Appendix G

Limited environmental assessment and waste classification report

Roads & Maritime

Limited Environmental Assessment & Waste Classification Report

Barham-Koondrook Bridge Restoration Work

March 2015

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LIMITED ENVIRONMENTAL ASSESSMENT AND WASTE CLASSIFICATION REPORT – BARHAM-KOONDROOK BRIDGE (VICTORIAN APPROACH)

Roads and Maritime Services

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Project Manager: _____
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1 EXECUTIVE SUMMARY

This report presents the findings of a limited environmental site assessment (ESA), inclusive of waste classification, undertaken by Vantage Environmental Management Pty Ltd (Vantage) at the Victorian approach of the Barham-Koondrook Bridge which spans the Murray River from NSW Main Road 319 (Moulamein Road). The Bridge links the border towns of Barham in New South Wales and Koondrook in Victoria.

The assessment was commissioned by NGH Environmental (NGH) on behalf of the Roads and Maritime Services (Roads and Maritime).

As part of the assessment a total of six (6) discrete timber samples, four (4) discrete paint samples and six (6) discrete soil samples were submitted for laboratory analysis. The samples were analysed for parameters associated with bridge sites potentially incorporating treated timbers, lead paint and asbestos containing materials.

Contaminant concentration levels in the samples have been compared against relevant NSW Environmental Protection Authority (NSW EPA) and Victorian Environmental Protection Authority (Vic EPA) waste classification guidelines as well as National Environmental Protection (Assessment of Site Contamination) Measure [NEPM] investigation levels. The results of the assessment are as follows:

- Timber elements including piers, handrails, abutment sheeting, longitudinal top sheeting, transverse decking and longitudinal bridge beams (stringers) would be classified as NSW EPA *General Solid Waste* and Vic EPA *Industrial Waste*
- Of the four (4) paint samples collected and analysed, three (3) samples contained lead; asbestos was not identified in any of the four (4) paint samples. Painted bridge elements would be classified as NSW EPA *General Solid Waste* and Victorian EPA *Industrial Waste*
- Soil contaminants in excess of the NEPM land use criteria (commercial and industrial sites) were not identified at the site during the sampling and analysis program. Based on the results of analysis, soils could be reused on site. Soils requiring off-site disposal would be classified as NSW EPA *General Solid Waste* and Victorian EPA *Fill Material*.

All future waste management activities associated with proposed site demolition and redevelopment should be undertaken in accordance with NSW EPA and Vic EPA guidance as well as Roads and Maritime directives.

For this assessment and waste classification the noted guidance documents and directives have been interpreted to allow for the following waste management strategies to be implemented at the site:

- **Timbers (Pile and Abutment)**
  - May be sent to landfill under the classification of NSW EPA *General Solid Waste or* Victorian EPA *Industrial Waste* pending agreement from landfill operator *OR*
  - Stockpiled for future disposal.

- **Timbers (Definitely NOT pile or abutment)**
  - Stockpile/store for future Roads and Maritime use as sample results indicate OCPs and Phenols (inclusive of pentachlorophenol) are not present in excess of NSW *General Solid Waste* criteria and the material would not be classified as a SCW *OR*
  - Stockpile for future disposal as sample results indicate SCW's are not present in timber that is definitely not pile or abutment *OR*
  - May be sent to landfill under the classification of NSW EPA *General Solid Waste or* Victorian EPA *Industrial Waste* pending agreement from landfill operator.
- **Painted Surfaces**
  - Painted elements at the site would be pre-classified as NSW *General Solid Waste* and Victorian *Industrial Waste*. Where paint is stripped from elements the lead paint waste would be pre-classified as NSW *Hazardous Waste* or Victorian *Prescribed Industrial Waste (PIW)*.
- **Soil**
  - It is considered that the preferred waste management option for soils at the site would be on-site reuse rather than off-site disposal as the chemical quality of the soil is consistent with the contamination criteria applicable at the site.
  - If soil is to be removed from site it would have to be disposed of at a landfill that could accept NSW EPA *General Solid Waste* or Victorian EPA *Fill Material* as the current assessment data indicated soil at the site would be classified as NSW *General Solid Waste* and Victorian *Fill Material*.

DISPOSAL OPTIONS FOR SITE WASTE

Based on the waste classification directives provided by Roads and Maritime, the NSW EPA and Victorian EPA, the wastes generated during bridge demolition work such as concrete, asphalt, treated timber, painted timber/steel and soil could be disposed of in NSW at a landfill site licensed by the NSW EPA to accept *General Solid Waste*. The materials could also be disposed of in Victoria at a landfill that accepts *Industrial Waste* and *Fill Material*.

Following review of EPA records it is apparent that there are no appropriately licensed landfills within Wakool Shire (the NSW local government area that the NSW portion of the subject site is located within). Through negotiation with EPA and Wakool Shire, Roads and Maritime may be able to facilitate an agreement to allow for disposal of bridge wastes at the Wakool Shire Barham landfill (Phone: [03] 5453 3200) which is located within close proximity to the subject site on Barham East Road. The closest appropriately licensed landfills are located in Deniliquin (Deniliquin Waste Disposal Depot, Hay Road, Deniliquin, Phone: [03] 5898 3155) and Moama (Moama Solid Waste Depot, Centre Road, Moama, Phone: [03] 5884 3302).

It is considered that Gannawarra Shire (the Victorian local government area in which the Victorian portion of the subject site is located) may be able to accept bridge waste at the Denyers Pit Landfill, which is located approximately 40 km from the subject site (15 km west of Kerang along the Kerang-Quambatook Road). The Victorian EPA have also indicated that demolition waste would likely be acceptable for disposal at the Swan Hill Rural Council Landfill, which is a licenced facility located approximately 90 km northwest of the site.

A master table of waste management options has been prepared for use by the nominated demolition/disposal team at the site and is presented as Appendix F.

2 INTRODUCTION

This report presents the findings of a limited environmental site assessment (ESA) inclusive of waste classification undertaken by Vantage Environmental Management Pty Ltd (Vantage) at the site of the Victorian approach of the Barham-Koondrook Bridge which spans the Murray River from NSW Main Road 319 (Moulamein Road). The Bridge links the border towns of Barham in New South Wales and Koondrook in Victoria.

The assessment was commissioned by Ms Gemma Barber of NGH Environmental (NGH) on behalf of the Roads and Maritime Services (Roads and Maritime) in accordance with the proposal submitted by Vantage on 18 November 2014 (Vantage Doc. Ref. AL09-064-1ZQ).

As part of this project a detailed Project Plan (Vantage Doc. Ref. AL14-218-1B dated 16 December 2014) was also prepared and presented to NGH.

It is noted that Vantage completed an assessment of the NSW approach area of the bridge site in 2009 and the results are presented in the report entitled *Limited Environmental Assessment & Waste Classification Report – Barham-Koondrook Bridge, NSW* (Doc. Ref. AL09-064-1C, dated 04 September 2009).

3 SITE LOCATION AND CONTEXT

The Barham-Koondrook Bridge crosses the Murray River in the Shire of Wakool, NSW and was designed and built in 1904-1905. The bridge has 'high to exceptional' State Heritage Significance.

Barham is located on the northern bank of the Murray River approximately 850km south-west of Sydney in southwest New South Wales. Koondrook is located on the southern bank of the Murray River approximately 300 km north of Melbourne in north-east Victoria. The location of the subject bridge is shown on Figure 1.

The bridge comprises a lift span supported on cast iron piers and two (2) de Burgh truss spans on either side of the lift span. These de Burgh truss spans are supported on one end by the cast iron piers and on the other end by timber trestle piers. Timber approach spans link the truss spans to each shore.

The lift span (17.8 m in length) is of lattice steel construction with counterweights on the main axis side of the supporting columns. The de Burgh trusses (31.7 m in length each) support steel cross girders and longitudinal stringers. The approach spans (9.1 m in length each) consist of timber girders resting on timber trestle piers and timber abutments.

3.1 PROPOSED FUTURE WORK

A range of rehabilitation work has been proposed for the bridge and includes:

- Replacement of abutments and installation of embankment protection
- Rehabilitation and strengthening of timber approach spans
- Deck replacement and refurbishment/strengthening of de Burgh truss spans
- Pier refurbishment and lift span strengthening
- Upgrades to traffic barriers and approach barrier connections.

4 ASSESSMENT METHODOLOGY

In accordance with Roads and Maritime requirements the purpose of this ESA was to:

- Identify contaminants, their concentrations and locations within the study area
- Compare the identified contaminant concentrations with:
  - National Environment Protection (Assessment of Site Contamination) Measure (1999, Revised 2013) Investigation Levels for soil and groundwater (if necessary)
  - New South Wales and Victorian Environment Protection Authority (EPA) regulation and guidelines associated with the assessment, classification and management of wastes
- Determine mitigation and disposal options (including the nomination of licensed waste disposal facilities) for contaminated soils and timbers that may be identified during the assessment programs. These options would be consistent with Roads and Maritime Services Environmental Direction No. 10.

4.1 Initial Site Inspection & Development of Project Plan

A site inspection (site walkover) was completed by Vantage personnel on 12 December 2014 to assess whether there were any visual indications of contamination in the area of the bridge; particularly the abutments and piers and determine if there were any significant site constraints that could impact on the completion of the assessment program. Following the site inspection the sampling program was commenced and a Project Plan which confirmed the sampling and analysis plan was prepared and presented to NGH on 16 December 2014.

4.2 Bridge Structure (Timber & Paint) Sampling

To assess the chemical quality of key elements associated with the bridge structure, six (6) discrete samples of bridge timber and four (4) discrete paint samples were collected for laboratory analysis.

To obtain representative samples of key timber bridge elements, shavings and drill cuttings of timber were collected with a decontaminated stainless steel mitre-chisel and 20 mm stainless steel wood boring tool at a depth of between 0.05 cm and 2.5 cm below the surface. Samples were immediately transferred to laboratory supplied containers and stored in an ice-chilled esky for subsequent analysis at a NATA-accredited laboratory.

Representative paint samples were collected from a range of painted surfaces across the bridge structure; these samples were collected with a decontaminated stainless steel, retractable blade scraper. Sample sites were misted with deionised water prior to sample collection to reduce potential emission of airborne particulate matter.

In accordance with Roads and Maritime guidance, no samples of timber elements that were visibly CCA- (copper, chromium and arsenic) treated were collected or submitted for laboratory analysis.

Table 4.2, below, presents a summary of timber and paint sample details including sample identification and location.

TABLE 4.2: Sample Summary Information (Timber and Paint)

Sample ID	Sampling Date	Location	GPS coordinates	Comments
TIMBER SAMPLES				
TS-7	12-Dec-14	Pier Set (Victorian water line)	35°37'52"S 144°07'29"E	Pier timbers from Pier stack adjacent to Victorian water line
TS-8	12-Dec-14	Handrail timber	35°37'51"S 144°07'29"E	Painted (white) timber handrail; unpainted sample retained for analysis
TS-9	12-Dec-14	Abutment sheeting timber	35°37'52"S 144°07'29"E	Abutment sheeting from Victorian side of bridge embankment
TS-10	12-Dec-14	Top sheeting (longitudinal)	35°37'50"S 144°07'29"E	Longitudinal top sheeting (bitumen covered)
TS-11	12-Dec-14	Decking transverse timber	35°37'50"S 144°07'29"E	Transverse decking (Victorian approach)
TS-12	12-Dec-14	Longitudinal stringers	35°37'50"S 144°07'29"E	Longitudinal bridge beams (Victorian approach)
PAINT SAMPLES				
PS-5	15-Dec-15	White painted timber handrail	35°37'50"S 144°07'29"E	White paint, fair condition, some flaking and degradation observed; pink/red undercoat paint.
PS-6	15-Dec-15	Cream paint from De Burgh truss spans (Victorian Approach)	35°37'52"S 144°07'29"E	Cream paint with pink/red undercoat, fair to poor condition with common flaking and paint degradation noted
PS-7	15-Dec-15	Lift span paint	35°37'50"S 144°07'29"E	Grey metallic paint covering steel lift span in generally poor condition; some pink/red undercoat (paint appears consistent with that applied to cast iron cylindrical pylons and web panels)
PS-8	15-Dec-15	Cylindrical steel support elements from De Burgh truss (Victorian approach)	35°37'50"S 144°07'29"E	Red brown paint, fair condition

4.3 Soil Sampling

A soil sampling program was completed concurrently with the timber and paint sampling program. The soil sampling was completed to assess the ground surface below and adjacent to key bridge elements as these locations may have been historically impacted due to a range of factors including:

- Chemical spills during treatment/painting of bridge timbers
- Leaching of chemicals within the bridge structure to surface and sub-surface soils
- Application of chemicals to the ground surface in the vicinity of bridge abutments/ embankment areas to control pest and weed infestations

The soil sampling program involved the completion of four (4) boreholes at selected locations in the vicinity of the bridge abutment and embankment associated with the bridge structure approach on the Victorian side of the Murray River (i.e. assessment of soil was confined to the

Victorian side of the bridge). The boreholes were completed with a stainless steel hand-auger to a maximum depth of approximately 1.1 m below ground surface.

During completion of the boreholes representative soil samples were collected from the auger with a decontaminated stainless steel hand-trowel and directly transferred to laboratory supplied sample containers. The samples were held in an ice-chilled esky prior to transfer to and subsequent analysis at a NATA-accredited laboratory.

Table 4.3, below, presents a summary of soil sample details including sample identification and location. Figure 2, the sample location plan, shows the approximate location from which samples were collected for the assessment program.

TABLE 4.3: Sample Summary Information (Soil)

Sample ID	Sampling Date	GPS coordinates	Comments
SOIL SAMPLES			
BH5-0.5	12-Dec-15	35°37'52"S 144°07'29"E	Collected from borehole 5 at a depth of 0.5m – adjacent to Victorian approach ramp
BH5-1.0	12-Dec-15	35°37'52"S 144°07'29"E	Collected from borehole 5 at a depth of 1.0m – adjacent to Victorian approach ramp
BH6-0.1	12-Dec-15	35°37'52"S 144°07'29"E	Collected from borehole 6 at a depth of 0.1m – adjacent to Victorian approach ramp
BH6-0.5	12-Dec-15	35°37'52"S 144°07'29"E	Collected from borehole 6 at a depth of 0.5m – adjacent to Victorian approach ramp
BH6-1.0	12-Dec-15	35°37'52"S 144°07'29"E	Collected from borehole 6 at a depth of 1.0m – adjacent to Victorian approach ramp
BH7-0.1	12-Dec-15	35°37'52"S 144°07'29"E	Collected from borehole 7 at a depth of 0.1m – adjacent to Victorian approach ramp
BH7-0.5	12-Dec-15	35°37'52"S 144°07'29"E	Collected from borehole 7 at a depth of 0.5m – adjacent to Victorian approach ramp
BH7-1.0	12-Dec-15	35°37'51"S 144°07'29"E	Collected from borehole 7 at a depth of 1.0m – adjacent to Victorian approach ramp
BH8-0.1	12-Dec-15	35°37'51"S 144°07'29"E	Collected from borehole 8 at a depth of 0.1m – adjacent to Victorian approach ramp
BH8-0.5	12-Dec-15	35°37'51"S 144°07'29"E	Collected from borehole 8 at a depth of 0.5m – adjacent to Victorian approach ramp
BH8-1.0	12-Dec-15	35°37'52"S 144°07'29"E	Collected from borehole 8 at a depth of 1.0m – adjacent to Victorian approach ramp

4.4 Laboratory Testing

Analytical Testing

For this assessment selected timber, paint and soil samples were analysed for a range of typical chemicals that would be considered potential contaminants of concern (PCoCs) in settings where bridge structures incorporating treated timbers, lead paint and asbestos containing materials have been present for an extended period of time. In particular, the PCoCs considered relevant at the site include:

- Phenols (inclusive of pentachlorophenol)
- Creosols
- Organochlorine and Organophosphorous Pesticides (OCP & OPP)
- Phenoxy Acetic Acid Herbicides
- Total petroleum hydrocarbons (TPH)
- Polycyclic aromatic hydrocarbons (PAH)
- A suite of typically encountered heavy metals including Arsenic, Cadmium, Chromium (total and hexavalent), Copper, Mercury, Lead, Nickel and Zinc
- Asbestos.

A program of broader spectrum analyses (inclusive analysis of cyanide, fluoride, chlorinated hydrocarbons, polychlorinated biphenyl concentrations and pH) was also completed on selected samples to screen for a wider range of contaminants and ensure adherence to NSW and Victorian waste characterisation guidelines.

A total of six (6) individual soil samples, six (6) individual timber samples and four (4) individual paint samples were submitted for laboratory analysis as part of this assessment. One (1) additional soil sample, one (1) additional timber sample, one (1) wash blank sample and one (1) trip blank sample were also submitted as part of the project quality control/quality assurance program. The laboratory analysis schedule is noted below on Table 4.4.

TABLE 4.4: Environmental Analysis Schedule

Analysis Parameter	Number of Samples and Material Type		
	Soil	Paint	Timber
Phenols (inclusive of pentachlorophenol)	6	0	5
Creosols	6	0	5
Organochlorine Pesticides (OCP)	6	0	6
Organophosphorous Pesticides (OPP)	2	0	2
Acid Herbicides	2	0	2
Total petroleum hydrocarbons (TPH)	4	0	4
Benzene, toluene, ethylbenzene & xylenes (BTEX)	4	0	3
Polycyclic aromatic hydrocarbons (PAH)	4	0	3
Heavy metals (As, Cd, Cr(Total), Cr(VI), Cu, Hg, Pb, Ni, Zn)	6	4 (lead only)	6
Asbestos	0	4	0
Broad Contaminant Screen including PCBs, cyanide, fluoride, chlorinated hydrocarbons and pH	2	0	0

Samples were analysed by the NATA accredited laboratory of Eurofins-mgt located in Oakleigh, Victoria. The analytical methods used during the analysis program were based on the following methods:

- USEPA 6010B & 6020: Heavy Metals
- USEPA 7470/71 Mercury
- USEPA 8270C: Phenols
- USEPA 8082: Polychlorinated Biphenyls
- USEPA 8121: Chlorinated Hydrocarbons
- USEPA 8081A: Organochlorine Pesticides
- USEPA 8270C: Polycyclic Aromatic Hydrocarbons
- MGT 200A: Phenoxy-Acetic Acid Herbicides
- USEPA 8260B / MGT 350A: BTEX
- MGT100A-GC: TPH
- USEPA 9010B: Cyanide.

The project quality assurance/quality control program also included the analysis of selected samples as described in Section 8 of this report. The quality control program involved the use of a secondary analytical laboratory for inter-laboratory duplicate analysis.

5 ASSESSMENT RESULTS

5.1 General Site Conditions

On 25 June 2009, a Vantage environmental scientist visited the subject site to confirm site access arrangements and methodology for the environmental assessment as well as commence sampling activities. A summary of relevant site observations is presented below:

- Some bridge pier timbers and stringers (longitudinal bridge beams) have been replaced with copper-chromium-arsenic (CCA) treated timber. It is apparent that many of the bridge timbers are original and therefore are likely to have been treated with non-CCA based products which could include heavy metals, pesticide and petroleum constituents
- Longitudinal bridge beam, piers, decking and top-sheeting and abutment timbers were observed to be generally hardwood with evidence of hand-applied treatment/preservation products
- Painted surfaces across the bridge site include those associated with the metal elements of the over-water lift-span and de Burgh truss sections. The condition of the paint observed on bridge elements at the subject site varied from fair to very poor with evidence of significant flaking and degradation common. It is considered that there is a high probability that some of the original paints on the bridge structure may contain lead compounds
- In some instances a lack of vegetative cover was noted along the edge of the Victorian approach ramp and associated abutment area suggesting some weed control chemicals may have been used in these areas.

Selected site photographs are contained within Appendix A of this report.

5.2 Subsurface Conditions

During completion of the boreholes at the site, information regarding sub-surface conditions was recorded on borehole logs which are included within Appendix B of this report. Based on the soils encountered within the boreholes the sub-surface profile generally consisted of a silty sandy fill material with trace gravel. The boreholes (up to 1.1 metres deep) did not extend through to natural soils as they were completed within the abutment and embankment area associated with the Victorian approach ramp of the bridge structure. Based on field observations it is considered that the fill at the site was representative of re-worked site material (local borrow) that was used to backfill the area behind the bridge abutment and form the associated embankment area.

5.3 Regulatory Framework

For this assessment and waste classification, analytical results of sampled soils, timber and paint have been compared with the following environmental guidance documentation and criteria:

- NEPC National Environmental Protection (Assessment of Site Contamination) Measure [NEPM] 1999 (Revised 2013)
- NSW EPA *Waste Classification Guidelines Part 1: Classifying Wastes (2014)*
- NSW DECC (EPA) Environmentally Hazardous Chemicals Act 1985 – *Chemical Control Order in Relation to Scheduled Chemical Wastes – 11 June 2004.*

The land-use setting of "commercial and industrial", as defined in the NEPM, is referenced for this assessment as it is consistent with Roads and Maritime infrastructures sites.

In addition, for waste classification purposes within the state of Victoria, analytical results of sampled soils have also been compared with the Victorian Environment Protection Authority (Vic EPA) *Industrial Waste Resource Guidelines (IWRG) Soil Hazard Categorisation and Management Publication (IWRG621 – June 2009).* Analytical results of sampled timber (and paint) have been compared with the Vic EPA *Solid Industrial Waste Hazard Categorisation and Management Publication (IWRG631 – June 2009).* These documents present comparison criteria which allow for classification of materials according to chemical and physical quality in Victoria.

5.4 Analytical Results and Waste Classification

5.4.1 Timber

Laboratory results for the analysed timber samples, along with the applicable NSW and Victorian EPA waste classification criteria, are presented within the tables following the text of this report. Copies of the Certificates of Analysis provided by the NATA-accredited analytical laboratory of eurofins-mgt are included within Appendix D.

All analysed parameters were present at concentrations below the waste classification standards for NSW *General Solid Waste* and as such the timber would be classified as NSW General *Solid Waste* for disposal purposes. All analysed parameters were present at

concentrations below the waste classification standards for Victorian *Industrial Waste* and as such the timber would be classified as Victorian *Industrial Waste* for disposal purposes. It is also noted that based on the analysis data no timber samples exhibited concentrations in excess of NSW Scheduled Chemical Waste (SCW) criteria.

5.4.2 Paint

Laboratory results for the analysed paint samples, along with the applicable NSW and Victorian EPA waste classification criteria are presented within the tables following the text of this report. Copies of the Certificates of Analysis provided by the NATA-accredited analytical laboratory of eurofins-mgt are included within Appendix D.

The results of analysis indicate that lead was present in three (3) of the four (4) analysed paint samples.

Asbestos was not identified in any of the four (4) analysed paint samples.

Based on the sampling and analysis completed as part of this current assessment the painted elements at the site would be pre-classified as NSW *General Solid Waste*. Based on review of Victorian EPA waste classification guidelines painted bridge elements would be classified as Victorian *Industrial Waste*. It is noted that where paint is stripped from elements the lead paint waste would be pre-classified as NSW *Hazardous Waste* or Victorian *Prescribed Industrial Waste (PIW)*.

5.4.3 Soil

Soil analytical results, along with the applicable NSW and Victorian EPA waste classification criteria and environmental reference (NEPM) criteria, are presented within the tables following the text of this report. Copies of the Certificates of Analysis provided by the NATA-accredited analytical laboratory of eurofins-mgt are included within Appendix D.

5.4.3.1 Soil Contamination Assessment

The results of analysis indicated that all analysed samples contained concentrations below the NEPM investigation levels for commercial and industrial sites.

5.4.3.2 Soil Waste Classification Assessment

The results of analysis indicated that all analysed samples contained concentrations below the NSW waste classification standards for *General Solid Waste* and therefore the soil would be classified as *General Solid Waste* in NSW. In addition, the results of analysis indicated that all analysed samples contained concentrations below the Victorian waste classification standards for *Fill Material* and therefore the soil would be classified as *Fill Material* in Victoria.

5.4.4 Summary

Based on the laboratory analysis completed as part of the current assessment, the following waste classifications apply to materials at the site:

- Soil would be classified as *General Solid Waste* in NSW and *Fill Material* in Victoria
- Bridge timber elements would be classified as *General Solid Waste* in NSW and *Industrial Waste* in Victoria

- Painted bridge elements would be pre-classified as *General Solid Waste* in NSW and *Industrial Waste* in Victoria.

It is noted that the concentrations of phenols (including pentachlorophenol), organochlorine pesticides (OCPs), organophosphorous pesticides (OPPs), phenoxy acetic acid herbicides, polychlorinated biphenyls (PCBs) and asbestos in all analysed soil, timber and paint samples were less than the relevant site contamination criteria, waste classification standards and laboratory detection limits.

Based on the analysis data, no samples exhibited concentrations in excess of Scheduled Chemical Waste (SCW) criteria.

Table 5.4 below presents a summary of waste classification for each analysed sample at the site and potential waste management options are discussed in Section 4.5 of this report.

TABLE 5.4: Summary of NSW and Victorian EPA Waste Classification and Contamination Status

Sample ID	Waste Classification (NSW EPA)	Waste Classification (Victorian EPA)	Sample Location / Comments
SOIL SAMPLES			
All soil samples: BH5-0.1, BH6-0.1, BH7-0.1, BH7-0.5, BH7-1.0 & BH8-0.1	*General Solid Waste*	*Fill Material*	Samples collected at various locations adjacent to Victorian approach ramp
TIMBER SAMPLES			
TS-7	*General Solid Waste*	*Industrial Waste*	Pier timbers from Pier stack adjacent to Victorian water line
TS-8	*General Solid Waste*	*Industrial Waste*	Painted (white) timber handrail; unpainted sample retained for analysis
TS-9	*General Solid Waste*	*Industrial Waste*	Abutment sheeting from Victorian side of bridge embankment
TS-10	*General Solid Waste*	*Industrial Waste*	Longitudinal top sheeting (bitumen covered)
TS-11	*General Solid Waste*	*Industrial Waste*	Transverse decking (Victorian approach)
TS-12	*General Solid Waste*	*Industrial Waste*	Longitudinal bridge beams (Victorian approach)
PAINT SAMPLES			
Paint sample PS-5	*General Solid Waste*	*Industrial Waste*	White painted timber handrail
Paint samples PS-6, PS-7 and PS-8	*General Solid Waste* when attached to timber *Hazardous Waste* if stripped from timber	*Industrial Waste* when attached to timber *Prescribed Industrial Waste* if stripped from timber	Samples collected from painted elements at various locations on the Victorian approach of the bridge

Note: Concentrations in excess of NSW Scheduled Chemical Waste (SCW) criteria were not identified in any samples.

6 PROPOSED WASTE MANAGEMENT OPTIONS

In accordance with the NSW EPA, Victorian EPA and Roads and Maritime waste management protocols it is understood that preferred options for disposal of materials at the subject site include reuse and recycling rather than direct landfill disposal. As such, the preferred options for waste management at the site would be either/or:

- Reuse of materials on-site where possible
- Transport of materials to recycling facilities where available
- Disposal at an appropriately licensed landfill facility where no other options for reuse/recycling are practicable.

In accordance with NSW EPA guidance building and demolition wastes (other than material containing asbestos or liquid waste) that are generated from the construction, replacement, repair or alteration of infrastructure such as roads are pre-classified as ***General Solid Waste (non-putrescible).*** This pre-classification does not include soil. Soil is classified in accordance with the following protocols:

- ***General Solid Waste*** where contaminant concentrations are below *General Solid Waste* criteria; this waste can be disposed of at landfills that are licensed to accept *General Solid Waste*
- ***Restricted Solid Waste*** where contaminant concentrations are greater than *General Solid Waste* criteria but less than *Restricted Solid Waste* criteria; this waste can be disposed of at landfills licensed to accept *Restricted Solid Waste*
- ***Hazardous Waste*** where contaminant concentrations are greater than *Restricted Solid Waste* criteria; this waste can be disposed of at landfills licensed to accept *Hazardous Waste*.

Given site work is being managed by Roads and Maritime and predominantly involves demolition work in NSW, waste classification and management options are presented from a NSW regulatory perspective. Guidance associated with Victorian waste classification is, however, also presented to assist Roads and Maritime in determining alternative disposal sites for demolition waste. In Victoria building/demolition waste from building construction, renovations or repairs, and road construction and maintenance including metal, timber and concrete is classified as ***Industrial Waste***. *Industrial waste* can be disposed of at licenced non-municipal landfills, at non-licenced municipal landfills serving <5,000 persons or at licenced municipal landfills serving >5000 persons.

In accordance with Victorian EPA guidance, waste soils are classified as:

- ***Fill Material*** where contaminant concentrations are below *Fill Material* criteria; this waste can be reused as fill material, however, reuse must not give rise to environmental or health impact. The material can also be disposed of at non-licenced landfills
- ***Category C Contaminated Soil*** where contaminant concentrations are greater than *Fill Material* criteria but less than *Category C* criteria; this waste can be disposed of at landfills licensed to accept *Category C* contaminated soil

- ***Category B Contaminated Soil*** where contaminant concentrations are greater than *Category C* criteria but less than *Category B* criteria; this waste can be disposed of at landfills licensed to accept *Category B* contaminated soil
- ***Category A Contaminated Soil*** where contaminant concentrations are greater than *Category B*; this waste must be treated to reduce contaminants to a lower waste category prior to disposal.

It is further noted that lead paint waste is pre-classified as ***Hazardous Waste*** in NSW and ***Prescribed Industrial Waste*** in Victoria.

Appropriate waste management practices would have to be adhered to during any demolition/disposal activities associated with contaminated materials at the site to ensure the health and safety of site personnel and the public as well as protection of the environment.

A detailed discussion regarding the waste management options for materials at the site is presented in the following sections of this report and a master table presenting a summary of sample locality information, waste classification details and proposed waste management options is presented within Appendix E of this report. Appendix F presents a simplified master table of waste management options for use by the nominated demolition/disposal team at the site.

6.1 Timber

In accordance with Roads and Maritime preferences regarding the disposal and/or recycling of bridge timbers a clear directive is given that ownership of timbers should not be transferred to third parties. An exception to this direction is where the bridge timbers are recycled via the Roads and Maritime 'Recycling of Bridge Timbers' Panel Contract and specification. There are currently two recyclers signed up to this contract, both located outside the South West Region.

The preferred waste management option is therefore to either/or:

- Stockpile the timbers on-site for later reuse or disposal ensuring there is appropriate signage and security in place
- Dispose of the timbers to a licensed landfill.

The results of this assessment indicate that timber elements including piers, handrail, abutment sheeting, longitudinal top sheeting, transverse decking and longitudinal bridge beams (stringers) would be classified as NSW EPA *General Solid Waste or* Victorian EPA *Industrial Waste*. As such this material should be disposed of at a landfill facility licensed to accept such waste.

Based on the directives provided by the Roads and Maritime in Environmental Direction No. 10 the following management options would be suitable for waste timber at the bridge site:

Pile and Abutment Timbers:

- May be sent to landfill under the classification of NSW EPA *General Solid Waste or* Victorian EPA *Industrial Waste* pending agreement from landfill operator *OR*
- Stockpiled for future disposal.

Other Timbers (Definitely not pile or abutment)

- Stockpile/store for future Roads and Maritime use as sample results indicate OCPs and Phenols (inclusive of pentachlorophenol) are not present in excess of NSW *General Solid Waste* criteria and the material would not be classified as an SCW *OR*
- Stockpile for future disposal as sample results indicate SCWs are not present in timber that is definitely not pile or abutment *OR*
- May be sent to landfill under the classification of NSW EPA *General Solid Waste or* Victorian EPA *Industrial Waste* pending agreement from landfill operator.

6.2 Paint

The results of this assessment indicate that paint containing lead was present within three (3) of the four (4) sampled bridge elements. As such it assumed that majority of painted surfaces are lead containing. In accordance with NSW EPA and Roads and Maritime guidance demolition wastes containing bonded lead based paint can be disposed of as NSW *General Solid Waste*. In addition such materials would be pre-classified as Victorian *Industrial Waste*.

Asbestos was not identified in any of the four (4) samples that were laboratory analysed.

It is noted that appropriate waste management practices would have to be adhered to during any demolition/disposal activities associated with painted surfaces at the site to ensure the health and safety of site personnel and the public as well as protection of the environment. It is further noted that lead paint waste (i.e. previously bonded paint that is removed/stripped from bridge elements) would be pre-classified as ***Hazardous Waste*** in NSW and ***Prescribed Industrial Waste*** in Victoria.

6.3 Soil

Based on the current assessment data it is considered that the preferred waste management option for soils at the site would be on-site reuse, rather than off-site disposal, as the chemical quality of the soil is consistent with the contamination criteria applicable at the site.

If soil was to be removed from site it would have to be disposed of at a landfill that could accept NSW EPA *General Solid Waste* or Victorian EPA *Fill Material* as the current assessment data indicated soil at the site would be classified as NSW *General Solid Waste* and Victorian *Fill Material*.

It is noted that if soil from the site is to be disposed off-site then additional sampling and analysis would likely be required by a receiving landfill and it is generally expected that sampling is completed ex-situ. As such, material to be removed should generally be stockpiled first and then sampled to ensure representative samples are collected of all material to be disposed of.

7 WASTE DISPOSAL OPTIONS

Based on the waste classification directives provided by Roads and Maritime, the NSW EPA and Victorian EPA, the waste generated during bridge demolition work such as concrete, asphalt, treated timber, painted timber/steel and soil could be disposed of in NSW at a landfill site licensed by the NSW EPA to accept *General Solid Waste*. The materials could also be disposed of in Victoria at a landfill that accepts *Industrial Waste* and *Fill Material*.

Following review of EPA records it is apparent that there are no appropriately licensed landfills within Wakool Shire (the NSW local government area that the NSW portion of the subject site is located within). However, through negotiation with EPA and Wakool Shire, Roads and Maritime may be able to facilitate an agreement to allow for disposal of bridge waste at the Wakool Shire Barham landfill (Phone: [03] 5453 3200) which is located within close proximity to the subject site on Barham East Road. The closest appropriately licensed landfills are located in Deniliquin (Deniliquin Waste Disposal Depot, Hay Road, Deniliquin, Phone: [03] 5898 3155) and Moama (Moama Solid Waste Depot, Centre Road, Moama, Phone: [03] 5884 3302).

It is considered that Gannawarra Shire (the Victorian local government area in which the Victorian portion of the subject site is located) may be able to accept bridge waste at the Denyers Pit Landfill, which is located approximately 40 km from the subject site (15 km west of Kerang along the Kerang-Quambatook Road). The Victorian EPA have also indicated that demolition waste would likely be acceptable for disposal at the Swan Hill Rural Council Landfill, which is a licenced facility located approximately 90 km northwest of the site.

A master table of waste management options has been prepared for use by the nominated demolition/disposal team at the site and is presented as Appendix F.

8 PROJECT QUALITY CONTROL

An important part of this project included the implementation of a range of quality assurance/quality control (QA/QC) procedures. The QA/QC program adopted for this project was consistent with industry accepted practices for completing environmental assessment projects and included:

- Adherence to industry accepted sampling practices inclusive of field decontamination procedures
- Analysis of one (1) intra-laboratory and one (1) inter-laboratory blind-duplicate sample
- Analysis of one (1) wash-blank and one (1) trip-blank sample
- Review of the internal QA/QC program completed during the analysis program by the analytical laboratory.

Based on the results of the QA/QC program it is considered that QA/QC results are acceptable and the analysis data presented is reliable and consistent with the requirements of this assessment program. Further details regarding the QA/QC program for this project are presented below.

8.1 Field Based Quality Assurance & Quality Control

Industry accepted field sampling protocols were used during this assessment which included decontamination of sampling equipment and collection of duplicate samples at a rate of approximately one (1) duplicate sample per ten (10) primary samples.

Field Sampling

Samples were collected with a decontaminated stainless steel tool (hand-trowel) and then directly transferred to laboratory-supplied containers. Decontamination of sampling equipment was completed prior to the collection of each sample and included the removal of extraneous

materials from sampling tools, scrubbing of sampling tools in a cleaning solution, rinsing with potable water and final rinsing with deionised water.

All sample containers were stored in ice-chilled coolers prior to transfer to the analytical laboratory within the approved sample hold time. Each sample was labelled with a unique identification code and two (2) duplicate soil samples were "blind-coded" for subsequent duplicate pair analysis to enable intra-laboratory and inter-laboratory (secondary laboratory) comparison of results.

To validate the blind-duplicate data from the intra-laboratory and inter-laboratory analysis programs the relative percentage differences (RPDs) from the mean values were calculated. Specifically, the difference between the samples results divided by the average of the results was calculated and expressed as a percentage. A value of half the detection limit was used within the RPD calculation where one of the samples within a given duplicate pair exhibited a concentration below the laboratory detection limit. The results of QC samples are presented within Table 9 at the end of this report text and the associated NATA Certificates of Analysis are included as Appendix D. The results of duplicate analysis were generally less than the acceptable value of 50 per cent of the mean which indicates a good level of repeatability within sample analysis and that sample collection procedures were consistent on the project. It is noted that in some instances the RPD was greater than 50 per cent; it is considered that this is likely to be related to some sample heterogeneity and that analytical results were close to the laboratory detection limits.

Trip-Blank and Wash-Blank Samples

A laboratory supplied "trip-blank" sample was transported with samples to assess for potential introduction of contaminants during the sampling process and subsequent transportation to the analytical laboratory. A "wash-blank" sample was also collected following sampling to assess the effectiveness of the field decontamination procedures. The wash-blank sample was collected by rinsing deionised water over sampling tools once the standard decontamination procedures were complete. The rinsate water was then collected in laboratory supplied sample containers for subsequent analysis.

The trip-blank analysis results indicated that the sampling procedures and subsequent transportation of samples to the analytical laboratory did not have an adverse impact on sample integrity.

Analysis of the wash blank sample indicated that decontamination procedures were appropriate i.e. sample materials were being effectively removed and contaminants were not being introduced during the decontamination procedures.

Chain of Custody Documentation

Chain of custody documentation was prepared to accompany the samples and was signed off prior to their shipment. Upon receipt at the laboratory all samples were checked and logged; details regarding sample integrity were recorded by the lab and forwarded to Vantage. A copy of chain of custody documentation and the associated laboratory sample receipt advice is included within Appendix C of this report.

8.2 Laboratory Based Quality Assurance & Quality Control

In accordance with industry accepted standards an internal QA program was completed by the project analytical laboratories. The program included the analysis of internal duplicates, spike

recovery analysis and laboratory method blanks. The results of the laboratories' internal QA program are reported within the NATA Certificates of Analysis in Appendix C and can be summarised as follows:

- The RPDs between primary samples and laboratory duplicates were within 50 per cent of the mean which is considered acceptable (Standards Australia, 1997)
- Laboratory spiked sample recoveries were within the acceptable control limit of 70-130 per cent
- The results of laboratory blank analysis results were less than the nominated detection limits indicating that contamination of samples had not occurred as a result of laboratory handling procedures.

In summary, the laboratories did not report any internal QA/QC anomalies and it is considered that the reported analytical results are consistent with acceptable data quality objectives for this project.

9 CONCLUSION

On behalf of the NGH environmental and Roads and Maritime Services, Vantage Environmental Management Pty Ltd has completed a limited environmental site assessment and waste classification at the site of the Victorian approach of Barham-Koondrook Bridge located over the Murray River between the towns of Barham in New South Wales and Koondrook in Victoria.

As part of the assessment a total of six (6) discrete timber samples, four (4) discrete paint samples and six (6) discrete soil samples were collected and analysed for a range of chemical parameters typically associated with settings where bridge structures incorporating treated timbers, lead paint and asbestos containing materials have been present for an extended period of time.

The results of the assessment indicated that:

- Timber elements including piers, handrail, abutment sheeting, longitudinal top sheeting, transverse decking and longitudinal bridge beams (stringers) would be classified as NSW EPA *General Solid Waste* and Victorian EPA *Industrial Waste*
- Paint samples that contained lead were present at three (3) of the four (4) sampling locations. Asbestos was not identified in any of the four (4) paint samples that were submitted for laboratory analysis. Painted bridge elements would be classified as NSW EPA *General Solid Waste* and Victorian EPA *Industrial Waste*
- Soil contaminants in excess of the applicable land use criteria (NEPM Investigation Levels for commercial and industrial sites) were not identified at the site during the soil sampling and analysis program. Based on the results of analysis soils could be reused on site. Soils requiring off-site disposal would be classified as NSW EPA *General Solid Waste* and Victorian EPA *Fill Material*
- Based on the waste classification directives provided by Roads and Maritime, NSW EPA and Victorian EPA, the waste generated during bridge demolition work such as treated timber, painted timber and soil could be disposed of at landfill sites in New South Wales

that can accept NSW EPA *General Solid Waste* and/or landfill sites in Victoria that can accept Victorian EPA *Industrial Waste* and *Fill Material*

- The closest appropriately licensed NSW landfills are located in Deniliquin and Moama as there are no licensed landfills within the Wakool Shire (the local government area that the NSW portion of the Barham Bridge is located within). It is possible that through negotiation with NSW EPA and Wakool Shire, Roads and Maritime may be able to facilitate an agreement to allow for disposal of bridge waste at one of Wakool Shire's landfills, the closest of which is located at Barham. It is considered that Gannawarra Shire (the Victorian local government area in which the Victorian portion of the bridge is located) may also be able to accept waste from the site at Denyers Pit Landfill (approximately 40 km from the subject site) or the Swan Hill Rural Council Landfill (approximately 90 km from the subject site)
- All future waste management activities associated with proposed site demolition and redevelopment should be undertaken in accordance with relevant NSW EPA, Victorian EPA and Roads and Maritime directives, criteria and regulation.

10 LIMITATIONS

This assessment was limited in scope to classifying soil, timber and paint at the subject site for primarily waste management purposes. While the assessment and sampling methodologies used were in accordance with normal practices and standards, under no circumstances do these findings represent the actual state of the site at all points. The assessment was not scoped to meet all NSW EPA, Victorian EPA and National guidelines regarding the assessment of potentially contaminated sites and does not represent a *Statutory Environmental Audit* of the site.

11 REFERENCES

- NSW EPA (1994) *"Guidelines for Assessing Service Station Sites."* Publication 94/119
- National Environment Protection Council (NEPC) 1999 Revised 2013 *"National Environment Protection (Assessment of Site Contamination) Measure [NEPM]"*
- NSW EPA *Waste Classification Guidelines Part 1: Classifying Wastes (2014)*
- NSW DECCW (EPA) Environmentally Hazardous Chemicals Act 1985 – *"Chemical Control Order in Relation to Scheduled Chemical Wastes – 11 June 2004"*
- Standards Australia (1999). *"AS4482.2: Guide to the Sampling and Investigation of Potentially Contaminated Soil; Part 2: Volatile Substances"*
- Standards Australia (2005). *"AS4482.1: Guide to Investigation and Sampling of Sites with Potentially Contaminated Soil; Part 1: Non-Volatile and Semi-Volatile Compounds"*
- Vic EPA (June 2009). *Industrial Waste Resource Guidelines (IWRG) Soil Hazard Categorisation and Management Publication (IWRG621)*
- Vic EPA (June 2009). *Industrial Waste Resource Guidelines (IWRG) Solid Industrial Waste Hazard Categorisation and Management Publication (IWRG631)*

Vic EPA (September 2010). *Industrial Waste Resource Guidelines (IWRG) Waste Categorisation (IWRG600.1).*

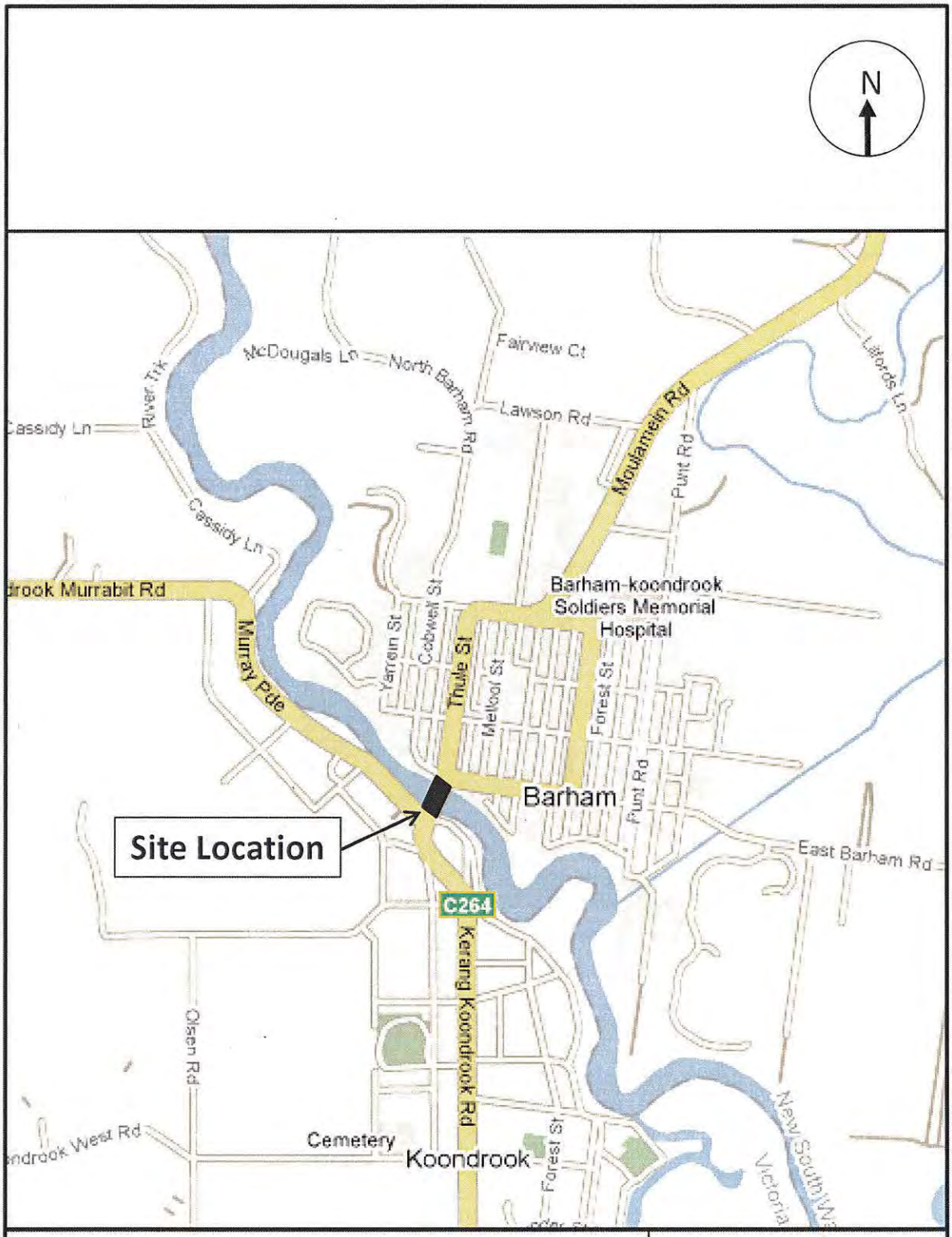

Figure 1: SITE LOCATION PLAN
Barham-Koondrook Bridge
Source: www.google.com.au

VANTAGE
ENVIRONMENTAL MANAGEMENT

Project:	**Limited Environmental Assessment & Waste Classification**	**Project ID:**	AL14-218-1C
Client:	**NGH Environmental**	**Date:**	12 January 2015
Drawn by:	SP Checked by: TH	**Scale:**	Not to scale

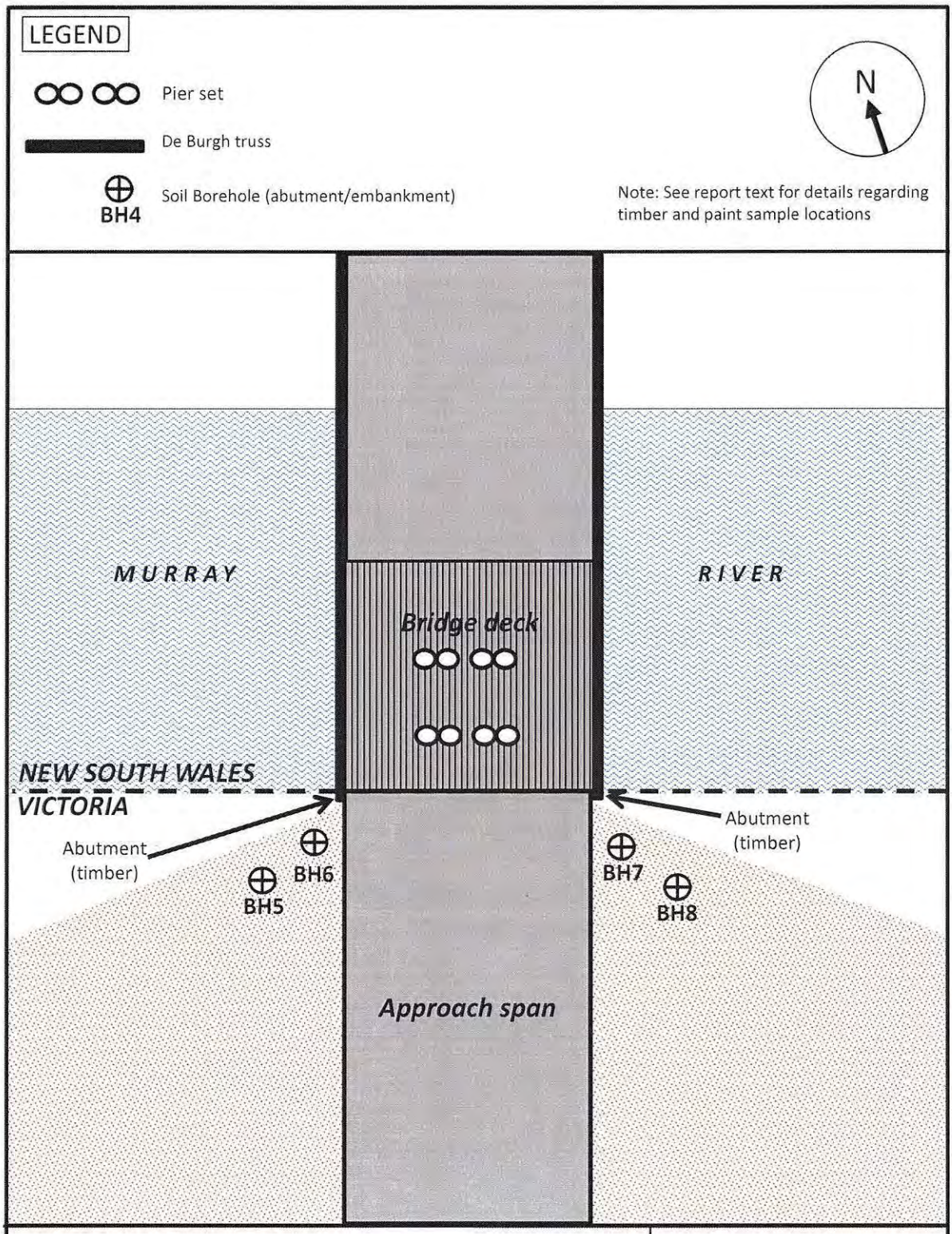

Figure 2: SAMPLE LOCATION PLAN
Barham-Koondrook Bridge (Victorian Approach)

VANTAGE
ENVIRONMENTAL MANAGEMENT

Project: Limited Environmental Assessment & Waste Classification	**Project ID:** AL14-218-1C
Client: NGH Environmental	**Date:** 12 January 2015
Drawn by: SP Checked by: TH	**Scale:** Not to scale

SITE: **Barham-Koondrook Bridge (Victorian Approach), Koondrook VIC**
PROJECT: Contamination Assessment
PROJECT ID: AL14-218

CLIENT: NGH Environmental

VANTAGE ENVIRONMENTAL MANAGEMENT

TABLE 1: Analytical Results - SOIL AND TIMBER - Organochlorine Pesticides

		Organochlorine Pesticides																	Scheduled Chemicals*
		DDT	DDT* + DDD* + DDE*	a BHC*	Aldrin* + Dieldren*	b BHC*	Chlordane*	d BHC*	Endosulfan (total)	Endrin*	Endrin aldehyde*	Endrin ketone	g BHC (Lindane)*	Heptachlor*	Heptachlor epoxide*	Hexachlorobenzene*	Methoxychlor	Toxophene	
	Units	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg
NEPM Guidelines	Soil Health Investigation (Commercial and Industrial)	-	3,600	-	45	-	530	-	2,000	100	-	-	-	50	-	80	2,500	160	-
	Ecological Investigation Level (Commercial and Industrial)	640	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
NSW Waste Guidelines	"General solid waste" classification	*See Scheduled Chemicals column**							60	*See Scheduled Chemicals column**									<50
	"Restricted solid waste" classification	*See Scheduled Chemicals column**							240	*See Scheduled Chemicals column**									<50
Sample ID	**Date Sampled**																		
BOREHOLE (BH) SOIL SAMPLES																			
BH5-0.1	12-Dec-14	<0.05	<0.15	< 0.05	<0.10	< 0.05	< 0.1	< 0.05	<0.15	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 1	<2.05
BH6-0.1	12-Dec-14	<0.05	<0.15	< 0.05	<0.10	< 0.05	< 0.1	< 0.05	<0.15	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 1	<2.05
BH7-0.1	12-Dec-14	<0.05	<0.15	< 0.05	<0.10	< 0.05	< 0.1	< 0.05	<0.15	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 1	<2.05
BH7-0.5	12-Dec-14	<0.05	<0.15	< 0.05	<0.10	< 0.05	< 0.1	< 0.05	<0.15	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 1	<2.05
BH7-1.0	12-Dec-14	<0.05	<0.15	< 0.05	<0.10	< 0.05	< 0.1	< 0.05	<0.15	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 1	<2.05
BH8-0.1	12-Dec-14	<0.05	<0.15	< 0.05	<0.10	< 0.05	< 0.1	< 0.05	<0.15	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 1	<2.05
TIMBER SAMPLES (TS)																			
TS-7	12-Dec-14	<0.05	<0.15	< 0.05	<0.10	< 0.05	< 0.1	< 0.05	<0.15	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 1	<2.05
TS-8	12-Dec-14	<0.05	<0.15	< 0.05	<0.10	< 0.05	< 0.1	< 0.05	<0.15	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 1	<2.05
TS-9	12-Dec-14	<0.05	<0.15	< 0.05	<0.10	< 0.05	< 0.1	< 0.05	<0.15	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 1	<2.05
TS-10	12-Dec-14	<0.05	<0.15	< 0.05	<0.10	< 0.05	< 0.1	< 0.05	<0.15	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 1	<2.05
TS-11	12-Dec-14	<0.05	<0.15	< 0.05	<0.10	< 0.05	< 0.1	< 0.05	<0.15	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 1	<2.05
TS-12	12-Dec-14	<0.05	<0.15	< 0.05	<0.10	< 0.05	< 0.1	< 0.05	<0.15	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 1	<2.05

****Scheduled Chemicals** include the following organochlorine pesticides: Adrin, a-BHC, b-BHC, g-BHC (Lindane), d-BHC, Chlordane, DDD, DDE, DDT, Dieldrin, Endrin, Endrin aldehyde, Heptachlor, Heptachlor epoxide and Hexachlorobenzene.

INVERSE	Exceeds NSW EPA "General solid waste" criteria
INVERSE	Exceeds NSW EPA "Restricted solid waste" criteria
-	no criteria specified
n.a.	not analysed
b.d.	below laboratory detection limits

SITE: **Barham-Koondrook Bridge (Victorian Approach), Koondrook VIC**
PROJECT: Contamination Assessment
PROJECT ID: AL14-218

CLIENT: NGH Environmental

VANTAGE ENVIRONMENTAL MANAGEMENT

TABLE 2: Analytical Results - SOIL, TIMBER AND PAINT - Metals, Cyanide, Fluoride and Asbestos (Page 1 of 2)

		Arsenic	Cadmium	Chromium	Copper	Lead	Mercury	Nickel	Zinc
	Units	*mg/kg*	*mg/kg*	*mg/kg*	*mg/kg*	*mg/kg*	*mg/kg*	*mg/kg*	*mg/kg*
NEPM Guidelines	Soil Health Investigation (Commercial and Industrial)	*3,000*	*900*	-	*240,000*	*1,500*	*730*	*6,000*	*400,000*
	Soil Ecological Investigation Level (Commercial and Industrial)	*160*	-	*860**	*160**	*1,800*	-	*310**	*390**
NSW Waste Guidelines	"General solid waste" classification	*100*	*20*	-	-	*100*	*4*	*40*	-
	"Restricted solid waste" classification	*400*	*80*	-	-	*400*	*16*	*160*	-
Sample Type	Date Sampled								
BOREHOLE (BH) SOIL SAMPLES									
BH5-0.1	12-Dec-14	2.7	< 0.4	13	10	11	< 0.1	10	28
BH6-0.1	12-Dec-14	2.2	< 0.4	13	9.6	9.5	< 0.1	9.5	26
BH7-0.1	12-Dec-14	2.4	< 0.4	12	15	31	< 0.1	10	55
BH7-0.5	12-Dec-14	8.1	< 0.4	16	12	17	< 0.1	18	25
BH7-1.0	12-Dec-14	4.6	< 0.4	n.a.	12	9.7	< 0.1	12	25
BH8-0.1	12-Dec-14	2	< 0.4	n.a.	11	16	< 0.1	10	39
TIMBER SAMPLES (TS)									
TS-7	12-Dec-14	3.8	< 0.4	7.7	19	28	< 0.2	13	26
TS-8	12-Dec-14	< 2	< 0.4	n.a.	920	25	< 0.2	< 5	730
TS-9	12-Dec-14	< 2	< 0.4	6.1	19	9.9	< 0.2	< 5	90
TS-10	12-Dec-14	< 2	< 0.4	< 5	74	9.1	< 0.2	< 5	38
TS-11	12-Dec-14	390	< 0.4	n.a.	180	15	< 0.1	< 5	180
TS-12	12-Dec-14	21	< 0.4	n.a.	63	5	< 0.1	< 5	29

*Site specific Soil Ecological Investigation Levels have been calculated

INVERSE	Exceeds criteria
-	no criteria specified
n.a.	not analysed

SITE: **Barham-Koondrook Bridge (Victorian Approach), Koondrook VIC**
PROJECT: Contamination Assessment
PROJECT ID: AL14-218

CLIENT: NGH Environmental

VANTAGE ENVIRONMENTAL MANAGEMENT

TABLE 2: Analytical Results - SOIL, TIMBER AND PAINT - Metals, Cyanide, Fluoride and Asbestos (Page 2 of 2)

		Molybdenum	Selenium	Silver	Tin	Chromium (hexavalent)	Cyanide	Fluoride	Lead in Paint	Asbestos
	Units	*mg/kg*	*mg/kg*	*mg/kg*	*mg/kg*	*mg/kg*	*mg/kg*	*mg/kg*	*%w/w*	*mg/kg*
NEPM Guidelines	Soil Health Investigation (Commercial and Industrial)	-	-	-	-	*3,600*	*1,500*	-	-	-
	Soil Ecological Investigation Level (Commercial and Industrial)	-	-	-	-	-	-	-	-	-
NSW Waste Guidelines	"General solid waste" classification	*100*	*20*	*100*	-	*100*	*320*	*3,000*	-	-
	"Restricted solid waste" classification	*400*	*80*	*400*	-	*400*	*1,280*	*12,000*	-	-
Sample ID	Date Sampled									
BOREHOLE (BH) SOIL SAMPLES										
BH5-0.1	12-Dec-14	< 10	< 2	< 5	< 10	< 1	< 5	230	n.a.	n.a.
BH6-0.1	12-Dec-14	n.a.	n.a.	n.a.	n.a.	< 1	n.a.	n.a.	n.a.	n.a.
BH7-0.1	12-Dec-14	n.a.	n.a.	n.a.	n.a.	< 1	n.a.	n.a.	n.a.	n.a.
BH7-0.5	12-Dec-14	< 10	< 2	< 5	< 10	< 1	< 5	240	n.a.	n.a.
BH7-1.0	12-Dec-14	n.a.	< 2	n.a.	n.a.	< 1	n.a.	n.a.	n.a.	n.a.
BH8-0.1	12-Dec-14	n.a.	< 2	n.a.	n.a.	< 1	n.a.	n.a.	n.a.	n.a.
TIMBER SAMPLES (TS)										
TS-7	12-Dec-14	n.a.	n.a.	n.a.	n.a.	< 1	n.a.	n.a.	n.a.	n.a.
TS-8	12-Dec-14	n.a.	< 2	n.a.	n.a.	< 1	n.a.	n.a.	n.a.	n.a.
TS-9	12-Dec-14	n.a.	n.a.	n.a.	n.a.	< 1	n.a.	n.a.	n.a.	n.a.
TS-10	12-Dec-14	n.a.	n.a.	n.a.	n.a.	< 1	n.a.	n.a.	n.a.	n.a.
TS-11	12-Dec-14	n.a.	< 2	n.a.	n.a.	< 1	n.a.	n.a.	n.a.	n.a.
TS-12	12-Dec-14	n.a.	< 2	n.a.	n.a.	< 1	n.a.	n.a.	n.a.	n.a.
PAINT SAMPLES (PS)										
PS-5	15-Dec-14	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	NOT DETECTED	NOT DETECTED
PS-6	15-Dec-14	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	**DETECTED**	NOT DETECTED
PS-7	15-Dec-14	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	**DETECTED**	NOT DETECTED
PS-8	15-Dec-14	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	**DETECTED**	NOT DETECTED

INVERSE	Exceeds criteria
DETECTED	Lead in paint detected
-	no criteria specified
n.a.	not analysed

SITE: **Barham-Koondrook Bridge (Victorian Approach), Koondrook VIC**
PROJECT: Contamination Assessment
PROJECT ID: AL14-218

CLIENT: NGH Environmental

VANTAGE ENVIRONMENTAL MANAGEMENT

TABLE 3: Analytical Results - SOIL AND TIMBER - Total Petroleum Hydrocarbons (TPH), Monocyclic Aromatic Hydrocarbons (BTEX) and Polycyclic Aromatic Hydrocarbons (PAH), Page 1 of 2

		TPH					BTEX				PAH	
		C_6 C_9	C_{10} C_{14}	C_{15} C_{28}	C_{29} C_{36}	C_{10} C_{36}	Benzene	Toluene	Ethyl benzene	Xylenes	Benzo(a) Pyrene	Total PAH
	Units	*mg/kg*	*mg/kg*	*mg/kg*	*mg/kg*	*mg/kg*	*mg/kg*	*mg/kg*	*mg/kg*	*mg/kg*	*mg/kg*	*mg/kg*
NSW Waste Guidelines	"General solid waste" classification	*650*	-	-	-	*10000*	*10*	*288*	*600*	*1000*	*0.8*	*200*
	"Restricted solid waste" classification	*2600*	-	-	-	*40000*	*40*	*1152*	*2400*	*4000*	*3.2*	*800*
Sample ID	Date sampled											
BOREHOLE (BH) SOIL SAMPLES												
BH5-0.1	12-Dec-14	< 20	< 20	< 50	63	63	< 0.1	< 0.1	< 0.1	< 0.3	< 0.5	< 0.5
BH6-0.1	12-Dec-14	< 20	< 20	< 50	90	90	< 0.1	< 0.1	< 0.1	< 0.3	< 0.5	< 0.5
BH7-0.1	12-Dec-14	< 20	< 20	< 50	60	60	< 0.1	< 0.1	< 0.1	< 0.3	< 0.5	< 0.5
BH7-0.5	12-Dec-14	24	< 20	< 50	< 50	< 50	< 0.1	< 0.1	< 0.1	< 0.3	< 0.5	< 0.5
TIMBER SAMPLES (TS)												
TS-7	12-Dec-14	< 200	< 20	69	97	170	< 1	< 1	< 1	< 3	< 0.5	< 0.5
TS-9	12-Dec-14	< 100	< 20	310	1400	1700	< 0.5	< 0.5	< 0.5	< 1.5	< 0.5	< 0.5
TS-10	12-Dec-14	< 100	< 20	< 50	67	67	< 0.5	< 0.5	< 0.5	< 1.5	< 0.5	< 0.5
TS-11	12-Dec-14	< 100	260	260	2200	2700	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.

INVERSE	Exceeds criteria
-	no criteria specified
n.a.	not analysed

SITE: **Barham-Koondrook Bridge (Victorian Approach), Koondrook VIC**
PROJECT: Contamination Assessment
PROJECT ID: AL14-218

CLIENT: NGH Environmental

VANTAGE ENVIRONMENTAL MANAGEMENT

TABLE 3: Analytical Results - SOIL AND TIMBER - Total Petroleum Hydrocarbons (TPH), Monocyclic Aromatic Hydrocarbons (BTEX) and Polycyclic Aromatic Hydrocarbons (PAH), Page 2 of 2

		TPH				MAH				PAH			
		F1 C_6 C_{10} (BTEX)	F2 > C_6 C_{10} (Napthalene)	F3 > C_{16} C_{34}	F4 > C_{34} C_{40}	Benzene	Toluene	Ethylbenzene	Total Xylenes	Napthalene	Benzo(a) pyrene	Carcinogenic PAHs (as BaP TEQ upperbound)	Total PAHs
	Units	*mg/kg*	*mg/kg*	*mg/kg*	*mg/kg*	*mg/kg*	*mg/kg*	*mg/kg*	*mg/kg*	*mg/kg*	*mg/kg*	*mg/kg*	*mg/kg*
NEPM Guidelines	*Soil Health Screening Level Commercial and Industrial)**	*2640*	*NL*	-	-	*3*	*NL*	*NL*	*230*	*NL*	-	-	-
	Soil Health Investigation Level (Commercial and Industrial)	-	-	-	-	-	-	-	-	-	-	*40*	*4000*
	Ecological Screening Levels for Commercial and Industrial (Coarse/Fine levels listed)	*215*	*170*	*1,700/2,500*	*3,300/6,600*	*75/95*	*135*	*165/185*	*180/95*	-	*1.4*	-	-
	Management Limits for Commercial and Industrial (Coarse/Fine levels listed)	*700/800*	*1,000*	*3,500/5,000*	*10,000*	-	-	-	-	-	-	-	-
	Ecological Investigation Level (Commercial and Industrial)	-	-	-	-	-	-	-	-	*370*	-	-	-
Sample ID	Date sampled												
BOREHOLE (BH) SOIL SAMPLES													
BH5-0.1	12-Dec-14	< 20	< 50	< 100	< 100	< 0.1	< 0.1	< 0.1	< 0.3	< 0.5	< 0.5	1.2	< 0.5
BH6-0.1	12-Dec-14	< 20	< 50	< 100	< 100	< 0.1	< 0.1	< 0.1	< 0.3	< 0.5	< 0.5	1.2	< 0.5
BH7-0.1	12-Dec-14	< 20	< 50	< 100	< 100	< 0.1	< 0.1	< 0.1	< 0.3	< 0.5	< 0.5	1.2	< 0.5
BH7-0.5	12-Dec-14	26	< 50	< 100	< 100	< 0.1	< 0.1	< 0.1	< 0.3	< 0.5	< 0.5	1.2	< 0.5
TIMBER SAMPLES (TS)													
TS-7	12-Dec-14	< 200	< 50	140	< 100	< 1	< 1	< 1	< 3	< 0.5	< 0.5	1.2	< 0.5
TS-9	12-Dec-14	< 100	< 50	1,300	480	< 0.5	< 0.5	< 0.5	< 1.5	< 0.5	< 0.5	1.2	< 0.5
TS-10	12-Dec-14	< 100	< 50	< 100	< 100	< 0.5	< 0.5	< 0.5	< 1.5	< 0.5	< 0.5	1.2	< 0.5
TS-11	12-Dec-14	< 100	230	1,600	990	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.

*Soil Health Screening Levels for sand soil type and depths of between 0m to <1m)

INVERSE	Exceeds criteria
NL	Soil Health Screening Level (HSL) for vapour intrusion is not limiting
-	no criteria available
b.d.	below laboratory detection limit
n.a.	not analysed

SITE: **Barham-Koondrook Bridge (Victorian Approach), Koondrook VIC**
PROJECT: Contamination Assessment
PROJECT ID: AL14-218

CLIENT: NGH Environmental

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TABLE 4: Analytical Results - SOIL AND TIMBER - Acid Herbicides, Organophosphorous Pesticides (OPP), Phenols and Creosols, Chlorinated Hydrocarbons and Polychlorinated Biphenyls (PCBs)

		Acid Herbicides					Organophosphorous Pesticides		Phenols and Creosols				Chlorinated Hydrocarbons		PCBs
		2,4,5 T	2,4 D	MCPA	MCPB	Mecoprop	Chlorpyrifos	Total OPPs	2,4,6 Tricholoro phenol	Pentachloro phenol	Creosol (total)	Phenol	1,2 dicholoro benzene	1,4 dicholoro benzene	Total PCBs
	Units	*mg/kg*	*mg/kg*				*mg/kg*	*mg/kg*	*mg/kg*		*mg/kg*	*mg/kg*	*mg/kg*	*mg/kg*	*mg/kg*
NEPM Guidelines	Soil Health Investigation (Commercial and Industrial)	*5000*	*9000*	*5000*	*5000*	*5000*	*2,000*	-	-	*660*	*25,000*	*240,000*	-	-	*7*
NSW Waste Guidelines	"General solid waste" classification	-	*200*	-	-	-	-	-	*40*	-	*4,000*	*288*	*86*	*150*	*<50*
	"Restricted solid waste" classification	-	*800*	-	-	-	-	-	*160*	-	*16,000*	*1,152*	*344*	*600*	*<50*
Sample ID	Date sampled														
BOREHOLE (BH) SOIL SAMPLES															
BH5-0.1	12-Dec-14	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	b.d.	b.d.	< 1	< 1	< 0.6	< 0.5	< 0.05	< 0.05	< 0.1
BH6-0.1	12-Dec-14	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	< 1	< 1	< 0.6	< 0.5	n.a.	n.a.	n.a.
BH7-0.1	12-Dec-14	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	< 1	< 1	< 0.6	< 0.5	n.a.	n.a.	n.a.
BH7-0.5	12-Dec-14	<0.5	< 0.5	<0.5	<0.5	<0.5	b.d.	b.d.	< 1	< 1	< 0.6	< 0.5	< 0.05	< 0.05	< 0.1
BH7-1.0	12-Dec-14	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	< 1	< 1	< 0.6	< 0.5	n.a.	n.a.	n.a.
BH8-0.1	12-Dec-14	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	< 1	< 1	< 0.6	< 0.5	n.a.	n.a.	n.a.
TIMBER SAMPLES (TS)															
TS-7	12-Dec-14	<1	< 0.5	<0.5	<1	<1	b.d.	b.d.	< 1	< 1	< 0.6	< 0.5	n.a.	n.a.	n.a.
TS-8	12-Dec-14	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	< 1	< 1	< 0.6	< 0.5	n.a.	n.a.	n.a.
TS-9	12-Dec-14	<30	< 1	<1	<5	<1	b.d.	b.d.	< 1	< 1	< 0.6	< 0.5	n.a.	n.a.	n.a.
TS-10	12-Dec-14	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	< 1	< 1	< 0.6	< 0.5	n.a.	n.a.	n.a.
TS-12	12-Dec-14	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	< 1	< 1	< 0.6	<0.5	n.a.	n.a.	n.a.

INVERSE	Exceeds criteria
-	no criteria specified
n.a.	not analysed
b.d.	below laboratory detection limits

SITE: Barham-Koondrook Bridge (Victorian Approach), Koondrook VIC
PROJECT: Contamination Assessment
PROJECT ID: AL14-218

CLIENT: NGH Environmental

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TABLE 5: Analytical Results - SOIL AND TIMBER - Organochlorine Pesticides

		Organochlorine Pesticides									
		4,4'-DDD + 4,4'-DDE + 4,4'-DDT		Aldrin + Dieldrin		Chlordane		Heptachlor		Other Organo-chlorine Pesticides*	Total Organo-chlorine Pesticides
		ASLP	Total	ASLP	Total	ASLP	Total	ASLP	Total	ASLP	Total
	Units	mg/L	mg/kg	mg/L	mg/kg	mg/L	mg/kg	mg/L	mg/kg	mg/kg	mg/kg
Victorian Soil Waste Guidelines	Fill material thresholds	-	-	-	-	-	-	-	-	-	1
	Category C contaminated soil thresholds	2	50	0.03	1.2	0.1	4	0.03	1.2	10	-
	Category B contaminated soil thresholds	-	50	0.12	4.8	0.4	16	0.12	4.8	50	-
Sample ID	Date Sampled										
BOREHOLE (BH) SOIL SAMPLES											
BH5-0.1	12-Dec-14	n.a.	<0.15	n.a.	<0.10	n.a.	< 0.1	n.a.	< 0.05	b.d.	b.d.
BH6-0.1	12-Dec-14	n.a.	<0.15	n.a.	<0.10	n.a.	< 0.1	n.a.	< 0.05	b.d.	b.d.
BH7-0.1	12-Dec-14	n.a.	<0.15	n.a.	<0.10	n.a.	< 0.1	n.a.	< 0.05	b.d.	b.d.
BH7-0.5	12-Dec-14	n.a.	<0.15	n.a.	<0.10	n.a.	< 0.1	n.a.	< 0.05	b.d.	b.d.
BH7-1.0	12-Dec-14	n.a.	<0.15	n.a.	<0.10	n.a.	< 0.1	n.a.	< 0.05	b.d.	b.d.
BH8-0.1	12-Dec-14	n.a.	<0.15	n.a.	<0.10	n.a.	< 0.1	n.a.	< 0.05	b.d.	b.d.

		Organochlorine Pesticides									
		4,4'-DDD + 4,4'-DDE + 4,4'-DDT		Aldrin + Dieldrin		Chlordane		Heptachlor		Other Organo-chlorine Pesticides*	Total Organo-chlorine Pesticides
		ASLP	Total	ASLP	Total	ASLP	Total	ASLP	Total	ASLP	Total
	Units	mg/L	mg/kg	mg/L	mg/kg	mg/L	mg/kg	mg/L	mg/kg	mg/kg	mg/kg
Victorian Solid Industrial Waste Guidelines	Industrial waste thresholds	1	50	0.015	1.2	0.05	4	0.015	1.2	-	-
	Category C prescribed industrial waste	2	50	0.03	1.2	0.1	4	0.03	1.2	-	-
	Category B prescribed industrial waste	-	50	0.12	4.8	0.4	16	0.12	4.8	-	-
Sample ID	Date Sampled										
TIMBER SAMPLES (TS)											
TS-7	12-Dec-14	n.a.	<0.15	n.a.	<0.10	n.a.	< 0.1	n.a.	< 0.05	b.d.	b.d.
TS-8	12-Dec-14	n.a.	<0.15	n.a.	<0.10	n.a.	< 0.1	n.a.	< 0.05	b.d.	b.d.
TS-9	12-Dec-14	n.a.	<0.15	n.a.	<0.10	n.a.	< 0.1	n.a.	< 0.05	b.d.	b.d.
TS-10	12-Dec-14	n.a.	<0.15	n.a.	<0.10	n.a.	< 0.1	n.a.	< 0.05	b.d.	b.d.
TS-11	12-Dec-14	n.a.	<0.15	n.a.	<0.10	n.a.	< 0.1	n.a.	< 0.05	b.d.	b.d.
TS-12	12-Dec-14	n.a.	<0.15	n.a.	<0.10	n.a.	< 0.1	n.a.	< 0.05	b.d.	b.d.

INVERSE	Exceeds criteria
n.a.	Not analysed
b.d.	Below laboratory detection limits
-	No contaminant concentration criteria available

SITE: Barham-Koondrook Bridge (Victorian Approach), Koondrook VIC
PROJECT: Contamination Assessment
PROJECT ID: AL14-218

CLIENT: NGH Environmental

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TABLE 6: Analytical Results - SOIL AND TIMBER - Heavy Metals (Page 1 of 2)

		Arsenic		Cadmium		Chromium		Copper		Lead		Mercury		Nickel		Zinc	
		ASLP	Total	ASLP	Total	ASLP	Total	ASLP	Total	ASLP	Total	ASLP	Total	ASLP	Total	ASLP	Total
	Units	mg/L	mg/kg	mg/L	mg/kg	mg/L	mg/kg	mg/L	mg/kg	mg/L	mg/kg	mg/L	mg/kg	mg/L	mg/kg	mg/L	mg/kg
Victorian Soil Waste Guidelines	Fill material thresholds	-	20	-	3	-	-	-	100	-	300	-	1	-	60	-	200
	Category C contaminated soil thresholds	1	500	0	100	-	-	200	5,000	1	1,500	0	75	2	3,000	300	35,000
	Category B contaminated soil thresholds	3	2,000	1	400	-	-	800	20,000	4	6,000	0	300	8	12,000	1,200	140,000
Sample ID	Date Sampled																
BOREHOLE (BH) SOIL SAMPLES																	
BH5-0.1	12-Dec-14	n.a.	2.7	n.a.	< 0.4	n.a.	13	n.a.	10.0	n.a.	11	n.a.	< 0.1	n.a.	10	n.a.	28
BH6-0.1	12-Dec-14	n.a.	2.2	n.a.	< 0.4	n.a.	13	n.a.	9.6	n.a.	9.5	n.a.	< 0.1	n.a.	9.5	n.a.	26
BH7-0.1	12-Dec-14	n.a.	2.4	n.a.	< 0.4	n.a.	12	n.a.	15	n.a.	31	n.a.	< 0.1	n.a.	10	n.a.	55
BH7-0.5	12-Dec-14	n.a.	8.1	n.a.	< 0.4	n.a.	16	n.a.	12	n.a.	17	n.a.	< 0.1	n.a.	18	n.a.	25
BH7-1.0	12-Dec-14	n.a.	4.6	n.a.	< 0.4	n.a.	n.a.	n.a.	12	n.a.	9.7	n.a.	< 0.1	n.a.	12	n.a.	25
BH8-0.1	12-Dec-14	n.a.	2	n.a.	< 0.4	n.a.	n.a.	n.a.	11	n.a.	16	n.a.	< 0.1	n.a.	10	n.a.	39

		Hexavalent Chromium		Molybdenum		Selenium		Silver		Tin	
		ASLP	Total	ASLP	Total	ASLP	Total	ASLP	Total	ASLP	Total
	Units	mg/L	mg/kg	mg/L	mg/kg	mg/L	mg/kg	mg/L	mg/kg	mg/L	mg/kg
Victorian Soil Waste Guidelines	Fill material thresholds	-	1	-	40	-	10	-	10	-	50
	Category C contaminated soil thresholds	5	500	5	1,000	1	50	10	180	-	500
	Category B contaminated soil thresholds	20	2,000	20	4,000	4	200	40	720	-	-
Sample ID	Date Sampled										
BOREHOLE (BH) SOIL SAMPLES											
BH5-0.1	12-Dec-14	n.a.	< 1	n.a.	< 10	n.a.	< 2	n.a.	< 5	n.a.	< 10
BH6-0.1	12-Dec-14	n.a.	< 1	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.
BH7-0.1	12-Dec-14	n.a.	< 1	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.
BH7-0.5	12-Dec-14	n.a.	< 1	n.a.	< 10	n.a.	< 2	n.a.	< 5	n.a.	< 10
BH7-1.0	12-Dec-14	n.a.	< 1	n.a.	n.a.	n.a.	< 2	n.a.	n.a.	n.a.	n.a.
BH8-0.1	12-Dec-14	n.a.	< 1	n.a.	n.a.	n.a.	< 2	n.a.	n.a.	n.a.	n.a.

INVERSE	Exceeds criteria
n.a.	Not analysed
b.d.	Below laboratory detection limits
-	No contaminant concentration criteria available

SITE: Barham-Koondrook Bridge (Victorian Approach), Koondrook VIC
PROJECT: Contamination Assessment
PROJECT ID: AL14-218

CLIENT: NGH Environmental

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TABLE 6: Analytical Results - SOIL AND TIMBER - Heavy Metals (Page 1 of 2)

		Arsenic		Cadmium		Chromium		Copper		Lead		Mercury		Nickel		Zinc	
		ASLP	Total	ASLP	Total	ASLP	Total	ASLP	Total	ASLP	Total	ASLP	Total	ASLP	Total	ASLP	Total
	Units	mg/L	mg/kg	mg/L	mg/kg	mg/L	mg/kg	mg/L	mg/kg	mg/L	mg/kg	mg/L	mg/kg	mg/L	mg/kg	mg/L	mg/kg
Victorian Solid Industrial Waste Guidelines	Industrial waste thresholds	0.35	500	0.1	100	-	-	100	5,000	0.5	1,500	0.05	75	1	3,000	150	35,000
	Category C prescribed industrial waste	0.7	500	0	100	-	-	200	5,000	1	1,500	0.1	75	2	3,000	300	35,000
	Category B prescribed industrial waste	2.8	2,000	0.8	400	-	-	800	20,000	4	6,000	0.4	300	8	12,000	1,200	140,000
Sample ID	Date Sampled																
TIMBER SAMPLES (TS)																	
TS-7	12-Dec-14	n.a.	3.8	n.a.	< 0.4	n.a.	7.7	n.a.	19	n.a.	28	n.a.	< 0.2	n.a.	13	n.a.	26
TS-8	12-Dec-14	n.a.	< 2	n.a.	< 0.4	n.a.	n.a.	n.a.	920	n.a.	25	n.a.	< 0.2	n.a.	< 5	n.a.	730
TS-9	12-Dec-14	n.a.	< 2	n.a.	< 0.4	n.a.	6	n.a.	19	n.a.	9.9	n.a.	< 0.2	n.a.	< 5	n.a.	90
TS-10	12-Dec-14	n.a.	< 2	n.a.	< 0.4	n.a.	< 5	n.a.	74	n.a.	9.1	n.a.	< 0.2	n.a.	< 5	n.a.	38
TS-11	12-Dec-14	n.a.	390	n.a.	< 0.4	n.a.	n.a.	n.a.	180	n.a.	15	n.a.	< 0.1	n.a.	< 5	n.a.	180
TS-12	12-Dec-14	n.a.	21	n.a.	< 0.4	n.a.	n.a.	n.a.	63	n.a.	5	n.a.	< 0.1	n.a.	< 5	n.a.	29

		Hexavalent Chromium		Molybdenum		Selenium		Silver		Tin	
		ASLP	Total	ASLP	Total	ASLP	Total	ASLP	Total	ASLP	Total
	Units	mg/L	mg/kg	mg/L	mg/kg	mg/L	mg/kg	mg/L	mg/kg	mg/L	mg/kg
Victorian Solid Industrial Waste Guidelines	Industrial waste thresholds	3	500	3	1,000	0.5	50	5	180	-	-
	Category C prescribed industrial waste	5	500	5	1,000	1	50	10	180	-	-
	Category B prescribed industrial waste	20	2,000	20	4,000	4	200	40	720	-	-
Sample ID	Date Sampled										
TIMBER SAMPLES (TS)											
TS-7	12-Dec-14	n.a.	< 1	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.
TS-8	12-Dec-14	n.a.	< 1	n.a.	n.a.	n.a.	< 2	n.a.	n.a.	n.a.	n.a.
TS-9	12-Dec-14	n.a.	< 1	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.
TS-10	12-Dec-14	n.a.	< 1	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.
TS-11	12-Dec-14	n.a.	< 1	n.a.	n.a.	n.a.	< 2	n.a.	n.a.	n.a.	n.a.
TS-12	12-Dec-14	n.a.	< 1	n.a.	n.a.	n.a.	< 2	n.a.	n.a.	n.a.	n.a.

INVERSE	Exceeds criteria
n.a.	Not analysed
b.d.	Below laboratory detection limits
-	No contaminant concentration criteria available

SITE: Barham-Koondrook Bridge (Victorian Approach), Koondrook VIC
PROJECT: Contamination Assessment
PROJECT ID: AL14-218

CLIENT: NGH Environmental

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TABLE 7: Analytical Results - SOIL AND TIMBER - Total Petroleum Hydrocarbons (TPH) and Monocyclic Aromatic Hydrocarbons (BTEX)

		TPH					BTEX			
		C_6 - C_9	C_{10}-C_{14}	C_{15}-C_{28}	C_{29}-C_{36}	C_{10}-C_{36}	Benzene	Toluene	Ethyl-benzene	Xylenes
	Units	*mg/kg*	*mg/kg*	*mg/kg*	*mg/kg*	*mg/kg*	*mg/kg*	*mg/kg*	*mg/kg*	*mg/kg*
Victorian Soil Waste Guidelines	Fill material thresholds	*100*	-	-	-	*1000*	*1*	*BTEX total = 7*		
	Category C contaminated soil thresholds	*650*	-	-	-	*10000*	*4*	*BTEX total = 70*		
	Category B contaminated soil thresholds	*2600*	-	-	-	*40000*	*16*	*BTEX total = 240*		
Sample ID	Date sampled									
BOREHOLE (BH) SOIL SAMPLES										
BH5-0.1	12-Dec-14	< 20	< 20	< 50	63	63	< 0.1	< 0.1	< 0.1	< 0.3
BH6-0.1	12-Dec-14	< 20	< 20	< 50	90	90	< 0.1	< 0.1	< 0.1	< 0.3
BH7-0.1	12-Dec-14	< 20	< 20	< 50	60	60	< 0.1	< 0.1	< 0.1	< 0.3
BH7-0.5	12-Dec-14	24	< 20	< 50	< 50	< 50	< 0.1	< 0.1	< 0.1	< 0.3

		TPH					BTEX			
		C_6 - C_9	C_{10}-C_{14}	C_{15}-C_{28}	C_{29}-C_{36}	C_{10}-C_{36}	Benzene	Toluene	Ethyl-benzene	Xylenes
	Units	*mg/kg*	*mg/kg*	*mg/kg*	*mg/kg*	*mg/kg*	*mg/kg*	*mg/kg*	*mg/kg*	*mg/kg*
Victorian Solid Industrial Waste Guidelines	Industrial waste thresholds	*325*	-	-	-	*5000*	*4*	*3,200*	*1,200*	*2,400*
	Category C prescribed industrial waste	*650*	-	-	-	*10,000*	*4*	*3,00*	*1,200*	*2,40*
	Category B prescribed industrial waste	*2,600*	-	-	-	*40,000*	*16*	*12,800*	*4,800*	*9,600*
TIMBER SAMPLES (TS)										
TS-7	12-Dec-14	< 200	< 20	69	97	170	< 1	< 1	< 1	< 3
TS-9	12-Dec-14	< 100	< 20	310	1400	1700	< 0.5	< 0.5	< 0.5	< 1.5
TS-10	12-Dec-14	< 100	< 20	< 50	67	67	< 0.5	< 0.5	< 0.5	< 1.5
TS-11	12-Dec-14	< 100	260	260	2200	2700	n.a.	n.a.	n.a.	n.a.

INVERSE	Exceeds criteria
n.a.	Not analysed
b.d.	Below laboratory detection limits
-	No contaminant concentration criteria available

SITE: Barham-Koondrook Bridge (Victorian Approach), Koondrook VIC
PROJECT: Contamination Assessment
PROJECT ID: AL14-218

CLIENT: NGH Environmental

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ENVIRONMENTAL MANAGEMENT

TABLE 8: Analytical Results - SOIL AND TIMBER - Polycyclic Aromatic Hydrocarbons (PAH), Phenols, Polychlorinated Biphenyls (PCBs), Chlorinated Hydrocarbons (CHCs), Cyanide, Fluoride and pH

		PAHs		Phenols			Total PCBs	CHCs		Cyanide	Fluoride	pH
		Benzo(a)-Pyrene	Total PAH	Phenol	Halogen-ated	Non-halogenated		Hexachloro-butadiene	Total CHCs			
	Units	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	units
Victorian Soil Waste Guidelines	Fill material thresholds	1	20	-	1	60	2	-	1	50	450	-**
	Category C contaminated soil thresholds	5	100	-	10	560	2	2.8	10	2500	10000	-**
	Category B contaminated soil thresholds	20	400	-	320	2200	2	11	50	10000	40000	-**
Sample ID	Date sampled											
BOREHOLE (BH) SOIL SAMPLES												
BH5-0.1	12-Dec-14	< 0.5	< 0.5	< 0.5	<1	<20	< 0.1	< 0.2	b.d.	< 5	230	6.7
BH6-0.1	12-Dec-14	< 0.5	< 0.5	< 0.5	<1	<20	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.
BH7-0.1	12-Dec-14	< 0.5	< 0.5	< 0.5	<1	<20	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.
BH7-0.5	12-Dec-14	< 0.5	< 0.5	< 0.5	<1	<20	< 0.1	< 0.2	b.d.	< 5	240	5.6
BH7-1.0	12-Dec-14	n.a.	n.a.	< 0.5	<1	<20	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.
BH8-0.1	12-Dec-14	n.a.	n.a.	< 0.5	<1	<20	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.

		PAHs		Phenols			Total PCBs	CHCs		Cyanide	Fluoride	pH
		Benzo(a)-Pyrene	Total PAH	Phenol	Halogen-ated	Non-halogenated		Hexachloro-butadiene	Total CHCs			
	Units	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	units
Victorian Solid Industrial Waste Guidelines	Industrial waste thresholds	5	50	-	-	560	2	2.8	-	2500	10000	-**
	Category C prescribed industrial waste	5	100	-	-	560	2	2.8	-	2500	10000	-**
	Category B prescribed industrial waste	20	400	-	-	2200	2	11	-	10000	40000	-**
Sample ID	Date sampled											
TIMBER SAMPLES (TS)												
TS-7	12-Dec-14	< 0.5	< 0.5	< 0.5	<1	<20	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.
TS-8	12-Dec-14	n.a.	n.a.	< 0.5	<1	<20	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.
TS-9	12-Dec-14	< 0.5	< 0.5	< 0.5	<1	<20	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.
TS-10	12-Dec-14	< 0.5	< 0.5	< 0.5	<1	<20	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.
TS-11	12-Dec-14	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.
TS-12	12-Dec-14	n.a.	n.a.	<0.5	<1	<20	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.

* ASLP concentrations of Category C and Category B criteria are not listed as "total" concentrations are below "Fill Material" and "Industrial Waste" criteria
** Soils with a pH value of 4 or less or a pH of 9 or more are consiedered to be Prescribed Industrial Wastes (PIW)

INVERSE	Exceeds criteria
n.a.	Not analysed
b.d.	Below laboratory detection limits
-	No contaminant concentration criteria available

SITE: **Barham-Koondrook Bridge (Victorian Approach), Koondrook VIC**
PROJECT: Contamination Assessment
PROJECT ID: AL14-218

CLIENT: NGH Environmental

VANTAGE ENVIRONMENTAL MANAGEMENT

TABLE 9: Quality Assurance / Quality Control results

Duplicate sample analysis results

		Metals							OCPs	Phenols
		As	Cd	Cu	Pb	Hg	Ni	Zn		
	Units	*mg/kg*	*mg/kg*	*mg/kg*	*mg/kg*	*mg/kg*	*mg/kg*	*mg/kg*	*mg/kg*	*mg/kg*
Original Sample	TS-7	3.8	< 0.4	19	28	< 0.2	13	26	b.d.	b.d.
Duplicate Sample	DUP-A	<2	<0.4	13	20	<0.2	11	24	b.d.	b.d.
	RPD (%)	**117**	**0**	**38**	**33**	**0**	**17**	**8**	**0**	**0**
Original Sample	BH5-0.1	2.7	< 0.4	10	11	< 0.1	10	28	b.d.	b.d.
Duplicate Sample	DUP-B	10	<0.4	12	15	<0.05	12	36	b.d.	b.d.
	RPD (%)	**115**	**0**	**18**	**31**	**0**	**18**	**25**	**0**	**0**

Duplicate Sample	This sample was analysed by eurofins-mgt Sydney as an inter-laboratory duplicate analysis
85	RPD value greater than 50%
n.a.	not analysed
b.d.	below laboratory detection limits

Wash Blank (WB) and Trip Blank (TB) Results

	TPH				BTEX				Metals
	C_6 C_9	C_{10} C_{14}	C_{15} C_{28}	C_{29} C_{36}	Benzene	Toluene	Ethyl benzene	Xylenes	
Units	*mg/L*	*mg/L*	*mg/L*	*mg/L*	*mg/L*	*mg/L*	*mg/L*	*mg/L*	*mg/L*
WB121214	<0.02	<0.05	<0.1	<0.1	<0.001	<0.001	<0.001	<0.003	b.d.
TB121214	<0.02	n.a.	n.a.	n.a.	<0.001	<0.001	<0.001	<0.003	n.a.

Appendix A

Site Photographs

Plate 1: View of the subject site looking toward the north from the Victorian approach of the bridge structure. The steel lift span structure is visible as well as associated above-deck timber bridge support elements. Timber piers are also visible in the lower central portion of this photo.

Plate 2: View of the Victorian abutment and associated embankment soils. The abutment sheeting timber was noted to be in fair to poor condition and some evidence of the application of treatment chemicals was noted. Transverse bridge beams (stringers) and decking are also visible.

Plate 3: Detailed view of bridge timber exhibiting white and cream coloured paint where sample PS-6 was collected. A pinkish-red undercoat was also observed at several locations. Paint was noted to be in poor condition and laboratory analysis indicated lead was present.

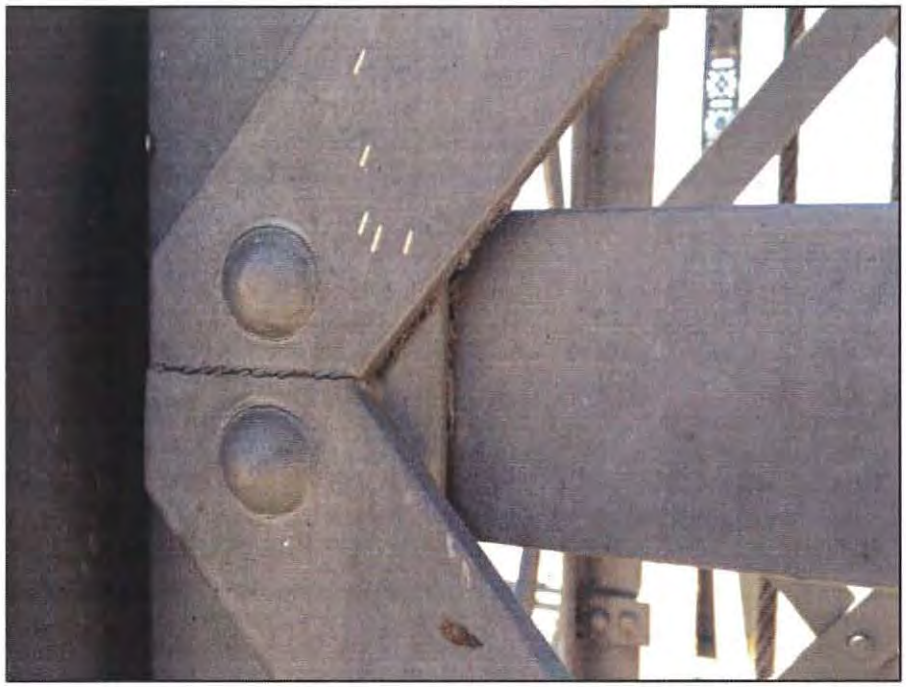

Plate 4: Detailed view of silver-grey paint on metal lift-span bridge elements where sample PS-7 was collected. Paint was noted to be in fair to poor condition and laboratory analysis indicated that lead was present.

Appendix B

Environmental Borehole Logs

ENVIRONMENTAL BOREHOLE LOG

VANTAGE
ENVIRONMENTAL MANAGEMENT

Project:	**Limited Environmental Assessment & Waste Classification**
Location:	Barham-Koondrook Bridge (Victorian Approach)
Client:	Roads and Maritime Services
Project ID:	AL14-218

Excavation Date(s):	12 December 2014	Easting:	35deg37'50" E
Method:	Hand Auger	Northing:	144deg7'29" S
Logged by:	T. Hobbs	Checked by:	S. Price

Bore Hole ID:	BH5
Page:	1 of 1
Location:	See Figure 2

Depth (metres)	Sample Interval & ID	PID (ppm)	Graphic Log	Lithologic Description	Moisture	Additional Observations	Well Construction
0.0	BH5-0.1			FILL: Grey brown sandy silt and clay with trace gravel, medium dense	Dry to moist	Fill	n/a
				FILL: Orange to grey brown silty sand to sandy silt, medium dense.	Dry	Fill	
0.5	BH5-0.5						
1.0	BH5-1.0						
				End of Hole at 1.1m			
1.5							
2.0							
2.5							

Notes:

ENVIRONMENTAL BOREHOLE LOG

VANTAGE
ENVIRONMENTAL MANAGEMENT

Project:	**Limited Environmental Assessment & Waste Classification**
Location:	Barham-Koondrook Bridge (Victorian Approach)
Client:	Roads and Maritime Services
Project ID:	AL14-218

Excavation Date(s):	12 December 2014	Easting:	35deg37'50" E
Method:	Hand Auger	Northing:	144deg7'29" S
Logged by:	T. Hobbs	Checked by:	S. Price

Bore Hole ID:	BH6
Page:	1 of 1
Location:	See Figure 2

Depth (metres)	Sample Interval & ID	PID (ppm)	Graphic Log	Lithologic Description	Moisture	Additional Observations	Well Construction
0.0	BH6-0.1			FILL: Grey brown silty sand and gravel, medium dense	Dry	Fill	n/a
				FILL: Orange brown clayey silt with trace sand and gravel, medium dense	Dry	Fill	
0.5	BH6-0.5						
1.0	BH6-1.0			End of Hole at 1.1m			
1.5							
2.0							
2.5							

Notes:

ENVIRONMENTAL BOREHOLE LOG

VANTAGE
ENVIRONMENTAL MANAGEMENT

Project:	**Limited Environmental Assessment & Waste Classification**
Location:	Barham-Koondrook Bridge (Victorian Approach)
Client:	Roads and Maritime Services
Project ID:	AL14-218

Excavation Date(s):	12 December 2014	Easting:	35deg37'50" E
Method:	Hand Auger	Northing:	144deg7'29" S
Logged by:	T.Hobbs	Checked by:	S. Price

Bore Hole ID:	BH7
Page:	1 of 1
Location:	See Figure 2

Depth (metres)	Sample Interval & ID	PID (ppm)	Graphic Log	Lithologic Description	Moisture	Additional Observations	Well Construction
0.0	BH7-0.1			FILL: Orange brown sandy silt with some organics (grass rootlets and leaf litter), medium dense	Moist to wet	Fill	n/a
				FILL: Orange brown sand with trace to some silt, loose to medium dense.	Moist	Fill	
0.5	BH7-0.5						
1.0	BH7-1.0						
				End of Hole at 1.1m			
1.5							
2.0							
2.5							

Notes:

ENVIRONMENTAL BOREHOLE LOG

VANTAGE
ENVIRONMENTAL MANAGEMENT

Project:	**Limited Environmental Assessment & Waste Classification**
Location:	Barham-Koondrook Bridge (Victorian Approach)
Client:	Roads and Maritime Services
Project ID:	AL14-218

Excavation Date(s):	12 December 2014	Easting:	35deg37'50" E
Method:	Hand Auger	Northing:	144deg7'29" S
Logged by:	T.Hobbs	Checked by:	S. Price

Bore Hole ID:	BH8
Page:	1 of 1
Location:	See Figure 2

Depth (metres)	Sample Interval & ID	PID (ppm)	Graphic Log	Lithologic Description	Moisture	Additional Observations	Well Construction
0.0	BH8-0.1			FILL: Grey brown silty sand with some organics (grass rootlets and leaf litter), loose to medium dense	Dry to moist	Fill	n/a
				FILL: Orange to brown silty sand with trace gravel, medium dense	Dry to moist	Fill	
0.5	BH8-0.5						
1.0	BH8-1.0			End of Hole at 1.1m			
1.5							
2.0							
2.5							

Notes:

Appendix C

Environmental Sample Chain of Custody Documentation

CHAIN OF CUSTODY RECORD

Vantage Environmental Management
Suite 4, 539-541 Kiewa St (PO Box 378)
ALBURY NSW 2640
Phone: (02) 6021 8655

VANTAGE
ENVIRONMENTAL MANAGEMENT

TO LABORATORY: eurofins-mgt, 2-5 Kingston Town Close, Oakleigh VIC 3166 Phone: (03) 8564 5000

Project: BARHAM	**Job No.** AL14-218	**Contact:** Susannah Price sprice@venv.com.au M 0421 871 433

Special directions and/or comments: ****Please note if custody seal is intact *****

Sample ID	Date	Type	ANALYTES: Suite B7A	Suite M13	OCPs	OPPs	Phenoxy Acid Herbicides	Suite R1	Phenols	Suite B14	Cr VI	TRH	pH ($CaCl_2$)	CEC	% clay content		Comments
BH5-0.1	12/12/14	SOIL				X	X	X									
BH5-0.5																	
BH5-1.0																	
BH6-0.1			X		X				X		X						
BH6-0.5																	
BH6-1.0																	
BH7-0.1			X		X				X		X						
BH7-0.5						X	X	X	X								
BH7-1.0				X	X				X								
BH8-0.1				X	X				X				X	X	X		
BH8-0.5																	
BH8-1.0																	
TS-7		TIMBER	X				X		X	X	X						
TS-8				X	X				X								
TS-9			X				X		X	X	X						
TS-10			X		X				X		X						
TS-11				X	X							X					
TS-12				X	X				X								
DUP-A				X	X				X								
Please see next page																	

Relinquished by: S.PRICE	**Received by:** Simon Lake	**Turnaround time:**	
Date and Time: 16:00 15/12/14	Date and Time: 16/12 8:55	(Standard)	3-4 day 2 day
Signature: Sprice	Signature:	48 hr	24 hr
Shipment Method: Courier (Toll)	Report No.: 442493		

CHAIN OF CUSTODY RECORD

Vantage Environmental Management
Suite 4, 539-541 Kiewa St (PO Box 378)
A LBURY NSW 2640
Phone: (02) 6021 8655

VANTAGE
ENVIRONMENTAL MANAGEMENT

TO LABORATORY: eurofins-mgt, 2-5 Kingston Town Close, Oakleigh VIC 3166 Phone: (03) 8564 5000

Project: BARHAM | Job No. AL14 -218 | Contact: Susannah Price sprice@venv.com.au M 0421 871 433

Special directions and/or comments: ****Please note if custody seal is intact *****

Sample ID	Date	Type	ANALYTES: Asbestos	Lead	Suite B6	C_{6-10} + BTEX											Comments
PS-5	15/12/14	PAINT	X	X													
PS-6	↓	↓	X	X													
PS-7	↓	↓	X	X													
PS-8	↓	↓	X	X													
WB121214	12/12/14	WATER			X												
TB151214	15/12/14	↓				X											

Relinquished by: S.PRICE
Date and Time: 16:00 15/12/14
Signature: SPrice
Shipment Method: Courier (Toll)

Received by:
Date and Time:
Signature:
Report No.:

Turnaround time:
(Standard) 3-4 day 2 day
48 hr 24 hr

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ABN – 50 005 085 521 e.mail : EnviroSales@eurofins.com.au web : www.eurofins.com.au

Melbourne
3-5 Kingston Town Close
Oakleigh Vic 3166
Phone : +61 3 8564 5000
NATA # 1261
Site # 1254 & 14271

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Unit F3, Building F
16 Mars Road
Lane Cove West NSW 2066
Phone : +61 2 9900 8400
NATA # 1261 Site # 18217

Brisbane
1/21 Smallwood Place
Murarrie QLD 4172
Phone : +61 7 3902 4600
NATA # 1261 Site # 20794

Sample Receipt Advice

Please note that as detailed in our EnviroNote 1049 released 27th Nov 2014 all samples received as of 18th Dec 2014 nominated TAT on the Sample Receipt Advice (SRA) will be provided where possible, however due to the holiday period TAT will not be guaranteed until 12th Jan 2015.
Where earlier TAT is required you are encouraged to speak with one of our Analytical Service Managers (ASM) to see if your requirements can be met.
For samples received from 5th Jan 2015 the nominated Reporting date on the SRA will be adhered to unless otherwise communicated by your ASM.

Company name:	Vantage Environmental Management Pty Ltd
Contact name:	Susannah Price
Project name:	BARHAM
Project ID:	AL14-218
COC number:	Not provided
Turn around time:	5 Day
Date/Time received:	Dec 16, 2014 8:55 AM
Eurofins | mgt reference:	442493

Sample information

- ☑ A detailed list of analytes logged into our LIMS, is included in the attached summary table.
- ☑ All samples have been received as described on the above COC.
- ☑ COC has been completed correctly.
- ☑ Attempt to chill was evident.
- ☑ Appropriately preserved sample containers have been used.
- ☑ All samples were received in good condition.
- ☑ Samples have been provided with adequate time to commence analysis in accordance with the relevant holding times.
- ☑ Appropriate sample containers have been used.
- ☑ Sample containers for volatile analysis received with zero headspace.
- ☒ Some samples have been subcontracted.
- ☑ Custody Seals intact (if used).

Contact notes

If you have any questions with respect to these samples please contact:

Onur Mehmet on Phone : (+61) (3) 8564 5026 or by e.mail: OnurMehmet@eurofins.com.au

Results will be delivered electronically via e.mail to Susannah Price - sprice@vantageenv.com.au.

CHAIN OF CUSTODY RECORD

Vantage Environmental Management
Suite 4, 539-541 Kiewa St (PO Box 378)
ALBURY NSW 2640
Phone: (02) 6021 8655

VANTAGE
ENVIRONMENTAL MANAGEMENT

TO LABORATORY: eurofins-mgt, Unit F4, Building F, 16 Mars Road, LANE COVE WEST NSW 2066

Project: BARHAM	**Job No.** AL14-218	**Contact:** Susannah Price sprice@venv.com.au **M** 0421 871 433

Special directions and/or comments: -Please note if custody seal is intact

Sample ID	Date	Comments	ANALYTES: Suite M13	OCPs	Phenols											
DUP-B	12-Dec-14	SOIL	X	X	X											

Relinquished by: S.PRICE	**Received by:** Simek-S	**Turnaround time:**
Date and Time: 15/12/14 16:00	Date and Time: 16-12-14 12pm	Standard / 3-4 day / 2 day / 48 hr / 24 hr
Signature: SPrice	Signature:	
Shipment Method: Courier (TNT)	Report No.:	

21.5°C

eurofins | mgt

ABN – 50 005 085 521 e.mail : EnviroSales@eurofins.com.au web : www.eurofins.com.au

Melbourne
3-5 Kingston Town Close
Oakleigh Vic 3166
Phone : +61 3 8564 5000
NATA # 1261
Site # 1254 & 14271

Sydney
Unit F3, Building F
16 Mars Road
Lane Cove West NSW 2066
Phone : +61 2 9900 8400
NATA # 1261 Site # 18217

Brisbane
1/21 Smallwood Place
Murarrie QLD 4172
Phone : +61 7 3902 4600
NATA # 1261 Site # 20794

Sample Receipt Advice

Please note that as detailed in our EnviroNote 1049 released 27th Nov 2014 all samples received as of 18th Dec 2014 the nominated TAT on the Sample Receipt Advice (SRA) will be provided where possible, however due to the holiday period TAT will not be guaranteed until 12th Jan 2015.
Where earlier TAT is required you are encouraged to speak with one of our Analytical Service Managers (ASM) to see if your requirements can be met.
For samples received from 5th Jan 2015 the nominated Reporting date on the SRA will be adhered to unless otherwise communicated by your ASM.

Company name:	Vantage Environmental Management Pty Ltd
Contact name:	Susannah Price
Project name:	BARHAM AL14-218
COC number:	Not provided
Turn around time:	5 Day
Date/Time received:	Dec 16, 2014 12:00 PM
Eurofins | mgt reference:	442534

Sample information

- ☑ A detailed list of analytes logged into our LIMS, is included in the attached summary table.
- ☑ All samples have been received as described on the above COC.
- ☑ COC has been completed correctly.
- ☑ Attempt to chill was evident.
- ☑ Appropriately preserved sample containers have been used.
- ☑ All samples were received in good condition.
- ☑ Samples have been provided with adequate time to commence analysis in accordance with the relevant holding times.
- ☑ Appropriate sample containers have been used.
- ☒ Some samples have been subcontracted.
- ☑ Custody Seals intact (if used).

Contact notes

If you have any questions with respect to these samples please contact:

Onur Mehmet on Phone : (+61) (3) 8564 5026 or by e.mail: OnurMehmet@eurofins.com.au

Results will be delivered electronically via e.mail to Susannah Price - sprice@vantageenv.com.au.

Appendix D

Laboratory Certificates of Analysis

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Certificate of Analysis

NATA Accredited
Accreditation Number 1261
Site Number 1254

Accredited for compliance with ISO/IEC 17025.
The results of the tests, calibrations and/or measurements included in this document are traceable to Australian/national standards.

Vantage Environmental Management
Suite 4 539-541 Kiewa St
Albury
NSW 2640

Attention: **Susannah Price**

Report	**442493-S**
Project name	BARHAM
Project ID	AL14-218
Received Date	Dec 16, 2014

Client Sample ID			BH5-0.1	BH6-0.1	BH7-0.1	BH7-0.5
Sample Matrix			Soil	Soil	Soil	Soil
Eurofins | mgt Sample No.			M14-De14236	M14-De14237	M14-De14238	M14-De14239
Date Sampled			Dec 12, 2014	Dec 12, 2014	Dec 12, 2014	Dec 12, 2014
Test/Reference	LOR	Unit				
Total Recoverable Hydrocarbons - 1999 NEPM Fractions						
TRH C6-C9	20	mg/kg	< 20	< 20	< 20	24
TRH C10-C14	20	mg/kg	< 20	< 20	< 20	< 20
TRH C15-C28	50	mg/kg	< 50	< 50	< 50	< 50
TRH C29-C36	50	mg/kg	63	90	60	< 50
TRH C10-36 (Total)	50	mg/kg	63	90	60	< 50
BTEX						
Benzene	0.1	mg/kg	-	< 0.1	< 0.1	-
Toluene	0.1	mg/kg	-	< 0.1	< 0.1	-
Ethylbenzene	0.1	mg/kg	-	< 0.1	< 0.1	-
m&p-Xylenes	0.2	mg/kg	-	< 0.2	< 0.2	-
o-Xylene	0.1	mg/kg	-	< 0.1	< 0.1	-
Xylenes - Total	0.3	mg/kg	-	< 0.3	< 0.3	-
4-Bromofluorobenzene (surr.)	1	%	-	99	90	-
Total Recoverable Hydrocarbons - 2013 NEPM Fractions						
Naphthalene[N02]	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
TRH C6-C10	20	mg/kg	< 20	< 20	< 20	26
TRH C6-C10 less BTEX (F1)[N04]	20	mg/kg	< 20	< 20	< 20	26
TRH >C10-C16	50	mg/kg	< 50	< 50	< 50	< 50
TRH >C10-C16 less Naphthalene (F2)[N01]	50	mg/kg	< 50	< 50	< 50	< 50
TRH >C16-C34	100	mg/kg	< 100	< 100	< 100	< 100
TRH >C34-C40	100	mg/kg	< 100	< 100	< 100	< 100
Volatile Organics						
1.2.4-Trichlorobenzene	0.2	mg/kg	< 0.2	-	-	< 0.2
Hexachlorobutadiene	0.2	mg/kg	< 0.2	-	-	< 0.2
1.1-Dichloroethane	0.05	mg/kg	< 0.05	-	-	< 0.05
1.1-Dichloroethene	0.05	mg/kg	< 0.05	-	-	< 0.05
1.1.1-Trichloroethane	0.05	mg/kg	< 0.05	-	-	< 0.05
1.1.1.2-Tetrachloroethane	0.05	mg/kg	< 0.05	-	-	< 0.05
1.1.2-Trichloroethane	0.05	mg/kg	< 0.05	-	-	< 0.05
1.1.2.2-Tetrachloroethane	0.05	mg/kg	< 0.05	-	-	< 0.05
1.2-Dibromoethane	0.05	mg/kg	< 0.05	-	-	< 0.05
1.2-Dichlorobenzene	0.05	mg/kg	< 0.05	-	-	< 0.05
1.2-Dichloroethane	0.05	mg/kg	< 0.05	-	-	< 0.05
1.2-Dichloropropane	0.05	mg/kg	< 0.05	-	-	< 0.05
1.2.3-Trichloropropane	0.05	mg/kg	< 0.05	-	-	< 0.05

eurofins | mgt

Client Sample ID			BH5-0.1	BH6-0.1	BH7-0.1	BH7-0.5
Sample Matrix			Soil	Soil	Soil	Soil
Eurofins | mgt Sample No.			M14-De14236	M14-De14237	M14-De14238	M14-De14239
Date Sampled			Dec 12, 2014	Dec 12, 2014	Dec 12, 2014	Dec 12, 2014
Test/Reference	LOR	Unit				
Volatile Organics						
1.2.4-Trimethylbenzene	0.05	mg/kg	< 0.05	-	-	< 0.05
1.3-Dichlorobenzene	0.05	mg/kg	< 0.05	-	-	< 0.05
1.3-Dichloropropane	0.05	mg/kg	< 0.05	-	-	< 0.05
1.3.5-Trimethylbenzene	0.05	mg/kg	< 0.05	-	-	< 0.05
1.4-Dichlorobenzene	0.05	mg/kg	< 0.05	-	-	< 0.05
2-Butanone (MEK)	0.05	mg/kg	< 0.05	-	-	< 0.05
2-Propanone (Acetone)	0.05	mg/kg	< 0.05	-	-	< 0.05
4-Chlorotoluene	0.05	mg/kg	< 0.05	-	-	< 0.05
4-Methyl-2-pentanone (MIBK)	0.05	mg/kg	< 0.05	-	-	< 0.05
Allyl chloride	0.05	mg/kg	< 0.05	-	-	< 0.05
Benzene	0.1	mg/kg	< 0.1	-	-	< 0.1
Bromobenzene	0.05	mg/kg	< 0.05	-	-	< 0.05
Bromochloromethane	0.05	mg/kg	< 0.05	-	-	< 0.05
Bromodichloromethane	0.05	mg/kg	< 0.05	-	-	< 0.05
Bromoform	0.05	mg/kg	< 0.05	-	-	< 0.05
Bromomethane	0.05	mg/kg	< 0.05	-	-	< 0.05
Carbon disulfide	0.05	mg/kg	< 0.05	-	-	< 0.05
Carbon Tetrachloride	0.05	mg/kg	< 0.05	-	-	< 0.05
Chlorobenzene	0.05	mg/kg	< 0.05	-	-	< 0.05
Chloroethane	0.05	mg/kg	< 0.05	-	-	< 0.05
Chloroform	0.05	mg/kg	< 0.05	-	-	< 0.05
Chloromethane	0.05	mg/kg	< 0.05	-	-	< 0.05
cis-1.2-Dichloroethene	0.05	mg/kg	< 0.05	-	-	< 0.05
cis-1.3-Dichloropropene	0.05	mg/kg	< 0.05	-	-	< 0.05
Dibromochloromethane	0.05	mg/kg	< 0.05	-	-	< 0.05
Dibromomethane	0.05	mg/kg	< 0.05	-	-	< 0.05
Dichlorodifluoromethane	0.05	mg/kg	< 0.05	-	-	< 0.05
Ethylbenzene	0.1	mg/kg	< 0.1	-	-	< 0.1
Iodomethane	0.05	mg/kg	< 0.05	-	-	< 0.05
Isopropyl benzene (Cumene)	0.05	mg/kg	< 0.05	-	-	< 0.05
m&p-Xylenes	0.2	mg/kg	< 0.2	-	-	< 0.2
Methylene Chloride	0.05	mg/kg	< 0.05	-	-	< 0.05
o-Xylene	0.1	mg/kg	< 0.1	-	-	< 0.1
Styrene	0.05	mg/kg	< 0.05	-	-	< 0.05
Tetrachloroethene	0.05	mg/kg	< 0.05	-	-	< 0.05
Toluene	0.1	mg/kg	< 0.1	-	-	< 0.1
trans-1.2-Dichloroethene	0.05	mg/kg	< 0.05	-	-	< 0.05
trans-1.3-Dichloropropene	0.05	mg/kg	< 0.05	-	-	< 0.05
Trichloroethene	0.05	mg/kg	< 0.05	-	-	< 0.05
Trichlorofluoromethane	0.05	mg/kg	< 0.05	-	-	< 0.05
Vinyl chloride	0.05	mg/kg	< 0.05	-	-	< 0.05
Xylenes - Total	0.3	mg/kg	< 0.3	-	-	< 0.3
Fluorobenzene (surr.)	1	%	85	-	-	79
4-Bromofluorobenzene (surr.)	1	%	90	-	-	83
Polycyclic Aromatic Hydrocarbons						
Benzo(a)pyrene TEQ (lower bound) *	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
Benzo(a)pyrene TEQ (medium bound) *	0.5	mg/kg	0.6	0.6	0.6	0.6
Benzo(a)pyrene TEQ (upper bound) *	0.5	mg/kg	1.2	1.2	1.2	1.2
Acenaphthene	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5

eurofins | mgt

Client Sample ID			BH5-0.1	BH6-0.1	BH7-0.1	BH7-0.5
Sample Matrix			Soil	Soil	Soil	Soil
Eurofins | mgt Sample No.			M14-De14236	M14-De14237	M14-De14238	M14-De14239
Date Sampled			Dec 12, 2014	Dec 12, 2014	Dec 12, 2014	Dec 12, 2014
Test/Reference	LOR	Unit				
Polycyclic Aromatic Hydrocarbons						
Acenaphthylene	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
Anthracene	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
Benz(a)anthracene	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
Benzo(a)pyrene	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
Benzo(b&j)fluoranthene[N07]	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
Benzo(g.h.i)perylene	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
Benzo(k)fluoranthene	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
Chrysene	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
Dibenz(a.h)anthracene	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
Fluoranthene	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
Fluorene	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
Indeno(1.2.3-cd)pyrene	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
Naphthalene	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
Phenanthrene	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
Pyrene	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
Total PAH	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
2-Fluorobiphenyl (surr.)	1	%	88	88	80	92
p-Terphenyl-d14 (surr.)	1	%	92	91	86	97
Organochlorine Pesticides						
Chlordanes - Total	0.1	mg/kg	< 0.1	< 0.1	< 0.1	< 0.1
4.4'-DDD	0.05	mg/kg	< 0.05	< 0.05	< 0.05	< 0.05
4.4'-DDE	0.05	mg/kg	< 0.05	< 0.05	< 0.05	< 0.05
4.4'-DDT	0.05	mg/kg	< 0.05	< 0.05	< 0.05	< 0.05
a-BHC	0.05	mg/kg	< 0.05	< 0.05	< 0.05	< 0.05
Aldrin	0.05	mg/kg	< 0.05	< 0.05	< 0.05	< 0.05
b-BHC	0.05	mg/kg	< 0.05	< 0.05	< 0.05	< 0.05
d-BHC	0.05	mg/kg	< 0.05	< 0.05	< 0.05	< 0.05
Dieldrin	0.05	mg/kg	< 0.05	< 0.05	< 0.05	< 0.05
Endosulfan I	0.05	mg/kg	< 0.05	< 0.05	< 0.05	< 0.05
Endosulfan II	0.05	mg/kg	< 0.05	< 0.05	< 0.05	< 0.05
Endosulfan sulphate	0.05	mg/kg	< 0.05	< 0.05	< 0.05	< 0.05
Endrin	0.05	mg/kg	< 0.05	< 0.05	< 0.05	< 0.05
Endrin aldehyde	0.05	mg/kg	< 0.05	< 0.05	< 0.05	< 0.05
Endrin ketone	0.05	mg/kg	< 0.05	< 0.05	< 0.05	< 0.05
g-BHC (Lindane)	0.05	mg/kg	< 0.05	< 0.05	< 0.05	< 0.05
Heptachlor	0.05	mg/kg	< 0.05	< 0.05	< 0.05	< 0.05
Heptachlor epoxide	0.05	mg/kg	< 0.05	< 0.05	< 0.05	< 0.05
Hexachlorobenzene	0.05	mg/kg	< 0.05	< 0.05	< 0.05	< 0.05
Methoxychlor	0.05	mg/kg	< 0.05	< 0.05	< 0.05	< 0.05
Toxaphene	1	mg/kg	< 1	< 1	< 1	< 1
Dibutylchlorendate (surr.)	1	%	123	118	80	86
Tetrachloro-m-xylene (surr.)	1	%	106	106	104	108
Organophosphorous Pesticides						
Bolstar	0.2	mg/kg	< 0.2	-	-	< 0.2
Chlorpyrifos	0.2	mg/kg	< 0.2	-	-	< 0.2
Demeton-O	0.2	mg/kg	< 0.2	-	-	< 0.2
Diazinon	0.2	mg/kg	< 0.2	-	-	< 0.2
Dichlorvos	0.2	mg/kg	< 0.2	-	-	< 0.2
Disulfoton	0.2	mg/kg	< 0.2	-	-	< 0.2

eurofins | mgt

Client Sample ID			BH5-0.1	BH6-0.1	BH7-0.1	BH7-0.5
Sample Matrix			Soil	Soil	Soil	Soil
Eurofins | mgt Sample No.			M14-De14236	M14-De14237	M14-De14238	M14-De14239
Date Sampled			Dec 12, 2014	Dec 12, 2014	Dec 12, 2014	Dec 12, 2014
Test/Reference	LOR	Unit				
Organophosphorous Pesticides						
Ethion	0.2	mg/kg	< 0.2	-	-	< 0.2
Ethoprop	0.2	mg/kg	< 0.2	-	-	< 0.2
Fenitrothion	0.2	mg/kg	< 0.2	-	-	< 0.2
Fensulfothion	0.2	mg/kg	< 0.2	-	-	< 0.2
Fenthion	0.2	mg/kg	< 0.2	-	-	< 0.2
Merphos	0.2	mg/kg	< 0.2	-	-	< 0.2
Methyl azinphos	0.2	mg/kg	< 0.2	-	-	< 0.2
Methyl parathion	0.2	mg/kg	< 0.2	-	-	< 0.2
Mevinphos	0.2	mg/kg	< 0.2	-	-	< 0.2
Naled	0.5	mg/kg	< 0.5	-	-	< 0.5
Phorate	0.2	mg/kg	< 0.2	-	-	< 0.2
Ronnel	0.2	mg/kg	< 0.2	-	-	< 0.2
Tokuthion	0.2	mg/kg	< 0.2	-	-	< 0.2
Trichloronate	0.2	mg/kg	< 0.2	-	-	< 0.2
Triphenylphosphate (surr.)	1	%	100	-	-	106
Polychlorinated Biphenyls						
Aroclor-1016	0.1	mg/kg	< 0.1	-	-	< 0.1
Aroclor-1221	0.1	mg/kg	< 0.1	-	-	< 0.1
Aroclor-1232	0.1	mg/kg	< 0.1	-	-	< 0.1
Aroclor-1242	0.1	mg/kg	< 0.1	-	-	< 0.1
Aroclor-1248	0.1	mg/kg	< 0.1	-	-	< 0.1
Aroclor-1254	0.1	mg/kg	< 0.1	-	-	< 0.1
Aroclor-1260	0.1	mg/kg	< 0.1	-	-	< 0.1
Total PCB	0.1	mg/kg	< 0.1	-	-	< 0.1
Dibutylchlorendate (surr.)	1	%	123	-	-	86
Tetrachloro-m-xylene (surr.)	1	%	106	-	-	108
Acid Herbicides						
2.4-D	0.5	mg/kg	< 0.5	-	-	< 0.5
2.4-DB	0.5	mg/kg	< 0.5	-	-	< 0.5
2.4.5-T	0.5	mg/kg	< 0.5	-	-	< 0.5
2.4.5-TP	0.5	mg/kg	< 0.5	-	-	< 0.5
Actril (loxynil)	0.5	mg/kg	< 0.5	-	-	< 0.5
Dicamba	0.5	mg/kg	< 0.5	-	-	< 0.5
Dichlorprop	0.5	mg/kg	< 0.5	-	-	< 0.5
Dinitro-o-cresol	0.5	mg/kg	< 0.5	-	-	< 0.5
Dinoseb	0.5	mg/kg	< 0.5	-	-	< 0.5
MCPA	0.5	mg/kg	< 0.5	-	-	< 0.5
MCPB	0.5	mg/kg	< 0.5	-	-	< 0.5
Mecoprop	0.5	mg/kg	< 0.5	-	-	< 0.5
Warfarin (surr.)	1	%	123	-	-	126
Phenols (Halogenated)						
2-Chlorophenol	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
2.4-Dichlorophenol	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
2.4.5-Trichlorophenol	1.0	mg/kg	< 1	< 1	< 1	< 1
2.4.6-Trichlorophenol	1.0	mg/kg	< 1	< 1	< 1	< 1
2.6-Dichlorophenol	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
4-Chloro-3-methylphenol	1.0	mg/kg	< 1	< 1	< 1	< 1
Pentachlorophenol	1.0	mg/kg	< 1	< 1	< 1	< 1
Tetrachlorophenols - Total	1.0	mg/kg	< 1	< 1	< 1	< 1
Total Halogenated Phenol	1	mg/kg	< 1	< 1	< 1	< 1

Client Sample ID			BH5-0.1	BH6-0.1	BH7-0.1	BH7-0.5
Sample Matrix			Soil	Soil	Soil	Soil
Eurofins | mgt Sample No.			M14-De14236	M14-De14237	M14-De14238	M14-De14239
Date Sampled			Dec 12, 2014	Dec 12, 2014	Dec 12, 2014	Dec 12, 2014
Test/Reference	LOR	Unit				
Phenols (non-Halogenated)						
2-Cyclohexyl-4.6-dinitrophenol	20	mg/kg	< 20	< 20	< 20	< 20
2-Methyl-4.6-dinitrophenol	5	mg/kg	< 5	< 5	< 5	< 5
2-Methylphenol (o-Cresol)	0.2	mg/kg	< 0.2	< 0.2	< 0.2	< 0.2
2-Nitrophenol	1.0	mg/kg	< 1	< 1	< 1	< 1
2.4-Dimethylphenol	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
2.4-Dinitrophenol	5	mg/kg	< 5	< 5	< 5	< 5
3&4-Methylphenol (m&p-Cresol)	0.4	mg/kg	< 0.4	< 0.4	< 0.4	< 0.4
4-Nitrophenol	5	mg/kg	< 5	< 5	< 5	< 5
Dinoseb	20	mg/kg	< 20	< 20	< 20	< 20
Phenol	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
Total Non-Halogenated Phenol	20	mg/kg	< 20	< 20	< 20	< 20
Phenol-d6 (surr.)	1	%	92	80	78	97
Chromium (hexavalent)	1	mg/kg	< 1	< 1	< 1	< 1
Cyanide (total)	5	mg/kg	< 5	-	-	< 5
Fluoride	100	mg/kg	230	-	-	240
pH (1:5 Aqueous extract)	0.1	pH Units	6.7	-	-	5.6
% Moisture	0.1	%	12	6.8	12	15
Heavy Metals						
Arsenic	2	mg/kg	2.7	2.2	2.4	8.1
Cadmium	0.4	mg/kg	< 0.4	< 0.4	< 0.4	< 0.4
Chromium	5	mg/kg	13	13	12	16
Copper	5	mg/kg	10	9.6	15	12
Lead	5	mg/kg	11	9.5	31	17
Mercury	0.1	mg/kg	< 0.1	< 0.1	< 0.1	< 0.1
Molybdenum	10	mg/kg	< 10	-	-	< 10
Nickel	5	mg/kg	10	9.5	10.0	18
Selenium	2	mg/kg	< 2	-	-	< 2
Silver	5	mg/kg	< 5	-	-	< 5
Tin	10	mg/kg	< 10	-	-	< 10
Zinc	5	mg/kg	28	26	55	25

Client Sample ID			BH7-1.0	BH8-0.1	TS-7	TS-8
Sample Matrix			Soil	Soil	Solid	Solid
Eurofins | mgt Sample No.			M14-De14240	M14-De14241	M14-De14242	M14-De14243
Date Sampled			Dec 12, 2014	Dec 12, 2014	Dec 12, 2014	Dec 12, 2014
Test/Reference	LOR	Unit				
Total Recoverable Hydrocarbons - 1999 NEPM Fractions						
TRH C6-C9	20	mg/kg	-	-	[G01]< 200	-
TRH C10-C14	20	mg/kg	-	-	< 20	-
TRH C15-C28	50	mg/kg	-	-	69	-
TRH C29-C36	50	mg/kg	-	-	97	-
TRH C10-36 (Total)	50	mg/kg	-	-	170	-
BTEX						
Comments					G01	
Benzene	0.1	mg/kg	-	-	< 1	-
Toluene	0.1	mg/kg	-	-	< 1	-
Ethylbenzene	0.1	mg/kg	-	-	< 1	-

Client Sample ID Sample Matrix Eurofins | mgt Sample No. Date Sampled Test/Reference	LOR	Unit	BH7-1.0 Soil M14-De14240 Dec 12, 2014	BH8-0.1 Soil M14-De14241 Dec 12, 2014	TS-7 Solid M14-De14242 Dec 12, 2014	TS-8 Solid M14-De14243 Dec 12, 2014
BTEX						
m&p-Xylenes	0.2	mg/kg	-	-	< 2	-
o-Xylene	0.1	mg/kg	-	-	< 1	-
Xylenes - Total	0.3	mg/kg	-	-	< 3	-
4-Bromofluorobenzene (surr.)	1	%	-	-	94	-
Total Recoverable Hydrocarbons - 2013 NEPM Fractions						
Naphthalene[N02]	0.5	mg/kg	-	-	[G01]< 1	-
TRH C6-C10	20	mg/kg	-	-	[G01]< 200	-
TRH C6-C10 less BTEX (F1)[N04]	20	mg/kg	-	-	[G01]< 200	-
TRH >C10-C16	50	mg/kg	-	-	< 50	-
TRH >C10-C16 less Naphthalene (F2)[N01]	50	mg/kg	-	-	< 50	-
TRH >C16-C34	100	mg/kg	-	-	140	-
TRH >C34-C40	100	mg/kg	-	-	< 100	-
Polycyclic Aromatic Hydrocarbons						
Benzo(a)pyrene TEQ (lower bound) *	0.5	mg/kg	-	-	< 0.5	-
Benzo(a)pyrene TEQ (medium bound) *	0.5	mg/kg	-	-	0.6	-
Benzo(a)pyrene TEQ (upper bound) *	0.5	mg/kg	-	-	1.2	-
Acenaphthene	0.5	mg/kg	-	-	< 0.5	-
Acenaphthylene	0.5	mg/kg	-	-	< 0.5	-
Anthracene	0.5	mg/kg	-	-	< 0.5	-
Benz(a)anthracene	0.5	mg/kg	-	-	< 0.5	-
Benzo(a)pyrene	0.5	mg/kg	-	-	< 0.5	-
Benzo(b&j)fluoranthene[N07]	0.5	mg/kg	-	-	< 0.5	-
Benzo(g.h.i)perylene	0.5	mg/kg	-	-	< 0.5	-
Benzo(k)fluoranthene	0.5	mg/kg	-	-	< 0.5	-
Chrysene	0.5	mg/kg	-	-	< 0.5	-
Dibenz(a.h)anthracene	0.5	mg/kg	-	-	< 0.5	-
Fluoranthene	0.5	mg/kg	-	-	< 0.5	-
Fluorene	0.5	mg/kg	-	-	< 0.5	-
Indeno(1.2.3-cd)pyrene	0.5	mg/kg	-	-	< 0.5	-
Naphthalene	0.5	mg/kg	-	-	< 0.5	-
Phenanthrene	0.5	mg/kg	-	-	< 0.5	-
Pyrene	0.5	mg/kg	-	-	< 0.5	-
Total PAH	0.5	mg/kg	-	-	< 0.5	-
2-Fluorobiphenyl (surr.)	1	%	-	-	99	-
p-Terphenyl-d14 (surr.)	1	%	-	-	108	-
Organochlorine Pesticides						
Chlordanes - Total	0.1	mg/kg	< 0.1	< 0.1	< 0.1	< 0.1
4.4'-DDD	0.05	mg/kg	< 0.05	< 0.05	< 0.05	< 0.05
4.4'-DDE	0.05	mg/kg	< 0.05	< 0.05	< 0.05	< 0.05
4.4'-DDT	0.05	mg/kg	< 0.05	< 0.05	< 0.05	< 0.05
a-BHC	0.05	mg/kg	< 0.05	< 0.05	< 0.05	< 0.05
Aldrin	0.05	mg/kg	< 0.05	< 0.05	< 0.05	< 0.05
b-BHC	0.05	mg/kg	< 0.05	< 0.05	< 0.05	< 0.05
d-BHC	0.05	mg/kg	< 0.05	< 0.05	< 0.05	< 0.05
Dieldrin	0.05	mg/kg	< 0.05	< 0.05	< 0.05	< 0.05
Endosulfan I	0.05	mg/kg	< 0.05	< 0.05	< 0.05	< 0.05
Endosulfan II	0.05	mg/kg	< 0.05	< 0.05	< 0.05	< 0.05
Endosulfan sulphate	0.05	mg/kg	< 0.05	< 0.05	< 0.05	< 0.05
Endrin	0.05	mg/kg	< 0.05	< 0.05	< 0.05	< 0.05

eurofins | mgt

Client Sample ID			BH7-1.0	BH8-0.1	TS-7	TS-8
Sample Matrix			Soil	Soil	Solid	Solid
Eurofins | mgt Sample No.			M14-De14240	M14-De14241	M14-De14242	M14-De14243
Date Sampled			Dec 12, 2014	Dec 12, 2014	Dec 12, 2014	Dec 12, 2014
Test/Reference	LOR	Unit				
Organochlorine Pesticides						
Endrin aldehyde	0.05	mg/kg	< 0.05	< 0.05	< 0.05	< 0.05
Endrin ketone	0.05	mg/kg	< 0.05	< 0.05	< 0.05	< 0.05
g-BHC (Lindane)	0.05	mg/kg	< 0.05	< 0.05	< 0.05	< 0.05
Heptachlor	0.05	mg/kg	< 0.05	< 0.05	< 0.05	< 0.05
Heptachlor epoxide	0.05	mg/kg	< 0.05	< 0.05	< 0.05	< 0.05
Hexachlorobenzene	0.05	mg/kg	< 0.05	< 0.05	< 0.05	< 0.05
Methoxychlor	0.05	mg/kg	< 0.05	< 0.05	< 0.05	< 0.05
Toxaphene	1	mg/kg	< 1	< 1	< 1	< 1
Dibutylchlorendate (surr.)	1	%	96	114	121	97
Tetrachloro-m-xylene (surr.)	1	%	110	139	119	107
Organophosphorous Pesticides						
Bolstar	0.2	mg/kg	-	-	< 0.2	-
Chlorpyrifos	0.2	mg/kg	-	-	< 0.2	-
Demeton-O	0.2	mg/kg	-	-	< 0.2	-
Diazinon	0.2	mg/kg	-	-	< 0.2	-
Dichlorvos	0.2	mg/kg	-	-	< 0.2	-
Disulfoton	0.2	mg/kg	-	-	< 0.2	-
Ethion	0.2	mg/kg	-	-	< 0.2	-
Ethoprop	0.2	mg/kg	-	-	< 0.2	-
Fenitrothion	0.2	mg/kg	-	-	< 0.2	-
Fensulfothion	0.2	mg/kg	-	-	< 0.2	-
Fenthion	0.2	mg/kg	-	-	< 0.2	-
Merphos	0.2	mg/kg	-	-	< 0.2	-
Methyl azinphos	0.2	mg/kg	-	-	< 0.2	-
Methyl parathion	0.2	mg/kg	-	-	< 0.2	-
Mevinphos	0.2	mg/kg	-	-	< 0.2	-
Naled	0.5	mg/kg	-	-	< 0.5	-
Phorate	0.2	mg/kg	-	-	< 0.2	-
Ronnel	0.2	mg/kg	-	-	< 0.2	-
Tokuthion	0.2	mg/kg	-	-	< 0.2	-
Trichloronate	0.2	mg/kg	-	-	< 0.2	-
Triphenylphosphate (surr.)	1	%	-	-	126	-
Acid Herbicides						
Comments					G01	
2.4-D	0.5	mg/kg	-	-	< 0.5	-
2.4-DB	0.5	mg/kg	-	-	< 1	-
2.4.5-T	0.5	mg/kg	-	-	< 1	-
2.4.5-TP	0.5	mg/kg	-	-	< 1	-
Actril (loxynil)	0.5	mg/kg	-	-	< 5	-
Dicamba	0.5	mg/kg	-	-	< 1	-
Dichlorprop	0.5	mg/kg	-	-	< 1	-
Dinitro-o-cresol	0.5	mg/kg	-	-	< 1	-
Dinoseb	0.5	mg/kg	-	-	< 1	-
MCPA	0.5	mg/kg	-	-	< 0.5	-
MCPB	0.5	mg/kg	-	-	< 1	-
Mecoprop	0.5	mg/kg	-	-	< 1	-
Warfarin (surr.)	1	%	-	-	124	-

eurofins | mgt

Client Sample ID			BH7-1.0	BH8-0.1	TS-7	TS-8
Sample Matrix			Soil	Soil	Solid	Solid
Eurofins | mgt Sample No.			M14-De14240	M14-De14241	M14-De14242	M14-De14243
Date Sampled			Dec 12, 2014	Dec 12, 2014	Dec 12, 2014	Dec 12, 2014
Test/Reference	LOR	Unit				
Phenols (Halogenated)						
2-Chlorophenol	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
2.4-Dichlorophenol	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
2.4.5-Trichlorophenol	1.0	mg/kg	< 1	< 1	< 1	< 1
2.4.6-Trichlorophenol	1.0	mg/kg	< 1	< 1	< 1	< 1
2.6-Dichlorophenol	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
4-Chloro-3-methylphenol	1.0	mg/kg	< 1	< 1	< 1	< 1
Pentachlorophenol	1.0	mg/kg	< 1	< 1	< 1	< 1
Tetrachlorophenols - Total	1.0	mg/kg	< 1	< 1	< 1	< 1
Total Halogenated Phenol	1	mg/kg	< 1	< 1	< 1	< 1
Phenols (non-Halogenated)						
2-Cyclohexyl-4.6-dinitrophenol	20	mg/kg	< 20	< 20	< 20	< 20
2-Methyl-4.6-dinitrophenol	5	mg/kg	< 5	< 5	< 5	< 5
2-Methylphenol (o-Cresol)	0.2	mg/kg	< 0.2	< 0.2	< 0.2	< 0.2
2-Nitrophenol	1.0	mg/kg	< 1	< 1	< 1	< 1
2.4-Dimethylphenol	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
2.4-Dinitrophenol	5	mg/kg	< 5	< 5	< 5	< 5
3&4-Methylphenol (m&p-Cresol)	0.4	mg/kg	< 0.4	< 0.4	< 0.4	< 0.4
4-Nitrophenol	5	mg/kg	< 5	< 5	< 5	< 5
Dinoseb	20	mg/kg	< 20	< 20	< 20	< 20
Phenol	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
Total Non-Halogenated Phenol	20	mg/kg	< 20	< 20	< 20	< 20
Phenol-d6 (surr.)	1	%	79	77	99	102
% Clay*	1	%	-	21	-	-
Chromium (hexavalent)	1	mg/kg	< 1	< 1	< 1	< 1
Conductivity (1:5 aqueous extract at 25°C)	10	uS/cm	-	95	-	-
pH (units)(1:5 soil:CaCl2 extract)	0.1	pH Units	-	5.1	-	-
% Moisture	0.1	%	15	13	-	-
Heavy Metals						
Arsenic	2	mg/kg	4.6	2.0	3.8	< 2
Beryllium	2	mg/kg	< 2	< 2	-	< 2
Boron	10	mg/kg	< 10	< 10	-	38
Cadmium	0.4	mg/kg	< 0.4	< 0.4	< 0.4	< 0.4
Chromium	5	mg/kg	-	-	7.7	-
Cobalt	5	mg/kg	7.2	5.8	-	< 5
Copper	5	mg/kg	12	11	19	920
Lead	5	mg/kg	9.7	16	28	25
Manganese	5	mg/kg	440	470	-	100
Mercury	0.1	mg/kg	< 0.1	< 0.1	< 0.2	< 0.2
Nickel	5	mg/kg	12	10	13	< 5
Selenium	2	mg/kg	< 2	< 2	-	< 2
Zinc	5	mg/kg	25	39	26	730
Ion Exchange Properties						
Cation Exchange Capacity	0.05	meq/100g	-	11	-	-

Client Sample ID			TS-9	TS-10	TS-11	TS-12
Sample Matrix			Solid	Solid	Solid	Solid
Eurofins | mgt Sample No.			M14-De14244	M14-De14245	M14-De14246	M14-De14247
Date Sampled			Dec 12, 2014	Dec 12, 2014	Dec 12, 2014	Dec 12, 2014
Test/Reference	LOR	Unit				
Total Recoverable Hydrocarbons - 1999 NEPM Fractions						
TRH C6-C9	20	mg/kg	[G01]< 100	[G01]< 100	[G01]< 100	-
TRH C10-C14	20	mg/kg	< 20	< 20	260	-
TRH C15-C28	50	mg/kg	310	< 50	260	-
TRH C29-C36	50	mg/kg	1400	67	2200	-
TRH C10-36 (Total)	50	mg/kg	1700	67	2700	-
BTEX						
Benzene	0.1	mg/kg	< 0.5	< 0.5	-	-
Toluene	0.1	mg/kg	< 0.5	< 0.5	-	-
Ethylbenzene	0.1	mg/kg	< 0.5	< 0.5	-	-
m&p-Xylenes	0.2	mg/kg	< 1	< 1	-	-
o-Xylene	0.1	mg/kg	< 0.5	< 0.5	-	-
Xylenes - Total	0.3	mg/kg	< 1.5	< 1.5	-	-
4-Bromofluorobenzene (surr.)	1	%	85	88	-	-
Total Recoverable Hydrocarbons - 2013 NEPM Fractions						
Naphthalene[N02]	0.5	mg/kg	< 0.5	< 0.5	< 0.5	-
TRH C6-C10	20	mg/kg	[G01]< 100	[G01]< 100	[G01]< 100	-
TRH C6-C10 less BTEX (F1)[N04]	20	mg/kg	[G01]< 100	[G01]< 100	[G01]< 100	-
TRH >C10-C16	50	mg/kg	< 50	< 50	230	-
TRH >C10-C16 less Naphthalene (F2)[N01]	50	mg/kg	< 50	< 50	230	-
TRH >C16-C34	100	mg/kg	1300	< 100	1600	-
TRH >C34-C40	100	mg/kg	480	< 100	990	-
Polycyclic Aromatic Hydrocarbons						
Benzo(a)pyrene TEQ (lower bound) *	0.5	mg/kg	< 0.5	< 0.5	-	-
Benzo(a)pyrene TEQ (medium bound) *	0.5	mg/kg	0.6	0.6	-	-
Benzo(a)pyrene TEQ (upper bound) *	0.5	mg/kg	1.2	1.2	-	-
Acenaphthene	0.5	mg/kg	< 0.5	< 0.5	-	-
Acenaphthylene	0.5	mg/kg	< 0.5	< 0.5	-	-
Anthracene	0.5	mg/kg	< 0.5	< 0.5	-	-
Benz(a)anthracene	0.5	mg/kg	< 0.5	< 0.5	-	-
Benzo(a)pyrene	0.5	mg/kg	< 0.5	< 0.5	-	-
Benzo(b&j)fluoranthene[N07]	0.5	mg/kg	< 0.5	< 0.5	-	-
Benzo(g.h.i)perylene	0.5	mg/kg	< 0.5	< 0.5	-	-
Benzo(k)fluoranthene	0.5	mg/kg	< 0.5	< 0.5	-	-
Chrysene	0.5	mg/kg	< 0.5	< 0.5	-	-
Dibenz(a.h)anthracene	0.5	mg/kg	< 0.5	< 0.5	-	-
Fluoranthene	0.5	mg/kg	< 0.5	< 0.5	-	-
Fluorene	0.5	mg/kg	< 0.5	< 0.5	-	-
Indeno(1.2.3-cd)pyrene	0.5	mg/kg	< 0.5	< 0.5	-	-
Naphthalene	0.5	mg/kg	< 0.5	< 0.5	-	-
Phenanthrene	0.5	mg/kg	< 0.5	< 0.5	-	-
Pyrene	0.5	mg/kg	< 0.5	< 0.5	-	-
Total PAH	0.5	mg/kg	< 0.5	< 0.5	-	-
2-Fluorobiphenyl (surr.)	1	%	99	79	-	-
p-Terphenyl-d14 (surr.)	1	%	103	86	-	-
Organochlorine Pesticides						
Chlordanes - Total	0.1	mg/kg	< 0.1	< 0.1	< 0.1	< 0.1
4.4'-DDD	0.05	mg/kg	< 0.05	< 0.05	< 0.05	< 0.05
4.4'-DDE	0.05	mg/kg	< 0.05	< 0.05	< 0.05	< 0.05
4.4'-DDT	0.05	mg/kg	< 0.05	< 0.05	< 0.05	< 0.05

eurofins | mgt

Client Sample ID			TS-9	TS-10	TS-11	TS-12
Sample Matrix			Solid	Solid	Solid	Solid
Eurofins | mgt Sample No.			M14-De14244	M14-De14245	M14-De14246	M14-De14247
Date Sampled			Dec 12, 2014	Dec 12, 2014	Dec 12, 2014	Dec 12, 2014
Test/Reference	LOR	Unit				
Organochlorine Pesticides						
a-BHC	0.05	mg/kg	< 0.05	< 0.05	< 0.05	< 0.05
Aldrin	0.05	mg/kg	< 0.05	< 0.05	< 0.05	< 0.05
b-BHC	0.05	mg/kg	< 0.05	< 0.05	< 0.05	< 0.05
d-BHC	0.05	mg/kg	< 0.05	< 0.05	< 0.05	< 0.05
Dieldrin	0.05	mg/kg	< 0.05	< 0.05	< 0.05	< 0.05
Endosulfan I	0.05	mg/kg	< 0.05	< 0.05	< 0.05	< 0.05
Endosulfan II	0.05	mg/kg	< 0.05	< 0.05	< 0.05	< 0.05
Endosulfan sulphate	0.05	mg/kg	< 0.05	< 0.05	< 0.05	< 0.05
Endrin	0.05	mg/kg	< 0.05	< 0.05	< 0.05	< 0.05
Endrin aldehyde	0.05	mg/kg	< 0.05	< 0.05	< 0.05	< 0.05
Endrin ketone	0.05	mg/kg	< 0.05	< 0.05	< 0.05	< 0.05
g-BHC (Lindane)	0.05	mg/kg	< 0.05	< 0.05	< 0.05	< 0.05
Heptachlor	0.05	mg/kg	< 0.05	< 0.05	< 0.05	< 0.05
Heptachlor epoxide	0.05	mg/kg	< 0.05	< 0.05	< 0.05	< 0.05
Hexachlorobenzene	0.05	mg/kg	< 0.05	< 0.05	< 0.05	< 0.05
Methoxychlor	0.05	mg/kg	< 0.05	< 0.05	< 0.05	< 0.05
Toxaphene	1	mg/kg	< 1	< 1	< 1	< 1
Dibutylchlorendate (surr.)	1	%	106	110	120	109
Tetrachloro-m-xylene (surr.)	1	%	130	89	118	78
Organophosphorous Pesticides						
Bolstar	0.2	mg/kg	< 0.2	-	-	-
Chlorpyrifos	0.2	mg/kg	< 0.5	-	-	-
Demeton-O	0.2	mg/kg	< 0.2	-	-	-
Diazinon	0.2	mg/kg	< 0.2	-	-	-
Dichlorvos	0.2	mg/kg	< 0.2	-	-	-
Disulfoton	0.2	mg/kg	< 0.2	-	-	-
Ethion	0.2	mg/kg	< 0.2	-	-	-
Ethoprop	0.2	mg/kg	< 0.2	-	-	-
Fenitrothion	0.2	mg/kg	< 0.2	-	-	-
Fensulfothion	0.2	mg/kg	< 0.2	-	-	-
Fenthion	0.2	mg/kg	< 0.2	-	-	-
Merphos	0.2	mg/kg	< 0.2	-	-	-
Methyl azinphos	0.2	mg/kg	< 0.2	-	-	-
Methyl parathion	0.2	mg/kg	< 0.2	-	-	-
Mevinphos	0.2	mg/kg	< 0.2	-	-	-
Naled	0.5	mg/kg	< 0.5	-	-	-
Phorate	0.2	mg/kg	< 0.2	-	-	-
Ronnel	0.2	mg/kg	< 0.2	-	-	-
Tokuthion	0.2	mg/kg	< 0.2	-	-	-
Trichloronate	0.2	mg/kg	< 0.2	-	-	-
Triphenylphosphate (surr.)	1	%	139	-	-	-
Acid Herbicides						
Comments			G01			
2.4-D	0.5	mg/kg	< 1	-	-	-
2.4-DB	0.5	mg/kg	< 5	-	-	-
2.4.5-T	0.5	mg/kg	< 30	-	-	-
2.4.5-TP	0.5	mg/kg	< 0.5	-	-	-
Actril (loxynil)	0.5	mg/kg	< 1	-	-	-
Dicamba	0.5	mg/kg	< 1	-	-	-

eurofins | mgt

Client Sample ID			TS-9	TS-10	TS-11	TS-12
Sample Matrix			Solid	Solid	Solid	Solid
Eurofins | mgt Sample No.			M14-De14244	M14-De14245	M14-De14246	M14-De14247
Date Sampled			Dec 12, 2014	Dec 12, 2014	Dec 12, 2014	Dec 12, 2014
Test/Reference	LOR	Unit				
Acid Herbicides						
Dichlorprop	0.5	mg/kg	< 1	-	-	-
Dinitro-o-cresol	0.5	mg/kg	< 1	-	-	-
Dinoseb	0.5	mg/kg	< 10	-	-	-
MCPA	0.5	mg/kg	< 1	-	-	-
MCPB	0.5	mg/kg	< 5	-	-	-
Mecoprop	0.5	mg/kg	< 1	-	-	-
Warfarin (surr.)	1	%	107	-	-	-
Phenols (Halogenated)						
2-Chlorophenol	0.5	mg/kg	< 0.5	< 0.5	-	< 0.5
2.4-Dichlorophenol	0.5	mg/kg	< 0.5	< 0.5	-	< 0.5
2.4.5-Trichlorophenol	1	mg/kg	< 1	< 1	-	< 1
2.4.6-Trichlorophenol	1.0	mg/kg	< 1	< 1	-	< 1
2.6-Dichlorophenol	0.5	mg/kg	< 0.5	< 0.5	-	< 0.5
4-Chloro-3-methylphenol	1.0	mg/kg	< 1	< 1	-	< 1
Pentachlorophenol	1.0	mg/kg	< 1	< 1	-	< 1
Tetrachlorophenols - Total	1.0	mg/kg	< 1	< 1	-	< 1
Total Halogenated Phenol	1	mg/kg	< 1	< 1	-	< 1
Phenols (non-Halogenated)						
2-Cyclohexyl-4.6-dinitrophenol	20	mg/kg	< 20	< 20	-	< 20
2-Methyl-4.6-dinitrophenol	5	mg/kg	< 5	< 5	-	< 5
2-Methylphenol (o-Cresol)	0.2	mg/kg	< 0.2	< 0.2	-	< 0.2
2-Nitrophenol	1	mg/kg	< 1	< 1	-	< 1
2.4-Dimethylphenol	0.5	mg/kg	< 0.5	< 0.5	-	< 0.5
2.4-Dinitrophenol	5	mg/kg	< 5	< 5	-	< 5
3&4-Methylphenol (m&p-Cresol)	0.4	mg/kg	< 0.4	< 0.4	-	< 0.4
4-Nitrophenol	5	mg/kg	< 5	< 5	-	< 5
Dinoseb	20	mg/kg	< 20	< 20	-	< 20
Phenol	0.5	mg/kg	< 0.5	< 0.5	-	< 0.5
Total Non-Halogenated Phenol	20	mg/kg	< 20	< 20	-	< 20
Phenol-d6 (surr.)	1	%	117	78	-	78
Chromium (hexavalent)	1	mg/kg	< 1	< 1	< 1	< 1
Heavy Metals						
Arsenic	2	mg/kg	< 2	< 2	390	21
Beryllium	2	mg/kg	-	-	< 2	< 2
Boron	10	mg/kg	-	-	11	29
Cadmium	0.4	mg/kg	< 0.4	< 0.4	< 0.4	< 0.4
Chromium	5	mg/kg	6.1	< 5	-	-
Cobalt	5	mg/kg	-	-	< 5	< 5
Copper	5	mg/kg	19	74	180	63
Lead	5	mg/kg	9.9	9.1	15	5.0
Manganese	5	mg/kg	-	-	110	29
Mercury	0.1	mg/kg	< 0.2	< 0.2	< 0.1	< 0.1
Nickel	5	mg/kg	< 5	< 5	< 5	< 5
Selenium	2	mg/kg	-	-	< 2	< 2
Zinc	5	mg/kg	90	38	180	29

Client Sample ID			DUP-A	PS-5	PS-6	PS-7
Sample Matrix			Solid	Paint	Paint	Paint
Eurofins | mgt Sample No.			M14-De14248	M14-De14249	M14-De14250	M14-De14251
Date Sampled			Dec 12, 2014	Dec 15, 2014	Dec 15, 2014	Dec 15, 2014
Test/Reference	LOR	Unit				
Organochlorine Pesticides						
Chlordanes - Total	0.1	mg/kg	< 0.1	-	-	-
4.4'-DDD	0.05	mg/kg	< 0.05	-	-	-
4.4'-DDE	0.05	mg/kg	< 0.05	-	-	-
4.4'-DDT	0.05	mg/kg	< 0.05	-	-	-
a-BHC	0.05	mg/kg	< 0.05	-	-	-
Aldrin	0.05	mg/kg	< 0.05	-	-	-
b-BHC	0.05	mg/kg	< 0.05	-	-	-
d-BHC	0.05	mg/kg	< 0.05	-	-	-
Dieldrin	0.05	mg/kg	< 0.05	-	-	-
Endosulfan I	0.05	mg/kg	< 0.05	-	-	-
Endosulfan II	0.05	mg/kg	< 0.05	-	-	-
Endosulfan sulphate	0.05	mg/kg	< 0.05	-	-	-
Endrin	0.05	mg/kg	< 0.05	-	-	-
Endrin aldehyde	0.05	mg/kg	< 0.05	-	-	-
Endrin ketone	0.05	mg/kg	< 0.05	-	-	-
g-BHC (Lindane)	0.05	mg/kg	< 0.05	-	-	-
Heptachlor	0.05	mg/kg	< 0.05	-	-	-
Heptachlor epoxide	0.05	mg/kg	< 0.05	-	-	-
Hexachlorobenzene	0.05	mg/kg	< 0.05	-	-	-
Methoxychlor	0.05	mg/kg	< 0.05	-	-	-
Toxaphene	1	mg/kg	< 1	-	-	-
Dibutylchlorendate (surr.)	1	%	85	-	-	-
Tetrachloro-m-xylene (surr.)	1	%	99	-	-	-
Phenols (Halogenated)						
2-Chlorophenol	0.5	mg/kg	< 0.5	-	-	-
2.4-Dichlorophenol	0.5	mg/kg	< 0.5	-	-	-
2.4.5-Trichlorophenol	1	mg/kg	< 1	-	-	-
2.4.6-Trichlorophenol	1.0	mg/kg	< 1	-	-	-
2.6-Dichlorophenol	0.5	mg/kg	< 0.5	-	-	-
4-Chloro-3-methylphenol	1.0	mg/kg	< 1	-	-	-
Pentachlorophenol	1.0	mg/kg	< 1	-	-	-
Tetrachlorophenols - Total	1.0	mg/kg	< 1	-	-	-
Total Halogenated Phenol	1	mg/kg	< 1	-	-	-
Phenols (non-Halogenated)						
2-Cyclohexyl-4.6-dinitrophenol	20	mg/kg	< 20	-	-	-
2-Methyl-4.6-dinitrophenol	5	mg/kg	< 5	-	-	-
2-Methylphenol (o-Cresol)	0.2	mg/kg	< 0.2	-	-	-
2-Nitrophenol	1	mg/kg	< 1	-	-	-
2.4-Dimethylphenol	0.5	mg/kg	< 0.5	-	-	-
2.4-Dinitrophenol	5	mg/kg	< 5	-	-	-
3&4-Methylphenol (m&p-Cresol)	0.4	mg/kg	< 0.4	-	-	-
4-Nitrophenol	5	mg/kg	< 5	-	-	-
Dinoseb	20	mg/kg	< 20	-	-	-
Phenol	0.5	mg/kg	< 0.5	-	-	-
Total Non-Halogenated Phenol	20	mg/kg	< 20	-	-	-
Phenol-d6 (surr.)	1	%	85	-	-	-
Chromium (hexavalent)	1	mg/kg	< 1	-	-	-
Lead (% w/w)	0.01	%	-	< 0.01	12	0.01
Asbestos Absence /Presence			-	See attached	See attached	See attached

Client Sample ID			DUP-A	PS-5	PS-6	PS-7
Sample Matrix			Solid	Paint	Paint	Paint
Eurofins | mgt Sample No.			M14-De14248	M14-De14249	M14-De14250	M14-De14251
Date Sampled			Dec 12, 2014	Dec 15, 2014	Dec 15, 2014	Dec 15, 2014
Test/Reference	LOR	Unit				
Heavy Metals						
Arsenic	2	mg/kg	< 2	-	-	-
Beryllium	2	mg/kg	< 2	-	-	-
Boron	10	mg/kg	< 10	-	-	-
Cadmium	0.4	mg/kg	< 0.4	-	-	-
Cobalt	5	mg/kg	< 5	-	-	-
Copper	5	mg/kg	13	-	-	-
Lead	5	mg/kg	20	-	-	-
Manganese	5	mg/kg	630	-	-	-
Mercury	0.1	mg/kg	< 0.2	-	-	-
Nickel	5	mg/kg	11	-	-	-
Selenium	2	mg/kg	< 2	-	-	-
Zinc	5	mg/kg	24	-	-	-

Client Sample ID			PS-8
Sample Matrix			Paint
Eurofins | mgt Sample No.			M14-De14252
Date Sampled			Dec 15, 2014
Test/Reference	LOR	Unit	
Lead (% w/w)	0.01	%	8.6
Asbestos Absence /Presence			See attached

eurofins | mgt

Sample History

Where samples are submitted/analysed over several days, the last date of extraction and analysis is reported.
A recent review of our LIMS has resulted in the correction or clarification of some method identifications. Due to this, some of the method reference information on reports has changed. However, no substantive change has been made to our laboratory methods, and as such there is no change in the validity of current or previous results (regarding both quality and NATA accreditation).

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
Eurofins | mgt Suite 7A			
Total Recoverable Hydrocarbons - 1999 NEPM Fractions	Melbourne	Dec 18, 2014	14 Day
- Method: TRH C6-C36 - LTM-ORG-2010			
BTEX	Melbourne	Dec 18, 2014	14 Day
- Method: TRH C6-C40 - LTM-ORG-2010			
Total Recoverable Hydrocarbons - 2013 NEPM Fractions	Melbourne	Dec 18, 2014	14 Day
- Method: TRH C6-C40 - LTM-ORG-2010			
Polycyclic Aromatic Hydrocarbons	Melbourne	Dec 18, 2014	14 Day
- Method: USEPA 8270 Polycyclic Aromatic Hydrocarbons			
Phenols (Halogenated)	Melbourne	Dec 18, 2014	14 Day
- Method: USEPA 8270 Phenols			
Phenols (non-Halogenated)	Melbourne	Dec 18, 2014	14 Day
- Method: USEPA 8270 Phenols			
Metals M8	Melbourne	Dec 18, 2014	28 Day
- Method: USEPA 6010/6020 Heavy Metals & USEPA 7470/71 Mercury			
Vic EPA IWRG 621 (Solids)			
Volatile Organics	Melbourne	Dec 18, 2014	7 Day
- Method: USEPA 8260 - MGT 350A Volatile Organics by GCMS			
Organochlorine Pesticides	Melbourne	Dec 18, 2014	14 Day
- Method: USEPA 8081 Organochlorine Pesticides			
Polychlorinated Biphenyls	Melbourne	Dec 18, 2014	28 Day
- Method: USEPA 8082 Polychlorinated Biphenyls			
Chromium (hexavalent)	Melbourne	Dec 18, 2014	28 Day
- Method: APHA 3500-Cr Hexavalent Chromium- (Extraction:- USEPA3060)			
Cyanide (total)	Melbourne	Dec 19, 2014	14 Day
- Method: USEPA 9010 Cyanide			
Fluoride	Melbourne	Dec 19, 2014	28 Day
- Method: NEPC 404 (Fusion followed by ISE)			
pH (1:5 Aqueous extract)	Melbourne	Dec 18, 2014	7 Day
- Method: LM-LTM-INO-4000			
IWRG 621 Metals : Metals M12	Melbourne	Dec 18, 2014	28 Day
- Method: USEPA 6010/6020 Heavy Metals & USEPA 7470/71 Mercury			
Eurofins | mgt Suite 14			
Organophosphorous Pesticides	Melbourne	Dec 18, 2014	14 Day
- Method: USEPA 8270 Organophosphorus Pesticides			
Acid Herbicides	Melbourne	Dec 18, 2014	14 Day
- Method: MGT 530			
% Clay*	Brisbane	Dec 22, 2014	6 Month
- Method: LTM-GEN-7040			
pH (units)(1:5 soil:CaCl2 extract)	Melbourne	Dec 18, 2014	7 Day
Lead (% w/w)	Sydney	Dec 17, 2014	6 Month
- Method: E022.5/E030.5			
% Moisture	Melbourne	Dec 16, 2014	14 Day
- Method: LTM-GEN-7080 Moisture			
Asbestos Absence /Presence	Sydney	Dec 16, 2014	0 Day
- Method: Asbestos – LTM-ASB-8020			
Conductivity (1:5 aqueous extract at 25°C)	Melbourne	Dec 18, 2014	7 Day
- Method: LM-LTM-INO-4010			
Ion Exchange Properties	Melbourne	Dec 19, 2014	
Heavy Metals	Melbourne	Dec 18, 2014	180 Day
- Method: USEPA 6010/6020 Heavy Metals			

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Site # 1254 & 14271

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Company Name: Vantage Environmental Management Pty Ltd
Address: Suite 4 539-541 Kiewa St
Albury
NSW 2640

Project Name: BARHAM
Project ID: AL14-218

Order No.:
Report #: 442493
Phone: (02) 6021 8655
Fax: (02) 6021 8666

Received: Dec 16, 2014 8:55 AM
Due: Dec 23, 2014
Priority: 5 Day
Contact Name: Susannah Price

Eurofins | mgt Client Manager: Onur Mehmet

Eurofins | mgt 2-5 Kingston Town Close, Oakleigh, Victoria, Australia, 3166
Telephone: +61 3 8564 5000 Facsimile: +61 3 8564 5090

Date Reported: Jan 05, 2015

Sample Detail	% Clay*	% Moisture	Asbestos Absence /Presence	Chromium (hexavalent)	HOLD	Lead (% w/w)	pH (units)(1:5 soil:CaCl2 extract)	Organochlorine Pesticides	Organophosphorous Pesticides	Acid Herbicides	Phenols (IWRG 621)	Eurofins | mgt Suite 14	Total Recoverable Hydrocarbons - NEPM 2013 Fractions	NEPM 2013 Metals : Metals M13	Eurofins | mgt Suite 6	BTEX and Volatile TRH	Vic EPA IWRG 621 (Solids)	Eurofins | mgt Suite 7A	Cation Exchange Capacity
Laboratory where analysis is conducted																			
Melbourne Laboratory - NATA Site # 1254 & 14271		X		X	X		X	X	X	X	X	X	X	X	X	X	X	X	X
Sydney Laboratory - NATA Site # 18217			X			X								X					
Brisbane Laboratory - NATA Site # 20794	X																		
External Laboratory																			

Sample ID	Sample Date	Sampling Time	Matrix	LAB ID																
BH5-0.1	Dec 12, 2014		Soil	M14-De14236		X							X	X							X		
BH6-0.1	Dec 12, 2014		Soil	M14-De14237		X		X				X			X							X	
BH7-0.1	Dec 12, 2014		Soil	M14-De14238		X		X				X			X							X	
BH7-0.5	Dec 12, 2014		Soil	M14-De14239		X							X	X	X						X		
BH7-1.0	Dec 12, 2014		Soil	M14-De14240		X						X			X			X					
BH8-0.1	Dec 12, 2014		Soil	M14-De14241	X	X					X	X			X			X					X
TS-7	Dec 12, 2014		Solid	M14-De14242				X						X	X	X						X	
TS-8	Dec 12, 2014		Solid	M14-De14243								X			X			X					
TS-9	Dec 12, 2014		Solid	M14-De14244				X						X	X	X						X	

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ABN : 50 005 085 521

Company Name:	Vantage Environmental Management Pty Ltd	**Order No.:**	
Address:	Suite 4 539-541 Kiewa St Albury NSW 2640	**Report #:** **Phone:** **Fax:**	442493 (02) 6021 8655 (02) 6021 8666
Project Name:	BARHAM		
Project ID:	AL14-218		

Received:	Dec 16, 2014 8:55 AM
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Date Reported: Jan 05, 2015

Sample Detail					% Clay*	% Moisture	Asbestos Absence /Presence	Chromium (hexavalent)	HOLD	Lead (% w/w)	pH (units)(1:5 soil:CaCl2 extract)	Organochlorine Pesticides	Organophosphorous Pesticides	Acid Herbicides	Phenols (IWRG 621)	Eurofins | mgt Suite 14	Total Recoverable Hydrocarbons - NEPM 2013 Fractions	NEPM 2013 Metals : Metals M13	Eurofins | mgt Suite 6	BTEX and Volatile TRH	Vic EPA IWRG 621 (Solids)	Eurofins | mgt Suite 7A	Cation Exchange Capacity
Laboratory where analysis is conducted																							
Melbourne Laboratory - NATA Site # 1254 & 14271						X		X	X		X	X	X	X	X	X	X	X	X	X	X	X	X
Sydney Laboratory - NATA Site # 18217							X			X								X					
Brisbane Laboratory - NATA Site # 20794					X																		
External Laboratory																							
TS-10		Dec 12, 2014		Solid	M14-De14245			X				X			X							X	
TS-11		Dec 12, 2014		Solid	M14-De14246							X					X	X					
TS-12		Dec 12, 2014		Solid	M14-De14247							X			X			X					
DUP-A		Dec 12, 2014		Solid	M14-De14248							X			X			X					
PS-5		Dec 15, 2014		Paint	M14-De14249		X			X													
PS-6		Dec 15, 2014		Paint	M14-De14250		X			X													
PS-7		Dec 15, 2014		Paint	M14-De14251		X			X													
PS-8		Dec 15, 2014		Paint	M14-De14252		X			X													
WB121214		Dec 12, 2014		Water	M14-De14253														X				
TB151214		Dec 15, 2014		Water	M14-De14254															X			

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Sample Detail					% Clay*	% Moisture	Asbestos Absence /Presence	Chromium (hexavalent)	HOLD	Lead (% w/w)	pH (units)(1:5 soil:CaCl2 extract)	Organochlorine Pesticides	Organophosphorous Pesticides	Acid Herbicides	Phenols (IWRG 621)	Eurofins | mgt Suite 14	Total Recoverable Hydrocarbons - NEPM 2013 Fractions	Total Recoverable Hydrocarbons - NEPM 2013 Fractions	NEPM 2013 Metals : Metals M13	Eurofins | mgt Suite 6	BTEX and Volatile TRH	Vic EPA IWRG 621 (Solids)	Eurofins | mgt Suite 7A	Cation Exchange Capacity
Laboratory where analysis is conducted																								
Melbourne Laboratory - NATA Site # 1254 & 14271						X		X	X		X	X	X	X	X	X	X	X	X	X	X	X	X	X
Sydney Laboratory - NATA Site # 18217							X			X										X				
Brisbane Laboratory - NATA Site # 20794					X																			
External Laboratory																								
BH5-0.5	Dec 12, 2014		Soil	M14-De14255					X															
BH5-1.0	Dec 12, 2014		Soil	M14-De14256					X															
BH6-0.5	Dec 12, 2014		Soil	M14-De14257					X															
BH6-1.0	Dec 12, 2014		Soil	M14-De14258					X															
BH8-0.5	Dec 12, 2014		Soil	M14-De14259					X															
BH8-1.0	Dec 12, 2014		Soil	M14-De14260					X															

Date Reported:Jan 05, 2015

Eurofins | mgt Internal Quality Control Review and Glossary

General

1. Laboratory QC results for Method Blanks, Duplicates, Matrix Spikes, and Laboratory Control Samples are included in this QC report where applicable. Additional QC data may be available on request.
2. All soil results are reported on a dry basis, unless otherwise stated.
3. Actual LORs are matrix dependant. Quoted LORs may be raised where sample extracts are diluted due to interferences.
4. Results are uncorrected for matrix spikes or surrogate recoveries.
5. SVOC analysis on waters are performed on homogenised, unfiltered samples, unless noted otherwise.
6. Samples were analysed on an 'as received' basis. 7. 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 Sample Receipt Advice.

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.

****NOTE:** pH duplicates are reported as a range NOT as RPD

UNITS

mg/kg: milligrams per Kilogram

ug/l: micrograms per litre

ppb: Parts per billion

org/100ml: Organisms per 100 millilitres

MPN/100mL: Most Probable Number of organisms per 100 millilitres

mg/l: milligrams per litre

ppm: Parts per million

%: Percentage

NTU: Nephelometric Turbidity Units

TERMS

Dry	Where a moisture has been determined on a solid sample the result is expressed on a dry basis.
LOR	Limit of Reporting.
SPIKE	Addition of the analyte to the sample and reported as percentage recovery.
RPD	Relative Percent Difference between two Duplicate pieces of analysis.
LCS	Laboratory Control Sample - reported as percent recovery
CRM	Certified Reference Material - reported as percent recovery
Method Blank	In the case of solid samples these are performed on laboratory certified clean sands. In the case of water samples these are performed on de-ionised water.
Surr - Surrogate	The addition of a like compound to the analyte target and reported as percentage recovery.
Duplicate	A second piece of analysis from the same sample and reported in the same units as the result to show comparison.
Batch Duplicate	A second piece of analysis from a sample outside of the clients batch of samples but run within the laboratory batch of analysis.
Batch SPIKE	Spike recovery reported on a sample from outside of the clients batch of samples but run within the laboratory batch of analysis.
USEPA	United States Environmental Protection Agency
APHA	American Public Health Association
ASLP	Australian Standard Leaching Procedure (AS4439.3)
TCLP	Toxicity Characteristic Leaching Procedure
COC	Chain of Custody
SRA	Sample Receipt Advice
CP	Client Parent - QC was performed on samples pertaining to this report
NCP	Non-Client Parent - QC performed on samples not pertaining to this report. QC is representative of the sequence or batch that client samples were analysed within
TEQ	Toxic Equivalency Quotient

QC - ACCEPTANCE CRITERIA

RPD Duplicates: Global RPD Duplicates Acceptance Criteria is 30% however the following acceptance guidelines are equally applicable:

Results <10 times the LOR : No Limit

Results between 10-20 times the LOR : RPD must lie between 0-50%

Results >20 times the LOR : RPD must lie between 0-30%

Surrogate Recoveries : Recoveries must lie between 50-150% - Phenols 20-130%.

QC DATA GENERAL COMMENTS

1. Where a result is reported as a less than (<), higher than the nominated LOR, this is due to either matrix interference, extract dilution required due to interferences or contaminant levels within the sample, high moisture content or insufficient sample provided.
2. Duplicate data shown within this report that states the word "BATCH" is a Batch Duplicate from outside of your sample batch, but within the laboratory sample batch at a 1:10 ratio. The Parent and Duplicate data shown is not data from your samples.
3. Organochlorine Pesticide analysis - where reporting LCS data, Toxophene & Chlordane are not added to the LCS.
4. Organochlorine Pesticide analysis - where reporting Spike data, Toxophene is not added to the Spike.
5. Total Recoverable Hydrocarbons - where reporting Spike & LCS data, a single spike of commercial Hydrocarbon products in the range of C12-C30 is added and it's Total Recovery is reported in the C10-C14 cell of the Report.
6. pH and Free Chlorine analysed in the laboratory - Analysis on this test must begin within 30 minutes of sampling.Therefore laboratory analysis is unlikely to be completed within holding time. Analysis will begin as soon as possible after sample receipt.
7. Recovery Data (Spikes & Surrogates) - where chromatographic interference does not allow the determination of Recovery the term "INT" appears against that analyte.
8. Polychlorinated Biphenyls are spiked only using Arochlor 1260 in Matrix Spikes and LCS's.
9. For Matrix Spikes and LCS results a dash " -" in the report means that the specific analyte was not added to the QC sample.
10. Duplicate RPD's 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							
Total Recoverable Hydrocarbons - 1999 NEPM Fractions							
TRH C6-C9	mg/kg	< 20			20	Pass	
TRH C10-C14	mg/kg	< 20			20	Pass	
TRH C15-C28	mg/kg	< 50			50	Pass	
TRH C29-C36	mg/kg	< 50			50	Pass	
Method Blank							
BTEX							
Benzene	mg/kg	< 0.1			0.1	Pass	
Toluene	mg/kg	< 0.1			0.1	Pass	
Ethylbenzene	mg/kg	< 0.1			0.1	Pass	
m&p-Xylenes	mg/kg	< 0.2			0.2	Pass	
o-Xylene	mg/kg	< 0.1			0.1	Pass	
Xylenes - Total	mg/kg	< 0.3			0.3	Pass	
Method Blank							
Total Recoverable Hydrocarbons - 2013 NEPM Fractions							
Naphthalene	mg/kg	< 0.5			0.5	Pass	
TRH C6-C10	mg/kg	< 20			20	Pass	
TRH C6-C10 less BTEX (F1)	mg/kg	< 20			20	Pass	
TRH >C10-C16	mg/kg	< 50			50	Pass	
TRH >C16-C34	mg/kg	< 100			100	Pass	
TRH >C34-C40	mg/kg	< 100			100	Pass	
Method Blank							
Volatile Organics							
1.2.4-Trichlorobenzene	mg/kg	< 0.2			0.2	Pass	
Hexachlorobutadiene	mg/kg	< 0.2			0.2	Pass	
1.1-Dichloroethane	mg/kg	< 0.05			0.05	Pass	
1.1-Dichloroethene	mg/kg	< 0.05			0.05	Pass	
1.1.1-Trichloroethane	mg/kg	< 0.05			0.05	Pass	
1.1.1.2-Tetrachloroethane	mg/kg	< 0.05			0.05	Pass	
1.1.2-Trichloroethane	mg/kg	< 0.05			0.05	Pass	
1.1.2.2-Tetrachloroethane	mg/kg	< 0.05			0.05	Pass	
1.2-Dibromoethane	mg/kg	< 0.05			0.05	Pass	
1.2-Dichlorobenzene	mg/kg	< 0.05			0.05	Pass	
1.2-Dichloroethane	mg/kg	< 0.05			0.05	Pass	
1.2-Dichloropropane	mg/kg	< 0.05			0.05	Pass	
1.2.3-Trichloropropane	mg/kg	< 0.05			0.05	Pass	
1.2.4-Trimethylbenzene	mg/kg	< 0.05			0.05	Pass	
1.3-Dichlorobenzene	mg/kg	< 0.05			0.05	Pass	
1.3-Dichloropropane	mg/kg	< 0.05			0.05	Pass	
1.3.5-Trimethylbenzene	mg/kg	< 0.05			0.05	Pass	
1.4-Dichlorobenzene	mg/kg	< 0.05			0.05	Pass	
2-Butanone (MEK)	mg/kg	< 0.05			0.05	Pass	
2-Propanone (Acetone)	mg/kg	< 0.05			0.05	Pass	
4-Chlorotoluene	mg/kg	< 0.05			0.05	Pass	
4-Methyl-2-pentanone (MIBK)	mg/kg	< 0.05			0.05	Pass	
Allyl chloride	mg/kg	< 0.05			0.05	Pass	
Bromobenzene	mg/kg	< 0.05			0.05	Pass	
Bromochloromethane	mg/kg	< 0.05			0.05	Pass	
Bromodichloromethane	mg/kg	< 0.05			0.05	Pass	
Bromoform	mg/kg	< 0.05			0.05	Pass	
Bromomethane	mg/kg	< 0.05			0.05	Pass	

Test	Units	Result 1			Acceptance Limits	Pass Limits	Qualifying Code
Carbon disulfide	mg/kg	< 0.05			0.05	Pass	
Carbon Tetrachloride	mg/kg	< 0.05			0.05	Pass	
Chlorobenzene	mg/kg	< 0.05			0.05	Pass	
Chloroethane	mg/kg	< 0.05			0.05	Pass	
Chloroform	mg/kg	< 0.05			0.05	Pass	
Chloromethane	mg/kg	< 0.05			0.05	Pass	
cis-1.2-Dichloroethene	mg/kg	< 0.05			0.05	Pass	
cis-1.3-Dichloropropene	mg/kg	< 0.05			0.05	Pass	
Dibromochloromethane	mg/kg	< 0.05			0.05	Pass	
Dibromomethane	mg/kg	< 0.05			0.05	Pass	
Dichlorodifluoromethane	mg/kg	< 0.05			0.05	Pass	
Iodomethane	mg/kg	< 0.05			0.05	Pass	
Isopropyl benzene (Cumene)	mg/kg	< 0.05			0.05	Pass	
Methylene Chloride	mg/kg	< 0.05			0.05	Pass	
Styrene	mg/kg	< 0.05			0.05	Pass	
Tetrachloroethene	mg/kg	< 0.05			0.05	Pass	
trans-1.2-Dichloroethene	mg/kg	< 0.05			0.05	Pass	
trans-1.3-Dichloropropene	mg/kg	< 0.05			0.05	Pass	
Trichloroethene	mg/kg	< 0.05			0.05	Pass	
Trichlorofluoromethane	mg/kg	< 0.05			0.05	Pass	
Vinyl chloride	mg/kg	< 0.05			0.05	Pass	
Method Blank							
Polycyclic Aromatic Hydrocarbons							
Acenaphthene	mg/kg	< 0.5			0.5	Pass	
Acenaphthylene	mg/kg	< 0.5			0.5	Pass	
Anthracene	mg/kg	< 0.5			0.5	Pass	
Benz(a)anthracene	mg/kg	< 0.5			0.5	Pass	
Benzo(a)pyrene	mg/kg	< 0.5			0.5	Pass	
Benzo(b&j)fluoranthene	mg/kg	< 0.5			0.5	Pass	
Benzo(g.h.i)perylene	mg/kg	< 0.5			0.5	Pass	
Benzo(k)fluoranthene	mg/kg	< 0.5			0.5	Pass	
Chrysene	mg/kg	< 0.5			0.5	Pass	
Dibenz(a.h)anthracene	mg/kg	< 0.5			0.5	Pass	
Fluoranthene	mg/kg	< 0.5			0.5	Pass	
Fluorene	mg/kg	< 0.5			0.5	Pass	
Indeno(1.2.3-cd)pyrene	mg/kg	< 0.5			0.5	Pass	
Naphthalene	mg/kg	< 0.5			0.5	Pass	
Phenanthrene	mg/kg	< 0.5			0.5	Pass	
Pyrene	mg/kg	< 0.5			0.5	Pass	
Method Blank							
Organochlorine Pesticides							
Chlordanes - Total	mg/kg	< 0.1			0.1	Pass	
4.4'-DDD	mg/kg	< 0.05			0.05	Pass	
4.4'-DDE	mg/kg	< 0.05			0.05	Pass	
4.4'-DDT	mg/kg	< 0.05			0.05	Pass	
a-BHC	mg/kg	< 0.05			0.05	Pass	
Aldrin	mg/kg	< 0.05			0.05	Pass	
b-BHC	mg/kg	< 0.05			0.05	Pass	
d-BHC	mg/kg	< 0.05			0.05	Pass	
Dieldrin	mg/kg	< 0.05			0.05	Pass	
Endosulfan I	mg/kg	< 0.05			0.05	Pass	
Endosulfan II	mg/kg	< 0.05			0.05	Pass	
Endosulfan sulphate	mg/kg	< 0.05			0.05	Pass	
Endrin	mg/kg	< 0.05			0.05	Pass	

Test	Units	Result 1			Acceptance Limits	Pass Limits	Qualifying Code
Endrin aldehyde	mg/kg	< 0.05			0.05	Pass	
Endrin ketone	mg/kg	< 0.05			0.05	Pass	
g-BHC (Lindane)	mg/kg	< 0.05			0.05	Pass	
Heptachlor	mg/kg	< 0.05			0.05	Pass	
Heptachlor epoxide	mg/kg	< 0.05			0.05	Pass	
Hexachlorobenzene	mg/kg	< 0.05			0.05	Pass	
Methoxychlor	mg/kg	< 0.05			0.05	Pass	
Toxaphene	mg/kg	< 1			1	Pass	
Method Blank							
Organophosphorous Pesticides							
Bolstar	mg/kg	< 0.2			0.2	Pass	
Chlorpyrifos	mg/kg	< 0.2			0.2	Pass	
Demeton-O	mg/kg	< 0.2			0.2	Pass	
Diazinon	mg/kg	< 0.2			0.2	Pass	
Dichlorvos	mg/kg	< 0.2			0.2	Pass	
Disulfoton	mg/kg	< 0.2			0.2	Pass	
Ethion	mg/kg	< 0.2			0.2	Pass	
Ethoprop	mg/kg	< 0.2			0.2	Pass	
Fenitrothion	mg/kg	< 0.2			0.2	Pass	
Fensulfothion	mg/kg	< 0.2			0.2	Pass	
Fenthion	mg/kg	< 0.2			0.2	Pass	
Merphos	mg/kg	< 0.2			0.2	Pass	
Methyl azinphos	mg/kg	< 0.2			0.2	Pass	
Methyl parathion	mg/kg	< 0.2			0.2	Pass	
Mevinphos	mg/kg	< 0.2			0.2	Pass	
Naled	mg/kg	< 0.5			0.5	Pass	
Phorate	mg/kg	< 0.2			0.2	Pass	
Ronnel	mg/kg	< 0.2			0.2	Pass	
Tokuthion	mg/kg	< 0.2			0.2	Pass	
Trichloronate	mg/kg	< 0.2			0.2	Pass	
Method Blank							
Polychlorinated Biphenyls							
Aroclor-1016	mg/kg	< 0.1			0.1	Pass	
Aroclor-1221	mg/kg	< 0.1			0.1	Pass	
Aroclor-1232	mg/kg	< 0.1			0.1	Pass	
Aroclor-1242	mg/kg	< 0.1			0.1	Pass	
Aroclor-1248	mg/kg	< 0.1			0.1	Pass	
Aroclor-1254	mg/kg	< 0.1			0.1	Pass	
Aroclor-1260	mg/kg	< 0.1			0.1	Pass	
Total PCB	mg/kg	< 0.1			0.1	Pass	
Method Blank							
Acid Herbicides							
2.4-D	mg/kg	< 0.5			0.5	Pass	
2.4-DB	mg/kg	< 0.5			0.5	Pass	
2.4.5-T	mg/kg	< 0.5			0.5	Pass	
2.4.5-TP	mg/kg	< 0.5			0.5	Pass	
Actril (loxynil)	mg/kg	< 0.5			0.5	Pass	
Dicamba	mg/kg	< 0.5			0.5	Pass	
Dichlorprop	mg/kg	< 0.5			0.5	Pass	
Dinitro-o-cresol	mg/kg	< 0.5			0.5	Pass	
Dinoseb	mg/kg	< 0.5			0.5	Pass	
MCPA	mg/kg	< 0.5			0.5	Pass	
MCPB	mg/kg	< 0.5			0.5	Pass	
Mecoprop	mg/kg	< 0.5			0.5	Pass	

Test	Units	Result 1			Acceptance Limits	Pass Limits	Qualifying Code
Method Blank							
Phenols (Halogenated)							
2-Chlorophenol	mg/kg	< 0.5			0.5	Pass	
2.4-Dichlorophenol	mg/kg	< 0.5			0.5	Pass	
2.4.5-Trichlorophenol	mg/kg	< 1			1.0	Pass	
2.4.6-Trichlorophenol	mg/kg	< 1			1.0	Pass	
2.6-Dichlorophenol	mg/kg	< 0.5			0.5	Pass	
4-Chloro-3-methylphenol	mg/kg	< 1			1.0	Pass	
Pentachlorophenol	mg/kg	< 1			1.0	Pass	
Tetrachlorophenols - Total	mg/kg	< 1			1.0	Pass	
Method Blank							
Phenols (non-Halogenated)							
2-Cyclohexyl-4.6-dinitrophenol	mg/kg	< 20			20	Pass	
2-Methyl-4.6-dinitrophenol	mg/kg	< 5			5	Pass	
2-Methylphenol (o-Cresol)	mg/kg	< 0.2			0.2	Pass	
2-Nitrophenol	mg/kg	< 1			1.0	Pass	
2.4-Dimethylphenol	mg/kg	< 0.5			0.5	Pass	
2.4-Dinitrophenol	mg/kg	< 5			5	Pass	
3&4-Methylphenol (m&p-Cresol)	mg/kg	< 0.4			0.4	Pass	
4-Nitrophenol	mg/kg	< 5			5	Pass	
Dinoseb	mg/kg	< 20			20	Pass	
Phenol	mg/kg	< 0.5			0.5	Pass	
Method Blank							
% Clay*	%	pass			1	N/A	
Chromium (hexavalent)	mg/kg	< 1			1	Pass	
Conductivity (1:5 aqueous extract at 25°C)	uS/cm	< 10			10	Pass	
Cyanide (total)	mg/kg	< 5			5	Pass	
Fluoride	mg/kg	< 100			100	Pass	
Lead (% w/w)	%	< 0.01			0.01	Pass	
Method Blank							
Heavy Metals							
Arsenic	mg/kg	< 2			2	Pass	
Beryllium	mg/kg	< 2			2	Pass	
Boron	mg/kg	< 10			10	Pass	
Cadmium	mg/kg	< 0.4			0.4	Pass	
Chromium	mg/kg	< 5			5	Pass	
Cobalt	mg/kg	< 5			5	Pass	
Copper	mg/kg	< 5			5	Pass	
Lead	mg/kg	< 50			50	Pass	
Manganese	mg/kg	< 5			5	Pass	
Mercury	mg/kg	< 0.1			0.1	Pass	
Molybdenum	mg/kg	< 10			10	Pass	
Nickel	mg/kg	< 5			5	Pass	
Selenium	mg/kg	< 2			2	Pass	
Silver	mg/kg	< 5			5	Pass	
Tin	mg/kg	< 10			10	Pass	
Zinc	mg/kg	< 5			5	Pass	
Method Blank							
Ion Exchange Properties							
Cation Exchange Capacity	meq/100g	< 0.05			0.05	Pass	
LCS - % Recovery							
Total Recoverable Hydrocarbons - 1999 NEPM Fractions							
TRH C6-C9	%	90			70-130	Pass	
TRH C10-C14	%	121			70-130	Pass	

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Test	Units	Result 1			Acceptance Limits	Pass Limits	Qualifying Code
LCS - % Recovery							
BTEX							
Benzene	%	81			70-130	Pass	
Toluene	%	84			70-130	Pass	
Ethylbenzene	%	84			70-130	Pass	
m&p-Xylenes	%	83			70-130	Pass	
Xylenes - Total	%	84			70-130	Pass	
LCS - % Recovery							
Total Recoverable Hydrocarbons - 2013 NEPM Fractions							
Naphthalene	%	96			75-125	Pass	
TRH C6-C10	%	85			70-130	Pass	
TRH >C10-C16	%	121			70-130	Pass	
LCS - % Recovery							
Volatile Organics							
1.1.1-Trichloroethane	%	109			70-130	Pass	
1.2-Dichloroethane	%	89			70-130	Pass	
Trichloroethene	%	80			70-130	Pass	
LCS - % Recovery							
Polycyclic Aromatic Hydrocarbons							
Acenaphthene	%	83			70-130	Pass	
Acenaphthylene	%	89			70-130	Pass	
Anthracene	%	86			70-130	Pass	
Benz(a)anthracene	%	92			70-130	Pass	
Benzo(a)pyrene	%	100			70-130	Pass	
Benzo(b&j)fluoranthene	%	105			70-130	Pass	
Benzo(g.h.i)perylene	%	79			70-130	Pass	
Benzo(k)fluoranthene	%	87			70-130	Pass	
Chrysene	%	80			70-130	Pass	
Dibenz(a.h)anthracene	%	98			70-130	Pass	
Fluoranthene	%	80			70-130	Pass	
Fluorene	%	84			70-130	Pass	
Indeno(1.2.3-cd)pyrene	%	98			70-130	Pass	
Naphthalene	%	90			70-130	Pass	
Phenanthrene	%	89			70-130	Pass	
Pyrene	%	80			70-130	Pass	
LCS - % Recovery							
Organochlorine Pesticides							
4.4'-DDD	%	102			70-130	Pass	
4.4'-DDE	%	106			70-130	Pass	
4.4'-DDT	%	86			70-130	Pass	
a-BHC	%	107			70-130	Pass	
Aldrin	%	113			70-130	Pass	
b-BHC	%	101			70-130	Pass	
d-BHC	%	104			70-130	Pass	
Dieldrin	%	112			70-130	Pass	
Endosulfan I	%	111			70-130	Pass	
Endosulfan II	%	108			70-130	Pass	
Endosulfan sulphate	%	106			70-130	Pass	
Endrin	%	93			70-130	Pass	
Endrin aldehyde	%	108			70-130	Pass	
Endrin ketone	%	107			70-130	Pass	
g-BHC (Lindane)	%	106			70-130	Pass	
Heptachlor	%	101			70-130	Pass	
Heptachlor epoxide	%	111			70-130	Pass	

Test	Units	Result 1			Acceptance Limits	Pass Limits	Qualifying Code
Hexachlorobenzene	%	102			70-130	Pass	
Methoxychlor	%	82			70-130	Pass	
LCS - % Recovery							
Organophosphorous Pesticides							
Diazinon	%	93			70-130	Pass	
Ethion	%	125			70-130	Pass	
Fenitrothion	%	96			70-130	Pass	
Methyl parathion	%	84			70-130	Pass	
Mevinphos	%	123			70-130	Pass	
LCS - % Recovery							
Polychlorinated Biphenyls							
Aroclor-1260	%	87			70-130	Pass	
LCS - % Recovery							
Acid Herbicides							
2.4-D	%	82			70-130	Pass	
2.4-DB	%	77			70-130	Pass	
2.4.5-T	%	88			70-130	Pass	
2.4.5-TP	%	82			70-130	Pass	
Actril (loxynil)	%	90			70-130	Pass	
Dicamba	%	92			70-130	Pass	
Dichlorprop	%	89			70-130	Pass	
Dinitro-o-cresol	%	89			70-130	Pass	
Dinoseb	%	83			70-130	Pass	
MCPA	%	87			70-130	Pass	
MCPB	%	78			70-130	Pass	
Mecoprop	%	89			70-130	Pass	
LCS - % Recovery							
Phenols (Halogenated)							
2-Chlorophenol	%	91			30-130	Pass	
2.4-Dichlorophenol	%	61			30-130	Pass	
2.4.5-Trichlorophenol	%	76			30-130	Pass	
2.4.6-Trichlorophenol	%	60			30-130	Pass	
2.6-Dichlorophenol	%	61			30-130	Pass	
4-Chloro-3-methylphenol	%	80			30-130	Pass	
Pentachlorophenol	%	36			30-130	Pass	
Tetrachlorophenols - Total	%	63			30-130	Pass	
LCS - % Recovery							
Phenols (non-Halogenated)							
2-Cyclohexyl-4.6-dinitrophenol	%	32			30-130	Pass	
2-Methyl-4.6-dinitrophenol	%	31			30-130	Pass	
2-Methylphenol (o-Cresol)	%	84			30-130	Pass	
2-Nitrophenol	%	67			30-130	Pass	
2.4-Dimethylphenol	%	75			30-130	Pass	
2.4-Dinitrophenol	%	45			30-130	Pass	
3&4-Methylphenol (m&p-Cresol)	%	81			30-130	Pass	
4-Nitrophenol	%	74			30-130	Pass	
Dinoseb	%	36			30-130	Pass	
Phenol	%	96			30-130	Pass	
LCS - % Recovery							
Chromium (hexavalent)	%	98			70-130	Pass	
Cyanide (total)	%	100			70-130	Pass	
Fluoride	%	110			70-130	Pass	
LCS - % Recovery							
Heavy Metals							

Test			Units	Result 1			Acceptance Limits	Pass Limits	Qualifying Code
Arsenic			%	96			80-120	Pass	
Beryllium			%	119			80-120	Pass	
Boron			%	114			80-120	Pass	
Cadmium			%	114			80-120	Pass	
Chromium			%	117			80-120	Pass	
Cobalt			%	117			80-120	Pass	
Copper			%	115			80-120	Pass	
Lead			%	100			70-130	Pass	
Manganese			%	97			80-120	Pass	
Mercury			%	87			75-125	Pass	
Molybdenum			%	119			80-120	Pass	
Nickel			%	112			80-120	Pass	
Selenium			%	118			80-120	Pass	
Silver			%	97			80-120	Pass	
Zinc			%	108			80-120	Pass	
Test	**Lab Sample ID**	**QA Source**	**Units**	**Result 1**			**Acceptance Limits**	**Pass Limits**	**Qualifying Code**
Spike - % Recovery									
Total Recoverable Hydrocarbons - 1999 NEPM Fractions				Result 1					
TRH C6-C9	M14-De16995	NCP	%	80			70-130	Pass	
TRH C10-C14	B14-De17378	NCP	%	126			70-130	Pass	
Spike - % Recovery									
BTEX				Result 1					
Benzene	M14-De16995	NCP	%	76			70-130	Pass	
Toluene	M14-De16995	NCP	%	78			70-130	Pass	
Ethylbenzene	M14-De16995	NCP	%	82			70-130	Pass	
m&p-Xylenes	M14-De16995	NCP	%	81			70-130	Pass	
o-Xylene	M14-De16995	NCP	%	83			70-130	Pass	
Xylenes - Total	M14-De16995	NCP	%	81			70-130	Pass	
Spike - % Recovery									
Total Recoverable Hydrocarbons - 2013 NEPM Fractions				Result 1					
Naphthalene	M14-De16995	NCP	%	94			70-130	Pass	
TRH C6-C10	M14-De16995	NCP	%	77			70-130	Pass	
TRH >C10-C16	B14-De17378	NCP	%	126			70-130	Pass	
Spike - % Recovery									
Volatile Organics				Result 1					
1.1.1-Trichloroethane	M14-De16995	NCP	%	97			70-130	Pass	
1.2-Dichlorobenzene	M14-De16995	NCP	%	75			70-130	Pass	
1.2-Dichloroethane	M14-De16995	NCP	%	86			70-130	Pass	
Trichloroethene	M14-De16995	NCP	%	77			70-130	Pass	
Spike - % Recovery									
				Result 1					
Fluoride	M14-De15549	NCP	%	90			70-130	Pass	
Spike - % Recovery									
Heavy Metals				Result 1					
Arsenic	B14-De14556	NCP	%	104			75-125	Pass	
Cadmium	M14-De15494	NCP	%	89			75-125	Pass	
Chromium	M14-De15494	NCP	%	84			75-125	Pass	
Copper	M14-De15494	NCP	%	86			75-125	Pass	
Mercury	M14-De15550	NCP	%	118			70-130	Pass	
Molybdenum	B14-De14556	NCP	%	115			75-125	Pass	
Nickel	B14-De14556	NCP	%	109			75-125	Pass	
Selenium	M14-De15484	NCP	%	75			75-125	Pass	
Silver	B14-De14556	NCP	%	102			75-125	Pass	
Zinc	B14-De14556	NCP	%	94			75-125	Pass	

Test	Lab Sample ID	QA Source	Units	Result 1			Acceptance Limits	Pass Limits	Qualifying Code
Spike - % Recovery									
Polycyclic Aromatic Hydrocarbons				Result 1					
Acenaphthene	M14-De14237	CP	%	75			70-130	Pass	
Acenaphthylene	M14-De14237	CP	%	80			70-130	Pass	
Anthracene	M14-De14237	CP	%	75			70-130	Pass	
Benz(a)anthracene	M14-De14237	CP	%	81			70-130	Pass	
Benzo(a)pyrene	M14-De14237	CP	%	89			70-130	Pass	
Benzo(b&j)fluoranthene	M14-De14237	CP	%	93			70-130	Pass	
Benzo(g.h.i)perylene	M14-De14237	CP	%	81			70-130	Pass	
Benzo(k)fluoranthene	M14-De14237	CP	%	81			70-130	Pass	
Chrysene	M14-De14237	CP	%	72			70-130	Pass	
Dibenz(a.h)anthracene	M14-De14237	CP	%	89			70-130	Pass	
Fluoranthene	M14-De14237	CP	%	73			70-130	Pass	
Fluorene	M14-De14237	CP	%	76			70-130	Pass	
Indeno(1.2.3-cd)pyrene	M14-De14237	CP	%	87			70-130	Pass	
Naphthalene	M14-De14237	CP	%	78			70-130	Pass	
Phenanthrene	M14-De14237	CP	%	81			70-130	Pass	
Pyrene	M14-De14237	CP	%	71			70-130	Pass	
Spike - % Recovery									
Organochlorine Pesticides				Result 1					
4.4'-DDD	M14-De14237	CP	%	124			70-130	Pass	
4.4'-DDE	M14-De14237	CP	%	116			70-130	Pass	
4.4'-DDT	M14-De14237	CP	%	111			70-130	Pass	
a-BHC	M14-De14237	CP	%	103			70-130	Pass	
Aldrin	M14-De14237	CP	%	113			70-130	Pass	
b-BHC	M14-De14237	CP	%	107			70-130	Pass	
d-BHC	M14-De14237	CP	%	114			70-130	Pass	
Dieldrin	M14-De14237	CP	%	116			70-130	Pass	
Endosulfan I	M14-De14237	CP	%	110			70-130	Pass	
Endosulfan II	M14-De14237	CP	%	118			70-130	Pass	
Endosulfan sulphate	M14-De14237	CP	%	124			70-130	Pass	
Endrin	M14-De14237	CP	%	116			70-130	Pass	
Endrin aldehyde	M14-De14237	CP	%	116			70-130	Pass	
Endrin ketone	M14-De14237	CP	%	125			70-130	Pass	
g-BHC (Lindane)	M14-De14237	CP	%	105			70-130	Pass	
Heptachlor	M14-De14237	CP	%	102			70-130	Pass	
Heptachlor epoxide	M14-De14237	CP	%	111			70-130	Pass	
Hexachlorobenzene	M14-De14237	CP	%	100			70-130	Pass	
Methoxychlor	M14-De14237	CP	%	122			70-130	Pass	
Spike - % Recovery									
Phenols (Halogenated)				Result 1					
2-Chlorophenol	M14-De14237	CP	%	85			30-130	Pass	
2.4-Dichlorophenol	M14-De14237	CP	%	53			30-130	Pass	
2.4.5-Trichlorophenol	M14-De14237	CP	%	69			30-130	Pass	
2.4.6-Trichlorophenol	M14-De14237	CP	%	55			30-130	Pass	
2.6-Dichlorophenol	M14-De14237	CP	%	52			30-130	Pass	
4-Chloro-3-methylphenol	M14-De14237	CP	%	72			30-130	Pass	
Pentachlorophenol	M14-De14237	CP	%	65			30-130	Pass	
Tetrachlorophenols - Total	M14-De14237	CP	%	61			30-130	Pass	
Spike - % Recovery									
Phenols (non-Halogenated)				Result 1					
2-Cyclohexyl-4.6-dinitrophenol	M14-De14237	CP	%	35			30-130	Pass	
2-Methyl-4.6-dinitrophenol	M14-De14237	CP	%	47			30-130	Pass	
2-Methylphenol (o-Cresol)	M14-De14237	CP	%	74			30-130	Pass	

Test	Lab Sample ID	QA Source	Units	Result 1			Acceptance Limits	Pass Limits	Qualifying Code
2-Nitrophenol	M14-De14237	CP	%	62			30-130	Pass	
2.4-Dimethylphenol	M14-De14237	CP	%	64			30-130	Pass	
2.4-Dinitrophenol	M14-De14237	CP	%	69			30-130	Pass	
3&4-Methylphenol (m&p-Cresol)	M14-De14237	CP	%	68			30-130	Pass	
4-Nitrophenol	M14-De14237	CP	%	67			30-130	Pass	
Dinoseb	M14-De14237	CP	%	39			30-130	Pass	
Phenol	M14-De14237	CP	%	81			30-130	Pass	
Spike - % Recovery									
				Result 1					
Chromium (hexavalent)	M14-De14237	CP	%	92			70-130	Pass	
Spike - % Recovery									
Organophosphorous Pesticides				Result 1					
Diazinon	M14-De14239	CP	%	128			70-130	Pass	
Ethion	M14-De14239	CP	%	119			70-130	Pass	
Fenitrothion	M14-De14239	CP	%	106			70-130	Pass	
Methyl parathion	M14-De14239	CP	%	81			70-130	Pass	
Mevinphos	M14-De14239	CP	%	91			70-130	Pass	
Spike - % Recovery									
Polychlorinated Biphenyls				Result 1					
Aroclor-1260	M14-De14239	CP	%	92			70-130	Pass	
Spike - % Recovery									
Acid Herbicides				Result 1					
2.4-D	M14-De14239	CP	%	74			70-130	Pass	
Actril (loxynil)	M14-De14239	CP	%	77			70-130	Pass	
Dichlorprop	M14-De14239	CP	%	85			70-130	Pass	
MCPA	M14-De14239	CP	%	80			70-130	Pass	
MCPB	M14-De14239	CP	%	73			70-130	Pass	
Spike - % Recovery									
				Result 1					
Cyanide (total)	M14-De14239	CP	%	99			70-130	Pass	
Spike - % Recovery									
Heavy Metals				Result 1					
Beryllium	B14-De14556	NCP	%	119			75-125	Pass	
Boron	M14-De15484	NCP	%	78			75-125	Pass	
Cobalt	B14-De14556	NCP	%	122			75-125	Pass	
Spike - % Recovery									
Heavy Metals				Result 1					
Manganese	B14-De14556	NCP	%	111			75-125	Pass	
Spike - % Recovery									
Organochlorine Pesticides				Result 1					
4.4'-DDD	M14-De14247	CP	%	123			70-130	Pass	
4.4'-DDE	M14-De14247	CP	%	103			70-130	Pass	
4.4'-DDT	M14-De14247	CP	%	125			70-130	Pass	
a-BHC	M14-De14247	CP	%	115			70-130	Pass	
Aldrin	M14-De14247	CP	%	114			70-130	Pass	
b-BHC	M14-De14247	CP	%	113			70-130	Pass	
d-BHC	M14-De14247	CP	%	124			70-130	Pass	
Dieldrin	M14-De14247	CP	%	112			70-130	Pass	
Endosulfan I	M14-De14247	CP	%	108			70-130	Pass	
Endosulfan II	M14-De14247	CP	%	109			70-130	Pass	
Endosulfan sulphate	M14-De14247	CP	%	112			70-130	Pass	
Endrin	M14-De14247	CP	%	111			70-130	Pass	
Endrin aldehyde	M14-De14247	CP	%	110			70-130	Pass	
Endrin ketone	M14-De14247	CP	%	107			70-130	Pass	

Test	Lab Sample ID	QA Source	Units	Result 1			Acceptance Limits	Pass Limits	Qualifying Code
g-BHC (Lindane)	M14-De14247	CP	%	115			70-130	Pass	
Heptachlor	M14-De14247	CP	%	111			70-130	Pass	
Heptachlor epoxide	M14-De14247	CP	%	107			70-130	Pass	
Hexachlorobenzene	M14-De14247	CP	%	108			70-130	Pass	
Methoxychlor	M14-De14247	CP	%	105			70-130	Pass	
Spike - % Recovery									
Polycyclic Aromatic Hydrocarbons				Result 1					
Acenaphthene	M14-De14248	CP	%	99			70-130	Pass	
Acenaphthylene	M14-De14248	CP	%	104			70-130	Pass	
Anthracene	M14-De14248	CP	%	100			70-130	Pass	
Benz(a)anthracene	M14-De14248	CP	%	97			70-130	Pass	
Benzo(a)pyrene	M14-De14248	CP	%	110			70-130	Pass	
Benzo(b&j)fluoranthene	M14-De14248	CP	%	105			70-130	Pass	
Benzo(g.h.i)perylene	M14-De14248	CP	%	117			70-130	Pass	
Benzo(k)fluoranthene	M14-De14248	CP	%	102			70-130	Pass	
Chrysene	M14-De14248	CP	%	95			70-130	Pass	
Dibenz(a.h)anthracene	M14-De14248	CP	%	123			70-130	Pass	
Fluoranthene	M14-De14248	CP	%	109			70-130	Pass	
Fluorene	M14-De14248	CP	%	107			70-130	Pass	
Indeno(1.2.3-cd)pyrene	M14-De14248	CP	%	119			70-130	Pass	
Naphthalene	M14-De14248	CP	%	95			70-130	Pass	
Phenanthrene	M14-De14248	CP	%	100			70-130	Pass	
Pyrene	M14-De14248	CP	%	102			70-130	Pass	
Spike - % Recovery									
Phenols (Halogenated)				Result 1					
2-Chlorophenol	M14-De14248	CP	%	53			30-130	Pass	
2.4-Dichlorophenol	M14-De14248	CP	%	32			30-130	Pass	
2.4.5-Trichlorophenol	M14-De14248	CP	%	47			30-130	Pass	
2.4.6-Trichlorophenol	M14-De14248	CP	%	46			30-130	Pass	
2.6-Dichlorophenol	M14-De14248	CP	%	46			30-130	Pass	
4-Chloro-3-methylphenol	M14-De14248	CP	%	47			30-130	Pass	
Pentachlorophenol	M14-De14248	CP	%	33			30-130	Pass	
Tetrachlorophenols - Total	M14-De14248	CP	%	42			30-130	Pass	
Spike - % Recovery									
Phenols (non-Halogenated)				Result 1					
2-Methyl-4.6-dinitrophenol	M14-De14248	CP	%	40			30-130	Pass	
2-Methylphenol (o-Cresol)	M14-De14248	CP	%	44			30-130	Pass	
2-Nitrophenol	M14-De14248	CP	%	32			30-130	Pass	
2.4-Dimethylphenol	M14-De14248	CP	%	41			30-130	Pass	
3&4-Methylphenol (m&p-Cresol)	M14-De14248	CP	%	46			30-130	Pass	
Dinoseb	M14-De14248	CP	%	35			30-130	Pass	
Phenol	M14-De14248	CP	%	48			30-130	Pass	
Test	**Lab Sample ID**	**QA Source**	**Units**	**Result 1**			**Acceptance Limits**	**Pass Limits**	**Qualifying Code**
Duplicate									
Total Recoverable Hydrocarbons - 1999 NEPM Fractions				Result 1	Result 2	RPD			
TRH C6-C9	M14-De11101	NCP	mg/kg	< 20	< 20	<1	30%	Pass	
TRH C10-C14	M14-De14236	CP	mg/kg	< 20	< 20	<1	30%	Pass	
TRH C15-C28	M14-De14236	CP	mg/kg	< 50	< 50	<1	30%	Pass	
TRH C29-C36	M14-De14236	CP	mg/kg	63	68	7.6	30%	Pass	

Duplicate								
BTEX				Result 1	Result 2	RPD		
Benzene	M14-De16995	NCP	mg/kg	< 0.1	< 0.1	<1	30%	Pass
Toluene	M14-De16995	NCP	mg/kg	< 0.1	< 0.1	<1	30%	Pass
Ethylbenzene	M14-De16995	NCP	mg/kg	< 0.1	< 0.1	<1	30%	Pass
m&p-Xylenes	M14-De16995	NCP	mg/kg	< 0.2	< 0.2	<1	30%	Pass
o-Xylene	M14-De16995	NCP	mg/kg	< 0.1	< 0.1	<1	30%	Pass
Xylenes - Total	M14-De16995	NCP	mg/kg	< 0.3	< 0.3	<1	30%	Pass
Duplicate								
Total Recoverable Hydrocarbons - 2013 NEPM Fractions				Result 1	Result 2	RPD		
Naphthalene	M14-De16995	NCP	mg/kg	< 0.5	< 0.5	<1	30%	Pass
TRH C6-C10	M14-De11101	NCP	mg/kg	< 20	< 20	<1	30%	Pass
TRH C6-C10 less BTEX (F1)	M14-De11101	NCP	mg/kg	< 20	< 20	<1	30%	Pass
TRH >C10-C16	M14-De14236	CP	mg/kg	< 50	< 50	<1	30%	Pass
TRH >C16-C34	M14-De14236	CP	mg/kg	< 100	< 100	<1	30%	Pass
TRH >C34-C40	M14-De14236	CP	mg/kg	< 100	< 100	<1	30%	Pass
Duplicate								
Volatile Organics				Result 1	Result 2	RPD		
1.2.4-Trichlorobenzene	M14-De16995	NCP	mg/kg	< 0.2	< 0.2	<1	30%	Pass
Hexachlorobutadiene	M14-De16995	NCP	mg/kg	< 0.2	< 0.2	<1	30%	Pass
1.1-Dichloroethane	M14-De16995	NCP	mg/kg	< 0.05	< 0.05	<1	30%	Pass
1.1-Dichloroethene	M14-De16995	NCP	mg/kg	< 0.05	< 0.05	<1	30%	Pass
1.1.1-Trichloroethane	M14-De16995	NCP	mg/kg	< 0.05	< 0.05	<1	30%	Pass
1.1.1.2-Tetrachloroethane	M14-De16995	NCP	mg/kg	< 0.05	< 0.05	<1	30%	Pass
1.1.2-Trichloroethane	M14-De16995	NCP	mg/kg	< 0.05	< 0.05	<1	30%	Pass
1.1.2.2-Tetrachloroethane	M14-De16995	NCP	mg/kg	< 0.05	< 0.05	<1	30%	Pass
1.2-Dibromoethane	M14-De16995	NCP	mg/kg	< 0.05	< 0.05	<1	30%	Pass
1.2-Dichlorobenzene	M14-De16995	NCP	mg/kg	< 0.05	< 0.05	<1	30%	Pass
1.2-Dichloroethane	M14-De16995	NCP	mg/kg	< 0.05	< 0.05	<1	30%	Pass
1.2-Dichloropropane	M14-De16995	NCP	mg/kg	< 0.05	< 0.05	<1	30%	Pass
1.2.3-Trichloropropane	M14-De16995	NCP	mg/kg	< 0.05	< 0.05	<1	30%	Pass
1.2.4-Trimethylbenzene	M14-De16995	NCP	mg/kg	< 0.05	< 0.05	<1	30%	Pass
1.3-Dichlorobenzene	M14-De16995	NCP	mg/kg	< 0.05	< 0.05	<1	30%	Pass
1.3-Dichloropropane	M14-De16995	NCP	mg/kg	< 0.05	< 0.05	<1	30%	Pass
1.3.5-Trimethylbenzene	M14-De16995	NCP	mg/kg	< 0.05	< 0.05	<1	30%	Pass
1.4-Dichlorobenzene	M14-De16995	NCP	mg/kg	< 0.05	< 0.05	<1	30%	Pass
2-Butanone (MEK)	M14-De16995	NCP	mg/kg	< 0.05	< 0.05	<1	30%	Pass
2-Propanone (Acetone)	M14-De16995	NCP	mg/kg	< 0.05	< 0.05	<1	30%	Pass
4-Chlorotoluene	M14-De16995	NCP	mg/kg	< 0.05	< 0.05	<1	30%	Pass
4-Methyl-2-pentanone (MIBK)	M14-De16995	NCP	mg/kg	< 0.05	< 0.05	<1	30%	Pass
Allyl chloride	M14-De16995	NCP	mg/kg	< 0.05	< 0.05	<1	30%	Pass
Bromobenzene	M14-De16995	NCP	mg/kg	< 0.05	< 0.05	<1	30%	Pass
Bromochloromethane	M14-De16995	NCP	mg/kg	< 0.05	< 0.05	<1	30%	Pass
Bromodichloromethane	M14-De16995	NCP	mg/kg	< 0.05	< 0.05	<1	30%	Pass
Bromoform	M14-De16995	NCP	mg/kg	< 0.05	< 0.05	<1	30%	Pass
Bromomethane	M14-De16995	NCP	mg/kg	< 0.05	< 0.05	<1	30%	Pass
Carbon disulfide	M14-De16995	NCP	mg/kg	< 0.05	< 0.05	<1	30%	Pass
Carbon Tetrachloride	M14-De16995	NCP	mg/kg	< 0.05	< 0.05	<1	30%	Pass
Chlorobenzene	M14-De16995	NCP	mg/kg	< 0.05	< 0.05	<1	30%	Pass
Chloroethane	M14-De16995	NCP	mg/kg	< 0.05	< 0.05	<1	30%	Pass
Chloroform	M14-De16995	NCP	mg/kg	< 0.05	< 0.05	<1	30%	Pass
Chloromethane	M14-De16995	NCP	mg/kg	< 0.05	< 0.05	<1	30%	Pass
cis-1.2-Dichloroethene	M14-De16995	NCP	mg/kg	< 0.05	< 0.05	<1	30%	Pass
cis-1.3-Dichloropropene	M14-De16995	NCP	mg/kg	< 0.05	< 0.05	<1	30%	Pass
Dibromochloromethane	M14-De16995	NCP	mg/kg	< 0.05	< 0.05	<1	30%	Pass
Dibromomethane	M14-De16995	NCP	mg/kg	< 0.05	< 0.05	<1	30%	Pass

Duplicate									
Volatile Organics				Result 1	Result 2	RPD			
Dichlorodifluoromethane	M14-De16995	NCP	mg/kg	< 0.05	< 0.05	<1	30%	Pass	
Iodomethane	M14-De16995	NCP	mg/kg	< 0.05	< 0.05	<1	30%	Pass	
Isopropyl benzene (Cumene)	M14-De16995	NCP	mg/kg	< 0.05	< 0.05	<1	30%	Pass	
Methylene Chloride	M14-De16995	NCP	mg/kg	< 0.05	< 0.05	<1	30%	Pass	
Styrene	M14-De16995	NCP	mg/kg	< 0.05	< 0.05	<1	30%	Pass	
Tetrachloroethene	M14-De16995	NCP	mg/kg	< 0.05	< 0.05	<1	30%	Pass	
trans-1.2-Dichloroethene	M14-De16995	NCP	mg/kg	< 0.05	< 0.05	<1	30%	Pass	
trans-1.3-Dichloropropene	M14-De16995	NCP	mg/kg	< 0.05	< 0.05	<1	30%	Pass	
Trichloroethene	M14-De16995	NCP	mg/kg	< 0.05	< 0.05	<1	30%	Pass	
Trichlorofluoromethane	M14-De16995	NCP	mg/kg	< 0.05	< 0.05	<1	30%	Pass	
Vinyl chloride	M14-De16995	NCP	mg/kg	< 0.05	< 0.05	<1	30%	Pass	
Duplicate									
Organochlorine Pesticides				Result 1	Result 2	RPD			
Chlordanes - Total	M14-De14236	CP	mg/kg	< 0.1	< 0.1	<1	30%	Pass	
4.4'-DDD	M14-De14236	CP	mg/kg	< 0.05	< 0.05	<1	30%	Pass	
4.4'-DDE	M14-De14236	CP	mg/kg	< 0.05	< 0.05	<1	30%	Pass	
4.4'-DDT	M14-De14236	CP	mg/kg	< 0.05	< 0.05	<1	30%	Pass	
a-BHC	M14-De14236	CP	mg/kg	< 0.05	< 0.05	<1	30%	Pass	
Aldrin	M14-De14236	CP	mg/kg	< 0.05	< 0.05	<1	30%	Pass	
b-BHC	M14-De14236	CP	mg/kg	< 0.05	< 0.05	<1	30%	Pass	
d-BHC	M14-De14236	CP	mg/kg	< 0.05	< 0.05	<1	30%	Pass	
Dieldrin	M14-De14236	CP	mg/kg	< 0.05	< 0.05	<1	30%	Pass	
Endosulfan I	M14-De14236	CP	mg/kg	< 0.05	< 0.05	<1	30%	Pass	
Endosulfan II	M14-De14236	CP	mg/kg	< 0.05	< 0.05	<1	30%	Pass	
Endosulfan sulphate	M14-De14236	CP	mg/kg	< 0.05	< 0.05	<1	30%	Pass	
Endrin	M14-De14236	CP	mg/kg	< 0.05	< 0.05	<1	30%	Pass	
Endrin aldehyde	M14-De14236	CP	mg/kg	< 0.05	< 0.05	<1	30%	Pass	
Endrin ketone	M14-De14236	CP	mg/kg	< 0.05	< 0.05	<1	30%	Pass	
g-BHC (Lindane)	M14-De14236	CP	mg/kg	< 0.05	< 0.05	<1	30%	Pass	
Heptachlor	M14-De14236	CP	mg/kg	< 0.05	< 0.05	<1	30%	Pass	
Heptachlor epoxide	M14-De14236	CP	mg/kg	< 0.05	< 0.05	<1	30%	Pass	
Hexachlorobenzene	M14-De14236	CP	mg/kg	< 0.05	< 0.05	<1	30%	Pass	
Methoxychlor	M14-De14236	CP	mg/kg	< 0.05	< 0.05	<1	30%	Pass	
Toxaphene	M14-De14236	CP	mg/kg	< 1	< 1	<1	30%	Pass	
Duplicate									
Organophosphorous Pesticides				Result 1	Result 2	RPD			
Bolstar	M14-De14236	CP	mg/kg	< 0.2	< 0.2	<1	30%	Pass	
Chlorpyrifos	M14-De14236	CP	mg/kg	< 0.2	< 0.2	<1	30%	Pass	
Demeton-O	M14-De14236	CP	mg/kg	< 0.2	< 0.2	<1	30%	Pass	
Diazinon	M14-De14236	CP	mg/kg	< 0.2	< 0.2	<1	30%	Pass	
Dichlorvos	M14-De14236	CP	mg/kg	< 0.2	< 0.2	<1	30%	Pass	
Disulfoton	M14-De14236	CP	mg/kg	< 0.2	< 0.2	<1	30%	Pass	
Ethion	M14-De14236	CP	mg/kg	< 0.2	< 0.2	<1	30%	Pass	
Ethoprop	M14-De14236	CP	mg/kg	< 0.2	< 0.2	<1	30%	Pass	
Fenitrothion	M14-De14236	CP	mg/kg	< 0.2	< 0.2	<1	30%	Pass	
Fensulfothion	M14-De14236	CP	mg/kg	< 0.2	< 0.2	<1	30%	Pass	
Fenthion	M14-De14236	CP	mg/kg	< 0.2	< 0.2	<1	30%	Pass	
Merphos	M14-De14236	CP	mg/kg	< 0.2	< 0.2	<1	30%	Pass	
Methyl azinphos	M14-De14236	CP	mg/kg	< 0.2	< 0.2	<1	30%	Pass	
Methyl parathion	M14-De14236	CP	mg/kg	< 0.2	< 0.2	<1	30%	Pass	
Mevinphos	M14-De14236	CP	mg/kg	< 0.2	< 0.2	<1	30%	Pass	
Naled	M14-De14236	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
Phorate	M14-De14236	CP	mg/kg	< 0.2	< 0.2	<1	30%	Pass	
Ronnel	M14-De14236	CP	mg/kg	< 0.2	< 0.2	<1	30%	Pass	

Duplicate									
Organophosphorous Pesticides				Result 1	Result 2	RPD			
Tokuthion	M14-De14236	CP	mg/kg	< 0.2	< 0.2	<1	30%	Pass	
Trichloronate	M14-De14236	CP	mg/kg	< 0.2	< 0.2	<1	30%	Pass	
Duplicate									
Polychlorinated Biphenyls				Result 1	Result 2	RPD			
Aroclor-1016	M14-De14236	CP	mg/kg	< 0.1	< 0.1	<1	30%	Pass	
Aroclor-1221	M14-De14236	CP	mg/kg	< 0.1	< 0.1	<1	30%	Pass	
Aroclor-1232	M14-De14236	CP	mg/kg	< 0.1	< 0.1	<1	30%	Pass	
Aroclor-1242	M14-De14236	CP	mg/kg	< 0.1	< 0.1	<1	30%	Pass	
Aroclor-1248	M14-De14236	CP	mg/kg	< 0.1	< 0.1	<1	30%	Pass	
Aroclor-1254	M14-De14236	CP	mg/kg	< 0.1	< 0.1	<1	30%	Pass	
Aroclor-1260	M14-De14236	CP	mg/kg	< 0.1	< 0.1	<1	30%	Pass	
Total PCB	M14-De14236	CP	mg/kg	< 0.1	< 0.1	<1	30%	Pass	
Duplicate									
Acid Herbicides				Result 1	Result 2	RPD			
2.4-D	M14-De14236	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
2.4-DB	M14-De14236	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
2.4.5-T	M14-De14236	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
2.4.5-TP	M14-De14236	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
Actril (loxynil)	M14-De14236	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
Dicamba	M14-De14236	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
Dichlorprop	M14-De14236	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
Dinitro-o-cresol	M14-De14236	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
Dinoseb	M14-De14236	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
MCPA	M14-De14236	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
MCPB	M14-De14236	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
Mecoprop	M14-De14236	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
Duplicate									
				Result 1	Result 2	RPD			
Chromium (hexavalent)	M14-De14236	CP	mg/kg	< 1	< 1	<1	30%	Pass	
Cyanide (total)	M14-De14236	CP	mg/kg	< 5	< 5	<1	30%	Pass	
Fluoride	M14-De14236	CP	mg/kg	230	260	12	30%	Pass	
Duplicate									
Heavy Metals				Result 1	Result 2	RPD			
Mercury	M14-De15550	NCP	mg/kg	< 0.1	< 0.1	<1	30%	Pass	
Duplicate									
				Result 1	Result 2	RPD			
% Clay*	M14-Oc10659	NCP	%	60	60	<1	30%	Pass	
Conductivity (1:5 aqueous extract at 25°C)	M14-De18346	NCP	uS/cm	160	150	9.0	30%	Pass	
pH (units)(1:5 soil:CaCl2 extract)	M14-De17342	NCP	pH Units	7.2	7.2	<1	30%	Pass	
Duplicate									
Heavy Metals				Result 1	Result 2	RPD			
Arsenic	M14-De14243	CP	mg/kg	< 2	< 2	<1	30%	Pass	
Beryllium	M14-De14243	CP	mg/kg	< 2	< 2	<1	30%	Pass	
Boron	M14-De14243	CP	mg/kg	38	23	50	30%	Fail	Q15
Cadmium	M14-De14243	CP	mg/kg	< 0.4	< 0.4	<1	30%	Pass	
Chromium	M14-De14243	CP	mg/kg	< 5	< 5	<1	30%	Pass	
Cobalt	M14-De14243	CP	mg/kg	< 5	< 5	<1	30%	Pass	
Copper	M14-De14243	CP	mg/kg	920	930	2.0	30%	Pass	
Lead	M14-De14243	CP	mg/kg	25	36	38	30%	Fail	Q15
Manganese	M14-De14243	CP	mg/kg	100	250	83	30%	Fail	Q15
Molybdenum	M14-De14243	CP	mg/kg	< 10	< 10	<1	30%	Pass	
Nickel	M14-De14243	CP	mg/kg	< 5	< 5	<1	30%	Pass	
Selenium	M14-De14243	CP	mg/kg	< 2	< 2	<1	30%	Pass	

Duplicate									
Heavy Metals				Result 1	Result 2	RPD			
Silver	M14-De14243	CP	mg/kg	< 5	< 5	<1	30%	Pass	
Tin	M14-De14243	CP	mg/kg	< 10	< 10	<1	30%	Pass	
Zinc	M14-De14243	CP	mg/kg	730	740	2.0	30%	Pass	
Duplicate									
Organochlorine Pesticides				Result 1	Result 2	RPD			
Chlordanes - Total	M14-De14246	CP	mg/kg	< 0.1	< 0.1	<1	30%	Pass	
4.4'-DDD	M14-De14246	CP	mg/kg	< 0.05	< 0.05	<1	30%	Pass	
4.4'-DDE	M14-De14246	CP	mg/kg	< 0.05	< 0.05	<1	30%	Pass	
4.4'-DDT	M14-De14246	CP	mg/kg	< 0.05	< 0.05	<1	30%	Pass	
a-BHC	M14-De14246	CP	mg/kg	< 0.05	< 0.05	<1	30%	Pass	
Aldrin	M14-De14246	CP	mg/kg	< 0.05	< 0.05	<1	30%	Pass	
b-BHC	M14-De14246	CP	mg/kg	< 0.05	< 0.05	<1	30%	Pass	
d-BHC	M14-De14246	CP	mg/kg	< 0.05	< 0.05	<1	30%	Pass	
Dieldrin	M14-De14246	CP	mg/kg	< 0.05	< 0.05	<1	30%	Pass	
Endosulfan I	M14-De14246	CP	mg/kg	< 0.05	< 0.05	<1	30%	Pass	
Endosulfan II	M14-De14246	CP	mg/kg	< 0.05	< 0.05	<1	30%	Pass	
Endosulfan sulphate	M14-De14246	CP	mg/kg	< 0.05	< 0.05	<1	30%	Pass	
Endrin	M14-De14246	CP	mg/kg	< 0.05	< 0.05	<1	30%	Pass	
Endrin aldehyde	M14-De14246	CP	mg/kg	< 0.05	< 0.05	<1	30%	Pass	
Endrin ketone	M14-De14246	CP	mg/kg	< 0.05	< 0.05	<1	30%	Pass	
g-BHC (Lindane)	M14-De14246	CP	mg/kg	< 0.05	< 0.05	<1	30%	Pass	
Heptachlor	M14-De14246	CP	mg/kg	< 0.05	< 0.05	<1	30%	Pass	
Heptachlor epoxide	M14-De14246	CP	mg/kg	< 0.05	< 0.05	<1	30%	Pass	
Hexachlorobenzene	M14-De14246	CP	mg/kg	< 0.05	< 0.05	<1	30%	Pass	
Methoxychlor	M14-De14246	CP	mg/kg	< 0.05	< 0.05	<1	30%	Pass	
Toxaphene	M14-De14246	CP	mg/kg	< 1	< 1	<1	30%	Pass	
Duplicate									
Polychlorinated Biphenyls				Result 1	Result 2	RPD			
Aroclor-1016	M14-De14246	CP	mg/kg	< 0.1	< 0.1	<1	30%	Pass	
Aroclor-1221	M14-De14246	CP	mg/kg	< 0.1	< 0.1	<1	30%	Pass	
Aroclor-1232	M14-De14246	CP	mg/kg	< 0.1	< 0.1	<1	30%	Pass	
Aroclor-1242	M14-De14246	CP	mg/kg	< 0.1	< 0.1	<1	30%	Pass	
Aroclor-1248	M14-De14246	CP	mg/kg	< 0.1	< 0.1	<1	30%	Pass	
Aroclor-1254	M14-De14246	CP	mg/kg	< 0.1	< 0.1	<1	30%	Pass	
Aroclor-1260	M14-De14246	CP	mg/kg	< 0.1	< 0.1	<1	30%	Pass	
Total PCB	M14-De14246	CP	mg/kg	0	< 0.1	<1	30%	Pass	
Duplicate									
				Result 1	Result 2	RPD			
Chromium (hexavalent)	M14-De14246	CP	mg/kg	< 1	< 1	<1	30%	Pass	
Duplicate									
Polycyclic Aromatic Hydrocarbons				Result 1	Result 2	RPD			
Acenaphthene	M14-De14247	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
Acenaphthylene	M14-De14247	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
Anthracene	M14-De14247	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
Benz(a)anthracene	M14-De14247	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
Benzo(a)pyrene	M14-De14247	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
Benzo(b&j)fluoranthene	M14-De14247	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
Benzo(g.h.i)perylene	M14-De14247	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
Benzo(k)fluoranthene	M14-De14247	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
Chrysene	M14-De14247	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
Dibenz(a.h)anthracene	M14-De14247	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
Fluoranthene	M14-De14247	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
Fluorene	M14-De14247	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
Indeno(1.2.3-cd)pyrene	M14-De14247	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	

Duplicate									
Polycyclic Aromatic Hydrocarbons				Result 1	Result 2	RPD			
Naphthalene	M14-De14247	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
Phenanthrene	M14-De14247	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
Pyrene	M14-De14247	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
Duplicate									
Phenols (Halogenated)				Result 1	Result 2	RPD			
2-Chlorophenol	M14-De14247	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
2.4-Dichlorophenol	M14-De14247	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
2.4.5-Trichlorophenol	M14-De14247	CP	mg/kg	< 1	< 1	<1	30%	Pass	
2.4.6-Trichlorophenol	M14-De14247	CP	mg/kg	< 1	< 1	<1	30%	Pass	
2.6-Dichlorophenol	M14-De14247	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
4-Chloro-3-methylphenol	M14-De14247	CP	mg/kg	< 1	< 1	<1	30%	Pass	
Pentachlorophenol	M14-De14247	CP	mg/kg	< 1	< 1	<1	30%	Pass	
Tetrachlorophenols - Total	M14-De14247	CP	mg/kg	< 1	< 1	<1	30%	Pass	
Duplicate									
Phenols (non-Halogenated)				Result 1	Result 2	RPD			
2-Cyclohexyl-4.6-dinitrophenol	M14-De14247	CP	mg/kg	< 20	< 20	<1	30%	Pass	
2-Methyl-4.6-dinitrophenol	M14-De14247	CP	mg/kg	< 5	< 5	<1	30%	Pass	
2-Methylphenol (o-Cresol)	M14-De14247	CP	mg/kg	< 0.2	< 0.2	<1	30%	Pass	
2-Nitrophenol	M14-De14247	CP	mg/kg	< 1	< 1	<1	30%	Pass	
2.4-Dimethylphenol	M14-De14247	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
2.4-Dinitrophenol	M14-De14247	CP	mg/kg	< 5	< 5	<1	30%	Pass	
3&4-Methylphenol (m&p-Cresol)	M14-De14247	CP	mg/kg	< 0.4	< 0.4	<1	30%	Pass	
4-Nitrophenol	M14-De14247	CP	mg/kg	< 5	< 5	<1	30%	Pass	
Dinoseb	M14-De14247	CP	mg/kg	< 20	< 20	<1	30%	Pass	
Phenol	M14-De14247	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	

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Comments

Sample Integrity

Custody Seals Intact (if used)	Yes
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
G01	The LORs have been raised due to matrix interference
N01	F2 is determined by arithmetically subtracting the "naphthalene" value from the ">C10-C16" value. The naphthalene value used in this calculation is obtained from volatiles (Purge & Trap analysis).
N02	Where we have reported both volatile (P&T GCMS) and semivolatile (GCMS) naphthalene data, results may not be identical. Provided correct sample handling protocols have been followed, any observed differences in results are likely to be due to procedural differences within each methodology. Results determined by both techniques have passed all QAQC acceptance criteria, and are entirely technically valid.
N04	F1 is determined by arithmetically subtracting the "Total BTEX" value from the "C6-C10" value. The "Total BTEX" value is obtained by summing the concentrations of BTEX analytes. The "C6-C10" value is obtained by quantitating against a standard of mixed aromatic/aliphatic analytes.
N07	Please note:- These two PAH isomers closely co-elute using the most contemporary analytical methods and both the reported concentration (and the TEQ) apply specifically to the total of the two co-eluting PAHs
Q15	The RPD reported passes Eurofins | mgt's Acceptance Criteria as stipulated in SOP 05. Refer to Glossary Page of this report for further details

Authorised By

Onur Mehmet	Analytical Services Manager
Carroll Lee	Senior Analyst-Organic (VIC)
Carroll Lee	Senior Analyst-Volatile (VIC)
Emily Rosenberg	Senior Analyst-Metal (VIC)
Huong Le	Senior Analyst-Inorganic (VIC)
Ivan Taylor	Senior Analyst-Metal (NSW)
Nibha Vaidya	Senior Analyst-Asbestos (NSW)
Richard Corner	Senior Analyst-Inorganic (QLD)

Glenn Jackson

National Laboratory Manager

Final report - this Report replaces any previously issued Report

- Indicates Not Requested

* Indicates NATA accreditation does not cover the performance of this service

Uncertainty data is available on request

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Certificate of Analysis

NATA Accredited
Accreditation Number 1261
Site Number 18217

Accredited for compliance with ISO/IEC 17025. The results of the tests, calibrations and/or measurements included in this document are traceable to Australian/national standards.

Vantage Environmental Management
Suite 4 539-541 Kiewa St
Albury
NSW 2640

Attention:	Susannah Price
Report	442493-AID
Project Name	BARHAM
Project ID	AL14-218
Received Date	Dec 16, 2014
Date Reported	Jan 05, 2015

Methodology:

Asbestos ID	Conducted in accordance with the Australian Standard AS 4964 – 2004: Method for the Qualitative Identification of Asbestos in Bulk Samples and in-house Method LTM-ASB-8020 by polarised light microscopy (PLM) and dispersion staining (DS) techniques. Bulk samples include building materials, soils and ores.
Subsampling Soil Samples	The whole sample submitted is first dried and then sieved through a 10mm sieve followed by a 2mm sieve. All fibrous matter viz greater than 10mm, greater than 2mm as well as the material passing through the 2mm sieve are retained and analysed for the presence of asbestos. If the sub 2mm fraction is greater than approximately 30 to 60g then a sub-sampling routine based on ISO 3082:2009(E) Iron ores - Sampling and Sample preparation procedures is employed. Depending on the nature and size of the soil sample, the sub-2 mm residue material may need to be sub-sampled for trace analysis in accordance with AS 4964-2004.
Bonded asbestos-containing material (ACM)	The material is first examined and any fibres isolated and where required interfering organic fibres or matter may be removed by treating the sample for several hours at a temperature not exceeding 400 ± 30°C. The resultant material is then ground and examined in accordance with AS 4964-2004.
Limit of Reporting	The nominal detection limit of the AS4964 method is around 0.01%. The examination of large sample sizes (at least 500 ml is recommended) may improve the likelihood of identifying asbestos material in the greater than 2 mm fraction. The NEPM screening level of 0.001% w/w asbestos in soil for FA and AF (i.e. non-bonded/friable asbestos) only applies where the FA and AF are able to be quantified by gravimetric procedures. This screening level is not applicable to free fibres. NOTE: NATA News, September 2011 – page 34, states, "Weighing of fibres is problematic and can lead to loss of fibres and potential exposure for laboratory analysts. To request laboratories to report information which is outside the scope of AS 4964-2004 and the scope of their accreditation is misleading and is most unwise" therefore such values reported are outside the scope of Eurofins | mgt NATA accreditation as designated by an asterisk.

Project Name BARHAM
Project ID AL14-218
Date Sampled Dec 15, 2014
Report 442493-AID

Client Sample ID	Eurofins | mgt Sample No.	Date Sampled	Sample Description	Result
PS-5	14-De14249	Dec 15, 2014	Approximate Sample 72x46x6mm Sample consisted of: Dark grey paint flakes like material and debris	No asbestos detected. Organic fibre detected. No respirable fibres detected.
PS-6	14-De14250	Dec 15, 2014	Approximate Sample 84x80x6mm Sample consisted of: Dark grey paint flakes like material and debris	No asbestos detected. Organic fibre detected. No respirable fibres detected.
PS-7	14-De14251	Dec 15, 2014	Approximate Sample 80x44x6mm Sample consisted of: Dark grey paint flakes like material and debris	No asbestos detected. Organic fibre detected. No respirable fibres detected.
PS-8	14-De14252	Dec 15, 2014	Approximate Sample 92x24x6mm Sample consisted of: Dark grey paint flakes like material and debris	No asbestos detected. Organic fibre detected. No respirable fibres detected.

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Sample History

Where samples are submitted/analysed over several days, the last date of extraction and analysis is reported. A recent review of our LIMS has resulted in the correction or clarification of some method identifications. Due to this, some of the method reference information on reports has changed. However, no substantive change has been made to our laboratory methods, and as such there is no change in the validity of current or previous results (regarding both quality and NATA accreditation).

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
Asbestos – LTM-ASB-8020	Sydney	Dec 16, 2014	Indefinite

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NATA # 1261
Site # 1254 & 14271

Sydney
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Lane Cove West NSW 2066
Phone : +61 2 9900 8400
NATA # 1261 Site # 18217

Brisbane
1/21 Smallwood Place
Murarrie QLD 4172
Phone : +61 7 3902 4600
NATA # 1261 Site # 20794

Company Name:	Vantage Environmental Management Pty Ltd	**Order No.:**		**Received:**	Dec 16, 2014 8:55 AM
Address:	Suite 4 539-541 Kiewa St Albury NSW 2640	**Report #:**	442493	**Due:**	Dec 23, 2014
		Phone:	(02) 6021 8655	**Priority:**	5 Day
		Fax:	(02) 6021 8666	**Contact Name:**	Susannah Price
Project Name:	BARHAM				
Project ID:	AL14-218				

Eurofins | mgt Client Manager: Onur Mehmet

Sample Detail					% Clay*	% Moisture	Asbestos Absence /Presence	Chromium (hexavalent)	HOLD	Lead (% w/w)	pH (units)(1:5 soil:CaCl2 extract)	Organochlorine Pesticides	Organophosphorous Pesticides	Acid Herbicides	Phenols (IWRG 621)	Eurofins | mgt Suite 14	Total Recoverable Hydrocarbons	NEPM 2013 Metals : Metals M13	Eurofins | mgt Suite 6	BTEX and Volatile TRH	Vic EPA IWRG 621 (Solids)	Eurofins | mgt Suite 7A	Cation Exchange Capacity
Laboratory where analysis is conducted																							
Melbourne Laboratory - NATA Site # 1254 & 14271						X		X	X		X	X	X	X	X	X	X	X	X	X	X	X	X
Sydney Laboratory - NATA Site # 18217							X			X								X					
Brisbane Laboratory - NATA Site # 20794					X																		
External Laboratory																							
Sample ID	**Sample Date**	**Sampling Time**	**Matrix**	**LAB ID**																			
BH5-0.1	Dec 12, 2014		Soil	M14-De14236		X							X	X							X		
BH6-0.1	Dec 12, 2014		Soil	M14-De14237		X		X				X			X							X	
BH7-0.1	Dec 12, 2014		Soil	M14-De14238		X		X				X			X							X	
BH7-0.5	Dec 12, 2014		Soil	M14-De14239		X							X	X	X						X		
BH7-1.0	Dec 12, 2014		Soil	M14-De14240		X						X			X			X					
BH8-0.1	Dec 12, 2014		Soil	M14-De14241	X	X					X	X			X			X					X
TS-7	Dec 12, 2014		Solid	M14-De14242				X						X	X	X						X	
TS-8	Dec 12, 2014		Solid	M14-De14243								X			X			X					
TS-9	Dec 12, 2014		Solid	M14-De14244				X						X	X	X						X	

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NATA # 1261 Site # 18217

Brisbane
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Murarrie QLD 4172
Phone : +61 7 3902 4600
NATA # 1261 Site # 20794

Company Name: Vantage Environmental Management Pty Ltd
Address: Suite 4 539-541 Kiewa St
Albury
NSW 2640

Project Name: BARHAM
Project ID: AL14-218

Order No.:
Report #: 442493
Phone: (02) 6021 8655
Fax: (02) 6021 8666

Received: Dec 16, 2014 8:55 AM
Due: Dec 23, 2014
Priority: 5 Day
Contact Name: Susannah Price

Eurofins | mgt Client Manager: Onur Mehmet

Sample Detail					% Clay*	% Moisture	Asbestos Absence /Presence	Chromium (hexavalent)	HOLD	Lead (% w/w)	pH (units)(1:5 soil:CaCl2 extract)	Organochlorine Pesticides	Organophosphorous Pesticides	Acid Herbicides	Phenols (IWRG 621)	Eurofins | mgt Suite 14	Total Recoverable Hydrocarbons	NEPM 2013 Metals : Metals M13	Eurofins | mgt Suite 6	BTEX and Volatile TRH	Vic EPA IWRG 621 (Solids)	Eurofins | mgt Suite 7A	Cation Exchange Capacity
Laboratory where analysis is conducted																							
Melbourne Laboratory - NATA Site # 1254 & 14271						X		X	X		X	X	X	X	X	X	X	X	X	X	X	X	X
Sydney Laboratory - NATA Site # 18217							X			X								X					
Brisbane Laboratory - NATA Site # 20794					X																		
External Laboratory																							
TS-10	Dec 12, 2014		Solid	M14-De14245				X				X			X							X	
TS-11	Dec 12, 2014		Solid	M14-De14246								X					X	X					
TS-12	Dec 12, 2014		Solid	M14-De14247								X			X			X					
DUP-A	Dec 12, 2014		Solid	M14-De14248								X			X			X					
PS-5	Dec 15, 2014		Paint	M14-De14249			X			X													
PS-6	Dec 15, 2014		Paint	M14-De14250			X			X													
PS-7	Dec 15, 2014		Paint	M14-De14251			X			X													
PS-8	Dec 15, 2014		Paint	M14-De14252			X			X													
WB121214	Dec 12, 2014		Water	M14-De14253															X				
TB151214	Dec 15, 2014		Water	M14-De14254																X			

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Company Name: Vantage Environmental Management Pty Ltd
Address: Suite 4 539-541 Kiewa St
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NSW 2640

Project Name: BARHAM
Project ID: AL14-218

Order No.:
Report #: 442493
Phone: (02) 6021 8655
Fax: (02) 6021 8666

Received: Dec 16, 2014 8:55 AM
Due: Dec 23, 2014
Priority: 5 Day
Contact Name: Susannah Price

Eurofins | mgt Client Manager: Onur Mehmet

Sample Detail					% Clay*	% Moisture	Asbestos Absence /Presence	Chromium (hexavalent)	HOLD	Lead (% w/w)	pH (units)(1:5 soil:CaCl2 extract)	Organochlorine Pesticides	Organophosphorous Pesticides	Acid Herbicides	Phenols (IWRG 621)	Eurofins | mgt Suite 14	Total Recoverable Hydrocarbons	NEPM 2013 Metals : Metals M13	Eurofins | mgt Suite 6	BTEX and Volatile TRH	Vic EPA IWRG 621 (Solids)	Eurofins | mgt Suite 7A	Cation Exchange Capacity
Laboratory where analysis is conducted																							
Melbourne Laboratory - NATA Site # 1254 & 14271						X		X	X		X	X	X	X	X	X	X	X	X	X	X	X	X
Sydney Laboratory - NATA Site # 18217							X			X								X					
Brisbane Laboratory - NATA Site # 20794					X																		
External Laboratory																							
BH5-0.5	Dec 12, 2014		Soil	M14-De14255					X														
BH5-1.0	Dec 12, 2014		Soil	M14-De14256					X														
BH6-0.5	Dec 12, 2014		Soil	M14-De14257					X														
BH6-1.0	Dec 12, 2014		Soil	M14-De14258					X														
BH8-0.5	Dec 12, 2014		Soil	M14-De14259					X														
BH8-1.0	Dec 12, 2014		Soil	M14-De14260					X														

Eurofins | mgt Internal Quality Control Review and Glossary

General

1. QC data may be available on request.
2. All soil results are reported on a dry basis, unless otherwise stated.
3. Samples were analysed on an 'as received' basis.
4. 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 Sample Receipt Advice.

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.

UNITS

% w/w: weight for weight basis	grams per kilogram
Filter loading:	fibres/100 graticule areas
Reported Concentration:	fibres/mL
Flowrate:	L/min

TERMS

Dry	Where a moisture has been determined on a solid sample the result is expressed on a dry basis.
LOR	Limit of Reporting.
COC	Chain of custody
SRA	Sample Receipt Advice
ISO	International Stardards Organisation
AS	Australian Standards
WA DOH	Western Australia Department of Health
NOHSC	National Occupational Health and Safety Commission
ACM	Bonded asbestos-containing material means any material containing more than 1% asbestos and comprises asbestos-containing-material which is in sound condition, although possibly broken or fragmented, and where the asbestos is bound in a matrix such as cement or resin. Common examples of ACM include but are not limited to: pipe and boiler insulation, sprayed-on fireproofing, troweled-on acoustical plaster, floor tile and mastic, floor linoleum, transite shingles, roofing materials, wall and ceiling plaster, ceiling tiles, and gasket materials. This term is restricted to material that cannot pass a 7 mm x 7 mm sieve. This sieve size is selected because it approximates the thickness of common asbestos cement sheeting and for fragments to be smaller than this would imply a high degree of damage and hence potential for fibre release.
FA	FA comprises friable asbestos material and includes severely weathered cement sheet, insulation products and woven asbestos material. This type of friable asbestos is defined here as asbestos material that is in a degraded condition such that it can be broken or crumbled by hand pressure. This material is typically unbonded or was previously bonded and is now significantly degraded (crumbling).
PACM	Presumed Asbestos-Containing Material means thermal system insulation and surfacing material found in buildings, vessels, and vessel sections constructed no later than 1980 that are assumed to contain greater than one percent asbestos but have not been sampled or analyzed to verify or negate the presence of asbestos.
AF	Asbestos fines (AF) are defined as free fibres, or fibre bundles, smaller than 7mm. It is the free fibres which present the greatest risk to human health, although very small fibres (< 5 microns in length) are not considered to be such a risk. AF also includes small fragments of bonded ACM that pass through a 7 mm x 7 mm sieve. (Note that for bonded ACM fragments to pass through a 7 mm x 7 mm sieve implies a substatntial degree of damage which increases the potential for fibre release.)
AC	Asbestos cement means a mixture of cement and asbestos fibres (typically 90:10 ratios).

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Comments

Sample Integrity

Custody Seals Intact (if used)	Yes
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
N/A	Not applicable

Authorised by:

Nibha Vaidya Senior Analyst-Asbestos (NSW)

Glenn Jackson
National Laboratory Manager

Final Report – this report replaces any previously issued Report

- Indicates Not Requested

* Indicates NATA accreditation does not cover the performance of this service

Uncertainty data is available on request

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Certificate of Analysis

NATA Accredited
Accreditation Number 1261
Site Number 1254

Accredited for compliance with ISO/IEC 17025
The results of the tests, calibrations and/or measurements included in this document are traceable to Australian/national standards

Vantage Environmental Management
Suite 4 539-541 Kiewa St
Albury
NSW 2640

Attention: **Susannah Price**

Report **442493-W**
Project name BARHAM
Project ID AL14-218
Received Date Dec 16, 2014

Client Sample ID			**WB121214**	**TB151214**
Sample Matrix			**Water**	**Water**
Eurofins | mgt Sample No.			**M14-De14253**	**M14-De14254**
Date Sampled			**Dec 12, 2014**	**Dec 15, 2014**
Test/Reference	LOR	Unit		
Total Recoverable Hydrocarbons - 1999 NEPM Fractions				
TRH C6-C9	0.02	mg/L	< 0.02	< 0.02
TRH C10-C14	0.05	mg/L	< 0.05	-
TRH C15-C28	0.1	mg/L	< 0.1	-
TRH C29-C36	0.1	mg/L	< 0.1	-
TRH C10-36 (Total)	0.1	mg/L	< 0.1	-
Volatile Organics				
Naphthalene[N02]	0.02	mg/L	-	< 0.02
BTEX				
Benzene	0.001	mg/L	< 0.001	< 0.001
Toluene	0.001	mg/L	< 0.001	< 0.001
Ethylbenzene	0.001	mg/L	< 0.001	< 0.001
m&p-Xylenes	0.002	mg/L	< 0.002	< 0.002
o-Xylene	0.001	mg/L	< 0.001	< 0.001
Xylenes - Total	0.003	mg/L	< 0.003	< 0.003
4-Bromofluorobenzene (surr.)	1	%	105	107
Total Recoverable Hydrocarbons - 2013 NEPM Fractions				
Naphthalene[N02]	0.02	mg/L	< 0.02	-
TRH C6-C10	0.02	mg/L	< 0.02	-
TRH C6-C10	0.02	mg/L	-	< 0.02
TRH C6-C10 less BTEX (F1)[N04]	0.02	mg/L	< 0.02	-
TRH C6-C10 less BTEX (F1)[N04]	0.02	mg/L	-	< 0.02
TRH >C10-C16	0.05	mg/L	< 0.05	-
TRH >C10-C16 less Naphthalene (F2)[N01]	0.05	mg/L	< 0.05	-
TRH >C16-C34	0.1	mg/L	< 0.1	-
TRH >C34-C40	0.1	mg/L	< 0.1	-
Heavy Metals				
Arsenic	0.001	mg/L	< 0.001	-
Cadmium	0.0002	mg/L	< 0.0002	-
Chromium	0.001	mg/L	< 0.001	-
Copper	0.001	mg/L	< 0.001	-
Lead	0.001	mg/L	< 0.001	-
Mercury	0.0001	mg/L	< 0.0001	-
Nickel	0.001	mg/L	< 0.001	-
Zinc	0.001	mg/L	< 0.001	-

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Sample History

Where samples are submitted/analysed over several days, the last date of extraction and analysis is reported.
A recent review of our LIMS has resulted in the correction or clarification of some method identifications. Due to this, some of the method reference information on reports has changed. However, no substantive change has been made to our laboratory methods, and as such there is no change in the validity of current or previous results (regarding both quality and NATA accreditation).

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
Eurofins | mgt Suite 7A			
Total Recoverable Hydrocarbons - 1999 NEPM Fractions	Melbourne	Dec 18, 2014	7 Day
- Method: TRH C6-C36 - LTM-ORG-2010			
BTEX	Melbourne	Dec 16, 2014	14 Day
- Method: TRH C6-C40 - LTM-ORG-2010			
Total Recoverable Hydrocarbons - 2013 NEPM Fractions	Melbourne	Dec 18, 2014	7 Day
- Method: TRH C6-C40 - LTM-ORG-2010			
Metals M8	Melbourne	Dec 16, 2014	28 Day
- Method: USEPA 6010/6020 Heavy Metals & USEPA 7470/71 Mercury			
Volatile Organics	Melbourne	Dec 16, 2014	7 Day
- Method: USEPA 8260 - MGT 350A Volatile Organics by GCMS			

Melbourne
3-5 Kingston Town Close
Oakleigh VIC 3166
Phone : +61 3 8564 5000
NATA # 1261
Site # 1254 & 14271

ABN – 50 005 085 521 e.mail : EnviroSales@eurofins.com.au web : www.eurofins.com.au

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Company Name:	Vantage Environmental Management Pty Ltd	**Order No.:**		**Received:** Dec 16, 2014 8:55 AM
Address:	Suite 4 539-541 Kiewa St	**Report #:**	442493	**Due:** Dec 23, 2014
	Albury	**Phone:**	(02) 6021 8655	**Priority:** 5 Day
	NSW 2640	**Fax:**	(02) 6021 8666	**Contact Name:** Susannah Price
Project Name:	BARHAM			
Project ID:	AL14-218			

Eurofins | mgt Client Manager: Onur Mehmet

Sample Detail					% Clay*	% Moisture	Asbestos Absence /Presence	Chromium (hexavalent)	HOLD	Lead (% w/w)	pH (units)(1:5 soil:CaCl2 extract)	Organochlorine Pesticides	Organophosphorous Pesticides	Acid Herbicides	Phenols (IWRG 621)	Eurofins | mgt Suite 14	Total Recoverable Hydrocarbons	NEPM 2013 Metals : Metals M13	Eurofins | mgt Suite 6	BTEX and Volatile TRH	Vic EPA IWRG 621 (Solids)	Eurofins | mgt Suite 7A	Cation Exchange Capacity
Laboratory where analysis is conducted																							
Melbourne Laboratory - NATA Site # 1254 & 14271						X		X	X		X	X	X	X	X	X	X	X	X	X	X	X	X
Sydney Laboratory - NATA Site # 18217							X			X								X					
Brisbane Laboratory - NATA Site # 20794					X																		
External Laboratory																							
Sample ID	**Sample Date**	**Sampling Time**	**Matrix**	**LAB ID**																			
H5-01	Dec 12, 2014		Soil	M14-De14236		X							X	X							X		
H6-01	Dec 12, 2014		Soil	M14-De14237		X		X				X			X							X	
H7-01	Dec 12, 2014		Soil	M14-De14238		X		X				X			X							X	
H7-05	Dec 12, 2014		Soil	M14-De14239		X							X	X	X						X		
H7-10	Dec 12, 2014		Soil	M14-De14240		X						X			X			X					
H8-01	Dec 12, 2014		Soil	M14-De14241	X	X					X	X			X			X					X
S-7	Dec 12, 2014		Solid	M14-De14242				X						X	X	X						X	
S-8	Dec 12, 2014		Solid	M14-De14243								X			X			X					
S-9	Dec 12, 2014		Solid	M14-De14244				X						X	X	X						X	

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Date Reported: Jan 05, 2015

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ABN : 50 005 085 521

Eurofins | mgt 2-5 Kingston Town Close, Oakleigh, Victoria, Australia, 3166 Phone: +61 3 8564 5000 Facsimile: +61 3 8564 5090

Company Name:	Vantage Environmental Management Pty Ltd	**Order No.:**	
Address:	Suite 4 539-541 Kiewa St Albury NSW 2640	**Report #:** **Phone:** **Fax:**	442493 (02) 6021 8655 (02) 6021 8666
Project Name:	BARHAM		
Project ID:	AL14-218		

Received:	Dec 16, 2014 8:55 AM
Due:	Dec 23, 2014
Priority:	5 Day
Contact Name:	Susannah Price

Eurofins | mgt Client Manager: Onur Mehmet

Sample Detail					% Clay*	% Moisture	Asbestos Absence /Presence	Chromium (hexavalent)	HOLD	Lead (% w/w)	pH (units)(1:5 soil:CaCl2 extract)	Organochlorine Pesticides	Organophosphorous Pesticides	Acid Herbicides	Phenols (IWRG 621)	Eurofins | mgt Suite 14	Total Recoverable Hydrocarbons - NEPM 2013 Fractions	NEPM 2013 Metals : Metals M13	Eurofins | mgt Suite 6	BTEX and Volatile TRH	Vic EPA IWRG 621 (Solids)	Eurofins | mgt Suite 7A	Cation Exchange Capacity
Laboratory where analysis is conducted																							
Melbourne Laboratory - NATA Site # 1254 & 14271						X		X	X		X	X	X	X	X	X	X	X	X	X	X	X	X
Sydney Laboratory - NATA Site # 18217							X			X								X					
Brisbane Laboratory - NATA Site # 20794					X																		
External Laboratory																							
S-10		Dec 12, 2014		Solid	M14-De14245			X				X			X							X	
S-11		Dec 12, 2014		Solid	M14-De14246							X					X	X					
S-12		Dec 12, 2014		Solid	M14-De14247							X			X			X					
UP-A		Dec 12, 2014		Solid	M14-De14248							X			X			X					
S-5		Dec 15, 2014		Paint	M14-De14249		X			X													
S-6		Dec 15, 2014		Paint	M14-De14250		X			X													
S-7		Dec 15, 2014		Paint	M14-De14251		X			X													
S-8		Dec 15, 2014		Paint	M14-De14252		X			X													
B121214		Dec 12, 2014		Water	M14-De14253														X				
B151214		Dec 15, 2014		Water	M14-De14254															X			

Date Reported: Jan 05, 2015

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Eurofins | mgt 2-5 Kingston Town Close, Oakleigh, Victoria, Australia, 3166 Telephone: +61 3 8564 5000 Facsimile: +61 3 8564 5090

Company Name:	Vantage Environmental Management Pty Ltd	**Order No.:**	
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Sample Detail					% Clay*	% Moisture	Asbestos Absence /Presence	Chromium (hexavalent)	HOLD	Lead (% w/w)	pH (units)(1:5 soil:CaCl2 extract)	Organochlorine Pesticides	Organophosphorous Pesticides	Acid Herbicides	Phenols (IWRG 621)	Eurofins | mgt Suite 14	Total Recoverable Hydrocarbons - NEPM 2013 Fractions	Total Recoverable Hydrocarbons - NEPM 2013 Fractions	NEPM 2013 Metals : Metals M13	Eurofins | mgt Suite 6	BTEX and Volatile TRH	Vic EPA IWRG 621 (Solids)	Eurofins | mgt Suite 7A	Cation Exchange Capacity
Laboratory where analysis is conducted																									
Melbourne Laboratory - NATA Site # 1254 & 14271						X		X	X		X	X	X	X	X	X	X	X	X	X	X	X	X	X	X
Sydney Laboratory - NATA Site # 18217							X			X										X					
Brisbane Laboratory - NATA Site # 20794					X																				
External Laboratory																									
AL14-05-0.5	Dec 12, 2014		Soil	M14-De14255					X																
AL14-05-1.0	Dec 12, 2014		Soil	M14-De14256					X																
AL14-06-0.5	Dec 12, 2014		Soil	M14-De14257					X																
AL14-06-1.0	Dec 12, 2014		Soil	M14-De14258					X																
AL14-08-0.5	Dec 12, 2014		Soil	M14-De14259					X																
AL14-08-1.0	Dec 12, 2014		Soil	M14-De14260					X																

Date Reported:Jan 05, 2015

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General

1. Laboratory QC results for Method Blanks, Duplicates, Matrix Spikes, and Laboratory Control Samples are included in this QC report where applicable. Additional QC data may be available on request.
2. All soil results are reported on a dry basis, unless otherwise stated.
3. Actual LORs are matrix dependant. Quoted LORs may be raised where sample extracts are diluted due to interferences.
4. Results are uncorrected for matrix spikes or surrogate recoveries.
5. SVOC analysis on waters are performed on homogenised, unfiltered samples, unless noted otherwise.
6. Samples were analysed on an 'as received' basis. 7. 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 Sample Receipt Advice.

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.

****NOTE:** pH duplicates are reported as a range NOT as RPD

UNITS

mg/kg: milligrams per Kilogram

ug/l: micrograms per litre

ppb: Parts per billion

org/100ml: Organisms per 100 millilitres

MPN/100mL: Most Probable Number of organisms per 100 millilitres

mg/l: milligrams per litre

ppm: Parts per million

%: Percentage

NTU: Nephelometric Turbidity Units

TERMS

Dry	Where a moisture has been determined on a solid sample the result is expressed on a dry basis.
LOR	Limit of Reporting.
SPIKE	Addition of the analyte to the sample and reported as percentage recovery.
RPD	Relative Percent Difference between two Duplicate pieces of analysis.
LCS	Laboratory Control Sample - reported as percent recovery
CRM	Certified Reference Material - reported as percent recovery
Method Blank	In the case of solid samples these are performed on laboratory certified clean sands. In the case of water samples these are performed on de-ionised water.
Surr - Surrogate	The addition of a like compound to the analyte target and reported as percentage recovery.
Duplicate	A second piece of analysis from the same sample and reported in the same units as the result to show comparison.
Batch Duplicate	A second piece of analysis from a sample outside of the clients batch of samples but run within the laboratory batch of analysis.
Batch SPIKE	Spike recovery reported on a sample from outside of the clients batch of samples but run within the laboratory batch of analysis.
USEPA	United States Environmental Protection Agency
APHA	American Public Health Association
ASLP	Australian Standard Leaching Procedure (AS4439.3)
TCLP	Toxicity Characteristic Leaching Procedure
COC	Chain of Custody
SRA	Sample Receipt Advice
CP	Client Parent - QC was performed on samples pertaining to this report
NCP	Non-Client Parent - QC performed on samples not pertaining to this report, QC is representative of the sequence or batch that client samples were analysed within
TEQ	Toxic Equivalency Quotient

QC - ACCEPTANCE CRITERIA

RPD Duplicates: Global RPD Duplicates Acceptance Criteria is 30% however the following acceptance guidelines are equally applicable:

Results <10 times the LOR : No Limit

Results between 10-20 times the LOR : RPD must lie between 0-50%

Results >20 times the LOR : RPD must lie between 0-30%

Surrogate Recoveries : Recoveries must lie between 50-150% - Phenols 20-130%.

QC DATA GENERAL COMMENTS

1. Where a result is reported as a less than (<), higher than the nominated LOR, this is due to either matrix interference, extract dilution required due to interferences or contaminant levels within the sample, high moisture content or insufficient sample provided.
2. Duplicate data shown within this report that states the word "BATCH" is a Batch Duplicate from outside of your sample batch, but within the laboratory sample batch at a 1:10 ratio. The Parent and Duplicate data shown is not data from your samples.
3. Organochlorine Pesticide analysis - where reporting LCS data, Toxophene & Chlordane are not added to the LCS.
4. Organochlorine Pesticide analysis - where reporting Spike data, Toxophene is not added to the Spike.
5. Total Recoverable Hydrocarbons - where reporting Spike & LCS data, a single spike of commercial Hydrocarbon products in the range of C12-C30 is added and it's Total Recovery is reported in the C10-C14 cell of the Report.
6. pH and Free Chlorine analysed in the laboratory - Analysis on this test must begin within 30 minutes of sampling.Therefore laboratory analysis is unlikely to be completed within holding time. Analysis will begin as soon as possible after sample receipt.
7. Recovery Data (Spikes & Surrogates) - where chromatographic interference does not allow the determination of Recovery the term "INT" appears against that analyte.
8. Polychlorinated Biphenyls are spiked only using Arochlor 1260 in Matrix Spikes and LCS's.
9. For Matrix Spikes and LCS results a dash " -" in the report means that the specific analyte was not added to the QC sample.
10. Duplicate RPD's are calculated from raw analytical data thus it is possible to have two sets of data.

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Quality Control Results

Test	Lab Sample ID	QA Source	Units	Result 1			Acceptance Limits	Pass Limits	Qualifying Code
Spike - % Recovery									
Total Recoverable Hydrocarbons - 1999 NEPM Fractions				Result 1					
TRH C6-C9	M14-De12911	NCP	%	98			70-130	Pass	
TRH C10-C14	M14-De14523	NCP	%	107			70-130	Pass	
Spike - % Recovery									
Volatile Organics				Result 1					
Naphthalene	M14-De12911	NCP	%	82			70-130	Pass	
Spike - % Recovery									
BTEX				Result 1					
Benzene	M14-De12911	NCP	%	93			70-130	Pass	
Toluene	M14-De12911	NCP	%	91			70-130	Pass	
Ethylbenzene	M14-De12911	NCP	%	92			70-130	Pass	
m&p-Xylenes	M14-De12911	NCP	%	91			70-130	Pass	
o-Xylene	M14-De12911	NCP	%	90			70-130	Pass	
Xylenes - Total	M14-De12911	NCP	%	91			70-130	Pass	
Spike - % Recovery									
Total Recoverable Hydrocarbons - 2013 NEPM Fractions				Result 1					
TRH C6-C10	M14-De12911	NCP	%	89			70-130	Pass	
TRH >C10-C16	M14-De14523	NCP	%	107			70-130	Pass	
Spike - % Recovery									
Heavy Metals				Result 1					
Arsenic	M14-De10933	NCP	%	91			75-125	Pass	
Cadmium	M14-De10933	NCP	%	90			75-125	Pass	
Chromium	M14-De10933	NCP	%	97			75-125	Pass	
Copper	M14-De10933	NCP	%	84			75-125	Pass	
Lead	M14-De10933	NCP	%	88			75-125	Pass	
Mercury	M14-De10933	NCP	%	79			70-130	Pass	
Nickel	M14-De10933	NCP	%	90			75-125	Pass	
Zinc	M14-De10933	NCP	%	91			75-125	Pass	
Test	**Lab Sample ID**	**QA Source**	**Units**	**Result 1**			**Acceptance Limits**	**Pass Limits**	**Qualifying Code**
Duplicate									
Total Recoverable Hydrocarbons - 1999 NEPM Fractions				Result 1	Result 2	RPD			
TRH C6-C9	M14-De14419	NCP	mg/L	< 0.02	< 0.02	<1	30%	Pass	
TRH C10-C14	M14-De14522	NCP	mg/L	< 0.05	< 0.05	<1	30%	Pass	
TRH C15-C28	M14-De14522	NCP	mg/L	< 0.1	< 0.1	<1	30%	Pass	
TRH C29-C36	M14-De14522	NCP	mg/L	< 0.1	< 0.1	<1	30%	Pass	
Duplicate									
Volatile Organics				Result 1	Result 2	RPD			
Naphthalene	M14-De14419	NCP	mg/L	< 0.02	< 0.02	<1	30%	Pass	
Duplicate									
BTEX				Result 1	Result 2	RPD			
Benzene	M14-De14419	NCP	mg/L	< 0.001	< 0.001	<1	30%	Pass	
Toluene	M14-De14419	NCP	mg/L	< 0.001	< 0.001	<1	30%	Pass	
Ethylbenzene	M14-De14419	NCP	mg/L	< 0.001	< 0.001	<1	30%	Pass	
m&p-Xylenes	M14-De14419	NCP	mg/L	< 0.002	< 0.002	<1	30%	Pass	
o-Xylene	M14-De14419	NCP	mg/L	< 0.001	< 0.001	<1	30%	Pass	
Xylenes - Total	M14-De14419	NCP	mg/L	< 0.003	< 0.003	<1	30%	Pass	

Duplicate									
Total Recoverable Hydrocarbons - 2013 NEPM Fractions				Result 1	Result 2	RPD			
TRH C6-C10	M14-De14419	NCP	mg/L	< 0.02	< 0.02	<1	30%	Pass	
TRH C6-C10 less BTEX (F1)	M14-De14419	NCP	mg/L	< 0.02	< 0.02	<1	30%	Pass	
TRH >C10-C16	M14-De14522	NCP	mg/L	< 0.05	< 0.05	<1	30%	Pass	
TRH >C16-C34	M14-De14522	NCP	mg/L	< 0.1	< 0.1	<1	30%	Pass	
TRH >C34-C40	M14-De14522	NCP	mg/L	< 0.1	< 0.1	<1	30%	Pass	
Duplicate									
Heavy Metals				Result 1	Result 2	RPD			
Arsenic	M14-De10933	NCP	mg/L	0.0045	0.0045	1.0	30%	Pass	
Cadmium	M14-De10933	NCP	mg/L	< 0.0002	< 0.0002	<1	30%	Pass	
Chromium	M14-De10933	NCP	mg/L	< 0.001	< 0.001	<1	30%	Pass	
Copper	M14-De14102	NCP	mg/L	0.015	0.015	1.0	30%	Pass	
Lead	M14-De10933	NCP	mg/L	< 0.001	< 0.001	<1	30%	Pass	
Mercury	M14-De10933	NCP	mg/L	< 0.0001	< 0.0001	<1	30%	Pass	
Nickel	M14-De10933	NCP	mg/L	0.0015	0.0014	4.0	30%	Pass	
Zinc	M14-De10933	NCP	mg/L	0.0042	0.0044	5.0	30%	Pass	

Comments

Sample Integrity

Custody Seals Intact (if used)	Yes
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
N01	F2 is determined by arithmetically subtracting the "naphthalene" value from the ">C10-C16" value. The naphthalene value used in this calculation is obtained from volatiles (Purge & Trap analysis).
N02	Where we have reported both volatile (P&T GCMS) and semivolatile (GCMS) naphthalene data, results may not be identical. Provided correct sample handling protocols have been followed, any observed differences in results are likely to be due to procedural differences within each methodology. Results determined by both techniques have passed all QAQC acceptance criteria, and are entirely technically valid.
N04	F1 is determined by arithmetically subtracting the "Total BTEX" value from the "C6-C10" value. The "Total BTEX" value is obtained by summing the concentrations of BTEX analytes. The "C6-C10" value is obtained by quantitating against a standard of mixed aromatic/aliphatic analytes.

Authorised By

Onur Mehmet	Analytical Services Manager
Carroll Lee	Senior Analyst-Organic (VIC)
Carroll Lee	Senior Analyst-Volatile (VIC)
Emily Rosenberg	Senior Analyst-Metal (VIC)

Glenn Jackson
National Laboratory Manager

Final report - this Report replaces any previously issued Report

- Indicates Not Requested

* Indicates NATA accreditation does not cover the performance of this service

Uncertainty data is available on request

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Certificate of Analysis

NATA Accredited
Accreditation Number 1261
Site Number 1254

Accredited for compliance with ISO/IEC 17025
The results of the tests, calibrations and/or measurements included in this document are traceable to Australian/national standards.

Vantage Environmental Management
Suite 4 539-541 Kiewa St
Albury
NSW 2640

Attention: **Susannah Price**

Report **442534-S**
Project name BARHAM AL14-218
Received Date Dec 16, 2014

Client Sample ID			**DUP-B**
Sample Matrix			**Soil**
Eurofins | mgt Sample No.			**S14-De14684**
Date Sampled			**Dec 12, 2014**
Test/Reference	LOR	Unit	
Organochlorine Pesticides			
Chlordanes - Total	0.1	mg/kg	< 0.1
4.4'-DDD	0.05	mg/kg	< 0.05
4.4'-DDE	0.05	mg/kg	< 0.05
4.4'-DDT	0.05	mg/kg	< 0.05
a-BHC	0.05	mg/kg	< 0.05
Aldrin	0.05	mg/kg	< 0.05
b-BHC	0.05	mg/kg	< 0.05
d-BHC	0.05	mg/kg	< 0.05
Dieldrin	0.05	mg/kg	< 0.05
Endosulfan I	0.05	mg/kg	< 0.05
Endosulfan II	0.05	mg/kg	< 0.05
Endosulfan sulphate	0.05	mg/kg	< 0.05
Endrin	0.05	mg/kg	< 0.05
Endrin aldehyde	0.05	mg/kg	< 0.05
Endrin ketone	0.05	mg/kg	< 0.05
g-BHC (Lindane)	0.05	mg/kg	< 0.05
Heptachlor	0.05	mg/kg	< 0.05
Heptachlor epoxide	0.05	mg/kg	< 0.05
Hexachlorobenzene	0.05	mg/kg	< 0.05
Methoxychlor	0.2	mg/kg	< 0.2
Toxaphene	1	mg/kg	< 1
Dibutylchlorendate (surr.)	1	%	111
Tetrachloro-m-xylene (surr.)	1	%	107
Speciated Phenols			
2.4-Dichlorophenol	0.5	mg/kg	< 0.5
2.4-Dimethylphenol	0.5	mg/kg	< 0.5
2.4.5-Trichlorophenol	0.5	mg/kg	< 0.5
2.4.6-Trichlorophenol	0.5	mg/kg	< 0.5
Phenol	0.5	mg/kg	< 0.5
2-Methylphenol (o-Cresol)	0.5	mg/kg	< 0.5
3&4-Methylphenol (m&p-Cresol)	1	mg/kg	< 1
2-Chlorophenol	0.5	mg/kg	< 0.5
2-Nitrophenol	0.5	mg/kg	< 0.5
4-Chloro-3-methylphenol	0.5	mg/kg	< 0.5
Pentachlorophenol	1	mg/kg	< 1
Phenol-d5 (surr.)	1	%	103

Client Sample ID			DUP-B
Sample Matrix			Soil
Eurofins | mgt Sample No.			S14-De14684
Date Sampled			Dec 12, 2014
Test/Reference	LOR	Unit	
Chromium (hexavalent)	1	mg/kg	< 1
% Moisture	0.1	%	13
Heavy Metals			
Arsenic	2	mg/kg	10
Beryllium	2	mg/kg	< 2
Boron	10	mg/kg	< 10
Cadmium	0.4	mg/kg	< 0.4
Cobalt	5	mg/kg	8.0
Copper	5	mg/kg	12
Lead	5	mg/kg	15
Manganese	5	mg/kg	420
Mercury	0.05	mg/kg	< 0.05
Nickel	5	mg/kg	12
Selenium	2	mg/kg	< 2
Zinc	5	mg/kg	36

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Sample History

Where samples are submitted/analysed over several days, the last date of extraction and analysis is reported.
A recent review of our LIMS has resulted in the correction or clarification of some method identifications. Due to this, some of the method reference information on reports has changed. However, no substantive change has been made to our laboratory methods, and as such there is no change in the validity of current or previous results (regarding both quality and NATA accreditation).

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
Organochlorine Pesticides	Sydney	Dec 16, 2014	14 Day
- Method: E013 Organochlorine Pesticides (OC)			
Speciated Phenols	Sydney	Dec 16, 2014	14 Day
- Method: E008 Speciated Phenols			
% Moisture	Sydney	Dec 16, 2014	14 Day
- Method: LTM-GEN-7080 Moisture			
Chromium (hexavalent)	Sydney	Dec 16, 2014	28 Day
- Method: E043 /E057 Total Speciated Chromium			
Heavy Metals	Sydney	Dec 17, 2014	180 Day
- Method: E022 Acid Extractable metals in Soils			

Melbourne
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NATA # 1261
Site # 1254 & 14271

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ABN - 50 005 085 521

Company Name:	Vantage Environmental Management Pty Ltd	**Order No.:**		**Received:**	Dec 16, 2014 12:00 PM
Address:	Suite 4 539-541 Kiewa St Albury NSW 2640	**Report #:** **Phone:** **Fax:**	442534 (02) 6021 8655 (02) 6021 8666	**Due:** **Priority:** **Contact Name:**	Dec 23, 2014 5 Day Susannah Price
Project Name:	BARHAM AL14-218				

Eurofins | mgt Client Manager: Onur Mehmet

Eurofins | mgt Unit F3, Building F, 16 Mars Road, Lane Cove West, NSW, Australia, 2066
ABN : 50 005 085 521 Telephone: +61 2 9900 8400 Facsimile: +61 2 9420 2977

Date Reported:Dec 23, 2014

Sample Detail	% Moisture	Organochlorine Pesticides	Speciated Phenols	NEPM 2013 Metals : Metals M13
Laboratory where analysis is conducted				
Melbourne Laboratory - NATA Site # 1254 & 14271				
Sydney Laboratory - NATA Site # 18217	X	X	X	X
Brisbane Laboratory - NATA Site # 20794				
External Laboratory				

Sample ID	Sample Date	Sampling Time	Matrix	LAB ID				
JP-B	Dec 12, 2014		Soil	S14-De14684	X	X	X	X

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Eurofins | mgt Internal Quality Control Review and Glossary

General

1. Laboratory QC results for Method Blanks, Duplicates, Matrix Spikes, and Laboratory Control Samples are included in this QC report where applicable. Additional QC data may be available on request.
2. All soil results are reported on a dry basis, unless otherwise stated.
3. Actual LORs are matrix dependant. Quoted LORs may be raised where sample extracts are diluted due to interferences.
4. Results are uncorrected for matrix spikes or surrogate recoveries.
5. SVOC analysis on waters are performed on homogenised, unfiltered samples, unless noted otherwise.
6. Samples were analysed on an 'as received' basis. 7. 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 Sample Receipt Advice.

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.

****NOTE:** pH duplicates are reported as a range NOT as RPD

UNITS

mg/kg: milligrams per Kilogram

ug/l: micrograms per litre

ppb: Parts per billion

org/100ml: Organisms per 100 millilitres

MPN/100mL: Most Probable Number of organisms per 100 millilitres

mg/l: milligrams per litre

ppm: Parts per million

%: Percentage

NTU: Nephelometric Turbidity Units

TERMS

Dry	Where a moisture has been determined on a solid sample the result is expressed on a dry basis.
LOR	Limit of Reporting.
SPIKE	Addition of the analyte to the sample and reported as percentage recovery.
RPD	Relative Percent Difference between two Duplicate pieces of analysis.
LCS	Laboratory Control Sample - reported as percent recovery
CRM	Certified Reference Material - reported as percent recovery
Method Blank	In the case of solid samples these are performed on laboratory certified clean sands. In the case of water samples these are performed on de-ionised water.
Surr - Surrogate	The addition of a like compound to the analyte target and reported as percentage recovery.
Duplicate	A second piece of analysis from the same sample and reported in the same units as the result to show comparison.
Batch Duplicate	A second piece of analysis from a sample outside of the clients batch of samples but run within the laboratory batch of analysis.
Batch SPIKE	Spike recovery reported on a sample from outside of the clients batch of samples but run within the laboratory batch of analysis.
USEPA	United States Environmental Protection Agency
APHA	American Public Health Association
ASLP	Australian Standard Leaching Procedure (AS4439.3)
TCLP	Toxicity Characteristic Leaching Procedure
COC	Chain of Custody
SRA	Sample Receipt Advice
CP	Client Parent - QC was performed on samples pertaining to this report
NCP	Non-Client Parent - QC performed on samples not pertaining to this report, QC is representative of the sequence or batch that client samples were analysed within
TEQ	Toxic Equivalency Quotient

QC - ACCEPTANCE CRITERIA

RPD Duplicates: Global RPD Duplicates Acceptance Criteria is 30% however the following acceptance guidelines are equally applicable:

Results <10 times the LOR : No Limit

Results between 10-20 times the LOR : RPD must lie between 0-50%

Results >20 times the LOR : RPD must lie between 0-30%

Surrogate Recoveries : Recoveries must lie between 50-150% - Phenols 20-130%.

QC DATA GENERAL COMMENTS

1. Where a result is reported as a less than (<), higher than the nominated LOR, this is due to either matrix interference, extract dilution required due to interferences or contaminant levels within the sample, high moisture content or insufficient sample provided.
2. Duplicate data shown within this report that states the word "BATCH" is a Batch Duplicate from outside of your sample batch, but within the laboratory sample batch at a 1:10 ratio. The Parent and Duplicate data shown is not data from your samples.
3. Organochlorine Pesticide analysis - where reporting LCS data, Toxophene & Chlordane are not added to the LCS.
4. Organochlorine Pesticide analysis - where reporting Spike data, Toxophene is not added to the Spike.
5. Total Recoverable Hydrocarbons - where reporting Spike & LCS data, a single spike of commercial Hydrocarbon products in the range of C12-C30 is added and it's Total Recovery is reported in the C10-C14 cell of the Report.
6. pH and Free Chlorine analysed in the laboratory - Analysis on this test must begin within 30 minutes of sampling.Therefore laboratory analysis is unlikely to be completed within holding time. Analysis will begin as soon as possible after sample receipt.
7. Recovery Data (Spikes & Surrogates) - where chromatographic interference does not allow the determination of Recovery the term "INT" appears against that analyte.
8. Polychlorinated Biphenyls are spiked only using Arochlor 1260 in Matrix Spikes and LCS's.
9. For Matrix Spikes and LCS results a dash " -" in the report means that the specific analyte was not added to the QC sample.
10. Duplicate RPD's are calculated from raw analytical data thus it is possible to have two sets of data.

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Quality Control Results

Test	Units	Result 1			Acceptance Limits	Pass Limits	Qualifying Code
Method Blank							
Organochlorine Pesticides							
Chlordanes - Total	mg/kg	< 0.1			0.1	Pass	
4.4'-DDD	mg/kg	< 0.05			0.05	Pass	
4.4'-DDE	mg/kg	< 0.05			0.05	Pass	
4.4'-DDT	mg/kg	< 0.05			0.05	Pass	
a-BHC	mg/kg	< 0.05			0.05	Pass	
Aldrin	mg/kg	< 0.05			0.05	Pass	
b-BHC	mg/kg	< 0.05			0.05	Pass	
d-BHC	mg/kg	< 0.05			0.05	Pass	
Dieldrin	mg/kg	< 0.05			0.05	Pass	
Endosulfan I	mg/kg	< 0.05			0.05	Pass	
Endosulfan II	mg/kg	< 0.05			0.05	Pass	
Endosulfan sulphate	mg/kg	< 0.05			0.05	Pass	
Endrin	mg/kg	< 0.05			0.05	Pass	
Endrin aldehyde	mg/kg	< 0.05			0.05	Pass	
Endrin ketone	mg/kg	< 0.05			0.05	Pass	
g-BHC (Lindane)	mg/kg	< 0.05			0.05	Pass	
Heptachlor	mg/kg	< 0.05			0.05	Pass	
Heptachlor epoxide	mg/kg	< 0.05			0.05	Pass	
Hexachlorobenzene	mg/kg	< 0.05			0.05	Pass	
Methoxychlor	mg/kg	< 0.2			0.2	Pass	
Toxaphene	mg/kg	< 1			1	Pass	
Method Blank							
Speciated Phenols							
2.4-Dichlorophenol	mg/kg	< 0.5			0.5	Pass	
2.4-Dimethylphenol	mg/kg	< 0.5			0.5	Pass	
2.4.5-Trichlorophenol	mg/kg	< 0.5			0.5	Pass	
2.4.6-Trichlorophenol	mg/kg	< 0.5			0.5	Pass	
Phenol	mg/kg	< 0.5			0.5	Pass	
2-Methylphenol (o-Cresol)	mg/kg	< 0.5			0.5	Pass	
3&4-Methylphenol (m&p-Cresol)	mg/kg	< 1			1	Pass	
2-Chlorophenol	mg/kg	< 0.5			0.5	Pass	
2-Nitrophenol	mg/kg	< 0.5			0.5	Pass	
4-Chloro-3-methylphenol	mg/kg	< 0.5			0.5	Pass	
Pentachlorophenol	mg/kg	< 1			1	Pass	
Method Blank							
Chromium (hexavalent)	mg/kg	< 1			1	Pass	
Method Blank							
Heavy Metals							
Arsenic	mg/kg	< 2			2	Pass	
Beryllium	mg/kg	< 2			2	Pass	
Boron	mg/kg	< 10			10	Pass	
Cadmium	mg/kg	< 0.4			0.4	Pass	
Cobalt	mg/kg	< 5			5	Pass	
Copper	mg/kg	< 5			5	Pass	
Lead	mg/kg	< 5			5	Pass	
Manganese	mg/kg	< 5			5	Pass	
Mercury	mg/kg	< 0.05			0.05	Pass	
Nickel	mg/kg	< 5			5	Pass	
Selenium	mg/kg	< 2			2	Pass	
Zinc	mg/kg	< 5			5	Pass	

Test	Units	Result 1			Acceptance Limits	Pass Limits	Qualifying Code
LCS - % Recovery							
Organochlorine Pesticides							
Chlordanes - Total	%	106			70-130	Pass	
4.4'-DDD	%	103			70-130	Pass	
4.4'-DDE	%	96			70-130	Pass	
4.4'-DDT	%	90			70-130	Pass	
a-BHC	%	94			70-130	Pass	
Aldrin	%	110			70-130	Pass	
b-BHC	%	111			70-130	Pass	
d-BHC	%	84			70-130	Pass	
Dieldrin	%	105			70-130	Pass	
Endosulfan I	%	120			70-130	Pass	
Endosulfan II	%	109			70-130	Pass	
Endosulfan sulphate	%	102			70-130	Pass	
Endrin	%	106			70-130	Pass	
Endrin aldehyde	%	119			70-130	Pass	
Endrin ketone	%	110			70-130	Pass	
g-BHC (Lindane)	%	107			70-130	Pass	
Heptachlor	%	112			70-130	Pass	
Heptachlor epoxide	%	105			70-130	Pass	
Methoxychlor	%	98			70-130	Pass	
LCS - % Recovery							
Speciated Phenols							
2.4-Dichlorophenol	%	110			30-130	Pass	
2.4-Dimethylphenol	%	115			30-130	Pass	
2.4.5-Trichlorophenol	%	103			30-130	Pass	
2.4.6-Trichlorophenol	%	109			30-130	Pass	
Phenol	%	113			30-130	Pass	
2-Methylphenol (o-Cresol)	%	115			30-130	Pass	
3&4-Methylphenol (m&p-Cresol)	%	119			30-130	Pass	
2-Chlorophenol	%	111			30-130	Pass	
2-Nitrophenol	%	107			30-130	Pass	
4-Chloro-3-methylphenol	%	108			30-130	Pass	
Pentachlorophenol	%	90			30-130	Pass	
LCS - % Recovery							
Chromium (hexavalent)	%	98			70-130	Pass	
LCS - % Recovery							
Heavy Metals							
Arsenic	%	101			70-130	Pass	
Beryllium	%	101			70-130	Pass	
Boron	%	90			70-130	Pass	
Cadmium	%	102			70-130	Pass	
Cobalt	%	98			70-130	Pass	
Copper	%	97			70-130	Pass	
Lead	%	99			70-130	Pass	
Manganese	%	89			70-130	Pass	
Mercury	%	86			70-130	Pass	
Nickel	%	97			70-130	Pass	
Selenium	%	97			70-130	Pass	
Zinc	%	101			70-130	Pass	

Test	Lab Sample ID	QA Source	Units	Result 1			Acceptance Limits	Pass Limits	Qualifying Code
Spike - % Recovery									
Organochlorine Pesticides				Result 1					
Chlordanes - Total	S14-De14750	NCP	%	118			70-130	Pass	
4.4'-DDD	S14-De14750	NCP	%	126			70-130	Pass	
4.4'-DDE	S14-De14750	NCP	%	125			70-130	Pass	
4.4'-DDT	S14-De14750	NCP	%	75			70-130	Pass	
a-BHC	S14-De14750	NCP	%	94			70-130	Pass	
Aldrin	S14-De14750	NCP	%	121			70-130	Pass	
b-BHC	S14-De14750	NCP	%	109			70-130	Pass	
d-BHC	S14-De14750	NCP	%	94			70-130	Pass	
Dieldrin	S14-De14750	NCP	%	114			70-130	Pass	
Endosulfan I	S14-De14750	NCP	%	121			70-130	Pass	
Endosulfan II	S14-De14750	NCP	%	109			70-130	Pass	
Endosulfan sulphate	S14-De14750	NCP	%	108			70-130	Pass	
Endrin	S14-De14750	NCP	%	116			70-130	Pass	
Endrin aldehyde	S14-De14750	NCP	%	109			70-130	Pass	
Endrin ketone	S14-De14750	NCP	%	112			70-130	Pass	
g-BHC (Lindane)	S14-De14750	NCP	%	113			70-130	Pass	
Heptachlor	S14-De14750	NCP	%	111			70-130	Pass	
Heptachlor epoxide	S14-De14750	NCP	%	117			70-130	Pass	
Methoxychlor	S14-De14750	NCP	%	79			70-130	Pass	
Toxaphene	S14-De14750	NCP	%	112			70-130	Pass	
Spike - % Recovery									
Speciated Phenols				Result 1					
2.4-Dichlorophenol	S14-De14684	CP	%	121			30-130	Pass	
2.4-Dimethylphenol	S14-De14684	CP	%	116			30-130	Pass	
2.4.5-Trichlorophenol	S14-De14684	CP	%	114			30-130	Pass	
2.4.6-Trichlorophenol	S14-De14684	CP	%	123			30-130	Pass	
Phenol	S14-De14684	CP	%	125			30-130	Pass	
2-Methylphenol (o-Cresol)	S14-De14684	CP	%	123			30-130	Pass	
3&4-Methylphenol (m&p-Cresol)	S14-De14684	CP	%	122			30-130	Pass	
2-Chlorophenol	S14-De14684	CP	%	121			30-130	Pass	
2-Nitrophenol	S14-De14684	CP	%	119			30-130	Pass	
4-Chloro-3-methylphenol	S14-De14684	CP	%	118			30-130	Pass	
Pentachlorophenol	S14-De14684	CP	%	72			30-130	Pass	
Spike - % Recovery									
				Result 1					
Chromium (hexavalent)	B14-De14423	NCP	%	97			70-130	Pass	
Spike - % Recovery									
Heavy Metals				Result 1					
Arsenic	S14-De14204	NCP	%	95			70-130	Pass	
Beryllium	S14-De14204	NCP	%	101			70-130	Pass	
Boron	S14-De14970	NCP	%	87			70-130	Pass	
Cadmium	S14-De14204	NCP	%	101			70-130	Pass	
Cobalt	S14-De14204	NCP	%	107			70-130	Pass	
Copper	S14-De17131	NCP	%	102			70-130	Pass	
Lead	S14-De14204	NCP	%	78			70-130	Pass	
Manganese	S14-De14970	NCP	%	100			70-130	Pass	
Mercury	S14-De14204	NCP	%	92			70-130	Pass	
Nickel	S14-De14970	NCP	%	98			70-130	Pass	
Selenium	S14-De14204	NCP	%	92			70-130	Pass	
Zinc	S14-De17131	NCP	%	100			70-130	Pass	

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Test	Lab Sample ID	QA Source	Units	Result 1			Acceptance Limits	Pass Limits	Qualifying Code
Duplicate									
Organochlorine Pesticides				Result 1	Result 2	RPD			
Chlordanes - Total	S14-De13231	NCP	mg/kg	< 0.1	< 0.1	<1	30%	Pass	
4.4'-DDD	S14-De13231	NCP	mg/kg	< 0.05	< 0.05	<1	30%	Pass	
4.4'-DDE	S14-De13231	NCP	mg/kg	< 0.05	< 0.05	<1	30%	Pass	
4.4'-DDT	S14-De13231	NCP	mg/kg	< 0.05	< 0.05	<1	30%	Pass	
a-BHC	S14-De13231	NCP	mg/kg	< 0.05	< 0.05	<1	30%	Pass	
Aldrin	S14-De13231	NCP	mg/kg	< 0.05	< 0.05	<1	30%	Pass	
b-BHC	S14-De13231	NCP	mg/kg	< 0.05	< 0.05	<1	30%	Pass	
d-BHC	S14-De13231	NCP	mg/kg	< 0.05	< 0.05	<1	30%	Pass	
Dieldrin	S14-De13231	NCP	mg/kg	< 0.05	< 0.05	<1	30%	Pass	
Endosulfan I	S14-De13231	NCP	mg/kg	< 0.05	< 0.05	<1	30%	Pass	
Endosulfan II	S14-De13231	NCP	mg/kg	< 0.05	< 0.05	<1	30%	Pass	
Endosulfan sulphate	S14-De13231	NCP	mg/kg	< 0.05	< 0.05	<1	30%	Pass	
Endrin	S14-De13231	NCP	mg/kg	< 0.05	< 0.05	<1	30%	Pass	
Endrin aldehyde	S14-De13231	NCP	mg/kg	< 0.05	< 0.05	<1	30%	Pass	
Endrin ketone	S14-De13231	NCP	mg/kg	< 0.05	< 0.05	<1	30%	Pass	
g-BHC (Lindane)	S14-De13231	NCP	mg/kg	< 0.05	< 0.05	<1	30%	Pass	
Heptachlor	S14-De13231	NCP	mg/kg	< 0.05	< 0.05	<1	30%	Pass	
Heptachlor epoxide	S14-De13231	NCP	mg/kg	< 0.05	< 0.05	<1	30%	Pass	
Hexachlorobenzene	S14-De13231	NCP	mg/kg	< 0.05	< 0.05	<1	30%	Pass	
Methoxychlor	S14-De13231	NCP	mg/kg	< 0.2	< 0.2	<1	30%	Pass	
Toxaphene	S14-De13231	NCP	mg/kg	< 1	< 1	<1	30%	Pass	
Duplicate									
Speciated Phenols				Result 1	Result 2	RPD			
2.4-Dichlorophenol	S14-De15002	NCP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
2.4-Dimethylphenol	S14-De15002	NCP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
2.4.5-Trichlorophenol	S14-De15002	NCP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
2.4.6-Trichlorophenol	S14-De15002	NCP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
Phenol	S14-De15002	NCP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
2-Methylphenol (o-Cresol)	S14-De15002	NCP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
3&4-Methylphenol (m&p-Cresol)	S14-De15002	NCP	mg/kg	< 1	< 1	<1	30%	Pass	
2-Chlorophenol	S14-De15002	NCP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
2-Nitrophenol	S14-De15002	NCP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
4-Chloro-3-methylphenol	S14-De15002	NCP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
Pentachlorophenol	S14-De15002	NCP	mg/kg	< 1	< 1	<1	30%	Pass	
Duplicate									
				Result 1	Result 2	RPD			
Chromium (hexavalent)	S14-De11303	NCP	mg/kg	< 1	< 1	<1	30%	Pass	
% Moisture	S14-De17751	NCP	%	70	71	1.0	30%	Pass	
Duplicate									
Heavy Metals				Result 1	Result 2	RPD			
Arsenic	S14-De15169	NCP	mg/kg	< 2	< 2	<1	30%	Pass	
Beryllium	S14-De13234	NCP	mg/kg	< 2	< 2	<1	30%	Pass	
Boron	S14-De13234	NCP	mg/kg	32	31	4.0	30%	Pass	
Cadmium	S14-De13234	NCP	mg/kg	< 0.4	< 0.4	<1	30%	Pass	
Cobalt	S14-De13234	NCP	mg/kg	8.8	8.3	6.0	30%	Pass	
Copper	S14-De13234	NCP	mg/kg	27	25	7.0	30%	Pass	
Lead	S14-De14747	NCP	mg/kg	21	21	<1	30%	Pass	
Manganese	S14-De13234	NCP	mg/kg	100	93	8.0	30%	Pass	
Mercury	S14-De13234	NCP	mg/kg	0.10	0.10	<1	30%	Pass	
Nickel	S14-De13234	NCP	mg/kg	33	31	7.0	30%	Pass	
Selenium	S14-De13234	NCP	mg/kg	2.2	2.2	3.0	30%	Pass	

Comments

Sample Integrity

Custody Seals Intact (if used)	Yes
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

Onur Mehmet	Analytical Services Manager
Bob Symons	Senior Analyst-Inorganic (NSW)
Ryan Hamilton	Senior Analyst-Organic (NSW)
Ivan Taylor	Senior Analyst-Metal (NSW)

Glenn Jackson
National Laboratory Manager

Final report - this Report replaces any previously issued Report

- Indicates Not Requested

* Indicates NATA accreditation does not cover the performance of this service

Uncertainty data is available on request

Appendix E

Master Table of Sample Localities, Waste Classification and Management Options

Master Table of Waste Classification & Waste Management Options: Barham-Koondrook Bridge (Victorian Approach)

Material Type	NSW EPA Waste Classification	Victorian EPA Waste Classification	Waste Management Options
Timber (Pier and Abutment)	Pier timber: ***General Solid Waste*** Abutment timber: ***General Solid Waste***	Pier timber: ***Industrial Waste*** Abutment timber: ***Industrial Waste***	• May be sent to landfill under the classification of NSW EPA ***General Solid Waste*** *or* Victorian EPA ***Industrial Waste*** pending agreement from landfill operator; or • Stockpiled for future disposal.
Timber (NOT Pier and Abutment)	Handrail timber: ***General Solid Waste*** Top sheeting: ***General Solid Waste*** Transverse decking: ***General Solid Waste*** Longitudinal bridge beams (stringers): ***General Solid Waste***	Handrail timber: ***Industrial Waste*** Top sheeting: ***Industrial Waste*** Transverse decking: ***Industrial Waste*** Longitudinal bridge beams (stringers): ***Industrial Waste***	• Stockpile/store for future RMS use as sample results indicate OCPs and Phenols (inclusive of pentachlorophenol) are NOT present in excess of NSW ***General Solid Waste*** criteria and the material would NOT be classified as a SCW; or • Stockpile for future disposal as sample results indicate SCW's are NOT present in timber that is definitely not pile or abutment; or • May be sent to landfill under the classification of NSW EPA ***General Solid Waste*** or Victorian EPA ***Industrial Waste*** pending agreement from landfill operator.
Painted Elements	***General Solid Waste***	***Industrial Waste***	Painted bridge elements could be disposed of at a NSW landfill licensed to accept ***General Solid Waste*** or Victorian landfill licenced to accept ***Industrial Waste***. Approval to dispose of such wastes would have to be given by the nominated landfill prior to disposal. Lead paint waste (i.e. previously bonded paint that is removed/stripped from bridge elements) would be pre-classified as ***Hazardous Waste*** in NSW and ***Prescribed Industrial Waste*** in Victoria**.**
Soil	***General Solid Waste***	***Fill Material***	On-site reuse as soil quality is consistent with the contamination criteria applicable at the site. Alternatively, soil can be disposed of at a NSW landfill under the classification of ***General Solid Waste*** or Victorian Landfill under the classification of ***Fill Material*.** Approval to dispose of soils would have to be given by the nominated landfill prior to disposal and additional sampling would generally be required to confirm waste classification prior to disposal of excavated soils.

Appendix F

Contractors Master Table of Waste Management Options

Contractor's Master Table of Waste Management Options: Barham-Koondrook Bridge (Victorian Approach)

KEY:	NSW *General Solid Waste* or Victorian *Industrial Waste* or Victorian *Fill Material*	NSW *Restricted/Hazardous Waste/SCW* or Victorian *Prescribed Industrial Waste*

Bridge Element	NSW Waste Classification	Vic Waste Classification	Waste Management Options
Timbers (Pile & Abutment)	***General Solid Waste***	***Industrial Waste***	1. May be sent to landfill under the classification of NSW EPA ***General Solid Waste*** *or* Victorian EPA ***Industrial Waste*** pending agreement from landfill operator; or 2. Stockpiled for future disposal.
Timbers (NOT Pile or Abutment)	***General Solid Waste***	***Industrial Waste***	1. Stockpile/store for future RMS use; 2. Stockpile for future disposal; or 3. May be sent to landfill under the classification of NSW EPA ***General Solid Waste*** *or* Victorian EPA ***Industrial Waste*** pending agreement from landfill operator.
Painted Bridge Elements (Timber & Steel)	***General Solid Waste***	***Industrial Waste***	1. May be sent to a NSW landfill under the classification of NSW EPA ***General Solid Waste*** or Victorian EPA ***Industrial Waste*** pending agreement from landfill operator; or 2. Stockpile for future disposal.
Site Soils	***General Solid Waste***	***Fill Material***	1. Suitable for reuse on-site; or 2. May be send to a NSW landfill under the classification of ***General Solid Waste*** or Victorian Landfill under the classification of ***Fill Material*** pending agreement from landfill operator.