
Acenaphthylene	208-96-8	1.0	µg/L		<1.0	<1.0	<1.0	<1.0	<1.0
Acenaphthene	83-32-9	1.0	µg/L		<1.0	<1.0	<1.0	<1.0	<1.0

Analytical Results

Sub-Matrix: WATER (Matrix: WATER)				Sample ID	HINDS	HINUS	KEMDS	KEMUS	ROPDS
				Sampling date / time	04-Jul-2023 00:00	04-Jul-2023 00:00	04-Jul-2023 00:00	04-Jul-2023 00:00	04-Jul-2023 00:00
Compound	CAS Number	LOR	Unit		ES2322320-001	ES2322320-002	ES2322320-003	ES2322320-004	ES2322320-005
					Result	Result	Result	Result	Result
EP075(SIM)B: Polynuclear Aromatic Hydrocarbons - Continued									
Fluorene	86-73-7	1.0	µg/L		<1.0	<1.0	<1.0	<1.0	<1.0
Phenanthrene	85-01-8	1.0	µg/L		<1.0	<1.0	<1.0	<1.0	<1.0
Anthracene	120-12-7	1.0	µg/L		<1.0	<1.0	<1.0	<1.0	<1.0
Fluoranthene	206-44-0	1.0	µg/L		<1.0	<1.0	<1.0	<1.0	<1.0
Pyrene	129-00-0	1.0	µg/L		<1.0	<1.0	<1.0	<1.0	<1.0
Benz(a)anthracene	56-55-3	1.0	µg/L		<1.0	<1.0	<1.0	<1.0	<1.0
Chrysene	218-01-9	1.0	µg/L		<1.0	<1.0	<1.0	<1.0	<1.0
Benzo(b+j)fluoranthene	205-99-2 205-82-3	1.0	µg/L		<1.0	<1.0	<1.0	<1.0	<1.0
Benzo(k)fluoranthene	207-08-9	1.0	µg/L		<1.0	<1.0	<1.0	<1.0	<1.0
Benzo(a)pyrene	50-32-8	0.5	µg/L		<0.5	<0.5	<0.5	<0.5	<0.5
Indeno(1.2.3.cd)pyrene	193-39-5	1.0	µg/L		<1.0	<1.0	<1.0	<1.0	<1.0
Dibenz(a.h)anthracene	53-70-3	1.0	µg/L		<1.0	<1.0	<1.0	<1.0	<1.0
Benzo(g.h.i)perylene	191-24-2	1.0	µg/L		<1.0	<1.0	<1.0	<1.0	<1.0
^ **Sum of polycyclic aromatic hydrocarbons**	----	0.5	µg/L		<0.5	<0.5	<0.5	<0.5	<0.5
^ **Benzo(a)pyrene TEQ (zero)**	----	0.5	µg/L		<0.5	<0.5	<0.5	<0.5	<0.5
EP080: BTEXN									
Benzene	71-43-2	1	µg/L		<1	<1	<1	<1	<1
Toluene	108-88-3	2	µg/L		<2	<2	<2	<2	<2
Ethylbenzene	100-41-4	2	µg/L		<2	<2	<2	<2	<2
meta- & para-Xylene	108-38-3 106-42-3	2	µg/L		<2	<2	<2	<2	<2
ortho-Xylene	95-47-6	2	µg/L		<2	<2	<2	<2	<2
^ **Total Xylenes**	----	2	µg/L		<2	<2	<2	<2	<2
^ **Sum of BTEX**	----	1	µg/L		<1	<1	<1	<1	<1
Naphthalene	91-20-3	5	µg/L		<5	<5	<5	<5	<5
EP234A: OP Pesticides									
Acephate	30560-19-1	0.5	µg/L		<0.5	<0.5	<0.5	<0.5	<0.5
Azinphos-methyl	86-50-0	0.02	µg/L		<0.02	<0.02	<0.02	<0.02	<0.02
Azinphos-ethyl	2642-71-9	0.02	µg/L		<0.02	<0.02	<0.02	<0.02	<0.02
Bensulide	741-58-2	0.1	µg/L		<0.1	<0.1	<0.1	<0.1	<0.1
Bromophos-ethyl	4824-78-6	0.10	µg/L		<0.10	<0.10	<0.10	<0.10	<0.10
Carbofenothion	786-19-6	0.02	µg/L		<0.02	<0.02	<0.02	<0.02	<0.02
Chlorfenvinphos	470-90-6	0.02	µg/L		<0.02	<0.02	<0.02	<0.02	<0.02
Chlorpyrifos	2921-88-2	0.02	µg/L		<0.02	<0.02	<0.02	<0.02	<0.02
Chlorpyrifos-methyl	5598-13-0	0.2	µg/L		<0.2	<0.2	<0.2	<0.2	<0.2

Analytical Results

Sub-Matrix: WATER (Matrix: WATER)				Sample ID	HINDS	HINUS	KEMDS	KEMUS	ROPDS
				Sampling date / time	04-Jul-2023 00:00	04-Jul-2023 00:00	04-Jul-2023 00:00	04-Jul-2023 00:00	04-Jul-2023 00:00
Compound	CAS Number	LOR	Unit		ES2322320-001	ES2322320-002	ES2322320-003	ES2322320-004	ES2322320-005
					Result	Result	Result	Result	Result
EP234A: OP Pesticides - Continued									
Coumaphos	56-72-4	0.01	µg/L		<0.01	<0.01	<0.01	<0.01	<0.01
Demeton-O	298-03-3	0.02	µg/L		<0.02	<0.02	<0.02	<0.02	<0.02
Demeton-O & Demeton-S	298-03-3/126-75-0	0.02	µg/L		<0.02	<0.02	<0.02	<0.02	<0.02
Demeton-S	126-75-0	0.02	µg/L		<0.02	<0.02	<0.02	<0.02	<0.02
Demeton-S-methyl	919-86-8	0.02	µg/L		<0.02	<0.02	<0.02	<0.02	<0.02
Diazinon	333-41-5	0.01	µg/L		<0.01	<0.01	<0.01	<0.01	<0.01
Dichlorvos	62-73-7	0.20	µg/L		<0.20	<0.20	<0.20	<0.20	<0.20
Dimethoate	60-51-5	0.02	µg/L		<0.02	<0.02	**0.41**	**0.13**	<0.02
Disulfoton	298-04-4	0.05	µg/L		<0.05	<0.05	<0.05	<0.05	<0.05
EPN	2104-64-5	0.05	µg/L		<0.05	<0.05	<0.05	<0.05	<0.05
Ethion	563-12-2	0.02	µg/L		<0.02	<0.02	<0.02	<0.02	<0.02
Ethoprophos	13194-48-4	0.01	µg/L		<0.01	<0.01	<0.01	<0.01	<0.01
Fenamiphos	22224-92-6	0.01	µg/L		<0.01	<0.01	<0.01	<0.01	<0.01
Fenchlorphos (Ronnel)	299-84-3	10	µg/L		<10	<10	<10	<10	<10
Fenitrothion	122-14-5	2	µg/L		<2	<2	<2	<2	<2
Fensulfothion	115-90-2	0.01	µg/L		<0.01	<0.01	<0.01	<0.01	<0.01
Fenthion	55-38-9	0.05	µg/L		<0.05	<0.05	<0.05	<0.05	<0.05
Formothion	2540-82-1	20	µg/L		<20	<20	<20	<20	<20
Fosetyl Aluminium	39148-24-8	10	µg/L		<10	<10	<10	<10	<10
Malathion	121-75-5	0.02	µg/L		<0.02	<0.02	<0.02	<0.02	<0.02
Methidathion	950-37-8	0.1	µg/L		<0.1	<0.1	<0.1	<0.1	<0.1
Mevinphos	7786-34-7	0.02	µg/L		<0.02	<0.02	<0.02	<0.02	<0.02
Monocrotophos	6923-22-4	0.02	µg/L		<0.02	<0.02	<0.02	<0.02	<0.02
Naftalofos	1491-41-4	1.0	µg/L		<1.0	<1.0	<1.0	<1.0	<1.0
Omethoate	1113-02-6	0.01	µg/L		<0.01	<0.01	<0.01	<0.01	<0.01
Parathion	56-38-2	0.2	µg/L		<0.2	<0.2	<0.2	<0.2	<0.2
Parathion-methyl	298-00-0	0.5	µg/L		<0.5	<0.5	<0.5	<0.5	<0.5
Phorate	298-02-2	0.1	µg/L		<0.1	<0.1	<0.1	<0.1	<0.1
Pirimiphos-ethyl	23505-41-1	0.01	µg/L		<0.01	<0.01	<0.01	<0.01	<0.01
Pirimiphos-methyl	29232-93-7	0.01	µg/L		<0.01	<0.01	<0.01	<0.01	<0.01
Profenofos	41198-08-7	0.01	µg/L		<0.01	<0.01	<0.01	<0.01	<0.01
Prothiofos	34643-46-4	0.1	µg/L		<0.1	<0.1	<0.1	<0.1	<0.1
Pyrazophos	13457-18-6	0.1	µg/L		<0.1	<0.1	<0.1	<0.1	<0.1
Sulfotep	3689-24-5	0.005	µg/L		<0.005	<0.005	<0.005	<0.005	<0.005
Sulprofos	35400-43-2	0.05	µg/L		<0.05	<0.05	<0.05	<0.05	<0.05

Analytical Results

Sub-Matrix: WATER (Matrix: WATER)				Sample ID	HINDS	HINUS	KEMDS	KEMUS	ROPDS
				Sampling date / time	04-Jul-2023 00:00	04-Jul-2023 00:00	04-Jul-2023 00:00	04-Jul-2023 00:00	04-Jul-2023 00:00
Compound	CAS Number	LOR	Unit		ES2322320-001	ES2322320-002	ES2322320-003	ES2322320-004	ES2322320-005
					Result	Result	Result	Result	Result
EP234A: OP Pesticides - Continued									
Temephos	3383-96-8	0.02	µg/L		<0.02	<0.02	<0.02	<0.02	<0.02
Terbufos	13071-79-9	0.01	µg/L		<0.01	<0.01	<0.01	<0.01	<0.01
Tetrachlorvinphos	22248-79-9	0.01	µg/L		<0.01	<0.01	<0.01	<0.01	<0.01
Thiometon	640-15-3	0.5	µg/L		<0.5	<0.5	<0.5	<0.5	<0.5
Triazophos	24017-47-8	0.005	µg/L		<0.005	<0.005	<0.005	<0.005	<0.005
Trichlorfon	52-68-6	0.02	µg/L		<0.02	<0.02	<0.02	<0.02	<0.02
Trichloronate	327-98-0	0.5	µg/L		<0.5	<0.5	<0.5	<0.5	<0.5
EP074S: VOC Surrogates									
1.2-Dichloroethane-D4	17060-07-0	5	%		**117**	**120**	**122**	**85.9**	**122**
Toluene-D8	2037-26-5	5	%		**115**	**116**	**120**	**94.3**	**121**
4-Bromofluorobenzene	460-00-4	5	%		**102**	**102**	**104**	**81.7**	**103**
EP075(SIM)S: Phenolic Compound Surrogates									
Phenol-d6	13127-88-3	1.0	%		**21.5**	**19.7**	**20.6**	**19.8**	**23.4**
2-Chlorophenol-D4	93951-73-6	1.0	%		**45.9**	**37.6**	**41.3**	**42.8**	**45.6**
2.4.6-Tribromophenol	118-79-6	1.0	%		**39.8**	**36.2**	**45.2**	**51.8**	**42.6**
EP075(SIM)T: PAH Surrogates									
2-Fluorobiphenyl	321-60-8	1.0	%		**55.1**	**53.3**	**52.6**	**57.0**	**56.1**
Anthracene-d10	1719-06-8	1.0	%		**63.2**	**61.5**	**63.7**	**59.7**	**70.2**
4-Terphenyl-d14	1718-51-0	1.0	%		**62.3**	**60.5**	**64.6**	**66.6**	**78.6**
EP080S: TPH(V)/BTEX Surrogates									
1.2-Dichloroethane-D4	17060-07-0	2	%		**122**	**125**	**127**	**89.0**	**127**
Toluene-D8	2037-26-5	2	%		**122**	**123**	**127**	**99.9**	**128**
4-Bromofluorobenzene	460-00-4	2	%		**106**	**107**	**109**	**89.5**	**109**

Analytical Results

Sub-Matrix: WATER (Matrix: WATER)			Sample ID	ROPUS	SOUDS	SOUUS	SWDUP1	----
			Sampling date / time	04-Jul-2023 00:00	04-Jul-2023 00:00	04-Jul-2023 00:00	04-Jul-2023 00:00	----
Compound	CAS Number	LOR	Unit	ES2322320-006	ES2322320-007	ES2322320-008	ES2322320-009	--------
				Result	Result	Result	Result	----
EA015: Total Dissolved Solids dried at 180 ± 5 °C								
Total Dissolved Solids @180°C	----	10	mg/L	**164**	**613**	**612**	**----**	**----**
EA025: Total Suspended Solids dried at 104 ± 2°C								
Suspended Solids (SS)	----	5	mg/L	**1030**	**32**	**22**	**----**	**----**
EG020T: Total Metals by ICP-MS								
Arsenic	7440-38-2	0.001	mg/L	**0.011**	<0.001	<0.001	<0.001	**----**
Cadmium	7440-43-9	0.0001	mg/L	**0.0002**	<0.0001	<0.0001	<0.0001	**----**
Chromium	7440-47-3	0.001	mg/L	**0.058**	<0.001	<0.001	<0.001	**----**
Copper	7440-50-8	0.001	mg/L	**0.074**	**0.002**	<0.001	**0.002**	**----**
Nickel	7440-02-0	0.001	mg/L	**0.043**	**0.002**	**0.003**	**0.002**	**----**
Lead	7439-92-1	0.001	mg/L	**0.064**	<0.001	<0.001	<0.001	**----**
Zinc	7440-66-6	0.005	mg/L	**0.170**	**0.008**	**0.011**	**0.017**	**----**
Manganese	7439-96-5	0.001	mg/L	**1.43**	**0.073**	**0.125**	**----**	**----**
Iron	7439-89-6	0.05	mg/L	**65.5**	**0.53**	**0.55**	**----**	**----**
EG035T: Total Recoverable Mercury by FIMS								
Mercury	7439-97-6	0.0001	mg/L	<0.0001	<0.0001	<0.0001	<0.0001	**----**
EK055G: Ammonia as N by Discrete Analyser								
Ammonia as N	7664-41-7	0.01	mg/L	**0.11**	**0.02**	**0.02**	**----**	**----**
EK057G: Nitrite as N by Discrete Analyser								
Nitrite as N	14797-65-0	0.01	mg/L	<0.01	<0.01	<0.01	**----**	**----**
EK058G: Nitrate as N by Discrete Analyser								
Nitrate as N	14797-55-8	0.01	mg/L	<0.01	**1.10**	**1.06**	**----**	**----**
EK059G: Nitrite plus Nitrate as N (NOx) by Discrete Analyser								
Nitrite + Nitrate as N	----	0.01	mg/L	<0.01	**1.10**	**1.06**	**----**	**----**
EK061G: Total Kjeldahl Nitrogen By Discrete Analyser								
Total Kjeldahl Nitrogen as N	----	0.1	mg/L	**9.3**	**1.2**	**1.2**	**----**	**----**
EK062G: Total Nitrogen as N (TKN + NOx) by Discrete Analyser								
^ Total Nitrogen as N	----	0.1	mg/L	**9.3**	**2.3**	**2.3**	**----**	**----**
EK067G: Total Phosphorus as P by Discrete Analyser								
Total Phosphorus as P	----	0.01	mg/L	**1.32**	**0.06**	**0.05**	**----**	**----**
EK071G: Reactive Phosphorus as P by discrete analyser								
Reactive Phosphorus as P	14265-44-2	0.01	mg/L	<0.01	<0.01	<0.01	**----**	**----**
EP008: Chlorophyll a & Pheophytin a								
Chlorophyll a	----	1	mg/m³	**101**	**20**	**38**	**----**	**----**

Analytical Results

Sub-Matrix: WATER (Matrix: WATER)				Sample ID	ROPUS	SOUDS	SOUUS	SWDUP1	----
				Sampling date / time	04-Jul-2023 00:00	04-Jul-2023 00:00	04-Jul-2023 00:00	04-Jul-2023 00:00	----
Compound	CAS Number	LOR	Unit		ES2322320-006	ES2322320-007	ES2322320-008	ES2322320-009	--------
					Result	Result	Result	Result	----
EP020: Oil and Grease (O&G)									
Oil & Grease	----	5	mg/L		<5	<5	<5	----	----
EP074D: Fumigants									
2.2-Dichloropropane	594-20-7	5	µg/L		<5	<5	<5	----	----
1.2-Dichloropropane	78-87-5	5	µg/L		<5	<5	<5	----	----
cis-1.3-Dichloropropylene	10061-01-5	5	µg/L		<5	<5	<5	----	----
trans-1.3-Dichloropropylene	10061-02-6	5	µg/L		<5	<5	<5	----	----
1.2-Dibromoethane (EDB)	106-93-4	5	µg/L		<5	<5	<5	----	----
EP074E: Halogenated Aliphatic Compounds									
Dichlorodifluoromethane	75-71-8	50	µg/L		<50	<50	<50	----	----
Chloromethane	74-87-3	50	µg/L		<50	<50	<50	----	----
Vinyl chloride	75-01-4	50	µg/L		<50	<50	<50	----	----
Bromomethane	74-83-9	50	µg/L		<50	<50	<50	----	----
Chloroethane	75-00-3	50	µg/L		<50	<50	<50	----	----
Trichlorofluoromethane	75-69-4	50	µg/L		<50	<50	<50	----	----
1.1-Dichloroethene	75-35-4	5	µg/L		<5	<5	<5	----	----
Iodomethane	74-88-4	5	µg/L		<5	<5	<5	----	----
trans-1.2-Dichloroethene	156-60-5	5	µg/L		<5	<5	<5	----	----
1.1-Dichloroethane	75-34-3	5	µg/L		<5	<5	<5	----	----
cis-1.2-Dichloroethene	156-59-2	5	µg/L		<5	<5	<5	----	----
1.1.1-Trichloroethane	71-55-6	5	µg/L		<5	<5	<5	----	----
1.1-Dichloropropylene	563-58-6	5	µg/L		<5	<5	<5	----	----
Carbon Tetrachloride	56-23-5	5	µg/L		<5	<5	<5	----	----
1.2-Dichloroethane	107-06-2	5	µg/L		<5	<5	<5	----	----
Trichloroethene	79-01-6	5	µg/L		<5	<5	<5	----	----
Dibromomethane	74-95-3	5	µg/L		<5	<5	<5	----	----
1.1.2-Trichloroethane	79-00-5	5	µg/L		<5	<5	<5	----	----
1.3-Dichloropropane	142-28-9	5	µg/L		<5	<5	<5	----	----
Tetrachloroethene	127-18-4	5	µg/L		<5	<5	<5	----	----
1.1.1.2-Tetrachloroethane	630-20-6	5	µg/L		<5	<5	<5	----	----
trans-1.4-Dichloro-2-butene	110-57-6	5	µg/L		<5	<5	<5	----	----
cis-1.4-Dichloro-2-butene	1476-11-5	5	µg/L		<5	<5	<5	----	----
1.1.2.2-Tetrachloroethane	79-34-5	5	µg/L		<5	<5	<5	----	----
1.2.3-Trichloropropane	96-18-4	5	µg/L		<5	<5	<5	----	----
Pentachloroethane	76-01-7	5	µg/L		<5	<5	<5	----	----

Analytical Results

Sub-Matrix: WATER (Matrix: WATER)				Sample ID	ROPUS	SOUDS	SOUUS	SWDUP1	----
				Sampling date / time	04-Jul-2023 00:00	04-Jul-2023 00:00	04-Jul-2023 00:00	04-Jul-2023 00:00	----
Compound	CAS Number	LOR	Unit		ES2322320-006	ES2322320-007	ES2322320-008	ES2322320-009	--------
					Result	Result	Result	Result	----
EP074E: Halogenated Aliphatic Compounds - Continued									
1.2-Dibromo-3-chloropropane	96-12-8	5	µg/L		<5	<5	<5	----	----
Hexachlorobutadiene	87-68-3	5	µg/L		<5	<5	<5	----	----
EP074F: Halogenated Aromatic Compounds									
Chlorobenzene	108-90-7	5	µg/L		<5	<5	<5	----	----
Bromobenzene	108-86-1	5	µg/L		<5	<5	<5	----	----
2-Chlorotoluene	95-49-8	5	µg/L		<5	<5	<5	----	----
4-Chlorotoluene	106-43-4	5	µg/L		<5	<5	<5	----	----
1.3-Dichlorobenzene	541-73-1	5	µg/L		<5	<5	<5	----	----
1.4-Dichlorobenzene	106-46-7	5	µg/L		<5	<5	<5	----	----
1.2-Dichlorobenzene	95-50-1	5	µg/L		<5	<5	<5	----	----
1.2.4-Trichlorobenzene	120-82-1	5	µg/L		<5	<5	<5	----	----
1.2.3-Trichlorobenzene	87-61-6	5	µg/L		<5	<5	<5	----	----
EP074G: Trihalomethanes									
Chloroform	67-66-3	5	µg/L		<5	<5	<5	----	----
Bromodichloromethane	75-27-4	5	µg/L		<5	<5	<5	----	----
Dibromochloromethane	124-48-1	5	µg/L		<5	<5	<5	----	----
Bromoform	75-25-2	5	µg/L		<5	<5	<5	----	----
EP075(SIM)A: Phenolic Compounds									
Phenol	108-95-2	1.0	µg/L		<1.0	<1.0	<1.0	----	----
2-Chlorophenol	95-57-8	1.0	µg/L		<1.0	<1.0	<1.0	----	----
2-Methylphenol	95-48-7	1.0	µg/L		<1.0	<1.0	<1.0	----	----
3- & 4-Methylphenol	1319-77-3	2.0	µg/L		<2.0	<2.0	<2.0	----	----
2-Nitrophenol	88-75-5	1.0	µg/L		<1.0	<1.0	<1.0	----	----
2.4-Dimethylphenol	105-67-9	1.0	µg/L		<1.0	<1.0	<1.0	----	----
2.4-Dichlorophenol	120-83-2	1.0	µg/L		<1.0	<1.0	<1.0	----	----
2.6-Dichlorophenol	87-65-0	1.0	µg/L		<1.0	<1.0	<1.0	----	----
4-Chloro-3-methylphenol	59-50-7	1.0	µg/L		<1.0	<1.0	<1.0	----	----
2.4.6-Trichlorophenol	88-06-2	1.0	µg/L		<1.0	<1.0	<1.0	----	----
2.4.5-Trichlorophenol	95-95-4	1.0	µg/L		<1.0	<1.0	<1.0	----	----
Pentachlorophenol	87-86-5	2.0	µg/L		<2.0	<2.0	<2.0	----	----
EP075(SIM)B: Polynuclear Aromatic Hydrocarbons									
Naphthalene	91-20-3	1.0	µg/L		<1.0	<1.0	<1.0	----	----
Acenaphthylene	208-96-8	1.0	µg/L		<1.0	<1.0	<1.0	----	----
Acenaphthene	83-32-9	1.0	µg/L		<1.0	<1.0	<1.0	----	----

Analytical Results

Sub-Matrix: WATER (Matrix: WATER)				Sample ID	ROPUS	SOUDS	SOUUS	SWDUP1	----
				Sampling date / time	04-Jul-2023 00:00	04-Jul-2023 00:00	04-Jul-2023 00:00	04-Jul-2023 00:00	----
Compound	CAS Number	LOR	Unit		ES2322320-006	ES2322320-007	ES2322320-008	ES2322320-009	--------
					Result	Result	Result	Result	----
EP075(SIM)B: Polynuclear Aromatic Hydrocarbons - Continued									
Fluorene	86-73-7	1.0	µg/L		<1.0	<1.0	<1.0	----	----
Phenanthrene	85-01-8	1.0	µg/L		<1.0	<1.0	<1.0	----	----
Anthracene	120-12-7	1.0	µg/L		<1.0	<1.0	<1.0	----	----
Fluoranthene	206-44-0	1.0	µg/L		<1.0	<1.0	<1.0	----	----
Pyrene	129-00-0	1.0	µg/L		<1.0	<1.0	<1.0	----	----
Benz(a)anthracene	56-55-3	1.0	µg/L		<1.0	<1.0	<1.0	----	----
Chrysene	218-01-9	1.0	µg/L		<1.0	<1.0	<1.0	----	----
Benzo(b+j)fluoranthene	205-99-2 205-82-3	1.0	µg/L		<1.0	<1.0	<1.0	----	----
Benzo(k)fluoranthene	207-08-9	1.0	µg/L		<1.0	<1.0	<1.0	----	----
Benzo(a)pyrene	50-32-8	0.5	µg/L		<0.5	<0.5	<0.5	----	----
Indeno(1.2.3.cd)pyrene	193-39-5	1.0	µg/L		<1.0	<1.0	<1.0	----	----
Dibenz(a.h)anthracene	53-70-3	1.0	µg/L		<1.0	<1.0	<1.0	----	----
Benzo(g.h.i)perylene	191-24-2	1.0	µg/L		<1.0	<1.0	<1.0	----	----
^ Sum of polycyclic aromatic hydrocarbons	----	0.5	µg/L		<0.5	<0.5	<0.5	----	----
^ Benzo(a)pyrene TEQ (zero)	----	0.5	µg/L		<0.5	<0.5	<0.5	----	----
EP080: BTEXN									
Benzene	71-43-2	1	µg/L		<1	<1	<1	----	----
Toluene	108-88-3	2	µg/L		<2	<2	<2	----	----
Ethylbenzene	100-41-4	2	µg/L		<2	<2	<2	----	----
meta- & para-Xylene	108-38-3 106-42-3	2	µg/L		<2	<2	<2	----	----
ortho-Xylene	95-47-6	2	µg/L		<2	<2	<2	----	----
^ Total Xylenes	----	2	µg/L		<2	<2	<2	----	----
^ Sum of BTEX	----	1	µg/L		<1	<1	<1	----	----
Naphthalene	91-20-3	5	µg/L		<5	<5	<5	----	----
EP234A: OP Pesticides									
Acephate	30560-19-1	0.5	µg/L		<0.5	<0.5	<0.5	----	----
Azinphos-methyl	86-50-0	0.02	µg/L		<0.02	<0.02	<0.02	----	----
Azinphos-ethyl	2642-71-9	0.02	µg/L		<0.02	<0.02	<0.02	----	----
Bensulide	741-58-2	0.1	µg/L		<0.1	<0.1	<0.1	----	----
Bromophos-ethyl	4824-78-6	0.10	µg/L		<0.10	<0.10	<0.10	----	----
Carbofenothion	786-19-6	0.02	µg/L		<0.02	<0.02	<0.02	----	----
Chlorfenvinphos	470-90-6	0.02	µg/L		<0.02	<0.02	<0.02	----	----
Chlorpyrifos	2921-88-2	0.02	µg/L		<0.02	<0.02	<0.02	----	----
Chlorpyrifos-methyl	5598-13-0	0.2	µg/L		<0.2	<0.2	<0.2	----	----

Analytical Results

Sub-Matrix: WATER (Matrix: WATER)				Sample ID	ROPUS	SOUDS	SOUUS	SWDUP1	----
				Sampling date / time	04-Jul-2023 00:00	04-Jul-2023 00:00	04-Jul-2023 00:00	04-Jul-2023 00:00	----
Compound	CAS Number	LOR	Unit		ES2322320-006	ES2322320-007	ES2322320-008	ES2322320-009	--------
					Result	Result	Result	Result	----
EP234A: OP Pesticides - Continued									
Coumaphos	56-72-4	0.01	µg/L		<0.01	<0.01	<0.01	----	----
Demeton-O	298-03-3	0.02	µg/L		<0.02	<0.02	<0.02	----	----
Demeton-O & Demeton-S	298-03-3/126-75-0	0.02	µg/L		<0.02	<0.02	<0.02	----	----
Demeton-S	126-75-0	0.02	µg/L		<0.02	<0.02	<0.02	----	----
Demeton-S-methyl	919-86-8	0.02	µg/L		<0.02	<0.02	<0.02	----	----
Diazinon	333-41-5	0.01	µg/L		<0.01	<0.01	**0.01**	----	----
Dichlorvos	62-73-7	0.20	µg/L		<0.20	<0.20	<0.20	----	----
Dimethoate	60-51-5	0.02	µg/L		<0.02	<0.02	<0.02	----	----
Disulfoton	298-04-4	0.05	µg/L		<0.05	<0.05	<0.05	----	----
EPN	2104-64-5	0.05	µg/L		<0.05	<0.05	<0.05	----	----
Ethion	563-12-2	0.02	µg/L		<0.02	<0.02	<0.02	----	----
Ethoprophos	13194-48-4	0.01	µg/L		<0.01	<0.01	<0.01	----	----
Fenamiphos	22224-92-6	0.01	µg/L		<0.01	<0.01	<0.01	----	----
Fenchlorphos (Ronnel)	299-84-3	10	µg/L		<10	<10	<10	----	----
Fenitrothion	122-14-5	2	µg/L		<2	<2	<2	----	----
Fensulfothion	115-90-2	0.01	µg/L		<0.01	<0.01	<0.01	----	----
Fenthion	55-38-9	0.05	µg/L		<0.05	<0.05	<0.05	----	----
Formothion	2540-82-1	20	µg/L		<20	<20	<20	----	----
Fosetyl Aluminium	39148-24-8	10	µg/L		<10	<10	<10	----	----
Malathion	121-75-5	0.02	µg/L		<0.02	<0.02	<0.02	----	----
Methidathion	950-37-8	0.1	µg/L		<0.1	<0.1	<0.1	----	----
Mevinphos	7786-34-7	0.02	µg/L		<0.02	<0.02	<0.02	----	----
Monocrotophos	6923-22-4	0.02	µg/L		<0.02	<0.02	<0.02	----	----
Naftalofos	1491-41-4	1.0	µg/L		<1.0	<1.0	<1.0	----	----
Omethoate	1113-02-6	0.01	µg/L		<0.01	<0.01	<0.01	----	----
Parathion	56-38-2	0.2	µg/L		<0.2	<0.2	<0.2	----	----
Parathion-methyl	298-00-0	0.5	µg/L		<0.5	<0.5	<0.5	----	----
Phorate	298-02-2	0.1	µg/L		<0.1	<0.1	<0.1	----	----
Pirimiphos-ethyl	23505-41-1	0.01	µg/L		<0.01	<0.01	<0.01	----	----
Pirimiphos-methyl	29232-93-7	0.01	µg/L		<0.01	<0.01	<0.01	----	----
Profenofos	41198-08-7	0.01	µg/L		<0.01	<0.01	<0.01	----	----
Prothiofos	34643-46-4	0.1	µg/L		<0.1	<0.1	<0.1	----	----
Pyrazophos	13457-18-6	0.1	µg/L		<0.1	<0.1	<0.1	----	----
Sulfotep	3689-24-5	0.005	µg/L		<0.005	<0.005	<0.005	----	----
Sulprofos	35400-43-2	0.05	µg/L		<0.05	<0.05	<0.05	----	----

Analytical Results

Sub-Matrix: WATER (Matrix: WATER)				Sample ID	ROPUS	SOUDS	SOUUS	SWDUP1	----
				Sampling date / time	04-Jul-2023 00:00	04-Jul-2023 00:00	04-Jul-2023 00:00	04-Jul-2023 00:00	----
Compound	CAS Number	LOR	Unit		ES2322320-006	ES2322320-007	ES2322320-008	ES2322320-009	--------
					Result	Result	Result	Result	----
EP234A: OP Pesticides - Continued									
Temephos	3383-96-8	0.02	µg/L		<0.02	<0.02	<0.02	----	----
Terbufos	13071-79-9	0.01	µg/L		<0.01	<0.01	<0.01	----	----
Tetrachlorvinphos	22248-79-9	0.01	µg/L		<0.01	<0.01	<0.01	----	----
Thiometon	640-15-3	0.5	µg/L		<0.5	<0.5	<0.5	----	----
Triazophos	24017-47-8	0.005	µg/L		<0.005	<0.005	<0.005	----	----
Trichlorfon	52-68-6	0.02	µg/L		<0.02	<0.02	<0.02	----	----
Trichloronate	327-98-0	0.5	µg/L		<0.5	<0.5	<0.5	----	----
EP074S: VOC Surrogates									
1.2-Dichloroethane-D4	17060-07-0	5	%		**112**	**114**	**118**	----	----
Toluene-D8	2037-26-5	5	%		**104**	**110**	**115**	----	----
4-Bromofluorobenzene	460-00-4	5	%		**94.0**	**99.6**	**103**	----	----
EP075(SIM)S: Phenolic Compound Surrogates									
Phenol-d6	13127-88-3	1.0	%		**18.5**	**20.6**	**18.9**	----	----
2-Chlorophenol-D4	93951-73-6	1.0	%		**40.2**	**41.1**	**36.5**	----	----
2.4.6-Tribromophenol	118-79-6	1.0	%		**45.1**	**38.0**	**37.1**	----	----
EP075(SIM)T: PAH Surrogates									
2-Fluorobiphenyl	321-60-8	1.0	%		**52.6**	**52.6**	**54.9**	----	----
Anthracene-d10	1719-06-8	1.0	%		**59.4**	**60.0**	**65.0**	----	----
4-Terphenyl-d14	1718-51-0	1.0	%		**61.8**	**63.7**	**67.9**	----	----
EP080S: TPH(V)/BTEX Surrogates									
1.2-Dichloroethane-D4	17060-07-0	2	%		**117**	**118**	**123**	----	----
Toluene-D8	2037-26-5	2	%		**110**	**117**	**122**	----	----
4-Bromofluorobenzene	460-00-4	2	%		**99.9**	**104**	**108**	----	----

Surrogate Control Limits

Sub-Matrix: WATER		Recovery Limits (%)	
Compound	*CAS Number*	*Low*	*High*
EP074S: VOC Surrogates			
1.2-Dichloroethane-D4	17060-07-0	78	133
Toluene-D8	2037-26-5	79	129
4-Bromofluorobenzene	460-00-4	81	124
EP075(SIM)S: Phenolic Compound Surrogates			
Phenol-d6	13127-88-3	10	44
2-Chlorophenol-D4	93951-73-6	14	94
2.4.6-Tribromophenol	118-79-6	17	125
EP075(SIM)T: PAH Surrogates			
2-Fluorobiphenyl	321-60-8	20	104
Anthracene-d10	1719-06-8	27	113
4-Terphenyl-d14	1718-51-0	32	112
EP080S: TPH(V)/BTEX Surrogates			
1.2-Dichloroethane-D4	17060-07-0	72	143
Toluene-D8	2037-26-5	75	131
4-Bromofluorobenzene	460-00-4	73	137

QUALITY CONTROL REPORT

Work Order	: **ES2322320**	Page	: 1 of 18
Client	: **GHD PTY LTD**	Laboratory	: Environmental Division Sydney
Contact	: MR HENRY LUO	Contact	: Sarah Mathew
Address	: LEVEL 15, 133 CASTLEREAGH STREET SYDNEY NSW, AUSTRALIA 2000	Address	: 277-289 Woodpark Road Smithfield NSW Australia 2164
Telephone	: +61 02 9239 7100	Telephone	: +61-2-8784 8555
Project	: 12554717	Date Samples Received	: 05-Jul-2023
Order number	: 12554717	Date Analysis Commenced	: 05-Jul-2023
C-O-C number	: ----	Issue Date	: 11-Jul-2023
Sampler	: ANDREW DUVAL, EMILY SMITH		
Site	: ----		
Quote number	: SY/322/21		
No. of samples received	: 9		
No. of samples analysed	: 9		

Accreditation No. 825
Accredited for compliance with
ISO/IEC 17025 - Testing

This report supersedes any previous report(s) with this reference. Results apply to the sample(s) as submitted, unless the sampling was conducted by ALS. This document shall not be reproduced, except in full.

This Quality Control Report contains the following information:

- Laboratory Duplicate (DUP) Report; Relative Percentage Difference (RPD) and Acceptance Limits
- Method Blank (MB) and Laboratory Control Spike (LCS) Report; Recovery and Acceptance Limits
- Matrix Spike (MS) Report; Recovery and Acceptance Limits

Signatories

This document has been electronically signed by the authorized signatories below. Electronic signing is carried out in compliance with procedures specified in 21 CFR Part 11.

Signatories	*Position*	*Accreditation Category*
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General Comments

The analytical procedures used by ALS have been developed from established internationally recognised procedures such as those published by the USEPA, APHA, AS and NEPM. In house developed procedures are fully validated and are often at the client request.

Where moisture determination has been performed, results are reported on a dry weight basis.

Where a reported less than (<) result is higher than the LOR, this may be due to primary sample extract/digestate dilution and/or insufficient sample for analysis. Where the LOR of a reported result differs from standard LOR, this may be due to high moisture content, insufficient sample (reduced weight employed) or matrix interference.

Key : Anonymous = Refers to samples which are not specifically part of this work order but formed part of the QC process lot
CAS Number = CAS registry number from database maintained by Chemical Abstracts Services. The Chemical Abstracts Service is a division of the American Chemical Society.
LOR = Limit of reporting
RPD = Relative Percentage Difference
# = Indicates failed QC

Laboratory Duplicate (DUP) Report

The quality control term Laboratory Duplicate refers to a randomly selected intralaboratory split. Laboratory duplicates provide information regarding method precision and sample heterogeneity. The permitted ranges for the Relative Percent Deviation (RPD) of Laboratory Duplicates are specified in ALS Method QWI-EN/38 and are dependent on the magnitude of results in comparison to the level of reporting: Result < 10 times LOR: No Limit; Result between 10 and 20 times LOR: 0% - 50%; Result > 20 times LOR: 0% - 20%.

Sub-Matrix: **WATER**

				Laboratory Duplicate (DUP) Report					
Laboratory sample ID	*Sample ID*	*Method: Compound*	*CAS Number*	*LOR*	*Unit*	*Original Result*	*Duplicate Result*	*RPD (%)*	*Acceptable RPD (%)*
EA015: Total Dissolved Solids dried at 180 ± 5 °C (QC Lot: 5158102)									
ES2321842-001	Anonymous	EA015H: Total Dissolved Solids @180°C	----	10	mg/L	37400	38300	2.3	0% - 20%
ES2322138-002	Anonymous	EA015H: Total Dissolved Solids @180°C	----	10	mg/L	407	415	1.9	0% - 20%
ES2322320-006	ROPUS	EA015H: Total Dissolved Solids @180°C	----	10	mg/L	164	164	0.0	0% - 50%
EW2302953-003	Anonymous	EA015H: Total Dissolved Solids @180°C	----	10	mg/L	62	60	2.9	No Limit
EA025: Total Suspended Solids dried at 104 ± 2°C (QC Lot: 5158103)									
ES2321842-001	Anonymous	EA025H: Suspended Solids (SS)	----	5	mg/L	<5	5	0.0	No Limit
ES2322138-002	Anonymous	EA025H: Suspended Solids (SS)	----	5	mg/L	<5	<5	0.0	No Limit
ES2322320-006	ROPUS	EA025H: Suspended Solids (SS)	----	5	mg/L	1030	1080	4.7	0% - 20%
EW2302953-003	Anonymous	EA025H: Suspended Solids (SS)	----	5	mg/L	6	6	0.0	No Limit
EG020T: Total Metals by ICP-MS (QC Lot: 5153956)									
ES2322047-001	Anonymous	EG020A-T: Cadmium	7440-43-9	0.0001	mg/L	<0.0001	<0.0001	0.0	No Limit
		EG020A-T: Arsenic	7440-38-2	0.001	mg/L	<0.001	<0.001	0.0	No Limit
		EG020A-T: Chromium	7440-47-3	0.001	mg/L	<0.001	<0.001	0.0	No Limit
		EG020A-T: Copper	7440-50-8	0.001	mg/L	<0.001	<0.001	0.0	No Limit
		EG020A-T: Lead	7439-92-1	0.001	mg/L	<0.001	<0.001	0.0	No Limit
		EG020A-T: Manganese	7439-96-5	0.001	mg/L	0.100	0.108	7.7	0% - 20%
		EG020A-T: Nickel	7440-02-0	0.001	mg/L	0.001	0.001	0.0	No Limit
		EG020A-T: Zinc	7440-66-6	0.005	mg/L	0.011	0.010	0.0	No Limit
		EG020A-T: Iron	7439-89-6	0.05	mg/L	3.17	3.25	2.5	0% - 20%
ES2322289-002	Anonymous	EG020A-T: Cadmium	7440-43-9	0.0001	mg/L	<0.0001	<0.0001	0.0	No Limit
		EG020A-T: Arsenic	7440-38-2	0.001	mg/L	<0.001	<0.001	0.0	No Limit
		EG020A-T: Chromium	7440-47-3	0.001	mg/L	<0.001	<0.001	0.0	No Limit
		EG020A-T: Copper	7440-50-8	0.001	mg/L	<0.001	<0.001	0.0	No Limit
		EG020A-T: Lead	7439-92-1	0.001	mg/L	<0.001	<0.001	0.0	No Limit

Sub-Matrix: **WATER**

				Laboratory Duplicate (DUP) Report					
Laboratory sample ID	*Sample ID*	*Method: Compound*	*CAS Number*	*LOR*	*Unit*	*Original Result*	*Duplicate Result*	*RPD (%)*	*Acceptable RPD (%)*
EG020T: Total Metals by ICP-MS (QC Lot: 5153956) - continued									
ES2322289-002	Anonymous	EG020A-T: Manganese	7439-96-5	0.001	mg/L	<0.001	<0.001	0.0	No Limit
		EG020A-T: Nickel	7440-02-0	0.001	mg/L	0.001	0.001	0.0	No Limit
		EG020A-T: Zinc	7440-66-6	0.005	mg/L	<0.005	<0.005	0.0	No Limit
		EG020A-T: Iron	7439-89-6	0.05	mg/L	<0.05	<0.05	0.0	No Limit
EG035T: Total Recoverable Mercury by FIMS (QC Lot: 5155258)									
ES2321909-044	Anonymous	EG035T: Mercury	7439-97-6	0.0001	mg/L	<0.0001	<0.0001	0.0	No Limit
ES2322289-001	Anonymous	EG035T: Mercury	7439-97-6	0.0001	mg/L	<0.0001	<0.0001	0.0	No Limit
EG035T: Total Recoverable Mercury by FIMS (QC Lot: 5155259)									
ES2322320-009	SWDUP1	EG035T: Mercury	7439-97-6	0.0001	mg/L	<0.0001	<0.0001	0.0	No Limit
WN2308204-006	Anonymous	EG035T: Mercury	7439-97-6	0.0001	mg/L	<0.0001	<0.0001	0.0	No Limit
EK055G: Ammonia as N by Discrete Analyser (QC Lot: 5157184)									
EP2308822-022	Anonymous	EK055G: Ammonia as N	7664-41-7	0.01	mg/L	<0.10	<0.10	0.0	No Limit
ES2322320-007	SOUDS	EK055G: Ammonia as N	7664-41-7	0.01	mg/L	0.02	0.03	52.6	No Limit
EK057G: Nitrite as N by Discrete Analyser (QC Lot: 5153958)									
ES2322037-006	Anonymous	EK057G: Nitrite as N	14797-65-0	0.01	mg/L	<0.01	0.01	0.0	No Limit
EK059G: Nitrite plus Nitrate as N (NOx) by Discrete Analyser (QC Lot: 5157185)									
EP2308822-022	Anonymous	EK059G: Nitrite + Nitrate as N	----	0.01	mg/L	35.4	32.4	9.0	0% - 20%
ES2322320-007	SOUDS	EK059G: Nitrite + Nitrate as N	----	0.01	mg/L	1.10	1.23	11.7	0% - 20%
EK061G: Total Kjeldahl Nitrogen By Discrete Analyser (QC Lot: 5157181)									
EP2308822-021	Anonymous	EK061G: Total Kjeldahl Nitrogen as N	----	0.1	mg/L	3.6	3.5	0.0	No Limit
ES2322320-007	SOUDS	EK061G: Total Kjeldahl Nitrogen as N	----	0.1	mg/L	1.2	1.1	0.0	0% - 50%
EK067G: Total Phosphorus as P by Discrete Analyser (QC Lot: 5157180)									
EP2308822-021	Anonymous	EK067G: Total Phosphorus as P	----	0.01	mg/L	0.02	0.03	0.0	No Limit
ES2322320-007	SOUDS	EK067G: Total Phosphorus as P	----	0.01	mg/L	0.06	0.05	0.0	No Limit
EK071G: Reactive Phosphorus as P by discrete analyser (QC Lot: 5153963)									
ES2322320-001	HINDS	EK071G: Reactive Phosphorus as P	14265-44-2	0.01	mg/L	<0.01	<0.01	0.0	No Limit
EP074D: Fumigants (QC Lot: 5155656)									
ES2322320-003	KEMDS	EP074: 2.2-Dichloropropane	594-20-7	5	µg/L	<5	<5	0.0	No Limit
		EP074: 1.2-Dichloropropane	78-87-5	5	µg/L	<5	<5	0.0	No Limit
		EP074: cis-1.3-Dichloropropylene	10061-01-5	5	µg/L	<5	<5	0.0	No Limit
		EP074: trans-1.3-Dichloropropylene	10061-02-6	5	µg/L	<5	<5	0.0	No Limit
		EP074: 1.2-Dibromoethane (EDB)	106-93-4	5	µg/L	<5	<5	0.0	No Limit
ES2322269-003	Anonymous	EP074: 2.2-Dichloropropane	594-20-7	5	µg/L	<5	<5	0.0	No Limit
		EP074: 1.2-Dichloropropane	78-87-5	5	µg/L	<5	<5	0.0	No Limit
		EP074: cis-1.3-Dichloropropylene	10061-01-5	5	µg/L	<5	<5	0.0	No Limit
		EP074: trans-1.3-Dichloropropylene	10061-02-6	5	µg/L	<5	<5	0.0	No Limit
		EP074: 1.2-Dibromoethane (EDB)	106-93-4	5	µg/L	<5	<5	0.0	No Limit
EP074E: Halogenated Aliphatic Compounds (QC Lot: 5155656)									

Sub-Matrix: **WATER**

				Laboratory Duplicate (DUP) Report					
Laboratory sample ID	*Sample ID*	*Method: Compound*	*CAS Number*	*LOR*	*Unit*	*Original Result*	*Duplicate Result*	*RPD (%)*	*Acceptable RPD (%)*
EP074E: Halogenated Aliphatic Compounds (QC Lot: 5155656) - continued									
ES2322320-003	KEMDS	EP074: 1.1-Dichloroethene	75-35-4	5	µg/L	<5	<5	0.0	No Limit
		EP074: Iodomethane	74-88-4	5	µg/L	<5	<5	0.0	No Limit
		EP074: trans-1.2-Dichloroethene	156-60-5	5	µg/L	<5	<5	0.0	No Limit
		EP074: 1.1-Dichloroethane	75-34-3	5	µg/L	<5	<5	0.0	No Limit
		EP074: cis-1.2-Dichloroethene	156-59-2	5	µg/L	<5	<5	0.0	No Limit
		EP074: 1.1.1-Trichloroethane	71-55-6	5	µg/L	<5	<5	0.0	No Limit
		EP074: 1.1-Dichloropropylene	563-58-6	5	µg/L	<5	<5	0.0	No Limit
		EP074: Carbon Tetrachloride	56-23-5	5	µg/L	<5	<5	0.0	No Limit
		EP074: 1.2-Dichloroethane	107-06-2	5	µg/L	<5	<5	0.0	No Limit
		EP074: Trichloroethene	79-01-6	5	µg/L	<5	<5	0.0	No Limit
		EP074: Dibromomethane	74-95-3	5	µg/L	<5	<5	0.0	No Limit
		EP074: 1.1.2-Trichloroethane	79-00-5	5	µg/L	<5	<5	0.0	No Limit
		EP074: 1.3-Dichloropropane	142-28-9	5	µg/L	<5	<5	0.0	No Limit
		EP074: Tetrachloroethene	127-18-4	5	µg/L	<5	<5	0.0	No Limit
		EP074: 1.1.1.2-Tetrachloroethane	630-20-6	5	µg/L	<5	<5	0.0	No Limit
		EP074: trans-1.4-Dichloro-2-butene	110-57-6	5	µg/L	<5	<5	0.0	No Limit
		EP074: cis-1.4-Dichloro-2-butene	1476-11-5	5	µg/L	<5	<5	0.0	No Limit
		EP074: 1.1.2.2-Tetrachloroethane	79-34-5	5	µg/L	<5	<5	0.0	No Limit
		EP074: 1.2.3-Trichloropropane	96-18-4	5	µg/L	<5	<5	0.0	No Limit
		EP074: Pentachloroethane	76-01-7	5	µg/L	<5	<5	0.0	No Limit
		EP074: 1.2-Dibromo-3-chloropropane	96-12-8	5	µg/L	<5	<5	0.0	No Limit
		EP074: Hexachlorobutadiene	87-68-3	5	µg/L	<5	<5	0.0	No Limit
		EP074: Dichlorodifluoromethane	75-71-8	50	µg/L	<50	<50	0.0	No Limit
		EP074: Chloromethane	74-87-3	50	µg/L	<50	<50	0.0	No Limit
		EP074: Vinyl chloride	75-01-4	50	µg/L	<50	<50	0.0	No Limit
		EP074: Bromomethane	74-83-9	50	µg/L	<50	<50	0.0	No Limit
		EP074: Chloroethane	75-00-3	50	µg/L	<50	<50	0.0	No Limit
		EP074: Trichlorofluoromethane	75-69-4	50	µg/L	<50	<50	0.0	No Limit
ES2322269-003	Anonymous	EP074: 1.1-Dichloroethene	75-35-4	5	µg/L	<5	<5	0.0	No Limit
		EP074: Iodomethane	74-88-4	5	µg/L	<5	<5	0.0	No Limit
		EP074: trans-1.2-Dichloroethene	156-60-5	5	µg/L	<5	<5	0.0	No Limit
		EP074: 1.1-Dichloroethane	75-34-3	5	µg/L	<5	<5	0.0	No Limit
		EP074: cis-1.2-Dichloroethene	156-59-2	5	µg/L	<5	<5	0.0	No Limit
		EP074: 1.1.1-Trichloroethane	71-55-6	5	µg/L	<5	<5	0.0	No Limit
		EP074: 1.1-Dichloropropylene	563-58-6	5	µg/L	<5	<5	0.0	No Limit
		EP074: Carbon Tetrachloride	56-23-5	5	µg/L	<5	<5	0.0	No Limit
		EP074: 1.2-Dichloroethane	107-06-2	5	µg/L	<5	<5	0.0	No Limit
		EP074: Trichloroethene	79-01-6	5	µg/L	<5	<5	0.0	No Limit
		EP074: Dibromomethane	74-95-3	5	µg/L	<5	<5	0.0	No Limit
		EP074: 1.1.2-Trichloroethane	79-00-5	5	µg/L	<5	<5	0.0	No Limit

Sub-Matrix: **WATER**

				Laboratory Duplicate (DUP) Report					
Laboratory sample ID	*Sample ID*	*Method: Compound*	*CAS Number*	*LOR*	*Unit*	*Original Result*	*Duplicate Result*	*RPD (%)*	*Acceptable RPD (%)*
EP074E: Halogenated Aliphatic Compounds (QC Lot: 5155656) - continued									
ES2322269-003	Anonymous	EP074: 1.3-Dichloropropane	142-28-9	5	µg/L	<5	<5	0.0	No Limit
		EP074: Tetrachloroethene	127-18-4	5	µg/L	<5	<5	0.0	No Limit
		EP074: 1.1.1.2-Tetrachloroethane	630-20-6	5	µg/L	<5	<5	0.0	No Limit
		EP074: trans-1.4-Dichloro-2-butene	110-57-6	5	µg/L	<5	<5	0.0	No Limit
		EP074: cis-1.4-Dichloro-2-butene	1476-11-5	5	µg/L	<5	<5	0.0	No Limit
		EP074: 1.1.2.2-Tetrachloroethane	79-34-5	5	µg/L	<5	<5	0.0	No Limit
		EP074: 1.2.3-Trichloropropane	96-18-4	5	µg/L	<5	<5	0.0	No Limit
		EP074: Pentachloroethane	76-01-7	5	µg/L	<5	<5	0.0	No Limit
		EP074: 1.2-Dibromo-3-chloropropane	96-12-8	5	µg/L	<5	<5	0.0	No Limit
		EP074: Hexachlorobutadiene	87-68-3	5	µg/L	<5	<5	0.0	No Limit
		EP074: Dichlorodifluoromethane	75-71-8	50	µg/L	<50	<50	0.0	No Limit
		EP074: Chloromethane	74-87-3	50	µg/L	<50	<50	0.0	No Limit
		EP074: Vinyl chloride	75-01-4	50	µg/L	<50	<50	0.0	No Limit
		EP074: Bromomethane	74-83-9	50	µg/L	<50	<50	0.0	No Limit
		EP074: Chloroethane	75-00-3	50	µg/L	<50	<50	0.0	No Limit
		EP074: Trichlorofluoromethane	75-69-4	50	µg/L	<50	<50	0.0	No Limit
EP074F: Halogenated Aromatic Compounds (QC Lot: 5155656)									
ES2322320-003	KEMDS	EP074: Chlorobenzene	108-90-7	5	µg/L	<5	<5	0.0	No Limit
		EP074: Bromobenzene	108-86-1	5	µg/L	<5	<5	0.0	No Limit
		EP074: 2-Chlorotoluene	95-49-8	5	µg/L	<5	<5	0.0	No Limit
		EP074: 4-Chlorotoluene	106-43-4	5	µg/L	<5	<5	0.0	No Limit
		EP074: 1.3-Dichlorobenzene	541-73-1	5	µg/L	<5	<5	0.0	No Limit
		EP074: 1.4-Dichlorobenzene	106-46-7	5	µg/L	<5	<5	0.0	No Limit
		EP074: 1.2-Dichlorobenzene	95-50-1	5	µg/L	<5	<5	0.0	No Limit
		EP074: 1.2.4-Trichlorobenzene	120-82-1	5	µg/L	<5	<5	0.0	No Limit
		EP074: 1.2.3-Trichlorobenzene	87-61-6	5	µg/L	<5	<5	0.0	No Limit
ES2322269-003	Anonymous	EP074: Chlorobenzene	108-90-7	5	µg/L	<5	<5	0.0	No Limit
		EP074: Bromobenzene	108-86-1	5	µg/L	<5	<5	0.0	No Limit
		EP074: 2-Chlorotoluene	95-49-8	5	µg/L	<5	<5	0.0	No Limit
		EP074: 4-Chlorotoluene	106-43-4	5	µg/L	<5	<5	0.0	No Limit
		EP074: 1.3-Dichlorobenzene	541-73-1	5	µg/L	<5	<5	0.0	No Limit
		EP074: 1.4-Dichlorobenzene	106-46-7	5	µg/L	<5	<5	0.0	No Limit
		EP074: 1.2-Dichlorobenzene	95-50-1	5	µg/L	<5	<5	0.0	No Limit
		EP074: 1.2.4-Trichlorobenzene	120-82-1	5	µg/L	<5	<5	0.0	No Limit
		EP074: 1.2.3-Trichlorobenzene	87-61-6	5	µg/L	<5	<5	0.0	No Limit
EP074G: Trihalomethanes (QC Lot: 5155656)									
ES2322320-003	KEMDS	EP074: Chloroform	67-66-3	5	µg/L	<5	<5	0.0	No Limit
		EP074: Bromodichloromethane	75-27-4	5	µg/L	<5	<5	0.0	No Limit
		EP074: Dibromochloromethane	124-48-1	5	µg/L	<5	<5	0.0	No Limit
		EP074: Bromoform	75-25-2	5	µg/L	<5	<5	0.0	No Limit

Sub-Matrix: **WATER**

				Laboratory Duplicate (DUP) Report					
Laboratory sample ID	*Sample ID*	*Method: Compound*	*CAS Number*	*LOR*	*Unit*	*Original Result*	*Duplicate Result*	*RPD (%)*	*Acceptable RPD (%)*
EP074G: Trihalomethanes (QC Lot: 5155656) - continued									
ES2322269-003	Anonymous	EP074: Chloroform	67-66-3	5	µg/L	<5	<5	0.0	No Limit
		EP074: Bromodichloromethane	75-27-4	5	µg/L	<5	<5	0.0	No Limit
		EP074: Dibromochloromethane	124-48-1	5	µg/L	<5	<5	0.0	No Limit
		EP074: Bromoform	75-25-2	5	µg/L	<5	<5	0.0	No Limit
EP075(SIM)A: Phenolic Compounds (QC Lot: 5153591)									
ES2322320-001	HINDS	EP075(SIM): Phenol	108-95-2	1	µg/L	<1.0	<1.0	0.0	No Limit
		EP075(SIM): 2-Chlorophenol	95-57-8	1	µg/L	<1.0	<1.0	0.0	No Limit
		EP075(SIM): 2-Methylphenol	95-48-7	1	µg/L	<1.0	<1.0	0.0	No Limit
		EP075(SIM): 2-Nitrophenol	88-75-5	1	µg/L	<1.0	<1.0	0.0	No Limit
		EP075(SIM): 2.4-Dimethylphenol	105-67-9	1	µg/L	<1.0	<1.0	0.0	No Limit
		EP075(SIM): 2.4-Dichlorophenol	120-83-2	1	µg/L	<1.0	<1.0	0.0	No Limit
		EP075(SIM): 2.6-Dichlorophenol	87-65-0	1	µg/L	<1.0	<1.0	0.0	No Limit
		EP075(SIM): 4-Chloro-3-methylphenol	59-50-7	1	µg/L	<1.0	<1.0	0.0	No Limit
		EP075(SIM): 2.4.6-Trichlorophenol	88-06-2	1	µg/L	<1.0	<1.0	0.0	No Limit
		EP075(SIM): 2.4.5-Trichlorophenol	95-95-4	1	µg/L	<1.0	<1.0	0.0	No Limit
		EP075(SIM): 3- & 4-Methylphenol	1319-77-3	2	µg/L	<2.0	<2.0	0.0	No Limit
		EP075(SIM): Pentachlorophenol	87-86-5	2	µg/L	<2.0	<2.0	0.0	No Limit
EP075(SIM)B: Polynuclear Aromatic Hydrocarbons (QC Lot: 5153591)									
ES2322320-001	HINDS	EP075(SIM): Benzo(a)pyrene	50-32-8	0.5	µg/L	<0.5	<0.5	0.0	No Limit
		EP075(SIM): Naphthalene	91-20-3	1	µg/L	<1.0	<1.0	0.0	No Limit
		EP075(SIM): Acenaphthylene	208-96-8	1	µg/L	<1.0	<1.0	0.0	No Limit
		EP075(SIM): Acenaphthene	83-32-9	1	µg/L	<1.0	<1.0	0.0	No Limit
		EP075(SIM): Fluorene	86-73-7	1	µg/L	<1.0	<1.0	0.0	No Limit
		EP075(SIM): Phenanthrene	85-01-8	1	µg/L	<1.0	<1.0	0.0	No Limit
		EP075(SIM): Anthracene	120-12-7	1	µg/L	<1.0	<1.0	0.0	No Limit
		EP075(SIM): Fluoranthene	206-44-0	1	µg/L	<1.0	<1.0	0.0	No Limit
		EP075(SIM): Pyrene	129-00-0	1	µg/L	<1.0	<1.0	0.0	No Limit
		EP075(SIM): Benz(a)anthracene	56-55-3	1	µg/L	<1.0	<1.0	0.0	No Limit
		EP075(SIM): Chrysene	218-01-9	1	µg/L	<1.0	<1.0	0.0	No Limit
		EP075(SIM): Benzo(b+j)fluoranthene	205-99-2 205-82-3	1	µg/L	<1.0	<1.0	0.0	No Limit
		EP075(SIM): Benzo(k)fluoranthene	207-08-9	1	µg/L	<1.0	<1.0	0.0	No Limit
		EP075(SIM): Indeno(1.2.3.cd)pyrene	193-39-5	1	µg/L	<1.0	<1.0	0.0	No Limit
		EP075(SIM): Dibenz(a.h)anthracene	53-70-3	1	µg/L	<1.0	<1.0	0.0	No Limit
		EP075(SIM): Benzo(g.h.i)perylene	191-24-2	1	µg/L	<1.0	<1.0	0.0	No Limit
EP080: BTEXN (QC Lot: 5155657)									
ES2322320-003	KEMDS	EP080: Benzene	71-43-2	1	µg/L	<1	<1	0.0	No Limit
		EP080: Toluene	108-88-3	2	µg/L	<2	<2	0.0	No Limit
		EP080: Ethylbenzene	100-41-4	2	µg/L	<2	<2	0.0	No Limit

Sub-Matrix: **WATER**

				Laboratory Duplicate (DUP) Report					
Laboratory sample ID	*Sample ID*	*Method: Compound*	*CAS Number*	*LOR*	*Unit*	*Original Result*	*Duplicate Result*	*RPD (%)*	*Acceptable RPD (%)*
EP080: BTEXN (QC Lot: 5155657) - continued									
ES2322320-003	KEMDS	EP080: meta- & para-Xylene	108-38-3 106-42-3	2	µg/L	<2	<2	0.0	No Limit
		EP080: ortho-Xylene	95-47-6	2	µg/L	<2	<2	0.0	No Limit
		EP080: Naphthalene	91-20-3	5	µg/L	<5	<5	0.0	No Limit
ES2322269-003	Anonymous	EP080: Benzene	71-43-2	1	µg/L	<1	<1	0.0	No Limit
		EP080: Toluene	108-88-3	2	µg/L	<2	<2	0.0	No Limit
		EP080: Ethylbenzene	100-41-4	2	µg/L	<2	<2	0.0	No Limit
		EP080: meta- & para-Xylene	108-38-3 106-42-3	2	µg/L	<2	<2	0.0	No Limit
		EP080: ortho-Xylene	95-47-6	2	µg/L	<2	<2	0.0	No Limit
		EP080: Naphthalene	91-20-3	5	µg/L	<5	<5	0.0	No Limit
EP234A: OP Pesticides (QC Lot: 5155281)									
ES2322320-007	SOUDS	EP234-1: Sulfotep	3689-24-5	0.005	µg/L	<0.005	<0.005	0.0	No Limit
		EP234-1: Triazophos	24017-47-8	0.005	µg/L	<0.005	<0.005	0.0	No Limit
		EP234-1: Coumaphos	56-72-4	0.01	µg/L	<0.01	<0.01	0.0	No Limit
		EP234-1: Diazinon	333-41-5	0.01	µg/L	<0.01	0.01	0.0	No Limit
		EP234-1: Ethoprophos	13194-48-4	0.01	µg/L	<0.01	<0.01	0.0	No Limit
		EP234-1: Fenamiphos	22224-92-6	0.01	µg/L	<0.01	<0.01	0.0	No Limit
		EP234-1: Fensulfothion	115-90-2	0.01	µg/L	<0.01	<0.01	0.0	No Limit
		EP234-1: Omethoate	1113-02-6	0.01	µg/L	<0.01	<0.01	0.0	No Limit
		EP234-1: Pirimiphos-ethyl	23505-41-1	0.01	µg/L	<0.01	<0.01	0.0	No Limit
		EP234-1: Pirimiphos-methyl	29232-93-7	0.01	µg/L	<0.01	<0.01	0.0	No Limit
		EP234-1: Profenofos	41198-08-7	0.01	µg/L	<0.01	<0.01	0.0	No Limit
		EP234-1: Terbufos	13071-79-9	0.01	µg/L	<0.01	<0.01	0.0	No Limit
		EP234-1: Tetrachlorvinphos	22248-79-9	0.01	µg/L	<0.01	<0.01	0.0	No Limit
		EP234-1: Azinphos-methyl	86-50-0	0.02	µg/L	<0.02	<0.02	0.0	No Limit
		EP234-1: Azinphos-ethyl	2642-71-9	0.02	µg/L	<0.02	<0.02	0.0	No Limit
		EP234-1: Carbofenothion	786-19-6	0.02	µg/L	<0.02	<0.02	0.0	No Limit
		EP234-1: Chlorfenvinphos	470-90-6	0.02	µg/L	<0.02	<0.02	0.0	No Limit
		EP234-1: Chlorpyrifos	2921-88-2	0.02	µg/L	<0.02	<0.02	0.0	No Limit
		EP234-1: Demeton-O	298-03-3	0.02	µg/L	<0.02	<0.02	0.0	No Limit
		EP234-1: Demeton-O & Demeton-S	298-03-3/126-75-0	0.02	µg/L	<0.02	<0.02	0.0	No Limit
		EP234-1: Demeton-S	126-75-0	0.02	µg/L	<0.02	<0.02	0.0	No Limit
		EP234-1: Demeton-S-methyl	919-86-8	0.02	µg/L	<0.02	<0.02	0.0	No Limit
		EP234-1: Dimethoate	60-51-5	0.02	µg/L	<0.02	<0.02	0.0	No Limit
		EP234-1: Ethion	563-12-2	0.02	µg/L	<0.02	<0.02	0.0	No Limit
		EP234-1: Malathion	121-75-5	0.02	µg/L	<0.02	<0.02	0.0	No Limit
		EP234-1: Mevinphos	7786-34-7	0.02	µg/L	<0.02	<0.02	0.0	No Limit
		EP234-1: Monocrotophos	6923-22-4	0.02	µg/L	<0.02	<0.02	0.0	No Limit

Sub-Matrix: **WATER**

Laboratory sample ID	Sample ID	Method: Compound	CAS Number	Laboratory Duplicate (DUP) Report					
				LOR	Unit	Original Result	Duplicate Result	RPD (%)	Acceptable RPD (%)
EP234A: OP Pesticides (QC Lot: 5155281) - continued									
ES2322320-007	SOUDS	EP234-1: Temephos	3383-96-8	0.02	µg/L	<0.02	<0.02	0.0	No Limit
		EP234-1: Trichlorfon	52-68-6	0.02	µg/L	<0.02	<0.02	0.0	No Limit
		EP234-1: Disulfoton	298-04-4	0.05	µg/L	<0.05	<0.05	0.0	No Limit
		EP234-1: EPN	2104-64-5	0.05	µg/L	<0.05	<0.05	0.0	No Limit
		EP234-1: Fenthion	55-38-9	0.05	µg/L	<0.05	<0.05	0.0	No Limit
		EP234-1: Sulprofos	35400-43-2	0.05	µg/L	<0.05	<0.05	0.0	No Limit
		EP234-1: Bromophos-ethyl	4824-78-6	0.1	µg/L	<0.10	<0.10	0.0	No Limit
		EP234-1: Phorate	298-02-2	0.1	µg/L	<0.1	<0.1	0.0	No Limit
		EP234-1: Prothiofos	34643-46-4	0.1	µg/L	<0.1	<0.1	0.0	No Limit
		EP234-1: Chlorpyrifos-methyl	5598-13-0	0.2	µg/L	<0.2	<0.2	0.0	No Limit
		EP234-1: Dichlorvos	62-73-7	0.2	µg/L	<0.20	<0.20	0.0	No Limit
		EP234-1: Parathion	56-38-2	0.2	µg/L	<0.2	<0.2	0.0	No Limit
		EP234-1: Parathion-methyl	298-00-0	0.5	µg/L	<0.5	<0.5	0.0	No Limit
		EP234-1: Trichloronate	327-98-0	0.5	µg/L	<0.5	<0.5	0.0	No Limit
		EP234-1: Fenchlorphos (Ronnel)	299-84-3	10	µg/L	<10	<10	0.0	No Limit
		EP234-1: Fenitrothion	122-14-5	2	µg/L	<2	<2	0.0	No Limit
EB2319947-002	Anonymous	EP234-1: Sulfotep	3689-24-5	0.005	µg/L	<0.005	<0.005	0.0	No Limit
		EP234-1: Triazophos	24017-47-8	0.005	µg/L	<0.005	<0.005	0.0	No Limit
		EP234-1: Coumaphos	56-72-4	0.01	µg/L	<0.01	<0.01	0.0	No Limit
		EP234-1: Diazinon	333-41-5	0.01	µg/L	<0.01	<0.01	0.0	No Limit
		EP234-1: Ethoprophos	13194-48-4	0.01	µg/L	<0.01	<0.01	0.0	No Limit
		EP234-1: Fenamiphos	22224-92-6	0.01	µg/L	<0.01	<0.01	0.0	No Limit
		EP234-1: Fensulfothion	115-90-2	0.01	µg/L	<0.01	<0.01	0.0	No Limit
		EP234-1: Omethoate	1113-02-6	0.01	µg/L	<0.01	<0.01	0.0	No Limit
		EP234-1: Pirimiphos-ethyl	23505-41-1	0.01	µg/L	<0.01	<0.01	0.0	No Limit
		EP234-1: Pirimiphos-methyl	29232-93-7	0.01	µg/L	<0.01	<0.01	0.0	No Limit
		EP234-1: Profenofos	41198-08-7	0.01	µg/L	<0.01	<0.01	0.0	No Limit
		EP234-1: Terbufos	13071-79-9	0.01	µg/L	<0.01	<0.01	0.0	No Limit
		EP234-1: Tetrachlorvinphos	22248-79-9	0.01	µg/L	<0.01	<0.01	0.0	No Limit
		EP234-1: Azinphos-methyl	86-50-0	0.02	µg/L	<0.02	<0.02	0.0	No Limit
		EP234-1: Azinphos-ethyl	2642-71-9	0.02	µg/L	<0.02	<0.02	0.0	No Limit
		EP234-1: Carbofenothion	786-19-6	0.02	µg/L	<0.02	<0.02	0.0	No Limit
		EP234-1: Chlorfenvinphos	470-90-6	0.02	µg/L	<0.02	<0.02	0.0	No Limit
		EP234-1: Chlorpyrifos	2921-88-2	0.02	µg/L	<0.02	<0.02	0.0	No Limit
		EP234-1: Demeton-O	298-03-3	0.02	µg/L	<0.02	<0.02	0.0	No Limit
		EP234-1: Demeton-O & Demeton-S	298-03-3/126-75-0	0.02	µg/L	<0.02	<0.02	0.0	No Limit
		EP234-1: Demeton-S	126-75-0	0.02	µg/L	<0.02	<0.02	0.0	No Limit
		EP234-1: Demeton-S-methyl	919-86-8	0.02	µg/L	<0.02	<0.02	0.0	No Limit
		EP234-1: Dimethoate	60-51-5	0.02	µg/L	<0.02	<0.02	0.0	No Limit

Sub-Matrix: **WATER**

				Laboratory Duplicate (DUP) Report					
Laboratory sample ID	*Sample ID*	*Method: Compound*	*CAS Number*	*LOR*	*Unit*	*Original Result*	*Duplicate Result*	*RPD (%)*	*Acceptable RPD (%)*
EP234A: OP Pesticides (QC Lot: 5155281) - continued									
EB2319947-002	Anonymous	EP234-1: Ethion	563-12-2	0.02	µg/L	<0.02	<0.02	0.0	No Limit
		EP234-1: Malathion	121-75-5	0.02	µg/L	<0.02	<0.02	0.0	No Limit
		EP234-1: Mevinphos	7786-34-7	0.02	µg/L	<0.02	<0.02	0.0	No Limit
		EP234-1: Monocrotophos	6923-22-4	0.02	µg/L	<0.02	<0.02	0.0	No Limit
		EP234-1: Temephos	3383-96-8	0.02	µg/L	<0.02	<0.02	0.0	No Limit
		EP234-1: Trichlorfon	52-68-6	0.02	µg/L	<0.02	<0.02	0.0	No Limit
		EP234-1: Disulfoton	298-04-4	0.05	µg/L	<0.05	<0.05	0.0	No Limit
		EP234-1: EPN	2104-64-5	0.05	µg/L	<0.05	<0.05	0.0	No Limit
		EP234-1: Fenthion	55-38-9	0.05	µg/L	<0.05	<0.05	0.0	No Limit
		EP234-1: Sulprofos	35400-43-2	0.05	µg/L	<0.05	<0.05	0.0	No Limit
		EP234-1: Bromophos-ethyl	4824-78-6	0.1	µg/L	<0.10	<0.10	0.0	No Limit
		EP234-1: Phorate	298-02-2	0.1	µg/L	<0.1	<0.1	0.0	No Limit
		EP234-1: Prothiofos	34643-46-4	0.1	µg/L	<0.1	<0.1	0.0	No Limit
		EP234-1: Chlorpyrifos-methyl	5598-13-0	0.2	µg/L	<0.2	<0.2	0.0	No Limit
		EP234-1: Dichlorvos	62-73-7	0.2	µg/L	<0.20	<0.20	0.0	No Limit
		EP234-1: Parathion	56-38-2	0.2	µg/L	<0.2	<0.2	0.0	No Limit
		EP234-1: Parathion-methyl	298-00-0	0.5	µg/L	<2.0	<2.0	0.0	No Limit
		EP234-1: Trichloronate	327-98-0	0.5	µg/L	<0.5	<0.5	0.0	No Limit
		EP234-1: Fenchlorphos (Ronnel)	299-84-3	10	µg/L	<10	<10	0.0	No Limit
		EP234-1: Fenitrothion	122-14-5	2	µg/L	<2	<2	0.0	No Limit
EP234A: OP Pesticides (QC Lot: 5155284)									
ES2322320-007	SOUDS	EP234-1x: Bensulide	741-58-2	0.1	µg/L	<0.1	<0.1	0.0	No Limit
		EP234-1x: Methidathion	950-37-8	0.1	µg/L	<0.1	<0.1	0.0	No Limit
		EP234-1x: Pyrazophos	13457-18-6	0.1	µg/L	<0.1	<0.1	0.0	No Limit
		EP234-1x: Acephate	30560-19-1	0.5	µg/L	<0.5	<0.5	0.0	No Limit
		EP234-1x: Thiometon	640-15-3	0.5	µg/L	<0.5	<0.5	0.0	No Limit
		EP234-1x: Naftalofos	1491-41-4	1	µg/L	<1.0	<1.0	0.0	No Limit
		EP234-1x: Fosetyl Aluminium	39148-24-8	10	µg/L	<10	<10	0.0	No Limit
		EP234-1x: Formothion	2540-82-1	20	µg/L	<20	<20	0.0	No Limit
EB2319947-002	Anonymous	EP234-1x: Bensulide	741-58-2	0.1	µg/L	<0.1	<0.1	0.0	No Limit
		EP234-1x: Methidathion	950-37-8	0.1	µg/L	<0.1	<0.1	0.0	No Limit
		EP234-1x: Pyrazophos	13457-18-6	0.1	µg/L	<0.1	<0.1	0.0	No Limit
		EP234-1x: Acephate	30560-19-1	0.5	µg/L	<0.5	<0.5	0.0	No Limit
		EP234-1x: Thiometon	640-15-3	0.5	µg/L	<0.5	<0.5	0.0	No Limit
		EP234-1x: Naftalofos	1491-41-4	1	µg/L	<1.0	<1.0	0.0	No Limit
		EP234-1x: Fosetyl Aluminium	39148-24-8	10	µg/L	<10	<10	0.0	No Limit
		EP234-1x: Formothion	2540-82-1	20	µg/L	<20	<20	0.0	No Limit

Method Blank (MB) and Laboratory Control Sample (LCS) Report

The quality control term Method / Laboratory Blank refers to an analyte free matrix to which all reagents are added in the same volumes or proportions as used in standard sample preparation. The purpose of this QC parameter is to monitor potential laboratory contamination. The quality control term Laboratory Control Sample (LCS) refers to a certified reference material, or a known interference free matrix spiked with target analytes. The purpose of this QC parameter is to monitor method precision and accuracy independent of sample matrix. Dynamic Recovery Limits are based on statistical evaluation of processed LCS.

Sub-Matrix: **WATER**

				Method Blank (MB) Report	Laboratory Control Spike (LCS) Report			
					Spike	Spike Recovery (%)	Acceptable Limits (%)	
Method: Compound	CAS Number	LOR	Unit	Result	Concentration	LCS	Low	High
EA015: Total Dissolved Solids dried at 180 ± 5 °C (QCLot: 5158102)								
EA015H: Total Dissolved Solids @180°C	----	10	mg/L	<10	2000 mg/L	89.8	87.0	109
				<10	293 mg/L	92.2	75.2	126
				<10	2320 mg/L	98.9	83.0	124
EA025: Total Suspended Solids dried at 104 ± 2°C (QCLot: 5158103)								
EA025H: Suspended Solids (SS)	----	5	mg/L	<5	150 mg/L	93.3	83.0	129
				<5	1000 mg/L	94.3	82.0	110
				<5	926 mg/L	96.5	83.0	118
EG020T: Total Metals by ICP-MS (QCLot: 5153956)								
EG020A-T: Arsenic	7440-38-2	0.001	mg/L	<0.001	0.1 mg/L	95.7	82.0	114
EG020A-T: Cadmium	7440-43-9	0.0001	mg/L	<0.0001	0.1 mg/L	94.7	84.0	112
EG020A-T: Chromium	7440-47-3	0.001	mg/L	<0.001	0.1 mg/L	96.4	86.0	116
EG020A-T: Copper	7440-50-8	0.001	mg/L	<0.001	0.1 mg/L	96.1	83.0	118
EG020A-T: Lead	7439-92-1	0.001	mg/L	<0.001	0.1 mg/L	97.7	85.0	115
EG020A-T: Manganese	7439-96-5	0.001	mg/L	<0.001	0.1 mg/L	99.6	85.0	113
EG020A-T: Nickel	7440-02-0	0.001	mg/L	<0.001	0.1 mg/L	99.4	84.0	116
EG020A-T: Zinc	7440-66-6	0.005	mg/L	<0.005	0.1 mg/L	95.4	79.0	117
EG020A-T: Iron	7439-89-6	0.05	mg/L	<0.05	0.5 mg/L	93.2	85.0	117
EG035T: Total Recoverable Mercury by FIMS (QCLot: 5155258)								
EG035T: Mercury	7439-97-6	0.0001	mg/L	<0.0001	0.01 mg/L	96.0	77.0	111
EG035T: Total Recoverable Mercury by FIMS (QCLot: 5155259)								
EG035T: Mercury	7439-97-6	0.0001	mg/L	<0.0001	0.01 mg/L	96.2	77.0	111
EK055G: Ammonia as N by Discrete Analyser (QCLot: 5157184)								
EK055G: Ammonia as N	7664-41-7	0.01	mg/L	<0.01	1 mg/L	94.1	90.0	114
EK057G: Nitrite as N by Discrete Analyser (QCLot: 5153958)								
EK057G: Nitrite as N	14797-65-0	0.01	mg/L	<0.01	0.5 mg/L	101	82.0	114
EK059G: Nitrite plus Nitrate as N (NOx) by Discrete Analyser (QCLot: 5157185)								
EK059G: Nitrite + Nitrate as N	----	0.01	mg/L	<0.01	0.5 mg/L	97.8	91.0	113
EK061G: Total Kjeldahl Nitrogen By Discrete Analyser (QCLot: 5157181)								

Sub-Matrix: **WATER**

Method: Compound	CAS Number	LOR	Unit	Method Blank (MB) Report: Result	Laboratory Control Spike (LCS) Report: Spike Concentration	Spike Recovery (%): LCS	Acceptable Limits (%): Low	Acceptable Limits (%): High
EK061G: Total Kjeldahl Nitrogen By Discrete Analyser (QCLot: 5157181) - continued								
EK061G: Total Kjeldahl Nitrogen as N	----	0.1	mg/L	<0.1	10 mg/L	73.8	69.0	101
				<0.1	1 mg/L	91.3	70.0	118
				<0.1	5 mg/L	80.6	70.0	130
EK067G: Total Phosphorus as P by Discrete Analyser (QCLot: 5157180)								
EK067G: Total Phosphorus as P	----	0.01	mg/L	<0.01	4.42 mg/L	85.1	71.3	126
				<0.01	0.442 mg/L	90.8	71.3	126
				<0.01	1 mg/L	92.0	70.0	130
EK071G: Reactive Phosphorus as P by discrete analyser (QCLot: 5153963)								
EK071G: Reactive Phosphorus as P	14265-44-2	0.01	mg/L	<0.01	0.5 mg/L	97.0	85.0	117
EP008: Chlorophyll (QCLot: 5154922)								
EP008: Chlorophyll a	----	1	mg/m³	<1	20 mg/m³	82.9	70.0	130
EP020: Oil and Grease (O&G) (QCLot: 5157806)								
EP020: Oil & Grease	----	5	mg/L	<5	5000 mg/L	94.8	81.0	121
				<5	4000 mg/L	86.7	70.0	110
EP074D: Fumigants (QCLot: 5155656)								
EP074: 2.2-Dichloropropane	594-20-7	5	µg/L	<5	10 µg/L	98.8	68.0	122
EP074: 1.2-Dichloropropane	78-87-5	5	µg/L	<5	10 µg/L	100.0	76.0	118
EP074: cis-1.3-Dichloropropylene	10061-01-5	5	µg/L	<5	10 µg/L	99.3	62.0	120
EP074: trans-1.3-Dichloropropylene	10061-02-6	5	µg/L	<5	10 µg/L	99.5	60.0	114
EP074: 1.2-Dibromoethane (EDB)	106-93-4	5	µg/L	<5	10 µg/L	105	69.0	117
EP074E: Halogenated Aliphatic Compounds (QCLot: 5155656)								
EP074: Dichlorodifluoromethane	75-71-8	50	µg/L	<50	100 µg/L	105	60.6	138
EP074: Chloromethane	74-87-3	50	µg/L	<50	100 µg/L	103	67.4	130
EP074: Vinyl chloride	75-01-4	50	µg/L	<50	100 µg/L	101	69.4	129
EP074: Bromomethane	74-83-9	50	µg/L	<50	100 µg/L	105	56.0	140
EP074: Chloroethane	75-00-3	50	µg/L	<50	100 µg/L	99.6	61.0	139
EP074: Trichlorofluoromethane	75-69-4	50	µg/L	<50	100 µg/L	101	69.0	131
EP074: 1.1-Dichloroethene	75-35-4	5	µg/L	<5	10 µg/L	101	70.0	124
EP074: Iodomethane	74-88-4	5	µg/L	<5	10 µg/L	92.0	70.2	128
EP074: trans-1.2-Dichloroethene	156-60-5	5	µg/L	<5	10 µg/L	101	74.0	118
EP074: 1.1-Dichloroethane	75-34-3	5	µg/L	<5	10 µg/L	100	74.0	120
EP074: cis-1.2-Dichloroethene	156-59-2	5	µg/L	<5	10 µg/L	98.2	77.0	119
EP074: 1.1.1-Trichloroethane	71-55-6	5	µg/L	<5	10 µg/L	98.0	67.0	119
EP074: 1.1-Dichloropropylene	563-58-6	5	µg/L	<5	10 µg/L	98.8	73.0	119

Sub-Matrix: **WATER**

Method: Compound	CAS Number	LOR	Unit	Method Blank (MB) Report: Result	Laboratory Control Spike (LCS) Report: Spike Concentration	Spike Recovery (%): LCS	Acceptable Limits (%): Low	Acceptable Limits (%): High
EP074E: Halogenated Aliphatic Compounds (QCLot: 5155656) - continued								
EP074: Carbon Tetrachloride	56-23-5	5	µg/L	<5	10 µg/L	96.1	62.0	120
EP074: 1.2-Dichloroethane	107-06-2	5	µg/L	<5	10 µg/L	102	73.0	123
EP074: Trichloroethene	79-01-6	5	µg/L	<5	10 µg/L	100	76.0	118
EP074: Dibromomethane	74-95-3	5	µg/L	<5	10 µg/L	102	73.0	119
EP074: 1.1.2-Trichloroethane	79-00-5	5	µg/L	<5	10 µg/L	103	72.0	126
EP074: 1.3-Dichloropropane	142-28-9	5	µg/L	<5	10 µg/L	103	71.0	129
EP074: Tetrachloroethene	127-18-4	5	µg/L	<5	10 µg/L	104	72.0	124
EP074: 1.1.1.2-Tetrachloroethane	630-20-6	5	µg/L	<5	10 µg/L	100	66.0	114
EP074: trans-1.4-Dichloro-2-butene	110-57-6	5	µg/L	<5	10 µg/L	104	60.0	120
EP074: cis-1.4-Dichloro-2-butene	1476-11-5	5	µg/L	<5	10 µg/L	105	70.6	128
EP074: 1.1.2.2-Tetrachloroethane	79-34-5	5	µg/L	<5	10 µg/L	105	70.0	124
EP074: 1.2.3-Trichloropropane	96-18-4	5	µg/L	<5	10 µg/L	106	74.0	126
EP074: Pentachloroethane	76-01-7	5	µg/L	<5	10 µg/L	95.2	71.8	126
EP074: 1.2-Dibromo-3-chloropropane	96-12-8	5	µg/L	<5	10 µg/L	94.9	66.4	136
EP074: Hexachlorobutadiene	87-68-3	5	µg/L	<5	10 µg/L	99.1	58.0	130
EP074F: Halogenated Aromatic Compounds (QCLot: 5155656)								
EP074: Chlorobenzene	108-90-7	5	µg/L	<5	10 µg/L	101	79.0	117
EP074: Bromobenzene	108-86-1	5	µg/L	<5	10 µg/L	102	76.0	116
EP074: 2-Chlorotoluene	95-49-8	5	µg/L	<5	10 µg/L	99.3	73.0	119
EP074: 4-Chlorotoluene	106-43-4	5	µg/L	<5	10 µg/L	98.5	73.0	119
EP074: 1.3-Dichlorobenzene	541-73-1	5	µg/L	<5	10 µg/L	99.9	75.0	117
EP074: 1.4-Dichlorobenzene	106-46-7	5	µg/L	<5	10 µg/L	100	74.0	118
EP074: 1.2-Dichlorobenzene	95-50-1	5	µg/L	<5	10 µg/L	99.4	75.0	117
EP074: 1.2.4-Trichlorobenzene	120-82-1	5	µg/L	<5	10 µg/L	99.4	61.0	125
EP074: 1.2.3-Trichlorobenzene	87-61-6	5	µg/L	<5	10 µg/L	102	67.0	123
EP074G: Trihalomethanes (QCLot: 5155656)								
EP074: Chloroform	67-66-3	5	µg/L	<5	10 µg/L	102	72.0	120
EP074: Bromodichloromethane	75-27-4	5	µg/L	<5	10 µg/L	99.5	64.0	118
EP074: Dibromochloromethane	124-48-1	5	µg/L	<5	10 µg/L	97.4	65.0	115
EP074: Bromoform	75-25-2	5	µg/L	<5	10 µg/L	100	73.5	126
EP075(SIM)A: Phenolic Compounds (QCLot: 5153591)								
EP075(SIM): Phenol	108-95-2	1	µg/L	<1.0	5 µg/L	32.4	24.5	61.9
EP075(SIM): 2-Chlorophenol	95-57-8	1	µg/L	<1.0	5 µg/L	68.4	52.0	90.0
EP075(SIM): 2-Methylphenol	95-48-7	1	µg/L	<1.0	5 µg/L	76.6	51.0	91.0

Sub-Matrix: **WATER**

Method: Compound	CAS Number	LOR	Unit	Method Blank (MB) Report: Result	Laboratory Control Spike (LCS) Report: Spike Concentration	Spike Recovery (%): LCS	Acceptable Limits (%): Low	Acceptable Limits (%): High
EP075(SIM)A: Phenolic Compounds (QCLot: 5153591) - continued								
EP075(SIM): 3- & 4-Methylphenol	1319-77-3	2	µg/L	<2.0	10 µg/L	59.0	44.0	88.0
EP075(SIM): 2-Nitrophenol	88-75-5	1	µg/L	<1.0	5 µg/L	73.9	48.0	100
EP075(SIM): 2.4-Dimethylphenol	105-67-9	1	µg/L	<1.0	5 µg/L	70.9	49.0	99.0
EP075(SIM): 2.4-Dichlorophenol	120-83-2	1	µg/L	<1.0	5 µg/L	79.0	53.0	105
EP075(SIM): 2.6-Dichlorophenol	87-65-0	1	µg/L	<1.0	5 µg/L	85.8	57.0	105
EP075(SIM): 4-Chloro-3-methylphenol	59-50-7	1	µg/L	<1.0	5 µg/L	75.0	53.0	99.0
EP075(SIM): 2.4.6-Trichlorophenol	88-06-2	1	µg/L	<1.0	5 µg/L	78.8	50.0	106
EP075(SIM): 2.4.5-Trichlorophenol	95-95-4	1	µg/L	<1.0	5 µg/L	77.2	51.0	105
EP075(SIM): Pentachlorophenol	87-86-5	2	µg/L	<2.0	10 µg/L	35.5	10.0	95.0
EP075(SIM)B: Polynuclear Aromatic Hydrocarbons (QCLot: 5153591)								
EP075(SIM): Naphthalene	91-20-3	1	µg/L	<1.0	5 µg/L	74.0	50.0	94.0
EP075(SIM): Acenaphthylene	208-96-8	1	µg/L	<1.0	5 µg/L	81.0	63.6	114
EP075(SIM): Acenaphthene	83-32-9	1	µg/L	<1.0	5 µg/L	68.3	62.2	113
EP075(SIM): Fluorene	86-73-7	1	µg/L	<1.0	5 µg/L	80.0	63.9	115
EP075(SIM): Phenanthrene	85-01-8	1	µg/L	<1.0	5 µg/L	78.2	62.6	116
EP075(SIM): Anthracene	120-12-7	1	µg/L	<1.0	5 µg/L	74.9	64.3	116
EP075(SIM): Fluoranthene	206-44-0	1	µg/L	<1.0	5 µg/L	67.1	63.6	118
EP075(SIM): Pyrene	129-00-0	1	µg/L	<1.0	5 µg/L	69.7	63.1	118
EP075(SIM): Benz(a)anthracene	56-55-3	1	µg/L	<1.0	5 µg/L	82.1	64.1	117
EP075(SIM): Chrysene	218-01-9	1	µg/L	<1.0	5 µg/L	77.9	62.5	116
EP075(SIM): Benzo(b+j)fluoranthene	205-99-2 205-82-3	1	µg/L	<1.0	5 µg/L	86.2	61.7	119
EP075(SIM): Benzo(k)fluoranthene	207-08-9	1	µg/L	<1.0	5 µg/L	69.8	63.0	115
EP075(SIM): Benzo(a)pyrene	50-32-8	0.5	µg/L	<0.5	5 µg/L	76.4	63.3	117
EP075(SIM): Indeno(1.2.3.cd)pyrene	193-39-5	1	µg/L	<1.0	5 µg/L	67.6	59.9	118
EP075(SIM): Dibenz(a.h)anthracene	53-70-3	1	µg/L	<1.0	5 µg/L	67.1	61.2	117
EP075(SIM): Benzo(g.h.i)perylene	191-24-2	1	µg/L	<1.0	5 µg/L	68.8	59.1	118
EP080: BTEXN (QCLot: 5155657)								
EP080: Benzene	71-43-2	1	µg/L	<1	10 µg/L	101	68.3	119
EP080: Toluene	108-88-3	2	µg/L	<2	10 µg/L	103	73.5	120
EP080: Ethylbenzene	100-41-4	2	µg/L	<2	10 µg/L	107	73.8	122
EP080: meta- & para-Xylene	108-38-3 106-42-3	2	µg/L	<2	10 µg/L	107	73.0	122
EP080: ortho-Xylene	95-47-6	2	µg/L	<2	10 µg/L	106	76.4	123
EP080: Naphthalene	91-20-3	5	µg/L	<5	10 µg/L	93.5	75.5	124

Sub-Matrix: **WATER**

Method: Compound	CAS Number	LOR	Unit	Method Blank (MB) Report	Laboratory Control Spike (LCS) Report			
					Spike	Spike Recovery (%)	Acceptable Limits (%)	
				Result	Concentration	LCS	Low	High
EP234A: OP Pesticides (QCLot: 5155281)								
EP234-1: Azinphos-methyl	86-50-0	0.02	µg/L	<0.02	0.2 µg/L	105	77.0	129
EP234-1: Azinphos-ethyl	2642-71-9	0.02	µg/L	<0.02	0.2 µg/L	107	75.0	135
EP234-1: Bromophos-ethyl	4824-78-6	0.1	µg/L	<0.10	1 µg/L	77.7	70.0	130
EP234-1: Carbofenothion	786-19-6	0.02	µg/L	<0.02	0.2 µg/L	104	70.0	130
EP234-1: Chlorfenvinphos	470-90-6	0.02	µg/L	<0.02	0.2 µg/L	108	74.0	134
EP234-1: Chlorpyrifos	2921-88-2	0.02	µg/L	<0.02	0.2 µg/L	107	70.0	130
EP234-1: Chlorpyrifos-methyl	5598-13-0	0.2	µg/L	<0.2	2 µg/L	122	70.0	130
EP234-1: Coumaphos	56-72-4	0.01	µg/L	<0.01	0.1 µg/L	108	70.0	130
EP234-1: Demeton-O	298-03-3	0.02	µg/L	<0.02	0.05 µg/L	107	64.0	134
EP234-1: Demeton-O & Demeton-S	298-03-3/126-75-0	0.02	µg/L	<0.02	0.1 µg/L	111	79.0	127
EP234-1: Demeton-S	126-75-0	0.02	µg/L	<0.02	0.05 µg/L	115	63.0	135
EP234-1: Demeton-S-methyl	919-86-8	0.02	µg/L	<0.02	0.2 µg/L	105	70.0	128
EP234-1: Diazinon	333-41-5	0.01	µg/L	<0.01	0.1 µg/L	105	68.0	138
EP234-1: Dichlorvos	62-73-7	0.2	µg/L	<0.20	2 µg/L	112	76.0	128
EP234-1: Dimethoate	60-51-5	0.02	µg/L	<0.02	0.2 µg/L	106	75.0	127
EP234-1: Disulfoton	298-04-4	0.05	µg/L	<0.05	0.5 µg/L	87.8	72.0	134
EP234-1: EPN	2104-64-5	0.05	µg/L	<0.05	0.5 µg/L	129	70.0	130
EP234-1: Ethion	563-12-2	0.02	µg/L	<0.02	0.2 µg/L	105	70.0	130
EP234-1: Ethoprophos	13194-48-4	0.01	µg/L	<0.01	0.1 µg/L	87.7	78.0	128
EP234-1: Fenamiphos	22224-92-6	0.01	µg/L	<0.01	0.1 µg/L	106	71.0	135
EP234-1: Fenchlorphos (Ronnel)	299-84-3	10	µg/L	<10	100 µg/L	106	70.0	130
EP234-1: Fenitrothion	122-14-5	2	µg/L	<2	20 µg/L	101	64.0	136
EP234-1: Fensulfothion	115-90-2	0.01	µg/L	<0.01	0.1 µg/L	107	79.0	125
EP234-1: Fenthion	55-38-9	0.05	µg/L	<0.05	0.5 µg/L	99.9	70.0	130
EP234-1: Malathion	121-75-5	0.02	µg/L	<0.02	0.2 µg/L	104	70.0	130
EP234-1: Mevinphos	7786-34-7	0.02	µg/L	<0.02	0.2 µg/L	104	77.0	123
EP234-1: Monocrotophos	6923-22-4	0.02	µg/L	<0.02	0.2 µg/L	108	75.0	129
EP234-1: Omethoate	1113-02-6	0.01	µg/L	<0.01	0.1 µg/L	108	74.0	130
EP234-1: Parathion	56-38-2	0.2	µg/L	<0.2	2 µg/L	104	69.0	139
EP234-1: Parathion-methyl	298-00-0	0.5	µg/L	<0.5	20 µg/L	80.4	66.0	140
EP234-1: Phorate	298-02-2	0.1	µg/L	<0.1	1 µg/L	107	68.0	136
EP234-1: Pirimiphos-ethyl	23505-41-1	0.01	µg/L	<0.01	0.1 µg/L	105	70.0	130
EP234-1: Pirimiphos-methyl	29232-93-7	0.01	µg/L	<0.01	0.1 µg/L	102	71.0	137
EP234-1: Profenofos	41198-08-7	0.01	µg/L	<0.01	0.1 µg/L	102	70.0	130

Sub-Matrix: **WATER**

Method: Compound	CAS Number	LOR	Unit	Method Blank (MB) Report: Result	Laboratory Control Spike (LCS) Report: Spike Concentration	Spike Recovery (%): LCS	Acceptable Limits (%): Low	Acceptable Limits (%): High
EP234A: OP Pesticides (QCLot: 5155281) - continued								
EP234-1: Prothiofos	34643-46-4	0.1	µg/L	<0.1	1 µg/L	96.4	70.0	130
EP234-1: Sulfotep	3689-24-5	0.005	µg/L	<0.005	0.05 µg/L	103	71.0	137
EP234-1: Sulprofos	35400-43-2	0.05	µg/L	<0.05	0.5 µg/L	103	70.0	130
EP234-1: Temephos	3383-96-8	0.02	µg/L	<0.02	0.2 µg/L	113	70.0	130
EP234-1: Terbufos	13071-79-9	0.01	µg/L	<0.01	0.1 µg/L	104	70.0	130
EP234-1: Tetrachlorvinphos	22248-79-9	0.01	µg/L	<0.01	0.1 µg/L	110	74.0	128
EP234-1: Triazophos	24017-47-8	0.005	µg/L	<0.005	0.05 µg/L	100	77.0	131
EP234-1: Trichlorfon	52-68-6	0.02	µg/L	<0.02	0.2 µg/L	109	70.0	130
EP234-1: Trichloronate	327-98-0	0.5	µg/L	<0.5	5 µg/L	98.9	63.0	139
EP234A: OP Pesticides (QCLot: 5155284)								
EP234-1x: Acephate	30560-19-1	0.5	µg/L	<0.5	5 µg/L	110	70.0	130
EP234-1x: Bensulide	741-58-2	0.1	µg/L	<0.1	5 µg/L	101	70.0	130
EP234-1x: Formothion	2540-82-1	20	µg/L	<20	----	----	----	----
EP234-1x: Fosetyl Aluminium	39148-24-8	10	µg/L	<10	5 µg/L	103	70.0	130
EP234-1x: Methidathion	950-37-8	0.1	µg/L	<0.1	5 µg/L	102	70.0	130
EP234-1x: Naftalofos	1491-41-4	1	µg/L	<1.0	5 µg/L	75.3	70.0	130
EP234-1x: Pyrazophos	13457-18-6	0.1	µg/L	<0.1	5 µg/L	103	70.0	130
EP234-1x: Thiometon	640-15-3	0.5	µg/L	<0.5	5 µg/L	103	70.0	130

Matrix Spike (MS) Report

The quality control term Matrix Spike (MS) refers to an intralaboratory split sample spiked with a representative set of target analytes. The purpose of this QC parameter is to monitor potential matrix effects on analyte recoveries. Static Recovery Limits as per laboratory Data Quality Objectives (DQOs). Ideal recovery ranges stated may be waived in the event of sample matrix interference.

Sub-Matrix: **WATER**

Laboratory sample ID	Sample ID	Method: Compound	CAS Number	Matrix Spike (MS) Report: Spike Concentration	SpikeRecovery(%): MS	Acceptable Limits (%): Low	Acceptable Limits (%): High
EG020T: Total Metals by ICP-MS (QCLot: 5153956)							
ES2322047-002	Anonymous	EG020A-T: Arsenic	7440-38-2	1 mg/L	99.3	70.0	130
		EG020A-T: Cadmium	7440-43-9	0.25 mg/L	100	70.0	130
		EG020A-T: Chromium	7440-47-3	1 mg/L	101	70.0	130
		EG020A-T: Copper	7440-50-8	1 mg/L	100	70.0	130
		EG020A-T: Lead	7439-92-1	1 mg/L	116	70.0	130
		EG020A-T: Manganese	7439-96-5	1 mg/L	76.2	70.0	130
		EG020A-T: Nickel	7440-02-0	1 mg/L	102	70.0	130
		EG020A-T: Zinc	7440-66-6	1 mg/L	101	70.0	130
EG035T: Total Recoverable Mercury by FIMS (QCLot: 5155258)							

Sub-Matrix: **WATER**

				Matrix Spike (MS) Report			
				Spike	SpikeRecovery(%)	Acceptable Limits (%)	
Laboratory sample ID	Sample ID	Method: Compound	CAS Number	Concentration	MS	Low	High
EG035T: Total Recoverable Mercury by FIMS (QCLot: 5155258) - continued							
ES2321962-058	Anonymous	EG035T: Mercury	7439-97-6	0.01 mg/L	85.5	70.0	130
EG035T: Total Recoverable Mercury by FIMS (QCLot: 5155259)							
ES2322371-001	Anonymous	EG035T: Mercury	7439-97-6	0.01 mg/L	70.1	70.0	130
EK055G: Ammonia as N by Discrete Analyser (QCLot: 5157184)							
EP2308822-022	Anonymous	EK055G: Ammonia as N	7664-41-7	1 mg/L	103	70.0	130
EK057G: Nitrite as N by Discrete Analyser (QCLot: 5153958)							
ES2322037-006	Anonymous	EK057G: Nitrite as N	14797-65-0	0.5 mg/L	106	70.0	130
EK059G: Nitrite plus Nitrate as N (NOx) by Discrete Analyser (QCLot: 5157185)							
EP2308822-022	Anonymous	EK059G: Nitrite + Nitrate as N	----	0.5 mg/L	# Not Determined	70.0	130
EK061G: Total Kjeldahl Nitrogen By Discrete Analyser (QCLot: 5157181)							
EP2308822-022	Anonymous	EK061G: Total Kjeldahl Nitrogen as N	----	50 mg/L	76.6	70.0	130
EK067G: Total Phosphorus as P by Discrete Analyser (QCLot: 5157180)							
EP2308822-022	Anonymous	EK067G: Total Phosphorus as P	----	10 mg/L	91.7	70.0	130
EK071G: Reactive Phosphorus as P by discrete analyser (QCLot: 5153963)							
ES2322320-001	HINDS	EK071G: Reactive Phosphorus as P	14265-44-2	0.5 mg/L	97.6	70.0	130
EP074E: Halogenated Aliphatic Compounds (QCLot: 5155656)							
ES2322269-003	Anonymous	EP074: 1.1-Dichloroethene	75-35-4	25 µg/L	115	70.0	130
		EP074: Trichloroethene	79-01-6	25 µg/L	103	70.0	130
EP074F: Halogenated Aromatic Compounds (QCLot: 5155656)							
ES2322269-003	Anonymous	EP074: Chlorobenzene	108-90-7	25 µg/L	108	70.0	130
EP075(SIM)A: Phenolic Compounds (QCLot: 5153591)							
ES2322320-001	HINDS	EP075(SIM): Phenol	108-95-2	20 µg/L	32.6	20.0	130
		EP075(SIM): 2-Chlorophenol	95-57-8	20 µg/L	83.8	60.0	130
		EP075(SIM): 2-Nitrophenol	88-75-5	20 µg/L	76.2	60.0	130
		EP075(SIM): 4-Chloro-3-methylphenol	59-50-7	20 µg/L	82.8	70.0	130
		EP075(SIM): Pentachlorophenol	87-86-5	20 µg/L	36.4	20.0	130
EP075(SIM)B: Polynuclear Aromatic Hydrocarbons (QCLot: 5153591)							
ES2322320-001	HINDS	EP075(SIM): Acenaphthene	83-32-9	20 µg/L	79.2	70.0	130
		EP075(SIM): Pyrene	129-00-0	20 µg/L	88.2	70.0	130
EP080: BTEXN (QCLot: 5155657)							
ES2322269-003	Anonymous	EP080: Benzene	71-43-2	25 µg/L	101	70.0	130
		EP080: Toluene	108-88-3	25 µg/L	106	70.0	130
		EP080: Ethylbenzene	100-41-4	25 µg/L	114	70.0	130

Sub-Matrix: **WATER**

				Matrix Spike (MS) Report			
				Spike	SpikeRecovery(%)	Acceptable Limits (%)	
Laboratory sample ID	Sample ID	Method: Compound	CAS Number	Concentration	MS	Low	High
EP080: BTEXN (QCLot: 5155657) - continued							
ES2322269-003	Anonymous	EP080: meta- & para-Xylene	108-38-3 106-42-3	25 µg/L	105	70.0	130
		EP080: ortho-Xylene	95-47-6	25 µg/L	121	70.0	130
		EP080: Naphthalene	91-20-3	25 µg/L	114	70.0	130
EP234A: OP Pesticides (QCLot: 5155281)							
EB2319947-002	Anonymous	EP234-1: Azinphos-methyl	86-50-0	0.2 µg/L	93.6	70.0	130
		EP234-1: Azinphos-ethyl	2642-71-9	0.2 µg/L	94.5	70.0	130
		EP234-1: Bromophos-ethyl	4824-78-6	1 µg/L	# 61.2	70.0	130
		EP234-1: Carbofenothion	786-19-6	0.2 µg/L	115	70.0	130
		EP234-1: Chlorfenvinphos	470-90-6	0.2 µg/L	91.8	70.0	130
		EP234-1: Chlorpyrifos	2921-88-2	0.2 µg/L	93.0	70.0	130
		EP234-1: Chlorpyrifos-methyl	5598-13-0	2 µg/L	63.6	58.0	136
		EP234-1: Coumaphos	56-72-4	0.1 µg/L	93.7	70.0	130
		EP234-1: Demeton-O	298-03-3	0.05 µg/L	85.2	70.0	130
		EP234-1: Demeton-O & Demeton-S	298-03-3/126 -75-0	0.1 µg/L	89.4	69.0	129
		EP234-1: Demeton-S	126-75-0	0.05 µg/L	93.6	70.0	130
		EP234-1: Demeton-S-methyl	919-86-8	0.2 µg/L	71.2	70.0	130
		EP234-1: Diazinon	333-41-5	0.1 µg/L	91.2	70.0	130
		EP234-1: Dichlorvos	62-73-7	2 µg/L	116	70.0	130
		EP234-1: Dimethoate	60-51-5	0.2 µg/L	81.0	69.0	131
		EP234-1: Disulfoton	298-04-4	0.5 µg/L	97.7	70.0	130
		EP234-1: EPN	2104-64-5	0.5 µg/L	# 57.6	70.0	130
		EP234-1: Ethion	563-12-2	0.2 µg/L	93.6	70.0	130
		EP234-1: Ethoprophos	13194-48-4	0.1 µg/L	# 43.8	70.0	132
		EP234-1: Fenamiphos	22224-92-6	0.1 µg/L	89.3	70.0	130
		EP234-1: Fenchlorphos (Ronnel)	299-84-3	100 µg/L	# 60.9	71.0	133
		EP234-1: Fenitrothion	122-14-5	20 µg/L	68.8	64.0	136
		EP234-1: Fensulfothion	115-90-2	0.1 µg/L	96.0	83.0	123
		EP234-1: Fenthion	55-38-9	0.5 µg/L	105	70.0	130
		EP234-1: Malathion	121-75-5	0.2 µg/L	111	70.0	130
		EP234-1: Mevinphos	7786-34-7	0.2 µg/L	# 62.2	69.0	125
		EP234-1: Monocrotophos	6923-22-4	0.2 µg/L	105	70.0	128
		EP234-1: Omethoate	1113-02-6	0.1 µg/L	73.1	70.0	130
		EP234-1: Parathion	56-38-2	2 µg/L	75.0	70.0	130
		EP234-1: Parathion-methyl	298-00-0	20 µg/L	# 44.7	70.0	140
		EP234-1: Phorate	298-02-2	1 µg/L	94.2	70.0	130
		EP234-1: Pirimiphos-ethyl	23505-41-1	0.1 µg/L	91.7	70.0	130
		EP234-1: Pirimiphos-methyl	29232-93-7	0.1 µg/L	112	70.0	130

Sub-Matrix: **WATER**

				Matrix Spike (MS) Report			
				Spike	SpikeRecovery(%)	Acceptable Limits (%)	
Laboratory sample ID	*Sample ID*	*Method: Compound*	*CAS Number*	*Concentration*	*MS*	*Low*	*High*
EP234A: OP Pesticides (QCLot: 5155281) - continued							
EB2319947-002	Anonymous	EP234-1: Profenofos	41198-08-7	0.1 µg/L	100	70.0	130
		EP234-1: Prothiofos	34643-46-4	1 µg/L	73.6	70.0	130
		EP234-1: Sulfotep	3689-24-5	0.05 µg/L	91.0	63.0	135
		EP234-1: Sulprofos	35400-43-2	0.5 µg/L	95.0	70.0	130
		EP234-1: Temephos	3383-96-8	0.2 µg/L	104	70.0	130
		EP234-1: Terbufos	13071-79-9	0.1 µg/L	98.7	70.0	130
		EP234-1: Tetrachlorvinphos	22248-79-9	0.1 µg/L	102	77.0	125
		EP234-1: Triazophos	24017-47-8	0.05 µg/L	87.4	74.0	132
		EP234-1: Trichlorfon	52-68-6	0.2 µg/L	# 40.0	70.0	130
		EP234-1: Trichloronate	327-98-0	5 µg/L	# 56.5	63.0	139
EP234A: OP Pesticides (QCLot: 5155284)							
EB2319947-002	Anonymous	EP234-1x: Acephate	30560-19-1	5 µg/L	70.0	70.0	130
		EP234-1x: Bensulide	741-58-2	5 µg/L	108	70.0	130
		EP234-1x: Fosetyl Aluminium	39148-24-8	5 µg/L	# 23.6	70.0	130
		EP234-1x: Methidathion	950-37-8	5 µg/L	97.1	70.0	130
		EP234-1x: Naftalofos	1491-41-4	5 µg/L	104	70.0	130
		EP234-1x: Pyrazophos	13457-18-6	5 µg/L	104	70.0	130
		EP234-1x: Thiometon	640-15-3	5 µg/L	93.9	70.0	130

QA/QC Compliance Assessment to assist with Quality Review

Work Order	: **ES2322320**	Page	: 1 of 10
Client	: **GHD PTY LTD**	Laboratory	: Environmental Division Sydney
Contact	: MR HENRY LUO	Telephone	: +61-2-8784 8555
Project	: 12554717	Date Samples Received	: 05-Jul-2023
Site	: ----	Issue Date	: 11-Jul-2023
Sampler	: ANDREW DUVAL, EMILY SMITH	No. of samples received	: 9
Order number	: 12554717	No. of samples analysed	: 9

This report is automatically generated by the ALS LIMS through interpretation of the ALS Quality Control Report and several Quality Assurance parameters measured by ALS. This automated reporting highlights any non-conformances, facilitates faster and more accurate data validation and is designed to assist internal expert and external Auditor review. Many components of this report contribute to the overall DQO assessment and reporting for guideline compliance.

Brief method summaries and references are also provided to assist in traceability.

Summary of Outliers

Outliers : Quality Control Samples

This report highlights outliers flagged in the Quality Control (QC) Report.

- **NO Method Blank value outliers occur.**
- **NO Duplicate outliers occur.**
- **NO Laboratory Control outliers occur.**
- **Matrix Spike outliers exist - please see following pages for full details.**
- **For all regular sample matrices, NO surrogate recovery outliers occur.**

Outliers : Analysis Holding Time Compliance

- **NO Analysis Holding Time Outliers exist.**

Outliers : Frequency of Quality Control Samples

- **NO Quality Control Sample Frequency Outliers exist.**

Outliers : Quality Control Samples

Duplicates, Method Blanks, Laboratory Control Samples and Matrix Spikes

Matrix: **WATER**

Compound Group Name	Laboratory Sample ID	Client Sample ID	Analyte	CAS Number	Data	Limits	Comment
Matrix Spike (MS) Recoveries							
EK059G: Nitrite plus Nitrate as N (NOx) by Discrete Ar	EP2308822--022	Anonymous	**Nitrite + Nitrate as N**	----	Not Determined	----	**MS recovery not determined, background level greater than or equal to 4x spike level.**
EP234A: OP Pesticides	EB2319947--002	Anonymous	**Bromophos-ethyl**	4824-78-6	61.2 %	70.0-130%	**Recovery less than lower data quality objective**
EP234A: OP Pesticides	EB2319947--002	Anonymous	**EPN**	2104-64-5	57.6 %	70.0-130%	**Recovery less than lower data quality objective**
EP234A: OP Pesticides	EB2319947--002	Anonymous	**Ethoprophos**	13194-48-4	43.8 %	70.0-132%	**Recovery less than lower data quality objective**
EP234A: OP Pesticides	EB2319947--002	Anonymous	**Fenchlorphos (Ronnel)**	299-84-3	60.9 %	71.0-133%	**Recovery less than lower data quality objective**
EP234A: OP Pesticides	EB2319947--002	Anonymous	**Mevinphos**	7786-34-7	62.2 %	69.0-125%	**Recovery less than lower data quality objective**
EP234A: OP Pesticides	EB2319947--002	Anonymous	**Parathion-methyl**	298-00-0	44.7 %	70.0-140%	**Recovery less than lower data quality objective**
EP234A: OP Pesticides	EB2319947--002	Anonymous	**Trichlorfon**	52-68-6	40.0 %	70.0-130%	**Recovery less than lower data quality objective**
EP234A: OP Pesticides	EB2319947--002	Anonymous	**Trichloronate**	327-98-0	56.5 %	63.0-139%	**Recovery less than lower data quality objective**
EP234A: OP Pesticides	EB2319947--002	Anonymous	**Fosetyl Aluminium**	39148-24-8	23.6 %	70.0-130%	**Recovery less than lower data quality objective**

Analysis Holding Time Compliance

If samples are identified below as having been analysed or extracted outside of recommended holding times, this should be taken into consideration when interpreting results.

This report summarizes extraction / preparation and analysis times and compares each with ALS recommended holding times (referencing USEPA SW 846, APHA, AS and NEPM) based on the sample container provided. Dates reported represent first date of extraction or analysis and preclude subsequent dilutions and reruns. A listing of breaches (if any) is provided herein.

Holding time for leachate methods (e.g. TCLP) vary according to the analytes reported. Assessment compares the leach date with the shortest analyte holding time for the equivalent soil method. These are: organics 14 days, mercury 28 days & other metals 180 days. A recorded breach does not guarantee a breach for all non-volatile parameters.

Holding times for ***VOC in soils*** vary according to analytes of interest. Vinyl Chloride and Styrene holding time is 7 days; others 14 days. A recorded breach does not guarantee a breach for all VOC analytes and should be verified in case the reported breach is a false positive or Vinyl Chloride and Styrene are not key analytes of interest/concern.

Matrix: **WATER**

Evaluation: × = Holding time breach ; ✓ = Within holding time.

Method / Container / Client Sample ID(s)		Sample Date	Extraction / Preparation			Analysis		
			Date extracted	Due for extraction	Evaluation	Date analysed	Due for analysis	Evaluation
EA015: Total Dissolved Solids dried at 180 ± 5 °C								
Clear Plastic Bottle - Natural (EA015H)								
HINDS,	HINUS,	**04-Jul-2023**	**----**	----	**----**	**07-Jul-2023**	11-Jul-2023	✓
KEMDS,	KEMUS,							
ROPDS,	ROPUS,							
SOUDS,	SOUUS							

Matrix: **WATER**

Evaluation: × = Holding time breach ; ✓ = Within holding time.

Method / Container / Client Sample ID(s)		Sample Date	Extraction / Preparation			Analysis		
			Date extracted	Due for extraction	Evaluation	Date analysed	Due for analysis	Evaluation
EA025: Total Suspended Solids dried at 104 ± 2°C								
Clear Plastic Bottle - Natural (EA025H)								
HINDS,	HINUS,	**04-Jul-2023**	**----**	----	----	**07-Jul-2023**	11-Jul-2023	✓
KEMDS,	KEMUS,							
ROPDS,	ROPUS,							
SOUDS,	SOUUS							
EG020T: Total Metals by ICP-MS								
Clear Plastic Bottle - Nitric Acid; Unfiltered (EG020A-T)								
HINDS,	HINUS,	**04-Jul-2023**	**05-Jul-2023**	31-Dec-2023	✓	**05-Jul-2023**	31-Dec-2023	✓
KEMDS,	KEMUS,							
ROPDS,	ROPUS,							
SOUDS,	SOUUS,							
SWDUP1								
EG035T: Total Recoverable Mercury by FIMS								
Clear Plastic Bottle - Nitric Acid; Unfiltered (EG035T)								
HINDS,	HINUS,	**04-Jul-2023**	**----**	----	----	**07-Jul-2023**	01-Aug-2023	✓
KEMDS,	KEMUS,							
ROPDS,	ROPUS,							
SOUDS,	SOUUS,							
SWDUP1								
EK055G: Ammonia as N by Discrete Analyser								
Clear Plastic Bottle - Sulfuric Acid (EK055G)								
HINDS,	HINUS,	**04-Jul-2023**	**----**	----	----	**07-Jul-2023**	01-Aug-2023	✓
KEMDS,	KEMUS,							
ROPDS,	ROPUS,							
SOUDS,	SOUUS							
EK057G: Nitrite as N by Discrete Analyser								
Clear Plastic Bottle - Natural (EK057G)								
HINDS,	HINUS,	**04-Jul-2023**	**----**	----	----	**05-Jul-2023**	06-Jul-2023	✓
KEMDS,	KEMUS,							
ROPDS,	ROPUS,							
SOUDS,	SOUUS							
EK059G: Nitrite plus Nitrate as N (NOx) by Discrete Analyser								
Clear Plastic Bottle - Sulfuric Acid (EK059G)								
HINDS,	HINUS,	**04-Jul-2023**	**----**	----	----	**07-Jul-2023**	01-Aug-2023	✓
KEMDS,	KEMUS,							
ROPDS,	ROPUS,							
SOUDS,	SOUUS							

Matrix: **WATER**

Evaluation: × = Holding time breach ; ✓ = Within holding time.

Method / Container / Client Sample ID(s)	Sample Date	Extraction / Preparation			Analysis		
		Date extracted	Due for extraction	Evaluation	Date analysed	Due for analysis	Evaluation
EK061G: Total Kjeldahl Nitrogen By Discrete Analyser							
Clear Plastic Bottle - Sulfuric Acid (EK061G)							
HINDS, HINUS, KEMDS, KEMUS, ROPDS, ROPUS, SOUDS, SOUUS	**04-Jul-2023**	**06-Jul-2023**	01-Aug-2023	✓	**07-Jul-2023**	01-Aug-2023	✓
EK067G: Total Phosphorus as P by Discrete Analyser							
Clear Plastic Bottle - Sulfuric Acid (EK067G)							
HINDS, HINUS, KEMDS, KEMUS, ROPDS, ROPUS, SOUDS, SOUUS	**04-Jul-2023**	**06-Jul-2023**	01-Aug-2023	✓	**07-Jul-2023**	01-Aug-2023	✓
EK071G: Reactive Phosphorus as P by discrete analyser							
Clear Plastic Bottle - Natural (EK071G)							
HINDS, HINUS, KEMDS, KEMUS, ROPDS, ROPUS, SOUDS, SOUUS	**04-Jul-2023**	**----**	----	----	**05-Jul-2023**	06-Jul-2023	✓
EP008: Chlorophyll a & Pheophytin a							
Opaque Plastic Bottle - Unpreserved (EP008)							
HINDS, HINUS, KEMDS, KEMUS, ROPDS, ROPUS, SOUDS, SOUUS	**04-Jul-2023**	**----**	----	----	**05-Jul-2023**	06-Jul-2023	✓
EP020: Oil and Grease (O&G)							
Amber Glass Bottle - Sulfuric Acid (EP020)							
HINDS, HINUS, KEMDS, KEMUS, ROPDS, ROPUS, SOUDS, SOUUS	**04-Jul-2023**	**----**	----	----	**07-Jul-2023**	01-Aug-2023	✓
EP074D: Fumigants							
Amber VOC Vial - Sulfuric Acid (EP074)							
KEMUS	**04-Jul-2023**	**06-Jul-2023**	18-Jul-2023	✓	**06-Jul-2023**	18-Jul-2023	✓
Amber VOC Vial - Sulfuric Acid (EP074)							
HINDS, HINUS, KEMDS, ROPDS, ROPUS, SOUDS, SOUUS	**04-Jul-2023**	**06-Jul-2023**	18-Jul-2023	✓	**10-Jul-2023**	18-Jul-2023	✓

Matrix: **WATER**

Evaluation: × = Holding time breach ; ✓ = Within holding time.

Method / Container / Client Sample ID(s)	Sample Date	Extraction / Preparation			Analysis		
		Date extracted	Due for extraction	Evaluation	Date analysed	Due for analysis	Evaluation
EP074E: Halogenated Aliphatic Compounds							
Amber VOC Vial - Sulfuric Acid (EP074)							
KEMUS	**04-Jul-2023**	**06-Jul-2023**	18-Jul-2023	✓	**06-Jul-2023**	18-Jul-2023	✓
Amber VOC Vial - Sulfuric Acid (EP074)							
HINDS, HINUS, KEMDS, ROPDS, ROPUS, SOUDS, SOUUS	**04-Jul-2023**	**06-Jul-2023**	18-Jul-2023	✓	**10-Jul-2023**	18-Jul-2023	✓
EP074F: Halogenated Aromatic Compounds							
Amber VOC Vial - Sulfuric Acid (EP074)							
KEMUS	**04-Jul-2023**	**06-Jul-2023**	18-Jul-2023	✓	**06-Jul-2023**	18-Jul-2023	✓
Amber VOC Vial - Sulfuric Acid (EP074)							
HINDS, HINUS, KEMDS, ROPDS, ROPUS, SOUDS, SOUUS	**04-Jul-2023**	**06-Jul-2023**	18-Jul-2023	✓	**10-Jul-2023**	18-Jul-2023	✓
EP074G: Trihalomethanes							
Amber VOC Vial - Sulfuric Acid (EP074)							
KEMUS	**04-Jul-2023**	**06-Jul-2023**	18-Jul-2023	✓	**06-Jul-2023**	18-Jul-2023	✓
Amber VOC Vial - Sulfuric Acid (EP074)							
HINDS, HINUS, KEMDS, ROPDS, ROPUS, SOUDS, SOUUS	**04-Jul-2023**	**06-Jul-2023**	18-Jul-2023	✓	**10-Jul-2023**	18-Jul-2023	✓
EP075(SIM)A: Phenolic Compounds							
Amber Glass Bottle - Unpreserved (EP075(SIM))							
HINDS, HINUS, KEMDS, KEMUS, ROPDS, ROPUS, SOUDS, SOUUS	**04-Jul-2023**	**07-Jul-2023**	11-Jul-2023	✓	**10-Jul-2023**	16-Aug-2023	✓
EP075(SIM)B: Polynuclear Aromatic Hydrocarbons							
Amber Glass Bottle - Unpreserved (EP075(SIM))							
HINDS, HINUS, KEMDS, KEMUS, ROPDS, ROPUS, SOUDS, SOUUS	**04-Jul-2023**	**07-Jul-2023**	11-Jul-2023	✓	**10-Jul-2023**	16-Aug-2023	✓

Matrix: **WATER**

Evaluation: × = Holding time breach ; ✓ = Within holding time.

Method / Container / Client Sample ID(s)	Sample Date	Extraction / Preparation			Analysis		
		Date extracted	Due for extraction	Evaluation	Date analysed	Due for analysis	Evaluation
EP080: BTEXN							
Amber VOC Vial - Sulfuric Acid (EP080)							
KEMUS	**04-Jul-2023**	**06-Jul-2023**	18-Jul-2023	✓	**06-Jul-2023**	18-Jul-2023	✓
Amber VOC Vial - Sulfuric Acid (EP080)							
HINDS, HINUS, KEMDS, ROPDS, ROPUS, SOUDS, SOUUS	**04-Jul-2023**	**06-Jul-2023**	18-Jul-2023	✓	**10-Jul-2023**	18-Jul-2023	✓
EP234A: OP Pesticides							
Amber Glass Bottle - Unpreserved (EP234-1)							
HINDS, HINUS, KEMDS, KEMUS, ROPDS, ROPUS, SOUDS, SOUUS	**04-Jul-2023**	**----**	----	**----**	**06-Jul-2023**	11-Jul-2023	✓

Quality Control Parameter Frequency Compliance

The following report summarises the frequency of laboratory QC samples analysed within the analytical lot(s) in which the submitted sample(s) was(were) processed. Actual rate should be greater than or equal to the expected rate. A listing of breaches is provided in the Summary of Outliers.

Matrix: **WATER**

Evaluation: × = Quality Control frequency not within specification ; ✓ = Quality Control frequency within specification.

Quality Control Sample Type		Count		Rate (%)			Quality Control Specification
Analytical Methods	*Method*	*QC*	*Regular*	***Actual***	***Expected***	*Evaluation*	
Laboratory Duplicates (DUP)							
Ammonia as N by Discrete analyser	EK055G	2	15	**13.33**	**10.00**	✓	NEPM 2013 B3 & ALS QC Standard
Nitrite and Nitrate as N (NOx) by Discrete Analyser	EK059G	2	16	**12.50**	**10.00**	✓	NEPM 2013 B3 & ALS QC Standard
Nitrite as N by Discrete Analyser	EK057G	1	9	**11.11**	**10.00**	✓	NEPM 2013 B3 & ALS QC Standard
PAH/Phenols (GC/MS - SIM)	EP075(SIM)	1	8	**12.50**	**10.00**	✓	NEPM 2013 B3 & ALS QC Standard
Pesticides by LCMSMS (Positive Ion Mode)	EP234-1	2	17	**11.76**	**10.00**	✓	NEPM 2013 B3 & ALS QC Standard
Pesticides by LCMSMS (Positive Ion Mode) - extended	EP234-1x	2	12	**16.67**	**10.00**	✓	NEPM 2013 B3 & ALS QC Standard
Reactive Phosphorus as P-By Discrete Analyser	EK071G	1	8	**12.50**	**10.00**	✓	NEPM 2013 B3 & ALS QC Standard
Suspended Solids (High Level)	EA025H	4	40	**10.00**	**10.00**	✓	NEPM 2013 B3 & ALS QC Standard
Total Dissolved Solids (High Level)	EA015H	4	40	**10.00**	**10.00**	✓	NEPM 2013 B3 & ALS QC Standard
Total Kjeldahl Nitrogen as N By Discrete Analyser	EK061G	2	17	**11.76**	**10.00**	✓	NEPM 2013 B3 & ALS QC Standard
Total Mercury by FIMS	EG035T	4	31	**12.90**	**10.00**	✓	NEPM 2013 B3 & ALS QC Standard
Total Metals by ICP-MS - Suite A	EG020A-T	2	11	**18.18**	**10.00**	✓	NEPM 2013 B3 & ALS QC Standard
Total Phosphorus as P By Discrete Analyser	EK067G	2	20	**10.00**	**10.00**	✓	NEPM 2013 B3 & ALS QC Standard
TRH Volatiles/BTEX	EP080	2	17	**11.76**	**10.00**	✓	NEPM 2013 B3 & ALS QC Standard
Volatile Organic Compounds	EP074	2	16	**12.50**	**10.00**	✓	NEPM 2013 B3 & ALS QC Standard
Laboratory Control Samples (LCS)							
Ammonia as N by Discrete analyser	EK055G	1	15	**6.67**	**5.00**	✓	NEPM 2013 B3 & ALS QC Standard
Chlorophyll a and Pheophytin a	EP008	1	12	**8.33**	**5.00**	✓	NEPM 2013 B3 & ALS QC Standard
Nitrite and Nitrate as N (NOx) by Discrete Analyser	EK059G	1	16	**6.25**	**5.00**	✓	NEPM 2013 B3 & ALS QC Standard
Nitrite as N by Discrete Analyser	EK057G	1	9	**11.11**	**5.00**	✓	NEPM 2013 B3 & ALS QC Standard
Oil and Grease	EP020	4	47	**8.51**	**8.00**	✓	NEPM 2013 B3 & ALS QC Standard
PAH/Phenols (GC/MS - SIM)	EP075(SIM)	1	8	**12.50**	**5.00**	✓	NEPM 2013 B3 & ALS QC Standard
Pesticides by LCMSMS (Positive Ion Mode)	EP234-1	1	17	**5.88**	**5.00**	✓	NEPM 2013 B3 & ALS QC Standard
Pesticides by LCMSMS (Positive Ion Mode) - extended	EP234-1x	1	12	**8.33**	**5.00**	✓	NEPM 2013 B3 & ALS QC Standard
Reactive Phosphorus as P-By Discrete Analyser	EK071G	1	8	**12.50**	**5.00**	✓	NEPM 2013 B3 & ALS QC Standard
Suspended Solids (High Level)	EA025H	5	40	**12.50**	**12.50**	✓	NEPM 2013 B3 & ALS QC Standard
Total Dissolved Solids (High Level)	EA015H	5	40	**12.50**	**12.50**	✓	NEPM 2013 B3 & ALS QC Standard
Total Kjeldahl Nitrogen as N By Discrete Analyser	EK061G	3	17	**17.65**	**15.00**	✓	NEPM 2013 B3 & ALS QC Standard
Total Mercury by FIMS	EG035T	2	31	**6.45**	**5.00**	✓	NEPM 2013 B3 & ALS QC Standard
Total Metals by ICP-MS - Suite A	EG020A-T	1	11	**9.09**	**5.00**	✓	NEPM 2013 B3 & ALS QC Standard
Total Phosphorus as P By Discrete Analyser	EK067G	3	20	**15.00**	**15.00**	✓	NEPM 2013 B3 & ALS QC Standard
TRH Volatiles/BTEX	EP080	1	17	**5.88**	**5.00**	✓	NEPM 2013 B3 & ALS QC Standard
Volatile Organic Compounds	EP074	1	16	**6.25**	**5.00**	✓	NEPM 2013 B3 & ALS QC Standard
Method Blanks (MB)							
Ammonia as N by Discrete analyser	EK055G	1	15	**6.67**	**5.00**	✓	NEPM 2013 B3 & ALS QC Standard
Chlorophyll a and Pheophytin a	EP008	1	12	**8.33**	**5.00**	✓	NEPM 2013 B3 & ALS QC Standard

Matrix: **WATER**

Evaluation: × = Quality Control frequency not within specification ; ✓ = Quality Control frequency within specification.

Quality Control Sample Type		Count		Rate (%)			Quality Control Specification
Analytical Methods	*Method*	*QC*	*Regular*	***Actual***	***Expected***	*Evaluation*	
Method Blanks (MB) - Continued							
Nitrite and Nitrate as N (NOx) by Discrete Analyser	EK059G	1	16	**6.25**	**5.00**	✓	NEPM 2013 B3 & ALS QC Standard
Nitrite as N by Discrete Analyser	EK057G	1	9	**11.11**	**5.00**	✓	NEPM 2013 B3 & ALS QC Standard
Oil and Grease	EP020	3	47	**6.38**	**6.00**	✓	NEPM 2013 B3 & ALS QC Standard
PAH/Phenols (GC/MS - SIM)	EP075(SIM)	1	8	**12.50**	**5.00**	✓	NEPM 2013 B3 & ALS QC Standard
Pesticides by LCMSMS (Positive Ion Mode)	EP234-1	1	17	**5.88**	**5.00**	✓	NEPM 2013 B3 & ALS QC Standard
Pesticides by LCMSMS (Positive Ion Mode) - extended	EP234-1x	1	12	**8.33**	**5.00**	✓	NEPM 2013 B3 & ALS QC Standard
Reactive Phosphorus as P-By Discrete Analyser	EK071G	1	8	**12.50**	**5.00**	✓	NEPM 2013 B3 & ALS QC Standard
Suspended Solids (High Level)	EA025H	2	40	**5.00**	**5.00**	✓	NEPM 2013 B3 & ALS QC Standard
Total Dissolved Solids (High Level)	EA015H	2	40	**5.00**	**5.00**	✓	NEPM 2013 B3 & ALS QC Standard
Total Kjeldahl Nitrogen as N By Discrete Analyser	EK061G	1	17	**5.88**	**5.00**	✓	NEPM 2013 B3 & ALS QC Standard
Total Mercury by FIMS	EG035T	2	31	**6.45**	**5.00**	✓	NEPM 2013 B3 & ALS QC Standard
Total Metals by ICP-MS - Suite A	EG020A-T	1	11	**9.09**	**5.00**	✓	NEPM 2013 B3 & ALS QC Standard
Total Phosphorus as P By Discrete Analyser	EK067G	1	20	**5.00**	**5.00**	✓	NEPM 2013 B3 & ALS QC Standard
TRH Volatiles/BTEX	EP080	1	17	**5.88**	**5.00**	✓	NEPM 2013 B3 & ALS QC Standard
Volatile Organic Compounds	EP074	1	16	**6.25**	**5.00**	✓	NEPM 2013 B3 & ALS QC Standard
Matrix Spikes (MS)							
Ammonia as N by Discrete analyser	EK055G	1	15	**6.67**	**5.00**	✓	NEPM 2013 B3 & ALS QC Standard
Nitrite and Nitrate as N (NOx) by Discrete Analyser	EK059G	1	16	**6.25**	**5.00**	✓	NEPM 2013 B3 & ALS QC Standard
Nitrite as N by Discrete Analyser	EK057G	1	9	**11.11**	**5.00**	✓	NEPM 2013 B3 & ALS QC Standard
PAH/Phenols (GC/MS - SIM)	EP075(SIM)	1	8	**12.50**	**5.00**	✓	NEPM 2013 B3 & ALS QC Standard
Pesticides by LCMSMS (Positive Ion Mode)	EP234-1	1	17	**5.88**	**5.00**	✓	NEPM 2013 B3 & ALS QC Standard
Pesticides by LCMSMS (Positive Ion Mode) - extended	EP234-1x	1	12	**8.33**	**5.00**	✓	NEPM 2013 B3 & ALS QC Standard
Reactive Phosphorus as P-By Discrete Analyser	EK071G	1	8	**12.50**	**5.00**	✓	NEPM 2013 B3 & ALS QC Standard
Total Kjeldahl Nitrogen as N By Discrete Analyser	EK061G	1	17	**5.88**	**5.00**	✓	NEPM 2013 B3 & ALS QC Standard
Total Mercury by FIMS	EG035T	2	31	**6.45**	**5.00**	✓	NEPM 2013 B3 & ALS QC Standard
Total Metals by ICP-MS - Suite A	EG020A-T	1	11	**9.09**	**5.00**	✓	NEPM 2013 B3 & ALS QC Standard
Total Phosphorus as P By Discrete Analyser	EK067G	1	20	**5.00**	**5.00**	✓	NEPM 2013 B3 & ALS QC Standard
TRH Volatiles/BTEX	EP080	1	17	**5.88**	**5.00**	✓	NEPM 2013 B3 & ALS QC Standard
Volatile Organic Compounds	EP074	1	16	**6.25**	**5.00**	✓	NEPM 2013 B3 & ALS QC Standard

Brief Method Summaries

The analytical procedures used by the Environmental Division have been developed from established internationally recognized procedures such as those published by the US EPA, APHA, AS and NEPM. In house developed procedures are employed in the absence of documented standards or by client request. The following report provides brief descriptions of the analytical procedures employed for results reported in the Certificate of Analysis. Sources from which ALS methods have been developed are provided within the Method Descriptions.

Analytical Methods	Method	Matrix	Method Descriptions
Total Dissolved Solids (High Level)	EA015H	WATER	In house: Referenced to APHA 2540C. A gravimetric procedure that determines the amount of `filterable` residue in an aqueous sample. A well-mixed sample is filtered through a glass fibre filter (1.2um). The filtrate is evaporated to dryness and dried to constant weight at 180+/-5C. This method is compliant with NEPM Schedule B(3)
Suspended Solids (High Level)	EA025H	WATER	In house: Referenced to APHA 2540D. A gravimetric procedure employed to determine the amount of `non-filterable` residue in a aqueous sample. The prescribed GFC (1.2um) filter is rinsed with deionised water, oven dried and weighed prior to analysis. A well-mixed sample is filtered through a glass fibre filter (1.2um). The residue on the filter paper is dried at 104+/-2C . This method is compliant with NEPM Schedule B(3)
Total Metals by ICP-MS - Suite A	EG020A-T	WATER	In house: Referenced to APHA 3125; USEPA SW846 - 6020, ALS QWI-EN/EG020. The ICPMS technique utilizes a highly efficient argon plasma to ionize selected elements. Ions are then passed into a high vacuum mass spectrometer, which separates the analytes based on their distinct mass to charge ratios prior to their measurement by a discrete dynode ion detector.
Total Mercury by FIMS	EG035T	WATER	In house: Referenced to APHA 3112 Hg - B (Flow-injection (SnCl2)(Cold Vapour generation) AAS) FIM-AAS is an automated flameless atomic absorption technique. A bromate/bromide reagent is used to oxidise any organic mercury compounds in the unfiltered sample. The ionic mercury is reduced online to atomic mercury vapour by SnCl2 which is then purged into a heated quartz cell. Quantification is by comparing absorbance against a calibration curve. This method is compliant with NEPM Schedule B(3).
Ammonia as N by Discrete analyser	EK055G	WATER	In house: Referenced to APHA 4500-NH3 G Ammonia is determined by direct colorimetry by Discrete Analyser. This method is compliant with NEPM Schedule B(3)
Nitrite as N by Discrete Analyser	EK057G	WATER	In house: Referenced to APHA 4500-NO2- B. Nitrite is determined by direct colourimetry by Discrete Analyser. This method is compliant with NEPM Schedule B(3)
Nitrate as N by Discrete Analyser	EK058G	WATER	In house: Referenced to APHA 4500-NO3- F. Nitrate is reduced to nitrite by way of a chemical reduction followed by quantification by Discrete Analyser. Nitrite is determined seperately by direct colourimetry and result for Nitrate calculated as the difference between the two results. This method is compliant with NEPM Schedule B(3)
Nitrite and Nitrate as N (NOx) by Discrete Analyser	EK059G	WATER	In house: Referenced to APHA 4500-NO3- F. Combined oxidised Nitrogen (NO2+NO3) is determined by Chemical Reduction and direct colourimetry by Discrete Analyser. This method is compliant with NEPM Schedule B(3)
Total Kjeldahl Nitrogen as N By Discrete Analyser	EK061G	WATER	In house: Referenced to APHA 4500-Norg D (In house). An aliquot of sample is digested using a high temperature Kjeldahl digestion to convert nitrogenous compounds to ammonia. Ammonia is determined colorimetrically by discrete analyser. This method is compliant with NEPM Schedule B(3)
Total Nitrogen as N (TKN + Nox) By Discrete Analyser	EK062G	WATER	In house: Referenced to APHA 4500-Norg / 4500-NO3-. This method is compliant with NEPM Schedule B(3)
Total Phosphorus as P By Discrete Analyser	EK067G	WATER	In house: Referenced to APHA 4500-P H, Jirka et al, Zhang et al. This procedure involves sulphuric acid digestion of a sample aliquot to break phosphorus down to orthophosphate. The orthophosphate reacts with ammonium molybdate and antimony potassium tartrate to form a complex which is then reduced and its concentration measured at 880nm using discrete analyser. This method is compliant with NEPM Schedule B(3)

Analytical Methods	Method	Matrix	Method Descriptions
Reactive Phosphorus as P-By Discrete Analyser	EK071G	WATER	In house: Referenced to APHA 4500-P F Ammonium molybdate and potassium antimonyl tartrate reacts in acid medium with othophosphate to form a heteropoly acid -phosphomolybdic acid - which is reduced to intensely coloured molybdenum blue by ascorbic acid. Quantification is by Discrete Analyser. This method is compliant with NEPM Schedule B(3)
Chlorophyll a and Pheophytin a	EP008	WATER	In house: Referenced to APHA 10200 H. The pigments are extracted into aqueous acetone. The optical density of the extract before and after acidification at both 664 nm and 665 nm is determined spectrometrically.
Oil and Grease	EP020	WATER	In house: Referenced to APHA 5520 B. Oil & grease is a gravimetric procedure to determine the amount of dissolved or emulsified oil & grease residue in an aqueous sample. The sample is serially extracted three times n-hexane. The resultant extracts are combined, dehydrated and concentrated prior to gravimetric determination. This method is compliant with NEPM Schedule B(3)
Volatile Organic Compounds	EP074	WATER	In house: Referenced to USEPA SW 846 - 8260 Water samples are directly purged prior to analysis by Capillary GC/MS and quantification is by comparison against an established 5 point calibration curve. This method is compliant with NEPM Schedule B(3)
PAH/Phenols (GC/MS - SIM)	EP075(SIM)	WATER	In house: Referenced to USEPA SW 846 - 8270 Sample extracts are analysed by Capillary GC/MS in SIM Mode and quantification is by comparison against an established 5 point calibration curve. This method is compliant with NEPM Schedule B(3)
TRH Volatiles/BTEX	EP080	WATER	In house: Referenced to USEPA SW 846 - 8260 Water samples are directly purged prior to analysis by Capillary GC/MS and quantification is by comparison against an established 5 point calibration curve. Alternatively, a sample is equilibrated in a headspace vial and a portion of the headspace determined by GCMS analysis. This method is compliant with the QC requirements of NEPM Schedule B(3)
Pesticides by LCMSMS (Positive Ion Mode)	EP234-1	WATER	In house: LC-MSMS, direct injection. A sample is filtered and injected directly onto the LC-MSMS. Analysis is by LC/MSMS, ESI Positive Mode.
Pesticides by LCMSMS (Positive Ion Mode) - extended	EP234-1x	WATER	In house: LC-MSMS, direct injection. A sample is filtered and injected directly onto the LC-MSMS. Analysis is by LC/MSMS, ESI Positive Mode.

Preparation Methods	Method	Matrix	Method Descriptions
TKN/TP Digestion	EK061/EK067	WATER	In house: Referenced to APHA 4500 Norg - D; APHA 4500 P - H. This method is compliant with NEPM Schedule B(3)
Digestion for Total Recoverable Metals	EN25	WATER	In house: Referenced to USEPA SW846-3005. Method 3005 is a Nitric/Hydrochloric acid digestion procedure used to prepare surface and ground water samples for analysis by ICPAES or ICPMS. This method is compliant with NEPM Schedule B(3)
Separatory Funnel Extraction of Liquids	ORG14	WATER	In house: Referenced to USEPA SW 846 - 3510 100 mL to 1L of sample is transferred to a separatory funnel and serially extracted three times using DCM for each extract. The resultant extracts are combined, dehydrated and concentrated for analysis. This method is compliant with NEPM Schedule B(3) . ALS default excludes sediment which may be resident in the container.
Volatiles Water Preparation	ORG16-W	WATER	A 5 mL aliquot or 5 mL of a diluted sample is added to a 40 mL VOC vial for purging.

CHAIN OF CUSTODY

ALS Environmental

ALS Laboratory: please tick →

□BRISBANE 32 Shand Street Stafford QLD 4053 Ph: 07 3243 7222 E: samples.brisbane@alsglobal.com
□MACKAY 78 Harbour Road Mackay QLD 4740 Ph: 07 4944 0177 E: samples.mackay@alsglobal.com
□TOWNSVILLE 14-15 Desma Court Garbutt QLD 4814 Ph: 07 4796 0600 E: samples.townsville@alsglobal.com
□GLADSTONE 1/2 Kitchener Drive Gladstone QLD 4680 Ph: 07 4971 7900 E: samples.gladstone@alsglobal.com
□SYDNEY 277-289 Woodpark Road Smithfield NSW 2164 Ph: 02 8784 8555 E: samples.sydney@alsglobal.com
□NEWCASTLE 5 Rose Gum Road Warabrook NSW 2304 Ph: 02 4958 2150 E: samples.newcastle@alsglobal.com
□WOLLONGONG 99 Kenny Street Wollongong NSW 2500 Ph: 02 4225 3125 E: portkembla@alsglobal.com
□ALBURY 31 Dean Street Albury NSW 2640 Ph: 02 6043 5933 E: samples.albury@alsglobal.com
□SYDNEY Unit 16, 33 Maddox St Alexandria NSW 2015 Ph: 02 8594 5135 E: samples.sydney@alsglobal.com
□NOWRA 4/92-98 Kinghorne Street Nowra NSW 2541 Ph: 02 4422 3100 E: samples.nowra@alsglobal.com
□PERTH 10 Hod Way Malaga WA 6090 Ph: 08 9209 7655 E: samples.perth@alsglobal.com

CLIENT: GHD Pty Ltd	TURNAROUND REQUIREMENTS ☐ Standard TAT (List due date):	STANDARD TAT	FOR LABORATORY USE ONLY (Circle)
OFFICE: Sydney	(Standard TAT may be longer for some tests e.g.. Ultra Trace Organics) ☐ Non Standard or urgent TAT (List due date):		Custody Seal Intact? No N/A
PROJECT: M12 Surface Water	ALS QUOTE NO.: SY/322/21	COC SEQUENCE NUMBER (Circle)	Free ice / frozen ice bricks present upon receipt? No N/A
ORDER NUMBER: 12554717		COC: 1 2 3 4 5 6 7	Random Sample Temperature on Receipt: °C
PROJECT MANAGER: Henry Luo	CONTACT PH: Henry Luo 0414 090 002	OF: 1 2 3 4 5 6 7	Other comment:

SAMPLER: Emily Smith, Andrew Duval	SAMPLER MOBILE: 0431 522 928	RELINQUISHED BY: ~~Emily Smith~~ Andrew Duval	RECEIVED BY: Fran	RELINQUISHED BY:
COC emailed to ALS? (YES / NO)	EDD FORMAT (or default): ESDAT	DATE/TIME: 7/7/23	DATE/TIME: 7/7/23 4:39	DATE/TIME:
Email Reports to: henry.luo@ghd.com , ghdlabreports@ghd.com; terry.nham@ghd.com, emily.smith@ghd.com; andrew.duval@ghd.com				

COMMENTS/SPECIAL HANDLING/STORAGE OR DISPOSAL:

ALS USE	SAMPLE DETAILS MATRIX: SOLID (S) WATER (W)			CONTAINER INFORMATION		ANALYSIS REQUIRED including SUITES (NB. Suite Codes must be listed to attract suite price) Where Metals are required, specify Total (unfiltered bottle required) or Dissolved (field filtered bottle required).														
LAB ID	SAMPLE ID	DATE / TIME	MATRIX	Comments	TOTAL CONTAINERS	W-02T (8 total metals)	EG020T (total Fe, Mn)	NT-08A (total N, No2, No3, NH3, Total P, reactive P)	EP008 (chlorophyll a)	EP020 (oil & grease)	UTO-9W Ultra trace OC/OP	EP074DEFG (VOC - fumigants, Hal aliphatics, Hal Aromatics, THM)	MW006 (FC) Thermotolerant Coliforms	W-14A (PAH/phenols)	EA015H (TDS), EA025H (TSS)	EP080 (BTEXN)	Ultra trace OPP (EP234AX)	Super Utra Trace PCB's (EP1318-ST)	PFAS - full suite (EP231X)
1 f	BADDS	7/7/23	Water		11	X	X	X	X	X		X		X	X	X	X		
2 g	BADMS	7/7/23	W		11	X	X	X	X	X		X		X	X	X	X		
3 h	BADUS	7/7/23	W		11	X	X	X	X	X		X		X	X	X	X		

Environmental Division
Sydney
Work Order Reference
ES2322911

Telephone : +61-2-8784 8555

SAMPLE RECEIPT NOTIFICATION (SRN)

Work Order : **ES2322911**

Client	: **GHD PTY LTD**	Laboratory	: Environmental Division Sydney
Contact	: MR HENRY LUO	Contact	: Sarah Mathew
Address	: LEVEL 15, 133 CASTLEREAGH STREET SYDNEY NSW, AUSTRALIA 2000	Address	: 277-289 Woodpark Road Smithfield NSW Australia 2164
E-mail	: henry.luo@ghd.com	E-mail	: sarah.mathew@alsglobal.com
Telephone	: +61 02 9239 7100	Telephone	: +61-2-8784 8555
Facsimile	: +61 02 9239 7199	Facsimile	: +61-2-8784 8500
Project	: 12554717	Page	: 1 of 3
Order number	: ----	Quote number	: ES2021GHDSER0026 (SY/322/21)
C-O-C number	: ----	QC Level	: NEPM 2013 B3 & ALS QC Standard
Site	: ----		
Sampler	: ANDREW DUVAL, EMILY SMITH		

Dates

Date Samples Received	: 07-Jul-2023 16:30	Issue Date	: 10-Jul-2023
Client Requested Due Date	: 14-Jul-2023	Scheduled Reporting Date	: **14-Jul-2023**

Delivery Details

Mode of Delivery	: Carrier	Security Seal	: Intact.
No. of coolers/boxes	: 2	Temperature	: 3.7'C - Ice present
Receipt Detail	:	No. of samples received / analysed	: 3 / 3

General Comments

- This report contains the following information:
  - Sample Container(s)/Preservation Non-Compliances
  - Summary of Sample(s) and Requested Analysis
  - Proactive Holding Time Report
  - Requested Deliverables
- **Please refer to the Proactive Holding Time Report table below which summarises breaches of recommended holding times that have occurred prior to samples/instructions being received at the laboratory. The laboratory will process these samples unless instructions are received from you indicating you do not wish to proceed. The absence of this summary table indicates that all samples have been received within the recommended holding times for the analysis requested.**
- **Sample(s) requiring volatile organic compound analysis received in airtight containers (ZHE).**
- Please direct any queries you have regarding this work order to the above ALS laboratory contact.
- Analytical work for this work order will be conducted at ALS Sydney.
- Sample Disposal - Aqueous (3 weeks), Solid (2 months ± 1 week) from receipt of samples.
- Please be aware that APHA/NEPM recommends water and soil samples be chilled to less than or equal to 6°C for chemical analysis, and less than or equal to 10°C but unfrozen for Microbiological analysis. Where samples are received above this temperature, it should be taken into consideration when interpreting results. Refer to ALS EnviroMail 85 for ALS recommendations of the best practice for chilling samples after sampling and for maintaining a cool temperature during transit.

Sample Container(s)/Preservation Non-Compliances

All comparisons are made against pretreatment/preservation AS, APHA, USEPA standards.

- **No sample container / preservation non-compliance exists.**

Summary of Sample(s) and Requested Analysis

Some items described below may be part of a laboratory process necessary for the execution of client requested tasks. Packages may contain additional analyses, such as the determination of moisture content and preparation tasks, that are included in the package.
If no sampling time is provided, the sampling time will default 00:00 on the date of sampling. If no sampling date is provided, the sampling date will be assumed by the laboratory and displayed in brackets without a time component

Matrix: **WATER**

Laboratory sample ID	Sampling date / time	Sample ID	WATER - EA025H Suspended Solids - Standard Level	WATER - EG020T Total Metals by ICP/MS (including digestion)	WATER - EP008 Chlorophyll a	WATER - EP020 Oil & Grease (O&G)	WATER - EP074DEFG VOC - Fumigants, Hal Aliphatics, Hal Aromatics,	WATER - W-02T 8 metals (Total)	WATER - W-14A PAH/Phenols (SIM)
ES2322911-001	07-Jul-2023 00:00	BADDS	✓	✓	✓	✓	✓	✓	✓
ES2322911-002	07-Jul-2023 00:00	BADMS	✓	✓	✓	✓	✓	✓	✓
ES2322911-003	07-Jul-2023 00:00	BADUS	✓	✓	✓	✓	✓	✓	✓

Matrix: **WATER**

Laboratory sample ID	Sampling date / time	Sample ID	WATER - EA015H Total Dissolved Solids - Standard Level	WATER - EP080 BTEXN	WATER - EP234AX Organophosphorus Pesticides - Extended List (50	WATER - NT-08A Total Nitrogen + NO2 + NO3 + NH3 + Total P +
ES2322911-001	07-Jul-2023 00:00	BADDS	✓	✓	✓	✓
ES2322911-002	07-Jul-2023 00:00	BADMS	✓	✓	✓	✓
ES2322911-003	07-Jul-2023 00:00	BADUS	✓	✓	✓	✓

Proactive Holding Time Report

Sample(s) have been received within the recommended holding times for the requested analysis.

Requested Deliverables

Accounts Payable Australia		
- A4 - AU Tax Invoice (INV)	Email	accountspayableAU@ghd.com
ANDREW DUVAL		
- *AU Certificate of Analysis - NATA (COA)	Email	andrew.duval@ghd.com
- *AU Interpretive QC Report - DEFAULT (Anon QCI Rep) (QCI)	Email	andrew.duval@ghd.com
- *AU QC Report - DEFAULT (Anon QC Rep) - NATA (QC)	Email	andrew.duval@ghd.com
- A4 - AU Sample Receipt Notification - Environmental HT (SRN)	Email	andrew.duval@ghd.com
- Chain of Custody (CoC) (COC)	Email	andrew.duval@ghd.com
- EDI Format - ESDAT (ESDAT)	Email	andrew.duval@ghd.com
- EDI Format - XTab (XTAB)	Email	andrew.duval@ghd.com
- Electronic SRN for ESdat (ESRN_ESDAT)	Email	andrew.duval@ghd.com
EMILY SMITH		
- *AU Certificate of Analysis - NATA (COA)	Email	emily.smith@ghd.com
- *AU Interpretive QC Report - DEFAULT (Anon QCI Rep) (QCI)	Email	emily.smith@ghd.com
- *AU QC Report - DEFAULT (Anon QC Rep) - NATA (QC)	Email	emily.smith@ghd.com
- A4 - AU Sample Receipt Notification - Environmental HT (SRN)	Email	emily.smith@ghd.com
- Chain of Custody (CoC) (COC)	Email	emily.smith@ghd.com
- EDI Format - ESDAT (ESDAT)	Email	emily.smith@ghd.com
- EDI Format - XTab (XTAB)	Email	emily.smith@ghd.com
- Electronic SRN for ESdat (ESRN_ESDAT)	Email	emily.smith@ghd.com
GHD LAB REPORTS		
- *AU Certificate of Analysis - NATA (COA)	Email	GHDLabreports@ghd.com
- *AU Interpretive QC Report - DEFAULT (Anon QCI Rep) (QCI)	Email	GHDLabreports@ghd.com
- *AU QC Report - DEFAULT (Anon QC Rep) - NATA (QC)	Email	GHDLabreports@ghd.com
- A4 - AU Sample Receipt Notification - Environmental HT (SRN)	Email	GHDLabreports@ghd.com
- Chain of Custody (CoC) (COC)	Email	GHDLabreports@ghd.com
- EDI Format - ESDAT (ESDAT)	Email	GHDLabreports@ghd.com
- EDI Format - XTab (XTAB)	Email	GHDLabreports@ghd.com
- Electronic SRN for ESdat (ESRN_ESDAT)	Email	GHDLabreports@ghd.com
HENRY LUO		
- *AU Certificate of Analysis - NATA (COA)	Email	henry.luo@ghd.com
- *AU Interpretive QC Report - DEFAULT (Anon QCI Rep) (QCI)	Email	henry.luo@ghd.com
- *AU QC Report - DEFAULT (Anon QC Rep) - NATA (QC)	Email	henry.luo@ghd.com
- A4 - AU Sample Receipt Notification - Environmental HT (SRN)	Email	henry.luo@ghd.com
- Chain of Custody (CoC) (COC)	Email	henry.luo@ghd.com
- EDI Format - ESDAT (ESDAT)	Email	henry.luo@ghd.com
- EDI Format - XTab (XTAB)	Email	henry.luo@ghd.com
- Electronic SRN for ESdat (ESRN_ESDAT)	Email	henry.luo@ghd.com
TERRY NHAM		
- *AU Certificate of Analysis - NATA (COA)	Email	terry.nham@ghd.com
- *AU Interpretive QC Report - DEFAULT (Anon QCI Rep) (QCI)	Email	terry.nham@ghd.com
- *AU QC Report - DEFAULT (Anon QC Rep) - NATA (QC)	Email	terry.nham@ghd.com
- A4 - AU Sample Receipt Notification - Environmental HT (SRN)	Email	terry.nham@ghd.com
- Chain of Custody (CoC) (COC)	Email	terry.nham@ghd.com
- EDI Format - ESDAT (ESDAT)	Email	terry.nham@ghd.com
- EDI Format - XTab (XTAB)	Email	terry.nham@ghd.com
- Electronic SRN for ESdat (ESRN_ESDAT)	Email	terry.nham@ghd.com

CERTIFICATE OF ANALYSIS

Work Order	: **ES2322911**	Page	: 1 of 9
Client	: **GHD PTY LTD**	Laboratory	: Environmental Division Sydney
Contact	: MR HENRY LUO	Contact	: Sarah Mathew
Address	: LEVEL 15, 133 CASTLEREAGH STREET SYDNEY NSW, AUSTRALIA 2000	Address	: 277-289 Woodpark Road Smithfield NSW Australia 2164
Telephone	: +61 02 9239 7100	Telephone	: +61-2-8784 8555
Project	: 12554717	Date Samples Received	: 07-Jul-2023 16:30
Order number	: ----	Date Analysis Commenced	: 10-Jul-2023
C-O-C number	: ----	Issue Date	: 14-Jul-2023 17:17
Sampler	: ANDREW DUVAL, EMILY SMITH		
Site	: ----		
Quote number	: SY/322/21		
No. of samples received	: 3		
No. of samples analysed	: 3		

Accreditation No. 825
Accredited for compliance with
ISO/IEC 17025 - Testing

This report supersedes any previous report(s) with this reference. Results apply to the sample(s) as submitted, unless the sampling was conducted by ALS. This document shall not be reproduced, except in full.

This Certificate of Analysis contains the following information:

- General Comments
- Analytical Results
- Surrogate Control Limits

Additional information pertinent to this report will be found in the following separate attachments: Quality Control Report, QA/QC Compliance Assessment to assist with Quality Review and Sample Receipt Notification.

Signatories

This document has been electronically signed by the authorized signatories below. Electronic signing is carried out in compliance with procedures specified in 21 CFR Part 11.

Signatories	*Position*	*Accreditation Category*
Ankit Joshi	Senior Chemist - Inorganics	Sydney Inorganics, Smithfield, NSW
Dian Dao	Senior Chemist - Inorganics	Sydney Inorganics, Smithfield, NSW
Edwandy Fadjar	Organic Coordinator	Sydney Organics, Smithfield, NSW
Franco Lentini	LCMS Coordinator	Sydney Organics, Smithfield, NSW

General Comments

The analytical procedures used by ALS have been developed from established internationally recognised procedures such as those published by the USEPA, APHA, AS and NEPM. In house developed procedures are fully validated and are often at the client request.

Where moisture determination has been performed, results are reported on a dry weight basis.

Where a reported less than (<) result is higher than the LOR, this may be due to primary sample extract/digestate dilution and/or insufficient sample for analysis.

Where the LOR of a reported result differs from standard LOR, this may be due to high moisture content, insufficient sample (reduced weight employed) or matrix interference.

When sampling time information is not provided by the client, sampling dates are shown without a time component. In these instances, the time component has been assumed by the laboratory for processing purposes.

Where a result is required to meet compliance limits the associated uncertainty must be considered. Refer to the ALS Contract for details.

Key : CAS Number = CAS registry number from database maintained by Chemical Abstracts Services. The Chemical Abstracts Service is a division of the American Chemical Society.
LOR = Limit of reporting
^ = This result is computed from individual analyte detections at or above the level of reporting
ø = ALS is not NATA accredited for these tests.
~ = Indicates an estimated value.

- EP075 (SIM): Where reported, Benzo(a)pyrene Toxicity Equivalent Quotient (TEQ) per the NEPM (2013) is the sum total of the concentration of the eight carcinogenic PAHs multiplied by their Toxicity Equivalence Factor (TEF) relative to Benzo(a)pyrene. TEF values are provided in brackets as follows: Benz(a)anthracene (0.1), Chrysene (0.01), Benzo(b+j) & Benzo(k)fluoranthene (0.1), Benzo(a)pyrene (1.0), Indeno(1.2.3.cd)pyrene (0.1), Dibenz(a.h)anthracene (1.0), Benzo(g.h.i)perylene (0.01). Less than LOR results for 'TEQ Zero' are treated as zero.
- EP080: Where reported, Total Xylenes is the sum of the reported concentrations of m&p-Xylene and o-Xylene at or above the LOR.
- EP074: Where reported, Total Trihalomethanes is the sum of the reported concentrations of all Trihalomethanes at or above the LOR.
- EP074: Where reported, Total Trimethylbenzenes is the sum of the reported concentrations of 1.2.3-Trimethylbenzene, 1.2.4-Trimethylbenzene and 1.3.5-Trimethylbenzene at or above the LOR.
- EP075(SIM): Where reported, Total Cresol is the sum of the reported concentrations of 2-Methylphenol and 3- & 4-Methylphenol at or above the LOR.
- EP234: Poor matrix spike recovery for particular compounds due to matrix interferences and high matrix spike recovery has been noted for particular compounds due to ion enhancement.

Analytical Results

Sub-Matrix: WATER (Matrix: WATER)				Sample ID	BADDS	BADMS	BADUS	----	----
				Sampling date / time	07-Jul-2023 00:00	07-Jul-2023 00:00	07-Jul-2023 00:00	----	----
Compound	CAS Number	LOR	Unit		ES2322911-001	ES2322911-002	ES2322911-003	--------	--------
					Result	Result	Result	----	----
EA015: Total Dissolved Solids dried at 180 ± 5 °C									
Total Dissolved Solids @180°C	----	10	mg/L		**520**	**489**	**906**	**----**	**----**
EA025: Total Suspended Solids dried at 104 ± 2°C									
Suspended Solids (SS)	----	5	mg/L		**17**	**20**	**7**	**----**	**----**
EG020T: Total Metals by ICP-MS									
Arsenic	7440-38-2	0.001	mg/L		<0.001	<0.001	**0.001**	**----**	**----**
Cadmium	7440-43-9	0.0001	mg/L		<0.0001	<0.0001	<0.0001	**----**	**----**
Chromium	7440-47-3	0.001	mg/L		<0.001	**0.003**	**0.012**	**----**	**----**
Copper	7440-50-8	0.001	mg/L		**0.001**	**0.002**	**0.001**	**----**	**----**
Nickel	7440-02-0	0.001	mg/L		**0.002**	**0.002**	<0.001	**----**	**----**
Lead	7439-92-1	0.001	mg/L		<0.001	<0.001	<0.001	**----**	**----**
Zinc	7440-66-6	0.005	mg/L		**0.012**	**0.009**	**0.011**	**----**	**----**
Manganese	7439-96-5	0.001	mg/L		**0.082**	**0.111**	**0.114**	**----**	**----**
Iron	7439-89-6	0.05	mg/L		**0.43**	**1.02**	**0.40**	**----**	**----**
EG035T: Total Recoverable Mercury by FIMS									
Mercury	7439-97-6	0.0001	mg/L		<0.0001	<0.0001	<0.0001	**----**	**----**
EK055G: Ammonia as N by Discrete Analyser									
Ammonia as N	7664-41-7	0.01	mg/L		**0.01**	**0.02**	**0.06**	**----**	**----**
EK057G: Nitrite as N by Discrete Analyser									
Nitrite as N	14797-65-0	0.01	mg/L		<0.01	<0.01	**0.03**	**----**	**----**
EK058G: Nitrate as N by Discrete Analyser									
Nitrate as N	14797-55-8	0.01	mg/L		**0.13**	**0.16**	**0.24**	**----**	**----**
EK059G: Nitrite plus Nitrate as N (NOx) by Discrete Analyser									
Nitrite + Nitrate as N	----	0.01	mg/L		**0.13**	**0.16**	**0.27**	**----**	**----**
EK061G: Total Kjeldahl Nitrogen By Discrete Analyser									
Total Kjeldahl Nitrogen as N	----	0.1	mg/L		**0.5**	**0.6**	**0.5**	**----**	**----**
EK062G: Total Nitrogen as N (TKN + NOx) by Discrete Analyser									
^ Total Nitrogen as N	----	0.1	mg/L		**0.6**	**0.8**	**0.8**	**----**	**----**
EK067G: Total Phosphorus as P by Discrete Analyser									
Total Phosphorus as P	----	0.01	mg/L		**0.08**	**0.10**	**0.05**	**----**	**----**
EK071G: Reactive Phosphorus as P by discrete analyser									
Reactive Phosphorus as P	14265-44-2	0.01	mg/L		<0.01	<0.01	<0.01	**----**	**----**
EP008: Chlorophyll a & Pheophytin a									
Chlorophyll a	----	1	mg/m³		**6**	**8**	**6**	**----**	**----**

Analytical Results

Sub-Matrix: WATER (Matrix: WATER)				Sample ID	BADDS	BADMS	BADUS	----	----
				Sampling date / time	07-Jul-2023 00:00	07-Jul-2023 00:00	07-Jul-2023 00:00	----	----
Compound	CAS Number	LOR	Unit		ES2322911-001	ES2322911-002	ES2322911-003	--------	--------
					Result	Result	Result	----	----
EP020: Oil and Grease (O&G)									
Oil & Grease	----	5	mg/L		<5	<5	<5	----	----
EP074D: Fumigants									
2.2-Dichloropropane	594-20-7	5	µg/L		<5	<5	<5	----	----
1.2-Dichloropropane	78-87-5	5	µg/L		<5	<5	<5	----	----
cis-1.3-Dichloropropylene	10061-01-5	5	µg/L		<5	<5	<5	----	----
trans-1.3-Dichloropropylene	10061-02-6	5	µg/L		<5	<5	<5	----	----
1.2-Dibromoethane (EDB)	106-93-4	5	µg/L		<5	<5	<5	----	----
EP074E: Halogenated Aliphatic Compounds									
Dichlorodifluoromethane	75-71-8	50	µg/L		<50	<50	<50	----	----
Chloromethane	74-87-3	50	µg/L		<50	<50	<50	----	----
Vinyl chloride	75-01-4	50	µg/L		<50	<50	<50	----	----
Bromomethane	74-83-9	50	µg/L		<50	<50	<50	----	----
Chloroethane	75-00-3	50	µg/L		<50	<50	<50	----	----
Trichlorofluoromethane	75-69-4	50	µg/L		<50	<50	<50	----	----
1.1-Dichloroethene	75-35-4	5	µg/L		<5	<5	<5	----	----
Iodomethane	74-88-4	5	µg/L		<5	<5	<5	----	----
trans-1.2-Dichloroethene	156-60-5	5	µg/L		<5	<5	<5	----	----
1.1-Dichloroethane	75-34-3	5	µg/L		<5	<5	<5	----	----
cis-1.2-Dichloroethene	156-59-2	5	µg/L		<5	<5	<5	----	----
1.1.1-Trichloroethane	71-55-6	5	µg/L		<5	<5	<5	----	----
1.1-Dichloropropylene	563-58-6	5	µg/L		<5	<5	<5	----	----
Carbon Tetrachloride	56-23-5	5	µg/L		<5	<5	<5	----	----
1.2-Dichloroethane	107-06-2	5	µg/L		<5	<5	<5	----	----
Trichloroethene	79-01-6	5	µg/L		<5	<5	<5	----	----
Dibromomethane	74-95-3	5	µg/L		<5	<5	<5	----	----
1.1.2-Trichloroethane	79-00-5	5	µg/L		<5	<5	<5	----	----
1.3-Dichloropropane	142-28-9	5	µg/L		<5	<5	<5	----	----
Tetrachloroethene	127-18-4	5	µg/L		<5	<5	<5	----	----
1.1.1.2-Tetrachloroethane	630-20-6	5	µg/L		<5	<5	<5	----	----
trans-1.4-Dichloro-2-butene	110-57-6	5	µg/L		<5	<5	<5	----	----
cis-1.4-Dichloro-2-butene	1476-11-5	5	µg/L		<5	<5	<5	----	----
1.1.2.2-Tetrachloroethane	79-34-5	5	µg/L		<5	<5	<5	----	----
1.2.3-Trichloropropane	96-18-4	5	µg/L		<5	<5	<5	----	----
Pentachloroethane	76-01-7	5	µg/L		<5	<5	<5	----	----

Analytical Results

Sub-Matrix: WATER (Matrix: WATER)				Sample ID	BADDS	BADMS	BADUS	----	----
				Sampling date / time	07-Jul-2023 00:00	07-Jul-2023 00:00	07-Jul-2023 00:00	----	----
Compound	CAS Number	LOR	Unit		ES2322911-001	ES2322911-002	ES2322911-003	--------	--------
					Result	Result	Result	----	----
EP074E: Halogenated Aliphatic Compounds - Continued									
1.2-Dibromo-3-chloropropane	96-12-8	5	µg/L		<5	<5	<5	----	----
Hexachlorobutadiene	87-68-3	5	µg/L		<5	<5	<5	----	----
EP074F: Halogenated Aromatic Compounds									
Chlorobenzene	108-90-7	5	µg/L		<5	<5	<5	----	----
Bromobenzene	108-86-1	5	µg/L		<5	<5	<5	----	----
2-Chlorotoluene	95-49-8	5	µg/L		<5	<5	<5	----	----
4-Chlorotoluene	106-43-4	5	µg/L		<5	<5	<5	----	----
1.3-Dichlorobenzene	541-73-1	5	µg/L		<5	<5	<5	----	----
1.4-Dichlorobenzene	106-46-7	5	µg/L		<5	<5	<5	----	----
1.2-Dichlorobenzene	95-50-1	5	µg/L		<5	<5	<5	----	----
1.2.4-Trichlorobenzene	120-82-1	5	µg/L		<5	<5	<5	----	----
1.2.3-Trichlorobenzene	87-61-6	5	µg/L		<5	<5	<5	----	----
EP074G: Trihalomethanes									
Chloroform	67-66-3	5	µg/L		<5	<5	<5	----	----
Bromodichloromethane	75-27-4	5	µg/L		<5	<5	<5	----	----
Dibromochloromethane	124-48-1	5	µg/L		<5	<5	<5	----	----
Bromoform	75-25-2	5	µg/L		<5	<5	<5	----	----
EP075(SIM)A: Phenolic Compounds									
Phenol	108-95-2	1.0	µg/L		<1.0	<1.0	<1.0	----	----
2-Chlorophenol	95-57-8	1.0	µg/L		<1.0	<1.0	<1.0	----	----
2-Methylphenol	95-48-7	1.0	µg/L		<1.0	<1.0	<1.0	----	----
3- & 4-Methylphenol	1319-77-3	2.0	µg/L		<2.0	<2.0	<2.0	----	----
2-Nitrophenol	88-75-5	1.0	µg/L		<1.0	<1.0	<1.0	----	----
2.4-Dimethylphenol	105-67-9	1.0	µg/L		<1.0	<1.0	<1.0	----	----
2.4-Dichlorophenol	120-83-2	1.0	µg/L		<1.0	<1.0	<1.0	----	----
2.6-Dichlorophenol	87-65-0	1.0	µg/L		<1.0	<1.0	<1.0	----	----
4-Chloro-3-methylphenol	59-50-7	1.0	µg/L		<1.0	<1.0	<1.0	----	----
2.4.6-Trichlorophenol	88-06-2	1.0	µg/L		<1.0	<1.0	<1.0	----	----
2.4.5-Trichlorophenol	95-95-4	1.0	µg/L		<1.0	<1.0	<1.0	----	----
Pentachlorophenol	87-86-5	2.0	µg/L		<2.0	<2.0	<2.0	----	----
EP075(SIM)B: Polynuclear Aromatic Hydrocarbons									
Naphthalene	91-20-3	1.0	µg/L		<1.0	<1.0	<1.0	----	----
Acenaphthylene	208-96-8	1.0	µg/L		<1.0	<1.0	<1.0	----	----
Acenaphthene	83-32-9	1.0	µg/L		<1.0	<1.0	<1.0	----	----

Analytical Results

Sub-Matrix: WATER (Matrix: WATER)				Sample ID	BADDS	BADMS	BADUS	----	----
				Sampling date / time	07-Jul-2023 00:00	07-Jul-2023 00:00	07-Jul-2023 00:00	----	----
Compound	CAS Number	LOR	Unit		ES2322911-001	ES2322911-002	ES2322911-003	--------	--------
					Result	Result	Result	----	----
EP075(SIM)B: Polynuclear Aromatic Hydrocarbons - Continued									
Fluorene	86-73-7	1.0	µg/L		<1.0	<1.0	<1.0	----	----
Phenanthrene	85-01-8	1.0	µg/L		<1.0	<1.0	<1.0	----	----
Anthracene	120-12-7	1.0	µg/L		<1.0	<1.0	<1.0	----	----
Fluoranthene	206-44-0	1.0	µg/L		<1.0	<1.0	<1.0	----	----
Pyrene	129-00-0	1.0	µg/L		<1.0	<1.0	<1.0	----	----
Benz(a)anthracene	56-55-3	1.0	µg/L		<1.0	<1.0	<1.0	----	----
Chrysene	218-01-9	1.0	µg/L		<1.0	<1.0	<1.0	----	----
Benzo(b+j)fluoranthene	205-99-2 205-82-3	1.0	µg/L		<1.0	<1.0	<1.0	----	----
Benzo(k)fluoranthene	207-08-9	1.0	µg/L		<1.0	<1.0	<1.0	----	----
Benzo(a)pyrene	50-32-8	0.5	µg/L		<0.5	<0.5	<0.5	----	----
Indeno(1.2.3.cd)pyrene	193-39-5	1.0	µg/L		<1.0	<1.0	<1.0	----	----
Dibenz(a.h)anthracene	53-70-3	1.0	µg/L		<1.0	<1.0	<1.0	----	----
Benzo(g.h.i)perylene	191-24-2	1.0	µg/L		<1.0	<1.0	<1.0	----	----
^ **Sum of polycyclic aromatic hydrocarbons**	----	0.5	µg/L		<0.5	<0.5	<0.5	----	----
^ **Benzo(a)pyrene TEQ (zero)**	----	0.5	µg/L		<0.5	<0.5	<0.5	----	----
EP080: BTEXN									
Benzene	71-43-2	1	µg/L		<1	<1	<1	----	----
Toluene	108-88-3	2	µg/L		<2	<2	<2	----	----
Ethylbenzene	100-41-4	2	µg/L		<2	<2	<2	----	----
meta- & para-Xylene	108-38-3 106-42-3	2	µg/L		<2	<2	<2	----	----
ortho-Xylene	95-47-6	2	µg/L		<2	<2	<2	----	----
^ **Total Xylenes**	----	2	µg/L		<2	<2	<2	----	----
^ **Sum of BTEX**	----	1	µg/L		<1	<1	<1	----	----
Naphthalene	91-20-3	5	µg/L		<5	<5	<5	----	----
EP234A: OP Pesticides									
Acephate	30560-19-1	0.5	µg/L		<0.5	<0.5	<0.5	----	----
Azinphos-methyl	86-50-0	0.02	µg/L		<0.02	<0.02	<0.02	----	----
Azinphos-ethyl	2642-71-9	0.02	µg/L		<0.02	<0.02	<0.02	----	----
Bensulide	741-58-2	0.1	µg/L		<0.1	<0.1	<0.1	----	----
Bromophos-ethyl	4824-78-6	0.10	µg/L		<0.10	<0.10	<0.10	----	----
Carbofenothion	786-19-6	0.02	µg/L		<0.02	<0.02	<0.02	----	----
Chlorfenvinphos	470-90-6	0.02	µg/L		<0.02	<0.02	<0.02	----	----
Chlorpyrifos	2921-88-2	0.02	µg/L		<0.02	<0.02	<0.02	----	----
Chlorpyrifos-methyl	5598-13-0	0.2	µg/L		<0.2	<0.2	<0.2	----	----

Analytical Results

Sub-Matrix: WATER (Matrix: WATER)				Sample ID	BADDS	BADMS	BADUS	----	----
				Sampling date / time	07-Jul-2023 00:00	07-Jul-2023 00:00	07-Jul-2023 00:00	----	----
Compound	CAS Number	LOR	Unit		ES2322911-001	ES2322911-002	ES2322911-003	--------	--------
					Result	Result	Result	----	----
EP234A: OP Pesticides - Continued									
Coumaphos	56-72-4	0.01	µg/L		<0.01	<0.01	<0.01	----	----
Demeton-O	298-03-3	0.02	µg/L		<0.02	<0.02	<0.02	----	----
Demeton-O & Demeton-S	298-03-3/126-75-0	0.02	µg/L		<0.02	<0.02	<0.02	----	----
Demeton-S	126-75-0	0.02	µg/L		<0.02	<0.02	<0.02	----	----
Demeton-S-methyl	919-86-8	0.02	µg/L		<0.02	<0.02	<0.02	----	----
Diazinon	333-41-5	0.01	µg/L		<0.01	<0.01	<0.01	----	----
Dichlorvos	62-73-7	0.20	µg/L		<0.20	<0.20	<0.20	----	----
Dimethoate	60-51-5	0.02	µg/L		<0.02	<0.02	<0.02	----	----
Disulfoton	298-04-4	0.05	µg/L		<0.05	<0.05	<0.05	----	----
EPN	2104-64-5	0.05	µg/L		<0.05	<0.05	<0.05	----	----
Ethion	563-12-2	0.02	µg/L		<0.02	<0.02	<0.02	----	----
Ethoprophos	13194-48-4	0.01	µg/L		<0.01	<0.01	<0.01	----	----
Fenamiphos	22224-92-6	0.01	µg/L		<0.01	<0.01	<0.01	----	----
Fenchlorphos (Ronnel)	299-84-3	10	µg/L		<10	<10	<10	----	----
Fenitrothion	122-14-5	2	µg/L		<2	<2	<2	----	----
Fensulfothion	115-90-2	0.01	µg/L		<0.01	<0.01	<0.01	----	----
Fenthion	55-38-9	0.05	µg/L		<0.05	<0.05	<0.05	----	----
Formothion	2540-82-1	20	µg/L		<20	<20	<20	----	----
Fosetyl Aluminium	39148-24-8	10	µg/L		<10	<10	<10	----	----
Malathion	121-75-5	0.02	µg/L		<0.02	<0.02	<0.02	----	----
Methidathion	950-37-8	0.1	µg/L		<0.1	<0.1	<0.1	----	----
Mevinphos	7786-34-7	0.02	µg/L		<0.02	<0.02	<0.02	----	----
Monocrotophos	6923-22-4	0.02	µg/L		<0.02	<0.02	<0.02	----	----
Naftalofos	1491-41-4	1.0	µg/L		<1.0	<1.0	<1.0	----	----
Omethoate	1113-02-6	0.01	µg/L		<0.01	<0.01	<0.01	----	----
Parathion	56-38-2	0.2	µg/L		<0.2	<0.2	<0.2	----	----
Parathion-methyl	298-00-0	0.5	µg/L		<0.5	<0.5	<0.5	----	----
Phorate	298-02-2	0.1	µg/L		<0.1	<0.1	<0.1	----	----
Pirimiphos-ethyl	23505-41-1	0.01	µg/L		<0.01	<0.01	<0.01	----	----
Pirimiphos-methyl	29232-93-7	0.01	µg/L		<0.01	<0.01	<0.01	----	----
Profenofos	41198-08-7	0.01	µg/L		<0.01	<0.01	<0.01	----	----
Prothiofos	34643-46-4	0.1	µg/L		<0.1	<0.1	<0.1	----	----
Pyrazophos	13457-18-6	0.1	µg/L		<0.1	<0.1	<0.1	----	----
Sulfotep	3689-24-5	0.005	µg/L		<0.005	<0.005	<0.005	----	----
Sulprofos	35400-43-2	0.05	µg/L		<0.05	<0.05	<0.05	----	----

Analytical Results

Sub-Matrix: WATER (Matrix: WATER)				Sample ID	BADDS	BADMS	BADUS	----	----
				Sampling date / time	07-Jul-2023 00:00	07-Jul-2023 00:00	07-Jul-2023 00:00	----	----
Compound	CAS Number	LOR	Unit		ES2322911-001	ES2322911-002	ES2322911-003	--------	--------
					Result	Result	Result	----	----
EP234A: OP Pesticides - Continued									
Temephos	3383-96-8	0.02	µg/L		<0.02	<0.02	<0.02	----	----
Terbufos	13071-79-9	0.01	µg/L		<0.01	<0.01	<0.01	----	----
Tetrachlorvinphos	22248-79-9	0.01	µg/L		<0.01	<0.01	<0.01	----	----
Thiometon	640-15-3	0.5	µg/L		<0.5	<0.5	<0.5	----	----
Triazophos	24017-47-8	0.005	µg/L		<0.005	<0.005	<0.005	----	----
Trichlorfon	52-68-6	0.02	µg/L		<0.02	<0.02	<0.02	----	----
Trichloronate	327-98-0	0.5	µg/L		<0.5	<0.5	<0.5	----	----
EP074S: VOC Surrogates									
1.2-Dichloroethane-D4	17060-07-0	5	%		**122**	**126**	**124**	----	----
Toluene-D8	2037-26-5	5	%		**104**	**109**	**108**	----	----
4-Bromofluorobenzene	460-00-4	5	%		**104**	**109**	**107**	----	----
EP075(SIM)S: Phenolic Compound Surrogates									
Phenol-d6	13127-88-3	1.0	%		**24.7**	**20.8**	**21.0**	----	----
2-Chlorophenol-D4	93951-73-6	1.0	%		**56.1**	**48.6**	**50.8**	----	----
2.4.6-Tribromophenol	118-79-6	1.0	%		**40.4**	**38.6**	**50.5**	----	----
EP075(SIM)T: PAH Surrogates									
2-Fluorobiphenyl	321-60-8	1.0	%		**66.7**	**59.7**	**57.1**	----	----
Anthracene-d10	1719-06-8	1.0	%		**98.3**	**74.1**	**74.8**	----	----
4-Terphenyl-d14	1718-51-0	1.0	%		**77.7**	**69.8**	**72.7**	----	----
EP080S: TPH(V)/BTEX Surrogates									
1.2-Dichloroethane-D4	17060-07-0	2	%		**105**	**109**	**108**	----	----
Toluene-D8	2037-26-5	2	%		**104**	**109**	**108**	----	----
4-Bromofluorobenzene	460-00-4	2	%		**101**	**106**	**106**	----	----

Surrogate Control Limits

Sub-Matrix: WATER		Recovery Limits (%)	
Compound	*CAS Number*	*Low*	*High*
EP074S: VOC Surrogates			
1.2-Dichloroethane-D4	17060-07-0	78	133
Toluene-D8	2037-26-5	79	129
4-Bromofluorobenzene	460-00-4	81	124
EP075(SIM)S: Phenolic Compound Surrogates			
Phenol-d6	13127-88-3	10	44
2-Chlorophenol-D4	93951-73-6	14	94
2.4.6-Tribromophenol	118-79-6	17	125
EP075(SIM)T: PAH Surrogates			
2-Fluorobiphenyl	321-60-8	20	104
Anthracene-d10	1719-06-8	27	113
4-Terphenyl-d14	1718-51-0	32	112
EP080S: TPH(V)/BTEX Surrogates			
1.2-Dichloroethane-D4	17060-07-0	72	143
Toluene-D8	2037-26-5	75	131
4-Bromofluorobenzene	460-00-4	73	137

QUALITY CONTROL REPORT

Work Order	: **ES2322911**	Page	: 1 of 15
Client	: **GHD PTY LTD**	Laboratory	: Environmental Division Sydney
Contact	: MR HENRY LUO	Contact	: Sarah Mathew
Address	: LEVEL 15, 133 CASTLEREAGH STREET SYDNEY NSW, AUSTRALIA 2000	Address	: 277-289 Woodpark Road Smithfield NSW Australia 2164
Telephone	: +61 02 9239 7100	Telephone	: +61-2-8784 8555
Project	: 12554717	Date Samples Received	: 07-Jul-2023
Order number	: ----	Date Analysis Commenced	: 10-Jul-2023
C-O-C number	: ----	Issue Date	: 14-Jul-2023
Sampler	: ANDREW DUVAL, EMILY SMITH		
Site	: ----		
Quote number	: SY/322/21		
No. of samples received	: 3		
No. of samples analysed	: 3		

Accreditation No. 825
Accredited for compliance with
ISO/IEC 17025 - Testing

This report supersedes any previous report(s) with this reference. Results apply to the sample(s) as submitted, unless the sampling was conducted by ALS. This document shall not be reproduced, except in full.

This Quality Control Report contains the following information:

- Laboratory Duplicate (DUP) Report; Relative Percentage Difference (RPD) and Acceptance Limits
- Method Blank (MB) and Laboratory Control Spike (LCS) Report; Recovery and Acceptance Limits
- Matrix Spike (MS) Report; Recovery and Acceptance Limits

Signatories

This document has been electronically signed by the authorized signatories below. Electronic signing is carried out in compliance with procedures specified in 21 CFR Part 11.

Signatories	*Position*	*Accreditation Category*
Ankit Joshi	Senior Chemist - Inorganics	Sydney Inorganics, Smithfield, NSW
Dian Dao	Senior Chemist - Inorganics	Sydney Inorganics, Smithfield, NSW
Edwandy Fadjar	Organic Coordinator	Sydney Organics, Smithfield, NSW
Franco Lentini	LCMS Coordinator	Sydney Organics, Smithfield, NSW

General Comments

The analytical procedures used by ALS have been developed from established internationally recognised procedures such as those published by the USEPA, APHA, AS and NEPM. In house developed procedures are fully validated and are often at the client request.

Where moisture determination has been performed, results are reported on a dry weight basis.

Where a reported less than (<) result is higher than the LOR, this may be due to primary sample extract/digestate dilution and/or insufficient sample for analysis. Where the LOR of a reported result differs from standard LOR, this may be due to high moisture content, insufficient sample (reduced weight employed) or matrix interference.

Key : Anonymous = Refers to samples which are not specifically part of this work order but formed part of the QC process lot
CAS Number = CAS registry number from database maintained by Chemical Abstracts Services. The Chemical Abstracts Service is a division of the American Chemical Society.
LOR = Limit of reporting
RPD = Relative Percentage Difference
# = Indicates failed QC

Laboratory Duplicate (DUP) Report

The quality control term Laboratory Duplicate refers to a randomly selected intralaboratory split. Laboratory duplicates provide information regarding method precision and sample heterogeneity. The permitted ranges for the Relative Percent Deviation (RPD) of Laboratory Duplicates are specified in ALS Method QWI-EN/38 and are dependent on the magnitude of results in comparison to the level of reporting: Result < 10 times LOR: No Limit; Result between 10 and 20 times LOR: 0% - 50%; Result > 20 times LOR: 0% - 20%.

Sub-Matrix: **WATER**

				Laboratory Duplicate (DUP) Report					
Laboratory sample ID	*Sample ID*	*Method: Compound*	*CAS Number*	*LOR*	*Unit*	*Original Result*	*Duplicate Result*	*RPD (%)*	*Acceptable RPD (%)*
EA015: Total Dissolved Solids dried at 180 ± 5 °C (QC Lot: 5169753)									
ES2322862-001	Anonymous	EA015H: Total Dissolved Solids @180°C	----	10	mg/L	1650	1630	1.4	0% - 20%
ES2322911-003	BADUS	EA015H: Total Dissolved Solids @180°C	----	10	mg/L	906	936	3.2	0% - 20%
ES2323043-006	Anonymous	EA015H: Total Dissolved Solids @180°C	----	10	mg/L	712	692	2.9	0% - 20%
EW2303068-002	Anonymous	EA015H: Total Dissolved Solids @180°C	----	10	mg/L	88	93	6.1	No Limit
EA025: Total Suspended Solids dried at 104 ± 2°C (QC Lot: 5169754)									
ES2322862-001	Anonymous	EA025H: Suspended Solids (SS)	----	5	mg/L	8	8	0.0	No Limit
ES2322911-003	BADUS	EA025H: Suspended Solids (SS)	----	5	mg/L	7	7	0.0	No Limit
ES2323043-006	Anonymous	EA025H: Suspended Solids (SS)	----	5	mg/L	<5	<5	0.0	No Limit
EW2303068-002	Anonymous	EA025H: Suspended Solids (SS)	----	5	mg/L	<5	<5	0.0	No Limit
EG020T: Total Metals by ICP-MS (QC Lot: 5166292)									
ES2322820-010	Anonymous	EG020A-T: Cadmium	7440-43-9	0.0001	mg/L	<0.0001	<0.0001	0.0	No Limit
		EG020A-T: Arsenic	7440-38-2	0.001	mg/L	<0.001	<0.001	0.0	No Limit
		EG020A-T: Chromium	7440-47-3	0.001	mg/L	<0.001	<0.001	0.0	No Limit
		EG020A-T: Copper	7440-50-8	0.001	mg/L	<0.001	<0.001	0.0	No Limit
		EG020A-T: Lead	7439-92-1	0.001	mg/L	<0.001	<0.001	0.0	No Limit
		EG020A-T: Manganese	7439-96-5	0.001	mg/L	0.562	0.561	0.0	0% - 20%
		EG020A-T: Nickel	7440-02-0	0.001	mg/L	0.003	0.002	0.0	No Limit
		EG020A-T: Zinc	7440-66-6	0.005	mg/L	<0.005	<0.005	0.0	No Limit
		EG020A-T: Iron	7439-89-6	0.05	mg/L	4.00	4.05	1.3	0% - 20%
WN2308013-001	Anonymous	EG020A-T: Cadmium	7440-43-9	0.0001	mg/L	0.0002	0.0002	0.0	No Limit
		EG020A-T: Arsenic	7440-38-2	0.001	mg/L	<0.001	<0.001	0.0	No Limit
		EG020A-T: Chromium	7440-47-3	0.001	mg/L	0.001	0.001	0.0	No Limit
		EG020A-T: Copper	7440-50-8	0.001	mg/L	0.808	0.818	1.2	0% - 20%
		EG020A-T: Lead	7439-92-1	0.001	mg/L	0.002	0.002	0.0	No Limit

Sub-Matrix: **WATER**

				Laboratory Duplicate (DUP) Report					
Laboratory sample ID	*Sample ID*	*Method: Compound*	*CAS Number*	*LOR*	*Unit*	*Original Result*	*Duplicate Result*	*RPD (%)*	*Acceptable RPD (%)*
EG020T: Total Metals by ICP-MS (QC Lot: 5166292) - continued									
WN2308013-001	Anonymous	EG020A-T: Manganese	7439-96-5	0.001	mg/L	0.046	0.042	7.1	0% - 20%
		EG020A-T: Nickel	7440-02-0	0.001	mg/L	0.009	0.015	49.5	0% - 50%
		EG020A-T: Zinc	7440-66-6	0.005	mg/L	0.161	0.158	2.5	0% - 20%
		EG020A-T: Iron	7439-89-6	0.05	mg/L	0.36	0.35	3.3	No Limit
EG035T: Total Recoverable Mercury by FIMS (QC Lot: 5164661)									
EP2308793-001	Anonymous	EG035T: Mercury	7439-97-6	0.0001	mg/L	<0.0001	<0.0001	0.0	No Limit
ES2322573-008	Anonymous	EG035T: Mercury	7439-97-6	0.0001	mg/L	<0.0001	<0.0001	0.0	No Limit
EG035T: Total Recoverable Mercury by FIMS (QC Lot: 5164662)									
ES2322911-003	BADUS	EG035T: Mercury	7439-97-6	0.0001	mg/L	<0.0001	<0.0001	0.0	No Limit
EK055G: Ammonia as N by Discrete Analyser (QC Lot: 5169339)									
ES2322911-001	BADDS	EK055G: Ammonia as N	7664-41-7	0.01	mg/L	0.01	0.01	0.0	No Limit
EW2303023-007	Anonymous	EK055G: Ammonia as N	7664-41-7	0.01	mg/L	<0.01	0.02	0.0	No Limit
EK057G: Nitrite as N by Discrete Analyser (QC Lot: 5164555)									
ES2322911-001	BADDS	EK057G: Nitrite as N	14797-65-0	0.01	mg/L	<0.01	<0.01	0.0	No Limit
EK059G: Nitrite plus Nitrate as N (NOx) by Discrete Analyser (QC Lot: 5169340)									
ES2322911-001	BADDS	EK059G: Nitrite + Nitrate as N	----	0.01	mg/L	0.13	0.13	0.0	0% - 50%
EW2303023-007	Anonymous	EK059G: Nitrite + Nitrate as N	----	0.01	mg/L	<0.01	<0.01	0.0	No Limit
EK061G: Total Kjeldahl Nitrogen By Discrete Analyser (QC Lot: 5169336)									
ES2322911-001	BADDS	EK061G: Total Kjeldahl Nitrogen as N	----	0.1	mg/L	0.5	0.5	0.0	No Limit
EW2303023-006	Anonymous	EK061G: Total Kjeldahl Nitrogen as N	----	0.1	mg/L	0.3	0.3	0.0	No Limit
EK067G: Total Phosphorus as P by Discrete Analyser (QC Lot: 5169335)									
ES2322876-001	Anonymous	EK067G: Total Phosphorus as P	----	0.01	mg/L	0.06	0.08	32.6	No Limit
ES2322911-001	BADDS	EK067G: Total Phosphorus as P	----	0.01	mg/L	0.08	0.06	36.5	No Limit
EK071G: Reactive Phosphorus as P by discrete analyser (QC Lot: 5164554)									
ES2322911-001	BADDS	EK071G: Reactive Phosphorus as P	14265-44-2	0.01	mg/L	<0.01	<0.01	0.0	No Limit
EP074D: Fumigants (QC Lot: 5166328)									
ES2322317-002	Anonymous	EP074: 2.2-Dichloropropane	594-20-7	5	µg/L	<5	<5	0.0	No Limit
		EP074: 1.2-Dichloropropane	78-87-5	5	µg/L	<5	<5	0.0	No Limit
		EP074: cis-1.3-Dichloropropylene	10061-01-5	5	µg/L	<5	<5	0.0	No Limit
		EP074: trans-1.3-Dichloropropylene	10061-02-6	5	µg/L	<5	<5	0.0	No Limit
		EP074: 1.2-Dibromoethane (EDB)	106-93-4	5	µg/L	<5	<5	0.0	No Limit
EP074E: Halogenated Aliphatic Compounds (QC Lot: 5166328)									
ES2322317-002	Anonymous	EP074: 1.1-Dichloroethene	75-35-4	5	µg/L	<5	<5	0.0	No Limit
		EP074: Iodomethane	74-88-4	5	µg/L	<5	<5	0.0	No Limit
		EP074: trans-1.2-Dichloroethene	156-60-5	5	µg/L	<5	<5	0.0	No Limit
		EP074: 1.1-Dichloroethane	75-34-3	5	µg/L	<5	<5	0.0	No Limit
		EP074: cis-1.2-Dichloroethene	156-59-2	5	µg/L	<5	<5	0.0	No Limit
		EP074: 1.1.1-Trichloroethane	71-55-6	5	µg/L	<5	<5	0.0	No Limit

Sub-Matrix: **WATER**

				Laboratory Duplicate (DUP) Report					
Laboratory sample ID	*Sample ID*	*Method: Compound*	*CAS Number*	*LOR*	*Unit*	*Original Result*	*Duplicate Result*	*RPD (%)*	*Acceptable RPD (%)*
EP074E: Halogenated Aliphatic Compounds (QC Lot: 5166328) - continued									
ES2322317-002	Anonymous	EP074: 1.1-Dichloropropylene	563-58-6	5	µg/L	<5	<5	0.0	No Limit
		EP074: Carbon Tetrachloride	56-23-5	5	µg/L	<5	<5	0.0	No Limit
		EP074: 1.2-Dichloroethane	107-06-2	5	µg/L	<5	<5	0.0	No Limit
		EP074: Trichloroethene	79-01-6	5	µg/L	<5	<5	0.0	No Limit
		EP074: Dibromomethane	74-95-3	5	µg/L	<5	<5	0.0	No Limit
		EP074: 1.1.2-Trichloroethane	79-00-5	5	µg/L	<5	<5	0.0	No Limit
		EP074: 1.3-Dichloropropane	142-28-9	5	µg/L	<5	<5	0.0	No Limit
		EP074: Tetrachloroethene	127-18-4	5	µg/L	<5	<5	0.0	No Limit
		EP074: 1.1.1.2-Tetrachloroethane	630-20-6	5	µg/L	<5	<5	0.0	No Limit
		EP074: trans-1.4-Dichloro-2-butene	110-57-6	5	µg/L	<5	<5	0.0	No Limit
		EP074: cis-1.4-Dichloro-2-butene	1476-11-5	5	µg/L	<5	<5	0.0	No Limit
		EP074: 1.1.2.2-Tetrachloroethane	79-34-5	5	µg/L	<5	<5	0.0	No Limit
		EP074: 1.2.3-Trichloropropane	96-18-4	5	µg/L	<5	<5	0.0	No Limit
		EP074: Pentachloroethane	76-01-7	5	µg/L	<5	<5	0.0	No Limit
		EP074: 1.2-Dibromo-3-chloropropane	96-12-8	5	µg/L	<5	<5	0.0	No Limit
		EP074: Hexachlorobutadiene	87-68-3	5	µg/L	<5	<5	0.0	No Limit
		EP074: Dichlorodifluoromethane	75-71-8	50	µg/L	<50	<50	0.0	No Limit
		EP074: Chloromethane	74-87-3	50	µg/L	<50	<50	0.0	No Limit
		EP074: Vinyl chloride	75-01-4	50	µg/L	<50	<50	0.0	No Limit
		EP074: Bromomethane	74-83-9	50	µg/L	<50	<50	0.0	No Limit
		EP074: Chloroethane	75-00-3	50	µg/L	<50	<50	0.0	No Limit
		EP074: Trichlorofluoromethane	75-69-4	50	µg/L	<50	<50	0.0	No Limit
EP074F: Halogenated Aromatic Compounds (QC Lot: 5166328)									
ES2322317-002	Anonymous	EP074: Chlorobenzene	108-90-7	5	µg/L	<5	<5	0.0	No Limit
		EP074: Bromobenzene	108-86-1	5	µg/L	<5	<5	0.0	No Limit
		EP074: 2-Chlorotoluene	95-49-8	5	µg/L	<5	<5	0.0	No Limit
		EP074: 4-Chlorotoluene	106-43-4	5	µg/L	<5	<5	0.0	No Limit
		EP074: 1.3-Dichlorobenzene	541-73-1	5	µg/L	<5	<5	0.0	No Limit
		EP074: 1.4-Dichlorobenzene	106-46-7	5	µg/L	<5	<5	0.0	No Limit
		EP074: 1.2-Dichlorobenzene	95-50-1	5	µg/L	<5	<5	0.0	No Limit
		EP074: 1.2.4-Trichlorobenzene	120-82-1	5	µg/L	<5	<5	0.0	No Limit
		EP074: 1.2.3-Trichlorobenzene	87-61-6	5	µg/L	<5	<5	0.0	No Limit
EP074G: Trihalomethanes (QC Lot: 5166328)									
ES2322317-002	Anonymous	EP074: Chloroform	67-66-3	5	µg/L	<5	<5	0.0	No Limit
		EP074: Bromodichloromethane	75-27-4	5	µg/L	<5	<5	0.0	No Limit
		EP074: Dibromochloromethane	124-48-1	5	µg/L	<5	<5	0.0	No Limit
		EP074: Bromoform	75-25-2	5	µg/L	<5	<5	0.0	No Limit
EP080: BTEXN (QC Lot: 5166329)									
ES2322317-002	Anonymous	EP080: Benzene	71-43-2	1	µg/L	<1	<1	0.0	No Limit
		EP080: Toluene	108-88-3	2	µg/L	<2	<2	0.0	No Limit

Sub-Matrix: **WATER**

				Laboratory Duplicate (DUP) Report					
Laboratory sample ID	*Sample ID*	*Method: Compound*	*CAS Number*	*LOR*	*Unit*	*Original Result*	*Duplicate Result*	*RPD (%)*	*Acceptable RPD (%)*
EP080: BTEXN (QC Lot: 5166329) - continued									
ES2322317-002	Anonymous	EP080: Ethylbenzene	100-41-4	2	µg/L	<2	<2	0.0	No Limit
		EP080: meta- & para-Xylene	108-38-3 106-42-3	2	µg/L	<2	<2	0.0	No Limit
		EP080: ortho-Xylene	95-47-6	2	µg/L	<2	<2	0.0	No Limit
		EP080: Naphthalene	91-20-3	5	µg/L	<5	<5	0.0	No Limit
EP234A: OP Pesticides (QC Lot: 5167780)									
ES2322615-001	Anonymous	EP234-1: Sulfotep	3689-24-5	0.005	µg/L	<0.005	<0.005	0.0	No Limit
		EP234-1: Triazophos	24017-47-8	0.005	µg/L	<0.005	<0.005	0.0	No Limit
		EP234-1: Coumaphos	56-72-4	0.01	µg/L	<0.01	<0.01	0.0	No Limit
		EP234-1: Diazinon	333-41-5	0.01	µg/L	<0.01	<0.01	0.0	No Limit
		EP234-1: Ethoprophos	13194-48-4	0.01	µg/L	<0.01	<0.01	0.0	No Limit
		EP234-1: Fenamiphos	22224-92-6	0.01	µg/L	<0.01	<0.01	0.0	No Limit
		EP234-1: Fensulfothion	115-90-2	0.01	µg/L	<0.01	<0.01	0.0	No Limit
		EP234-1: Omethoate	1113-02-6	0.01	µg/L	<0.01	<0.01	0.0	No Limit
		EP234-1: Pirimiphos-ethyl	23505-41-1	0.01	µg/L	<0.01	<0.01	0.0	No Limit
		EP234-1: Pirimiphos-methyl	29232-93-7	0.01	µg/L	<0.01	<0.01	0.0	No Limit
		EP234-1: Profenofos	41198-08-7	0.01	µg/L	<0.01	<0.01	0.0	No Limit
		EP234-1: Terbufos	13071-79-9	0.01	µg/L	<0.01	<0.01	0.0	No Limit
		EP234-1: Tetrachlorvinphos	22248-79-9	0.01	µg/L	<0.01	<0.01	0.0	No Limit
		EP234-1: Azinphos-methyl	86-50-0	0.02	µg/L	<0.02	<0.02	0.0	No Limit
		EP234-1: Azinphos-ethyl	2642-71-9	0.02	µg/L	<0.02	<0.02	0.0	No Limit
		EP234-1: Carbofenothion	786-19-6	0.02	µg/L	<0.02	<0.02	0.0	No Limit
		EP234-1: Chlorfenvinphos	470-90-6	0.02	µg/L	<0.02	<0.02	0.0	No Limit
		EP234-1: Chlorpyrifos	2921-88-2	0.02	µg/L	<0.02	<0.02	0.0	No Limit
		EP234-1: Demeton-O	298-03-3	0.02	µg/L	<0.02	<0.02	0.0	No Limit
		EP234-1: Demeton-O & Demeton-S	298-03-3/126-75-0	0.02	µg/L	<0.02	<0.02	0.0	No Limit
		EP234-1: Demeton-S	126-75-0	0.02	µg/L	<0.02	<0.02	0.0	No Limit
		EP234-1: Demeton-S-methyl	919-86-8	0.02	µg/L	<0.02	<0.02	0.0	No Limit
		EP234-1: Dimethoate	60-51-5	0.02	µg/L	<0.02	<0.02	0.0	No Limit
		EP234-1: Ethion	563-12-2	0.02	µg/L	<0.02	<0.02	0.0	No Limit
		EP234-1: Malathion	121-75-5	0.02	µg/L	<0.02	<0.02	0.0	No Limit
		EP234-1: Mevinphos	7786-34-7	0.02	µg/L	<0.02	<0.02	0.0	No Limit
		EP234-1: Monocrotophos	6923-22-4	0.02	µg/L	<0.02	<0.02	0.0	No Limit
		EP234-1: Temephos	3383-96-8	0.02	µg/L	<0.02	<0.02	0.0	No Limit
		EP234-1: Trichlorfon	52-68-6	0.02	µg/L	<0.02	<0.02	0.0	No Limit
		EP234-1: Disulfoton	298-04-4	0.05	µg/L	<0.05	<0.05	0.0	No Limit
		EP234-1: EPN	2104-64-5	0.05	µg/L	<0.05	<0.05	0.0	No Limit
		EP234-1: Fenthion	55-38-9	0.05	µg/L	<0.05	<0.05	0.0	No Limit
		EP234-1: Sulprofos	35400-43-2	0.05	µg/L	<0.05	<0.05	0.0	No Limit

Sub-Matrix: **WATER**

				Laboratory Duplicate (DUP) Report					
Laboratory sample ID	*Sample ID*	*Method: Compound*	*CAS Number*	*LOR*	*Unit*	*Original Result*	*Duplicate Result*	*RPD (%)*	*Acceptable RPD (%)*
EP234A: OP Pesticides (QC Lot: 5167780) - continued									
ES2322615-001	Anonymous	EP234-1: Bromophos-ethyl	4824-78-6	0.1	µg/L	<0.10	<0.10	0.0	No Limit
		EP234-1: Phorate	298-02-2	0.1	µg/L	<0.1	<0.1	0.0	No Limit
		EP234-1: Prothiofos	34643-46-4	0.1	µg/L	<0.1	<0.1	0.0	No Limit
		EP234-1: Chlorpyrifos-methyl	5598-13-0	0.2	µg/L	<0.2	<0.2	0.0	No Limit
		EP234-1: Dichlorvos	62-73-7	0.2	µg/L	<0.20	<0.20	0.0	No Limit
		EP234-1: Parathion	56-38-2	0.2	µg/L	<0.2	<0.2	0.0	No Limit
		EP234-1: Parathion-methyl	298-00-0	0.5	µg/L	<0.5	<0.5	0.0	No Limit
		EP234-1: Trichloronate	327-98-0	0.5	µg/L	<0.5	<0.5	0.0	No Limit
		EP234-1: Fenchlorphos (Ronnel)	299-84-3	10	µg/L	<10	<10	0.0	No Limit
		EP234-1: Fenitrothion	122-14-5	2	µg/L	<2	<2	0.0	No Limit
EP234A: OP Pesticides (QC Lot: 5167781)									
ES2322615-001	Anonymous	EP234-1x: Bensulide	741-58-2	0.1	µg/L	<0.1	<0.1	0.0	No Limit
		EP234-1x: Methidathion	950-37-8	0.1	µg/L	<0.1	<0.1	0.0	No Limit
		EP234-1x: Pyrazophos	13457-18-6	0.1	µg/L	<0.1	<0.1	0.0	No Limit
		EP234-1x: Acephate	30560-19-1	0.5	µg/L	<0.5	<0.5	0.0	No Limit
		EP234-1x: Thiometon	640-15-3	0.5	µg/L	<0.5	<0.5	0.0	No Limit
		EP234-1x: Naftalofos	1491-41-4	1	µg/L	<1.0	<1.0	0.0	No Limit
		EP234-1x: Fosetyl Aluminium	39148-24-8	10	µg/L	<10	<10	0.0	No Limit
		EP234-1x: Formothion	2540-82-1	20	µg/L	<20	<20	0.0	No Limit

Method Blank (MB) and Laboratory Control Sample (LCS) Report

The quality control term Method / Laboratory Blank refers to an analyte free matrix to which all reagents are added in the same volumes or proportions as used in standard sample preparation. The purpose of this QC parameter is to monitor potential laboratory contamination. The quality control term Laboratory Control Sample (LCS) refers to a certified reference material, or a known interference free matrix spiked with target analytes. The purpose of this QC parameter is to monitor method precision and accuracy independent of sample matrix. Dynamic Recovery Limits are based on statistical evaluation of processed LCS.

Sub-Matrix: **WATER**

				Method Blank (MB) Report	Laboratory Control Spike (LCS) Report			
					Spike	Spike Recovery (%)	Acceptable Limits (%)	
Method: Compound	CAS Number	LOR	Unit	Result	Concentration	LCS	Low	High
EA015: Total Dissolved Solids dried at 180 ± 5 °C (QCLot: 5169753)								
EA015H: Total Dissolved Solids @180°C	----	10	mg/L	<10	2000 mg/L	97.1	87.0	109
				<10	293 mg/L	103	75.2	126
				<10	2320 mg/L	103	83.0	124
EA025: Total Suspended Solids dried at 104 ± 2°C (QCLot: 5169754)								
EA025H: Suspended Solids (SS)	----	5	mg/L	<5	150 mg/L	104	83.0	129
				<5	1000 mg/L	94.8	82.0	110
				<5	926 mg/L	97.8	83.0	118
EG020T: Total Metals by ICP-MS (QCLot: 5166292)								
EG020A-T: Arsenic	7440-38-2	0.001	mg/L	<0.001	0.1 mg/L	99.2	82.0	114
EG020A-T: Cadmium	7440-43-9	0.0001	mg/L	<0.0001	0.1 mg/L	96.6	84.0	112
EG020A-T: Chromium	7440-47-3	0.001	mg/L	<0.001	0.1 mg/L	98.0	86.0	116
EG020A-T: Copper	7440-50-8	0.001	mg/L	<0.001	0.1 mg/L	96.1	83.0	118
EG020A-T: Lead	7439-92-1	0.001	mg/L	<0.001	0.1 mg/L	97.5	85.0	115
EG020A-T: Manganese	7439-96-5	0.001	mg/L	<0.001	0.1 mg/L	105	85.0	113
EG020A-T: Nickel	7440-02-0	0.001	mg/L	<0.001	0.1 mg/L	104	84.0	116
EG020A-T: Zinc	7440-66-6	0.005	mg/L	<0.005	0.1 mg/L	93.2	79.0	117
EG020A-T: Iron	7439-89-6	0.05	mg/L	<0.05	0.5 mg/L	101	85.0	117
EG035T: Total Recoverable Mercury by FIMS (QCLot: 5164661)								
EG035T: Mercury	7439-97-6	0.0001	mg/L	<0.0001	0.01 mg/L	105	77.0	111
EG035T: Total Recoverable Mercury by FIMS (QCLot: 5164662)								
EG035T: Mercury	7439-97-6	0.0001	mg/L	<0.0001	0.01 mg/L	105	77.0	111
EK055G: Ammonia as N by Discrete Analyser (QCLot: 5169339)								
EK055G: Ammonia as N	7664-41-7	0.01	mg/L	<0.01	1 mg/L	98.5	90.0	114
EK057G: Nitrite as N by Discrete Analyser (QCLot: 5164555)								
EK057G: Nitrite as N	14797-65-0	0.01	mg/L	<0.01	0.5 mg/L	99.8	82.0	114
EK059G: Nitrite plus Nitrate as N (NOx) by Discrete Analyser (QCLot: 5169340)								
EK059G: Nitrite + Nitrate as N	----	0.01	mg/L	<0.01	0.5 mg/L	101	91.0	113
EK061G: Total Kjeldahl Nitrogen By Discrete Analyser (QCLot: 5169336)								

Sub-Matrix: **WATER**

Method: Compound	CAS Number	LOR	Unit	Method Blank (MB) Report: Result	Laboratory Control Spike (LCS) Report: Spike Concentration	Spike Recovery (%): LCS	Acceptable Limits (%): Low	Acceptable Limits (%): High
EK061G: Total Kjeldahl Nitrogen By Discrete Analyser (QCLot: 5169336) - continued								
EK061G: Total Kjeldahl Nitrogen as N	----	0.1	mg/L	<0.1	10 mg/L	91.7	69.0	101
				<0.1	1 mg/L	112	70.0	118
				<0.1	5 mg/L	98.4	70.0	130
EK067G: Total Phosphorus as P by Discrete Analyser (QCLot: 5169335)								
EK067G: Total Phosphorus as P	----	0.01	mg/L	<0.01	4.42 mg/L	93.7	71.3	126
				<0.01	0.442 mg/L	108	71.3	126
				<0.01	1 mg/L	103	70.0	130
EK071G: Reactive Phosphorus as P by discrete analyser (QCLot: 5164554)								
EK071G: Reactive Phosphorus as P	14265-44-2	0.01	mg/L	<0.01	0.5 mg/L	94.5	85.0	117
EP008: Chlorophyll (QCLot: 5163909)								
EP008: Chlorophyll a	----	1	mg/m³	<1	20 mg/m³	83.4	70.0	130
EP020: Oil and Grease (O&G) (QCLot: 5170407)								
EP020: Oil & Grease	----	5	mg/L	<5	5000 mg/L	90.2	81.0	121
EP074D: Fumigants (QCLot: 5166328)								
EP074: 2.2-Dichloropropane	594-20-7	5	µg/L	<5	10 µg/L	102	68.0	122
EP074: 1.2-Dichloropropane	78-87-5	5	µg/L	<5	10 µg/L	104	76.0	118
EP074: cis-1.3-Dichloropropylene	10061-01-5	5	µg/L	<5	10 µg/L	100	62.0	120
EP074: trans-1.3-Dichloropropylene	10061-02-6	5	µg/L	<5	10 µg/L	104	60.0	114
EP074: 1.2-Dibromoethane (EDB)	106-93-4	5	µg/L	<5	10 µg/L	110	69.0	117
EP074E: Halogenated Aliphatic Compounds (QCLot: 5166328)								
EP074: Dichlorodifluoromethane	75-71-8	50	µg/L	<50	100 µg/L	84.5	60.6	138
EP074: Chloromethane	74-87-3	50	µg/L	<50	100 µg/L	92.7	67.4	130
EP074: Vinyl chloride	75-01-4	50	µg/L	<50	100 µg/L	93.1	69.4	129
EP074: Bromomethane	74-83-9	50	µg/L	<50	100 µg/L	93.2	56.0	140
EP074: Chloroethane	75-00-3	50	µg/L	<50	100 µg/L	95.7	61.0	139
EP074: Trichlorofluoromethane	75-69-4	50	µg/L	<50	100 µg/L	98.3	69.0	131
EP074: 1.1-Dichloroethene	75-35-4	5	µg/L	<5	10 µg/L	99.6	70.0	124
EP074: Iodomethane	74-88-4	5	µg/L	<5	10 µg/L	76.1	70.2	128
EP074: trans-1.2-Dichloroethene	156-60-5	5	µg/L	<5	10 µg/L	101	74.0	118
EP074: 1.1-Dichloroethane	75-34-3	5	µg/L	<5	10 µg/L	102	74.0	120
EP074: cis-1.2-Dichloroethene	156-59-2	5	µg/L	<5	10 µg/L	103	77.0	119
EP074: 1.1.1-Trichloroethane	71-55-6	5	µg/L	<5	10 µg/L	99.3	67.0	119
EP074: 1.1-Dichloropropylene	563-58-6	5	µg/L	<5	10 µg/L	98.0	73.0	119
EP074: Carbon Tetrachloride	56-23-5	5	µg/L	<5	10 µg/L	97.0	62.0	120

Sub-Matrix: **WATER**

Method: Compound	CAS Number	LOR	Unit	Method Blank (MB) Report: Result	Laboratory Control Spike (LCS) Report: Spike Concentration	Spike Recovery (%): LCS	Acceptable Limits (%): Low	Acceptable Limits (%): High
EP074E: Halogenated Aliphatic Compounds (QCLot: 5166328) - continued								
EP074: 1.2-Dichloroethane	107-06-2	5	µg/L	<5	10 µg/L	107	73.0	123
EP074: Trichloroethene	79-01-6	5	µg/L	<5	10 µg/L	99.9	76.0	118
EP074: Dibromomethane	74-95-3	5	µg/L	<5	10 µg/L	110	73.0	119
EP074: 1.1.2-Trichloroethane	79-00-5	5	µg/L	<5	10 µg/L	109	72.0	126
EP074: 1.3-Dichloropropane	142-28-9	5	µg/L	<5	10 µg/L	106	71.0	129
EP074: Tetrachloroethene	127-18-4	5	µg/L	<5	10 µg/L	104	72.0	124
EP074: 1.1.1.2-Tetrachloroethane	630-20-6	5	µg/L	<5	10 µg/L	104	66.0	114
EP074: trans-1.4-Dichloro-2-butene	110-57-6	5	µg/L	<5	10 µg/L	113	60.0	120
EP074: cis-1.4-Dichloro-2-butene	1476-11-5	5	µg/L	<5	10 µg/L	112	70.6	128
EP074: 1.1.2.2-Tetrachloroethane	79-34-5	5	µg/L	<5	10 µg/L	116	70.0	124
EP074: 1.2.3-Trichloropropane	96-18-4	5	µg/L	<5	10 µg/L	112	74.0	126
EP074: Pentachloroethane	76-01-7	5	µg/L	<5	10 µg/L	98.5	71.8	126
EP074: 1.2-Dibromo-3-chloropropane	96-12-8	5	µg/L	<5	10 µg/L	108	66.4	136
EP074: Hexachlorobutadiene	87-68-3	5	µg/L	<5	10 µg/L	106	58.0	130
EP074F: Halogenated Aromatic Compounds (QCLot: 5166328)								
EP074: Chlorobenzene	108-90-7	5	µg/L	<5	10 µg/L	102	79.0	117
EP074: Bromobenzene	108-86-1	5	µg/L	<5	10 µg/L	101	76.0	116
EP074: 2-Chlorotoluene	95-49-8	5	µg/L	<5	10 µg/L	98.3	73.0	119
EP074: 4-Chlorotoluene	106-43-4	5	µg/L	<5	10 µg/L	99.4	73.0	119
EP074: 1.3-Dichlorobenzene	541-73-1	5	µg/L	<5	10 µg/L	103	75.0	117
EP074: 1.4-Dichlorobenzene	106-46-7	5	µg/L	<5	10 µg/L	102	74.0	118
EP074: 1.2-Dichlorobenzene	95-50-1	5	µg/L	<5	10 µg/L	106	75.0	117
EP074: 1.2.4-Trichlorobenzene	120-82-1	5	µg/L	<5	10 µg/L	107	61.0	125
EP074: 1.2.3-Trichlorobenzene	87-61-6	5	µg/L	<5	10 µg/L	111	67.0	123
EP074G: Trihalomethanes (QCLot: 5166328)								
EP074: Chloroform	67-66-3	5	µg/L	<5	10 µg/L	110	72.0	120
EP074: Bromodichloromethane	75-27-4	5	µg/L	<5	10 µg/L	96.2	64.0	118
EP074: Dibromochloromethane	124-48-1	5	µg/L	<5	10 µg/L	101	65.0	115
EP074: Bromoform	75-25-2	5	µg/L	<5	10 µg/L	101	73.5	126
EP075(SIM)A: Phenolic Compounds (QCLot: 5163575)								
EP075(SIM): Phenol	108-95-2	1	µg/L	<1.0	5 µg/L	39.8	24.5	61.9
EP075(SIM): 2-Chlorophenol	95-57-8	1	µg/L	<1.0	5 µg/L	70.6	52.0	90.0
EP075(SIM): 2-Methylphenol	95-48-7	1	µg/L	<1.0	5 µg/L	68.0	51.0	91.0
EP075(SIM): 3- & 4-Methylphenol	1319-77-3	2	µg/L	<2.0	10 µg/L	62.7	44.0	88.0

Sub-Matrix: **WATER**

Method: Compound	CAS Number	LOR	Unit	Method Blank (MB) Report: Result	Laboratory Control Spike (LCS) Report: Spike Concentration	Spike Recovery (%): LCS	Acceptable Limits (%): Low	Acceptable Limits (%): High
EP075(SIM)A: Phenolic Compounds (QCLot: 5163575) - continued								
EP075(SIM): 2-Nitrophenol	88-75-5	1	µg/L	<1.0	5 µg/L	66.5	48.0	100
EP075(SIM): 2.4-Dimethylphenol	105-67-9	1	µg/L	<1.0	5 µg/L	66.1	49.0	99.0
EP075(SIM): 2.4-Dichlorophenol	120-83-2	1	µg/L	<1.0	5 µg/L	70.5	53.0	105
EP075(SIM): 2.6-Dichlorophenol	87-65-0	1	µg/L	<1.0	5 µg/L	67.8	57.0	105
EP075(SIM): 4-Chloro-3-methylphenol	59-50-7	1	µg/L	<1.0	5 µg/L	70.5	53.0	99.0
EP075(SIM): 2.4.6-Trichlorophenol	88-06-2	1	µg/L	<1.0	5 µg/L	66.8	50.0	106
EP075(SIM): 2.4.5-Trichlorophenol	95-95-4	1	µg/L	<1.0	5 µg/L	78.1	51.0	105
EP075(SIM): Pentachlorophenol	87-86-5	2	µg/L	<2.0	10 µg/L	33.8	10.0	95.0
EP075(SIM)B: Polynuclear Aromatic Hydrocarbons (QCLot: 5163575)								
EP075(SIM): Naphthalene	91-20-3	1	µg/L	<1.0	5 µg/L	74.1	50.0	94.0
EP075(SIM): Acenaphthylene	208-96-8	1	µg/L	<1.0	5 µg/L	87.1	63.6	114
EP075(SIM): Acenaphthene	83-32-9	1	µg/L	<1.0	5 µg/L	80.2	62.2	113
EP075(SIM): Fluorene	86-73-7	1	µg/L	<1.0	5 µg/L	75.4	63.9	115
EP075(SIM): Phenanthrene	85-01-8	1	µg/L	<1.0	5 µg/L	67.1	62.6	116
EP075(SIM): Anthracene	120-12-7	1	µg/L	<1.0	5 µg/L	84.8	64.3	116
EP075(SIM): Fluoranthene	206-44-0	1	µg/L	<1.0	5 µg/L	68.7	63.6	118
EP075(SIM): Pyrene	129-00-0	1	µg/L	<1.0	5 µg/L	71.3	63.1	118
EP075(SIM): Benz(a)anthracene	56-55-3	1	µg/L	<1.0	5 µg/L	66.8	64.1	117
EP075(SIM): Chrysene	218-01-9	1	µg/L	<1.0	5 µg/L	70.2	62.5	116
EP075(SIM): Benzo(b+j)fluoranthene	205-99-2 205-82-3	1	µg/L	<1.0	5 µg/L	79.2	61.7	119
EP075(SIM): Benzo(k)fluoranthene	207-08-9	1	µg/L	<1.0	5 µg/L	74.3	63.0	115
EP075(SIM): Benzo(a)pyrene	50-32-8	0.5	µg/L	<0.5	5 µg/L	77.0	63.3	117
EP075(SIM): Indeno(1.2.3.cd)pyrene	193-39-5	1	µg/L	<1.0	5 µg/L	67.8	59.9	118
EP075(SIM): Dibenz(a.h)anthracene	53-70-3	1	µg/L	<1.0	5 µg/L	74.8	61.2	117
EP075(SIM): Benzo(g.h.i)perylene	191-24-2	1	µg/L	<1.0	5 µg/L	74.4	59.1	118
EP080: BTEXN (QCLot: 5166329)								
EP080: Benzene	71-43-2	1	µg/L	<1	10 µg/L	91.4	68.3	119
EP080: Toluene	108-88-3	2	µg/L	<2	10 µg/L	97.8	73.5	120
EP080: Ethylbenzene	100-41-4	2	µg/L	<2	10 µg/L	95.0	73.8	122
EP080: meta- & para-Xylene	108-38-3 106-42-3	2	µg/L	<2	10 µg/L	94.2	73.0	122
EP080: ortho-Xylene	95-47-6	2	µg/L	<2	10 µg/L	97.6	76.4	123
EP080: Naphthalene	91-20-3	5	µg/L	<5	10 µg/L	104	75.5	124
EP234A: OP Pesticides (QCLot: 5167780)								

Sub-Matrix: **WATER**

Method: Compound	CAS Number	LOR	Unit	Method Blank (MB) Report: Result	Laboratory Control Spike (LCS) Report: Spike Concentration	Spike Recovery (%): LCS	Acceptable Limits (%): Low	Acceptable Limits (%): High
EP234A: OP Pesticides (QCLot: 5167780) - continued								
EP234-1: Azinphos-methyl	86-50-0	0.02	µg/L	<0.02	0.2 µg/L	91.4	77.0	129
EP234-1: Azinphos-ethyl	2642-71-9	0.02	µg/L	<0.02	0.2 µg/L	91.0	75.0	135
EP234-1: Bromophos-ethyl	4824-78-6	0.1	µg/L	<0.10	1 µg/L	83.1	70.0	130
EP234-1: Carbofenothion	786-19-6	0.02	µg/L	<0.02	0.2 µg/L	82.2	70.0	130
EP234-1: Chlorfenvinphos	470-90-6	0.02	µg/L	<0.02	0.2 µg/L	96.9	74.0	134
EP234-1: Chlorpyrifos	2921-88-2	0.02	µg/L	<0.02	0.2 µg/L	92.6	70.0	130
EP234-1: Chlorpyrifos-methyl	5598-13-0	0.2	µg/L	<0.2	2 µg/L	93.1	70.0	130
EP234-1: Coumaphos	56-72-4	0.01	µg/L	<0.01	0.1 µg/L	102	70.0	130
EP234-1: Demeton-O	298-03-3	0.02	µg/L	<0.02	0.05 µg/L	99.6	64.0	134
EP234-1: Demeton-O & Demeton-S	298-03-3/126-75-0	0.02	µg/L	<0.02	0.1 µg/L	99.0	79.0	127
EP234-1: Demeton-S	126-75-0	0.02	µg/L	<0.02	0.05 µg/L	98.4	63.0	135
EP234-1: Demeton-S-methyl	919-86-8	0.02	µg/L	<0.02	0.2 µg/L	87.0	70.0	128
EP234-1: Diazinon	333-41-5	0.01	µg/L	<0.01	0.1 µg/L	99.3	68.0	138
EP234-1: Dichlorvos	62-73-7	0.2	µg/L	<0.20	2 µg/L	104	76.0	128
EP234-1: Dimethoate	60-51-5	0.02	µg/L	<0.02	0.2 µg/L	92.6	75.0	127
EP234-1: Disulfoton	298-04-4	0.05	µg/L	<0.05	0.5 µg/L	93.4	72.0	134
EP234-1: EPN	2104-64-5	0.05	µg/L	<0.05	0.5 µg/L	112	70.0	130
EP234-1: Ethion	563-12-2	0.02	µg/L	<0.02	0.2 µg/L	93.2	70.0	130
EP234-1: Ethoprophos	13194-48-4	0.01	µg/L	<0.01	0.1 µg/L	117	78.0	128
EP234-1: Fenamiphos	22224-92-6	0.01	µg/L	<0.01	0.1 µg/L	96.6	71.0	135
EP234-1: Fenchlorphos (Ronnel)	299-84-3	10	µg/L	<10	100 µg/L	111	70.0	130
EP234-1: Fenitrothion	122-14-5	2	µg/L	<2	20 µg/L	110	64.0	136
EP234-1: Fensulfothion	115-90-2	0.01	µg/L	<0.01	0.1 µg/L	96.8	79.0	125
EP234-1: Fenthion	55-38-9	0.05	µg/L	<0.05	0.5 µg/L	122	70.0	130
EP234-1: Malathion	121-75-5	0.02	µg/L	<0.02	0.2 µg/L	81.4	70.0	130
EP234-1: Mevinphos	7786-34-7	0.02	µg/L	<0.02	0.2 µg/L	93.9	77.0	123
EP234-1: Monocrotophos	6923-22-4	0.02	µg/L	<0.02	0.2 µg/L	129	75.0	129
EP234-1: Omethoate	1113-02-6	0.01	µg/L	<0.01	0.1 µg/L	83.1	74.0	130
EP234-1: Parathion	56-38-2	0.2	µg/L	<0.2	2 µg/L	134	69.0	139
EP234-1: Parathion-methyl	298-00-0	0.5	µg/L	<0.5	20 µg/L	124	66.0	140
EP234-1: Phorate	298-02-2	0.1	µg/L	<0.1	1 µg/L	110	68.0	136
EP234-1: Pirimiphos-ethyl	23505-41-1	0.01	µg/L	<0.01	0.1 µg/L	104	70.0	130
EP234-1: Pirimiphos-methyl	29232-93-7	0.01	µg/L	<0.01	0.1 µg/L	107	71.0	137
EP234-1: Profenofos	41198-08-7	0.01	µg/L	<0.01	0.1 µg/L	90.4	70.0	130

Sub-Matrix: **WATER**

Method: Compound	CAS Number	LOR	Unit	Method Blank (MB) Report: Result	Laboratory Control Spike (LCS) Report: Spike Concentration	Spike Recovery (%): LCS	Acceptable Limits (%): Low	Acceptable Limits (%): High
EP234A: OP Pesticides (QCLot: 5167780) - continued								
EP234-1: Prothiofos	34643-46-4	0.1	µg/L	<0.1	1 µg/L	95.4	70.0	130
EP234-1: Sulfotep	3689-24-5	0.005	µg/L	<0.005	0.05 µg/L	90.6	71.0	137
EP234-1: Sulprofos	35400-43-2	0.05	µg/L	<0.05	0.5 µg/L	110	70.0	130
EP234-1: Temephos	3383-96-8	0.02	µg/L	<0.02	0.2 µg/L	72.9	70.0	130
EP234-1: Terbufos	13071-79-9	0.01	µg/L	<0.01	0.1 µg/L	95.4	70.0	130
EP234-1: Tetrachlorvinphos	22248-79-9	0.01	µg/L	<0.01	0.1 µg/L	102	74.0	128
EP234-1: Triazophos	24017-47-8	0.005	µg/L	<0.005	0.05 µg/L	104	77.0	131
EP234-1: Trichlorfon	52-68-6	0.02	µg/L	<0.02	0.2 µg/L	94.2	70.0	130
EP234-1: Trichloronate	327-98-0	0.5	µg/L	<0.5	5 µg/L	83.5	63.0	139
EP234A: OP Pesticides (QCLot: 5167781)								
EP234-1x: Acephate	30560-19-1	0.5	µg/L	<0.5	5 µg/L	87.8	70.0	130
EP234-1x: Bensulide	741-58-2	0.1	µg/L	<0.1	5 µg/L	100	70.0	130
EP234-1x: Formothion	2540-82-1	20	µg/L	<20	----	----	----	----
EP234-1x: Fosetyl Aluminium	39148-24-8	10	µg/L	<10	5 µg/L	128	70.0	130
EP234-1x: Methidathion	950-37-8	0.1	µg/L	<0.1	5 µg/L	92.1	70.0	130
EP234-1x: Naftalofos	1491-41-4	1	µg/L	<1.0	5 µg/L	78.5	70.0	130
EP234-1x: Pyrazophos	13457-18-6	0.1	µg/L	<0.1	5 µg/L	102	70.0	130
EP234-1x: Thiometon	640-15-3	0.5	µg/L	<0.5	5 µg/L	86.5	70.0	130

Matrix Spike (MS) Report

The quality control term Matrix Spike (MS) refers to an intralaboratory split sample spiked with a representative set of target analytes. The purpose of this QC parameter is to monitor potential matrix effects on analyte recoveries. Static Recovery Limits as per laboratory Data Quality Objectives (DQOs). Ideal recovery ranges stated may be waived in the event of sample matrix interference.

Sub-Matrix: **WATER**

Laboratory sample ID	Sample ID	Method: Compound	CAS Number	Matrix Spike (MS) Report: Spike Concentration	SpikeRecovery(%): MS	Acceptable Limits (%): Low	Acceptable Limits (%): High
EG020T: Total Metals by ICP-MS (QCLot: 5166292)							
ES2322820-011	Anonymous	EG020A-T: Arsenic	7440-38-2	1 mg/L	101	70.0	130
		EG020A-T: Cadmium	7440-43-9	0.25 mg/L	101	70.0	130
		EG020A-T: Chromium	7440-47-3	1 mg/L	101	70.0	130
		EG020A-T: Copper	7440-50-8	1 mg/L	99.0	70.0	130
		EG020A-T: Lead	7439-92-1	1 mg/L	104	70.0	130
		EG020A-T: Manganese	7439-96-5	1 mg/L	108	70.0	130
		EG020A-T: Nickel	7440-02-0	1 mg/L	101	70.0	130
		EG020A-T: Zinc	7440-66-6	1 mg/L	98.4	70.0	130
EG035T: Total Recoverable Mercury by FIMS (QCLot: 5164661)							

Sub-Matrix: **WATER**

				Matrix Spike (MS) Report			
				Spike	SpikeRecovery(%)	Acceptable Limits (%)	
Laboratory sample ID	*Sample ID*	*Method: Compound*	*CAS Number*	*Concentration*	*MS*	*Low*	*High*
EG035T: Total Recoverable Mercury by FIMS (QCLot: 5164661) - continued							
EP2308793-002	Anonymous	EG035T: Mercury	7439-97-6	0.01 mg/L	101	70.0	130
EG035T: Total Recoverable Mercury by FIMS (QCLot: 5164662)							
WN2308437-001	Anonymous	EG035T: Mercury	7439-97-6	0.01 mg/L	107	70.0	130
EK055G: Ammonia as N by Discrete Analyser (QCLot: 5169339)							
ES2322911-001	BADDS	EK055G: Ammonia as N	7664-41-7	1 mg/L	101	70.0	130
EK057G: Nitrite as N by Discrete Analyser (QCLot: 5164555)							
ES2322911-001	BADDS	EK057G: Nitrite as N	14797-65-0	0.5 mg/L	106	70.0	130
EK059G: Nitrite plus Nitrate as N (NOx) by Discrete Analyser (QCLot: 5169340)							
ES2322911-001	BADDS	EK059G: Nitrite + Nitrate as N	----	0.5 mg/L	106	70.0	130
EK061G: Total Kjeldahl Nitrogen By Discrete Analyser (QCLot: 5169336)							
ES2322911-002	BADMS	EK061G: Total Kjeldahl Nitrogen as N	----	5 mg/L	91.1	70.0	130
EK067G: Total Phosphorus as P by Discrete Analyser (QCLot: 5169335)							
ES2322876-002	Anonymous	EK067G: Total Phosphorus as P	----	1 mg/L	95.0	70.0	130
EK071G: Reactive Phosphorus as P by discrete analyser (QCLot: 5164554)							
ES2322911-001	BADDS	EK071G: Reactive Phosphorus as P	14265-44-2	0.5 mg/L	97.4	70.0	130
EP074E: Halogenated Aliphatic Compounds (QCLot: 5166328)							
ES2322317-002	Anonymous	EP074: 1.1-Dichloroethene	75-35-4	25 µg/L	71.3	70.0	130
		EP074: Trichloroethene	79-01-6	25 µg/L	91.1	70.0	130
EP074F: Halogenated Aromatic Compounds (QCLot: 5166328)							
ES2322317-002	Anonymous	EP074: Chlorobenzene	108-90-7	25 µg/L	98.7	70.0	130
EP080: BTEXN (QCLot: 5166329)							
ES2322317-002	Anonymous	EP080: Benzene	71-43-2	25 µg/L	92.1	70.0	130
		EP080: Toluene	108-88-3	25 µg/L	102	70.0	130
		EP080: Ethylbenzene	100-41-4	25 µg/L	100	70.0	130
		EP080: meta- & para-Xylene	108-38-3 106-42-3	25 µg/L	99.7	70.0	130
		EP080: ortho-Xylene	95-47-6	25 µg/L	104	70.0	130
		EP080: Naphthalene	91-20-3	25 µg/L	89.0	70.0	130
EP234A: OP Pesticides (QCLot: 5167780)							
ES2322615-001	Anonymous	EP234-1: Azinphos-methyl	86-50-0	0.2 µg/L	# 66.8	70.0	130
		EP234-1: Azinphos-ethyl	2642-71-9	0.2 µg/L	# 23.8	70.0	130
		EP234-1: Bromophos-ethyl	4824-78-6	1 µg/L	# 36.4	70.0	130
		EP234-1: Carbofenothion	786-19-6	0.2 µg/L	# 1.4	70.0	130
		EP234-1: Chlorfenvinphos	470-90-6	0.2 µg/L	102	70.0	130
		EP234-1: Chlorpyrifos	2921-88-2	0.2 µg/L	118	70.0	130

Sub-Matrix: **WATER**

				Matrix Spike (MS) Report			
				Spike	SpikeRecovery(%)	Acceptable Limits (%)	
Laboratory sample ID	Sample ID	Method: Compound	CAS Number	Concentration	MS	Low	High
EP234A: OP Pesticides (QCLot: 5167780) - continued							
ES2322615-001	Anonymous	EP234-1: Chlorpyrifos-methyl	5598-13-0	2 µg/L	# 56.0	58.0	136
		EP234-1: Coumaphos	56-72-4	0.1 µg/L	72.1	70.0	130
		EP234-1: Demeton-O	298-03-3	0.05 µg/L	# 0.6	70.0	130
		EP234-1: Demeton-O & Demeton-S	298-03-3/126-75-0	0.1 µg/L	# 0.0	69.0	129
		EP234-1: Demeton-S	126-75-0	0.05 µg/L	# Not Determined	70.0	130
		EP234-1: Demeton-S-methyl	919-86-8	0.2 µg/L	# Not Determined	70.0	130
		EP234-1: Diazinon	333-41-5	0.1 µg/L	# 49.1	70.0	130
		EP234-1: Dichlorvos	62-73-7	2 µg/L	107	70.0	130
		EP234-1: Dimethoate	60-51-5	0.2 µg/L	# 33.3	69.0	131
		EP234-1: Disulfoton	298-04-4	0.5 µg/L	# 0.08	70.0	130
		EP234-1: EPN	2104-64-5	0.5 µg/L	# 0.7	70.0	130
		EP234-1: Ethion	563-12-2	0.2 µg/L	# 1.1	70.0	130
		EP234-1: Ethoprophos	13194-48-4	0.1 µg/L	75.3	70.0	132
		EP234-1: Fenamiphos	22224-92-6	0.1 µg/L	# Not Determined	70.0	130
		EP234-1: Fenchlorphos (Ronnel)	299-84-3	100 µg/L	# 68.9	71.0	133
		EP234-1: Fenitrothion	122-14-5	20 µg/L	# 50.2	64.0	136
		EP234-1: Fensulfothion	115-90-2	0.1 µg/L	# 50.2	83.0	123
		EP234-1: Fenthion	55-38-9	0.5 µg/L	# 2.2	70.0	130
		EP234-1: Malathion	121-75-5	0.2 µg/L	# 69.2	70.0	130
		EP234-1: Mevinphos	7786-34-7	0.2 µg/L	107	69.0	125
		EP234-1: Monocrotophos	6923-22-4	0.2 µg/L	# 143	70.0	128
		EP234-1: Omethoate	1113-02-6	0.1 µg/L	110	70.0	130
		EP234-1: Parathion	56-38-2	2 µg/L	# 35.4	70.0	130
		EP234-1: Parathion-methyl	298-00-0	20 µg/L	# 51.0	70.0	140
		EP234-1: Phorate	298-02-2	1 µg/L	# 0.0	70.0	130
		EP234-1: Pirimiphos-ethyl	23505-41-1	0.1 µg/L	# 10.1	70.0	130
		EP234-1: Pirimiphos-methyl	29232-93-7	0.1 µg/L	# 27.3	70.0	130
		EP234-1: Profenofos	41198-08-7	0.1 µg/L	90.7	70.0	130
		EP234-1: Prothiofos	34643-46-4	1 µg/L	# 4.7	70.0	130
		EP234-1: Sulfotep	3689-24-5	0.05 µg/L	# 54.0	63.0	135
		EP234-1: Sulprofos	35400-43-2	0.5 µg/L	# 0.5	70.0	130
		EP234-1: Temephos	3383-96-8	0.2 µg/L	# 0.2	70.0	130
		EP234-1: Terbufos	13071-79-9	0.1 µg/L	# 0.0	70.0	130
		EP234-1: Tetrachlorvinphos	22248-79-9	0.1 µg/L	119	77.0	125
		EP234-1: Triazophos	24017-47-8	0.05 µg/L	102	74.0	132
		EP234-1: Trichlorfon	52-68-6	0.2 µg/L	# 47.0	70.0	130

Sub-Matrix: **WATER**

				Matrix Spike (MS) Report			
				Spike	SpikeRecovery(%)	Acceptable Limits (%)	
Laboratory sample ID	*Sample ID*	*Method: Compound*	*CAS Number*	*Concentration*	*MS*	*Low*	*High*
EP234A: OP Pesticides (QCLot: 5167780) - continued							
ES2322615-001	Anonymous	EP234-1: Trichloronate	327-98-0	5 µg/L	# 0.06	63.0	139
EP234A: OP Pesticides (QCLot: 5167781)							
ES2322615-001	Anonymous	EP234-1x: Acephate	30560-19-1	5 µg/L	# 0.1	70.0	130
		EP234-1x: Bensulide	741-58-2	5 µg/L	# 0.0	70.0	130
		EP234-1x: Fosetyl Aluminium	39148-24-8	5 µg/L	# 208	70.0	130
		EP234-1x: Methidathion	950-37-8	5 µg/L	# 51.1	70.0	130
		EP234-1x: Naftalofos	1491-41-4	5 µg/L	93.5	70.0	130
		EP234-1x: Pyrazophos	13457-18-6	5 µg/L	94.9	70.0	130
		EP234-1x: Thiometon	640-15-3	5 µg/L	# Not Determined	70.0	130

QA/QC Compliance Assessment to assist with Quality Review

Work Order	: **ES2322911**	Page	: 1 of 10
Client	: **GHD PTY LTD**	Laboratory	: Environmental Division Sydney
Contact	: MR HENRY LUO	Telephone	: +61-2-8784 8555
Project	: 12554717	Date Samples Received	: 07-Jul-2023
Site	: ----	Issue Date	: 14-Jul-2023
Sampler	: ANDREW DUVAL, EMILY SMITH	No. of samples received	: 3
Order number	: ----	No. of samples analysed	: 3

This report is automatically generated by the ALS LIMS through interpretation of the ALS Quality Control Report and several Quality Assurance parameters measured by ALS. This automated reporting highlights any non-conformances, facilitates faster and more accurate data validation and is designed to assist internal expert and external Auditor review. Many components of this report contribute to the overall DQO assessment and reporting for guideline compliance.

Brief method summaries and references are also provided to assist in traceability.

Summary of Outliers

Outliers : Quality Control Samples

This report highlights outliers flagged in the Quality Control (QC) Report.

- **NO Method Blank value outliers occur.**
- **NO Duplicate outliers occur.**
- **NO Laboratory Control outliers occur.**
- **Matrix Spike outliers exist - please see following pages for full details.**
- **For all regular sample matrices, NO surrogate recovery outliers occur.**

Outliers : Analysis Holding Time Compliance

- **Analysis Holding Time Outliers exist - please see following pages for full details.**

Outliers : Frequency of Quality Control Samples

- **Quality Control Sample Frequency Outliers exist - please see following pages for full details.**

Outliers : Quality Control Samples

Duplicates, Method Blanks, Laboratory Control Samples and Matrix Spikes

Matrix: **WATER**

Compound Group Name	Laboratory Sample ID	Client Sample ID	Analyte	CAS Number	Data	Limits	Comment
Matrix Spike (MS) Recoveries							
EP234A: OP Pesticides	ES2322615--001	Anonymous	**Azinphos-methyl**	86-50-0	66.8 %	70.0-130%	**Recovery less than lower data quality objective**
EP234A: OP Pesticides	ES2322615--001	Anonymous	**Azinphos-ethyl**	2642-71-9	23.8 %	70.0-130%	**Recovery less than lower data quality objective**
EP234A: OP Pesticides	ES2322615--001	Anonymous	**Bromophos-ethyl**	4824-78-6	36.4 %	70.0-130%	**Recovery less than lower data quality objective**
EP234A: OP Pesticides	ES2322615--001	Anonymous	**Carbofenothion**	786-19-6	1.4 %	70.0-130%	**Recovery less than lower data quality objective**
EP234A: OP Pesticides	ES2322615--001	Anonymous	**Chlorpyrifos-methyl**	5598-13-0	56.0 %	58.0-136%	**Recovery less than lower data quality objective**
EP234A: OP Pesticides	ES2322615--001	Anonymous	**Demeton-O**	298-03-3	0.6 %	70.0-130%	**Recovery less than lower data quality objective**
EP234A: OP Pesticides	ES2322615--001	Anonymous	**Demeton-O & Demeton-S**	298-03-3/126-75-0	0.0 %	69.0-129%	**Recovery less than lower data quality objective**
EP234A: OP Pesticides	ES2322615--001	Anonymous	**Diazinon**	333-41-5	49.1 %	70.0-130%	**Recovery less than lower data quality objective**
EP234A: OP Pesticides	ES2322615--001	Anonymous	**Dimethoate**	60-51-5	33.3 %	69.0-131%	**Recovery less than lower data quality objective**
EP234A: OP Pesticides	ES2322615--001	Anonymous	**Disulfoton**	298-04-4	0.08 %	70.0-130%	**Recovery less than lower data quality objective**
EP234A: OP Pesticides	ES2322615--001	Anonymous	**EPN**	2104-64-5	0.7 %	70.0-130%	**Recovery less than lower data quality objective**
EP234A: OP Pesticides	ES2322615--001	Anonymous	**Ethion**	563-12-2	1.1 %	70.0-130%	**Recovery less than lower data quality objective**
EP234A: OP Pesticides	ES2322615--001	Anonymous	**Fenchlorphos (Ronnel)**	299-84-3	68.9 %	71.0-133%	**Recovery less than lower data quality objective**
EP234A: OP Pesticides	ES2322615--001	Anonymous	**Fenitrothion**	122-14-5	50.2 %	64.0-136%	**Recovery less than lower data quality objective**
EP234A: OP Pesticides	ES2322615--001	Anonymous	**Fensulfothion**	115-90-2	50.2 %	83.0-123%	**Recovery less than lower data quality objective**
EP234A: OP Pesticides	ES2322615--001	Anonymous	**Fenthion**	55-38-9	2.2 %	70.0-130%	**Recovery less than lower data quality objective**
EP234A: OP Pesticides	ES2322615--001	Anonymous	**Malathion**	121-75-5	69.2 %	70.0-130%	**Recovery less than lower data quality objective**
EP234A: OP Pesticides	ES2322615--001	Anonymous	**Monocrotophos**	6923-22-4	143 %	70.0-128%	**Recovery greater than upper data quality objective**
EP234A: OP Pesticides	ES2322615--001	Anonymous	**Parathion**	56-38-2	35.4 %	70.0-130%	**Recovery less than lower data quality objective**
EP234A: OP Pesticides	ES2322615--001	Anonymous	**Parathion-methyl**	298-00-0	51.0 %	70.0-140%	**Recovery less than lower data quality objective**

Matrix: **WATER**

Compound Group Name	Laboratory Sample ID	Client Sample ID	Analyte	CAS Number	Data	Limits	Comment
Matrix Spike (MS) Recoveries - Continued							
EP234A: OP Pesticides	ES2322615--001	Anonymous	**Phorate**	298-02-2	0.0 %	70.0-130%	**Recovery less than lower data quality objective**
EP234A: OP Pesticides	ES2322615--001	Anonymous	**Pirimiphos-ethyl**	23505-41-1	10.1 %	70.0-130%	**Recovery less than lower data quality objective**
EP234A: OP Pesticides	ES2322615--001	Anonymous	**Pirimiphos-methyl**	29232-93-7	27.3 %	70.0-130%	**Recovery less than lower data quality objective**
EP234A: OP Pesticides	ES2322615--001	Anonymous	**Prothiofos**	34643-46-4	4.7 %	70.0-130%	**Recovery less than lower data quality objective**
EP234A: OP Pesticides	ES2322615--001	Anonymous	**Sulfotep**	3689-24-5	54.0 %	63.0-135%	**Recovery less than lower data quality objective**
EP234A: OP Pesticides	ES2322615--001	Anonymous	**Sulprofos**	35400-43-2	0.5 %	70.0-130%	**Recovery less than lower data quality objective**
EP234A: OP Pesticides	ES2322615--001	Anonymous	**Temephos**	3383-96-8	0.2 %	70.0-130%	**Recovery less than lower data quality objective**
EP234A: OP Pesticides	ES2322615--001	Anonymous	**Terbufos**	13071-79-9	0.0 %	70.0-130%	**Recovery less than lower data quality objective**
EP234A: OP Pesticides	ES2322615--001	Anonymous	**Trichlorfon**	52-68-6	47.0 %	70.0-130%	**Recovery less than lower data quality objective**
EP234A: OP Pesticides	ES2322615--001	Anonymous	**Trichloronate**	327-98-0	0.06 %	63.0-139%	**Recovery less than lower data quality objective**
EP234A: OP Pesticides	ES2322615--001	Anonymous	**Acephate**	30560-19-1	0.1 %	70.0-130%	**Recovery less than lower data quality objective**
EP234A: OP Pesticides	ES2322615--001	Anonymous	**Bensulide**	741-58-2	0.0 %	70.0-130%	**Recovery less than lower data quality objective**
EP234A: OP Pesticides	ES2322615--001	Anonymous	**Fosetyl Aluminium**	39148-24-8	208 %	70.0-130%	**Recovery greater than upper data quality objective**
EP234A: OP Pesticides	ES2322615--001	Anonymous	**Methidathion**	950-37-8	51.1 %	70.0-130%	**Recovery less than lower data quality objective**

Outliers : Analysis Holding Time Compliance

Matrix: **WATER**

Method / **Container** / Client Sample ID(s)	*Extraction / Preparation*			*Analysis*		
	Date extracted	*Due for extraction*	***Days overdue***	*Date analysed*	*Due for analysis*	***Days overdue***
EK057G: Nitrite as N by Discrete Analyser						
Clear Plastic Bottle - Natural						
BADDS, BADMS, BADUS	----	----	----	12-Jul-2023	09-Jul-2023	**3**
EK071G: Reactive Phosphorus as P by discrete analyser						
Clear Plastic Bottle - Natural						
BADDS, BADMS, BADUS	----	----	----	12-Jul-2023	09-Jul-2023	**3**

Matrix: **WATER**

Method / Container / Client Sample ID(s)		Extraction / Preparation: Date extracted	Extraction / Preparation: Due for extraction	Extraction / Preparation: Days overdue	Analysis: Date analysed	Analysis: Due for analysis	Analysis: Days overdue
EP008: Chlorophyll a & Pheophytin a							
Opaque Plastic Bottle - Unpreserved							
BADDS, BADUS	BADMS,	----	----	----	10-Jul-2023	09-Jul-2023	**1**

Outliers : Frequency of Quality Control Samples

Matrix: **WATER**

Quality Control Sample Type / Method	Count: QC	Count: Regular	Rate (%): Actual	Rate (%): Expected	Quality Control Specification
	0				
Laboratory Duplicates (DUP)					
PAH/Phenols (GC/MS - SIM)	0	6	0.00	10.00	NEPM 2013 B3 & ALS QC Standard
Laboratory Control Samples (LCS)					
Oil and Grease	3	40	7.50	8.00	NEPM 2013 B3 & ALS QC Standard
Matrix Spikes (MS)					
PAH/Phenols (GC/MS - SIM)	0	6	0.00	5.00	NEPM 2013 B3 & ALS QC Standard

Analysis Holding Time Compliance

If samples are identified below as having been analysed or extracted outside of recommended holding times, this should be taken into consideration when interpreting results.

This report summarizes extraction / preparation and analysis times and compares each with ALS recommended holding times (referencing USEPA SW 846, APHA, AS and NEPM) based on the sample container provided. Dates reported represent first date of extraction or analysis and preclude subsequent dilutions and reruns. A listing of breaches (if any) is provided herein.

Holding time for leachate methods (e.g. TCLP) vary according to the analytes reported. Assessment compares the leach date with the shortest analyte holding time for the equivalent soil method. These are: organics 14 days, mercury 28 days & other metals 180 days. A recorded breach does not guarantee a breach for all non-volatile parameters.

Holding times for ***VOC in soils*** vary according to analytes of interest. Vinyl Chloride and Styrene holding time is 7 days; others 14 days. A recorded breach does not guarantee a breach for all VOC analytes and should be verified in case the reported breach is a false positive or Vinyl Chloride and Styrene are not key analytes of interest/concern.

Matrix: **WATER**

Evaluation: × = Holding time breach ; ✓ = Within holding time.

Method / Container / Client Sample ID(s)		Sample Date	Extraction / Preparation: Date extracted	Extraction / Preparation: Due for extraction	Extraction / Preparation: Evaluation	Analysis: Date analysed	Analysis: Due for analysis	Analysis: Evaluation
EA015: Total Dissolved Solids dried at 180 ± 5 °C								
Clear Plastic Bottle - Natural (EA015H)								
BADDS, BADUS	BADMS,	**07-Jul-2023**	**----**	----	----	**13-Jul-2023**	14-Jul-2023	✓
EA025: Total Suspended Solids dried at 104 ± 2°C								
Clear Plastic Bottle - Natural (EA025H)								
BADDS, BADUS	BADMS,	**07-Jul-2023**	**----**	----	----	**13-Jul-2023**	14-Jul-2023	✓
EG020T: Total Metals by ICP-MS								
Clear Plastic Bottle - Nitric Acid; Unfiltered (EG020A-T)								
BADDS, BADUS	BADMS,	**07-Jul-2023**	**11-Jul-2023**	03-Jan-2024	✓	**11-Jul-2023**	03-Jan-2024	✓

Matrix: **WATER**

Evaluation: × = Holding time breach ; ✓ = Within holding time.

Method / Container / Client Sample ID(s)	Sample Date	Extraction / Preparation			Analysis		
		Date extracted	Due for extraction	Evaluation	Date analysed	Due for analysis	Evaluation
EG035T: Total Recoverable Mercury by FIMS							
Clear Plastic Bottle - Nitric Acid; Unfiltered (EG035T)							
BADDS, BADMS, BADUS	**07-Jul-2023**	**----**	----	----	**12-Jul-2023**	04-Aug-2023	✓
EK055G: Ammonia as N by Discrete Analyser							
Clear Plastic Bottle - Sulfuric Acid (EK055G)							
BADDS, BADMS, BADUS	**07-Jul-2023**	**----**	----	----	**13-Jul-2023**	04-Aug-2023	✓
EK057G: Nitrite as N by Discrete Analyser							
Clear Plastic Bottle - Natural (EK057G)							
BADDS, BADMS, BADUS	**07-Jul-2023**	**----**	----	----	**12-Jul-2023**	09-Jul-2023	×
EK059G: Nitrite plus Nitrate as N (NOx) by Discrete Analyser							
Clear Plastic Bottle - Sulfuric Acid (EK059G)							
BADDS, BADMS, BADUS	**07-Jul-2023**	**----**	----	----	**13-Jul-2023**	04-Aug-2023	✓
EK061G: Total Kjeldahl Nitrogen By Discrete Analyser							
Clear Plastic Bottle - Sulfuric Acid (EK061G)							
BADDS, BADMS, BADUS	**07-Jul-2023**	**12-Jul-2023**	04-Aug-2023	✓	**13-Jul-2023**	04-Aug-2023	✓
EK067G: Total Phosphorus as P by Discrete Analyser							
Clear Plastic Bottle - Sulfuric Acid (EK067G)							
BADDS, BADMS, BADUS	**07-Jul-2023**	**12-Jul-2023**	04-Aug-2023	✓	**13-Jul-2023**	04-Aug-2023	✓
EK071G: Reactive Phosphorus as P by discrete analyser							
Clear Plastic Bottle - Natural (EK071G)							
BADDS, BADMS, BADUS	**07-Jul-2023**	**----**	----	----	**12-Jul-2023**	09-Jul-2023	×
EP008: Chlorophyll a & Pheophytin a							
Opaque Plastic Bottle - Unpreserved (EP008)							
BADDS, BADMS, BADUS	**07-Jul-2023**	**----**	----	----	**10-Jul-2023**	09-Jul-2023	×
EP020: Oil and Grease (O&G)							
Amber Jar - Sulfuric Acid or Sodium Bisulfate (EP020)							
BADDS, BADMS, BADUS	**07-Jul-2023**	**----**	----	----	**13-Jul-2023**	04-Aug-2023	✓
EP074D: Fumigants							
Amber VOC Vial - Sulfuric Acid (EP074)							
BADDS, BADMS	**07-Jul-2023**	**12-Jul-2023**	21-Jul-2023	✓	**12-Jul-2023**	21-Jul-2023	✓
Amber VOC Vial - Sulfuric Acid (EP074)							
BADUS	**07-Jul-2023**	**12-Jul-2023**	21-Jul-2023	✓	**13-Jul-2023**	21-Jul-2023	✓

Matrix: **WATER**

Evaluation: × = Holding time breach ; ✓ = Within holding time.

Method / Container / Client Sample ID(s)	Sample Date	Extraction / Preparation			Analysis		
		Date extracted	Due for extraction	Evaluation	Date analysed	Due for analysis	Evaluation
EP074E: Halogenated Aliphatic Compounds							
Amber VOC Vial - Sulfuric Acid (EP074)							
BADDS, BADMS	**07-Jul-2023**	**12-Jul-2023**	21-Jul-2023	✓	**12-Jul-2023**	21-Jul-2023	✓
Amber VOC Vial - Sulfuric Acid (EP074)							
BADUS	**07-Jul-2023**	**12-Jul-2023**	21-Jul-2023	✓	**13-Jul-2023**	21-Jul-2023	✓
EP074F: Halogenated Aromatic Compounds							
Amber VOC Vial - Sulfuric Acid (EP074)							
BADDS, BADMS	**07-Jul-2023**	**12-Jul-2023**	21-Jul-2023	✓	**12-Jul-2023**	21-Jul-2023	✓
Amber VOC Vial - Sulfuric Acid (EP074)							
BADUS	**07-Jul-2023**	**12-Jul-2023**	21-Jul-2023	✓	**13-Jul-2023**	21-Jul-2023	✓
EP074G: Trihalomethanes							
Amber VOC Vial - Sulfuric Acid (EP074)							
BADDS, BADMS	**07-Jul-2023**	**12-Jul-2023**	21-Jul-2023	✓	**12-Jul-2023**	21-Jul-2023	✓
Amber VOC Vial - Sulfuric Acid (EP074)							
BADUS	**07-Jul-2023**	**12-Jul-2023**	21-Jul-2023	✓	**13-Jul-2023**	21-Jul-2023	✓
EP075(SIM)A: Phenolic Compounds							
Amber Glass Bottle - Unpreserved (EP075(SIM))							
BADDS, BADMS, BADUS	**07-Jul-2023**	**11-Jul-2023**	14-Jul-2023	✓	**13-Jul-2023**	20-Aug-2023	✓
EP075(SIM)B: Polynuclear Aromatic Hydrocarbons							
Amber Glass Bottle - Unpreserved (EP075(SIM))							
BADDS, BADMS, BADUS	**07-Jul-2023**	**11-Jul-2023**	14-Jul-2023	✓	**13-Jul-2023**	20-Aug-2023	✓
EP080: BTEXN							
Amber VOC Vial - Sulfuric Acid (EP080)							
BADDS, BADMS	**07-Jul-2023**	**12-Jul-2023**	21-Jul-2023	✓	**12-Jul-2023**	21-Jul-2023	✓
Amber VOC Vial - Sulfuric Acid (EP080)							
BADUS	**07-Jul-2023**	**12-Jul-2023**	21-Jul-2023	✓	**13-Jul-2023**	21-Jul-2023	✓
EP234A: OP Pesticides							
Amber Glass Bottle - Unpreserved (EP234-1)							
BADDS, BADMS, BADUS	**07-Jul-2023**	**----**	----	----	**12-Jul-2023**	14-Jul-2023	✓

Quality Control Parameter Frequency Compliance

The following report summarises the frequency of laboratory QC samples analysed within the analytical lot(s) in which the submitted sample(s) was(were) processed. Actual rate should be greater than or equal to the expected rate. A listing of breaches is provided in the Summary of Outliers.

Matrix: **WATER**

Evaluation: × = Quality Control frequency not within specification ; ✓ = Quality Control frequency within specification.

Quality Control Sample Type		Count		Rate (%)			Quality Control Specification
Analytical Methods	*Method*	*QC*	*Regular*	***Actual***	***Expected***	*Evaluation*	
Laboratory Duplicates (DUP)							
Ammonia as N by Discrete analyser	EK055G	2	8	**25.00**	**10.00**	✓	NEPM 2013 B3 & ALS QC Standard
Nitrite and Nitrate as N (NOx) by Discrete Analyser	EK059G	2	20	**10.00**	**10.00**	✓	NEPM 2013 B3 & ALS QC Standard
Nitrite as N by Discrete Analyser	EK057G	1	3	**33.33**	**10.00**	✓	NEPM 2013 B3 & ALS QC Standard
PAH/Phenols (GC/MS - SIM)	EP075(SIM)	0	6	**0.00**	**10.00**	×	NEPM 2013 B3 & ALS QC Standard
Pesticides by LCMSMS (Positive Ion Mode)	EP234-1	1	9	**11.11**	**10.00**	✓	NEPM 2013 B3 & ALS QC Standard
Pesticides by LCMSMS (Positive Ion Mode) - extended	EP234-1x	1	5	**20.00**	**10.00**	✓	NEPM 2013 B3 & ALS QC Standard
Reactive Phosphorus as P-By Discrete Analyser	EK071G	1	3	**33.33**	**10.00**	✓	NEPM 2013 B3 & ALS QC Standard
Suspended Solids (High Level)	EA025H	4	40	**10.00**	**10.00**	✓	NEPM 2013 B3 & ALS QC Standard
Total Dissolved Solids (High Level)	EA015H	4	40	**10.00**	**10.00**	✓	NEPM 2013 B3 & ALS QC Standard
Total Kjeldahl Nitrogen as N By Discrete Analyser	EK061G	2	20	**10.00**	**10.00**	✓	NEPM 2013 B3 & ALS QC Standard
Total Mercury by FIMS	EG035T	3	29	**10.34**	**10.00**	✓	NEPM 2013 B3 & ALS QC Standard
Total Metals by ICP-MS - Suite A	EG020A-T	2	20	**10.00**	**10.00**	✓	NEPM 2013 B3 & ALS QC Standard
Total Phosphorus as P By Discrete Analyser	EK067G	2	20	**10.00**	**10.00**	✓	NEPM 2013 B3 & ALS QC Standard
TRH Volatiles/BTEX	EP080	1	8	**12.50**	**10.00**	✓	NEPM 2013 B3 & ALS QC Standard
Volatile Organic Compounds	EP074	1	6	**16.67**	**10.00**	✓	NEPM 2013 B3 & ALS QC Standard
Laboratory Control Samples (LCS)							
Ammonia as N by Discrete analyser	EK055G	1	8	**12.50**	**5.00**	✓	NEPM 2013 B3 & ALS QC Standard
Chlorophyll a and Pheophytin a	EP008	1	16	**6.25**	**5.00**	✓	NEPM 2013 B3 & ALS QC Standard
Nitrite and Nitrate as N (NOx) by Discrete Analyser	EK059G	1	20	**5.00**	**5.00**	✓	NEPM 2013 B3 & ALS QC Standard
Nitrite as N by Discrete Analyser	EK057G	1	3	**33.33**	**5.00**	✓	NEPM 2013 B3 & ALS QC Standard
Oil and Grease	EP020	3	40	**7.50**	**8.00**	×	NEPM 2013 B3 & ALS QC Standard
PAH/Phenols (GC/MS - SIM)	EP075(SIM)	1	6	**16.67**	**5.00**	✓	NEPM 2013 B3 & ALS QC Standard
Pesticides by LCMSMS (Positive Ion Mode)	EP234-1	1	9	**11.11**	**5.00**	✓	NEPM 2013 B3 & ALS QC Standard
Pesticides by LCMSMS (Positive Ion Mode) - extended	EP234-1x	1	5	**20.00**	**5.00**	✓	NEPM 2013 B3 & ALS QC Standard
Reactive Phosphorus as P-By Discrete Analyser	EK071G	1	3	**33.33**	**5.00**	✓	NEPM 2013 B3 & ALS QC Standard
Suspended Solids (High Level)	EA025H	5	40	**12.50**	**12.50**	✓	NEPM 2013 B3 & ALS QC Standard
Total Dissolved Solids (High Level)	EA015H	5	40	**12.50**	**12.50**	✓	NEPM 2013 B3 & ALS QC Standard
Total Kjeldahl Nitrogen as N By Discrete Analyser	EK061G	3	20	**15.00**	**15.00**	✓	NEPM 2013 B3 & ALS QC Standard
Total Mercury by FIMS	EG035T	2	29	**6.90**	**5.00**	✓	NEPM 2013 B3 & ALS QC Standard
Total Metals by ICP-MS - Suite A	EG020A-T	1	20	**5.00**	**5.00**	✓	NEPM 2013 B3 & ALS QC Standard
Total Phosphorus as P By Discrete Analyser	EK067G	3	20	**15.00**	**15.00**	✓	NEPM 2013 B3 & ALS QC Standard
TRH Volatiles/BTEX	EP080	1	8	**12.50**	**5.00**	✓	NEPM 2013 B3 & ALS QC Standard
Volatile Organic Compounds	EP074	1	6	**16.67**	**5.00**	✓	NEPM 2013 B3 & ALS QC Standard
Method Blanks (MB)							
Ammonia as N by Discrete analyser	EK055G	1	8	**12.50**	**5.00**	✓	NEPM 2013 B3 & ALS QC Standard
Chlorophyll a and Pheophytin a	EP008	1	16	**6.25**	**5.00**	✓	NEPM 2013 B3 & ALS QC Standard

Matrix: **WATER**

Evaluation: × = Quality Control frequency not within specification ; ✓ = Quality Control frequency within specification.

Quality Control Sample Type		Count		Rate (%)			Quality Control Specification
Analytical Methods	*Method*	*QC*	*Regular*	***Actual***	***Expected***	*Evaluation*	
Method Blanks (MB) - Continued							
Nitrite and Nitrate as N (NOx) by Discrete Analyser	EK059G	1	20	**5.00**	**5.00**	✓	NEPM 2013 B3 & ALS QC Standard
Nitrite as N by Discrete Analyser	EK057G	1	3	**33.33**	**5.00**	✓	NEPM 2013 B3 & ALS QC Standard
Oil and Grease	EP020	3	40	**7.50**	**6.00**	✓	NEPM 2013 B3 & ALS QC Standard
PAH/Phenols (GC/MS - SIM)	EP075(SIM)	1	6	**16.67**	**5.00**	✓	NEPM 2013 B3 & ALS QC Standard
Pesticides by LCMSMS (Positive Ion Mode)	EP234-1	1	9	**11.11**	**5.00**	✓	NEPM 2013 B3 & ALS QC Standard
Pesticides by LCMSMS (Positive Ion Mode) - extended	EP234-1x	1	5	**20.00**	**5.00**	✓	NEPM 2013 B3 & ALS QC Standard
Reactive Phosphorus as P-By Discrete Analyser	EK071G	1	3	**33.33**	**5.00**	✓	NEPM 2013 B3 & ALS QC Standard
Suspended Solids (High Level)	EA025H	2	40	**5.00**	**5.00**	✓	NEPM 2013 B3 & ALS QC Standard
Total Dissolved Solids (High Level)	EA015H	2	40	**5.00**	**5.00**	✓	NEPM 2013 B3 & ALS QC Standard
Total Kjeldahl Nitrogen as N By Discrete Analyser	EK061G	1	20	**5.00**	**5.00**	✓	NEPM 2013 B3 & ALS QC Standard
Total Mercury by FIMS	EG035T	2	29	**6.90**	**5.00**	✓	NEPM 2013 B3 & ALS QC Standard
Total Metals by ICP-MS - Suite A	EG020A-T	1	20	**5.00**	**5.00**	✓	NEPM 2013 B3 & ALS QC Standard
Total Phosphorus as P By Discrete Analyser	EK067G	1	20	**5.00**	**5.00**	✓	NEPM 2013 B3 & ALS QC Standard
TRH Volatiles/BTEX	EP080	1	8	**12.50**	**5.00**	✓	NEPM 2013 B3 & ALS QC Standard
Volatile Organic Compounds	EP074	1	6	**16.67**	**5.00**	✓	NEPM 2013 B3 & ALS QC Standard
Matrix Spikes (MS)							
Ammonia as N by Discrete analyser	EK055G	1	8	**12.50**	**5.00**	✓	NEPM 2013 B3 & ALS QC Standard
Nitrite and Nitrate as N (NOx) by Discrete Analyser	EK059G	1	20	**5.00**	**5.00**	✓	NEPM 2013 B3 & ALS QC Standard
Nitrite as N by Discrete Analyser	EK057G	1	3	**33.33**	**5.00**	✓	NEPM 2013 B3 & ALS QC Standard
PAH/Phenols (GC/MS - SIM)	EP075(SIM)	0	6	**0.00**	**5.00**	×	NEPM 2013 B3 & ALS QC Standard
Pesticides by LCMSMS (Positive Ion Mode)	EP234-1	1	9	**11.11**	**5.00**	✓	NEPM 2013 B3 & ALS QC Standard
Pesticides by LCMSMS (Positive Ion Mode) - extended	EP234-1x	1	5	**20.00**	**5.00**	✓	NEPM 2013 B3 & ALS QC Standard
Reactive Phosphorus as P-By Discrete Analyser	EK071G	1	3	**33.33**	**5.00**	✓	NEPM 2013 B3 & ALS QC Standard
Total Kjeldahl Nitrogen as N By Discrete Analyser	EK061G	1	20	**5.00**	**5.00**	✓	NEPM 2013 B3 & ALS QC Standard
Total Mercury by FIMS	EG035T	2	29	**6.90**	**5.00**	✓	NEPM 2013 B3 & ALS QC Standard
Total Metals by ICP-MS - Suite A	EG020A-T	1	20	**5.00**	**5.00**	✓	NEPM 2013 B3 & ALS QC Standard
Total Phosphorus as P By Discrete Analyser	EK067G	1	20	**5.00**	**5.00**	✓	NEPM 2013 B3 & ALS QC Standard
TRH Volatiles/BTEX	EP080	1	8	**12.50**	**5.00**	✓	NEPM 2013 B3 & ALS QC Standard
Volatile Organic Compounds	EP074	1	6	**16.67**	**5.00**	✓	NEPM 2013 B3 & ALS QC Standard

Brief Method Summaries

The analytical procedures used by the Environmental Division have been developed from established internationally recognized procedures such as those published by the US EPA, APHA, AS and NEPM. In house developed procedures are employed in the absence of documented standards or by client request. The following report provides brief descriptions of the analytical procedures employed for results reported in the Certificate of Analysis. Sources from which ALS methods have been developed are provided within the Method Descriptions.

Analytical Methods	Method	Matrix	Method Descriptions
Total Dissolved Solids (High Level)	EA015H	WATER	In house: Referenced to APHA 2540C. A gravimetric procedure that determines the amount of `filterable` residue in an aqueous sample. A well-mixed sample is filtered through a glass fibre filter (1.2um). The filtrate is evaporated to dryness and dried to constant weight at 180+/-5C. This method is compliant with NEPM Schedule B(3)
Suspended Solids (High Level)	EA025H	WATER	In house: Referenced to APHA 2540D. A gravimetric procedure employed to determine the amount of `non-filterable` residue in a aqueous sample. The prescribed GFC (1.2um) filter is rinsed with deionised water, oven dried and weighed prior to analysis. A well-mixed sample is filtered through a glass fibre filter (1.2um). The residue on the filter paper is dried at 104+/-2C . This method is compliant with NEPM Schedule B(3)
Total Metals by ICP-MS - Suite A	EG020A-T	WATER	In house: Referenced to APHA 3125; USEPA SW846 - 6020, ALS QWI-EN/EG020. The ICPMS technique utilizes a highly efficient argon plasma to ionize selected elements. Ions are then passed into a high vacuum mass spectrometer, which separates the analytes based on their distinct mass to charge ratios prior to their measurement by a discrete dynode ion detector.
Total Mercury by FIMS	EG035T	WATER	In house: Referenced to APHA 3112 Hg - B (Flow-injection (SnCl2)(Cold Vapour generation) AAS) FIM-AAS is an automated flameless atomic absorption technique. A bromate/bromide reagent is used to oxidise any organic mercury compounds in the unfiltered sample. The ionic mercury is reduced online to atomic mercury vapour by SnCl2 which is then purged into a heated quartz cell. Quantification is by comparing absorbance against a calibration curve. This method is compliant with NEPM Schedule B(3).
Ammonia as N by Discrete analyser	EK055G	WATER	In house: Referenced to APHA 4500-NH3 G Ammonia is determined by direct colorimetry by Discrete Analyser. This method is compliant with NEPM Schedule B(3)
Nitrite as N by Discrete Analyser	EK057G	WATER	In house: Referenced to APHA 4500-NO2- B. Nitrite is determined by direct colourimetry by Discrete Analyser. This method is compliant with NEPM Schedule B(3)
Nitrate as N by Discrete Analyser	EK058G	WATER	In house: Referenced to APHA 4500-NO3- F. Nitrate is reduced to nitrite by way of a chemical reduction followed by quantification by Discrete Analyser. Nitrite is determined seperately by direct colourimetry and result for Nitrate calculated as the difference between the two results. This method is compliant with NEPM Schedule B(3)
Nitrite and Nitrate as N (NOx) by Discrete Analyser	EK059G	WATER	In house: Referenced to APHA 4500-NO3- F. Combined oxidised Nitrogen (NO2+NO3) is determined by Chemical Reduction and direct colourimetry by Discrete Analyser. This method is compliant with NEPM Schedule B(3)
Total Kjeldahl Nitrogen as N By Discrete Analyser	EK061G	WATER	In house: Referenced to APHA 4500-Norg D (In house). An aliquot of sample is digested using a high temperature Kjeldahl digestion to convert nitrogenous compounds to ammonia. Ammonia is determined colorimetrically by discrete analyser. This method is compliant with NEPM Schedule B(3)
Total Nitrogen as N (TKN + Nox) By Discrete Analyser	EK062G	WATER	In house: Referenced to APHA 4500-Norg / 4500-NO3-. This method is compliant with NEPM Schedule B(3)
Total Phosphorus as P By Discrete Analyser	EK067G	WATER	In house: Referenced to APHA 4500-P H, Jirka et al, Zhang et al. This procedure involves sulphuric acid digestion of a sample aliquot to break phosphorus down to orthophosphate. The orthophosphate reacts with ammonium molybdate and antimony potassium tartrate to form a complex which is then reduced and its concentration measured at 880nm using discrete analyser. This method is compliant with NEPM Schedule B(3)

Analytical Methods	Method	Matrix	Method Descriptions
Reactive Phosphorus as P-By Discrete Analyser	EK071G	WATER	In house: Referenced to APHA 4500-P F Ammonium molybdate and potassium antimonyl tartrate reacts in acid medium with othophosphate to form a heteropoly acid -phosphomolybdic acid - which is reduced to intensely coloured molybdenum blue by ascorbic acid. Quantification is by Discrete Analyser. This method is compliant with NEPM Schedule B(3)
Chlorophyll a and Pheophytin a	EP008	WATER	In house: Referenced to APHA 10200 H. The pigments are extracted into aqueous acetone. The optical density of the extract before and after acidification at both 664 nm and 665 nm is determined spectrometrically.
Oil and Grease	EP020	WATER	In house: Referenced to APHA 5520 B. Oil & grease is a gravimetric procedure to determine the amount of dissolved or emulsified oil & grease residue in an aqueous sample. The sample is serially extracted three times n-hexane. The resultant extracts are combined, dehydrated and concentrated prior to gravimetric determination. This method is compliant with NEPM Schedule B(3)
Volatile Organic Compounds	EP074	WATER	In house: Referenced to USEPA SW 846 - 8260 Water samples are directly purged prior to analysis by Capillary GC/MS and quantification is by comparison against an established 5 point calibration curve. This method is compliant with NEPM Schedule B(3)
PAH/Phenols (GC/MS - SIM)	EP075(SIM)	WATER	In house: Referenced to USEPA SW 846 - 8270 Sample extracts are analysed by Capillary GC/MS in SIM Mode and quantification is by comparison against an established 5 point calibration curve. This method is compliant with NEPM Schedule B(3)
TRH Volatiles/BTEX	EP080	WATER	In house: Referenced to USEPA SW 846 - 8260 Water samples are directly purged prior to analysis by Capillary GC/MS and quantification is by comparison against an established 5 point calibration curve. Alternatively, a sample is equilibrated in a headspace vial and a portion of the headspace determined by GCMS analysis. This method is compliant with the QC requirements of NEPM Schedule B(3)
Pesticides by LCMSMS (Positive Ion Mode)	EP234-1	WATER	In house: LC-MSMS, direct injection. A sample is filtered and injected directly onto the LC-MSMS. Analysis is by LC/MSMS, ESI Positive Mode.
Pesticides by LCMSMS (Positive Ion Mode) - extended	EP234-1x	WATER	In house: LC-MSMS, direct injection. A sample is filtered and injected directly onto the LC-MSMS. Analysis is by LC/MSMS, ESI Positive Mode.

Preparation Methods	Method	Matrix	Method Descriptions
TKN/TP Digestion	EK061/EK067	WATER	In house: Referenced to APHA 4500 Norg - D; APHA 4500 P - H. This method is compliant with NEPM Schedule B(3)
Digestion for Total Recoverable Metals	EN25	WATER	In house: Referenced to USEPA SW846-3005. Method 3005 is a Nitric/Hydrochloric acid digestion procedure used to prepare surface and ground water samples for analysis by ICPAES or ICPMS. This method is compliant with NEPM Schedule B(3)
Separatory Funnel Extraction of Liquids	ORG14	WATER	In house: Referenced to USEPA SW 846 - 3510 100 mL to 1L of sample is transferred to a separatory funnel and serially extracted three times using DCM for each extract. The resultant extracts are combined, dehydrated and concentrated for analysis. This method is compliant with NEPM Schedule B(3) . ALS default excludes sediment which may be resident in the container.
Volatiles Water Preparation	ORG16-W	WATER	A 5 mL aliquot or 5 mL of a diluted sample is added to a 40 mL VOC vial for purging.

eurofins | mgt

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CHAIN OF CUSTODY RECORD

CLIENT DETAILS

Company Name : GHD Pty Ltd, Sydney
Office Address : Level 15, 133 Castlereagh Street, Sydney NSW 2000

Contact Name : Emily Smith 0431 522 928
Project Manager: Henry Luo 0414 090 002
Email for results : emily.smith@ghd.com; terry.nham@ghd.com; henry.luo@ghd.com; ghdlabreports@ghd.com

Purchase Order : 12554717
PROJECT Number : 12554717
PROJECT Name : M12 Water Sampling

COC Number :
Eurofins | mgt quote ID :
Data output format: ESDAT

Special Directions & Comments :

Sent from ALS

Eurofins | mgt DI water batch number:

Analytes

	Sample ID	Date	Matrix	Dissolved metals	Total metals						
1	SWDUP2	7/7/23	Water		X						
2	GWDUP2	7/7/23	Water	X							
3											
4											
5											
6											
7											
8											
9											
10											

Some common holding times (with correct preservation).
For further information contact the lab

Waters		Soils	
BTEX, MAH, VOC	14 days	BTEX, MAH, VOC	14 days
TRH, PAH, Phenols, Pesticides	7 days	TRH, PAH, Phenols, Pesticides	14 days
Heavy Metals	6 months	Heavy Metals	6 months
Mercury, CrVI	28 days	Mercury, CrVI	28 days
Microbiological testing	24 hours	Microbiological testing	72 hours
BOD, Nitrate, Nitrite, Total N	2 days	Anions	28 days
Solids - TSS, TDS etc	7 days	SPOCAS, pH Field and FOX, CrS	24 hours
Ferrous iron	7 days	ASLP, TCLP	7 days

Containers:

500P	250P	60P	1LA	40mL vial	200mL A	Jar	Bag

Sample comments:

Laboratory Staff

Relinquished By: Andrew Duval
Date & Time : 7/7/23
Signature:

Received By: Brendan
Date & Time : 11/7 1:01 Pm
Signature:

Method Of Shipment

☐ Courier
☐ Hand Delivered
☐ Postal
Courier Consignment # :

Temperature on arrival: 5.5

Report number: 1006932

CHAIN OF CUSTODY

ALS Environmental

ALS Laboratory: please tick →

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☐NEWCASTLE 5 Rose Gum Road Warabrook NSW 2304 Ph: 02 4258 2181 E: newcastle@alsglobal.com
☐PERTH 10 Hod Way Malaga WA 6090 Ph: 08 9209 7655 E: samples.perth@alsglobal.com
☐SYDNEY 277-289 Woodpark Road Smithfield NSW 2164 Ph: 02 8784 8555 E: samples.sydney@alsglobal.com
☐WOLLONGONG 99 Kenny Street Wollongong NSW 2500 Ph: 02 4225 3125 E: portkembla@alsglobal.com

CLIENT: GHD Pty Ltd	TURNAROUND REQUIREME ☐ Standard TAT (List due date): STANDARD TAT	FOR LABORATORY USE ONLY (Circle)	
OFFICE: Sydney	(Standard TAT may be longer for some tests e.g.. Ultra Trace ☐ Non Standard or urgent TAT (List due date):	Custody Seal Intact?	Yes No N/A
PROJECT: M12 Groundwater	ALS QUOTE NO.: SY/322/21	Free ice / frozen ice bricks present upon receipt?	Yes No N/A
ORDER NUMBER: 12554717		Random Sample Temperature on Receipt:	°C
PROJECT MANAGER: Henry Luo	CONTACT PH: Henry Luo 0414 090 002	Other comment:	
SAMPLER: Emily Smith Andrew Duval	SAMPLER MOBILE: 0431 522 928		
COC emailed to ALS? (YES / NO)	EDD FORMAT (or default): ESDAT		

COC SEQUENCE NUMBER (Circle)

COC:	1	2	3	4	5	6	7
OF:	1	2	3	4	5	6	7

Email Reports to: henry.luo@ghd.com, ghdlabreports@ghd.com; terry.nham@ghd.com; emily.smith@ghd.com; andrew.duval@ghd.com

RELINQUISHED BY:	RECEIVED BY:	RELINQUISHED BY:	RECEIVED BY:
Andrew Duval		Lab / Analysis:	Eurofins
DATE/TIME: 7/7/23	DATE/TIME: 7/7/23 4:30	DATE/TIME: Organised By / Date:	DATE/TIME: Relinquished By / Date:

COMMENTS/SPECIAL HANDLING/STORAGE OR DISPOSAL:

Consol / Courier: QC FWD

WO No: ES2322790

ANALYSIS REQUIRED by ALS (Eurofins)

ANALYSIS REQUIRED including SUITES (NB. Suite Codes must be listed to attract suite price)
Where Metals are required, specify Total (unfiltered bottle required) or Dissolved (field filtered bottle required).

ALS USE	SAMPLE DETAILS MATRIX: SOLID (S) WATER (W)			CONTAINER INFORMATION		W-02 (8 dissolved metals)	EG020F (dissolved Fe, Mn)	W-04 (TRH/BTEXN)	NT-08A (TN, NO2, NO3, NH3, TP, soluble Reactive P)	NT-01D & 02 (major cations & anions, Hardness)	EA015H (TDS)	EA025H (SS)		W-02T (8 total metals)	BTEXN		
LAB ID	SAMPLE ID	DATE / TIME	MATRIX	Comments	TOTAL CONTAINERS												
1	BH104R	7/7/23	Water		6	X	X	X	X	X	X	X					
2	BH107R	7/7/23	Water		6	X	X	X	X	X	X	X					
~~BH112R~~			~~Water~~			~~X~~	~~X~~	~~X~~	~~X~~	~~X~~	~~X~~	~~X~~					
3	BH145R		Water		6	X	X	X	X	X	X	X					
4	GWDUP1	7/7/23	Water		1	X											
5	GWRB1	7/7/23	Water		1									X			
6	Trip spike	7/7/23	Water		1										X		
7	Trip blank	7/7/23	Water		1										X		
	GWDUP2	7/7/23	W	PLEASE FWD TO EUROFINS	1												
	SWDUP2	7/7/23	W	PLEASE FWD TO EUROFINS WITH ATTACHED COC	1												

Environmental Division Sydney
Work Order Reference
ES2322790

Telephone : +61-2-8784 8555

1066932

CHAIN OF CUSTODY

ALS Environmental

ALS Laboratory: please tick →

☐BRISBANE 32 Shand Street Stafford QLD 4053 Ph: 07 7471 5800 E: samples.brisbane@alsglobal.com

☐MACKAY 78 Harbour Road MENLO QLD 4805 Ross Gum Road Warabrook NSW 2304 PH: 02 4968 9433 E: samples.newcastle@alsglobal.com

☐TOWNSVILLE 14-15 Desma Court Bohle QLD 4818 Ph: 07 4796 0600 E: townsville.environmental@alsglobal.com

☐WOLLONGONG 99 Kenny Street Wollongong NSW 2500 Ph: 02 4225 3125 E: portkembla@alsglobal.com

☐SYDNEY 277-289 Woodpark Road Smithfield NSW 2164 Ph: 02 8784 8555 E: samples.sydney@alsglobal.com

☐PERTH 10 Hod Way Malaga WA 6090 Ph: 08 9209 7655 E: samples.perth@alsglobal.com

CLIENT: GHD Pty Ltd	TURNAROUND REQUIREMENT: ☐ Standard TAT (List due date): STANDARD TAT	FOR LABORATORY USE ONLY (Circle)	
OFFICE: Sydney	(Standard TAT may be longer for some tests e.g., Ultra Trace Organics) ☐ Non Standard or urgent TAT (List due date):	Custody Seal Intact?	No N/A
PROJECT: M12 Surface Water	ALS QUOTE NO.: SY/322/21	Free Ice / frozen ice bricks present upon receipt?	No N/A
ORDER NUMBER: 12554717		Random Sample Temperature on Receipt	°C
PROJECT MANAGER: Henry Luo	CONTACT PH: Henry Luo 0414 090 002	Other comment:	
SAMPLER: Emily Smith, Andrew Duval	SAMPLER MOBILE: 0431 522 928	COC SEQUENCE NUMBER (Circle) COC: 1 2 3 4 5 6 7 OF: 1 2 3 4 5 6 7	
COC emailed to ALS? (YES / NO)	EDD FORMAT (or default): ESDAT		
Email Reports to: henry.luo@ghd.com , ghdlabreports@ghd.com; terry.nham@ghd.com, emily.smith@ghd.com; andrew.duval@ghd.com			

RELINQUISHED BY:	RECEIVED BY:	RELINQUISHED BY:	RECEIVED BY:
DATE/TIME: Andrew Duval 7/7/23	DATE/TIME: 7/7/23 4:32	DATE/TIME:	DATE/TIME:

COMMENTS/SPECIAL HANDLING/STORAGE OR DISPOSAL:

ALS USE	SAMPLE DETAILS MATRIX: SOLID (S) WATER (W)			CONTAINER INFORMATION		ANALYSIS REQUIRED including SUITES (NB. Suite Codes must be listed to attract suite price) Where Metals are required, specify Total (unfiltered bottle required) or Dissolved (field filtered bottle required).													
LAB ID	SAMPLE ID	DATE / TIME	MATRIX	Comments	TOTAL CONTAINERS	W-02T (8 total metals)	EG020T (total Fe, Mn)	NT-08A (total N, No2, No3, NH3, Total P, reactive P)	EP008 (chlorophyll a)	EP020 (oil & grease)	UTO-9W Ultra trace OC/OP	EP074DEFG (VOC - fumigants, Hal aliphatics, Hal Aromatics, THM)	MW006 (FC) Thermotolerant Coliforms	W-14A (PAH/phenols)	EA015H (TDS), EA025H (TSS)	EP080 (BTEXN)	Ultra trace OPP (EP234AX)	Super Ultra Trace PCB's (EP1318-ST)	PFAS - full suite (EP231X)
8	BADDS	7/7/23	Water		11	X	X	X	X	X		X		X	X	X	X		
9	BADMS	7/7/23	W		11	X	X	X	X	X		X		X	X	X	X		
10	BADUS	7/7/23	W		11	X	X	X	X	X		X		X	X	X	X		

1006932

eurofins | Environment Testing

www.eurofins.com.au EnviroSales@eurofins.com

Eurofins Environment Testing Australia Pty Ltd

ABN: 50 005 085 521

Melbourne	Geelong	Sydney	Canberra	Brisbane	Newcastle
6 Monterey Road	19/8 Lewalan Street	179 Magowar Road	Unit 1,2 Dacre Street	1/21 Smallwood Place	1/2 Frost Drive
Dandenong South	Grovedale	Girraween	Mitchell	Murarrie	Mayfield West NSW 2304
VIC 3175	VIC 3216	NSW 2145	ACT 2911	QLD 4172	Tel: +61 2 4968 8448
Tel: +61 3 8564 5000	Tel: +61 3 8564 5000	Tel: +61 2 9900 8400	Tel: +61 2 6113 8091	Tel: +61 7 3902 4600	NATA# 1261
NATA# 1261	NATA# 1261	NATA# 1261	NATA# 1261	NATA# 1261	Site# 25079 & 25289
Site# 1254	Site# 25403	Site# 18217	Site# 25466	Site# 20794	

Eurofins ARL Pty Ltd

ABN: 91 05 0159 898

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46-48 Banksia Road
Welshpool
WA 6106
Tel: +61 8 6253 4444
NATA# 2377
Site# 2370

Eurofins Environment Testing NZ Ltd

NZBN: 9429046024954

Auckland	Christchurch	Tauranga
35 O'Rorke Road	43 Detroit Drive	1277 Cameron Road,
Penrose,	Rolleston,	Gate Pa,
Auckland 1061	Christchurch 7675	Tauranga 3112
Tel: +64 9 526 4551	Tel: +64 3 343 5201	Tel: +64 9 525 0568
IANZ# 1327	IANZ# 1290	IANZ# 1402

Sample Receipt Advice

Company name:	GHD Pty Ltd NSW
Contact name:	Emily Smith
Project name:	M12 WATER SAMPLING
Project ID:	12554717
Turnaround time:	5 Day
Date/Time received	Jul 11, 2023 1:01 PM
Eurofins reference	1006932

Sample Information

✓	A detailed list of analytes logged into our LIMS, is included in the attached summary table.
✓	Sample Temperature of chilled sample on the batch as recorded by Eurofins Sample Receipt : 5.5 degrees Celsius.
✓	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.
X	Split sample sent to requested external lab.
X	Some samples have been subcontracted.
N/A	Custody Seals intact (if used).

Notes

Contact

If you have any questions with respect to these samples, please contact your Analytical Services Manager:

Bonnie Pu on phone : or by email: BonniePu@eurofins.com

Results will be delivered electronically via email to Emily Smith - emily.smith@ghd.com.

Note: A copy of these results will also be delivered to the general GHD Pty Ltd NSW email address.

GHD Pty Ltd NSW
Level 15, 133 Castlereagh Street
Sydney
NSW 2000

NATA Accredited
Accreditation Number 1261
Site Number 18217

Accredited for compliance with ISO/IEC 17025 – Testing
NATA is a signatory to the ILAC Mutual Recognition Arrangement for the mutual recognition of the equivalence of testing, medical testing, calibration, inspection, proficiency testing scheme providers and reference materials producers reports and certificates.

Attention: **Emily Smith**

Report **1006932-W-V2**
Project name M12 WATER SAMPLING
Project ID 12554717
Received Date Jul 11, 2023

Client Sample ID			**SWDUP2**	**GWDUP2**
Sample Matrix			**Water**	**Water**
Eurofins Sample No.			**S23-Jl0021772**	**S23-Jl0021773**
Date Sampled			**Jul 07, 2023**	**Jul 07, 2023**
Test/Reference	LOR	Unit		
Heavy Metals				
Arsenic	0.001	mg/L	< 0.001	-
Arsenic (filtered)	0.001	mg/L	-	0.002
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
Copper	0.001	mg/L	0.002	-
Copper (filtered)	0.001	mg/L	-	< 0.001
Lead	0.001	mg/L	< 0.001	-
Lead (filtered)	0.001	mg/L	-	< 0.001
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	0.012	-
Zinc (filtered)	0.005	mg/L	-	< 0.005

Sample History

Where samples are submitted/analysed over several days, the last date of extraction is reported.

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
Metals M8	Sydney	Sep 20, 2023	28 Days
- Method: LTM-MET-3040 Metals in Waters, Soils & Sediments by ICP-MS			
Metals M8 filtered	Sydney	Jul 13, 2023	28 Days
- Method: LTM-MET-3040 Metals in Waters, Soils & Sediments by ICP-MS			

eurofins

web: www.eurofins.com.au
email: EnviroSales@eurofins.com

Eurofins Environment Testing Australia Pty Ltd
ABN: 50 005 085 521

Melbourne	Geelong	Sydney	Canberra	Brisbane	Newcastle
6 Monterey Road	19/8 Lewalan Street	179 Magowar Road	Unit 1,2 Dacre Street	1/21 Smallwood Place	1/2 Frost Drive
Dandenong South	Grovedale	Girraween	Mitchell	Murarrie	Mayfield West NSW 2304
VIC 3175	VIC 3216	NSW 2145	ACT 2911	QLD 4172	Tel: +61 2 4968 8448
Tel: +61 3 8564 5000	Tel: +61 3 8564 5000	Tel: +61 2 9900 8400	Tel: +61 2 6113 8091	Tel: +61 7 3902 4600	NATA# 1261
NATA# 1261	NATA# 1261	NATA# 1261	NATA# 1261	NATA# 1261	Site# 25079 & 25289
Site# 1254	Site# 25403	Site# 18217	Site# 25466	Site# 20794	

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46-48 Banksia Road
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Tel: +61 8 6253 4444
NATA# 2377
Site# 2370

Eurofins Environment Testing NZ Ltd
NZBN: 9429046024954

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Penrose,	Rolleston,	Gate Pa,
Auckland 1061	Christchurch 7675	Tauranga 3112
Tel: +64 9 526 4551	Tel: +64 3 343 5201	Tel: +64 9 525 0568
IANZ# 1327	IANZ# 1290	IANZ# 1402

Company Name: GHD Pty Ltd NSW
Address: Level 15, 133 Castlereagh Street
Sydney
NSW 2000

Project Name: M12 WATER SAMPLING
Project ID: 12554717

Order No.:
Report #: 1006932
Phone: 02 9239 7100
Fax: 02 9239 7199

Received: Jul 11, 2023 1:01 PM
Due: Jul 18, 2023
Priority: 5 Day
Contact Name: Emily Smith

Eurofins Analytical Services Manager : Bonnie Pu

Sample Detail						Metals M8 filtered
Sydney Laboratory - NATA # 1261 Site # 18217						X
External Laboratory						
No	**Sample ID**	**Sample Date**	**Sampling Time**	**Matrix**	**LAB ID**	
1	SWDUP2	Jul 07, 2023		Water	S23-Jl0021772	X
2	GWDUP2	Jul 07, 2023		Water	S23-Jl0021773	X
Test Counts						2

eurofins | Environment Testing

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.

Units

mg/kg: milligrams per kilogram	**mg/L:** milligrams per litre	**µg/L:** micrograms per litre
ppm: parts per million	**ppb:** parts per billion	**%:** Percentage
org/100 mL: Organisms per 100 millilitres	**NTU:** Nephelometric Turbidity Units	**MPN/100 mL:** Most Probable Number of organisms per 100 millilitres
CFU: Colony forming unit		

Terms

APHA	American Public Health Association
COC	Chain of Custody
CP	Client Parent - QC was performed on samples pertaining to this report
CRM	Certified Reference Material (ISO17034) - reported as percent recovery.
Dry	Where a moisture has been determined on a solid sample the result is expressed on a dry basis.
Duplicate	A second piece of analysis from the same sample and reported in the same units as the result to show comparison.
LOR	Limit of Reporting.
LCS	Laboratory Control Sample - 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.
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.
RPD	Relative Percent Difference between two Duplicate pieces of analysis.
SPIKE	Addition of the analyte to the sample and reported as percentage recovery.
SRA	Sample Receipt Advice
Surr - Surrogate	The addition of a like compound to the analyte target and reported as percentage recovery.
TBTO	Tributyltin oxide (*bis*-tributyltin oxide) - individual tributyltin compounds cannot be identified separately in the environment however free tributyltin was measured and its values were converted stoichiometrically into tributyltin oxide for comparison with regulatory limits.
TCLP	Toxicity Characteristic Leaching Procedure
TEQ	Toxic Equivalency Quotient or Total Equivalence
QSM	US Department of Defense Quality Systems Manual Version 5.4
US EPA	United States Environmental Protection Agency
WA DWER	Sum of PFBA, PFPeA, PFHxA, PFHpA, PFOA, PFBS, PFHxS, PFOS, 6:2 FTSA, 8:2 FTSA

QC - Acceptance Criteria

The acceptance criteria should be used as a guide only and may be different when site specific Sampling Analysis and Quality Plan (SAQP) have been implemented

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%

NOTE: pH duplicates are reported as a range not as RPD

Surrogate Recoveries: Recoveries must lie between 20-130% for Speciated Phenols & 50-150% for PFAS. SVOCs recoveries 20 – 150%

PFAS field samples that contain surrogate recoveries in excess of the QC limit designated in QSM 5.4 where no positive PFAS results have been reported have been reviewed and no data was affected.

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. 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.
4. Recovery Data (Spikes & Surrogates) - where chromatographic interference does not allow the determination of recovery the term "INT" appears against that analyte.
5. For Matrix Spikes and LCS results a dash "-" in the report means that the specific analyte was not added to the QC sample.
6. 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					
Arsenic (filtered)	S23-Jl0021773	CP	%	104			75-125	Pass	
Cadmium (filtered)	S23-Jl0021773	CP	%	93			75-125	Pass	
Chromium (filtered)	S23-Jl0021773	CP	%	87			75-125	Pass	
Copper (filtered)	S23-Jl0021773	CP	%	81			75-125	Pass	
Lead (filtered)	S23-Jl0021773	CP	%	89			75-125	Pass	
Mercury (filtered)	S23-Jl0021773	CP	%	90			75-125	Pass	
Nickel (filtered)	S23-Jl0021773	CP	%	82			75-125	Pass	
Zinc (filtered)	S23-Jl0021773	CP	%	85			75-125	Pass	

Comments

V2 - Sample 23-Jl0021772 has been rerun as total metals

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:

Bonnie Pu	Analytical Services Manager
Fang Yee Tan	Senior Analyst-Metal

Glenn Jackson
Managing Director

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.

Subcon / Forward Lab / Split WO

Lab / Analysis: SWDUP2 / GWDUP2 / EURO PINS

Organised By / Date:

Relinquished By / Date:

Connote / Courier:

WO No: ES2326795

Attached By PO / Internal Sheet

Environmental Division Sydney
Work Order Reference
ES2326795

Telephone : +61-2-8784 8555

CHAIN OF CUSTODY

ALS Environmental

ALS Laboratory: please tick →

CLIENT: GHD Pty Ltd	TURNAROUND REQUIREMENT: ☐ Standard TAT (List due date): STANDARD TAT		FOR LABORATORY USE ON
OFFICE: Sydney	(Standard TAT may be longer for some tests e.g., Ultra Trace Organics) ☐ Non Standard or urgent TAT (List due date):		Custody Seal Intact?
PROJECT: M12 Surface Water	ALS QUOTE NO.: SY/322/21	COC SEQUENCE NUMBER (Circle)	Free ice / frozen ice bricks present
ORDER NUMBER: 12554717		COC: 1 2 3 4 5 6 7	Random Sample Temperature on
PROJECT MANAGER: Henry Luo	CONTACT PH: Henry Luo 0414 090 002	OF: 1 2 3 4 5 6 7	Other comment:

SAMPLER: Emily Smith / Andrew Duval	SAMPLER MOBILE: 0431 522 928	RELINQUISHED BY: Andrew Duval	RECEIVED BY:	RELINQUISHED BY:
COC emailed to ALS? (YES / NO)	EDD FORMAT (or default): ESDAT			
Email Reports to: henry.luo@ghd.com , ghdlabreports@ghd.com; terry.nham@ghd.com, emily.smith@ghd.com; andrew.duval@ghd.com		DATE/TIME: 09/08/2023, 5:45PM	DATE/TIME:	DATE/TIME:

RECEIVED BY:	
	JRW
DATE/TIME:	9/8/23 1829

COMMENTS/SPECIAL HANDLING/STORAGE OR DISPOSAL:

HT

ALS USE	SAMPLE DETAILS MATRIX: SOLID (S) WATER (W)			CONTAINER INFORMATION		ANALYSIS REQUIRED including SUITES (NB. Suite Codes must be listed to attract suite price) Where Metals are required, specify Total (unfiltered bottle required) or Dissolved (field filtered bottle required).													
LAB ID	SAMPLE ID	DATE / TIME	MATRIX	Comments	TOTAL CONTAINERS	W-02T (8 total metals)	EG020T (total Fe, Mn)	NT-08A (total N, No2, No3, NH3, Total P, reactive P)	EP008 (chlorophyll a)	EP020 (oil & grease)	UTO-9W Ultra trace OC/OP	EP074DEFG (VOC - fumigants, Hal aliphatics, Hal Aromatics, THM)	MW006 (FC) Thermotolerant Coliforms	W-14A (PAH/phenols)	EA016H (TDS), EA025H (TSS)	EP080 (BTEXN)	Ultra trace OPP (EP234AX)	Super Ultra Trace PCB's (EP1318-ST)	PFAS - full suite (EP231X)
1	BADDS	9/08/2023	Water		11	X	X	X	X	X		X		X	X	X	X		
2	BADMS	9/08/2023	Water		11	X	X	X	X	X		X		X	X	X	X		
3	BADUS	9/08/2023	Water		11	X	X	X	X	X		X		X	X	X	X		
4	COSDS	9/08/2023	Water		11	X	X	X	X	X		X		X	X	X	X		
5	COSUS	9/08/2023	Water		11	X	X	X	X	X		X		X	X	X	X		
6	HINDS	8/08/2023	Water		11	X	X	X	X	X		X		X	X	X	X		
7	HINUS	8/08/2023	Water		11	X	X	X	X	X		X		X	X	X	X		
8	KEMDS	8/08/2023	Water		11	X	X	X	X	X		X		X	X	X	X		
9	KEMUS	8/08/2023	Water		11	X	X	X	X	X		X		X	X	X	X		
10	ROPDS	8/08/2023	Water		11	X	X	X	X	X		X		X	X	X	X		
11	ROPUS	8/08/2023	Water		11	X	X	X	X	X		X		X	X	X	X		
12	SOUDS	8/08/2023	Water		11	X	X	X	X	X		X		X	X	X	X		
13	SOUUS	8/08/2023	Water		11	X	X	X	X	X		X		X	X	X	X		
14	SWDUP1	8/08/2023	Water		1	X													
-	SWDUP2	8/08/2023	Water	PLEASE FORWARD TO EUROFINS WITH ATTACHED COC	1														
-	GWDUP2	9/09/2023	Water	PLEASE FORWARD TO EUROFINS WITH ATTACHED COC	1														

eurofins | mgt

☑ **Sydney**
Unit F3 - 6 Building F, 16 Mars Road, Lane Cove
Phone: +612 9900 8400
Email: enviro.syd@mgtlabmark.com.au

☐ **Brisbane**
Unit 1-21 Smallwood Place, Murrarie
Phone: +617 3902 4600
Email: enviro.bris@mgtlabmark.com.a

☐ **Melbourne**
2 Kingston Town Close, Oakleigh, VIC 3166
Phone: +613 8564 5000 Fax: +613 8564 5090
Email: enquiries.melb@mgtlabmark.com.au

CHAIN OF CUSTODY RECORD

CLIENT DETAILS

Company Name : GHD Pty Ltd, Sydney	**Contact Name :** Emily Smith 0431 522 928	**Purchase Order :** 12554717	**COC Number :**
Office Address :	**Project Manager:** Henry Luo 0414 090 002	**PROJECT Number :** 12554717	**Eurofins | mgt quote ID :**
Level 15, 133 Castlereagh Street, Sydney NSW 2000	**Email for results :** emily.smith@ghd.com; terry.nham@ghd.com; henry.luo@ghd.com;andrew.duval@ghd.com, ghdlabreports@ghd.com	**PROJECT Name :** M12 Water Sampling	**Data output format:** ESDAT

Special Directions & Comments :

Sent from ALS

Eurofins | mgt DI water batch number:

	Sample ID	Date	Matrix	Dissolved metals	Total metals					
1	SWDUP2	8/08/2023	Water		X					
2	GWDUP2	9/08/2023	Water	X						
3										
4										
5										
6										
7										
8										
9										
10										

Analytes

Some common holding times (with correct preservation).
For further information contact the lab

Waters		Soils	
BTEX, MAH, VOC	14 days	BTEX, MAH, VOC	14 days
TRH, PAH, Phenols, Pesticides	7 days	TRH, PAH, Phenols, Pesticides	14 days
Heavy Metals	6 months	Heavy Metals	6 months
Mercury, CrVI	28 days	Mercury, CrVI	28 days
Microbiological testing	24 hours	Microbiological testing	72 hours
BOD, Nitrate, Nitrite, Total N	2 days	Anions	28 days
Solids - TSS, TDS etc	7 days	SPOCAS, pH Field and FOX, CrS	24 hours
Ferrous iron	7 days	ASLP, TCLP	7 days

Containers:

	500P	250P	60P	1LA	40mL vial	200mL A	Jar	Bag
1			1					
2			1					
3								
4								
5								
6								
7								
8								
9								
10								

Sample comments:

Laboratory Staff

Relinquished By: Andrew Duval	**Received By:**
Date & Time : 09/08/2023, 5.45PM	**Date & Time :**
Signature: AD	**Signature:**

Method Of Shipment

☐ Courier
☐ Hand Delivered
☐ Postal
☐ **Courier Consignment # :**

Temperature on arrival:

Report number:

SAMPLE RECEIPT NOTIFICATION (SRN)

Work Order : **ES2326795**

Client	: **GHD PTY LTD**	Laboratory	: Environmental Division Sydney
Contact	: MR HENRY LUO	Contact	: Sarah Mathew
Address	: LEVEL 15, 133 CASTLEREAGH STREET SYDNEY NSW, AUSTRALIA 2000	Address	: 277-289 Woodpark Road Smithfield NSW Australia 2164
E-mail	: henry.luo@ghd.com	E-mail	: sarah.mathew@alsglobal.com
Telephone	: +61 02 9239 7100	Telephone	: +61-2-8784 8555
Facsimile	: +61 02 9239 7199	Facsimile	: +61-2-8784 8500
Project	: 12554717	Page	: 1 of 4
Order number	: ----	Quote number	: ES2021GHDSER0026 (SY/322/21)
C-O-C number	: ----	QC Level	: NEPM 2013 B3 & ALS QC Standard
Site	: ----		
Sampler	: Emily Smith / Andrew Duval		

Dates

Date Samples Received	: 09-Aug-2023 18:29	Issue Date	: 09-Aug-2023
Client Requested Due Date	: 17-Aug-2023	Scheduled Reporting Date	: **17-Aug-2023**

Delivery Details

Mode of Delivery	: Client Drop Off	Security Seal	: Not Available
No. of coolers/boxes	: 7	Temperature	: 5.2'C, 9.9'C, 7.0'C
Receipt Detail	:	No. of samples received / analysed	: 14 / 14

General Comments

- This report contains the following information:
  - Sample Container(s)/Preservation Non-Compliances
  - Summary of Sample(s) and Requested Analysis
  - Proactive Holding Time Report
  - Requested Deliverables
- **Sample ID SWDUP2 and GWDUP2 will be forwarded to Eurofins as per COC.**
- **Please refer to the Proactive Holding Time Report table below which summarises breaches of recommended holding times that have occurred prior to samples/instructions being received at the laboratory. The laboratory will process these samples unless instructions are received from you indicating you do not wish to proceed. The absence of this summary table indicates that all samples have been received within the recommended holding times for the analysis requested.**
- **Sample(s) requiring volatile organic compound analysis received in airtight containers (ZHE).**
- Please direct any queries you have regarding this work order to the above ALS laboratory contact.
- Analytical work for this work order will be conducted at ALS Sydney.
- Sample Disposal - Aqueous (3 weeks), Solid (2 months ± 1 week) from receipt of samples.
- Please be aware that APHA/NEPM recommends water and soil samples be chilled to less than or equal to 6°C for chemical analysis, and less than or equal to 10°C but unfrozen for Microbiological analysis. Where samples are received above this temperature, it should be taken into consideration when interpreting results. Refer to ALS EnviroMail 85 for ALS recommendations of the best practice for chilling samples after sampling and for maintaining a cool temperature during transit.

Sample Container(s)/Preservation Non-Compliances

All comparisons are made against pretreatment/preservation AS, APHA, USEPA standards.

- **No sample container / preservation non-compliance exists.**

Summary of Sample(s) and Requested Analysis

Some items described below may be part of a laboratory process necessary for the execution of client requested tasks. Packages may contain additional analyses, such as the determination of moisture content and preparation tasks, that are included in the package.
If no sampling time is provided, the sampling time will default 00:00 on the date of sampling. If no sampling date is provided, the sampling date will be assumed by the laboratory and displayed in brackets without a time component

Matrix: **WATER**

Laboratory sample ID	Sampling date / time	Sample ID	WATER - EA025H Suspended Solids - Standard Level	WATER - EG020T Total Metals by ICP/MS (including digestion)	WATER - EP008 Chlorophyll a	WATER - EP020 Oil & Grease (O&G)	WATER - NT-08A Total Nitrogen + NO2 + NO3 + NH3 + Total P +	WATER - W-02T 8 metals (Total)	WATER - W-14A PAH/Phenols (SIM)
ES2326795-001	09-Aug-2023 00:00	BADDS	✓	✓	✓	✓	✓	✓	✓
ES2326795-002	09-Aug-2023 00:00	BADMS	✓	✓	✓	✓	✓	✓	✓
ES2326795-003	09-Aug-2023 00:00	BADUS	✓	✓	✓	✓	✓	✓	✓
ES2326795-004	09-Aug-2023 00:00	COSDS	✓	✓	✓	✓	✓	✓	✓
ES2326795-005	09-Aug-2023 00:00	COSUS	✓	✓	✓	✓	✓	✓	✓
ES2326795-006	08-Aug-2023 00:00	HINDS	✓	✓	✓	✓	✓	✓	✓
ES2326795-007	08-Aug-2023 00:00	HINUS	✓	✓	✓	✓	✓	✓	✓
ES2326795-008	08-Aug-2023 00:00	KEMDS	✓	✓	✓	✓	✓	✓	✓
ES2326795-009	08-Aug-2023 00:00	KEMUS	✓	✓	✓	✓	✓	✓	✓
ES2326795-010	08-Aug-2023 00:00	ROPDS	✓	✓	✓	✓	✓	✓	✓
ES2326795-011	08-Aug-2023 00:00	ROPUS	✓	✓	✓	✓	✓	✓	✓
ES2326795-012	08-Aug-2023 00:00	SOUDS	✓	✓	✓	✓	✓	✓	✓
ES2326795-013	08-Aug-2023 00:00	SOUUS	✓	✓	✓	✓	✓	✓	✓
ES2326795-014	08-Aug-2023 00:00	SWDUP1						✓	

Matrix: **WATER**

Laboratory sample ID	Sampling date / time	Sample ID	WATER - EA015H Total Dissolved Solids - Standard Level	WATER - EP074DEFG VOC - Fumigants, Hal Aliphatics, Hal Aromatics,	WATER - EP080 BTEXN	WATER - EP234AX Organophosphorus Pesticides - Extended List (50
ES2326795-001	09-Aug-2023 00:00	BADDS	✓	✓	✓	✓
ES2326795-002	09-Aug-2023 00:00	BADMS	✓	✓	✓	✓
ES2326795-003	09-Aug-2023 00:00	BADUS	✓	✓	✓	✓
ES2326795-004	09-Aug-2023 00:00	COSDS	✓	✓	✓	✓
ES2326795-005	09-Aug-2023 00:00	COSUS	✓	✓	✓	✓
ES2326795-006	08-Aug-2023 00:00	HINDS	✓	✓	✓	✓
ES2326795-007	08-Aug-2023 00:00	HINUS	✓	✓	✓	✓
ES2326795-008	08-Aug-2023 00:00	KEMDS	✓	✓	✓	✓
ES2326795-009	08-Aug-2023 00:00	KEMUS	✓	✓	✓	✓
ES2326795-010	08-Aug-2023 00:00	ROPDS	✓	✓	✓	✓

			WATER - EA015H Total Dissolved Solids - Standard Level	WATER - EP074DEFG VOC - Fumigants, Hal Aliphatics, Hal Aromatics,	WATER - EP080 BTEXN	WATER - EP234AX Organophosphorus Pesticides - Extended List (50
ES2326795-011	08-Aug-2023 00:00	ROPUS	✓	✓	✓	✓
ES2326795-012	08-Aug-2023 00:00	SOUDS	✓	✓	✓	✓
ES2326795-013	08-Aug-2023 00:00	SOUUS	✓	✓	✓	✓

Proactive Holding Time Report

Sample(s) have been received within the recommended holding times for the requested analysis.

Requested Deliverables

Accounts Payable Australia

- A4 - AU Tax Invoice (INV)	Email	accountspayableAU@ghd.com

ANDREW DUVAL

- *AU Certificate of Analysis - NATA (COA)	Email	andrew.duval@ghd.com
- *AU Interpretive QC Report - DEFAULT (Anon QCI Rep) (QCI)	Email	andrew.duval@ghd.com
- *AU QC Report - DEFAULT (Anon QC Rep) - NATA (QC)	Email	andrew.duval@ghd.com
- A4 - AU Sample Receipt Notification - Environmental HT (SRN)	Email	andrew.duval@ghd.com
- Chain of Custody (CoC) (COC)	Email	andrew.duval@ghd.com
- EDI Format - ESDAT (ESDAT)	Email	andrew.duval@ghd.com
- EDI Format - XTab (XTAB)	Email	andrew.duval@ghd.com
- Electronic SRN for ESdat (ESRN_ESDAT)	Email	andrew.duval@ghd.com

EMILY SMITH

- *AU Certificate of Analysis - NATA (COA)	Email	emily.smith@ghd.com
- *AU Interpretive QC Report - DEFAULT (Anon QCI Rep) (QCI)	Email	emily.smith@ghd.com
- *AU QC Report - DEFAULT (Anon QC Rep) - NATA (QC)	Email	emily.smith@ghd.com
- A4 - AU Sample Receipt Notification - Environmental HT (SRN)	Email	emily.smith@ghd.com
- Chain of Custody (CoC) (COC)	Email	emily.smith@ghd.com
- EDI Format - ESDAT (ESDAT)	Email	emily.smith@ghd.com
- EDI Format - XTab (XTAB)	Email	emily.smith@ghd.com
- Electronic SRN for ESdat (ESRN_ESDAT)	Email	emily.smith@ghd.com

GHD LAB REPORTS

- *AU Certificate of Analysis - NATA (COA)	Email	ghdlabreports@ghd.com
- *AU Interpretive QC Report - DEFAULT (Anon QCI Rep) (QCI)	Email	ghdlabreports@ghd.com
- *AU QC Report - DEFAULT (Anon QC Rep) - NATA (QC)	Email	ghdlabreports@ghd.com
- A4 - AU Sample Receipt Notification - Environmental HT (SRN)	Email	ghdlabreports@ghd.com
- Chain of Custody (CoC) (COC)	Email	ghdlabreports@ghd.com
- EDI Format - ESDAT (ESDAT)	Email	ghdlabreports@ghd.com
- EDI Format - XTab (XTAB)	Email	ghdlabreports@ghd.com
- Electronic SRN for ESdat (ESRN_ESDAT)	Email	ghdlabreports@ghd.com

HENRY LUO

- *AU Certificate of Analysis - NATA (COA)	Email	henry.luo@ghd.com
- *AU Interpretive QC Report - DEFAULT (Anon QCI Rep) (QCI)	Email	henry.luo@ghd.com
- *AU QC Report - DEFAULT (Anon QC Rep) - NATA (QC)	Email	henry.luo@ghd.com
- A4 - AU Sample Receipt Notification - Environmental HT (SRN)	Email	henry.luo@ghd.com
- Chain of Custody (CoC) (COC)	Email	henry.luo@ghd.com
- EDI Format - ESDAT (ESDAT)	Email	henry.luo@ghd.com
- EDI Format - XTab (XTAB)	Email	henry.luo@ghd.com
- Electronic SRN for ESdat (ESRN_ESDAT)	Email	henry.luo@ghd.com

TERRY NHAM

- *AU Certificate of Analysis - NATA (COA)	Email	terry.nham@ghd.com
- *AU Interpretive QC Report - DEFAULT (Anon QCI Rep) (QCI)	Email	terry.nham@ghd.com
- *AU QC Report - DEFAULT (Anon QC Rep) - NATA (QC)	Email	terry.nham@ghd.com
- A4 - AU Sample Receipt Notification - Environmental HT (SRN)	Email	terry.nham@ghd.com
- Chain of Custody (CoC) (COC)	Email	terry.nham@ghd.com
- EDI Format - ESDAT (ESDAT)	Email	terry.nham@ghd.com
- EDI Format - XTab (XTAB)	Email	terry.nham@ghd.com
- Electronic SRN for ESdat (ESRN_ESDAT)	Email	terry.nham@ghd.com

CERTIFICATE OF ANALYSIS

Work Order	: **ES2326795**	Page	: 1 of 21
Client	: **GHD PTY LTD**	Laboratory	: Environmental Division Sydney
Contact	: MR HENRY LUO	Contact	: Sarah Mathew
Address	: LEVEL 15, 133 CASTLEREAGH STREET SYDNEY NSW, AUSTRALIA 2000	Address	: 277-289 Woodpark Road Smithfield NSW Australia 2164
Telephone	: +61 02 9239 7100	Telephone	: +61-2-8784 8555
Project	: 12554717	Date Samples Received	: 09-Aug-2023 18:29
Order number	: ----	Date Analysis Commenced	: 10-Aug-2023
C-O-C number	: ----	Issue Date	: 17-Aug-2023 19:20
Sampler	: Emily Smith / Andrew Duval		
Site	: ----		
Quote number	: SY/322/21		
No. of samples received	: 14		
No. of samples analysed	: 14		

Accreditation No. 825
Accredited for compliance with
ISO/IEC 17025 - Testing

This report supersedes any previous report(s) with this reference. Results apply to the sample(s) as submitted, unless the sampling was conducted by ALS. This document shall not be reproduced, except in full.

This Certificate of Analysis contains the following information:

- General Comments
- Analytical Results
- Surrogate Control Limits

Additional information pertinent to this report will be found in the following separate attachments: Quality Control Report, QA/QC Compliance Assessment to assist with Quality Review and Sample Receipt Notification.

Signatories

This document has been electronically signed by the authorized signatories below. Electronic signing is carried out in compliance with procedures specified in 21 CFR Part 11.

Signatories	*Position*	*Accreditation Category*
Alex Rossi	Organic Chemist	Sydney Organics, Smithfield, NSW
Dian Dao	Senior Chemist - Inorganics	Sydney Inorganics, Smithfield, NSW
Franco Lentini	LCMS Coordinator	Sydney Organics, Smithfield, NSW
Wisam Marassa	Inorganics Coordinator	Sydney Inorganics, Smithfield, NSW

General Comments

The analytical procedures used by ALS have been developed from established internationally recognised procedures such as those published by the USEPA, APHA, AS and NEPM. In house developed procedures are fully validated and are often at the client request.

Where moisture determination has been performed, results are reported on a dry weight basis.

Where a reported less than (<) result is higher than the LOR, this may be due to primary sample extract/digestate dilution and/or insufficient sample for analysis.

Where the LOR of a reported result differs from standard LOR, this may be due to high moisture content, insufficient sample (reduced weight employed) or matrix interference.

When sampling time information is not provided by the client, sampling dates are shown without a time component. In these instances, the time component has been assumed by the laboratory for processing purposes.

Where a result is required to meet compliance limits the associated uncertainty must be considered. Refer to the ALS Contract for details.

Key : CAS Number = CAS registry number from database maintained by Chemical Abstracts Services. The Chemical Abstracts Service is a division of the American Chemical Society.
LOR = Limit of reporting
^ = This result is computed from individual analyte detections at or above the level of reporting
ø = ALS is not NATA accredited for these tests.
~ = Indicates an estimated value.

- EP075 (SIM): Where reported, Benzo(a)pyrene Toxicity Equivalent Quotient (TEQ) per the NEPM (2013) is the sum total of the concentration of the eight carcinogenic PAHs multiplied by their Toxicity Equivalence Factor (TEF) relative to Benzo(a)pyrene. TEF values are provided in brackets as follows: Benz(a)anthracene (0.1), Chrysene (0.01), Benzo(b+j) & Benzo(k)fluoranthene (0.1), Benzo(a)pyrene (1.0), Indeno(1.2.3.cd)pyrene (0.1), Dibenz(a.h)anthracene (1.0), Benzo(g.h.i)perylene (0.01). Less than LOR results for 'TEQ Zero' are treated as zero.
- EP080: Where reported, Total Xylenes is the sum of the reported concentrations of m&p-Xylene and o-Xylene at or above the LOR.
- EP074: Where reported, Total Trihalomethanes is the sum of the reported concentrations of all Trihalomethanes at or above the LOR.
- EP074: Where reported, Total Trimethylbenzenes is the sum of the reported concentrations of 1.2.3-Trimethylbenzene, 1.2.4-Trimethylbenzene and 1.3.5-Trimethylbenzene at or above the LOR.
- EP075(SIM): Where reported, Total Cresol is the sum of the reported concentrations of 2-Methylphenol and 3- & 4-Methylphenol at or above the LOR.
- EP234: Poor matrix spike recovery for particular compounds due to matrix interferences and high matrix spike recovery has been noted for particular compounds due to ion enhancement.
- It has been noted that Reactive P is greater than Total P, however this difference is within the limits of experimental variation.
- TDS by method EA-015 may bias high due to the presence of fine particulate matter, which may pass through the prescribed GF/C paper.

Analytical Results

Sub-Matrix: WATER (Matrix: WATER)				Sample ID	BADDS	BADMS	BADUS	COSDS	COSUS
				Sampling date / time	09-Aug-2023 00:00	09-Aug-2023 00:00	09-Aug-2023 00:00	09-Aug-2023 00:00	09-Aug-2023 00:00
Compound	CAS Number	LOR	Unit		ES2326795-001	ES2326795-002	ES2326795-003	ES2326795-004	ES2326795-005
					Result	Result	Result	Result	Result
EA015: Total Dissolved Solids dried at 180 ± 5 °C									
Total Dissolved Solids @180°C	----	10	mg/L		**850**	**818**	**680**	**1240**	**3720**
EA025: Total Suspended Solids dried at 104 ± 2°C									
Suspended Solids (SS)	----	5	mg/L		**18**	**33**	**10**	**26**	**21**
EG020T: Total Metals by ICP-MS									
Arsenic	7440-38-2	0.001	mg/L		<0.001	<0.001	<0.001	<0.001	<0.001
Cadmium	7440-43-9	0.0001	mg/L		<0.0001	<0.0001	<0.0001	<0.0001	<0.0001
Chromium	7440-47-3	0.001	mg/L		<0.001	<0.001	<0.001	<0.001	<0.001
Copper	7440-50-8	0.001	mg/L		<0.001	<0.001	<0.001	<0.001	<0.001
Nickel	7440-02-0	0.001	mg/L		**0.001**	**0.002**	<0.001	**0.001**	<0.001
Lead	7439-92-1	0.001	mg/L		<0.001	<0.001	<0.001	<0.001	<0.001
Zinc	7440-66-6	0.005	mg/L		**0.013**	**0.007**	**0.005**	**0.011**	**0.006**
Manganese	7439-96-5	0.001	mg/L		**0.127**	**0.205**	**0.230**	**0.552**	**3.60**
Iron	7439-89-6	0.05	mg/L		**0.78**	**0.92**	**0.48**	**1.14**	**3.14**
EG035T: Total Recoverable Mercury by FIMS									
Mercury	7439-97-6	0.0001	mg/L		<0.0001	<0.0001	<0.0001	<0.0001	<0.0001
EK055G: Ammonia as N by Discrete Analyser									
Ammonia as N	7664-41-7	0.01	mg/L		**0.02**	<0.01	**0.01**	<0.01	**0.34**
EK057G: Nitrite as N by Discrete Analyser									
Nitrite as N	14797-65-0	0.01	mg/L		<0.01	<0.01	<0.01	<0.01	<0.01
EK058G: Nitrate as N by Discrete Analyser									
Nitrate as N	14797-55-8	0.01	mg/L		**0.02**	**0.07**	**0.05**	**0.02**	<0.01
EK059G: Nitrite plus Nitrate as N (NOx) by Discrete Analyser									
Nitrite + Nitrate as N	----	0.01	mg/L		**0.02**	**0.07**	**0.05**	**0.02**	<0.01
EK061G: Total Kjeldahl Nitrogen By Discrete Analyser									
Total Kjeldahl Nitrogen as N	----	0.1	mg/L		**0.6**	**0.8**	**0.5**	**0.5**	**0.9**
EK062G: Total Nitrogen as N (TKN + NOx) by Discrete Analyser									
^ Total Nitrogen as N	----	0.1	mg/L		**0.6**	**0.9**	**0.6**	**0.5**	**0.9**
EK067G: Total Phosphorus as P by Discrete Analyser									
Total Phosphorus as P	----	0.01	mg/L		**0.06**	**0.04**	<0.01	<0.01	**0.02**
EK071G: Reactive Phosphorus as P by discrete analyser									
Reactive Phosphorus as P	14265-44-2	0.01	mg/L		<0.01	<0.01	<0.01	<0.01	<0.01
EP008: Chlorophyll a & Pheophytin a									
Chlorophyll a	----	1	mg/m³		**12**	**26**	**7**	**64**	**389**

Analytical Results

Sub-Matrix: WATER (Matrix: WATER)			Sample ID	BADDS	BADMS	BADUS	COSDS	COSUS
			Sampling date / time	09-Aug-2023 00:00	09-Aug-2023 00:00	09-Aug-2023 00:00	09-Aug-2023 00:00	09-Aug-2023 00:00
Compound	CAS Number	LOR	Unit	ES2326795-001	ES2326795-002	ES2326795-003	ES2326795-004	ES2326795-005
				Result	Result	Result	Result	Result
EP020: Oil and Grease (O&G)								
Oil & Grease	----	5	mg/L	<5	<5	<5	<5	<5
EP074D: Fumigants								
2.2-Dichloropropane	594-20-7	5	µg/L	<5	<5	<5	<5	<5
1.2-Dichloropropane	78-87-5	5	µg/L	<5	<5	<5	<5	<5
cis-1.3-Dichloropropylene	10061-01-5	5	µg/L	<5	<5	<5	<5	<5
trans-1.3-Dichloropropylene	10061-02-6	5	µg/L	<5	<5	<5	<5	<5
1.2-Dibromoethane (EDB)	106-93-4	5	µg/L	<5	<5	<5	<5	<5
EP074E: Halogenated Aliphatic Compounds								
Dichlorodifluoromethane	75-71-8	50	µg/L	<50	<50	<50	<50	<50
Chloromethane	74-87-3	50	µg/L	<50	<50	<50	<50	<50
Vinyl chloride	75-01-4	50	µg/L	<50	<50	<50	<50	<50
Bromomethane	74-83-9	50	µg/L	<50	<50	<50	<50	<50
Chloroethane	75-00-3	50	µg/L	<50	<50	<50	<50	<50
Trichlorofluoromethane	75-69-4	50	µg/L	<50	<50	<50	<50	<50
1.1-Dichloroethene	75-35-4	5	µg/L	<5	<5	<5	<5	<5
Iodomethane	74-88-4	5	µg/L	<5	<5	<5	<5	<5
trans-1.2-Dichloroethene	156-60-5	5	µg/L	<5	<5	<5	<5	<5
1.1-Dichloroethane	75-34-3	5	µg/L	<5	<5	<5	<5	<5
cis-1.2-Dichloroethene	156-59-2	5	µg/L	<5	<5	<5	<5	<5
1.1.1-Trichloroethane	71-55-6	5	µg/L	<5	<5	<5	<5	<5
1.1-Dichloropropylene	563-58-6	5	µg/L	<5	<5	<5	<5	<5
Carbon Tetrachloride	56-23-5	5	µg/L	<5	<5	<5	<5	<5
1.2-Dichloroethane	107-06-2	5	µg/L	<5	<5	<5	<5	<5
Trichloroethene	79-01-6	5	µg/L	<5	<5	<5	<5	<5
Dibromomethane	74-95-3	5	µg/L	<5	<5	<5	<5	<5
1.1.2-Trichloroethane	79-00-5	5	µg/L	<5	<5	<5	<5	<5
1.3-Dichloropropane	142-28-9	5	µg/L	<5	<5	<5	<5	<5
Tetrachloroethene	127-18-4	5	µg/L	<5	<5	<5	<5	<5
1.1.1.2-Tetrachloroethane	630-20-6	5	µg/L	<5	<5	<5	<5	<5
trans-1.4-Dichloro-2-butene	110-57-6	5	µg/L	<5	<5	<5	<5	<5
cis-1.4-Dichloro-2-butene	1476-11-5	5	µg/L	<5	<5	<5	<5	<5
1.1.2.2-Tetrachloroethane	79-34-5	5	µg/L	<5	<5	<5	<5	<5
1.2.3-Trichloropropane	96-18-4	5	µg/L	<5	<5	<5	<5	<5
Pentachloroethane	76-01-7	5	µg/L	<5	<5	<5	<5	<5

Analytical Results

Sub-Matrix: WATER (Matrix: WATER)				Sample ID	BADDS	BADMS	BADUS	COSDS	COSUS
				Sampling date / time	09-Aug-2023 00:00	09-Aug-2023 00:00	09-Aug-2023 00:00	09-Aug-2023 00:00	09-Aug-2023 00:00
Compound	CAS Number	LOR	Unit		ES2326795-001	ES2326795-002	ES2326795-003	ES2326795-004	ES2326795-005
					Result	Result	Result	Result	Result
EP074E: Halogenated Aliphatic Compounds - Continued									
1.2-Dibromo-3-chloropropane	96-12-8	5	µg/L		<5	<5	<5	<5	<5
Hexachlorobutadiene	87-68-3	5	µg/L		<5	<5	<5	<5	<5
EP074F: Halogenated Aromatic Compounds									
Chlorobenzene	108-90-7	5	µg/L		<5	<5	<5	<5	<5
Bromobenzene	108-86-1	5	µg/L		<5	<5	<5	<5	<5
2-Chlorotoluene	95-49-8	5	µg/L		<5	<5	<5	<5	<5
4-Chlorotoluene	106-43-4	5	µg/L		<5	<5	<5	<5	<5
1.3-Dichlorobenzene	541-73-1	5	µg/L		<5	<5	<5	<5	<5
1.4-Dichlorobenzene	106-46-7	5	µg/L		<5	<5	<5	<5	<5
1.2-Dichlorobenzene	95-50-1	5	µg/L		<5	<5	<5	<5	<5
1.2.4-Trichlorobenzene	120-82-1	5	µg/L		<5	<5	<5	<5	<5
1.2.3-Trichlorobenzene	87-61-6	5	µg/L		<5	<5	<5	<5	<5
EP074G: Trihalomethanes									
Chloroform	67-66-3	5	µg/L		<5	<5	<5	<5	<5
Bromodichloromethane	75-27-4	5	µg/L		<5	<5	<5	<5	<5
Dibromochloromethane	124-48-1	5	µg/L		<5	<5	<5	<5	<5
Bromoform	75-25-2	5	µg/L		<5	<5	<5	<5	<5
EP075(SIM)A: Phenolic Compounds									
Phenol	108-95-2	1.0	µg/L		<1.0	<1.0	<1.0	<1.0	<1.0
2-Chlorophenol	95-57-8	1.0	µg/L		<1.0	<1.0	<1.0	<1.0	<1.0
2-Methylphenol	95-48-7	1.0	µg/L		<1.0	<1.0	<1.0	<1.0	<1.0
3- & 4-Methylphenol	1319-77-3	2.0	µg/L		<2.0	<2.0	<2.0	<2.0	<2.0
2-Nitrophenol	88-75-5	1.0	µg/L		<1.0	<1.0	<1.0	<1.0	<1.0
2.4-Dimethylphenol	105-67-9	1.0	µg/L		<1.0	<1.0	<1.0	<1.0	<1.0
2.4-Dichlorophenol	120-83-2	1.0	µg/L		<1.0	<1.0	<1.0	<1.0	<1.0
2.6-Dichlorophenol	87-65-0	1.0	µg/L		<1.0	<1.0	<1.0	<1.0	<1.0
4-Chloro-3-methylphenol	59-50-7	1.0	µg/L		<1.0	<1.0	<1.0	<1.0	<1.0
2.4.6-Trichlorophenol	88-06-2	1.0	µg/L		<1.0	<1.0	<1.0	<1.0	<1.0
2.4.5-Trichlorophenol	95-95-4	1.0	µg/L		<1.0	<1.0	<1.0	<1.0	<1.0
Pentachlorophenol	87-86-5	2.0	µg/L		<2.0	<2.0	<2.0	<2.0	<2.0
EP075(SIM)B: Polynuclear Aromatic Hydrocarbons									
Naphthalene	91-20-3	1.0	µg/L		<1.0	<1.0	<1.0	<1.0	<1.0
Acenaphthylene	208-96-8	1.0	µg/L		<1.0	<1.0	<1.0	<1.0	<1.0
Acenaphthene	83-32-9	1.0	µg/L		<1.0	<1.0	<1.0	<1.0	<1.0

Analytical Results

Sub-Matrix: WATER (Matrix: WATER)				Sample ID	BADDS	BADMS	BADUS	COSDS	COSUS
				Sampling date / time	09-Aug-2023 00:00	09-Aug-2023 00:00	09-Aug-2023 00:00	09-Aug-2023 00:00	09-Aug-2023 00:00
Compound	CAS Number	LOR	Unit		ES2326795-001	ES2326795-002	ES2326795-003	ES2326795-004	ES2326795-005
					Result	Result	Result	Result	Result
EP075(SIM)B: Polynuclear Aromatic Hydrocarbons - Continued									
Fluorene	86-73-7	1.0	µg/L		<1.0	<1.0	<1.0	<1.0	<1.0
Phenanthrene	85-01-8	1.0	µg/L		<1.0	<1.0	<1.0	<1.0	<1.0
Anthracene	120-12-7	1.0	µg/L		<1.0	<1.0	<1.0	<1.0	<1.0
Fluoranthene	206-44-0	1.0	µg/L		<1.0	<1.0	<1.0	<1.0	<1.0
Pyrene	129-00-0	1.0	µg/L		<1.0	<1.0	<1.0	<1.0	<1.0
Benz(a)anthracene	56-55-3	1.0	µg/L		<1.0	<1.0	<1.0	<1.0	<1.0
Chrysene	218-01-9	1.0	µg/L		<1.0	<1.0	<1.0	<1.0	<1.0
Benzo(b+j)fluoranthene	205-99-2 205-82-3	1.0	µg/L		<1.0	<1.0	<1.0	<1.0	<1.0
Benzo(k)fluoranthene	207-08-9	1.0	µg/L		<1.0	<1.0	<1.0	<1.0	<1.0
Benzo(a)pyrene	50-32-8	0.5	µg/L		<0.5	<0.5	<0.5	<0.5	<0.5
Indeno(1.2.3.cd)pyrene	193-39-5	1.0	µg/L		<1.0	<1.0	<1.0	<1.0	<1.0
Dibenz(a.h)anthracene	53-70-3	1.0	µg/L		<1.0	<1.0	<1.0	<1.0	<1.0
Benzo(g.h.i)perylene	191-24-2	1.0	µg/L		<1.0	<1.0	<1.0	<1.0	<1.0
^ **Sum of polycyclic aromatic hydrocarbons**	----	0.5	µg/L		<0.5	<0.5	<0.5	<0.5	<0.5
^ **Benzo(a)pyrene TEQ (zero)**	----	0.5	µg/L		<0.5	<0.5	<0.5	<0.5	<0.5
EP080: BTEXN									
Benzene	71-43-2	1	µg/L		<1	<1	<1	<1	<1
Toluene	108-88-3	2	µg/L		<2	<2	<2	<2	<2
Ethylbenzene	100-41-4	2	µg/L		<2	<2	<2	<2	<2
meta- & para-Xylene	108-38-3 106-42-3	2	µg/L		<2	<2	<2	<2	<2
ortho-Xylene	95-47-6	2	µg/L		<2	<2	<2	<2	<2
^ **Total Xylenes**	----	2	µg/L		<2	<2	<2	<2	<2
^ **Sum of BTEX**	----	1	µg/L		<1	<1	<1	<1	<1
Naphthalene	91-20-3	5	µg/L		<5	<5	<5	<5	<5
EP234A: OP Pesticides									
Acephate	30560-19-1	0.5	µg/L		<0.5	<0.5	<0.5	<0.5	<0.5
Azinphos-methyl	86-50-0	0.02	µg/L		<0.02	<0.02	<0.02	<0.02	<0.02
Azinphos-ethyl	2642-71-9	0.02	µg/L		<0.02	<0.02	<0.02	<0.02	<0.02
Bensulide	741-58-2	0.1	µg/L		<0.1	<0.1	<0.1	<0.1	<0.1
Bromophos-ethyl	4824-78-6	0.10	µg/L		<0.10	<0.10	<0.10	<0.10	<0.10
Carbofenothion	786-19-6	0.02	µg/L		<0.02	<0.02	<0.02	<0.02	<0.02
Chlorfenvinphos	470-90-6	0.02	µg/L		<0.02	<0.02	<0.02	<0.02	<0.02
Chlorpyrifos	2921-88-2	0.02	µg/L		<0.02	<0.02	<0.02	<0.02	<0.02
Chlorpyrifos-methyl	5598-13-0	0.2	µg/L		<0.2	<0.2	<0.2	<0.2	<0.2

Analytical Results

Sub-Matrix: WATER (Matrix: WATER)				Sample ID	BADDS	BADMS	BADUS	COSDS	COSUS
				Sampling date / time	09-Aug-2023 00:00	09-Aug-2023 00:00	09-Aug-2023 00:00	09-Aug-2023 00:00	09-Aug-2023 00:00
Compound	CAS Number	LOR	Unit		ES2326795-001	ES2326795-002	ES2326795-003	ES2326795-004	ES2326795-005
					Result	Result	Result	Result	Result
EP234A: OP Pesticides - Continued									
Coumaphos	56-72-4	0.01	µg/L		<0.01	<0.01	<0.01	<0.01	<0.01
Demeton-O	298-03-3	0.02	µg/L		<0.02	<0.02	<0.02	<0.02	<0.02
Demeton-O & Demeton-S	298-03-3/126-75-0	0.02	µg/L		<0.02	<0.02	<0.02	<0.02	<0.02
Demeton-S	126-75-0	0.02	µg/L		<0.02	<0.02	<0.02	<0.02	<0.02
Demeton-S-methyl	919-86-8	0.02	µg/L		<0.02	<0.02	<0.02	<0.02	<0.02
Diazinon	333-41-5	0.01	µg/L		<0.01	<0.01	<0.01	<0.01	<0.01
Dichlorvos	62-73-7	0.20	µg/L		<0.20	<0.20	<0.20	<0.20	<0.20
Dimethoate	60-51-5	0.02	µg/L		<0.02	<0.02	<0.02	<0.02	<0.02
Disulfoton	298-04-4	0.05	µg/L		<0.05	<0.05	<0.05	<0.05	<0.05
EPN	2104-64-5	0.05	µg/L		<0.05	<0.05	<0.05	<0.05	<0.05
Ethion	563-12-2	0.02	µg/L		<0.02	<0.02	<0.02	<0.02	<0.02
Ethoprophos	13194-48-4	0.01	µg/L		<0.01	<0.01	<0.01	<0.01	<0.01
Fenamiphos	22224-92-6	0.01	µg/L		<0.01	<0.01	<0.01	<0.01	<0.01
Fenchlorphos (Ronnel)	299-84-3	10	µg/L		<10	<10	<10	<10	<10
Fenitrothion	122-14-5	2	µg/L		<2	<2	<2	<2	<2
Fensulfothion	115-90-2	0.01	µg/L		<0.01	<0.01	<0.01	<0.01	<0.01
Fenthion	55-38-9	0.05	µg/L		<0.05	<0.05	<0.05	<0.05	<0.05
Formothion	2540-82-1	20	µg/L		<20	<20	<20	<20	<20
Fosetyl Aluminium	39148-24-8	10	µg/L		<10	<10	<10	<10	<10
Malathion	121-75-5	0.02	µg/L		<0.02	<0.02	<0.02	<0.02	<0.02
Methidathion	950-37-8	0.1	µg/L		<0.1	<0.1	<0.1	<0.1	<0.1
Mevinphos	7786-34-7	0.02	µg/L		<0.02	<0.02	<0.02	<0.02	<0.02
Monocrotophos	6923-22-4	0.02	µg/L		<0.02	<0.02	<0.02	<0.02	<0.02
Naftalofos	1491-41-4	1.0	µg/L		<1.0	<1.0	<1.0	<1.0	<1.0
Omethoate	1113-02-6	0.01	µg/L		<0.01	<0.01	<0.01	<0.01	<0.01
Parathion	56-38-2	0.2	µg/L		<0.2	<0.2	<0.2	<0.2	<0.2
Parathion-methyl	298-00-0	0.5	µg/L		<0.5	<0.5	<0.5	<0.5	<0.5
Phorate	298-02-2	0.1	µg/L		<0.1	<0.1	<0.1	<0.1	<0.1
Pirimiphos-ethyl	23505-41-1	0.01	µg/L		<0.01	<0.01	<0.01	<0.01	<0.01
Pirimiphos-methyl	29232-93-7	0.01	µg/L		<0.01	<0.01	<0.01	<0.01	<0.01
Profenofos	41198-08-7	0.01	µg/L		<0.01	<0.01	<0.01	<0.01	<0.01
Prothiofos	34643-46-4	0.1	µg/L		<0.1	<0.1	<0.1	<0.1	<0.1
Pyrazophos	13457-18-6	0.1	µg/L		<0.1	<0.1	<0.1	<0.1	<0.1
Sulfotep	3689-24-5	0.005	µg/L		<0.005	<0.005	<0.005	<0.005	<0.005
Sulprofos	35400-43-2	0.05	µg/L		<0.05	<0.05	<0.05	<0.05	<0.05

Analytical Results

Sub-Matrix: WATER (Matrix: WATER)				Sample ID	BADDS	BADMS	BADUS	COSDS	COSUS
				Sampling date / time	09-Aug-2023 00:00	09-Aug-2023 00:00	09-Aug-2023 00:00	09-Aug-2023 00:00	09-Aug-2023 00:00
Compound	CAS Number	LOR	Unit		ES2326795-001	ES2326795-002	ES2326795-003	ES2326795-004	ES2326795-005
					Result	Result	Result	Result	Result
EP234A: OP Pesticides - Continued									
Temephos	3383-96-8	0.02	µg/L		<0.02	<0.02	<0.02	<0.02	<0.02
Terbufos	13071-79-9	0.01	µg/L		<0.01	<0.01	<0.01	<0.01	<0.01
Tetrachlorvinphos	22248-79-9	0.01	µg/L		<0.01	<0.01	<0.01	<0.01	<0.01
Thiometon	640-15-3	0.5	µg/L		<0.5	<0.5	<0.5	<0.5	<0.5
Triazophos	24017-47-8	0.005	µg/L		<0.005	<0.005	<0.005	<0.005	<0.005
Trichlorfon	52-68-6	0.02	µg/L		<0.02	<0.02	<0.02	<0.02	<0.02
Trichloronate	327-98-0	0.5	µg/L		<0.5	<0.5	<0.5	<0.5	<0.5
EP074S: VOC Surrogates									
1.2-Dichloroethane-D4	17060-07-0	5	%		**110**	**109**	**107**	**108**	**106**
Toluene-D8	2037-26-5	5	%		**107**	**105**	**109**	**100.0**	**97.7**
4-Bromofluorobenzene	460-00-4	5	%		**111**	**108**	**110**	**108**	**103**
EP075(SIM)S: Phenolic Compound Surrogates									
Phenol-d6	13127-88-3	1.0	%		**27.6**	**28.4**	**27.2**	**27.6**	**26.9**
2-Chlorophenol-D4	93951-73-6	1.0	%		**53.2**	**60.6**	**55.9**	**53.5**	**53.6**
2.4.6-Tribromophenol	118-79-6	1.0	%		**36.3**	**37.9**	**35.6**	**36.5**	**43.4**
EP075(SIM)T: PAH Surrogates									
2-Fluorobiphenyl	321-60-8	1.0	%		**70.7**	**89.1**	**75.4**	**68.7**	**68.5**
Anthracene-d10	1719-06-8	1.0	%		**95.5**	**91.3**	**92.4**	**79.9**	**96.4**
4-Terphenyl-d14	1718-51-0	1.0	%		**71.3**	**87.8**	**77.9**	**72.1**	**73.3**
EP080S: TPH(V)/BTEX Surrogates									
1.2-Dichloroethane-D4	17060-07-0	2	%		**126**	**125**	**122**	**124**	**121**
Toluene-D8	2037-26-5	2	%		**99.1**	**97.2**	**102**	**92.8**	**90.7**
4-Bromofluorobenzene	460-00-4	2	%		**97.7**	**95.1**	**94.3**	**91.4**	**86.6**

Analytical Results

Sub-Matrix: WATER (Matrix: WATER)			Sample ID	HINDS	HINUS	KEMDS	KEMUS	ROPDS
			Sampling date / time	08-Aug-2023 00:00	08-Aug-2023 00:00	08-Aug-2023 00:00	08-Aug-2023 00:00	08-Aug-2023 00:00
Compound	CAS Number	LOR	Unit	ES2326795-006	ES2326795-007	ES2326795-008	ES2326795-009	ES2326795-010
				Result	Result	Result	Result	Result
EA015: Total Dissolved Solids dried at 180 ± 5 °C								
Total Dissolved Solids @180°C	----	10	mg/L	**309**	**373**	**1540**	**1740**	**3230**
EA025: Total Suspended Solids dried at 104 ± 2°C								
Suspended Solids (SS)	----	5	mg/L	**14**	**5**	<5	**18**	<5
EG020T: Total Metals by ICP-MS								
Arsenic	7440-38-2	0.001	mg/L	<0.001	**0.001**	<0.001	<0.001	<0.001
Cadmium	7440-43-9	0.0001	mg/L	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001
Chromium	7440-47-3	0.001	mg/L	<0.001	<0.001	<0.001	<0.001	<0.001
Copper	7440-50-8	0.001	mg/L	<0.001	<0.001	**0.002**	**0.003**	<0.001
Nickel	7440-02-0	0.001	mg/L	<0.001	<0.001	**0.002**	**0.002**	<0.001
Lead	7439-92-1	0.001	mg/L	<0.001	<0.001	<0.001	**0.003**	<0.001
Zinc	7440-66-6	0.005	mg/L	<0.005	<0.005	**0.009**	**0.014**	**0.006**
Manganese	7439-96-5	0.001	mg/L	**0.307**	**0.340**	**0.027**	**0.053**	**0.280**
Iron	7439-89-6	0.05	mg/L	**0.53**	**1.45**	**0.15**	**0.43**	**0.06**
EG035T: Total Recoverable Mercury by FIMS								
Mercury	7439-97-6	0.0001	mg/L	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001
EK055G: Ammonia as N by Discrete Analyser								
Ammonia as N	7664-41-7	0.01	mg/L	**0.01**	**0.01**	**0.04**	**0.02**	**0.01**
EK057G: Nitrite as N by Discrete Analyser								
Nitrite as N	14797-65-0	0.01	mg/L	<0.01	<0.01	<0.01	<0.01	<0.01
EK058G: Nitrate as N by Discrete Analyser								
Nitrate as N	14797-55-8	0.01	mg/L	<0.01	<0.01	**3.50**	**4.00**	**0.03**
EK059G: Nitrite plus Nitrate as N (NOx) by Discrete Analyser								
Nitrite + Nitrate as N	----	0.01	mg/L	<0.01	<0.01	**3.50**	**4.00**	**0.03**
EK061G: Total Kjeldahl Nitrogen By Discrete Analyser								
Total Kjeldahl Nitrogen as N	----	0.1	mg/L	**0.9**	**1.5**	**0.9**	**1.0**	**0.5**
EK062G: Total Nitrogen as N (TKN + NOx) by Discrete Analyser								
^ Total Nitrogen as N	----	0.1	mg/L	**0.9**	**1.5**	**4.4**	**5.0**	**0.5**
EK067G: Total Phosphorus as P by Discrete Analyser								
Total Phosphorus as P	----	0.01	mg/L	<0.01	**0.06**	**0.34**	**0.44**	<0.01
EK071G: Reactive Phosphorus as P by discrete analyser								
Reactive Phosphorus as P	14265-44-2	0.01	mg/L	<0.01	<0.01	**0.39**	**0.47**	**0.02**
EP008: Chlorophyll a & Pheophytin a								
Chlorophyll a	----	1	mg/m³	**11**	**15**	**20**	**70**	**10**

Analytical Results

Sub-Matrix: WATER (Matrix: WATER)				Sample ID	HINDS	HINUS	KEMDS	KEMUS	ROPDS
				Sampling date / time	08-Aug-2023 00:00	08-Aug-2023 00:00	08-Aug-2023 00:00	08-Aug-2023 00:00	08-Aug-2023 00:00
Compound	CAS Number	LOR	Unit		ES2326795-006	ES2326795-007	ES2326795-008	ES2326795-009	ES2326795-010
					Result	Result	Result	Result	Result
EP020: Oil and Grease (O&G)									
Oil & Grease	----	5	mg/L		<5	<5	<5	<5	<5
EP074D: Fumigants									
2.2-Dichloropropane	594-20-7	5	µg/L		<5	<5	<5	<5	<5
1.2-Dichloropropane	78-87-5	5	µg/L		<5	<5	<5	<5	<5
cis-1.3-Dichloropropylene	10061-01-5	5	µg/L		<5	<5	<5	<5	<5
trans-1.3-Dichloropropylene	10061-02-6	5	µg/L		<5	<5	<5	<5	<5
1.2-Dibromoethane (EDB)	106-93-4	5	µg/L		<5	<5	<5	<5	<5
EP074E: Halogenated Aliphatic Compounds									
Dichlorodifluoromethane	75-71-8	50	µg/L		<50	<50	<50	<50	<50
Chloromethane	74-87-3	50	µg/L		<50	<50	<50	<50	<50
Vinyl chloride	75-01-4	50	µg/L		<50	<50	<50	<50	<50
Bromomethane	74-83-9	50	µg/L		<50	<50	<50	<50	<50
Chloroethane	75-00-3	50	µg/L		<50	<50	<50	<50	<50
Trichlorofluoromethane	75-69-4	50	µg/L		<50	<50	<50	<50	<50
1.1-Dichloroethene	75-35-4	5	µg/L		<5	<5	<5	<5	<5
Iodomethane	74-88-4	5	µg/L		<5	<5	<5	<5	<5
trans-1.2-Dichloroethene	156-60-5	5	µg/L		<5	<5	<5	<5	<5
1.1-Dichloroethane	75-34-3	5	µg/L		<5	<5	<5	<5	<5
cis-1.2-Dichloroethene	156-59-2	5	µg/L		<5	<5	<5	<5	<5
1.1.1-Trichloroethane	71-55-6	5	µg/L		<5	<5	<5	<5	<5
1.1-Dichloropropylene	563-58-6	5	µg/L		<5	<5	<5	<5	<5
Carbon Tetrachloride	56-23-5	5	µg/L		<5	<5	<5	<5	<5
1.2-Dichloroethane	107-06-2	5	µg/L		<5	<5	<5	<5	<5
Trichloroethene	79-01-6	5	µg/L		<5	<5	<5	<5	<5
Dibromomethane	74-95-3	5	µg/L		<5	<5	<5	<5	<5
1.1.2-Trichloroethane	79-00-5	5	µg/L		<5	<5	<5	<5	<5
1.3-Dichloropropane	142-28-9	5	µg/L		<5	<5	<5	<5	<5
Tetrachloroethene	127-18-4	5	µg/L		<5	<5	<5	<5	<5
1.1.1.2-Tetrachloroethane	630-20-6	5	µg/L		<5	<5	<5	<5	<5
trans-1.4-Dichloro-2-butene	110-57-6	5	µg/L		<5	<5	<5	<5	<5
cis-1.4-Dichloro-2-butene	1476-11-5	5	µg/L		<5	<5	<5	<5	<5
1.1.2.2-Tetrachloroethane	79-34-5	5	µg/L		<5	<5	<5	<5	<5
1.2.3-Trichloropropane	96-18-4	5	µg/L		<5	<5	<5	<5	<5
Pentachloroethane	76-01-7	5	µg/L		<5	<5	<5	<5	<5

Analytical Results

Sub-Matrix: WATER (Matrix: WATER)				Sample ID	HINDS	HINUS	KEMDS	KEMUS	ROPDS
				Sampling date / time	08-Aug-2023 00:00	08-Aug-2023 00:00	08-Aug-2023 00:00	08-Aug-2023 00:00	08-Aug-2023 00:00
Compound	CAS Number	LOR	Unit		ES2326795-006	ES2326795-007	ES2326795-008	ES2326795-009	ES2326795-010
					Result	Result	Result	Result	Result
EP074E: Halogenated Aliphatic Compounds - Continued									
1.2-Dibromo-3-chloropropane	96-12-8	5	µg/L		<5	<5	<5	<5	<5
Hexachlorobutadiene	87-68-3	5	µg/L		<5	<5	<5	<5	<5
EP074F: Halogenated Aromatic Compounds									
Chlorobenzene	108-90-7	5	µg/L		<5	<5	<5	<5	<5
Bromobenzene	108-86-1	5	µg/L		<5	<5	<5	<5	<5
2-Chlorotoluene	95-49-8	5	µg/L		<5	<5	<5	<5	<5
4-Chlorotoluene	106-43-4	5	µg/L		<5	<5	<5	<5	<5
1.3-Dichlorobenzene	541-73-1	5	µg/L		<5	<5	<5	<5	<5
1.4-Dichlorobenzene	106-46-7	5	µg/L		<5	<5	<5	<5	<5
1.2-Dichlorobenzene	95-50-1	5	µg/L		<5	<5	<5	<5	<5
1.2.4-Trichlorobenzene	120-82-1	5	µg/L		<5	<5	<5	<5	<5
1.2.3-Trichlorobenzene	87-61-6	5	µg/L		<5	<5	<5	<5	<5
EP074G: Trihalomethanes									
Chloroform	67-66-3	5	µg/L		<5	<5	<5	<5	<5
Bromodichloromethane	75-27-4	5	µg/L		<5	<5	<5	<5	<5
Dibromochloromethane	124-48-1	5	µg/L		<5	<5	<5	<5	<5
Bromoform	75-25-2	5	µg/L		<5	<5	<5	<5	<5
EP075(SIM)A: Phenolic Compounds									
Phenol	108-95-2	1.0	µg/L		<1.0	<1.0	<1.0	<1.0	<1.0
2-Chlorophenol	95-57-8	1.0	µg/L		<1.0	<1.0	<1.0	<1.0	<1.0
2-Methylphenol	95-48-7	1.0	µg/L		<1.0	<1.0	<1.0	<1.0	<1.0
3- & 4-Methylphenol	1319-77-3	2.0	µg/L		<2.0	<2.0	<2.0	<2.0	<2.0
2-Nitrophenol	88-75-5	1.0	µg/L		<1.0	<1.0	<1.0	<1.0	<1.0
2.4-Dimethylphenol	105-67-9	1.0	µg/L		<1.0	<1.0	<1.0	<1.0	<1.0
2.4-Dichlorophenol	120-83-2	1.0	µg/L		<1.0	<1.0	<1.0	<1.0	<1.0
2.6-Dichlorophenol	87-65-0	1.0	µg/L		<1.0	<1.0	<1.0	<1.0	<1.0
4-Chloro-3-methylphenol	59-50-7	1.0	µg/L		<1.0	<1.0	<1.0	<1.0	<1.0
2.4.6-Trichlorophenol	88-06-2	1.0	µg/L		<1.0	<1.0	<1.0	<1.0	<1.0
2.4.5-Trichlorophenol	95-95-4	1.0	µg/L		<1.0	<1.0	<1.0	<1.0	<1.0
Pentachlorophenol	87-86-5	2.0	µg/L		<2.0	<2.0	<2.0	<2.0	<2.0
EP075(SIM)B: Polynuclear Aromatic Hydrocarbons									
Naphthalene	91-20-3	1.0	µg/L		<1.0	<1.0	<1.0	<1.0	<1.0
Acenaphthylene	208-96-8	1.0	µg/L		<1.0	<1.0	<1.0	<1.0	<1.0
Acenaphthene	83-32-9	1.0	µg/L		<1.0	<1.0	<1.0	<1.0	<1.0

Analytical Results

Sub-Matrix: WATER (Matrix: WATER)				Sample ID	HINDS	HINUS	KEMDS	KEMUS	ROPDS
				Sampling date / time	08-Aug-2023 00:00	08-Aug-2023 00:00	08-Aug-2023 00:00	08-Aug-2023 00:00	08-Aug-2023 00:00
Compound	CAS Number	LOR	Unit		ES2326795-006	ES2326795-007	ES2326795-008	ES2326795-009	ES2326795-010
					Result	Result	Result	Result	Result
EP075(SIM)B: Polynuclear Aromatic Hydrocarbons - Continued									
Fluorene	86-73-7	1.0	µg/L		<1.0	<1.0	<1.0	<1.0	<1.0
Phenanthrene	85-01-8	1.0	µg/L		<1.0	<1.0	<1.0	<1.0	<1.0
Anthracene	120-12-7	1.0	µg/L		<1.0	<1.0	<1.0	<1.0	<1.0
Fluoranthene	206-44-0	1.0	µg/L		<1.0	<1.0	<1.0	<1.0	<1.0
Pyrene	129-00-0	1.0	µg/L		<1.0	<1.0	<1.0	<1.0	<1.0
Benz(a)anthracene	56-55-3	1.0	µg/L		<1.0	<1.0	<1.0	<1.0	<1.0
Chrysene	218-01-9	1.0	µg/L		<1.0	<1.0	<1.0	<1.0	<1.0
Benzo(b+j)fluoranthene	205-99-2 205-82-3	1.0	µg/L		<1.0	<1.0	<1.0	<1.0	<1.0
Benzo(k)fluoranthene	207-08-9	1.0	µg/L		<1.0	<1.0	<1.0	<1.0	<1.0
Benzo(a)pyrene	50-32-8	0.5	µg/L		<0.5	<0.5	<0.5	<0.5	<0.5
Indeno(1.2.3.cd)pyrene	193-39-5	1.0	µg/L		<1.0	<1.0	<1.0	<1.0	<1.0
Dibenz(a.h)anthracene	53-70-3	1.0	µg/L		<1.0	<1.0	<1.0	<1.0	<1.0
Benzo(g.h.i)perylene	191-24-2	1.0	µg/L		<1.0	<1.0	<1.0	<1.0	<1.0
^ **Sum of polycyclic aromatic hydrocarbons**	----	0.5	µg/L		<0.5	<0.5	<0.5	<0.5	<0.5
^ **Benzo(a)pyrene TEQ (zero)**	----	0.5	µg/L		<0.5	<0.5	<0.5	<0.5	<0.5
EP080: BTEXN									
Benzene	71-43-2	1	µg/L		<1	<1	<1	<1	<1
Toluene	108-88-3	2	µg/L		<2	<2	<2	<2	<2
Ethylbenzene	100-41-4	2	µg/L		<2	<2	<2	<2	<2
meta- & para-Xylene	108-38-3 106-42-3	2	µg/L		<2	<2	<2	<2	<2
ortho-Xylene	95-47-6	2	µg/L		<2	<2	<2	<2	<2
^ **Total Xylenes**	----	2	µg/L		<2	<2	<2	<2	<2
^ **Sum of BTEX**	----	1	µg/L		<1	<1	<1	<1	<1
Naphthalene	91-20-3	5	µg/L		<5	<5	<5	<5	<5
EP234A: OP Pesticides									
Acephate	30560-19-1	0.5	µg/L		<0.5	<0.5	<0.5	<0.5	<0.5
Azinphos-methyl	86-50-0	0.02	µg/L		<0.02	<0.02	<0.02	<0.02	<0.02
Azinphos-ethyl	2642-71-9	0.02	µg/L		<0.02	<0.02	<0.02	<0.02	<0.02
Bensulide	741-58-2	0.1	µg/L		<0.1	<0.1	<0.1	<0.1	<0.1
Bromophos-ethyl	4824-78-6	0.10	µg/L		<0.10	<0.10	<0.10	<0.10	<0.10
Carbofenothion	786-19-6	0.02	µg/L		<0.02	<0.02	<0.02	<0.02	<0.02
Chlorfenvinphos	470-90-6	0.02	µg/L		<0.02	<0.02	<0.02	<0.02	<0.02
Chlorpyrifos	2921-88-2	0.02	µg/L		<0.02	<0.02	<0.02	<0.02	<0.02
Chlorpyrifos-methyl	5598-13-0	0.2	µg/L		<0.2	<0.2	<0.2	<0.2	<0.2

Analytical Results

Sub-Matrix: WATER (Matrix: WATER)				Sample ID	HINDS	HINUS	KEMDS	KEMUS	ROPDS
				Sampling date / time	08-Aug-2023 00:00	08-Aug-2023 00:00	08-Aug-2023 00:00	08-Aug-2023 00:00	08-Aug-2023 00:00
Compound	CAS Number	LOR	Unit		ES2326795-006	ES2326795-007	ES2326795-008	ES2326795-009	ES2326795-010
					Result	Result	Result	Result	Result
EP234A: OP Pesticides - Continued									
Coumaphos	56-72-4	0.01	µg/L		<0.01	<0.01	<0.01	<0.01	<0.01
Demeton-O	298-03-3	0.02	µg/L		<0.02	<0.02	<0.02	<0.02	<0.02
Demeton-O & Demeton-S	298-03-3/126-75-0	0.02	µg/L		<0.02	<0.02	<0.02	<0.02	<0.02
Demeton-S	126-75-0	0.02	µg/L		<0.02	<0.02	<0.02	<0.02	<0.02
Demeton-S-methyl	919-86-8	0.02	µg/L		<0.02	<0.02	<0.02	<0.02	<0.02
Diazinon	333-41-5	0.01	µg/L		<0.01	<0.01	<0.01	<0.01	<0.01
Dichlorvos	62-73-7	0.20	µg/L		<0.20	<0.20	<0.20	<0.20	<0.20
Dimethoate	60-51-5	0.02	µg/L		<0.02	<0.02	**0.04**	**0.07**	<0.02
Disulfoton	298-04-4	0.05	µg/L		<0.05	<0.05	<0.05	<0.05	<0.05
EPN	2104-64-5	0.05	µg/L		<0.05	<0.05	<0.05	<0.05	<0.05
Ethion	563-12-2	0.02	µg/L		<0.02	<0.02	<0.02	<0.02	<0.02
Ethoprophos	13194-48-4	0.01	µg/L		<0.01	<0.01	<0.01	<0.01	<0.01
Fenamiphos	22224-92-6	0.01	µg/L		<0.01	<0.01	<0.01	<0.01	<0.01
Fenchlorphos (Ronnel)	299-84-3	10	µg/L		<10	<10	<10	<10	<10
Fenitrothion	122-14-5	2	µg/L		<2	<2	<2	<2	<2
Fensulfothion	115-90-2	0.01	µg/L		<0.01	<0.01	<0.01	<0.01	<0.01
Fenthion	55-38-9	0.05	µg/L		<0.05	<0.05	<0.05	<0.05	<0.05
Formothion	2540-82-1	20	µg/L		<20	<20	<20	<20	<20
Fosetyl Aluminium	39148-24-8	10	µg/L		<10	<10	<10	<10	<10
Malathion	121-75-5	0.02	µg/L		<0.02	<0.02	<0.02	<0.02	<0.02
Methidathion	950-37-8	0.1	µg/L		<0.1	<0.1	<0.1	<0.1	<0.1
Mevinphos	7786-34-7	0.02	µg/L		<0.02	<0.02	<0.02	<0.02	<0.02
Monocrotophos	6923-22-4	0.02	µg/L		<0.02	<0.02	<0.02	<0.02	<0.02
Naftalofos	1491-41-4	1.0	µg/L		<1.0	<1.0	<1.0	<1.0	<1.0
Omethoate	1113-02-6	0.01	µg/L		<0.01	<0.01	<0.01	<0.01	<0.01
Parathion	56-38-2	0.2	µg/L		<0.2	<0.2	<0.2	<0.2	<0.2
Parathion-methyl	298-00-0	0.5	µg/L		<0.5	<0.5	<0.5	<0.5	<0.5
Phorate	298-02-2	0.1	µg/L		<0.1	<0.1	<0.1	<0.1	<0.1
Pirimiphos-ethyl	23505-41-1	0.01	µg/L		<0.01	<0.01	<0.01	<0.01	<0.01
Pirimiphos-methyl	29232-93-7	0.01	µg/L		<0.01	<0.01	<0.01	<0.01	<0.01
Profenofos	41198-08-7	0.01	µg/L		<0.01	<0.01	<0.01	<0.01	<0.01
Prothiofos	34643-46-4	0.1	µg/L		<0.1	<0.1	<0.1	<0.1	<0.1
Pyrazophos	13457-18-6	0.1	µg/L		<0.1	<0.1	<0.1	<0.1	<0.1
Sulfotep	3689-24-5	0.005	µg/L		<0.005	<0.005	<0.005	<0.005	<0.005
Sulprofos	35400-43-2	0.05	µg/L		<0.05	<0.05	<0.05	<0.05	<0.05

Analytical Results

Sub-Matrix: WATER (Matrix: WATER)				Sample ID	HINDS	HINUS	KEMDS	KEMUS	ROPDS
				Sampling date / time	08-Aug-2023 00:00	08-Aug-2023 00:00	08-Aug-2023 00:00	08-Aug-2023 00:00	08-Aug-2023 00:00
Compound	CAS Number	LOR	Unit		ES2326795-006	ES2326795-007	ES2326795-008	ES2326795-009	ES2326795-010
					Result	Result	Result	Result	Result
EP234A: OP Pesticides - Continued									
Temephos	3383-96-8	0.02	µg/L		<0.02	<0.02	<0.02	<0.02	<0.02
Terbufos	13071-79-9	0.01	µg/L		<0.01	<0.01	<0.01	<0.01	<0.01
Tetrachlorvinphos	22248-79-9	0.01	µg/L		<0.01	<0.01	<0.01	<0.01	<0.01
Thiometon	640-15-3	0.5	µg/L		<0.5	<0.5	<0.5	<0.5	<0.5
Triazophos	24017-47-8	0.005	µg/L		<0.005	<0.005	<0.005	<0.005	<0.005
Trichlorfon	52-68-6	0.02	µg/L		<0.02	<0.02	<0.02	<0.02	<0.02
Trichloronate	327-98-0	0.5	µg/L		<0.5	<0.5	<0.5	<0.5	<0.5
EP074S: VOC Surrogates									
1.2-Dichloroethane-D4	17060-07-0	5	%		**112**	**131**	**119**	**112**	**128**
Toluene-D8	2037-26-5	5	%		**109**	**126**	**112**	**113**	**121**
4-Bromofluorobenzene	460-00-4	5	%		**113**	**122**	**113**	**117**	**123**
EP075(SIM)S: Phenolic Compound Surrogates									
Phenol-d6	13127-88-3	1.0	%		**24.9**	**25.0**	**24.7**	**27.9**	**29.4**
2-Chlorophenol-D4	93951-73-6	1.0	%		**49.6**	**50.2**	**48.6**	**55.0**	**58.0**
2.4.6-Tribromophenol	118-79-6	1.0	%		**39.1**	**38.2**	**36.9**	**35.9**	**43.0**
EP075(SIM)T: PAH Surrogates									
2-Fluorobiphenyl	321-60-8	1.0	%		**65.7**	**64.4**	**63.7**	**70.2**	**74.4**
Anthracene-d10	1719-06-8	1.0	%		**93.4**	**91.7**	**76.6**	**80.6**	**84.8**
4-Terphenyl-d14	1718-51-0	1.0	%		**69.1**	**67.0**	**70.5**	**71.6**	**81.7**
EP080S: TPH(V)/BTEX Surrogates									
1.2-Dichloroethane-D4	17060-07-0	2	%		**128**	**123**	**136**	**128**	**118**
Toluene-D8	2037-26-5	2	%		**101**	**129**	**104**	**105**	**123**
4-Bromofluorobenzene	460-00-4	2	%		**97.2**	**127**	**101**	**97.6**	**123**

Analytical Results

Sub-Matrix: WATER (Matrix: WATER)			Sample ID	ROPUS	SOUDS	SOUUS	SWDUP1	----
			Sampling date / time	08-Aug-2023 00:00	08-Aug-2023 00:00	08-Aug-2023 00:00	08-Aug-2023 00:00	----
Compound	CAS Number	LOR	Unit	ES2326795-011	ES2326795-012	ES2326795-013	ES2326795-014	--------
				Result	Result	Result	Result	----
EA015: Total Dissolved Solids dried at 180 ± 5 °C								
Total Dissolved Solids @180°C	----	10	mg/L	**234**	**764**	**734**	**----**	**----**
EA025: Total Suspended Solids dried at 104 ± 2°C								
Suspended Solids (SS)	----	5	mg/L	**53**	**27**	**20**	**----**	**----**
EG020T: Total Metals by ICP-MS								
Arsenic	7440-38-2	0.001	mg/L	**0.002**	<0.001	<0.001	<0.001	**----**
Cadmium	7440-43-9	0.0001	mg/L	<0.0001	<0.0001	<0.0001	<0.0001	**----**
Chromium	7440-47-3	0.001	mg/L	**0.003**	<0.001	<0.001	<0.001	**----**
Copper	7440-50-8	0.001	mg/L	**0.003**	**0.002**	**0.001**	<0.001	**----**
Nickel	7440-02-0	0.001	mg/L	**0.003**	**0.003**	**0.003**	<0.001	**----**
Lead	7439-92-1	0.001	mg/L	**0.003**	<0.001	<0.001	<0.001	**----**
Zinc	7440-66-6	0.005	mg/L	**0.011**	**0.005**	<0.005	<0.005	**----**
Manganese	7439-96-5	0.001	mg/L	**1.36**	**0.126**	**0.110**	**----**	**----**
Iron	7439-89-6	0.05	mg/L	**5.26**	**0.76**	**0.49**	**----**	**----**
EG035T: Total Recoverable Mercury by FIMS								
Mercury	7439-97-6	0.0001	mg/L	<0.0001	<0.0001	<0.0001	<0.0001	**----**
EK055G: Ammonia as N by Discrete Analyser								
Ammonia as N	7664-41-7	0.01	mg/L	**0.94**	**0.01**	**0.02**	**----**	**----**
EK057G: Nitrite as N by Discrete Analyser								
Nitrite as N	14797-65-0	0.01	mg/L	<0.01	<0.01	<0.01	**----**	**----**
EK058G: Nitrate as N by Discrete Analyser								
Nitrate as N	14797-55-8	0.01	mg/L	<0.01	**0.05**	**0.11**	**----**	**----**
EK059G: Nitrite plus Nitrate as N (NOx) by Discrete Analyser								
Nitrite + Nitrate as N	----	0.01	mg/L	<0.01	**0.05**	**0.11**	**----**	**----**
EK061G: Total Kjeldahl Nitrogen By Discrete Analyser								
Total Kjeldahl Nitrogen as N	----	0.1	mg/L	**1.7**	**0.7**	**0.6**	**----**	**----**
EK062G: Total Nitrogen as N (TKN + NOx) by Discrete Analyser								
^ Total Nitrogen as N	----	0.1	mg/L	**1.7**	**0.8**	**0.7**	**----**	**----**
EK067G: Total Phosphorus as P by Discrete Analyser								
Total Phosphorus as P	----	0.01	mg/L	<0.01	<0.01	**0.02**	**----**	**----**
EK071G: Reactive Phosphorus as P by discrete analyser								
Reactive Phosphorus as P	14265-44-2	0.01	mg/L	<0.01	<0.01	<0.01	**----**	**----**
EP008: Chlorophyll a & Pheophytin a								
Chlorophyll a	----	1	mg/m³	**2**	**16**	**19**	**----**	**----**

Analytical Results

Sub-Matrix: WATER (Matrix: WATER)				Sample ID	ROPUS	SOUDS	SOUUS	SWDUP1	----
				Sampling date / time	08-Aug-2023 00:00	08-Aug-2023 00:00	08-Aug-2023 00:00	08-Aug-2023 00:00	----
Compound	CAS Number	LOR	Unit		ES2326795-011	ES2326795-012	ES2326795-013	ES2326795-014	--------
					Result	Result	Result	Result	----
EP020: Oil and Grease (O&G)									
Oil & Grease	----	5	mg/L		<5	<5	<5	----	----
EP074D: Fumigants									
2.2-Dichloropropane	594-20-7	5	µg/L		<5	<5	<5	----	----
1.2-Dichloropropane	78-87-5	5	µg/L		<5	<5	<5	----	----
cis-1.3-Dichloropropylene	10061-01-5	5	µg/L		<5	<5	<5	----	----
trans-1.3-Dichloropropylene	10061-02-6	5	µg/L		<5	<5	<5	----	----
1.2-Dibromoethane (EDB)	106-93-4	5	µg/L		<5	<5	<5	----	----
EP074E: Halogenated Aliphatic Compounds									
Dichlorodifluoromethane	75-71-8	50	µg/L		<50	<50	<50	----	----
Chloromethane	74-87-3	50	µg/L		<50	<50	<50	----	----
Vinyl chloride	75-01-4	50	µg/L		<50	<50	<50	----	----
Bromomethane	74-83-9	50	µg/L		<50	<50	<50	----	----
Chloroethane	75-00-3	50	µg/L		<50	<50	<50	----	----
Trichlorofluoromethane	75-69-4	50	µg/L		<50	<50	<50	----	----
1.1-Dichloroethene	75-35-4	5	µg/L		<5	<5	<5	----	----
Iodomethane	74-88-4	5	µg/L		<5	<5	<5	----	----
trans-1.2-Dichloroethene	156-60-5	5	µg/L		<5	<5	<5	----	----
1.1-Dichloroethane	75-34-3	5	µg/L		<5	<5	<5	----	----
cis-1.2-Dichloroethene	156-59-2	5	µg/L		<5	<5	<5	----	----
1.1.1-Trichloroethane	71-55-6	5	µg/L		<5	<5	<5	----	----
1.1-Dichloropropylene	563-58-6	5	µg/L		<5	<5	<5	----	----
Carbon Tetrachloride	56-23-5	5	µg/L		<5	<5	<5	----	----
1.2-Dichloroethane	107-06-2	5	µg/L		<5	<5	<5	----	----
Trichloroethene	79-01-6	5	µg/L		<5	<5	<5	----	----
Dibromomethane	74-95-3	5	µg/L		<5	<5	<5	----	----
1.1.2-Trichloroethane	79-00-5	5	µg/L		<5	<5	<5	----	----
1.3-Dichloropropane	142-28-9	5	µg/L		<5	<5	<5	----	----
Tetrachloroethene	127-18-4	5	µg/L		<5	<5	<5	----	----
1.1.1.2-Tetrachloroethane	630-20-6	5	µg/L		<5	<5	<5	----	----
trans-1.4-Dichloro-2-butene	110-57-6	5	µg/L		<5	<5	<5	----	----
cis-1.4-Dichloro-2-butene	1476-11-5	5	µg/L		<5	<5	<5	----	----
1.1.2.2-Tetrachloroethane	79-34-5	5	µg/L		<5	<5	<5	----	----
1.2.3-Trichloropropane	96-18-4	5	µg/L		<5	<5	<5	----	----
Pentachloroethane	76-01-7	5	µg/L		<5	<5	<5	----	----

Analytical Results

Sub-Matrix: WATER (Matrix: WATER)				Sample ID	ROPUS	SOUDS	SOUUS	SWDUP1	----
				Sampling date / time	08-Aug-2023 00:00	08-Aug-2023 00:00	08-Aug-2023 00:00	08-Aug-2023 00:00	----
Compound	CAS Number	LOR	Unit		ES2326795-011	ES2326795-012	ES2326795-013	ES2326795-014	--------
					Result	Result	Result	Result	----
EP074E: Halogenated Aliphatic Compounds - Continued									
1.2-Dibromo-3-chloropropane	96-12-8	5	µg/L		<5	<5	<5	----	----
Hexachlorobutadiene	87-68-3	5	µg/L		<5	<5	<5	----	----
EP074F: Halogenated Aromatic Compounds									
Chlorobenzene	108-90-7	5	µg/L		<5	<5	<5	----	----
Bromobenzene	108-86-1	5	µg/L		<5	<5	<5	----	----
2-Chlorotoluene	95-49-8	5	µg/L		<5	<5	<5	----	----
4-Chlorotoluene	106-43-4	5	µg/L		<5	<5	<5	----	----
1.3-Dichlorobenzene	541-73-1	5	µg/L		<5	<5	<5	----	----
1.4-Dichlorobenzene	106-46-7	5	µg/L		<5	<5	<5	----	----
1.2-Dichlorobenzene	95-50-1	5	µg/L		<5	<5	<5	----	----
1.2.4-Trichlorobenzene	120-82-1	5	µg/L		<5	<5	<5	----	----
1.2.3-Trichlorobenzene	87-61-6	5	µg/L		<5	<5	<5	----	----
EP074G: Trihalomethanes									
Chloroform	67-66-3	5	µg/L		<5	<5	<5	----	----
Bromodichloromethane	75-27-4	5	µg/L		<5	<5	<5	----	----
Dibromochloromethane	124-48-1	5	µg/L		<5	<5	<5	----	----
Bromoform	75-25-2	5	µg/L		<5	<5	<5	----	----
EP075(SIM)A: Phenolic Compounds									
Phenol	108-95-2	1.0	µg/L		<1.0	<1.0	<1.0	----	----
2-Chlorophenol	95-57-8	1.0	µg/L		<1.0	<1.0	<1.0	----	----
2-Methylphenol	95-48-7	1.0	µg/L		<1.0	<1.0	<1.0	----	----
3- & 4-Methylphenol	1319-77-3	2.0	µg/L		<2.0	<2.0	<2.0	----	----
2-Nitrophenol	88-75-5	1.0	µg/L		<1.0	<1.0	<1.0	----	----
2.4-Dimethylphenol	105-67-9	1.0	µg/L		<1.0	<1.0	<1.0	----	----
2.4-Dichlorophenol	120-83-2	1.0	µg/L		<1.0	<1.0	<1.0	----	----
2.6-Dichlorophenol	87-65-0	1.0	µg/L		<1.0	<1.0	<1.0	----	----
4-Chloro-3-methylphenol	59-50-7	1.0	µg/L		<1.0	<1.0	<1.0	----	----
2.4.6-Trichlorophenol	88-06-2	1.0	µg/L		<1.0	<1.0	<1.0	----	----
2.4.5-Trichlorophenol	95-95-4	1.0	µg/L		<1.0	<1.0	<1.0	----	----
Pentachlorophenol	87-86-5	2.0	µg/L		<2.0	<2.0	<2.0	----	----
EP075(SIM)B: Polynuclear Aromatic Hydrocarbons									
Naphthalene	91-20-3	1.0	µg/L		<1.0	<1.0	<1.0	----	----
Acenaphthylene	208-96-8	1.0	µg/L		<1.0	<1.0	<1.0	----	----
Acenaphthene	83-32-9	1.0	µg/L		<1.0	<1.0	<1.0	----	----

Analytical Results

Sub-Matrix: WATER (Matrix: WATER)				Sample ID	ROPUS	SOUDS	SOUUS	SWDUP1	----
				Sampling date / time	08-Aug-2023 00:00	08-Aug-2023 00:00	08-Aug-2023 00:00	08-Aug-2023 00:00	----
Compound	CAS Number	LOR	Unit		ES2326795-011	ES2326795-012	ES2326795-013	ES2326795-014	--------
					Result	Result	Result	Result	----
EP075(SIM)B: Polynuclear Aromatic Hydrocarbons - Continued									
Fluorene	86-73-7	1.0	µg/L		<1.0	<1.0	<1.0	----	----
Phenanthrene	85-01-8	1.0	µg/L		<1.0	<1.0	<1.0	----	----
Anthracene	120-12-7	1.0	µg/L		<1.0	<1.0	<1.0	----	----
Fluoranthene	206-44-0	1.0	µg/L		<1.0	<1.0	<1.0	----	----
Pyrene	129-00-0	1.0	µg/L		<1.0	<1.0	<1.0	----	----
Benz(a)anthracene	56-55-3	1.0	µg/L		<1.0	<1.0	<1.0	----	----
Chrysene	218-01-9	1.0	µg/L		<1.0	<1.0	<1.0	----	----
Benzo(b+j)fluoranthene	205-99-2 205-82-3	1.0	µg/L		<1.0	<1.0	<1.0	----	----
Benzo(k)fluoranthene	207-08-9	1.0	µg/L		<1.0	<1.0	<1.0	----	----
Benzo(a)pyrene	50-32-8	0.5	µg/L		<0.5	<0.5	<0.5	----	----
Indeno(1.2.3.cd)pyrene	193-39-5	1.0	µg/L		<1.0	<1.0	<1.0	----	----
Dibenz(a.h)anthracene	53-70-3	1.0	µg/L		<1.0	<1.0	<1.0	----	----
Benzo(g.h.i)perylene	191-24-2	1.0	µg/L		<1.0	<1.0	<1.0	----	----
^ **Sum of polycyclic aromatic hydrocarbons**	----	0.5	µg/L		<0.5	<0.5	<0.5	----	----
^ **Benzo(a)pyrene TEQ (zero)**	----	0.5	µg/L		<0.5	<0.5	<0.5	----	----
EP080: BTEXN									
Benzene	71-43-2	1	µg/L		<1	<1	<1	----	----
Toluene	108-88-3	2	µg/L		<2	<2	<2	----	----
Ethylbenzene	100-41-4	2	µg/L		<2	<2	<2	----	----
meta- & para-Xylene	108-38-3 106-42-3	2	µg/L		<2	<2	<2	----	----
ortho-Xylene	95-47-6	2	µg/L		<2	<2	<2	----	----
^ **Total Xylenes**	----	2	µg/L		<2	<2	<2	----	----
^ **Sum of BTEX**	----	1	µg/L		<1	<1	<1	----	----
Naphthalene	91-20-3	5	µg/L		<5	<5	<5	----	----
EP234A: OP Pesticides									
Acephate	30560-19-1	0.5	µg/L		<0.5	<0.5	<0.5	----	----
Azinphos-methyl	86-50-0	0.02	µg/L		<0.02	<0.02	<0.02	----	----
Azinphos-ethyl	2642-71-9	0.02	µg/L		<0.02	<0.02	<0.02	----	----
Bensulide	741-58-2	0.1	µg/L		<0.1	<0.1	<0.1	----	----
Bromophos-ethyl	4824-78-6	0.10	µg/L		<0.10	<0.10	<0.10	----	----
Carbofenothion	786-19-6	0.02	µg/L		<0.02	<0.02	<0.02	----	----
Chlorfenvinphos	470-90-6	0.02	µg/L		<0.02	<0.02	<0.02	----	----
Chlorpyrifos	2921-88-2	0.02	µg/L		<0.02	<0.02	<0.02	----	----
Chlorpyrifos-methyl	5598-13-0	0.2	µg/L		<0.2	<0.2	<0.2	----	----

Analytical Results

Sub-Matrix: WATER (Matrix: WATER)				Sample ID	ROPUS	SOUDS	SOUUS	SWDUP1	----
				Sampling date / time	08-Aug-2023 00:00	08-Aug-2023 00:00	08-Aug-2023 00:00	08-Aug-2023 00:00	----
Compound	CAS Number	LOR	Unit		ES2326795-011	ES2326795-012	ES2326795-013	ES2326795-014	--------
					Result	Result	Result	Result	----
EP234A: OP Pesticides - Continued									
Coumaphos	56-72-4	0.01	µg/L		<0.01	<0.01	<0.01	----	----
Demeton-O	298-03-3	0.02	µg/L		<0.02	<0.02	<0.02	----	----
Demeton-O & Demeton-S	298-03-3/126-75-0	0.02	µg/L		<0.02	<0.02	<0.02	----	----
Demeton-S	126-75-0	0.02	µg/L		<0.02	<0.02	<0.02	----	----
Demeton-S-methyl	919-86-8	0.02	µg/L		<0.02	<0.02	<0.02	----	----
Diazinon	333-41-5	0.01	µg/L		<0.01	<0.01	<0.01	----	----
Dichlorvos	62-73-7	0.20	µg/L		<0.20	<0.20	<0.20	----	----
Dimethoate	60-51-5	0.02	µg/L		<0.02	<0.02	<0.02	----	----
Disulfoton	298-04-4	0.05	µg/L		<0.05	<0.05	<0.05	----	----
EPN	2104-64-5	0.05	µg/L		<0.05	<0.05	<0.05	----	----
Ethion	563-12-2	0.02	µg/L		<0.02	<0.02	<0.02	----	----
Ethoprophos	13194-48-4	0.01	µg/L		<0.01	<0.01	<0.01	----	----
Fenamiphos	22224-92-6	0.01	µg/L		<0.01	<0.01	<0.01	----	----
Fenchlorphos (Ronnel)	299-84-3	10	µg/L		<10	<10	<10	----	----
Fenitrothion	122-14-5	2	µg/L		<2	<2	<2	----	----
Fensulfothion	115-90-2	0.01	µg/L		<0.01	<0.01	<0.01	----	----
Fenthion	55-38-9	0.05	µg/L		<0.05	<0.05	<0.05	----	----
Formothion	2540-82-1	20	µg/L		<20	<20	<20	----	----
Fosetyl Aluminium	39148-24-8	10	µg/L		<10	<10	<10	----	----
Malathion	121-75-5	0.02	µg/L		<0.02	<0.02	<0.02	----	----
Methidathion	950-37-8	0.1	µg/L		<0.1	<0.1	<0.1	----	----
Mevinphos	7786-34-7	0.02	µg/L		<0.02	<0.02	<0.02	----	----
Monocrotophos	6923-22-4	0.02	µg/L		<0.02	<0.02	<0.02	----	----
Naftalofos	1491-41-4	1.0	µg/L		<1.0	<1.0	<1.0	----	----
Omethoate	1113-02-6	0.01	µg/L		<0.01	<0.01	<0.01	----	----
Parathion	56-38-2	0.2	µg/L		<0.2	<0.2	<0.2	----	----
Parathion-methyl	298-00-0	0.5	µg/L		<0.5	<0.5	<0.5	----	----
Phorate	298-02-2	0.1	µg/L		<0.1	<0.1	<0.1	----	----
Pirimiphos-ethyl	23505-41-1	0.01	µg/L		<0.01	<0.01	<0.01	----	----
Pirimiphos-methyl	29232-93-7	0.01	µg/L		<0.01	<0.01	<0.01	----	----
Profenofos	41198-08-7	0.01	µg/L		<0.01	<0.01	<0.01	----	----
Prothiofos	34643-46-4	0.1	µg/L		<0.1	<0.1	<0.1	----	----
Pyrazophos	13457-18-6	0.1	µg/L		<0.1	<0.1	<0.1	----	----
Sulfotep	3689-24-5	0.005	µg/L		<0.005	<0.005	<0.005	----	----
Sulprofos	35400-43-2	0.05	µg/L		<0.05	<0.05	<0.05	----	----

Analytical Results

Sub-Matrix: WATER (Matrix: WATER)				Sample ID	ROPUS	SOUDS	SOUUS	SWDUP1	----
				Sampling date / time	08-Aug-2023 00:00	08-Aug-2023 00:00	08-Aug-2023 00:00	08-Aug-2023 00:00	----
Compound	CAS Number	LOR	Unit		ES2326795-011	ES2326795-012	ES2326795-013	ES2326795-014	--------
					Result	Result	Result	Result	----
EP234A: OP Pesticides - Continued									
Temephos	3383-96-8	0.02	µg/L		<0.02	<0.02	<0.02	----	----
Terbufos	13071-79-9	0.01	µg/L		<0.01	<0.01	<0.01	----	----
Tetrachlorvinphos	22248-79-9	0.01	µg/L		<0.01	<0.01	<0.01	----	----
Thiometon	640-15-3	0.5	µg/L		<0.5	<0.5	<0.5	----	----
Triazophos	24017-47-8	0.005	µg/L		<0.005	<0.005	<0.005	----	----
Trichlorfon	52-68-6	0.02	µg/L		<0.02	<0.02	<0.02	----	----
Trichloronate	327-98-0	0.5	µg/L		<0.5	<0.5	<0.5	----	----
EP074S: VOC Surrogates									
1.2-Dichloroethane-D4	17060-07-0	5	%		**130**	**117**	**114**	----	----
Toluene-D8	2037-26-5	5	%		**118**	**112**	**107**	----	----
4-Bromofluorobenzene	460-00-4	5	%		**121**	**115**	**109**	----	----
EP075(SIM)S: Phenolic Compound Surrogates									
Phenol-d6	13127-88-3	1.0	%		**28.2**	**25.4**	**29.1**	----	----
2-Chlorophenol-D4	93951-73-6	1.0	%		**56.2**	**50.1**	**55.5**	----	----
2.4.6-Tribromophenol	118-79-6	1.0	%		**45.6**	**35.4**	**49.8**	----	----
EP075(SIM)T: PAH Surrogates									
2-Fluorobiphenyl	321-60-8	1.0	%		**70.4**	**65.9**	**73.6**	----	----
Anthracene-d10	1719-06-8	1.0	%		**87.2**	**92.1**	**97.8**	----	----
4-Terphenyl-d14	1718-51-0	1.0	%		**78.0**	**68.6**	**78.5**	----	----
EP080S: TPH(V)/BTEX Surrogates									
1.2-Dichloroethane-D4	17060-07-0	2	%		**118**	**132**	**130**	----	----
Toluene-D8	2037-26-5	2	%		**121**	**104**	**99.4**	----	----
4-Bromofluorobenzene	460-00-4	2	%		**116**	**99.4**	**93.3**	----	----

Surrogate Control Limits

Sub-Matrix: WATER		Recovery Limits (%)	
Compound	*CAS Number*	*Low*	*High*
EP074S: VOC Surrogates			
1.2-Dichloroethane-D4	17060-07-0	78	133
Toluene-D8	2037-26-5	79	129
4-Bromofluorobenzene	460-00-4	81	124
EP075(SIM)S: Phenolic Compound Surrogates			
Phenol-d6	13127-88-3	10	44
2-Chlorophenol-D4	93951-73-6	14	94
2.4.6-Tribromophenol	118-79-6	17	125
EP075(SIM)T: PAH Surrogates			
2-Fluorobiphenyl	321-60-8	20	104
Anthracene-d10	1719-06-8	27	113
4-Terphenyl-d14	1718-51-0	32	112
EP080S: TPH(V)/BTEX Surrogates			
1.2-Dichloroethane-D4	17060-07-0	72	143
Toluene-D8	2037-26-5	75	131
4-Bromofluorobenzene	460-00-4	73	137

QUALITY CONTROL REPORT

Work Order	: **ES2326795**	Page	: 1 of 19
Client	: **GHD PTY LTD**	Laboratory	: Environmental Division Sydney
Contact	: MR HENRY LUO	Contact	: Sarah Mathew
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Telephone	: +61 02 9239 7100	Telephone	: +61-2-8784 8555
Project	: 12554717	Date Samples Received	: 09-Aug-2023
Order number	: ----	Date Analysis Commenced	: 10-Aug-2023
C-O-C number	: ----	Issue Date	: 17-Aug-2023
Sampler	: Emily Smith / Andrew Duval		
Site	: ----		
Quote number	: SY/322/21		
No. of samples received	: 14		
No. of samples analysed	: 14		

Accreditation No. 825
Accredited for compliance with
ISO/IEC 17025 - Testing

This report supersedes any previous report(s) with this reference. Results apply to the sample(s) as submitted, unless the sampling was conducted by ALS. This document shall not be reproduced, except in full.

This Quality Control Report contains the following information:

- Laboratory Duplicate (DUP) Report; Relative Percentage Difference (RPD) and Acceptance Limits
- Method Blank (MB) and Laboratory Control Spike (LCS) Report; Recovery and Acceptance Limits
- Matrix Spike (MS) Report; Recovery and Acceptance Limits

Signatories

This document has been electronically signed by the authorized signatories below. Electronic signing is carried out in compliance with procedures specified in 21 CFR Part 11.

Signatories	*Position*	*Accreditation Category*
Alex Rossi	Organic Chemist	Sydney Organics, Smithfield, NSW
Dian Dao	Senior Chemist - Inorganics	Sydney Inorganics, Smithfield, NSW
Franco Lentini	LCMS Coordinator	Sydney Organics, Smithfield, NSW
Wisam Marassa	Inorganics Coordinator	Sydney Inorganics, Smithfield, NSW

General Comments

The analytical procedures used by ALS have been developed from established internationally recognised procedures such as those published by the USEPA, APHA, AS and NEPM. In house developed procedures are fully validated and are often at the client request.

Where moisture determination has been performed, results are reported on a dry weight basis.

Where a reported less than (<) result is higher than the LOR, this may be due to primary sample extract/digestate dilution and/or insufficient sample for analysis. Where the LOR of a reported result differs from standard LOR, this may be due to high moisture content, insufficient sample (reduced weight employed) or matrix interference.

Key : Anonymous = Refers to samples which are not specifically part of this work order but formed part of the QC process lot
CAS Number = CAS registry number from database maintained by Chemical Abstracts Services. The Chemical Abstracts Service is a division of the American Chemical Society.
LOR = Limit of reporting
RPD = Relative Percentage Difference
# = Indicates failed QC

Laboratory Duplicate (DUP) Report

The quality control term Laboratory Duplicate refers to a randomly selected intralaboratory split. Laboratory duplicates provide information regarding method precision and sample heterogeneity. The permitted ranges for the Relative Percent Deviation (RPD) of Laboratory Duplicates are specified in ALS Method QWI-EN/38 and are dependent on the magnitude of results in comparison to the level of reporting: Result < 10 times LOR: No Limit; Result between 10 and 20 times LOR: 0% - 50%; Result > 20 times LOR: 0% - 20%.

Sub-Matrix: **WATER**

				Laboratory Duplicate (DUP) Report					
Laboratory sample ID	*Sample ID*	*Method: Compound*	*CAS Number*	*LOR*	*Unit*	*Original Result*	*Duplicate Result*	*RPD (%)*	*Acceptable RPD (%)*
EA015: Total Dissolved Solids dried at 180 ± 5 °C (QC Lot: 5235831)									
ES2326795-006	HINDS	EA015H: Total Dissolved Solids @180°C	----	10	mg/L	309	320	3.3	0% - 20%
ES2326871-002	Anonymous	EA015H: Total Dissolved Solids @180°C	----	10	mg/L	32	36	13.2	No Limit
EA015: Total Dissolved Solids dried at 180 ± 5 °C (QC Lot: 5236615)									
ES2326795-001	BADDS	EA015H: Total Dissolved Solids @180°C	----	10	mg/L	850	843	0.8	0% - 20%
ES2326882-004	Anonymous	EA015H: Total Dissolved Solids @180°C	----	10	mg/L	644	656	1.7	0% - 20%
ES2327060-006	Anonymous	EA015H: Total Dissolved Solids @180°C	----	10	mg/L	361	373	3.3	0% - 20%
ES2327198-007	Anonymous	EA015H: Total Dissolved Solids @180°C	----	10	mg/L	2760	2760	0.1	0% - 20%
EA025: Total Suspended Solids dried at 104 ± 2°C (QC Lot: 5235830)									
ES2326795-006	HINDS	EA025H: Suspended Solids (SS)	----	5	mg/L	14	10	26.8	No Limit
ES2326871-002	Anonymous	EA025H: Suspended Solids (SS)	----	5	mg/L	<5	<5	0.0	No Limit
EA025: Total Suspended Solids dried at 104 ± 2°C (QC Lot: 5236616)									
ES2326795-001	BADDS	EA025H: Suspended Solids (SS)	----	5	mg/L	18	18	0.0	No Limit
ES2326882-004	Anonymous	EA025H: Suspended Solids (SS)	----	5	mg/L	<5	<5	0.0	No Limit
ES2327060-006	Anonymous	EA025H: Suspended Solids (SS)	----	5	mg/L	<5	<5	0.0	No Limit
ES2327198-007	Anonymous	EA025H: Suspended Solids (SS)	----	5	mg/L	86	102	16.7	0% - 20%
EG020T: Total Metals by ICP-MS (QC Lot: 5232925)									
ES2326793-001	Anonymous	EG020A-T: Cadmium	7440-43-9	0.0001	mg/L	<0.0001	<0.0001	0.0	No Limit
		EG020A-T: Arsenic	7440-38-2	0.001	mg/L	<0.001	<0.001	0.0	No Limit
		EG020A-T: Chromium	7440-47-3	0.001	mg/L	<0.001	<0.001	0.0	No Limit
		EG020A-T: Copper	7440-50-8	0.001	mg/L	<0.001	<0.001	0.0	No Limit
		EG020A-T: Lead	7439-92-1	0.001	mg/L	<0.001	<0.001	0.0	No Limit
		EG020A-T: Manganese	7439-96-5	0.001	mg/L	0.174	0.171	1.6	0% - 20%
		EG020A-T: Nickel	7440-02-0	0.001	mg/L	0.002	0.002	0.0	No Limit

Sub-Matrix: **WATER**

				Laboratory Duplicate (DUP) Report					
Laboratory sample ID	*Sample ID*	*Method: Compound*	*CAS Number*	*LOR*	*Unit*	*Original Result*	*Duplicate Result*	*RPD (%)*	*Acceptable RPD (%)*
EG020T: Total Metals by ICP-MS (QC Lot: 5232925) - continued									
ES2326793-001	Anonymous	EG020A-T: Zinc	7440-66-6	0.005	mg/L	<0.005	<0.005	0.0	No Limit
		EG020A-T: Iron	7439-89-6	0.05	mg/L	0.32	0.28	11.2	No Limit
ES2326795-005	COSUS	EG020A-T: Cadmium	7440-43-9	0.0001	mg/L	<0.0001	<0.0001	0.0	No Limit
		EG020A-T: Arsenic	7440-38-2	0.001	mg/L	<0.001	<0.001	0.0	No Limit
		EG020A-T: Chromium	7440-47-3	0.001	mg/L	<0.001	<0.001	0.0	No Limit
		EG020A-T: Copper	7440-50-8	0.001	mg/L	<0.001	<0.001	0.0	No Limit
		EG020A-T: Lead	7439-92-1	0.001	mg/L	<0.001	<0.001	0.0	No Limit
		EG020A-T: Manganese	7439-96-5	0.001	mg/L	3.60	3.60	0.1	0% - 20%
		EG020A-T: Nickel	7440-02-0	0.001	mg/L	<0.001	<0.001	0.0	No Limit
		EG020A-T: Zinc	7440-66-6	0.005	mg/L	0.006	<0.005	0.0	No Limit
		EG020A-T: Iron	7439-89-6	0.05	mg/L	3.14	3.17	1.0	0% - 20%
EG035T: Total Recoverable Mercury by FIMS (QC Lot: 5233374)									
ES2326793-001	Anonymous	EG035T: Mercury	7439-97-6	0.0001	mg/L	<0.0001	<0.0001	0.0	No Limit
ES2326795-005	COSUS	EG035T: Mercury	7439-97-6	0.0001	mg/L	<0.0001	<0.0001	0.0	No Limit
EK055G: Ammonia as N by Discrete Analyser (QC Lot: 5234098)									
ES2326714-013	Anonymous	EK055G: Ammonia as N	7664-41-7	0.01	mg/L	130	135	3.7	0% - 20%
ES2326795-009	KEMUS	EK055G: Ammonia as N	7664-41-7	0.01	mg/L	0.02	0.02	0.0	No Limit
EK057G: Nitrite as N by Discrete Analyser (QC Lot: 5225800)									
ES2326795-007	HINUS	EK057G: Nitrite as N	14797-65-0	0.01	mg/L	<0.01	<0.01	0.0	No Limit
ES2326671-002	Anonymous	EK057G: Nitrite as N	14797-65-0	0.01	mg/L	0.08	0.08	0.0	No Limit
EK059G: Nitrite plus Nitrate as N (NOx) by Discrete Analyser (QC Lot: 5234097)									
ES2326714-013	Anonymous	EK059G: Nitrite + Nitrate as N	----	0.01	mg/L	2.04	2.17	5.9	0% - 20%
ES2326795-009	KEMUS	EK059G: Nitrite + Nitrate as N	----	0.01	mg/L	4.00	4.20	5.0	0% - 20%
EK061G: Total Kjeldahl Nitrogen By Discrete Analyser (QC Lot: 5234091)									
ES2326189-015	Anonymous	EK061G: Total Kjeldahl Nitrogen as N	----	0.1	mg/L	<0.1	<0.1	0.0	No Limit
ES2326795-007	HINUS	EK061G: Total Kjeldahl Nitrogen as N	----	0.1	mg/L	1.5	1.0	32.1	0% - 50%
EK067G: Total Phosphorus as P by Discrete Analyser (QC Lot: 5234092)									
ES2326189-015	Anonymous	EK067G: Total Phosphorus as P	----	0.01	mg/L	<0.01	0.01	0.0	No Limit
ES2326795-007	HINUS	EK067G: Total Phosphorus as P	----	0.01	mg/L	0.06	0.04	34.8	No Limit
EK071G: Reactive Phosphorus as P by discrete analyser (QC Lot: 5225799)									
ES2326669-002	Anonymous	EK071G: Reactive Phosphorus as P	14265-44-2	0.01	mg/L	0.57	0.58	0.0	0% - 20%
ES2326671-002	Anonymous	EK071G: Reactive Phosphorus as P	14265-44-2	0.01	mg/L	0.01	0.02	0.0	No Limit
EK071G: Reactive Phosphorus as P by discrete analyser (QC Lot: 5225803)									
ES2326795-007	HINUS	EK071G: Reactive Phosphorus as P	14265-44-2	0.01	mg/L	<0.01	<0.01	0.0	No Limit
EP074D: Fumigants (QC Lot: 5230224)									
ES2326795-001	BADDS	EP074: 2.2-Dichloropropane	594-20-7	5	µg/L	<5	<5	0.0	No Limit
		EP074: 1.2-Dichloropropane	78-87-5	5	µg/L	<5	<5	0.0	No Limit
		EP074: cis-1.3-Dichloropropylene	10061-01-5	5	µg/L	<5	<5	0.0	No Limit

Sub-Matrix: **WATER**

				Laboratory Duplicate (DUP) Report					
Laboratory sample ID	*Sample ID*	*Method: Compound*	*CAS Number*	*LOR*	*Unit*	*Original Result*	*Duplicate Result*	*RPD (%)*	*Acceptable RPD (%)*
EP074D: Fumigants (QC Lot: 5230224) - continued									
ES2326795-001	BADDS	EP074: trans-1.3-Dichloropropylene	10061-02-6	5	µg/L	<5	<5	0.0	No Limit
		EP074: 1.2-Dibromoethane (EDB)	106-93-4	5	µg/L	<5	<5	0.0	No Limit
ES2326795-011	ROPUS	EP074: 2.2-Dichloropropane	594-20-7	5	µg/L	<5	<5	0.0	No Limit
		EP074: 1.2-Dichloropropane	78-87-5	5	µg/L	<5	<5	0.0	No Limit
		EP074: cis-1.3-Dichloropropylene	10061-01-5	5	µg/L	<5	<5	0.0	No Limit
		EP074: trans-1.3-Dichloropropylene	10061-02-6	5	µg/L	<5	<5	0.0	No Limit
		EP074: 1.2-Dibromoethane (EDB)	106-93-4	5	µg/L	<5	<5	0.0	No Limit
EP074E: Halogenated Aliphatic Compounds (QC Lot: 5230224)									
ES2326795-001	BADDS	EP074: 1.1-Dichloroethene	75-35-4	5	µg/L	<5	<5	0.0	No Limit
		EP074: Iodomethane	74-88-4	5	µg/L	<5	<5	0.0	No Limit
		EP074: trans-1.2-Dichloroethene	156-60-5	5	µg/L	<5	<5	0.0	No Limit
		EP074: 1.1-Dichloroethane	75-34-3	5	µg/L	<5	<5	0.0	No Limit
		EP074: cis-1.2-Dichloroethene	156-59-2	5	µg/L	<5	<5	0.0	No Limit
		EP074: 1.1.1-Trichloroethane	71-55-6	5	µg/L	<5	<5	0.0	No Limit
		EP074: 1.1-Dichloropropylene	563-58-6	5	µg/L	<5	<5	0.0	No Limit
		EP074: Carbon Tetrachloride	56-23-5	5	µg/L	<5	<5	0.0	No Limit
		EP074: 1.2-Dichloroethane	107-06-2	5	µg/L	<5	<5	0.0	No Limit
		EP074: Trichloroethene	79-01-6	5	µg/L	<5	<5	0.0	No Limit
		EP074: Dibromomethane	74-95-3	5	µg/L	<5	<5	0.0	No Limit
		EP074: 1.1.2-Trichloroethane	79-00-5	5	µg/L	<5	<5	0.0	No Limit
		EP074: 1.3-Dichloropropane	142-28-9	5	µg/L	<5	<5	0.0	No Limit
		EP074: Tetrachloroethene	127-18-4	5	µg/L	<5	<5	0.0	No Limit
		EP074: 1.1.1.2-Tetrachloroethane	630-20-6	5	µg/L	<5	<5	0.0	No Limit
		EP074: trans-1.4-Dichloro-2-butene	110-57-6	5	µg/L	<5	<5	0.0	No Limit
		EP074: cis-1.4-Dichloro-2-butene	1476-11-5	5	µg/L	<5	<5	0.0	No Limit
		EP074: 1.1.2.2-Tetrachloroethane	79-34-5	5	µg/L	<5	<5	0.0	No Limit
		EP074: 1.2.3-Trichloropropane	96-18-4	5	µg/L	<5	<5	0.0	No Limit
		EP074: Pentachloroethane	76-01-7	5	µg/L	<5	<5	0.0	No Limit
		EP074: 1.2-Dibromo-3-chloropropane	96-12-8	5	µg/L	<5	<5	0.0	No Limit
		EP074: Hexachlorobutadiene	87-68-3	5	µg/L	<5	<5	0.0	No Limit
		EP074: Dichlorodifluoromethane	75-71-8	50	µg/L	<50	<50	0.0	No Limit
		EP074: Chloromethane	74-87-3	50	µg/L	<50	<50	0.0	No Limit
		EP074: Vinyl chloride	75-01-4	50	µg/L	<50	<50	0.0	No Limit
		EP074: Bromomethane	74-83-9	50	µg/L	<50	<50	0.0	No Limit
		EP074: Chloroethane	75-00-3	50	µg/L	<50	<50	0.0	No Limit
		EP074: Trichlorofluoromethane	75-69-4	50	µg/L	<50	<50	0.0	No Limit
ES2326795-011	ROPUS	EP074: 1.1-Dichloroethene	75-35-4	5	µg/L	<5	<5	0.0	No Limit
		EP074: Iodomethane	74-88-4	5	µg/L	<5	<5	0.0	No Limit
		EP074: trans-1.2-Dichloroethene	156-60-5	5	µg/L	<5	<5	0.0	No Limit
		EP074: 1.1-Dichloroethane	75-34-3	5	µg/L	<5	<5	0.0	No Limit

Sub-Matrix: **WATER**

				Laboratory Duplicate (DUP) Report					
Laboratory sample ID	*Sample ID*	*Method: Compound*	*CAS Number*	*LOR*	*Unit*	*Original Result*	*Duplicate Result*	*RPD (%)*	*Acceptable RPD (%)*
EP074E: Halogenated Aliphatic Compounds (QC Lot: 5230224) - continued									
ES2326795-011	ROPUS	EP074: cis-1.2-Dichloroethene	156-59-2	5	µg/L	<5	<5	0.0	No Limit
		EP074: 1.1.1-Trichloroethane	71-55-6	5	µg/L	<5	<5	0.0	No Limit
		EP074: 1.1-Dichloropropylene	563-58-6	5	µg/L	<5	<5	0.0	No Limit
		EP074: Carbon Tetrachloride	56-23-5	5	µg/L	<5	<5	0.0	No Limit
		EP074: 1.2-Dichloroethane	107-06-2	5	µg/L	<5	<5	0.0	No Limit
		EP074: Trichloroethene	79-01-6	5	µg/L	<5	<5	0.0	No Limit
		EP074: Dibromomethane	74-95-3	5	µg/L	<5	<5	0.0	No Limit
		EP074: 1.1.2-Trichloroethane	79-00-5	5	µg/L	<5	<5	0.0	No Limit
		EP074: 1.3-Dichloropropane	142-28-9	5	µg/L	<5	<5	0.0	No Limit
		EP074: Tetrachloroethene	127-18-4	5	µg/L	<5	<5	0.0	No Limit
		EP074: 1.1.1.2-Tetrachloroethane	630-20-6	5	µg/L	<5	<5	0.0	No Limit
		EP074: trans-1.4-Dichloro-2-butene	110-57-6	5	µg/L	<5	<5	0.0	No Limit
		EP074: cis-1.4-Dichloro-2-butene	1476-11-5	5	µg/L	<5	<5	0.0	No Limit
		EP074: 1.1.2.2-Tetrachloroethane	79-34-5	5	µg/L	<5	<5	0.0	No Limit
		EP074: 1.2.3-Trichloropropane	96-18-4	5	µg/L	<5	<5	0.0	No Limit
		EP074: Pentachloroethane	76-01-7	5	µg/L	<5	<5	0.0	No Limit
		EP074: 1.2-Dibromo-3-chloropropane	96-12-8	5	µg/L	<5	<5	0.0	No Limit
		EP074: Hexachlorobutadiene	87-68-3	5	µg/L	<5	<5	0.0	No Limit
		EP074: Dichlorodifluoromethane	75-71-8	50	µg/L	<50	<50	0.0	No Limit
		EP074: Chloromethane	74-87-3	50	µg/L	<50	<50	0.0	No Limit
		EP074: Vinyl chloride	75-01-4	50	µg/L	<50	<50	0.0	No Limit
		EP074: Bromomethane	74-83-9	50	µg/L	<50	<50	0.0	No Limit
		EP074: Chloroethane	75-00-3	50	µg/L	<50	<50	0.0	No Limit
		EP074: Trichlorofluoromethane	75-69-4	50	µg/L	<50	<50	0.0	No Limit
EP074F: Halogenated Aromatic Compounds (QC Lot: 5230224)									
ES2326795-001	BADDS	EP074: Chlorobenzene	108-90-7	5	µg/L	<5	<5	0.0	No Limit
		EP074: Bromobenzene	108-86-1	5	µg/L	<5	<5	0.0	No Limit
		EP074: 2-Chlorotoluene	95-49-8	5	µg/L	<5	<5	0.0	No Limit
		EP074: 4-Chlorotoluene	106-43-4	5	µg/L	<5	<5	0.0	No Limit
		EP074: 1.3-Dichlorobenzene	541-73-1	5	µg/L	<5	<5	0.0	No Limit
		EP074: 1.4-Dichlorobenzene	106-46-7	5	µg/L	<5	<5	0.0	No Limit
		EP074: 1.2-Dichlorobenzene	95-50-1	5	µg/L	<5	<5	0.0	No Limit
		EP074: 1.2.4-Trichlorobenzene	120-82-1	5	µg/L	<5	<5	0.0	No Limit
		EP074: 1.2.3-Trichlorobenzene	87-61-6	5	µg/L	<5	<5	0.0	No Limit
ES2326795-011	ROPUS	EP074: Chlorobenzene	108-90-7	5	µg/L	<5	<5	0.0	No Limit
		EP074: Bromobenzene	108-86-1	5	µg/L	<5	<5	0.0	No Limit
		EP074: 2-Chlorotoluene	95-49-8	5	µg/L	<5	<5	0.0	No Limit
		EP074: 4-Chlorotoluene	106-43-4	5	µg/L	<5	<5	0.0	No Limit
		EP074: 1.3-Dichlorobenzene	541-73-1	5	µg/L	<5	<5	0.0	No Limit
		EP074: 1.4-Dichlorobenzene	106-46-7	5	µg/L	<5	<5	0.0	No Limit

Sub-Matrix: **WATER**

				Laboratory Duplicate (DUP) Report					
Laboratory sample ID	*Sample ID*	*Method: Compound*	*CAS Number*	*LOR*	*Unit*	*Original Result*	*Duplicate Result*	*RPD (%)*	*Acceptable RPD (%)*
EP074F: Halogenated Aromatic Compounds (QC Lot: 5230224) - continued									
ES2326795-011	ROPUS	EP074: 1.2-Dichlorobenzene	95-50-1	5	µg/L	<5	<5	0.0	No Limit
		EP074: 1.2.4-Trichlorobenzene	120-82-1	5	µg/L	<5	<5	0.0	No Limit
		EP074: 1.2.3-Trichlorobenzene	87-61-6	5	µg/L	<5	<5	0.0	No Limit
EP074G: Trihalomethanes (QC Lot: 5230224)									
ES2326795-001	BADDS	EP074: Chloroform	67-66-3	5	µg/L	<5	<5	0.0	No Limit
		EP074: Bromodichloromethane	75-27-4	5	µg/L	<5	<5	0.0	No Limit
		EP074: Dibromochloromethane	124-48-1	5	µg/L	<5	<5	0.0	No Limit
		EP074: Bromoform	75-25-2	5	µg/L	<5	<5	0.0	No Limit
ES2326795-011	ROPUS	EP074: Chloroform	67-66-3	5	µg/L	<5	<5	0.0	No Limit
		EP074: Bromodichloromethane	75-27-4	5	µg/L	<5	<5	0.0	No Limit
		EP074: Dibromochloromethane	124-48-1	5	µg/L	<5	<5	0.0	No Limit
		EP074: Bromoform	75-25-2	5	µg/L	<5	<5	0.0	No Limit
EP075(SIM)A: Phenolic Compounds (QC Lot: 5225862)									
ES2326795-001	BADDS	EP075(SIM): Phenol	108-95-2	1	µg/L	<1.0	<1.0	0.0	No Limit
		EP075(SIM): 2-Chlorophenol	95-57-8	1	µg/L	<1.0	<1.0	0.0	No Limit
		EP075(SIM): 2-Methylphenol	95-48-7	1	µg/L	<1.0	<1.0	0.0	No Limit
		EP075(SIM): 2-Nitrophenol	88-75-5	1	µg/L	<1.0	<1.0	0.0	No Limit
		EP075(SIM): 2.4-Dimethylphenol	105-67-9	1	µg/L	<1.0	<1.0	0.0	No Limit
		EP075(SIM): 2.4-Dichlorophenol	120-83-2	1	µg/L	<1.0	<1.0	0.0	No Limit
		EP075(SIM): 2.6-Dichlorophenol	87-65-0	1	µg/L	<1.0	<1.0	0.0	No Limit
		EP075(SIM): 4-Chloro-3-methylphenol	59-50-7	1	µg/L	<1.0	<1.0	0.0	No Limit
		EP075(SIM): 2.4.6-Trichlorophenol	88-06-2	1	µg/L	<1.0	<1.0	0.0	No Limit
		EP075(SIM): 2.4.5-Trichlorophenol	95-95-4	1	µg/L	<1.0	<1.0	0.0	No Limit
		EP075(SIM): 3- & 4-Methylphenol	1319-77-3	2	µg/L	<2.0	<2.0	0.0	No Limit
		EP075(SIM): Pentachlorophenol	87-86-5	2	µg/L	<2.0	<2.0	0.0	No Limit
ES2326795-011	ROPUS	EP075(SIM): Phenol	108-95-2	1	µg/L	<1.0	<1.0	0.0	No Limit
		EP075(SIM): 2-Chlorophenol	95-57-8	1	µg/L	<1.0	<1.0	0.0	No Limit
		EP075(SIM): 2-Methylphenol	95-48-7	1	µg/L	<1.0	<1.0	0.0	No Limit
		EP075(SIM): 2-Nitrophenol	88-75-5	1	µg/L	<1.0	<1.0	0.0	No Limit
		EP075(SIM): 2.4-Dimethylphenol	105-67-9	1	µg/L	<1.0	<1.0	0.0	No Limit
		EP075(SIM): 2.4-Dichlorophenol	120-83-2	1	µg/L	<1.0	<1.0	0.0	No Limit
		EP075(SIM): 2.6-Dichlorophenol	87-65-0	1	µg/L	<1.0	<1.0	0.0	No Limit
		EP075(SIM): 4-Chloro-3-methylphenol	59-50-7	1	µg/L	<1.0	<1.0	0.0	No Limit
		EP075(SIM): 2.4.6-Trichlorophenol	88-06-2	1	µg/L	<1.0	<1.0	0.0	No Limit
		EP075(SIM): 2.4.5-Trichlorophenol	95-95-4	1	µg/L	<1.0	<1.0	0.0	No Limit
		EP075(SIM): 3- & 4-Methylphenol	1319-77-3	2	µg/L	<2.0	<2.0	0.0	No Limit
		EP075(SIM): Pentachlorophenol	87-86-5	2	µg/L	<2.0	<2.0	0.0	No Limit
EP075(SIM)B: Polynuclear Aromatic Hydrocarbons (QC Lot: 5225862)									
ES2326795-001	BADDS	EP075(SIM): Benzo(a)pyrene	50-32-8	0.5	µg/L	<0.5	<0.5	0.0	No Limit
		EP075(SIM): Naphthalene	91-20-3	1	µg/L	<1.0	<1.0	0.0	No Limit

Sub-Matrix: **WATER**

				Laboratory Duplicate (DUP) Report					
Laboratory sample ID	*Sample ID*	*Method: Compound*	*CAS Number*	*LOR*	*Unit*	*Original Result*	*Duplicate Result*	*RPD (%)*	*Acceptable RPD (%)*
EP075(SIM)B: Polynuclear Aromatic Hydrocarbons (QC Lot: 5225862) - continued									
ES2326795-001	BADDS	EP075(SIM): Acenaphthylene	208-96-8	1	µg/L	<1.0	<1.0	0.0	No Limit
		EP075(SIM): Acenaphthene	83-32-9	1	µg/L	<1.0	<1.0	0.0	No Limit
		EP075(SIM): Fluorene	86-73-7	1	µg/L	<1.0	<1.0	0.0	No Limit
		EP075(SIM): Phenanthrene	85-01-8	1	µg/L	<1.0	<1.0	0.0	No Limit
		EP075(SIM): Anthracene	120-12-7	1	µg/L	<1.0	<1.0	0.0	No Limit
		EP075(SIM): Fluoranthene	206-44-0	1	µg/L	<1.0	<1.0	0.0	No Limit
		EP075(SIM): Pyrene	129-00-0	1	µg/L	<1.0	<1.0	0.0	No Limit
		EP075(SIM): Benz(a)anthracene	56-55-3	1	µg/L	<1.0	<1.0	0.0	No Limit
		EP075(SIM): Chrysene	218-01-9	1	µg/L	<1.0	<1.0	0.0	No Limit
		EP075(SIM): Benzo(b+j)fluoranthene	205-99-2 205-82-3	1	µg/L	<1.0	<1.0	0.0	No Limit
		EP075(SIM): Benzo(k)fluoranthene	207-08-9	1	µg/L	<1.0	<1.0	0.0	No Limit
		EP075(SIM): Indeno(1.2.3.cd)pyrene	193-39-5	1	µg/L	<1.0	<1.0	0.0	No Limit
		EP075(SIM): Dibenz(a.h)anthracene	53-70-3	1	µg/L	<1.0	<1.0	0.0	No Limit
		EP075(SIM): Benzo(g.h.i)perylene	191-24-2	1	µg/L	<1.0	<1.0	0.0	No Limit
ES2326795-011	ROPUS	EP075(SIM): Benzo(a)pyrene	50-32-8	0.5	µg/L	<0.5	<0.5	0.0	No Limit
		EP075(SIM): Naphthalene	91-20-3	1	µg/L	<1.0	<1.0	0.0	No Limit
		EP075(SIM): Acenaphthylene	208-96-8	1	µg/L	<1.0	<1.0	0.0	No Limit
		EP075(SIM): Acenaphthene	83-32-9	1	µg/L	<1.0	<1.0	0.0	No Limit
		EP075(SIM): Fluorene	86-73-7	1	µg/L	<1.0	<1.0	0.0	No Limit
		EP075(SIM): Phenanthrene	85-01-8	1	µg/L	<1.0	<1.0	0.0	No Limit
		EP075(SIM): Anthracene	120-12-7	1	µg/L	<1.0	<1.0	0.0	No Limit
		EP075(SIM): Fluoranthene	206-44-0	1	µg/L	<1.0	<1.0	0.0	No Limit
		EP075(SIM): Pyrene	129-00-0	1	µg/L	<1.0	<1.0	0.0	No Limit
		EP075(SIM): Benz(a)anthracene	56-55-3	1	µg/L	<1.0	<1.0	0.0	No Limit
		EP075(SIM): Chrysene	218-01-9	1	µg/L	<1.0	<1.0	0.0	No Limit
		EP075(SIM): Benzo(b+j)fluoranthene	205-99-2 205-82-3	1	µg/L	<1.0	<1.0	0.0	No Limit
		EP075(SIM): Benzo(k)fluoranthene	207-08-9	1	µg/L	<1.0	<1.0	0.0	No Limit
		EP075(SIM): Indeno(1.2.3.cd)pyrene	193-39-5	1	µg/L	<1.0	<1.0	0.0	No Limit
		EP075(SIM): Dibenz(a.h)anthracene	53-70-3	1	µg/L	<1.0	<1.0	0.0	No Limit
		EP075(SIM): Benzo(g.h.i)perylene	191-24-2	1	µg/L	<1.0	<1.0	0.0	No Limit
EP080: BTEXN (QC Lot: 5230223)									
ES2326795-001	BADDS	EP080: Benzene	71-43-2	1	µg/L	<1	<1	0.0	No Limit
		EP080: Toluene	108-88-3	2	µg/L	<2	<2	0.0	No Limit
		EP080: Ethylbenzene	100-41-4	2	µg/L	<2	<2	0.0	No Limit
		EP080: meta- & para-Xylene	108-38-3 106-42-3	2	µg/L	<2	<2	0.0	No Limit
		EP080: ortho-Xylene	95-47-6	2	µg/L	<2	<2	0.0	No Limit
		EP080: Naphthalene	91-20-3	5	µg/L	<5	<5	0.0	No Limit

Sub-Matrix: **WATER**

				Laboratory Duplicate (DUP) Report					
Laboratory sample ID	*Sample ID*	*Method: Compound*	*CAS Number*	*LOR*	*Unit*	*Original Result*	*Duplicate Result*	*RPD (%)*	*Acceptable RPD (%)*
EP080: BTEXN (QC Lot: 5230223) - continued									
ES2326795-011	ROPUS	EP080: Benzene	71-43-2	1	µg/L	<1	<1	0.0	No Limit
		EP080: Toluene	108-88-3	2	µg/L	<2	<2	0.0	No Limit
		EP080: Ethylbenzene	100-41-4	2	µg/L	<2	<2	0.0	No Limit
		EP080: meta- & para-Xylene	108-38-3 106-42-3	2	µg/L	<2	<2	0.0	No Limit
		EP080: ortho-Xylene	95-47-6	2	µg/L	<2	<2	0.0	No Limit
		EP080: Naphthalene	91-20-3	5	µg/L	<5	<5	0.0	No Limit
EP234A: OP Pesticides (QC Lot: 5225503)									
ES2326795-001	BADDS	EP234-1: Sulfotep	3689-24-5	0.005	µg/L	<0.005	<0.005	0.0	No Limit
		EP234-1: Triazophos	24017-47-8	0.005	µg/L	<0.005	<0.005	0.0	No Limit
		EP234-1: Coumaphos	56-72-4	0.01	µg/L	<0.01	<0.01	0.0	No Limit
		EP234-1: Diazinon	333-41-5	0.01	µg/L	<0.01	<0.01	0.0	No Limit
		EP234-1: Ethoprophos	13194-48-4	0.01	µg/L	<0.01	<0.01	0.0	No Limit
		EP234-1: Fenamiphos	22224-92-6	0.01	µg/L	<0.01	<0.01	0.0	No Limit
		EP234-1: Fensulfothion	115-90-2	0.01	µg/L	<0.01	<0.01	0.0	No Limit
		EP234-1: Omethoate	1113-02-6	0.01	µg/L	<0.01	<0.01	0.0	No Limit
		EP234-1: Pirimiphos-ethyl	23505-41-1	0.01	µg/L	<0.01	<0.01	0.0	No Limit
		EP234-1: Pirimiphos-methyl	29232-93-7	0.01	µg/L	<0.01	<0.01	0.0	No Limit
		EP234-1: Profenofos	41198-08-7	0.01	µg/L	<0.01	<0.01	0.0	No Limit
		EP234-1: Terbufos	13071-79-9	0.01	µg/L	<0.01	<0.01	0.0	No Limit
		EP234-1: Tetrachlorvinphos	22248-79-9	0.01	µg/L	<0.01	<0.01	0.0	No Limit
		EP234-1: Azinphos-methyl	86-50-0	0.02	µg/L	<0.02	<0.02	0.0	No Limit
		EP234-1: Azinphos-ethyl	2642-71-9	0.02	µg/L	<0.02	<0.02	0.0	No Limit
		EP234-1: Carbofenothion	786-19-6	0.02	µg/L	<0.02	<0.02	0.0	No Limit
		EP234-1: Chlorfenvinphos	470-90-6	0.02	µg/L	<0.02	<0.02	0.0	No Limit
		EP234-1: Chlorpyrifos	2921-88-2	0.02	µg/L	<0.02	<0.02	0.0	No Limit
		EP234-1: Demeton-O	298-03-3	0.02	µg/L	<0.02	<0.02	0.0	No Limit
		EP234-1: Demeton-O & Demeton-S	298-03-3/126-75-0	0.02	µg/L	<0.02	<0.02	0.0	No Limit
		EP234-1: Demeton-S	126-75-0	0.02	µg/L	<0.02	<0.02	0.0	No Limit
		EP234-1: Demeton-S-methyl	919-86-8	0.02	µg/L	<0.02	<0.02	0.0	No Limit
		EP234-1: Dimethoate	60-51-5	0.02	µg/L	<0.02	<0.02	0.0	No Limit
		EP234-1: Ethion	563-12-2	0.02	µg/L	<0.02	<0.02	0.0	No Limit
		EP234-1: Malathion	121-75-5	0.02	µg/L	<0.02	<0.02	0.0	No Limit
		EP234-1: Mevinphos	7786-34-7	0.02	µg/L	<0.02	<0.02	0.0	No Limit
		EP234-1: Monocrotophos	6923-22-4	0.02	µg/L	<0.02	<0.02	0.0	No Limit
		EP234-1: Temephos	3383-96-8	0.02	µg/L	<0.02	<0.02	0.0	No Limit
		EP234-1: Trichlorfon	52-68-6	0.02	µg/L	<0.02	<0.02	0.0	No Limit
		EP234-1: Disulfoton	298-04-4	0.05	µg/L	<0.05	<0.05	0.0	No Limit
		EP234-1: EPN	2104-64-5	0.05	µg/L	<0.05	<0.05	0.0	No Limit

Sub-Matrix: **WATER**

				Laboratory Duplicate (DUP) Report					
Laboratory sample ID	*Sample ID*	*Method: Compound*	*CAS Number*	*LOR*	*Unit*	*Original Result*	*Duplicate Result*	*RPD (%)*	*Acceptable RPD (%)*
EP234A: OP Pesticides (QC Lot: 5225503) - continued									
ES2326795-001	BADDS	EP234-1: Fenthion	55-38-9	0.05	µg/L	<0.05	<0.05	0.0	No Limit
		EP234-1: Sulprofos	35400-43-2	0.05	µg/L	<0.05	<0.05	0.0	No Limit
		EP234-1: Bromophos-ethyl	4824-78-6	0.1	µg/L	<0.10	<0.10	0.0	No Limit
		EP234-1: Phorate	298-02-2	0.1	µg/L	<0.1	<0.1	0.0	No Limit
		EP234-1: Prothiofos	34643-46-4	0.1	µg/L	<0.1	<0.1	0.0	No Limit
		EP234-1: Chlorpyrifos-methyl	5598-13-0	0.2	µg/L	<0.2	<0.2	0.0	No Limit
		EP234-1: Dichlorvos	62-73-7	0.2	µg/L	<0.20	<0.20	0.0	No Limit
		EP234-1: Parathion	56-38-2	0.2	µg/L	<0.2	<0.2	0.0	No Limit
		EP234-1: Parathion-methyl	298-00-0	0.5	µg/L	<0.5	<0.5	0.0	No Limit
		EP234-1: Trichloronate	327-98-0	0.5	µg/L	<0.5	<0.5	0.0	No Limit
		EP234-1: Fenchlorphos (Ronnel)	299-84-3	10	µg/L	<10	<10	0.0	No Limit
		EP234-1: Fenitrothion	122-14-5	2	µg/L	<2	<2	0.0	No Limit
ES2326795-004	COSDS	EP234-1: Sulfotep	3689-24-5	0.005	µg/L	<0.005	<0.005	0.0	No Limit
		EP234-1: Triazophos	24017-47-8	0.005	µg/L	<0.005	<0.005	0.0	No Limit
		EP234-1: Coumaphos	56-72-4	0.01	µg/L	<0.01	<0.01	0.0	No Limit
		EP234-1: Diazinon	333-41-5	0.01	µg/L	<0.01	<0.01	0.0	No Limit
		EP234-1: Ethoprophos	13194-48-4	0.01	µg/L	<0.01	<0.01	0.0	No Limit
		EP234-1: Fenamiphos	22224-92-6	0.01	µg/L	<0.01	<0.01	0.0	No Limit
		EP234-1: Fensulfothion	115-90-2	0.01	µg/L	<0.01	<0.01	0.0	No Limit
		EP234-1: Omethoate	1113-02-6	0.01	µg/L	<0.01	<0.01	0.0	No Limit
		EP234-1: Pirimiphos-ethyl	23505-41-1	0.01	µg/L	<0.01	<0.01	0.0	No Limit
		EP234-1: Pirimiphos-methyl	29232-93-7	0.01	µg/L	<0.01	<0.01	0.0	No Limit
		EP234-1: Profenofos	41198-08-7	0.01	µg/L	<0.01	<0.01	0.0	No Limit
		EP234-1: Terbufos	13071-79-9	0.01	µg/L	<0.01	<0.01	0.0	No Limit
		EP234-1: Tetrachlorvinphos	22248-79-9	0.01	µg/L	<0.01	<0.01	0.0	No Limit
		EP234-1: Azinphos-methyl	86-50-0	0.02	µg/L	<0.02	<0.02	0.0	No Limit
		EP234-1: Azinphos-ethyl	2642-71-9	0.02	µg/L	<0.02	<0.02	0.0	No Limit
		EP234-1: Carbofenothion	786-19-6	0.02	µg/L	<0.02	<0.02	0.0	No Limit
		EP234-1: Chlorfenvinphos	470-90-6	0.02	µg/L	<0.02	<0.02	0.0	No Limit
		EP234-1: Chlorpyrifos	2921-88-2	0.02	µg/L	<0.02	<0.02	0.0	No Limit
		EP234-1: Demeton-O	298-03-3	0.02	µg/L	<0.02	<0.02	0.0	No Limit
		EP234-1: Demeton-O & Demeton-S	298-03-3/126-75-0	0.02	µg/L	<0.02	<0.02	0.0	No Limit
		EP234-1: Demeton-S	126-75-0	0.02	µg/L	<0.02	<0.02	0.0	No Limit
		EP234-1: Demeton-S-methyl	919-86-8	0.02	µg/L	<0.02	<0.02	0.0	No Limit
		EP234-1: Dimethoate	60-51-5	0.02	µg/L	<0.02	<0.02	0.0	No Limit
		EP234-1: Ethion	563-12-2	0.02	µg/L	<0.02	<0.02	0.0	No Limit
		EP234-1: Malathion	121-75-5	0.02	µg/L	<0.02	<0.02	0.0	No Limit
		EP234-1: Mevinphos	7786-34-7	0.02	µg/L	<0.02	<0.02	0.0	No Limit
		EP234-1: Monocrotophos	6923-22-4	0.02	µg/L	<0.02	<0.02	0.0	No Limit

Sub-Matrix: **WATER**

				Laboratory Duplicate (DUP) Report					
Laboratory sample ID	*Sample ID*	*Method: Compound*	*CAS Number*	*LOR*	*Unit*	*Original Result*	*Duplicate Result*	*RPD (%)*	*Acceptable RPD (%)*
EP234A: OP Pesticides (QC Lot: 5225503) - continued									
ES2326795-004	COSDS	EP234-1: Temephos	3383-96-8	0.02	µg/L	<0.02	<0.02	0.0	No Limit
		EP234-1: Trichlorfon	52-68-6	0.02	µg/L	<0.02	<0.02	0.0	No Limit
		EP234-1: Disulfoton	298-04-4	0.05	µg/L	<0.05	<0.05	0.0	No Limit
		EP234-1: EPN	2104-64-5	0.05	µg/L	<0.05	<0.05	0.0	No Limit
		EP234-1: Fenthion	55-38-9	0.05	µg/L	<0.05	<0.05	0.0	No Limit
		EP234-1: Sulprofos	35400-43-2	0.05	µg/L	<0.05	<0.05	0.0	No Limit
		EP234-1: Bromophos-ethyl	4824-78-6	0.1	µg/L	<0.10	<0.10	0.0	No Limit
		EP234-1: Phorate	298-02-2	0.1	µg/L	<0.1	<0.1	0.0	No Limit
		EP234-1: Prothiofos	34643-46-4	0.1	µg/L	<0.1	<0.1	0.0	No Limit
		EP234-1: Chlorpyrifos-methyl	5598-13-0	0.2	µg/L	<0.2	<0.2	0.0	No Limit
		EP234-1: Dichlorvos	62-73-7	0.2	µg/L	<0.20	<0.20	0.0	No Limit
		EP234-1: Parathion	56-38-2	0.2	µg/L	<0.2	<0.2	0.0	No Limit
		EP234-1: Parathion-methyl	298-00-0	0.5	µg/L	<0.5	<0.5	0.0	No Limit
		EP234-1: Trichloronate	327-98-0	0.5	µg/L	<0.5	<0.5	0.0	No Limit
		EP234-1: Fenchlorphos (Ronnel)	299-84-3	10	µg/L	<10	<10	0.0	No Limit
		EP234-1: Fenitrothion	122-14-5	2	µg/L	<2	<2	0.0	No Limit
EP234A: OP Pesticides (QC Lot: 5225504)									
ES2326795-001	BADDS	EP234-1x: Bensulide	741-58-2	0.1	µg/L	<0.1	<0.1	0.0	No Limit
		EP234-1x: Methidathion	950-37-8	0.1	µg/L	<0.1	<0.1	0.0	No Limit
		EP234-1x: Pyrazophos	13457-18-6	0.1	µg/L	<0.1	<0.1	0.0	No Limit
		EP234-1x: Acephate	30560-19-1	0.5	µg/L	<0.5	<0.5	0.0	No Limit
		EP234-1x: Thiometon	640-15-3	0.5	µg/L	<0.5	<0.5	0.0	No Limit
		EP234-1x: Naftalofos	1491-41-4	1	µg/L	<1.0	<1.0	0.0	No Limit
		EP234-1x: Fosetyl Aluminium	39148-24-8	10	µg/L	<10	<10	0.0	No Limit
		EP234-1x: Formothion	2540-82-1	20	µg/L	<20	<20	0.0	No Limit
ES2326795-004	COSDS	EP234-1x: Bensulide	741-58-2	0.1	µg/L	<0.1	<0.1	0.0	No Limit
		EP234-1x: Methidathion	950-37-8	0.1	µg/L	<0.1	<0.1	0.0	No Limit
		EP234-1x: Pyrazophos	13457-18-6	0.1	µg/L	<0.1	<0.1	0.0	No Limit
		EP234-1x: Acephate	30560-19-1	0.5	µg/L	<0.5	<0.5	0.0	No Limit
		EP234-1x: Thiometon	640-15-3	0.5	µg/L	<0.5	<0.5	0.0	No Limit
		EP234-1x: Naftalofos	1491-41-4	1	µg/L	<1.0	<1.0	0.0	No Limit
		EP234-1x: Fosetyl Aluminium	39148-24-8	10	µg/L	<10	<10	0.0	No Limit
		EP234-1x: Formothion	2540-82-1	20	µg/L	<20	<20	0.0	No Limit

Method Blank (MB) and Laboratory Control Sample (LCS) Report

The quality control term Method / Laboratory Blank refers to an analyte free matrix to which all reagents are added in the same volumes or proportions as used in standard sample preparation. The purpose of this QC parameter is to monitor potential laboratory contamination. The quality control term Laboratory Control Sample (LCS) refers to a certified reference material, or a known interference free matrix spiked with target analytes. The purpose of this QC parameter is to monitor method precision and accuracy independent of sample matrix. Dynamic Recovery Limits are based on statistical evaluation of processed LCS.

Sub-Matrix: **WATER**

				Method Blank (MB) Report	Laboratory Control Spike (LCS) Report			
					Spike	Spike Recovery (%)	Acceptable Limits (%)	
Method: Compound	CAS Number	LOR	Unit	Result	Concentration	LCS	Low	High
EA015: Total Dissolved Solids dried at 180 ± 5 °C (QCLot: 5235831)								
EA015H: Total Dissolved Solids @180°C	----	10	mg/L	<10	2000 mg/L	94.0	87.0	109
				<10	293 mg/L	125	75.2	126
				<10	2380 mg/L	108	83.0	124
EA015: Total Dissolved Solids dried at 180 ± 5 °C (QCLot: 5236615)								
EA015H: Total Dissolved Solids @180°C	----	10	mg/L	<10	2000 mg/L	99.6	87.0	109
				<10	293 mg/L	101	75.2	126
				<10	2380 mg/L	103	83.0	124
EA025: Total Suspended Solids dried at 104 ± 2°C (QCLot: 5235830)								
EA025H: Suspended Solids (SS)	----	5	mg/L	<5	150 mg/L	103	83.0	129
				<5	1000 mg/L	92.2	82.0	110
				<5	931 mg/L	94.3	83.0	118
EA025: Total Suspended Solids dried at 104 ± 2°C (QCLot: 5236616)								
EA025H: Suspended Solids (SS)	----	5	mg/L	<5	150 mg/L	101	83.0	129
				<5	1000 mg/L	96.4	82.0	110
				<5	931 mg/L	99.7	83.0	118
EG020T: Total Metals by ICP-MS (QCLot: 5232925)								
EG020A-T: Arsenic	7440-38-2	0.001	mg/L	<0.001	0.1 mg/L	100	82.0	114
EG020A-T: Cadmium	7440-43-9	0.0001	mg/L	<0.0001	0.1 mg/L	98.9	84.0	112
EG020A-T: Chromium	7440-47-3	0.001	mg/L	<0.001	0.1 mg/L	99.6	86.0	116
EG020A-T: Copper	7440-50-8	0.001	mg/L	<0.001	0.1 mg/L	98.4	83.0	118
EG020A-T: Lead	7439-92-1	0.001	mg/L	<0.001	0.1 mg/L	98.4	85.0	115
EG020A-T: Manganese	7439-96-5	0.001	mg/L	<0.001	0.1 mg/L	100	85.0	113
EG020A-T: Nickel	7440-02-0	0.001	mg/L	<0.001	0.1 mg/L	100	84.0	116
EG020A-T: Zinc	7440-66-6	0.005	mg/L	<0.005	0.1 mg/L	101	79.0	117
EG020A-T: Iron	7439-89-6	0.05	mg/L	<0.05	0.5 mg/L	109	85.0	117
EG035T: Total Recoverable Mercury by FIMS (QCLot: 5233374)								
EG035T: Mercury	7439-97-6	0.0001	mg/L	<0.0001	0.01 mg/L	97.9	77.0	111
EK055G: Ammonia as N by Discrete Analyser (QCLot: 5234098)								
EK055G: Ammonia as N	7664-41-7	0.01	mg/L	<0.01	1 mg/L	99.4	90.0	114
EK057G: Nitrite as N by Discrete Analyser (QCLot: 5225800)								
EK057G: Nitrite as N	14797-65-0	0.01	mg/L	<0.01	0.5 mg/L	98.6	82.0	114

Sub-Matrix: **WATER**

Method: Compound	CAS Number	LOR	Unit	Method Blank (MB) Report: Result	Laboratory Control Spike (LCS) Report: Spike Concentration	Spike Recovery (%): LCS	Acceptable Limits (%): Low	Acceptable Limits (%): High
EK059G: Nitrite plus Nitrate as N (NOx) by Discrete Analyser (QCLot: 5234097)								
EK059G: Nitrite + Nitrate as N	----	0.01	mg/L	<0.01	0.5 mg/L	98.5	91.0	113
EK061G: Total Kjeldahl Nitrogen By Discrete Analyser (QCLot: 5234091)								
EK061G: Total Kjeldahl Nitrogen as N	----	0.1	mg/L	<0.1	10 mg/L	95.0	69.0	101
				<0.1	1 mg/L	97.2	70.0	118
				<0.1	5 mg/L	95.0	70.0	130
EK067G: Total Phosphorus as P by Discrete Analyser (QCLot: 5234092)								
EK067G: Total Phosphorus as P	----	0.01	mg/L	<0.01	4.42 mg/L	78.3	71.3	126
				<0.01	0.442 mg/L	86.9	71.3	126
				<0.01	1 mg/L	91.5	70.0	130
EK071G: Reactive Phosphorus as P by discrete analyser (QCLot: 5225799)								
EK071G: Reactive Phosphorus as P	14265-44-2	0.01	mg/L	<0.01	0.5 mg/L	95.3	85.0	117
EK071G: Reactive Phosphorus as P by discrete analyser (QCLot: 5225803)								
EK071G: Reactive Phosphorus as P	14265-44-2	0.01	mg/L	<0.01	0.5 mg/L	99.3	85.0	117
EP008: Chlorophyll (QCLot: 5227172)								
EP008: Chlorophyll a	----	1	mg/m³	<1	20 mg/m³	83.6	70.0	130
EP020: Oil and Grease (O&G) (QCLot: 5236517)								
EP020: Oil & Grease	----	5	mg/L	<5	5000 mg/L	97.7	81.0	121
				<5	4000 mg/L	98.5	70.0	110
EP074D: Fumigants (QCLot: 5230224)								
EP074: 2.2-Dichloropropane	594-20-7	5	µg/L	<5	10 µg/L	84.8	68.0	122
EP074: 1.2-Dichloropropane	78-87-5	5	µg/L	<5	10 µg/L	93.8	76.0	118
EP074: cis-1.3-Dichloropropylene	10061-01-5	5	µg/L	<5	10 µg/L	86.3	62.0	120
EP074: trans-1.3-Dichloropropylene	10061-02-6	5	µg/L	<5	10 µg/L	89.0	60.0	114
EP074: 1.2-Dibromoethane (EDB)	106-93-4	5	µg/L	<5	10 µg/L	94.0	69.0	117
EP074E: Halogenated Aliphatic Compounds (QCLot: 5230224)								
EP074: Dichlorodifluoromethane	75-71-8	50	µg/L	<50	100 µg/L	77.6	60.6	138
EP074: Chloromethane	74-87-3	50	µg/L	<50	100 µg/L	87.8	67.4	130
EP074: Vinyl chloride	75-01-4	50	µg/L	<50	100 µg/L	87.5	69.4	129
EP074: Bromomethane	74-83-9	50	µg/L	<50	100 µg/L	78.4	56.0	140
EP074: Chloroethane	75-00-3	50	µg/L	<50	100 µg/L	80.8	61.0	139
EP074: Trichlorofluoromethane	75-69-4	50	µg/L	<50	100 µg/L	82.6	69.0	131
EP074: 1.1-Dichloroethene	75-35-4	5	µg/L	<5	10 µg/L	91.4	70.0	124
EP074: Iodomethane	74-88-4	5	µg/L	<5	10 µg/L	71.6	70.2	128
EP074: trans-1.2-Dichloroethene	156-60-5	5	µg/L	<5	10 µg/L	86.5	74.0	118

Sub-Matrix: **WATER**

Method: Compound	CAS Number	LOR	Unit	Method Blank (MB) Report: Result	Laboratory Control Spike (LCS) Report: Spike Concentration	Spike Recovery (%): LCS	Acceptable Limits (%): Low	Acceptable Limits (%): High
EP074E: Halogenated Aliphatic Compounds (QCLot: 5230224) - continued								
EP074: 1.1-Dichloroethane	75-34-3	5	µg/L	<5	10 µg/L	90.8	74.0	120
EP074: cis-1.2-Dichloroethene	156-59-2	5	µg/L	<5	10 µg/L	86.0	77.0	119
EP074: 1.1.1-Trichloroethane	71-55-6	5	µg/L	<5	10 µg/L	86.7	67.0	119
EP074: 1.1-Dichloropropylene	563-58-6	5	µg/L	<5	10 µg/L	88.6	73.0	119
EP074: Carbon Tetrachloride	56-23-5	5	µg/L	<5	10 µg/L	82.4	62.0	120
EP074: 1.2-Dichloroethane	107-06-2	5	µg/L	<5	10 µg/L	92.8	73.0	123
EP074: Trichloroethene	79-01-6	5	µg/L	<5	10 µg/L	89.1	76.0	118
EP074: Dibromomethane	74-95-3	5	µg/L	<5	10 µg/L	94.4	73.0	119
EP074: 1.1.2-Trichloroethane	79-00-5	5	µg/L	<5	10 µg/L	93.4	72.0	126
EP074: 1.3-Dichloropropane	142-28-9	5	µg/L	<5	10 µg/L	97.5	71.0	129
EP074: Tetrachloroethene	127-18-4	5	µg/L	<5	10 µg/L	86.8	72.0	124
EP074: 1.1.1.2-Tetrachloroethane	630-20-6	5	µg/L	<5	10 µg/L	86.9	66.0	114
EP074: trans-1.4-Dichloro-2-butene	110-57-6	5	µg/L	<5	10 µg/L	93.7	60.0	120
EP074: cis-1.4-Dichloro-2-butene	1476-11-5	5	µg/L	<5	10 µg/L	100	70.6	128
EP074: 1.1.2.2-Tetrachloroethane	79-34-5	5	µg/L	<5	10 µg/L	92.7	70.0	124
EP074: 1.2.3-Trichloropropane	96-18-4	5	µg/L	<5	10 µg/L	87.6	74.0	126
EP074: Pentachloroethane	76-01-7	5	µg/L	<5	10 µg/L	82.8	71.8	126
EP074: 1.2-Dibromo-3-chloropropane	96-12-8	5	µg/L	<5	10 µg/L	93.2	66.4	136
EP074: Hexachlorobutadiene	87-68-3	5	µg/L	<5	10 µg/L	85.8	58.0	130
EP074F: Halogenated Aromatic Compounds (QCLot: 5230224)								
EP074: Chlorobenzene	108-90-7	5	µg/L	<5	10 µg/L	90.4	79.0	117
EP074: Bromobenzene	108-86-1	5	µg/L	<5	10 µg/L	90.0	76.0	116
EP074: 2-Chlorotoluene	95-49-8	5	µg/L	<5	10 µg/L	89.3	73.0	119
EP074: 4-Chlorotoluene	106-43-4	5	µg/L	<5	10 µg/L	92.2	73.0	119
EP074: 1.3-Dichlorobenzene	541-73-1	5	µg/L	<5	10 µg/L	89.6	75.0	117
EP074: 1.4-Dichlorobenzene	106-46-7	5	µg/L	<5	10 µg/L	92.6	74.0	118
EP074: 1.2-Dichlorobenzene	95-50-1	5	µg/L	<5	10 µg/L	93.8	75.0	117
EP074: 1.2.4-Trichlorobenzene	120-82-1	5	µg/L	<5	10 µg/L	93.2	61.0	125
EP074: 1.2.3-Trichlorobenzene	87-61-6	5	µg/L	<5	10 µg/L	97.1	67.0	123
EP074G: Trihalomethanes (QCLot: 5230224)								
EP074: Chloroform	67-66-3	5	µg/L	<5	10 µg/L	90.6	72.0	120
EP074: Bromodichloromethane	75-27-4	5	µg/L	<5	10 µg/L	84.8	64.0	118
EP074: Dibromochloromethane	124-48-1	5	µg/L	<5	10 µg/L	87.1	65.0	115
EP074: Bromoform	75-25-2	5	µg/L	<5	10 µg/L	79.9	73.5	126

Sub-Matrix: **WATER**

Method: Compound	CAS Number	LOR	Unit	Method Blank (MB) Report	Laboratory Control Spike (LCS) Report			
					Spike	Spike Recovery (%)	Acceptable Limits (%)	
				Result	Concentration	LCS	Low	High
EP075(SIM)A: Phenolic Compounds (QCLot: 5225862)								
EP075(SIM): Phenol	108-95-2	1	µg/L	<1.0	5 µg/L	44.2	24.5	61.9
EP075(SIM): 2-Chlorophenol	95-57-8	1	µg/L	<1.0	5 µg/L	78.7	52.0	90.0
EP075(SIM): 2-Methylphenol	95-48-7	1	µg/L	<1.0	5 µg/L	77.7	51.0	91.0
EP075(SIM): 3- & 4-Methylphenol	1319-77-3	2	µg/L	<2.0	10 µg/L	62.9	44.0	88.0
EP075(SIM): 2-Nitrophenol	88-75-5	1	µg/L	<1.0	5 µg/L	70.2	48.0	100
EP075(SIM): 2.4-Dimethylphenol	105-67-9	1	µg/L	<1.0	5 µg/L	71.0	49.0	99.0
EP075(SIM): 2.4-Dichlorophenol	120-83-2	1	µg/L	<1.0	5 µg/L	68.2	53.0	105
EP075(SIM): 2.6-Dichlorophenol	87-65-0	1	µg/L	<1.0	5 µg/L	80.5	57.0	105
EP075(SIM): 4-Chloro-3-methylphenol	59-50-7	1	µg/L	<1.0	5 µg/L	76.1	53.0	99.0
EP075(SIM): 2.4.6-Trichlorophenol	88-06-2	1	µg/L	<1.0	5 µg/L	77.7	50.0	106
EP075(SIM): 2.4.5-Trichlorophenol	95-95-4	1	µg/L	<1.0	5 µg/L	70.9	51.0	105
EP075(SIM): Pentachlorophenol	87-86-5	2	µg/L	<2.0	10 µg/L	38.8	10.0	95.0
EP075(SIM)B: Polynuclear Aromatic Hydrocarbons (QCLot: 5225862)								
EP075(SIM): Naphthalene	91-20-3	1	µg/L	<1.0	5 µg/L	69.5	50.0	94.0
EP075(SIM): Acenaphthylene	208-96-8	1	µg/L	<1.0	5 µg/L	86.7	63.6	114
EP075(SIM): Acenaphthene	83-32-9	1	µg/L	<1.0	5 µg/L	84.1	62.2	113
EP075(SIM): Fluorene	86-73-7	1	µg/L	<1.0	5 µg/L	81.7	63.9	115
EP075(SIM): Phenanthrene	85-01-8	1	µg/L	<1.0	5 µg/L	69.5	62.6	116
EP075(SIM): Anthracene	120-12-7	1	µg/L	<1.0	5 µg/L	93.6	64.3	116
EP075(SIM): Fluoranthene	206-44-0	1	µg/L	<1.0	5 µg/L	84.1	63.6	118
EP075(SIM): Pyrene	129-00-0	1	µg/L	<1.0	5 µg/L	84.0	63.1	118
EP075(SIM): Benz(a)anthracene	56-55-3	1	µg/L	<1.0	5 µg/L	72.4	64.1	117
EP075(SIM): Chrysene	218-01-9	1	µg/L	<1.0	5 µg/L	75.8	62.5	116
EP075(SIM): Benzo(b+j)fluoranthene	205-99-2 205-82-3	1	µg/L	<1.0	5 µg/L	71.4	61.7	119
EP075(SIM): Benzo(k)fluoranthene	207-08-9	1	µg/L	<1.0	5 µg/L	71.1	63.0	115
EP075(SIM): Benzo(a)pyrene	50-32-8	0.5	µg/L	<0.5	5 µg/L	75.6	63.3	117
EP075(SIM): Indeno(1.2.3.cd)pyrene	193-39-5	1	µg/L	<1.0	5 µg/L	69.7	59.9	118
EP075(SIM): Dibenz(a.h)anthracene	53-70-3	1	µg/L	<1.0	5 µg/L	76.5	61.2	117
EP075(SIM): Benzo(g.h.i)perylene	191-24-2	1	µg/L	<1.0	5 µg/L	67.4	59.1	118
EP080: BTEXN (QCLot: 5230223)								
EP080: Benzene	71-43-2	1	µg/L	<1	10 µg/L	114	68.3	119
EP080: Toluene	108-88-3	2	µg/L	<2	10 µg/L	91.1	73.5	120
EP080: Ethylbenzene	100-41-4	2	µg/L	<2	10 µg/L	90.8	73.8	122

Sub-Matrix: **WATER**

Method: Compound	CAS Number	LOR	Unit	Method Blank (MB) Report: Result	Laboratory Control Spike (LCS) Report: Spike Concentration	Spike Recovery (%): LCS	Acceptable Limits (%): Low	Acceptable Limits (%): High
EP080: BTEXN (QCLot: 5230223) - continued								
EP080: meta- & para-Xylene	108-38-3 106-42-3	2	µg/L	<2	10 µg/L	94.2	73.0	122
EP080: ortho-Xylene	95-47-6	2	µg/L	<2	10 µg/L	99.6	76.4	123
EP080: Naphthalene	91-20-3	5	µg/L	<5	10 µg/L	103	75.5	124
EP234A: OP Pesticides (QCLot: 5225503)								
EP234-1: Azinphos-methyl	86-50-0	0.02	µg/L	<0.02	0.2 µg/L	97.4	77.0	129
EP234-1: Azinphos-ethyl	2642-71-9	0.02	µg/L	<0.02	0.2 µg/L	113	75.0	135
EP234-1: Bromophos-ethyl	4824-78-6	0.1	µg/L	<0.10	1 µg/L	76.8	70.0	130
EP234-1: Carbofenothion	786-19-6	0.02	µg/L	<0.02	0.2 µg/L	102	70.0	130
EP234-1: Chlorfenvinphos	470-90-6	0.02	µg/L	<0.02	0.2 µg/L	106	74.0	134
EP234-1: Chlorpyrifos	2921-88-2	0.02	µg/L	<0.02	0.2 µg/L	98.8	70.0	130
EP234-1: Chlorpyrifos-methyl	5598-13-0	0.2	µg/L	<0.2	2 µg/L	94.0	70.0	130
EP234-1: Coumaphos	56-72-4	0.01	µg/L	<0.01	0.1 µg/L	105	70.0	130
EP234-1: Demeton-O	298-03-3	0.02	µg/L	<0.02	0.05 µg/L	107	64.0	134
EP234-1: Demeton-O & Demeton-S	298-03-3/12 6-75-0	0.02	µg/L	<0.02	0.1 µg/L	105	79.0	127
EP234-1: Demeton-S	126-75-0	0.02	µg/L	<0.02	0.05 µg/L	102	63.0	135
EP234-1: Demeton-S-methyl	919-86-8	0.02	µg/L	<0.02	0.2 µg/L	99.8	70.0	128
EP234-1: Diazinon	333-41-5	0.01	µg/L	<0.01	0.1 µg/L	104	68.0	138
EP234-1: Dichlorvos	62-73-7	0.2	µg/L	<0.20	2 µg/L	102	76.0	128
EP234-1: Dimethoate	60-51-5	0.02	µg/L	<0.02	0.2 µg/L	100	75.0	127
EP234-1: Disulfoton	298-04-4	0.05	µg/L	<0.05	0.5 µg/L	104	72.0	134
EP234-1: EPN	2104-64-5	0.05	µg/L	<0.05	0.5 µg/L	113	70.0	130
EP234-1: Ethion	563-12-2	0.02	µg/L	<0.02	0.2 µg/L	106	70.0	130
EP234-1: Ethoprophos	13194-48-4	0.01	µg/L	<0.01	0.1 µg/L	83.6	78.0	128
EP234-1: Fenamiphos	22224-92-6	0.01	µg/L	<0.01	0.1 µg/L	104	71.0	135
EP234-1: Fenchlorphos (Ronnel)	299-84-3	10	µg/L	<10	100 µg/L	107	70.0	130
EP234-1: Fenitrothion	122-14-5	2	µg/L	<2	20 µg/L	80.7	64.0	136
EP234-1: Fensulfothion	115-90-2	0.01	µg/L	<0.01	0.1 µg/L	91.5	79.0	125
EP234-1: Fenthion	55-38-9	0.05	µg/L	<0.05	0.5 µg/L	108	70.0	130
EP234-1: Malathion	121-75-5	0.02	µg/L	<0.02	0.2 µg/L	112	70.0	130
EP234-1: Mevinphos	7786-34-7	0.02	µg/L	<0.02	0.2 µg/L	107	77.0	123
EP234-1: Monocrotophos	6923-22-4	0.02	µg/L	<0.02	0.2 µg/L	108	75.0	129
EP234-1: Omethoate	1113-02-6	0.01	µg/L	<0.01	0.1 µg/L	102	74.0	130
EP234-1: Parathion	56-38-2	0.2	µg/L	<0.2	2 µg/L	105	69.0	139

Sub-Matrix: **WATER**

Method: Compound	CAS Number	LOR	Unit	Method Blank (MB) Report: Result	Laboratory Control Spike (LCS) Report: Spike Concentration	Spike Recovery (%): LCS	Acceptable Limits (%): Low	Acceptable Limits (%): High
EP234A: OP Pesticides (QCLot: 5225503) - continued								
EP234-1: Parathion-methyl	298-00-0	0.5	µg/L	<0.5	20 µg/L	98.2	66.0	140
EP234-1: Phorate	298-02-2	0.1	µg/L	<0.1	1 µg/L	103	68.0	136
EP234-1: Pirimiphos-ethyl	23505-41-1	0.01	µg/L	<0.01	0.1 µg/L	103	70.0	130
EP234-1: Pirimiphos-methyl	29232-93-7	0.01	µg/L	<0.01	0.1 µg/L	99.8	71.0	137
EP234-1: Profenofos	41198-08-7	0.01	µg/L	<0.01	0.1 µg/L	101	70.0	130
EP234-1: Prothiofos	34643-46-4	0.1	µg/L	<0.1	1 µg/L	78.4	70.0	130
EP234-1: Sulfotep	3689-24-5	0.005	µg/L	<0.005	0.05 µg/L	103	71.0	137
EP234-1: Sulprofos	35400-43-2	0.05	µg/L	<0.05	0.5 µg/L	105	70.0	130
EP234-1: Temephos	3383-96-8	0.02	µg/L	<0.02	0.2 µg/L	100	70.0	130
EP234-1: Terbufos	13071-79-9	0.01	µg/L	<0.01	0.1 µg/L	106	70.0	130
EP234-1: Tetrachlorvinphos	22248-79-9	0.01	µg/L	<0.01	0.1 µg/L	104	74.0	128
EP234-1: Triazophos	24017-47-8	0.005	µg/L	<0.005	0.05 µg/L	104	77.0	131
EP234-1: Trichlorfon	52-68-6	0.02	µg/L	<0.02	0.2 µg/L	88.0	70.0	130
EP234-1: Trichloronate	327-98-0	0.5	µg/L	<0.5	5 µg/L	91.0	63.0	139
EP234A: OP Pesticides (QCLot: 5225504)								
EP234-1x: Acephate	30560-19-1	0.5	µg/L	<0.5	5 µg/L	90.4	70.0	130
EP234-1x: Bensulide	741-58-2	0.1	µg/L	<0.1	5 µg/L	100	70.0	130
EP234-1x: Formothion	2540-82-1	20	µg/L	<20	----	----	----	----
EP234-1x: Fosetyl Aluminium	39148-24-8	10	µg/L	<10	5 µg/L	81.5	70.0	130
EP234-1x: Methidathion	950-37-8	0.1	µg/L	<0.1	5 µg/L	103	70.0	130
EP234-1x: Naftalofos	1491-41-4	1	µg/L	<1.0	5 µg/L	119	70.0	130
EP234-1x: Pyrazophos	13457-18-6	0.1	µg/L	<0.1	5 µg/L	103	70.0	130
EP234-1x: Thiometon	640-15-3	0.5	µg/L	<0.5	5 µg/L	101	70.0	130

Matrix Spike (MS) Report

The quality control term Matrix Spike (MS) refers to an intralaboratory split sample spiked with a representative set of target analytes. The purpose of this QC parameter is to monitor potential matrix effects on analyte recoveries. Static Recovery Limits as per laboratory Data Quality Objectives (DQOs). Ideal recovery ranges stated may be waived in the event of sample matrix interference.

Sub-Matrix: **WATER**

Laboratory sample ID	Sample ID	Method: Compound	CAS Number	Matrix Spike (MS) Report: Spike Concentration	SpikeRecovery(%): MS	Acceptable Limits (%): Low	Acceptable Limits (%): High
EG020T: Total Metals by ICP-MS (QCLot: 5232925)							
ES2326793-002	Anonymous	EG020A-T: Arsenic	7440-38-2	1 mg/L	99.8	70.0	130
		EG020A-T: Cadmium	7440-43-9	0.25 mg/L	99.8	70.0	130
		EG020A-T: Chromium	7440-47-3	1 mg/L	96.2	70.0	130
		EG020A-T: Copper	7440-50-8	1 mg/L	100	70.0	130

Sub-Matrix: **WATER**

				Matrix Spike (MS) Report			
				Spike	SpikeRecovery(%)	Acceptable Limits (%)	
Laboratory sample ID	Sample ID	Method: Compound	CAS Number	Concentration	MS	Low	High
EG020T: Total Metals by ICP-MS (QCLot: 5232925) - continued							
ES2326793-002	Anonymous	EG020A-T: Lead	7439-92-1	1 mg/L	95.6	70.0	130
		EG020A-T: Manganese	7439-96-5	1 mg/L	98.6	70.0	130
		EG020A-T: Nickel	7440-02-0	1 mg/L	99.4	70.0	130
		EG020A-T: Zinc	7440-66-6	1 mg/L	98.6	70.0	130
EG035T: Total Recoverable Mercury by FIMS (QCLot: 5233374)							
ES2326793-002	Anonymous	EG035T: Mercury	7439-97-6	0.01 mg/L	81.0	70.0	130
EK055G: Ammonia as N by Discrete Analyser (QCLot: 5234098)							
ES2326714-013	Anonymous	EK055G: Ammonia as N	7664-41-7	1 mg/L	# Not Determined	70.0	130
EK057G: Nitrite as N by Discrete Analyser (QCLot: 5225800)							
ES2326671-002	Anonymous	EK057G: Nitrite as N	14797-65-0	0.5 mg/L	103	70.0	130
EK059G: Nitrite plus Nitrate as N (NOx) by Discrete Analyser (QCLot: 5234097)							
ES2326714-013	Anonymous	EK059G: Nitrite + Nitrate as N	----	0.5 mg/L	# Not Determined	70.0	130
EK061G: Total Kjeldahl Nitrogen By Discrete Analyser (QCLot: 5234091)							
ES2326189-032	Anonymous	EK061G: Total Kjeldahl Nitrogen as N	----	5 mg/L	90.8	70.0	130
EK067G: Total Phosphorus as P by Discrete Analyser (QCLot: 5234092)							
ES2326189-032	Anonymous	EK067G: Total Phosphorus as P	----	1 mg/L	89.0	70.0	130
EK071G: Reactive Phosphorus as P by discrete analyser (QCLot: 5225799)							
ES2326671-002	Anonymous	EK071G: Reactive Phosphorus as P	14265-44-2	0.5 mg/L	98.7	70.0	130
EK071G: Reactive Phosphorus as P by discrete analyser (QCLot: 5225803)							
ES2326795-007	HINUS	EK071G: Reactive Phosphorus as P	14265-44-2	0.5 mg/L	103	70.0	130
EP074E: Halogenated Aliphatic Compounds (QCLot: 5230224)							
ES2326795-001	BADDS	EP074: 1.1-Dichloroethene	75-35-4	25 µg/L	83.4	70.0	130
		EP074: Trichloroethene	79-01-6	25 µg/L	103	70.0	130
EP074F: Halogenated Aromatic Compounds (QCLot: 5230224)							
ES2326795-001	BADDS	EP074: Chlorobenzene	108-90-7	25 µg/L	103	70.0	130
EP075(SIM)A: Phenolic Compounds (QCLot: 5225862)							
ES2326795-002	BADMS	EP075(SIM): Phenol	108-95-2	20 µg/L	32.8	20.0	130
		EP075(SIM): 2-Chlorophenol	95-57-8	20 µg/L	75.4	60.0	130
		EP075(SIM): 2-Nitrophenol	88-75-5	20 µg/L	74.9	60.0	130
		EP075(SIM): 4-Chloro-3-methylphenol	59-50-7	20 µg/L	87.7	70.0	130
		EP075(SIM): Pentachlorophenol	87-86-5	20 µg/L	35.8	20.0	130
EP075(SIM)B: Polynuclear Aromatic Hydrocarbons (QCLot: 5225862)							
ES2326795-002	BADMS	EP075(SIM): Acenaphthene	83-32-9	20 µg/L	75.9	70.0	130

Sub-Matrix: **WATER**

Laboratory sample ID	Sample ID	Method: Compound	CAS Number	Matrix Spike (MS) Report			
				Spike	SpikeRecovery(%)	Acceptable Limits (%)	
				Concentration	MS	Low	High
EP075(SIM)B: Polynuclear Aromatic Hydrocarbons (QCLot: 5225862) - continued							
ES2326795-002	BADMS	EP075(SIM): Pyrene	129-00-0	20 µg/L	86.6	70.0	130
EP080: BTEXN (QCLot: 5230223)							
ES2326795-001	BADDS	EP080: Benzene	71-43-2	25 µg/L	104	70.0	130
		EP080: Toluene	108-88-3	25 µg/L	84.0	70.0	130
		EP080: Ethylbenzene	100-41-4	25 µg/L	85.5	70.0	130
		EP080: meta- & para-Xylene	108-38-3 106-42-3	25 µg/L	88.1	70.0	130
		EP080: ortho-Xylene	95-47-6	25 µg/L	97.7	70.0	130
		EP080: Naphthalene	91-20-3	25 µg/L	88.5	70.0	130
EP234A: OP Pesticides (QCLot: 5225503)							
ES2326795-001	BADDS	EP234-1: Azinphos-methyl	86-50-0	0.2 µg/L	105	70.0	130
		EP234-1: Azinphos-ethyl	2642-71-9	0.2 µg/L	101	70.0	130
		EP234-1: Bromophos-ethyl	4824-78-6	1 µg/L	83.4	70.0	130
		EP234-1: Carbofenothion	786-19-6	0.2 µg/L	105	70.0	130
		EP234-1: Chlorfenvinphos	470-90-6	0.2 µg/L	101	70.0	130
		EP234-1: Chlorpyrifos	2921-88-2	0.2 µg/L	96.4	70.0	130
		EP234-1: Chlorpyrifos-methyl	5598-13-0	2 µg/L	102	58.0	136
		EP234-1: Coumaphos	56-72-4	0.1 µg/L	103	70.0	130
		EP234-1: Demeton-O	298-03-3	0.05 µg/L	102	70.0	130
		EP234-1: Demeton-O & Demeton-S	298-03-3/126-75-0	0.1 µg/L	102	69.0	129
		EP234-1: Demeton-S	126-75-0	0.05 µg/L	101	70.0	130
		EP234-1: Demeton-S-methyl	919-86-8	0.2 µg/L	89.6	70.0	130
		EP234-1: Diazinon	333-41-5	0.1 µg/L	97.1	70.0	130
		EP234-1: Dichlorvos	62-73-7	2 µg/L	89.8	70.0	130
		EP234-1: Dimethoate	60-51-5	0.2 µg/L	88.8	69.0	131
		EP234-1: Disulfoton	298-04-4	0.5 µg/L	102	70.0	130
		EP234-1: EPN	2104-64-5	0.5 µg/L	98.5	70.0	130
		EP234-1: Ethion	563-12-2	0.2 µg/L	101	70.0	130
		EP234-1: Ethoprophos	13194-48-4	0.1 µg/L	# 169	70.0	132
		EP234-1: Fenamiphos	22224-92-6	0.1 µg/L	105	70.0	130
		EP234-1: Fenchlorphos (Ronnel)	299-84-3	100 µg/L	101	71.0	133
		EP234-1: Fenitrothion	122-14-5	20 µg/L	66.0	64.0	136
		EP234-1: Fensulfothion	115-90-2	0.1 µg/L	110	83.0	123
		EP234-1: Fenthion	55-38-9	0.5 µg/L	107	70.0	130
		EP234-1: Malathion	121-75-5	0.2 µg/L	99.2	70.0	130
		EP234-1: Mevinphos	7786-34-7	0.2 µg/L	105	69.0	125
		EP234-1: Monocrotophos	6923-22-4	0.2 µg/L	108	70.0	128
		EP234-1: Omethoate	1113-02-6	0.1 µg/L	115	70.0	130

Sub-Matrix: **WATER**

				Matrix Spike (MS) Report			
				Spike	SpikeRecovery(%)	Acceptable Limits (%)	
Laboratory sample ID	*Sample ID*	*Method: Compound*	*CAS Number*	*Concentration*	*MS*	*Low*	*High*
EP234A: OP Pesticides (QCLot: 5225503) - continued							
ES2326795-001	BADDS	EP234-1: Parathion	56-38-2	2 µg/L	84.4	70.0	130
		EP234-1: Parathion-methyl	298-00-0	20 µg/L	78.2	70.0	140
		EP234-1: Phorate	298-02-2	1 µg/L	99.6	70.0	130
		EP234-1: Pirimiphos-ethyl	23505-41-1	0.1 µg/L	100	70.0	130
		EP234-1: Pirimiphos-methyl	29232-93-7	0.1 µg/L	97.7	70.0	130
		EP234-1: Profenofos	41198-08-7	0.1 µg/L	97.3	70.0	130
		EP234-1: Prothiofos	34643-46-4	1 µg/L	103	70.0	130
		EP234-1: Sulfotep	3689-24-5	0.05 µg/L	105	63.0	135
		EP234-1: Sulprofos	35400-43-2	0.5 µg/L	106	70.0	130
		EP234-1: Temephos	3383-96-8	0.2 µg/L	105	70.0	130
		EP234-1: Terbufos	13071-79-9	0.1 µg/L	95.5	70.0	130
		EP234-1: Tetrachlorvinphos	22248-79-9	0.1 µg/L	99.2	77.0	125
		EP234-1: Triazophos	24017-47-8	0.05 µg/L	95.6	74.0	132
		EP234-1: Trichlorfon	52-68-6	0.2 µg/L	# 49.2	70.0	130
		EP234-1: Trichloronate	327-98-0	5 µg/L	91.8	63.0	139
EP234A: OP Pesticides (QCLot: 5225504)							
ES2326795-001	BADDS	EP234-1x: Acephate	30560-19-1	5 µg/L	109	70.0	130
		EP234-1x: Bensulide	741-58-2	5 µg/L	107	70.0	130
		EP234-1x: Fosetyl Aluminium	39148-24-8	5 µg/L	# 10.7	70.0	130
		EP234-1x: Methidathion	950-37-8	5 µg/L	99.2	70.0	130
		EP234-1x: Naftalofos	1491-41-4	5 µg/L	106	70.0	130
		EP234-1x: Pyrazophos	13457-18-6	5 µg/L	109	70.0	130
		EP234-1x: Thiometon	640-15-3	5 µg/L	94.6	70.0	130

QA/QC Compliance Assessment to assist with Quality Review

Work Order	: **ES2326795**	Page	: 1 of 11
Client	: **GHD PTY LTD**	Laboratory	: Environmental Division Sydney
Contact	: MR HENRY LUO	Telephone	: +61-2-8784 8555
Project	: 12554717	Date Samples Received	: 09-Aug-2023
Site	: ----	Issue Date	: 17-Aug-2023
Sampler	: Emily Smith / Andrew Duval	No. of samples received	: 14
Order number	: ----	No. of samples analysed	: 14

This report is automatically generated by the ALS LIMS through interpretation of the ALS Quality Control Report and several Quality Assurance parameters measured by ALS. This automated reporting highlights any non-conformances, facilitates faster and more accurate data validation and is designed to assist internal expert and external Auditor review. Many components of this report contribute to the overall DQO assessment and reporting for guideline compliance.

Brief method summaries and references are also provided to assist in traceability.

Summary of Outliers

Outliers : Quality Control Samples

This report highlights outliers flagged in the Quality Control (QC) Report.

- **NO Method Blank value outliers occur.**
- **NO Duplicate outliers occur.**
- **NO Laboratory Control outliers occur.**
- **Matrix Spike outliers exist - please see following pages for full details.**
- **For all regular sample matrices, NO surrogate recovery outliers occur.**

Outliers : Analysis Holding Time Compliance

- **NO Analysis Holding Time Outliers exist.**

Outliers : Frequency of Quality Control Samples

- **NO Quality Control Sample Frequency Outliers exist.**

Outliers : Quality Control Samples

Duplicates, Method Blanks, Laboratory Control Samples and Matrix Spikes

Matrix: **WATER**

Compound Group Name	Laboratory Sample ID	Client Sample ID	Analyte	CAS Number	Data	Limits	Comment
Matrix Spike (MS) Recoveries							
EK055G: Ammonia as N by Discrete Analyser	ES2326714--013	Anonymous	**Ammonia as N**	7664-41-7	Not Determined	----	**MS recovery not determined, background level greater than or equal to 4x spike level.**
EK059G: Nitrite plus Nitrate as N (NOx) by Discrete Ar	ES2326714--013	Anonymous	**Nitrite + Nitrate as N**	----	Not Determined	----	**MS recovery not determined, background level greater than or equal to 4x spike level.**
EP234A: OP Pesticides	ES2326795--001	BADDS	**Ethoprophos**	13194-48-4	169 %	70.0-132%	**Recovery greater than upper data quality objective**
EP234A: OP Pesticides	ES2326795--001	BADDS	**Trichlorfon**	52-68-6	49.2 %	70.0-130%	**Recovery less than lower data quality objective**
EP234A: OP Pesticides	ES2326795--001	BADDS	**Fosetyl Aluminium**	39148-24-8	10.7 %	70.0-130%	**Recovery less than lower data quality objective**

Analysis Holding Time Compliance

If samples are identified below as having been analysed or extracted outside of recommended holding times, this should be taken into consideration when interpreting results.

This report summarizes extraction / preparation and analysis times and compares each with ALS recommended holding times (referencing USEPA SW 846, APHA, AS and NEPM) based on the sample container provided. Dates reported represent first date of extraction or analysis and preclude subsequent dilutions and reruns. A listing of breaches (if any) is provided herein.

Holding time for leachate methods (e.g. TCLP) vary according to the analytes reported. Assessment compares the leach date with the shortest analyte holding time for the equivalent soil method. These are: organics 14 days, mercury 28 days & other metals 180 days. A recorded breach does not guarantee a breach for all non-volatile parameters.

Holding times for ***VOC in soils*** vary according to analytes of interest. Vinyl Chloride and Styrene holding time is 7 days; others 14 days. A recorded breach does not guarantee a breach for all VOC analytes and should be verified in case the reported breach is a false positive or Vinyl Chloride and Styrene are not key analytes of interest/concern.

Matrix: **WATER**

Evaluation: × = Holding time breach ; ✓ = Within holding time.

Method / Container / Client Sample ID(s)		Sample Date	Extraction / Preparation			Analysis		
			Date extracted	Due for extraction	Evaluation	Date analysed	Due for analysis	Evaluation
EA015: Total Dissolved Solids dried at 180 ± 5 °C								
Clear Plastic Bottle - Natural (EA015H)								
HINDS,	HINUS,	**08-Aug-2023**	**----**	----	**----**	**15-Aug-2023**	15-Aug-2023	✓
KEMDS,	KEMUS,							
ROPDS,	ROPUS,							
SOUDS,	SOUUS							
Clear Plastic Bottle - Natural (EA015H)								
BADDS,	BADMS,	**09-Aug-2023**	**----**	----	**----**	**16-Aug-2023**	16-Aug-2023	✓
BADUS,	COSDS,							
COSUS								

Matrix: **WATER**

Evaluation: × = Holding time breach ; ✓ = Within holding time.

Method / Container / Client Sample ID(s)	Sample Date	Extraction / Preparation			Analysis		
		Date extracted	Due for extraction	Evaluation	Date analysed	Due for analysis	Evaluation
EA025: Total Suspended Solids dried at 104 ± 2°C							
Clear Plastic Bottle - Natural (EA025H)							
HINDS, HINUS, KEMDS, KEMUS, ROPDS, ROPUS, SOUDS, SOUUS	**08-Aug-2023**	**----**	----	----	**15-Aug-2023**	15-Aug-2023	✓
Clear Plastic Bottle - Natural (EA025H)							
BADDS, BADMS, BADUS, COSDS, COSUS	**09-Aug-2023**	**----**	----	----	**16-Aug-2023**	16-Aug-2023	✓
EG020T: Total Metals by ICP-MS							
Clear Plastic Bottle - Nitric Acid; Unfiltered (EG020A-T)							
HINDS, HINUS, KEMDS, KEMUS, ROPDS, ROPUS, SOUDS, SOUUS, SWDUP1	**08-Aug-2023**	**14-Aug-2023**	04-Feb-2024	✓	**14-Aug-2023**	04-Feb-2024	✓
Clear Plastic Bottle - Nitric Acid; Unfiltered (EG020A-T)							
BADDS, BADMS, BADUS, COSDS, COSUS	**09-Aug-2023**	**14-Aug-2023**	05-Feb-2024	✓	**14-Aug-2023**	05-Feb-2024	✓
EG035T: Total Recoverable Mercury by FIMS							
Clear Plastic Bottle - Nitric Acid; Unfiltered (EG035T)							
HINDS, HINUS, KEMDS, KEMUS, ROPDS, ROPUS, SOUDS, SOUUS, SWDUP1	**08-Aug-2023**	**----**	----	----	**16-Aug-2023**	05-Sep-2023	✓
Clear Plastic Bottle - Nitric Acid; Unfiltered (EG035T)							
BADDS, BADMS, BADUS, COSDS, COSUS	**09-Aug-2023**	**----**	----	----	**16-Aug-2023**	06-Sep-2023	✓
EK055G: Ammonia as N by Discrete Analyser							
Clear Plastic Bottle - Sulfuric Acid (EK055G)							
HINDS, HINUS, KEMDS, KEMUS, ROPDS, ROPUS, SOUDS, SOUUS	**08-Aug-2023**	**----**	----	----	**16-Aug-2023**	05-Sep-2023	✓
Clear Plastic Bottle - Sulfuric Acid (EK055G)							
BADDS, BADMS, BADUS, COSDS, COSUS	**09-Aug-2023**	**----**	----	----	**16-Aug-2023**	06-Sep-2023	✓

Matrix: **WATER**

Evaluation: × = Holding time breach ; ✓ = Within holding time.

Method / Container / Client Sample ID(s)	Sample Date	Extraction / Preparation			Analysis		
		Date extracted	Due for extraction	Evaluation	Date analysed	Due for analysis	Evaluation
EK057G: Nitrite as N by Discrete Analyser							
Clear Plastic Bottle - Natural (EK057G)							
HINDS, HINUS, KEMDS, KEMUS, ROPDS, ROPUS, SOUDS, SOUUS	**08-Aug-2023**	**----**	----	----	**10-Aug-2023**	10-Aug-2023	✓
Clear Plastic Bottle - Natural (EK057G)							
BADDS, BADMS, BADUS, COSDS, COSUS	**09-Aug-2023**	**----**	----	----	**10-Aug-2023**	11-Aug-2023	✓
EK059G: Nitrite plus Nitrate as N (NOx) by Discrete Analyser							
Clear Plastic Bottle - Sulfuric Acid (EK059G)							
HINDS, HINUS, KEMDS, KEMUS, ROPDS, ROPUS, SOUDS, SOUUS	**08-Aug-2023**	**----**	----	----	**16-Aug-2023**	05-Sep-2023	✓
Clear Plastic Bottle - Sulfuric Acid (EK059G)							
BADDS, BADMS, BADUS, COSDS, COSUS	**09-Aug-2023**	**----**	----	----	**16-Aug-2023**	06-Sep-2023	✓
EK061G: Total Kjeldahl Nitrogen By Discrete Analyser							
Clear Plastic Bottle - Sulfuric Acid (EK061G)							
HINDS, HINUS, KEMDS, KEMUS, ROPDS, ROPUS, SOUDS, SOUUS	**08-Aug-2023**	**15-Aug-2023**	05-Sep-2023	✓	**16-Aug-2023**	05-Sep-2023	✓
Clear Plastic Bottle - Sulfuric Acid (EK061G)							
BADDS	**09-Aug-2023**	**15-Aug-2023**	06-Sep-2023	✓	**15-Aug-2023**	06-Sep-2023	✓
Clear Plastic Bottle - Sulfuric Acid (EK061G)							
BADMS, BADUS, COSDS, COSUS	**09-Aug-2023**	**15-Aug-2023**	06-Sep-2023	✓	**16-Aug-2023**	06-Sep-2023	✓
EK067G: Total Phosphorus as P by Discrete Analyser							
Clear Plastic Bottle - Sulfuric Acid (EK067G)							
HINDS, HINUS, KEMDS, KEMUS, ROPDS, ROPUS, SOUDS, SOUUS	**08-Aug-2023**	**15-Aug-2023**	05-Sep-2023	✓	**16-Aug-2023**	05-Sep-2023	✓
Clear Plastic Bottle - Sulfuric Acid (EK067G)							
BADDS	**09-Aug-2023**	**15-Aug-2023**	06-Sep-2023	✓	**15-Aug-2023**	06-Sep-2023	✓
Clear Plastic Bottle - Sulfuric Acid (EK067G)							
BADMS, BADUS, COSDS, COSUS	**09-Aug-2023**	**15-Aug-2023**	06-Sep-2023	✓	**16-Aug-2023**	06-Sep-2023	✓

Matrix: **WATER**

Evaluation: × = Holding time breach ; ✓ = Within holding time.

Method / Container / Client Sample ID(s)	Sample Date	Extraction / Preparation			Analysis		
		Date extracted	Due for extraction	Evaluation	Date analysed	Due for analysis	Evaluation
EK071G: Reactive Phosphorus as P by discrete analyser							
Clear Plastic Bottle - Natural (EK071G)							
HINDS, HINUS, KEMDS, KEMUS, ROPDS, ROPUS, SOUDS, SOUUS	**08-Aug-2023**	**----**	----	----	**10-Aug-2023**	10-Aug-2023	✓
Clear Plastic Bottle - Natural (EK071G)							
BADDS, BADMS, BADUS, COSDS, COSUS	**09-Aug-2023**	**----**	----	----	**10-Aug-2023**	11-Aug-2023	✓
EP008: Chlorophyll a & Pheophytin a							
Opaque Plastic Bottle - Unpreserved (EP008)							
HINDS, HINUS, KEMDS, KEMUS, ROPDS, ROPUS, SOUDS, SOUUS	**08-Aug-2023**	**----**	----	----	**10-Aug-2023**	10-Aug-2023	✓
Opaque Plastic Bottle - Unpreserved (EP008)							
BADDS, BADMS, BADUS, COSDS, COSUS	**09-Aug-2023**	**----**	----	----	**10-Aug-2023**	11-Aug-2023	✓
EP020: Oil and Grease (O&G)							
Amber Jar - Sulfuric Acid or Sodium Bisulfate (EP020)							
HINDS, HINUS, KEMDS, KEMUS, ROPDS, ROPUS, SOUDS, SOUUS	**08-Aug-2023**	**----**	----	----	**16-Aug-2023**	05-Sep-2023	✓
Amber Jar - Sulfuric Acid or Sodium Bisulfate (EP020)							
BADDS, BADMS, BADUS, COSDS, COSUS	**09-Aug-2023**	**----**	----	----	**16-Aug-2023**	06-Sep-2023	✓
EP074D: Fumigants							
Amber VOC Vial - Sulfuric Acid (EP074)							
HINDS, HINUS, KEMDS, KEMUS, ROPDS, ROPUS, SOUDS, SOUUS	**08-Aug-2023**	**16-Aug-2023**	22-Aug-2023	✓	**16-Aug-2023**	22-Aug-2023	✓
Amber VOC Vial - Sulfuric Acid (EP074)							
BADDS, BADMS, BADUS, COSDS, COSUS	**09-Aug-2023**	**16-Aug-2023**	23-Aug-2023	✓	**16-Aug-2023**	23-Aug-2023	✓

Matrix: **WATER**

Evaluation: × = Holding time breach ; ✓ = Within holding time.

Method / Container / Client Sample ID(s)		Sample Date	Extraction / Preparation			Analysis		
			Date extracted	Due for extraction	Evaluation	Date analysed	Due for analysis	Evaluation
EP074E: Halogenated Aliphatic Compounds								
Amber VOC Vial - Sulfuric Acid (EP074)								
HINDS,	HINUS,	**08-Aug-2023**	**16-Aug-2023**	22-Aug-2023	✓	**16-Aug-2023**	22-Aug-2023	✓
KEMDS,	KEMUS,							
ROPDS,	ROPUS,							
SOUDS,	SOUUS							
Amber VOC Vial - Sulfuric Acid (EP074)								
BADDS,	BADMS,	**09-Aug-2023**	**16-Aug-2023**	23-Aug-2023	✓	**16-Aug-2023**	23-Aug-2023	✓
BADUS,	COSDS,							
COSUS								
EP074F: Halogenated Aromatic Compounds								
Amber VOC Vial - Sulfuric Acid (EP074)								
HINDS,	HINUS,	**08-Aug-2023**	**16-Aug-2023**	22-Aug-2023	✓	**16-Aug-2023**	22-Aug-2023	✓
KEMDS,	KEMUS,							
ROPDS,	ROPUS,							
SOUDS,	SOUUS							
Amber VOC Vial - Sulfuric Acid (EP074)								
BADDS,	BADMS,	**09-Aug-2023**	**16-Aug-2023**	23-Aug-2023	✓	**16-Aug-2023**	23-Aug-2023	✓
BADUS,	COSDS,							
COSUS								
EP074G: Trihalomethanes								
Amber VOC Vial - Sulfuric Acid (EP074)								
HINDS,	HINUS,	**08-Aug-2023**	**16-Aug-2023**	22-Aug-2023	✓	**16-Aug-2023**	22-Aug-2023	✓
KEMDS,	KEMUS,							
ROPDS,	ROPUS,							
SOUDS,	SOUUS							
Amber VOC Vial - Sulfuric Acid (EP074)								
BADDS,	BADMS,	**09-Aug-2023**	**16-Aug-2023**	23-Aug-2023	✓	**16-Aug-2023**	23-Aug-2023	✓
BADUS,	COSDS,							
COSUS								
EP075(SIM)A: Phenolic Compounds								
Amber Glass Bottle - Unpreserved (EP075(SIM))								
HINDS,	HINUS,	**08-Aug-2023**	**15-Aug-2023**	15-Aug-2023	✓	**17-Aug-2023**	24-Sep-2023	✓
KEMDS,	KEMUS,							
ROPDS,	ROPUS,							
SOUDS,	SOUUS							
Amber Glass Bottle - Unpreserved (EP075(SIM))								
BADDS,	BADMS	**09-Aug-2023**	**15-Aug-2023**	16-Aug-2023	✓	**16-Aug-2023**	24-Sep-2023	✓
Amber Glass Bottle - Unpreserved (EP075(SIM))								
BADUS,	COSDS,	**09-Aug-2023**	**15-Aug-2023**	16-Aug-2023	✓	**17-Aug-2023**	24-Sep-2023	✓
COSUS								

Matrix: **WATER**

Evaluation: × = Holding time breach ; ✓ = Within holding time.

Method / Container / Client Sample ID(s)	Sample Date	Extraction / Preparation			Analysis		
		Date extracted	Due for extraction	Evaluation	Date analysed	Due for analysis	Evaluation
EP075(SIM)B: Polynuclear Aromatic Hydrocarbons							
Amber Glass Bottle - Unpreserved (EP075(SIM)) HINDS, HINUS, KEMDS, KEMUS, ROPDS, ROPUS, SOUDS, SOUUS	**08-Aug-2023**	**15-Aug-2023**	15-Aug-2023	✓	**17-Aug-2023**	24-Sep-2023	✓
Amber Glass Bottle - Unpreserved (EP075(SIM)) BADDS, BADMS	**09-Aug-2023**	**15-Aug-2023**	16-Aug-2023	✓	**16-Aug-2023**	24-Sep-2023	✓
Amber Glass Bottle - Unpreserved (EP075(SIM)) BADUS, COSDS, COSUS	**09-Aug-2023**	**15-Aug-2023**	16-Aug-2023	✓	**17-Aug-2023**	24-Sep-2023	✓
EP080: BTEXN							
Amber VOC Vial - Sulfuric Acid (EP080) HINDS, HINUS, KEMDS, KEMUS, ROPDS, ROPUS, SOUDS, SOUUS	**08-Aug-2023**	**16-Aug-2023**	22-Aug-2023	✓	**16-Aug-2023**	22-Aug-2023	✓
Amber VOC Vial - Sulfuric Acid (EP080) BADDS, BADMS, BADUS, COSDS, COSUS	**09-Aug-2023**	**16-Aug-2023**	23-Aug-2023	✓	**16-Aug-2023**	23-Aug-2023	✓
EP234A: OP Pesticides							
Amber Glass Bottle - Unpreserved (EP234-1) HINDS, HINUS, KEMDS, KEMUS, ROPDS, ROPUS, SOUDS, SOUUS	**08-Aug-2023**	**----**	----	----	**10-Aug-2023**	15-Aug-2023	✓
Amber Glass Bottle - Unpreserved (EP234-1) BADDS, BADMS, BADUS, COSDS, COSUS	**09-Aug-2023**	**----**	----	----	**10-Aug-2023**	16-Aug-2023	✓

Quality Control Parameter Frequency Compliance

The following report summarises the frequency of laboratory QC samples analysed within the analytical lot(s) in which the submitted sample(s) was(were) processed. Actual rate should be greater than or equal to the expected rate. A listing of breaches is provided in the Summary of Outliers.

Matrix: **WATER**

Evaluation: × = Quality Control frequency not within specification ; ✓ = Quality Control frequency within specification.

Quality Control Sample Type		Count		Rate (%)			Quality Control Specification
Analytical Methods	*Method*	*QC*	*Regular*	***Actual***	***Expected***	*Evaluation*	
Laboratory Duplicates (DUP)							
Ammonia as N by Discrete analyser	EK055G	2	20	**10.00**	**10.00**	✓	NEPM 2013 B3 & ALS QC Standard
Nitrite and Nitrate as N (NOx) by Discrete Analyser	EK059G	2	20	**10.00**	**10.00**	✓	NEPM 2013 B3 & ALS QC Standard
Nitrite as N by Discrete Analyser	EK057G	2	20	**10.00**	**10.00**	✓	NEPM 2013 B3 & ALS QC Standard
PAH/Phenols (GC/MS - SIM)	EP075(SIM)	2	13	**15.38**	**10.00**	✓	NEPM 2013 B3 & ALS QC Standard
Pesticides by LCMSMS (Positive Ion Mode)	EP234-1	2	20	**10.00**	**10.00**	✓	NEPM 2013 B3 & ALS QC Standard
Pesticides by LCMSMS (Positive Ion Mode) - extended	EP234-1x	2	13	**15.38**	**10.00**	✓	NEPM 2013 B3 & ALS QC Standard
Reactive Phosphorus as P-By Discrete Analyser	EK071G	3	27	**11.11**	**10.00**	✓	NEPM 2013 B3 & ALS QC Standard
Suspended Solids (High Level)	EA025H	6	54	**11.11**	**10.00**	✓	NEPM 2013 B3 & ALS QC Standard
Total Dissolved Solids (High Level)	EA015H	6	54	**11.11**	**10.00**	✓	NEPM 2013 B3 & ALS QC Standard
Total Kjeldahl Nitrogen as N By Discrete Analyser	EK061G	2	20	**10.00**	**10.00**	✓	NEPM 2013 B3 & ALS QC Standard
Total Mercury by FIMS	EG035T	2	20	**10.00**	**10.00**	✓	NEPM 2013 B3 & ALS QC Standard
Total Metals by ICP-MS - Suite A	EG020A-T	2	20	**10.00**	**10.00**	✓	NEPM 2013 B3 & ALS QC Standard
Total Phosphorus as P By Discrete Analyser	EK067G	2	20	**10.00**	**10.00**	✓	NEPM 2013 B3 & ALS QC Standard
TRH Volatiles/BTEX	EP080	2	19	**10.53**	**10.00**	✓	NEPM 2013 B3 & ALS QC Standard
Volatile Organic Compounds	EP074	2	15	**13.33**	**10.00**	✓	NEPM 2013 B3 & ALS QC Standard
Laboratory Control Samples (LCS)							
Ammonia as N by Discrete analyser	EK055G	1	20	**5.00**	**5.00**	✓	NEPM 2013 B3 & ALS QC Standard
Chlorophyll a and Pheophytin a	EP008	1	17	**5.88**	**5.00**	✓	NEPM 2013 B3 & ALS QC Standard
Nitrite and Nitrate as N (NOx) by Discrete Analyser	EK059G	1	20	**5.00**	**5.00**	✓	NEPM 2013 B3 & ALS QC Standard
Nitrite as N by Discrete Analyser	EK057G	1	20	**5.00**	**5.00**	✓	NEPM 2013 B3 & ALS QC Standard
Oil and Grease	EP020	4	49	**8.16**	**8.00**	✓	NEPM 2013 B3 & ALS QC Standard
PAH/Phenols (GC/MS - SIM)	EP075(SIM)	1	13	**7.69**	**5.00**	✓	NEPM 2013 B3 & ALS QC Standard
Pesticides by LCMSMS (Positive Ion Mode)	EP234-1	1	20	**5.00**	**5.00**	✓	NEPM 2013 B3 & ALS QC Standard
Pesticides by LCMSMS (Positive Ion Mode) - extended	EP234-1x	1	13	**7.69**	**5.00**	✓	NEPM 2013 B3 & ALS QC Standard
Reactive Phosphorus as P-By Discrete Analyser	EK071G	2	27	**7.41**	**5.00**	✓	NEPM 2013 B3 & ALS QC Standard
Suspended Solids (High Level)	EA025H	8	54	**14.81**	**12.50**	✓	NEPM 2013 B3 & ALS QC Standard
Total Dissolved Solids (High Level)	EA015H	8	54	**14.81**	**12.50**	✓	NEPM 2013 B3 & ALS QC Standard
Total Kjeldahl Nitrogen as N By Discrete Analyser	EK061G	3	20	**15.00**	**15.00**	✓	NEPM 2013 B3 & ALS QC Standard
Total Mercury by FIMS	EG035T	1	20	**5.00**	**5.00**	✓	NEPM 2013 B3 & ALS QC Standard
Total Metals by ICP-MS - Suite A	EG020A-T	1	20	**5.00**	**5.00**	✓	NEPM 2013 B3 & ALS QC Standard
Total Phosphorus as P By Discrete Analyser	EK067G	3	20	**15.00**	**15.00**	✓	NEPM 2013 B3 & ALS QC Standard
TRH Volatiles/BTEX	EP080	1	19	**5.26**	**5.00**	✓	NEPM 2013 B3 & ALS QC Standard
Volatile Organic Compounds	EP074	1	15	**6.67**	**5.00**	✓	NEPM 2013 B3 & ALS QC Standard
Method Blanks (MB)							
Ammonia as N by Discrete analyser	EK055G	1	20	**5.00**	**5.00**	✓	NEPM 2013 B3 & ALS QC Standard
Chlorophyll a and Pheophytin a	EP008	1	17	**5.88**	**5.00**	✓	NEPM 2013 B3 & ALS QC Standard

Matrix: **WATER**

Evaluation: × = Quality Control frequency not within specification ; ✓ = Quality Control frequency within specification.

Quality Control Sample Type		Count		Rate (%)			Quality Control Specification
Analytical Methods	*Method*	*QC*	*Regular*	***Actual***	***Expected***	*Evaluation*	
Method Blanks (MB) - Continued							
Nitrite and Nitrate as N (NOx) by Discrete Analyser	EK059G	1	20	**5.00**	**5.00**	✓	NEPM 2013 B3 & ALS QC Standard
Nitrite as N by Discrete Analyser	EK057G	1	20	**5.00**	**5.00**	✓	NEPM 2013 B3 & ALS QC Standard
Oil and Grease	EP020	3	49	**6.12**	**6.00**	✓	NEPM 2013 B3 & ALS QC Standard
PAH/Phenols (GC/MS - SIM)	EP075(SIM)	1	13	**7.69**	**5.00**	✓	NEPM 2013 B3 & ALS QC Standard
Pesticides by LCMSMS (Positive Ion Mode)	EP234-1	1	20	**5.00**	**5.00**	✓	NEPM 2013 B3 & ALS QC Standard
Pesticides by LCMSMS (Positive Ion Mode) - extended	EP234-1x	1	13	**7.69**	**5.00**	✓	NEPM 2013 B3 & ALS QC Standard
Reactive Phosphorus as P-By Discrete Analyser	EK071G	2	27	**7.41**	**5.00**	✓	NEPM 2013 B3 & ALS QC Standard
Suspended Solids (High Level)	EA025H	3	54	**5.56**	**5.00**	✓	NEPM 2013 B3 & ALS QC Standard
Total Dissolved Solids (High Level)	EA015H	3	54	**5.56**	**5.00**	✓	NEPM 2013 B3 & ALS QC Standard
Total Kjeldahl Nitrogen as N By Discrete Analyser	EK061G	1	20	**5.00**	**5.00**	✓	NEPM 2013 B3 & ALS QC Standard
Total Mercury by FIMS	EG035T	1	20	**5.00**	**5.00**	✓	NEPM 2013 B3 & ALS QC Standard
Total Metals by ICP-MS - Suite A	EG020A-T	1	20	**5.00**	**5.00**	✓	NEPM 2013 B3 & ALS QC Standard
Total Phosphorus as P By Discrete Analyser	EK067G	1	20	**5.00**	**5.00**	✓	NEPM 2013 B3 & ALS QC Standard
TRH Volatiles/BTEX	EP080	1	19	**5.26**	**5.00**	✓	NEPM 2013 B3 & ALS QC Standard
Volatile Organic Compounds	EP074	1	15	**6.67**	**5.00**	✓	NEPM 2013 B3 & ALS QC Standard
Matrix Spikes (MS)							
Ammonia as N by Discrete analyser	EK055G	1	20	**5.00**	**5.00**	✓	NEPM 2013 B3 & ALS QC Standard
Nitrite and Nitrate as N (NOx) by Discrete Analyser	EK059G	1	20	**5.00**	**5.00**	✓	NEPM 2013 B3 & ALS QC Standard
Nitrite as N by Discrete Analyser	EK057G	1	20	**5.00**	**5.00**	✓	NEPM 2013 B3 & ALS QC Standard
PAH/Phenols (GC/MS - SIM)	EP075(SIM)	1	13	**7.69**	**5.00**	✓	NEPM 2013 B3 & ALS QC Standard
Pesticides by LCMSMS (Positive Ion Mode)	EP234-1	1	20	**5.00**	**5.00**	✓	NEPM 2013 B3 & ALS QC Standard
Pesticides by LCMSMS (Positive Ion Mode) - extended	EP234-1x	1	13	**7.69**	**5.00**	✓	NEPM 2013 B3 & ALS QC Standard
Reactive Phosphorus as P-By Discrete Analyser	EK071G	2	27	**7.41**	**5.00**	✓	NEPM 2013 B3 & ALS QC Standard
Total Kjeldahl Nitrogen as N By Discrete Analyser	EK061G	1	20	**5.00**	**5.00**	✓	NEPM 2013 B3 & ALS QC Standard
Total Mercury by FIMS	EG035T	1	20	**5.00**	**5.00**	✓	NEPM 2013 B3 & ALS QC Standard
Total Metals by ICP-MS - Suite A	EG020A-T	1	20	**5.00**	**5.00**	✓	NEPM 2013 B3 & ALS QC Standard
Total Phosphorus as P By Discrete Analyser	EK067G	1	20	**5.00**	**5.00**	✓	NEPM 2013 B3 & ALS QC Standard
TRH Volatiles/BTEX	EP080	1	19	**5.26**	**5.00**	✓	NEPM 2013 B3 & ALS QC Standard
Volatile Organic Compounds	EP074	1	15	**6.67**	**5.00**	✓	NEPM 2013 B3 & ALS QC Standard

Brief Method Summaries

The analytical procedures used by the Environmental Division have been developed from established internationally recognized procedures such as those published by the US EPA, APHA, AS and NEPM. In house developed procedures are employed in the absence of documented standards or by client request. The following report provides brief descriptions of the analytical procedures employed for results reported in the Certificate of Analysis. Sources from which ALS methods have been developed are provided within the Method Descriptions.

Analytical Methods	Method	Matrix	Method Descriptions
Total Dissolved Solids (High Level)	EA015H	WATER	In house: Referenced to APHA 2540C. A gravimetric procedure that determines the amount of `filterable` residue in an aqueous sample. A well-mixed sample is filtered through a glass fibre filter (1.2um). The filtrate is evaporated to dryness and dried to constant weight at 180+/-5C. This method is compliant with NEPM Schedule B(3)
Suspended Solids (High Level)	EA025H	WATER	In house: Referenced to APHA 2540D. A gravimetric procedure employed to determine the amount of `non-filterable` residue in a aqueous sample. The prescribed GFC (1.2um) filter is rinsed with deionised water, oven dried and weighed prior to analysis. A well-mixed sample is filtered through a glass fibre filter (1.2um). The residue on the filter paper is dried at 104+/-2C . This method is compliant with NEPM Schedule B(3)
Total Metals by ICP-MS - Suite A	EG020A-T	WATER	In house: Referenced to APHA 3125; USEPA SW846 - 6020, ALS QWI-EN/EG020. The ICPMS technique utilizes a highly efficient argon plasma to ionize selected elements. Ions are then passed into a high vacuum mass spectrometer, which separates the analytes based on their distinct mass to charge ratios prior to their measurement by a discrete dynode ion detector.
Total Mercury by FIMS	EG035T	WATER	In house: Referenced to APHA 3112 Hg - B (Flow-injection (SnCl2)(Cold Vapour generation) AAS) FIM-AAS is an automated flameless atomic absorption technique. A bromate/bromide reagent is used to oxidise any organic mercury compounds in the unfiltered sample. The ionic mercury is reduced online to atomic mercury vapour by SnCl2 which is then purged into a heated quartz cell. Quantification is by comparing absorbance against a calibration curve. This method is compliant with NEPM Schedule B(3).
Ammonia as N by Discrete analyser	EK055G	WATER	In house: Referenced to APHA 4500-NH3 G Ammonia is determined by direct colorimetry by Discrete Analyser. This method is compliant with NEPM Schedule B(3)
Nitrite as N by Discrete Analyser	EK057G	WATER	In house: Referenced to APHA 4500-NO2- B. Nitrite is determined by direct colourimetry by Discrete Analyser. This method is compliant with NEPM Schedule B(3)
Nitrate as N by Discrete Analyser	EK058G	WATER	In house: Referenced to APHA 4500-NO3- F. Nitrate is reduced to nitrite by way of a chemical reduction followed by quantification by Discrete Analyser. Nitrite is determined seperately by direct colourimetry and result for Nitrate calculated as the difference between the two results. This method is compliant with NEPM Schedule B(3)
Nitrite and Nitrate as N (NOx) by Discrete Analyser	EK059G	WATER	In house: Referenced to APHA 4500-NO3- F. Combined oxidised Nitrogen (NO2+NO3) is determined by Chemical Reduction and direct colourimetry by Discrete Analyser. This method is compliant with NEPM Schedule B(3)
Total Kjeldahl Nitrogen as N By Discrete Analyser	EK061G	WATER	In house: Referenced to APHA 4500-Norg D (In house). An aliquot of sample is digested using a high temperature Kjeldahl digestion to convert nitrogenous compounds to ammonia. Ammonia is determined colorimetrically by discrete analyser. This method is compliant with NEPM Schedule B(3)
Total Nitrogen as N (TKN + Nox) By Discrete Analyser	EK062G	WATER	In house: Referenced to APHA 4500-Norg / 4500-NO3-. This method is compliant with NEPM Schedule B(3)
Total Phosphorus as P By Discrete Analyser	EK067G	WATER	In house: Referenced to APHA 4500-P H, Jirka et al, Zhang et al. This procedure involves sulphuric acid digestion of a sample aliquot to break phosphorus down to orthophosphate. The orthophosphate reacts with ammonium molybdate and antimony potassium tartrate to form a complex which is then reduced and its concentration measured at 880nm using discrete analyser. This method is compliant with NEPM Schedule B(3)

Analytical Methods	Method	Matrix	Method Descriptions
Reactive Phosphorus as P-By Discrete Analyser	EK071G	WATER	In house: Referenced to APHA 4500-P F Ammonium molybdate and potassium antimonyl tartrate reacts in acid medium with othophosphate to form a heteropoly acid -phosphomolybdic acid - which is reduced to intensely coloured molybdenum blue by ascorbic acid. Quantification is by Discrete Analyser. This method is compliant with NEPM Schedule B(3)
Chlorophyll a and Pheophytin a	EP008	WATER	In house: Referenced to APHA 10200 H. The pigments are extracted into aqueous acetone. The optical density of the extract before and after acidification at both 664 nm and 665 nm is determined spectrometrically.
Oil and Grease	EP020	WATER	In house: Referenced to APHA 5520 B. Oil & grease is a gravimetric procedure to determine the amount of dissolved or emulsified oil & grease residue in an aqueous sample. The sample is serially extracted three times n-hexane. The resultant extracts are combined, dehydrated and concentrated prior to gravimetric determination. This method is compliant with NEPM Schedule B(3)
Volatile Organic Compounds	EP074	WATER	In house: Referenced to USEPA SW 846 - 8260 Water samples are directly purged prior to analysis by Capillary GC/MS and quantification is by comparison against an established 5 point calibration curve. This method is compliant with NEPM Schedule B(3)
PAH/Phenols (GC/MS - SIM)	EP075(SIM)	WATER	In house: Referenced to USEPA SW 846 - 8270 Sample extracts are analysed by Capillary GC/MS in SIM Mode and quantification is by comparison against an established 5 point calibration curve. This method is compliant with NEPM Schedule B(3)
TRH Volatiles/BTEX	EP080	WATER	In house: Referenced to USEPA SW 846 - 8260 Water samples are directly purged prior to analysis by Capillary GC/MS and quantification is by comparison against an established 5 point calibration curve. Alternatively, a sample is equilibrated in a headspace vial and a portion of the headspace determined by GCMS analysis. This method is compliant with the QC requirements of NEPM Schedule B(3)
Pesticides by LCMSMS (Positive Ion Mode)	EP234-1	WATER	In house: LC-MSMS, direct injection. A sample is filtered and injected directly onto the LC-MSMS. Analysis is by LC/MSMS, ESI Positive Mode.
Pesticides by LCMSMS (Positive Ion Mode) - extended	EP234-1x	WATER	In house: LC-MSMS, direct injection. A sample is filtered and injected directly onto the LC-MSMS. Analysis is by LC/MSMS, ESI Positive Mode.

Preparation Methods	Method	Matrix	Method Descriptions
TKN/TP Digestion	EK061/EK067	WATER	In house: Referenced to APHA 4500 Norg - D; APHA 4500 P - H. This method is compliant with NEPM Schedule B(3)
Digestion for Total Recoverable Metals	EN25	WATER	In house: Referenced to USEPA SW846-3005. Method 3005 is a Nitric/Hydrochloric acid digestion procedure used to prepare surface and ground water samples for analysis by ICPAES or ICPMS. This method is compliant with NEPM Schedule B(3)
Separatory Funnel Extraction of Liquids	ORG14	WATER	In house: Referenced to USEPA SW 846 - 3510 100 mL to 1L of sample is transferred to a separatory funnel and serially extracted three times using DCM for each extract. The resultant extracts are combined, dehydrated and concentrated for analysis. This method is compliant with NEPM Schedule B(3) . ALS default excludes sediment which may be resident in the container.
Volatiles Water Preparation	ORG16-W	WATER	A 5 mL aliquot or 5 mL of a diluted sample is added to a 40 mL VOC vial for purging.

Subcontract / Split WO:

Lab Assigned: SYDVB2, GWDUP2 / EURO PINS

Organised by / Date:

Relinquished by / Date:

Courier:

WO No: ES2326795

Environmental Division Sydney
Work Order Reference
ES2326795

CHAIN OF CUSTODY

CLIENT:

OFFICE:

PROJECT:

ORDER NUMBER:

PROJECT MANAGER:

SAMPLER:

SAMPLER MOBILE:

COC emailed to ALS? (YES / NO):

EDD FORMAT (or default):

Email Reports to:

TURNAROUND REQUIREMENT:

ALS QUOTE NO.:

CONTACT PH:

COC SEQUENCE NUMBER (Circle): 1 2 3 4 5 6 7

FOR LABORATORY USE ONLY
Custody Seal Intact?
Free ice / frozen ice bricks present
Random Sample Temperature on
Other comments: 7.3

RELINQUISHED BY: Brandan 1018

RECEIVED BY:

DATE/TIME:

RELINQUISHED BY:

DATE/TIME:

RECEIVED BY: JRW 9/8/23 1529

COMMENTS/SPECIAL HANDLING/STORAGE OR DISPOSAL:

HT

ALS USE	SAMPLE DETAILS MATRIX: SOLID (S) WATER (W)			CONTAINER INFORMATION		ANALYSIS REQUIRED including SUITES (NB. Suite Codes must be listed to ensure correct analysis) Where Metals are required, indicate Total (unfiltered bottle required) or Dissolved (field filtered bottle required).											
LAB ID	SAMPLE ID	DATE / TIME	MATRIX	Comments	TOTAL # OF BOTTLES												
1																	
2																	
3																	
4																	
5																	
6																	
7																	
8																	
9																	
10																	
11																	
12																	
13																	
14																	
-																	
-																	

1015916

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CHAIN OF CUSTODY RECORD

CLIENT DETAILS

Page __1__ of __1__

Company Name:	Contact Name:	Purchase Order:	COC Number:
Office Address:	Project Manager: Henry Lau	PROJECT Number:	Eurofins | mgt quote ID:
	Email for results:	PROJECT Name:	Data output format:

Special Directions & Comments:

Sonic Non ALS

Eurofins | mgt Drawer batch number:

Analytes

Some common holding times (with correct preservation)
For further information contact the lab

Waters		Soils	
BTEX, MAH, VOC	7 days	BTEX, MAH, VOC	14 days
OCP, PAH, Phenols, Pesticides	7 days	TRH, PAH, Phenols, Pesticides	14 days
Heavy Metals	6 months	Heavy Metals	6 months
Mercury, DVC	28 days	Mercury, DVC	28 days
Microbiological testing	24 hours	Microbiological testing	72 hours
BOD, Nitrate, Nitrite, TKN*1	3 days	Asbest	28 days
Solids - TSS, TDS, etc	7 days	SPOCAS, pH Field and FOC (S)*	24 hours
Fertiliser (N)	7 days	ASLP, SLP	7 days

	Sample ID	Date	Matrix	Containers								Sample comments
				100*	250*	500*	1Ltr	1Ltr Vial	250mL P	125mL	Bag	
1	[illegible]	[illegible]	Water			1						
2	[illegible]	[illegible]	Water			1						
3												
4												
5												
6												
7												
8												
9												
10												

Laboratory Staff

Relinquished By:	Received By:	Method Of Shipment	Temperature on arrival:
Date & Time:	Date & Time:	Courier Hand Delivered Postal Courier Consignment #	Report number:
Signature: AU	Signature:		

Issue No: 09 Issue Date: 25 February 20[illegible] Page 1 of 1

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Eurofins Environment Testing Australia Pty Ltd

ABN: 50 005 085 521

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Dandenong South	Grovedale	Girraween	Mitchell	Murarrie	Mayfield West NSW 2304
VIC 3175	VIC 3216	NSW 2145	ACT 2911	QLD 4172	Tel: +61 2 4968 8448
Tel: +61 3 8564 5000	Tel: +61 3 8564 5000	Tel: +61 2 9900 8400	Tel: +61 2 6113 8091	Tel: +61 7 3902 4600	NATA# 1261
NATA# 1261	NATA# 1261	NATA# 1261	NATA# 1261	NATA# 1261	Site# 25079 & 25289
Site# 1254	Site# 25403	Site# 18217	Site# 25466	Site# 20794	

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Site# 2370

Eurofins Environment Testing NZ Ltd

NZBN: 9429046024954

Auckland	Christchurch	Tauranga
35 O'Rorke Road	43 Detroit Drive	1277 Cameron Road,
Penrose,	Rolleston,	Gate Pa,
Auckland 1061	Christchurch 7675	Tauranga 3112
Tel: +64 9 526 4551	Tel: +64 3 343 5201	Tel: +64 9 525 0568
IANZ# 1327	IANZ# 1290	IANZ# 1402

Sample Receipt Advice

Company name:	GHD Pty Ltd NSW
Contact name:	Henry Luo
Project name:	M12 SURFACE WATER
Project ID:	Not provided
Turnaround time:	5 Day
Date/Time received	Aug 10, 2023 3:30 PM
Eurofins reference	1015966

Sample Information

✓	A detailed list of analytes logged into our LIMS, is included in the attached summary table.
✓	Sample Temperature of chilled sample on the batch as recorded by Eurofins Sample Receipt : 7.3 degrees Celsius.
✓	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

Contact

If you have any questions with respect to these samples, please contact your Analytical Services Manager:

Bonnie Pu on phone : or by email: BonniePu@eurofins.com

Results will be delivered electronically via email to Henry Luo - henry.luo@ghd.com.

Note: A copy of these results will also be delivered to the general GHD Pty Ltd NSW email address.

GHD Pty Ltd NSW
Level 15, 133 Castlereagh Street
Sydney
NSW 2000

NATA Accredited
Accreditation Number 1261
Site Number 18217

Accredited for compliance with ISO/IEC 17025 – Testing
NATA is a signatory to the ILAC Mutual Recognition Arrangement for the mutual recognition of the equivalence of testing, medical testing, calibration, inspection, proficiency testing scheme providers and reference materials producers reports and certificates.

Attention: **Henry Luo**

Report **1015966-W**
Project name M12 SURFACE WATER
Received Date Aug 10, 2023

Client Sample ID			**SWDUP2**	**GWDUP2**
Sample Matrix			**Water**	**Water**
Eurofins Sample No.			**S23-Au0028765**	**S23-Au0028766**
Date Sampled			**Aug 08, 2023**	**Aug 09, 2023**
Test/Reference	LOR	Unit		
Heavy Metals				
Arsenic	0.001	mg/L	0.001	-
Arsenic (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
Copper	0.001	mg/L	0.003	-
Copper (filtered)	0.001	mg/L	-	0.004
Lead	0.001	mg/L	< 0.001	-
Lead (filtered)	0.001	mg/L	-	< 0.001
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	-	0.002
Zinc	0.005	mg/L	0.011	-
Zinc (filtered)	0.005	mg/L	-	0.006

Sample History

Where samples are submitted/analysed over several days, the last date of extraction is reported.

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
Metals M8	Sydney	Aug 11, 2023	28 Days
- Method: LTM-MET-3040 Metals in Waters, Soils & Sediments by ICP-MS			
Metals M8 filtered	Sydney	Aug 11, 2023	28 Days
- Method: LTM-MET-3040 Metals in Waters, Soils & Sediments by ICP-MS			

eurofins

web: www.eurofins.com.au
email: EnviroSales@eurofins.com

Eurofins Environment Testing Australia Pty Ltd
ABN: 50 005 085 521

Melbourne	Geelong	Sydney	Canberra	Brisbane	Newcastle
6 Monterey Road	19/8 Lewalan Street	179 Magowar Road	Unit 1,2 Dacre Street	1/21 Smallwood Place	1/2 Frost Drive
Dandenong South	Grovedale	Girraween	Mitchell	Murarrie	Mayfield West NSW 2304
VIC 3175	VIC 3216	NSW 2145	ACT 2911	QLD 4172	Tel: +61 2 4968 8448
Tel: +61 3 8564 5000	Tel: +61 3 8564 5000	Tel: +61 2 9900 8400	Tel: +61 2 6113 8091	Tel: +61 7 3902 4600	NATA# 1261
NATA# 1261	NATA# 1261	NATA# 1261	NATA# 1261	NATA# 1261	Site# 25079 & 25289
Site# 1254	Site# 25403	Site# 18217	Site# 25466	Site# 20794	

Eurofins ARL Pty Ltd
ABN: 91 05 0159 898

Perth
46-48 Banksia Road
Welshpool
WA 6106
Tel: +61 8 6253 4444
NATA# 2377
Site# 2370

Eurofins Environment Testing NZ Ltd
NZBN: 9429046024954

Auckland	Christchurch	Tauranga
35 O'Rorke Road	43 Detroit Drive	1277 Cameron Road,
Penrose,	Rolleston,	Gate Pa,
Auckland 1061	Christchurch 7675	Tauranga 3112
Tel: +64 9 526 4551	Tel: +64 3 343 5201	Tel: +64 9 525 0568
IANZ# 1327	IANZ# 1290	IANZ# 1402

Company Name: GHD Pty Ltd NSW
Address: Level 15, 133 Castlereagh Street
Sydney
NSW 2000

Project Name: M12 SURFACE WATER

Order No.: 12554717
Report #: 1015966
Phone: 02 9239 7100
Fax: 02 9239 7199

Received: Aug 10, 2023 3:30 PM
Due: Aug 17, 2023
Priority: 5 Day
Contact Name: Henry Luo

Eurofins Analytical Services Manager : Bonnie Pu

Sample Detail						Metals M8	Metals M8 filtered
Sydney Laboratory - NATA # 1261 Site # 18217						X	X
External Laboratory							
No	**Sample ID**	**Sample Date**	**Sampling Time**	**Matrix**	**LAB ID**		
1	SWDUP2	Aug 08, 2023		Water	S23-Au0028765	X	
2	GWDUP2	Aug 09, 2023		Water	S23-Au0028766		X
Test Counts						1	1

eurofins | Environment Testing

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.

Units

mg/kg: milligrams per kilogram	**mg/L:** milligrams per litre	**µg/L:** micrograms per litre
ppm: parts per million	**ppb:** parts per billion	**%:** Percentage
org/100 mL: Organisms per 100 millilitres	**NTU:** Nephelometric Turbidity Units	**MPN/100 mL:** Most Probable Number of organisms per 100 millilitres
CFU: Colony forming unit		

Terms

APHA	American Public Health Association
COC	Chain of Custody
CP	Client Parent - QC was performed on samples pertaining to this report
CRM	Certified Reference Material (ISO17034) - reported as percent recovery.
Dry	Where a moisture has been determined on a solid sample the result is expressed on a dry basis.
Duplicate	A second piece of analysis from the same sample and reported in the same units as the result to show comparison.
LOR	Limit of Reporting.
LCS	Laboratory Control Sample - 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.
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.
RPD	Relative Percent Difference between two Duplicate pieces of analysis.
SPIKE	Addition of the analyte to the sample and reported as percentage recovery.
SRA	Sample Receipt Advice
Surr - Surrogate	The addition of a like compound to the analyte target and reported as percentage recovery.
TBTO	Tributyltin oxide (*bis*-tributyltin oxide) - individual tributyltin compounds cannot be identified separately in the environment however free tributyltin was measured and its values were converted stoichiometrically into tributyltin oxide for comparison with regulatory limits.
TCLP	Toxicity Characteristic Leaching Procedure
TEQ	Toxic Equivalency Quotient or Total Equivalence
QSM	US Department of Defense Quality Systems Manual Version 5.4
US EPA	United States Environmental Protection Agency
WA DWER	Sum of PFBA, PFPeA, PFHxA, PFHpA, PFOA, PFBS, PFHxS, PFOS, 6:2 FTSA, 8:2 FTSA

QC - Acceptance Criteria

The acceptance criteria should be used as a guide only and may be different when site specific Sampling Analysis and Quality Plan (SAQP) have been implemented

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%

NOTE: pH duplicates are reported as a range not as RPD

Surrogate Recoveries: Recoveries must lie between 20-130% for Speciated Phenols & 50-150% for PFAS. SVOCs recoveries 20 – 150%

PFAS field samples that contain surrogate recoveries in excess of the QC limit designated in QSM 5.4 where no positive PFAS results have been reported have been reviewed and no data was affected.

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. 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.
4. Recovery Data (Spikes & Surrogates) - where chromatographic interference does not allow the determination of recovery the term "INT" appears against that analyte.
5. For Matrix Spikes and LCS results a dash "-" in the report means that the specific analyte was not added to the QC sample.
6. 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	
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	
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	
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							
Arsenic	%	93			80-120	Pass	
Arsenic (filtered)	%	96			80-120	Pass	
Cadmium	%	93			80-120	Pass	
Cadmium (filtered)	%	101			80-120	Pass	
Chromium	%	97			80-120	Pass	
Chromium (filtered)	%	103			80-120	Pass	
Copper	%	97			80-120	Pass	
Copper (filtered)	%	102			80-120	Pass	
Lead	%	96			80-120	Pass	
Lead (filtered)	%	103			80-120	Pass	
Mercury	%	95			80-120	Pass	
Mercury (filtered)	%	106			80-120	Pass	
Nickel	%	99			80-120	Pass	
Nickel (filtered)	%	102			80-120	Pass	
Zinc	%	98			80-120	Pass	
Zinc (filtered)	%	100			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	S23-Au0028765	CP	%	99			75-125	Pass	
Cadmium	S23-Au0028765	CP	%	93			75-125	Pass	
Chromium	S23-Au0028765	CP	%	94			75-125	Pass	
Copper	S23-Au0028765	CP	%	91			75-125	Pass	
Lead	S23-Au0028765	CP	%	91			75-125	Pass	
Mercury	S23-Au0028765	CP	%	92			75-125	Pass	
Nickel	S23-Au0028765	CP	%	92			75-125	Pass	
Zinc	S23-Au0028765	CP	%	93			75-125	Pass	
Spike - % Recovery									
Heavy Metals				Result 1					
Arsenic (filtered)	S23-Jl0038099	NCP	%	107			75-125	Pass	
Cadmium (filtered)	S23-Jl0038099	NCP	%	94			75-125	Pass	

Test	Lab Sample ID	QA Source	Units	Result 1			Acceptance Limits	Pass Limits	Qualifying Code
Chromium (filtered)	S23-Jl0038099	NCP	%	89			75-125	Pass	
Lead (filtered)	S23-Jl0038099	NCP	%	81			75-125	Pass	
Mercury (filtered)	S23-Jl0038099	NCP	%	86			75-125	Pass	
Nickel (filtered)	S23-Jl0038099	NCP	%	81			75-125	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	N23-Au0015445	NCP	mg/L	< 0.001	< 0.001	<1	30%	Pass	
Cadmium	N23-Au0015445	NCP	mg/L	< 0.0002	< 0.0002	<1	30%	Pass	
Chromium	N23-Au0015445	NCP	mg/L	< 0.001	< 0.001	<1	30%	Pass	
Copper	N23-Au0015445	NCP	mg/L	0.002	0.002	4.9	30%	Pass	
Lead	N23-Au0015445	NCP	mg/L	< 0.001	< 0.001	<1	30%	Pass	
Mercury	N23-Au0015445	NCP	mg/L	< 0.0001	< 0.0001	<1	30%	Pass	
Nickel	N23-Au0015445	NCP	mg/L	0.001	0.001	15	30%	Pass	
Zinc	N23-Au0015445	NCP	mg/L	0.026	0.027	4.9	30%	Pass	
Duplicate									
Heavy Metals				Result 1	Result 2	RPD			
Arsenic (filtered)	S23-Au0030415	NCP	mg/L	0.001	0.001	1.0	30%	Pass	
Cadmium (filtered)	S23-Au0030415	NCP	mg/L	< 0.0002	< 0.0002	<1	30%	Pass	
Chromium (filtered)	S23-Au0030415	NCP	mg/L	< 0.001	< 0.001	<1	30%	Pass	
Copper (filtered)	S23-Au0030415	NCP	mg/L	0.002	0.002	5.0	30%	Pass	
Lead (filtered)	S23-Au0030415	NCP	mg/L	< 0.001	< 0.001	<1	30%	Pass	
Mercury (filtered)	S23-Au0030415	NCP	mg/L	< 0.0001	< 0.0001	<1	30%	Pass	
Nickel (filtered)	S23-Au0030415	NCP	mg/L	0.003	0.003	5.0	30%	Pass	
Zinc (filtered)	S23-Au0030415	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

Authorised by:

Bonnie Pu	Analytical Services Manager
Fang Yee Tan	Senior Analyst-Metal

Glenn Jackson
Managing Director

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

ALS Environmental

ALS Laboratory: please tick →

Ph: 07 3243 7222 E: samples.brisbane@alsglobal.com
Ph: 07 6373 5500 E: gladstone@alsglobal.com 6209 7655 E: samples.perth@alsglobal.com

Environmental Division Sydney
Work Order Reference
ES2329639

Telephone : + 61-2-8784 8555

CLIENT: GHD Pty Ltd	TURNAROUND REQUIREMENTS (Standard TAT may be longer for some tests e.g., Ultra Trace Organics) ☐ Standard TAT (List due date): STANDARD TAT ☐ Non Standard or urgent TAT (List due date):		FOR LABOR
OFFICE: Sydney			Custody Seal I
PROJECT: M12 Surface Water	ALS QUOTE NO.: SY/322/21	COC SEQUENCE NUMBER (Circle) COC: 1 2 3 4 5 6 7	Free ice / froze
ORDER NUMBER: 12554717		OF: 1 2 3 4 5 6 7	Random Samp
PROJECT MANAGER: Henry Luo	CONTACT PH: Henry Luo 0414 090 002		Other commen
SAMPLER: Emily Smith, Jackson Miller	SAMPLER MOBILE: 0431 522 928	RELINQUISHED BY:	RECEIVED BY:
COC emailed to ALS? (YES / NO)	EDD FORMAT (or default): ESDAT	Emily Smith - GHD	Thank le
Email Reports to: henry.luo@ghd.com, ghdlabreports@ghd.com; emily.smith@ghd.com; andrew.duval@ghd.com		DATE/TIME: 23/08/2023 - 6pm	DATE/TIME: 31/8/23 17:55

RELINQUISHED B

DATE/TIME:

COMMENTS/SPECIAL HANDLING/STORAGE OR DISPOSAL:

ALS USE	SAMPLE DETAILS MATRIX: SOLID (S) WATER (W)			CONTAINER INFORMATION		ANALYSIS REQUIRED including SUITES (NB. Suite Codes must be listed to attract suite price) Where Metals are required, specify Total (unfiltered bottle required) or Dissolved (field filtered bottle required)													
LAB ID	SAMPLE ID	DATE / TIME	MATRIX	Comments	TOTAL CONTAINERS	W-02T (8 total metals)	EG020T (total Fe, Mn)	NT-08A (total N, No2, No3, NH3, Total P, reactive P)	EP008 (chlorophyll a)	EP020 (oil & grease)	UTO-9W Ultra trace OC/OP	EP074DEFG (VOC - fumigants, Hal aliphatics, Hal Aromatics, THM)	MW006 (FC) Thermotolerant Coliforms	W-14A (PAH/phenols)	EA015H (TDS), EA025H (TSS)	EP080 (BTEXN	Ultra trace OPP (EP234AX)	Super Ultra Trace PCB's (EP1318-ST)	PFAS - full suite (EP231X)
1	BADDS	31/08/2023	Water		11	X	X	X	X	X	X	X		X	X	X		X	
2	BADMS	31/08/2023	Water		11	X	X	X	X	X	X	X		X	X	X		X	
3	BADUS	31/08/2023	Water		11	X	X	X	X	X	X	X		X	X	X		X	
4	COSDS	31/08/2023	Water		11	X	X	X	X	X	X	X		X	X	X		X	
5	COSUS	31/08/2023	Water		11	X	X	X	X	X	X	X		X	X	X		X	
6	HINDS	31/08/2023	Water		11	X	X	X	X	X	X	X		X	X	X		X	
7	HINUS	31/08/2023	Water		11	X	X	X	X	X	X	X		X	X	X		X	
8	KEMDS	31/08/2023	Water		11	X	X	X	X	X	X	X		X	X	X		X	
9	KEMUS	31/08/2023	Water		11	X	X	X	X	X	X	X		X	X	X		X	
10	ROPDS	31/08/2023	Water		11	X	X	X	X	X	X	X		X	X	X		X	
11	ROPUS	31/08/2023	Water		11	X	X	X	X	X	X	X		X	X	X		X	
12	SOUDS	31/08/2023	Water		11	X	X	X	X	X	X	X		X	X	X		X	
13	SOUUS	31/08/2023	Water		11	X	X	X	X	X	X	X		X	X	X		X	
14	SWDUP1	31/08/2023	Water		1	X													
K	SWDUP2	31/08/2023	Water	PLEASE FORWARD TO EUROFINS WITH ATTACHED COC	1														

eurofins | mgt

☑ **Sydney**
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☐ **Brisbane**
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☐ **Melbourne**
2 Kingston Town Close, Oakleigh, VIC 3166
Phone: +613 8564 5000 Fax: +613 8564 5090
Email: enquiries.melb@mgtlabmark.com.au

CHAIN OF CUSTODY RECORD

CLIENT DETAILS

Company Name : GHD Pty Ltd, Sydney	**Contact Name :** Emily Smith 0431 522 928	**Purchase Order :** 12554717	**COC Number :**
Office Address :	**Project Manager:** Henry Luo 0414 090 002	**PROJECT Number :** 12554717	**Eurofins | mgt quote ID :**
Level 15, 133 Castlereagh Street, Sydney NSW 2000	**Email for results :** emily.smith@ghd.com; henry.luo@ghd.com; andrew.duval@ghd.com ghdlabreports@ghd.com	**PROJECT Name :** M12 Water Sampling	**Data output format:** ESDAT

Special Directions & Comments :

Sent from ALS

Eurofins | mgt DI water batch number:

Analytes

	Sample ID	Date	Matrix	Dissolved metals	Total metals					
1	SWDUP2	31/08/2023	Water		X					
2										
3										
4										
5										
6										
7										
8										
9										
10										

Some common holding times (with correct preservation).
For further information contact the lab

Waters		Soils	
BTEX, MAH, VOC	14 days	BTEX, MAH, VOC	14 days
TRH, PAH, Phenols, Pesticides	7 days	TRH, PAH, Phenols, Pesticides	14 days
Heavy Metals	6 months	Heavy Metals	6 months
Mercury, CrVI	28 days	Mercury, CrVI	28 days
Microbiological testing	24 hours	Microbiological testing	72 hours
BOD, Nitrate, Nitrite, Total N	2 days	Anions	28 days
Solids - TSS, TDS etc	7 days	SPOCAS, pH Field and FOX, CrS	24 hours
Ferrous iron	7 days	ASLP, TCLP	7 days

Containers:

500P	250P	60P	1LA	40mL vial	200mL A	Jar	Bag

Sample comments:

Laboratory Staff

Relinquished By: Emily Smith	**Received By:**
Date & Time : 31/08/2023 - 6 pm	**Date & Time :**
Signature: Esmith	**Signature:**

Method Of Shipment

- ☐ Courier
- ☐ Hand Delivered
- ☐ Postal

Courier Consignment # :

Temperature on arrival:

Report number:

Subcon / Forward Lab / Split WO: _____

Lab / Analysis: Eurofins - SWDUP2

Organised By / Date: _____

Relinquished By / Date: _____

Connote / Courier: _____

CHAIN OF CUSTODY

ALS Environmental

ALS Laboratory: please tick →

□ ALS Environmental 14 Ladyhay Road, MOUNT CONNER WA 6354 Ph: 08 9209 7655 E: samples.perth@alsglobal.com

□ ALS Environmental 277-289 Woodpark Road, Smithfield NSW 2164 Ph: 02 8784 8555 E: samples.sydney@alsglobal.com

□ ALS Environmental 4 Westall Road, Springvale VIC 3171 Ph: 03 8549 9600 E: samples.melbourne@alsglobal.com

□ ALS Environmental 2 Byth Street, Stafford QLD 4053 Ph: 07 3243 7222 E: samples.brisbane@alsglobal.com

□ ALS Environmental 74 Sharps Road, Tuggerah NSW 2259 Ph: 02 4350 2074 E: samples.newcastle@alsglobal.com

□ ALS Environmental 1/8 Lee Street, Horsham VIC 3400 Ph: 03 5382 5222 E: samples.horsham@alsglobal.com

□ ALS Environmental 1/2 Geelong Road, Brooklyn VIC 3012 Ph: 03 9689 1000 E: samples.melbourne@alsglobal.com

□ ALS Environmental 4 Westall Road, Springvale VIC 3171 Ph: 03 8549 9600 E: samples.melbourne@alsglobal.com

□ ALS Environmental 1/2 Geelong Road, Brooklyn VIC 3012 Ph: 03 9689 1000 E: samples.melbourne@alsglobal.com

□ ALS Environmental 277-289 Woodpark Road, Smithfield NSW 2164 Ph: 02 8784 8555 E: samples.sydney

eurofins | mgt

☑ **Sydney**
Unit F3 - 6 Building F, 16 Mars Road, Lane Cove
Phone: +612 9900 8400
Email: enviro.syd@mgtlabmark.com.au

☐ **Brisbane**
Unit 1-21 Smallwood Place, Murrarie
Phone: +617 3902 4600
Email: enviro.bris@mgtlabmark.com.a

☐ **Melbourne**
2 Kingston Town Close, Oakleigh, VIC 3166
Phone: +613 8564 5000 Fax: +613 8564 5090
Email: enquiries.melb@mgtlabmark.com.au

CHAIN OF CUSTODY RECORD

CLIENT DETAILS

Company Name : GHD Pty Ltd, Sydney	**Contact Name :** Emily Smith 0431 522 928	**Purchase Order :** 12554717	**COC Number :**
Office Address :	**Project Manager:** Henry Luo 0414 090 002	**PROJECT Number :** 12554717	**Eurofins | mgt quote ID :**
Level 15, 133 Castlereagh Street, Sydney NSW 2000	**Email for results :** emily.smith@ghd.com; henry.luo@ghd.com; andrew.duval@ghd.com ghdlabreports@ghd.com	**PROJECT Name :** M12 Water Sampling	**Data output format:** ESDAT

Special Directions & Comments :

Sent from ALS

Eurofins | mgt DI water batch number:

	Sample ID	Date	Matrix	Dissolved metals	Total metals					
1	SWDUP2	31/08/2023	Water		X					
2										
3										
4										
5										
6										
7										
8										
9										
10										

Analytes

Some common holding times (with correct preservation).
For further information contact the lab

Waters		Soils	
BTEX, MAH, VOC	14 days	BTEX, MAH, VOC	14 days
TRH, PAH, Phenols, Pesticides	7 days	TRH, PAH, Phenols, Pesticides	14 days
Heavy Metals	6 months	Heavy Metals	6 months
Mercury, CrVI	28 days	Mercury, CrVI	28 days
Microbiological testing	24 hours	Microbiological testing	72 hours
BOD, Nitrate, Nitrite, Total N	2 days	Anions	28 days
Solids - TSS, TDS etc	7 days	SPOCAS, pH Field and FOX, CrS	24 hours
Ferrous iron	7 days	ASLP, TCLP	7 days

Containers:

500P	250P	60P	1LA	40mL vial	200mL A	Jar	Bag

Sample comments:

Laboratory Staff

Relinquished By: Emily Smith	**Received By:**
Date & Time : 31/08/2023 - 6 pm	**Date & Time :**
Signature: egmith	**Signature:**

Method Of Shipment

- ☐ Courier
- ☐ Hand Delivered
- ☐ Postal

Courier Consignment # :

Temperature on arrival:

Report number:

SAMPLE RECEIPT NOTIFICATION (SRN)

Work Order : **ES2329639**

Client	: **GHD PTY LTD**	Laboratory	: Environmental Division Sydney
Contact	: MR HENRY LUO	Contact	: Sarah Mathew
Address	: LEVEL 15, 133 CASTLEREAGH STREET SYDNEY NSW, AUSTRALIA 2000	Address	: 277-289 Woodpark Road Smithfield NSW Australia 2164
E-mail	: henry.luo@ghd.com	E-mail	: sarah.mathew@alsglobal.com
Telephone	: +61 02 9239 7100	Telephone	: +61-2-8784 8555
Facsimile	: +61 02 9239 7199	Facsimile	: +61-2-8784 8500
Project	: 12554717	Page	: 1 of 4
Order number	: 12554717	Quote number	: ES2021GHDSER0026 (SY/322/21)
C-O-C number	: ----	QC Level	: NEPM 2013 B3 & ALS QC Standard
Site	: ----		
Sampler	: EMILY SMITH, Jackson Miller		

Dates

Date Samples Received	: 31-Aug-2023 17:55	Issue Date	: 31-Aug-2023
Client Requested Due Date	: 07-Sep-2023	Scheduled Reporting Date	: **07-Sep-2023**

Delivery Details

Mode of Delivery	: Client Drop Off	Security Seal	: Not Available
No. of coolers/boxes	: 7	Temperature	: 5.2, 5.5, 4.2'C - Ice present
Receipt Detail	:	No. of samples received / analysed	: 14 / 14

General Comments

- This report contains the following information:
  - Sample Container(s)/Preservation Non-Compliances
  - Summary of Sample(s) and Requested Analysis
  - Proactive Holding Time Report
  - Requested Deliverables
- **Sample SWDUP2 has been forwarded to Eurofins.**
- **Some bottles for sample 3 "BADUS" received as "BADUP"**
- **Please refer to the Proactive Holding Time Report table below which summarises breaches of recommended holding times that have occurred prior to samples/instructions being received at the laboratory. The laboratory will process these samples unless instructions are received from you indicating you do not wish to proceed. The absence of this summary table indicates that all samples have been received within the recommended holding times for the analysis requested.**
- **Sample(s) requiring volatile organic compound analysis received in airtight containers (ZHE).**
- Please direct any queries you have regarding this work order to the above ALS laboratory contact.
- Analytical work for this work order will be conducted at ALS Sydney.
- Sample Disposal - Aqueous (3 weeks), Solid (2 months ± 1 week) from receipt of samples.
- Please be aware that APHA/NEPM recommends water and soil samples be chilled to less than or equal to 6°C for chemical analysis, and less than or equal to 10°C but unfrozen for Microbiological analysis. Where samples are received above this temperature, it should be taken into consideration when interpreting results. Refer to ALS EnviroMail 85 for ALS recommendations of the best practice for chilling samples after sampling and for maintaining a cool temperature during transit.

Sample Container(s)/Preservation Non-Compliances

All comparisons are made against pretreatment/preservation AS, APHA, USEPA standards.

- **No sample container / preservation non-compliance exists.**

Any sample identifications that cannot be displayed entirely in the analysis summary table will be listed below.

ES2329639-003 : [31-Aug-2023] : BADUS - Some bottles received as BADUP

Summary of Sample(s) and Requested Analysis

Some items described below may be part of a laboratory process necessary for the execution of client requested tasks. Packages may contain additional analyses, such as the determination of moisture content and preparation tasks, that are included in the package.
If no sampling time is provided, the sampling time will default 00:00 on the date of sampling. If no sampling date is provided, the sampling date will be assumed by the laboratory and displayed in brackets without a time component

Matrix: **WATER**

Laboratory sample ID	Sampling date / time	Sample ID	WATER - EG020T Total Metals by ICP/MS (including digestion)	WATER - EP008 Chlorophyll a	WATER - EP020 Oil & Grease (O&G)	WATER - EP074DEFG VOC - Fumigants, Hal Aliphatics, Hal Aromatics,	WATER - NT-08A Total Nitrogen + NO2 + NO3 + NH3 + Total P +	WATER - UTO-9W Ultratrace OC/OP (extended) Pesticides	WATER - W-02T 8 metals (Total)
ES2329639-001	31-Aug-2023 00:00	BADDS	✓	✓	✓	✓	✓	✓	✓
ES2329639-002	31-Aug-2023 00:00	BADMS	✓	✓	✓	✓	✓	✓	✓
ES2329639-003	31-Aug-2023 00:00	BADUS Some bottles ...	✓	✓	✓	✓	✓	✓	✓
ES2329639-004	31-Aug-2023 00:00	COSDS	✓	✓	✓	✓	✓	✓	✓
ES2329639-005	31-Aug-2023 00:00	COSUS	✓	✓	✓	✓	✓	✓	✓
ES2329639-006	31-Aug-2023 00:00	HINDS	✓	✓	✓	✓	✓	✓	✓
ES2329639-007	31-Aug-2023 00:00	HINUS	✓	✓	✓	✓	✓	✓	✓
ES2329639-008	31-Aug-2023 00:00	KEMDS	✓	✓	✓	✓	✓	✓	✓
ES2329639-009	31-Aug-2023 00:00	KEMUS	✓	✓	✓	✓	✓	✓	✓
ES2329639-010	31-Aug-2023 00:00	ROPDS	✓	✓	✓	✓	✓	✓	✓
ES2329639-011	31-Aug-2023 00:00	ROPUS	✓	✓	✓	✓	✓	✓	✓
ES2329639-012	31-Aug-2023 00:00	SOUDS	✓	✓	✓	✓	✓	✓	✓
ES2329639-013	31-Aug-2023 00:00	SOUUS	✓	✓	✓	✓	✓	✓	✓
ES2329639-014	31-Aug-2023 00:00	SWDUP1							✓

Matrix: **WATER**

Laboratory sample ID	Sampling date / time	Sample ID	WATER - EA015H Total Dissolved Solids - Standard Level	WATER - EA025H Suspended Solids - Standard Level	WATER - EP080 BTEXN	WATER - EP131B-ST Super Ultra Trace PCB's to Meet ANZECC and	WATER - W-14A PAH/Phenols (SIM)
ES2329639-001	31-Aug-2023 00:00	BADDS	✓	✓	✓	✓	✓
ES2329639-002	31-Aug-2023 00:00	BADMS	✓	✓	✓	✓	✓
ES2329639-003	31-Aug-2023 00:00	BADUS Some bottles ...	✓	✓	✓	✓	✓
ES2329639-004	31-Aug-2023 00:00	COSDS	✓	✓	✓	✓	✓
ES2329639-005	31-Aug-2023 00:00	COSUS	✓	✓	✓	✓	✓
ES2329639-006	31-Aug-2023 00:00	HINDS	✓	✓	✓	✓	✓
ES2329639-007	31-Aug-2023 00:00	HINUS	✓	✓	✓	✓	✓
ES2329639-008	31-Aug-2023 00:00	KEMDS	✓	✓	✓	✓	✓

			WATER - EA015H Total Dissolved Solids - Standard Level	WATER - EA025H Suspended Solids - Standard Level	WATER - EP080 BTEXN	WATER - EP131B-ST Super Ultra Trace PCB's to Meet ANZECC and	WATER - W-14A PAH/Phenols (SIM)
ES2329639-009	31-Aug-2023 00:00	KEMUS	✓	✓	✓	✓	✓
ES2329639-010	31-Aug-2023 00:00	ROPDS	✓	✓	✓	✓	✓
ES2329639-011	31-Aug-2023 00:00	ROPUS	✓	✓	✓	✓	✓
ES2329639-012	31-Aug-2023 00:00	SOUDS	✓	✓	✓	✓	✓
ES2329639-013	31-Aug-2023 00:00	SOUUS	✓	✓	✓	✓	✓

Proactive Holding Time Report

Sample(s) have been received within the recommended holding times for the requested analysis.

Requested Deliverables

Accounts Payable Australia

- A4 - AU Tax Invoice (INV)	Email	accountspayableAU@ghd.com

ANDREW DUVAL

- *AU Certificate of Analysis - NATA (COA)	Email	andrew.duval@ghd.com
- *AU Interpretive QC Report - DEFAULT (Anon QCI Rep) (QCI)	Email	andrew.duval@ghd.com
- *AU QC Report - DEFAULT (Anon QC Rep) - NATA (QC)	Email	andrew.duval@ghd.com
- A4 - AU Sample Receipt Notification - Environmental HT (SRN)	Email	andrew.duval@ghd.com
- Chain of Custody (CoC) (COC)	Email	andrew.duval@ghd.com
- EDI Format - ESDAT (ESDAT)	Email	andrew.duval@ghd.com
- EDI Format - XTab (XTAB)	Email	andrew.duval@ghd.com
- Electronic SRN for ESdat (ESRN_ESDAT)	Email	andrew.duval@ghd.com

EMILY SMITH

- *AU Certificate of Analysis - NATA (COA)	Email	emily.smith@ghd.com
- *AU Interpretive QC Report - DEFAULT (Anon QCI Rep) (QCI)	Email	emily.smith@ghd.com
- *AU QC Report - DEFAULT (Anon QC Rep) - NATA (QC)	Email	emily.smith@ghd.com
- A4 - AU Sample Receipt Notification - Environmental HT (SRN)	Email	emily.smith@ghd.com
- Chain of Custody (CoC) (COC)	Email	emily.smith@ghd.com
- EDI Format - ESDAT (ESDAT)	Email	emily.smith@ghd.com
- EDI Format - XTab (XTAB)	Email	emily.smith@ghd.com
- Electronic SRN for ESdat (ESRN_ESDAT)	Email	emily.smith@ghd.com

GHD LAB REPORTS

- *AU Certificate of Analysis - NATA (COA)	Email	ghdlabreports@ghd.com
- *AU Interpretive QC Report - DEFAULT (Anon QCI Rep) (QCI)	Email	ghdlabreports@ghd.com
- *AU QC Report - DEFAULT (Anon QC Rep) - NATA (QC)	Email	ghdlabreports@ghd.com
- A4 - AU Sample Receipt Notification - Environmental HT (SRN)	Email	ghdlabreports@ghd.com
- Chain of Custody (CoC) (COC)	Email	ghdlabreports@ghd.com
- EDI Format - ESDAT (ESDAT)	Email	ghdlabreports@ghd.com
- EDI Format - XTab (XTAB)	Email	ghdlabreports@ghd.com
- Electronic SRN for ESdat (ESRN_ESDAT)	Email	ghdlabreports@ghd.com

HENRY LUO

- *AU Certificate of Analysis - NATA (COA)	Email	henry.luo@ghd.com
- *AU Interpretive QC Report - DEFAULT (Anon QCI Rep) (QCI)	Email	henry.luo@ghd.com
- *AU QC Report - DEFAULT (Anon QC Rep) - NATA (QC)	Email	henry.luo@ghd.com
- A4 - AU Sample Receipt Notification - Environmental HT (SRN)	Email	henry.luo@ghd.com
- Chain of Custody (CoC) (COC)	Email	henry.luo@ghd.com
- EDI Format - ESDAT (ESDAT)	Email	henry.luo@ghd.com
- EDI Format - XTab (XTAB)	Email	henry.luo@ghd.com
- Electronic SRN for ESdat (ESRN_ESDAT)	Email	henry.luo@ghd.com

CERTIFICATE OF ANALYSIS

Work Order	: **ES2329639**	Page	: 1 of 25
Client	: **GHD PTY LTD**	Laboratory	: Environmental Division Sydney
Contact	: MR HENRY LUO	Contact	: Sarah Mathew
Address	: LEVEL 15, 133 CASTLEREAGH STREET SYDNEY NSW, AUSTRALIA 2000	Address	: 277-289 Woodpark Road Smithfield NSW Australia 2164
Telephone	: +61 02 9239 7100	Telephone	: +61-2-8784 8555
Project	: 12554717	Date Samples Received	: 31-Aug-2023 17:55
Order number	: 12554717	Date Analysis Commenced	: 31-Aug-2023
C-O-C number	: ----	Issue Date	: 08-Sep-2023 09:27
Sampler	: EMILY SMITH, Jackson Miller		
Site	: ----		
Quote number	: SY/322/21		
No. of samples received	: 14		
No. of samples analysed	: 14		

Accreditation No. 825
Accredited for compliance with
ISO/IEC 17025 - Testing

This report supersedes any previous report(s) with this reference. Results apply to the sample(s) as submitted, unless the sampling was conducted by ALS. This document shall not be reproduced, except in full.

This Certificate of Analysis contains the following information:

- General Comments
- Analytical Results
- Surrogate Control Limits

Additional information pertinent to this report will be found in the following separate attachments: Quality Control Report, QA/QC Compliance Assessment to assist with Quality Review and Sample Receipt Notification.

Signatories

This document has been electronically signed by the authorized signatories below. Electronic signing is carried out in compliance with procedures specified in 21 CFR Part 11.

Signatories	*Position*	*Accreditation Category*
Ankit Joshi	Senior Chemist - Inorganics	Sydney Inorganics, Smithfield, NSW
Edwandy Fadjar	Organic Coordinator	Sydney Organics, Smithfield, NSW
Franco Lentini	LCMS Coordinator	Sydney Organics, Smithfield, NSW

General Comments

The analytical procedures used by ALS have been developed from established internationally recognised procedures such as those published by the USEPA, APHA, AS and NEPM. In house developed procedures are fully validated and are often at the client request.

Where moisture determination has been performed, results are reported on a dry weight basis.

Where a reported less than (<) result is higher than the LOR, this may be due to primary sample extract/digestate dilution and/or insufficient sample for analysis.

Where the LOR of a reported result differs from standard LOR, this may be due to high moisture content, insufficient sample (reduced weight employed) or matrix interference.

When sampling time information is not provided by the client, sampling dates are shown without a time component. In these instances, the time component has been assumed by the laboratory for processing purposes.

Where a result is required to meet compliance limits the associated uncertainty must be considered. Refer to the ALS Contract for details.

Key : CAS Number = CAS registry number from database maintained by Chemical Abstracts Services. The Chemical Abstracts Service is a division of the American Chemical Society.
LOR = Limit of reporting
^ = This result is computed from individual analyte detections at or above the level of reporting
ø = ALS is not NATA accredited for these tests.
~ = Indicates an estimated value.

- EP075 (SIM): Where reported, Benzo(a)pyrene Toxicity Equivalent Quotient (TEQ) per the NEPM (2013) is the sum total of the concentration of the eight carcinogenic PAHs multiplied by their Toxicity Equivalence Factor (TEF) relative to Benzo(a)pyrene. TEF values are provided in brackets as follows: Benz(a)anthracene (0.1), Chrysene (0.01), Benzo(b+j) & Benzo(k)fluoranthene (0.1), Benzo(a)pyrene (1.0), Indeno(1.2.3.cd)pyrene (0.1), Dibenz(a.h)anthracene (1.0), Benzo(g.h.i)perylene (0.01). Less than LOR results for 'TEQ Zero' are treated as zero.
- EP131A: Where reported, Total Chlordane (sum) is the sum of the reported concentrations of cis-Chlordane and trans-Chlordane at or above the LOR.
- EP080: Where reported, Total Xylenes is the sum of the reported concentrations of m&p-Xylene and o-Xylene at or above the LOR.
- EP074: Where reported, Total Trihalomethanes is the sum of the reported concentrations of all Trihalomethanes at or above the LOR.
- EP074: Where reported, Total Trimethylbenzenes is the sum of the reported concentrations of 1.2.3-Trimethylbenzene, 1.2.4-Trimethylbenzene and 1.3.5-Trimethylbenzene at or above the LOR.
- EP075(SIM): Where reported, Total Cresol is the sum of the reported concentrations of 2-Methylphenol and 3- & 4-Methylphenol at or above the LOR.
- EP234: Poor matrix spike recovery for particular compounds due to matrix interferences and high matrix spike recovery has been noted for particular compounds due to ion enhancement.

Analytical Results

Sub-Matrix: WATER
(Matrix: WATER)

Compound	CAS Number	LOR	Unit	Sample ID	BADDS	BADMS	BADUS Some bottles received as BADUP	COSDS	COSUS
				Sampling date / time	31-Aug-2023 00:00	31-Aug-2023 00:00	31-Aug-2023 00:00	31-Aug-2023 00:00	31-Aug-2023 00:00
					ES2329639-001	ES2329639-002	ES2329639-003	ES2329639-004	ES2329639-005
					Result	Result	Result	Result	Result
EA015: Total Dissolved Solids dried at 180 ± 5 °C									
Total Dissolved Solids @180°C	----	10	mg/L		783	592	640	558	1550
EA025: Total Suspended Solids dried at 104 ± 2°C									
Suspended Solids (SS)	----	5	mg/L		84	101	84	94	80
EG020T: Total Metals by ICP-MS									
Arsenic	7440-38-2	0.001	mg/L		0.001	0.002	0.002	0.001	0.001
Cadmium	7440-43-9	0.0001	mg/L		<0.0001	<0.0001	<0.0001	<0.0001	<0.0001
Chromium	7440-47-3	0.001	mg/L		0.003	0.003	0.003	0.003	0.002
Copper	7440-50-8	0.001	mg/L		0.008	0.006	0.008	0.008	0.005
Nickel	7440-02-0	0.001	mg/L		0.004	0.004	0.003	0.003	0.003
Lead	7439-92-1	0.001	mg/L		0.003	0.003	0.004	0.003	0.002
Zinc	7440-66-6	0.005	mg/L		0.019	0.013	0.021	0.015	0.013
Manganese	7439-96-5	0.001	mg/L		0.171	0.120	0.154	0.172	1.01
Iron	7439-89-6	0.05	mg/L		2.38	2.60	1.96	2.54	2.75
EG035T: Total Recoverable Mercury by FIMS									
Mercury	7439-97-6	0.0001	mg/L		<0.0001	<0.0001	<0.0001	<0.0001	<0.0001
EK055G: Ammonia as N by Discrete Analyser									
Ammonia as N	7664-41-7	0.01	mg/L		0.04	0.07	0.04	0.08	0.20
EK057G: Nitrite as N by Discrete Analyser									
Nitrite as N	14797-65-0	0.01	mg/L		<0.01	0.02	0.02	0.02	0.02
EK058G: Nitrate as N by Discrete Analyser									
Nitrate as N	14797-55-8	0.01	mg/L		0.34	0.72	1.99	1.22	0.54
EK059G: Nitrite plus Nitrate as N (NOx) by Discrete Analyser									
Nitrite + Nitrate as N	----	0.01	mg/L		0.34	0.74	2.01	1.24	0.56
EK061G: Total Kjeldahl Nitrogen By Discrete Analyser									
Total Kjeldahl Nitrogen as N	----	0.1	mg/L		0.8	0.8	1.4	0.9	0.9
EK062G: Total Nitrogen as N (TKN + NOx) by Discrete Analyser									
^ Total Nitrogen as N	----	0.1	mg/L		1.1	1.5	3.4	2.1	1.5
EK067G: Total Phosphorus as P by Discrete Analyser									
Total Phosphorus as P	----	0.01	mg/L		0.08	0.09	0.28	0.14	0.07
EK071G: Reactive Phosphorus as P by discrete analyser									
Reactive Phosphorus as P	14265-44-2	0.01	mg/L		<0.01	<0.01	0.12	<0.01	<0.01
EP008: Chlorophyll a & Pheophytin a									

Analytical Results

Sub-Matrix: WATER
(Matrix: WATER)

Compound	CAS Number	LOR	Unit	Sample ID	BADDS	BADMS	BADUS Some bottles received as BADUP	COSDS	COSUS
				Sampling date / time	31-Aug-2023 00:00	31-Aug-2023 00:00	31-Aug-2023 00:00	31-Aug-2023 00:00	31-Aug-2023 00:00
					ES2329639-001	ES2329639-002	ES2329639-003	ES2329639-004	ES2329639-005
					Result	Result	Result	Result	Result
EP008: Chlorophyll a & Pheophytin a - Continued									
Chlorophyll a	----	1	mg/m³		**4**	**2**	**4**	<1	**6**
EP020: Oil and Grease (O&G)									
Oil & Grease	----	5	mg/L		<5	<5	<5	<5	<5
EP074D: Fumigants									
2.2-Dichloropropane	594-20-7	5	µg/L		<5	<5	<5	<5	<5
1.2-Dichloropropane	78-87-5	5	µg/L		<5	<5	<5	<5	<5
cis-1.3-Dichloropropylene	10061-01-5	5	µg/L		<5	<5	<5	<5	<5
trans-1.3-Dichloropropylene	10061-02-6	5	µg/L		<5	<5	<5	<5	<5
1.2-Dibromoethane (EDB)	106-93-4	5	µg/L		<5	<5	<5	<5	<5
EP074E: Halogenated Aliphatic Compounds									
Dichlorodifluoromethane	75-71-8	50	µg/L		<50	<50	<50	<50	<50
Chloromethane	74-87-3	50	µg/L		<50	<50	<50	<50	<50
Vinyl chloride	75-01-4	50	µg/L		<50	<50	<50	<50	<50
Bromomethane	74-83-9	50	µg/L		<50	<50	<50	<50	<50
Chloroethane	75-00-3	50	µg/L		<50	<50	<50	<50	<50
Trichlorofluoromethane	75-69-4	50	µg/L		<50	<50	<50	<50	<50
1.1-Dichloroethene	75-35-4	5	µg/L		<5	<5	<5	<5	<5
Iodomethane	74-88-4	5	µg/L		<5	<5	<5	<5	<5
trans-1.2-Dichloroethene	156-60-5	5	µg/L		<5	<5	<5	<5	<5
1.1-Dichloroethane	75-34-3	5	µg/L		<5	<5	<5	<5	<5
cis-1.2-Dichloroethene	156-59-2	5	µg/L		<5	<5	<5	<5	<5
1.1.1-Trichloroethane	71-55-6	5	µg/L		<5	<5	<5	<5	<5
1.1-Dichloropropylene	563-58-6	5	µg/L		<5	<5	<5	<5	<5
Carbon Tetrachloride	56-23-5	5	µg/L		<5	<5	<5	<5	<5
1.2-Dichloroethane	107-06-2	5	µg/L		<5	<5	<5	<5	<5
Trichloroethene	79-01-6	5	µg/L		<5	<5	<5	<5	<5
Dibromomethane	74-95-3	5	µg/L		<5	<5	<5	<5	<5
1.1.2-Trichloroethane	79-00-5	5	µg/L		<5	<5	<5	<5	<5
1.3-Dichloropropane	142-28-9	5	µg/L		<5	<5	<5	<5	<5
Tetrachloroethene	127-18-4	5	µg/L		<5	<5	<5	<5	<5
1.1.1.2-Tetrachloroethane	630-20-6	5	µg/L		<5	<5	<5	<5	<5
trans-1.4-Dichloro-2-butene	110-57-6	5	µg/L		<5	<5	<5	<5	<5
cis-1.4-Dichloro-2-butene	1476-11-5	5	µg/L		<5	<5	<5	<5	<5

Analytical Results

Sub-Matrix: WATER
(Matrix: WATER)

Compound	CAS Number	LOR	Unit	Sample ID	BADDS	BADMS	BADUS Some bottles received as BADUP	COSDS	COSUS
				Sampling date / time	31-Aug-2023 00:00	31-Aug-2023 00:00	31-Aug-2023 00:00	31-Aug-2023 00:00	31-Aug-2023 00:00
					ES2329639-001	ES2329639-002	ES2329639-003	ES2329639-004	ES2329639-005
					Result	Result	Result	Result	Result
EP074E: Halogenated Aliphatic Compounds - Continued									
1.1.2.2-Tetrachloroethane	79-34-5	5	µg/L		<5	<5	<5	<5	<5
1.2.3-Trichloropropane	96-18-4	5	µg/L		<5	<5	<5	<5	<5
Pentachloroethane	76-01-7	5	µg/L		<5	<5	<5	<5	<5
1.2-Dibromo-3-chloropropane	96-12-8	5	µg/L		<5	<5	<5	<5	<5
Hexachlorobutadiene	87-68-3	5	µg/L		<5	<5	<5	<5	<5
EP074F: Halogenated Aromatic Compounds									
Chlorobenzene	108-90-7	5	µg/L		<5	<5	<5	<5	<5
Bromobenzene	108-86-1	5	µg/L		<5	<5	<5	<5	<5
2-Chlorotoluene	95-49-8	5	µg/L		<5	<5	<5	<5	<5
4-Chlorotoluene	106-43-4	5	µg/L		<5	<5	<5	<5	<5
1.3-Dichlorobenzene	541-73-1	5	µg/L		<5	<5	<5	<5	<5
1.4-Dichlorobenzene	106-46-7	5	µg/L		<5	<5	<5	<5	<5
1.2-Dichlorobenzene	95-50-1	5	µg/L		<5	<5	<5	<5	<5
1.2.4-Trichlorobenzene	120-82-1	5	µg/L		<5	<5	<5	<5	<5
1.2.3-Trichlorobenzene	87-61-6	5	µg/L		<5	<5	<5	<5	<5
EP074G: Trihalomethanes									
Chloroform	67-66-3	5	µg/L		<5	<5	<5	<5	<5
Bromodichloromethane	75-27-4	5	µg/L		<5	<5	<5	<5	<5
Dibromochloromethane	124-48-1	5	µg/L		<5	<5	<5	<5	<5
Bromoform	75-25-2	5	µg/L		<5	<5	<5	<5	<5
EP075(SIM)A: Phenolic Compounds									
Phenol	108-95-2	1.0	µg/L		<1.0	<1.0	<1.0	<1.0	<1.0
2-Chlorophenol	95-57-8	1.0	µg/L		<1.0	<1.0	<1.0	<1.0	<1.0
2-Methylphenol	95-48-7	1.0	µg/L		<1.0	<1.0	<1.0	<1.0	<1.0
3- & 4-Methylphenol	1319-77-3	2.0	µg/L		<2.0	<2.0	<2.0	<2.0	<2.0
2-Nitrophenol	88-75-5	1.0	µg/L		<1.0	<1.0	<1.0	<1.0	<1.0
2.4-Dimethylphenol	105-67-9	1.0	µg/L		<1.0	<1.0	<1.0	<1.0	<1.0
2.4-Dichlorophenol	120-83-2	1.0	µg/L		<1.0	<1.0	<1.0	<1.0	<1.0
2.6-Dichlorophenol	87-65-0	1.0	µg/L		<1.0	<1.0	<1.0	<1.0	<1.0
4-Chloro-3-methylphenol	59-50-7	1.0	µg/L		<1.0	<1.0	<1.0	<1.0	<1.0
2.4.6-Trichlorophenol	88-06-2	1.0	µg/L		<1.0	<1.0	<1.0	<1.0	<1.0
2.4.5-Trichlorophenol	95-95-4	1.0	µg/L		<1.0	<1.0	<1.0	<1.0	<1.0
Pentachlorophenol	87-86-5	2.0	µg/L		<2.0	<2.0	<2.0	<2.0	<2.0

Analytical Results

Sub-Matrix: WATER
(Matrix: WATER)

Compound	CAS Number	LOR	Unit	Sample ID	BADDS	BADMS	BADUS Some bottles received as BADUP	COSDS	COSUS
				Sampling date / time	31-Aug-2023 00:00	31-Aug-2023 00:00	31-Aug-2023 00:00	31-Aug-2023 00:00	31-Aug-2023 00:00
					ES2329639-001	ES2329639-002	ES2329639-003	ES2329639-004	ES2329639-005
					Result	Result	Result	Result	Result
EP075(SIM)B: Polynuclear Aromatic Hydrocarbons									
Naphthalene	91-20-3	1.0	µg/L		<1.0	<1.0	<1.0	<1.0	<1.0
Acenaphthylene	208-96-8	1.0	µg/L		<1.0	<1.0	<1.0	<1.0	<1.0
Acenaphthene	83-32-9	1.0	µg/L		<1.0	<1.0	<1.0	<1.0	<1.0
Fluorene	86-73-7	1.0	µg/L		<1.0	<1.0	<1.0	<1.0	<1.0
Phenanthrene	85-01-8	1.0	µg/L		<1.0	<1.0	<1.0	<1.0	<1.0
Anthracene	120-12-7	1.0	µg/L		<1.0	<1.0	<1.0	<1.0	<1.0
Fluoranthene	206-44-0	1.0	µg/L		<1.0	<1.0	<1.0	<1.0	<1.0
Pyrene	129-00-0	1.0	µg/L		<1.0	<1.0	<1.0	<1.0	<1.0
Benz(a)anthracene	56-55-3	1.0	µg/L		<1.0	<1.0	<1.0	<1.0	<1.0
Chrysene	218-01-9	1.0	µg/L		<1.0	<1.0	<1.0	<1.0	<1.0
Benzo(b+j)fluoranthene	205-99-2 205-82-3	1.0	µg/L		<1.0	<1.0	<1.0	<1.0	<1.0
Benzo(k)fluoranthene	207-08-9	1.0	µg/L		<1.0	<1.0	<1.0	<1.0	<1.0
Benzo(a)pyrene	50-32-8	0.5	µg/L		<0.5	<0.5	<0.5	<0.5	<0.5
Indeno(1.2.3.cd)pyrene	193-39-5	1.0	µg/L		<1.0	<1.0	<1.0	<1.0	<1.0
Dibenz(a.h)anthracene	53-70-3	1.0	µg/L		<1.0	<1.0	<1.0	<1.0	<1.0
Benzo(g.h.i)perylene	191-24-2	1.0	µg/L		<1.0	<1.0	<1.0	<1.0	<1.0
^ **Sum of polycyclic aromatic hydrocarbons**	----	0.5	µg/L		<0.5	<0.5	<0.5	<0.5	<0.5
^ **Benzo(a)pyrene TEQ (zero)**	----	0.5	µg/L		<0.5	<0.5	<0.5	<0.5	<0.5
EP080: BTEXN									
Benzene	71-43-2	1	µg/L		<1	<1	<1	<1	<1
Toluene	108-88-3	2	µg/L		<2	<2	<2	<2	<2
Ethylbenzene	100-41-4	2	µg/L		<2	<2	<2	<2	<2
meta- & para-Xylene	108-38-3 106-42-3	2	µg/L		<2	<2	<2	<2	<2
ortho-Xylene	95-47-6	2	µg/L		<2	<2	<2	<2	<2
^ **Total Xylenes**	----	2	µg/L		<2	<2	<2	<2	<2
^ **Sum of BTEX**	----	1	µg/L		<1	<1	<1	<1	<1
Naphthalene	91-20-3	5	µg/L		<5	<5	<5	<5	<5
EP131A: Organochlorine Pesticides									
Aldrin	309-00-2	0.010	µg/L		<0.010	<0.010	<0.010	<0.010	<0.010
alpha-BHC	319-84-6	0.010	µg/L		<0.010	<0.010	<0.010	<0.010	<0.010
beta-BHC	319-85-7	0.010	µg/L		<0.010	<0.010	<0.010	<0.010	<0.010
delta-BHC	319-86-8	0.010	µg/L		<0.010	<0.010	<0.010	<0.010	<0.010
4.4`-DDD	72-54-8	0.010	µg/L		<0.010	<0.010	<0.010	<0.010	<0.010

Analytical Results

Sub-Matrix: WATER
(Matrix: WATER)

Compound	CAS Number	LOR	Unit	Sample ID	BADDS	BADMS	BADUS Some bottles received as BADUP	COSDS	COSUS
				Sampling date / time	31-Aug-2023 00:00	31-Aug-2023 00:00	31-Aug-2023 00:00	31-Aug-2023 00:00	31-Aug-2023 00:00
					ES2329639-001	ES2329639-002	ES2329639-003	ES2329639-004	ES2329639-005
					Result	Result	Result	Result	Result
EP131A: Organochlorine Pesticides - Continued									
4.4`-DDE	72-55-9	0.010	µg/L		<0.010	<0.010	<0.010	<0.010	<0.010
4.4`-DDT	50-29-3	0.010	µg/L		<0.010	<0.010	<0.010	<0.010	<0.010
^ **Sum of DDD + DDE + DDT**	72-54-8/72-55-9/50-2	0.010	µg/L		<0.010	<0.010	<0.010	<0.010	<0.010
Dieldrin	60-57-1	0.010	µg/L		<0.010	<0.010	<0.010	<0.010	<0.010
alpha-Endosulfan	959-98-8	0.010	µg/L		<0.010	<0.010	<0.010	<0.010	<0.010
beta-Endosulfan	33213-65-9	0.010	µg/L		<0.010	<0.010	<0.010	<0.010	<0.010
Endosulfan sulfate	1031-07-8	0.010	µg/L		<0.010	<0.010	<0.010	<0.010	<0.010
^ **Endosulfan (sum)**	115-29-7	0.010	µg/L		<0.010	<0.010	<0.010	<0.010	<0.010
Endrin	72-20-8	0.010	µg/L		<0.010	<0.010	<0.010	<0.010	<0.010
Endrin aldehyde	7421-93-4	0.010	µg/L		<0.010	<0.010	<0.010	<0.010	<0.010
Endrin ketone	53494-70-5	0.010	µg/L		<0.010	<0.010	<0.010	<0.010	<0.010
Heptachlor	76-44-8	0.005	µg/L		<0.005	<0.005	<0.005	<0.005	<0.005
Heptachlor epoxide	1024-57-3	0.010	µg/L		<0.010	<0.010	<0.010	<0.010	<0.010
Hexachlorobenzene (HCB)	118-74-1	0.010	µg/L		<0.010	<0.010	<0.010	<0.010	<0.010
gamma-BHC	58-89-9	0.010	µg/L		<0.010	<0.010	<0.010	<0.010	<0.010
Methoxychlor	72-43-5	0.010	µg/L		<0.010	<0.010	<0.010	<0.010	<0.010
cis-Chlordane	5103-71-9	0.010	µg/L		<0.010	<0.010	<0.010	<0.010	<0.010
trans-Chlordane	5103-74-2	0.010	µg/L		<0.010	<0.010	<0.010	<0.010	<0.010
^ **Total Chlordane (sum)**	----	0.010	µg/L		<0.010	<0.010	<0.010	<0.010	<0.010
Oxychlordane	27304-13-8	0.010	µg/L		<0.010	<0.010	<0.010	<0.010	<0.010
EP131B: Polychlorinated Biphenyls (as Aroclors)									
Total Polychlorinated biphenyls	----	0.005	µg/L		<0.005	<0.005	<0.005	<0.005	<0.005
Aroclor 1016	12674-11-2	0.005	µg/L		<0.005	<0.005	<0.005	<0.005	<0.005
Aroclor 1221	11104-28-2	0.005	µg/L		<0.005	<0.005	<0.005	<0.005	<0.005
Aroclor 1232	11141-16-5	0.005	µg/L		<0.005	<0.005	<0.005	<0.005	<0.005
Aroclor 1242	53469-21-9	0.005	µg/L		<0.005	<0.005	<0.005	<0.005	<0.005
Aroclor 1248	12672-29-6	0.005	µg/L		<0.005	<0.005	<0.005	<0.005	<0.005
Aroclor 1254	11097-69-1	0.005	µg/L		<0.005	<0.005	<0.005	<0.005	<0.005
Aroclor 1260	11096-82-5	0.005	µg/L		<0.005	<0.005	<0.005	<0.005	<0.005
EP234A: OP Pesticides									
Acephate	30560-19-1	0.5	µg/L		<0.5	<0.5	<0.5	<0.5	<0.5
Azinphos-methyl	86-50-0	0.02	µg/L		<0.02	<0.02	<0.02	<0.02	<0.02

Analytical Results

Sub-Matrix: WATER
(Matrix: WATER)

Compound	CAS Number	LOR	Unit	Sample ID	BADDS	BADMS	BADUS Some bottles received as BADUP	COSDS	COSUS
				Sampling date / time	31-Aug-2023 00:00	31-Aug-2023 00:00	31-Aug-2023 00:00	31-Aug-2023 00:00	31-Aug-2023 00:00
					ES2329639-001	ES2329639-002	ES2329639-003	ES2329639-004	ES2329639-005
					Result	Result	Result	Result	Result
EP234A: OP Pesticides - Continued									
Azinphos-ethyl	2642-71-9	0.02	µg/L		<0.02	<0.02	<0.02	<0.02	<0.02
Bensulide	741-58-2	0.1	µg/L		<0.1	<0.1	<0.1	<0.1	<0.1
Bromophos-ethyl	4824-78-6	0.10	µg/L		<0.10	<0.10	<0.10	<0.10	<0.10
Carbofenothion	786-19-6	0.02	µg/L		<0.02	<0.02	<0.02	<0.02	<0.02
Chlorfenvinphos	470-90-6	0.02	µg/L		<0.02	<0.02	<0.02	<0.02	<0.02
Chlorpyrifos	2921-88-2	0.02	µg/L		<0.02	<0.02	<0.02	<0.02	<0.02
Chlorpyrifos-methyl	5598-13-0	0.2	µg/L		<0.2	<0.2	<0.2	<0.2	<0.2
Coumaphos	56-72-4	0.01	µg/L		<0.01	<0.01	<0.01	<0.01	<0.01
Demeton-O	298-03-3	0.02	µg/L		<0.02	<0.02	<0.02	<0.02	<0.02
Demeton-O & Demeton-S	298-03-3/126-75-0	0.02	µg/L		<0.02	<0.02	<0.02	<0.02	<0.02
Demeton-S	126-75-0	0.02	µg/L		<0.02	<0.02	<0.02	<0.02	<0.02
Demeton-S-methyl	919-86-8	0.02	µg/L		<0.02	<0.02	<0.02	<0.02	<0.02
Diazinon	333-41-5	0.01	µg/L		<0.01	<0.01	<0.01	<0.01	<0.01
Dichlorvos	62-73-7	0.20	µg/L		<0.20	<0.20	<0.20	<0.20	<0.20
Dimethoate	60-51-5	0.02	µg/L		<0.02	<0.02	<0.02	<0.02	<0.02
Disulfoton	298-04-4	0.05	µg/L		<0.05	<0.05	<0.05	<0.05	<0.05
EPN	2104-64-5	0.05	µg/L		<0.05	<0.05	<0.05	<0.05	<0.05
Ethion	563-12-2	0.02	µg/L		<0.02	<0.02	<0.02	<0.02	<0.02
Ethoprophos	13194-48-4	0.01	µg/L		<0.01	<0.01	<0.01	<0.01	<0.01
Fenamiphos	22224-92-6	0.01	µg/L		<0.01	<0.01	<0.01	<0.01	<0.01
Fenchlorphos (Ronnel)	299-84-3	10	µg/L		<10	<10	<10	<10	<10
Fenitrothion	122-14-5	2	µg/L		<2	<2	<2	<2	<2
Fensulfothion	115-90-2	0.01	µg/L		<0.01	<0.01	<0.01	<0.01	<0.01
Fenthion	55-38-9	0.05	µg/L		<0.05	<0.05	<0.05	<0.05	<0.05
Formothion	2540-82-1	20	µg/L		<20	<20	<20	<20	<20
Fosetyl Aluminium	39148-24-8	10	µg/L		<10	<10	<10	<10	<10
Malathion	121-75-5	0.02	µg/L		<0.02	<0.02	<0.02	<0.02	<0.02
Methidathion	950-37-8	0.1	µg/L		<0.1	<0.1	<0.1	<0.1	<0.1
Mevinphos	7786-34-7	0.02	µg/L		<0.02	<0.02	<0.02	<0.02	<0.02
Monocrotophos	6923-22-4	0.02	µg/L		<0.02	<0.02	<0.02	<0.02	<0.02
Naftalofos	1491-41-4	1.0	µg/L		<1.0	<1.0	<1.0	<1.0	<1.0
Omethoate	1113-02-6	0.01	µg/L		<0.01	<0.01	<0.01	<0.01	<0.01
Parathion	56-38-2	0.2	µg/L		<0.2	<0.2	<0.2	<0.2	<0.2

Analytical Results

Sub-Matrix: WATER
(Matrix: WATER)

Compound	CAS Number	LOR	Unit	Sample ID	BADDS	BADMS	BADUS Some bottles received as BADUP	COSDS	COSUS
				Sampling date / time	31-Aug-2023 00:00	31-Aug-2023 00:00	31-Aug-2023 00:00	31-Aug-2023 00:00	31-Aug-2023 00:00
					ES2329639-001	ES2329639-002	ES2329639-003	ES2329639-004	ES2329639-005
					Result	Result	Result	Result	Result
EP234A: OP Pesticides - Continued									
Parathion-methyl	298-00-0	0.5	µg/L		<0.5	<0.5	<0.5	<0.5	<0.5
Phorate	298-02-2	0.1	µg/L		<0.1	<0.1	<0.1	<0.1	<0.1
Pirimiphos-ethyl	23505-41-1	0.01	µg/L		<0.01	<0.01	<0.01	<0.01	<0.01
Pirimiphos-methyl	29232-93-7	0.01	µg/L		<0.01	<0.01	<0.01	<0.01	<0.01
Profenofos	41198-08-7	0.01	µg/L		<0.01	<0.01	<0.01	<0.01	<0.01
Prothiofos	34643-46-4	0.1	µg/L		<0.1	<0.1	<0.1	<0.1	<0.1
Pyrazophos	13457-18-6	0.1	µg/L		<0.1	<0.1	<0.1	<0.1	<0.1
Sulfotep	3689-24-5	0.005	µg/L		<0.005	<0.005	<0.005	<0.005	<0.005
Sulprofos	35400-43-2	0.05	µg/L		<0.05	<0.05	<0.05	<0.05	<0.05
Temephos	3383-96-8	0.02	µg/L		<0.02	<0.02	<0.02	<0.02	<0.02
Terbufos	13071-79-9	0.01	µg/L		<0.01	<0.01	<0.01	<0.01	<0.01
Tetrachlorvinphos	22248-79-9	0.01	µg/L		<0.01	<0.01	<0.01	<0.01	<0.01
Thiometon	640-15-3	0.5	µg/L		<0.5	<0.5	<0.5	<0.5	<0.5
Triazophos	24017-47-8	0.005	µg/L		<0.005	<0.005	<0.005	<0.005	<0.005
Trichlorfon	52-68-6	0.02	µg/L		<0.02	<0.02	<0.02	<0.02	<0.02
Trichloronate	327-98-0	0.5	µg/L		<0.5	<0.5	<0.5	<0.5	<0.5
EP074S: VOC Surrogates									
1.2-Dichloroethane-D4	17060-07-0	5	%		**89.8**	**102**	**104**	**99.6**	**100**
Toluene-D8	2037-26-5	5	%		**94.4**	**107**	**112**	**103**	**101**
4-Bromofluorobenzene	460-00-4	5	%		**83.5**	**97.1**	**103**	**95.5**	**95.6**
EP075(SIM)S: Phenolic Compound Surrogates									
Phenol-d6	13127-88-3	1.0	%		**22.8**	**22.8**	**22.8**	**23.0**	**23.5**
2-Chlorophenol-D4	93951-73-6	1.0	%		**52.9**	**51.1**	**53.2**	**50.7**	**53.3**
2.4.6-Tribromophenol	118-79-6	1.0	%		**75.7**	**73.7**	**74.4**	**67.5**	**72.8**
EP075(SIM)T: PAH Surrogates									
2-Fluorobiphenyl	321-60-8	1.0	%		**50.6**	**59.2**	**60.3**	**51.6**	**60.2**
Anthracene-d10	1719-06-8	1.0	%		**74.3**	**70.2**	**72.4**	**72.4**	**71.4**
4-Terphenyl-d14	1718-51-0	1.0	%		**68.3**	**65.6**	**64.9**	**67.1**	**64.6**
EP080S: TPH(V)/BTEX Surrogates									
1.2-Dichloroethane-D4	17060-07-0	2	%		**116**	**132**	**134**	**128**	**130**
Toluene-D8	2037-26-5	2	%		**101**	**114**	**122**	**110**	**109**
4-Bromofluorobenzene	460-00-4	2	%		**101**	**117**	**125**	**110**	**109**
EP131S: OC Pesticide Surrogate									

Analytical Results

Sub-Matrix: WATER (Matrix: WATER)				Sample ID	BADDS	BADMS	BADUS Some bottles received as BADUP	COSDS	COSUS
				Sampling date / time	31-Aug-2023 00:00	31-Aug-2023 00:00	31-Aug-2023 00:00	31-Aug-2023 00:00	31-Aug-2023 00:00
Compound	CAS Number	LOR	Unit		ES2329639-001	ES2329639-002	ES2329639-003	ES2329639-004	ES2329639-005
					Result	Result	Result	Result	Result
EP131S: OC Pesticide Surrogate - Continued									
Dibromo-DDE	21655-73-2	0.010	%		**96.2**	**92.0**	**87.1**	**97.3**	**90.6**
EP131T: PCB Surrogate									
Decachlorobiphenyl	2051-24-3	0.010	%		**124**	**133**	**124**	**122**	**124**

Analytical Results

Sub-Matrix: WATER (Matrix: WATER)			Sample ID	HINDS	HINUS	KEMDS	KEMUS	ROPDS
			Sampling date / time	31-Aug-2023 00:00	31-Aug-2023 00:00	31-Aug-2023 00:00	31-Aug-2023 00:00	31-Aug-2023 00:00
Compound	CAS Number	LOR	Unit	ES2329639-006	ES2329639-007	ES2329639-008	ES2329639-009	ES2329639-010
				Result	Result	Result	Result	Result
EA015: Total Dissolved Solids dried at 180 ± 5 °C								
Total Dissolved Solids @180°C	----	10	mg/L	**277**	**358**	**808**	**823**	**282**
EA025: Total Suspended Solids dried at 104 ± 2°C								
Suspended Solids (SS)	----	5	mg/L	**7**	**41**	**50**	**30**	**14**
EG020T: Total Metals by ICP-MS								
Arsenic	7440-38-2	0.001	mg/L	<0.001	**0.002**	**0.001**	**0.001**	<0.001
Cadmium	7440-43-9	0.0001	mg/L	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001
Chromium	7440-47-3	0.001	mg/L	<0.001	**0.003**	**0.002**	<0.001	**0.002**
Copper	7440-50-8	0.001	mg/L	<0.001	**0.003**	**0.008**	**0.007**	**0.011**
Nickel	7440-02-0	0.001	mg/L	**0.001**	**0.002**	**0.003**	**0.002**	**0.002**
Lead	7439-92-1	0.001	mg/L	<0.001	**0.002**	**0.003**	**0.002**	**0.002**
Zinc	7440-66-6	0.005	mg/L	<0.005	**0.009**	**0.021**	**0.017**	**0.035**
Manganese	7439-96-5	0.001	mg/L	**0.544**	**0.384**	**0.077**	**0.058**	**0.038**
Iron	7439-89-6	0.05	mg/L	**0.95**	**4.18**	**1.73**	**0.96**	**0.91**
EG035T: Total Recoverable Mercury by FIMS								
Mercury	7439-97-6	0.0001	mg/L	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001
EK055G: Ammonia as N by Discrete Analyser								
Ammonia as N	7664-41-7	0.01	mg/L	**0.20**	**0.07**	**0.07**	**0.06**	**0.07**
EK057G: Nitrite as N by Discrete Analyser								
Nitrite as N	14797-65-0	0.01	mg/L	**0.01**	<0.01	**0.02**	**0.02**	**0.02**
EK058G: Nitrate as N by Discrete Analyser								
Nitrate as N	14797-55-8	0.01	mg/L	**0.05**	**0.06**	**4.99**	**4.63**	**0.70**
EK059G: Nitrite plus Nitrate as N (NOx) by Discrete Analyser								
Nitrite + Nitrate as N	----	0.01	mg/L	**0.06**	**0.06**	**5.01**	**4.65**	**0.72**
EK061G: Total Kjeldahl Nitrogen By Discrete Analyser								
Total Kjeldahl Nitrogen as N	----	0.1	mg/L	**1.3**	**2.1**	**1.6**	**1.5**	**0.9**
EK062G: Total Nitrogen as N (TKN + NOx) by Discrete Analyser								
^ Total Nitrogen as N	----	0.1	mg/L	**1.4**	**2.2**	**6.6**	**6.2**	**1.6**
EK067G: Total Phosphorus as P by Discrete Analyser								
Total Phosphorus as P	----	0.01	mg/L	**0.05**	**0.20**	**0.64**	**0.65**	**0.16**
EK071G: Reactive Phosphorus as P by discrete analyser								
Reactive Phosphorus as P	14265-44-2	0.01	mg/L	<0.01	<0.01	**0.58**	**0.60**	**0.10**
EP008: Chlorophyll a & Pheophytin a								
Chlorophyll a	----	1	mg/m³	**3**	**5**	**4**	**3**	**2**

Analytical Results

Sub-Matrix: WATER (Matrix: WATER)				Sample ID	HINDS	HINUS	KEMDS	KEMUS	ROPDS
				Sampling date / time	31-Aug-2023 00:00	31-Aug-2023 00:00	31-Aug-2023 00:00	31-Aug-2023 00:00	31-Aug-2023 00:00
Compound	CAS Number	LOR	Unit		ES2329639-006	ES2329639-007	ES2329639-008	ES2329639-009	ES2329639-010
					Result	Result	Result	Result	Result
EP020: Oil and Grease (O&G)									
Oil & Grease	----	5	mg/L		<5	<5	<5	<5	<5
EP074D: Fumigants									
2.2-Dichloropropane	594-20-7	5	µg/L		<5	<5	<5	<5	<5
1.2-Dichloropropane	78-87-5	5	µg/L		<5	<5	<5	<5	<5
cis-1.3-Dichloropropylene	10061-01-5	5	µg/L		<5	<5	<5	<5	<5
trans-1.3-Dichloropropylene	10061-02-6	5	µg/L		<5	<5	<5	<5	<5
1.2-Dibromoethane (EDB)	106-93-4	5	µg/L		<5	<5	<5	<5	<5
EP074E: Halogenated Aliphatic Compounds									
Dichlorodifluoromethane	75-71-8	50	µg/L		<50	<50	<50	<50	<50
Chloromethane	74-87-3	50	µg/L		<50	<50	<50	<50	<50
Vinyl chloride	75-01-4	50	µg/L		<50	<50	<50	<50	<50
Bromomethane	74-83-9	50	µg/L		<50	<50	<50	<50	<50
Chloroethane	75-00-3	50	µg/L		<50	<50	<50	<50	<50
Trichlorofluoromethane	75-69-4	50	µg/L		<50	<50	<50	<50	<50
1.1-Dichloroethene	75-35-4	5	µg/L		<5	<5	<5	<5	<5
Iodomethane	74-88-4	5	µg/L		<5	<5	<5	<5	<5
trans-1.2-Dichloroethene	156-60-5	5	µg/L		<5	<5	<5	<5	<5
1.1-Dichloroethane	75-34-3	5	µg/L		<5	<5	<5	<5	<5
cis-1.2-Dichloroethene	156-59-2	5	µg/L		<5	<5	<5	<5	<5
1.1.1-Trichloroethane	71-55-6	5	µg/L		<5	<5	<5	<5	<5
1.1-Dichloropropylene	563-58-6	5	µg/L		<5	<5	<5	<5	<5
Carbon Tetrachloride	56-23-5	5	µg/L		<5	<5	<5	<5	<5
1.2-Dichloroethane	107-06-2	5	µg/L		<5	<5	<5	<5	<5
Trichloroethene	79-01-6	5	µg/L		<5	<5	<5	<5	<5
Dibromomethane	74-95-3	5	µg/L		<5	<5	<5	<5	<5
1.1.2-Trichloroethane	79-00-5	5	µg/L		<5	<5	<5	<5	<5
1.3-Dichloropropane	142-28-9	5	µg/L		<5	<5	<5	<5	<5
Tetrachloroethene	127-18-4	5	µg/L		<5	<5	<5	<5	<5
1.1.1.2-Tetrachloroethane	630-20-6	5	µg/L		<5	<5	<5	<5	<5
trans-1.4-Dichloro-2-butene	110-57-6	5	µg/L		<5	<5	<5	<5	<5
cis-1.4-Dichloro-2-butene	1476-11-5	5	µg/L		<5	<5	<5	<5	<5
1.1.2.2-Tetrachloroethane	79-34-5	5	µg/L		<5	<5	<5	<5	<5
1.2.3-Trichloropropane	96-18-4	5	µg/L		<5	<5	<5	<5	<5
Pentachloroethane	76-01-7	5	µg/L		<5	<5	<5	<5	<5

Analytical Results

Sub-Matrix: WATER (Matrix: WATER)				Sample ID	HINDS	HINUS	KEMDS	KEMUS	ROPDS
				Sampling date / time	31-Aug-2023 00:00	31-Aug-2023 00:00	31-Aug-2023 00:00	31-Aug-2023 00:00	31-Aug-2023 00:00
Compound	CAS Number	LOR	Unit		ES2329639-006	ES2329639-007	ES2329639-008	ES2329639-009	ES2329639-010
					Result	Result	Result	Result	Result
EP074E: Halogenated Aliphatic Compounds - Continued									
1.2-Dibromo-3-chloropropane	96-12-8	5	µg/L		<5	<5	<5	<5	<5
Hexachlorobutadiene	87-68-3	5	µg/L		<5	<5	<5	<5	<5
EP074F: Halogenated Aromatic Compounds									
Chlorobenzene	108-90-7	5	µg/L		<5	<5	<5	<5	<5
Bromobenzene	108-86-1	5	µg/L		<5	<5	<5	<5	<5
2-Chlorotoluene	95-49-8	5	µg/L		<5	<5	<5	<5	<5
4-Chlorotoluene	106-43-4	5	µg/L		<5	<5	<5	<5	<5
1.3-Dichlorobenzene	541-73-1	5	µg/L		<5	<5	<5	<5	<5
1.4-Dichlorobenzene	106-46-7	5	µg/L		<5	<5	<5	<5	<5
1.2-Dichlorobenzene	95-50-1	5	µg/L		<5	<5	<5	<5	<5
1.2.4-Trichlorobenzene	120-82-1	5	µg/L		<5	<5	<5	<5	<5
1.2.3-Trichlorobenzene	87-61-6	5	µg/L		<5	<5	<5	<5	<5
EP074G: Trihalomethanes									
Chloroform	67-66-3	5	µg/L		<5	<5	<5	<5	<5
Bromodichloromethane	75-27-4	5	µg/L		<5	<5	<5	<5	<5
Dibromochloromethane	124-48-1	5	µg/L		<5	<5	<5	<5	<5
Bromoform	75-25-2	5	µg/L		<5	<5	<5	<5	<5
EP075(SIM)A: Phenolic Compounds									
Phenol	108-95-2	1.0	µg/L		<1.0	<1.0	<1.0	<1.0	<1.0
2-Chlorophenol	95-57-8	1.0	µg/L		<1.0	<1.0	<1.0	<1.0	<1.0
2-Methylphenol	95-48-7	1.0	µg/L		<1.0	<1.0	<1.0	<1.0	<1.0
3- & 4-Methylphenol	1319-77-3	2.0	µg/L		<2.0	<2.0	<2.0	<2.0	<2.0
2-Nitrophenol	88-75-5	1.0	µg/L		<1.0	<1.0	<1.0	<1.0	<1.0
2.4-Dimethylphenol	105-67-9	1.0	µg/L		<1.0	<1.0	<1.0	<1.0	<1.0
2.4-Dichlorophenol	120-83-2	1.0	µg/L		<1.0	<1.0	<1.0	<1.0	<1.0
2.6-Dichlorophenol	87-65-0	1.0	µg/L		<1.0	<1.0	<1.0	<1.0	<1.0
4-Chloro-3-methylphenol	59-50-7	1.0	µg/L		<1.0	<1.0	<1.0	<1.0	<1.0
2.4.6-Trichlorophenol	88-06-2	1.0	µg/L		<1.0	<1.0	<1.0	<1.0	<1.0
2.4.5-Trichlorophenol	95-95-4	1.0	µg/L		<1.0	<1.0	<1.0	<1.0	<1.0
Pentachlorophenol	87-86-5	2.0	µg/L		<2.0	<2.0	<2.0	<2.0	<2.0
EP075(SIM)B: Polynuclear Aromatic Hydrocarbons									
Naphthalene	91-20-3	1.0	µg/L		<1.0	<1.0	<1.0	<1.0	<1.0
Acenaphthylene	208-96-8	1.0	µg/L		<1.0	<1.0	<1.0	<1.0	<1.0
Acenaphthene	83-32-9	1.0	µg/L		<1.0	<1.0	<1.0	<1.0	<1.0

Analytical Results

Sub-Matrix: WATER (Matrix: WATER)				Sample ID	HINDS	HINUS	KEMDS	KEMUS	ROPDS
				Sampling date / time	31-Aug-2023 00:00	31-Aug-2023 00:00	31-Aug-2023 00:00	31-Aug-2023 00:00	31-Aug-2023 00:00
Compound	CAS Number	LOR	Unit		ES2329639-006	ES2329639-007	ES2329639-008	ES2329639-009	ES2329639-010
					Result	Result	Result	Result	Result
EP075(SIM)B: Polynuclear Aromatic Hydrocarbons - Continued									
Fluorene	86-73-7	1.0	µg/L		<1.0	<1.0	<1.0	<1.0	<1.0
Phenanthrene	85-01-8	1.0	µg/L		<1.0	<1.0	<1.0	<1.0	<1.0
Anthracene	120-12-7	1.0	µg/L		<1.0	<1.0	<1.0	<1.0	<1.0
Fluoranthene	206-44-0	1.0	µg/L		<1.0	<1.0	<1.0	<1.0	<1.0
Pyrene	129-00-0	1.0	µg/L		<1.0	<1.0	<1.0	<1.0	<1.0
Benz(a)anthracene	56-55-3	1.0	µg/L		<1.0	<1.0	<1.0	<1.0	<1.0
Chrysene	218-01-9	1.0	µg/L		<1.0	<1.0	<1.0	<1.0	<1.0
Benzo(b+j)fluoranthene	205-99-2 205-82-3	1.0	µg/L		<1.0	<1.0	<1.0	<1.0	<1.0
Benzo(k)fluoranthene	207-08-9	1.0	µg/L		<1.0	<1.0	<1.0	<1.0	<1.0
Benzo(a)pyrene	50-32-8	0.5	µg/L		<0.5	<0.5	<0.5	<0.5	<0.5
Indeno(1.2.3.cd)pyrene	193-39-5	1.0	µg/L		<1.0	<1.0	<1.0	<1.0	<1.0
Dibenz(a.h)anthracene	53-70-3	1.0	µg/L		<1.0	<1.0	<1.0	<1.0	<1.0
Benzo(g.h.i)perylene	191-24-2	1.0	µg/L		<1.0	<1.0	<1.0	<1.0	<1.0
^ **Sum of polycyclic aromatic hydrocarbons**	----	0.5	µg/L		<0.5	<0.5	<0.5	<0.5	<0.5
^ **Benzo(a)pyrene TEQ (zero)**	----	0.5	µg/L		<0.5	<0.5	<0.5	<0.5	<0.5
EP080: BTEXN									
Benzene	71-43-2	1	µg/L		<1	<1	<1	<1	<1
Toluene	108-88-3	2	µg/L		<2	<2	<2	<2	<2
Ethylbenzene	100-41-4	2	µg/L		<2	<2	<2	<2	<2
meta- & para-Xylene	108-38-3 106-42-3	2	µg/L		<2	<2	<2	<2	<2
ortho-Xylene	95-47-6	2	µg/L		<2	<2	<2	<2	<2
^ **Total Xylenes**	----	2	µg/L		<2	<2	<2	<2	<2
^ **Sum of BTEX**	----	1	µg/L		<1	<1	<1	<1	<1
Naphthalene	91-20-3	5	µg/L		<5	<5	<5	<5	<5
EP131A: Organochlorine Pesticides									
Aldrin	309-00-2	0.010	µg/L		<0.010	<0.010	<0.010	<0.010	<0.010
alpha-BHC	319-84-6	0.010	µg/L		<0.010	<0.010	<0.010	<0.010	<0.010
beta-BHC	319-85-7	0.010	µg/L		<0.010	<0.010	<0.010	<0.010	<0.010
delta-BHC	319-86-8	0.010	µg/L		<0.010	<0.010	<0.010	<0.010	<0.010
4.4`-DDD	72-54-8	0.010	µg/L		<0.010	<0.010	<0.010	<0.010	<0.010
4.4`-DDE	72-55-9	0.010	µg/L		<0.010	<0.010	<0.010	<0.010	<0.010
4.4`-DDT	50-29-3	0.010	µg/L		<0.010	<0.010	<0.010	<0.010	<0.010
^ **Sum of DDD + DDE + DDT**	72-54-8/72-55-9/50-29-2	0.010	µg/L		<0.010	<0.010	<0.010	<0.010	<0.010

Analytical Results

Sub-Matrix: WATER (Matrix: WATER)				Sample ID	HINDS	HINUS	KEMDS	KEMUS	ROPDS
				Sampling date / time	31-Aug-2023 00:00	31-Aug-2023 00:00	31-Aug-2023 00:00	31-Aug-2023 00:00	31-Aug-2023 00:00
Compound	CAS Number	LOR	Unit		ES2329639-006	ES2329639-007	ES2329639-008	ES2329639-009	ES2329639-010
					Result	Result	Result	Result	Result
EP131A: Organochlorine Pesticides - Continued									
Dieldrin	60-57-1	0.010	µg/L		<0.010	<0.010	<0.010	<0.010	<0.010
alpha-Endosulfan	959-98-8	0.010	µg/L		<0.010	<0.010	<0.010	<0.010	<0.010
beta-Endosulfan	33213-65-9	0.010	µg/L		<0.010	<0.010	<0.010	<0.010	<0.010
Endosulfan sulfate	1031-07-8	0.010	µg/L		<0.010	<0.010	<0.010	<0.010	<0.010
^ Endosulfan (sum)	115-29-7	0.010	µg/L		<0.010	<0.010	<0.010	<0.010	<0.010
Endrin	72-20-8	0.010	µg/L		<0.010	<0.010	<0.010	<0.010	<0.010
Endrin aldehyde	7421-93-4	0.010	µg/L		<0.010	<0.010	<0.010	<0.010	<0.010
Endrin ketone	53494-70-5	0.010	µg/L		<0.010	<0.010	<0.010	<0.010	<0.010
Heptachlor	76-44-8	0.005	µg/L		<0.005	<0.005	<0.005	<0.005	<0.005
Heptachlor epoxide	1024-57-3	0.010	µg/L		<0.010	<0.010	<0.010	<0.010	<0.010
Hexachlorobenzene (HCB)	118-74-1	0.010	µg/L		<0.010	<0.010	<0.010	<0.010	<0.010
gamma-BHC	58-89-9	0.010	µg/L		<0.010	<0.010	<0.010	<0.010	<0.010
Methoxychlor	72-43-5	0.010	µg/L		<0.010	<0.010	<0.010	<0.010	<0.010
cis-Chlordane	5103-71-9	0.010	µg/L		<0.010	<0.010	<0.010	<0.010	<0.010
trans-Chlordane	5103-74-2	0.010	µg/L		<0.010	<0.010	<0.010	<0.010	<0.010
^ Total Chlordane (sum)	----	0.010	µg/L		<0.010	<0.010	<0.010	<0.010	<0.010
Oxychlordane	27304-13-8	0.010	µg/L		<0.010	<0.010	<0.010	<0.010	<0.010
EP131B: Polychlorinated Biphenyls (as Aroclors)									
Total Polychlorinated biphenyls	----	0.005	µg/L		<0.005	<0.005	<0.005	<0.005	<0.005
Aroclor 1016	12674-11-2	0.005	µg/L		<0.005	<0.005	<0.005	<0.005	<0.005
Aroclor 1221	11104-28-2	0.005	µg/L		<0.005	<0.005	<0.005	<0.005	<0.005
Aroclor 1232	11141-16-5	0.005	µg/L		<0.005	<0.005	<0.005	<0.005	<0.005
Aroclor 1242	53469-21-9	0.005	µg/L		<0.005	<0.005	<0.005	<0.005	<0.005
Aroclor 1248	12672-29-6	0.005	µg/L		<0.005	<0.005	<0.005	<0.005	<0.005
Aroclor 1254	11097-69-1	0.005	µg/L		<0.005	<0.005	<0.005	<0.005	<0.005
Aroclor 1260	11096-82-5	0.005	µg/L		<0.005	<0.005	<0.005	<0.005	<0.005
EP234A: OP Pesticides									
Acephate	30560-19-1	0.5	µg/L		<0.5	<0.5	<0.5	<0.5	<0.5
Azinphos-methyl	86-50-0	0.02	µg/L		<0.02	<0.02	<0.02	<0.02	<0.02
Azinphos-ethyl	2642-71-9	0.02	µg/L		<0.02	<0.02	<0.02	<0.02	<0.02
Bensulide	741-58-2	0.1	µg/L		<0.1	<0.1	<0.1	<0.1	<0.1
Bromophos-ethyl	4824-78-6	0.10	µg/L		<0.10	<0.10	<0.10	<0.10	<0.10
Carbofenothion	786-19-6	0.02	µg/L		<0.02	<0.02	<0.02	<0.02	<0.02
Chlorfenvinphos	470-90-6	0.02	µg/L		<0.02	<0.02	<0.02	<0.02	<0.02

Analytical Results

Sub-Matrix: WATER (Matrix: WATER)				Sample ID	HINDS	HINUS	KEMDS	KEMUS	ROPDS
				Sampling date / time	31-Aug-2023 00:00	31-Aug-2023 00:00	31-Aug-2023 00:00	31-Aug-2023 00:00	31-Aug-2023 00:00
Compound	CAS Number	LOR	Unit		ES2329639-006	ES2329639-007	ES2329639-008	ES2329639-009	ES2329639-010
					Result	Result	Result	Result	Result
EP234A: OP Pesticides - Continued									
Chlorpyrifos	2921-88-2	0.02	µg/L		<0.02	<0.02	<0.02	<0.02	<0.02
Chlorpyrifos-methyl	5598-13-0	0.2	µg/L		<0.2	<0.2	<0.2	<0.2	<0.2
Coumaphos	56-72-4	0.01	µg/L		<0.01	<0.01	<0.01	<0.01	<0.01
Demeton-O	298-03-3	0.02	µg/L		<0.02	<0.02	<0.02	<0.02	<0.02
Demeton-O & Demeton-S	298-03-3/126-75-0	0.02	µg/L		<0.02	<0.02	<0.02	<0.02	<0.02
Demeton-S	126-75-0	0.02	µg/L		<0.02	<0.02	<0.02	<0.02	<0.02
Demeton-S-methyl	919-86-8	0.02	µg/L		<0.02	<0.02	<0.02	<0.02	<0.02
Diazinon	333-41-5	0.01	µg/L		<0.01	<0.01	<0.01	<0.01	<0.01
Dichlorvos	62-73-7	0.20	µg/L		<0.20	<0.20	<0.20	<0.20	<0.20
Dimethoate	60-51-5	0.02	µg/L		<0.02	<0.02	**0.18**	**0.16**	<0.02
Disulfoton	298-04-4	0.05	µg/L		<0.05	<0.05	<0.05	<0.05	<0.05
EPN	2104-64-5	0.05	µg/L		<0.05	<0.05	<0.05	<0.05	<0.05
Ethion	563-12-2	0.02	µg/L		<0.02	<0.02	<0.02	<0.02	<0.02
Ethoprophos	13194-48-4	0.01	µg/L		<0.01	<0.01	<0.01	<0.01	<0.01
Fenamiphos	22224-92-6	0.01	µg/L		<0.01	<0.01	<0.01	<0.01	<0.01
Fenchlorphos (Ronnel)	299-84-3	10	µg/L		<10	<10	<10	<10	<10
Fenitrothion	122-14-5	2	µg/L		<2	<2	<2	<2	<2
Fensulfothion	115-90-2	0.01	µg/L		<0.01	<0.01	<0.01	<0.01	<0.01
Fenthion	55-38-9	0.05	µg/L		<0.05	<0.05	<0.05	<0.05	<0.05
Formothion	2540-82-1	20	µg/L		<20	<20	<20	<20	<20
Fosetyl Aluminium	39148-24-8	10	µg/L		<10	<10	<10	<10	<10
Malathion	121-75-5	0.02	µg/L		<0.02	<0.02	**0.04**	**0.05**	<0.02
Methidathion	950-37-8	0.1	µg/L		<0.1	<0.1	<0.1	<0.1	<0.1
Mevinphos	7786-34-7	0.02	µg/L		<0.02	<0.02	<0.02	<0.02	<0.02
Monocrotophos	6923-22-4	0.02	µg/L		<0.02	<0.02	<0.02	<0.02	<0.02
Naftalofos	1491-41-4	1.0	µg/L		<1.0	<1.0	<1.0	<1.0	<1.0
Omethoate	1113-02-6	0.01	µg/L		<0.01	<0.01	<0.01	<0.01	<0.01
Parathion	56-38-2	0.2	µg/L		<0.2	<0.2	<0.2	<0.2	<0.2
Parathion-methyl	298-00-0	0.5	µg/L		<0.5	<0.5	<0.5	<0.5	<0.5
Phorate	298-02-2	0.1	µg/L		<0.1	<0.1	<0.1	<0.1	<0.1
Pirimiphos-ethyl	23505-41-1	0.01	µg/L		<0.01	<0.01	<0.01	<0.01	<0.01
Pirimiphos-methyl	29232-93-7	0.01	µg/L		<0.01	<0.01	<0.01	<0.01	<0.01
Profenofos	41198-08-7	0.01	µg/L		<0.01	<0.01	<0.01	<0.01	<0.01
Prothiofos	34643-46-4	0.1	µg/L		<0.1	<0.1	<0.1	<0.1	<0.1
Pyrazophos	13457-18-6	0.1	µg/L		<0.1	<0.1	<0.1	<0.1	<0.1

Analytical Results

Sub-Matrix: WATER (Matrix: WATER)				Sample ID	HINDS	HINUS	KEMDS	KEMUS	ROPDS
				Sampling date / time	31-Aug-2023 00:00	31-Aug-2023 00:00	31-Aug-2023 00:00	31-Aug-2023 00:00	31-Aug-2023 00:00
Compound	CAS Number	LOR	Unit		ES2329639-006	ES2329639-007	ES2329639-008	ES2329639-009	ES2329639-010
					Result	Result	Result	Result	Result
EP234A: OP Pesticides - Continued									
Sulfotep	3689-24-5	0.005	µg/L		<0.005	<0.005	<0.005	<0.005	<0.005
Sulprofos	35400-43-2	0.05	µg/L		<0.05	<0.05	<0.05	<0.05	<0.05
Temephos	3383-96-8	0.02	µg/L		<0.02	<0.02	<0.02	<0.02	<0.02
Terbufos	13071-79-9	0.01	µg/L		<0.01	<0.01	<0.01	<0.01	<0.01
Tetrachlorvinphos	22248-79-9	0.01	µg/L		<0.01	<0.01	<0.01	<0.01	<0.01
Thiometon	640-15-3	0.5	µg/L		<0.5	<0.5	<0.5	<0.5	<0.5
Triazophos	24017-47-8	0.005	µg/L		<0.005	<0.005	<0.005	<0.005	<0.005
Trichlorfon	52-68-6	0.02	µg/L		<0.02	<0.02	<0.02	<0.02	<0.02
Trichloronate	327-98-0	0.5	µg/L		<0.5	<0.5	<0.5	<0.5	<0.5
EP074S: VOC Surrogates									
1.2-Dichloroethane-D4	17060-07-0	5	%		103	92.8	106	111	109
Toluene-D8	2037-26-5	5	%		101	88.4	106	109	104
4-Bromofluorobenzene	460-00-4	5	%		95.8	80.7	97.8	99.6	98.4
EP075(SIM)S: Phenolic Compound Surrogates									
Phenol-d6	13127-88-3	1.0	%		23.9	21.8	23.9	20.1	24.1
2-Chlorophenol-D4	93951-73-6	1.0	%		54.9	46.4	52.0	43.3	53.2
2.4.6-Tribromophenol	118-79-6	1.0	%		79.0	61.7	69.7	71.8	80.4
EP075(SIM)T: PAH Surrogates									
2-Fluorobiphenyl	321-60-8	1.0	%		60.5	57.8	65.7	55.5	63.9
Anthracene-d10	1719-06-8	1.0	%		75.6	60.3	66.8	72.8	74.8
4-Terphenyl-d14	1718-51-0	1.0	%		66.0	60.7	59.5	65.4	66.1
EP080S: TPH(V)/BTEX Surrogates									
1.2-Dichloroethane-D4	17060-07-0	2	%		133	120	137	124	142
Toluene-D8	2037-26-5	2	%		108	93.7	114	118	111
4-Bromofluorobenzene	460-00-4	2	%		111	102	115	109	115
EP131S: OC Pesticide Surrogate									
Dibromo-DDE	21655-73-2	0.010	%		96.4	79.8	85.8	95.0	87.2
EP131T: PCB Surrogate									
Decachlorobiphenyl	2051-24-3	0.010	%		124	120	124	138	131

Analytical Results

Sub-Matrix: WATER (Matrix: WATER)			Sample ID	ROPUS	SOUDS	SOUUS	SWDUP1	----
			Sampling date / time	31-Aug-2023 00:00	31-Aug-2023 00:00	31-Aug-2023 00:00	31-Aug-2023 00:00	----
Compound	CAS Number	LOR	Unit	ES2329639-011	ES2329639-012	ES2329639-013	ES2329639-014	--------
				Result	Result	Result	Result	----
EA015: Total Dissolved Solids dried at 180 ± 5 °C								
Total Dissolved Solids @180°C	----	10	mg/L	**188**	**535**	**498**	**----**	**----**
EA025: Total Suspended Solids dried at 104 ± 2°C								
Suspended Solids (SS)	----	5	mg/L	**45**	**127**	**105**	**----**	**----**
EG020T: Total Metals by ICP-MS								
Arsenic	7440-38-2	0.001	mg/L	**0.002**	**0.002**	**0.002**	**0.002**	**----**
Cadmium	7440-43-9	0.0001	mg/L	<0.0001	<0.0001	<0.0001	<0.0001	**----**
Chromium	7440-47-3	0.001	mg/L	**0.002**	**0.004**	**0.004**	**0.002**	**----**
Copper	7440-50-8	0.001	mg/L	**0.003**	**0.009**	**0.009**	**0.008**	**----**
Nickel	7440-02-0	0.001	mg/L	**0.002**	**0.006**	**0.006**	**0.003**	**----**
Lead	7439-92-1	0.001	mg/L	**0.003**	**0.005**	**0.005**	**0.004**	**----**
Zinc	7440-66-6	0.005	mg/L	**0.007**	**0.024**	**0.022**	**0.023**	**----**
Manganese	7439-96-5	0.001	mg/L	**1.04**	**0.257**	**0.271**	**----**	**----**
Iron	7439-89-6	0.05	mg/L	**6.42**	**3.59**	**3.48**	**----**	**----**
EG035T: Total Recoverable Mercury by FIMS								
Mercury	7439-97-6	0.0001	mg/L	<0.0001	<0.0001	<0.0001	<0.0001	**----**
EK055G: Ammonia as N by Discrete Analyser								
Ammonia as N	7664-41-7	0.01	mg/L	**1.28**	**0.44**	**0.57**	**----**	**----**
EK057G: Nitrite as N by Discrete Analyser								
Nitrite as N	14797-65-0	0.01	mg/L	<0.01	**0.09**	**0.10**	**----**	**----**
EK058G: Nitrate as N by Discrete Analyser								
Nitrate as N	14797-55-8	0.01	mg/L	**0.02**	**1.64**	**1.71**	**----**	**----**
EK059G: Nitrite plus Nitrate as N (NOx) by Discrete Analyser								
Nitrite + Nitrate as N	----	0.01	mg/L	**0.02**	**1.73**	**1.81**	**----**	**----**
EK061G: Total Kjeldahl Nitrogen By Discrete Analyser								
Total Kjeldahl Nitrogen as N	----	0.1	mg/L	**3.2**	**2.9**	**3.2**	**----**	**----**
EK062G: Total Nitrogen as N (TKN + NOx) by Discrete Analyser								
^ Total Nitrogen as N	----	0.1	mg/L	**3.2**	**4.6**	**5.0**	**----**	**----**
EK067G: Total Phosphorus as P by Discrete Analyser								
Total Phosphorus as P	----	0.01	mg/L	**0.12**	**0.55**	**0.82**	**----**	**----**
EK071G: Reactive Phosphorus as P by discrete analyser								
Reactive Phosphorus as P	14265-44-2	0.01	mg/L	<0.01	**0.23**	**0.21**	**----**	**----**
EP008: Chlorophyll a & Pheophytin a								
Chlorophyll a	----	1	mg/m³	**6**	**6**	**17**	**----**	**----**

Analytical Results

Sub-Matrix: WATER (Matrix: WATER)				Sample ID	ROPUS	SOUDS	SOUUS	SWDUP1	----
				Sampling date / time	31-Aug-2023 00:00	31-Aug-2023 00:00	31-Aug-2023 00:00	31-Aug-2023 00:00	----
Compound	CAS Number	LOR	Unit		ES2329639-011	ES2329639-012	ES2329639-013	ES2329639-014	--------
					Result	Result	Result	Result	----
EP020: Oil and Grease (O&G)									
Oil & Grease	----	5	mg/L		<5	<5	<5	----	----
EP074D: Fumigants									
2.2-Dichloropropane	594-20-7	5	µg/L		<5	<5	<5	----	----
1.2-Dichloropropane	78-87-5	5	µg/L		<5	<5	<5	----	----
cis-1.3-Dichloropropylene	10061-01-5	5	µg/L		<5	<5	<5	----	----
trans-1.3-Dichloropropylene	10061-02-6	5	µg/L		<5	<5	<5	----	----
1.2-Dibromoethane (EDB)	106-93-4	5	µg/L		<5	<5	<5	----	----
EP074E: Halogenated Aliphatic Compounds									
Dichlorodifluoromethane	75-71-8	50	µg/L		<50	<50	<50	----	----
Chloromethane	74-87-3	50	µg/L		<50	<50	<50	----	----
Vinyl chloride	75-01-4	50	µg/L		<50	<50	<50	----	----
Bromomethane	74-83-9	50	µg/L		<50	<50	<50	----	----
Chloroethane	75-00-3	50	µg/L		<50	<50	<50	----	----
Trichlorofluoromethane	75-69-4	50	µg/L		<50	<50	<50	----	----
1.1-Dichloroethene	75-35-4	5	µg/L		<5	<5	<5	----	----
Iodomethane	74-88-4	5	µg/L		<5	<5	<5	----	----
trans-1.2-Dichloroethene	156-60-5	5	µg/L		<5	<5	<5	----	----
1.1-Dichloroethane	75-34-3	5	µg/L		<5	<5	<5	----	----
cis-1.2-Dichloroethene	156-59-2	5	µg/L		<5	<5	<5	----	----
1.1.1-Trichloroethane	71-55-6	5	µg/L		<5	<5	<5	----	----
1.1-Dichloropropylene	563-58-6	5	µg/L		<5	<5	<5	----	----
Carbon Tetrachloride	56-23-5	5	µg/L		<5	<5	<5	----	----
1.2-Dichloroethane	107-06-2	5	µg/L		<5	<5	<5	----	----
Trichloroethene	79-01-6	5	µg/L		<5	<5	<5	----	----
Dibromomethane	74-95-3	5	µg/L		<5	<5	<5	----	----
1.1.2-Trichloroethane	79-00-5	5	µg/L		<5	<5	<5	----	----
1.3-Dichloropropane	142-28-9	5	µg/L		<5	<5	<5	----	----
Tetrachloroethene	127-18-4	5	µg/L		<5	<5	<5	----	----
1.1.1.2-Tetrachloroethane	630-20-6	5	µg/L		<5	<5	<5	----	----
trans-1.4-Dichloro-2-butene	110-57-6	5	µg/L		<5	<5	<5	----	----
cis-1.4-Dichloro-2-butene	1476-11-5	5	µg/L		<5	<5	<5	----	----
1.1.2.2-Tetrachloroethane	79-34-5	5	µg/L		<5	<5	<5	----	----
1.2.3-Trichloropropane	96-18-4	5	µg/L		<5	<5	<5	----	----
Pentachloroethane	76-01-7	5	µg/L		<5	<5	<5	----	----

Analytical Results

Sub-Matrix: WATER (Matrix: WATER)				Sample ID	ROPUS	SOUDS	SOUUS	SWDUP1	----
				Sampling date / time	31-Aug-2023 00:00	31-Aug-2023 00:00	31-Aug-2023 00:00	31-Aug-2023 00:00	----
Compound	CAS Number	LOR	Unit		ES2329639-011	ES2329639-012	ES2329639-013	ES2329639-014	--------
					Result	Result	Result	Result	----
EP074E: Halogenated Aliphatic Compounds - Continued									
1.2-Dibromo-3-chloropropane	96-12-8	5	µg/L		<5	<5	<5	----	----
Hexachlorobutadiene	87-68-3	5	µg/L		<5	<5	<5	----	----
EP074F: Halogenated Aromatic Compounds									
Chlorobenzene	108-90-7	5	µg/L		<5	<5	<5	----	----
Bromobenzene	108-86-1	5	µg/L		<5	<5	<5	----	----
2-Chlorotoluene	95-49-8	5	µg/L		<5	<5	<5	----	----
4-Chlorotoluene	106-43-4	5	µg/L		<5	<5	<5	----	----
1.3-Dichlorobenzene	541-73-1	5	µg/L		<5	<5	<5	----	----
1.4-Dichlorobenzene	106-46-7	5	µg/L		<5	<5	<5	----	----
1.2-Dichlorobenzene	95-50-1	5	µg/L		<5	<5	<5	----	----
1.2.4-Trichlorobenzene	120-82-1	5	µg/L		<5	<5	<5	----	----
1.2.3-Trichlorobenzene	87-61-6	5	µg/L		<5	<5	<5	----	----
EP074G: Trihalomethanes									
Chloroform	67-66-3	5	µg/L		<5	<5	<5	----	----
Bromodichloromethane	75-27-4	5	µg/L		<5	<5	<5	----	----
Dibromochloromethane	124-48-1	5	µg/L		<5	<5	<5	----	----
Bromoform	75-25-2	5	µg/L		<5	<5	<5	----	----
EP075(SIM)A: Phenolic Compounds									
Phenol	108-95-2	1.0	µg/L		<1.0	<1.0	<1.0	----	----
2-Chlorophenol	95-57-8	1.0	µg/L		<1.0	<1.0	<1.0	----	----
2-Methylphenol	95-48-7	1.0	µg/L		<1.0	<1.0	<1.0	----	----
3- & 4-Methylphenol	1319-77-3	2.0	µg/L		<2.0	<2.0	<2.0	----	----
2-Nitrophenol	88-75-5	1.0	µg/L		<1.0	<1.0	<1.0	----	----
2.4-Dimethylphenol	105-67-9	1.0	µg/L		<1.0	<1.0	<1.0	----	----
2.4-Dichlorophenol	120-83-2	1.0	µg/L		<1.0	<1.0	<1.0	----	----
2.6-Dichlorophenol	87-65-0	1.0	µg/L		<1.0	<1.0	<1.0	----	----
4-Chloro-3-methylphenol	59-50-7	1.0	µg/L		<1.0	<1.0	<1.0	----	----
2.4.6-Trichlorophenol	88-06-2	1.0	µg/L		<1.0	<1.0	<1.0	----	----
2.4.5-Trichlorophenol	95-95-4	1.0	µg/L		<1.0	<1.0	<1.0	----	----
Pentachlorophenol	87-86-5	2.0	µg/L		<2.0	<2.0	<2.0	----	----
EP075(SIM)B: Polynuclear Aromatic Hydrocarbons									
Naphthalene	91-20-3	1.0	µg/L		<1.0	<1.0	<1.0	----	----
Acenaphthylene	208-96-8	1.0	µg/L		<1.0	<1.0	<1.0	----	----
Acenaphthene	83-32-9	1.0	µg/L		<1.0	<1.0	<1.0	----	----

Analytical Results

Sub-Matrix: WATER (Matrix: WATER)				Sample ID	ROPUS	SOUDS	SOUUS	SWDUP1	----
				Sampling date / time	31-Aug-2023 00:00	31-Aug-2023 00:00	31-Aug-2023 00:00	31-Aug-2023 00:00	----
Compound	CAS Number	LOR	Unit		ES2329639-011	ES2329639-012	ES2329639-013	ES2329639-014	--------
					Result	Result	Result	Result	----
EP075(SIM)B: Polynuclear Aromatic Hydrocarbons - Continued									
Fluorene	86-73-7	1.0	µg/L		<1.0	<1.0	<1.0	----	----
Phenanthrene	85-01-8	1.0	µg/L		<1.0	<1.0	<1.0	----	----
Anthracene	120-12-7	1.0	µg/L		<1.0	<1.0	<1.0	----	----
Fluoranthene	206-44-0	1.0	µg/L		<1.0	<1.0	<1.0	----	----
Pyrene	129-00-0	1.0	µg/L		<1.0	<1.0	<1.0	----	----
Benz(a)anthracene	56-55-3	1.0	µg/L		<1.0	<1.0	<1.0	----	----
Chrysene	218-01-9	1.0	µg/L		<1.0	<1.0	<1.0	----	----
Benzo(b+j)fluoranthene	205-99-2 205-82-3	1.0	µg/L		<1.0	<1.0	<1.0	----	----
Benzo(k)fluoranthene	207-08-9	1.0	µg/L		<1.0	<1.0	<1.0	----	----
Benzo(a)pyrene	50-32-8	0.5	µg/L		<0.5	<0.5	<0.5	----	----
Indeno(1.2.3.cd)pyrene	193-39-5	1.0	µg/L		<1.0	<1.0	<1.0	----	----
Dibenz(a.h)anthracene	53-70-3	1.0	µg/L		<1.0	<1.0	<1.0	----	----
Benzo(g.h.i)perylene	191-24-2	1.0	µg/L		<1.0	<1.0	<1.0	----	----
^ **Sum of polycyclic aromatic hydrocarbons**	----	0.5	µg/L		<0.5	<0.5	<0.5	----	----
^ **Benzo(a)pyrene TEQ (zero)**	----	0.5	µg/L		<0.5	<0.5	<0.5	----	----
EP080: BTEXN									
Benzene	71-43-2	1	µg/L		<1	<1	<1	----	----
Toluene	108-88-3	2	µg/L		<2	<2	<2	----	----
Ethylbenzene	100-41-4	2	µg/L		<2	<2	<2	----	----
meta- & para-Xylene	108-38-3 106-42-3	2	µg/L		<2	<2	<2	----	----
ortho-Xylene	95-47-6	2	µg/L		<2	<2	<2	----	----
^ **Total Xylenes**	----	2	µg/L		<2	<2	<2	----	----
^ **Sum of BTEX**	----	1	µg/L		<1	<1	<1	----	----
Naphthalene	91-20-3	5	µg/L		<5	<5	<5	----	----
EP131A: Organochlorine Pesticides									
Aldrin	309-00-2	0.010	µg/L		<0.010	<0.010	<0.010	----	----
alpha-BHC	319-84-6	0.010	µg/L		<0.010	<0.010	<0.010	----	----
beta-BHC	319-85-7	0.010	µg/L		<0.010	<0.010	<0.010	----	----
delta-BHC	319-86-8	0.010	µg/L		<0.010	<0.010	<0.010	----	----
4.4`-DDD	72-54-8	0.010	µg/L		<0.010	<0.010	<0.010	----	----
4.4`-DDE	72-55-9	0.010	µg/L		<0.010	<0.010	<0.010	----	----
4.4`-DDT	50-29-3	0.010	µg/L		<0.010	<0.010	<0.010	----	----
^ **Sum of DDD + DDE + DDT**	72-54-8/72-55-9/50-29-3	0.010	µg/L		<0.010	<0.010	<0.010	----	----

Analytical Results

Sub-Matrix: WATER (Matrix: WATER)				Sample ID	ROPUS	SOUDS	SOUUS	SWDUP1	----
				Sampling date / time	31-Aug-2023 00:00	31-Aug-2023 00:00	31-Aug-2023 00:00	31-Aug-2023 00:00	----
Compound	CAS Number	LOR	Unit		ES2329639-011	ES2329639-012	ES2329639-013	ES2329639-014	--------
					Result	Result	Result	Result	----
EP131A: Organochlorine Pesticides - Continued									
Dieldrin	60-57-1	0.010	µg/L		<0.010	<0.010	<0.010	----	----
alpha-Endosulfan	959-98-8	0.010	µg/L		<0.010	<0.010	<0.010	----	----
beta-Endosulfan	33213-65-9	0.010	µg/L		<0.010	<0.010	<0.010	----	----
Endosulfan sulfate	1031-07-8	0.010	µg/L		<0.010	<0.010	<0.010	----	----
^ Endosulfan (sum)	115-29-7	0.010	µg/L		<0.010	<0.010	<0.010	----	----
Endrin	72-20-8	0.010	µg/L		<0.010	<0.010	<0.010	----	----
Endrin aldehyde	7421-93-4	0.010	µg/L		<0.010	<0.010	<0.010	----	----
Endrin ketone	53494-70-5	0.010	µg/L		<0.010	<0.010	<0.010	----	----
Heptachlor	76-44-8	0.005	µg/L		<0.005	<0.005	<0.005	----	----
Heptachlor epoxide	1024-57-3	0.010	µg/L		<0.010	<0.010	<0.010	----	----
Hexachlorobenzene (HCB)	118-74-1	0.010	µg/L		<0.010	<0.010	<0.010	----	----
gamma-BHC	58-89-9	0.010	µg/L		<0.010	<0.010	<0.010	----	----
Methoxychlor	72-43-5	0.010	µg/L		<0.010	<0.010	<0.010	----	----
cis-Chlordane	5103-71-9	0.010	µg/L		<0.010	<0.010	<0.010	----	----
trans-Chlordane	5103-74-2	0.010	µg/L		<0.010	<0.010	<0.010	----	----
^ Total Chlordane (sum)	----	0.010	µg/L		<0.010	<0.010	<0.010	----	----
Oxychlordane	27304-13-8	0.010	µg/L		<0.010	<0.010	<0.010	----	----
EP131B: Polychlorinated Biphenyls (as Aroclors)									
Total Polychlorinated biphenyls	----	0.005	µg/L		<0.005	<0.005	<0.005	----	----
Aroclor 1016	12674-11-2	0.005	µg/L		<0.005	<0.005	<0.005	----	----
Aroclor 1221	11104-28-2	0.005	µg/L		<0.005	<0.005	<0.005	----	----
Aroclor 1232	11141-16-5	0.005	µg/L		<0.005	<0.005	<0.005	----	----
Aroclor 1242	53469-21-9	0.005	µg/L		<0.005	<0.005	<0.005	----	----
Aroclor 1248	12672-29-6	0.005	µg/L		<0.005	<0.005	<0.005	----	----
Aroclor 1254	11097-69-1	0.005	µg/L		<0.005	<0.005	<0.005	----	----
Aroclor 1260	11096-82-5	0.005	µg/L		<0.005	<0.005	<0.005	----	----
EP234A: OP Pesticides									
Acephate	30560-19-1	0.5	µg/L		<0.5	<0.5	<0.5	----	----
Azinphos-methyl	86-50-0	0.02	µg/L		<0.02	<0.02	<0.02	----	----
Azinphos-ethyl	2642-71-9	0.02	µg/L		<0.02	<0.02	<0.02	----	----
Bensulide	741-58-2	0.1	µg/L		<0.1	<0.1	<0.1	----	----
Bromophos-ethyl	4824-78-6	0.10	µg/L		<0.10	<0.10	<0.10	----	----
Carbofenothion	786-19-6	0.02	µg/L		<0.02	<0.02	<0.02	----	----
Chlorfenvinphos	470-90-6	0.02	µg/L		<0.02	<0.02	<0.02	----	----

Analytical Results

Sub-Matrix: WATER (Matrix: WATER)				Sample ID	ROPUS	SOUDS	SOUUS	SWDUP1	----
				Sampling date / time	31-Aug-2023 00:00	31-Aug-2023 00:00	31-Aug-2023 00:00	31-Aug-2023 00:00	----
Compound	CAS Number	LOR	Unit		ES2329639-011	ES2329639-012	ES2329639-013	ES2329639-014	--------
					Result	Result	Result	Result	----
EP234A: OP Pesticides - Continued									
Chlorpyrifos	2921-88-2	0.02	µg/L		<0.02	<0.02	<0.02	----	----
Chlorpyrifos-methyl	5598-13-0	0.2	µg/L		<0.2	<0.2	<0.2	----	----
Coumaphos	56-72-4	0.01	µg/L		<0.01	<0.01	<0.01	----	----
Demeton-O	298-03-3	0.02	µg/L		<0.02	<0.02	<0.02	----	----
Demeton-O & Demeton-S	298-03-3/126-75-0	0.02	µg/L		<0.02	<0.02	<0.02	----	----
Demeton-S	126-75-0	0.02	µg/L		<0.02	<0.02	<0.02	----	----
Demeton-S-methyl	919-86-8	0.02	µg/L		<0.02	<0.02	<0.02	----	----
Diazinon	333-41-5	0.01	µg/L		<0.01	<0.01	<0.01	----	----
Dichlorvos	62-73-7	0.20	µg/L		<0.20	<0.20	<0.20	----	----
Dimethoate	60-51-5	0.02	µg/L		<0.02	<0.02	<0.02	----	----
Disulfoton	298-04-4	0.05	µg/L		<0.05	<0.05	<0.05	----	----
EPN	2104-64-5	0.05	µg/L		<0.05	<0.05	<0.05	----	----
Ethion	563-12-2	0.02	µg/L		<0.02	<0.02	<0.02	----	----
Ethoprophos	13194-48-4	0.01	µg/L		<0.01	<0.01	<0.01	----	----
Fenamiphos	22224-92-6	0.01	µg/L		<0.01	<0.01	<0.01	----	----
Fenchlorphos (Ronnel)	299-84-3	10	µg/L		<10	<10	<10	----	----
Fenitrothion	122-14-5	2	µg/L		<2	<2	<2	----	----
Fensulfothion	115-90-2	0.01	µg/L		<0.01	<0.01	<0.01	----	----
Fenthion	55-38-9	0.05	µg/L		<0.05	<0.05	<0.05	----	----
Formothion	2540-82-1	20	µg/L		<20	<20	<20	----	----
Fosetyl Aluminium	39148-24-8	10	µg/L		<10	<10	<10	----	----
Malathion	121-75-5	0.02	µg/L		<0.02	<0.02	<0.02	----	----
Methidathion	950-37-8	0.1	µg/L		<0.1	<0.1	<0.1	----	----
Mevinphos	7786-34-7	0.02	µg/L		<0.02	<0.02	<0.02	----	----
Monocrotophos	6923-22-4	0.02	µg/L		<0.02	<0.02	<0.02	----	----
Naftalofos	1491-41-4	1.0	µg/L		<1.0	<1.0	<1.0	----	----
Omethoate	1113-02-6	0.01	µg/L		<0.01	<0.01	<0.01	----	----
Parathion	56-38-2	0.2	µg/L		<0.2	<0.2	<0.2	----	----
Parathion-methyl	298-00-0	0.5	µg/L		<0.5	<0.5	<0.5	----	----
Phorate	298-02-2	0.1	µg/L		<0.1	<0.1	<0.1	----	----
Pirimiphos-ethyl	23505-41-1	0.01	µg/L		<0.01	<0.01	<0.01	----	----
Pirimiphos-methyl	29232-93-7	0.01	µg/L		<0.01	<0.01	<0.01	----	----
Profenofos	41198-08-7	0.01	µg/L		<0.01	<0.01	<0.01	----	----
Prothiofos	34643-46-4	0.1	µg/L		<0.1	<0.1	<0.1	----	----
Pyrazophos	13457-18-6	0.1	µg/L		<0.1	<0.1	<0.1	----	----

Analytical Results

Sub-Matrix: WATER (Matrix: WATER)				Sample ID	ROPUS	SOUDS	SOUUS	SWDUP1	----
				Sampling date / time	31-Aug-2023 00:00	31-Aug-2023 00:00	31-Aug-2023 00:00	31-Aug-2023 00:00	----
Compound	CAS Number	LOR	Unit		ES2329639-011	ES2329639-012	ES2329639-013	ES2329639-014	--------
					Result	Result	Result	Result	----
EP234A: OP Pesticides - Continued									
Sulfotep	3689-24-5	0.005	µg/L		<0.005	<0.005	<0.005	----	----
Sulprofos	35400-43-2	0.05	µg/L		<0.05	<0.05	<0.05	----	----
Temephos	3383-96-8	0.02	µg/L		<0.02	<0.02	<0.02	----	----
Terbufos	13071-79-9	0.01	µg/L		<0.01	<0.01	<0.01	----	----
Tetrachlorvinphos	22248-79-9	0.01	µg/L		<0.01	<0.01	<0.01	----	----
Thiometon	640-15-3	0.5	µg/L		<0.5	<0.5	<0.5	----	----
Triazophos	24017-47-8	0.005	µg/L		<0.005	<0.005	<0.005	----	----
Trichlorfon	52-68-6	0.02	µg/L		<0.02	<0.02	<0.02	----	----
Trichloronate	327-98-0	0.5	µg/L		<0.5	<0.5	<0.5	----	----
EP074S: VOC Surrogates									
1.2-Dichloroethane-D4	17060-07-0	5	%		**108**	**110**	**104**	----	----
Toluene-D8	2037-26-5	5	%		**107**	**102**	**105**	----	----
4-Bromofluorobenzene	460-00-4	5	%		**100**	**95.0**	**97.7**	----	----
EP075(SIM)S: Phenolic Compound Surrogates									
Phenol-d6	13127-88-3	1.0	%		**27.6**	**19.1**	**16.8**	----	----
2-Chlorophenol-D4	93951-73-6	1.0	%		**59.7**	**42.0**	**36.5**	----	----
2.4.6-Tribromophenol	118-79-6	1.0	%		**87.4**	**62.3**	**66.9**	----	----
EP075(SIM)T: PAH Surrogates									
2-Fluorobiphenyl	321-60-8	1.0	%		**71.2**	**50.4**	**54.1**	----	----
Anthracene-d10	1719-06-8	1.0	%		**78.3**	**61.3**	**65.0**	----	----
4-Terphenyl-d14	1718-51-0	1.0	%		**68.5**	**59.9**	**62.5**	----	----
EP080S: TPH(V)/BTEX Surrogates									
1.2-Dichloroethane-D4	17060-07-0	2	%		**140**	**141**	**136**	----	----
Toluene-D8	2037-26-5	2	%		**115**	**109**	**111**	----	----
4-Bromofluorobenzene	460-00-4	2	%		**115**	**112**	**115**	----	----
EP131S: OC Pesticide Surrogate									
Dibromo-DDE	21655-73-2	0.010	%		**73.0**	**73.7**	**73.7**	----	----
EP131T: PCB Surrogate									
Decachlorobiphenyl	2051-24-3	0.010	%		**113**	**111**	**109**	----	----

Surrogate Control Limits

Sub-Matrix: WATER		Recovery Limits (%)	
Compound	*CAS Number*	*Low*	*High*
EP074S: VOC Surrogates			
1.2-Dichloroethane-D4	17060-07-0	78	133
Toluene-D8	2037-26-5	79	129
4-Bromofluorobenzene	460-00-4	81	124
EP075(SIM)S: Phenolic Compound Surrogates			
Phenol-d6	13127-88-3	10	44
2-Chlorophenol-D4	93951-73-6	14	94
2.4.6-Tribromophenol	118-79-6	17	125
EP075(SIM)T: PAH Surrogates			
2-Fluorobiphenyl	321-60-8	20	104
Anthracene-d10	1719-06-8	27	113
4-Terphenyl-d14	1718-51-0	32	112
EP080S: TPH(V)/BTEX Surrogates			
1.2-Dichloroethane-D4	17060-07-0	72	143
Toluene-D8	2037-26-5	75	131
4-Bromofluorobenzene	460-00-4	73	137
EP131S: OC Pesticide Surrogate			
Dibromo-DDE	21655-73-2	14	166
EP131T: PCB Surrogate			
Decachlorobiphenyl	2051-24-3	10	164

QUALITY CONTROL REPORT

Work Order	: **ES2329639**	Page	: 1 of 20
Client	: **GHD PTY LTD**	Laboratory	: Environmental Division Sydney
Contact	: MR HENRY LUO	Contact	: Sarah Mathew
Address	: LEVEL 15, 133 CASTLEREAGH STREET SYDNEY NSW, AUSTRALIA 2000	Address	: 277-289 Woodpark Road Smithfield NSW Australia 2164
Telephone	: +61 02 9239 7100	Telephone	: +61-2-8784 8555
Project	: 12554717	Date Samples Received	: 31-Aug-2023
Order number	: 12554717	Date Analysis Commenced	: 31-Aug-2023
C-O-C number	: ----	Issue Date	: 08-Sep-2023
Sampler	: EMILY SMITH, Jackson Miller		
Site	: ----		
Quote number	: SY/322/21		
No. of samples received	: 14		
No. of samples analysed	: 14		

Accreditation No. 825
Accredited for compliance with
ISO/IEC 17025 - Testing

This report supersedes any previous report(s) with this reference. Results apply to the sample(s) as submitted, unless the sampling was conducted by ALS. This document shall not be reproduced, except in full.

This Quality Control Report contains the following information:

- Laboratory Duplicate (DUP) Report; Relative Percentage Difference (RPD) and Acceptance Limits
- Method Blank (MB) and Laboratory Control Spike (LCS) Report; Recovery and Acceptance Limits
- Matrix Spike (MS) Report; Recovery and Acceptance Limits

Signatories

This document has been electronically signed by the authorized signatories below. Electronic signing is carried out in compliance with procedures specified in 21 CFR Part 11.

Signatories	*Position*	*Accreditation Category*
Ankit Joshi	Senior Chemist - Inorganics	Sydney Inorganics, Smithfield, NSW
Edwandy Fadjar	Organic Coordinator	Sydney Organics, Smithfield, NSW
Franco Lentini	LCMS Coordinator	Sydney Organics, Smithfield, NSW

General Comments

The analytical procedures used by ALS have been developed from established internationally recognised procedures such as those published by the USEPA, APHA, AS and NEPM. In house developed procedures are fully validated and are often at the client request.

Where moisture determination has been performed, results are reported on a dry weight basis.

Where a reported less than (<) result is higher than the LOR, this may be due to primary sample extract/digestate dilution and/or insufficient sample for analysis. Where the LOR of a reported result differs from standard LOR, this may be due to high moisture content, insufficient sample (reduced weight employed) or matrix interference.

Key : Anonymous = Refers to samples which are not specifically part of this work order but formed part of the QC process lot
CAS Number = CAS registry number from database maintained by Chemical Abstracts Services. The Chemical Abstracts Service is a division of the American Chemical Society.
LOR = Limit of reporting
RPD = Relative Percentage Difference
# = Indicates failed QC

Laboratory Duplicate (DUP) Report

The quality control term Laboratory Duplicate refers to a randomly selected intralaboratory split. Laboratory duplicates provide information regarding method precision and sample heterogeneity. The permitted ranges for the Relative Percent Deviation (RPD) of Laboratory Duplicates are specified in ALS Method QWI-EN/38 and are dependent on the magnitude of results in comparison to the level of reporting: Result < 10 times LOR: No Limit; Result between 10 and 20 times LOR: 0% - 50%; Result > 20 times LOR: 0% - 20%.

Sub-Matrix: **WATER**

				Laboratory Duplicate (DUP) Report					
Laboratory sample ID	*Sample ID*	*Method: Compound*	*CAS Number*	*LOR*	*Unit*	*Original Result*	*Duplicate Result*	*RPD (%)*	*Acceptable RPD (%)*
EA015: Total Dissolved Solids dried at 180 ± 5 °C (QC Lot: 5276376)									
ES2329511-001	Anonymous	EA015H: Total Dissolved Solids @180°C	----	10	mg/L	934	948	1.5	0% - 20%
ES2329572-001	Anonymous	EA015H: Total Dissolved Solids @180°C	----	10	mg/L	184	176	4.4	0% - 50%
ES2329573-009	Anonymous	EA015H: Total Dissolved Solids @180°C	----	10	mg/L	202	204	1.0	0% - 20%
ES2329639-006	HINDS	EA015H: Total Dissolved Solids @180°C	----	10	mg/L	277	266	4.2	0% - 20%
EA025: Total Suspended Solids dried at 104 ± 2°C (QC Lot: 5276377)									
ES2329511-001	Anonymous	EA025H: Suspended Solids (SS)	----	5	mg/L	99	98	1.3	0% - 50%
ES2329572-001	Anonymous	EA025H: Suspended Solids (SS)	----	5	mg/L	28	29	0.0	No Limit
ES2329573-009	Anonymous	EA025H: Suspended Solids (SS)	----	5	mg/L	30	28	6.8	No Limit
ES2329639-006	HINDS	EA025H: Suspended Solids (SS)	----	5	mg/L	7	6	14.8	No Limit
EG020T: Total Metals by ICP-MS (QC Lot: 5273142)									
ES2329639-001	BADDS	EG020A-T: Cadmium	7440-43-9	0.0001	mg/L	<0.0001	<0.0001	0.0	No Limit
		EG020A-T: Arsenic	7440-38-2	0.001	mg/L	0.001	0.001	0.0	No Limit
		EG020A-T: Chromium	7440-47-3	0.001	mg/L	0.003	0.003	0.0	No Limit
		EG020A-T: Copper	7440-50-8	0.001	mg/L	0.008	0.008	0.0	No Limit
		EG020A-T: Lead	7439-92-1	0.001	mg/L	0.003	0.003	0.0	No Limit
		EG020A-T: Manganese	7439-96-5	0.001	mg/L	0.171	0.171	0.0	0% - 20%
		EG020A-T: Nickel	7440-02-0	0.001	mg/L	0.004	0.004	0.0	No Limit
		EG020A-T: Zinc	7440-66-6	0.005	mg/L	0.019	0.018	0.0	No Limit
		EG020A-T: Iron	7439-89-6	0.05	mg/L	2.38	2.38	0.0	0% - 20%
ES2329639-011	ROPUS	EG020A-T: Cadmium	7440-43-9	0.0001	mg/L	<0.0001	<0.0001	0.0	No Limit
		EG020A-T: Arsenic	7440-38-2	0.001	mg/L	0.002	0.002	0.0	No Limit
		EG020A-T: Chromium	7440-47-3	0.001	mg/L	0.002	0.002	0.0	No Limit
		EG020A-T: Copper	7440-50-8	0.001	mg/L	0.003	0.003	0.0	No Limit
		EG020A-T: Lead	7439-92-1	0.001	mg/L	0.003	0.003	0.0	No Limit

Sub-Matrix: **WATER**

				Laboratory Duplicate (DUP) Report					
Laboratory sample ID	*Sample ID*	*Method: Compound*	*CAS Number*	*LOR*	*Unit*	*Original Result*	*Duplicate Result*	*RPD (%)*	*Acceptable RPD (%)*
EG020T: Total Metals by ICP-MS (QC Lot: 5273142) - continued									
ES2329639-011	ROPUS	EG020A-T: Manganese	7439-96-5	0.001	mg/L	1.04	1.03	0.4	0% - 20%
		EG020A-T: Nickel	7440-02-0	0.001	mg/L	0.002	0.003	0.0	No Limit
		EG020A-T: Zinc	7440-66-6	0.005	mg/L	0.007	0.009	19.4	No Limit
		EG020A-T: Iron	7439-89-6	0.05	mg/L	6.42	6.35	1.1	0% - 20%
EG035T: Total Recoverable Mercury by FIMS (QC Lot: 5276443)									
ES2329572-001	Anonymous	EG035T: Mercury	7439-97-6	0.0001	mg/L	<0.0001	<0.0001	0.0	No Limit
ES2329639-009	KEMUS	EG035T: Mercury	7439-97-6	0.0001	mg/L	<0.0001	<0.0001	0.0	No Limit
EK055G: Ammonia as N by Discrete Analyser (QC Lot: 5274331)									
ES2329639-001	BADDS	EK055G: Ammonia as N	7664-41-7	0.01	mg/L	0.04	0.04	0.0	No Limit
ES2329639-010	ROPDS	EK055G: Ammonia as N	7664-41-7	0.01	mg/L	0.07	0.07	0.0	No Limit
EK057G: Nitrite as N by Discrete Analyser (QC Lot: 5273480)									
ES2329608-001	Anonymous	EK057G: Nitrite as N	14797-65-0	0.01	mg/L	<0.01	<0.01	0.0	No Limit
ES2329573-001	Anonymous	EK057G: Nitrite as N	14797-65-0	0.01	mg/L	0.91	0.93	1.8	0% - 20%
EK057G: Nitrite as N by Discrete Analyser (QC Lot: 5273484)									
ES2329639-005	COSUS	EK057G: Nitrite as N	14797-65-0	0.01	mg/L	0.02	0.02	0.0	No Limit
ES2329761-001	Anonymous	EK057G: Nitrite as N	14797-65-0	0.01	mg/L	<0.01	<0.01	0.0	No Limit
EK059G: Nitrite plus Nitrate as N (NOx) by Discrete Analyser (QC Lot: 5274332)									
ES2329639-001	BADDS	EK059G: Nitrite + Nitrate as N	----	0.01	mg/L	0.34	0.35	0.0	0% - 20%
ES2329639-010	ROPDS	EK059G: Nitrite + Nitrate as N	----	0.01	mg/L	0.72	0.71	0.0	0% - 20%
EK061G: Total Kjeldahl Nitrogen By Discrete Analyser (QC Lot: 5274337)									
ES2329639-001	BADDS	EK061G: Total Kjeldahl Nitrogen as N	----	0.1	mg/L	0.8	0.8	0.0	No Limit
ES2329639-011	ROPUS	EK061G: Total Kjeldahl Nitrogen as N	----	0.1	mg/L	3.2	3.1	0.0	0% - 20%
EK067G: Total Phosphorus as P by Discrete Analyser (QC Lot: 5274336)									
ES2329639-001	BADDS	EK067G: Total Phosphorus as P	----	0.01	mg/L	0.08	0.09	0.0	No Limit
ES2329639-011	ROPUS	EK067G: Total Phosphorus as P	----	0.01	mg/L	0.12	0.17	32.1	0% - 50%
EK071G: Reactive Phosphorus as P by discrete analyser (QC Lot: 5273483)									
ES2329639-010	ROPDS	EK071G: Reactive Phosphorus as P	14265-44-2	0.01	mg/L	0.10	0.10	0.0	No Limit
ES2329639-005	COSUS	EK071G: Reactive Phosphorus as P	14265-44-2	0.01	mg/L	<0.01	<0.01	0.0	No Limit
EP074D: Fumigants (QC Lot: 5275892)									
ES2329503-001	Anonymous	EP074: 2.2-Dichloropropane	594-20-7	5	µg/L	<5	<5	0.0	No Limit
		EP074: 1.2-Dichloropropane	78-87-5	5	µg/L	<5	<5	0.0	No Limit
		EP074: cis-1.3-Dichloropropylene	10061-01-5	5	µg/L	<5	<5	0.0	No Limit
		EP074: trans-1.3-Dichloropropylene	10061-02-6	5	µg/L	<5	<5	0.0	No Limit
		EP074: 1.2-Dibromoethane (EDB)	106-93-4	5	µg/L	<5	<5	0.0	No Limit
ES2329639-004	COSDS	EP074: 2.2-Dichloropropane	594-20-7	5	µg/L	<5	<5	0.0	No Limit
		EP074: 1.2-Dichloropropane	78-87-5	5	µg/L	<5	<5	0.0	No Limit
		EP074: cis-1.3-Dichloropropylene	10061-01-5	5	µg/L	<5	<5	0.0	No Limit
		EP074: trans-1.3-Dichloropropylene	10061-02-6	5	µg/L	<5	<5	0.0	No Limit

Sub-Matrix: **WATER**

				Laboratory Duplicate (DUP) Report					
Laboratory sample ID	*Sample ID*	*Method: Compound*	*CAS Number*	*LOR*	*Unit*	*Original Result*	*Duplicate Result*	*RPD (%)*	*Acceptable RPD (%)*
EP074D: Fumigants (QC Lot: 5275892) - continued									
ES2329639-004	COSDS	EP074: 1.2-Dibromoethane (EDB)	106-93-4	5	µg/L	<5	<5	0.0	No Limit
EP074E: Halogenated Aliphatic Compounds (QC Lot: 5275892)									
ES2329503-001	Anonymous	EP074: 1.1-Dichloroethene	75-35-4	5	µg/L	<5	<5	0.0	No Limit
		EP074: Iodomethane	74-88-4	5	µg/L	<5	<5	0.0	No Limit
		EP074: trans-1.2-Dichloroethene	156-60-5	5	µg/L	<5	<5	0.0	No Limit
		EP074: 1.1-Dichloroethane	75-34-3	5	µg/L	<5	<5	0.0	No Limit
		EP074: cis-1.2-Dichloroethene	156-59-2	5	µg/L	<5	<5	0.0	No Limit
		EP074: 1.1.1-Trichloroethane	71-55-6	5	µg/L	<5	<5	0.0	No Limit
		EP074: 1.1-Dichloropropylene	563-58-6	5	µg/L	<5	<5	0.0	No Limit
		EP074: Carbon Tetrachloride	56-23-5	5	µg/L	<5	<5	0.0	No Limit
		EP074: 1.2-Dichloroethane	107-06-2	5	µg/L	<5	<5	0.0	No Limit
		EP074: Trichloroethene	79-01-6	5	µg/L	<5	<5	0.0	No Limit
		EP074: Dibromomethane	74-95-3	5	µg/L	<5	<5	0.0	No Limit
		EP074: 1.1.2-Trichloroethane	79-00-5	5	µg/L	<5	<5	0.0	No Limit
		EP074: 1.3-Dichloropropane	142-28-9	5	µg/L	<5	<5	0.0	No Limit
		EP074: Tetrachloroethene	127-18-4	5	µg/L	<5	<5	0.0	No Limit
		EP074: 1.1.1.2-Tetrachloroethane	630-20-6	5	µg/L	<5	<5	0.0	No Limit
		EP074: trans-1.4-Dichloro-2-butene	110-57-6	5	µg/L	<5	<5	0.0	No Limit
		EP074: cis-1.4-Dichloro-2-butene	1476-11-5	5	µg/L	<5	<5	0.0	No Limit
		EP074: 1.1.2.2-Tetrachloroethane	79-34-5	5	µg/L	<5	<5	0.0	No Limit
		EP074: 1.2.3-Trichloropropane	96-18-4	5	µg/L	<5	<5	0.0	No Limit
		EP074: Pentachloroethane	76-01-7	5	µg/L	<5	<5	0.0	No Limit
		EP074: 1.2-Dibromo-3-chloropropane	96-12-8	5	µg/L	<5	<5	0.0	No Limit
		EP074: Hexachlorobutadiene	87-68-3	5	µg/L	<5	<5	0.0	No Limit
		EP074: Dichlorodifluoromethane	75-71-8	50	µg/L	<50	<50	0.0	No Limit
		EP074: Chloromethane	74-87-3	50	µg/L	<50	<50	0.0	No Limit
		EP074: Vinyl chloride	75-01-4	50	µg/L	<50	<50	0.0	No Limit
		EP074: Bromomethane	74-83-9	50	µg/L	<50	<50	0.0	No Limit
		EP074: Chloroethane	75-00-3	50	µg/L	<50	<50	0.0	No Limit
		EP074: Trichlorofluoromethane	75-69-4	50	µg/L	<50	<50	0.0	No Limit
ES2329639-004	COSDS	EP074: 1.1-Dichloroethene	75-35-4	5	µg/L	<5	<5	0.0	No Limit
		EP074: Iodomethane	74-88-4	5	µg/L	<5	<5	0.0	No Limit
		EP074: trans-1.2-Dichloroethene	156-60-5	5	µg/L	<5	<5	0.0	No Limit
		EP074: 1.1-Dichloroethane	75-34-3	5	µg/L	<5	<5	0.0	No Limit
		EP074: cis-1.2-Dichloroethene	156-59-2	5	µg/L	<5	<5	0.0	No Limit
		EP074: 1.1.1-Trichloroethane	71-55-6	5	µg/L	<5	<5	0.0	No Limit
		EP074: 1.1-Dichloropropylene	563-58-6	5	µg/L	<5	<5	0.0	No Limit
		EP074: Carbon Tetrachloride	56-23-5	5	µg/L	<5	<5	0.0	No Limit
		EP074: 1.2-Dichloroethane	107-06-2	5	µg/L	<5	<5	0.0	No Limit
		EP074: Trichloroethene	79-01-6	5	µg/L	<5	<5	0.0	No Limit

Sub-Matrix: **WATER**

Laboratory sample ID	Sample ID	Method: Compound	CAS Number	Laboratory Duplicate (DUP) Report					
				LOR	Unit	Original Result	Duplicate Result	RPD (%)	Acceptable RPD (%)
EP074E: Halogenated Aliphatic Compounds (QC Lot: 5275892) - continued									
ES2329639-004	COSDS	EP074: Dibromomethane	74-95-3	5	µg/L	<5	<5	0.0	No Limit
		EP074: 1.1.2-Trichloroethane	79-00-5	5	µg/L	<5	<5	0.0	No Limit
		EP074: 1.3-Dichloropropane	142-28-9	5	µg/L	<5	<5	0.0	No Limit
		EP074: Tetrachloroethene	127-18-4	5	µg/L	<5	<5	0.0	No Limit
		EP074: 1.1.1.2-Tetrachloroethane	630-20-6	5	µg/L	<5	<5	0.0	No Limit
		EP074: trans-1.4-Dichloro-2-butene	110-57-6	5	µg/L	<5	<5	0.0	No Limit
		EP074: cis-1.4-Dichloro-2-butene	1476-11-5	5	µg/L	<5	<5	0.0	No Limit
		EP074: 1.1.2.2-Tetrachloroethane	79-34-5	5	µg/L	<5	<5	0.0	No Limit
		EP074: 1.2.3-Trichloropropane	96-18-4	5	µg/L	<5	<5	0.0	No Limit
		EP074: Pentachloroethane	76-01-7	5	µg/L	<5	<5	0.0	No Limit
		EP074: 1.2-Dibromo-3-chloropropane	96-12-8	5	µg/L	<5	<5	0.0	No Limit
		EP074: Hexachlorobutadiene	87-68-3	5	µg/L	<5	<5	0.0	No Limit
		EP074: Dichlorodifluoromethane	75-71-8	50	µg/L	<50	<50	0.0	No Limit
		EP074: Chloromethane	74-87-3	50	µg/L	<50	<50	0.0	No Limit
		EP074: Vinyl chloride	75-01-4	50	µg/L	<50	<50	0.0	No Limit
		EP074: Bromomethane	74-83-9	50	µg/L	<50	<50	0.0	No Limit
		EP074: Chloroethane	75-00-3	50	µg/L	<50	<50	0.0	No Limit
		EP074: Trichlorofluoromethane	75-69-4	50	µg/L	<50	<50	0.0	No Limit
EP074F: Halogenated Aromatic Compounds (QC Lot: 5275892)									
ES2329503-001	Anonymous	EP074: Chlorobenzene	108-90-7	5	µg/L	<5	<5	0.0	No Limit
		EP074: Bromobenzene	108-86-1	5	µg/L	<5	<5	0.0	No Limit
		EP074: 2-Chlorotoluene	95-49-8	5	µg/L	<5	<5	0.0	No Limit
		EP074: 4-Chlorotoluene	106-43-4	5	µg/L	<5	<5	0.0	No Limit
		EP074: 1.3-Dichlorobenzene	541-73-1	5	µg/L	<5	<5	0.0	No Limit
		EP074: 1.4-Dichlorobenzene	106-46-7	5	µg/L	<5	<5	0.0	No Limit
		EP074: 1.2-Dichlorobenzene	95-50-1	5	µg/L	<5	<5	0.0	No Limit
		EP074: 1.2.4-Trichlorobenzene	120-82-1	5	µg/L	<5	<5	0.0	No Limit
		EP074: 1.2.3-Trichlorobenzene	87-61-6	5	µg/L	<5	<5	0.0	No Limit
ES2329639-004	COSDS	EP074: Chlorobenzene	108-90-7	5	µg/L	<5	<5	0.0	No Limit
		EP074: Bromobenzene	108-86-1	5	µg/L	<5	<5	0.0	No Limit
		EP074: 2-Chlorotoluene	95-49-8	5	µg/L	<5	<5	0.0	No Limit
		EP074: 4-Chlorotoluene	106-43-4	5	µg/L	<5	<5	0.0	No Limit
		EP074: 1.3-Dichlorobenzene	541-73-1	5	µg/L	<5	<5	0.0	No Limit
		EP074: 1.4-Dichlorobenzene	106-46-7	5	µg/L	<5	<5	0.0	No Limit
		EP074: 1.2-Dichlorobenzene	95-50-1	5	µg/L	<5	<5	0.0	No Limit
		EP074: 1.2.4-Trichlorobenzene	120-82-1	5	µg/L	<5	<5	0.0	No Limit
		EP074: 1.2.3-Trichlorobenzene	87-61-6	5	µg/L	<5	<5	0.0	No Limit
EP074G: Trihalomethanes (QC Lot: 5275892)									
ES2329503-001	Anonymous	EP074: Chloroform	67-66-3	5	µg/L	<5	<5	0.0	No Limit
		EP074: Bromodichloromethane	75-27-4	5	µg/L	<5	<5	0.0	No Limit

Sub-Matrix: **WATER**

				Laboratory Duplicate (DUP) Report					
Laboratory sample ID	*Sample ID*	*Method: Compound*	*CAS Number*	*LOR*	*Unit*	*Original Result*	*Duplicate Result*	*RPD (%)*	*Acceptable RPD (%)*
EP074G: Trihalomethanes (QC Lot: 5275892) - continued									
ES2329503-001	Anonymous	EP074: Dibromochloromethane	124-48-1	5	µg/L	<5	<5	0.0	No Limit
		EP074: Bromoform	75-25-2	5	µg/L	<5	<5	0.0	No Limit
ES2329639-004	COSDS	EP074: Chloroform	67-66-3	5	µg/L	<5	<5	0.0	No Limit
		EP074: Bromodichloromethane	75-27-4	5	µg/L	<5	<5	0.0	No Limit
		EP074: Dibromochloromethane	124-48-1	5	µg/L	<5	<5	0.0	No Limit
		EP074: Bromoform	75-25-2	5	µg/L	<5	<5	0.0	No Limit
EP075(SIM)A: Phenolic Compounds (QC Lot: 5271598)									
ES2329639-001	BADDS	EP075(SIM): Phenol	108-95-2	1	µg/L	<1.0	<1.0	0.0	No Limit
		EP075(SIM): 2-Chlorophenol	95-57-8	1	µg/L	<1.0	<1.0	0.0	No Limit
		EP075(SIM): 2-Methylphenol	95-48-7	1	µg/L	<1.0	<1.0	0.0	No Limit
		EP075(SIM): 2-Nitrophenol	88-75-5	1	µg/L	<1.0	<1.0	0.0	No Limit
		EP075(SIM): 2.4-Dimethylphenol	105-67-9	1	µg/L	<1.0	<1.0	0.0	No Limit
		EP075(SIM): 2.4-Dichlorophenol	120-83-2	1	µg/L	<1.0	<1.0	0.0	No Limit
		EP075(SIM): 2.6-Dichlorophenol	87-65-0	1	µg/L	<1.0	<1.0	0.0	No Limit
		EP075(SIM): 4-Chloro-3-methylphenol	59-50-7	1	µg/L	<1.0	<1.0	0.0	No Limit
		EP075(SIM): 2.4.6-Trichlorophenol	88-06-2	1	µg/L	<1.0	<1.0	0.0	No Limit
		EP075(SIM): 2.4.5-Trichlorophenol	95-95-4	1	µg/L	<1.0	<1.0	0.0	No Limit
		EP075(SIM): 3- & 4-Methylphenol	1319-77-3	2	µg/L	<2.0	<2.0	0.0	No Limit
		EP075(SIM): Pentachlorophenol	87-86-5	2	µg/L	<2.0	<2.0	0.0	No Limit
ES2329639-011	ROPUS	EP075(SIM): Phenol	108-95-2	1	µg/L	<1.0	<1.0	0.0	No Limit
		EP075(SIM): 2-Chlorophenol	95-57-8	1	µg/L	<1.0	<1.0	0.0	No Limit
		EP075(SIM): 2-Methylphenol	95-48-7	1	µg/L	<1.0	<1.0	0.0	No Limit
		EP075(SIM): 2-Nitrophenol	88-75-5	1	µg/L	<1.0	<1.0	0.0	No Limit
		EP075(SIM): 2.4-Dimethylphenol	105-67-9	1	µg/L	<1.0	<1.0	0.0	No Limit
		EP075(SIM): 2.4-Dichlorophenol	120-83-2	1	µg/L	<1.0	<1.0	0.0	No Limit
		EP075(SIM): 2.6-Dichlorophenol	87-65-0	1	µg/L	<1.0	<1.0	0.0	No Limit
		EP075(SIM): 4-Chloro-3-methylphenol	59-50-7	1	µg/L	<1.0	<1.0	0.0	No Limit
		EP075(SIM): 2.4.6-Trichlorophenol	88-06-2	1	µg/L	<1.0	<1.0	0.0	No Limit
		EP075(SIM): 2.4.5-Trichlorophenol	95-95-4	1	µg/L	<1.0	<1.0	0.0	No Limit
		EP075(SIM): 3- & 4-Methylphenol	1319-77-3	2	µg/L	<2.0	<2.0	0.0	No Limit
		EP075(SIM): Pentachlorophenol	87-86-5	2	µg/L	<2.0	<2.0	0.0	No Limit
EP075(SIM)B: Polynuclear Aromatic Hydrocarbons (QC Lot: 5271598)									
ES2329639-001	BADDS	EP075(SIM): Benzo(a)pyrene	50-32-8	0.5	µg/L	<0.5	<0.5	0.0	No Limit
		EP075(SIM): Naphthalene	91-20-3	1	µg/L	<1.0	<1.0	0.0	No Limit
		EP075(SIM): Acenaphthylene	208-96-8	1	µg/L	<1.0	<1.0	0.0	No Limit
		EP075(SIM): Acenaphthene	83-32-9	1	µg/L	<1.0	<1.0	0.0	No Limit
		EP075(SIM): Fluorene	86-73-7	1	µg/L	<1.0	<1.0	0.0	No Limit
		EP075(SIM): Phenanthrene	85-01-8	1	µg/L	<1.0	<1.0	0.0	No Limit
		EP075(SIM): Anthracene	120-12-7	1	µg/L	<1.0	<1.0	0.0	No Limit
		EP075(SIM): Fluoranthene	206-44-0	1	µg/L	<1.0	<1.0	0.0	No Limit

Sub-Matrix: **WATER**

				Laboratory Duplicate (DUP) Report					
Laboratory sample ID	*Sample ID*	*Method: Compound*	*CAS Number*	*LOR*	*Unit*	*Original Result*	*Duplicate Result*	*RPD (%)*	*Acceptable RPD (%)*
EP075(SIM)B: Polynuclear Aromatic Hydrocarbons (QC Lot: 5271598) - continued									
ES2329639-001	BADDS	EP075(SIM): Pyrene	129-00-0	1	µg/L	<1.0	<1.0	0.0	No Limit
		EP075(SIM): Benz(a)anthracene	56-55-3	1	µg/L	<1.0	<1.0	0.0	No Limit
		EP075(SIM): Chrysene	218-01-9	1	µg/L	<1.0	<1.0	0.0	No Limit
		EP075(SIM): Benzo(b+j)fluoranthene	205-99-2 205-82-3	1	µg/L	<1.0	<1.0	0.0	No Limit
		EP075(SIM): Benzo(k)fluoranthene	207-08-9	1	µg/L	<1.0	<1.0	0.0	No Limit
		EP075(SIM): Indeno(1.2.3.cd)pyrene	193-39-5	1	µg/L	<1.0	<1.0	0.0	No Limit
		EP075(SIM): Dibenz(a.h)anthracene	53-70-3	1	µg/L	<1.0	<1.0	0.0	No Limit
		EP075(SIM): Benzo(g.h.i)perylene	191-24-2	1	µg/L	<1.0	<1.0	0.0	No Limit
ES2329639-011	ROPUS	EP075(SIM): Benzo(a)pyrene	50-32-8	0.5	µg/L	<0.5	<0.5	0.0	No Limit
		EP075(SIM): Naphthalene	91-20-3	1	µg/L	<1.0	<1.0	0.0	No Limit
		EP075(SIM): Acenaphthylene	208-96-8	1	µg/L	<1.0	<1.0	0.0	No Limit
		EP075(SIM): Acenaphthene	83-32-9	1	µg/L	<1.0	<1.0	0.0	No Limit
		EP075(SIM): Fluorene	86-73-7	1	µg/L	<1.0	<1.0	0.0	No Limit
		EP075(SIM): Phenanthrene	85-01-8	1	µg/L	<1.0	<1.0	0.0	No Limit
		EP075(SIM): Anthracene	120-12-7	1	µg/L	<1.0	<1.0	0.0	No Limit
		EP075(SIM): Fluoranthene	206-44-0	1	µg/L	<1.0	<1.0	0.0	No Limit
		EP075(SIM): Pyrene	129-00-0	1	µg/L	<1.0	<1.0	0.0	No Limit
		EP075(SIM): Benz(a)anthracene	56-55-3	1	µg/L	<1.0	<1.0	0.0	No Limit
		EP075(SIM): Chrysene	218-01-9	1	µg/L	<1.0	<1.0	0.0	No Limit
		EP075(SIM): Benzo(b+j)fluoranthene	205-99-2 205-82-3	1	µg/L	<1.0	<1.0	0.0	No Limit
		EP075(SIM): Benzo(k)fluoranthene	207-08-9	1	µg/L	<1.0	<1.0	0.0	No Limit
		EP075(SIM): Indeno(1.2.3.cd)pyrene	193-39-5	1	µg/L	<1.0	<1.0	0.0	No Limit
		EP075(SIM): Dibenz(a.h)anthracene	53-70-3	1	µg/L	<1.0	<1.0	0.0	No Limit
		EP075(SIM): Benzo(g.h.i)perylene	191-24-2	1	µg/L	<1.0	<1.0	0.0	No Limit
EP080: BTEXN (QC Lot: 5275891)									
ES2329503-001	Anonymous	EP080: Benzene	71-43-2	1	µg/L	<1	<1	0.0	No Limit
		EP080: Toluene	108-88-3	2	µg/L	<2	<2	0.0	No Limit
		EP080: Ethylbenzene	100-41-4	2	µg/L	<2	<2	0.0	No Limit
		EP080: meta- & para-Xylene	108-38-3 106-42-3	2	µg/L	<2	<2	0.0	No Limit
		EP080: ortho-Xylene	95-47-6	2	µg/L	<2	<2	0.0	No Limit
		EP080: Naphthalene	91-20-3	5	µg/L	<5	<5	0.0	No Limit
ES2329639-004	COSDS	EP080: Benzene	71-43-2	1	µg/L	<1	<1	0.0	No Limit
		EP080: Toluene	108-88-3	2	µg/L	<2	<2	0.0	No Limit
		EP080: Ethylbenzene	100-41-4	2	µg/L	<2	<2	0.0	No Limit
		EP080: meta- & para-Xylene	108-38-3 106-42-3	2	µg/L	<2	<2	0.0	No Limit
		EP080: ortho-Xylene	95-47-6	2	µg/L	<2	<2	0.0	No Limit

Sub-Matrix: **WATER**

				Laboratory Duplicate (DUP) Report					
Laboratory sample ID	*Sample ID*	*Method: Compound*	*CAS Number*	*LOR*	*Unit*	*Original Result*	*Duplicate Result*	*RPD (%)*	*Acceptable RPD (%)*
EP080: BTEXN (QC Lot: 5275891) - continued									
ES2329639-004	COSDS	EP080: Naphthalene	91-20-3	5	µg/L	<5	<5	0.0	No Limit
EP234A: OP Pesticides (QC Lot: 5271267)									
ES2329169-001	Anonymous	EP234-1x: Bensulide	741-58-2	0.1	µg/L	<0.1	<0.1	0.0	No Limit
		EP234-1x: Methidathion	950-37-8	0.1	µg/L	<0.1	<0.1	0.0	No Limit
		EP234-1x: Pyrazophos	13457-18-6	0.1	µg/L	<0.1	<0.1	0.0	No Limit
		EP234-1x: Acephate	30560-19-1	0.5	µg/L	<0.5	<0.5	0.0	No Limit
		EP234-1x: Thiometon	640-15-3	0.5	µg/L	<0.5	<0.5	0.0	No Limit
		EP234-1x: Naftalofos	1491-41-4	1	µg/L	<1.0	<1.0	0.0	No Limit
		EP234-1x: Fosetyl Aluminium	39148-24-8	10	µg/L	<10	<10	0.0	No Limit
		EP234-1x: Formothion	2540-82-1	20	µg/L	<20	<20	0.0	No Limit
ES2329639-005	COSUS	EP234-1x: Bensulide	741-58-2	0.1	µg/L	<0.1	<0.1	0.0	No Limit
		EP234-1x: Methidathion	950-37-8	0.1	µg/L	<0.1	<0.1	0.0	No Limit
		EP234-1x: Pyrazophos	13457-18-6	0.1	µg/L	<0.1	<0.1	0.0	No Limit
		EP234-1x: Acephate	30560-19-1	0.5	µg/L	<0.5	<0.5	0.0	No Limit
		EP234-1x: Thiometon	640-15-3	0.5	µg/L	<0.5	<0.5	0.0	No Limit
		EP234-1x: Naftalofos	1491-41-4	1	µg/L	<1.0	<1.0	0.0	No Limit
		EP234-1x: Fosetyl Aluminium	39148-24-8	10	µg/L	<10	<10	0.0	No Limit
		EP234-1x: Formothion	2540-82-1	20	µg/L	<20	<20	0.0	No Limit
EP234A: OP Pesticides (QC Lot: 5271268)									
ES2329169-001	Anonymous	EP234-1: Sulfotep	3689-24-5	0.005	µg/L	<0.005	<0.005	0.0	No Limit
		EP234-1: Triazophos	24017-47-8	0.005	µg/L	<0.005	<0.005	0.0	No Limit
		EP234-1: Coumaphos	56-72-4	0.01	µg/L	<0.01	<0.01	0.0	No Limit
		EP234-1: Diazinon	333-41-5	0.01	µg/L	<0.01	<0.01	0.0	No Limit
		EP234-1: Ethoprophos	13194-48-4	0.01	µg/L	<0.01	<0.01	0.0	No Limit
		EP234-1: Fenamiphos	22224-92-6	0.01	µg/L	<0.01	<0.01	0.0	No Limit
		EP234-1: Fensulfothion	115-90-2	0.01	µg/L	<0.01	<0.01	0.0	No Limit
		EP234-1: Omethoate	1113-02-6	0.01	µg/L	<0.01	<0.01	0.0	No Limit
		EP234-1: Pirimiphos-ethyl	23505-41-1	0.01	µg/L	<0.01	<0.01	0.0	No Limit
		EP234-1: Pirimiphos-methyl	29232-93-7	0.01	µg/L	<0.01	<0.01	0.0	No Limit
		EP234-1: Profenofos	41198-08-7	0.01	µg/L	<0.01	<0.01	0.0	No Limit
		EP234-1: Terbufos	13071-79-9	0.01	µg/L	<0.01	<0.01	0.0	No Limit
		EP234-1: Tetrachlorvinphos	22248-79-9	0.01	µg/L	<0.01	<0.01	0.0	No Limit
		EP234-1: Azinphos-methyl	86-50-0	0.02	µg/L	<0.02	<0.02	0.0	No Limit
		EP234-1: Azinphos-ethyl	2642-71-9	0.02	µg/L	<0.02	<0.02	0.0	No Limit
		EP234-1: Carbofenothion	786-19-6	0.02	µg/L	<0.02	<0.02	0.0	No Limit
		EP234-1: Chlorfenvinphos	470-90-6	0.02	µg/L	<0.02	<0.02	0.0	No Limit
		EP234-1: Chlorpyrifos	2921-88-2	0.02	µg/L	<0.02	<0.02	0.0	No Limit
		EP234-1: Demeton-O	298-03-3	0.02	µg/L	<0.02	<0.02	0.0	No Limit
		EP234-1: Demeton-O & Demeton-S	298-03-3/126-75-0	0.02	µg/L	<0.02	<0.02	0.0	No Limit

Sub-Matrix: **WATER**

				Laboratory Duplicate (DUP) Report					
Laboratory sample ID	*Sample ID*	*Method: Compound*	*CAS Number*	*LOR*	*Unit*	*Original Result*	*Duplicate Result*	*RPD (%)*	*Acceptable RPD (%)*
EP234A: OP Pesticides (QC Lot: 5271268) - continued									
ES2329169-001	Anonymous	EP234-1: Demeton-S	126-75-0	0.02	µg/L	<0.02	<0.02	0.0	No Limit
		EP234-1: Demeton-S-methyl	919-86-8	0.02	µg/L	<0.02	<0.02	0.0	No Limit
		EP234-1: Dimethoate	60-51-5	0.02	µg/L	<0.02	<0.02	0.0	No Limit
		EP234-1: Ethion	563-12-2	0.02	µg/L	<0.02	<0.02	0.0	No Limit
		EP234-1: Malathion	121-75-5	0.02	µg/L	<0.02	<0.02	0.0	No Limit
		EP234-1: Mevinphos	7786-34-7	0.02	µg/L	<0.02	<0.02	0.0	No Limit
		EP234-1: Monocrotophos	6923-22-4	0.02	µg/L	<0.02	<0.02	0.0	No Limit
		EP234-1: Temephos	3383-96-8	0.02	µg/L	<0.02	<0.02	0.0	No Limit
		EP234-1: Trichlorfon	52-68-6	0.02	µg/L	<0.02	<0.02	0.0	No Limit
		EP234-1: Disulfoton	298-04-4	0.05	µg/L	<0.05	<0.05	0.0	No Limit
		EP234-1: EPN	2104-64-5	0.05	µg/L	<0.05	<0.05	0.0	No Limit
		EP234-1: Fenthion	55-38-9	0.05	µg/L	<0.05	<0.05	0.0	No Limit
		EP234-1: Sulprofos	35400-43-2	0.05	µg/L	<0.05	<0.05	0.0	No Limit
		EP234-1: Bromophos-ethyl	4824-78-6	0.1	µg/L	<0.10	<0.10	0.0	No Limit
		EP234-1: Phorate	298-02-2	0.1	µg/L	<0.1	<0.1	0.0	No Limit
		EP234-1: Prothiofos	34643-46-4	0.1	µg/L	<0.1	<0.1	0.0	No Limit
		EP234-1: Chlorpyrifos-methyl	5598-13-0	0.2	µg/L	<0.2	<0.2	0.0	No Limit
		EP234-1: Dichlorvos	62-73-7	0.2	µg/L	<0.20	<0.20	0.0	No Limit
		EP234-1: Parathion	56-38-2	0.2	µg/L	<0.2	<0.2	0.0	No Limit
		EP234-1: Parathion-methyl	298-00-0	0.5	µg/L	<0.5	<0.5	0.0	No Limit
		EP234-1: Trichloronate	327-98-0	0.5	µg/L	<0.5	<0.5	0.0	No Limit
		EP234-1: Fenchlorphos (Ronnel)	299-84-3	10	µg/L	<10	<10	0.0	No Limit
		EP234-1: Fenitrothion	122-14-5	2	µg/L	<2	<2	0.0	No Limit
ES2329639-005	COSUS	EP234-1: Sulfotep	3689-24-5	0.005	µg/L	<0.005	<0.005	0.0	No Limit
		EP234-1: Triazophos	24017-47-8	0.005	µg/L	<0.005	<0.005	0.0	No Limit
		EP234-1: Coumaphos	56-72-4	0.01	µg/L	<0.01	<0.01	0.0	No Limit
		EP234-1: Diazinon	333-41-5	0.01	µg/L	<0.01	<0.01	0.0	No Limit
		EP234-1: Ethoprophos	13194-48-4	0.01	µg/L	<0.01	<0.01	0.0	No Limit
		EP234-1: Fenamiphos	22224-92-6	0.01	µg/L	<0.01	<0.01	0.0	No Limit
		EP234-1: Fensulfothion	115-90-2	0.01	µg/L	<0.01	<0.01	0.0	No Limit
		EP234-1: Omethoate	1113-02-6	0.01	µg/L	<0.01	<0.01	0.0	No Limit
		EP234-1: Pirimiphos-ethyl	23505-41-1	0.01	µg/L	<0.01	<0.01	0.0	No Limit
		EP234-1: Pirimiphos-methyl	29232-93-7	0.01	µg/L	<0.01	<0.01	0.0	No Limit
		EP234-1: Profenofos	41198-08-7	0.01	µg/L	<0.01	<0.01	0.0	No Limit
		EP234-1: Terbufos	13071-79-9	0.01	µg/L	<0.01	<0.01	0.0	No Limit
		EP234-1: Tetrachlorvinphos	22248-79-9	0.01	µg/L	<0.01	<0.01	0.0	No Limit
		EP234-1: Azinphos-methyl	86-50-0	0.02	µg/L	<0.02	<0.02	0.0	No Limit
		EP234-1: Azinphos-ethyl	2642-71-9	0.02	µg/L	<0.02	<0.02	0.0	No Limit
		EP234-1: Carbofenothion	786-19-6	0.02	µg/L	<0.02	<0.02	0.0	No Limit
		EP234-1: Chlorfenvinphos	470-90-6	0.02	µg/L	<0.02	<0.02	0.0	No Limit

Sub-Matrix: **WATER**

				Laboratory Duplicate (DUP) Report					
Laboratory sample ID	*Sample ID*	*Method: Compound*	*CAS Number*	*LOR*	*Unit*	*Original Result*	*Duplicate Result*	*RPD (%)*	*Acceptable RPD (%)*
EP234A: OP Pesticides (QC Lot: 5271268) - continued									
ES2329639-005	COSUS	EP234-1: Chlorpyrifos	2921-88-2	0.02	µg/L	<0.02	<0.02	0.0	No Limit
		EP234-1: Demeton-O	298-03-3	0.02	µg/L	<0.02	<0.02	0.0	No Limit
		EP234-1: Demeton-O & Demeton-S	298-03-3/126-75-0	0.02	µg/L	<0.02	<0.02	0.0	No Limit
		EP234-1: Demeton-S	126-75-0	0.02	µg/L	<0.02	<0.02	0.0	No Limit
		EP234-1: Demeton-S-methyl	919-86-8	0.02	µg/L	<0.02	<0.02	0.0	No Limit
		EP234-1: Dimethoate	60-51-5	0.02	µg/L	<0.02	<0.02	0.0	No Limit
		EP234-1: Ethion	563-12-2	0.02	µg/L	<0.02	<0.02	0.0	No Limit
		EP234-1: Malathion	121-75-5	0.02	µg/L	<0.02	<0.02	0.0	No Limit
		EP234-1: Mevinphos	7786-34-7	0.02	µg/L	<0.02	<0.02	0.0	No Limit
		EP234-1: Monocrotophos	6923-22-4	0.02	µg/L	<0.02	<0.02	0.0	No Limit
		EP234-1: Temephos	3383-96-8	0.02	µg/L	<0.02	<0.02	0.0	No Limit
		EP234-1: Trichlorfon	52-68-6	0.02	µg/L	<0.02	<0.02	0.0	No Limit
		EP234-1: Disulfoton	298-04-4	0.05	µg/L	<0.05	<0.05	0.0	No Limit
		EP234-1: EPN	2104-64-5	0.05	µg/L	<0.05	<0.05	0.0	No Limit
		EP234-1: Fenthion	55-38-9	0.05	µg/L	<0.05	<0.05	0.0	No Limit
		EP234-1: Sulprofos	35400-43-2	0.05	µg/L	<0.05	<0.05	0.0	No Limit
		EP234-1: Bromophos-ethyl	4824-78-6	0.1	µg/L	<0.10	<0.10	0.0	No Limit
		EP234-1: Phorate	298-02-2	0.1	µg/L	<0.1	<0.1	0.0	No Limit
		EP234-1: Prothiofos	34643-46-4	0.1	µg/L	<0.1	<0.1	0.0	No Limit
		EP234-1: Chlorpyrifos-methyl	5598-13-0	0.2	µg/L	<0.2	<0.2	0.0	No Limit
		EP234-1: Dichlorvos	62-73-7	0.2	µg/L	<0.20	<0.20	0.0	No Limit
		EP234-1: Parathion	56-38-2	0.2	µg/L	<0.2	<0.2	0.0	No Limit
		EP234-1: Parathion-methyl	298-00-0	0.5	µg/L	<0.5	<0.5	0.0	No Limit
		EP234-1: Trichloronate	327-98-0	0.5	µg/L	<0.5	<0.5	0.0	No Limit
		EP234-1: Fenchlorphos (Ronnel)	299-84-3	10	µg/L	<10	<10	0.0	No Limit
		EP234-1: Fenitrothion	122-14-5	2	µg/L	<2	<2	0.0	No Limit

Method Blank (MB) and Laboratory Control Sample (LCS) Report

The quality control term Method / Laboratory Blank refers to an analyte free matrix to which all reagents are added in the same volumes or proportions as used in standard sample preparation. The purpose of this QC parameter is to monitor potential laboratory contamination. The quality control term Laboratory Control Sample (LCS) refers to a certified reference material, or a known interference free matrix spiked with target analytes. The purpose of this QC parameter is to monitor method precision and accuracy independent of sample matrix. Dynamic Recovery Limits are based on statistical evaluation of processed LCS.

Sub-Matrix: **WATER**

				Method Blank (MB) Report	Laboratory Control Spike (LCS) Report			
					Spike	Spike Recovery (%)	Acceptable Limits (%)	
Method: Compound	CAS Number	LOR	Unit	Result	Concentration	LCS	Low	High
EA015: Total Dissolved Solids dried at 180 ± 5 °C (QCLot: 5276376)								
EA015H: Total Dissolved Solids @180°C	----	10	mg/L	<10	2000 mg/L	99.4	87.0	109
				<10	293 mg/L	102	75.2	126
				<10	2380 mg/L	104	83.0	124
EA025: Total Suspended Solids dried at 104 ± 2°C (QCLot: 5276377)								
EA025H: Suspended Solids (SS)	----	5	mg/L	<5	150 mg/L	102	83.0	129
				<5	1000 mg/L	97.2	82.0	110
				<5	931 mg/L	104	83.0	118
EG020T: Total Metals by ICP-MS (QCLot: 5273142)								
EG020A-T: Arsenic	7440-38-2	0.001	mg/L	<0.001	0.1 mg/L	102	82.0	114
EG020A-T: Cadmium	7440-43-9	0.0001	mg/L	<0.0001	0.1 mg/L	100	84.0	112
EG020A-T: Chromium	7440-47-3	0.001	mg/L	<0.001	0.1 mg/L	101	86.0	116
EG020A-T: Copper	7440-50-8	0.001	mg/L	<0.001	0.1 mg/L	101	83.0	118
EG020A-T: Lead	7439-92-1	0.001	mg/L	<0.001	0.1 mg/L	99.6	85.0	115
EG020A-T: Manganese	7439-96-5	0.001	mg/L	<0.001	0.1 mg/L	103	85.0	113
EG020A-T: Nickel	7440-02-0	0.001	mg/L	<0.001	0.1 mg/L	99.7	84.0	116
EG020A-T: Zinc	7440-66-6	0.005	mg/L	<0.005	0.1 mg/L	102	79.0	117
EG020A-T: Iron	7439-89-6	0.05	mg/L	<0.05	0.5 mg/L	101	85.0	117
EG035T: Total Recoverable Mercury by FIMS (QCLot: 5276443)								
EG035T: Mercury	7439-97-6	0.0001	mg/L	<0.0001	0.01 mg/L	99.7	77.0	111
EK055G: Ammonia as N by Discrete Analyser (QCLot: 5274331)								
EK055G: Ammonia as N	7664-41-7	0.01	mg/L	<0.01	1 mg/L	103	90.0	114
EK057G: Nitrite as N by Discrete Analyser (QCLot: 5273480)								
EK057G: Nitrite as N	14797-65-0	0.01	mg/L	<0.01	0.5 mg/L	102	82.0	114
EK057G: Nitrite as N by Discrete Analyser (QCLot: 5273484)								
EK057G: Nitrite as N	14797-65-0	0.01	mg/L	<0.01	0.5 mg/L	100	82.0	114
EK059G: Nitrite plus Nitrate as N (NOx) by Discrete Analyser (QCLot: 5274332)								
EK059G: Nitrite + Nitrate as N	----	0.01	mg/L	<0.01	0.5 mg/L	106	91.0	113
EK061G: Total Kjeldahl Nitrogen By Discrete Analyser (QCLot: 5274337)								

Sub-Matrix: **WATER**

Method: Compound	CAS Number	LOR	Unit	Method Blank (MB) Report: Result	Laboratory Control Spike (LCS) Report: Spike Concentration	Spike Recovery (%): LCS	Acceptable Limits (%): Low	Acceptable Limits (%): High
EK061G: Total Kjeldahl Nitrogen By Discrete Analyser (QCLot: 5274337) - continued								
EK061G: Total Kjeldahl Nitrogen as N	----	0.1	mg/L	<0.1	10 mg/L	96.0	69.0	101
				<0.1	1 mg/L	105	70.0	118
				<0.1	5 mg/L	102	70.0	130
EK067G: Total Phosphorus as P by Discrete Analyser (QCLot: 5274336)								
EK067G: Total Phosphorus as P	----	0.01	mg/L	<0.01	4.42 mg/L	87.9	71.3	126
				<0.01	0.442 mg/L	93.8	71.3	126
				<0.01	1 mg/L	89.6	70.0	130
EK071G: Reactive Phosphorus as P by discrete analyser (QCLot: 5273483)								
EK071G: Reactive Phosphorus as P	14265-44-2	0.01	mg/L	<0.01	0.5 mg/L	108	85.0	117
EP008: Chlorophyll (QCLot: 5270835)								
EP008: Chlorophyll a	----	1	mg/m³	<1	20 mg/m³	95.4	70.0	130
EP008: Chlorophyll (QCLot: 5270836)								
EP008: Chlorophyll a	----	1	mg/m³	<1	20 mg/m³	95.2	70.0	130
EP020: Oil and Grease (O&G) (QCLot: 5276928)								
EP020: Oil & Grease	----	5	mg/L	<5	5000 mg/L	92.4	81.0	121
				<5	4000 mg/L	94.1	70.0	110
EP074D: Fumigants (QCLot: 5275892)								
EP074: 2.2-Dichloropropane	594-20-7	5	µg/L	<5	10 µg/L	96.0	68.0	122
EP074: 1.2-Dichloropropane	78-87-5	5	µg/L	<5	10 µg/L	106	76.0	118
EP074: cis-1.3-Dichloropropylene	10061-01-5	5	µg/L	<5	10 µg/L	105	62.0	120
EP074: trans-1.3-Dichloropropylene	10061-02-6	5	µg/L	<5	10 µg/L	109	60.0	114
EP074: 1.2-Dibromoethane (EDB)	106-93-4	5	µg/L	<5	10 µg/L	116	69.0	117
EP074E: Halogenated Aliphatic Compounds (QCLot: 5275892)								
EP074: Dichlorodifluoromethane	75-71-8	50	µg/L	<50	100 µg/L	89.9	60.6	138
EP074: Chloromethane	74-87-3	50	µg/L	<50	100 µg/L	93.4	67.4	130
EP074: Vinyl chloride	75-01-4	50	µg/L	<50	100 µg/L	95.2	69.4	129
EP074: Bromomethane	74-83-9	50	µg/L	<50	100 µg/L	99.8	56.0	140
EP074: Chloroethane	75-00-3	50	µg/L	<50	100 µg/L	98.7	61.0	139
EP074: Trichlorofluoromethane	75-69-4	50	µg/L	<50	100 µg/L	97.8	69.0	131
EP074: 1.1-Dichloroethene	75-35-4	5	µg/L	<5	10 µg/L	99.2	70.0	124
EP074: Iodomethane	74-88-4	5	µg/L	<5	10 µg/L	77.9	70.2	128
EP074: trans-1.2-Dichloroethene	156-60-5	5	µg/L	<5	10 µg/L	95.7	74.0	118
EP074: 1.1-Dichloroethane	75-34-3	5	µg/L	<5	10 µg/L	98.6	74.0	120
EP074: cis-1.2-Dichloroethene	156-59-2	5	µg/L	<5	10 µg/L	103	77.0	119

Sub-Matrix: **WATER**

Method: Compound	CAS Number	LOR	Unit	Method Blank (MB) Report: Result	Laboratory Control Spike (LCS) Report: Spike Concentration	Spike Recovery (%): LCS	Acceptable Limits (%): Low	Acceptable Limits (%): High
EP074E: Halogenated Aliphatic Compounds (QCLot: 5275892) - continued								
EP074: 1.1.1-Trichloroethane	71-55-6	5	µg/L	<5	10 µg/L	102	67.0	119
EP074: 1.1-Dichloropropylene	563-58-6	5	µg/L	<5	10 µg/L	97.8	73.0	119
EP074: Carbon Tetrachloride	56-23-5	5	µg/L	<5	10 µg/L	97.7	62.0	120
EP074: 1.2-Dichloroethane	107-06-2	5	µg/L	<5	10 µg/L	109	73.0	123
EP074: Trichloroethene	79-01-6	5	µg/L	<5	10 µg/L	112	76.0	118
EP074: Dibromomethane	74-95-3	5	µg/L	<5	10 µg/L	109	73.0	119
EP074: 1.1.2-Trichloroethane	79-00-5	5	µg/L	<5	10 µg/L	115	72.0	126
EP074: 1.3-Dichloropropane	142-28-9	5	µg/L	<5	10 µg/L	118	71.0	129
EP074: Tetrachloroethene	127-18-4	5	µg/L	<5	10 µg/L	107	72.0	124
EP074: 1.1.1.2-Tetrachloroethane	630-20-6	5	µg/L	<5	10 µg/L	103	66.0	114
EP074: trans-1.4-Dichloro-2-butene	110-57-6	5	µg/L	<5	10 µg/L	115	60.0	120
EP074: cis-1.4-Dichloro-2-butene	1476-11-5	5	µg/L	<5	10 µg/L	122	70.6	128
EP074: 1.1.2.2-Tetrachloroethane	79-34-5	5	µg/L	<5	10 µg/L	103	70.0	124
EP074: 1.2.3-Trichloropropane	96-18-4	5	µg/L	<5	10 µg/L	119	74.0	126
EP074: Pentachloroethane	76-01-7	5	µg/L	<5	10 µg/L	97.7	71.8	126
EP074: 1.2-Dibromo-3-chloropropane	96-12-8	5	µg/L	<5	10 µg/L	103	66.4	136
EP074: Hexachlorobutadiene	87-68-3	5	µg/L	<5	10 µg/L	86.7	58.0	130
EP074F: Halogenated Aromatic Compounds (QCLot: 5275892)								
EP074: Chlorobenzene	108-90-7	5	µg/L	<5	10 µg/L	104	79.0	117
EP074: Bromobenzene	108-86-1	5	µg/L	<5	10 µg/L	95.1	76.0	116
EP074: 2-Chlorotoluene	95-49-8	5	µg/L	<5	10 µg/L	97.1	73.0	119
EP074: 4-Chlorotoluene	106-43-4	5	µg/L	<5	10 µg/L	94.1	73.0	119
EP074: 1.3-Dichlorobenzene	541-73-1	5	µg/L	<5	10 µg/L	99.9	75.0	117
EP074: 1.4-Dichlorobenzene	106-46-7	5	µg/L	<5	10 µg/L	106	74.0	118
EP074: 1.2-Dichlorobenzene	95-50-1	5	µg/L	<5	10 µg/L	103	75.0	117
EP074: 1.2.4-Trichlorobenzene	120-82-1	5	µg/L	<5	10 µg/L	97.5	61.0	125
EP074: 1.2.3-Trichlorobenzene	87-61-6	5	µg/L	<5	10 µg/L	108	67.0	123
EP074G: Trihalomethanes (QCLot: 5275892)								
EP074: Chloroform	67-66-3	5	µg/L	<5	10 µg/L	102	72.0	120
EP074: Bromodichloromethane	75-27-4	5	µg/L	<5	10 µg/L	102	64.0	118
EP074: Dibromochloromethane	124-48-1	5	µg/L	<5	10 µg/L	112	65.0	115
EP074: Bromoform	75-25-2	5	µg/L	<5	10 µg/L	121	73.5	126
EP075(SIM)A: Phenolic Compounds (QCLot: 5271598)								
EP075(SIM): Phenol	108-95-2	1	µg/L	<1.0	5 µg/L	39.8	24.5	61.9

Sub-Matrix: **WATER**

Method: Compound	CAS Number	LOR	Unit	Method Blank (MB) Report: Result	Laboratory Control Spike (LCS) Report: Spike Concentration	Spike Recovery (%): LCS	Acceptable Limits (%): Low	Acceptable Limits (%): High
EP075(SIM)A: Phenolic Compounds (QCLot: 5271598) - continued								
EP075(SIM): 2-Chlorophenol	95-57-8	1	µg/L	<1.0	5 µg/L	67.2	52.0	90.0
EP075(SIM): 2-Methylphenol	95-48-7	1	µg/L	<1.0	5 µg/L	73.0	51.0	91.0
EP075(SIM): 3- & 4-Methylphenol	1319-77-3	2	µg/L	<2.0	10 µg/L	63.8	44.0	88.0
EP075(SIM): 2-Nitrophenol	88-75-5	1	µg/L	<1.0	5 µg/L	68.6	48.0	100
EP075(SIM): 2.4-Dimethylphenol	105-67-9	1	µg/L	<1.0	5 µg/L	77.2	49.0	99.0
EP075(SIM): 2.4-Dichlorophenol	120-83-2	1	µg/L	<1.0	5 µg/L	68.4	53.0	105
EP075(SIM): 2.6-Dichlorophenol	87-65-0	1	µg/L	<1.0	5 µg/L	70.4	57.0	105
EP075(SIM): 4-Chloro-3-methylphenol	59-50-7	1	µg/L	<1.0	5 µg/L	70.4	53.0	99.0
EP075(SIM): 2.4.6-Trichlorophenol	88-06-2	1	µg/L	<1.0	5 µg/L	73.0	50.0	106
EP075(SIM): 2.4.5-Trichlorophenol	95-95-4	1	µg/L	<1.0	5 µg/L	72.8	51.0	105
EP075(SIM): Pentachlorophenol	87-86-5	2	µg/L	<2.0	10 µg/L	47.0	10.0	95.0
EP075(SIM)B: Polynuclear Aromatic Hydrocarbons (QCLot: 5271598)								
EP075(SIM): Naphthalene	91-20-3	1	µg/L	<1.0	5 µg/L	67.4	50.0	94.0
EP075(SIM): Acenaphthylene	208-96-8	1	µg/L	<1.0	5 µg/L	71.4	63.6	114
EP075(SIM): Acenaphthene	83-32-9	1	µg/L	<1.0	5 µg/L	71.6	62.2	113
EP075(SIM): Fluorene	86-73-7	1	µg/L	<1.0	5 µg/L	74.3	63.9	115
EP075(SIM): Phenanthrene	85-01-8	1	µg/L	<1.0	5 µg/L	76.5	62.6	116
EP075(SIM): Anthracene	120-12-7	1	µg/L	<1.0	5 µg/L	75.4	64.3	116
EP075(SIM): Fluoranthene	206-44-0	1	µg/L	<1.0	5 µg/L	83.3	63.6	118
EP075(SIM): Pyrene	129-00-0	1	µg/L	<1.0	5 µg/L	83.6	63.1	118
EP075(SIM): Benz(a)anthracene	56-55-3	1	µg/L	<1.0	5 µg/L	80.8	64.1	117
EP075(SIM): Chrysene	218-01-9	1	µg/L	<1.0	5 µg/L	76.6	62.5	116
EP075(SIM): Benzo(b+j)fluoranthene	205-99-2 205-82-3	1	µg/L	<1.0	5 µg/L	84.7	61.7	119
EP075(SIM): Benzo(k)fluoranthene	207-08-9	1	µg/L	<1.0	5 µg/L	73.3	63.0	115
EP075(SIM): Benzo(a)pyrene	50-32-8	0.5	µg/L	<0.5	5 µg/L	76.2	63.3	117
EP075(SIM): Indeno(1.2.3.cd)pyrene	193-39-5	1	µg/L	<1.0	5 µg/L	77.0	59.9	118
EP075(SIM): Dibenz(a.h)anthracene	53-70-3	1	µg/L	<1.0	5 µg/L	76.8	61.2	117
EP075(SIM): Benzo(g.h.i)perylene	191-24-2	1	µg/L	<1.0	5 µg/L	78.3	59.1	118
EP080: BTEXN (QCLot: 5275891)								
EP080: Benzene	71-43-2	1	µg/L	<1	10 µg/L	89.2	68.3	119
EP080: Toluene	108-88-3	2	µg/L	<2	10 µg/L	87.9	73.5	120
EP080: Ethylbenzene	100-41-4	2	µg/L	<2	10 µg/L	87.9	73.8	122
EP080: meta- & para-Xylene	108-38-3 106-42-3	2	µg/L	<2	10 µg/L	89.6	73.0	122

Sub-Matrix: **WATER**

Method: Compound	CAS Number	LOR	Unit	Method Blank (MB) Report: Result	Laboratory Control Spike (LCS) Report: Spike Concentration	Spike Recovery (%): LCS	Acceptable Limits (%): Low	Acceptable Limits (%): High
EP080: BTEXN (QCLot: 5275891) - continued								
EP080: ortho-Xylene	95-47-6	2	µg/L	<2	10 µg/L	90.4	76.4	123
EP080: Naphthalene	91-20-3	5	µg/L	<5	10 µg/L	101	75.5	124
EP131A: Organochlorine Pesticides (QCLot: 5271594)								
EP131A: Aldrin	309-00-2	0.01	µg/L	<0.010	1.1 µg/L	88.9	34.0	145
EP131A: alpha-BHC	319-84-6	0.01	µg/L	<0.010	1.1 µg/L	101	27.2	131
EP131A: beta-BHC	319-85-7	0.01	µg/L	<0.010	1.1 µg/L	92.9	28.6	133
EP131A: delta-BHC	319-86-8	0.01	µg/L	<0.010	1.1 µg/L	101	36.0	131
EP131A: 4.4`-DDD	72-54-8	0.01	µg/L	<0.010	1.1 µg/L	105	36.0	142
EP131A: 4.4`-DDE	72-55-9	0.01	µg/L	<0.010	1.1 µg/L	93.0	30.4	112
EP131A: 4.4`-DDT	50-29-3	0.01	µg/L	<0.010	1.1 µg/L	106	29.5	142
EP131A: Dieldrin	60-57-1	0.01	µg/L	<0.010	1.1 µg/L	61.1	28.1	122
EP131A: alpha-Endosulfan	959-98-8	0.01	µg/L	<0.010	1.1 µg/L	101	34.0	119
EP131A: beta-Endosulfan	33213-65-9	0.01	µg/L	<0.010	1.1 µg/L	73.1	31.6	128
EP131A: Endosulfan sulfate	1031-07-8	0.01	µg/L	<0.010	1.1 µg/L	72.7	35.0	159
EP131A: Endrin	72-20-8	0.01	µg/L	<0.010	1.1 µg/L	100	21.5	165
EP131A: Endosulfan (sum)	115-29-7	0.01	µg/L	<0.010	----	----	----	----
EP131A: Endrin aldehyde	7421-93-4	0.01	µg/L	<0.010	1.1 µg/L	69.4	22.7	123
EP131A: Endrin ketone	53494-70-5	0.01	µg/L	<0.010	1.1 µg/L	109	16.3	144
EP131A: Heptachlor	76-44-8	0.005	µg/L	<0.005	1.1 µg/L	94.9	33.0	160
EP131A: Heptachlor epoxide	1024-57-3	0.01	µg/L	<0.010	1.1 µg/L	99.0	33.0	117
EP131A: Hexachlorobenzene (HCB)	118-74-1	0.01	µg/L	<0.010	1.1 µg/L	119	23.6	126
EP131A: gamma-BHC	58-89-9	0.01	µg/L	<0.010	1.1 µg/L	99.0	28.7	134
EP131A: Methoxychlor	72-43-5	0.01	µg/L	<0.010	1.1 µg/L	119	29.5	150
EP131A: cis-Chlordane	5103-71-9	0.01	µg/L	<0.010	1.1 µg/L	103	27.0	116
EP131A: trans-Chlordane	5103-74-2	0.01	µg/L	<0.010	1.1 µg/L	113	31.2	119
EP131A: Total Chlordane (sum)	----	0.01	µg/L	<0.010	----	----	----	----
EP131A: Sum of DDD + DDE + DDT	72-54-8/72-5 5-9/50-2	0.01	µg/L	<0.010	----	----	----	----
EP131B: Polychlorinated Biphenyls (as Aroclors) (QCLot: 5271595)								
EP131B-ST: Aroclor 1254	11097-69-1	0.005	µg/L	<0.005	0.00022 µg/L	91.2	61.6	123
EP234A: OP Pesticides (QCLot: 5271267)								
EP234-1x: Acephate	30560-19-1	0.5	µg/L	<0.5	5 µg/L	105	70.0	130
EP234-1x: Bensulide	741-58-2	0.1	µg/L	<0.1	5 µg/L	121	70.0	130
EP234-1x: Formothion	2540-82-1	20	µg/L	<20	----	----	----	----

Sub-Matrix: **WATER**

Method: Compound	CAS Number	LOR	Unit	Method Blank (MB) Report: Result	Laboratory Control Spike (LCS) Report: Spike Concentration	Spike Recovery (%): LCS	Acceptable Limits (%): Low	Acceptable Limits (%): High
EP234A: OP Pesticides (QCLot: 5271267) - continued								
EP234-1x: Fosetyl Aluminium	39148-24-8	10	µg/L	<10	5 µg/L	126	70.0	130
EP234-1x: Methidathion	950-37-8	0.1	µg/L	<0.1	5 µg/L	114	70.0	130
EP234-1x: Naftalofos	1491-41-4	1	µg/L	<1.0	5 µg/L	84.0	70.0	130
EP234-1x: Pyrazophos	13457-18-6	0.1	µg/L	<0.1	5 µg/L	112	70.0	130
EP234-1x: Thiometon	640-15-3	0.5	µg/L	<0.5	5 µg/L	88.3	70.0	130
EP234A: OP Pesticides (QCLot: 5271268)								
EP234-1: Azinphos-methyl	86-50-0	0.02	µg/L	<0.02	0.2 µg/L	84.8	77.0	129
EP234-1: Azinphos-ethyl	2642-71-9	0.02	µg/L	<0.02	0.2 µg/L	96.4	75.0	135
EP234-1: Bromophos-ethyl	4824-78-6	0.1	µg/L	<0.10	1 µg/L	98.3	70.0	130
EP234-1: Carbofenothion	786-19-6	0.02	µg/L	<0.02	0.2 µg/L	100	70.0	130
EP234-1: Chlorfenvinphos	470-90-6	0.02	µg/L	<0.02	0.2 µg/L	111	74.0	134
EP234-1: Chlorpyrifos	2921-88-2	0.02	µg/L	<0.02	0.2 µg/L	106	70.0	130
EP234-1: Chlorpyrifos-methyl	5598-13-0	0.2	µg/L	<0.2	2 µg/L	89.5	70.0	130
EP234-1: Coumaphos	56-72-4	0.01	µg/L	<0.01	0.1 µg/L	116	70.0	130
EP234-1: Demeton-O	298-03-3	0.02	µg/L	<0.02	0.05 µg/L	89.8	64.0	134
EP234-1: Demeton-O & Demeton-S	298-03-3/126-75-0	0.02	µg/L	<0.02	0.1 µg/L	96.4	79.0	127
EP234-1: Demeton-S	126-75-0	0.02	µg/L	<0.02	0.05 µg/L	103	63.0	135
EP234-1: Demeton-S-methyl	919-86-8	0.02	µg/L	<0.02	0.2 µg/L	81.1	70.0	128
EP234-1: Diazinon	333-41-5	0.01	µg/L	<0.01	0.1 µg/L	105	68.0	138
EP234-1: Dichlorvos	62-73-7	0.2	µg/L	<0.20	2 µg/L	104	76.0	128
EP234-1: Dimethoate	60-51-5	0.02	µg/L	<0.02	0.2 µg/L	82.4	75.0	127
EP234-1: Disulfoton	298-04-4	0.05	µg/L	<0.05	0.5 µg/L	95.8	72.0	134
EP234-1: EPN	2104-64-5	0.05	µg/L	<0.05	0.5 µg/L	105	70.0	130
EP234-1: Ethion	563-12-2	0.02	µg/L	<0.02	0.2 µg/L	95.6	70.0	130
EP234-1: Ethoprophos	13194-48-4	0.01	µg/L	<0.01	0.1 µg/L	84.6	78.0	128
EP234-1: Fenamiphos	22224-92-6	0.01	µg/L	<0.01	0.1 µg/L	103	71.0	135
EP234-1: Fenchlorphos (Ronnel)	299-84-3	10	µg/L	<10	100 µg/L	105	70.0	130
EP234-1: Fenitrothion	122-14-5	2	µg/L	<2	20 µg/L	95.6	64.0	136
EP234-1: Fensulfothion	115-90-2	0.01	µg/L	<0.01	0.1 µg/L	109	79.0	125
EP234-1: Fenthion	55-38-9	0.05	µg/L	<0.05	0.5 µg/L	119	70.0	130
EP234-1: Malathion	121-75-5	0.02	µg/L	<0.02	0.2 µg/L	102	70.0	130
EP234-1: Mevinphos	7786-34-7	0.02	µg/L	<0.02	0.2 µg/L	109	77.0	123
EP234-1: Monocrotophos	6923-22-4	0.02	µg/L	<0.02	0.2 µg/L	109	75.0	129
EP234-1: Omethoate	1113-02-6	0.01	µg/L	<0.01	0.1 µg/L	100	74.0	130

Sub-Matrix: **WATER**

Method: Compound	CAS Number	LOR	Unit	Method Blank (MB) Report: Result	Laboratory Control Spike (LCS) Report: Spike Concentration	Spike Recovery (%): LCS	Acceptable Limits (%): Low	Acceptable Limits (%): High
EP234A: OP Pesticides (QCLot: 5271268) - continued								
EP234-1: Parathion	56-38-2	0.2	µg/L	<0.2	2 µg/L	75.2	69.0	139
EP234-1: Parathion-methyl	298-00-0	0.5	µg/L	<0.5	20 µg/L	87.6	66.0	140
EP234-1: Phorate	298-02-2	0.1	µg/L	<0.1	1 µg/L	113	68.0	136
EP234-1: Pirimiphos-ethyl	23505-41-1	0.01	µg/L	<0.01	0.1 µg/L	94.1	70.0	130
EP234-1: Pirimiphos-methyl	29232-93-7	0.01	µg/L	<0.01	0.1 µg/L	94.9	71.0	137
EP234-1: Profenofos	41198-08-7	0.01	µg/L	<0.01	0.1 µg/L	96.3	70.0	130
EP234-1: Prothiofos	34643-46-4	0.1	µg/L	<0.1	1 µg/L	87.6	70.0	130
EP234-1: Sulfotep	3689-24-5	0.005	µg/L	<0.005	0.05 µg/L	105	71.0	137
EP234-1: Sulprofos	35400-43-2	0.05	µg/L	<0.05	0.5 µg/L	109	70.0	130
EP234-1: Temephos	3383-96-8	0.02	µg/L	<0.02	0.2 µg/L	93.1	70.0	130
EP234-1: Terbufos	13071-79-9	0.01	µg/L	<0.01	0.1 µg/L	103	70.0	130
EP234-1: Tetrachlorvinphos	22248-79-9	0.01	µg/L	<0.01	0.1 µg/L	97.0	74.0	128
EP234-1: Triazophos	24017-47-8	0.005	µg/L	<0.005	0.05 µg/L	107	77.0	131
EP234-1: Trichlorfon	52-68-6	0.02	µg/L	<0.02	0.2 µg/L	85.5	70.0	130
EP234-1: Trichloronate	327-98-0	0.5	µg/L	<0.5	5 µg/L	99.2	63.0	139

Matrix Spike (MS) Report

The quality control term Matrix Spike (MS) refers to an intralaboratory split sample spiked with a representative set of target analytes. The purpose of this QC parameter is to monitor potential matrix effects on analyte recoveries. Static Recovery Limits as per laboratory Data Quality Objectives (DQOs). Ideal recovery ranges stated may be waived in the event of sample matrix interference.

Sub-Matrix: **WATER**

Laboratory sample ID	Sample ID	Method: Compound	CAS Number	Matrix Spike (MS) Report: Spike Concentration	SpikeRecovery(%): MS	Acceptable Limits (%): Low	Acceptable Limits (%): High
EG020T: Total Metals by ICP-MS (QCLot: 5273142)							
ES2329639-002	BADMS	EG020A-T: Arsenic	7440-38-2	1 mg/L	95.2	70.0	130
		EG020A-T: Cadmium	7440-43-9	0.125 mg/L	81.6	70.0	130
		EG020A-T: Chromium	7440-47-3	1 mg/L	104	70.0	130
		EG020A-T: Copper	7440-50-8	1 mg/L	106	70.0	130
		EG020A-T: Lead	7439-92-1	1 mg/L	108	70.0	130
		EG020A-T: Manganese	7439-96-5	1 mg/L	100	70.0	130
		EG020A-T: Nickel	7440-02-0	1 mg/L	93.2	70.0	130
		EG020A-T: Zinc	7440-66-6	5 mg/L	99.8	70.0	130
EG035T: Total Recoverable Mercury by FIMS (QCLot: 5276443)							
ES2329572-002	Anonymous	EG035T: Mercury	7439-97-6	0.01 mg/L	70.2	70.0	130
EK055G: Ammonia as N by Discrete Analyser (QCLot: 5274331)							
ES2329639-001	BADDS	EK055G: Ammonia as N	7664-41-7	1 mg/L	103	70.0	130

Sub-Matrix: **WATER**

				Matrix Spike (MS) Report			
				Spike	SpikeRecovery(%)	Acceptable Limits (%)	
Laboratory sample ID	*Sample ID*	*Method: Compound*	*CAS Number*	*Concentration*	*MS*	*Low*	*High*
EK057G: Nitrite as N by Discrete Analyser (QCLot: 5273480)							
ES2329573-001	Anonymous	EK057G: Nitrite as N	14797-65-0	0.5 mg/L	95.7	70.0	130
EK057G: Nitrite as N by Discrete Analyser (QCLot: 5273484)							
ES2329639-005	COSUS	EK057G: Nitrite as N	14797-65-0	0.5 mg/L	111	70.0	130
EK059G: Nitrite plus Nitrate as N (NOx) by Discrete Analyser (QCLot: 5274332)							
ES2329639-001	BADDS	EK059G: Nitrite + Nitrate as N	----	0.5 mg/L	104	70.0	130
EK061G: Total Kjeldahl Nitrogen By Discrete Analyser (QCLot: 5274337)							
ES2329639-002	BADMS	EK061G: Total Kjeldahl Nitrogen as N	----	10 mg/L	98.3	70.0	130
EK067G: Total Phosphorus as P by Discrete Analyser (QCLot: 5274336)							
ES2329639-002	BADMS	EK067G: Total Phosphorus as P	----	2 mg/L	89.7	70.0	130
EK071G: Reactive Phosphorus as P by discrete analyser (QCLot: 5273483)							
ES2329639-005	COSUS	EK071G: Reactive Phosphorus as P	14265-44-2	0.5 mg/L	104	70.0	130
EP074E: Halogenated Aliphatic Compounds (QCLot: 5275892)							
ES2329503-001	Anonymous	EP074: 1.1-Dichloroethene	75-35-4	25 µg/L	88.4	70.0	130
		EP074: Trichloroethene	79-01-6	25 µg/L	105	70.0	130
EP074F: Halogenated Aromatic Compounds (QCLot: 5275892)							
ES2329503-001	Anonymous	EP074: Chlorobenzene	108-90-7	25 µg/L	107	70.0	130
EP075(SIM)A: Phenolic Compounds (QCLot: 5271598)							
ES2329639-002	BADMS	EP075(SIM): Phenol	108-95-2	20 µg/L	32.4	20.0	130
		EP075(SIM): 2-Chlorophenol	95-57-8	20 µg/L	76.4	60.0	130
		EP075(SIM): 2-Nitrophenol	88-75-5	20 µg/L	75.2	60.0	130
		EP075(SIM): 4-Chloro-3-methylphenol	59-50-7	20 µg/L	79.0	70.0	130
		EP075(SIM): Pentachlorophenol	87-86-5	20 µg/L	41.1	20.0	130
EP075(SIM)B: Polynuclear Aromatic Hydrocarbons (QCLot: 5271598)							
ES2329639-002	BADMS	EP075(SIM): Acenaphthene	83-32-9	20 µg/L	76.3	70.0	130
		EP075(SIM): Pyrene	129-00-0	20 µg/L	89.0	70.0	130
EP080: BTEXN (QCLot: 5275891)							
ES2329503-003	Anonymous	EP080: Benzene	71-43-2	25 µg/L	105	70.0	130
		EP080: Toluene	108-88-3	25 µg/L	114	70.0	130
		EP080: Ethylbenzene	100-41-4	25 µg/L	111	70.0	130
		EP080: meta- & para-Xylene	108-38-3 106-42-3	25 µg/L	108	70.0	130
		EP080: ortho-Xylene	95-47-6	25 µg/L	108	70.0	130
		EP080: Naphthalene	91-20-3	25 µg/L	112	70.0	130
EP234A: OP Pesticides (QCLot: 5271267)							
ES2329169-001	Anonymous						

Sub-Matrix: **WATER**

				Matrix Spike (MS) Report			
				Spike	SpikeRecovery(%)	Acceptable Limits (%)	
Laboratory sample ID	Sample ID	Method: Compound	CAS Number	Concentration	MS	Low	High
EP234A: OP Pesticides (QCLot: 5271267) - continued							
ES2329169-001	Anonymous	EP234-1x: Acephate	30560-19-1	5 µg/L	# Not Determined	70.0	130
		EP234-1x: Bensulide	741-58-2	5 µg/L	# 0.2	70.0	130
		EP234-1x: Fosetyl Aluminium	39148-24-8	5 µg/L	128	70.0	130
		EP234-1x: Methidathion	950-37-8	5 µg/L	# 5.5	70.0	130
		EP234-1x: Naftalofos	1491-41-4	5 µg/L	107	70.0	130
		EP234-1x: Pyrazophos	13457-18-6	5 µg/L	# 46.2	70.0	130
		EP234-1x: Thiometon	640-15-3	5 µg/L	# Not Determined	70.0	130
EP234A: OP Pesticides (QCLot: 5271268)							
ES2329169-001	Anonymous	EP234-1: Azinphos-methyl	86-50-0	0.2 µg/L	# 13.3	70.0	130
		EP234-1: Azinphos-ethyl	2642-71-9	0.2 µg/L	# 3.4	70.0	130
		EP234-1: Bromophos-ethyl	4824-78-6	1 µg/L	# 45.4	70.0	130
		EP234-1: Carbofenothion	786-19-6	0.2 µg/L	# Not Determined	70.0	130
		EP234-1: Chlorfenvinphos	470-90-6	0.2 µg/L	120	70.0	130
		EP234-1: Chlorpyrifos	2921-88-2	0.2 µg/L	# 166	70.0	130
		EP234-1: Chlorpyrifos-methyl	5598-13-0	2 µg/L	# 49.7	58.0	136
		EP234-1: Coumaphos	56-72-4	0.1 µg/L	# 17.2	70.0	130
		EP234-1: Demeton-O	298-03-3	0.05 µg/L	# Not Determined	70.0	130
		EP234-1: Demeton-O & Demeton-S	298-03-3/126-75-0	0.1 µg/L	# 0.0	69.0	129
		EP234-1: Demeton-S	126-75-0	0.05 µg/L	# 0.0	70.0	130
		EP234-1: Demeton-S-methyl	919-86-8	0.2 µg/L	# 0.0	70.0	130
		EP234-1: Diazinon	333-41-5	0.1 µg/L	# 3.0	70.0	130
		EP234-1: Dichlorvos	62-73-7	2 µg/L	97.7	70.0	130
		EP234-1: Dimethoate	60-51-5	0.2 µg/L	# Not Determined	69.0	131
		EP234-1: Disulfoton	298-04-4	0.5 µg/L	# 1.5	70.0	130
		EP234-1: EPN	2104-64-5	0.5 µg/L	# Not Determined	70.0	130
		EP234-1: Ethion	563-12-2	0.2 µg/L	# 0.7	70.0	130
		EP234-1: Ethoprophos	13194-48-4	0.1 µg/L	78.3	70.0	132
		EP234-1: Fenamiphos	22224-92-6	0.1 µg/L	# Not Determined	70.0	130
		EP234-1: Fenchlorphos (Ronnel)	299-84-3	100 µg/L	# 34.5	71.0	133
		EP234-1: Fenitrothion	122-14-5	20 µg/L	# 24.7	64.0	136
		EP234-1: Fensulfothion	115-90-2	0.1 µg/L	# 5.7	83.0	123
		EP234-1: Fenthion	55-38-9	0.5 µg/L	# 0.2	70.0	130

Sub-Matrix: **WATER**

				Matrix Spike (MS) Report			
				Spike	SpikeRecovery(%)	Acceptable Limits (%)	
Laboratory sample ID	*Sample ID*	*Method: Compound*	*CAS Number*	*Concentration*	*MS*	*Low*	*High*
EP234A: OP Pesticides (QCLot: 5271268) - continued							
ES2329169-001	Anonymous	EP234-1: Malathion	121-75-5	0.2 µg/L	# 21.0	70.0	130
		EP234-1: Mevinphos	7786-34-7	0.2 µg/L	105	69.0	125
		EP234-1: Monocrotophos	6923-22-4	0.2 µg/L	114	70.0	128
		EP234-1: Omethoate	1113-02-6	0.1 µg/L	# 132	70.0	130
		EP234-1: Parathion	56-38-2	2 µg/L	# 11.3	70.0	130
		EP234-1: Parathion-methyl	298-00-0	20 µg/L	# 51.9	70.0	140
		EP234-1: Phorate	298-02-2	1 µg/L	# 0.0	70.0	130
		EP234-1: Pirimiphos-ethyl	23505-41-1	0.1 µg/L	# 25.2	70.0	130
		EP234-1: Pirimiphos-methyl	29232-93-7	0.1 µg/L	# 2.0	70.0	130
		EP234-1: Profenofos	41198-08-7	0.1 µg/L	78.6	70.0	130
		EP234-1: Prothiofos	34643-46-4	1 µg/L	# 16.3	70.0	130
		EP234-1: Sulfotep	3689-24-5	0.05 µg/L	# 8.4	63.0	135
		EP234-1: Sulprofos	35400-43-2	0.5 µg/L	# Not Determined	70.0	130
		EP234-1: Temephos	3383-96-8	0.2 µg/L	# 0.6	70.0	130
		EP234-1: Terbufos	13071-79-9	0.1 µg/L	# 1.6	70.0	130
		EP234-1: Tetrachlorvinphos	22248-79-9	0.1 µg/L	87.0	77.0	125
		EP234-1: Triazophos	24017-47-8	0.05 µg/L	# 70.6	74.0	132
		EP234-1: Trichlorfon	52-68-6	0.2 µg/L	# 66.2	70.0	130
		EP234-1: Trichloronate	327-98-0	5 µg/L	# 0.1	63.0	139

QA/QC Compliance Assessment to assist with Quality Review

Work Order	: **ES2329639**	Page	: 1 of 14
Client	: **GHD PTY LTD**	Laboratory	: Environmental Division Sydney
Contact	: MR HENRY LUO	Telephone	: +61-2-8784 8555
Project	: 12554717	Date Samples Received	: 31-Aug-2023
Site	: ----	Issue Date	: 08-Sep-2023
Sampler	: EMILY SMITH, Jackson Miller	No. of samples received	: 14
Order number	: 12554717	No. of samples analysed	: 14

This report is automatically generated by the ALS LIMS through interpretation of the ALS Quality Control Report and several Quality Assurance parameters measured by ALS. This automated reporting highlights any non-conformances, facilitates faster and more accurate data validation and is designed to assist internal expert and external Auditor review. Many components of this report contribute to the overall DQO assessment and reporting for guideline compliance.

Brief method summaries and references are also provided to assist in traceability.

Summary of Outliers

Outliers : Quality Control Samples

This report highlights outliers flagged in the Quality Control (QC) Report.

- **NO Method Blank value outliers occur.**
- **NO Duplicate outliers occur.**
- **NO Laboratory Control outliers occur.**
- **Matrix Spike outliers exist - please see following pages for full details.**
- **Surrogate recovery outliers exist for all regular sample matrices - please see following pages for full details.**

Outliers : Analysis Holding Time Compliance

- **NO Analysis Holding Time Outliers exist.**

Outliers : Frequency of Quality Control Samples

- **Quality Control Sample Frequency Outliers exist - please see following pages for full details.**

Outliers : Quality Control Samples

Duplicates, Method Blanks, Laboratory Control Samples and Matrix Spikes

Matrix: **WATER**

Compound Group Name	Laboratory Sample ID	Client Sample ID	Analyte	CAS Number	Data	Limits	Comment
Matrix Spike (MS) Recoveries							
EP234A: OP Pesticides	ES2329169--001	Anonymous	**Azinphos-methyl**	86-50-0	13.3 %	70.0-130%	**Recovery less than lower data quality objective**
EP234A: OP Pesticides	ES2329169--001	Anonymous	**Azinphos-ethyl**	2642-71-9	3.4 %	70.0-130%	**Recovery less than lower data quality objective**
EP234A: OP Pesticides	ES2329169--001	Anonymous	**Bromophos-ethyl**	4824-78-6	45.4 %	70.0-130%	**Recovery less than lower data quality objective**
EP234A: OP Pesticides	ES2329169--001	Anonymous	**Chlorpyrifos**	2921-88-2	166 %	70.0-130%	**Recovery greater than upper data quality objective**
EP234A: OP Pesticides	ES2329169--001	Anonymous	**Chlorpyrifos-methyl**	5598-13-0	49.7 %	58.0-136%	**Recovery less than lower data quality objective**
EP234A: OP Pesticides	ES2329169--001	Anonymous	**Coumaphos**	56-72-4	17.2 %	70.0-130%	**Recovery less than lower data quality objective**
EP234A: OP Pesticides	ES2329169--001	Anonymous	**Demeton-O & Demeton-S**	298-03-3/126-75-0	0.0 %	69.0-129%	**Recovery less than lower data quality objective**
EP234A: OP Pesticides	ES2329169--001	Anonymous	**Demeton-S**	126-75-0	0.0 %	70.0-130%	**Recovery less than lower data quality objective**
EP234A: OP Pesticides	ES2329169--001	Anonymous	**Demeton-S-methyl**	919-86-8	0.0 %	70.0-130%	**Recovery less than lower data quality objective**
EP234A: OP Pesticides	ES2329169--001	Anonymous	**Diazinon**	333-41-5	3.0 %	70.0-130%	**Recovery less than lower data quality objective**
EP234A: OP Pesticides	ES2329169--001	Anonymous	**Disulfoton**	298-04-4	1.5 %	70.0-130%	**Recovery less than lower data quality objective**
EP234A: OP Pesticides	ES2329169--001	Anonymous	**Ethion**	563-12-2	0.7 %	70.0-130%	**Recovery less than lower data quality objective**
EP234A: OP Pesticides	ES2329169--001	Anonymous	**Fenchlorphos (Ronnel)**	299-84-3	34.5 %	71.0-133%	**Recovery less than lower data quality objective**
EP234A: OP Pesticides	ES2329169--001	Anonymous	**Fenitrothion**	122-14-5	24.7 %	64.0-136%	**Recovery less than lower data quality objective**
EP234A: OP Pesticides	ES2329169--001	Anonymous	**Fensulfothion**	115-90-2	5.7 %	83.0-123%	**Recovery less than lower data quality objective**
EP234A: OP Pesticides	ES2329169--001	Anonymous	**Fenthion**	55-38-9	0.2 %	70.0-130%	**Recovery less than lower data quality objective**
EP234A: OP Pesticides	ES2329169--001	Anonymous	**Malathion**	121-75-5	21.0 %	70.0-130%	**Recovery less than lower data quality objective**
EP234A: OP Pesticides	ES2329169--001	Anonymous	**Omethoate**	1113-02-6	132 %	70.0-130%	**Recovery greater than upper data quality objective**
EP234A: OP Pesticides	ES2329169--001	Anonymous	**Parathion**	56-38-2	11.3 %	70.0-130%	**Recovery less than lower data quality objective**
EP234A: OP Pesticides	ES2329169--001	Anonymous	**Parathion-methyl**	298-00-0	51.9 %	70.0-140%	**Recovery less than lower data quality objective**

Matrix: **WATER**

Compound Group Name	Laboratory Sample ID	Client Sample ID	Analyte	CAS Number	Data	Limits	Comment
Matrix Spike (MS) Recoveries - Continued							
EP234A: OP Pesticides	ES2329169--001	Anonymous	**Phorate**	298-02-2	0.0 %	70.0-130%	**Recovery less than lower data quality objective**
EP234A: OP Pesticides	ES2329169--001	Anonymous	**Pirimiphos-ethyl**	23505-41-1	25.2 %	70.0-130%	**Recovery less than lower data quality objective**
EP234A: OP Pesticides	ES2329169--001	Anonymous	**Pirimiphos-methyl**	29232-93-7	2.0 %	70.0-130%	**Recovery less than lower data quality objective**
EP234A: OP Pesticides	ES2329169--001	Anonymous	**Prothiofos**	34643-46-4	16.3 %	70.0-130%	**Recovery less than lower data quality objective**
EP234A: OP Pesticides	ES2329169--001	Anonymous	**Sulfotep**	3689-24-5	8.4 %	63.0-135%	**Recovery less than lower data quality objective**
EP234A: OP Pesticides	ES2329169--001	Anonymous	**Temephos**	3383-96-8	0.6 %	70.0-130%	**Recovery less than lower data quality objective**
EP234A: OP Pesticides	ES2329169--001	Anonymous	**Terbufos**	13071-79-9	1.6 %	70.0-130%	**Recovery less than lower data quality objective**
EP234A: OP Pesticides	ES2329169--001	Anonymous	**Triazophos**	24017-47-8	70.6 %	74.0-132%	**Recovery less than lower data quality objective**
EP234A: OP Pesticides	ES2329169--001	Anonymous	**Trichlorfon**	52-68-6	66.2 %	70.0-130%	**Recovery less than lower data quality objective**
EP234A: OP Pesticides	ES2329169--001	Anonymous	**Trichloronate**	327-98-0	0.1 %	63.0-139%	**Recovery less than lower data quality objective**
EP234A: OP Pesticides	ES2329169--001	Anonymous	**Bensulide**	741-58-2	0.2 %	70.0-130%	**Recovery less than lower data quality objective**
EP234A: OP Pesticides	ES2329169--001	Anonymous	**Methidathion**	950-37-8	5.5 %	70.0-130%	**Recovery less than lower data quality objective**
EP234A: OP Pesticides	ES2329169--001	Anonymous	**Pyrazophos**	13457-18-6	46.2 %	70.0-130%	**Recovery less than lower data quality objective**

Regular Sample Surrogates

Sub-Matrix: **WATER**

Compound Group Name	Laboratory Sample ID	Client Sample ID	Analyte	CAS Number	Data	Limits	Comment
Samples Submitted							
EP074S: VOC Surrogates	ES2329639-007	HINUS	**4-Bromofluorobenzene**	460-00-4	80.7 %	80.8-124 %	**Recovery less than lower data quality objective**

Outliers : Frequency of Quality Control Samples

Matrix: **WATER**

Quality Control Sample Type	Count		Rate (%)		Quality Control Specification
Method	QC 0	Regular	Actual	Expected	
Laboratory Duplicates (DUP)					
Organochlorine Pesticides (Ultra-trace)	0	13	0.00	10.00	NEPM 2013 B3 & ALS QC Standard
PCB's (Ultra-trace) for Catchment Monitoring	0	13	0.00	10.00	NEPM 2013 B3 & ALS QC Standard

Matrix: **WATER**

Quality Control Sample Type	Count		Rate (%)		Quality Control Specification
Method	QC	Regular	Actual	Expected	
	0				
Matrix Spikes (MS)					
Organochlorine Pesticides (Ultra-trace)	0	13	0.00	5.00	NEPM 2013 B3 & ALS QC Standard
PCB's (Ultra-trace) for Catchment Monitoring	0	13	0.00	5.00	NEPM 2013 B3 & ALS QC Standard

Analysis Holding Time Compliance

If samples are identified below as having been analysed or extracted outside of recommended holding times, this should be taken into consideration when interpreting results.

This report summarizes extraction / preparation and analysis times and compares each with ALS recommended holding times (referencing USEPA SW 846, APHA, AS and NEPM) based on the sample container provided. Dates reported represent first date of extraction or analysis and preclude subsequent dilutions and reruns. A listing of breaches (if any) is provided herein.

Holding time for leachate methods (e.g. TCLP) vary according to the analytes reported. Assessment compares the leach date with the shortest analyte holding time for the equivalent soil method. These are: organics 14 days, mercury 28 days & other metals 180 days. A recorded breach does not guarantee a breach for all non-volatile parameters.

Holding times for ***VOC in soils*** vary according to analytes of interest. Vinyl Chloride and Styrene holding time is 7 days; others 14 days. A recorded breach does not guarantee a breach for all VOC analytes and should be verified in case the reported breach is a false positive or Vinyl Chloride and Styrene are not key analytes of interest/concern.

Matrix: **WATER**

Evaluation: × = Holding time breach ; ✓ = Within holding time.

Method / ***Container*** / *Client Sample ID(s)*	***Sample Date***	*Extraction / Preparation*			*Analysis*		
		Date extracted	*Due for extraction*	*Evaluation*	***Date analysed***	*Due for analysis*	*Evaluation*
EA015: Total Dissolved Solids dried at 180 ± 5 °C							
Clear Plastic Bottle - Natural (EA015H)							
BADDS, BADMS, BADUS - Some bottles received as BADUP, COSDS, COSUS, HINDS, HINUS, KEMDS, KEMUS, ROPDS, ROPUS, SOUDS, SOUUS	**31-Aug-2023**	**----**	----	----	**05-Sep-2023**	07-Sep-2023	✓
EA025: Total Suspended Solids dried at 104 ± 2°C							
Clear Plastic Bottle - Natural (EA025H)							
BADDS, BADMS, BADUS - Some bottles received as BADUP, COSDS, COSUS, HINDS, HINUS, KEMDS, KEMUS, ROPDS, ROPUS, SOUDS, SOUUS	**31-Aug-2023**	**----**	----	----	**05-Sep-2023**	07-Sep-2023	✓

Matrix: **WATER**

Evaluation: × = Holding time breach ; ✓ = Within holding time.

Method / Container / Client Sample ID(s)	Sample Date	Extraction / Preparation			Analysis		
		Date extracted	Due for extraction	Evaluation	Date analysed	Due for analysis	Evaluation
EG020T: Total Metals by ICP-MS							
Clear Plastic Bottle - Nitric Acid; Unfiltered (EG020A-T)							
BADDS, BADUS - Some bottles received as BADUP, COSUS, HINUS, KEMUS, ROPUS, SOUUS, BADMS, COSDS, HINDS, KEMDS, ROPDS, SOUDS, SWDUP1	**31-Aug-2023**	**01-Sep-2023**	27-Feb-2024	✓	**01-Sep-2023**	27-Feb-2024	✓
EG035T: Total Recoverable Mercury by FIMS							
Clear Plastic Bottle - Nitric Acid; Unfiltered (EG035T)							
BADDS, BADUS - Some bottles received as BADUP, COSUS, HINUS, KEMUS, ROPUS, SOUUS, BADMS, COSDS, HINDS, KEMDS, ROPDS, SOUDS, SWDUP1	**31-Aug-2023**	**----**	----	----	**06-Sep-2023**	28-Sep-2023	✓
EK055G: Ammonia as N by Discrete Analyser							
Clear Plastic Bottle - Sulfuric Acid (EK055G)							
BADDS, BADUS - Some bottles received as BADUP, COSUS, HINUS, KEMUS, ROPUS, SOUUS, BADMS, COSDS, HINDS, KEMDS, ROPDS, SOUDS,	**31-Aug-2023**	**----**	----	----	**04-Sep-2023**	28-Sep-2023	✓
EK057G: Nitrite as N by Discrete Analyser							
Clear Plastic Bottle - Natural (EK057G)							
BADDS, BADUS - Some bottles received as BADUP, COSUS, HINUS, KEMUS, ROPUS, SOUUS, BADMS, COSDS, HINDS, KEMDS, ROPDS, SOUDS,	**31-Aug-2023**	**----**	----	----	**02-Sep-2023**	02-Sep-2023	✓

Matrix: **WATER**

Evaluation: × = Holding time breach ; ✓ = Within holding time.

Method / Container / Client Sample ID(s)	Sample Date	Extraction / Preparation			Analysis		
		Date extracted	Due for extraction	Evaluation	Date analysed	Due for analysis	Evaluation
EK059G: Nitrite plus Nitrate as N (NOx) by Discrete Analyser							
Clear Plastic Bottle - Sulfuric Acid (EK059G)							
BADDS, BADMS, BADUS - Some bottles received as BADUP, COSDS, COSUS, HINDS, HINUS, KEMDS, KEMUS, ROPDS, ROPUS, SOUDS, SOUUS	**31-Aug-2023**	**----**	----	----	**04-Sep-2023**	28-Sep-2023	✓
EK061G: Total Kjeldahl Nitrogen By Discrete Analyser							
Clear Plastic Bottle - Sulfuric Acid (EK061G)							
BADDS, BADMS, BADUS - Some bottles received as BADUP, COSDS, COSUS, HINDS, HINUS, KEMDS, KEMUS, ROPDS, ROPUS, SOUDS, SOUUS	**31-Aug-2023**	**04-Sep-2023**	28-Sep-2023	✓	**05-Sep-2023**	28-Sep-2023	✓
EK067G: Total Phosphorus as P by Discrete Analyser							
Clear Plastic Bottle - Sulfuric Acid (EK067G)							
BADDS, BADMS, BADUS - Some bottles received as BADUP, COSDS, COSUS, HINDS, HINUS, KEMDS, KEMUS, ROPDS, ROPUS, SOUDS, SOUUS	**31-Aug-2023**	**04-Sep-2023**	28-Sep-2023	✓	**05-Sep-2023**	28-Sep-2023	✓
EK071G: Reactive Phosphorus as P by discrete analyser							
Clear Plastic Bottle - Natural (EK071G)							
BADDS, BADMS, BADUS - Some bottles received as BADUP, COSDS, COSUS, HINDS, HINUS, KEMDS, KEMUS, ROPDS, ROPUS, SOUDS, SOUUS	**31-Aug-2023**	**----**	----	----	**02-Sep-2023**	02-Sep-2023	✓

Matrix: **WATER**

Evaluation: × = Holding time breach ; ✓ = Within holding time.

Method / Container / Client Sample ID(s)	Sample Date	Extraction / Preparation			Analysis		
		Date extracted	Due for extraction	Evaluation	Date analysed	Due for analysis	Evaluation
EP008: Chlorophyll a & Pheophytin a							
White Plastic Bottle - Unpreserved (EP008)							
BADDS, BADMS, BADUS - Some bottles received as BADUP, COSDS, COSUS, HINDS, HINUS, KEMDS, KEMUS, ROPDS, ROPUS, SOUDS, SOUUS	**31-Aug-2023**	**----**	----	----	**31-Aug-2023**	02-Sep-2023	✓
EP020: Oil and Grease (O&G)							
Amber Jar - Sulfuric Acid or Sodium Bisulfate (EP020)							
BADDS, BADMS, BADUS - Some bottles received as BADUP, COSDS, COSUS, HINDS, HINUS, KEMDS, KEMUS, ROPDS, ROPUS, SOUDS, SOUUS	**31-Aug-2023**	**----**	----	----	**05-Sep-2023**	28-Sep-2023	✓
EP074D: Fumigants							
Amber VOC Vial - Sulfuric Acid (EP074)							
BADDS, BADMS, BADUS - Some bottles received as BADUP, COSDS, COSUS, HINDS, HINUS, KEMDS, KEMUS, ROPDS, ROPUS, SOUDS, SOUUS	**31-Aug-2023**	**06-Sep-2023**	14-Sep-2023	✓	**06-Sep-2023**	14-Sep-2023	✓
EP074E: Halogenated Aliphatic Compounds							
Amber VOC Vial - Sulfuric Acid (EP074)							
BADDS, BADMS, BADUS - Some bottles received as BADUP, COSDS, COSUS, HINDS, HINUS, KEMDS, KEMUS, ROPDS, ROPUS, SOUDS, SOUUS	**31-Aug-2023**	**06-Sep-2023**	14-Sep-2023	✓	**06-Sep-2023**	14-Sep-2023	✓

Matrix: **WATER**

Evaluation: × = Holding time breach ; ✓ = Within holding time.

Method / Container / Client Sample ID(s)	Sample Date	Extraction / Preparation			Analysis		
		Date extracted	Due for extraction	Evaluation	Date analysed	Due for analysis	Evaluation
EP074F: Halogenated Aromatic Compounds							
Amber VOC Vial - Sulfuric Acid (EP074)							
BADDS, BADMS, BADUS - Some bottles received as BADUP, COSDS, COSUS, HINDS, HINUS, KEMDS, KEMUS, ROPDS, ROPUS, SOUDS, SOUUS	**31-Aug-2023**	**06-Sep-2023**	14-Sep-2023	✓	**06-Sep-2023**	14-Sep-2023	✓
EP074G: Trihalomethanes							
Amber VOC Vial - Sulfuric Acid (EP074)							
BADDS, BADMS, BADUS - Some bottles received as BADUP, COSDS, COSUS, HINDS, HINUS, KEMDS, KEMUS, ROPDS, ROPUS, SOUDS, SOUUS	**31-Aug-2023**	**06-Sep-2023**	14-Sep-2023	✓	**06-Sep-2023**	14-Sep-2023	✓
EP075(SIM)A: Phenolic Compounds							
Amber Glass Bottle - Unpreserved (EP075(SIM))							
BADDS, BADMS, BADUS - Some bottles received as BADUP, COSDS, COSUS, HINDS, HINUS, KEMDS, KEMUS, ROPDS, ROPUS	**31-Aug-2023**	**05-Sep-2023**	07-Sep-2023	✓	**06-Sep-2023**	15-Oct-2023	✓
Amber Glass Bottle - Unpreserved (EP075(SIM))							
SOUDS, SOUUS	**31-Aug-2023**	**05-Sep-2023**	07-Sep-2023	✓	**07-Sep-2023**	15-Oct-2023	✓
EP075(SIM)B: Polynuclear Aromatic Hydrocarbons							
Amber Glass Bottle - Unpreserved (EP075(SIM))							
BADDS, BADMS, BADUS - Some bottles received as BADUP, COSDS, COSUS, HINDS, HINUS, KEMDS, KEMUS, ROPDS, ROPUS	**31-Aug-2023**	**05-Sep-2023**	07-Sep-2023	✓	**06-Sep-2023**	15-Oct-2023	✓
Amber Glass Bottle - Unpreserved (EP075(SIM))							
SOUDS, SOUUS	**31-Aug-2023**	**05-Sep-2023**	07-Sep-2023	✓	**07-Sep-2023**	15-Oct-2023	✓

Matrix: **WATER**

Evaluation: × = Holding time breach ; ✓ = Within holding time.

Method / Container / Client Sample ID(s)	Sample Date	Extraction / Preparation			Analysis		
		Date extracted	Due for extraction	Evaluation	Date analysed	Due for analysis	Evaluation
EP080: BTEXN							
Amber VOC Vial - Sulfuric Acid (EP080)							
BADDS, BADMS, BADUS - Some bottles received as BADUP, COSDS, COSUS, HINDS, HINUS, KEMDS, KEMUS, ROPDS, ROPUS, SOUDS, SOUUS	**31-Aug-2023**	**06-Sep-2023**	14-Sep-2023	✓	**06-Sep-2023**	14-Sep-2023	✓
EP131A: Organochlorine Pesticides							
Amber Glass Bottle - Unpreserved (EP131A)							
BADDS, BADMS, BADUS - Some bottles received as BADUP, COSDS, COSUS, HINDS, HINUS, KEMDS, KEMUS, ROPDS, ROPUS, SOUDS, SOUUS	**31-Aug-2023**	**06-Sep-2023**	07-Sep-2023	✓	**06-Sep-2023**	16-Oct-2023	✓
EP131B: Polychlorinated Biphenyls (as Aroclors)							
Amber Glass Bottle - Unpreserved (EP131B-ST)							
BADDS, BADMS, BADUS - Some bottles received as BADUP, COSDS, COSUS, HINDS, HINUS, KEMDS, KEMUS, ROPDS, ROPUS, SOUDS, SOUUS	**31-Aug-2023**	**06-Sep-2023**	07-Sep-2023	✓	**06-Sep-2023**	16-Oct-2023	✓
EP234A: OP Pesticides							
Amber Glass Bottle - Unpreserved (EP234-1x)							
BADDS, BADMS, BADUS - Some bottles received as BADUP, COSDS, COSUS, HINDS, HINUS, KEMDS, KEMUS, ROPDS, ROPUS, SOUDS, SOUUS	**31-Aug-2023**	**----**	----	----	**01-Sep-2023**	07-Sep-2023	✓

Quality Control Parameter Frequency Compliance

The following report summarises the frequency of laboratory QC samples analysed within the analytical lot(s) in which the submitted sample(s) was(were) processed. Actual rate should be greater than or equal to the expected rate. A listing of breaches is provided in the Summary of Outliers.

Matrix: **WATER**

Evaluation: × = Quality Control frequency not within specification ; ✓ = Quality Control frequency within specification.

Quality Control Sample Type		Count		Rate (%)			Quality Control Specification
Analytical Methods	*Method*	*QC*	*Regular*	***Actual***	***Expected***	*Evaluation*	
Laboratory Duplicates (DUP)							
Ammonia as N by Discrete analyser	EK055G	2	20	**10.00**	**10.00**	✓	NEPM 2013 B3 & ALS QC Standard
Nitrite and Nitrate as N (NOx) by Discrete Analyser	EK059G	2	20	**10.00**	**10.00**	✓	NEPM 2013 B3 & ALS QC Standard
Nitrite as N by Discrete Analyser	EK057G	4	39	**10.26**	**10.00**	✓	NEPM 2013 B3 & ALS QC Standard
Organochlorine Pesticides (Ultra-trace)	EP131A	0	13	**0.00**	**10.00**	×	NEPM 2013 B3 & ALS QC Standard
PAH/Phenols (GC/MS - SIM)	EP075(SIM)	2	13	**15.38**	**10.00**	✓	NEPM 2013 B3 & ALS QC Standard
PCB's (Ultra-trace) for Catchment Monitoring	EP131B-ST	0	13	**0.00**	**10.00**	×	NEPM 2013 B3 & ALS QC Standard
Pesticides by LCMSMS (Positive Ion Mode)	EP234-1	2	17	**11.76**	**10.00**	✓	NEPM 2013 B3 & ALS QC Standard
Pesticides by LCMSMS (Positive Ion Mode) - extended	EP234-1x	2	13	**15.38**	**10.00**	✓	NEPM 2013 B3 & ALS QC Standard
Reactive Phosphorus as P-By Discrete Analyser	EK071G	2	20	**10.00**	**10.00**	✓	NEPM 2013 B3 & ALS QC Standard
Suspended Solids (High Level)	EA025H	4	39	**10.26**	**10.00**	✓	NEPM 2013 B3 & ALS QC Standard
Total Dissolved Solids (High Level)	EA015H	4	39	**10.26**	**10.00**	✓	NEPM 2013 B3 & ALS QC Standard
Total Kjeldahl Nitrogen as N By Discrete Analyser	EK061G	2	20	**10.00**	**10.00**	✓	NEPM 2013 B3 & ALS QC Standard
Total Mercury by FIMS	EG035T	2	20	**10.00**	**10.00**	✓	NEPM 2013 B3 & ALS QC Standard
Total Metals by ICP-MS - Suite A	EG020A-T	2	20	**10.00**	**10.00**	✓	NEPM 2013 B3 & ALS QC Standard
Total Phosphorus as P By Discrete Analyser	EK067G	2	20	**10.00**	**10.00**	✓	NEPM 2013 B3 & ALS QC Standard
TRH Volatiles/BTEX	EP080	2	19	**10.53**	**10.00**	✓	NEPM 2013 B3 & ALS QC Standard
Volatile Organic Compounds	EP074	2	20	**10.00**	**10.00**	✓	NEPM 2013 B3 & ALS QC Standard
Laboratory Control Samples (LCS)							
Ammonia as N by Discrete analyser	EK055G	1	20	**5.00**	**5.00**	✓	NEPM 2013 B3 & ALS QC Standard
Chlorophyll a and Pheophytin a	EP008	2	25	**8.00**	**5.00**	✓	NEPM 2013 B3 & ALS QC Standard
Nitrite and Nitrate as N (NOx) by Discrete Analyser	EK059G	1	20	**5.00**	**5.00**	✓	NEPM 2013 B3 & ALS QC Standard
Nitrite as N by Discrete Analyser	EK057G	2	39	**5.13**	**5.00**	✓	NEPM 2013 B3 & ALS QC Standard
Oil and Grease	EP020	4	41	**9.76**	**8.00**	✓	NEPM 2013 B3 & ALS QC Standard
Organochlorine Pesticides (Ultra-trace)	EP131A	1	13	**7.69**	**5.00**	✓	NEPM 2013 B3 & ALS QC Standard
PAH/Phenols (GC/MS - SIM)	EP075(SIM)	1	13	**7.69**	**5.00**	✓	NEPM 2013 B3 & ALS QC Standard
PCB's (Ultra-trace) for Catchment Monitoring	EP131B-ST	1	13	**7.69**	**5.00**	✓	NEPM 2013 B3 & ALS QC Standard
Pesticides by LCMSMS (Positive Ion Mode)	EP234-1	1	17	**5.88**	**5.00**	✓	NEPM 2013 B3 & ALS QC Standard
Pesticides by LCMSMS (Positive Ion Mode) - extended	EP234-1x	1	13	**7.69**	**5.00**	✓	NEPM 2013 B3 & ALS QC Standard
Reactive Phosphorus as P-By Discrete Analyser	EK071G	1	20	**5.00**	**5.00**	✓	NEPM 2013 B3 & ALS QC Standard
Suspended Solids (High Level)	EA025H	5	39	**12.82**	**12.50**	✓	NEPM 2013 B3 & ALS QC Standard
Total Dissolved Solids (High Level)	EA015H	5	39	**12.82**	**12.50**	✓	NEPM 2013 B3 & ALS QC Standard
Total Kjeldahl Nitrogen as N By Discrete Analyser	EK061G	3	20	**15.00**	**15.00**	✓	NEPM 2013 B3 & ALS QC Standard
Total Mercury by FIMS	EG035T	1	20	**5.00**	**5.00**	✓	NEPM 2013 B3 & ALS QC Standard
Total Metals by ICP-MS - Suite A	EG020A-T	1	20	**5.00**	**5.00**	✓	NEPM 2013 B3 & ALS QC Standard
Total Phosphorus as P By Discrete Analyser	EK067G	3	20	**15.00**	**15.00**	✓	NEPM 2013 B3 & ALS QC Standard
TRH Volatiles/BTEX	EP080	1	19	**5.26**	**5.00**	✓	NEPM 2013 B3 & ALS QC Standard

Matrix: **WATER**

Evaluation: × = Quality Control frequency not within specification ; ✓ = Quality Control frequency within specification.

Quality Control Sample Type		Count		Rate (%)			Quality Control Specification
Analytical Methods	*Method*	*QC*	*Regular*	***Actual***	***Expected***	*Evaluation*	
Laboratory Control Samples (LCS) - Continued							
Volatile Organic Compounds	EP074	1	20	**5.00**	**5.00**	✓	NEPM 2013 B3 & ALS QC Standard
Method Blanks (MB)							
Ammonia as N by Discrete analyser	EK055G	1	20	**5.00**	**5.00**	✓	NEPM 2013 B3 & ALS QC Standard
Chlorophyll a and Pheophytin a	EP008	2	25	**8.00**	**5.00**	✓	NEPM 2013 B3 & ALS QC Standard
Nitrite and Nitrate as N (NOx) by Discrete Analyser	EK059G	1	20	**5.00**	**5.00**	✓	NEPM 2013 B3 & ALS QC Standard
Nitrite as N by Discrete Analyser	EK057G	2	39	**5.13**	**5.00**	✓	NEPM 2013 B3 & ALS QC Standard
Oil and Grease	EP020	3	41	**7.32**	**6.00**	✓	NEPM 2013 B3 & ALS QC Standard
Organochlorine Pesticides (Ultra-trace)	EP131A	1	13	**7.69**	**5.00**	✓	NEPM 2013 B3 & ALS QC Standard
PAH/Phenols (GC/MS - SIM)	EP075(SIM)	1	13	**7.69**	**5.00**	✓	NEPM 2013 B3 & ALS QC Standard
PCB's (Ultra-trace) for Catchment Monitoring	EP131B-ST	1	13	**7.69**	**5.00**	✓	NEPM 2013 B3 & ALS QC Standard
Pesticides by LCMSMS (Positive Ion Mode)	EP234-1	1	17	**5.88**	**5.00**	✓	NEPM 2013 B3 & ALS QC Standard
Pesticides by LCMSMS (Positive Ion Mode) - extended	EP234-1x	1	13	**7.69**	**5.00**	✓	NEPM 2013 B3 & ALS QC Standard
Reactive Phosphorus as P-By Discrete Analyser	EK071G	1	20	**5.00**	**5.00**	✓	NEPM 2013 B3 & ALS QC Standard
Suspended Solids (High Level)	EA025H	2	39	**5.13**	**5.00**	✓	NEPM 2013 B3 & ALS QC Standard
Total Dissolved Solids (High Level)	EA015H	2	39	**5.13**	**5.00**	✓	NEPM 2013 B3 & ALS QC Standard
Total Kjeldahl Nitrogen as N By Discrete Analyser	EK061G	1	20	**5.00**	**5.00**	✓	NEPM 2013 B3 & ALS QC Standard
Total Mercury by FIMS	EG035T	1	20	**5.00**	**5.00**	✓	NEPM 2013 B3 & ALS QC Standard
Total Metals by ICP-MS - Suite A	EG020A-T	1	20	**5.00**	**5.00**	✓	NEPM 2013 B3 & ALS QC Standard
Total Phosphorus as P By Discrete Analyser	EK067G	1	20	**5.00**	**5.00**	✓	NEPM 2013 B3 & ALS QC Standard
TRH Volatiles/BTEX	EP080	1	19	**5.26**	**5.00**	✓	NEPM 2013 B3 & ALS QC Standard
Volatile Organic Compounds	EP074	1	20	**5.00**	**5.00**	✓	NEPM 2013 B3 & ALS QC Standard
Matrix Spikes (MS)							
Ammonia as N by Discrete analyser	EK055G	1	20	**5.00**	**5.00**	✓	NEPM 2013 B3 & ALS QC Standard
Nitrite and Nitrate as N (NOx) by Discrete Analyser	EK059G	1	20	**5.00**	**5.00**	✓	NEPM 2013 B3 & ALS QC Standard
Nitrite as N by Discrete Analyser	EK057G	2	39	**5.13**	**5.00**	✓	NEPM 2013 B3 & ALS QC Standard
Organochlorine Pesticides (Ultra-trace)	EP131A	0	13	**0.00**	**5.00**	×	NEPM 2013 B3 & ALS QC Standard
PAH/Phenols (GC/MS - SIM)	EP075(SIM)	1	13	**7.69**	**5.00**	✓	NEPM 2013 B3 & ALS QC Standard
PCB's (Ultra-trace) for Catchment Monitoring	EP131B-ST	0	13	**0.00**	**5.00**	×	NEPM 2013 B3 & ALS QC Standard
Pesticides by LCMSMS (Positive Ion Mode)	EP234-1	1	17	**5.88**	**5.00**	✓	NEPM 2013 B3 & ALS QC Standard
Pesticides by LCMSMS (Positive Ion Mode) - extended	EP234-1x	1	13	**7.69**	**5.00**	✓	NEPM 2013 B3 & ALS QC Standard
Reactive Phosphorus as P-By Discrete Analyser	EK071G	1	20	**5.00**	**5.00**	✓	NEPM 2013 B3 & ALS QC Standard
Total Kjeldahl Nitrogen as N By Discrete Analyser	EK061G	1	20	**5.00**	**5.00**	✓	NEPM 2013 B3 & ALS QC Standard
Total Mercury by FIMS	EG035T	1	20	**5.00**	**5.00**	✓	NEPM 2013 B3 & ALS QC Standard
Total Metals by ICP-MS - Suite A	EG020A-T	1	20	**5.00**	**5.00**	✓	NEPM 2013 B3 & ALS QC Standard
Total Phosphorus as P By Discrete Analyser	EK067G	1	20	**5.00**	**5.00**	✓	NEPM 2013 B3 & ALS QC Standard
TRH Volatiles/BTEX	EP080	1	19	**5.26**	**5.00**	✓	NEPM 2013 B3 & ALS QC Standard
Volatile Organic Compounds	EP074	1	20	**5.00**	**5.00**	✓	NEPM 2013 B3 & ALS QC Standard

Brief Method Summaries

The analytical procedures used by the Environmental Division have been developed from established internationally recognized procedures such as those published by the US EPA, APHA, AS and NEPM. In house developed procedures are employed in the absence of documented standards or by client request. The following report provides brief descriptions of the analytical procedures employed for results reported in the Certificate of Analysis. Sources from which ALS methods have been developed are provided within the Method Descriptions.

Analytical Methods	Method	Matrix	Method Descriptions
Total Dissolved Solids (High Level)	EA015H	WATER	In house: Referenced to APHA 2540C. A gravimetric procedure that determines the amount of `filterable` residue in an aqueous sample. A well-mixed sample is filtered through a glass fibre filter (1.2um). The filtrate is evaporated to dryness and dried to constant weight at 180+/-5C. This method is compliant with NEPM Schedule B(3)
Suspended Solids (High Level)	EA025H	WATER	In house: Referenced to APHA 2540D. A gravimetric procedure employed to determine the amount of `non-filterable` residue in a aqueous sample. The prescribed GFC (1.2um) filter is rinsed with deionised water, oven dried and weighed prior to analysis. A well-mixed sample is filtered through a glass fibre filter (1.2um). The residue on the filter paper is dried at 104+/-2C . This method is compliant with NEPM Schedule B(3)
Total Metals by ICP-MS - Suite A	EG020A-T	WATER	In house: Referenced to APHA 3125; USEPA SW846 - 6020, ALS QWI-EN/EG020. The ICPMS technique utilizes a highly efficient argon plasma to ionize selected elements. Ions are then passed into a high vacuum mass spectrometer, which separates the analytes based on their distinct mass to charge ratios prior to their measurement by a discrete dynode ion detector.
Total Mercury by FIMS	EG035T	WATER	In house: Referenced to APHA 3112 Hg - B (Flow-injection (SnCl2)(Cold Vapour generation) AAS) FIM-AAS is an automated flameless atomic absorption technique. A bromate/bromide reagent is used to oxidise any organic mercury compounds in the unfiltered sample. The ionic mercury is reduced online to atomic mercury vapour by SnCl2 which is then purged into a heated quartz cell. Quantification is by comparing absorbance against a calibration curve. This method is compliant with NEPM Schedule B(3).
Ammonia as N by Discrete analyser	EK055G	WATER	In house: Referenced to APHA 4500-NH3 G Ammonia is determined by direct colorimetry by Discrete Analyser. This method is compliant with NEPM Schedule B(3)
Nitrite as N by Discrete Analyser	EK057G	WATER	In house: Referenced to APHA 4500-NO2- B. Nitrite is determined by direct colourimetry by Discrete Analyser. This method is compliant with NEPM Schedule B(3)
Nitrate as N by Discrete Analyser	EK058G	WATER	In house: Referenced to APHA 4500-NO3- F. Nitrate is reduced to nitrite by way of a chemical reduction followed by quantification by Discrete Analyser. Nitrite is determined seperately by direct colourimetry and result for Nitrate calculated as the difference between the two results. This method is compliant with NEPM Schedule B(3)
Nitrite and Nitrate as N (NOx) by Discrete Analyser	EK059G	WATER	In house: Referenced to APHA 4500-NO3- F. Combined oxidised Nitrogen (NO2+NO3) is determined by Chemical Reduction and direct colourimetry by Discrete Analyser. This method is compliant with NEPM Schedule B(3)
Total Kjeldahl Nitrogen as N By Discrete Analyser	EK061G	WATER	In house: Referenced to APHA 4500-Norg D (In house). An aliquot of sample is digested using a high temperature Kjeldahl digestion to convert nitrogenous compounds to ammonia. Ammonia is determined colorimetrically by discrete analyser. This method is compliant with NEPM Schedule B(3)
Total Nitrogen as N (TKN + Nox) By Discrete Analyser	EK062G	WATER	In house: Referenced to APHA 4500-Norg / 4500-NO3-. This method is compliant with NEPM Schedule B(3)
Total Phosphorus as P By Discrete Analyser	EK067G	WATER	In house: Referenced to APHA 4500-P H, Jirka et al, Zhang et al. This procedure involves sulphuric acid digestion of a sample aliquot to break phosphorus down to orthophosphate. The orthophosphate reacts with ammonium molybdate and antimony potassium tartrate to form a complex which is then reduced and its concentration measured at 880nm using discrete analyser. This method is compliant with NEPM Schedule B(3)

Analytical Methods	Method	Matrix	Method Descriptions
Reactive Phosphorus as P-By Discrete Analyser	EK071G	WATER	In house: Referenced to APHA 4500-P F Ammonium molybdate and potassium antimonyl tartrate reacts in acid medium with othophosphate to form a heteropoly acid -phosphomolybdic acid - which is reduced to intensely coloured molybdenum blue by ascorbic acid. Quantification is by Discrete Analyser. This method is compliant with NEPM Schedule B(3)
Chlorophyll a and Pheophytin a	EP008	WATER	In house: Referenced to APHA 10200 H. The pigments are extracted into aqueous acetone. The optical density of the extract before and after acidification at both 664 nm and 665 nm is determined spectrometrically.
Oil and Grease	EP020	WATER	In house: Referenced to APHA 5520 B. Oil & grease is a gravimetric procedure to determine the amount of dissolved or emulsified oil & grease residue in an aqueous sample. The sample is serially extracted three times n-hexane. The resultant extracts are combined, dehydrated and concentrated prior to gravimetric determination. This method is compliant with NEPM Schedule B(3)
Volatile Organic Compounds	EP074	WATER	In house: Referenced to USEPA SW 846 - 8260 Water samples are directly purged prior to analysis by Capillary GC/MS and quantification is by comparison against an established 5 point calibration curve. This method is compliant with NEPM Schedule B(3)
PAH/Phenols (GC/MS - SIM)	EP075(SIM)	WATER	In house: Referenced to USEPA SW 846 - 8270 Sample extracts are analysed by Capillary GC/MS in SIM Mode and quantification is by comparison against an established 5 point calibration curve. This method is compliant with NEPM Schedule B(3)
TRH Volatiles/BTEX	EP080	WATER	In house: Referenced to USEPA SW 846 - 8260 Water samples are directly purged prior to analysis by Capillary GC/MS and quantification is by comparison against an established 5 point calibration curve. Alternatively, a sample is equilibrated in a headspace vial and a portion of the headspace determined by GCMS analysis. This method is compliant with the QC requirements of NEPM Schedule B(3)
Organochlorine Pesticides (Ultra-trace)	EP131A	WATER	In house: Referenced to USEPA Method 3640 (GPC cleanup),3620 (Florisil), 8081/8082 (GC/µECD/uECD). This method is compliant with NEPM Schedule B(3)
PCB's (Ultra-trace) for Catchment Monitoring	EP131B-ST	WATER	In house: Referenced to USEPA Method 3640 (GPC cleanup),3620 (Florisil), 8081/8082 (GC/µECD/µECD). This method is compliant with NEPM Schedule B(3)
Pesticides by LCMSMS (Positive Ion Mode)	EP234-1	WATER	In house: LC-MSMS, direct injection. A sample is filtered and injected directly onto the LC-MSMS. Analysis is by LC/MSMS, ESI Positive Mode.
Pesticides by LCMSMS (Positive Ion Mode) - extended	EP234-1x	WATER	In house: LC-MSMS, direct injection. A sample is filtered and injected directly onto the LC-MSMS. Analysis is by LC/MSMS, ESI Positive Mode.

Preparation Methods	Method	Matrix	Method Descriptions
TKN/TP Digestion	EK061/EK067	WATER	In house: Referenced to APHA 4500 Norg - D; APHA 4500 P - H. This method is compliant with NEPM Schedule B(3)
Digestion for Total Recoverable Metals	EN25	WATER	In house: Referenced to USEPA SW846-3005. Method 3005 is a Nitric/Hydrochloric acid digestion procedure used to prepare surface and ground water samples for analysis by ICPAES or ICPMS. This method is compliant with NEPM Schedule B(3)
Separatory Funnel Extraction of Liquids	ORG14	WATER	In house: Referenced to USEPA SW 846 - 3510 100 mL to 1L of sample is transferred to a separatory funnel and serially extracted three times using DCM for each extract. The resultant extracts are combined, dehydrated and concentrated for analysis. This method is compliant with NEPM Schedule B(3) . ALS default excludes sediment which may be resident in the container.
Sep. Funnel Extraction of Liquids (Ultra-trace pesticides.)	ORG14-UTP	WATER	In house: Referenced to USEPA 3510 Samples are extracted into dichloromethane, concentrated and exchanged into an apporpriate solvent for GPC and florisil cleanup as required. This method is compliant with NEPM Schedule B(3) . ALS default excludes sediment which may be resident in the container.

Preparation Methods	*Method*	*Matrix*	*Method Descriptions*
Volatiles Water Preparation	ORG16-W	WATER	A 5 mL aliquot or 5 mL of a diluted sample is added to a 40 mL VOC vial for purging.

Subcon / Forward Lab / Split WO

Lab / Analysis: Eurofins - SWDUP2

Organised By / Date:

Relinquished By / Date:

Connote / Courier:

CHAIN OF CUSTODY

ALS Laboratory: please tick →

CLIENT:	td	WO No:	TURNAROUND REQUIREMENTS: ☐ Standard TAT (List due date):							FOR LABOR
OFFICE: Sydney		Attached Ref PO / Historical Quotes	(Standard TAT may be longer for some projects) ☐ Non Standard or urgent TAT (List due date):							Custody Seal I
PROJECT: M12 Surface Water		ALS QUOTE NO.: SY/322/21	COC SEQUENCE NUMBER (Circle)							Free ice / froze
ORDER NUMBER: 12554717			COC:	1	2	3	4	5	6	7	Random Samp
PROJECT MANAGER: Henry Luo		CONTACT PH: Henry Luo 0414 090 002	OF:	1	2	3	4	5	6	7	Other commen
SAMPLER: Emily Smith, Jackson Miller	SAMPLER MOBILE: 0431 522 928	RELINQUISHED BY:	RECEIVED BY:							RELINQUISHED B
COC emailed to ALS? (YES / NO)	EDD FORMAT (or default): ESDAT	Emily Smith - GHD	Thank le							
Email Reports to: henry.luo@ghd.com, ghdlabreports@ghd.com: emily.smith@ghd.com; andrew.duval@ghd.com		DATE/TIME: 23/08/2023 - 6pm	DATE/TIME: 31/8/23 17:55							DATE/TIME:

Environmental Division Sydney

Work Order Reference

ES2329639

Telephone : + 61-2-8784 8555

COMMENTS/SPECIAL HANDLING/STORAGE OR DISPOSAL:

ALS USE	SAMPLE DETAILS MATRIX: SOLID (S) WATER (W)			CONTAINER INFORMATION		ANALYSIS REQUIRED including SUITES (NB. Suite Codes must be listed to attract suite price) Where Metals are required, specify Total (unfiltered bottle required) or Dissolved (field filtered bottle required)													
LAB ID	SAMPLE ID	DATE / TIME	MATRIX	Comments	TOTAL CONTAINERS	W-021-15 total (metals)	EB0UT (Total P, Mn)	NT-054 total N, TKN, NOx, NH3, Total P, reactive P)	EP045 (chlorophyll a)	EP075 (oil & grease)	UTUAW ultra trace SCOP	EP075(SIM) (Organochlorine Pesticides, Phenoxy alkanes, Acid Herbicides, Triazines, Carbamates, Organophosphorus Pesticides, Aromatics, THM)	MW005 (FC) Thermotolerant Coliforms	W-144A (PAHs)	EA015H (TDS) EA025H (TSS)	EP080 (BTEX)	EP080 (TPH(V)/BTEX)	Surrogate Toxicity SCOPE	PFAS - NATA/ISO
1	BADDS	31/08/2023	Water		11	X	X	X	X	X	X	X		X	X	X		X	
2	BADMS	31/08/2023	Water		11	X	X	X	X	X	X	X		X	X	X		X	
3	BADUS	31/08/2023	Water		11	X	X	X	X	X	X	X		X	X	X		X	
4	COSDS	31/08/2023	Water		11	X	X	X	X	X	X	X		X	X	X		X	
5	COSUS	31/08/2023	Water		11	X	X	X	X	X	X	X		X	X	X		X	
6	HINDS	31/08/2023	Water		11	X	X	X	X	X	X	X		X	X	X		X	
7	HINUS	31/08/2023	Water		11	X	X	X	X	X	X	X		X	X	X		X	
8	KEMDS	31/08/2023	Water		11	X	X	X	X	X	X	X		X	X	X		X	
9	KEMUS	31/08/2023	Water		11	X	X	X	X	X	X	X		X	X	X		X	
10	ROPDS	31/08/2023	Water		11	X	X	X	X	X	X	X		X	X	X		X	
11	ROPUS	31/08/2023	Water		11	X	X	X	X	X	X	X		X	X	X		X	
12	SOUDS	31/08/2023	Water		11	X	X	X	X	X	X	X		X	X	X		X	
13	SOUUS	31/08/2023	Water		11	X	X	X	X	X	X	X		X	X	X		X	
14	SWDUP1	31/08/2023	Water		1	X													
15	SWDUP2	31/08/2023	Water	TO BASF FORWARDED TO EUROFINS WITH ALS ACCREDITATION	1														

ID2329

eurofins | mgt

Sydney
Unit F3 - 6 Building F, 16 Mars Road, Lane Cove
Phone: +612 9900 8400
Email: enviro.syd@mgtlabmark.com.au

Brisbane
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Phone: +617 3902 4600
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Melbourne
2 Kingston Town Close, Oakleigh, VIC 3166
Phone: +613 8564 5000 Fax: +613 8564 5090
Email: enquiries.melb@mgtlabmark.com.au

CHAIN OF CUSTODY RECORD

Page __1___ of ___1__

CLIENT DETAILS

Company Name : GHD Pty Ltd, Sydney
Office Address :
Level 15, 133 Castlereagh Street, Sydney NSW 2000

Contact Name : Emily Smith 0431 522 928
Project Manager: Henry Luo 0414 090 002
Email for results : emily.smith@ghd.com; henry.luo@ghd.com; andrew.duval@ghd.com ghdlabreports@ghd.com

Purchase Order : 12554717
PROJECT Number : 12554717
PROJECT Name : M12 Water Sampling

COC Number :
Eurofins | mgt quote ID :
Data output format: ESDAT

Special Directions & Comments :

Sent from ALS

Eurofins | mgt DI water batch number:

	Sample ID	Date	Matrix	Analytes: Dissolved metals	Analytes: Total metals
1	SWDUP2	31/08/2023	Water		X
2					
3					
4					
5					
6					
7					
8					
9					
10					

Some common holding times (with correct preservation).
For further information contact the lab

Waters		Soils	
BTEX, MAH, VOC	14 days	BTEX, MAH, VOC	14 days
TRH, PAH, Phenols, Pesticides	7 days	TRH, PAH, Phenols, Pesticides	14 days
Heavy Metals	6 months	Heavy Metals	6 months
Mercury, CrVI	28 days	Mercury, CrVI	28 days
Microbiological testing	24 hours	Microbiological testing	72 hours
BOD, Nitrate, Nitrite, Total N	2 days	Anions	28 days
Solids - TSS, TDS etc	7 days	SPOCAS, pH Field and FOX, CrS	24 hours
Ferrous iron	7 days	ASLP, TCLP	7 days

Containers:

500P	250P	60P	1LA	40mL vial	200mL A	Jar	Bag

Sample comments:

Temperature on arrival: 2.3

Report number:

Laboratory Staff

Relinquished By: Emily Smith
Date & Time : 31/08/2023 - 6 pm
Signature: esmith

Received By: Brisbane
Date & Time : 1/9 1:33
Signature:

Method Of Shipment

- [ ] Courier
- [ ] Hand Delivered
- [ ] Postal
- [ ] Courier Consignment # :

eurofins | Environment Testing

www.eurofins.com.au EnviroSales@eurofins.com

Eurofins Environment Testing Australia Pty Ltd

ABN: 50 005 085 521

Melbourne	Geelong	Sydney	Canberra	Brisbane	Newcastle
6 Monterey Road	19/8 Lewalan Street	179 Magowar Road	Unit 1,2 Dacre Street	1/21 Smallwood Place	1/2 Frost Drive
Dandenong South	Grovedale	Girraween	Mitchell	Murarrie	Mayfield West NSW 2304
VIC 3175	VIC 3216	NSW 2145	ACT 2911	QLD 4172	Tel: +61 2 4968 8448
Tel: +61 3 8564 5000	Tel: +61 3 8564 5000	Tel: +61 2 9900 8400	Tel: +61 2 6113 8091	Tel: +61 7 3902 4600	NATA# 1261
NATA# 1261	NATA# 1261	NATA# 1261	NATA# 1261	NATA# 1261	Site# 25079 & 25289
Site# 1254	Site# 25403	Site# 18217	Site# 25466	Site# 20794	

Eurofins ARL Pty Ltd

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Perth
46-48 Banksia Road
Welshpool
WA 6106
Tel: +61 8 6253 4444
NATA# 2377
Site# 2370

Eurofins Environment Testing NZ Ltd

NZBN: 9429046024954

Auckland	Christchurch	Tauranga
35 O'Rorke Road	43 Detroit Drive	1277 Cameron Road,
Penrose,	Rolleston,	Gate Pa,
Auckland 1061	Christchurch 7675	Tauranga 3112
Tel: +64 9 526 4551	Tel: +64 3 343 5201	Tel: +64 9 525 0568
IANZ# 1327	IANZ# 1290	IANZ# 1402

Sample Receipt Advice

Company name:	GHD Pty Ltd NSW
Contact name:	Henry Luo
Project name:	M12 WATER SAMPLING
Project ID:	12554717
Turnaround time:	5 Day
Date/Time received	Sep 1, 2023 1:35 PM
Eurofins reference	1022291

Sample Information

✓	A detailed list of analytes logged into our LIMS, is included in the attached summary table.
✓	Sample Temperature of chilled sample on the batch as recorded by Eurofins Sample Receipt : 2.3 degrees Celsius.
✓	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.
X	Split sample sent to requested external lab.
X	Some samples have been subcontracted.
N/A	Custody Seals intact (if used).

Notes

Contact

If you have any questions with respect to these samples, please contact your Analytical Services Manager:

Bonnie Pu on phone : or by email: BonniePu@eurofins.com

Results will be delivered electronically via email to Henry Luo - henry.luo@ghd.com.

Note: A copy of these results will also be delivered to the general GHD Pty Ltd NSW email address.

GHD Pty Ltd NSW
Level 15, 133 Castlereagh Street
Sydney
NSW 2000

NATA Accredited
Accreditation Number 1261
Site Number 18217

Accredited for compliance with ISO/IEC 17025 – Testing
NATA is a signatory to the ILAC Mutual Recognition Arrangement for the mutual recognition of the equivalence of testing, medical testing, calibration, inspection, proficiency testing scheme providers and reference materials producers reports and certificates.

Attention: **Henry Luo**

Report **1022291-W-V2**
Project name M12 WATER SAMPLING
Project ID 12554717
Received Date Sep 01, 2023

Client Sample ID			**SWDUP2**
Sample Matrix			**Water**
Eurofins Sample No.			**S23-Se0001328**
Date Sampled			**Aug 31, 2023**
Test/Reference	LOR	Unit	
Heavy Metals			
Arsenic	0.001	mg/L	0.001
Cadmium	0.0002	mg/L	< 0.0002
Chromium	0.001	mg/L	0.002
Copper	0.001	mg/L	0.007
Lead	0.001	mg/L	0.002
Mercury	0.0001	mg/L	< 0.0001
Nickel	0.001	mg/L	0.002
Zinc	0.005	mg/L	0.019

Sample History

Where samples are submitted/analysed over several days, the last date of extraction is reported.

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
Metals M8	Sydney	Sep 08, 2023	28 Days

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

eurofins

web: www.eurofins.com.au
email: EnviroSales@eurofins.com

Eurofins Environment Testing Australia Pty Ltd
ABN: 50 005 085 521

Melbourne	Geelong	Sydney	Canberra	Brisbane	Newcastle
6 Monterey Road	19/8 Lewalan Street	179 Magowar Road	Unit 1,2 Dacre Street	1/21 Smallwood Place	1/2 Frost Drive
Dandenong South	Grovedale	Girraween	Mitchell	Murarrie	Mayfield West NSW 2304
VIC 3175	VIC 3216	NSW 2145	ACT 2911	QLD 4172	Tel: +61 2 4968 8448
Tel: +61 3 8564 5000	Tel: +61 3 8564 5000	Tel: +61 2 9900 8400	Tel: +61 2 6113 8091	Tel: +61 7 3902 4600	NATA# 1261
NATA# 1261	NATA# 1261	NATA# 1261	NATA# 1261	NATA# 1261	Site# 25079 & 25289
Site# 1254	Site# 25403	Site# 18217	Site# 25466	Site# 20794	

Eurofins ARL Pty Ltd
ABN: 91 05 0159 898

Perth
46-48 Banksia Road
Welshpool
WA 6106
Tel: +61 8 6253 4444
NATA# 2377
Site# 2370

Eurofins Environment Testing NZ Ltd
NZBN: 9429046024954

Auckland	Christchurch	Tauranga
35 O'Rorke Road	43 Detroit Drive	1277 Cameron Road,
Penrose,	Rolleston,	Gate Pa,
Auckland 1061	Christchurch 7675	Tauranga 3112
Tel: +64 9 526 4551	Tel: +64 3 343 5201	Tel: +64 9 525 0568
IANZ# 1327	IANZ# 1290	IANZ# 1402

Company Name: GHD Pty Ltd NSW
Address: Level 15, 133 Castlereagh Street
Sydney
NSW 2000

Project Name: M12 WATER SAMPLING
Project ID: 12554717

Order No.:
Report #: 1022291
Phone: 02 9239 7100
Fax: 02 9239 7199

Received: Sep 1, 2023 1:35 PM
Due: Sep 8, 2023
Priority: 5 Day
Contact Name: Henry Luo

Eurofins Analytical Services Manager : Bonnie Pu

Sample Detail						Metals M8
Melbourne Laboratory - NATA # 1261 Site # 1254						X
Sydney Laboratory - NATA # 1261 Site # 18217						X
External Laboratory						
No	**Sample ID**	**Sample Date**	**Sampling Time**	**Matrix**	**LAB ID**	
1	SWDUP1	Aug 31, 2023		Water	S23-Se0001328	X
Test Counts						1

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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.

Units

mg/kg: milligrams per kilogram	**mg/L:** milligrams per litre	**µg/L:** micrograms per litre
ppm: parts per million	**ppb:** parts per billion	**%:** Percentage
org/100 mL: Organisms per 100 millilitres	**NTU:** Nephelometric Turbidity Units	**MPN/100 mL:** Most Probable Number of organisms per 100 millilitres
CFU: Colony forming unit		

Terms

APHA	American Public Health Association
COC	Chain of Custody
CP	Client Parent - QC was performed on samples pertaining to this report
CRM	Certified Reference Material (ISO17034) - reported as percent recovery.
Dry	Where a moisture has been determined on a solid sample the result is expressed on a dry basis.
Duplicate	A second piece of analysis from the same sample and reported in the same units as the result to show comparison.
LOR	Limit of Reporting.
LCS	Laboratory Control Sample - 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.
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.
RPD	Relative Percent Difference between two Duplicate pieces of analysis.
SPIKE	Addition of the analyte to the sample and reported as percentage recovery.
SRA	Sample Receipt Advice
Surr - Surrogate	The addition of a like compound to the analyte target and reported as percentage recovery.
TBTO	Tributyltin oxide (*bis*-tributyltin oxide) - individual tributyltin compounds cannot be identified separately in the environment however free tributyltin was measured and its values were converted stoichiometrically into tributyltin oxide for comparison with regulatory limits.
TCLP	Toxicity Characteristic Leaching Procedure
TEQ	Toxic Equivalency Quotient or Total Equivalence
QSM	US Department of Defense Quality Systems Manual Version 5.4
US EPA	United States Environmental Protection Agency
WA DWER	Sum of PFBA, PFPeA, PFHxA, PFHpA, PFOA, PFBS, PFHxS, PFOS, 6:2 FTSA, 8:2 FTSA

QC - Acceptance Criteria

The acceptance criteria should be used as a guide only and may be different when site specific Sampling Analysis and Quality Plan (SAQP) have been implemented

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%

NOTE: pH duplicates are reported as a range not as RPD

Surrogate Recoveries: Recoveries must lie between 20-130% for Speciated Phenols & 50-150% for PFAS. SVOCs recoveries 20 – 150%

PFAS field samples that contain surrogate recoveries in excess of the QC limit designated in QSM 5.4 where no positive PFAS results have been reported have been reviewed and no data was affected.

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. 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.
4. Recovery Data (Spikes & Surrogates) - where chromatographic interference does not allow the determination of recovery the term "INT" appears against that analyte.
5. For Matrix Spikes and LCS results a dash "-" in the report means that the specific analyte was not added to the QC sample.
6. 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	
Cadmium	mg/L	< 0.0002			0.0002	Pass	
Chromium	mg/L	< 0.001			0.001	Pass	
Copper	mg/L	< 0.001			0.001	Pass	
Lead	mg/L	< 0.001			0.001	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							
Arsenic	%	99			80-120	Pass	
Cadmium	%	95			80-120	Pass	
Chromium	%	99			80-120	Pass	
Copper	%	96			80-120	Pass	
Lead	%	102			80-120	Pass	
Mercury	%	106			80-120	Pass	
Nickel	%	96			80-120	Pass	
Zinc	%	98			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	S23-Se0000975	NCP	%	100			75-125	Pass	
Chromium	S23-Se0000975	NCP	%	99			75-125	Pass	
Copper	S23-Se0000975	NCP	%	84			75-125	Pass	
Lead	S23-Se0000975	NCP	%	104			75-125	Pass	
Mercury	S23-Se0000975	NCP	%	109			75-125	Pass	
Nickel	S23-Se0000975	NCP	%	96			75-125	Pass	
Zinc	S23-Se0000975	NCP	%	93			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			
Arsenic	N23-Se0013273	NCP	mg/L	< 0.001	< 0.001	<1	30%	Pass	
Cadmium	N23-Se0013273	NCP	mg/L	< 0.0002	< 0.0002	<1	30%	Pass	
Chromium	N23-Se0013273	NCP	mg/L	< 0.001	< 0.001	<1	30%	Pass	
Copper	N23-Se0013273	NCP	mg/L	0.58	0.56	3.1	30%	Pass	
Lead	N23-Se0013273	NCP	mg/L	0.020	0.019	2.8	30%	Pass	
Mercury	N23-Se0013273	NCP	mg/L	< 0.0001	< 0.0001	<1	30%	Pass	
Nickel	N23-Se0013273	NCP	mg/L	0.007	0.006	3.5	30%	Pass	
Zinc	N23-Se0013273	NCP	mg/L	0.34	0.33	3.8	30%	Pass	

Comments

This report has been revised (V2) to correct sample name SWDUP1 to SWDUP2

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:

Adam Bateup	Analytical Services Manager
Fang Yee Tan	Senior Analyst-Metal

Glenn Jackson
Managing Director

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

ALS Environmental

ALS Laboratory: please tick →

MACKAY 78 Harbour Road MACKAY QLD 4740 Ph: 02 6472 6866 E: gladstone@alsglobal.com

Rose Gum Road Warabrook NSW 2304 Ph: 02 4014 2500 E: samples.newcastle@alsglobal.com

Geary Place North Nowra NSW 2541 Ph: 02 4422 3127 E: nowra@alsglobal.com

46 Hod Way Malaga WA 6090 Ph: 08 9209 7655 E: samples.perth@alsglobal.com

Environmental Division Sydney

Work Order Reference

ES2330280

Telephone : + 61-2-8784 8555

CLIENT: GHD Pty Ltd	**TURNAROUND REQUIREMENT:** ☐ Standard TAT (List due date):	STANDARD TAT	**FOR LABORA**
OFFICE: Sydney	(Standard TAT may be longer for some tests e.g.. Ultra Trace Organics) ☐ Non Standard or urgent TAT (List due date):		Custody Seal Int
PROJECT: M12 Surface Water	**ALS QUOTE NO.:** SY/322/21	COC SEQUENCE NUMBER (Circle)	Free ice / frozen
ORDER NUMBER: 12554717		COC: 1 2 3 4 5 6 7	Random Sampl
PROJECT MANAGER: Henry Luo	**CONTACT PH:** Henry Luo 0414 090 002	OF: 1 2 3 4 5 6 7	Other comment

SAMPLER: Emily Smith, ~~Andrew Duval~~ Jackson Miller	**SAMPLER MOBILE:** 0431 522 928	**RELINQUISHED BY:** Jackson Miller	**RECEIVED BY:** FATO
COC emailed to ALS? (YES / NO)	**EDD FORMAT (or default):** ESDAT	DATE/TIME: 6/9/23 - 13:15	DATE/TIME: 6/9/23 1:14
Email Reports to: henry.luo@ghd.com , ghdlabreports@ghd.com; terry.nham@ghd.com, emily.smith@ghd.com; andrew.duval@ghd.com		**RELINQUISHED BY** DATE/TIME:	DATE/TIME:

COMMENTS/SPECIAL HANDLING/STORAGE OR DISPOSAL:

ALS USE	SAMPLE DETAILS MATRIX: SOLID (S) WATER (W)			CONTAINER INFORMATION		ANALYSIS REQUIRED including SUITES (NB. Suite Codes must be listed to attract suite price) Where **Metals** are required, specify **Total** (unfiltered bottle required) or **Dissolved** (field filtered bottle required).													
LAB ID	SAMPLE ID	DATE / TIME	MATRIX	Comments	TOTAL CONTAINERS	W-02T (8 total metals)	EG020T (total Fe, Mn)	NT-08A (total N, No2, No3, NH3, Total P, reactive P)	EP008 (chlorophyll a)	EP020 (oil & grease)	UTO-9W Ultra trace OC/OP	EP074DEFG (VOC - fumigants, Hal aliphatics, Hal Aromatics, THM)	MW006 (FC) Thermotolerant Coliforms	W-14A (PAH/phenols)	EA015H (TDS), EA025H (TSS)	EP080 (BTEXN)	Ultra trace OPP (EP234AX)	Super Ultra Trace PCB's (EP1318-ST)	PFAS - full suite (EP231X)
1	BADDS	5/9/23	Water		11	X	X	X	X	X		X		X	X	X	X		
2	BADMS	5/9/23	Water		11	X	X	X	X	X		X		X	X	X	X		
3	BADUS	5/9/23	Water		11	X	X	X	X	X		X		X	X	X	X		
4	COSDS	5/9/23	Water		11	X	X	X	X	X		X		X	X	X	X		
5	COSUS	5/9/23	Water		11	X	X	X	X	X		X		X	X	X	X		
6	HINDS	6/9/23	Water		11	X	X	X	X	X		X		X	X	X	X		
7	HINUS	6/9/23	Water		11	X	X	X	X	X		X		X	X	X	X		
8	KEMDS	5/9/23	Water		11	X	X	X	X	X		X		X	X	X	X		
9	KEMUS	5/9/23	Water		11	X	X	X	X	X		X		X	X	X	X		
10	ROPDS	6/9/23	Water		11	X	X	X	X	X		X		X	X	X	X		
11	ROPUS	6/9/23	Water		11	X	X	X	X	X		X		X	X	X	X		
12	SOUDS	6/9/23	Water		11	X	X	X	X	X		X		X	X	X	X		
13	SOUUS	6/9/23	Water		11	X	X	X	X	X		X		X	X	X	X		
14	SWDUP1	5/9/23	Water		1	X													
~~15~~	SWDUP2	6/9/23	Water	PLEASE FORWARD TO EUROFINS WITH ATTACHED COC	1														
~~16~~	GWDUP2	5/9/23	Water	PLEASE FORWARD TO EUROFINS WITH ATTACHED COC	1														

HT

CHAIN OF CUSTODY

ALS Environmental

ALS Laboratory: please tick →

☐BRISBANE 32 Shand Street Stafford QLD 4053 Ph: 07 3243 7222 E: samples.brisbane@alsglobal.com
☐ADELAIDE 21 Burma Road Pooraka SA 5095 Ph: 08 8359 0890 E: adelaide@alsglobal.com
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☐GLADSTONE 46 Callemondah Drive Clinton QLD 4680 Ph: 07 7471 5600 E: gladstone@alsglobal.com
☐MUDGEE 27 Sydney Road Mudgee NSW 2850 Ph: 02 6372 6735 E: mudgee.mail@alsglobal.com
☐PERTH 10 Hod Way Malaga WA 6090 Ph: 08 9209 7655 E: samples.perth@alsglobal.com

CLIENT: GHD Pty Ltd	**TURNAROUND REQUIREME** ☐ Standard TAT **(List due date):**	STANDARD TAT	**FOR LABORATORY USE ONLY (Circle)**
OFFICE: Sydney	(Standard TAT may be longer for some tests e.g., Ultra Trace ☐ Non Standard or urgent TAT **(List due date):**		Custody Seal Intact? Yes No N/A
PROJECT: M12 Groundwater	**ALS QUOTE NO.:** SY/322/21	**COC SEQUENCE NUMBER (Circle)**	Free ice / frozen ice bricks present upon receipt? Yes No N/A
ORDER NUMBER: 12554717		COC: 1 2 3 4 5 6 7	Random Sample Temperature on Receipt: °C
PROJECT MANAGER: Henry Luo	**CONTACT PH:** Henry Luo 0414 090 002	OF: 1 2 3 4 5 6 7	Other comment:

SAMPLER: Emily Smith, Jackson Miller	**SAMPLER MOBILE:** 0431 522 928	**RELINQUISHED BY:** Jackson Miller	**RECEIVED BY:** Fran	**RELINQUISHED BY:**
COC emailed to ALS? (YES / NO)	**EDD FORMAT (or default):** ESDAT	DATE/TIME: 6/9/23 13:15	DATE/TIME: 6/9/23 1:15	DATE/TIME:
Email Reports to: henry.luo@ghd.com, ghdlabreports@ghd.com; terry.nham@ghd.com; emily.smith@ghd.com; andrew.duval@ghd.com				

COMMENTS/SPECIAL HANDLING/STORAGE OR DISPOSAL:

ALS USE	SAMPLE DETAILS MATRIX: SOLID (S) WATER (W)			CONTAINER INFORMATION		ANALYSIS REQUIRED including SUITES (NB. Suite Codes must be listed to attract suite price) Where **Metals** are required, specify **Total** (unfiltered bottle required) or **Dissolved** (field filtered bottle required).											
LAB ID	SAMPLE ID	DATE / TIME	MATRIX	Comments	TOTAL CONTAINERS	W-02 (8 dissovled metals)	EG020F (dissolved Fe, Mn)	W-04 (TRH/BTEXN)	NT-08A (TN, NO2, NO3, NH3, TP, soluble Reactive P)	NT-01D & 02 (major cations & anions, Hardness)	EA015H (TDS)	EA025H (SS)	W-14A (PAH/Phenols)	W-02T (8 total metals)	BTEXN		
15	BH104R	5/9/23	Water		6	X	X	X	X	X	X	X					
16	BH107R	5/9/23	Water		6	X	X	X	X	X	X	X					
17	BH112R	5/9/23	Water		6	X	X	X	X	X	X	X					
18	BH145R	6/9/23	Water		6	X	X	X	X	X	X	X					
19	GWDUP1	5/9/23	Water		1	X											
20	GWRB1	6/9/23	Water		1									X			
21	Trip spike	6/9/23	Water		1										X		
22	Trip blank	6/9/23	Water		1										X		

eurofins | mgt

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Email: enquiries.melb@mgtlabmark.com.au

CHAIN OF CUSTODY RECORD

CLIENT DETAILS

Company Name : GHD Pty Ltd, Sydney	**Contact Name :** Emily Smith 0431 522 928	**Purchase Order :** 12554717	**COC Number :**
Office Address :	**Project Manager:** Henry Luo 0414 090 002	**PROJECT Number :** 12554717	**Eurofins | mgt quote ID :**
Level 15, 133 Castlereagh Street, Sydney NSW 2000	**Email for results :** emily.smith@ghd.com; terry.nham@ghd.com; henry.luo@ghd.com; ghdlabreports@ghd.com	**PROJECT Name :** M12 Water Sampling	**Data output format:** ESDAT

Special Directions & Comments :

Sent from ALS

Eurofins | mgt DI water batch number:

	Sample ID	Date	Matrix	Dissolved metals	Total metals					
1	SWDUP2	6/9/23	Water		X					
2	GWDUP2	5/9/23	Water	X						
3										
4										
5										
6										
7										
8										
9										
10										

Analytes

Some common holding times (with correct preservation).
For further information contact the lab

Waters		Soils	
BTEX, MAH, VOC	14 days	BTEX, MAH, VOC	14 days
TRH, PAH, Phenols, Pesticides	7 days	TRH, PAH, Phenols, Pesticides	14 days
Heavy Metals	6 months	Heavy Metals	6 months
Mercury, CrVI	28 days	Mercury, CrVI	28 days
Microbiological testing	24 hours	Microbiological testing	72 hours
BOD, Nitrate, Nitrite, Total N	2 days	Anions	28 days
Solids - TSS, TDS etc	7 days	SPOCAS, pH Field and FOX, CrS	24 hours
Ferrous iron	7 days	ASLP, TCLP	7 days

Containers:								Sample comments:
500P	250P	60P	1LA	40mL vial	200mL A	Jar	Bag	

Laboratory Staff

Relinquished By: Jackson Miller	**Received By:**
Date & Time : 6/9/23 13:15	**Date & Time :**
Signature:	**Signature:**

Method Of Shipment

☐ Courier
☐ Hand Delivered
☐ Postal
Courier Consignment # :

Temperature on arrival:

Report number:

CERTIFICATE OF ANALYSIS

Work Order	: **ES2330280**	Page	: 1 of 21
Client	: **GHD PTY LTD**	Laboratory	: Environmental Division Sydney
Contact	: MR HENRY LUO	Contact	: Sarah Mathew
Address	: LEVEL 15, 133 CASTLEREAGH STREET SYDNEY NSW, AUSTRALIA 2000	Address	: 277-289 Woodpark Road Smithfield NSW Australia 2164
Telephone	: +61 02 9239 7100	Telephone	: +61-2-8784 8555
Project	: 12554717	Date Samples Received	: 06-Sep-2023 13:15
Order number	: 12554717	Date Analysis Commenced	: 06-Sep-2023
C-O-C number	: ----	Issue Date	: 13-Sep-2023 14:10
Sampler	: JACKSON MILLES		
Site	: ----		
Quote number	: SY/322/21		
No. of samples received	: 14		
No. of samples analysed	: 14		

Accreditation No. 825
Accredited for compliance with
ISO/IEC 17025 - Testing

This report supersedes any previous report(s) with this reference. Results apply to the sample(s) as submitted, unless the sampling was conducted by ALS. This document shall not be reproduced, except in full.

This Certificate of Analysis contains the following information:

- General Comments
- Analytical Results
- Surrogate Control Limits

Additional information pertinent to this report will be found in the following separate attachments: Quality Control Report, QA/QC Compliance Assessment to assist with Quality Review and Sample Receipt Notification.

Signatories

This document has been electronically signed by the authorized signatories below. Electronic signing is carried out in compliance with procedures specified in 21 CFR Part 11.

Signatories	*Position*	*Accreditation Category*
Ankit Joshi	Senior Chemist - Inorganics	Sydney Inorganics, Smithfield, NSW
Edwandy Fadjar	Organic Coordinator	Sydney Organics, Smithfield, NSW
Franco Lentini	LCMS Coordinator	Sydney Organics, Smithfield, NSW

General Comments

The analytical procedures used by ALS have been developed from established internationally recognised procedures such as those published by the USEPA, APHA, AS and NEPM. In house developed procedures are fully validated and are often at the client request.

Where moisture determination has been performed, results are reported on a dry weight basis.

Where a reported less than (<) result is higher than the LOR, this may be due to primary sample extract/digestate dilution and/or insufficient sample for analysis.

Where the LOR of a reported result differs from standard LOR, this may be due to high moisture content, insufficient sample (reduced weight employed) or matrix interference.

When sampling time information is not provided by the client, sampling dates are shown without a time component. In these instances, the time component has been assumed by the laboratory for processing purposes.

Where a result is required to meet compliance limits the associated uncertainty must be considered. Refer to the ALS Contract for details.

Key : CAS Number = CAS registry number from database maintained by Chemical Abstracts Services. The Chemical Abstracts Service is a division of the American Chemical Society.
LOR = Limit of reporting
^ = This result is computed from individual analyte detections at or above the level of reporting
ø = ALS is not NATA accredited for these tests.
~ = Indicates an estimated value.

- EP234: Poor matrix spike recovery for particular compounds due to matrix interferences and high matrix spike recovery has been noted for particular compounds due to ion enhancement.
- EP075 (SIM): Where reported, Benzo(a)pyrene Toxicity Equivalent Quotient (TEQ) per the NEPM (2013) is the sum total of the concentration of the eight carcinogenic PAHs multiplied by their Toxicity Equivalence Factor (TEF) relative to Benzo(a)pyrene. TEF values are provided in brackets as follows: Benz(a)anthracene (0.1), Chrysene (0.01), Benzo(b+j) & Benzo(k)fluoranthene (0.1), Benzo(a)pyrene (1.0), Indeno(1.2.3.cd)pyrene (0.1), Dibenz(a.h)anthracene (1.0), Benzo(g.h.i)perylene (0.01). Less than LOR results for 'TEQ Zero' are treated as zero.
- EP080: Where reported, Total Xylenes is the sum of the reported concentrations of m&p-Xylene and o-Xylene at or above the LOR.
- EP074: Where reported, Total Trihalomethanes is the sum of the reported concentrations of all Trihalomethanes at or above the LOR.
- EP074: Where reported, Total Trimethylbenzenes is the sum of the reported concentrations of 1.2.3-Trimethylbenzene, 1.2.4-Trimethylbenzene and 1.3.5-Trimethylbenzene at or above the LOR.
- EP075(SIM): Where reported, Total Cresol is the sum of the reported concentrations of 2-Methylphenol and 3- & 4-Methylphenol at or above the LOR.

Analytical Results

Sub-Matrix: WATER (Matrix: WATER)			Sample ID	BADDS	BADMS	BADUS	COSDS	COSUS
			Sampling date / time	05-Sep-2023 00:00	05-Sep-2023 00:00	05-Sep-2023 00:00	05-Sep-2023 00:00	05-Sep-2023 00:00
Compound	CAS Number	LOR	Unit	ES2330280-001	ES2330280-002	ES2330280-003	ES2330280-004	ES2330280-005
				Result	Result	Result	Result	Result
EA005P: pH by PC Titrator								
pH Value	----	0.01	pH Unit	**7.66**	**7.82**	**7.81**	**7.99**	**7.95**
EA015: Total Dissolved Solids dried at 180 ± 5 °C								
Total Dissolved Solids @180°C	----	10	mg/L	**648**	**720**	**495**	**604**	**2580**
EA025: Total Suspended Solids dried at 104 ± 2°C								
Suspended Solids (SS)	----	5	mg/L	**63**	**55**	**40**	**89**	**14**
EG020T: Total Metals by ICP-MS								
Arsenic	7440-38-2	0.001	mg/L	<0.001	<0.001	<0.001	**0.001**	<0.001
Cadmium	7440-43-9	0.0001	mg/L	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001
Chromium	7440-47-3	0.001	mg/L	**0.002**	**0.002**	**0.002**	**0.004**	<0.001
Copper	7440-50-8	0.001	mg/L	**0.004**	**0.004**	**0.004**	**0.006**	<0.001
Nickel	7440-02-0	0.001	mg/L	**0.003**	**0.002**	**0.003**	**0.004**	<0.001
Lead	7439-92-1	0.001	mg/L	<0.001	**0.001**	**0.002**	**0.002**	<0.001
Zinc	7440-66-6	0.005	mg/L	<0.005	**0.008**	**0.012**	**0.013**	<0.005
Manganese	7439-96-5	0.001	mg/L	**0.153**	**0.164**	**0.228**	**0.385**	**1.72**
Iron	7439-89-6	0.05	mg/L	**1.83**	**2.08**	**3.09**	**4.35**	**1.40**
EG035T: Total Recoverable Mercury by FIMS								
Mercury	7439-97-6	0.0001	mg/L	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001
EK055G: Ammonia as N by Discrete Analyser								
Ammonia as N	7664-41-7	0.01	mg/L	**0.02**	**0.03**	**0.02**	**0.04**	**0.15**
EK057G: Nitrite as N by Discrete Analyser								
Nitrite as N	14797-65-0	0.01	mg/L	**0.02**	**0.03**	<0.01	**0.03**	<0.01
EK058G: Nitrate as N by Discrete Analyser								
Nitrate as N	14797-55-8	0.01	mg/L	**0.67**	**1.34**	**0.03**	**0.48**	**0.04**
EK059G: Nitrite plus Nitrate as N (NOx) by Discrete Analyser								
Nitrite + Nitrate as N	----	0.01	mg/L	**0.69**	**1.37**	**0.03**	**0.51**	**0.04**
EK061G: Total Kjeldahl Nitrogen By Discrete Analyser								
Total Kjeldahl Nitrogen as N	----	0.1	mg/L	**0.7**	**1.1**	**0.8**	**1.3**	**0.6**
EK062G: Total Nitrogen as N (TKN + NOx) by Discrete Analyser								
^ Total Nitrogen as N	----	0.1	mg/L	**1.4**	**2.5**	**0.8**	**1.8**	**0.6**
EK067G: Total Phosphorus as P by Discrete Analyser								
Total Phosphorus as P	----	0.01	mg/L	**0.08**	**0.16**	**0.13**	**0.16**	**0.10**
EK071G: Reactive Phosphorus as P by discrete analyser								
Reactive Phosphorus as P	14265-44-2	0.01	mg/L	**0.04**	<0.01	<0.01	<0.01	<0.01

Analytical Results

Sub-Matrix: WATER (Matrix: WATER)			Sample ID	BADDS	BADMS	BADUS	COSDS	COSUS
			Sampling date / time	05-Sep-2023 00:00	05-Sep-2023 00:00	05-Sep-2023 00:00	05-Sep-2023 00:00	05-Sep-2023 00:00
Compound	CAS Number	LOR	Unit	ES2330280-001	ES2330280-002	ES2330280-003	ES2330280-004	ES2330280-005
				Result	Result	Result	Result	Result
EP008: Chlorophyll a & Pheophytin a								
Chlorophyll a	----	1	mg/m³	**11**	**13**	**17**	**11**	**4**
EP020: Oil and Grease (O&G)								
Oil & Grease	----	5	mg/L	**8**	**8**	**12**	**14**	<5
EP074D: Fumigants								
2.2-Dichloropropane	594-20-7	5	µg/L	<5	<5	<5	<5	<5
1.2-Dichloropropane	78-87-5	5	µg/L	<5	<5	<5	<5	<5
cis-1.3-Dichloropropylene	10061-01-5	5	µg/L	<5	<5	<5	<5	<5
trans-1.3-Dichloropropylene	10061-02-6	5	µg/L	<5	<5	<5	<5	<5
1.2-Dibromoethane (EDB)	106-93-4	5	µg/L	<5	<5	<5	<5	<5
EP074E: Halogenated Aliphatic Compounds								
Dichlorodifluoromethane	75-71-8	50	µg/L	<50	<50	<50	<50	<50
Chloromethane	74-87-3	50	µg/L	<50	<50	<50	<50	<50
Vinyl chloride	75-01-4	50	µg/L	<50	<50	<50	<50	<50
Bromomethane	74-83-9	50	µg/L	<50	<50	<50	<50	<50
Chloroethane	75-00-3	50	µg/L	<50	<50	<50	<50	<50
Trichlorofluoromethane	75-69-4	50	µg/L	<50	<50	<50	<50	<50
1.1-Dichloroethene	75-35-4	5	µg/L	<5	<5	<5	<5	<5
Iodomethane	74-88-4	5	µg/L	<5	<5	<5	<5	<5
trans-1.2-Dichloroethene	156-60-5	5	µg/L	<5	<5	<5	<5	<5
1.1-Dichloroethane	75-34-3	5	µg/L	<5	<5	<5	<5	<5
cis-1.2-Dichloroethene	156-59-2	5	µg/L	<5	<5	<5	<5	<5
1.1.1-Trichloroethane	71-55-6	5	µg/L	<5	<5	<5	<5	<5
1.1-Dichloropropylene	563-58-6	5	µg/L	<5	<5	<5	<5	<5
Carbon Tetrachloride	56-23-5	5	µg/L	<5	<5	<5	<5	<5
1.2-Dichloroethane	107-06-2	5	µg/L	<5	<5	<5	<5	<5
Trichloroethene	79-01-6	5	µg/L	<5	<5	<5	<5	<5
Dibromomethane	74-95-3	5	µg/L	<5	<5	<5	<5	<5
1.1.2-Trichloroethane	79-00-5	5	µg/L	<5	<5	<5	<5	<5
1.3-Dichloropropane	142-28-9	5	µg/L	<5	<5	<5	<5	<5
Tetrachloroethene	127-18-4	5	µg/L	<5	<5	<5	<5	<5
1.1.1.2-Tetrachloroethane	630-20-6	5	µg/L	<5	<5	<5	<5	<5
trans-1.4-Dichloro-2-butene	110-57-6	5	µg/L	<5	<5	<5	<5	<5
cis-1.4-Dichloro-2-butene	1476-11-5	5	µg/L	<5	<5	<5	<5	<5
1.1.2.2-Tetrachloroethane	79-34-5	5	µg/L	<5	<5	<5	<5	<5

Analytical Results

Sub-Matrix: WATER (Matrix: WATER)				Sample ID	BADDS	BADMS	BADUS	COSDS	COSUS
				Sampling date / time	05-Sep-2023 00:00	05-Sep-2023 00:00	05-Sep-2023 00:00	05-Sep-2023 00:00	05-Sep-2023 00:00
Compound	CAS Number	LOR	Unit		ES2330280-001	ES2330280-002	ES2330280-003	ES2330280-004	ES2330280-005
					Result	Result	Result	Result	Result
EP074E: Halogenated Aliphatic Compounds - Continued									
1.2.3-Trichloropropane	96-18-4	5	µg/L		<5	<5	<5	<5	<5
Pentachloroethane	76-01-7	5	µg/L		<5	<5	<5	<5	<5
1.2-Dibromo-3-chloropropane	96-12-8	5	µg/L		<5	<5	<5	<5	<5
Hexachlorobutadiene	87-68-3	5	µg/L		<5	<5	<5	<5	<5
EP074F: Halogenated Aromatic Compounds									
Chlorobenzene	108-90-7	5	µg/L		<5	<5	<5	<5	<5
Bromobenzene	108-86-1	5	µg/L		<5	<5	<5	<5	<5
2-Chlorotoluene	95-49-8	5	µg/L		<5	<5	<5	<5	<5
4-Chlorotoluene	106-43-4	5	µg/L		<5	<5	<5	<5	<5
1.3-Dichlorobenzene	541-73-1	5	µg/L		<5	<5	<5	<5	<5
1.4-Dichlorobenzene	106-46-7	5	µg/L		<5	<5	<5	<5	<5
1.2-Dichlorobenzene	95-50-1	5	µg/L		<5	<5	<5	<5	<5
1.2.4-Trichlorobenzene	120-82-1	5	µg/L		<5	<5	<5	<5	<5
1.2.3-Trichlorobenzene	87-61-6	5	µg/L		<5	<5	<5	<5	<5
EP074G: Trihalomethanes									
Chloroform	67-66-3	5	µg/L		<5	<5	<5	<5	<5
Bromodichloromethane	75-27-4	5	µg/L		<5	<5	<5	<5	<5
Dibromochloromethane	124-48-1	5	µg/L		<5	<5	<5	<5	<5
Bromoform	75-25-2	5	µg/L		<5	<5	<5	<5	<5
EP075(SIM)A: Phenolic Compounds									
Phenol	108-95-2	1.0	µg/L		<1.0	<1.0	<1.0	<1.0	<1.0
2-Chlorophenol	95-57-8	1.0	µg/L		<1.0	<1.0	<1.0	<1.0	<1.0
2-Methylphenol	95-48-7	1.0	µg/L		<1.0	<1.0	<1.0	<1.0	<1.0
3- & 4-Methylphenol	1319-77-3	2.0	µg/L		<2.0	<2.0	<2.0	<2.0	<2.0
2-Nitrophenol	88-75-5	1.0	µg/L		<1.0	<1.0	<1.0	<1.0	<1.0
2.4-Dimethylphenol	105-67-9	1.0	µg/L		<1.0	<1.0	<1.0	<1.0	<1.0
2.4-Dichlorophenol	120-83-2	1.0	µg/L		<1.0	<1.0	<1.0	<1.0	<1.0
2.6-Dichlorophenol	87-65-0	1.0	µg/L		<1.0	<1.0	<1.0	<1.0	<1.0
4-Chloro-3-methylphenol	59-50-7	1.0	µg/L		<1.0	<1.0	<1.0	<1.0	<1.0
2.4.6-Trichlorophenol	88-06-2	1.0	µg/L		<1.0	<1.0	<1.0	<1.0	<1.0
2.4.5-Trichlorophenol	95-95-4	1.0	µg/L		<1.0	<1.0	<1.0	<1.0	<1.0
Pentachlorophenol	87-86-5	2.0	µg/L		<2.0	<2.0	<2.0	<2.0	<2.0
EP075(SIM)B: Polynuclear Aromatic Hydrocarbons									
Naphthalene	91-20-3	1.0	µg/L		<1.0	<1.0	<1.0	<1.0	<1.0

Analytical Results

Sub-Matrix: WATER (Matrix: WATER)				Sample ID	BADDS	BADMS	BADUS	COSDS	COSUS
				Sampling date / time	05-Sep-2023 00:00	05-Sep-2023 00:00	05-Sep-2023 00:00	05-Sep-2023 00:00	05-Sep-2023 00:00
Compound	CAS Number	LOR	Unit		ES2330280-001	ES2330280-002	ES2330280-003	ES2330280-004	ES2330280-005
					Result	Result	Result	Result	Result
EP075(SIM)B: Polynuclear Aromatic Hydrocarbons - Continued									
Acenaphthylene	208-96-8	1.0	µg/L		<1.0	<1.0	<1.0	<1.0	<1.0
Acenaphthene	83-32-9	1.0	µg/L		<1.0	<1.0	<1.0	<1.0	<1.0
Fluorene	86-73-7	1.0	µg/L		<1.0	<1.0	<1.0	<1.0	<1.0
Phenanthrene	85-01-8	1.0	µg/L		<1.0	<1.0	<1.0	<1.0	<1.0
Anthracene	120-12-7	1.0	µg/L		<1.0	<1.0	<1.0	<1.0	<1.0
Fluoranthene	206-44-0	1.0	µg/L		<1.0	<1.0	<1.0	<1.0	<1.0
Pyrene	129-00-0	1.0	µg/L		<1.0	<1.0	<1.0	<1.0	<1.0
Benz(a)anthracene	56-55-3	1.0	µg/L		<1.0	<1.0	<1.0	<1.0	<1.0
Chrysene	218-01-9	1.0	µg/L		<1.0	<1.0	<1.0	<1.0	<1.0
Benzo(b+j)fluoranthene	205-99-2 205-82-3	1.0	µg/L		<1.0	<1.0	<1.0	<1.0	<1.0
Benzo(k)fluoranthene	207-08-9	1.0	µg/L		<1.0	<1.0	<1.0	<1.0	<1.0
Benzo(a)pyrene	50-32-8	0.5	µg/L		<0.5	<0.5	<0.5	<0.5	<0.5
Indeno(1.2.3.cd)pyrene	193-39-5	1.0	µg/L		<1.0	<1.0	<1.0	<1.0	<1.0
Dibenz(a.h)anthracene	53-70-3	1.0	µg/L		<1.0	<1.0	<1.0	<1.0	<1.0
Benzo(g.h.i)perylene	191-24-2	1.0	µg/L		<1.0	<1.0	<1.0	<1.0	<1.0
^ Sum of polycyclic aromatic hydrocarbons	----	0.5	µg/L		<0.5	<0.5	<0.5	<0.5	<0.5
^ Benzo(a)pyrene TEQ (zero)	----	0.5	µg/L		<0.5	<0.5	<0.5	<0.5	<0.5
EP080: BTEXN									
Benzene	71-43-2	1	µg/L		<1	<1	<1	<1	<1
Toluene	108-88-3	2	µg/L		<2	<2	<2	<2	<2
Ethylbenzene	100-41-4	2	µg/L		<2	<2	<2	<2	<2
meta- & para-Xylene	108-38-3 106-42-3	2	µg/L		<2	<2	<2	<2	<2
ortho-Xylene	95-47-6	2	µg/L		<2	<2	<2	<2	<2
^ Total Xylenes	----	2	µg/L		<2	<2	<2	<2	<2
^ Sum of BTEX	----	1	µg/L		<1	<1	<1	<1	<1
Naphthalene	91-20-3	5	µg/L		<5	<5	<5	<5	<5
EP234A: OP Pesticides									
Acephate	30560-19-1	0.5	µg/L		<0.5	<0.5	<0.5	<0.5	<0.5
Azinphos-methyl	86-50-0	0.02	µg/L		<0.02	<0.02	<0.02	<0.02	<0.02
Azinphos-ethyl	2642-71-9	0.02	µg/L		<0.02	<0.02	<0.02	<0.02	<0.02
Bensulide	741-58-2	0.1	µg/L		<0.1	<0.1	<0.1	<0.1	<0.1
Bromophos-ethyl	4824-78-6	0.10	µg/L		<0.10	<0.10	<0.10	<0.10	<0.10
Carbofenothion	786-19-6	0.02	µg/L		<0.02	<0.02	<0.02	<0.02	<0.02
Chlorfenvinphos	470-90-6	0.02	µg/L		<0.02	<0.02	<0.02	<0.02	<0.02

Analytical Results

Sub-Matrix: WATER (Matrix: WATER)				Sample ID	BADDS	BADMS	BADUS	COSDS	COSUS
				Sampling date / time	05-Sep-2023 00:00	05-Sep-2023 00:00	05-Sep-2023 00:00	05-Sep-2023 00:00	05-Sep-2023 00:00
Compound	CAS Number	LOR	Unit		ES2330280-001	ES2330280-002	ES2330280-003	ES2330280-004	ES2330280-005
					Result	Result	Result	Result	Result
EP234A: OP Pesticides - Continued									
Chlorpyrifos	2921-88-2	0.02	µg/L		<0.02	<0.02	<0.02	<0.02	<0.02
Chlorpyrifos-methyl	5598-13-0	0.2	µg/L		<0.2	<0.2	<0.2	<0.2	<0.2
Coumaphos	56-72-4	0.01	µg/L		<0.01	<0.01	<0.01	<0.01	<0.01
Demeton-O	298-03-3	0.02	µg/L		<0.02	<0.02	<0.02	<0.02	<0.02
Demeton-O & Demeton-S	298-03-3/126-75-0	0.02	µg/L		<0.02	<0.02	<0.02	<0.02	<0.02
Demeton-S	126-75-0	0.02	µg/L		<0.02	<0.02	<0.02	<0.02	<0.02
Demeton-S-methyl	919-86-8	0.02	µg/L		<0.02	<0.02	<0.02	<0.02	<0.02
Diazinon	333-41-5	0.01	µg/L		<0.01	<0.01	<0.01	<0.01	<0.01
Dichlorvos	62-73-7	0.20	µg/L		<0.20	<0.20	<0.20	<0.20	<0.20
Dimethoate	60-51-5	0.02	µg/L		<0.02	<0.02	<0.02	<0.02	<0.02
Disulfoton	298-04-4	0.05	µg/L		<0.05	<0.05	<0.05	<0.05	<0.05
EPN	2104-64-5	0.05	µg/L		<0.05	<0.05	<0.05	<0.05	<0.05
Ethion	563-12-2	0.02	µg/L		<0.02	<0.02	<0.02	<0.02	<0.02
Ethoprophos	13194-48-4	0.01	µg/L		<0.01	<0.01	<0.01	<0.01	<0.01
Fenamiphos	22224-92-6	0.01	µg/L		<0.01	<0.01	<0.01	<0.01	<0.01
Fenchlorphos (Ronnel)	299-84-3	10	µg/L		<10	<10	<10	<10	<10
Fenitrothion	122-14-5	2	µg/L		<2	<2	<2	<2	<2
Fensulfothion	115-90-2	0.01	µg/L		<0.01	<0.01	<0.01	<0.01	<0.01
Fenthion	55-38-9	0.05	µg/L		<0.05	<0.05	<0.05	<0.05	<0.05
Formothion	2540-82-1	20	µg/L		<20	<20	<20	<20	<20
Fosetyl Aluminium	39148-24-8	10	µg/L		<10	<10	<10	<10	<10
Malathion	121-75-5	0.02	µg/L		<0.02	<0.02	<0.02	<0.02	<0.02
Methidathion	950-37-8	0.1	µg/L		<0.1	<0.1	<0.1	<0.1	<0.1
Mevinphos	7786-34-7	0.02	µg/L		<0.02	<0.02	<0.02	<0.02	<0.02
Monocrotophos	6923-22-4	0.02	µg/L		<0.02	<0.02	<0.02	<0.02	<0.02
Naftalofos	1491-41-4	1.0	µg/L		<1.0	<1.0	<1.0	<1.0	<1.0
Omethoate	1113-02-6	0.01	µg/L		<0.01	<0.01	<0.01	<0.01	<0.01
Parathion	56-38-2	0.2	µg/L		<0.2	<0.2	<0.2	<0.2	<0.2
Parathion-methyl	298-00-0	0.5	µg/L		<0.5	<0.5	<0.5	<0.5	<0.5
Phorate	298-02-2	0.1	µg/L		<0.1	<0.1	<0.1	<0.1	<0.1
Pirimiphos-ethyl	23505-41-1	0.01	µg/L		<0.01	<0.01	<0.01	<0.01	<0.01
Pirimiphos-methyl	29232-93-7	0.01	µg/L		<0.01	<0.01	<0.01	<0.01	<0.01
Profenofos	41198-08-7	0.01	µg/L		<0.01	<0.01	<0.01	<0.01	<0.01
Prothiofos	34643-46-4	0.1	µg/L		<0.1	<0.1	<0.1	<0.1	<0.1
Pyrazophos	13457-18-6	0.1	µg/L		<0.1	<0.1	<0.1	<0.1	<0.1

Analytical Results

Sub-Matrix: WATER (Matrix: WATER)				Sample ID	BADDS	BADMS	BADUS	COSDS	COSUS
				Sampling date / time	05-Sep-2023 00:00	05-Sep-2023 00:00	05-Sep-2023 00:00	05-Sep-2023 00:00	05-Sep-2023 00:00
Compound	CAS Number	LOR	Unit		ES2330280-001	ES2330280-002	ES2330280-003	ES2330280-004	ES2330280-005
					Result	Result	Result	Result	Result
EP234A: OP Pesticides - Continued									
Sulfotep	3689-24-5	0.005	µg/L		<0.005	<0.005	<0.005	<0.005	<0.005
Sulprofos	35400-43-2	0.05	µg/L		<0.05	<0.05	<0.05	<0.05	<0.05
Temephos	3383-96-8	0.02	µg/L		<0.02	<0.02	<0.02	<0.02	<0.02
Terbufos	13071-79-9	0.01	µg/L		<0.01	<0.01	<0.01	<0.01	<0.01
Tetrachlorvinphos	22248-79-9	0.01	µg/L		<0.01	<0.01	<0.01	<0.01	<0.01
Thiometon	640-15-3	0.5	µg/L		<0.5	<0.5	<0.5	<0.5	<0.5
Triazophos	24017-47-8	0.005	µg/L		<0.005	<0.005	<0.005	<0.005	<0.005
Trichlorfon	52-68-6	0.02	µg/L		<0.02	<0.02	<0.02	<0.02	<0.02
Trichloronate	327-98-0	0.5	µg/L		<0.5	<0.5	<0.5	<0.5	<0.5
EP074S: VOC Surrogates									
1.2-Dichloroethane-D4	17060-07-0	5	%		**106**	**97.3**	**99.0**	**105**	**107**
Toluene-D8	2037-26-5	5	%		**97.0**	**97.3**	**103**	**97.3**	**99.0**
4-Bromofluorobenzene	460-00-4	5	%		**101**	**101**	**108**	**108**	**109**
EP075(SIM)S: Phenolic Compound Surrogates									
Phenol-d6	13127-88-3	1.0	%		**27.2**	**25.1**	**32.1**	**28.1**	**23.3**
2-Chlorophenol-D4	93951-73-6	1.0	%		**48.8**	**47.6**	**59.9**	**50.6**	**45.7**
2.4.6-Tribromophenol	118-79-6	1.0	%		**32.8**	**34.4**	**45.2**	**36.6**	**34.2**
EP075(SIM)T: PAH Surrogates									
2-Fluorobiphenyl	321-60-8	1.0	%		**53.1**	**50.1**	**62.8**	**55.2**	**53.2**
Anthracene-d10	1719-06-8	1.0	%		**62.7**	**58.3**	**79.0**	**60.6**	**60.4**
4-Terphenyl-d14	1718-51-0	1.0	%		**81.2**	**81.5**	**98.6**	**77.4**	**72.3**
EP080S: TPH(V)/BTEX Surrogates									
1.2-Dichloroethane-D4	17060-07-0	2	%		**100**	**91.8**	**93.4**	**99.2**	**101**
Toluene-D8	2037-26-5	2	%		**96.4**	**96.7**	**103**	**96.7**	**98.4**
4-Bromofluorobenzene	460-00-4	2	%		**111**	**111**	**116**	**115**	**112**

Analytical Results

Sub-Matrix: WATER (Matrix: WATER)			Sample ID	HINDS	HINUS	KEMDS	KEMUS	ROPDS
			Sampling date / time	06-Sep-2023 00:00	06-Sep-2023 00:00	05-Sep-2023 00:00	05-Sep-2023 00:00	06-Sep-2023 00:00
Compound	CAS Number	LOR	Unit	ES2330280-006	ES2330280-007	ES2330280-008	ES2330280-009	ES2330280-010
				Result	Result	Result	Result	Result
EA005P: pH by PC Titrator								
pH Value	----	0.01	pH Unit	**7.96**	**7.97**	**7.97**	**7.94**	**8.22**
EA015: Total Dissolved Solids dried at 180 ± 5 °C								
Total Dissolved Solids @180°C	----	10	mg/L	**304**	**368**	**624**	**657**	**2920**
EA025: Total Suspended Solids dried at 104 ± 2°C								
Suspended Solids (SS)	----	5	mg/L	**7**	**7**	**16**	**27**	**12**
EG020T: Total Metals by ICP-MS								
Arsenic	7440-38-2	0.001	mg/L	<0.001	<0.001	<0.001	<0.001	<0.001
Cadmium	7440-43-9	0.0001	mg/L	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001
Chromium	7440-47-3	0.001	mg/L	<0.001	<0.001	<0.001	<0.001	<0.001
Copper	7440-50-8	0.001	mg/L	**0.001**	<0.001	**0.005**	**0.004**	**0.002**
Nickel	7440-02-0	0.001	mg/L	**0.001**	<0.001	<0.001	<0.001	<0.001
Lead	7439-92-1	0.001	mg/L	<0.001	<0.001	<0.001	<0.001	<0.001
Zinc	7440-66-6	0.005	mg/L	<0.005	<0.005	**0.011**	**0.008**	**0.007**
Manganese	7439-96-5	0.001	mg/L	**0.404**	**0.443**	**0.042**	**0.052**	**0.755**
Iron	7439-89-6	0.05	mg/L	**1.03**	**3.06**	**1.00**	**0.93**	**0.30**
EG035T: Total Recoverable Mercury by FIMS								
Mercury	7439-97-6	0.0001	mg/L	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001
EK055G: Ammonia as N by Discrete Analyser								
Ammonia as N	7664-41-7	0.01	mg/L	**0.15**	**0.03**	**0.04**	**0.03**	**0.02**
EK057G: Nitrite as N by Discrete Analyser								
Nitrite as N	14797-65-0	0.01	mg/L	**0.01**	<0.01	<0.01	<0.01	<0.01
EK058G: Nitrate as N by Discrete Analyser								
Nitrate as N	14797-55-8	0.01	mg/L	**0.10**	<0.01	**2.40**	**2.58**	<0.01
EK059G: Nitrite plus Nitrate as N (NOx) by Discrete Analyser								
Nitrite + Nitrate as N	----	0.01	mg/L	**0.11**	<0.01	**2.40**	**2.58**	<0.01
EK061G: Total Kjeldahl Nitrogen By Discrete Analyser								
Total Kjeldahl Nitrogen as N	----	0.1	mg/L	**1.0**	**1.2**	**1.1**	**1.3**	**0.6**
EK062G: Total Nitrogen as N (TKN + NOx) by Discrete Analyser								
^ Total Nitrogen as N	----	0.1	mg/L	**1.1**	**1.2**	**3.5**	**3.9**	**0.6**
EK067G: Total Phosphorus as P by Discrete Analyser								
Total Phosphorus as P	----	0.01	mg/L	**0.06**	**0.08**	**0.47**	**0.51**	**0.03**
EK071G: Reactive Phosphorus as P by discrete analyser								
Reactive Phosphorus as P	14265-44-2	0.01	mg/L	<0.01	<0.01	**0.44**	**0.46**	<0.01

Analytical Results

Sub-Matrix: WATER (Matrix: WATER)			Sample ID	HINDS	HINUS	KEMDS	KEMUS	ROPDS
			Sampling date / time	06-Sep-2023 00:00	06-Sep-2023 00:00	05-Sep-2023 00:00	05-Sep-2023 00:00	06-Sep-2023 00:00
Compound	CAS Number	LOR	Unit	ES2330280-006	ES2330280-007	ES2330280-008	ES2330280-009	ES2330280-010
				Result	Result	Result	Result	Result
EP008: Chlorophyll a & Pheophytin a								
Chlorophyll a	----	1	mg/m³	**2**	**2**	**3**	**3**	**7**
EP020: Oil and Grease (O&G)								
Oil & Grease	----	5	mg/L	<5	<5	<5	<5	<5
EP074D: Fumigants								
2.2-Dichloropropane	594-20-7	5	µg/L	<5	<5	<5	<5	<5
1.2-Dichloropropane	78-87-5	5	µg/L	<5	<5	<5	<5	<5
cis-1.3-Dichloropropylene	10061-01-5	5	µg/L	<5	<5	<5	<5	<5
trans-1.3-Dichloropropylene	10061-02-6	5	µg/L	<5	<5	<5	<5	<5
1.2-Dibromoethane (EDB)	106-93-4	5	µg/L	<5	<5	<5	<5	<5
EP074E: Halogenated Aliphatic Compounds								
Dichlorodifluoromethane	75-71-8	50	µg/L	<50	<50	<50	<50	<50
Chloromethane	74-87-3	50	µg/L	<50	<50	<50	<50	<50
Vinyl chloride	75-01-4	50	µg/L	<50	<50	<50	<50	<50
Bromomethane	74-83-9	50	µg/L	<50	<50	<50	<50	<50
Chloroethane	75-00-3	50	µg/L	<50	<50	<50	<50	<50
Trichlorofluoromethane	75-69-4	50	µg/L	<50	<50	<50	<50	<50
1.1-Dichloroethene	75-35-4	5	µg/L	<5	<5	<5	<5	<5
Iodomethane	74-88-4	5	µg/L	<5	<5	<5	<5	<5
trans-1.2-Dichloroethene	156-60-5	5	µg/L	<5	<5	<5	<5	<5
1.1-Dichloroethane	75-34-3	5	µg/L	<5	<5	<5	<5	<5
cis-1.2-Dichloroethene	156-59-2	5	µg/L	<5	<5	<5	<5	<5
1.1.1-Trichloroethane	71-55-6	5	µg/L	<5	<5	<5	<5	<5
1.1-Dichloropropylene	563-58-6	5	µg/L	<5	<5	<5	<5	<5
Carbon Tetrachloride	56-23-5	5	µg/L	<5	<5	<5	<5	<5
1.2-Dichloroethane	107-06-2	5	µg/L	<5	<5	<5	<5	<5
Trichloroethene	79-01-6	5	µg/L	<5	<5	<5	<5	<5
Dibromomethane	74-95-3	5	µg/L	<5	<5	<5	<5	<5
1.1.2-Trichloroethane	79-00-5	5	µg/L	<5	<5	<5	<5	<5
1.3-Dichloropropane	142-28-9	5	µg/L	<5	<5	<5	<5	<5
Tetrachloroethene	127-18-4	5	µg/L	<5	<5	<5	<5	<5
1.1.1.2-Tetrachloroethane	630-20-6	5	µg/L	<5	<5	<5	<5	<5
trans-1.4-Dichloro-2-butene	110-57-6	5	µg/L	<5	<5	<5	<5	<5
cis-1.4-Dichloro-2-butene	1476-11-5	5	µg/L	<5	<5	<5	<5	<5
1.1.2.2-Tetrachloroethane	79-34-5	5	µg/L	<5	<5	<5	<5	<5

Analytical Results

Sub-Matrix: WATER (Matrix: WATER)				Sample ID	HINDS	HINUS	KEMDS	KEMUS	ROPDS
				Sampling date / time	06-Sep-2023 00:00	06-Sep-2023 00:00	05-Sep-2023 00:00	05-Sep-2023 00:00	06-Sep-2023 00:00
Compound	CAS Number	LOR	Unit		ES2330280-006	ES2330280-007	ES2330280-008	ES2330280-009	ES2330280-010
					Result	Result	Result	Result	Result
EP074E: Halogenated Aliphatic Compounds - Continued									
1.2.3-Trichloropropane	96-18-4	5	µg/L		<5	<5	<5	<5	<5
Pentachloroethane	76-01-7	5	µg/L		<5	<5	<5	<5	<5
1.2-Dibromo-3-chloropropane	96-12-8	5	µg/L		<5	<5	<5	<5	<5
Hexachlorobutadiene	87-68-3	5	µg/L		<5	<5	<5	<5	<5
EP074F: Halogenated Aromatic Compounds									
Chlorobenzene	108-90-7	5	µg/L		<5	<5	<5	<5	<5
Bromobenzene	108-86-1	5	µg/L		<5	<5	<5	<5	<5
2-Chlorotoluene	95-49-8	5	µg/L		<5	<5	<5	<5	<5
4-Chlorotoluene	106-43-4	5	µg/L		<5	<5	<5	<5	<5
1.3-Dichlorobenzene	541-73-1	5	µg/L		<5	<5	<5	<5	<5
1.4-Dichlorobenzene	106-46-7	5	µg/L		<5	<5	<5	<5	<5
1.2-Dichlorobenzene	95-50-1	5	µg/L		<5	<5	<5	<5	<5
1.2.4-Trichlorobenzene	120-82-1	5	µg/L		<5	<5	<5	<5	<5
1.2.3-Trichlorobenzene	87-61-6	5	µg/L		<5	<5	<5	<5	<5
EP074G: Trihalomethanes									
Chloroform	67-66-3	5	µg/L		<5	<5	<5	<5	<5
Bromodichloromethane	75-27-4	5	µg/L		<5	<5	<5	<5	<5
Dibromochloromethane	124-48-1	5	µg/L		<5	<5	<5	<5	<5
Bromoform	75-25-2	5	µg/L		<5	<5	<5	<5	<5
EP075(SIM)A: Phenolic Compounds									
Phenol	108-95-2	1.0	µg/L		<1.0	<1.0	<1.0	<1.0	<1.0
2-Chlorophenol	95-57-8	1.0	µg/L		<1.0	<1.0	<1.0	<1.0	<1.0
2-Methylphenol	95-48-7	1.0	µg/L		<1.0	<1.0	<1.0	<1.0	<1.0
3- & 4-Methylphenol	1319-77-3	2.0	µg/L		<2.0	<2.0	<2.0	<2.0	<2.0
2-Nitrophenol	88-75-5	1.0	µg/L		<1.0	<1.0	<1.0	<1.0	<1.0
2.4-Dimethylphenol	105-67-9	1.0	µg/L		<1.0	<1.0	<1.0	<1.0	<1.0
2.4-Dichlorophenol	120-83-2	1.0	µg/L		<1.0	<1.0	<1.0	<1.0	<1.0
2.6-Dichlorophenol	87-65-0	1.0	µg/L		<1.0	<1.0	<1.0	<1.0	<1.0
4-Chloro-3-methylphenol	59-50-7	1.0	µg/L		<1.0	<1.0	<1.0	<1.0	<1.0
2.4.6-Trichlorophenol	88-06-2	1.0	µg/L		<1.0	<1.0	<1.0	<1.0	<1.0
2.4.5-Trichlorophenol	95-95-4	1.0	µg/L		<1.0	<1.0	<1.0	<1.0	<1.0
Pentachlorophenol	87-86-5	2.0	µg/L		<2.0	<2.0	<2.0	<2.0	<2.0
EP075(SIM)B: Polynuclear Aromatic Hydrocarbons									
Naphthalene	91-20-3	1.0	µg/L		<1.0	<1.0	<1.0	<1.0	<1.0

Analytical Results

Sub-Matrix: WATER (Matrix: WATER)				Sample ID	HINDS	HINUS	KEMDS	KEMUS	ROPDS
				Sampling date / time	06-Sep-2023 00:00	06-Sep-2023 00:00	05-Sep-2023 00:00	05-Sep-2023 00:00	06-Sep-2023 00:00
Compound	CAS Number	LOR	Unit		ES2330280-006	ES2330280-007	ES2330280-008	ES2330280-009	ES2330280-010
					Result	Result	Result	Result	Result
EP075(SIM)B: Polynuclear Aromatic Hydrocarbons - Continued									
Acenaphthylene	208-96-8	1.0	µg/L		<1.0	<1.0	<1.0	<1.0	<1.0
Acenaphthene	83-32-9	1.0	µg/L		<1.0	<1.0	<1.0	<1.0	<1.0
Fluorene	86-73-7	1.0	µg/L		<1.0	<1.0	<1.0	<1.0	<1.0
Phenanthrene	85-01-8	1.0	µg/L		<1.0	<1.0	<1.0	<1.0	<1.0
Anthracene	120-12-7	1.0	µg/L		<1.0	<1.0	<1.0	<1.0	<1.0
Fluoranthene	206-44-0	1.0	µg/L		<1.0	<1.0	<1.0	<1.0	<1.0
Pyrene	129-00-0	1.0	µg/L		<1.0	<1.0	<1.0	<1.0	<1.0
Benz(a)anthracene	56-55-3	1.0	µg/L		<1.0	<1.0	<1.0	<1.0	<1.0
Chrysene	218-01-9	1.0	µg/L		<1.0	<1.0	<1.0	<1.0	<1.0
Benzo(b+j)fluoranthene	205-99-2 205-82-3	1.0	µg/L		<1.0	<1.0	<1.0	<1.0	<1.0
Benzo(k)fluoranthene	207-08-9	1.0	µg/L		<1.0	<1.0	<1.0	<1.0	<1.0
Benzo(a)pyrene	50-32-8	0.5	µg/L		<0.5	<0.5	<0.5	<0.5	<0.5
Indeno(1.2.3.cd)pyrene	193-39-5	1.0	µg/L		<1.0	<1.0	<1.0	<1.0	<1.0
Dibenz(a.h)anthracene	53-70-3	1.0	µg/L		<1.0	<1.0	<1.0	<1.0	<1.0
Benzo(g.h.i)perylene	191-24-2	1.0	µg/L		<1.0	<1.0	<1.0	<1.0	<1.0
^ Sum of polycyclic aromatic hydrocarbons	----	0.5	µg/L		<0.5	<0.5	<0.5	<0.5	<0.5
^ Benzo(a)pyrene TEQ (zero)	----	0.5	µg/L		<0.5	<0.5	<0.5	<0.5	<0.5
EP080: BTEXN									
Benzene	71-43-2	1	µg/L		<1	<1	<1	<1	<1
Toluene	108-88-3	2	µg/L		<2	<2	<2	<2	<2
Ethylbenzene	100-41-4	2	µg/L		<2	<2	<2	<2	<2
meta- & para-Xylene	108-38-3 106-42-3	2	µg/L		<2	<2	<2	<2	<2
ortho-Xylene	95-47-6	2	µg/L		<2	<2	<2	<2	<2
^ Total Xylenes	----	2	µg/L		<2	<2	<2	<2	<2
^ Sum of BTEX	----	1	µg/L		<1	<1	<1	<1	<1
Naphthalene	91-20-3	5	µg/L		<5	<5	<5	<5	<5
EP234A: OP Pesticides									
Acephate	30560-19-1	0.5	µg/L		<0.5	<0.5	<0.5	<0.5	<0.5
Azinphos-methyl	86-50-0	0.02	µg/L		<0.02	<0.02	<0.02	<0.02	<0.02
Azinphos-ethyl	2642-71-9	0.02	µg/L		<0.02	<0.02	<0.02	<0.02	<0.02
Bensulide	741-58-2	0.1	µg/L		<0.1	<0.1	<0.1	<0.1	<0.1
Bromophos-ethyl	4824-78-6	0.10	µg/L		<0.10	<0.10	<0.10	<0.10	<0.10
Carbofenothion	786-19-6	0.02	µg/L		<0.02	<0.02	<0.02	<0.02	<0.02
Chlorfenvinphos	470-90-6	0.02	µg/L		<0.02	<0.02	<0.02	<0.02	<0.02

Analytical Results

Sub-Matrix: WATER (Matrix: WATER)				Sample ID	HINDS	HINUS	KEMDS	KEMUS	ROPDS
				Sampling date / time	06-Sep-2023 00:00	06-Sep-2023 00:00	05-Sep-2023 00:00	05-Sep-2023 00:00	06-Sep-2023 00:00
Compound	CAS Number	LOR	Unit		ES2330280-006	ES2330280-007	ES2330280-008	ES2330280-009	ES2330280-010
					Result	Result	Result	Result	Result
EP234A: OP Pesticides - Continued									
Chlorpyrifos	2921-88-2	0.02	µg/L		<0.02	<0.02	<0.02	<0.02	<0.02
Chlorpyrifos-methyl	5598-13-0	0.2	µg/L		<0.2	<0.2	<0.2	<0.2	<0.2
Coumaphos	56-72-4	0.01	µg/L		<0.01	<0.01	<0.01	<0.01	<0.01
Demeton-O	298-03-3	0.02	µg/L		<0.02	<0.02	<0.02	<0.02	<0.02
Demeton-O & Demeton-S	298-03-3/126-75-0	0.02	µg/L		<0.02	<0.02	<0.02	<0.02	<0.02
Demeton-S	126-75-0	0.02	µg/L		<0.02	<0.02	<0.02	<0.02	<0.02
Demeton-S-methyl	919-86-8	0.02	µg/L		<0.02	<0.02	<0.02	<0.02	<0.02
Diazinon	333-41-5	0.01	µg/L		<0.01	<0.01	<0.01	<0.01	<0.01
Dichlorvos	62-73-7	0.20	µg/L		<0.20	<0.20	<0.20	<0.20	<0.20
Dimethoate	60-51-5	0.02	µg/L		<0.02	<0.02	**0.09**	**0.09**	<0.02
Disulfoton	298-04-4	0.05	µg/L		<0.05	<0.05	<0.05	<0.05	<0.05
EPN	2104-64-5	0.05	µg/L		<0.05	<0.05	<0.05	<0.05	<0.05
Ethion	563-12-2	0.02	µg/L		<0.02	<0.02	<0.02	<0.02	<0.02
Ethoprophos	13194-48-4	0.01	µg/L		<0.01	<0.01	<0.01	<0.01	<0.01
Fenamiphos	22224-92-6	0.01	µg/L		<0.01	<0.01	<0.01	<0.01	<0.01
Fenchlorphos (Ronnel)	299-84-3	10	µg/L		<10	<10	<10	<10	<10
Fenitrothion	122-14-5	2	µg/L		<2	<2	<2	<2	<2
Fensulfothion	115-90-2	0.01	µg/L		<0.01	<0.01	<0.01	<0.01	<0.01
Fenthion	55-38-9	0.05	µg/L		<0.05	<0.05	<0.05	<0.05	<0.05
Formothion	2540-82-1	20	µg/L		<20	<20	<20	<20	<20
Fosetyl Aluminium	39148-24-8	10	µg/L		<10	<10	<10	<10	<10
Malathion	121-75-5	0.02	µg/L		<0.02	<0.02	<0.02	<0.02	<0.02
Methidathion	950-37-8	0.1	µg/L		<0.1	<0.1	<0.1	<0.1	<0.1
Mevinphos	7786-34-7	0.02	µg/L		<0.02	<0.02	<0.02	<0.02	<0.02
Monocrotophos	6923-22-4	0.02	µg/L		<0.02	<0.02	<0.02	<0.02	<0.02
Naftalofos	1491-41-4	1.0	µg/L		<1.0	<1.0	<1.0	<1.0	<1.0
Omethoate	1113-02-6	0.01	µg/L		<0.01	<0.01	<0.01	<0.01	<0.01
Parathion	56-38-2	0.2	µg/L		<0.2	<0.2	<0.2	<0.2	<0.2
Parathion-methyl	298-00-0	0.5	µg/L		<0.5	<0.5	<0.5	<0.5	<0.5
Phorate	298-02-2	0.1	µg/L		<0.1	<0.1	<0.1	<0.1	<0.1
Pirimiphos-ethyl	23505-41-1	0.01	µg/L		<0.01	<0.01	<0.01	<0.01	<0.01
Pirimiphos-methyl	29232-93-7	0.01	µg/L		<0.01	<0.01	<0.01	<0.01	<0.01
Profenofos	41198-08-7	0.01	µg/L		<0.01	<0.01	<0.01	<0.01	<0.01
Prothiofos	34643-46-4	0.1	µg/L		<0.1	<0.1	<0.1	<0.1	<0.1
Pyrazophos	13457-18-6	0.1	µg/L		<0.1	<0.1	<0.1	<0.1	<0.1

Analytical Results

Sub-Matrix: WATER (Matrix: WATER)				Sample ID	HINDS	HINUS	KEMDS	KEMUS	ROPDS
				Sampling date / time	06-Sep-2023 00:00	06-Sep-2023 00:00	05-Sep-2023 00:00	05-Sep-2023 00:00	06-Sep-2023 00:00
Compound	CAS Number	LOR	Unit		ES2330280-006	ES2330280-007	ES2330280-008	ES2330280-009	ES2330280-010
					Result	Result	Result	Result	Result
EP234A: OP Pesticides - Continued									
Sulfotep	3689-24-5	0.005	µg/L		<0.005	<0.005	<0.005	<0.005	<0.005
Sulprofos	35400-43-2	0.05	µg/L		<0.05	<0.05	<0.05	<0.05	<0.05
Temephos	3383-96-8	0.02	µg/L		<0.02	<0.02	<0.02	<0.02	<0.02
Terbufos	13071-79-9	0.01	µg/L		<0.01	<0.01	<0.01	<0.01	<0.01
Tetrachlorvinphos	22248-79-9	0.01	µg/L		<0.01	<0.01	<0.01	<0.01	<0.01
Thiometon	640-15-3	0.5	µg/L		<0.5	<0.5	<0.5	<0.5	<0.5
Triazophos	24017-47-8	0.005	µg/L		<0.005	<0.005	<0.005	<0.005	<0.005
Trichlorfon	52-68-6	0.02	µg/L		<0.02	<0.02	<0.02	<0.02	<0.02
Trichloronate	327-98-0	0.5	µg/L		<0.5	<0.5	<0.5	<0.5	<0.5
EP074S: VOC Surrogates									
1.2-Dichloroethane-D4	17060-07-0	5	%		**108**	**123**	**100**	**109**	**108**
Toluene-D8	2037-26-5	5	%		**97.0**	**105**	**93.8**	**99.7**	**99.2**
4-Bromofluorobenzene	460-00-4	5	%		**104**	**114**	**102**	**104**	**102**
EP075(SIM)S: Phenolic Compound Surrogates									
Phenol-d6	13127-88-3	1.0	%		**25.7**	**26.1**	**30.2**	**26.0**	**32.8**
2-Chlorophenol-D4	93951-73-6	1.0	%		**47.4**	**50.5**	**54.1**	**47.7**	**61.8**
2.4.6-Tribromophenol	118-79-6	1.0	%		**34.1**	**35.1**	**37.7**	**38.9**	**44.3**
EP075(SIM)T: PAH Surrogates									
2-Fluorobiphenyl	321-60-8	1.0	%		**55.8**	**54.3**	**54.6**	**55.4**	**64.9**
Anthracene-d10	1719-06-8	1.0	%		**64.8**	**61.4**	**64.6**	**59.1**	**81.0**
4-Terphenyl-d14	1718-51-0	1.0	%		**83.0**	**78.5**	**82.8**	**76.8**	**91.7**
EP080S: TPH(V)/BTEX Surrogates									
1.2-Dichloroethane-D4	17060-07-0	2	%		**102**	**116**	**94.5**	**103**	**102**
Toluene-D8	2037-26-5	2	%		**96.4**	**105**	**93.3**	**99.1**	**98.6**
4-Bromofluorobenzene	460-00-4	2	%		**116**	**130**	**108**	**114**	**115**

Analytical Results

Sub-Matrix: WATER (Matrix: WATER)			Sample ID	ROPUS	SOUDS	SOUUS	SWDUP1	----
			Sampling date / time	06-Sep-2023 00:00	06-Sep-2023 00:00	06-Sep-2023 00:00	05-Sep-2023 00:00	----
Compound	CAS Number	LOR	Unit	ES2330280-011	ES2330280-012	ES2330280-013	ES2330280-014	--------
				Result	Result	Result	Result	----
EA005P: pH by PC Titrator								
pH Value	----	0.01	pH Unit	**7.92**	**8.28**	**8.25**	**----**	**----**
EA015: Total Dissolved Solids dried at 180 ± 5 °C								
Total Dissolved Solids @180°C	----	10	mg/L	**210**	**844**	**886**	**----**	**----**
EA025: Total Suspended Solids dried at 104 ± 2°C								
Suspended Solids (SS)	----	5	mg/L	**35**	**63**	**40**	**----**	**----**
EG020T: Total Metals by ICP-MS								
Arsenic	7440-38-2	0.001	mg/L	**0.002**	<0.001	<0.001	<0.001	**----**
Cadmium	7440-43-9	0.0001	mg/L	<0.0001	<0.0001	<0.0001	<0.0001	**----**
Chromium	7440-47-3	0.001	mg/L	**0.002**	**0.001**	<0.001	**0.003**	**----**
Copper	7440-50-8	0.001	mg/L	**0.002**	**0.004**	**0.003**	**0.004**	**----**
Nickel	7440-02-0	0.001	mg/L	**0.003**	**0.004**	**0.003**	**0.001**	**----**
Lead	7439-92-1	0.001	mg/L	**0.001**	<0.001	<0.001	**0.002**	**----**
Zinc	7440-66-6	0.005	mg/L	<0.005	**0.007**	<0.005	**0.010**	**----**
Manganese	7439-96-5	0.001	mg/L	**0.579**	**0.149**	**0.154**	**----**	**----**
Iron	7439-89-6	0.05	mg/L	**4.06**	**1.55**	**0.84**	**----**	**----**
EG035T: Total Recoverable Mercury by FIMS								
Mercury	7439-97-6	0.0001	mg/L	<0.0001	<0.0001	<0.0001	<0.0001	**----**
EK055G: Ammonia as N by Discrete Analyser								
Ammonia as N	7664-41-7	0.01	mg/L	**1.09**	**0.05**	**0.04**	**----**	**----**
EK057G: Nitrite as N by Discrete Analyser								
Nitrite as N	14797-65-0	0.01	mg/L	<0.01	**0.07**	**0.06**	**----**	**----**
EK058G: Nitrate as N by Discrete Analyser								
Nitrate as N	14797-55-8	0.01	mg/L	**0.03**	**1.66**	**1.72**	**----**	**----**
EK059G: Nitrite plus Nitrate as N (NOx) by Discrete Analyser								
Nitrite + Nitrate as N	----	0.01	mg/L	**0.03**	**1.73**	**1.78**	**----**	**----**
EK061G: Total Kjeldahl Nitrogen By Discrete Analyser								
Total Kjeldahl Nitrogen as N	----	0.1	mg/L	**3.5**	**3.1**	**4.6**	**----**	**----**
EK062G: Total Nitrogen as N (TKN + NOx) by Discrete Analyser								
^ Total Nitrogen as N	----	0.1	mg/L	**3.5**	**4.8**	**6.4**	**----**	**----**
EK067G: Total Phosphorus as P by Discrete Analyser								
Total Phosphorus as P	----	0.01	mg/L	**0.14**	**0.42**	**0.32**	**----**	**----**
EK071G: Reactive Phosphorus as P by discrete analyser								
Reactive Phosphorus as P	14265-44-2	0.01	mg/L	<0.01	**0.01**	**0.04**	**----**	**----**

Analytical Results

Sub-Matrix: WATER (Matrix: WATER)			Sample ID	ROPUS	SOUDS	SOUUS	SWDUP1	----
			Sampling date / time	06-Sep-2023 00:00	06-Sep-2023 00:00	06-Sep-2023 00:00	05-Sep-2023 00:00	----
Compound	CAS Number	LOR	Unit	ES2330280-011	ES2330280-012	ES2330280-013	ES2330280-014	--------
				Result	Result	Result	Result	----
EP008: Chlorophyll a & Pheophytin a								
Chlorophyll a	----	1	mg/m³	**103**	**174**	**155**	**----**	**----**
EP020: Oil and Grease (O&G)								
Oil & Grease	----	5	mg/L	<5	<5	<5	**----**	**----**
EP074D: Fumigants								
2.2-Dichloropropane	594-20-7	5	µg/L	<5	<5	<5	**----**	**----**
1.2-Dichloropropane	78-87-5	5	µg/L	<5	<5	<5	**----**	**----**
cis-1.3-Dichloropropylene	10061-01-5	5	µg/L	<5	<5	<5	**----**	**----**
trans-1.3-Dichloropropylene	10061-02-6	5	µg/L	<5	<5	<5	**----**	**----**
1.2-Dibromoethane (EDB)	106-93-4	5	µg/L	<5	<5	<5	**----**	**----**
EP074E: Halogenated Aliphatic Compounds								
Dichlorodifluoromethane	75-71-8	50	µg/L	<50	<50	<50	**----**	**----**
Chloromethane	74-87-3	50	µg/L	<50	<50	<50	**----**	**----**
Vinyl chloride	75-01-4	50	µg/L	<50	<50	<50	**----**	**----**
Bromomethane	74-83-9	50	µg/L	<50	<50	<50	**----**	**----**
Chloroethane	75-00-3	50	µg/L	<50	<50	<50	**----**	**----**
Trichlorofluoromethane	75-69-4	50	µg/L	<50	<50	<50	**----**	**----**
1.1-Dichloroethene	75-35-4	5	µg/L	<5	<5	<5	**----**	**----**
Iodomethane	74-88-4	5	µg/L	<5	<5	<5	**----**	**----**
trans-1.2-Dichloroethene	156-60-5	5	µg/L	<5	<5	<5	**----**	**----**
1.1-Dichloroethane	75-34-3	5	µg/L	<5	<5	<5	**----**	**----**
cis-1.2-Dichloroethene	156-59-2	5	µg/L	<5	<5	<5	**----**	**----**
1.1.1-Trichloroethane	71-55-6	5	µg/L	<5	<5	<5	**----**	**----**
1.1-Dichloropropylene	563-58-6	5	µg/L	<5	<5	<5	**----**	**----**
Carbon Tetrachloride	56-23-5	5	µg/L	<5	<5	<5	**----**	**----**
1.2-Dichloroethane	107-06-2	5	µg/L	<5	<5	<5	**----**	**----**
Trichloroethene	79-01-6	5	µg/L	<5	<5	<5	**----**	**----**
Dibromomethane	74-95-3	5	µg/L	<5	<5	<5	**----**	**----**
1.1.2-Trichloroethane	79-00-5	5	µg/L	<5	<5	<5	**----**	**----**
1.3-Dichloropropane	142-28-9	5	µg/L	<5	<5	<5	**----**	**----**
Tetrachloroethene	127-18-4	5	µg/L	<5	<5	<5	**----**	**----**
1.1.1.2-Tetrachloroethane	630-20-6	5	µg/L	<5	<5	<5	**----**	**----**
trans-1.4-Dichloro-2-butene	110-57-6	5	µg/L	<5	<5	<5	**----**	**----**
cis-1.4-Dichloro-2-butene	1476-11-5	5	µg/L	<5	<5	<5	**----**	**----**
1.1.2.2-Tetrachloroethane	79-34-5	5	µg/L	<5	<5	<5	**----**	**----**

Analytical Results

Sub-Matrix: WATER (Matrix: WATER)				Sample ID	ROPUS	SOUDS	SOUUS	SWDUP1	----
				Sampling date / time	06-Sep-2023 00:00	06-Sep-2023 00:00	06-Sep-2023 00:00	05-Sep-2023 00:00	----
Compound	CAS Number	LOR	Unit		ES2330280-011	ES2330280-012	ES2330280-013	ES2330280-014	--------
					Result	Result	Result	Result	----
EP074E: Halogenated Aliphatic Compounds - Continued									
1.2.3-Trichloropropane	96-18-4	5	µg/L		<5	<5	<5	----	----
Pentachloroethane	76-01-7	5	µg/L		<5	<5	<5	----	----
1.2-Dibromo-3-chloropropane	96-12-8	5	µg/L		<5	<5	<5	----	----
Hexachlorobutadiene	87-68-3	5	µg/L		<5	<5	<5	----	----
EP074F: Halogenated Aromatic Compounds									
Chlorobenzene	108-90-7	5	µg/L		<5	<5	<5	----	----
Bromobenzene	108-86-1	5	µg/L		<5	<5	<5	----	----
2-Chlorotoluene	95-49-8	5	µg/L		<5	<5	<5	----	----
4-Chlorotoluene	106-43-4	5	µg/L		<5	<5	<5	----	----
1.3-Dichlorobenzene	541-73-1	5	µg/L		<5	<5	<5	----	----
1.4-Dichlorobenzene	106-46-7	5	µg/L		<5	<5	<5	----	----
1.2-Dichlorobenzene	95-50-1	5	µg/L		<5	<5	<5	----	----
1.2.4-Trichlorobenzene	120-82-1	5	µg/L		<5	<5	<5	----	----
1.2.3-Trichlorobenzene	87-61-6	5	µg/L		<5	<5	<5	----	----
EP074G: Trihalomethanes									
Chloroform	67-66-3	5	µg/L		<5	<5	<5	----	----
Bromodichloromethane	75-27-4	5	µg/L		<5	<5	<5	----	----
Dibromochloromethane	124-48-1	5	µg/L		<5	<5	<5	----	----
Bromoform	75-25-2	5	µg/L		<5	<5	<5	----	----
EP075(SIM)A: Phenolic Compounds									
Phenol	108-95-2	1.0	µg/L		<1.0	<1.0	<1.0	----	----
2-Chlorophenol	95-57-8	1.0	µg/L		<1.0	<1.0	<1.0	----	----
2-Methylphenol	95-48-7	1.0	µg/L		<1.0	<1.0	<1.0	----	----
3- & 4-Methylphenol	1319-77-3	2.0	µg/L		<2.0	<2.0	<2.0	----	----
2-Nitrophenol	88-75-5	1.0	µg/L		<1.0	<1.0	<1.0	----	----
2.4-Dimethylphenol	105-67-9	1.0	µg/L		<1.0	<1.0	<1.0	----	----
2.4-Dichlorophenol	120-83-2	1.0	µg/L		<1.0	<1.0	<1.0	----	----
2.6-Dichlorophenol	87-65-0	1.0	µg/L		<1.0	<1.0	<1.0	----	----
4-Chloro-3-methylphenol	59-50-7	1.0	µg/L		<1.0	<1.0	<1.0	----	----
2.4.6-Trichlorophenol	88-06-2	1.0	µg/L		<1.0	<1.0	<1.0	----	----
2.4.5-Trichlorophenol	95-95-4	1.0	µg/L		<1.0	<1.0	<1.0	----	----
Pentachlorophenol	87-86-5	2.0	µg/L		<2.0	<2.0	<2.0	----	----
EP075(SIM)B: Polynuclear Aromatic Hydrocarbons									
Naphthalene	91-20-3	1.0	µg/L		<1.0	<1.0	<1.0	----	----

Analytical Results

Sub-Matrix: WATER (Matrix: WATER)				Sample ID	ROPUS	SOUDS	SOUUS	SWDUP1	----
				Sampling date / time	06-Sep-2023 00:00	06-Sep-2023 00:00	06-Sep-2023 00:00	05-Sep-2023 00:00	----
Compound	CAS Number	LOR	Unit		ES2330280-011	ES2330280-012	ES2330280-013	ES2330280-014	--------
					Result	Result	Result	Result	----
EP075(SIM)B: Polynuclear Aromatic Hydrocarbons - Continued									
Acenaphthylene	208-96-8	1.0	µg/L		<1.0	<1.0	<1.0	----	----
Acenaphthene	83-32-9	1.0	µg/L		<1.0	<1.0	<1.0	----	----
Fluorene	86-73-7	1.0	µg/L		<1.0	<1.0	<1.0	----	----
Phenanthrene	85-01-8	1.0	µg/L		<1.0	<1.0	<1.0	----	----
Anthracene	120-12-7	1.0	µg/L		<1.0	<1.0	<1.0	----	----
Fluoranthene	206-44-0	1.0	µg/L		<1.0	<1.0	<1.0	----	----
Pyrene	129-00-0	1.0	µg/L		<1.0	<1.0	<1.0	----	----
Benz(a)anthracene	56-55-3	1.0	µg/L		<1.0	<1.0	<1.0	----	----
Chrysene	218-01-9	1.0	µg/L		<1.0	<1.0	<1.0	----	----
Benzo(b+j)fluoranthene	205-99-2 205-82-3	1.0	µg/L		<1.0	<1.0	<1.0	----	----
Benzo(k)fluoranthene	207-08-9	1.0	µg/L		<1.0	<1.0	<1.0	----	----
Benzo(a)pyrene	50-32-8	0.5	µg/L		<0.5	<0.5	<0.5	----	----
Indeno(1.2.3.cd)pyrene	193-39-5	1.0	µg/L		<1.0	<1.0	<1.0	----	----
Dibenz(a.h)anthracene	53-70-3	1.0	µg/L		<1.0	<1.0	<1.0	----	----
Benzo(g.h.i)perylene	191-24-2	1.0	µg/L		<1.0	<1.0	<1.0	----	----
^ Sum of polycyclic aromatic hydrocarbons	----	0.5	µg/L		<0.5	<0.5	<0.5	----	----
^ Benzo(a)pyrene TEQ (zero)	----	0.5	µg/L		<0.5	<0.5	<0.5	----	----
EP080: BTEXN									
Benzene	71-43-2	1	µg/L		<1	<1	<1	----	----
Toluene	108-88-3	2	µg/L		<2	<2	<2	----	----
Ethylbenzene	100-41-4	2	µg/L		<2	<2	<2	----	----
meta- & para-Xylene	108-38-3 106-42-3	2	µg/L		<2	<2	<2	----	----
ortho-Xylene	95-47-6	2	µg/L		<2	<2	<2	----	----
^ Total Xylenes	----	2	µg/L		<2	<2	<2	----	----
^ Sum of BTEX	----	1	µg/L		<1	<1	<1	----	----
Naphthalene	91-20-3	5	µg/L		<5	<5	<5	----	----
EP234A: OP Pesticides									
Acephate	30560-19-1	0.5	µg/L		<0.5	<0.5	<0.5	----	----
Azinphos-methyl	86-50-0	0.02	µg/L		<0.02	<0.02	<0.02	----	----
Azinphos-ethyl	2642-71-9	0.02	µg/L		<0.02	<0.02	<0.02	----	----
Bensulide	741-58-2	0.1	µg/L		<0.1	<0.1	<0.1	----	----
Bromophos-ethyl	4824-78-6	0.10	µg/L		<0.10	<0.10	<0.10	----	----
Carbofenothion	786-19-6	0.02	µg/L		<0.02	<0.02	<0.02	----	----
Chlorfenvinphos	470-90-6	0.02	µg/L		<0.02	<0.02	<0.02	----	----

Analytical Results

Sub-Matrix: WATER (Matrix: WATER)				Sample ID	ROPUS	SOUDS	SOUUS	SWDUP1	----
				Sampling date / time	06-Sep-2023 00:00	06-Sep-2023 00:00	06-Sep-2023 00:00	05-Sep-2023 00:00	----
Compound	CAS Number	LOR	Unit		ES2330280-011	ES2330280-012	ES2330280-013	ES2330280-014	--------
					Result	Result	Result	Result	----
EP234A: OP Pesticides - Continued									
Chlorpyrifos	2921-88-2	0.02	µg/L		<0.02	<0.02	<0.02	----	----
Chlorpyrifos-methyl	5598-13-0	0.2	µg/L		<0.2	<0.2	<0.2	----	----
Coumaphos	56-72-4	0.01	µg/L		<0.01	<0.01	<0.01	----	----
Demeton-O	298-03-3	0.02	µg/L		<0.02	<0.02	<0.02	----	----
Demeton-O & Demeton-S	298-03-3/126-75-0	0.02	µg/L		<0.02	<0.02	<0.02	----	----
Demeton-S	126-75-0	0.02	µg/L		<0.02	<0.02	<0.02	----	----
Demeton-S-methyl	919-86-8	0.02	µg/L		<0.02	<0.02	<0.02	----	----
Diazinon	333-41-5	0.01	µg/L		<0.01	**0.01**	**0.01**	----	----
Dichlorvos	62-73-7	0.20	µg/L		<0.20	<0.20	<0.20	----	----
Dimethoate	60-51-5	0.02	µg/L		<0.02	**0.19**	**0.19**	----	----
Disulfoton	298-04-4	0.05	µg/L		<0.05	<0.05	<0.05	----	----
EPN	2104-64-5	0.05	µg/L		<0.05	<0.05	<0.05	----	----
Ethion	563-12-2	0.02	µg/L		<0.02	<0.02	<0.02	----	----
Ethoprophos	13194-48-4	0.01	µg/L		<0.01	<0.01	<0.01	----	----
Fenamiphos	22224-92-6	0.01	µg/L		<0.01	<0.01	<0.01	----	----
Fenchlorphos (Ronnel)	299-84-3	10	µg/L		<10	<10	<10	----	----
Fenitrothion	122-14-5	2	µg/L		<2	<2	<2	----	----
Fensulfothion	115-90-2	0.01	µg/L		<0.01	<0.01	<0.01	----	----
Fenthion	55-38-9	0.05	µg/L		<0.05	<0.05	<0.05	----	----
Formothion	2540-82-1	20	µg/L		<20	<20	<20	----	----
Fosetyl Aluminium	39148-24-8	10	µg/L		<10	<10	<10	----	----
Malathion	121-75-5	0.02	µg/L		<0.02	<0.02	<0.02	----	----
Methidathion	950-37-8	0.1	µg/L		<0.1	<0.1	<0.1	----	----
Mevinphos	7786-34-7	0.02	µg/L		<0.02	<0.02	<0.02	----	----
Monocrotophos	6923-22-4	0.02	µg/L		<0.02	<0.02	<0.02	----	----
Naftalofos	1491-41-4	1.0	µg/L		<1.0	<1.0	<1.0	----	----
Omethoate	1113-02-6	0.01	µg/L		<0.01	<0.01	<0.01	----	----
Parathion	56-38-2	0.2	µg/L		<0.2	<0.2	<0.2	----	----
Parathion-methyl	298-00-0	0.5	µg/L		<0.5	<0.5	<0.5	----	----
Phorate	298-02-2	0.1	µg/L		<0.1	<0.1	<0.1	----	----
Pirimiphos-ethyl	23505-41-1	0.01	µg/L		<0.01	<0.01	<0.01	----	----
Pirimiphos-methyl	29232-93-7	0.01	µg/L		<0.01	<0.01	<0.01	----	----
Profenofos	41198-08-7	0.01	µg/L		<0.01	<0.01	<0.01	----	----
Prothiofos	34643-46-4	0.1	µg/L		<0.1	<0.1	<0.1	----	----
Pyrazophos	13457-18-6	0.1	µg/L		<0.1	<0.1	<0.1	----	----

Analytical Results

Sub-Matrix: WATER (Matrix: WATER)				Sample ID	ROPUS	SOUDS	SOUUS	SWDUP1	----
				Sampling date / time	06-Sep-2023 00:00	06-Sep-2023 00:00	06-Sep-2023 00:00	05-Sep-2023 00:00	----
Compound	CAS Number	LOR	Unit		ES2330280-011	ES2330280-012	ES2330280-013	ES2330280-014	--------
					Result	Result	Result	Result	----
EP234A: OP Pesticides - Continued									
Sulfotep	3689-24-5	0.005	µg/L		<0.005	<0.005	<0.005	----	----
Sulprofos	35400-43-2	0.05	µg/L		<0.05	<0.05	<0.05	----	----
Temephos	3383-96-8	0.02	µg/L		<0.02	<0.02	<0.02	----	----
Terbufos	13071-79-9	0.01	µg/L		<0.01	<0.01	<0.01	----	----
Tetrachlorvinphos	22248-79-9	0.01	µg/L		<0.01	<0.01	<0.01	----	----
Thiometon	640-15-3	0.5	µg/L		<0.5	<0.5	<0.5	----	----
Triazophos	24017-47-8	0.005	µg/L		<0.005	<0.005	<0.005	----	----
Trichlorfon	52-68-6	0.02	µg/L		<0.02	<0.02	<0.02	----	----
Trichloronate	327-98-0	0.5	µg/L		<0.5	<0.5	<0.5	----	----
EP074S: VOC Surrogates									
1.2-Dichloroethane-D4	17060-07-0	5	%		**112**	**100**	**112**	----	----
Toluene-D8	2037-26-5	5	%		**106**	**90.0**	**104**	----	----
4-Bromofluorobenzene	460-00-4	5	%		**109**	**94.7**	**107**	----	----
EP075(SIM)S: Phenolic Compound Surrogates									
Phenol-d6	13127-88-3	1.0	%		**28.5**	**28.0**	**28.4**	----	----
2-Chlorophenol-D4	93951-73-6	1.0	%		**53.4**	**50.4**	**51.9**	----	----
2.4.6-Tribromophenol	118-79-6	1.0	%		**42.6**	**34.2**	**41.6**	----	----
EP075(SIM)T: PAH Surrogates									
2-Fluorobiphenyl	321-60-8	1.0	%		**59.4**	**53.4**	**55.9**	----	----
Anthracene-d10	1719-06-8	1.0	%		**67.9**	**63.7**	**67.5**	----	----
4-Terphenyl-d14	1718-51-0	1.0	%		**87.4**	**81.7**	**87.5**	----	----
EP080S: TPH(V)/BTEX Surrogates									
1.2-Dichloroethane-D4	17060-07-0	2	%		**106**	**94.9**	**106**	----	----
Toluene-D8	2037-26-5	2	%		**106**	**89.4**	**103**	----	----
4-Bromofluorobenzene	460-00-4	2	%		**123**	**105**	**118**	----	----

Surrogate Control Limits

Sub-Matrix: WATER		Recovery Limits (%)	
Compound	*CAS Number*	*Low*	*High*
EP074S: VOC Surrogates			
1.2-Dichloroethane-D4	17060-07-0	78	133
Toluene-D8	2037-26-5	79	129
4-Bromofluorobenzene	460-00-4	81	124
EP075(SIM)S: Phenolic Compound Surrogates			
Phenol-d6	13127-88-3	10	44
2-Chlorophenol-D4	93951-73-6	14	94
2.4.6-Tribromophenol	118-79-6	17	125
EP075(SIM)T: PAH Surrogates			
2-Fluorobiphenyl	321-60-8	20	104
Anthracene-d10	1719-06-8	27	113
4-Terphenyl-d14	1718-51-0	32	112
EP080S: TPH(V)/BTEX Surrogates			
1.2-Dichloroethane-D4	17060-07-0	72	143
Toluene-D8	2037-26-5	75	131
4-Bromofluorobenzene	460-00-4	73	137

QUALITY CONTROL REPORT

Work Order	: **ES2330280**	Page	: 1 of 21
Client	: **GHD PTY LTD**	Laboratory	: Environmental Division Sydney
Contact	: MR HENRY LUO	Contact	: Sarah Mathew
Address	: LEVEL 15, 133 CASTLEREAGH STREET SYDNEY NSW, AUSTRALIA 2000	Address	: 277-289 Woodpark Road Smithfield NSW Australia 2164
Telephone	: +61 02 9239 7100	Telephone	: +61-2-8784 8555
Project	: 12554717	Date Samples Received	: 06-Sep-2023
Order number	: 12554717	Date Analysis Commenced	: 06-Sep-2023
C-O-C number	: ----	Issue Date	: 13-Sep-2023
Sampler	: JACKSON MILLES		
Site	: ----		
Quote number	: SY/322/21		
No. of samples received	: 14		
No. of samples analysed	: 14		

Accreditation No. 825
Accredited for compliance with
ISO/IEC 17025 - Testing

This report supersedes any previous report(s) with this reference. Results apply to the sample(s) as submitted, unless the sampling was conducted by ALS. This document shall not be reproduced, except in full.

This Quality Control Report contains the following information:

- Laboratory Duplicate (DUP) Report; Relative Percentage Difference (RPD) and Acceptance Limits
- Method Blank (MB) and Laboratory Control Spike (LCS) Report; Recovery and Acceptance Limits
- Matrix Spike (MS) Report; Recovery and Acceptance Limits

Signatories

This document has been electronically signed by the authorized signatories below. Electronic signing is carried out in compliance with procedures specified in 21 CFR Part 11.

Signatories	*Position*	*Accreditation Category*
Ankit Joshi	Senior Chemist - Inorganics	Sydney Inorganics, Smithfield, NSW
Edwandy Fadjar	Organic Coordinator	Sydney Organics, Smithfield, NSW
Franco Lentini	LCMS Coordinator	Sydney Organics, Smithfield, NSW

General Comments

The analytical procedures used by ALS have been developed from established internationally recognised procedures such as those published by the USEPA, APHA, AS and NEPM. In house developed procedures are fully validated and are often at the client request.

Where moisture determination has been performed, results are reported on a dry weight basis.

Where a reported less than (<) result is higher than the LOR, this may be due to primary sample extract/digestate dilution and/or insufficient sample for analysis. Where the LOR of a reported result differs from standard LOR, this may be due to high moisture content, insufficient sample (reduced weight employed) or matrix interference.

Key : Anonymous = Refers to samples which are not specifically part of this work order but formed part of the QC process lot
CAS Number = CAS registry number from database maintained by Chemical Abstracts Services. The Chemical Abstracts Service is a division of the American Chemical Society.
LOR = Limit of reporting
RPD = Relative Percentage Difference
# = Indicates failed QC

Laboratory Duplicate (DUP) Report

The quality control term Laboratory Duplicate refers to a randomly selected intralaboratory split. Laboratory duplicates provide information regarding method precision and sample heterogeneity. The permitted ranges for the Relative Percent Deviation (RPD) of Laboratory Duplicates are specified in ALS Method QWI-EN/38 and are dependent on the magnitude of results in comparison to the level of reporting: Result < 10 times LOR: No Limit; Result between 10 and 20 times LOR: 0% - 50%; Result > 20 times LOR: 0% - 20%.

Sub-Matrix: **WATER**

				Laboratory Duplicate (DUP) Report					
Laboratory sample ID	*Sample ID*	*Method: Compound*	*CAS Number*	*LOR*	*Unit*	*Original Result*	*Duplicate Result*	*RPD (%)*	*Acceptable RPD (%)*
EA005P: pH by PC Titrator (QC Lot: 5281043)									
ES2330280-007	HINUS	EA005-P: pH Value	----	0.01	pH Unit	7.97	7.97	0.0	0% - 20%
ES2330188-001	Anonymous	EA005-P: pH Value	----	0.01	pH Unit	7.33	7.42	1.2	0% - 20%
EA015: Total Dissolved Solids dried at 180 ± 5 °C (QC Lot: 5287267)									
ES2330186-001	Anonymous	EA015H: Total Dissolved Solids @180°C	----	10	mg/L	1500	1500	0.5	0% - 20%
ES2330280-008	KEMDS	EA015H: Total Dissolved Solids @180°C	----	10	mg/L	624	609	2.4	0% - 20%
ES2330345-002	Anonymous	EA015H: Total Dissolved Solids @180°C	----	10	mg/L	728	732	0.5	0% - 20%
ES2330348-005	Anonymous	EA015H: Total Dissolved Solids @180°C	----	10	mg/L	368	369	0.4	0% - 20%
EA025: Total Suspended Solids dried at 104 ± 2°C (QC Lot: 5287268)									
ES2330186-001	Anonymous	EA025H: Suspended Solids (SS)	----	5	mg/L	23	22	4.4	No Limit
ES2330280-008	KEMDS	EA025H: Suspended Solids (SS)	----	5	mg/L	16	17	6.0	No Limit
ES2330345-002	Anonymous	EA025H: Suspended Solids (SS)	----	5	mg/L	<5	<5	0.0	No Limit
ES2330348-005	Anonymous	EA025H: Suspended Solids (SS)	----	5	mg/L	6	6	0.0	No Limit
EG020T: Total Metals by ICP-MS (QC Lot: 5288495)									
ES2330200-002	Anonymous	EG020A-T: Cadmium	7440-43-9	0.0001	mg/L	<0.0001	<0.0001	0.0	No Limit
		EG020A-T: Arsenic	7440-38-2	0.001	mg/L	<0.001	<0.001	0.0	No Limit
		EG020A-T: Chromium	7440-47-3	0.001	mg/L	0.005	0.005	0.0	No Limit
		EG020A-T: Copper	7440-50-8	0.001	mg/L	0.002	0.002	0.0	No Limit
		EG020A-T: Lead	7439-92-1	0.001	mg/L	<0.001	<0.001	0.0	No Limit
		EG020A-T: Manganese	7439-96-5	0.001	mg/L	0.098	0.094	3.6	0% - 20%
		EG020A-T: Nickel	7440-02-0	0.001	mg/L	0.006	0.006	0.0	No Limit
		EG020A-T: Zinc	7440-66-6	0.005	mg/L	0.013	<0.005	87.4	No Limit
		EG020A-T: Iron	7439-89-6	0.05	mg/L	0.21	0.18	18.8	No Limit
ES2330280-006	HINDS	EG020A-T: Cadmium	7440-43-9	0.0001	mg/L	<0.0001	<0.0001	0.0	No Limit

Sub-Matrix: **WATER**

				Laboratory Duplicate (DUP) Report					
Laboratory sample ID	*Sample ID*	*Method: Compound*	*CAS Number*	*LOR*	*Unit*	*Original Result*	*Duplicate Result*	*RPD (%)*	*Acceptable RPD (%)*
EG020T: Total Metals by ICP-MS (QC Lot: 5288495) - continued									
ES2330280-006	HINDS	EG020A-T: Arsenic	7440-38-2	0.001	mg/L	<0.001	<0.001	0.0	No Limit
		EG020A-T: Chromium	7440-47-3	0.001	mg/L	<0.001	<0.001	0.0	No Limit
		EG020A-T: Copper	7440-50-8	0.001	mg/L	0.001	<0.001	0.0	No Limit
		EG020A-T: Lead	7439-92-1	0.001	mg/L	<0.001	<0.001	0.0	No Limit
		EG020A-T: Manganese	7439-96-5	0.001	mg/L	0.404	0.407	0.6	0% - 20%
		EG020A-T: Nickel	7440-02-0	0.001	mg/L	0.001	0.001	0.0	No Limit
		EG020A-T: Zinc	7440-66-6	0.005	mg/L	<0.005	<0.005	0.0	No Limit
		EG020A-T: Iron	7439-89-6	0.05	mg/L	1.03	1.04	1.5	0% - 20%
EG035T: Total Recoverable Mercury by FIMS (QC Lot: 5283022)									
ES2329637-001	Anonymous	EG035T: Mercury	7439-97-6	0.0001	mg/L	<0.0001	<0.0001	0.0	No Limit
ES2330037-004	Anonymous	EG035T: Mercury	7439-97-6	0.0001	mg/L	<0.0001	<0.0001	0.0	No Limit
EG035T: Total Recoverable Mercury by FIMS (QC Lot: 5283023)									
ES2330280-004	COSDS	EG035T: Mercury	7439-97-6	0.0001	mg/L	<0.0001	<0.0001	0.0	No Limit
ES2330280-014	SWDUP1	EG035T: Mercury	7439-97-6	0.0001	mg/L	<0.0001	<0.0001	0.0	No Limit
EK055G: Ammonia as N by Discrete Analyser (QC Lot: 5284644)									
ES2330001-001	Anonymous	EK055G: Ammonia as N	7664-41-7	0.01	mg/L	1120	1000	11.0	0% - 20%
ES2330088-010	Anonymous	EK055G: Ammonia as N	7664-41-7	0.01	mg/L	11.7	11.0	6.0	0% - 20%
EK055G: Ammonia as N by Discrete Analyser (QC Lot: 5284647)									
ES2330280-005	COSUS	EK055G: Ammonia as N	7664-41-7	0.01	mg/L	0.15	0.14	9.2	0% - 50%
EK057G: Nitrite as N by Discrete Analyser (QC Lot: 5284070)									
ES2330198-006	Anonymous	EK057G: Nitrite as N	14797-65-0	0.01	mg/L	0.53	0.53	0.0	0% - 20%
ES2330032-008	Anonymous	EK057G: Nitrite as N	14797-65-0	0.01	mg/L	0.32	0.32	0.0	0% - 20%
EK057G: Nitrite as N by Discrete Analyser (QC Lot: 5284075)									
EW2303930-003	Anonymous	EK057G: Nitrite as N	14797-65-0	0.01	mg/L	<0.01	<0.01	0.0	No Limit
ES2330280-009	KEMUS	EK057G: Nitrite as N	14797-65-0	0.01	mg/L	<0.01	<0.01	0.0	No Limit
EK057G: Nitrite as N by Discrete Analyser (QC Lot: 5286696)									
ES2330358-002	Anonymous	EK057G: Nitrite as N	14797-65-0	0.01	mg/L	<0.01	<0.01	0.0	No Limit
ES2330280-006	HINDS	EK057G: Nitrite as N	14797-65-0	0.01	mg/L	0.01	0.01	0.0	No Limit
EK059G: Nitrite plus Nitrate as N (NOx) by Discrete Analyser (QC Lot: 5284645)									
ES2330001-001	Anonymous	EK059G: Nitrite + Nitrate as N	----	0.01	mg/L	<1.00	<1.00	0.0	No Limit
ES2330088-010	Anonymous	EK059G: Nitrite + Nitrate as N	----	0.01	mg/L	0.04	0.04	0.0	No Limit
EK059G: Nitrite plus Nitrate as N (NOx) by Discrete Analyser (QC Lot: 5284646)									
ES2330280-011	ROPUS	EK059G: Nitrite + Nitrate as N	----	0.01	mg/L	0.03	0.03	0.0	No Limit
ES2330280-005	COSUS	EK059G: Nitrite + Nitrate as N	----	0.01	mg/L	0.04	0.04	0.0	No Limit
EK061G: Total Kjeldahl Nitrogen By Discrete Analyser (QC Lot: 5284643)									
ES2330280-001	BADDS	EK061G: Total Kjeldahl Nitrogen as N	----	0.1	mg/L	0.7	0.7	0.0	No Limit
ES2330280-011	ROPUS	EK061G: Total Kjeldahl Nitrogen as N	----	0.1	mg/L	3.5	2.9	19.1	0% - 20%
EK067G: Total Phosphorus as P by Discrete Analyser (QC Lot: 5284642)									

Sub-Matrix: **WATER**

Laboratory sample ID	Sample ID	Method: Compound	CAS Number	Laboratory Duplicate (DUP) Report					
				LOR	Unit	Original Result	Duplicate Result	RPD (%)	Acceptable RPD (%)
EK067G: Total Phosphorus as P by Discrete Analyser (QC Lot: 5284642) - continued									
ES2330280-001	BADDS	EK067G: Total Phosphorus as P	----	0.01	mg/L	0.08	0.07	23.1	No Limit
ES2330280-011	ROPUS	EK067G: Total Phosphorus as P	----	0.01	mg/L	0.14	0.14	0.0	0% - 50%
EK071G: Reactive Phosphorus as P by discrete analyser (QC Lot: 5284071)									
ES2330280-009	KEMUS	EK071G: Reactive Phosphorus as P	14265-44-2	0.01	mg/L	0.46	0.47	0.0	0% - 20%
ES2330032-008	Anonymous	EK071G: Reactive Phosphorus as P	14265-44-2	0.01	mg/L	1.06	1.09	2.8	0% - 20%
EK071G: Reactive Phosphorus as P by discrete analyser (QC Lot: 5286697)									
ES2330587-001	Anonymous	EK071G: Reactive Phosphorus as P	14265-44-2	0.01	mg/L	53.5	53.8	0.5	0% - 20%
ES2330280-006	HINDS	EK071G: Reactive Phosphorus as P	14265-44-2	0.01	mg/L	<0.01	<0.01	0.0	No Limit
EP074D: Fumigants (QC Lot: 5288448)									
ES2330280-001	BADDS	EP074: 2.2-Dichloropropane	594-20-7	5	µg/L	<5	<5	0.0	No Limit
		EP074: 1.2-Dichloropropane	78-87-5	5	µg/L	<5	<5	0.0	No Limit
		EP074: cis-1.3-Dichloropropylene	10061-01-5	5	µg/L	<5	<5	0.0	No Limit
		EP074: trans-1.3-Dichloropropylene	10061-02-6	5	µg/L	<5	<5	0.0	No Limit
		EP074: 1.2-Dibromoethane (EDB)	106-93-4	5	µg/L	<5	<5	0.0	No Limit
ES2330280-011	ROPUS	EP074: 2.2-Dichloropropane	594-20-7	5	µg/L	<5	<5	0.0	No Limit
		EP074: 1.2-Dichloropropane	78-87-5	5	µg/L	<5	<5	0.0	No Limit
		EP074: cis-1.3-Dichloropropylene	10061-01-5	5	µg/L	<5	<5	0.0	No Limit
		EP074: trans-1.3-Dichloropropylene	10061-02-6	5	µg/L	<5	<5	0.0	No Limit
		EP074: 1.2-Dibromoethane (EDB)	106-93-4	5	µg/L	<5	<5	0.0	No Limit
EP074E: Halogenated Aliphatic Compounds (QC Lot: 5288448)									
ES2330280-001	BADDS	EP074: 1.1-Dichloroethene	75-35-4	5	µg/L	<5	<5	0.0	No Limit
		EP074: Iodomethane	74-88-4	5	µg/L	<5	<5	0.0	No Limit
		EP074: trans-1.2-Dichloroethene	156-60-5	5	µg/L	<5	<5	0.0	No Limit
		EP074: 1.1-Dichloroethane	75-34-3	5	µg/L	<5	<5	0.0	No Limit
		EP074: cis-1.2-Dichloroethene	156-59-2	5	µg/L	<5	<5	0.0	No Limit
		EP074: 1.1.1-Trichloroethane	71-55-6	5	µg/L	<5	<5	0.0	No Limit
		EP074: 1.1-Dichloropropylene	563-58-6	5	µg/L	<5	<5	0.0	No Limit
		EP074: Carbon Tetrachloride	56-23-5	5	µg/L	<5	<5	0.0	No Limit
		EP074: 1.2-Dichloroethane	107-06-2	5	µg/L	<5	<5	0.0	No Limit
		EP074: Trichloroethene	79-01-6	5	µg/L	<5	<5	0.0	No Limit
		EP074: Dibromomethane	74-95-3	5	µg/L	<5	<5	0.0	No Limit
		EP074: 1.1.2-Trichloroethane	79-00-5	5	µg/L	<5	<5	0.0	No Limit
		EP074: 1.3-Dichloropropane	142-28-9	5	µg/L	<5	<5	0.0	No Limit
		EP074: Tetrachloroethene	127-18-4	5	µg/L	<5	<5	0.0	No Limit
		EP074: 1.1.1.2-Tetrachloroethane	630-20-6	5	µg/L	<5	<5	0.0	No Limit
		EP074: trans-1.4-Dichloro-2-butene	110-57-6	5	µg/L	<5	<5	0.0	No Limit
		EP074: cis-1.4-Dichloro-2-butene	1476-11-5	5	µg/L	<5	<5	0.0	No Limit
		EP074: 1.1.2.2-Tetrachloroethane	79-34-5	5	µg/L	<5	<5	0.0	No Limit
		EP074: 1.2.3-Trichloropropane	96-18-4	5	µg/L	<5	<5	0.0	No Limit

Sub-Matrix: **WATER**

				Laboratory Duplicate (DUP) Report					
Laboratory sample ID	*Sample ID*	*Method: Compound*	*CAS Number*	*LOR*	*Unit*	*Original Result*	*Duplicate Result*	*RPD (%)*	*Acceptable RPD (%)*
EP074E: Halogenated Aliphatic Compounds (QC Lot: 5288448) - continued									
ES2330280-001	BADDS	EP074: Pentachloroethane	76-01-7	5	µg/L	<5	<5	0.0	No Limit
		EP074: 1.2-Dibromo-3-chloropropane	96-12-8	5	µg/L	<5	<5	0.0	No Limit
		EP074: Hexachlorobutadiene	87-68-3	5	µg/L	<5	<5	0.0	No Limit
		EP074: Dichlorodifluoromethane	75-71-8	50	µg/L	<50	<50	0.0	No Limit
		EP074: Chloromethane	74-87-3	50	µg/L	<50	<50	0.0	No Limit
		EP074: Vinyl chloride	75-01-4	50	µg/L	<50	<50	0.0	No Limit
		EP074: Bromomethane	74-83-9	50	µg/L	<50	<50	0.0	No Limit
		EP074: Chloroethane	75-00-3	50	µg/L	<50	<50	0.0	No Limit
		EP074: Trichlorofluoromethane	75-69-4	50	µg/L	<50	<50	0.0	No Limit
ES2330280-011	ROPUS	EP074: 1.1-Dichloroethene	75-35-4	5	µg/L	<5	<5	0.0	No Limit
		EP074: Iodomethane	74-88-4	5	µg/L	<5	<5	0.0	No Limit
		EP074: trans-1.2-Dichloroethene	156-60-5	5	µg/L	<5	<5	0.0	No Limit
		EP074: 1.1-Dichloroethane	75-34-3	5	µg/L	<5	<5	0.0	No Limit
		EP074: cis-1.2-Dichloroethene	156-59-2	5	µg/L	<5	<5	0.0	No Limit
		EP074: 1.1.1-Trichloroethane	71-55-6	5	µg/L	<5	<5	0.0	No Limit
		EP074: 1.1-Dichloropropylene	563-58-6	5	µg/L	<5	<5	0.0	No Limit
		EP074: Carbon Tetrachloride	56-23-5	5	µg/L	<5	<5	0.0	No Limit
		EP074: 1.2-Dichloroethane	107-06-2	5	µg/L	<5	<5	0.0	No Limit
		EP074: Trichloroethene	79-01-6	5	µg/L	<5	<5	0.0	No Limit
		EP074: Dibromomethane	74-95-3	5	µg/L	<5	<5	0.0	No Limit
		EP074: 1.1.2-Trichloroethane	79-00-5	5	µg/L	<5	<5	0.0	No Limit
		EP074: 1.3-Dichloropropane	142-28-9	5	µg/L	<5	<5	0.0	No Limit
		EP074: Tetrachloroethene	127-18-4	5	µg/L	<5	<5	0.0	No Limit
		EP074: 1.1.1.2-Tetrachloroethane	630-20-6	5	µg/L	<5	<5	0.0	No Limit
		EP074: trans-1.4-Dichloro-2-butene	110-57-6	5	µg/L	<5	<5	0.0	No Limit
		EP074: cis-1.4-Dichloro-2-butene	1476-11-5	5	µg/L	<5	<5	0.0	No Limit
		EP074: 1.1.2.2-Tetrachloroethane	79-34-5	5	µg/L	<5	<5	0.0	No Limit
		EP074: 1.2.3-Trichloropropane	96-18-4	5	µg/L	<5	<5	0.0	No Limit
		EP074: Pentachloroethane	76-01-7	5	µg/L	<5	<5	0.0	No Limit
		EP074: 1.2-Dibromo-3-chloropropane	96-12-8	5	µg/L	<5	<5	0.0	No Limit
		EP074: Hexachlorobutadiene	87-68-3	5	µg/L	<5	<5	0.0	No Limit
		EP074: Dichlorodifluoromethane	75-71-8	50	µg/L	<50	<50	0.0	No Limit
		EP074: Chloromethane	74-87-3	50	µg/L	<50	<50	0.0	No Limit
		EP074: Vinyl chloride	75-01-4	50	µg/L	<50	<50	0.0	No Limit
		EP074: Bromomethane	74-83-9	50	µg/L	<50	<50	0.0	No Limit
		EP074: Chloroethane	75-00-3	50	µg/L	<50	<50	0.0	No Limit
		EP074: Trichlorofluoromethane	75-69-4	50	µg/L	<50	<50	0.0	No Limit
EP074F: Halogenated Aromatic Compounds (QC Lot: 5288448)									
ES2330280-001	BADDS	EP074: Chlorobenzene	108-90-7	5	µg/L	<5	<5	0.0	No Limit
		EP074: Bromobenzene	108-86-1	5	µg/L	<5	<5	0.0	No Limit

Sub-Matrix: **WATER**

				Laboratory Duplicate (DUP) Report					
Laboratory sample ID	*Sample ID*	*Method: Compound*	*CAS Number*	*LOR*	*Unit*	*Original Result*	*Duplicate Result*	*RPD (%)*	*Acceptable RPD (%)*
EP074F: Halogenated Aromatic Compounds (QC Lot: 5288448) - continued									
ES2330280-001	BADDS	EP074: 2-Chlorotoluene	95-49-8	5	µg/L	<5	<5	0.0	No Limit
		EP074: 4-Chlorotoluene	106-43-4	5	µg/L	<5	<5	0.0	No Limit
		EP074: 1.3-Dichlorobenzene	541-73-1	5	µg/L	<5	<5	0.0	No Limit
		EP074: 1.4-Dichlorobenzene	106-46-7	5	µg/L	<5	<5	0.0	No Limit
		EP074: 1.2-Dichlorobenzene	95-50-1	5	µg/L	<5	<5	0.0	No Limit
		EP074: 1.2.4-Trichlorobenzene	120-82-1	5	µg/L	<5	<5	0.0	No Limit
		EP074: 1.2.3-Trichlorobenzene	87-61-6	5	µg/L	<5	<5	0.0	No Limit
ES2330280-011	ROPUS	EP074: Chlorobenzene	108-90-7	5	µg/L	<5	<5	0.0	No Limit
		EP074: Bromobenzene	108-86-1	5	µg/L	<5	<5	0.0	No Limit
		EP074: 2-Chlorotoluene	95-49-8	5	µg/L	<5	<5	0.0	No Limit
		EP074: 4-Chlorotoluene	106-43-4	5	µg/L	<5	<5	0.0	No Limit
		EP074: 1.3-Dichlorobenzene	541-73-1	5	µg/L	<5	<5	0.0	No Limit
		EP074: 1.4-Dichlorobenzene	106-46-7	5	µg/L	<5	<5	0.0	No Limit
		EP074: 1.2-Dichlorobenzene	95-50-1	5	µg/L	<5	<5	0.0	No Limit
		EP074: 1.2.4-Trichlorobenzene	120-82-1	5	µg/L	<5	<5	0.0	No Limit
		EP074: 1.2.3-Trichlorobenzene	87-61-6	5	µg/L	<5	<5	0.0	No Limit
EP074G: Trihalomethanes (QC Lot: 5288448)									
ES2330280-001	BADDS	EP074: Chloroform	67-66-3	5	µg/L	<5	<5	0.0	No Limit
		EP074: Bromodichloromethane	75-27-4	5	µg/L	<5	<5	0.0	No Limit
		EP074: Dibromochloromethane	124-48-1	5	µg/L	<5	<5	0.0	No Limit
		EP074: Bromoform	75-25-2	5	µg/L	<5	<5	0.0	No Limit
ES2330280-011	ROPUS	EP074: Chloroform	67-66-3	5	µg/L	<5	<5	0.0	No Limit
		EP074: Bromodichloromethane	75-27-4	5	µg/L	<5	<5	0.0	No Limit
		EP074: Dibromochloromethane	124-48-1	5	µg/L	<5	<5	0.0	No Limit
		EP074: Bromoform	75-25-2	5	µg/L	<5	<5	0.0	No Limit
EP075(SIM)A: Phenolic Compounds (QC Lot: 5280947)									
ES2330280-001	BADDS	EP075(SIM): Phenol	108-95-2	1	µg/L	<1.0	<1.0	0.0	No Limit
		EP075(SIM): 2-Chlorophenol	95-57-8	1	µg/L	<1.0	<1.0	0.0	No Limit
		EP075(SIM): 2-Methylphenol	95-48-7	1	µg/L	<1.0	<1.0	0.0	No Limit
		EP075(SIM): 2-Nitrophenol	88-75-5	1	µg/L	<1.0	<1.0	0.0	No Limit
		EP075(SIM): 2.4-Dimethylphenol	105-67-9	1	µg/L	<1.0	<1.0	0.0	No Limit
		EP075(SIM): 2.4-Dichlorophenol	120-83-2	1	µg/L	<1.0	<1.0	0.0	No Limit
		EP075(SIM): 2.6-Dichlorophenol	87-65-0	1	µg/L	<1.0	<1.0	0.0	No Limit
		EP075(SIM): 4-Chloro-3-methylphenol	59-50-7	1	µg/L	<1.0	<1.0	0.0	No Limit
		EP075(SIM): 2.4.6-Trichlorophenol	88-06-2	1	µg/L	<1.0	<1.0	0.0	No Limit
		EP075(SIM): 2.4.5-Trichlorophenol	95-95-4	1	µg/L	<1.0	<1.0	0.0	No Limit
		EP075(SIM): 3- & 4-Methylphenol	1319-77-3	2	µg/L	<2.0	<2.0	0.0	No Limit
		EP075(SIM): Pentachlorophenol	87-86-5	2	µg/L	<2.0	<2.0	0.0	No Limit
ES2330280-011	ROPUS	EP075(SIM): Phenol	108-95-2	1	µg/L	<1.0	<1.0	0.0	No Limit
		EP075(SIM): 2-Chlorophenol	95-57-8	1	µg/L	<1.0	<1.0	0.0	No Limit

Sub-Matrix: **WATER**

				Laboratory Duplicate (DUP) Report					
Laboratory sample ID	*Sample ID*	*Method: Compound*	*CAS Number*	*LOR*	*Unit*	*Original Result*	*Duplicate Result*	*RPD (%)*	*Acceptable RPD (%)*
EP075(SIM)A: Phenolic Compounds (QC Lot: 5280947) - continued									
ES2330280-011	ROPUS	EP075(SIM): 2-Methylphenol	95-48-7	1	µg/L	<1.0	<1.0	0.0	No Limit
		EP075(SIM): 2-Nitrophenol	88-75-5	1	µg/L	<1.0	<1.0	0.0	No Limit
		EP075(SIM): 2.4-Dimethylphenol	105-67-9	1	µg/L	<1.0	<1.0	0.0	No Limit
		EP075(SIM): 2.4-Dichlorophenol	120-83-2	1	µg/L	<1.0	<1.0	0.0	No Limit
		EP075(SIM): 2.6-Dichlorophenol	87-65-0	1	µg/L	<1.0	<1.0	0.0	No Limit
		EP075(SIM): 4-Chloro-3-methylphenol	59-50-7	1	µg/L	<1.0	<1.0	0.0	No Limit
		EP075(SIM): 2.4.6-Trichlorophenol	88-06-2	1	µg/L	<1.0	<1.0	0.0	No Limit
		EP075(SIM): 2.4.5-Trichlorophenol	95-95-4	1	µg/L	<1.0	<1.0	0.0	No Limit
		EP075(SIM): 3- & 4-Methylphenol	1319-77-3	2	µg/L	<2.0	<2.0	0.0	No Limit
		EP075(SIM): Pentachlorophenol	87-86-5	2	µg/L	<2.0	<2.0	0.0	No Limit
EP075(SIM)B: Polynuclear Aromatic Hydrocarbons (QC Lot: 5280947)									
ES2330280-001	BADDS	EP075(SIM): Benzo(a)pyrene	50-32-8	0.5	µg/L	<0.5	<0.5	0.0	No Limit
		EP075(SIM): Naphthalene	91-20-3	1	µg/L	<1.0	<1.0	0.0	No Limit
		EP075(SIM): Acenaphthylene	208-96-8	1	µg/L	<1.0	<1.0	0.0	No Limit
		EP075(SIM): Acenaphthene	83-32-9	1	µg/L	<1.0	<1.0	0.0	No Limit
		EP075(SIM): Fluorene	86-73-7	1	µg/L	<1.0	<1.0	0.0	No Limit
		EP075(SIM): Phenanthrene	85-01-8	1	µg/L	<1.0	<1.0	0.0	No Limit
		EP075(SIM): Anthracene	120-12-7	1	µg/L	<1.0	<1.0	0.0	No Limit
		EP075(SIM): Fluoranthene	206-44-0	1	µg/L	<1.0	<1.0	0.0	No Limit
		EP075(SIM): Pyrene	129-00-0	1	µg/L	<1.0	<1.0	0.0	No Limit
		EP075(SIM): Benz(a)anthracene	56-55-3	1	µg/L	<1.0	<1.0	0.0	No Limit
		EP075(SIM): Chrysene	218-01-9	1	µg/L	<1.0	<1.0	0.0	No Limit
		EP075(SIM): Benzo(b+j)fluoranthene	205-99-2 205-82-3	1	µg/L	<1.0	<1.0	0.0	No Limit
		EP075(SIM): Benzo(k)fluoranthene	207-08-9	1	µg/L	<1.0	<1.0	0.0	No Limit
		EP075(SIM): Indeno(1.2.3.cd)pyrene	193-39-5	1	µg/L	<1.0	<1.0	0.0	No Limit
		EP075(SIM): Dibenz(a.h)anthracene	53-70-3	1	µg/L	<1.0	<1.0	0.0	No Limit
		EP075(SIM): Benzo(g.h.i)perylene	191-24-2	1	µg/L	<1.0	<1.0	0.0	No Limit
ES2330280-011	ROPUS	EP075(SIM): Benzo(a)pyrene	50-32-8	0.5	µg/L	<0.5	<0.5	0.0	No Limit
		EP075(SIM): Naphthalene	91-20-3	1	µg/L	<1.0	<1.0	0.0	No Limit
		EP075(SIM): Acenaphthylene	208-96-8	1	µg/L	<1.0	<1.0	0.0	No Limit
		EP075(SIM): Acenaphthene	83-32-9	1	µg/L	<1.0	<1.0	0.0	No Limit
		EP075(SIM): Fluorene	86-73-7	1	µg/L	<1.0	<1.0	0.0	No Limit
		EP075(SIM): Phenanthrene	85-01-8	1	µg/L	<1.0	<1.0	0.0	No Limit
		EP075(SIM): Anthracene	120-12-7	1	µg/L	<1.0	<1.0	0.0	No Limit
		EP075(SIM): Fluoranthene	206-44-0	1	µg/L	<1.0	<1.0	0.0	No Limit
		EP075(SIM): Pyrene	129-00-0	1	µg/L	<1.0	<1.0	0.0	No Limit
		EP075(SIM): Benz(a)anthracene	56-55-3	1	µg/L	<1.0	<1.0	0.0	No Limit
		EP075(SIM): Chrysene	218-01-9	1	µg/L	<1.0	<1.0	0.0	No Limit

Sub-Matrix: **WATER**

				Laboratory Duplicate (DUP) Report					
Laboratory sample ID	*Sample ID*	*Method: Compound*	*CAS Number*	*LOR*	*Unit*	*Original Result*	*Duplicate Result*	*RPD (%)*	*Acceptable RPD (%)*
EP075(SIM)B: Polynuclear Aromatic Hydrocarbons (QC Lot: 5280947) - continued									
ES2330280-011	ROPUS	EP075(SIM): Benzo(b+j)fluoranthene	205-99-2 205-82-3	1	µg/L	<1.0	<1.0	0.0	No Limit
		EP075(SIM): Benzo(k)fluoranthene	207-08-9	1	µg/L	<1.0	<1.0	0.0	No Limit
		EP075(SIM): Indeno(1.2.3.cd)pyrene	193-39-5	1	µg/L	<1.0	<1.0	0.0	No Limit
		EP075(SIM): Dibenz(a.h)anthracene	53-70-3	1	µg/L	<1.0	<1.0	0.0	No Limit
		EP075(SIM): Benzo(g.h.i)perylene	191-24-2	1	µg/L	<1.0	<1.0	0.0	No Limit
EP080: BTEXN (QC Lot: 5288447)									
ES2330280-001	BADDS	EP080: Benzene	71-43-2	1	µg/L	<1	<1	0.0	No Limit
		EP080: Toluene	108-88-3	2	µg/L	<2	<2	0.0	No Limit
		EP080: Ethylbenzene	100-41-4	2	µg/L	<2	<2	0.0	No Limit
		EP080: meta- & para-Xylene	108-38-3 106-42-3	2	µg/L	<2	<2	0.0	No Limit
		EP080: ortho-Xylene	95-47-6	2	µg/L	<2	<2	0.0	No Limit
		EP080: Naphthalene	91-20-3	5	µg/L	<5	<5	0.0	No Limit
ES2330280-011	ROPUS	EP080: Benzene	71-43-2	1	µg/L	<1	<1	0.0	No Limit
		EP080: Toluene	108-88-3	2	µg/L	<2	<2	0.0	No Limit
		EP080: Ethylbenzene	100-41-4	2	µg/L	<2	<2	0.0	No Limit
		EP080: meta- & para-Xylene	108-38-3 106-42-3	2	µg/L	<2	<2	0.0	No Limit
		EP080: ortho-Xylene	95-47-6	2	µg/L	<2	<2	0.0	No Limit
		EP080: Naphthalene	91-20-3	5	µg/L	<5	<5	0.0	No Limit
EP234A: OP Pesticides (QC Lot: 5282508)									
ES2330280-001	BADDS	EP234-1: Sulfotep	3689-24-5	0.005	µg/L	<0.005	<0.005	0.0	No Limit
		EP234-1: Triazophos	24017-47-8	0.005	µg/L	<0.005	<0.005	0.0	No Limit
		EP234-1: Coumaphos	56-72-4	0.01	µg/L	<0.01	<0.01	0.0	No Limit
		EP234-1: Diazinon	333-41-5	0.01	µg/L	<0.01	<0.01	0.0	No Limit
		EP234-1: Ethoprophos	13194-48-4	0.01	µg/L	<0.01	<0.01	0.0	No Limit
		EP234-1: Fenamiphos	22224-92-6	0.01	µg/L	<0.01	<0.01	0.0	No Limit
		EP234-1: Fensulfothion	115-90-2	0.01	µg/L	<0.01	<0.01	0.0	No Limit
		EP234-1: Omethoate	1113-02-6	0.01	µg/L	<0.01	<0.01	0.0	No Limit
		EP234-1: Pirimiphos-ethyl	23505-41-1	0.01	µg/L	<0.01	<0.01	0.0	No Limit
		EP234-1: Pirimiphos-methyl	29232-93-7	0.01	µg/L	<0.01	<0.01	0.0	No Limit
		EP234-1: Profenofos	41198-08-7	0.01	µg/L	<0.01	<0.01	0.0	No Limit
		EP234-1: Terbufos	13071-79-9	0.01	µg/L	<0.01	<0.01	0.0	No Limit
		EP234-1: Tetrachlorvinphos	22248-79-9	0.01	µg/L	<0.01	<0.01	0.0	No Limit
		EP234-1: Azinphos-methyl	86-50-0	0.02	µg/L	<0.02	<0.02	0.0	No Limit
		EP234-1: Azinphos-ethyl	2642-71-9	0.02	µg/L	<0.02	<0.02	0.0	No Limit
		EP234-1: Carbofenothion	786-19-6	0.02	µg/L	<0.02	<0.02	0.0	No Limit
		EP234-1: Chlorfenvinphos	470-90-6	0.02	µg/L	<0.02	<0.02	0.0	No Limit
		EP234-1: Chlorpyrifos	2921-88-2	0.02	µg/L	<0.02	<0.02	0.0	No Limit

Sub-Matrix: **WATER**

Laboratory sample ID	Sample ID	Method: Compound	CAS Number	Laboratory Duplicate (DUP) Report					
				LOR	Unit	Original Result	Duplicate Result	RPD (%)	Acceptable RPD (%)
EP234A: OP Pesticides (QC Lot: 5282508) - continued									
ES2330280-001	BADDS	EP234-1: Demeton-O	298-03-3	0.02	µg/L	<0.02	<0.02	0.0	No Limit
		EP234-1: Demeton-O & Demeton-S	298-03-3/126-75-0	0.02	µg/L	<0.02	<0.02	0.0	No Limit
		EP234-1: Demeton-S	126-75-0	0.02	µg/L	<0.02	<0.02	0.0	No Limit
		EP234-1: Demeton-S-methyl	919-86-8	0.02	µg/L	<0.02	<0.02	0.0	No Limit
		EP234-1: Dimethoate	60-51-5	0.02	µg/L	<0.02	<0.02	0.0	No Limit
		EP234-1: Ethion	563-12-2	0.02	µg/L	<0.02	<0.02	0.0	No Limit
		EP234-1: Malathion	121-75-5	0.02	µg/L	<0.02	<0.02	0.0	No Limit
		EP234-1: Mevinphos	7786-34-7	0.02	µg/L	<0.02	<0.02	0.0	No Limit
		EP234-1: Monocrotophos	6923-22-4	0.02	µg/L	<0.02	<0.02	0.0	No Limit
		EP234-1: Temephos	3383-96-8	0.02	µg/L	<0.02	<0.02	0.0	No Limit
		EP234-1: Trichlorfon	52-68-6	0.02	µg/L	<0.02	<0.02	0.0	No Limit
		EP234-1: Disulfoton	298-04-4	0.05	µg/L	<0.05	<0.05	0.0	No Limit
		EP234-1: EPN	2104-64-5	0.05	µg/L	<0.05	<0.05	0.0	No Limit
		EP234-1: Fenthion	55-38-9	0.05	µg/L	<0.05	<0.05	0.0	No Limit
		EP234-1: Sulprofos	35400-43-2	0.05	µg/L	<0.05	<0.05	0.0	No Limit
		EP234-1: Bromophos-ethyl	4824-78-6	0.1	µg/L	<0.10	<0.10	0.0	No Limit
		EP234-1: Phorate	298-02-2	0.1	µg/L	<0.1	<0.1	0.0	No Limit
		EP234-1: Prothiofos	34643-46-4	0.1	µg/L	<0.1	<0.1	0.0	No Limit
		EP234-1: Chlorpyrifos-methyl	5598-13-0	0.2	µg/L	<0.2	<0.2	0.0	No Limit
		EP234-1: Dichlorvos	62-73-7	0.2	µg/L	<0.20	<0.20	0.0	No Limit
		EP234-1: Parathion	56-38-2	0.2	µg/L	<0.2	<0.2	0.0	No Limit
		EP234-1: Parathion-methyl	298-00-0	0.5	µg/L	<0.5	<0.5	0.0	No Limit
		EP234-1: Trichloronate	327-98-0	0.5	µg/L	<0.5	<0.5	0.0	No Limit
		EP234-1: Fenchlorphos (Ronnel)	299-84-3	10	µg/L	<10	<10	0.0	No Limit
		EP234-1: Fenitrothion	122-14-5	2	µg/L	<2	<2	0.0	No Limit
ES2330280-011	ROPUS	EP234-1: Sulfotep	3689-24-5	0.005	µg/L	<0.005	<0.005	0.0	No Limit
		EP234-1: Triazophos	24017-47-8	0.005	µg/L	<0.005	<0.005	0.0	No Limit
		EP234-1: Coumaphos	56-72-4	0.01	µg/L	<0.01	<0.01	0.0	No Limit
		EP234-1: Diazinon	333-41-5	0.01	µg/L	<0.01	<0.01	0.0	No Limit
		EP234-1: Ethoprophos	13194-48-4	0.01	µg/L	<0.01	<0.01	0.0	No Limit
		EP234-1: Fenamiphos	22224-92-6	0.01	µg/L	<0.01	<0.01	0.0	No Limit
		EP234-1: Fensulfothion	115-90-2	0.01	µg/L	<0.01	<0.01	0.0	No Limit
		EP234-1: Omethoate	1113-02-6	0.01	µg/L	<0.01	<0.01	0.0	No Limit
		EP234-1: Pirimiphos-ethyl	23505-41-1	0.01	µg/L	<0.01	<0.01	0.0	No Limit
		EP234-1: Pirimiphos-methyl	29232-93-7	0.01	µg/L	<0.01	<0.01	0.0	No Limit
		EP234-1: Profenofos	41198-08-7	0.01	µg/L	<0.01	<0.01	0.0	No Limit
		EP234-1: Terbufos	13071-79-9	0.01	µg/L	<0.01	<0.01	0.0	No Limit
		EP234-1: Tetrachlorvinphos	22248-79-9	0.01	µg/L	<0.01	<0.01	0.0	No Limit
		EP234-1: Azinphos-methyl	86-50-0	0.02	µg/L	<0.02	<0.02	0.0	No Limit

Sub-Matrix: **WATER**

Laboratory sample ID	Sample ID	Method: Compound	CAS Number	Laboratory Duplicate (DUP) Report					
				LOR	Unit	Original Result	Duplicate Result	RPD (%)	Acceptable RPD (%)
EP234A: OP Pesticides (QC Lot: 5282508) - continued									
ES2330280-011	ROPUS	EP234-1: Azinphos-ethyl	2642-71-9	0.02	µg/L	<0.02	<0.02	0.0	No Limit
		EP234-1: Carbofenothion	786-19-6	0.02	µg/L	<0.02	<0.02	0.0	No Limit
		EP234-1: Chlorfenvinphos	470-90-6	0.02	µg/L	<0.02	<0.02	0.0	No Limit
		EP234-1: Chlorpyrifos	2921-88-2	0.02	µg/L	<0.02	<0.02	0.0	No Limit
		EP234-1: Demeton-O	298-03-3	0.02	µg/L	<0.02	<0.02	0.0	No Limit
		EP234-1: Demeton-O & Demeton-S	298-03-3/126-75-0	0.02	µg/L	<0.02	<0.02	0.0	No Limit
		EP234-1: Demeton-S	126-75-0	0.02	µg/L	<0.02	<0.02	0.0	No Limit
		EP234-1: Demeton-S-methyl	919-86-8	0.02	µg/L	<0.02	<0.02	0.0	No Limit
		EP234-1: Dimethoate	60-51-5	0.02	µg/L	<0.02	<0.02	0.0	No Limit
		EP234-1: Ethion	563-12-2	0.02	µg/L	<0.02	<0.02	0.0	No Limit
		EP234-1: Malathion	121-75-5	0.02	µg/L	<0.02	<0.02	0.0	No Limit
		EP234-1: Mevinphos	7786-34-7	0.02	µg/L	<0.02	<0.02	0.0	No Limit
		EP234-1: Monocrotophos	6923-22-4	0.02	µg/L	<0.02	<0.02	0.0	No Limit
		EP234-1: Temephos	3383-96-8	0.02	µg/L	<0.02	<0.02	0.0	No Limit
		EP234-1: Trichlorfon	52-68-6	0.02	µg/L	<0.02	<0.02	0.0	No Limit
		EP234-1: Disulfoton	298-04-4	0.05	µg/L	<0.05	<0.05	0.0	No Limit
		EP234-1: EPN	2104-64-5	0.05	µg/L	<0.05	<0.05	0.0	No Limit
		EP234-1: Fenthion	55-38-9	0.05	µg/L	<0.05	<0.05	0.0	No Limit
		EP234-1: Sulprofos	35400-43-2	0.05	µg/L	<0.05	<0.05	0.0	No Limit
		EP234-1: Bromophos-ethyl	4824-78-6	0.1	µg/L	<0.10	<0.10	0.0	No Limit
		EP234-1: Phorate	298-02-2	0.1	µg/L	<0.1	<0.1	0.0	No Limit
		EP234-1: Prothiofos	34643-46-4	0.1	µg/L	<0.1	<0.1	0.0	No Limit
		EP234-1: Chlorpyrifos-methyl	5598-13-0	0.2	µg/L	<0.2	<0.2	0.0	No Limit
		EP234-1: Dichlorvos	62-73-7	0.2	µg/L	<0.20	<0.20	0.0	No Limit
		EP234-1: Parathion	56-38-2	0.2	µg/L	<0.2	<0.2	0.0	No Limit
		EP234-1: Parathion-methyl	298-00-0	0.5	µg/L	<0.5	<0.5	0.0	No Limit
		EP234-1: Trichloronate	327-98-0	0.5	µg/L	<0.5	<0.5	0.0	No Limit
		EP234-1: Fenchlorphos (Ronnel)	299-84-3	10	µg/L	<10	<10	0.0	No Limit
		EP234-1: Fenitrothion	122-14-5	2	µg/L	<2	<2	0.0	No Limit
EP234A: OP Pesticides (QC Lot: 5282509)									
ES2330280-001	BADDS	EP234-1x: Bensulide	741-58-2	0.1	µg/L	<0.1	<0.1	0.0	No Limit
		EP234-1x: Methidathion	950-37-8	0.1	µg/L	<0.1	<0.1	0.0	No Limit
		EP234-1x: Pyrazophos	13457-18-6	0.1	µg/L	<0.1	<0.1	0.0	No Limit
		EP234-1x: Acephate	30560-19-1	0.5	µg/L	<0.5	<0.5	0.0	No Limit
		EP234-1x: Thiometon	640-15-3	0.5	µg/L	<0.5	<0.5	0.0	No Limit
		EP234-1x: Naftalofos	1491-41-4	1	µg/L	<1.0	<1.0	0.0	No Limit
		EP234-1x: Fosetyl Aluminium	39148-24-8	10	µg/L	<10	<10	0.0	No Limit
		EP234-1x: Formothion	2540-82-1	20	µg/L	<20	<20	0.0	No Limit
ES2330280-011	ROPUS	EP234-1x: Bensulide	741-58-2	0.1	µg/L	<0.1	<0.1	0.0	No Limit

Sub-Matrix: **WATER**

				Laboratory Duplicate (DUP) Report					
Laboratory sample ID	*Sample ID*	*Method: Compound*	*CAS Number*	*LOR*	*Unit*	*Original Result*	*Duplicate Result*	*RPD (%)*	*Acceptable RPD (%)*
EP234A: OP Pesticides (QC Lot: 5282509) - continued									
ES2330280-011	ROPUS	EP234-1x: Methidathion	950-37-8	0.1	µg/L	<0.1	<0.1	0.0	No Limit
		EP234-1x: Pyrazophos	13457-18-6	0.1	µg/L	<0.1	<0.1	0.0	No Limit
		EP234-1x: Acephate	30560-19-1	0.5	µg/L	<0.5	<0.5	0.0	No Limit
		EP234-1x: Thiometon	640-15-3	0.5	µg/L	<0.5	<0.5	0.0	No Limit
		EP234-1x: Naftalofos	1491-41-4	1	µg/L	<1.0	<1.0	0.0	No Limit
		EP234-1x: Fosetyl Aluminium	39148-24-8	10	µg/L	<10	<10	0.0	No Limit
		EP234-1x: Formothion	2540-82-1	20	µg/L	<20	<20	0.0	No Limit

Method Blank (MB) and Laboratory Control Sample (LCS) Report

The quality control term Method / Laboratory Blank refers to an analyte free matrix to which all reagents are added in the same volumes or proportions as used in standard sample preparation. The purpose of this QC parameter is to monitor potential laboratory contamination. The quality control term Laboratory Control Sample (LCS) refers to a certified reference material, or a known interference free matrix spiked with target analytes. The purpose of this QC parameter is to monitor method precision and accuracy independent of sample matrix. Dynamic Recovery Limits are based on statistical evaluation of processed LCS.

Sub-Matrix: **WATER**

				Method Blank (MB) Report	Laboratory Control Spike (LCS) Report			
					Spike	Spike Recovery (%)	Acceptable Limits (%)	
Method: Compound	CAS Number	LOR	Unit	Result	Concentration	LCS	Low	High
EA005P: pH by PC Titrator (QCLot: 5281043)								
EA005-P: pH Value	----	----	pH Unit	----	4 pH Unit	100	98.8	101
				----	7 pH Unit	100	99.2	101
EA015: Total Dissolved Solids dried at 180 ± 5 °C (QCLot: 5287267)								
EA015H: Total Dissolved Solids @180°C	----	10	mg/L	<10	2000 mg/L	101	87.0	109
				<10	293 mg/L	102	75.2	126
				<10	2380 mg/L	96.7	83.0	124
EA025: Total Suspended Solids dried at 104 ± 2°C (QCLot: 5287268)								
EA025H: Suspended Solids (SS)	----	5	mg/L	<5	150 mg/L	98.0	83.0	129
				<5	1000 mg/L	91.4	82.0	110
				<5	931 mg/L	94.2	83.0	118
EG020T: Total Metals by ICP-MS (QCLot: 5288495)								
EG020A-T: Arsenic	7440-38-2	0.001	mg/L	<0.001	0.1 mg/L	95.4	82.0	114
EG020A-T: Cadmium	7440-43-9	0.0001	mg/L	<0.0001	0.1 mg/L	99.3	84.0	112
EG020A-T: Chromium	7440-47-3	0.001	mg/L	<0.001	0.1 mg/L	93.3	86.0	116
EG020A-T: Copper	7440-50-8	0.001	mg/L	<0.001	0.1 mg/L	97.0	83.0	118
EG020A-T: Lead	7439-92-1	0.001	mg/L	<0.001	0.1 mg/L	93.8	85.0	115
EG020A-T: Manganese	7439-96-5	0.001	mg/L	<0.001	0.1 mg/L	97.5	85.0	113
EG020A-T: Nickel	7440-02-0	0.001	mg/L	<0.001	0.1 mg/L	95.7	84.0	116
EG020A-T: Zinc	7440-66-6	0.005	mg/L	<0.005	0.1 mg/L	90.1	79.0	117
EG020A-T: Iron	7439-89-6	0.05	mg/L	<0.05	0.5 mg/L	97.8	85.0	117
EG035T: Total Recoverable Mercury by FIMS (QCLot: 5283022)								
EG035T: Mercury	7439-97-6	0.0001	mg/L	<0.0001	0.01 mg/L	91.1	77.0	111
EG035T: Total Recoverable Mercury by FIMS (QCLot: 5283023)								
EG035T: Mercury	7439-97-6	0.0001	mg/L	<0.0001	0.01 mg/L	88.8	77.0	111
EK055G: Ammonia as N by Discrete Analyser (QCLot: 5284644)								
EK055G: Ammonia as N	7664-41-7	0.01	mg/L	<0.01	1 mg/L	95.6	90.0	114
EK055G: Ammonia as N by Discrete Analyser (QCLot: 5284647)								
EK055G: Ammonia as N	7664-41-7	0.01	mg/L	<0.01	1 mg/L	100.0	90.0	114
EK057G: Nitrite as N by Discrete Analyser (QCLot: 5284070)								
EK057G: Nitrite as N	14797-65-0	0.01	mg/L	<0.01	0.5 mg/L	104	82.0	114

Sub-Matrix: **WATER**

Method: Compound	CAS Number	LOR	Unit	Method Blank (MB) Report	Laboratory Control Spike (LCS) Report			
					Spike	Spike Recovery (%)	Acceptable Limits (%)	
				Result	Concentration	LCS	Low	High
EK057G: Nitrite as N by Discrete Analyser (QCLot: 5284075)								
EK057G: Nitrite as N	14797-65-0	0.01	mg/L	<0.01	0.5 mg/L	103	82.0	114
EK057G: Nitrite as N by Discrete Analyser (QCLot: 5286696)								
EK057G: Nitrite as N	14797-65-0	0.01	mg/L	<0.01	0.5 mg/L	103	82.0	114
EK059G: Nitrite plus Nitrate as N (NOx) by Discrete Analyser (QCLot: 5284645)								
EK059G: Nitrite + Nitrate as N	----	0.01	mg/L	<0.01	0.5 mg/L	96.4	91.0	113
EK059G: Nitrite plus Nitrate as N (NOx) by Discrete Analyser (QCLot: 5284646)								
EK059G: Nitrite + Nitrate as N	----	0.01	mg/L	<0.01	0.5 mg/L	95.1	91.0	113
EK061G: Total Kjeldahl Nitrogen By Discrete Analyser (QCLot: 5284643)								
EK061G: Total Kjeldahl Nitrogen as N	----	0.1	mg/L	<0.1	10 mg/L	88.2	69.0	101
				<0.1	1 mg/L	102	70.0	118
				<0.1	5 mg/L	105	70.0	130
EK067G: Total Phosphorus as P by Discrete Analyser (QCLot: 5284642)								
EK067G: Total Phosphorus as P	----	0.01	mg/L	<0.01	4.42 mg/L	88.4	71.3	126
				<0.01	0.442 mg/L	105	71.3	126
				<0.01	1 mg/L	96.5	70.0	130
EK071G: Reactive Phosphorus as P by discrete analyser (QCLot: 5284071)								
EK071G: Reactive Phosphorus as P	14265-44-2	0.01	mg/L	<0.01	0.5 mg/L	105	85.0	117
EK071G: Reactive Phosphorus as P by discrete analyser (QCLot: 5286697)								
EK071G: Reactive Phosphorus as P	14265-44-2	0.01	mg/L	<0.01	0.5 mg/L	102	85.0	117
EP008: Chlorophyll (QCLot: 5281780)								
EP008: Chlorophyll a	----	1	mg/m³	<1	20 mg/m³	86.4	70.0	130
EP008: Chlorophyll (QCLot: 5284648)								
EP008: Chlorophyll a	----	1	mg/m³	<1	20 mg/m³	86.4	70.0	130
EP008: Chlorophyll (QCLot: 5286386)								
EP008: Chlorophyll a	----	1	mg/m³	<1	20 mg/m³	87.3	70.0	130
EP020: Oil and Grease (O&G) (QCLot: 5289489)								
EP020: Oil & Grease	----	5	mg/L	<5	5000 mg/L	94.2	81.0	121
				<5	4000 mg/L	85.7	70.0	110
EP074D: Fumigants (QCLot: 5288448)								
EP074: 2.2-Dichloropropane	594-20-7	5	µg/L	<5	10 µg/L	85.0	68.0	122
EP074: 1.2-Dichloropropane	78-87-5	5	µg/L	<5	10 µg/L	89.5	76.0	118
EP074: cis-1.3-Dichloropropylene	10061-01-5	5	µg/L	<5	10 µg/L	99.4	62.0	120
EP074: trans-1.3-Dichloropropylene	10061-02-6	5	µg/L	<5	10 µg/L	92.1	60.0	114
EP074: 1.2-Dibromoethane (EDB)	106-93-4	5	µg/L	<5	10 µg/L	90.5	69.0	117

Sub-Matrix: **WATER**

Method: Compound	CAS Number	LOR	Unit	Method Blank (MB) Report	Laboratory Control Spike (LCS) Report			
					Spike	Spike Recovery (%)	Acceptable Limits (%)	
				Result	Concentration	LCS	Low	High
EP074E: Halogenated Aliphatic Compounds (QCLot: 5288448)								
EP074: Dichlorodifluoromethane	75-71-8	50	µg/L	<50	100 µg/L	78.1	60.6	138
EP074: Chloromethane	74-87-3	50	µg/L	<50	100 µg/L	78.7	67.4	130
EP074: Vinyl chloride	75-01-4	50	µg/L	<50	100 µg/L	78.9	69.4	129
EP074: Bromomethane	74-83-9	50	µg/L	<50	100 µg/L	69.0	56.0	140
EP074: Chloroethane	75-00-3	50	µg/L	<50	100 µg/L	90.3	61.0	139
EP074: Trichlorofluoromethane	75-69-4	50	µg/L	<50	100 µg/L	89.4	69.0	131
EP074: 1.1-Dichloroethene	75-35-4	5	µg/L	<5	10 µg/L	90.1	70.0	124
EP074: Iodomethane	74-88-4	5	µg/L	<5	10 µg/L	82.5	70.2	128
EP074: trans-1.2-Dichloroethene	156-60-5	5	µg/L	<5	10 µg/L	91.0	74.0	118
EP074: 1.1-Dichloroethane	75-34-3	5	µg/L	<5	10 µg/L	93.9	74.0	120
EP074: cis-1.2-Dichloroethene	156-59-2	5	µg/L	<5	10 µg/L	95.2	77.0	119
EP074: 1.1.1-Trichloroethane	71-55-6	5	µg/L	<5	10 µg/L	89.4	67.0	119
EP074: 1.1-Dichloropropylene	563-58-6	5	µg/L	<5	10 µg/L	92.8	73.0	119
EP074: Carbon Tetrachloride	56-23-5	5	µg/L	<5	10 µg/L	90.3	62.0	120
EP074: 1.2-Dichloroethane	107-06-2	5	µg/L	<5	10 µg/L	94.2	73.0	123
EP074: Trichloroethene	79-01-6	5	µg/L	<5	10 µg/L	96.4	76.0	118
EP074: Dibromomethane	74-95-3	5	µg/L	<5	10 µg/L	91.9	73.0	119
EP074: 1.1.2-Trichloroethane	79-00-5	5	µg/L	<5	10 µg/L	90.8	72.0	126
EP074: 1.3-Dichloropropane	142-28-9	5	µg/L	<5	10 µg/L	103	71.0	129
EP074: Tetrachloroethene	127-18-4	5	µg/L	<5	10 µg/L	90.6	72.0	124
EP074: 1.1.1.2-Tetrachloroethane	630-20-6	5	µg/L	<5	10 µg/L	98.9	66.0	114
EP074: trans-1.4-Dichloro-2-butene	110-57-6	5	µg/L	<5	10 µg/L	81.5	60.0	120
EP074: cis-1.4-Dichloro-2-butene	1476-11-5	5	µg/L	<5	10 µg/L	77.9	70.6	128
EP074: 1.1.2.2-Tetrachloroethane	79-34-5	5	µg/L	<5	10 µg/L	109	70.0	124
EP074: 1.2.3-Trichloropropane	96-18-4	5	µg/L	<5	10 µg/L	121	74.0	126
EP074: Pentachloroethane	76-01-7	5	µg/L	<5	10 µg/L	83.4	71.8	126
EP074: 1.2-Dibromo-3-chloropropane	96-12-8	5	µg/L	<5	10 µg/L	75.3	66.4	136
EP074: Hexachlorobutadiene	87-68-3	5	µg/L	<5	10 µg/L	93.5	58.0	130
EP074F: Halogenated Aromatic Compounds (QCLot: 5288448)								
EP074: Chlorobenzene	108-90-7	5	µg/L	<5	10 µg/L	109	79.0	117
EP074: Bromobenzene	108-86-1	5	µg/L	<5	10 µg/L	94.3	76.0	116
EP074: 2-Chlorotoluene	95-49-8	5	µg/L	<5	10 µg/L	91.7	73.0	119
EP074: 4-Chlorotoluene	106-43-4	5	µg/L	<5	10 µg/L	91.1	73.0	119
EP074: 1.3-Dichlorobenzene	541-73-1	5	µg/L	<5	10 µg/L	88.5	75.0	117

Sub-Matrix: **WATER**

Method: Compound	CAS Number	LOR	Unit	Method Blank (MB) Report: Result	Laboratory Control Spike (LCS) Report: Spike Concentration	Spike Recovery (%): LCS	Acceptable Limits (%): Low	Acceptable Limits (%): High
EP074F: Halogenated Aromatic Compounds (QCLot: 5288448) - continued								
EP074: 1.4-Dichlorobenzene	106-46-7	5	µg/L	<5	10 µg/L	95.2	74.0	118
EP074: 1.2-Dichlorobenzene	95-50-1	5	µg/L	<5	10 µg/L	104	75.0	117
EP074: 1.2.4-Trichlorobenzene	120-82-1	5	µg/L	<5	10 µg/L	100	61.0	125
EP074: 1.2.3-Trichlorobenzene	87-61-6	5	µg/L	<5	10 µg/L	110	67.0	123
EP074G: Trihalomethanes (QCLot: 5288448)								
EP074: Chloroform	67-66-3	5	µg/L	<5	10 µg/L	97.4	72.0	120
EP074: Bromodichloromethane	75-27-4	5	µg/L	<5	10 µg/L	95.0	64.0	118
EP074: Dibromochloromethane	124-48-1	5	µg/L	<5	10 µg/L	91.7	65.0	115
EP074: Bromoform	75-25-2	5	µg/L	<5	10 µg/L	91.0	73.5	126
EP075(SIM)A: Phenolic Compounds (QCLot: 5280947)								
EP075(SIM): Phenol	108-95-2	1	µg/L	<1.0	5 µg/L	38.4	24.5	61.9
EP075(SIM): 2-Chlorophenol	95-57-8	1	µg/L	<1.0	5 µg/L	76.6	52.0	90.0
EP075(SIM): 2-Methylphenol	95-48-7	1	µg/L	<1.0	5 µg/L	76.8	51.0	91.0
EP075(SIM): 3- & 4-Methylphenol	1319-77-3	2	µg/L	<2.0	10 µg/L	58.0	44.0	88.0
EP075(SIM): 2-Nitrophenol	88-75-5	1	µg/L	<1.0	5 µg/L	72.8	48.0	100
EP075(SIM): 2.4-Dimethylphenol	105-67-9	1	µg/L	<1.0	5 µg/L	67.0	49.0	99.0
EP075(SIM): 2.4-Dichlorophenol	120-83-2	1	µg/L	<1.0	5 µg/L	74.1	53.0	105
EP075(SIM): 2.6-Dichlorophenol	87-65-0	1	µg/L	<1.0	5 µg/L	67.4	57.0	105
EP075(SIM): 4-Chloro-3-methylphenol	59-50-7	1	µg/L	<1.0	5 µg/L	73.0	53.0	99.0
EP075(SIM): 2.4.6-Trichlorophenol	88-06-2	1	µg/L	<1.0	5 µg/L	77.7	50.0	106
EP075(SIM): 2.4.5-Trichlorophenol	95-95-4	1	µg/L	<1.0	5 µg/L	73.5	51.0	105
EP075(SIM): Pentachlorophenol	87-86-5	2	µg/L	<2.0	10 µg/L	46.5	10.0	95.0
EP075(SIM)B: Polynuclear Aromatic Hydrocarbons (QCLot: 5280947)								
EP075(SIM): Naphthalene	91-20-3	1	µg/L	<1.0	5 µg/L	72.8	50.0	94.0
EP075(SIM): Acenaphthylene	208-96-8	1	µg/L	<1.0	5 µg/L	73.2	63.6	114
EP075(SIM): Acenaphthene	83-32-9	1	µg/L	<1.0	5 µg/L	69.7	62.2	113
EP075(SIM): Fluorene	86-73-7	1	µg/L	<1.0	5 µg/L	66.5	63.9	115
EP075(SIM): Phenanthrene	85-01-8	1	µg/L	<1.0	5 µg/L	75.8	62.6	116
EP075(SIM): Anthracene	120-12-7	1	µg/L	<1.0	5 µg/L	86.8	64.3	116
EP075(SIM): Fluoranthene	206-44-0	1	µg/L	<1.0	5 µg/L	98.1	63.6	118
EP075(SIM): Pyrene	129-00-0	1	µg/L	<1.0	5 µg/L	98.4	63.1	118
EP075(SIM): Benz(a)anthracene	56-55-3	1	µg/L	<1.0	5 µg/L	91.6	64.1	117
EP075(SIM): Chrysene	218-01-9	1	µg/L	<1.0	5 µg/L	87.3	62.5	116

Sub-Matrix: **WATER**

Method: Compound	CAS Number	LOR	Unit	Method Blank (MB) Report: Result	Laboratory Control Spike (LCS) Report: Spike Concentration	Spike Recovery (%): LCS	Acceptable Limits (%): Low	Acceptable Limits (%): High
EP075(SIM)B: Polynuclear Aromatic Hydrocarbons (QCLot: 5280947) - continued								
EP075(SIM): Benzo(b+j)fluoranthene	205-99-2 205-82-3	1	µg/L	<1.0	5 µg/L	87.9	61.7	119
EP075(SIM): Benzo(k)fluoranthene	207-08-9	1	µg/L	<1.0	5 µg/L	97.9	63.0	115
EP075(SIM): Benzo(a)pyrene	50-32-8	0.5	µg/L	<0.5	5 µg/L	95.0	63.3	117
EP075(SIM): Indeno(1.2.3.cd)pyrene	193-39-5	1	µg/L	<1.0	5 µg/L	74.8	59.9	118
EP075(SIM): Dibenz(a.h)anthracene	53-70-3	1	µg/L	<1.0	5 µg/L	74.6	61.2	117
EP075(SIM): Benzo(g.h.i)perylene	191-24-2	1	µg/L	<1.0	5 µg/L	83.6	59.1	118
EP080: BTEXN (QCLot: 5288447)								
EP080: Benzene	71-43-2	1	µg/L	<1	10 µg/L	78.2	68.3	119
EP080: Toluene	108-88-3	2	µg/L	<2	10 µg/L	89.3	73.5	120
EP080: Ethylbenzene	100-41-4	2	µg/L	<2	10 µg/L	93.6	73.8	122
EP080: meta- & para-Xylene	108-38-3 106-42-3	2	µg/L	<2	10 µg/L	95.2	73.0	122
EP080: ortho-Xylene	95-47-6	2	µg/L	<2	10 µg/L	95.9	76.4	123
EP080: Naphthalene	91-20-3	5	µg/L	<5	10 µg/L	88.9	75.5	124
EP234A: OP Pesticides (QCLot: 5282508)								
EP234-1: Azinphos-methyl	86-50-0	0.02	µg/L	<0.02	0.2 µg/L	99.8	77.0	129
EP234-1: Azinphos-ethyl	2642-71-9	0.02	µg/L	<0.02	0.2 µg/L	105	75.0	135
EP234-1: Bromophos-ethyl	4824-78-6	0.1	µg/L	<0.10	1 µg/L	88.0	70.0	130
EP234-1: Carbofenothion	786-19-6	0.02	µg/L	<0.02	0.2 µg/L	97.2	70.0	130
EP234-1: Chlorfenvinphos	470-90-6	0.02	µg/L	<0.02	0.2 µg/L	100	74.0	134
EP234-1: Chlorpyrifos	2921-88-2	0.02	µg/L	<0.02	0.2 µg/L	101	70.0	130
EP234-1: Chlorpyrifos-methyl	5598-13-0	0.2	µg/L	<0.2	2 µg/L	92.3	70.0	130
EP234-1: Coumaphos	56-72-4	0.01	µg/L	<0.01	0.1 µg/L	117	70.0	130
EP234-1: Demeton-O	298-03-3	0.02	µg/L	<0.02	0.05 µg/L	106	64.0	134
EP234-1: Demeton-O & Demeton-S	298-03-3/12 6-75-0	0.02	µg/L	<0.02	0.1 µg/L	107	79.0	127
EP234-1: Demeton-S	126-75-0	0.02	µg/L	<0.02	0.05 µg/L	108	63.0	135
EP234-1: Demeton-S-methyl	919-86-8	0.02	µg/L	<0.02	0.2 µg/L	111	70.0	128
EP234-1: Diazinon	333-41-5	0.01	µg/L	<0.01	0.1 µg/L	98.3	68.0	138
EP234-1: Dichlorvos	62-73-7	0.2	µg/L	<0.20	2 µg/L	102	76.0	128
EP234-1: Dimethoate	60-51-5	0.02	µg/L	<0.02	0.2 µg/L	99.5	75.0	127
EP234-1: Disulfoton	298-04-4	0.05	µg/L	<0.05	0.5 µg/L	109	72.0	134
EP234-1: EPN	2104-64-5	0.05	µg/L	<0.05	0.5 µg/L	96.8	70.0	130
EP234-1: Ethion	563-12-2	0.02	µg/L	<0.02	0.2 µg/L	107	70.0	130

Sub-Matrix: **WATER**

Method: Compound	CAS Number	LOR	Unit	Method Blank (MB) Report	Laboratory Control Spike (LCS) Report			
					Spike	Spike Recovery (%)	Acceptable Limits (%)	
				Result	Concentration	LCS	Low	High
EP234A: OP Pesticides (QCLot: 5282508) - continued								
EP234-1: Ethoprophos	13194-48-4	0.01	µg/L	<0.01	0.1 µg/L	94.5	78.0	128
EP234-1: Fenamiphos	22224-92-6	0.01	µg/L	<0.01	0.1 µg/L	113	71.0	135
EP234-1: Fenchlorphos (Ronnel)	299-84-3	10	µg/L	<10	100 µg/L	94.5	70.0	130
EP234-1: Fenitrothion	122-14-5	2	µg/L	<2	20 µg/L	85.6	64.0	136
EP234-1: Fensulfothion	115-90-2	0.01	µg/L	<0.01	0.1 µg/L	101	79.0	125
EP234-1: Fenthion	55-38-9	0.05	µg/L	<0.05	0.5 µg/L	90.0	70.0	130
EP234-1: Malathion	121-75-5	0.02	µg/L	<0.02	0.2 µg/L	105	70.0	130
EP234-1: Mevinphos	7786-34-7	0.02	µg/L	<0.02	0.2 µg/L	98.1	77.0	123
EP234-1: Monocrotophos	6923-22-4	0.02	µg/L	<0.02	0.2 µg/L	107	75.0	129
EP234-1: Omethoate	1113-02-6	0.01	µg/L	<0.01	0.1 µg/L	111	74.0	130
EP234-1: Parathion	56-38-2	0.2	µg/L	<0.2	2 µg/L	92.0	69.0	139
EP234-1: Parathion-methyl	298-00-0	0.5	µg/L	<0.5	20 µg/L	87.9	66.0	140
EP234-1: Phorate	298-02-2	0.1	µg/L	<0.1	1 µg/L	103	68.0	136
EP234-1: Pirimiphos-ethyl	23505-41-1	0.01	µg/L	<0.01	0.1 µg/L	99.4	70.0	130
EP234-1: Pirimiphos-methyl	29232-93-7	0.01	µg/L	<0.01	0.1 µg/L	97.6	71.0	137
EP234-1: Profenofos	41198-08-7	0.01	µg/L	<0.01	0.1 µg/L	102	70.0	130
EP234-1: Prothiofos	34643-46-4	0.1	µg/L	<0.1	1 µg/L	70.4	70.0	130
EP234-1: Sulfotep	3689-24-5	0.005	µg/L	<0.005	0.05 µg/L	95.2	71.0	137
EP234-1: Sulprofos	35400-43-2	0.05	µg/L	<0.05	0.5 µg/L	109	70.0	130
EP234-1: Temephos	3383-96-8	0.02	µg/L	<0.02	0.2 µg/L	93.2	70.0	130
EP234-1: Terbufos	13071-79-9	0.01	µg/L	<0.01	0.1 µg/L	109	70.0	130
EP234-1: Tetrachlorvinphos	22248-79-9	0.01	µg/L	<0.01	0.1 µg/L	101	74.0	128
EP234-1: Triazophos	24017-47-8	0.005	µg/L	<0.005	0.05 µg/L	107	77.0	131
EP234-1: Trichlorfon	52-68-6	0.02	µg/L	<0.02	0.2 µg/L	89.9	70.0	130
EP234-1: Trichloronate	327-98-0	0.5	µg/L	<0.5	5 µg/L	93.2	63.0	139
EP234A: OP Pesticides (QCLot: 5282509)								
EP234-1x: Acephate	30560-19-1	0.5	µg/L	<0.5	5 µg/L	86.7	70.0	130
EP234-1x: Bensulide	741-58-2	0.1	µg/L	<0.1	5 µg/L	108	70.0	130
EP234-1x: Formothion	2540-82-1	20	µg/L	<20	----	----	----	----
EP234-1x: Fosetyl Aluminium	39148-24-8	10	µg/L	<10	5 µg/L	91.7	70.0	130
EP234-1x: Methidathion	950-37-8	0.1	µg/L	<0.1	5 µg/L	104	70.0	130
EP234-1x: Naftalofos	1491-41-4	1	µg/L	<1.0	5 µg/L	120	70.0	130
EP234-1x: Pyrazophos	13457-18-6	0.1	µg/L	<0.1	5 µg/L	106	70.0	130
EP234-1x: Thiometon	640-15-3	0.5	µg/L	<0.5	5 µg/L	101	70.0	130

Matrix Spike (MS) Report

The quality control term Matrix Spike (MS) refers to an intralaboratory split sample spiked with a representative set of target analytes. The purpose of this QC parameter is to monitor potential matrix effects on analyte recoveries. Static Recovery Limits as per laboratory Data Quality Objectives (DQOs). Ideal recovery ranges stated may be waived in the event of sample matrix interference.

Sub-Matrix: **WATER**

				Matrix Spike (MS) Report			
				Spike	SpikeRecovery(%)	Acceptable Limits (%)	
Laboratory sample ID	Sample ID	Method: Compound	CAS Number	Concentration	MS	Low	High
EG020T: Total Metals by ICP-MS (QCLot: 5288495)							
ES2330200-004	Anonymous	EG020A-T: Arsenic	7440-38-2	1 mg/L	106	70.0	130
		EG020A-T: Cadmium	7440-43-9	0.25 mg/L	98.6	70.0	130
		EG020A-T: Chromium	7440-47-3	1 mg/L	94.2	70.0	130
		EG020A-T: Copper	7440-50-8	1 mg/L	103	70.0	130
		EG020A-T: Lead	7439-92-1	1 mg/L	91.2	70.0	130
		EG020A-T: Manganese	7439-96-5	1 mg/L	97.8	70.0	130
		EG020A-T: Nickel	7440-02-0	1 mg/L	100	70.0	130
		EG020A-T: Zinc	7440-66-6	1 mg/L	94.9	70.0	130
EG035T: Total Recoverable Mercury by FIMS (QCLot: 5283022)							
ES2329713-021	Anonymous	EG035T: Mercury	7439-97-6	0.01 mg/L	81.8	70.0	130
EG035T: Total Recoverable Mercury by FIMS (QCLot: 5283023)							
ES2330280-005	COSUS	EG035T: Mercury	7439-97-6	0.01 mg/L	90.5	70.0	130
EK055G: Ammonia as N by Discrete Analyser (QCLot: 5284644)							
ES2330001-001	Anonymous	EK055G: Ammonia as N	7664-41-7	1 mg/L	# Not Determined	70.0	130
EK055G: Ammonia as N by Discrete Analyser (QCLot: 5284647)							
ES2330280-005	COSUS	EK055G: Ammonia as N	7664-41-7	1 mg/L	96.4	70.0	130
EK057G: Nitrite as N by Discrete Analyser (QCLot: 5284070)							
ES2330032-008	Anonymous	EK057G: Nitrite as N	14797-65-0	0.5 mg/L	108	70.0	130
EK057G: Nitrite as N by Discrete Analyser (QCLot: 5284075)							
ES2330280-009	KEMUS	EK057G: Nitrite as N	14797-65-0	0.5 mg/L	116	70.0	130
EK057G: Nitrite as N by Discrete Analyser (QCLot: 5286696)							
ES2330280-006	HINDS	EK057G: Nitrite as N	14797-65-0	0.5 mg/L	115	70.0	130
EK059G: Nitrite plus Nitrate as N (NOx) by Discrete Analyser (QCLot: 5284645)							
ES2330001-001	Anonymous	EK059G: Nitrite + Nitrate as N	----	50 mg/L	107	70.0	130
EK059G: Nitrite plus Nitrate as N (NOx) by Discrete Analyser (QCLot: 5284646)							
ES2330280-005	COSUS	EK059G: Nitrite + Nitrate as N	----	0.5 mg/L	102	70.0	130
EK061G: Total Kjeldahl Nitrogen By Discrete Analyser (QCLot: 5284643)							
ES2330280-002	BADMS	EK061G: Total Kjeldahl Nitrogen as N	----	5 mg/L	76.5	70.0	130
EK067G: Total Phosphorus as P by Discrete Analyser (QCLot: 5284642)							
ES2330280-002	BADMS	EK067G: Total Phosphorus as P	----	1 mg/L	89.5	70.0	130

Sub-Matrix: **WATER**

				Matrix Spike (MS) Report			
				Spike	SpikeRecovery(%)	Acceptable Limits (%)	
Laboratory sample ID	Sample ID	Method: Compound	CAS Number	Concentration	MS	Low	High
EK071G: Reactive Phosphorus as P by discrete analyser (QCLot: 5284071)							
ES2330032-008	Anonymous	EK071G: Reactive Phosphorus as P	14265-44-2	0.5 mg/L	122	70.0	130
EK071G: Reactive Phosphorus as P by discrete analyser (QCLot: 5286697)							
ES2330280-006	HINDS	EK071G: Reactive Phosphorus as P	14265-44-2	0.5 mg/L	110	70.0	130
EP074E: Halogenated Aliphatic Compounds (QCLot: 5288448)							
ES2330280-001	BADDS	EP074: 1.1-Dichloroethene	75-35-4	25 µg/L	75.2	70.0	130
		EP074: Trichloroethene	79-01-6	25 µg/L	97.2	70.0	130
EP074F: Halogenated Aromatic Compounds (QCLot: 5288448)							
ES2330280-001	BADDS	EP074: Chlorobenzene	108-90-7	25 µg/L	102	70.0	130
EP075(SIM)A: Phenolic Compounds (QCLot: 5280947)							
ES2330280-002	BADMS	EP075(SIM): Phenol	108-95-2	20 µg/L	32.2	20.0	130
		EP075(SIM): 2-Chlorophenol	95-57-8	20 µg/L	78.7	60.0	130
		EP075(SIM): 2-Nitrophenol	88-75-5	20 µg/L	76.8	60.0	130
		EP075(SIM): 4-Chloro-3-methylphenol	59-50-7	20 µg/L	78.1	70.0	130
		EP075(SIM): Pentachlorophenol	87-86-5	20 µg/L	52.0	20.0	130
EP075(SIM)B: Polynuclear Aromatic Hydrocarbons (QCLot: 5280947)							
ES2330280-002	BADMS	EP075(SIM): Acenaphthene	83-32-9	20 µg/L	75.0	70.0	130
		EP075(SIM): Pyrene	129-00-0	20 µg/L	76.6	70.0	130
EP080: BTEXN (QCLot: 5288447)							
ES2330280-001	BADDS	EP080: Benzene	71-43-2	25 µg/L	73.2	70.0	130
		EP080: Toluene	108-88-3	25 µg/L	90.8	70.0	130
		EP080: Ethylbenzene	100-41-4	25 µg/L	97.4	70.0	130
		EP080: meta- & para-Xylene	108-38-3 106-42-3	25 µg/L	101	70.0	130
		EP080: ortho-Xylene	95-47-6	25 µg/L	99.3	70.0	130
		EP080: Naphthalene	91-20-3	25 µg/L	110	70.0	130
EP234A: OP Pesticides (QCLot: 5282508)							
ES2330280-001	BADDS	EP234-1: Azinphos-methyl	86-50-0	0.2 µg/L	104	70.0	130
		EP234-1: Azinphos-ethyl	2642-71-9	0.2 µg/L	119	70.0	130
		EP234-1: Bromophos-ethyl	4824-78-6	1 µg/L	118	70.0	130
		EP234-1: Carbofenothion	786-19-6	0.2 µg/L	122	70.0	130
		EP234-1: Chlorfenvinphos	470-90-6	0.2 µg/L	104	70.0	130
		EP234-1: Chlorpyrifos	2921-88-2	0.2 µg/L	111	70.0	130
		EP234-1: Chlorpyrifos-methyl	5598-13-0	2 µg/L	# 172	58.0	136
		EP234-1: Coumaphos	56-72-4	0.1 µg/L	125	70.0	130
		EP234-1: Demeton-O	298-03-3	0.05 µg/L	113	70.0	130
		EP234-1: Demeton-O & Demeton-S	298-03-3/126 -75-0	0.1 µg/L	112	69.0	129

Sub-Matrix: **WATER**

				Matrix Spike (MS) Report			
				Spike	SpikeRecovery(%)	Acceptable Limits (%)	
Laboratory sample ID	Sample ID	Method: Compound	CAS Number	Concentration	MS	Low	High
EP234A: OP Pesticides (QCLot: 5282508) - continued							
ES2330280-001	BADDS	EP234-1: Demeton-S	126-75-0	0.05 µg/L	105	70.0	130
		EP234-1: Demeton-S-methyl	919-86-8	0.2 µg/L	109	70.0	130
		EP234-1: Diazinon	333-41-5	0.1 µg/L	108	70.0	130
		EP234-1: Dichlorvos	62-73-7	2 µg/L	82.4	70.0	130
		EP234-1: Dimethoate	60-51-5	0.2 µg/L	97.1	69.0	131
		EP234-1: Disulfoton	298-04-4	0.5 µg/L	105	70.0	130
		EP234-1: EPN	2104-64-5	0.5 µg/L	# 137	70.0	130
		EP234-1: Ethion	563-12-2	0.2 µg/L	102	70.0	130
		EP234-1: Ethoprophos	13194-48-4	0.1 µg/L	# 293	70.0	132
		EP234-1: Fenamiphos	22224-92-6	0.1 µg/L	117	70.0	130
		EP234-1: Fenchlorphos (Ronnel)	299-84-3	100 µg/L	99.3	71.0	133
		EP234-1: Fenitrothion	122-14-5	20 µg/L	70.8	64.0	136
		EP234-1: Fensulfothion	115-90-2	0.1 µg/L	# 136	83.0	123
		EP234-1: Fenthion	55-38-9	0.5 µg/L	100	70.0	130
		EP234-1: Malathion	121-75-5	0.2 µg/L	85.4	70.0	130
		EP234-1: Mevinphos	7786-34-7	0.2 µg/L	109	69.0	125
		EP234-1: Monocrotophos	6923-22-4	0.2 µg/L	118	70.0	128
		EP234-1: Omethoate	1113-02-6	0.1 µg/L	72.3	70.0	130
		EP234-1: Parathion	56-38-2	2 µg/L	120	70.0	130
		EP234-1: Parathion-methyl	298-00-0	20 µg/L	90.9	70.0	140
		EP234-1: Phorate	298-02-2	1 µg/L	109	70.0	130
		EP234-1: Pirimiphos-ethyl	23505-41-1	0.1 µg/L	116	70.0	130
		EP234-1: Pirimiphos-methyl	29232-93-7	0.1 µg/L	112	70.0	130
		EP234-1: Profenofos	41198-08-7	0.1 µg/L	89.0	70.0	130
		EP234-1: Prothiofos	34643-46-4	1 µg/L	92.3	70.0	130
		EP234-1: Sulfotep	3689-24-5	0.05 µg/L	113	63.0	135
		EP234-1: Sulprofos	35400-43-2	0.5 µg/L	108	70.0	130
		EP234-1: Temephos	3383-96-8	0.2 µg/L	113	70.0	130
		EP234-1: Terbufos	13071-79-9	0.1 µg/L	119	70.0	130
		EP234-1: Tetrachlorvinphos	22248-79-9	0.1 µg/L	121	77.0	125
		EP234-1: Triazophos	24017-47-8	0.05 µg/L	120	74.0	132
		EP234-1: Trichlorfon	52-68-6	0.2 µg/L	# 328	70.0	130
		EP234-1: Trichloronate	327-98-0	5 µg/L	129	63.0	139
EP234A: OP Pesticides (QCLot: 5282509)							
ES2330280-001	BADDS	EP234-1x: Acephate	30560-19-1	5 µg/L	84.5	70.0	130
		EP234-1x: Bensulide	741-58-2	5 µg/L	# 135	70.0	130
		EP234-1x: Fosetyl Aluminium	39148-24-8	5 µg/L	# 0.8	70.0	130
		EP234-1x: Methidathion	950-37-8	5 µg/L	118	70.0	130
		EP234-1x: Naftalofos	1491-41-4	5 µg/L	# 6.0	70.0	130

Sub-Matrix: **WATER**

				Matrix Spike (MS) Report			
				Spike	SpikeRecovery(%)	Acceptable Limits (%)	
Laboratory sample ID	*Sample ID*	*Method: Compound*	*CAS Number*	*Concentration*	*MS*	*Low*	*High*
EP234A: OP Pesticides (QCLot: 5282509) - continued							
ES2330280-001	BADDS	EP234-1x: Pyrazophos	13457-18-6	5 µg/L	125	70.0	130
		EP234-1x: Thiometon	640-15-3	5 µg/L	94.4	70.0	130

QA/QC Compliance Assessment to assist with Quality Review

Work Order	: **ES2330280**	Page	: 1 of 12
Client	: **GHD PTY LTD**	Laboratory	: Environmental Division Sydney
Contact	: MR HENRY LUO	Telephone	: +61-2-8784 8555
Project	: 12554717	Date Samples Received	: 06-Sep-2023
Site	: ----	Issue Date	: 13-Sep-2023
Sampler	: JACKSON MILLES	No. of samples received	: 14
Order number	: 12554717	No. of samples analysed	: 14

This report is automatically generated by the ALS LIMS through interpretation of the ALS Quality Control Report and several Quality Assurance parameters measured by ALS. This automated reporting highlights any non-conformances, facilitates faster and more accurate data validation and is designed to assist internal expert and external Auditor review. Many components of this report contribute to the overall DQO assessment and reporting for guideline compliance.

Brief method summaries and references are also provided to assist in traceability.

Summary of Outliers

Outliers : Quality Control Samples

This report highlights outliers flagged in the Quality Control (QC) Report.

- **NO Method Blank value outliers occur.**
- **NO Duplicate outliers occur.**
- **NO Laboratory Control outliers occur.**
- **Matrix Spike outliers exist - please see following pages for full details.**
- **For all regular sample matrices, NO surrogate recovery outliers occur.**

Outliers : Analysis Holding Time Compliance

- **Analysis Holding Time Outliers exist - please see following pages for full details.**

Outliers : Frequency of Quality Control Samples

- **NO Quality Control Sample Frequency Outliers exist.**

Outliers : Quality Control Samples

Duplicates, Method Blanks, Laboratory Control Samples and Matrix Spikes

Matrix: **WATER**

Compound Group Name	Laboratory Sample ID	Client Sample ID	Analyte	CAS Number	Data	Limits	Comment
Matrix Spike (MS) Recoveries							
EK055G: Ammonia as N by Discrete Analyser	ES2330001--001	Anonymous	**Ammonia as N**	7664-41-7	Not Determined	----	**MS recovery not determined, background level greater than or equal to 4x spike level.**
EP234A: OP Pesticides	ES2330280--001	BADDS	**Chlorpyrifos-methyl**	5598-13-0	172 %	58.0-136%	**Recovery greater than upper data quality objective**
EP234A: OP Pesticides	ES2330280--001	BADDS	**EPN**	2104-64-5	137 %	70.0-130%	**Recovery greater than upper data quality objective**
EP234A: OP Pesticides	ES2330280--001	BADDS	**Ethoprophos**	13194-48-4	293 %	70.0-132%	**Recovery greater than upper data quality objective**
EP234A: OP Pesticides	ES2330280--001	BADDS	**Fensulfothion**	115-90-2	136 %	83.0-123%	**Recovery greater than upper data quality objective**
EP234A: OP Pesticides	ES2330280--001	BADDS	**Trichlorfon**	52-68-6	328 %	70.0-130%	**Recovery greater than upper data quality objective**
EP234A: OP Pesticides	ES2330280--001	BADDS	**Bensulide**	741-58-2	135 %	70.0-130%	**Recovery greater than upper data quality objective**
EP234A: OP Pesticides	ES2330280--001	BADDS	**Fosetyl Aluminium**	39148-24-8	0.8 %	70.0-130%	**Recovery less than lower data quality objective**
EP234A: OP Pesticides	ES2330280--001	BADDS	**Naftalofos**	1491-41-4	6.0 %	70.0-130%	**Recovery less than lower data quality objective**

Outliers : Analysis Holding Time Compliance

Matrix: **WATER**

Method / Container / Client Sample ID(s)		Extraction / Preparation			Analysis		
		Date extracted	Due for extraction	Days overdue	Date analysed	Due for analysis	Days overdue
EA005P: pH by PC Titrator							
Clear Plastic Bottle - Natural							
BADDS,	BADMS,	----	----	----	06-Sep-2023	05-Sep-2023	**1**
BADUS,	COSDS,						
COSUS,	KEMDS,						
KEMUS							

Analysis Holding Time Compliance

If samples are identified below as having been analysed or extracted outside of recommended holding times, this should be taken into consideration when interpreting results.

This report summarizes extraction / preparation and analysis times and compares each with ALS recommended holding times (referencing USEPA SW 846, APHA, AS and NEPM) based on the sample container provided. Dates reported represent first date of extraction or analysis and preclude subsequent dilutions and reruns. A listing of breaches (if any) is provided herein.

Holding time for leachate methods (e.g. TCLP) vary according to the analytes reported. Assessment compares the leach date with the shortest analyte holding time for the equivalent soil method. These are: organics 14 days, mercury 28 days & other metals 180 days. A recorded breach does not guarantee a breach for all non-volatile parameters.

Holding times for ***VOC in soils*** vary according to analytes of interest. Vinyl Chloride and Styrene holding time is 7 days; others 14 days. A recorded breach does not guarantee a breach for all VOC analytes and should be verified in case the reported breach is a false positive or Vinyl Chloride and Styrene are not key analytes of interest/concern.

Matrix: **WATER**

Evaluation: × = Holding time breach ; ✓ = Within holding time.

Method / Container / Client Sample ID(s)	Sample Date	Extraction / Preparation			Analysis		
		Date extracted	Due for extraction	Evaluation	Date analysed	Due for analysis	Evaluation
EA005P: pH by PC Titrator							
Clear Plastic Bottle - Natural (EA005-P)							
BADDS, BADMS, BADUS, COSDS, COSUS, KEMDS, KEMUS	**05-Sep-2023**	**----**	----	----	**06-Sep-2023**	05-Sep-2023	×
Clear Plastic Bottle - Natural (EA005-P)							
HINDS, HINUS, ROPDS, ROPUS, SOUDS, SOUUS	**06-Sep-2023**	**----**	----	----	**06-Sep-2023**	06-Sep-2023	✓
EA015: Total Dissolved Solids dried at 180 ± 5 °C							
Clear Plastic Bottle - Natural (EA015H)							
BADDS, BADMS, BADUS, COSDS, COSUS, KEMDS, KEMUS	**05-Sep-2023**	**----**	----	----	**09-Sep-2023**	12-Sep-2023	✓
Clear Plastic Bottle - Natural (EA015H)							
HINDS, HINUS, ROPDS, ROPUS, SOUDS, SOUUS	**06-Sep-2023**	**----**	----	----	**09-Sep-2023**	13-Sep-2023	✓
EA025: Total Suspended Solids dried at 104 ± 2°C							
Clear Plastic Bottle - Natural (EA025H)							
BADDS, BADMS, BADUS, COSDS, COSUS, KEMDS, KEMUS	**05-Sep-2023**	**----**	----	----	**09-Sep-2023**	12-Sep-2023	✓
Clear Plastic Bottle - Natural (EA025H)							
HINDS, HINUS, ROPDS, ROPUS, SOUDS, SOUUS	**06-Sep-2023**	**----**	----	----	**09-Sep-2023**	13-Sep-2023	✓
EG020T: Total Metals by ICP-MS							
Clear Plastic Bottle - Nitric Acid; Unfiltered (EG020A-T)							
BADDS, BADMS, BADUS, COSDS, COSUS, KEMDS, KEMUS, SWDUP1	**05-Sep-2023**	**11-Sep-2023**	03-Mar-2024	✓	**11-Sep-2023**	03-Mar-2024	✓
Clear Plastic Bottle - Nitric Acid; Unfiltered (EG020A-T)							
HINDS, HINUS, ROPDS, ROPUS, SOUDS, SOUUS	**06-Sep-2023**	**11-Sep-2023**	04-Mar-2024	✓	**11-Sep-2023**	04-Mar-2024	✓

Matrix: **WATER**

Evaluation: × = Holding time breach ; ✓ = Within holding time.

Method / Container / Client Sample ID(s)	Sample Date	Extraction / Preparation			Analysis		
		Date extracted	Due for extraction	Evaluation	Date analysed	Due for analysis	Evaluation
EG035T: Total Recoverable Mercury by FIMS							
Clear Plastic Bottle - Nitric Acid; Unfiltered (EG035T)							
BADDS, BADMS, BADUS, COSDS, COSUS, KEMDS, KEMUS, SWDUP1	**05-Sep-2023**	**----**	----	----	**11-Sep-2023**	03-Oct-2023	✓
Clear Plastic Bottle - Nitric Acid; Unfiltered (EG035T)							
HINDS, HINUS, ROPDS, ROPUS, SOUDS, SOUUS	**06-Sep-2023**	**----**	----	----	**11-Sep-2023**	04-Oct-2023	✓
EK055G: Ammonia as N by Discrete Analyser							
Clear Plastic Bottle - Sulfuric Acid (EK055G)							
BADDS, BADMS, BADUS, COSDS, COSUS, KEMDS, KEMUS	**05-Sep-2023**	**----**	----	----	**12-Sep-2023**	03-Oct-2023	✓
Clear Plastic Bottle - Sulfuric Acid (EK055G)							
HINDS, HINUS, ROPDS, ROPUS, SOUDS, SOUUS	**06-Sep-2023**	**----**	----	----	**12-Sep-2023**	04-Oct-2023	✓
EK057G: Nitrite as N by Discrete Analyser							
Clear Plastic Bottle - Natural (EK057G)							
BADDS, BADMS, BADUS, COSDS, COSUS, KEMDS, KEMUS	**05-Sep-2023**	**----**	----	----	**07-Sep-2023**	07-Sep-2023	✓
Clear Plastic Bottle - Natural (EK057G)							
HINDS, HINUS, ROPDS, ROPUS, SOUDS, SOUUS	**06-Sep-2023**	**----**	----	----	**08-Sep-2023**	08-Sep-2023	✓
EK059G: Nitrite plus Nitrate as N (NOx) by Discrete Analyser							
Clear Plastic Bottle - Sulfuric Acid (EK059G)							
BADDS, BADMS, BADUS, COSDS, COSUS, KEMDS, KEMUS	**05-Sep-2023**	**----**	----	----	**12-Sep-2023**	03-Oct-2023	✓
Clear Plastic Bottle - Sulfuric Acid (EK059G)							
HINDS, HINUS, ROPDS, ROPUS, SOUDS, SOUUS	**06-Sep-2023**	**----**	----	----	**12-Sep-2023**	04-Oct-2023	✓

Matrix: **WATER**

Evaluation: × = Holding time breach ; ✓ = Within holding time.

Method / Container / Client Sample ID(s)	Sample Date	Extraction / Preparation			Analysis		
		Date extracted	Due for extraction	Evaluation	Date analysed	Due for analysis	Evaluation
EK061G: Total Kjeldahl Nitrogen By Discrete Analyser							
Clear Plastic Bottle - Sulfuric Acid (EK061G)							
BADDS, BADMS, BADUS, COSDS, COSUS, KEMDS, KEMUS	**05-Sep-2023**	**08-Sep-2023**	03-Oct-2023	✓	**12-Sep-2023**	03-Oct-2023	✓
Clear Plastic Bottle - Sulfuric Acid (EK061G)							
HINDS, HINUS, ROPDS, ROPUS, SOUDS, SOUUS	**06-Sep-2023**	**08-Sep-2023**	04-Oct-2023	✓	**12-Sep-2023**	04-Oct-2023	✓
EK067G: Total Phosphorus as P by Discrete Analyser							
Clear Plastic Bottle - Sulfuric Acid (EK067G)							
BADDS, BADMS, BADUS, COSDS, COSUS, KEMDS, KEMUS	**05-Sep-2023**	**08-Sep-2023**	03-Oct-2023	✓	**12-Sep-2023**	03-Oct-2023	✓
Clear Plastic Bottle - Sulfuric Acid (EK067G)							
HINDS, HINUS, ROPDS, ROPUS, SOUDS, SOUUS	**06-Sep-2023**	**08-Sep-2023**	04-Oct-2023	✓	**12-Sep-2023**	04-Oct-2023	✓
EK071G: Reactive Phosphorus as P by discrete analyser							
Clear Plastic Bottle - Natural (EK071G)							
BADDS, BADMS, BADUS, COSDS, COSUS, KEMDS, KEMUS	**05-Sep-2023**	**----**	----	----	**07-Sep-2023**	07-Sep-2023	✓
Clear Plastic Bottle - Natural (EK071G)							
HINDS, HINUS, ROPDS, ROPUS, SOUDS, SOUUS	**06-Sep-2023**	**----**	----	----	**08-Sep-2023**	08-Sep-2023	✓
EP008: Chlorophyll a & Pheophytin a							
Opaque Plastic Bottle - Unpreserved (EP008)							
BADDS, BADMS, BADUS, COSDS, COSUS, KEMDS, KEMUS	**05-Sep-2023**	**----**	----	----	**06-Sep-2023**	07-Sep-2023	✓
Opaque Plastic Bottle - Unpreserved (EP008)							
HINDS, HINUS, ROPDS, ROPUS, SOUDS, SOUUS	**06-Sep-2023**	**----**	----	----	**08-Sep-2023**	08-Sep-2023	✓

Matrix: **WATER**

Evaluation: × = Holding time breach ; ✓ = Within holding time.

Method / Container / Client Sample ID(s)	Sample Date	Extraction / Preparation			Analysis		
		Date extracted	Due for extraction	Evaluation	Date analysed	Due for analysis	Evaluation
EP020: Oil and Grease (O&G)							
Amber Jar - Sulfuric Acid or Sodium Bisulfate (EP020)							
BADDS, BADMS, BADUS, COSDS, COSUS, KEMDS, KEMUS	**05-Sep-2023**	**----**	----	**----**	**11-Sep-2023**	03-Oct-2023	✓
Amber Jar - Sulfuric Acid or Sodium Bisulfate (EP020)							
HINDS, HINUS, ROPDS, ROPUS, SOUDS, SOUUS	**06-Sep-2023**	**----**	----	**----**	**11-Sep-2023**	04-Oct-2023	✓
EP074D: Fumigants							
Amber VOC Vial - Sulfuric Acid (EP074)							
BADDS, BADMS, BADUS, COSDS, COSUS, KEMDS, KEMUS	**05-Sep-2023**	**11-Sep-2023**	19-Sep-2023	✓	**11-Sep-2023**	19-Sep-2023	✓
Amber VOC Vial - Sulfuric Acid (EP074)							
HINDS, HINUS, ROPDS, ROPUS, SOUDS	**06-Sep-2023**	**11-Sep-2023**	20-Sep-2023	✓	**11-Sep-2023**	20-Sep-2023	✓
Amber VOC Vial - Sulfuric Acid (EP074)							
SOUUS	**06-Sep-2023**	**11-Sep-2023**	20-Sep-2023	✓	**12-Sep-2023**	20-Sep-2023	✓
EP074E: Halogenated Aliphatic Compounds							
Amber VOC Vial - Sulfuric Acid (EP074)							
BADDS, BADMS, BADUS, COSDS, COSUS, KEMDS, KEMUS	**05-Sep-2023**	**11-Sep-2023**	19-Sep-2023	✓	**11-Sep-2023**	19-Sep-2023	✓
Amber VOC Vial - Sulfuric Acid (EP074)							
HINDS, HINUS, ROPDS, ROPUS, SOUDS	**06-Sep-2023**	**11-Sep-2023**	20-Sep-2023	✓	**11-Sep-2023**	20-Sep-2023	✓
Amber VOC Vial - Sulfuric Acid (EP074)							
SOUUS	**06-Sep-2023**	**11-Sep-2023**	20-Sep-2023	✓	**12-Sep-2023**	20-Sep-2023	✓

Matrix: **WATER**

Evaluation: × = Holding time breach ; ✓ = Within holding time.

Method / Container / Client Sample ID(s)	Sample Date	Extraction / Preparation			Analysis		
		Date extracted	Due for extraction	Evaluation	Date analysed	Due for analysis	Evaluation
EP074F: Halogenated Aromatic Compounds							
Amber VOC Vial - Sulfuric Acid (EP074) BADDS, BADMS, BADUS, COSDS, COSUS, KEMDS, KEMUS	**05-Sep-2023**	**11-Sep-2023**	19-Sep-2023	✓	**11-Sep-2023**	19-Sep-2023	✓
Amber VOC Vial - Sulfuric Acid (EP074) HINDS, HINUS, ROPDS, ROPUS, SOUDS	**06-Sep-2023**	**11-Sep-2023**	20-Sep-2023	✓	**11-Sep-2023**	20-Sep-2023	✓
Amber VOC Vial - Sulfuric Acid (EP074) SOUUS	**06-Sep-2023**	**11-Sep-2023**	20-Sep-2023	✓	**12-Sep-2023**	20-Sep-2023	✓
EP074G: Trihalomethanes							
Amber VOC Vial - Sulfuric Acid (EP074) BADDS, BADMS, BADUS, COSDS, COSUS, KEMDS, KEMUS	**05-Sep-2023**	**11-Sep-2023**	19-Sep-2023	✓	**11-Sep-2023**	19-Sep-2023	✓
Amber VOC Vial - Sulfuric Acid (EP074) HINDS, HINUS, ROPDS, ROPUS, SOUDS	**06-Sep-2023**	**11-Sep-2023**	20-Sep-2023	✓	**11-Sep-2023**	20-Sep-2023	✓
Amber VOC Vial - Sulfuric Acid (EP074) SOUUS	**06-Sep-2023**	**11-Sep-2023**	20-Sep-2023	✓	**12-Sep-2023**	20-Sep-2023	✓
EP075(SIM)A: Phenolic Compounds							
Amber Glass Bottle - Unpreserved (EP075(SIM)) BADDS, BADMS, BADUS, COSDS, COSUS, KEMDS, KEMUS	**05-Sep-2023**	**11-Sep-2023**	12-Sep-2023	✓	**12-Sep-2023**	21-Oct-2023	✓
Amber Glass Bottle - Unpreserved (EP075(SIM)) HINDS, HINUS, ROPDS, ROPUS, SOUDS	**06-Sep-2023**	**11-Sep-2023**	13-Sep-2023	✓	**12-Sep-2023**	21-Oct-2023	✓
Amber Glass Bottle - Unpreserved (EP075(SIM)) SOUUS	**06-Sep-2023**	**11-Sep-2023**	13-Sep-2023	✓	**13-Sep-2023**	21-Oct-2023	✓

Matrix: **WATER**

Evaluation: × = Holding time breach ; ✓ = Within holding time.

Method / Container / Client Sample ID(s)	Sample Date	Extraction / Preparation			Analysis		
		Date extracted	Due for extraction	Evaluation	Date analysed	Due for analysis	Evaluation
EP075(SIM)B: Polynuclear Aromatic Hydrocarbons							
Amber Glass Bottle - Unpreserved (EP075(SIM)) BADDS, BADMS, BADUS, COSDS, COSUS, KEMDS, KEMUS	**05-Sep-2023**	**11-Sep-2023**	12-Sep-2023	✓	**12-Sep-2023**	21-Oct-2023	✓
Amber Glass Bottle - Unpreserved (EP075(SIM)) HINDS, HINUS, ROPDS, ROPUS, SOUDS	**06-Sep-2023**	**11-Sep-2023**	13-Sep-2023	✓	**12-Sep-2023**	21-Oct-2023	✓
Amber Glass Bottle - Unpreserved (EP075(SIM)) SOUUS	**06-Sep-2023**	**11-Sep-2023**	13-Sep-2023	✓	**13-Sep-2023**	21-Oct-2023	✓
EP080: BTEXN							
Amber VOC Vial - Sulfuric Acid (EP080) BADDS, BADMS, BADUS, COSDS, COSUS, KEMDS, KEMUS	**05-Sep-2023**	**11-Sep-2023**	19-Sep-2023	✓	**11-Sep-2023**	19-Sep-2023	✓
Amber VOC Vial - Sulfuric Acid (EP080) HINDS, HINUS, ROPDS, ROPUS, SOUDS	**06-Sep-2023**	**11-Sep-2023**	20-Sep-2023	✓	**11-Sep-2023**	20-Sep-2023	✓
Amber VOC Vial - Sulfuric Acid (EP080) SOUUS	**06-Sep-2023**	**11-Sep-2023**	20-Sep-2023	✓	**12-Sep-2023**	20-Sep-2023	✓
EP234A: OP Pesticides							
Amber Glass Bottle - Unpreserved (EP234-1) BADDS, BADMS, BADUS, COSDS, COSUS, KEMDS, KEMUS	**05-Sep-2023**	**----**	----	----	**12-Sep-2023**	12-Sep-2023	✓
Amber Glass Bottle - Unpreserved (EP234-1) HINDS, HINUS, ROPDS, ROPUS, SOUDS, SOUUS	**06-Sep-2023**	**----**	----	----	**12-Sep-2023**	13-Sep-2023	✓

Quality Control Parameter Frequency Compliance

The following report summarises the frequency of laboratory QC samples analysed within the analytical lot(s) in which the submitted sample(s) was(were) processed. Actual rate should be greater than or equal to the expected rate. A listing of breaches is provided in the Summary of Outliers.

Matrix: **WATER**

Evaluation: × = Quality Control frequency not within specification ; ✓ = Quality Control frequency within specification.

Quality Control Sample Type		Count		Rate (%)			Quality Control Specification
Analytical Methods	*Method*	*QC*	*Regular*	***Actual***	***Expected***	*Evaluation*	
Laboratory Duplicates (DUP)							
Ammonia as N by Discrete analyser	EK055G	3	28	**10.71**	**10.00**	✓	NEPM 2013 B3 & ALS QC Standard
Nitrite and Nitrate as N (NOx) by Discrete Analyser	EK059G	4	30	**13.33**	**10.00**	✓	NEPM 2013 B3 & ALS QC Standard
Nitrite as N by Discrete Analyser	EK057G	6	60	**10.00**	**10.00**	✓	NEPM 2013 B3 & ALS QC Standard
PAH/Phenols (GC/MS - SIM)	EP075(SIM)	2	13	**15.38**	**10.00**	✓	NEPM 2013 B3 & ALS QC Standard
Pesticides by LCMSMS (Positive Ion Mode)	EP234-1	2	15	**13.33**	**10.00**	✓	NEPM 2013 B3 & ALS QC Standard
Pesticides by LCMSMS (Positive Ion Mode) - extended	EP234-1x	2	13	**15.38**	**10.00**	✓	NEPM 2013 B3 & ALS QC Standard
pH by Auto Titrator	EA005-P	2	15	**13.33**	**10.00**	✓	NEPM 2013 B3 & ALS QC Standard
Reactive Phosphorus as P-By Discrete Analyser	EK071G	4	39	**10.26**	**10.00**	✓	NEPM 2013 B3 & ALS QC Standard
Suspended Solids (High Level)	EA025H	4	39	**10.26**	**10.00**	✓	NEPM 2013 B3 & ALS QC Standard
Total Dissolved Solids (High Level)	EA015H	4	39	**10.26**	**10.00**	✓	NEPM 2013 B3 & ALS QC Standard
Total Kjeldahl Nitrogen as N By Discrete Analyser	EK061G	2	13	**15.38**	**10.00**	✓	NEPM 2013 B3 & ALS QC Standard
Total Mercury by FIMS	EG035T	4	39	**10.26**	**10.00**	✓	NEPM 2013 B3 & ALS QC Standard
Total Metals by ICP-MS - Suite A	EG020A-T	2	18	**11.11**	**10.00**	✓	NEPM 2013 B3 & ALS QC Standard
Total Phosphorus as P By Discrete Analyser	EK067G	2	17	**11.76**	**10.00**	✓	NEPM 2013 B3 & ALS QC Standard
TRH Volatiles/BTEX	EP080	2	14	**14.29**	**10.00**	✓	NEPM 2013 B3 & ALS QC Standard
Volatile Organic Compounds	EP074	2	18	**11.11**	**10.00**	✓	NEPM 2013 B3 & ALS QC Standard
Laboratory Control Samples (LCS)							
Ammonia as N by Discrete analyser	EK055G	2	28	**7.14**	**5.00**	✓	NEPM 2013 B3 & ALS QC Standard
Chlorophyll a and Pheophytin a	EP008	3	33	**9.09**	**5.00**	✓	NEPM 2013 B3 & ALS QC Standard
Nitrite and Nitrate as N (NOx) by Discrete Analyser	EK059G	2	30	**6.67**	**5.00**	✓	NEPM 2013 B3 & ALS QC Standard
Nitrite as N by Discrete Analyser	EK057G	3	60	**5.00**	**5.00**	✓	NEPM 2013 B3 & ALS QC Standard
Oil and Grease	EP020	4	50	**8.00**	**8.00**	✓	NEPM 2013 B3 & ALS QC Standard
PAH/Phenols (GC/MS - SIM)	EP075(SIM)	1	13	**7.69**	**5.00**	✓	NEPM 2013 B3 & ALS QC Standard
Pesticides by LCMSMS (Positive Ion Mode)	EP234-1	1	15	**6.67**	**5.00**	✓	NEPM 2013 B3 & ALS QC Standard
Pesticides by LCMSMS (Positive Ion Mode) - extended	EP234-1x	1	13	**7.69**	**5.00**	✓	NEPM 2013 B3 & ALS QC Standard
pH by Auto Titrator	EA005-P	2	15	**13.33**	**10.00**	✓	NEPM 2013 B3 & ALS QC Standard
Reactive Phosphorus as P-By Discrete Analyser	EK071G	2	39	**5.13**	**5.00**	✓	NEPM 2013 B3 & ALS QC Standard
Suspended Solids (High Level)	EA025H	5	39	**12.82**	**12.50**	✓	NEPM 2013 B3 & ALS QC Standard
Total Dissolved Solids (High Level)	EA015H	5	39	**12.82**	**12.50**	✓	NEPM 2013 B3 & ALS QC Standard
Total Kjeldahl Nitrogen as N By Discrete Analyser	EK061G	3	13	**23.08**	**15.00**	✓	NEPM 2013 B3 & ALS QC Standard
Total Mercury by FIMS	EG035T	2	39	**5.13**	**5.00**	✓	NEPM 2013 B3 & ALS QC Standard
Total Metals by ICP-MS - Suite A	EG020A-T	1	18	**5.56**	**5.00**	✓	NEPM 2013 B3 & ALS QC Standard
Total Phosphorus as P By Discrete Analyser	EK067G	3	17	**17.65**	**15.00**	✓	NEPM 2013 B3 & ALS QC Standard
TRH Volatiles/BTEX	EP080	1	14	**7.14**	**5.00**	✓	NEPM 2013 B3 & ALS QC Standard
Volatile Organic Compounds	EP074	1	18	**5.56**	**5.00**	✓	NEPM 2013 B3 & ALS QC Standard
Method Blanks (MB)							

Matrix: **WATER**

Evaluation: × = Quality Control frequency not within specification ; ✓ = Quality Control frequency within specification.

Quality Control Sample Type		Count		Rate (%)			Quality Control Specification
Analytical Methods	*Method*	*QC*	*Regular*	***Actual***	***Expected***	*Evaluation*	
Method Blanks (MB) - Continued							
Ammonia as N by Discrete analyser	EK055G	2	28	**7.14**	**5.00**	✓	NEPM 2013 B3 & ALS QC Standard
Chlorophyll a and Pheophytin a	EP008	3	33	**9.09**	**5.00**	✓	NEPM 2013 B3 & ALS QC Standard
Nitrite and Nitrate as N (NOx) by Discrete Analyser	EK059G	2	30	**6.67**	**5.00**	✓	NEPM 2013 B3 & ALS QC Standard
Nitrite as N by Discrete Analyser	EK057G	3	60	**5.00**	**5.00**	✓	NEPM 2013 B3 & ALS QC Standard
Oil and Grease	EP020	3	50	**6.00**	**6.00**	✓	NEPM 2013 B3 & ALS QC Standard
PAH/Phenols (GC/MS - SIM)	EP075(SIM)	1	13	**7.69**	**5.00**	✓	NEPM 2013 B3 & ALS QC Standard
Pesticides by LCMSMS (Positive Ion Mode)	EP234-1	1	15	**6.67**	**5.00**	✓	NEPM 2013 B3 & ALS QC Standard
Pesticides by LCMSMS (Positive Ion Mode) - extended	EP234-1x	1	13	**7.69**	**5.00**	✓	NEPM 2013 B3 & ALS QC Standard
Reactive Phosphorus as P-By Discrete Analyser	EK071G	2	39	**5.13**	**5.00**	✓	NEPM 2013 B3 & ALS QC Standard
Suspended Solids (High Level)	EA025H	2	39	**5.13**	**5.00**	✓	NEPM 2013 B3 & ALS QC Standard
Total Dissolved Solids (High Level)	EA015H	2	39	**5.13**	**5.00**	✓	NEPM 2013 B3 & ALS QC Standard
Total Kjeldahl Nitrogen as N By Discrete Analyser	EK061G	1	13	**7.69**	**5.00**	✓	NEPM 2013 B3 & ALS QC Standard
Total Mercury by FIMS	EG035T	2	39	**5.13**	**5.00**	✓	NEPM 2013 B3 & ALS QC Standard
Total Metals by ICP-MS - Suite A	EG020A-T	1	18	**5.56**	**5.00**	✓	NEPM 2013 B3 & ALS QC Standard
Total Phosphorus as P By Discrete Analyser	EK067G	1	17	**5.88**	**5.00**	✓	NEPM 2013 B3 & ALS QC Standard
TRH Volatiles/BTEX	EP080	1	14	**7.14**	**5.00**	✓	NEPM 2013 B3 & ALS QC Standard
Volatile Organic Compounds	EP074	1	18	**5.56**	**5.00**	✓	NEPM 2013 B3 & ALS QC Standard
Matrix Spikes (MS)							
Ammonia as N by Discrete analyser	EK055G	2	28	**7.14**	**5.00**	✓	NEPM 2013 B3 & ALS QC Standard
Nitrite and Nitrate as N (NOx) by Discrete Analyser	EK059G	2	30	**6.67**	**5.00**	✓	NEPM 2013 B3 & ALS QC Standard
Nitrite as N by Discrete Analyser	EK057G	3	60	**5.00**	**5.00**	✓	NEPM 2013 B3 & ALS QC Standard
PAH/Phenols (GC/MS - SIM)	EP075(SIM)	1	13	**7.69**	**5.00**	✓	NEPM 2013 B3 & ALS QC Standard
Pesticides by LCMSMS (Positive Ion Mode)	EP234-1	1	15	**6.67**	**5.00**	✓	NEPM 2013 B3 & ALS QC Standard
Pesticides by LCMSMS (Positive Ion Mode) - extended	EP234-1x	1	13	**7.69**	**5.00**	✓	NEPM 2013 B3 & ALS QC Standard
Reactive Phosphorus as P-By Discrete Analyser	EK071G	2	39	**5.13**	**5.00**	✓	NEPM 2013 B3 & ALS QC Standard
Total Kjeldahl Nitrogen as N By Discrete Analyser	EK061G	1	13	**7.69**	**5.00**	✓	NEPM 2013 B3 & ALS QC Standard
Total Mercury by FIMS	EG035T	2	39	**5.13**	**5.00**	✓	NEPM 2013 B3 & ALS QC Standard
Total Metals by ICP-MS - Suite A	EG020A-T	1	18	**5.56**	**5.00**	✓	NEPM 2013 B3 & ALS QC Standard
Total Phosphorus as P By Discrete Analyser	EK067G	1	17	**5.88**	**5.00**	✓	NEPM 2013 B3 & ALS QC Standard
TRH Volatiles/BTEX	EP080	1	14	**7.14**	**5.00**	✓	NEPM 2013 B3 & ALS QC Standard
Volatile Organic Compounds	EP074	1	18	**5.56**	**5.00**	✓	NEPM 2013 B3 & ALS QC Standard

Brief Method Summaries

The analytical procedures used by the Environmental Division have been developed from established internationally recognized procedures such as those published by the US EPA, APHA, AS and NEPM. In house developed procedures are employed in the absence of documented standards or by client request. The following report provides brief descriptions of the analytical procedures employed for results reported in the Certificate of Analysis. Sources from which ALS methods have been developed are provided within the Method Descriptions.

Analytical Methods	Method	Matrix	Method Descriptions
pH by Auto Titrator	EA005-P	WATER	In house: Referenced to APHA 4500 H+ B. This procedure determines pH of water samples by automated ISE. This method is compliant with NEPM Schedule B(3)
Total Dissolved Solids (High Level)	EA015H	WATER	In house: Referenced to APHA 2540C. A gravimetric procedure that determines the amount of `filterable` residue in an aqueous sample. A well-mixed sample is filtered through a glass fibre filter (1.2um). The filtrate is evaporated to dryness and dried to constant weight at 180+/-5C. This method is compliant with NEPM Schedule B(3)
Suspended Solids (High Level)	EA025H	WATER	In house: Referenced to APHA 2540D. A gravimetric procedure employed to determine the amount of `non-filterable` residue in a aqueous sample. The prescribed GFC (1.2um) filter is rinsed with deionised water, oven dried and weighed prior to analysis. A well-mixed sample is filtered through a glass fibre filter (1.2um). The residue on the filter paper is dried at 104+/-2C . This method is compliant with NEPM Schedule B(3)
Total Metals by ICP-MS - Suite A	EG020A-T	WATER	In house: Referenced to APHA 3125; USEPA SW846 - 6020, ALS QWI-EN/EG020. The ICPMS technique utilizes a highly efficient argon plasma to ionize selected elements. Ions are then passed into a high vacuum mass spectrometer, which separates the analytes based on their distinct mass to charge ratios prior to their measurement by a discrete dynode ion detector.
Total Mercury by FIMS	EG035T	WATER	In house: Referenced to APHA 3112 Hg - B (Flow-injection (SnCl2)(Cold Vapour generation) AAS) FIM-AAS is an automated flameless atomic absorption technique. A bromate/bromide reagent is used to oxidise any organic mercury compounds in the unfiltered sample. The ionic mercury is reduced online to atomic mercury vapour by SnCl2 which is then purged into a heated quartz cell. Quantification is by comparing absorbance against a calibration curve. This method is compliant with NEPM Schedule B(3).
Ammonia as N by Discrete analyser	EK055G	WATER	In house: Referenced to APHA 4500-NH3 G Ammonia is determined by direct colorimetry by Discrete Analyser. This method is compliant with NEPM Schedule B(3)
Nitrite as N by Discrete Analyser	EK057G	WATER	In house: Referenced to APHA 4500-NO2- B. Nitrite is determined by direct colourimetry by Discrete Analyser. This method is compliant with NEPM Schedule B(3)
Nitrate as N by Discrete Analyser	EK058G	WATER	In house: Referenced to APHA 4500-NO3- F. Nitrate is reduced to nitrite by way of a chemical reduction followed by quantification by Discrete Analyser. Nitrite is determined seperately by direct colourimetry and result for Nitrate calculated as the difference between the two results. This method is compliant with NEPM Schedule B(3)
Nitrite and Nitrate as N (NOx) by Discrete Analyser	EK059G	WATER	In house: Referenced to APHA 4500-NO3- F. Combined oxidised Nitrogen (NO2+NO3) is determined by Chemical Reduction and direct colourimetry by Discrete Analyser. This method is compliant with NEPM Schedule B(3)
Total Kjeldahl Nitrogen as N By Discrete Analyser	EK061G	WATER	In house: Referenced to APHA 4500-Norg D (In house). An aliquot of sample is digested using a high temperature Kjeldahl digestion to convert nitrogenous compounds to ammonia. Ammonia is determined colorimetrically by discrete analyser. This method is compliant with NEPM Schedule B(3)
Total Nitrogen as N (TKN + Nox) By Discrete Analyser	EK062G	WATER	In house: Referenced to APHA 4500-Norg / 4500-NO3-. This method is compliant with NEPM Schedule B(3)

Analytical Methods	Method	Matrix	Method Descriptions
Total Phosphorus as P By Discrete Analyser	EK067G	WATER	In house: Referenced to APHA 4500-P H, Jirka et al, Zhang et al. This procedure involves sulphuric acid digestion of a sample aliquot to break phosphorus down to orthophosphate. The orthophosphate reacts with ammonium molybdate and antimony potassium tartrate to form a complex which is then reduced and its concentration measured at 880nm using discrete analyser. This method is compliant with NEPM Schedule B(3)
Reactive Phosphorus as P-By Discrete Analyser	EK071G	WATER	In house: Referenced to APHA 4500-P F Ammonium molybdate and potassium antimonyl tartrate reacts in acid medium with othophosphate to form a heteropoly acid -phosphomolybdic acid - which is reduced to intensely coloured molybdenum blue by ascorbic acid. Quantification is by Discrete Analyser. This method is compliant with NEPM Schedule B(3)
Chlorophyll a and Pheophytin a	EP008	WATER	In house: Referenced to APHA 10200 H. The pigments are extracted into aqueous acetone. The optical density of the extract before and after acidification at both 664 nm and 665 nm is determined spectrometrically.
Oil and Grease	EP020	WATER	In house: Referenced to APHA 5520 B. Oil & grease is a gravimetric procedure to determine the amount of dissolved or emulsified oil & grease residue in an aqueous sample. The sample is serially extracted three times n-hexane. The resultant extracts are combined, dehydrated and concentrated prior to gravimetric determination. This method is compliant with NEPM Schedule B(3)
Volatile Organic Compounds	EP074	WATER	In house: Referenced to USEPA SW 846 - 8260 Water samples are directly purged prior to analysis by Capillary GC/MS and quantification is by comparison against an established 5 point calibration curve. This method is compliant with NEPM Schedule B(3)
PAH/Phenols (GC/MS - SIM)	EP075(SIM)	WATER	In house: Referenced to USEPA SW 846 - 8270 Sample extracts are analysed by Capillary GC/MS in SIM Mode and quantification is by comparison against an established 5 point calibration curve. This method is compliant with NEPM Schedule B(3)
TRH Volatiles/BTEX	EP080	WATER	In house: Referenced to USEPA SW 846 - 8260 Water samples are directly purged prior to analysis by Capillary GC/MS and quantification is by comparison against an established 5 point calibration curve. Alternatively, a sample is equilibrated in a headspace vial and a portion of the headspace determined by GCMS analysis. This method is compliant with the QC requirements of NEPM Schedule B(3)
Pesticides by LCMSMS (Positive Ion Mode)	EP234-1	WATER	In house: LC-MSMS, direct injection. A sample is filtered and injected directly onto the LC-MSMS. Analysis is by LC/MSMS, ESI Positive Mode.
Pesticides by LCMSMS (Positive Ion Mode) - extended	EP234-1x	WATER	In house: LC-MSMS, direct injection. A sample is filtered and injected directly onto the LC-MSMS. Analysis is by LC/MSMS, ESI Positive Mode.

Preparation Methods	Method	Matrix	Method Descriptions
TKN/TP Digestion	EK061/EK067	WATER	In house: Referenced to APHA 4500 Norg - D; APHA 4500 P - H. This method is compliant with NEPM Schedule B(3)
Digestion for Total Recoverable Metals	EN25	WATER	In house: Referenced to USEPA SW846-3005. Method 3005 is a Nitric/Hydrochloric acid digestion procedure used to prepare surface and ground water samples for analysis by ICPAES or ICPMS. This method is compliant with NEPM Schedule B(3)
Separatory Funnel Extraction of Liquids	ORG14	WATER	In house: Referenced to USEPA SW 846 - 3510 100 mL to 1L of sample is transferred to a separatory funnel and serially extracted three times using DCM for each extract. The resultant extracts are combined, dehydrated and concentrated for analysis. This method is compliant with NEPM Schedule B(3) . ALS default excludes sediment which may be resident in the container.
Volatiles Water Preparation	ORG16-W	WATER	A 5 mL aliquot or 5 mL of a diluted sample is added to a 40 mL VOC vial for purging.

CHAIN OF CUSTODY

ALS Laboratory: please tick →

Environmental Division Sydney

Work Order Reference ES2330280

Telephone: +61-2-8784 8555

CLIENT: GHD Pty Ltd	TURNAROUND REQUIREMENT: ☐ Standard TAT (List due date): STANDARD TAT	FOR LABORA	
OFFICE: Sydney	(Standard TAT may be longer for some tests e.g. Ultra Trace Organics) ☐ Non Standard or urgent TAT (List due date):	Custody Seal Int	
PROJECT: M12 Surface Water	ALS QUOTE NO.: SY/322/21	Free ice / frozen	
ORDER NUMBER: 12554717		Random Sampl	
PROJECT MANAGER: Henry Luo	CONTACT PH: Henry Luo 0414 090 002	Other comment	
SAMPLER: Emily Smith ~~Anthony Zuvela~~ Jackson Miles	SAMPLER MOBILE: 0431 522 928		
COC emailed to ALS? (YES / NO)	EDD FORMAT (or default): ESDAT		
Email Reports to: henry.luo@ghd.com , ghdlabreports@ghd.com; terry.nham@ghd.com, emily.smith@ghd.com; andrew.duval@ghd.com			

COC SEQUENCE NUMBER (Circle)

COC:	1	2	3	4	5	6	7
OF:	1	2	3	4	5	6	7

RELINQUISHED BY:	RECEIVED BY:	RELINQUISHED BY:	
Jackson Miles	FMD		
DATE/TIME: 6/9/23 - 13:15	DATE/TIME: 6/9/23 1:14	DATE/TIME:	DATE/TIME:

COMMENTS/SPECIAL HANDLING/STORAGE OR DISPOSAL:

ALS USE	SAMPLE DETAILS MATRIX: SOLID (S) WATER (W)			CONTAINER INFORMATION		ANALYSIS REQUIRED including SUITES (NB. Suite Codes must be listed to attract suite price) Where Metals are required, specify Total (unfiltered bottle required) or Dissolved (field filtered bottle required).													
LAB ID	SAMPLE ID	DATE / TIME	MATRIX	Comments	TOTAL CONTAINERS	W-02T (ti total metals)	EG020T (total Fe, Mn)	NT-06A (total N, NO2, NO3, NH3, Total P, reactive P)	EP008 (chlorophyll a)	EP020 (oil & grease)	UTO-9W Ultra trace OC/OP	EP074DEFG (VOC fumigants, Hal aliphatics, Hal Aromatics, THM)	MW005 (FC) Thermotolerant Coliforms	W-14A (PAH/phenols)	EA015H (TDS), EA025H (TSS)	EP080 (BTEXN)	Ultra trace OPP (EP234AX)	Super Ultra Trace PCB's (EP131B-ST)	PFAS - full suite (EP231X)
1	BADDS	5/9/23	Water		11	X	X	X	X	X		X		X	X	X	X		
2	BADMS	5/9/23	Water		11	X	X	X	X	X		X		X	X	X	X		
3	BADUS	5/9/23	Water		11	X	X	X	X	X		X		X	X	X	X		
4	COSDS	5/9/23	Water		11	X	X	X	X	X		X		X	X	X	X		
5	COSUS	5/9/23	Water		11	X	X	X	X	X		X		X	X	X	X		
6	HINDS	6/9/23	Water		11	X	X	X	X	X		X		X	X	X	X		
7	HINUS	6/9/23	Water		11	X	X	X	X	X		X		X	X	X	X		
8	KEMDS	5/9/23	Water		11	X	X	X	X	X		X		X	X	X	X		
9	KEMUS	5/9/23	Water		11	X	X	X	X	X		X		X	X	X	X		
10	ROPDS	6/9/23	Water		11	X	X	X	X	X		X		X	X	X	X		
11	ROPUS	6/9/23	Water		11	X	X	X	X	X		X		X	X	X	X		
12	SOUDS	6/9/23	Water		11	X	X	X	X	X		X		X	X	X	X		
13	SOUUS	6/9/23	Water		11	X	X	X	X	X		X		X	X	X	X		
14	SWDUP1	5/9/23	Water		1	X													
~~15~~	SWDUP2	6/9/23	Water	PLEASE FORWARD TO EUROFINS WITH ATTACHED COC	1														
~~16~~	GWDUP2	5/9/23	Water	PLEASE FORWARD TO EUROFINS WITH ATTACHED COC	1														

Euro DUP2

HT

1024024

CHAIN OF CUSTODY

ALS Laboratory: please tick →

CLIENT: GHD Pty Ltd	TURNAROUND REQUIREME ☐ Standard TAT (List due date): STANDARD TAT	FOR LABORATORY USE ONLY (Circle)	
OFFICE: Sydney	[Standard TAT may be longer for some tests e.g. Ultra Trace ☐ Non Standard or urgent TAT (List due date):	Custody Seal Intact?	Yes No N/A
PROJECT: M12 Groundwater	ALS QUOTE NO.: SY/322/21	Free ice / frozen ice bricks present upon receipt?	Yes No N/A
ORDER NUMBER: 12554717	COC SEQUENCE NUMBER (Circle) COC: 1 2 3 4 5 6 7	Random Sample Temperature on Receipt:	°C
PROJECT MANAGER: Henry Luo	CONTACT PH: Henry Luo 0414 090 002 OF: 1 2 3 4 5 6 7	Other comment:	
SAMPLER: Emily Smith, Jackson Miller	SAMPLER MOBILE: 0431 522 928	RELINQUISHED BY: Jackson Miller	RECEIVED BY: Fazi
COC emailed to ALS? (YES / NO)	EDD FORMAT (or default): ESDAT	DATE/TIME: 6/9/23 13:15	DATE/TIME: 6/9/23 1:15
Email Reports to: henry.luo@ghd.com; ghdlabreports@ghd.com; terry.nham@ghd.com; emily.smith@ghd.com; andrew.duval@ghd.com		RELINQUISHED BY:	RECEIVED BY:
		DATE/TIME:	DATE/TIME:

COMMENTS/SPECIAL HANDLING/STORAGE OR DISPOSAL:

ALS USE	SAMPLE DETAILS MATRIX: SOLID (S) WATER (W)			CONTAINER INFORMATION		ANALYSIS REQUIRED including SUITES (NB. Suite Codes must be listed to attract suite price) Where Metals are required, specify Total (unfiltered bottle required) or Dissolved (field filtered bottle required).										
LAB ID	SAMPLE ID	DATE / TIME	MATRIX	Comments	TOTAL CONTAINERS	W-02 (B dissolved metals)	EG020F (dissolved Fe Mn)	W-04 (TRH/BTEXN)	NT-08A (TN, NO2 NO3, NH3, TP, soluble Reactive P)	NT-01D & 02 (major cations & anions Hardness)	EA015H (TDS)	EA025H (SS)		W-021 (B total metals)	BTEXN	
15	BH104R	5/9/23	Water		6	X	X	X	X	X	X	X				
16	BH107R	5/9/23	Water		6	X	X	X	X	X	X	X				
17	BH112R	5/9/23	Water		6	X	X	X	X	X	X	X				
18	BH145R	6/9/23	Water		6	X	X	X	X	X	X	X				
19	GWDUP1	5/9/23	Water		1	X										
20	GWRB1	6/9/23	Water		1									X		
21	Trip spike	6/9/23	Water		1										X	
22	Trip blank	6/9/23	Water		1										X	

eurofins | mgt

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Phone: +613 8564 5000 Fax: +613 8564 5090
Email: enquiries.melb@mgtlabmark.com.au

CHAIN OF CUSTODY RECORD

CLIENT DETAILS

Company Name : GHD Pty Ltd, Sydney	**Contact Name :** Emily Smith 0431 522 928	**Purchase Order :** 12554717	**COC Number :**
Office Address :	**Project Manager:** Henry Luo 0414 090 002	**PROJECT Number :** 12554717	**Eurofins | mgt quote ID :**
Level 15, 133 Castlereagh Street, Sydney NSW 2000	**Email for results :** emily.smith@ghd.com; terry.nham@ghd.com; henry.luo@ghd.com; ghdlabreports@ghd.com	**PROJECT Name :** M12 Water Sampling	**Data output format:** ESDAT

Special Directions & Comments :

Sent from ALS

Eurofins | mgt DI water batch number:

	Sample ID	Date	Matrix	Dissolved metals	Total metals					
1	SWDUP2	6/9/23	Water		X					
2	GWDUP2	5/9/23	Water	X						
3										
4										
5										
6										
7										
8										
9										
10										

Analytes

Some common holding times (with correct preservation).
For further information contact the lab

Waters		Soils	
BTEX, MAH, VOC	14 days	BTEX, MAH, VOC	14 days
TRH, PAH, Phenols, Pesticides	7 days	TRH, PAH, Phenols, Pesticides	14 days
Heavy Metals	6 months	Heavy Metals	6 months
Mercury, CrVI	28 days	Mercury, CrVi	28 days
Microbiological testing	24 hours	Microbiological testing	72 hours
BOD, Nitrate, Nitrite, Total N	2 days	Anions	28 days
Solids - TSS, TDS etc	7 days	SPOCAS, pH Field and FOX, CrS	24 hours
Ferrous iron	7 days	ASLP, TCLP	7 days

Containers:

500P	250P	60P	1LA	40mL vial	200mL A	Jar	Bag

Sample comments:

Laboratory Staff

Relinquished By: Jackson Miller
Date & Time : 6/9/23 13:15
Signature:

Received By:
Date & Time : 7/9/23 1:10
Signature:

Method Of Shipment

☐ Courier
☐ Hand Delivered
☐ Postal
Courier Consignment # :

Temperature on arrival: 5.8

Report number:

1 2

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NATA# 1261	NATA# 1261	NATA# 1261	NATA# 1261	NATA# 1261	Site# 25079 & 25289
Site# 1254	Site# 25403	Site# 18217	Site# 25466	Site# 20794	

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IANZ# 1327	IANZ# 1290	IANZ# 1402

Sample Receipt Advice

Company name:	GHD Pty Ltd NSW
Contact name:	Henry Luo
Project name:	M12 WATER SAMPLING
Project ID:	12554717
Turnaround time:	5 Day
Date/Time received	Sep 7, 2023 1:10 PM
Eurofins reference	1024024

Sample Information

✓	A detailed list of analytes logged into our LIMS, is included in the attached summary table.
✓	Sample Temperature of chilled sample on the batch as recorded by Eurofins Sample Receipt : 5.8 degrees Celsius.
✓	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

Contact

If you have any questions with respect to these samples, please contact your Analytical Services Manager:

Bonnie Pu on phone : or by email: BonniePu@eurofins.com

Results will be delivered electronically via email to Henry Luo - henry.luo@ghd.com.

Note: A copy of these results will also be delivered to the general GHD Pty Ltd NSW email address.

GHD Pty Ltd NSW
Level 15, 133 Castlereagh Street
Sydney
NSW 2000

NATA Accredited
Accreditation Number 1261
Site Number 18217

Accredited for compliance with ISO/IEC 17025 – Testing
NATA is a signatory to the ILAC Mutual Recognition Arrangement for the mutual recognition of the equivalence of testing, medical testing, calibration, inspection, proficiency testing scheme providers and reference materials producers reports and certificates.

Attention: **Henry Luo**

Report **1024024-W**
Project name M12 WATER SAMPLING
Project ID 12554717
Received Date Sep 07, 2023

Client Sample ID			**SWDUP2**	**GWDUP2**
Sample Matrix			**Water**	**Water**
Eurofins Sample No.			**S23-Se0014634**	**S23-Se0014635**
Date Sampled			**Sep 06, 2023**	**Sep 05, 2023**
Test/Reference	LOR	Unit		
Heavy Metals				
Arsenic	0.001	mg/L	0.002	-
Arsenic (filtered)	0.001	mg/L	-	0.002
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
Copper	0.001	mg/L	0.002	-
Copper (filtered)	0.001	mg/L	-	< 0.001
Lead	0.001	mg/L	< 0.001	-
Lead (filtered)	0.001	mg/L	-	< 0.001
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 is reported.

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
Metals M8	Sydney	Sep 12, 2023	28 Days
- Method: LTM-MET-3040 Metals in Waters, Soils & Sediments by ICP-MS			
Metals M8 filtered	Sydney	Sep 12, 2023	28 Days
- Method: LTM-MET-3040 Metals in Waters, Soils & Sediments by ICP-MS			

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Dandenong South	Grovedale	Girraween	Mitchell	Murarrie	Mayfield West NSW 2304
VIC 3175	VIC 3216	NSW 2145	ACT 2911	QLD 4172	Tel: +61 2 4968 8448
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NATA# 1261	NATA# 1261	NATA# 1261	NATA# 1261	NATA# 1261	Site# 25079 & 25289
Site# 1254	Site# 25403	Site# 18217	Site# 25466	Site# 20794	

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IANZ# 1327	IANZ# 1290	IANZ# 1402

Company Name: GHD Pty Ltd NSW
Address: Level 15, 133 Castlereagh Street
Sydney
NSW 2000

Project Name: M12 WATER SAMPLING
Project ID: 12554717

Order No.:
Report #: 1024024
Phone: 02 9239 7100
Fax: 02 9239 7199

Received: Sep 7, 2023 1:10 PM
Due: Sep 14, 2023
Priority: 5 Day
Contact Name: Henry Luo

Eurofins Analytical Services Manager : Bonnie Pu

Sample Detail						Metals M8	Metals M8 filtered
Sydney Laboratory - NATA # 1261 Site # 18217						X	X
External Laboratory							
No	**Sample ID**	**Sample Date**	**Sampling Time**	**Matrix**	**LAB ID**		
1	SWDUP2	Sep 06, 2023		Water	S23-Se0014634	X	
2	GWDUP2	Sep 05, 2023		Water	S23-Se0014635		X
Test Counts						1	1

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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.

Units

mg/kg: milligrams per kilogram	**mg/L:** milligrams per litre	**µg/L:** micrograms per litre
ppm: parts per million	**ppb:** parts per billion	**%:** Percentage
org/100 mL: Organisms per 100 millilitres	**NTU:** Nephelometric Turbidity Units	**MPN/100 mL:** Most Probable Number of organisms per 100 millilitres
CFU: Colony forming unit		

Terms

APHA	American Public Health Association
COC	Chain of Custody
CP	Client Parent - QC was performed on samples pertaining to this report
CRM	Certified Reference Material (ISO17034) - reported as percent recovery.
Dry	Where a moisture has been determined on a solid sample the result is expressed on a dry basis.
Duplicate	A second piece of analysis from the same sample and reported in the same units as the result to show comparison.
LOR	Limit of Reporting.
LCS	Laboratory Control Sample - 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.
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.
RPD	Relative Percent Difference between two Duplicate pieces of analysis.
SPIKE	Addition of the analyte to the sample and reported as percentage recovery.
SRA	Sample Receipt Advice
Surr - Surrogate	The addition of a like compound to the analyte target and reported as percentage recovery.
TBTO	Tributyltin oxide (*bis*-tributyltin oxide) - individual tributyltin compounds cannot be identified separately in the environment however free tributyltin was measured and its values were converted stoichiometrically into tributyltin oxide for comparison with regulatory limits.
TCLP	Toxicity Characteristic Leaching Procedure
TEQ	Toxic Equivalency Quotient or Total Equivalence
QSM	US Department of Defense Quality Systems Manual Version 5.4
US EPA	United States Environmental Protection Agency
WA DWER	Sum of PFBA, PFPeA, PFHxA, PFHpA, PFOA, PFBS, PFHxS, PFOS, 6:2 FTSA, 8:2 FTSA

QC - Acceptance Criteria

The acceptance criteria should be used as a guide only and may be different when site specific Sampling Analysis and Quality Plan (SAQP) have been implemented

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%

NOTE: pH duplicates are reported as a range not as RPD

Surrogate Recoveries: Recoveries must lie between 20-130% for Speciated Phenols & 50-150% for PFAS. SVOCs recoveries 20 – 150%

PFAS field samples that contain surrogate recoveries in excess of the QC limit designated in QSM 5.4 where no positive PFAS results have been reported have been reviewed and no data was affected.

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. 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.
4. Recovery Data (Spikes & Surrogates) - where chromatographic interference does not allow the determination of recovery the term "INT" appears against that analyte.
5. For Matrix Spikes and LCS results a dash "-" in the report means that the specific analyte was not added to the QC sample.
6. 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	
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	
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	
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							
Arsenic	%	105			80-120	Pass	
Arsenic (filtered)	%	99			80-120	Pass	
Cadmium	%	99			80-120	Pass	
Cadmium (filtered)	%	97			80-120	Pass	
Chromium	%	100			80-120	Pass	
Chromium (filtered)	%	97			80-120	Pass	
Copper	%	99			80-120	Pass	
Copper (filtered)	%	95			80-120	Pass	
Lead	%	105			80-120	Pass	
Lead (filtered)	%	100			80-120	Pass	
Mercury	%	105			80-120	Pass	
Mercury (filtered)	%	102			80-120	Pass	
Nickel	%	99			80-120	Pass	
Nickel (filtered)	%	96			80-120	Pass	
Zinc	%	100			80-120	Pass	
Zinc (filtered)	%	98			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	S23-Se0022843	NCP	%	111			75-125	Pass	
Cadmium	S23-Se0022843	NCP	%	102			75-125	Pass	
Chromium	S23-Se0022843	NCP	%	85			75-125	Pass	
Copper	S23-Se0022843	NCP	%	100			75-125	Pass	
Lead	S23-Se0022843	NCP	%	108			75-125	Pass	
Mercury	S23-Se0022843	NCP	%	109			75-125	Pass	
Nickel	S23-Se0022843	NCP	%	99			75-125	Pass	
Zinc	S23-Se0022843	NCP	%	98			75-125	Pass	
Spike - % Recovery									
Heavy Metals				Result 1					
Arsenic (filtered)	S23-Se0014635	CP	%	116			75-125	Pass	
Cadmium (filtered)	S23-Se0014635	CP	%	91			75-125	Pass	

Test	Lab Sample ID	QA Source	Units	Result 1			Acceptance Limits	Pass Limits	Qualifying Code
Chromium (filtered)	S23-Se0014635	CP	%	90			75-125	Pass	
Copper (filtered)	S23-Se0014635	CP	%	82			75-125	Pass	
Lead (filtered)	S23-Se0014635	CP	%	87			75-125	Pass	
Mercury (filtered)	S23-Se0014635	CP	%	88			75-125	Pass	
Nickel (filtered)	S23-Se0014635	CP	%	83			75-125	Pass	
Zinc (filtered)	S23-Se0014635	CP	%	84			75-125	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	S23-Se0014634	CP	mg/L	0.002	0.003	17	30%	Pass	
Cadmium	S23-Se0014634	CP	mg/L	0.0002	0.0003	23	30%	Pass	
Chromium	S23-Se0014634	CP	mg/L	< 0.001	< 0.001	<1	30%	Pass	
Copper	S23-Se0014634	CP	mg/L	0.002	0.001	2.1	30%	Pass	
Lead	S23-Se0014634	CP	mg/L	< 0.001	< 0.001	<1	30%	Pass	
Mercury	S23-Se0014634	CP	mg/L	< 0.0001	< 0.0001	<1	30%	Pass	
Nickel	S23-Se0014634	CP	mg/L	0.001	0.001	4.8	30%	Pass	
Zinc	S23-Se0014634	CP	mg/L	< 0.005	< 0.005	<1	30%	Pass	
Duplicate									
Heavy Metals				Result 1	Result 2	RPD			
Arsenic (filtered)	S23-Se0020988	NCP	mg/L	< 0.001	< 0.001	<1	30%	Pass	
Cadmium (filtered)	S23-Se0020988	NCP	mg/L	< 0.0002	< 0.0002	<1	30%	Pass	
Chromium (filtered)	S23-Se0020988	NCP	mg/L	< 0.001	< 0.001	<1	30%	Pass	
Copper (filtered)	S23-Se0020988	NCP	mg/L	0.002	0.003	3.6	30%	Pass	
Lead (filtered)	S23-Se0020988	NCP	mg/L	< 0.001	< 0.001	<1	30%	Pass	
Mercury (filtered)	S23-Se0020988	NCP	mg/L	< 0.0001	< 0.0001	<1	30%	Pass	
Nickel (filtered)	S23-Se0020988	NCP	mg/L	0.002	0.002	5.2	30%	Pass	
Zinc (filtered)	S23-Se0020988	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
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:

Ursula Long	Analytical Services Manager
Mickael Ros	Senior Analyst-Metal

Glenn Jackson
Managing Director

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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Appendix H

Quality assurance / Quality control program and assessment

Data Quality Objectives (DQOs)

The Data Quality Objectives (DQOs) are based on guidance presented in:

– NEPC (2013) National Environment Protection (Assessment of Site Contamination) Amended Measure (NEPM) No. 1 – Schedule B2, Guideline on Site Characterisation.

The DQO process will be applied to the on-going monitoring to ensure that data collection activities are appropriate and achieve the project objectives. The DQO process involves seven steps as follows:

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

An overview of the DQOs for the works are presented in the following steps.

Step 1: State the problem

The M12 Motorway (the project) is located between the M7 Motorway at Cecil Hills, and The Northern Road at Luddenham in Western Sydney, covering approximately 16 km. The intention of the project is to provide direct access between the Western Sydney International Airport at Badgerys Creek and Sydney's motorway network.

As part of the project approval conditions, TfNSW are required to prepare and implement a surface water baseline monitoring program for the M12 Motorway development

Step 2: Identify the decision/goal of the study

The key goal of the baseline monitoring program is to collect background monitoring data to identify baseline conditions in at least the first 12 months "pre-construction", prior to commencement of construction of the M12 Motorway.

The baseline data would support the development of a surface water monitoring program and management plans for construction and operation of the project. The baseline data may also inform the design of construction and operational water quality control devices, such as sedimentation basins and vegetation swales.

Step 3: Identify the information inputs

The following inputs are required for the decision:

– Existing data obtained from previous Jacobs reports: Surface Water and hydrology assessment report (JAJV, 2018a), Contamination factual report (JAJV, 2018b) and groundwater assessment report (2018c).
– Sampling of thirteen surface water locations (BADDS, BADMS, BADUS, COSDS, COSUS, HINDS, HINUS, KEMDS, KEMUS, ROPDS, ROPUS, SOUDS and SOUUS) along the proposed project alignment.
– Analysis of surface water samples for the following analytes:
    - Total suspended solids (TSS)
    - Total dissolved solids (TDS)
    - Thermotolerant (faecal) coliforms and E. coil
    - Chlorophyll- a
    - Oil and grease
    - Nutrients (including ammonia (NH3), nitrite (NO2), Nitrate (NO3), total nitrogen (TN), total kjeldahl nitrogen (TKN), total oxidised nitrogen (NOx), total phosphorus (TP) and soluble reactive phosphorus (SRP).
    - Heavy metals (arsenic, cadmium, chromium, copper, iron, lead, manganese, mercury, nickel and zinc)

- Benzene, toluene, ethylbenzene, xylenes, naphthalene (BTEXN)
- Ultra-trace polycyclic aromatic hydrocarbons (PAH)
- Total recoverable hydrocarbons (TRH)
- Phenols
- Volatile organic compounds (VOCs)
- Ultra-trace organophosphorus pesticides (OPPs) and ultra-trace organochlorine pesticides (OCPs)
- Super ultra-trace polychlorinated biphenyls (PCBs)
- Per- and polyfluoroalkyl substances (PFAS)

– Comparison of data with relevant public health and environmental water quality criteria to identify baseline conditions prior to commencement of the construction of the project.
– Confirmation that data generated by sampling and analysis are of a suitable quality to allow reliable comparison to baseline data as per the assessment of the data quality indicators (DQIs) (further discussed below).

Step 4: Define the boundaries of the study

The spatial and temporal boundaries of the study area are as follows:

– The lateral boundary of the project is defined as the extent of the surface water monitoring locations as shown in Figure 1, Appendix A.
– The vertical boundary of the project is defined as the depth of the maximum surface water sample, approximately 200 mm below the water's surface.
– The temporal boundary of the project is defined as the previous baseline and current construction monitoring period (April 2021 to September 2023).

Step 5: Develop the analytical approach

The degree of impact by contaminants and the associated decisions will be assessed with reference to assessment criteria, as discussed in Section 4. Acceptable relative percentage difference (RPD) limits for chemicals of potential concern (CoPC) detected in Quality Assurance and Quality Control (QA/QC) samples such as field duplicates, rinsate blanks, trip blanks and trip spikes and matrix spike and matrix spike duplicates are identified in the following sections. The decision rules to be applied are as follows:

– Monitoring data will be compared against relevant public health and environmental water quality guidelines to make this assessment.
– If the data has been collected in a manner from which it is possible to establish completeness, comparability, representativeness, precision and accuracy, the data will be considered suitable for the purposes of this assessment.
– If baseline data, either within or exceeding adopted assessment criteria, is considered suitable for interpretation, baseline conditions are able to be determined and support the development of a surface water monitoring program during future construction and operation of the project.
– If changes in water quality are observed between monitoring events during the construction and/or operational phases and previous baseline periods that cannot be plausibly explained by natural environmental fluctuations, and the concentrations of contaminants of potential concern have become elevated to levels in exceedance of the adopted public health and environmental water quality criteria, then further assessment may be required to evaluate the need for additional investigation and / or remediation / management activities.

Step 6: Specify performance or acceptance criteria

Data generated during this surface water monitoring program must be appropriate to allow decisions to be made with confidence. Specific limits have been adopted in accordance with the appropriate guidance from the AS4482.1, which includes appropriate indicators of data quality (DQIs used to assess QA/QC, and GHD's Standard Field Operating Procedures). The pre-determined DQIs established for the project are discussed below.

If any of the DQIs are not met, further investigation will be necessary to determine whether the non-conformance will significantly affect the usefulness of the data.

Step 7: Develop the plan for obtaining data

This step involves identifying the most resource effective sampling and analysis design which is required to satisfy the DQOs. The sampling and analysis plan which was developed to meet this objective is provided in Section 3.

Data quality indicators

Data generated during this investigation must be appropriate to allow decisions to be made with confidence. Specific limits for this investigation have been adopted in accordance with guidance from the AS4482.1 which includes appropriate indicators of data quality ((DQIs) used to assess QA/QC, and GHD's Standard Field Operating Procedures).

To assess the usability of the data prior to making decisions, the data was assessed against pre-determined DQIs. The DQIs including precision, accuracy, representativeness, comparability and completeness, were reviewed at the completion of the investigation works to assess for the presence of decision errors.

The pre-determined DQIs established for the investigation are discussed below and shown in Table H1 below.

– Precision - measures the reproducibility of measurements under a given set of conditions. The precision of the laboratory data and sampling techniques is assessed by calculating the RPD of duplicate samples.
– Accuracy - measures the bias in a measurement system. The accuracy of the laboratory data that are generated during this investigation is a measure of the closeness of the analytical results obtained by a method to the 'true' (or standard) value. Accuracy is assessed by reference to the analytical results of laboratory control samples, laboratory spikes and analyses against reference standards.
– Representativeness - expresses the degree to which sample data accurately and precisely represent a characteristic of a population or an environmental condition. Representativeness is achieved by collecting samples on a representative basis across the site, and by using an adequate number of sample locations to characterise the site to the required accuracy.
– Comparability - expresses the confidence with which one data set can be compared with another. This is achieved through maintaining a level of consistency in techniques used to collect samples; ensuring analysing laboratories use consistent analysis techniques and reporting methods.
– Completeness - is defined as the percentage of measurements made which are judged to be valid measurements.

Table H1 – Summary of quality assurance / quality control criteria - all media

Data quality indicator	Frequency	Data quality acceptance criteria
Precision		
Blind and split duplicates	1 / 10 samples (combined)	<30-50% RPD
Accuracy		
Surrogate spikes Laboratory control samples Matrix spikes	All organic samples 1 per lab batch 1 per lab batch	70-130% <LOR 70-130%
Representativeness		
Sampling appropriate for media and analytes Samples extracted and analysed within holding times	All samples All samples	- Organics (14 days) Inorganics (6 months)
Samples extracted and analysed within holding times	All samples	All samples
Comparability		
Consistent field conditions, sampling staff and laboratory analysis	All samples	All samples

Data quality indicator	Frequency	Data quality acceptance criteria
Standard operating procedures for sample collection & handling	All samples	All samples
Standard analytical methods used for all analyses	All samples	All samples
Completeness		
Sample description and COCs completed and appropriate	All Samples	All Samples
Appropriate documentation	All Samples	All Samples
Satisfactory frequency and result for QA/QC samples	All QA/QC samples	-
Data from critical samples is considered valid	-	Critical samples valid

If any of the DQIs are not met, further investigation will be necessary to determine whether the non-conformance will significantly affect the usefulness of the data.

Field QA/QC

An evaluation of the field and laboratory data quality was undertaken in accordance with the NEPM – Schedule B2, Assessment of data quality.

Each monitoring round, one blind duplicate and one split duplicate was collected from two different sampling locations and analysed as part of the project quality control program. Blind duplicate samples were analysed as an intra-laboratory duplicate at the primary laboratory (ALS Environmental). Split duplicates were analysed as inter-laboratory duplicates at the secondary laboratory (Eurofins). The duplicate samples and trip blanks are used by GHD to assess reliability of analytical results, with one of each generally collected during each monitoring event. GHD note the following in relation to rinsates, trip blanks and trip spikes:

Seven intra-laboratory duplicate samples were collected during the current monitoring period and include the following:

– SOUUS/SWDUP1 – 5 April 2023
– KEMUS/SWDUP1 – 1 May 2023
– SOUUS/SWDUP1 – 6 June 2023
– KEMUS/SWDUP1 – 4 July 2023
– HINUS/SWDUP1 – 8 August 2023
– KEMDS/SWDUP1 – 31 August 2023
– BADUS/SWDUP1 – 5 September 2023

Seven inter-laboratory duplicate samples were collected during the current monitoring period and include the following:

– KEMDS/SWDUP2 – 5 April 2023
– COSUS/SWDUP2 – 2 May 2023
– COSUS/SWDUP2 – 7 June 2023
– BADDS/SWDUP2 – 7 July 2023
– KEMUS/SWDUP2 – 8 August 2023
– KEMUS/SWDUP2 – 31 August 203

Seventy-eight primary samples were collected during April 2022 to September 2023. It was considered that the number of duplicates collected was adequate (14/89 samples = 16%).

Relative percentage difference calculations

Relative percentage difference (RPD) calculations are used to assess how closely primary and inter/intra duplicate sample results match. RPDs are a quantitative measure of the accuracy of the analytical results and are calculated in accordance with the procedure described in AS 4482.1 – 2005 (Standards Australia 2005). According to AS 4482.1 – 2005 typical RPDs are expected to range between 30% and 50%; however, this may be higher for organics and for low concentrations of analytes. GHD has adopted the following:

– 200% for concentrations within 1 to 10 times the analyte LOR.
– 50% for concentrations within 10 to 30 times the analyte LOR.
– 30% for concentrations greater than 30 times the analyte LOR.

Where a result is below the laboratory LOR for one of the paired samples, the concentration assigned to that sample is the LOR. Where both results are reported below laboratory LOR the RPD is not calculated.

There were no elevated RPDs between duplicate pairs in the current monitoring period.

RPD results are attached in Table H2, Appendix H.

Trip blanks

Trip blanks were not collected during the recent monitoring period as majority of volatile concentrations in surface water locations are non-detects, as shown in Tables B6 and B7, Appendix B. This eliminated the need for blank samples as there are low volatile concentrations to begin with.

Rinsate blank

Rinsate blank samples were not collected during the current monitoring period as reusable equipment was not utilised during sample collection.

Laboratory QA/QC

The NATA certified laboratories utilised for this assessment (ALS Environmental and Eurofins) undertook their own quality assurance and quality control procedures for sample analysis. GHD has reviewed the internal laboratory control data provided within the laboratory reports (refer to Appendix G). It is noted comments have been provided by the laboratory where a failure result was reported in laboratory QA/QC procedures.

Laboratory holding time

Samples were extracted within the required holding time for chemical analysis as presented on laboratory reports in Appendix G with exception of the following:

– Nitrite an N and Reactive Phosphorus during the April 2023 monitoring event for BADDUS, BADMS, BADUS, COSDS, COSUS, HINDS, HINUS, ROPDS, KEMDS, KEMUS, SOUDS, and SOUUS.
– Nitrite an N and Reactive Phosphorus during the May 2023 monitoring event for BADDUS, BADMS, BADUS, COSDS, and COSUS.
– pH during the September 2023 monitoring event for BADDS, BADMS, BADUS, COSDS, COSUS, KEMDS, and KEMUS.

Matrix spikes

The majority of matrix spike recovery results were reported within the laboratory limits (70% - 130%), with the exception of the following:

– Nitrite plus Nitrate as N and three OPPs during the April 2023 monitoring event
– Nitrite plus Nitrate as N, Reactive Phosphorus as P, and four OPPs during the May 2023 monitoring event.
– 25 OPPs during the June 2023 monitoring event.
– Nitrite plus Nitrate as N and 42 OPPs during the July 2023 monitoring event.
– Ammonia as N, Nitrite plus Nitrate as N, and three OPPs during the August 2023 monitoring event
– 33 OPPs during the August 2023 Wet Weather monitoring event.
– Ammonia as N and eight OPPs during the September 2023 monitoring event.

Ammonia, reactive phosphorus, and nitrite plus nitrate recoveries were not reported as the background level was equal to or greater than four times the matrix spike level.

Matrix spike recoveries of OPPs reported recoveries less than the lower data quality objective, or greater than the upper data quality objective.

As the majority of analytes reported matrix recoveries within laboratory limits during the monitoring period, and recoveries were within limits for analyte outliers, described above, in preceding or subsequent events, the matrix spike outliers are not considered to have any impact on the outcome of the investigation, or interpretation of this round of data.

Laboratory control samples

All laboratory control samples (LCS) were within laboratory limits (70%-130%).

Surrogate spikes

All surrogate spike recoveries were within laboratory limits (50%-150%) with the exception of the following:

– VOC surrogates during the August 2023 Wet Weather monitoring event.

Duplicate samples

The majority of laboratory duplicate samples were reported within the laboratory limits (30%), with the exception of the following:

- Chromium during the April 2023 monitoring event

Frequency of quality control samples

A sufficient frequency of quality control samples was reported by the laboratory during the monitoring period, with the exception of the following:

– Oil and Grease during the April 2023 monitoring event. Laboratory duplicate and matrix spike actual rate = 7.5%, expected rate = 8%.
– OPPs during the May 2023 monitoring event. Laboratory duplicate and matrix spike actual rate = 0, expected rate = 10%.
– OPPs and PCBs during the August 2023 Wet Weather monitoring event. Laboratory duplicate and matrix spike actual rate = 0, expected rate = 10%.

As quality control samples were collected for the remainder of analytes and samples during the monitoring period, it was considered that the reduced rate of collection of laboratory duplicate and matrix spikes did not have a material impact on the outcome of the investigation, or interpretation of this round of data.

QA/QC assessment outcome

The review of the QA/QC program and data indicates that the surface water analytical data are of an acceptable quality upon which to draw meaningful conclusions regarding impacts to surface water at the site.

Location Code			KEMDS			SOUUS			KEMUS			COSUS			SOUUS			COSUS			KEMUS		
Date			05 Apr 2023			05 Apr 2023			01 May 2023			02 May 2023			06 Jun 2023			07 Jun 2023			04 Jul 2023		
Field ID			KEMDS	SWDUP2		SOUUS	SWDUP1		KEMUS	SWDUP1		COSUS	SWDUP2		SOUUS	SWDUP1		COSUS	SWDUP2		KEMUS	SWDUP1	
Matrix Type			Water	Water		Water	Water		Water	Water		Water	Water		Water	Water		Water	Water		Water	Water	
Sample Type			Normal	Interlab_D		Normal	Field_D		Normal	Field_D		Normal	Interlab_D		Normal	Field_D		Normal	Interlab_D		Normal	Field_D	
Lab Report Number			ES2311425	979752	RPD	ES2311425	ES2311425	RPD	ES2314384	ES2314384	RPD	ES2314384	986190	RPD	ES2319028	ES2319028	RPD	ES2319028	997826	RPD	ES2322320	ES2322320	RPD
	Unit	EQL																					
Metals																							
Arsenic	mg/L	0.001	<0.001	<0.01	0	<0.001	<0.001	0	0.002	0.001	67	<0.001	<0.001	0	<0.001	<0.001	0	<0.001	<0.001	0	<0.001	<0.001	0
Cadmium	mg/L	0.0001	<0.0001	<0.002	0	<0.0001	<0.0001	0	<0.0001	<0.0001	0	<0.0001	<0.0002	0	<0.0001	<0.0001	0	<0.0001	<0.0002	0	<0.0001	<0.0001	0
Chromium (III+VI)	mg/L	0.001	<0.001	<0.01	0	<0.001	<0.001	0	0.002	0.002	0	0.002	0.001	67	<0.001	<0.001	0	<0.001	<0.001	0	<0.001	<0.001	0
Copper	mg/L	0.001	0.003	<0.01	0	<0.001	<0.001	0	0.007	0.007	0	0.003	0.002	40	0.002	0.002	0	<0.001	0.002	67	0.002	0.002	0
Iron	mg/L	0.05	0.50	-	-	0.82	-	-	1.89	-	-	1.60	-	-	0.83	-	-	0.56	-	-	0.27	-	-
Lead	mg/L	0.001	<0.001	<0.01	0	<0.001	<0.001	0	0.002	0.002	0	<0.001	<0.001	0	<0.001	<0.001	0	<0.001	<0.001	0	<0.001	<0.001	0
Manganese	mg/L	0.001	0.021	-	-	0.224	-	-	0.034	-	-	0.107	-	-	0.115	-	-	0.145	-	-	0.022	-	-
Mercury	mg/L	0.0001	<0.0001	<0.001	0	<0.0001	<0.0001	0	<0.0001	<0.0001	0	<0.0001	<0.0001	0	<0.0001	<0.0001	0	<0.0001	<0.0001	0	<0.0001	<0.0001	0
Nickel	mg/L	0.001	0.002	<0.01	0	0.003	0.003	0	0.002	0.002	0	0.002	<0.001	67	0.003	0.003	0	0.001	<0.001	0	0.001	0.002	67
Zinc	mg/L	0.005	0.007	<0.05	0	<0.005	<0.005	0	0.018	0.019	5	0.006	<0.005	18	0.015	0.016	6	<0.005	<0.005	0	0.017	0.017	0

Location Code			BADDS			HINDS			KEMUS			KEMDS			KEMUS			BADUS			HINDS		
Date			07 Jul 2023			08 Aug 2023			08 Aug 2023			31 Aug 2023			31 Aug 2023			05 Sep 2023			06 Sep 2023		
Field ID			BADDS	SWDUP2		HINDS	SWDUP1		KEMUS	SWDUP2		KEMDS	SWDUP1		KEMUS	SWDUP2		BADUS	SWDUP1		HINDS	SWDUP2	
Matrix Type			Water	Water		Water	Water		Water	Water		Water	Water		Water	Water		Water	Water		Water	Water	
Sample Type			Normal	Interlab_D		Normal	Field_D		Normal	Interlab_D		Normal	Field_D		Normal	Interlab_D		Normal	Field_D		Normal	Interlab_D	
Lab Report Number			ES2322911	1006932	RPD	ES2326795	ES2326795	RPD	ES2326795	1015966	RPD	ES2329639	ES2329639	RPD	ES2329639	1022291	RPD	ES2330280	ES2330280	RPD	ES2330280	1024024	RPD
	Unit	EQL																					
Metals																							
Arsenic	mg/L	0.001	<0.001	<0.001	0	<0.001	<0.001	0	<0.001	0.001	0	0.001	0.002	67	0.001	0.001	0	<0.001	<0.001	0	<0.001	0.002	67
Cadmium	mg/L	0.0001	<0.0001	<0.0002	0	<0.0001	<0.0001	0	<0.0001	<0.0002	0	<0.0001	<0.0001	0	<0.0001	<0.0002	0	<0.0001	<0.0001	0	<0.0001	0.0002	67
Chromium (III+VI)	mg/L	0.001	<0.001	<0.001	0	<0.001	<0.001	0	<0.001	<0.001	0	0.002	0.002	0	<0.001	0.002	67	0.002	0.003	40	<0.001	<0.001	0
Copper	mg/L	0.001	0.001	0.002	67	<0.001	<0.001	0	0.003	0.003	0	0.008	0.008	0	0.007	0.007	0	0.004	0.004	0	0.001	0.002	67
Iron	mg/L	0.05	0.43	-	-	0.53	-	-	0.43	-	-	1.73	-	-	0.96	-	-	3.09	-	-	1.03	-	-
Lead	mg/L	0.001	<0.001	<0.001	0	<0.001	<0.001	0	0.003	<0.001	100	0.003	0.004	29	0.002	0.002	0	0.002	0.002	0	<0.001	<0.001	0
Manganese	mg/L	0.001	0.082	-	-	0.307	-	-	0.053	-	-	0.077	-	-	0.058	-	-	0.228	-	-	0.404	-	-
Mercury	mg/L	0.0001	<0.0001	<0.0001	0	<0.0001	<0.0001	0	<0.0001	<0.0001	0	<0.0001	<0.0001	0	<0.0001	<0.0001	0	<0.0001	<0.0001	0	<0.0001	<0.0001	0
Nickel	mg/L	0.001	0.002	0.001	67	<0.001	<0.001	0	0.002	0.002	0	0.003	0.003	0	0.002	0.002	0	0.003	0.001	100	0.001	0.001	0
Zinc	mg/L	0.005	0.012	0.012	0	<0.005	<0.005	0	0.014	0.011	24	0.021	0.023	9	0.017	0.019	11	0.012	0.010	18	<0.005	<0.005	0

***RPDs have only been considered where a concentration is greater than 1 times the EQL.**

****Bold indicates high RPDs (Acceptable RPDs for each EQL multiplier range are: 200 (1 - 10 x EQL); 50 (10 - 30 x EQL); 30 (> 30 x EQL))**

*****Interlab Duplicates are matched on a per compound basis as methods vary between laboratories. Any methods in the row header relate to those used in the primary laboratory**

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