CHEC

Compliance Health & Environmental Consulting

Environmental Site Assessment

Property

80-82 Murray Street and 185 Morgan Street,

Wagga Wagga, NSW

Client

Demasa Pty Ltd
PO Box 5664
Wagga Wagga,
NSW 2650

Version

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The undersigned confirm that this document and all associated attachments relate to the Site under investigation and have been reviewed and checked for errors, omissions and inaccuracies.

Name	Signature	Position	Date
Richard Case	R Case.	Director	31/03/2023

Executive Summary

Compliance Health & Environmental Consulting Pty Ltd (CHEC) were engaged by Demasa Pty Ltd to undertake a Detailed Site Investigation on the property identified as Lot 1 in DP1027240 and Lot 1 DP550746 located respectively at 80-82 Murray Street and 185 Morgan Street, Wagga Wagga, NSW. The assessment was requested as part of due diligence relating to the potential purchase and redevelopment of property. The intent is for continued use and future development of commercial/residential properties consistent with the definition provided in the National Environment Protection (Assessment of Site Contamination) Amendment Measure (NEPM), 2013.

This investigation was undertaken to identify potential contamination activities, assess the risk of these sources of contaminants with respect to the contamination status of the site, and ultimately conclude whether or not the site is suitable for the proposed use as zoned. The methods of investigation and findings were reported in accordance with NSW endorsed guidelines including the *NSW OEH Guidelines for Consultants Reporting on Contaminated Sites, 2011* and *NEPC National Environmental Protection (Assessment of Site Contamination) amended Measure (NEPM), 2013*.

Site Address	80-82 Murray Street & 185 Morgan Street, Wagga Wagga
Lot Identification	Lot 1 in DP1027240 and Lot 1 DP550746
Site Area	17,000m^2 (1.7ha)
Zoning	B4 - Mixed Use (Commercial/Residential)
Current Land Use	Commercial/Residential use
Proposed Land Use	Commercial/Residential use

The property under investigation is within the urban area of Wagga Wagga and currently is occupied by four free standing single storey houses in the south eastern corner, a residence on the north eastern corner, commercial property with carpark in the south western corner and concrete carparking occupying the remainder of the investigation area.

The application to develop the property includes a two-level basement carpark, residential unit buildings with retail ground floor space and three-level townhouses. Refer to Appendix C for details of the proposed development.

Field investigations were undertaken on Friday 21th April. Fill soils consisted of silty/clayey sand within the central grassed area throughout the residential properties. Beneath the concrete surfaces in the northern car park, the fill consisted of a sandy gravelly layer above an additional silty clayey fill and natural silty clay. Natural grey clay with orange mottle was encountered at depths of 0.25m to 1.2m below slab level & 0.2-0.5 below ground level in cleared grassed locations.

The southern carpark area was underlain with sand beneath the concrete slab, which extended down to brown clay and gravelly clay, and included significant asphalt inclusions at BH-12 to a depth of 1.3m. No ACM was identified in any of the 10L sieve samples. No odours were noted at any sample locations and no staining was observed.

Concentrations of organic contaminants were generally compliant relative to the NEPM HIL's and EIL's. The majority of the Site, with the exception of the southern carpark and BH4-1 in the northern carpark, was measured to contain contaminant concentrations below detection or significantly less than the respective NEPM HIL. The development plans provided to CHEC indicate the proposed land use in the southern carpark includes a unit building on the western half and landscaping with communal BBQ on the eastern half.

The exceedances of BaP (TEQ) at BH-12 and BH-13 appear to be related to bitumen that was observed amongst the fill material to a depth of 1.3m and contains coal tar. Although NEPM, 2013 does discuss the limited bioavailability of carcinogens when presented in the form of bitumen, the concentrations are quite significant and will require remediation of the area that covers approximately 500m2. TRH concentrations in the F2 band also exceeded the NEPM HSL at BH-12, whilst the F3 band concentration exceeded the NEPM management limits, which needs to be considered in any remedial strategy.

BH4-1 of the northern carpark also exhibited high concentrations of BaP TEQ, which exceeded the HIL by more than 250% and will require remediation as a hot spot. The hot spot area is estimated to be approximately 250m2 to a depth of 0.5m; however, more accurate delineation of the contaminated fill should be undertaken at the time of excavation to be included in the Site validation scope.

Heavy Metals were observed at concentrations generally compliant with NEPM HIL's and EIL's, apart from one sample at BH4-2, which exceeded the calculated zinc EIL of 400mg/kg. The proposed developments for the current northern carpark include residential developments with minimal exposed soils. The exceedance therefore, does not represent a risk to the ecology due to the absence of any migration or exposure pathways under the proposed development.

Based on the data quality indicators, the resultant data is considered to have adequate level of accuracy and precision, and represents the actual concentrations of contaminants at the Site. The revised CSM attached as Figure 3, indicated there may be concern for residents due to accessible soils in proposed landscaped areas. Exposure pathways also need to be considered for workers during redevelopment(s) and future maintenance personnel.

Due to the presence of contaminants that do not comply with Site Acceptance Criteria a Remedial Action Plan (RAP) should be prepared to address the contaminated fill within the southern carpark and the northern carpark identified in Figure 2. The presence of the medical centre building prevented sampling along the western boundary, which will need to be addressed subsequent to demolition as a data gap investigation. A RAP may be developed prior to the additional investigation, though will need to provide contingencies in the event that significant contamination or additional contaminants are identified beyond the current remedial scope.

A waste classification will need to be developed for the site remedial work, should excavation and disposal be considered as a remedial strategy. Based on the available data, the fill soil is classified using the CT1 and CT2 criteria only as leachate analysis was not undertaken. As such the waste would be considered hazardous due to the elevated BaP and total PAH concentrations. The NSW EPA pre classifies asphalt as general solid waste, regardless of the coal tar content, which is considered applicable to this site. Leachate analysis of the material should be undertaken during any additional investigation to confirm the findings.

The reliability of both qualitative and quantitative data allows for a decision to be made with the required level of confidence to determine the potential risk to human health and the environment. It is considered that the Site can be made suitable for the intended land use as a mixed use retail and residential development with basement car parking with the development and implementation of a Site Remedial Action Plan (RAP).

Contents

1.0 Introduction

1.1 Background

Compliance Health & Environmental Consulting Pty Ltd (CHEC) were engaged by Demasa Pty Ltd to undertake a Detailed Site Investigation on the proposed stage 3 area within the property identified as Lot 1 in DP1027240 and Lot 1 DP550746, located respectively at 80-82 Murray Street and 185 Morgan Street, Wagga Wagga, NSW. The assessment was requested as part of a DA submission relating to redevelopment of property. The development will include mixed use commercial, residential and community facilities.

1.2 Project Objectives

The objective of the investigation is to supplement the findings of the ARTL Preliminary Site Investigations (PSI) from October 2022. The additional investigation will include intrusive investigations to determine the potential for contamination to exist at the Site and to indicate if historical potentially contaminating activities identified at the Site and surrounding areas, have contributed to any contamination.

To make the land use suitability determination, Tier 1 Health Investigation Level and Health Screening Levels (HIL/HSL) were referenced for Residential with minimal opportunities for soil access as defined by the National Environmental Protection Council (NEPC) in the National Environmental Protection (Assessment of Site Contamination) amended Measure, 2013 (NEPM, 2013). The investigation and reporting will be undertaken in accordance with The NSW EPA, Consultants Reporting on Contaminated Land Guidelines, 2020.

Should the findings of the assessment state that the Site is not suitable for the intended land use, a recommendation will be made for any remedial work that is required to make it suitable. If the investigation identifies an unacceptable level of uncertainty or data gaps, recommendations to obtain the necessary level of confidence to make a decision will be provided.

1.3 Scope of Work

The following methods were employed to determine if the Site is suitable for the intended land use:

- Site Inspection.
- Review of Site-specific background information within PSI, including State and local government records, historical land use and Aerial Photography, and geological and hydrogeological information.
- Develop sampling, Analysis and Quality Plan
- Undertake field investigations, including soil sampling and analysis from representative locations
- Data quality assessment.
- Interpretation of results for the purpose of Tier 1 Risk Assessment.
- Report findings of Investigation.

2.0 Data Quality Objectives

The successful outcome of an environmental study is dependent on development of appropriate Data Quality Objectives (DQOs). This study planning process is used to establish the representativeness of both qualitative and quantitative data, including methods and locations for collecting data of sufficient quality and quantity to evaluate a Site. It also sets performance and acceptance criteria, which serve to minimise error and ensure the required precision in the data set to achieve the confidence intervals required to make a conclusive decision in the Site Investigation stage.

The DQO process consists of seven iterative steps, which, although portrayed in a sequential fashion, the nature of the DQO process allows one or more of these steps to be revisited as the conceptual model for the Site becomes more distinct and more information on the problem is obtained. The DQOs are set out below in the following sections.

2.1 Step 1 – The Problem:

The property is proposed for redevelopment that will include retail and medium density housing. The PSI was limited to a desktop study and identified potential for contamination. Determination needs to be made whether the Site is suitable for the intended land use in accordance with NEPM, 2013. Currently, insufficient quantitative data is available to enable that determination.

2.2 Step 2 – The Goal of the Study

The purpose of this investigation is to:

a) Confirm all potential contaminants of concern, sources and migration pathways through a review of historical land use information and environmental conditions.

b) Design and carry out an appropriate field investigation that provides statistical confidence to determine land use suitability and accounts for all future receptors, contaminants of concern and exposure pathways identified by the desktop study.

c) Provide a conclusion that either states the land is suitable for the intended use. determines the extent of remediation required to make it suitable or provides recommendation for further investigation, should that be necessary.

2.3 Step 3 – Information Inputs

The data has been provided from the following sources:

- Preliminary Site Investigation, including historical land title information and aerial photography and hydrogeological and soil conditions
- Proposed development plans
- Site observation, including borehole excavations
- Laboratory analysis of representative soils
- Statistical evaluation of soil analytical data

2.4 Step 4 – Study Boundaries

This study is limited to the area marked on Figure 1 and Identified as Stage 3 of the proposed development within Lot 1 DP 1027240 and Lot 1 DP 550746. The surrounding community and potential future receptors within and nearby to the Site are also considered.

2.5 Step 5 – The Analytical Approach

The study adopted a probabilistic approach to determine if the average concentrations of contaminants were less than Tier 1 criteria provided by NEPM, 2013. The null hypothesis being tested is H_0= the 95% Upper Confidence Limit (UCL) for the average soil concentration > NEPM, 2013

Analysis of the identified potential contaminants of concern was undertaken from 13 representative locations. Further detail on the analytical scope is provided in Section 6.0 and 7.2.

2.6 Step 6 - Performance and Acceptance Criteria

2.6.1 Site Acceptance Criteria

With adequate statistical power, the investigation must provide evidence that the 95%UCL of average soil concentrations for the contaminants of concern do not exceed the Tier 1 NEPM HIL/HSL concentrations. In addition to average concentrations being compliant, NEPM also requires that standard deviation of each contaminant is less than 50% of the Tier 1 criteria and that no individual concentration exceeds the Tier 1 criteria by more than 250%.

2.6.2 Statistical Performance

A Site under investigation is assumed to be contaminated until statistically proven otherwise (eg: H_0 = soil concentrations > acceptance criteria), therefore two types of error are possible:

Type 1 error – Where the site is assessed to be uncontaminated when it is actually is. The probability of this occurring = α. Type 2 error when the Site is assessed to be contaminated though is actually not. The probability of this occurring = β.

Environmental investigations regularly use α of 0.05 as this provides a reasonable compromise between detecting contamination and incurring unnecessary cost.

2.6.3 Quality Control

To monitor the level of error being introduced into the data collection process the following quality indicators were implemented:

Table - 1: Data Quality Indictors

Data Precision and Accuracy	
Adequate Sampling Density	Soil sampling frequency determined in accordance with procedure B of the NSW EPA *Contaminated Sites: Sampling Design Guidelines*, 1995:.
Appropriate Analytical Techniques	Use of analytical laboratories with adequately trained and experienced testing staff experienced in the analyses undertaken. with appropriate NATA certification.
Acceptable field and laboratory Relative Percentage Difference (RPD) for duplicate comparison	>10 x LOR: 30% inorganics; 50% organics (Field) <10 x LOR: Assessed on individual basis (Field) >5 x LOR: 50% (laboratory) <5 x LOR: No Limit (laboratory)
Trip Spikes	Recoverable concentrations of volatiles between 60 – 140%
Adequate laboratory performance	Based on acceptance criteria of laboratory as specified on certificate of analysis: includes: blank samples, matrix spikes, control samples, and surrogate spike samples
Data Representativeness	
Sample and analysis selection	Representativeness of all potential contaminants
Trip Blanks/ Rinsate Blanks	No Detection above LOR
Trip Spikes	Recoverable concentrations of volatiles between 60 – 140%
Duplicate Samples	Adequate duplicate, split, rinsate and trip blank sample numbers
Laboratory selection	Adequate laboratory internal quality control and quality assurance methods. complying with the NEPM.
Documentation Completeness	
Chain of custody records	Laboratory sample receipt information received confirming receipt of samples intact and appropriate chain of custody
	NATA registered laboratory results certificates provided
Data Completeness	
Analytical Suites	Analysis for all potential contaminants of concern.
Confidence Levels	Field duplicate sample numbers complying with AS4482.1 - 2005
Transport and Handling	Trip spike samples prepared and sent with field samples regularly
Comparability	
Analytical Standards	Use of NATA registered laboratories
Data Quality	Test methods consistent for each sample in accordance with the Sampling Analysis and Quality Plan
Traceability	Detailed logs of all sample locations to be recorded
Analytical Methods	Test methods comparable between primary and secondary laboratory
Confidence Levels	Acceptable RPD's between original samples and field duplicates and inter-laboratory triplicate samples.

2.7 Step 7 – Obtaining Data

Qualitative data was obtained from recognised reliable sources and included:

- Council Planning Certificates
- Development Application design package
- NSW Land Registry Services Historical Search
- NSW Spatial Services – Historical Aerial Photography and Property Information
- NSW Dept. Planning, Industry & Environment – eSPADE Soil and Groundwater Reports
- Water NSW Groundwater Works Database
- NSW EPA Public Register Searches

Quantitative data was obtained through a systematic sampling plan from within the identified areas and contaminants of concern identified by the CSM from the PSI. Refer to Section 6.1 for more detail of sampling methods.

3.0 Site identification and Land Use Details

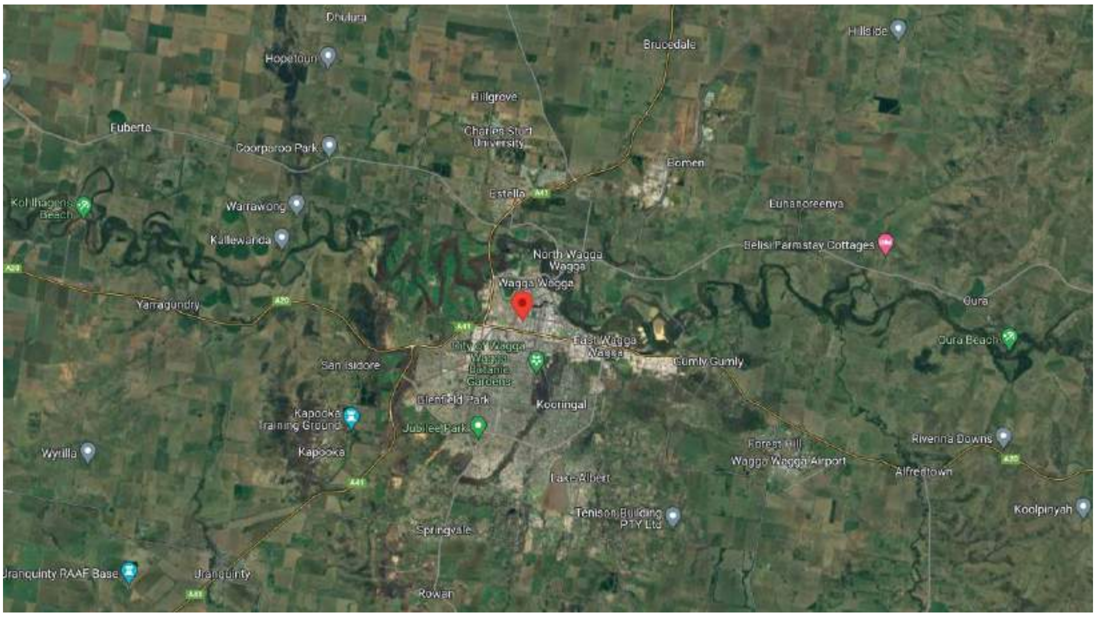
3.1 Property Information

- The details of the site have been summarised in the table below

Table - 2: Summary of Property Information

Site Address	80-82 Murray Street & 185 Morgan Street. Wagga Wagga, NSW
Lot Identification	Lot 1 DP 1027240 and Lot 1 DP 550746
Site Area	17,000m2 (1.7Ha)
Zoning	B4 - Mixed Use (Commercial/Residential)
Current Land Use	Commercial/Residential use
Proposed Land Use	Commercial/Residential use

3.2 Site Location



Geographic co-ordinance	(World Geodetic System WGS84)
Latitude and Longitude	35° 6'51.20"S S, 147°21'36.64"E

3.3 Current Land Use

The property under investigation is within the urban area of Wagga Wagga and currently is occupied by four free standing single storey houses in the south eastern corner, a residence on the north eastern corner, commercial property with carpark in the south western corner and concrete carparking occupying the remainder of the investigation area.

3.4 Proposed Development

The application to develop the property includes a two-level basement carpark, residential unit buildings with retail ground floor space and three-level townhouses. Refer to Appendix C for details of the proposed development.

3.5 Land Use History

- The site is predominantly vacant during the 1940's. The large warehouse type building and residential dwelling immediately south is noted along the eastern boundary of the site. A drainage line appears to run through the north west corner. Residential dwellings can be seen in the surrounding area.
- Further development has been undertaken to the warehouse building with an additional structure immediately west and hardstand areas now evident in the 1950's. Shrubs and trees appear scattered across the remainder of the site. Further residential dwellings constructed in the surrounding area.
- During the 1990's, three further buildings exist at the site. One to the south east and two to the north west. Concrete pavement covers majority of the site.
- 2007 displays development similar to today. Similar to. The building to toward the centre along the western boundary can be seen. The residential dwelling has a defined yard.

3.6 Historical Imagery Review

Aerial Photographs and associated details have been provided by the ARTL (2022) Preliminary Site Investigation. The information was reviewed by CHEC and resulted in the following summary.

In 1944 a warehouse building was present that was further developed by 1953. A number of unclear images limited further assessment until 1996 where it was evident additional commercial development had been undertaken at the property. Residences had also been established to the east within the Site boundary. The site has essentially maintained the current layout since that time.

3.7 NSW EPA Public Register Searches

The PSI reported that a search of the NSW EPA Public Register indicated:

- The surrounding land use hosts five nearby sites that have been notified to the EPA on the list of NSW Contaminated sites; Caltex Service station, BP Wagga Wagga, Former Mobil Depot Wagga Wagga, Coles Express Wagga Wagga, and Caltex Service Station. Each site exists within a range of 414-866m south west, south & south east to the site.
- Two delicensed activities that are currently regulated by the EPA are located within 650m of the site; Wagga Wagga Base Hospital, and Calvary Hospital, with both to the south of the site.he Site and surrounding land was not subject to any orders made under Part 3 of the Contaminated Land Management Act 1997 (CLM Act) or notices available to the public under section 58 of the CLM Act
- No site audit statements have been provided to the EPA under section 53B of the CLM Act that relate to significantly contaminated land
- No actions have been taken actions taken by EPA (or the previous State Pollution Control Commission) under sections 35 or 36 of the Environmentally Hazardous Chemicals Act 1985 (EHC Act)
- No notifications have been made under the Duty to Report Contamination Guidelines

4.0 Site Condition & Surrounding Environment

4.1 Environmental Setting

4.1.1 Geology & Topography

Within the Preliminary Site Investigation, ARTL (2022) advises that the Geological Series Sheet for Wagga Wagga (S1-55-15) indicate that the Wagga Wagga area is generally underlain by alluvium material, comprising sand, silt and clay (floodplain sediments), which is noted to be underlain by Ordovician aged shale, subgreywacke, quartzite, impure sandstone, black (carbonaceous) slate and siltstone associated with the Wagga Marginal Basin at the southwestern side (Calvary hospital) and southeastern side (Botanical Gardens & Willan Hills) and Palaezoic granite bedrock at the eastern side (Church Street near Wagga Wagga Beach area).

The geotechnical investigation, undertaken by ARTL (2022) indicates the area is generally covered by hardstand (concrete and bitumen), which is underlain with fill comprising low to medium & medium plasticity sandy silty clay & silty clay and fine to coarse grained silty sand & sand to 0.3m to 1.0m. The underlying natural alluvial material comprised low to medium, medium, medium to high & high plasticity silty clay, sandy clay, sandy silty clay & clay and fine to coarse grained silty sand & sandy gravel and then cobbles extending to 16.0m. These materials encountered are like those described in the Geological Series Sheet for Wagga Wagga (S1-55-15) for flood plain sediments. For geological borehole details, refer to the PSI.

4.1.2 Hydrogeology

The PSI reported that here are more than 200 registered groundwater bores within 2000m of the site. Twenty-seven of these are used for water supply, irrigation or dewatering purposes. The remainder are used for monitoring, or their use is unknown.

The site is within a region that overlies semi-confined and unconfined aquifers associated with the shallow Quaternary alluvium and the underlying Ordivician metasediments. The water table in the area of the site ranges from 9-12.3m below ground surface in the alluvium aquifer. Shallow perched water was also noted between 1.5m to 3.2m during drilling the boreholes for the geotechnical investigation. The perched water was found within higher content granular layers - silty sands and sandy silty clays.

The site is located within the Murrumbidgee River Catchment, which is approximately 1.3km east of the site. Prior to surrounding development, it is assumed the property would have formed part of the highly ephemeral flooding/drying regimes of the River floodplain.

There are no defined waterways within the site. The Wollundry Lagoon lies across Forsyth Street less than 50m from the site. The Lagoon forms part of stormwater management for Wagga Wagga and suburbs to the south and flows to the north west where water is discharged to the Murrumbidgee River via underground pipe network. The majority of stormwater will be collected on-site through roof and hard stand areas.

4.2 Potential Receptors

The nearest environmental receptor is Murrumbidgee River and it's associated ecological pathways. This is located 1.3km to the east of the site the Wollundry Lagoon, 100m north of the Site. Pathways include surface runoff and transport through stormwater drainage and groundwater migration.

4.3 Site Inspection

A site inspection was undertaken during field work on Friday 21th April 2023. The area under investigation is currently occupied by a medical centre in the south western corner that has an asphalt carpark fronting the Morgan Street boundary. Four residential houses made of brick and tile fronted Murray Street in the south eastern corner. A fifth residential style building, two blocks farther to the north and also fronting Murray Street, was previously being used as a health care facility, though now appeared vacated. A concrete carpark servicing the small shopping village occupied the north western portion of the investigation area.

A fibro shed in good condition was noted in the rear of one residence. All residential yards unsealed with accessible soils. No odours or staining was noted and no potentially contaminating activities were observed on or adjacent to the investigation area, which was bounded by a butcher, Australia Post outlet and other small retailers.

5.0 Preliminary Conceptual Site Model

5.1 Potential Contamination Source

1. The geotechnical investigation reported that fill soils were observed at the Site from unknown sources, which is identified as a potential source of contamination.
2. Potential persistent pesticide residue from predevelopment agricultural land use.
3. Commercial land use including potential machinery/air conditioning maintenance, washdown areas, paint storage and dumped rubbish.
4. Off-site sources include the electrical substation and road network

5.2 Potential Migration Pathways

The primary migration pathways would be through precipitation events that may erode surface soils with contaminants into the local stormwater system. Mobile contaminants such as heavy metals may also migrate into the soils below and be transported by groundwater movement.

Aeolian transport is limited due to the pavement/grass coverage at the site and there appeared to be no evidence of erosion that may contaminate surface waters.

5.3 Identified Receptors and Exposure Pathways

On-site human receptors would include any site tenants, construction or maintenance workers. Exposure scenarios including ingestion, inhalation, dermal absorption. Minimal vegetation was present at the site and fauna would generally be transient; however, receptors may include any avian communities that may be present. Due to the proximity of the stormwater system at the rear, downgradient side of the property, the potential for contaminants to be transported to nearby Wollundry Lagoon also needs to be considered.

5.4 Risk Assessment Data Requirements

The identified sources are generally associated with top-down contamination risk, which should be evident in surface soils and fill material. Due to a broad range of potential contaminants possible in imported fill prior to development, it is necessary to characterise that soil with an analytical suite covering a broad range of typical contaminants.

The site has generally been located within the more urban area of Wagga Wagga, therefore unlikely to have been subjected to the same pesticide and herbicide treatment as pastural areas. Representative analysis based on the assumption it would be a diffuse source of contamination should be undertaken.

The risk that off-site sources such as the road network and substation have impacted the site is relatively low based on topography, though analysis of the underlying natural soil should account for the potential contaminants if any.

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6.0 Sampling, Analysis and Quality Plan

Based on the outputs of the DQO's discussed in section 2.0, the following Sampling, Analysis and Quality plan has been developed.

6.1 Sampling Strategy

Considering no previous chemical data was available for soils at the Site, it was appropriate to target the most likely occurrences of contamination. The sampling points included most of the Site, whilst at the same time, targeting potential sources of contamination and migration pathways. Boreholes were drilled using a 100mm solid flight auger and, where possible, by manually auguring until natural ground was encountered. Fill material was sampled at all locations and representative data was obtained from the underlying natural soil. A total of 23 chemical samples and seven asbestos samples were obtained from 13 bore holes.

All samples were collected using a decontaminated stainless-steel trowel. Soils were transferred into individually labelled glass laboratory grade sampling jars with Teflon lids and stored within an iced esky so that sample temperatures remained below 4°C until received by a NATA approved laboratory.

6.2 Analytical Strategy

Chemical samples were analysed for heavy metals (As, Cd, Cr, Cu, Ni, Pb, Zn, Hg), Total Recoverable Hydrocarbons (TRH's), Poly Aromatic Hydrocarbons (PAH's), Benzene, Toluene, Ethylbenzene, Xylene and Naphthalene (BTEXN). Representative samples were analysed for pesticides and suspected locations were analysed for the presence of asbestos. Field gravimetric analysis in accordance with the NEPM method was undertaken on all fill soils.

6.3 Tier 1 Assessment Criteria

Acceptance criteria have been sourced from NEPM 2013. The most appropriate criteria based on the potential receptors identified in Section 3.0 is considered to be that associated with a residential land use with minimal opportunity for soil access. Where volatile hydrocarbons occur in soils, the exposure risk is related to the vapour intrusion potential, which in turn is dependent on the depth of contamination, relative to the nearest receptor, and the soil type.

For this assessment Health Screening Levels (HSL) for depths of <1m in a clay type soil have been referenced. Ecological criteria were derived using the pH and CEC's relationship against the ESL criteria.

Table -3a: Ecological Screening Levels (ESL) and Management Limits (ML) – Hydrocarbon Fractions (mg/kg)

ANALYTES(mg/kg)	ESL (Fine) Residential	ML (Fine) Residential
F1: C_6-C_{10}	180	800
F2: C_{10}-C_{16}	120	1000
F3: C_{16}-C_{34}	1300	3500
F4: C_{34}-C_{40}	5600	10000

Table 3b: NEPM Tier 1 Soil Assessment Criteria – Residential B (mg/kg)

	ANALYTES	HSL / HIL-B	Ecological Criteria
Volatile Hydrocarbons	Benzene	0.5	65
	Toluene	160	105
	Ethylbenzene	55	125
	Xylene	40	45
	F1	45	180
	F2	110	120
	Naphthalene	1900	170
HEAVY METALS	Arsenic	500	100
	Cadmium	150	
	Chromium	500	400
	Copper	30000	95
	Lead	1200	1100
	Mercury	120	
	Nickel	1200	170
	Zinc	60000	400
	PCB	1	
OC Pesticides	DDT+DDE+DDD	600	
	Aldrin and dieldrin	10	
	Chlordane	90	
	Endosulfan	400	
	Endrin	20	
	Heptachlor	10	
	HCB	15	
	Methoxychlor	500	
	Mirex	20	
	Toxaphene	30	
PAH	BaP TEQ	4	33*
	Total PAHs	400	
ACM	Bonded ACM	0.05% w/w	
	Friable Asbestos/Asbestos Fines	0.001% w/w	
	Surface Asbestos (0.1m)	No Visible	

NL: Not Limiting;.* Criteria derived from CRC Care Technical Report no. 39, 2017

6.4 Quality control

During Sampling the following quality control measures were implemented to ensure data representativeness and precision:

- Samples were obtained with disposable nitrile gloves or stainless-Steel trowel that was decontaminated and placed directly to 250ml glass container with Teflon lid seal.
- Containers were individually labelled and placed into a thermostatically controlled refrigerator set to 4°C for transport to a NATA laboratory under a chain of custody.
- A calibrated photoionisation detector (PID) was used to screen samples. Trip spike and trip blank samples accompanied the field samples where volatiles are suspected to measure the quality of handling and storage procedures.
- Duplicate samples are obtained at a rate of 5% for calculation of Relative Percentage Differences as a measure of precision in the sample analysis where appropriate for the sample density.

7.0Investigation Results

7.1 Field Observations

Field investigations were undertaken on Friday 21th April. Fill soils consisted of silty/clayey sand within the central grassed area throughout the residential properties. Beneath the concrete surfaces in the northern car park, the fill consisted of a sandy gravelly layer above an additional silty clayey fill and natural silty clay. Natural grey clay with orange mottle was encountered at depths of 0.25m to 1.2m below slab level & 0.2-0.5 below ground level in cleared grassed locations.

The southern carpark area was underlain with sand beneath the concrete slab, which extended down to brown clay and gravelly clay, and included significant asphalt inclusions at BH-12 to a depth of 1.3m. No ACM was identified in any of the 10L sieve samples. No odours were noted at any sample locations and no staining was observed.

Image 1 – Soil profile to a depth of 1m at BH13

Image 2 – Soil profile to a depth of 0.5m at BH6

7.2 Laboratory Analytical Results

No detections of organic contaminants greater than the LOR were reported in any of the natural soils that were sampled.

Table 4 - Chemical Analysis of Organic Contaminants in Natural Soil (mg/kg)

Sample ID	Depth	BTEX	F1	F2	F3	F4	Naph	BaP	BaP TEQ	Total PAH
BH4-3	0.6	< 0.3	< 20	< 50	< 100	< 100	< 0.5	< 0.5	ND	< 0.5
BH9-2	0.4	< 0.3	< 20	< 50	< 100	< 100	< 0.5	< 0.5	ND	< 0.5
BH11-2	0.4	< 0.3	< 20	< 50	< 100	< 100	< 0.5	< 0.5	ND	< 0.5
BH13-2	0.6	< 0.3	< 20	< 50	< 100	< 100	< 0.5	< 0.5	ND	< 0.5
n		4	4	4	4	4	4	4	4	4
Detections		0	0	0	0	0	0	0	0	0
Max		ND	ND	ND	ND	ND	ND	ND	ND	ND
HSL/HIL -B		40	45	110	--	--	1900	--	4	400
ESL		45	180	120	1300	5,600	170	33	--	--

Heavy metal concentrations measured in natural soils were generally indicative of expected background concentrations. Elevated zinc was observed in sample BH4-3; however, the concentration is significantly less than the NEPM HIL and complies with the calculated site-specific EIL.

Table 5 - Heavy Metal and Asbestos Analysis in Natural Soil (mg/kg)

Sample ID	Depth	Ar	Cd	Cr	Cu	Pb	Hg	Ni	Zi	Asb
BH4-3	0.6	13	< 0.4	30	14	28	< 0.1	23	200	--
BH9-2	0.4	4.7	< 0.4	28	17	21	< 0.1	20	61	--
BH11-2	0.4	5.6	< 0.4	23	18	20	< 0.1	23	40	--
BH13-2	0.6	6.1	< 0.4	34	26	29	< 0.1	28	77	--
n		4	4	4	4	4	4	4	4	7
Detections		4	0	4	1	3	2	4	4	0
Max		13	<0.4	34	26	29	<0.1	28	200	ND
HIL-B		500	150	500	30k	1200	120	1,200	60k	0.001%
EIL		100	--	400	95	1,100	--	170	400	0

Table 6 summary of Organic analysis indicates that BH12-3 had BaP(TEQ) concentrations of 200mg/kg at a depth of 1.3m, which exceeds the HIL of 3mg/kg by more than 250%. Two overlying samples at the same location also significantly exceeded the HIL, having 15mg/kg and 28mg/kg, as did the fill sample at BH-13, which was also measured to contain 15mg/kg BaP(TEQ). The concentrations of BaP TEQ exceeded the HIL by more than 250% and are considered to represent a hotspot location in the southern carpark area. TRH concentrations in the F2 band exceeded the NEPM HSL, whilst the F3 band exceeded the NEPM management limits.

Table 6- Statistical Summary of Organic Contaminants in Fill Soil (mg/kg)

Parameter	BTEX	F1	F2	F3	F4	Naph	BaP	BaP TEQ	Total PAH
n	23	23	23	23	23	23	23	23	23
Detections	1	0	3	5	5	2	8	19	14
Max	0.4	0	1181	5100	1100	19	140	220	2400
Std Dev	--	--	495	1,720	354	9	45	49	611
95% UCL	--	--	172	815	219	2	19	29	311
HSL/HIL -B	40	45	110	1300	5,600	1900	--	4	400
ESL	45	180	120			170	0.7	--	--

Heavy Metals were observed at concentrations generally compliant with NEPM HIL's and EIL's, apart from one sample at BH4-2, which had a concentration of zinc at 440mg/kg, marginally exceeding the calculated EIL of 400mg/kg. Six samples of fill soil were analysed for the presence of asbestos in accordance with AS4964-2004. No asbestos was identified in any of the samples.

Table 7 -Statistical Summary of Heavy Metal and Asbestos Analysis in Fill Soil(mg/kg)

Parameter	Ar	Cd	Cr	Cu	Pb	Hg	Ni	Zi	Asb
n	19	19	19	19	19	19	19	19	7
Detections	19	5	19	19	19	1	19	19	
Max	17	1.3	35	31	350	0.1	30	440	
Std Dev	3.5	0.3	7.0	7.7	83.0	--	6.7	114.9	
95% UCL	9.174	0.428	25.47	21.2	90.1	0.1	20.02	160.9	
HIL-B	500	150	500	30000	1200	120	1,200	60000	0.001%
EIL	100	--	400	95	1,100	--	170	400	0

Refer to **Appendix A** for Full results summary and NATA Certified Laboratory Reports.

7.3 Quality Control

To ensure sampling data is representative of the soils under investigation, all sampling methods were consistent with CHEC's standard sampling procedures (QPG9-5), which includes quality control measures that are implemented to measure data reliability and precision, and to ensure handling and transport procedures were of an adequate standard. The following sections evaluate the data quality indicators established for the project.

7.3.1 Duplicate Sample results

A duplicate was collected of sample BH7-1 for measurement of measurement precision. The acceptable limit for RPD's where concentrations exceeded ten times the LOR is 30%. Table 8 below, indicates no exceedances of the RPD criteria were observed in the BH7 duplicate. The results indicates that the precision and accuracy of the data set is sufficient to enable a decision to be made regarding land use suitability.

Table 8: Duplicate Sample Calculated RPD's

Sample	As	Cd	Cr	Cu	Pb	Hg	Ni	Zn	BaP	PAH
BH7-1	7.6	<0.4	13	8	23	<0.1	8.5	59	0.6	<0.5
BH7-1A	8.2	<0.4	14	8.4	23	<0.1	9	57	0.6	<0.5
RPD %	8%	0%	7%	5%	0%	0%	6%	3%	0%	0%

7.3.2 Spike/Blanks

All samples were collected, stored and transported in accordance with CHEC's standard soil and water sampling procedures (QPG9-5 and QPG9-6), which have been demonstrated on numerous occasions to provide representative data. A trip spike and blank were included with the samples to ensure than no losses or cross contamination occurred during storage and transportation.

Table 9 indicates that all BTEX spike recoverable concentrations were measured between 100%-120% & blank recoverable measured below the LOR, which considered compliant with the DQI of 60-140%. As such, it is considered that the analytical data can be relied on as a decision input to assess the contamination risk at the Site.

Table 9: Trip Spike / Trip Blank Analytical Results

Analyte	TS (%)	TB (mg/L)
Benzene	100	<0.001
Toluene	120	<0.001
Ethylbenzene	120	<0.001
m&p-Xylenes	120	<0.002
o-Xylene	120	<0.001
Total Xylenes	120	<0.003
C6-C9	94	<0.02
Naphthalene	110	<0.01

8.0 Discussion / Conclusion

The investigation has considered all relevant historical and anecdotal information and, based on the recommendations of the PSI, CHEC developed and implemented a sampling strategy to provide a high level of confidence for determination of land use suitability. Quantitative data was obtained from 23 samples obtained from thirteen locations and analysed for potential chemical contaminants of concern identified by the preliminary CSM.

The sampling program was considered representative of the identified potential contamination sources and sufficient to determine land use suitability.

Field analysis for asbestos included passing soils through a 7mm sieve in accordance with the NEPM, 2013 method. No material suspected of containing asbestos was identified at any location. Laboratory analysis of 500ml soil samples at seven selected 'higher risk' locations confirmed the absence of asbestos.

Concentrations of organic contaminants were generally compliant relative to the NEPM HIL's and EIL's. The majority of the Site, with the exception of the southern carpark and BH4-1 in the northern carpark, was measured to contain contaminant concentrations below detection or significantly less than the respective NEPM HIL. The development plans provided to CHEC indicate the proposed land use in the southern carpark includes a unit building on the western half and landscaping with communal BBQ on the eastern half.

The exceedances of BaP (TEQ) at BH-12 and BH-13 appear to be related to bitumen that was observed amongst the fill material to a depth of 1.3m and contains coal tar. Although NEPM, 2013 does discuss the limited bioavailability of carcinogens when presented in the form of bitumen, the concentrations are quite significant and will require remediation of the area that covers approximately 500m^2. TRH concentrations in the F2 band also exceeded the NEPM HSL at BH-12, whilst the F3 band concentration exceeded the NEPM management limits, which needs to be considered in any remedial strategy.

BH4-1 of the northern carpark also exhibited high concentrations of BaP TEQ, which exceeded the HIL by more than 250% and will require remediation as a hot spot. The hot spot area is estimated to be approximately 250m^2 to a depth of 0.5m; however, more accurate delineation of the contaminated fill should be undertaken at the time of excavation to be included in the Site validation scope.

Heavy Metals were observed at concentrations generally compliant with NEPM HIL's and EIL's, apart from one sample at BH4-2, which exceeded the calculated zinc EIL of 400mg/kg. The proposed developments for the current northern carpark include residential developments with minimal exposed soils. The exceedance therefore, does not represent a risk to the ecology due to the absence of any migration or exposure pathways under the proposed development.

Based on the data quality indicators, the resultant data is considered to have adequate level of accuracy and precision, and represents the actual concentrations of contaminants at the Site. The revised CSM attached as Figure 3, indicated there may be concern for residents due to accessible soils in proposed landscaped areas. Exposure pathways also need to be considered for workers during redevelopment (s) and future maintenance personnel.

Due to the presence of contaminants that do not comply with Site Acceptance Criteria a Remedial Action Plan (RAP) should be prepared to address the contaminated fill within the southern carpark and the northern carpark identified in Figure 2. The presence of the medical centre building prevented sampling along the western boundary, which will need to be addressed subsequent to demolition as a data gap investigation. A RAP may be developed prior to the additional investigation, though will need to provide contingencies in the event that significant contamination or additional contaminants are identified beyond the current remedial scope.

A waste classification will need to be developed for the site remedial work, should excavation and disposal be considered as a remedial strategy. Based on the available data, the fill soil is classified using the CT1 and CT2 criteria only as leachate analysis was not undertaken. As such the waste would be considered hazardous due to the elevated BaP and total PAH concentrations. The NSW EPA pre classifies asphalt as general solid waste, regardless of the coal tar content, which is considered applicable to this site. Leachate analysis of the material should be undertaken during any additional investigation to confirm the findings.

The reliability of both qualitative and quantitative data allows for a decision to be made with the required level of confidence to determine the potential risk to human health and the environment. It is considered that **the Site can be made suitable** for the intended land use as a mixed use retail and residential development with basement car parking with the development and implementation of a Site Remedial Action Plan (RAP).

9.0 Limitations

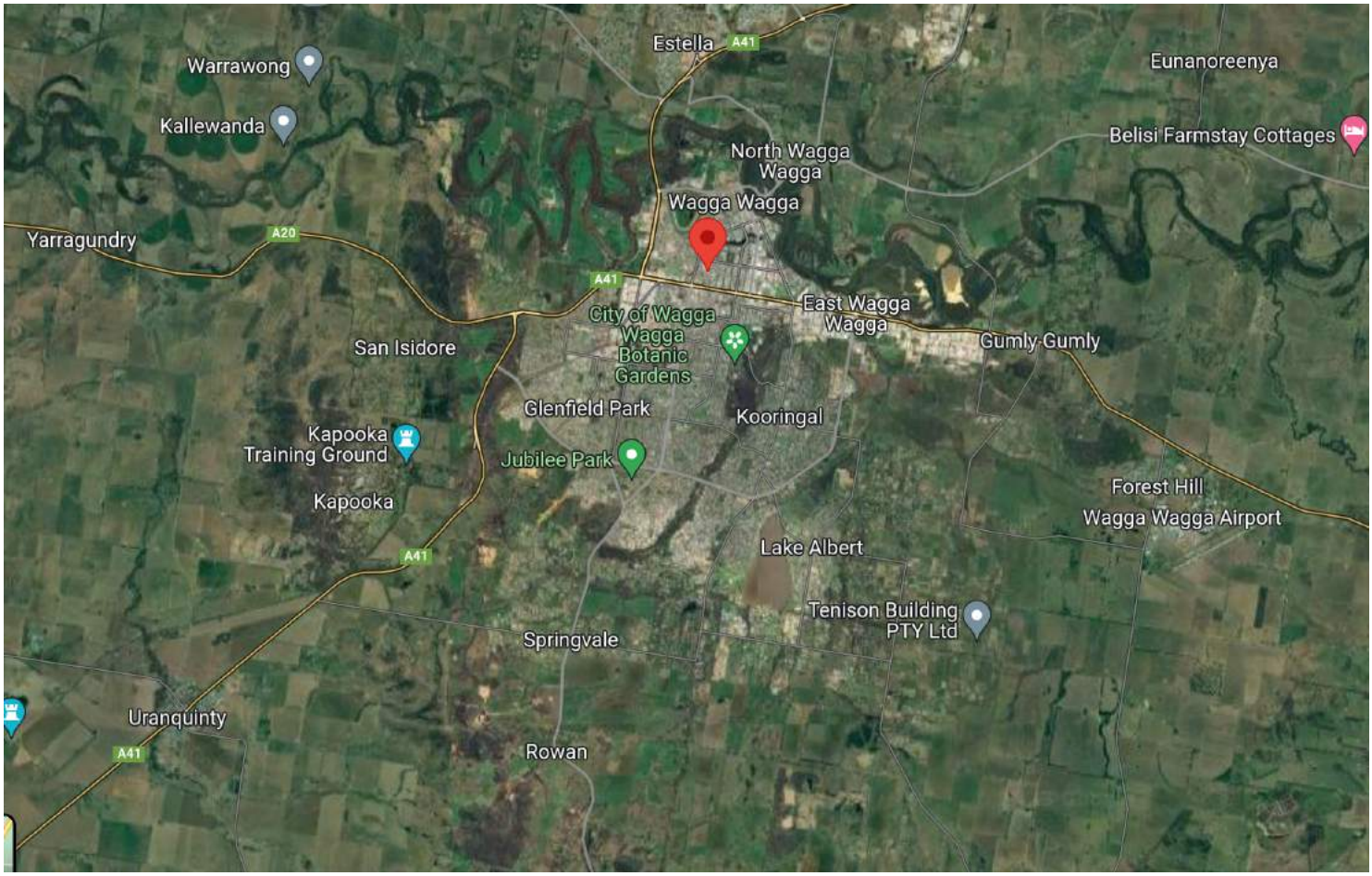
The sole purpose of this report and the associated services performed by Compliance Health & Environmental Consulting Pty Ltd is to fulfil the scope outlined by Demasa Pty Ltd (hereafter known as the Client). This report is intended to satisfy the requirements of a Site Investigation as defined by National Environment Protection (Assessment of Site Contamination) Amendment Measure (NEPM), 2013. Compliance Health & Environmental Consulting Pty Ltd has made every effort to assess the Site in a professional manner adhering to the technical standards expected from a contaminated land consultant and report the representative condition at the time of the assessment.

Compliance Health & Environmental Consulting Pty Ltd derived the information in this report from a number of sources which included correspondence regarding the proposal, examination of records in the public domain, previous investigations, anecdotal information regarding the site and the project, and field explorations conducted on the dates indicated. The passage of time, manifestation of latent conditions or impacts of future events may require further examination /exploration of the site and subsequent data analyses, together with a re-evaluation of the findings, observations and conclusions expressed in this report.

In preparing this report, Compliance Health & Environmental Consulting Pty Ltd may have relied upon and presumed accurate certain information (or absence thereof) relative to the site. Except as otherwise stated in the report, Compliance Health & Environmental Consulting Pty Ltd has not attempted to verify the accuracy of completeness of any such information (including for example survey data supplied by others). The findings, observations and conclusions expressed by Compliance Health & Environmental Consulting Pty Ltd in this report are not, and should not be considered an opinion concerning the completeness and accuracy of information supplied by others.

No warranty or guarantee, whether express or implied, is made with respect to the data reported or to the findings, observations and conclusions expressed in this report. Further, such data, findings and conclusions are based solely upon site conditions, information and drawings supplied by the Client and legislation etc. in existence at the time of the investigation. This report has been prepared on behalf of and for the exclusive use of the Client, and is subject to and issued in connection with the provisions of the agreement between Compliance Health & Environmental Consulting Pty Ltd and the Client. Compliance Health & Environmental Consulting Pty Ltd accepts no liability or responsibility whatsoever for or in respect of any use of or reliance upon this report by any third party.

Figure 1 – Site Location



N

CHEC
Compliance Health & Environmental Consulting

Title: Site Location			
Site Address: 80-82 Murray Street & 185 Morgan Street, Wagga Wagga NSW	Project No.: CH1440	Figure No.: 1	Date: 05/05/2023
Client: Damasa Pty Ltd	Scale: NTS	Compiled: CV	Revision: Rev. 1

Figure 2 – Site Sampling Layout

Sample ID	Depth	Contaminant	Concentration (Criteria)
BH4-1	0.2	BaP TEQ	9mg/kg (HIL-4mg/kg)
BH4-2	0.5	Zinc	440mg/kg (ESL-400mg/kg)

Sample ID	Depth	Contaminant	Concentration (Criteria)
BH13-1	0.4	BaP TEQ	15mg/kg (HIL-4mg/kg)

Sample ID	Depth	Contaminant	Concentration (Criteria)
BH12-1	0.2	BaP TEQ	15mg/kg (HIL-4mg/kg)
BH12-2	0.75	BaP TEQ	28mg/kg (HIL-4mg/kg)
		F2	220mg/kg (ESL-120mg/kg)
		F3	1700mg/kg (ESL-1300mg/kg)
BH12-3	1.2	BaP TEQ	220mg/kg (HIL-4mg/kg)
		PAH's	2,400mg/kg (HIL-400mg/kg
		BaP	140mg/kg (EIL-33mg/kg)
		F2	1181mg/kg (ESL-120mg/kg)
		F3	5100mg/kg (ESL-1300mg/kg)

Sample location

Site Location

Remedial Areas

N

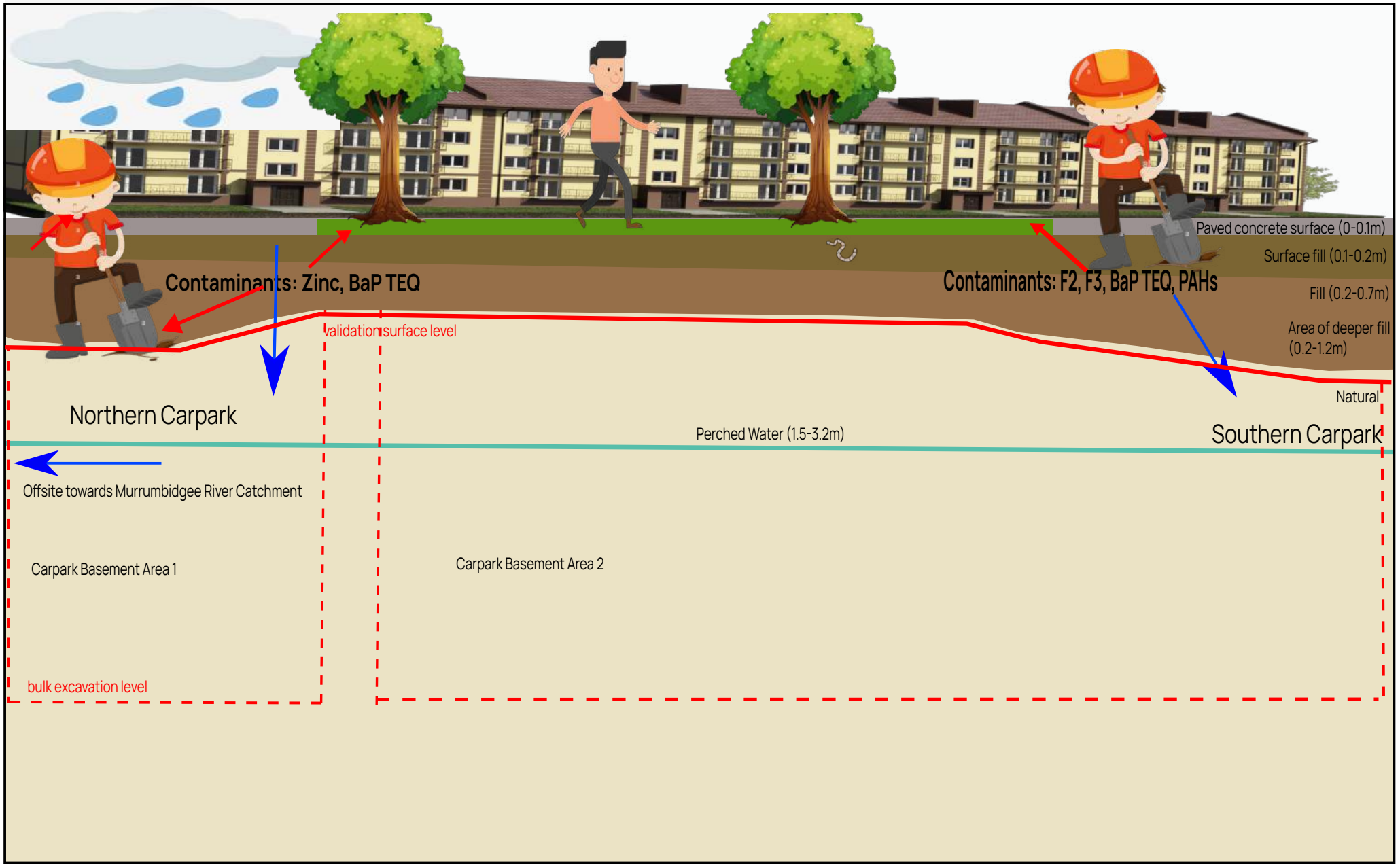
CHEC
Compliance Health & Environmental Consulting

Title: Sampling Layout

Site Address	Project No.	Figure No.	Date
80-82 Murray Street & 185 Morgan Street, Wagga Wagga NSW	CH1440	2	05/05/2023

Client	Scale	Compiled	Revision
Demasa Pty Ltd	NTS	CV	Rev. 1

Figure 3 – Conceptual Site Model



Existing Exposure pathway

Potential Migration pathway

N

CHEC Compliance Health & Environmental Consulting

Title	Conceptual Site Model			
Site Address: 80-82 Murray Street & 185 Morgan Street, Wagga Wagga NSW		Project No.: CH1440	Figure No.: CSM	Date: 08/05/2023
Client: Demasa Pty Ltd		Scale: NTS	Compiled: CV	Revision: Rev. 1

Appendix A –NATA Certified Laboratory Reports

CHAIN OF CUSTODY RECORD

Eurofins | mgt ABN 50 005 085 521

☐ Sydney Laboratory
Unit F3 Bld.F 16 Mars Road Lane Cove West NSW 2066
02 9900 8400 EnviroSampleNSW@eurofins.com

☐ Brisbane Laboratory
Unit 1 21 Smallwood Place Murarrie QLD 4172
07 3902 4600 EnviroSampleQLD@eurofins.com

☐ Perth Laboratory
Unit 2 91 Leach Highway Kewdale WA 6105
08 9251 9600 EnviroSampleWA@eurofins.com

☐ Melbourne Laboratory
6 Monterey Road Dandenong South VIC 3175
03 8564 5000 EnviroSampleVic@eurofins.com

Company	CHEC
Address	PO Box 275 Gosford, NSW 2250
Contact Name	
Phone №	
Special Directions	
Purchase Order	
Quote ID №	210427CHEN
Project №	1440
Project Name	J0999
Project Manager	
EDD Format (ESdat, EQuIS etc)	
Sampler(s)	
Handed over by	
Email for Invoice	accounts@ccompliancenviro.com.au
Email for Results	ops@compliancenviro.com.au

Analyses: Where metals are requested, please specify "Total" or "Filtered". SUITE code must be used to attract SUITE pricing.

Containers (Change container type & size if necessary): 500mL Plastic; 250mL Plastic; 125mL Plastic; 200mL Amber Glass; 40mL VOA vial; 500mL PFAS Bottle; Jar (Glass or HDPE); Other (Asbestos AS4964, WA Guidelines)

Required Turnaround Time (TAT) — Default will be 5 days if not ticked. ♦Surcharge will apply
☐ Overnight (reporting by 9am)♦
☐ Same day♦ ☐ 1 day♦
☐ 2 days♦ ☐ 3 days♦
☒ 5 days (Standard)
☐ Other( )

№	Client Sample ID	Sampled Date/Time dd/mm/yy hh:mm	Matrix Solid (S) Water (W)	B7	Asb ID	B14												500mL Plastic	250mL Plastic	125mL Plastic	200mL Amber Glass	40mL VOA vial	500mL PFAS Bottle	Jar (Glass or HDPE)	Other	Sample Comments / Dangerous Goods Hazard Warning
1	BH1-1	21/4	S	X	X																					
2	BH2-1	↓	↓	↓	X	X																				
3	BH3-1				X																					
4	BH4-1				X	[illegible]																				
5	BH4-2					X																				
6	BH4-3																									
7	BH5-1				X																					
8	BH6-1					X																				
9	BH7-1																									
10	BH7-1a	↓	↓	↓																						
	Total Counts																									

Method of Shipment: ☐ Courier (#) ☒ Hand Delivered ☐ Postal — Name: J. Gross — Signature: [signature] — Date: — Time:

Eurofins | mgt Laboratory Use Only						
Received By: Taylor R	SYD | BNE | MEL | PER | ADL | NTL | DRW	Signature: [signature]	Date: 21/4	Time: 4:05	Temperature: 16.05
Received By:	SYD | BNE | MEL | PER | ADL | NTL | DRW	Signature:	Date:	Time:	Report №:

983256

2 2/3

CHAIN OF CUSTODY RECORD

Eurofins | mgt ABN 50 005 085 521

☐ Sydney Laboratory
Unit F3 Bld F 16 Mars Road Lane Cove West NSW 2066
02 9900 8400 EnviroSampleNSW@eurofins.com

☐ Brisbane Laboratory
Unit 1 21 Smallwood Place Murarrie QLD 4172
07 3902 4600 EnviroSampleQLD@eurofins.com

☐ Perth Laboratory
Unit 2 91 Leach Highway Kewdale WA 6105
08 9251 9600 EnviroSampleWA@eurofins.com

☐ Melbourne Laboratory
6 Monterey Road Dandenong South VIC 3175
03 8564 5000 EnviroSampleVic@eurofins.com

Company	CHEC
Address	PO Box 275 Gosford, NSW 2250
Contact Name	
Phone №	
Special Directions	
Purchase Order	
Quote ID №	210427CHEN
Project №	1440
Project Name	Waggy
Project Manager	
EDD Format (ESdat, EQuIS etc)	
Sampler(s)	
Handed over by	
Email for Invoice	accounts@complianceenviro.com.au
Email for Results	ops@complianceenviro.com.au

Analyses: Where metals are requested, please specify "Total" or "Filtered". SUITE codes must be used to attract SUITE pricing.

Containers (Change container type & size if necessary): 500mL Plastic; 250mL Plastic; 125mL Plastic; 200mL Amber Glass; 40mL VOA vial; 500mL PFAS Bottle; Jar (Glass or HDPE); Other (Asbestos AS4964, WA Guidelines)

Required Turnaround Time (TAT) — Default will be 5 days if not ticked. ♦Surcharge will apply
☐ Overnight (reporting by 9am)♦
☐ Same day♦ ☐ 1 day♦
☐ 2 days♦ ☐ 3 days♦
☐ 5 days (Standard)
☐ Other( )

№	Client Sample ID	Sampled Date/Time (dd/mm/yy hh:mm)	Matrix (Solid (S), Water (W))	B7	Asb ID	B14	Sample Comments / Dangerous Goods Hazard Warning
1	BH7-2	21/4	S	X			
2	BH8-1	↓	↓	↓		X	
3	BH8-2	↓	↓	↓			
4	BH9-1	↓	↓	↓		X	
5	BH9-2	↓	↓	↓			
6	BH10-1	↓	↓	↓			
7	BH11-1	↓	↓	↓		X	
8	BH11-2	↓	↓	↓			
9	BH12-1	↓	↓	↓	X		
10	BH12-2	↓	↓	↓	X		
	Total Counts						

Method of Shipment	☐ Courier (#)	☑ Hand Delivered	☐ Postal	Name	Signature	Date	Time
Eurofins | mgt Laboratory Use Only	Received By	SYD | BNE | MEL | PER | ADL | NTL | DRW	Signature	Date	Time	Temperature	
	Received By	SYD | BNE | MEL | PER | ADL | NTL | DRW	Signature	Date	Time	Report №	

Eurofins Environment Testing Australia Pty Ltd trading as Eurofins | mgt

3053

CHAIN OF CUSTODY RECORD

Eurofins | mgt ABN 50 005 085 521

☐ **Sydney Laboratory** Unit F3 Bld F 16 Mars Road Lane Cove West NSW 2066 07 9900 8400 EnviroSampleNSW@eurofins.com

☐ **Brisbane Laboratory** Unit 1 21 Smallwood Place Murarrie QLD 4172 07 3902 4600 EnviroSampleQLD@eurofins.com

☐ **Perth Laboratory** Unit 2 91 Leach Highway Kewdale WA 6105 08 9251 9600 EnviroSampleWA@eurofins.com

☐ **Melbourne Laboratory** 6 Monterey Road Dandenong South VIC 3175 03 8564 5000 EnviroSampleVic@eurofins.com

Company	CHEC
Address	PO Box 275 Gosford, NSW 2250
Contact Name	
Phone №	
Special Directions	
Purchase Order	
Quote ID №	210427CHEN
Project №	
Project Name	
Project Manager	
EDD Format (ESdat, EQuIS etc)	
Sampler(s)	
Handed over by	
Email for Invoice	accounts@complianceenviro.com.au
Email for Results	ops@complianceenviro.com.au

Analyses — Where metals are requested, please specify "Total" or "Filtered". SUITE code must be used to attract SUITE pricing.

№	Client Sample ID	Sampled Date/Time (dd/mm/yy hh:mm)	Matrix Solid (S) Water (W)	B7	4d SD	BTEXN PH	B14
1	BH12-3	~1/4	S	X			
2	BH13-1	↓	↓	↓	X		
3	BH13-2	↓	↓	↓			X
4	TS/TB	↓	W			X	
5							
6							
7							
8							
9							
10							
	Total Counts						

Containers (Change container type & size if necessary): 500mL Plastic | 250mL Plastic | 125mL Plastic | 200mL Amber Glass | 40mL VOA vial | 500mL PFAS Bottle | Jar (Glass or HDPE) | Other (Asbestos AS4964, WA Guidelines)

Required Turnaround Time (TAT) Default will be 5 days if not ticked. ♦Surcharge will apply

☐ Overnight (reporting by 9am)♦
☐ Same day♦ ☐ 1 day♦
☐ 2 days♦ ☐ 3 days♦
☐ 5 days (Standard)
☐ Other( )

Sample Comments / Dangerous Goods Hazard Warning

Method of Shipment	☐ Courier (#)	☑ Hand Delivered	☐ Postal	Name	Signature	Date	Time
Eurofins | mgt Laboratory Use Only	Received By	SYD | BNE | MEL | PER | ADL | NTL | DRW	Signature	Date	Time	Temperature	
	Received By	SYD | BNE | MEL | PER | ADL | NTL | DRW	Signature	Date	Time	Report №	

Document Set ID: 6164650
Version: 1, Version Date: 28/02/2024

Compliance Health & Environmental Consulting P/L
PO Box 275
Gosford
NSW 2250

NATA Accredited
Accreditation Number 1261
Site Number 18217

Accredited for compliance with ISO/IEC 17025 – Testing
NATA is a signatory to the ILAC Mutual Recognition Arrangement for the mutual recognition of the equivalence of testing, medical testing, calibration, inspection, proficiency testing scheme providers and reference materials producers reports and certificates.

Attention: **RESULTS - ALL SRAS HERE ONLY - NO INVOICES**

Report **983256-W**
Project name WAGGA
Project ID 1440
Received Date Apr 21, 2023

Client Sample ID			**TS**	**TB**
Sample Matrix			**Water**	**Water**
Eurofins Sample No.			**S23-Ap0048449**	**S23-Ap0048450**
Date Sampled			**Apr 21, 2023**	**Apr 21, 2023**
Test/Reference	LOR	Unit		
TRH C6-C10	1	%	93	-
Naphthalene[N02]	0.01	mg/L	-	< 0.01
Total Recoverable Hydrocarbons				
Naphthalene	1	%	110	-
TRH C6-C9	1	%	94	-
BTEX				
Benzene	1	%	100	-
Ethylbenzene	1	%	120	-
m&p-Xylenes	1	%	120	-
o-Xylene	1	%	120	-
Toluene	1	%	120	-
Xylenes - Total	1	%	120	-
4-Bromofluorobenzene (surr.)	1	%	117	-
Total Recoverable Hydrocarbons				
TRH C6-C9	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
BTEX				
Benzene	0.001	mg/L	-	< 0.001
Toluene	0.001	mg/L	-	< 0.001
Ethylbenzene	0.001	mg/L	-	< 0.001
m&p-Xylenes	0.002	mg/L	-	< 0.002
o-Xylene	0.001	mg/L	-	< 0.001
Xylenes - Total*	0.003	mg/L	-	< 0.003
4-Bromofluorobenzene (surr.)	1	%	-	97

Sample History

Where samples are submitted/analysed over several days, the last date of extraction is reported.

If the date and time of sampling are not provided, the Laboratory will not be responsible for compromised results should testing be performed outside the recommended holding time.

Description	Testing Site	Extracted	Holding Time
Total Recoverable Hydrocarbons - 1999 NEPM Fractions	Sydney	Apr 21, 2023	7 Days
- Method: LTM-ORG-2010 TRH C6-C40			
Total Recoverable Hydrocarbons	Sydney	Apr 21, 2023	7 Days
- Method: LTM-ORG-2010 TRH C6-C40			
BTEX	Sydney	Apr 21, 2023	14 Days
- Method: LTM-ORG-2010 BTEX and Volatile TRH			

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Company Name: Compliance Health & Environmental Consulting P/L
Address: PO Box 275
Gosford
NSW 2250

Project Name: WAGGA
Project ID: 1440

Order No.:
Report #: 983256
Phone: 02 4304 0091
Fax:

Received: Apr 21, 2023 4:05 PM
Due: Apr 28, 2023
Priority: 5 Day
Contact Name: RESULTS - ALL SRAS HERE

Eurofins Analytical Services Manager : Bonnie Pu

Sample Detail						Asbestos - AS4964	Suite B14: OCP/OPP	Moisture Set	Eurofins Suite B7	BTEXN and Volatile TRH	BTEXN and Volatile TRH
Sydney Laboratory - NATA # 1261 Site # 18217						X	X	X	X	X	X
External Laboratory											
No	**Sample ID**	**Sample Date**	**Sampling Time**	**Matrix**	**LAB ID**						
1	BH1-1	Apr 21, 2023		Soil	S23-Ap0048426	X		X	X		
2	BH2-1	Apr 21, 2023		Soil	S23-Ap0048427	X	X	X	X		
3	BH3-1	Apr 21, 2023		Soil	S23-Ap0048428	X		X	X		
4	BH4-1	Apr 21, 2023		Soil	S23-Ap0048429	X		X	X		
5	BH4-2	Apr 21, 2023		Soil	S23-Ap0048430		X	X	X		
6	BH4-3	Apr 21, 2023		Soil	S23-Ap0048431			X	X		
7	BH5-1	Apr 21, 2023		Soil	S23-Ap0048432	X		X	X		
8	BH6-1	Apr 21, 2023		Soil	S23-Ap0048433		X	X	X		
9	BH7-1	Apr 21, 2023		Soil	S23-Ap0048434			X	X		
10	BH7-1A	Apr 21, 2023		Soil	S23-Ap0048435			X	X		
11	BH7-2	Apr 21, 2023		Soil	S23-Ap0048436			X	X		
12	BH8-1	Apr 21, 2023		Soil	S23-Ap0048437		X	X	X		
13	BH8-2	Apr 21, 2023		Soil	S23-Ap0048438			X	X		

eurofins

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Address: PO Box 275
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NSW 2250

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Project ID: 1440

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Phone: 02 4304 0091
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Contact Name: RESULTS - ALL SRAS HERE

Eurofins Analytical Services Manager : Bonnie Pu

Sample Detail						Asbestos - AS4964	Suite B14: OCP/OPP	Moisture Set	Eurofins Suite B7	BTEXN and Volatile TRH	BTEXN and Volatile TRH
Sydney Laboratory - NATA # 1261 Site # 18217						X	X	X	X	X	X
14	BH9-1	Apr 21, 2023		Soil	S23-Ap0048439		X	X	X		
15	BH9-2	Apr 21, 2023		Soil	S23-Ap0048440			X	X		
16	BH10-1	Apr 21, 2023		Soil	S23-Ap0048441			X	X		
17	BH11-1	Apr 21, 2023		Soil	S23-Ap0048442		X	X	X		
18	BH11-2	Apr 21, 2023		Soil	S23-Ap0048443			X	X		
19	BH12-1	Apr 21, 2023		Soil	S23-Ap0048444	X		X	X		
20	BH12-2	Apr 21, 2023		Soil	S23-Ap0048445	X		X	X		
21	BH12-3	Apr 21, 2023		Soil	S23-Ap0048446			X	X		
22	BH13-1	Apr 21, 2023		Soil	S23-Ap0048447	X		X	X		
23	BH13-2	Apr 21, 2023		Soil	S23-Ap0048448		X	X	X		
24	TS	Apr 21, 2023		Water	S23-Ap0048449						X
25	TB	Apr 21, 2023		Water	S23-Ap0048450					X	
Test Counts						8	7	23	23	1	1

Internal Quality Control Review and Glossary

General

1. Laboratory QC results for Method Blanks, Duplicates, Matrix Spikes, and Laboratory Control Samples follows guidelines delineated in the National Environment Protection (Assessment of Site Contamination) Measure 1999, as amended May 2013 and are included in this QC report where applicable. Additional QC data may be available on request.
2. All soil/sediment/solid results are reported on a dry basis, unless otherwise stated.
3. All biota/food results are reported on a wet weight basis on the edible portion, unless otherwise stated.
4. Actual LORs are matrix dependant. Quoted LORs may be raised where sample extracts are diluted due to interferences.
5. Results are uncorrected for matrix spikes or surrogate recoveries except for PFAS compounds.
6. SVOC analysis on waters are performed on homogenised, unfiltered samples, unless noted otherwise.
7. Samples were analysed on an 'as received' basis.
8. Information identified on this report with blue colour, indicates data provided by customer that may have an impact on the results.
9. This report replaces any interim results previously issued.

Holding Times

Please refer to 'Sample Preservation and Container Guide' for holding times (QS3001).

For samples received on the last day of holding time, notification of testing requirements should have been received at least 6 hours prior to sample receipt deadlines as stated on the SRA.

If the Laboratory did not receive the information in the required timeframe, and regardless of any other integrity issues, suitably qualified results may still be reported.

Holding times apply from the date of sampling, therefore compliance to these may be outside the laboratory's control.

For VOCs containing vinyl chloride, styrene and 2-chloroethyl vinyl ether the holding time is 7 days however for all other VOCs such as BTEX or C6-10 TRH then the holding time is 14 days.

Units

mg/kg: milligrams per kilogram
mg/L: milligrams per litre
µg/L: micrograms per litre
ppm: parts per million
ppb: parts per billion
%: Percentage
org/100 mL: Organisms per 100 millilitres
NTU: Nephelometric Turbidity Units
MPN/100 mL: Most Probable Number of organisms per 100 millilitres
CFU: Colony forming unit

Terms

APHA	American Public Health Association
COC	Chain of Custody
CP	Client Parent - QC was performed on samples pertaining to this report
CRM	Certified Reference Material (ISO17034) - reported as percent recovery.
Dry	Where a moisture has been determined on a solid sample the result is expressed on a dry basis.
Duplicate	A second piece of analysis from the same sample and reported in the same units as the result to show comparison.
LOR	Limit of Reporting.
LCS	Laboratory Control Sample - reported as percent recovery.
Method Blank	In the case of solid samples these are performed on laboratory certified clean sands and in the case of water samples these are performed on de-ionised water.
NCP	Non-Client Parent - QC performed on samples not pertaining to this report, QC is representative of the sequence or batch that client samples were analysed within.
RPD	Relative Percent Difference between two Duplicate pieces of analysis.
SPIKE	Addition of the analyte to the sample and reported as percentage recovery.
SRA	Sample Receipt Advice
Surr - Surrogate	The addition of a like compound to the analyte target and reported as percentage recovery.
TBTO	Tributyltin oxide (*bis*-tributyltin oxide) - individual tributyltin compounds cannot be identified separately in the environment however free tributyltin was measured and its values were converted stoichiometrically into tributyltin oxide for comparison with regulatory limits.
TCLP	Toxicity Characteristic Leaching Procedure
TEQ	Toxic Equivalency Quotient or Total Equivalence
QSM	US Department of Defense Quality Systems Manual Version 5.4
US EPA	United States Environmental Protection Agency
WA DWER	Sum of PFBA, PFPeA, PFHxA, PFHpA, PFOA, PFBS, PFHxS, PFOS, 6:2 FTSA, 8:2 FTSA

QC - Acceptance Criteria

The acceptance criteria should be used as a guide only and may be different when site specific Sampling Analysis and Quality Plan (SAQP) have been implemented

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

Results <10 times the LOR: No Limit

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

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

NOTE: pH duplicates are reported as a range not as RPD

Surrogate Recoveries: Recoveries must lie between 20-130% for Speciated Phenols & 50-150% for PFAS

PFAS field samples that contain surrogate recoveries in excess of the QC limit designated in QSM 5.4 where no positive PFAS results have been reported have been reviewed and no data was affected.

QC Data General Comments

1. Where a result is reported as a less than (<), higher than the nominated LOR, this is due to either matrix interference, extract dilution required due to interferences or contaminant levels within the sample, high moisture content or insufficient sample provided.
2. Duplicate data shown within this report that states the word "BATCH" is a Batch Duplicate from outside of your sample batch, but within the laboratory sample batch at a 1:10 ratio. The Parent and Duplicate data shown is not data from your samples.
3. pH and Free Chlorine analysed in the laboratory - Analysis on this test must begin within 30 minutes of sampling. Therefore, laboratory analysis is unlikely to be completed within holding time.Analysis will begin as soon as possible after sample receipt.
4. Recovery Data (Spikes & Surrogates) - where chromatographic interference does not allow the determination of recovery the term "INT" appears against that analyte.
5. For Matrix Spikes and LCS results a dash "-" in the report means that the specific analyte was not added to the QC sample.
6. Duplicate RPDs are calculated from raw analytical data thus it is possible to have two sets of data.

Quality Control Results

Test	Units	Result 1			Acceptance Limits	Pass Limits	Qualifying Code
Method Blank							
Naphthalene	mg/L	< 0.01			0.01	Pass	
Method Blank							
Total Recoverable Hydrocarbons							
TRH C6-C9	mg/L	< 0.02			0.02	Pass	
TRH C6-C10	mg/L	< 0.02			0.02	Pass	
Method Blank							
BTEX							
Benzene	mg/L	< 0.001			0.001	Pass	
Toluene	mg/L	< 0.001			0.001	Pass	
Ethylbenzene	mg/L	< 0.001			0.001	Pass	
m&p-Xylenes	mg/L	< 0.002			0.002	Pass	
o-Xylene	mg/L	< 0.001			0.001	Pass	
Xylenes - Total*	mg/L	< 0.003			0.003	Pass	
LCS - % Recovery							
Naphthalene	%	103			70-130	Pass	
LCS - % Recovery							
Total Recoverable Hydrocarbons							
TRH C6-C9	%	100			70-130	Pass	
TRH C6-C10	%	100			70-130	Pass	
LCS - % Recovery							
BTEX							
Benzene	%	91			70-130	Pass	
Toluene	%	100			70-130	Pass	
Ethylbenzene	%	108			70-130	Pass	
m&p-Xylenes	%	108			70-130	Pass	
o-Xylene	%	107			70-130	Pass	
Xylenes - Total*	%	108			70-130	Pass	

Test	Lab Sample ID	QA Source	Units	Result 1			Acceptance Limits	Pass Limits	Qualifying Code
Duplicate									
				Result 1	Result 2	RPD			
Naphthalene	S23-Ap0048746	NCP	mg/L	< 0.01	< 0.01	<1	30%	Pass	
Duplicate									
Total Recoverable Hydrocarbons				Result 1	Result 2	RPD			
TRH C6-C9	S23-Ap0048746	NCP	mg/L	< 0.02	< 0.02	<1	30%	Pass	
TRH C6-C10	S23-Ap0048746	NCP	mg/L	< 0.02	< 0.02	<1	30%	Pass	
Duplicate									
BTEX				Result 1	Result 2	RPD			
Benzene	S23-Ap0048746	NCP	mg/L	< 0.001	< 0.001	<1	30%	Pass	
Toluene	S23-Ap0048746	NCP	mg/L	< 0.001	< 0.001	<1	30%	Pass	
Ethylbenzene	S23-Ap0048746	NCP	mg/L	< 0.001	< 0.001	<1	30%	Pass	
m&p-Xylenes	S23-Ap0048746	NCP	mg/L	< 0.002	< 0.002	<1	30%	Pass	
o-Xylene	S23-Ap0048746	NCP	mg/L	< 0.001	< 0.001	<1	30%	Pass	
Xylenes - Total*	S23-Ap0048746	NCP	mg/L	< 0.003	< 0.003	<1	30%	Pass	

Comments

Sample Integrity

Custody Seals Intact (if used)	N/A
Attempt to Chill was evident	Yes
Sample correctly preserved	Yes
Appropriate sample containers have been used	Yes
Sample containers for volatile analysis received with minimal headspace	Yes
Samples received within HoldingTime	Yes
Some samples have been subcontracted	No

Qualifier Codes/Comments

Code	Description
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:

Bonnie Pu	Analytical Services Manager
Roopesh Rangarajan	Senior Analyst-Volatile

Glenn Jackson
General Manager

Final Report – this report replaces any previously issued Report

- Indicates Not Requested

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

Measurement uncertainty of test data is available on request or please click here.

Compliance Health & Environmental Consulting P/L
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NATA Accredited
Accreditation Number 1261
Site Number 18217

Accredited for compliance with ISO/IEC 17025 – Testing
NATA is a signatory to the ILAC Mutual Recognition Arrangement for the mutual recognition of the equivalence of testing, medical testing, calibration, inspection, proficiency testing scheme providers and reference materials producers reports and certificates.

Attention: **RESULTS - ALL SRAS HERE ONLY - NO INVOICES**

Report **983256-S**
Project name WAGGA
Project ID 1440
Received Date Apr 21, 2023

Client Sample ID			**BH1-1**	**BH2-1**	**BH3-1**	**BH4-1**
Sample Matrix			**Soil**	**Soil**	**Soil**	**Soil**
Eurofins Sample No.			**S23-Ap0048426**	**S23-Ap0048427**	**S23-Ap0048428**	**S23-Ap0048429**
Date Sampled			**Apr 21, 2023**	**Apr 21, 2023**	**Apr 21, 2023**	**Apr 21, 2023**
Test/Reference	LOR	Unit				
Total Recoverable Hydrocarbons						
TRH C6-C9	20	mg/kg	< 20	< 20	< 20	< 20
TRH C10-C14	20	mg/kg	< 20	< 20	< 20	< 20
TRH C15-C28	50	mg/kg	< 50	< 50	< 50	250
TRH C29-C36	50	mg/kg	< 50	< 50	< 50	200
TRH C10-C36 (Total)	50	mg/kg	< 50	< 50	< 50	450
TRH C6-C10	20	mg/kg	< 20	< 20	< 20	< 20
TRH C6-C10 less BTEX (F1)[N04]	20	mg/kg	< 20	< 20	< 20	< 20
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	390
TRH >C34-C40	100	mg/kg	< 100	< 100	< 100	150
TRH >C10-C40 (total)*	100	mg/kg	< 100	< 100	< 100	540
BTEX						
Benzene	0.1	mg/kg	< 0.1	< 0.1	< 0.1	< 0.1
Toluene	0.1	mg/kg	< 0.1	< 0.1	< 0.1	< 0.1
Ethylbenzene	0.1	mg/kg	< 0.1	< 0.1	< 0.1	< 0.1
m&p-Xylenes	0.2	mg/kg	< 0.2	< 0.2	< 0.2	< 0.2
o-Xylene	0.1	mg/kg	< 0.1	< 0.1	< 0.1	< 0.1
Xylenes - Total*	0.3	mg/kg	< 0.3	< 0.3	< 0.3	< 0.3
4-Bromofluorobenzene (surr.)	1	%	81	55	67	72
Total Recoverable Hydrocarbons - 2013 NEPM Fractions						
Naphthalene[N02]	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
Polycyclic Aromatic Hydrocarbons						
Benzo(a)pyrene TEQ (lower bound) *	0.5	mg/kg	< 0.5	< 0.5	< 0.5	9.0
Benzo(a)pyrene TEQ (medium bound) *	0.5	mg/kg	0.6	0.6	0.6	9.0
Benzo(a)pyrene TEQ (upper bound) *	0.5	mg/kg	1.2	1.2	1.2	9.0
Acenaphthene	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
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	5.5
Benzo(a)pyrene	0.5	mg/kg	< 0.5	< 0.5	< 0.5	5.7
Benzo(b&j)fluoranthene[N07]	0.5	mg/kg	< 0.5	< 0.5	< 0.5	5.4
Benzo(g.h.i)perylene	0.5	mg/kg	< 0.5	< 0.5	< 0.5	3.3
Benzo(k)fluoranthene	0.5	mg/kg	< 0.5	< 0.5	< 0.5	5.0
Chrysene	0.5	mg/kg	< 0.5	< 0.5	< 0.5	6.5

Client Sample ID			BH1-1	BH2-1	BH3-1	BH4-1
Sample Matrix			Soil	Soil	Soil	Soil
Eurofins Sample No.			S23-Ap0048426	S23-Ap0048427	S23-Ap0048428	S23-Ap0048429
Date Sampled			Apr 21, 2023	Apr 21, 2023	Apr 21, 2023	Apr 21, 2023
Test/Reference	LOR	Unit				
Polycyclic Aromatic Hydrocarbons						
Dibenz(a.h)anthracene	0.5	mg/kg	< 0.5	< 0.5	< 0.5	1.3
Fluoranthene	0.5	mg/kg	< 0.5	< 0.5	< 0.5	14
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	3.1
Naphthalene	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
Phenanthrene	0.5	mg/kg	< 0.5	< 0.5	< 0.5	1.5
Pyrene	0.5	mg/kg	< 0.5	< 0.5	0.6	14
Total PAH*	0.5	mg/kg	< 0.5	< 0.5	0.6	66
2-Fluorobiphenyl (surr.)	1	%	93	91	100	101
p-Terphenyl-d14 (surr.)	1	%	89	88	90	88
Conductivity (1:5 aqueous extract at 25 °C as rec.)	10	uS/cm	13	-	-	-
pH (1:5 Aqueous extract at 25 °C as rec.)	0.1	pH Units	7.4	-	-	-
Heavy Metals						
Arsenic	2	mg/kg	9.3	4.9	6.9	17
Cadmium	0.4	mg/kg	1.3	< 0.4	0.6	< 0.4
Chromium	5	mg/kg	29	14	26	30
Copper	5	mg/kg	31	7.1	29	22
Lead	5	mg/kg	180	18	200	37
Mercury	0.1	mg/kg	< 0.1	< 0.1	< 0.1	< 0.1
Nickel	5	mg/kg	30	11	18	30
Zinc	5	mg/kg	320	36	260	120
Cation Exchange Capacity						
Cation Exchange Capacity	0.05	meq/100g	11	-	-	-
Sample Properties						
% Moisture	1	%	20	12	20	13
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-HCH	0.05	mg/kg	-	< 0.05	-	-
Aldrin	0.05	mg/kg	-	< 0.05	-	-
b-HCH	0.05	mg/kg	-	< 0.05	-	-
d-HCH	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-HCH (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	0.5	mg/kg	-	< 0.5	-	-

Client Sample ID			BH1-1	BH2-1	BH3-1	BH4-1
Sample Matrix			Soil	Soil	Soil	Soil
Eurofins Sample No.			S23-Ap0048426	S23-Ap0048427	S23-Ap0048428	S23-Ap0048429
Date Sampled			Apr 21, 2023	Apr 21, 2023	Apr 21, 2023	Apr 21, 2023
Test/Reference	LOR	Unit				
Organochlorine Pesticides						
Aldrin and Dieldrin (Total)*	0.05	mg/kg	-	< 0.05	-	-
DDT + DDE + DDD (Total)*	0.05	mg/kg	-	< 0.05	-	-
Vic EPA IWRG 621 OCP (Total)*	0.1	mg/kg	-	< 0.1	-	-
Vic EPA IWRG 621 Other OCP (Total)*	0.1	mg/kg	-	< 0.1	-	-
Dibutylchlorendate (surr.)	1	%	-	120	-	-
Tetrachloro-m-xylene (surr.)	1	%	-	87	-	-
Organophosphorus Pesticides						
Azinphos-methyl	0.2	mg/kg	-	< 0.2	-	-
Bolstar	0.2	mg/kg	-	< 0.2	-	-
Chlorfenvinphos	0.2	mg/kg	-	< 0.2	-	-
Chlorpyrifos	0.2	mg/kg	-	< 0.2	-	-
Chlorpyrifos-methyl	0.2	mg/kg	-	< 0.2	-	-
Coumaphos	2	mg/kg	-	< 2	-	-
Demeton-S	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	-	-
Dimethoate	0.2	mg/kg	-	< 0.2	-	-
Disulfoton	0.2	mg/kg	-	< 0.2	-	-
EPN	0.2	mg/kg	-	< 0.2	-	-
Ethion	0.2	mg/kg	-	< 0.2	-	-
Ethoprop	0.2	mg/kg	-	< 0.2	-	-
Ethyl parathion	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	-	-
Malathion	0.2	mg/kg	-	< 0.2	-	-
Merphos	0.2	mg/kg	-	< 0.2	-	-
Methyl parathion	0.2	mg/kg	-	< 0.2	-	-
Mevinphos	0.2	mg/kg	-	< 0.2	-	-
Monocrotophos	2	mg/kg	-	< 2	-	-
Naled	0.2	mg/kg	-	< 0.2	-	-
Omethoate	2	mg/kg	-	< 2	-	-
Phorate	0.2	mg/kg	-	< 0.2	-	-
Pirimiphos-methyl	0.2	mg/kg	-	< 0.2	-	-
Pyrazophos	0.2	mg/kg	-	< 0.2	-	-
Ronnel	0.2	mg/kg	-	< 0.2	-	-
Terbufos	0.2	mg/kg	-	< 0.2	-	-
Tetrachlorvinphos	0.2	mg/kg	-	< 0.2	-	-
Tokuthion	0.2	mg/kg	-	< 0.2	-	-
Trichloronate	0.2	mg/kg	-	< 0.2	-	-
Triphenylphosphate (surr.)	1	%	-	101	-	-

Client Sample ID			BH4-2	BH4-3	BH5-1	BH6-1
Sample Matrix			Soil	Soil	Soil	Soil
Eurofins Sample No.			S23-Ap0048430	S23-Ap0048431	S23-Ap0048432	S23-Ap0048433
Date Sampled			Apr 21, 2023	Apr 21, 2023	Apr 21, 2023	Apr 21, 2023
Test/Reference	LOR	Unit				
Total Recoverable Hydrocarbons						
TRH C6-C9	20	mg/kg	< 20	< 20	< 20	< 20
TRH C10-C14	20	mg/kg	< 20	< 20	< 20	< 20
TRH C15-C28	50	mg/kg	59	< 50	< 50	< 50
TRH C29-C36	50	mg/kg	56	< 50	54	< 50
TRH C10-C36 (Total)	50	mg/kg	115	< 50	54	< 50
TRH C6-C10	20	mg/kg	< 20	< 20	< 20	< 20
TRH C6-C10 less BTEX (F1)[N04]	20	mg/kg	< 20	< 20	< 20	< 20
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
TRH >C10-C40 (total)*	100	mg/kg	< 100	< 100	< 100	< 100
BTEX						
Benzene	0.1	mg/kg	< 0.1	< 0.1	< 0.1	< 0.1
Toluene	0.1	mg/kg	< 0.1	< 0.1	< 0.1	< 0.1
Ethylbenzene	0.1	mg/kg	< 0.1	< 0.1	< 0.1	< 0.1
m&p-Xylenes	0.2	mg/kg	< 0.2	< 0.2	< 0.2	< 0.2
o-Xylene	0.1	mg/kg	< 0.1	< 0.1	< 0.1	< 0.1
Xylenes - Total*	0.3	mg/kg	< 0.3	< 0.3	< 0.3	< 0.3
4-Bromofluorobenzene (surr.)	1	%	72	75	71	77
Total Recoverable Hydrocarbons - 2013 NEPM Fractions						
Naphthalene[N02]	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
Polycyclic Aromatic Hydrocarbons						
Benzo(a)pyrene TEQ (lower bound) *	0.5	mg/kg	0.7	< 0.5	0.8	< 0.5
Benzo(a)pyrene TEQ (medium bound) *	0.5	mg/kg	1.0	0.6	1.1	0.6
Benzo(a)pyrene TEQ (upper bound) *	0.5	mg/kg	1.3	1.2	1.4	1.2
Acenaphthene	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
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	0.6	< 0.5	0.6	< 0.5
Benzo(b&j)fluoranthene[N07]	0.5	mg/kg	0.6	< 0.5	< 0.5	< 0.5
Benzo(g.h.i)perylene	0.5	mg/kg	< 0.5	< 0.5	0.6	< 0.5
Benzo(k)fluoranthene	0.5	mg/kg	0.6	< 0.5	1.0	< 0.5
Chrysene	0.5	mg/kg	0.7	< 0.5	0.9	< 0.5
Dibenz(a.h)anthracene	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
Fluoranthene	0.5	mg/kg	1.2	< 0.5	1.4	< 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	0.7	< 0.5
Pyrene	0.5	mg/kg	1.3	< 0.5	1.5	0.6
Total PAH*	0.5	mg/kg	5.0	< 0.5	7.2	0.6
2-Fluorobiphenyl (surr.)	1	%	101	93	61	97
p-Terphenyl-d14 (surr.)	1	%	90	89	75	87

Client Sample ID			BH4-2	BH4-3	BH5-1	BH6-1
Sample Matrix			Soil	Soil	Soil	Soil
Eurofins Sample No.			S23-Ap0048430	S23-Ap0048431	S23-Ap0048432	S23-Ap0048433
Date Sampled			Apr 21, 2023	Apr 21, 2023	Apr 21, 2023	Apr 21, 2023
Test/Reference	LOR	Unit				
Heavy Metals						
Arsenic	2	mg/kg	11	13	6.1	4.1
Cadmium	0.4	mg/kg	0.7	< 0.4	< 0.4	< 0.4
Chromium	5	mg/kg	35	30	17	16
Copper	5	mg/kg	30	14	19	8.3
Lead	5	mg/kg	350	28	58	19
Mercury	0.1	mg/kg	0.1	< 0.1	< 0.1	< 0.1
Nickel	5	mg/kg	22	23	15	11
Zinc	5	mg/kg	440	200	110	50
Sample Properties						
% Moisture	1	%	17	19	19	13
Organochlorine Pesticides						
Chlordanes - Total	0.1	mg/kg	< 0.1	-	-	< 0.1
4.4'-DDD	0.05	mg/kg	< 0.05	-	-	< 0.05
4.4'-DDE	0.05	mg/kg	< 0.05	-	-	< 0.05
4.4'-DDT	0.05	mg/kg	< 0.05	-	-	< 0.05
a-HCH	0.05	mg/kg	< 0.05	-	-	< 0.05
Aldrin	0.05	mg/kg	< 0.05	-	-	< 0.05
b-HCH	0.05	mg/kg	< 0.05	-	-	< 0.05
d-HCH	0.05	mg/kg	< 0.05	-	-	< 0.05
Dieldrin	0.05	mg/kg	< 0.05	-	-	< 0.05
Endosulfan I	0.05	mg/kg	< 0.05	-	-	< 0.05
Endosulfan II	0.05	mg/kg	< 0.05	-	-	< 0.05
Endosulfan sulphate	0.05	mg/kg	< 0.05	-	-	< 0.05
Endrin	0.05	mg/kg	< 0.05	-	-	< 0.05
Endrin aldehyde	0.05	mg/kg	< 0.05	-	-	< 0.05
Endrin ketone	0.05	mg/kg	< 0.05	-	-	< 0.05
g-HCH (Lindane)	0.05	mg/kg	< 0.05	-	-	< 0.05
Heptachlor	0.05	mg/kg	< 0.05	-	-	< 0.05
Heptachlor epoxide	0.05	mg/kg	< 0.05	-	-	< 0.05
Hexachlorobenzene	0.05	mg/kg	< 0.05	-	-	< 0.05
Methoxychlor	0.05	mg/kg	< 0.05	-	-	< 0.05
Toxaphene	0.5	mg/kg	< 0.5	-	-	< 0.5
Aldrin and Dieldrin (Total)*	0.05	mg/kg	< 0.05	-	-	< 0.05
DDT + DDE + DDD (Total)*	0.05	mg/kg	< 0.05	-	-	< 0.05
Vic EPA IWRG 621 OCP (Total)*	0.1	mg/kg	< 0.1	-	-	< 0.1
Vic EPA IWRG 621 Other OCP (Total)*	0.1	mg/kg	< 0.1	-	-	< 0.1
Dibutylchlorendate (surr.)	1	%	INT	-	-	INT
Tetrachloro-m-xylene (surr.)	1	%	95	-	-	91
Organophosphorus Pesticides						
Azinphos-methyl	0.2	mg/kg	< 0.2	-	-	< 0.2
Bolstar	0.2	mg/kg	< 0.2	-	-	< 0.2
Chlorfenvinphos	0.2	mg/kg	< 0.2	-	-	< 0.2
Chlorpyrifos	0.2	mg/kg	< 0.2	-	-	< 0.2
Chlorpyrifos-methyl	0.2	mg/kg	< 0.2	-	-	< 0.2
Coumaphos	2	mg/kg	< 2	-	-	< 2
Demeton-S	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

Client Sample ID			BH4-2	BH4-3	BH5-1	BH6-1
Sample Matrix			Soil	Soil	Soil	Soil
Eurofins Sample No.			S23-Ap0048430	S23-Ap0048431	S23-Ap0048432	S23-Ap0048433
Date Sampled			Apr 21, 2023	Apr 21, 2023	Apr 21, 2023	Apr 21, 2023
Test/Reference	LOR	Unit				
Organophosphorus Pesticides						
Dimethoate	0.2	mg/kg	< 0.2	-	-	< 0.2
Disulfoton	0.2	mg/kg	< 0.2	-	-	< 0.2
EPN	0.2	mg/kg	< 0.2	-	-	< 0.2
Ethion	0.2	mg/kg	< 0.2	-	-	< 0.2
Ethoprop	0.2	mg/kg	< 0.2	-	-	< 0.2
Ethyl parathion	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
Malathion	0.2	mg/kg	< 0.2	-	-	< 0.2
Merphos	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
Monocrotophos	2	mg/kg	< 2	-	-	< 2
Naled	0.2	mg/kg	< 0.2	-	-	< 0.2
Omethoate	2	mg/kg	< 2	-	-	< 2
Phorate	0.2	mg/kg	< 0.2	-	-	< 0.2
Pirimiphos-methyl	0.2	mg/kg	< 0.2	-	-	< 0.2
Pyrazophos	0.2	mg/kg	< 0.2	-	-	< 0.2
Ronnel	0.2	mg/kg	< 0.2	-	-	< 0.2
Terbufos	0.2	mg/kg	< 0.2	-	-	< 0.2
Tetrachlorvinphos	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	%	INT	-	-	149

Client Sample ID			BH7-1	BH7-1A	BH7-2	BH8-1
Sample Matrix			Soil	Soil	Soil	Soil
Eurofins Sample No.			S23-Ap0048434	S23-Ap0048435	S23-Ap0048436	S23-Ap0048437
Date Sampled			Apr 21, 2023	Apr 21, 2023	Apr 21, 2023	Apr 21, 2023
Test/Reference	LOR	Unit				
Total Recoverable Hydrocarbons						
TRH C6-C9	20	mg/kg	< 20	< 20	< 20	< 20
TRH C10-C14	20	mg/kg	< 20	< 20	< 20	< 20
TRH C15-C28	50	mg/kg	< 50	< 50	65	< 50
TRH C29-C36	50	mg/kg	< 50	< 50	< 50	< 50
TRH C10-C36 (Total)	50	mg/kg	< 50	< 50	65	< 50
TRH C6-C10	20	mg/kg	< 20	< 20	< 20	< 20
TRH C6-C10 less BTEX (F1)[N04]	20	mg/kg	< 20	< 20	< 20	< 20
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
TRH >C10-C40 (total)*	100	mg/kg	< 100	< 100	< 100	< 100

Client Sample ID			BH7-1	BH7-1A	BH7-2	BH8-1
Sample Matrix			Soil	Soil	Soil	Soil
Eurofins Sample No.			S23-Ap0048434	S23-Ap0048435	S23-Ap0048436	S23-Ap0048437
Date Sampled			Apr 21, 2023	Apr 21, 2023	Apr 21, 2023	Apr 21, 2023
Test/Reference	LOR	Unit				
BTEX						
Benzene	0.1	mg/kg	< 0.1	< 0.1	< 0.1	< 0.1
Toluene	0.1	mg/kg	< 0.1	< 0.1	< 0.1	< 0.1
Ethylbenzene	0.1	mg/kg	< 0.1	< 0.1	< 0.1	< 0.1
m&p-Xylenes	0.2	mg/kg	< 0.2	< 0.2	< 0.2	< 0.2
o-Xylene	0.1	mg/kg	< 0.1	< 0.1	< 0.1	< 0.1
Xylenes - Total*	0.3	mg/kg	< 0.3	< 0.3	< 0.3	< 0.3
4-Bromofluorobenzene (surr.)	1	%	77	55	75	73
Total Recoverable Hydrocarbons - 2013 NEPM Fractions						
Naphthalene[N02]	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
Polycyclic Aromatic Hydrocarbons						
Benzo(a)pyrene TEQ (lower bound) *	0.5	mg/kg	< 0.5	< 0.5	0.8	< 0.5
Benzo(a)pyrene TEQ (medium bound) *	0.5	mg/kg	0.6	0.6	1.1	0.6
Benzo(a)pyrene TEQ (upper bound) *	0.5	mg/kg	1.2	1.2	1.4	1.2
Acenaphthene	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
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	0.6	< 0.5
Benzo(a)pyrene	0.5	mg/kg	< 0.5	< 0.5	0.7	< 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	0.6	< 0.5
Chrysene	0.5	mg/kg	< 0.5	< 0.5	0.8	< 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	1.4	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	0.7	< 0.5
Pyrene	0.5	mg/kg	< 0.5	< 0.5	1.5	0.5
Total PAH*	0.5	mg/kg	< 0.5	< 0.5	6.3	1.0
2-Fluorobiphenyl (surr.)	1	%	99	51	107	111
p-Terphenyl-d14 (surr.)	1	%	92	54	82	92
Heavy Metals						
Arsenic	2	mg/kg	7.6	8.2	9.6	6.8
Cadmium	0.4	mg/kg	< 0.4	< 0.4	< 0.4	< 0.4
Chromium	5	mg/kg	13	14	29	26
Copper	5	mg/kg	8.0	8.4	19	16
Lead	5	mg/kg	23	23	67	26
Mercury	0.1	mg/kg	< 0.1	< 0.1	< 0.1	< 0.1
Nickel	5	mg/kg	8.5	9.0	21	21
Zinc	5	mg/kg	59	57	89	75
Sample Properties						
% Moisture	1	%	14	14	14	23
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

Client Sample ID			BH7-1	BH7-1A	BH7-2	BH8-1
Sample Matrix			Soil	Soil	Soil	Soil
Eurofins Sample No.			S23-Ap0048434	S23-Ap0048435	S23-Ap0048436	S23-Ap0048437
Date Sampled			Apr 21, 2023	Apr 21, 2023	Apr 21, 2023	Apr 21, 2023
Test/Reference	LOR	Unit				
Organochlorine Pesticides						
a-HCH	0.05	mg/kg	-	-	-	< 0.05
Aldrin	0.05	mg/kg	-	-	-	< 0.05
b-HCH	0.05	mg/kg	-	-	-	< 0.05
d-HCH	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-HCH (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	0.5	mg/kg	-	-	-	< 0.5
Aldrin and Dieldrin (Total)*	0.05	mg/kg	-	-	-	< 0.05
DDT + DDE + DDD (Total)*	0.05	mg/kg	-	-	-	< 0.05
Vic EPA IWRG 621 OCP (Total)*	0.1	mg/kg	-	-	-	< 0.1
Vic EPA IWRG 621 Other OCP (Total)*	0.1	mg/kg	-	-	-	< 0.1
Dibutylchlorendate (surr.)	1	%	-	-	-	123
Tetrachloro-m-xylene (surr.)	1	%	-	-	-	100
Organophosphorus Pesticides						
Azinphos-methyl	0.2	mg/kg	-	-	-	< 0.2
Bolstar	0.2	mg/kg	-	-	-	< 0.2
Chlorfenvinphos	0.2	mg/kg	-	-	-	< 0.2
Chlorpyrifos	0.2	mg/kg	-	-	-	< 0.2
Chlorpyrifos-methyl	0.2	mg/kg	-	-	-	< 0.2
Coumaphos	2	mg/kg	-	-	-	< 2
Demeton-S	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
Dimethoate	0.2	mg/kg	-	-	-	< 0.2
Disulfoton	0.2	mg/kg	-	-	-	< 0.2
EPN	0.2	mg/kg	-	-	-	< 0.2
Ethion	0.2	mg/kg	-	-	-	< 0.2
Ethoprop	0.2	mg/kg	-	-	-	< 0.2
Ethyl parathion	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
Malathion	0.2	mg/kg	-	-	-	< 0.2
Merphos	0.2	mg/kg	-	-	-	< 0.2
Methyl parathion	0.2	mg/kg	-	-	-	< 0.2
Mevinphos	0.2	mg/kg	-	-	-	< 0.2
Monocrotophos	2	mg/kg	-	-	-	< 2
Naled	0.2	mg/kg	-	-	-	< 0.2

Client Sample ID			BH7-1	BH7-1A	BH7-2	BH8-1
Sample Matrix			Soil	Soil	Soil	Soil
Eurofins Sample No.			S23-Ap0048434	S23-Ap0048435	S23-Ap0048436	S23-Ap0048437
Date Sampled			Apr 21, 2023	Apr 21, 2023	Apr 21, 2023	Apr 21, 2023
Test/Reference	LOR	Unit				
Organophosphorus Pesticides						
Omethoate	2	mg/kg	-	-	-	< 2
Phorate	0.2	mg/kg	-	-	-	< 0.2
Pirimiphos-methyl	0.2	mg/kg	-	-	-	< 0.2
Pyrazophos	0.2	mg/kg	-	-	-	< 0.2
Ronnel	0.2	mg/kg	-	-	-	< 0.2
Terbufos	0.2	mg/kg	-	-	-	< 0.2
Tetrachlorvinphos	0.2	mg/kg	-	-	-	< 0.2
Tokuthion	0.2	mg/kg	-	-	-	< 0.2
Trichloronate	0.2	mg/kg	-	-	-	< 0.2
Triphenylphosphate (surr.)	1	%	-	-	-	110

Client Sample ID			BH8-2	BH9-1	BH9-2	BH10-1
Sample Matrix			Soil	Soil	Soil	Soil
Eurofins Sample No.			S23-Ap0048438	S23-Ap0048439	S23-Ap0048440	S23-Ap0048441
Date Sampled			Apr 21, 2023	Apr 21, 2023	Apr 21, 2023	Apr 21, 2023
Test/Reference	LOR	Unit				
Total Recoverable Hydrocarbons						
TRH C6-C9	20	mg/kg	< 20	< 20	< 20	< 20
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	< 50	< 50	< 50	< 50
TRH C10-C36 (Total)	50	mg/kg	< 50	< 50	< 50	< 50
TRH C6-C10	20	mg/kg	< 20	< 20	< 20	< 20
TRH C6-C10 less BTEX (F1)[N04]	20	mg/kg	< 20	< 20	< 20	< 20
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
TRH >C10-C40 (total)*	100	mg/kg	< 100	< 100	< 100	< 100
BTEX						
Benzene	0.1	mg/kg	< 0.1	< 0.1	< 0.1	< 0.1
Toluene	0.1	mg/kg	< 0.1	< 0.1	< 0.1	< 0.1
Ethylbenzene	0.1	mg/kg	< 0.1	< 0.1	< 0.1	< 0.1
m&p-Xylenes	0.2	mg/kg	< 0.2	< 0.2	< 0.2	< 0.2
o-Xylene	0.1	mg/kg	< 0.1	< 0.1	< 0.1	< 0.1
Xylenes - Total*	0.3	mg/kg	< 0.3	< 0.3	< 0.3	< 0.3
4-Bromofluorobenzene (surr.)	1	%	77	81	81	79
Total Recoverable Hydrocarbons - 2013 NEPM Fractions						
Naphthalene[N02]	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
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
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

Client Sample ID			BH8-2	BH9-1	BH9-2	BH10-1
Sample Matrix			Soil	Soil	Soil	Soil
Eurofins Sample No.			S23-Ap0048438	S23-Ap0048439	S23-Ap0048440	S23-Ap0048441
Date Sampled			Apr 21, 2023	Apr 21, 2023	Apr 21, 2023	Apr 21, 2023
Test/Reference	LOR	Unit				
Polycyclic Aromatic Hydrocarbons						
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	0.7	0.6	< 0.5	< 0.5
Total PAH*	0.5	mg/kg	1.7	0.6	< 0.5	< 0.5
2-Fluorobiphenyl (surr.)	1	%	82	107	97	103
p-Terphenyl-d14 (surr.)	1	%	68	88	88	63
Conductivity (1:5 aqueous extract at 25 °C as rec.)	10	uS/cm	-	41	-	-
pH (1:5 Aqueous extract at 25 °C as rec.)	0.1	pH Units	-	6.3	-	-
Heavy Metals						
Arsenic	2	mg/kg	10	5.4	4.7	5.9
Cadmium	0.4	mg/kg	< 0.4	0.4	< 0.4	< 0.4
Chromium	5	mg/kg	33	18	28	22
Copper	5	mg/kg	20	23	17	19
Lead	5	mg/kg	34	61	21	28
Mercury	0.1	mg/kg	< 0.1	< 0.1	< 0.1	< 0.1
Nickel	5	mg/kg	24	13	20	17
Zinc	5	mg/kg	80	100	61	68
Cation Exchange Capacity						
Cation Exchange Capacity	0.05	meq/100g	-	13	-	-
Sample Properties						
% Moisture	1	%	24	13	21	19
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-HCH	0.05	mg/kg	-	< 0.05	-	-
Aldrin	0.05	mg/kg	-	< 0.05	-	-
b-HCH	0.05	mg/kg	-	< 0.05	-	-
d-HCH	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-HCH (Lindane)	0.05	mg/kg	-	< 0.05	-	-

Client Sample ID			BH8-2	BH9-1	BH9-2	BH10-1
Sample Matrix			Soil	Soil	Soil	Soil
Eurofins Sample No.			S23-Ap0048438	S23-Ap0048439	S23-Ap0048440	S23-Ap0048441
Date Sampled			Apr 21, 2023	Apr 21, 2023	Apr 21, 2023	Apr 21, 2023
Test/Reference	LOR	Unit				
Organochlorine Pesticides						
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	0.5	mg/kg	-	< 0.5	-	-
Aldrin and Dieldrin (Total)*	0.05	mg/kg	-	< 0.05	-	-
DDT + DDE + DDD (Total)*	0.05	mg/kg	-	< 0.05	-	-
Vic EPA IWRG 621 OCP (Total)*	0.1	mg/kg	-	< 0.1	-	-
Vic EPA IWRG 621 Other OCP (Total)*	0.1	mg/kg	-	< 0.1	-	-
Dibutylchlorendate (surr.)	1	%	-	106	-	-
Tetrachloro-m-xylene (surr.)	1	%	-	96	-	-
Organophosphorus Pesticides						
Azinphos-methyl	0.2	mg/kg	-	< 0.2	-	-
Bolstar	0.2	mg/kg	-	< 0.2	-	-
Chlorfenvinphos	0.2	mg/kg	-	< 0.2	-	-
Chlorpyrifos	0.2	mg/kg	-	< 0.2	-	-
Chlorpyrifos-methyl	0.2	mg/kg	-	< 0.2	-	-
Coumaphos	2	mg/kg	-	< 2	-	-
Demeton-S	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	-	-
Dimethoate	0.2	mg/kg	-	< 0.2	-	-
Disulfoton	0.2	mg/kg	-	< 0.2	-	-
EPN	0.2	mg/kg	-	< 0.2	-	-
Ethion	0.2	mg/kg	-	< 0.2	-	-
Ethoprop	0.2	mg/kg	-	< 0.2	-	-
Ethyl parathion	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	-	-
Malathion	0.2	mg/kg	-	< 0.2	-	-
Merphos	0.2	mg/kg	-	< 0.2	-	-
Methyl parathion	0.2	mg/kg	-	< 0.2	-	-
Mevinphos	0.2	mg/kg	-	< 0.2	-	-
Monocrotophos	2	mg/kg	-	< 2	-	-
Naled	0.2	mg/kg	-	< 0.2	-	-
Omethoate	2	mg/kg	-	< 2	-	-
Phorate	0.2	mg/kg	-	< 0.2	-	-
Pirimiphos-methyl	0.2	mg/kg	-	< 0.2	-	-
Pyrazophos	0.2	mg/kg	-	< 0.2	-	-
Ronnel	0.2	mg/kg	-	< 0.2	-	-
Terbufos	0.2	mg/kg	-	< 0.2	-	-
Tetrachlorvinphos	0.2	mg/kg	-	< 0.2	-	-
Tokuthion	0.2	mg/kg	-	< 0.2	-	-
Trichloronate	0.2	mg/kg	-	< 0.2	-	-
Triphenylphosphate (surr.)	1	%	-	113	-	-

Client Sample ID			[G01]BH11-1	BH11-2	BH12-1	BH12-2
Sample Matrix			Soil	Soil	Soil	Soil
Eurofins Sample No.			S23-Ap0048442	S23-Ap0048443	S23-Ap0048444	S23-Ap0048445
Date Sampled			Apr 21, 2023	Apr 21, 2023	Apr 21, 2023	Apr 21, 2023
Test/Reference	LOR	Unit				
Total Recoverable Hydrocarbons						
TRH C6-C9	20	mg/kg	< 20	< 20	< 20	< 20
TRH C10-C14	20	mg/kg	< 20	< 20	32	110
TRH C15-C28	50	mg/kg	< 50	< 50	590	1300
TRH C29-C36	50	mg/kg	< 50	< 50	300	640
TRH C10-C36 (Total)	50	mg/kg	< 50	< 50	922	2050
TRH C6-C10	20	mg/kg	< 20	< 20	< 20	< 20
TRH C6-C10 less BTEX (F1)[N04]	20	mg/kg	< 20	< 20	< 20	< 20
TRH >C10-C16	50	mg/kg	< 50	< 50	60	220
TRH >C10-C16 less Naphthalene (F2)[N01]	50	mg/kg	< 50	< 50	60	220
TRH >C16-C34	100	mg/kg	< 100	< 100	770	1700
TRH >C34-C40	100	mg/kg	< 100	< 100	220	520
TRH >C10-C40 (total)*	100	mg/kg	< 100	< 100	1050	2440
BTEX						
Benzene	0.1	mg/kg	< 0.1	< 0.1	< 0.1	< 0.1
Toluene	0.1	mg/kg	< 0.1	< 0.1	< 0.1	< 0.1
Ethylbenzene	0.1	mg/kg	< 0.1	< 0.1	< 0.1	< 0.1
m&p-Xylenes	0.2	mg/kg	< 0.2	< 0.2	< 0.2	< 0.2
o-Xylene	0.1	mg/kg	< 0.1	< 0.1	< 0.1	< 0.1
Xylenes - Total*	0.3	mg/kg	< 0.3	< 0.3	< 0.3	< 0.3
4-Bromofluorobenzene (surr.)	1	%	91	91	98	73
Total Recoverable Hydrocarbons - 2013 NEPM Fractions						
Naphthalene[N02]	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
Polycyclic Aromatic Hydrocarbons						
Benzo(a)pyrene TEQ (lower bound) *	0.5	mg/kg	< 0.5	< 0.5	15	28
Benzo(a)pyrene TEQ (medium bound) *	0.5	mg/kg	0.6	0.6	15	28
Benzo(a)pyrene TEQ (upper bound) *	0.5	mg/kg	1.2	1.2	15	28
Acenaphthene	0.5	mg/kg	< 0.5	< 0.5	0.9	8.5
Acenaphthylene	0.5	mg/kg	< 0.5	< 0.5	0.9	1.1
Anthracene	0.5	mg/kg	< 0.5	< 0.5	3.8	14
Benz(a)anthracene	0.5	mg/kg	< 0.5	< 0.5	8.2	18
Benzo(a)pyrene	0.5	mg/kg	< 0.5	< 0.5	9.9	18
Benzo(b&j)fluoranthene[N07]	0.5	mg/kg	< 0.5	< 0.5	5.1	11
Benzo(g.h.i)perylene	0.5	mg/kg	< 0.5	< 0.5	5.5	9.5
Benzo(k)fluoranthene	0.5	mg/kg	< 0.5	< 0.5	9.8	17
Chrysene	0.5	mg/kg	< 0.5	< 0.5	12	19
Dibenz(a.h)anthracene	0.5	mg/kg	< 0.5	< 0.5	2.1	4.3
Fluoranthene	0.5	mg/kg	< 0.5	< 0.5	19	47
Fluorene	0.5	mg/kg	< 0.5	< 0.5	0.9	13
Indeno(1.2.3-cd)pyrene	0.5	mg/kg	< 0.5	< 0.5	4.8	10
Naphthalene	0.5	mg/kg	< 0.5	< 0.5	< 0.5	14
Phenanthrene	0.5	mg/kg	< 0.5	< 0.5	9.4	63
Pyrene	0.5	mg/kg	0.6	< 0.5	21	50
Total PAH*	0.5	mg/kg	0.6	< 0.5	110	320
2-Fluorobiphenyl (surr.)	1	%	81	97	111	115
p-Terphenyl-d14 (surr.)	1	%	53	81	79	90

Client Sample ID			[G01]BH11-1	BH11-2	BH12-1	BH12-2
Sample Matrix			Soil	Soil	Soil	Soil
Eurofins Sample No.			S23-Ap0048442	S23-Ap0048443	S23-Ap0048444	S23-Ap0048445
Date Sampled			Apr 21, 2023	Apr 21, 2023	Apr 21, 2023	Apr 21, 2023
Test/Reference	LOR	Unit				
Heavy Metals						
Arsenic	2	mg/kg	4.2	5.6	3.9	12
Cadmium	0.4	mg/kg	< 0.4	< 0.4	< 0.4	< 0.4
Chromium	5	mg/kg	13	23	15	17
Copper	5	mg/kg	10	18	27	15
Lead	5	mg/kg	25	20	22	42
Mercury	0.1	mg/kg	< 0.1	< 0.1	< 0.1	< 0.1
Nickel	5	mg/kg	7.1	23	11	15
Zinc	5	mg/kg	53	40	36	54
Sample Properties						
% Moisture	1	%	12	17	11	12
Organochlorine Pesticides						
Chlordanes - Total	0.1	mg/kg	< 1	-	-	-
4.4'-DDD	0.05	mg/kg	< 0.5	-	-	-
4.4'-DDE	0.05	mg/kg	< 0.5	-	-	-
4.4'-DDT	0.05	mg/kg	< 0.5	-	-	-
a-HCH	0.05	mg/kg	< 0.5	-	-	-
Aldrin	0.05	mg/kg	< 0.5	-	-	-
b-HCH	0.05	mg/kg	< 0.5	-	-	-
d-HCH	0.05	mg/kg	< 0.5	-	-	-
Dieldrin	0.05	mg/kg	< 0.5	-	-	-
Endosulfan I	0.05	mg/kg	< 0.5	-	-	-
Endosulfan II	0.05	mg/kg	< 0.5	-	-	-
Endosulfan sulphate	0.05	mg/kg	< 0.5	-	-	-
Endrin	0.05	mg/kg	< 0.5	-	-	-
Endrin aldehyde	0.05	mg/kg	< 0.5	-	-	-
Endrin ketone	0.05	mg/kg	< 0.5	-	-	-
g-HCH (Lindane)	0.05	mg/kg	< 0.5	-	-	-
Heptachlor	0.05	mg/kg	< 0.5	-	-	-
Heptachlor epoxide	0.05	mg/kg	< 0.5	-	-	-
Hexachlorobenzene	0.05	mg/kg	< 0.5	-	-	-
Methoxychlor	0.05	mg/kg	< 0.5	-	-	-
Toxaphene	0.5	mg/kg	< 10	-	-	-
Aldrin and Dieldrin (Total)*	0.05	mg/kg	< 0.5	-	-	-
DDT + DDE + DDD (Total)*	0.05	mg/kg	< 0.5	-	-	-
Vic EPA IWRG 621 OCP (Total)*	0.1	mg/kg	< 1	-	-	-
Vic EPA IWRG 621 Other OCP (Total)*	0.1	mg/kg	< 1	-	-	-
Dibutylchlorendate (surr.)	1	%	57	-	-	-
Tetrachloro-m-xylene (surr.)	1	%	64	-	-	-
Organophosphorus Pesticides						
Azinphos-methyl	0.2	mg/kg	< 0.5	-	-	-
Bolstar	0.2	mg/kg	< 0.5	-	-	-
Chlorfenvinphos	0.2	mg/kg	< 0.5	-	-	-
Chlorpyrifos	0.2	mg/kg	< 0.5	-	-	-
Chlorpyrifos-methyl	0.2	mg/kg	< 0.5	-	-	-
Coumaphos	2	mg/kg	< 5	-	-	-
Demeton-S	0.2	mg/kg	< 0.5	-	-	-
Demeton-O	0.2	mg/kg	< 0.5	-	-	-
Diazinon	0.2	mg/kg	< 0.5	-	-	-
Dichlorvos	0.2	mg/kg	< 0.5	-	-	-

Client Sample ID			[G01]BH11-1	BH11-2	BH12-1	BH12-2
Sample Matrix			Soil	Soil	Soil	Soil
Eurofins Sample No.			S23-Ap0048442	S23-Ap0048443	S23-Ap0048444	S23-Ap0048445
Date Sampled			Apr 21, 2023	Apr 21, 2023	Apr 21, 2023	Apr 21, 2023
Test/Reference	LOR	Unit				
Organophosphorus Pesticides						
Dimethoate	0.2	mg/kg	< 0.5	-	-	-
Disulfoton	0.2	mg/kg	< 0.5	-	-	-
EPN	0.2	mg/kg	< 0.5	-	-	-
Ethion	0.2	mg/kg	< 0.5	-	-	-
Ethoprop	0.2	mg/kg	< 0.5	-	-	-
Ethyl parathion	0.2	mg/kg	< 0.5	-	-	-
Fenitrothion	0.2	mg/kg	< 0.5	-	-	-
Fensulfothion	0.2	mg/kg	< 0.5	-	-	-
Fenthion	0.2	mg/kg	< 0.5	-	-	-
Malathion	0.2	mg/kg	< 0.5	-	-	-
Merphos	0.2	mg/kg	< 0.5	-	-	-
Methyl parathion	0.2	mg/kg	< 0.5	-	-	-
Mevinphos	0.2	mg/kg	< 0.5	-	-	-
Monocrotophos	2	mg/kg	< 5	-	-	-
Naled	0.2	mg/kg	< 0.5	-	-	-
Omethoate	2	mg/kg	< 5	-	-	-
Phorate	0.2	mg/kg	< 0.5	-	-	-
Pirimiphos-methyl	0.2	mg/kg	< 0.5	-	-	-
Pyrazophos	0.2	mg/kg	< 0.5	-	-	-
Ronnel	0.2	mg/kg	< 0.5	-	-	-
Terbufos	0.2	mg/kg	< 0.5	-	-	-
Tetrachlorvinphos	0.2	mg/kg	< 0.5	-	-	-
Tokuthion	0.2	mg/kg	< 0.5	-	-	-
Trichloronate	0.2	mg/kg	< 0.5	-	-	-
Triphenylphosphate (surr.)	1	%	58	-	-	-

Client Sample ID			BH12-3	BH13-1	BH13-2
Sample Matrix			Soil	Soil	Soil
Eurofins Sample No.			S23-Ap0048446	S23-Ap0048447	S23-Ap0048448
Date Sampled			Apr 21, 2023	Apr 21, 2023	Apr 21, 2023
Test/Reference	LOR	Unit			
Total Recoverable Hydrocarbons					
TRH C6-C9	20	mg/kg	< 20	< 20	< 20
TRH C10-C14	20	mg/kg	700	< 20	< 20
TRH C15-C28	50	mg/kg	4500	660	< 50
TRH C29-C36	50	mg/kg	1500	330	< 50
TRH C10-C36 (Total)	50	mg/kg	6700	990	< 50
TRH C6-C10	20	mg/kg	< 20	< 20	< 20
TRH C6-C10 less BTEX (F1)[N04]	20	mg/kg	< 20	< 20	< 20
TRH >C10-C16	50	mg/kg	1200	< 50	< 50
TRH >C10-C16 less Naphthalene (F2)[N01]	50	mg/kg	1181	< 50	< 50
TRH >C16-C34	100	mg/kg	5100	880	< 100
TRH >C34-C40	100	mg/kg	1100	210	< 100
TRH >C10-C40 (total)*	100	mg/kg	7400	1090	< 100

Client Sample ID			BH12-3	BH13-1	BH13-2
Sample Matrix			Soil	Soil	Soil
Eurofins Sample No.			S23-Ap0048446	S23-Ap0048447	S23-Ap0048448
Date Sampled			Apr 21, 2023	Apr 21, 2023	Apr 21, 2023
Test/Reference	LOR	Unit			
BTEX					
Benzene	0.1	mg/kg	0.3	< 0.1	< 0.1
Toluene	0.1	mg/kg	0.3	< 0.1	< 0.1
Ethylbenzene	0.1	mg/kg	< 0.1	< 0.1	< 0.1
m&p-Xylenes	0.2	mg/kg	0.3	< 0.2	< 0.2
o-Xylene	0.1	mg/kg	0.1	< 0.1	< 0.1
Xylenes - Total*	0.3	mg/kg	0.4	< 0.3	< 0.3
4-Bromofluorobenzene (surr.)	1	%	89	94	87
Total Recoverable Hydrocarbons - 2013 NEPM Fractions					
Naphthalene[N02]	0.5	mg/kg	19	1.0	< 0.5
Polycyclic Aromatic Hydrocarbons					
Benzo(a)pyrene TEQ (lower bound) *	0.5	mg/kg	220	15	< 0.5
Benzo(a)pyrene TEQ (medium bound) *	0.5	mg/kg	220	15	0.6
Benzo(a)pyrene TEQ (upper bound) *	0.5	mg/kg	220	15	1.2
Acenaphthene	0.5	mg/kg	84	1.0	< 0.5
Acenaphthylene	0.5	mg/kg	6.9	1.1	< 0.5
Anthracene	0.5	mg/kg	130	3.8	< 0.5
Benz(a)anthracene	0.5	mg/kg	140	8.9	< 0.5
Benzo(a)pyrene	0.5	mg/kg	140	10	< 0.5
Benzo(b&j)fluoranthene[N07]	0.5	mg/kg	82	5.3	< 0.5
Benzo(g.h.i)perylene	0.5	mg/kg	83	4.7	< 0.5
Benzo(k)fluoranthene	0.5	mg/kg	120	10	< 0.5
Chrysene	0.5	mg/kg	150	13	< 0.5
Dibenz(a.h)anthracene	0.5	mg/kg	32	2.1	< 0.5
Fluoranthene	0.5	mg/kg	260	20	< 0.5
Fluorene	0.5	mg/kg	140	2.1	< 0.5
Indeno(1.2.3-cd)pyrene	0.5	mg/kg	83	4.7	< 0.5
Naphthalene	0.5	mg/kg	290	< 0.5	< 0.5
Phenanthrene	0.5	mg/kg	350	8.3	< 0.5
Pyrene	0.5	mg/kg	270	23	< 0.5
Total PAH*	0.5	mg/kg	2400	120	< 0.5
2-Fluorobiphenyl (surr.)	1	%	105	104	72
p-Terphenyl-d14 (surr.)	1	%	88	85	65
Conductivity (1:5 aqueous extract at 25 °C as rec.)	10	uS/cm	-	13	-
pH (1:5 Aqueous extract at 25 °C as rec.)	0.1	pH Units	-	7.2	-
Heavy Metals					
Arsenic	2	mg/kg	14	5.6	6.1
Cadmium	0.4	mg/kg	0.9	< 0.4	< 0.4
Chromium	5	mg/kg	24	20	34
Copper	5	mg/kg	26	14	26
Lead	5	mg/kg	85	25	29
Mercury	0.1	mg/kg	< 0.1	< 0.1	< 0.1
Nickel	5	mg/kg	15	11	28
Zinc	5	mg/kg	330	73	77
Cation Exchange Capacity					
Cation Exchange Capacity	0.05	meq/100g	-	4.7	-
Sample Properties					
% Moisture	1	%	17	13	20

Client Sample ID			BH12-3	BH13-1	BH13-2
Sample Matrix			Soil	Soil	Soil
Eurofins Sample No.			S23-Ap0048446	S23-Ap0048447	S23-Ap0048448
Date Sampled			Apr 21, 2023	Apr 21, 2023	Apr 21, 2023
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-HCH	0.05	mg/kg	-	-	< 0.05
Aldrin	0.05	mg/kg	-	-	< 0.05
b-HCH	0.05	mg/kg	-	-	< 0.05
d-HCH	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-HCH (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	0.5	mg/kg	-	-	< 0.5
Aldrin and Dieldrin (Total)*	0.05	mg/kg	-	-	< 0.05
DDT + DDE + DDD (Total)*	0.05	mg/kg	-	-	< 0.05
Vic EPA IWRG 621 OCP (Total)*	0.1	mg/kg	-	-	< 0.1
Vic EPA IWRG 621 Other OCP (Total)*	0.1	mg/kg	-	-	< 0.1
Dibutylchlorendate (surr.)	1	%	-	-	57
Tetrachloro-m-xylene (surr.)	1	%	-	-	67
Organophosphorus Pesticides					
Azinphos-methyl	0.2	mg/kg	-	-	< 0.2
Bolstar	0.2	mg/kg	-	-	< 0.2
Chlorfenvinphos	0.2	mg/kg	-	-	< 0.2
Chlorpyrifos	0.2	mg/kg	-	-	< 0.2
Chlorpyrifos-methyl	0.2	mg/kg	-	-	< 0.2
Coumaphos	2	mg/kg	-	-	< 2
Demeton-S	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
Dimethoate	0.2	mg/kg	-	-	< 0.2
Disulfoton	0.2	mg/kg	-	-	< 0.2
EPN	0.2	mg/kg	-	-	< 0.2
Ethion	0.2	mg/kg	-	-	< 0.2
Ethoprop	0.2	mg/kg	-	-	< 0.2
Ethyl parathion	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
Malathion	0.2	mg/kg	-	-	< 0.2
Merphos	0.2	mg/kg	-	-	< 0.2

Client Sample ID			BH12-3	BH13-1	BH13-2
Sample Matrix			Soil	Soil	Soil
Eurofins Sample No.			S23-Ap0048446	S23-Ap0048447	S23-Ap0048448
Date Sampled			Apr 21, 2023	Apr 21, 2023	Apr 21, 2023
Test/Reference	LOR	Unit			
Organophosphorus Pesticides					
Methyl parathion	0.2	mg/kg	-	-	< 0.2
Mevinphos	0.2	mg/kg	-	-	< 0.2
Monocrotophos	2	mg/kg	-	-	< 2
Naled	0.2	mg/kg	-	-	< 0.2
Omethoate	2	mg/kg	-	-	< 2
Phorate	0.2	mg/kg	-	-	< 0.2
Pirimiphos-methyl	0.2	mg/kg	-	-	< 0.2
Pyrazophos	0.2	mg/kg	-	-	< 0.2
Ronnel	0.2	mg/kg	-	-	< 0.2
Terbufos	0.2	mg/kg	-	-	< 0.2
Tetrachlorvinphos	0.2	mg/kg	-	-	< 0.2
Tokuthion	0.2	mg/kg	-	-	< 0.2
Trichloronate	0.2	mg/kg	-	-	< 0.2
Triphenylphosphate (surr.)	1	%	-	-	63

Sample History

Where samples are submitted/analysed over several days, the last date of extraction is reported.

If the date and time of sampling are not provided, the Laboratory will not be responsible for compromised results should testing be performed outside the recommended holding time.

Description	Testing Site	Extracted	Holding Time
Total Recoverable Hydrocarbons - 1999 NEPM Fractions	Sydney	Apr 26, 2023	14 Days
- Method: LTM-ORG-2010 TRH C6-C40			
Total Recoverable Hydrocarbons - 2013 NEPM Fractions	Sydney	Apr 26, 2023	14 Days
- Method: LTM-ORG-2010 TRH C6-C40			
BTEX	Sydney	Apr 26, 2023	14 Days
- Method: LTM-ORG-2010 BTEX and Volatile TRH			
Total Recoverable Hydrocarbons - 2013 NEPM Fractions	Sydney	Apr 26, 2023	14 Days
- Method: LTM-ORG-2010 TRH C6-C40			
Polycyclic Aromatic Hydrocarbons	Sydney	Apr 26, 2023	14 Days
- Method: LTM-ORG-2130 PAH and Phenols in Soil and Water			
Metals M8	Sydney	Apr 26, 2023	28 Days
- Method: LTM-MET-3040 Metals in Waters, Soils & Sediments by ICP-MS			
Conductivity (1:5 aqueous extract at 25 °C as rec.)	Sydney	May 02, 2023	7 Days
- Method: LTM-INO-4030 Conductivity			
Cation Exchange Capacity	Melbourne	May 02, 2023	28 Days
- Method: LTM-MET-3060 Cation Exchange Capacity by bases & Exchangeable Sodium Percentage			
pH (1:5 Aqueous extract at 25 °C as rec.)	Sydney	Apr 27, 2023	7 Days
- Method: LTM-GEN-7090 pH by ISE			
% Moisture	Sydney	Apr 21, 2023	14 Days
- Method: LTM-GEN-7080 Moisture			
Organochlorine Pesticides	Sydney	Apr 26, 2023	14 Days
- Method: LTM-ORG-2220 OCP & PCB in Soil and Water			
Organophosphorus Pesticides	Sydney	Apr 26, 2023	14 Days
- Method: LTM-ORG-2200 Organophosphorus Pesticides by GC-MS			

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Project Name: WAGGA
Project ID: 1440

Order No.:
Report #: 983256
Phone: 02 4304 0091
Fax:

Received: Apr 21, 2023 4:05 PM
Due: Apr 28, 2023
Priority: 5 Day
Contact Name: RESULTS - ALL SRAS HERE

Eurofins Analytical Services Manager : Bonnie Pu

Sample Detail						Asbestos - AS4964	Suite B14: OCP/OPP	Moisture Set	Eurofins Suite B7	BTEXN and Volatile TRH	BTEXN and Volatile TRH
Sydney Laboratory - NATA # 1261 Site # 18217						X	X	X	X	X	X
External Laboratory											
No	**Sample ID**	**Sample Date**	**Sampling Time**	**Matrix**	**LAB ID**						
1	BH1-1	Apr 21, 2023		Soil	S23-Ap0048426	X		X	X		
2	BH2-1	Apr 21, 2023		Soil	S23-Ap0048427	X	X	X	X		
3	BH3-1	Apr 21, 2023		Soil	S23-Ap0048428	X		X	X		
4	BH4-1	Apr 21, 2023		Soil	S23-Ap0048429	X		X	X		
5	BH4-2	Apr 21, 2023		Soil	S23-Ap0048430		X	X	X		
6	BH4-3	Apr 21, 2023		Soil	S23-Ap0048431			X	X		
7	BH5-1	Apr 21, 2023		Soil	S23-Ap0048432	X		X	X		
8	BH6-1	Apr 21, 2023		Soil	S23-Ap0048433		X	X	X		
9	BH7-1	Apr 21, 2023		Soil	S23-Ap0048434			X	X		
10	BH7-1A	Apr 21, 2023		Soil	S23-Ap0048435			X	X		
11	BH7-2	Apr 21, 2023		Soil	S23-Ap0048436			X	X		
12	BH8-1	Apr 21, 2023		Soil	S23-Ap0048437		X	X	X		
13	BH8-2	Apr 21, 2023		Soil	S23-Ap0048438			X	X		

eurofins

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Company Name: Compliance Health & Environmental Consulting P/L
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Project Name: WAGGA
Project ID: 1440

Order No.:
Report #: 983256
Phone: 02 4304 0091
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Received: Apr 21, 2023 4:05 PM
Due: Apr 28, 2023
Priority: 5 Day
Contact Name: RESULTS - ALL SRAS HERE

Eurofins Analytical Services Manager : Bonnie Pu

Sample Detail						Asbestos - AS4964	Suite B14: OCP/OPP	Moisture Set	Eurofins Suite B7	BTEXN and Volatile TRH	BTEXN and Volatile TRH
Sydney Laboratory - NATA # 1261 Site # 18217						X	X	X	X	X	X
14	BH9-1	Apr 21, 2023		Soil	S23-Ap0048439		X	X	X		
15	BH9-2	Apr 21, 2023		Soil	S23-Ap0048440			X	X		
16	BH10-1	Apr 21, 2023		Soil	S23-Ap0048441			X	X		
17	BH11-1	Apr 21, 2023		Soil	S23-Ap0048442		X	X	X		
18	BH11-2	Apr 21, 2023		Soil	S23-Ap0048443			X	X		
19	BH12-1	Apr 21, 2023		Soil	S23-Ap0048444	X		X	X		
20	BH12-2	Apr 21, 2023		Soil	S23-Ap0048445	X		X	X		
21	BH12-3	Apr 21, 2023		Soil	S23-Ap0048446			X	X		
22	BH13-1	Apr 21, 2023		Soil	S23-Ap0048447	X		X	X		
23	BH13-2	Apr 21, 2023		Soil	S23-Ap0048448		X	X	X		
24	TS	Apr 21, 2023		Water	S23-Ap0048449						X
25	TB	Apr 21, 2023		Water	S23-Ap0048450					X	
Test Counts						8	7	23	23	1	1

Internal Quality Control Review and Glossary

General

1. Laboratory QC results for Method Blanks, Duplicates, Matrix Spikes, and Laboratory Control Samples follows guidelines delineated in the National Environment Protection (Assessment of Site Contamination) Measure 1999, as amended May 2013 and are included in this QC report where applicable. Additional QC data may be available on request.
2. All soil/sediment/solid results are reported on a dry basis, unless otherwise stated.
3. All biota/food results are reported on a wet weight basis on the edible portion, unless otherwise stated.
4. Actual LORs are matrix dependant. Quoted LORs may be raised where sample extracts are diluted due to interferences.
5. Results are uncorrected for matrix spikes or surrogate recoveries except for PFAS compounds.
6. SVOC analysis on waters are performed on homogenised, unfiltered samples, unless noted otherwise.
7. Samples were analysed on an 'as received' basis.
8. Information identified on this report with blue colour, indicates data provided by customer that may have an impact on the results.
9. This report replaces any interim results previously issued.

Holding Times

Please refer to 'Sample Preservation and Container Guide' for holding times (QS3001).

For samples received on the last day of holding time, notification of testing requirements should have been received at least 6 hours prior to sample receipt deadlines as stated on the SRA.

If the Laboratory did not receive the information in the required timeframe, and regardless of any other integrity issues, suitably qualified results may still be reported.

Holding times apply from the date of sampling, therefore compliance to these may be outside the laboratory's control.

For VOCs containing vinyl chloride, styrene and 2-chloroethyl vinyl ether the holding time is 7 days however for all other VOCs such as BTEX or C6-10 TRH then the holding time is 14 days.

Units

mg/kg: milligrams per kilogram
mg/L: milligrams per litre
µg/L: micrograms per litre
ppm: parts per million
ppb: parts per billion
%: Percentage
org/100 mL: Organisms per 100 millilitres
NTU: Nephelometric Turbidity Units
MPN/100 mL: Most Probable Number of organisms per 100 millilitres
CFU: Colony forming unit

Terms

APHA	American Public Health Association
COC	Chain of Custody
CP	Client Parent - QC was performed on samples pertaining to this report
CRM	Certified Reference Material (ISO17034) - reported as percent recovery.
Dry	Where a moisture has been determined on a solid sample the result is expressed on a dry basis.
Duplicate	A second piece of analysis from the same sample and reported in the same units as the result to show comparison.
LOR	Limit of Reporting.
LCS	Laboratory Control Sample - reported as percent recovery.
Method Blank	In the case of solid samples these are performed on laboratory certified clean sands and in the case of water samples these are performed on de-ionised water.
NCP	Non-Client Parent - QC performed on samples not pertaining to this report, QC is representative of the sequence or batch that client samples were analysed within.
RPD	Relative Percent Difference between two Duplicate pieces of analysis.
SPIKE	Addition of the analyte to the sample and reported as percentage recovery.
SRA	Sample Receipt Advice
Surr - Surrogate	The addition of a like compound to the analyte target and reported as percentage recovery.
TBTO	Tributyltin oxide (*bis*-tributyltin oxide) - individual tributyltin compounds cannot be identified separately in the environment however free tributyltin was measured and its values were converted stoichiometrically into tributyltin oxide for comparison with regulatory limits.
TCLP	Toxicity Characteristic Leaching Procedure
TEQ	Toxic Equivalency Quotient or Total Equivalence
QSM	US Department of Defense Quality Systems Manual Version 5.4
US EPA	United States Environmental Protection Agency
WA DWER	Sum of PFBA, PFPeA, PFHxA, PFHpA, PFOA, PFBS, PFHxS, PFOS, 6:2 FTSA, 8:2 FTSA

QC - Acceptance Criteria

The acceptance criteria should be used as a guide only and may be different when site specific Sampling Analysis and Quality Plan (SAQP) have been implemented

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

Results <10 times the LOR: No Limit

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

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

NOTE: pH duplicates are reported as a range not as RPD

Surrogate Recoveries: Recoveries must lie between 20-130% for Speciated Phenols & 50-150% for PFAS

PFAS field samples that contain surrogate recoveries in excess of the QC limit designated in QSM 5.4 where no positive PFAS results have been reported have been reviewed and no data was affected.

QC Data General Comments

1. Where a result is reported as a less than (<), higher than the nominated LOR, this is due to either matrix interference, extract dilution required due to interferences or contaminant levels within the sample, high moisture content or insufficient sample provided.
2. Duplicate data shown within this report that states the word "BATCH" is a Batch Duplicate from outside of your sample batch, but within the laboratory sample batch at a 1:10 ratio. The Parent and Duplicate data shown is not data from your samples.
3. pH and Free Chlorine analysed in the laboratory - Analysis on this test must begin within 30 minutes of sampling. Therefore, laboratory analysis is unlikely to be completed within holding time.Analysis will begin as soon as possible after sample receipt.
4. Recovery Data (Spikes & Surrogates) - where chromatographic interference does not allow the determination of recovery the term "INT" appears against that analyte.
5. For Matrix Spikes and LCS results a dash "-" in the report means that the specific analyte was not added to the QC sample.
6. Duplicate RPDs are calculated from raw analytical data thus it is possible to have two sets of data.

Quality Control Results

Test	Units	Result 1			Acceptance Limits	Pass Limits	Qualifying Code
Method Blank							
Total Recoverable Hydrocarbons							
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	
TRH C6-C10	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							
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	
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							
Conductivity (1:5 aqueous extract at 25 °C as rec.)	uS/cm	< 10			10	Pass	
Method Blank							
Heavy Metals							
Arsenic	mg/kg	< 2			2	Pass	
Cadmium	mg/kg	< 0.4			0.4	Pass	
Chromium	mg/kg	< 5			5	Pass	
Copper	mg/kg	< 5			5	Pass	
Lead	mg/kg	< 5			5	Pass	
Mercury	mg/kg	< 0.1			0.1	Pass	
Nickel	mg/kg	< 5			5	Pass	
Zinc	mg/kg	< 5			5	Pass	
Method Blank							

Test	Units	Result 1			Acceptance Limits	Pass Limits	Qualifying Code
Cation Exchange Capacity							
Cation Exchange Capacity	meq/100g	< 0.05			0.05	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-HCH	mg/kg	< 0.05			0.05	Pass	
Aldrin	mg/kg	< 0.05			0.05	Pass	
b-HCH	mg/kg	< 0.05			0.05	Pass	
d-HCH	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-HCH (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	< 0.5			0.5	Pass	
Method Blank							
Organophosphorus Pesticides							
Azinphos-methyl	mg/kg	< 0.2			0.2	Pass	
Bolstar	mg/kg	< 0.2			0.2	Pass	
Chlorfenvinphos	mg/kg	< 0.2			0.2	Pass	
Chlorpyrifos	mg/kg	< 0.2			0.2	Pass	
Chlorpyrifos-methyl	mg/kg	< 0.2			0.2	Pass	
Coumaphos	mg/kg	< 2			2	Pass	
Demeton-S	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	
Dimethoate	mg/kg	< 0.2			0.2	Pass	
Disulfoton	mg/kg	< 0.2			0.2	Pass	
EPN	mg/kg	< 0.2			0.2	Pass	
Ethion	mg/kg	< 0.2			0.2	Pass	
Ethoprop	mg/kg	< 0.2			0.2	Pass	
Ethyl parathion	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	
Malathion	mg/kg	< 0.2			0.2	Pass	
Merphos	mg/kg	< 0.2			0.2	Pass	
Methyl parathion	mg/kg	< 0.2			0.2	Pass	
Mevinphos	mg/kg	< 0.2			0.2	Pass	
Monocrotophos	mg/kg	< 2			2	Pass	
Naled	mg/kg	< 0.2			0.2	Pass	
Omethoate	mg/kg	< 2			2	Pass	
Phorate	mg/kg	< 0.2			0.2	Pass	

Test	Units	Result 1			Acceptance Limits	Pass Limits	Qualifying Code
Pirimiphos-methyl	mg/kg	< 0.2			0.2	Pass	
Pyrazophos	mg/kg	< 0.2			0.2	Pass	
Ronnel	mg/kg	< 0.2			0.2	Pass	
Terbufos	mg/kg	< 0.2			0.2	Pass	
Tetrachlorvinphos	mg/kg	< 0.2			0.2	Pass	
Tokuthion	mg/kg	< 0.2			0.2	Pass	
Trichloronate	mg/kg	< 0.2			0.2	Pass	
LCS - % Recovery							
Total Recoverable Hydrocarbons							
TRH C6-C9	%	102			70-130	Pass	
TRH C10-C14	%	79			70-130	Pass	
TRH C6-C10	%	99			70-130	Pass	
TRH >C10-C16	%	78			70-130	Pass	
LCS - % Recovery							
BTEX							
Benzene	%	108			70-130	Pass	
Toluene	%	101			70-130	Pass	
Ethylbenzene	%	101			70-130	Pass	
m&p-Xylenes	%	101			70-130	Pass	
o-Xylene	%	102			70-130	Pass	
Xylenes - Total*	%	102			70-130	Pass	
LCS - % Recovery							
Total Recoverable Hydrocarbons - 2013 NEPM Fractions							
Naphthalene	%	105			70-130	Pass	
LCS - % Recovery							
Polycyclic Aromatic Hydrocarbons							
Acenaphthene	%	107			70-130	Pass	
Acenaphthylene	%	106			70-130	Pass	
Anthracene	%	102			70-130	Pass	
Benz(a)anthracene	%	107			70-130	Pass	
Benzo(a)pyrene	%	108			70-130	Pass	
Benzo(b&j)fluoranthene	%	99			70-130	Pass	
Benzo(g.h.i)perylene	%	108			70-130	Pass	
Benzo(k)fluoranthene	%	119			70-130	Pass	
Chrysene	%	105			70-130	Pass	
Dibenz(a.h)anthracene	%	115			70-130	Pass	
Fluoranthene	%	103			70-130	Pass	
Fluorene	%	108			70-130	Pass	
Indeno(1.2.3-cd)pyrene	%	115			70-130	Pass	
Naphthalene	%	107			70-130	Pass	
Phenanthrene	%	108			70-130	Pass	
Pyrene	%	105			70-130	Pass	
LCS - % Recovery							
Conductivity (1:5 aqueous extract at 25 °C as rec.)	%	92			70-130	Pass	
LCS - % Recovery							
Heavy Metals							
Arsenic	%	97			80-120	Pass	
Cadmium	%	102			80-120	Pass	
Chromium	%	94			80-120	Pass	
Copper	%	92			80-120	Pass	
Lead	%	116			80-120	Pass	
Mercury	%	106			80-120	Pass	
Nickel	%	106			80-120	Pass	
Zinc	%	106			80-120	Pass	

Test	Units	Result 1			Acceptance Limits	Pass Limits	Qualifying Code
LCS - % Recovery							
Organochlorine Pesticides							
Chlordanes - Total	%	85			70-130	Pass	
4.4'-DDD	%	91			70-130	Pass	
4.4'-DDE	%	88			70-130	Pass	
4.4'-DDT	%	94			70-130	Pass	
a-HCH	%	81			70-130	Pass	
Aldrin	%	86			70-130	Pass	
b-HCH	%	82			70-130	Pass	
d-HCH	%	83			70-130	Pass	
Dieldrin	%	79			70-130	Pass	
Endosulfan I	%	82			70-130	Pass	
Endosulfan II	%	86			70-130	Pass	
Endosulfan sulphate	%	84			70-130	Pass	
Endrin	%	70			70-130	Pass	
Endrin aldehyde	%	78			70-130	Pass	
Endrin ketone	%	84			70-130	Pass	
g-HCH (Lindane)	%	86			70-130	Pass	
Heptachlor	%	87			70-130	Pass	
Heptachlor epoxide	%	81			70-130	Pass	
Hexachlorobenzene	%	85			70-130	Pass	
Methoxychlor	%	87			70-130	Pass	
LCS - % Recovery							
Organophosphorus Pesticides							
Diazinon	%	128			70-130	Pass	
Dimethoate	%	123			70-130	Pass	
Ethion	%	121			70-130	Pass	
Fenitrothion	%	118			70-130	Pass	
Methyl parathion	%	122			70-130	Pass	
Mevinphos	%	117			70-130	Pass	

Test	Lab Sample ID	QA Source	Units	Result 1			Acceptance Limits	Pass Limits	Qualifying Code
Spike - % Recovery									
Total Recoverable Hydrocarbons				Result 1					
TRH C6-C9	N23-Ap0049002	NCP	%	84			70-130	Pass	
TRH C10-C14	S23-Ap0040748	NCP	%	107			70-130	Pass	
TRH C6-C10	N23-Ap0049002	NCP	%	82			70-130	Pass	
TRH >C10-C16	S23-Ap0040748	NCP	%	115			70-130	Pass	
Spike - % Recovery									
BTEX				Result 1					
Benzene	N23-Ap0049002	NCP	%	91			70-130	Pass	
Toluene	N23-Ap0049002	NCP	%	86			70-130	Pass	
Ethylbenzene	N23-Ap0049002	NCP	%	89			70-130	Pass	
m&p-Xylenes	N23-Ap0049002	NCP	%	90			70-130	Pass	
o-Xylene	N23-Ap0049002	NCP	%	88			70-130	Pass	
Xylenes - Total*	N23-Ap0049002	NCP	%	89			70-130	Pass	
Spike - % Recovery									
Total Recoverable Hydrocarbons - 2013 NEPM Fractions				Result 1					
Naphthalene	N23-Ap0049002	NCP	%	82			70-130	Pass	
Spike - % Recovery									
Polycyclic Aromatic Hydrocarbons				Result 1					
Acenaphthene	S23-Ap0050495	NCP	%	89			70-130	Pass	
Acenaphthylene	S23-Ap0050495	NCP	%	85			70-130	Pass	
Anthracene	S23-Ap0050495	NCP	%	87			70-130	Pass	
Benz(a)anthracene	S23-Ap0050495	NCP	%	81			70-130	Pass	

Test	Lab Sample ID	QA Source	Units	Result 1			Acceptance Limits	Pass Limits	Qualifying Code
Benzo(a)pyrene	S23-Ap0050495	NCP	%	76			70-130	Pass	
Benzo(b&j)fluoranthene	S23-Ap0050495	NCP	%	72			70-130	Pass	
Benzo(g.h.i)perylene	S23-Ap0050495	NCP	%	71			70-130	Pass	
Benzo(k)fluoranthene	S23-Ap0050495	NCP	%	94			70-130	Pass	
Chrysene	S23-Ap0050495	NCP	%	89			70-130	Pass	
Dibenz(a.h)anthracene	S23-Ap0050495	NCP	%	72			70-130	Pass	
Fluoranthene	S23-Ap0050495	NCP	%	99			70-130	Pass	
Fluorene	S23-Ap0050495	NCP	%	107			70-130	Pass	
Indeno(1.2.3-cd)pyrene	S23-Ap0050495	NCP	%	73			70-130	Pass	
Naphthalene	S23-Ap0050495	NCP	%	104			70-130	Pass	
Phenanthrene	S23-Ap0050495	NCP	%	88			70-130	Pass	
Pyrene	S23-Ap0050495	NCP	%	100			70-130	Pass	
Spike - % Recovery									
Organochlorine Pesticides				Result 1					
Chlordanes - Total	S23-Ap0050495	NCP	%	76			70-130	Pass	
4.4'-DDD	S23-Ap0050495	NCP	%	79			70-130	Pass	
4.4'-DDE	S23-Ap0050495	NCP	%	87			70-130	Pass	
4.4'-DDT	S23-Ap0050495	NCP	%	70			70-130	Pass	
a-HCH	S23-Ap0050495	NCP	%	76			70-130	Pass	
Aldrin	S23-Ap0053664	NCP	%	76			70-130	Pass	
d-HCH	S23-Ap0053664	NCP	%	73			70-130	Pass	
Dieldrin	S23-Ap0050495	NCP	%	70			70-130	Pass	
Endosulfan I	S23-Ap0050495	NCP	%	70			70-130	Pass	
Endosulfan II	S23-Ap0050495	NCP	%	89			70-130	Pass	
Endosulfan sulphate	S23-Ap0053664	NCP	%	80			70-130	Pass	
Endrin	S23-Ap0050495	NCP	%	81			70-130	Pass	
Endrin aldehyde	S23-Ap0053664	NCP	%	70			70-130	Pass	
Endrin ketone	S23-Ap0050495	NCP	%	86			70-130	Pass	
g-HCH (Lindane)	S23-Ap0050495	NCP	%	79			70-130	Pass	
Heptachlor	S23-Ap0053664	NCP	%	82			70-130	Pass	
Heptachlor epoxide	S23-Ap0053664	NCP	%	72			70-130	Pass	
Hexachlorobenzene	S23-Ap0050495	NCP	%	88			70-130	Pass	
Methoxychlor	S23-Ap0053664	NCP	%	94			70-130	Pass	
Spike - % Recovery									
Organophosphorus Pesticides				Result 1					
Diazinon	S23-Ap0053664	NCP	%	89			70-130	Pass	
Ethion	S23-Ap0053664	NCP	%	102			70-130	Pass	
Fenitrothion	S23-Ap0053664	NCP	%	87			70-130	Pass	
Methyl parathion	S23-Ap0053664	NCP	%	87			70-130	Pass	
Mevinphos	S23-Ap0053664	NCP	%	81			70-130	Pass	
Spike - % Recovery									
Organochlorine Pesticides				Result 1					
b-HCH	S23-Ap0048566	NCP	%	101			70-130	Pass	
Spike - % Recovery									
Organophosphorus Pesticides				Result 1					
Dimethoate	N23-Ap0045384	NCP	%	95			70-130	Pass	
Spike - % Recovery									
Heavy Metals				Result 1					
Arsenic	S23-Ap0048432	CP	%	89			75-125	Pass	
Cadmium	S23-Ap0048432	CP	%	93			75-125	Pass	
Chromium	S23-Ap0048432	CP	%	83			75-125	Pass	
Copper	S23-Ap0048432	CP	%	100			75-125	Pass	
Lead	S23-Ap0048432	CP	%	113			75-125	Pass	
Mercury	S23-Ap0048432	CP	%	97			75-125	Pass	

Test	Lab Sample ID	QA Source	Units	Result 1			Acceptance Limits	Pass Limits	Qualifying Code
Nickel	S23-Ap0048432	CP	%	94			75-125	Pass	
Zinc	S23-Ap0048432	CP	%	109			75-125	Pass	
Test	**Lab Sample ID**	**QA Source**	**Units**	**Result 1**			**Acceptance Limits**	**Pass Limits**	**Qualifying Code**
Duplicate									
Total Recoverable Hydrocarbons				Result 1	Result 2	RPD			
TRH C10-C14	S23-Ap0040747	NCP	mg/kg	< 20	< 20	<1	30%	Pass	
TRH C15-C28	S23-Ap0040747	NCP	mg/kg	< 50	< 50	<1	30%	Pass	
TRH C29-C36	S23-Ap0040747	NCP	mg/kg	< 50	< 50	<1	30%	Pass	
TRH >C10-C16	S23-Ap0040747	NCP	mg/kg	< 50	< 50	<1	30%	Pass	
TRH >C16-C34	S23-Ap0040747	NCP	mg/kg	< 100	< 100	<1	30%	Pass	
TRH >C34-C40	S23-Ap0040747	NCP	mg/kg	< 100	< 100	<1	30%	Pass	
Duplicate									
				Result 1	Result 2	RPD			
Conductivity (1:5 aqueous extract at 25 °C as rec.)	N23-Fe0036211	NCP	uS/cm	23	24	3.4	30%	Pass	
pH (1:5 Aqueous extract at 25 °C as rec.)	N23-Ap0042263	NCP	pH Units	6.2	6.2	<1	30%	Pass	
Duplicate									
Cation Exchange Capacity				Result 1	Result 2	RPD			
Cation Exchange Capacity	S23-Ap0048426	CP	meq/100g	11	11	<1	30%	Pass	
Duplicate									
Heavy Metals				Result 1	Result 2	RPD			
Arsenic	S23-Ap0048430	CP	mg/kg	11	11	3.8	30%	Pass	
Cadmium	S23-Ap0048430	CP	mg/kg	0.7	0.7	5.1	30%	Pass	
Chromium	S23-Ap0048430	CP	mg/kg	35	33	6.7	30%	Pass	
Copper	S23-Ap0048430	CP	mg/kg	30	28	5.9	30%	Pass	
Lead	S23-Ap0048430	CP	mg/kg	350	360	2.5	30%	Pass	
Mercury	S23-Ap0048430	CP	mg/kg	0.1	0.1	6.8	30%	Pass	
Nickel	S23-Ap0048430	CP	mg/kg	22	20	6.4	30%	Pass	
Zinc	S23-Ap0048430	CP	mg/kg	440	420	4.2	30%	Pass	
Duplicate									
Sample Properties				Result 1	Result 2	RPD			
% Moisture	S23-Ap0048431	CP	%	19	18	6.5	30%	Pass	
Duplicate									
Polycyclic Aromatic Hydrocarbons				Result 1	Result 2	RPD			
Acenaphthene	S23-Ap0048440	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
Acenaphthylene	S23-Ap0048440	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
Anthracene	S23-Ap0048440	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
Benz(a)anthracene	S23-Ap0048440	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
Benzo(a)pyrene	S23-Ap0048440	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
Benzo(b&j)fluoranthene	S23-Ap0048440	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
Benzo(g.h.i)perylene	S23-Ap0048440	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
Benzo(k)fluoranthene	S23-Ap0048440	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
Chrysene	S23-Ap0048440	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
Dibenz(a.h)anthracene	S23-Ap0048440	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
Fluoranthene	S23-Ap0048440	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
Fluorene	S23-Ap0048440	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
Indeno(1.2.3-cd)pyrene	S23-Ap0048440	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
Naphthalene	S23-Ap0048440	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
Phenanthrene	S23-Ap0048440	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
Pyrene	S23-Ap0048440	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	

Duplicate									
Heavy Metals				Result 1	Result 2	RPD			
Arsenic	S23-Ap0048440	CP	mg/kg	4.7	3.9	20	30%	Pass	
Cadmium	S23-Ap0048440	CP	mg/kg	< 0.4	< 0.4	<1	30%	Pass	
Chromium	S23-Ap0048440	CP	mg/kg	28	26	8.8	30%	Pass	
Copper	S23-Ap0048440	CP	mg/kg	17	17	<1	30%	Pass	
Lead	S23-Ap0048440	CP	mg/kg	21	20	4.2	30%	Pass	
Mercury	S23-Ap0048440	CP	mg/kg	< 0.1	< 0.1	<1	30%	Pass	
Nickel	S23-Ap0048440	CP	mg/kg	20	20	4.0	30%	Pass	
Zinc	S23-Ap0048440	CP	mg/kg	61	58	4.4	30%	Pass	
Duplicate									
Organochlorine Pesticides				Result 1	Result 2	RPD			
Chlordanes - Total	S23-Ap0048440	CP	mg/kg	< 0.1	< 0.1	<1	30%	Pass	
4.4'-DDD	S23-Ap0048440	CP	mg/kg	< 0.05	< 0.05	<1	30%	Pass	
4.4'-DDE	S23-Ap0048440	CP	mg/kg	< 0.05	< 0.05	<1	30%	Pass	
4.4'-DDT	S23-Ap0048440	CP	mg/kg	< 0.05	< 0.05	<1	30%	Pass	
a-HCH	S23-Ap0048440	CP	mg/kg	< 0.05	< 0.05	<1	30%	Pass	
Aldrin	S23-Ap0048440	CP	mg/kg	< 0.05	< 0.05	<1	30%	Pass	
b-HCH	S23-Ap0048440	CP	mg/kg	< 0.05	< 0.05	<1	30%	Pass	
d-HCH	S23-Ap0048440	CP	mg/kg	< 0.05	< 0.05	<1	30%	Pass	
Dieldrin	S23-Ap0048440	CP	mg/kg	< 0.05	< 0.05	<1	30%	Pass	
Endosulfan I	S23-Ap0048440	CP	mg/kg	< 0.05	< 0.05	<1	30%	Pass	
Endosulfan II	S23-Ap0048440	CP	mg/kg	< 0.05	< 0.05	<1	30%	Pass	
Endosulfan sulphate	S23-Ap0048440	CP	mg/kg	< 0.05	< 0.05	<1	30%	Pass	
Endrin	S23-Ap0048440	CP	mg/kg	< 0.05	< 0.05	<1	30%	Pass	
Endrin aldehyde	S23-Ap0048440	CP	mg/kg	< 0.05	< 0.05	<1	30%	Pass	
Endrin ketone	S23-Ap0048440	CP	mg/kg	< 0.05	< 0.05	<1	30%	Pass	
g-HCH (Lindane)	S23-Ap0048440	CP	mg/kg	< 0.05	< 0.05	<1	30%	Pass	
Heptachlor	S23-Ap0048440	CP	mg/kg	< 0.05	< 0.05	<1	30%	Pass	
Heptachlor epoxide	S23-Ap0048440	CP	mg/kg	< 0.05	< 0.05	<1	30%	Pass	
Hexachlorobenzene	S23-Ap0048440	CP	mg/kg	< 0.05	< 0.05	<1	30%	Pass	
Methoxychlor	S23-Ap0048440	CP	mg/kg	< 0.05	< 0.05	<1	30%	Pass	
Toxaphene	S23-Ap0048440	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
Duplicate									
Organophosphorus Pesticides				Result 1	Result 2	RPD			
Azinphos-methyl	S23-Ap0048440	CP	mg/kg	< 0.2	< 0.2	<1	30%	Pass	
Bolstar	S23-Ap0048440	CP	mg/kg	< 0.2	< 0.2	<1	30%	Pass	
Chlorfenvinphos	S23-Ap0048440	CP	mg/kg	< 0.2	< 0.2	<1	30%	Pass	
Chlorpyrifos	S23-Ap0048440	CP	mg/kg	< 0.2	< 0.2	<1	30%	Pass	
Chlorpyrifos-methyl	S23-Ap0048440	CP	mg/kg	< 0.2	< 0.2	<1	30%	Pass	
Coumaphos	S23-Ap0048440	CP	mg/kg	< 2	< 2	<1	30%	Pass	
Demeton-S	S23-Ap0048440	CP	mg/kg	< 0.2	< 0.2	<1	30%	Pass	
Demeton-O	S23-Ap0048440	CP	mg/kg	< 0.2	< 0.2	<1	30%	Pass	
Diazinon	S23-Ap0048440	CP	mg/kg	< 0.2	< 0.2	<1	30%	Pass	
Dichlorvos	S23-Ap0048440	CP	mg/kg	< 0.2	< 0.2	<1	30%	Pass	
Dimethoate	S23-Ap0048440	CP	mg/kg	< 0.2	< 0.2	<1	30%	Pass	
Disulfoton	S23-Ap0048440	CP	mg/kg	< 0.2	< 0.2	<1	30%	Pass	
EPN	S23-Ap0048440	CP	mg/kg	< 0.2	< 0.2	<1	30%	Pass	
Ethion	S23-Ap0048440	CP	mg/kg	< 0.2	< 0.2	<1	30%	Pass	
Ethoprop	S23-Ap0048440	CP	mg/kg	< 0.2	< 0.2	<1	30%	Pass	
Ethyl parathion	S23-Ap0048440	CP	mg/kg	< 0.2	< 0.2	<1	30%	Pass	
Fenitrothion	S23-Ap0048440	CP	mg/kg	< 0.2	< 0.2	<1	30%	Pass	
Fensulfothion	S23-Ap0048440	CP	mg/kg	< 0.2	< 0.2	<1	30%	Pass	
Fenthion	S23-Ap0048440	CP	mg/kg	< 0.2	< 0.2	<1	30%	Pass	
Malathion	S23-Ap0048440	CP	mg/kg	< 0.2	< 0.2	<1	30%	Pass	
Merphos	S23-Ap0048440	CP	mg/kg	< 0.2	< 0.2	<1	30%	Pass	

Duplicate									
Organophosphorus Pesticides				Result 1	Result 2	RPD			
Methyl parathion	S23-Ap0048440	CP	mg/kg	< 0.2	< 0.2	<1	30%	Pass	
Mevinphos	S23-Ap0048440	CP	mg/kg	< 0.2	< 0.2	<1	30%	Pass	
Monocrotophos	S23-Ap0048440	CP	mg/kg	< 2	< 2	<1	30%	Pass	
Naled	S23-Ap0048440	CP	mg/kg	< 0.2	< 0.2	<1	30%	Pass	
Omethoate	S23-Ap0048440	CP	mg/kg	< 2	< 2	<1	30%	Pass	
Phorate	S23-Ap0048440	CP	mg/kg	< 0.2	< 0.2	<1	30%	Pass	
Pirimiphos-methyl	S23-Ap0048440	CP	mg/kg	< 0.2	< 0.2	<1	30%	Pass	
Pyrazophos	S23-Ap0048440	CP	mg/kg	< 0.2	< 0.2	<1	30%	Pass	
Ronnel	S23-Ap0048440	CP	mg/kg	< 0.2	< 0.2	<1	30%	Pass	
Terbufos	S23-Ap0048440	CP	mg/kg	< 0.2	< 0.2	<1	30%	Pass	
Tetrachlorvinphos	S23-Ap0048440	CP	mg/kg	< 0.2	< 0.2	<1	30%	Pass	
Tokuthion	S23-Ap0048440	CP	mg/kg	< 0.2	< 0.2	<1	30%	Pass	
Trichloronate	S23-Ap0048440	CP	mg/kg	< 0.2	< 0.2	<1	30%	Pass	
Duplicate									
Total Recoverable Hydrocarbons				Result 1	Result 2	RPD			
TRH C6-C9	S23-Ap0048441	CP	mg/kg	< 20	< 20	<1	30%	Pass	
TRH C6-C10	S23-Ap0048441	CP	mg/kg	< 20	< 20	<1	30%	Pass	
Duplicate									
BTEX				Result 1	Result 2	RPD			
Benzene	S23-Ap0048441	CP	mg/kg	< 0.1	< 0.1	<1	30%	Pass	
Toluene	S23-Ap0048441	CP	mg/kg	< 0.1	< 0.1	<1	30%	Pass	
Ethylbenzene	S23-Ap0048441	CP	mg/kg	< 0.1	< 0.1	<1	30%	Pass	
m&p-Xylenes	S23-Ap0048441	CP	mg/kg	< 0.2	< 0.2	<1	30%	Pass	
o-Xylene	S23-Ap0048441	CP	mg/kg	< 0.1	< 0.1	<1	30%	Pass	
Xylenes - Total*	S23-Ap0048441	CP	mg/kg	< 0.3	< 0.3	<1	30%	Pass	
Duplicate									
Total Recoverable Hydrocarbons - 2013 NEPM Fractions				Result 1	Result 2	RPD			
Naphthalene	S23-Ap0048441	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
Duplicate									
Heavy Metals				Result 1	Result 2	RPD			
Arsenic	S23-Ap0048441	CP	mg/kg	5.9	5.1	14	30%	Pass	
Cadmium	S23-Ap0048441	CP	mg/kg	< 0.4	< 0.4	<1	30%	Pass	
Chromium	S23-Ap0048441	CP	mg/kg	22	23	3.9	30%	Pass	
Copper	S23-Ap0048441	CP	mg/kg	19	18	5.0	30%	Pass	
Lead	S23-Ap0048441	CP	mg/kg	28	25	14	30%	Pass	
Mercury	S23-Ap0048441	CP	mg/kg	< 0.1	< 0.1	<1	30%	Pass	
Nickel	S23-Ap0048441	CP	mg/kg	17	17	<1	30%	Pass	
Zinc	S23-Ap0048441	CP	mg/kg	68	67	1.3	30%	Pass	
Duplicate									
Sample Properties				Result 1	Result 2	RPD			
% Moisture	S23-Ap0048441	CP	%	19	18	3.7	30%	Pass	
Duplicate									
Polycyclic Aromatic Hydrocarbons				Result 1	Result 2	RPD			
Acenaphthene	S23-Ap0048448	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
Acenaphthylene	S23-Ap0048448	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
Anthracene	S23-Ap0048448	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
Benz(a)anthracene	S23-Ap0048448	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
Benzo(a)pyrene	S23-Ap0048448	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
Benzo(b&j)fluoranthene	S23-Ap0048448	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
Benzo(g.h.i)perylene	S23-Ap0048448	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
Benzo(k)fluoranthene	S23-Ap0048448	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
Chrysene	S23-Ap0048448	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
Dibenz(a.h)anthracene	S23-Ap0048448	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
Fluoranthene	S23-Ap0048448	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	

Duplicate									
Polycyclic Aromatic Hydrocarbons				Result 1	Result 2	RPD			
Fluorene	S23-Ap0048448	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
Indeno(1.2.3-cd)pyrene	S23-Ap0048448	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
Naphthalene	S23-Ap0048448	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
Phenanthrene	S23-Ap0048448	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
Pyrene	S23-Ap0048448	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
Duplicate									
Organochlorine Pesticides				Result 1	Result 2	RPD			
Chlordanes - Total	S23-Ap0048448	CP	mg/kg	< 0.1	< 0.1	<1	30%	Pass	
4.4'-DDD	S23-Ap0048448	CP	mg/kg	< 0.05	< 0.05	<1	30%	Pass	
4.4'-DDE	S23-Ap0048448	CP	mg/kg	< 0.05	< 0.05	<1	30%	Pass	
4.4'-DDT	S23-Ap0048448	CP	mg/kg	< 0.05	< 0.05	<1	30%	Pass	
a-HCH	S23-Ap0048448	CP	mg/kg	< 0.05	< 0.05	<1	30%	Pass	
Aldrin	S23-Ap0048448	CP	mg/kg	< 0.05	< 0.05	<1	30%	Pass	
b-HCH	S23-Ap0048448	CP	mg/kg	< 0.05	< 0.05	<1	30%	Pass	
d-HCH	S23-Ap0048448	CP	mg/kg	< 0.05	< 0.05	<1	30%	Pass	
Dieldrin	S23-Ap0048448	CP	mg/kg	< 0.05	< 0.05	<1	30%	Pass	
Endosulfan I	S23-Ap0048448	CP	mg/kg	< 0.05	< 0.05	<1	30%	Pass	
Endosulfan II	S23-Ap0048448	CP	mg/kg	< 0.05	< 0.05	<1	30%	Pass	
Endosulfan sulphate	S23-Ap0048448	CP	mg/kg	< 0.05	< 0.05	<1	30%	Pass	
Endrin	S23-Ap0048448	CP	mg/kg	< 0.05	< 0.05	<1	30%	Pass	
Endrin aldehyde	S23-Ap0048448	CP	mg/kg	< 0.05	< 0.05	<1	30%	Pass	
Endrin ketone	S23-Ap0048448	CP	mg/kg	< 0.05	< 0.05	<1	30%	Pass	
g-HCH (Lindane)	S23-Ap0048448	CP	mg/kg	< 0.05	< 0.05	<1	30%	Pass	
Heptachlor	S23-Ap0048448	CP	mg/kg	< 0.05	< 0.05	<1	30%	Pass	
Heptachlor epoxide	S23-Ap0048448	CP	mg/kg	< 0.05	< 0.05	<1	30%	Pass	
Hexachlorobenzene	S23-Ap0048448	CP	mg/kg	< 0.05	< 0.05	<1	30%	Pass	
Methoxychlor	S23-Ap0048448	CP	mg/kg	< 0.05	< 0.05	<1	30%	Pass	
Toxaphene	S23-Ap0048448	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
Duplicate									
Organophosphorus Pesticides				Result 1	Result 2	RPD			
Azinphos-methyl	S23-Ap0048448	CP	mg/kg	< 0.2	< 0.2	<1	30%	Pass	
Bolstar	S23-Ap0048448	CP	mg/kg	< 0.2	< 0.2	<1	30%	Pass	
Chlorfenvinphos	S23-Ap0048448	CP	mg/kg	< 0.2	< 0.2	<1	30%	Pass	
Chlorpyrifos	S23-Ap0048448	CP	mg/kg	< 0.2	< 0.2	<1	30%	Pass	
Chlorpyrifos-methyl	S23-Ap0048448	CP	mg/kg	< 0.2	< 0.2	<1	30%	Pass	
Coumaphos	S23-Ap0048448	CP	mg/kg	< 2	< 2	<1	30%	Pass	
Demeton-S	S23-Ap0048448	CP	mg/kg	< 0.2	< 0.2	<1	30%	Pass	
Demeton-O	S23-Ap0048448	CP	mg/kg	< 0.2	< 0.2	<1	30%	Pass	
Diazinon	S23-Ap0048448	CP	mg/kg	< 0.2	< 0.2	<1	30%	Pass	
Dichlorvos	S23-Ap0048448	CP	mg/kg	< 0.2	< 0.2	<1	30%	Pass	
Dimethoate	S23-Ap0048448	CP	mg/kg	< 0.2	< 0.2	<1	30%	Pass	
Disulfoton	S23-Ap0048448	CP	mg/kg	< 0.2	< 0.2	<1	30%	Pass	
EPN	S23-Ap0048448	CP	mg/kg	< 0.2	< 0.2	<1	30%	Pass	
Ethion	S23-Ap0048448	CP	mg/kg	< 0.2	< 0.2	<1	30%	Pass	
Ethoprop	S23-Ap0048448	CP	mg/kg	< 0.2	< 0.2	<1	30%	Pass	
Ethyl parathion	S23-Ap0048448	CP	mg/kg	< 0.2	< 0.2	<1	30%	Pass	
Fenitrothion	S23-Ap0048448	CP	mg/kg	< 0.2	< 0.2	<1	30%	Pass	
Fensulfothion	S23-Ap0048448	CP	mg/kg	< 0.2	< 0.2	<1	30%	Pass	
Fenthion	S23-Ap0048448	CP	mg/kg	< 0.2	< 0.2	<1	30%	Pass	
Malathion	S23-Ap0048448	CP	mg/kg	< 0.2	< 0.2	<1	30%	Pass	
Merphos	S23-Ap0048448	CP	mg/kg	< 0.2	< 0.2	<1	30%	Pass	
Methyl parathion	S23-Ap0048448	CP	mg/kg	< 0.2	< 0.2	<1	30%	Pass	
Mevinphos	S23-Ap0048448	CP	mg/kg	< 0.2	< 0.2	<1	30%	Pass	
Monocrotophos	S23-Ap0048448	CP	mg/kg	< 2	< 2	<1	30%	Pass	

Duplicate									
Organophosphorus Pesticides				Result 1	Result 2	RPD			
Naled	S23-Ap0048448	CP	mg/kg	< 0.2	< 0.2	<1	30%	Pass	
Omethoate	S23-Ap0048448	CP	mg/kg	< 2	< 2	<1	30%	Pass	
Phorate	S23-Ap0048448	CP	mg/kg	< 0.2	< 0.2	<1	30%	Pass	
Pirimiphos-methyl	S23-Ap0048448	CP	mg/kg	< 0.2	< 0.2	<1	30%	Pass	
Pyrazophos	S23-Ap0048448	CP	mg/kg	< 0.2	< 0.2	<1	30%	Pass	
Ronnel	S23-Ap0048448	CP	mg/kg	< 0.2	< 0.2	<1	30%	Pass	
Terbufos	S23-Ap0048448	CP	mg/kg	< 0.2	< 0.2	<1	30%	Pass	
Tetrachlorvinphos	S23-Ap0048448	CP	mg/kg	< 0.2	< 0.2	<1	30%	Pass	
Tokuthion	S23-Ap0048448	CP	mg/kg	< 0.2	< 0.2	<1	30%	Pass	
Trichloronate	S23-Ap0048448	CP	mg/kg	< 0.2	< 0.2	<1	30%	Pass	

Comments

Sample Integrity

Custody Seals Intact (if used)	N/A
Attempt to Chill was evident	Yes
Sample correctly preserved	Yes
Appropriate sample containers have been used	Yes
Sample containers for volatile analysis received with minimal headspace	Yes
Samples received within HoldingTime	Yes
Some samples have been subcontracted	No

Qualifier Codes/Comments

Code	Description
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

Authorised by:

Bonnie Pu	Analytical Services Manager
Mickael Ros	Senior Analyst-Metal
Dilani Samarakoon	Senior Analyst-Inorganic
Sayeed Abu	Senior Analyst-Asbestos
Roopesh Rangarajan	Senior Analyst-Inorganic
Mary Makarios	Senior Analyst-Metal
Raymond Siu	Senior Analyst-Volatile
Roopesh Rangarajan	Senior Analyst-Organic
Emily Rosenberg	Senior Analyst-Metal
Fang Yee Tan	Senior Analyst-Metal

Glenn Jackson
General Manager

Final Report – this report replaces any previously issued Report

- Indicates Not Requested

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

Measurement uncertainty of test data is available on request or please click here.

Certificate of Analysis

Compliance Health & Environmental Consulting P/L
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NATA Accredited
Accreditation Number 1261
Site Number 18217

Accredited for compliance with ISO/IEC 17025–Testing
NATA is a signatory to the ILAC Mutual Recognition Arrangement for the mutual recognition of the equivalence of testing, medical testing, calibration, inspection, proficiency testing scheme providers and reference materials producers reports and certificates.

Attention:	RESULTS - ALL SRAS HERE ONLY - NO INVOICES
Report	983256-AID
Project Name	WAGGA
Project ID	1440
Received Date	Apr 21, 2023
Date Reported	May 03, 2023

Methodology:

Asbestos Fibre Identification	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. *NOTE: Positive Trace Analysis results indicate the sample contains detectable respirable fibres.*
Unknown Mineral Fibres	Mineral fibres of unknown type, as determined by PLM with DS, may require another analytical technique, such as Electron Microscopy, to confirm unequivocal identity. *NOTE: While Actinolite, Anthophyllite and Tremolite asbestos may be detected by PLM with DS, due to variability in the optical properties of these materials, AS4964 requires that these are reported as UMF unless confirmed by an independent technique.*
Subsampling Soil Samples	The whole sample submitted is first dried and then passed through a 10mm sieve followed by a 2mm sieve. All fibrous matter 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) is employed. *NOTE: 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 for identification by PLM and DS. Where required, interfering matrices may be removed by disintegration using a range of heat, chemical or physical treatments, possibly in combination.The resultant material is then further examined in accordance with AS 4964 - 2004. *NOTE: Even after disintegration it may be difficult to detect the presence of asbestos in some asbestos-containing bulk materials using PLM and DS. This is due to the low grade or small length or diameter of the asbestos fibres present in the material, or to the fact that very fine fibres have been distributed intimately throughout the materials. Vinyl/asbestos floor tiles, some asbestos-containing sealants and mastics, asbestos-containing epoxy resins and some ore samples are examples of these types of material, which are difficult to analyse.*
Limit of Reporting	The performance limitation of the AS 4964 (2004) method for non-homogeneous samples is around 0.1 g/kg (equivalent to 0.01% (w/w)). Where no asbestos is found by PLM and DS, including Trace Analysis, this is considered to be at the nominal reporting limit of 0.01% (w/w). The NEPM screening level of 0.001% (w/w) is intended as an on-site determination, not a laboratory Limit of Reporting (LOR), per se. Examination of a large sample size (e.g. 500 mL) may improve the likelihood of detecting asbestos, particularly AF, to aid assessment against the NEPM criteria. Gravimetric determinations to this level of accuracy are outside of AS 4964 and hence NATA Accreditation does not cover the performance of this service (non-NATA results shown with an asterisk). *NOTE: NATA News March 2014, p.7, states in relation to AS 4964: "This is a qualitative method with a nominal reporting limit of 0.01 % " and that currently in Australia "there is no validated method available for the quantification of asbestos".This report is consistent with the analytical procedures and reporting recommendations in the NEPM and the WA DoH.*

Project Name WAGGA
Project ID 1440
Date Sampled Apr 21, 2023
Report 983256-AID

Client Sample ID	Eurofins Sample No.	Date Sampled	Sample Description	Result
BH1-1	23-Ap0048426	Apr 21, 2023	Approximate Sample 44g Sample consisted of: Brown fine-grained clayey soil and rocks	No asbestos detected at the reporting limit of 0.01% w/w. Organic fibre detected. No trace asbestos detected.
BH2-1	23-Ap0048427	Apr 21, 2023	Approximate Sample 44g Sample consisted of: Brown fine-grained clayey soil and rocks	No asbestos detected at the reporting limit of 0.01% w/w. Organic fibre detected. No trace asbestos detected.
BH3-1	23-Ap0048428	Apr 21, 2023	Approximate Sample 39g Sample consisted of: Brown fine-grained clayey soil and rocks	No asbestos detected at the reporting limit of 0.01% w/w. Organic fibre detected. No trace asbestos detected.
BH4-1	23-Ap0048429	Apr 21, 2023	Approximate Sample 31g Sample consisted of: Brown fine-grained clayey soil and rocks	No asbestos detected at the reporting limit of 0.01% w/w. Organic fibre detected. No trace asbestos detected.
BH5-1	23-Ap0048432	Apr 21, 2023	Approximate Sample 40g Sample consisted of: Brown fine-grained clayey soil and rocks	No asbestos detected at the reporting limit of 0.01% w/w. Organic fibre detected. No trace asbestos detected.
BH12-1	23-Ap0048444	Apr 21, 2023	Approximate Sample 33g Sample consisted of: Brown fine-grained clayey soil and rocks	No asbestos detected at the reporting limit of 0.01% w/w. Organic fibre detected. No trace asbestos detected.
BH12-2	23-Ap0048445	Apr 21, 2023	Approximate Sample 45g Sample consisted of: Brown fine-grained clayey soil and rocks	No asbestos detected at the reporting limit of 0.01% w/w. Organic fibre detected. No trace asbestos detected.
BH13-1	23-Ap0048447	Apr 21, 2023	Approximate Sample 48g Sample consisted of: Brown fine-grained clayey soil and rocks	No asbestos detected at the reporting limit of 0.01% w/w. Organic fibre detected. No trace asbestos detected.

Sample History

Where samples are submitted/analysed over several days, the last date of extraction is reported.

If the date and time of sampling are not provided, the Laboratory will not be responsible for compromised results should testing be performed outside the recommended holding time.

Description	Testing Site	Extracted	Holding Time
Asbestos - LTM-ASB-8020	Sydney	Apr 21, 2023	Indefinite

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Address: PO Box 275
Gosford
NSW 2250

Project Name: WAGGA
Project ID: 1440

Order No.:
Report #: 983256
Phone: 02 4304 0091
Fax:

Received: Apr 21, 2023 4:05 PM
Due: Apr 28, 2023
Priority: 5 Day
Contact Name: RESULTS - ALL SRAS HERE

Eurofins Analytical Services Manager : Bonnie Pu

Sample Detail						Asbestos - AS4964	pH (1:5 Aqueous extract at 25 °C as rec.)	Suite B14: OCP/OPP	Moisture Set	Cation Exchange Capacity	Eurofins Suite B7	BTEXN and Volatile TRH	BTEXN and Volatile TRH
Melbourne Laboratory - NATA # 1261 Site # 1254										X			
Sydney Laboratory - NATA # 1261 Site # 18217						X	X	X	X	X	X	X	X
External Laboratory													
No	**Sample ID**	**Sample Date**	**Sampling Time**	**Matrix**	**LAB ID**								
1	BH1-1	Apr 21, 2023		Soil	S23-Ap0048426	X	X		X	X	X		
2	BH2-1	Apr 21, 2023		Soil	S23-Ap0048427	X		X	X		X		
3	BH3-1	Apr 21, 2023		Soil	S23-Ap0048428	X			X		X		
4	BH4-1	Apr 21, 2023		Soil	S23-Ap0048429	X			X		X		
5	BH4-2	Apr 21, 2023		Soil	S23-Ap0048430			X	X		X		
6	BH4-3	Apr 21, 2023		Soil	S23-Ap0048431				X		X		
7	BH5-1	Apr 21, 2023		Soil	S23-Ap0048432	X			X		X		
8	BH6-1	Apr 21, 2023		Soil	S23-Ap0048433			X	X		X		
9	BH7-1	Apr 21, 2023		Soil	S23-Ap0048434				X		X		
10	BH7-1A	Apr 21, 2023		Soil	S23-Ap0048435				X		X		
11	BH7-2	Apr 21, 2023		Soil	S23-Ap0048436				X		X		
12	BH8-1	Apr 21, 2023		Soil	S23-Ap0048437			X	X		X		

eurofins

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NSW 2250

Project Name: WAGGA
Project ID: 1440

Order No.:
Report #: 983256
Phone: 02 4304 0091
Fax:

Received: Apr 21, 2023 4:05 PM
Due: Apr 28, 2023
Priority: 5 Day
Contact Name: RESULTS - ALL SRAS HERE

Eurofins Analytical Services Manager : Bonnie Pu

Sample Detail						Asbestos - AS4964	pH (1:5 Aqueous extract at 25 °C as rec.)	Suite B14: OCP/OPP	Moisture Set	Cation Exchange Capacity	Eurofins Suite B7	BTEXN and Volatile TRH	BTEXN and Volatile TRH
Melbourne Laboratory - NATA # 1261 Site # 1254										X			
Sydney Laboratory - NATA # 1261 Site # 18217						X	X	X	X	X	X	X	X
13	BH8-2	Apr 21, 2023		Soil	S23-Ap0048438				X		X		
14	BH9-1	Apr 21, 2023		Soil	S23-Ap0048439		X	X	X	X	X		
15	BH9-2	Apr 21, 2023		Soil	S23-Ap0048440				X		X		
16	BH10-1	Apr 21, 2023		Soil	S23-Ap0048441				X		X		
17	BH11-1	Apr 21, 2023		Soil	S23-Ap0048442			X	X		X		
18	BH11-2	Apr 21, 2023		Soil	S23-Ap0048443				X		X		
19	BH12-1	Apr 21, 2023		Soil	S23-Ap0048444	X			X		X		
20	BH12-2	Apr 21, 2023		Soil	S23-Ap0048445	X			X		X		
21	BH12-3	Apr 21, 2023		Soil	S23-Ap0048446				X		X		
22	BH13-1	Apr 21, 2023		Soil	S23-Ap0048447	X	X		X	X	X		
23	BH13-2	Apr 21, 2023		Soil	S23-Ap0048448			X	X		X		
24	TS	Apr 21, 2023		Water	S23-Ap0048449								X
25	TB	Apr 21, 2023		Water	S23-Ap0048450							X	
Test Counts						8	3	7	23	3	23	1	1

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. Information identified on this report with the colour **blue** indicates data provided by customer that may have an impact on the results.
5. This report replaces any interim results previously issued.

Holding Times

Please refer to the most recent version of the 'Sample Preservation and Container Guide' for holding times (QS3001).
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:	Percentage weight-for-weight basis, e.g. of asbestos in asbestos-containing finds in soil samples (**% w/w**)
F/fld	Airborne fibre filter loading as Fibres (**N**) per Fields counted (**n**)
F/mL	Airborne fibre reported concentration as Fibres per millilitre of air drawn over the sampler membrane (**C**)
g, kg	Mass, e.g. of whole sample (**M**) or asbestos-containing find within the sample (**m**)
g/kg	Concentration in grams per kilogram
L, mL	Volume, e.g. of air as measured in AFM (**V** = **r** x **t**)
L/min	Airborne fibre sampling Flowrate as litres per minute of air drawn over the sampler membrane (**r**)
min	Time (**t**), e.g. of air sample collection period

Calculations

Airborne Fibre Concentration: $C = \left(\frac{A}{a}\right) \times \left(\frac{N}{n}\right) \times \left(\frac{1}{r}\right) \times \left(\frac{1}{t}\right) = K \times \left(\frac{N}{n}\right) \times \left(\frac{1}{V}\right)$

Asbestos Content (as asbestos): $\%\, w/w = \frac{(m \times P_A)}{M}$

Weighted Average (of asbestos): $\%_{WA} = \sum \frac{(m \times P_A)_x}{x}$

Terms

%asbestos	Estimated percentage of asbestos in a given matrix. May be derived from knowledge or experience of the material, informed by HSG264 *Appendix 2*, else assumed to be 15% in accordance with WA DOH *Appendix 2* (**P_A**).
ACM	Asbestos Containing Materials. Asbestos contained within a non-asbestos matrix, typically presented in bonded (non-friable) condition. For the purposes of the NEPM and WA DOH, ACM corresponds to material larger than 7 mm x 7 mm.
AF	Asbestos Fines. Asbestos contamination within a soil sample, as defined by WA DOH. Includes loose fibre bundles and small pieces of friable and non-friable material such as asbestos cement fragments mixed with soil. Considered under the NEPM as equivalent to “non-bonded / friable”.
AFM	Airborne Fibre Monitoring, e.g. by the MFM.
Amosite	Amosite Asbestos Detected. Amosite may also refer to Fibrous Grunerite or Brown Asbestos. Identified in accordance with AS 4964-2004.
AS	Australian Standard.
Asbestos Content (as asbestos)	Total % w/w asbestos content in asbestos-containing finds in a soil sample (**% w/w)**.
Chrysotile	Chrysotile Asbestos Detected. Chrysotile may also refer to Fibrous Serpentine or White Asbestos. Identified in accordance with AS 4964-2004.
COC	Chain of Custody.
Crocidolite	Crocidolite Asbestos Detected. Crocidolite may also refer to Fibrous Riebeckite or Blue Asbestos. Identified in accordance with AS 4964-2004.
Dry	Sample is dried by heating prior to analysis.
DS	Dispersion Staining. Technique required for Unequivocal Identification of asbestos fibres by PLM.
FA	Fibrous Asbestos. Asbestos containing material that is wholly or in part friable, including materials with higher asbestos content with a propensity to become friable with handling, and any material that was previously non-friable and in a severely degraded condition. For the purposes of the NEPM and WA DOH, FA generally corresponds to material larger than 7 mm x 7 mm, although FA may be more difficult to visibly distinguish and may be assessed as AF.
Fibre Count	Total of all fibres (whether asbestos or not) meeting the counting criteria set out in the NOHSC:3003
Fibre ID	Fibre Identification. Unequivocal identification of asbestos fibres according to AS 4964-2004. Includes Chrysotile, Amosite (Grunerite) or Crocidolite asbestos.
Friable	Asbestos-containing materials of any size that may be broken or crumbled by hand pressure. For the purposes of the NEPM, this includes both AF and FA. It is outside of the laboratory’s remit to assess degree of friability.
HSG248	UK HSE HSG248, *Asbestos: The Analysts Guide*, 2nd Edition (2021).
HSG264	UK HSE HSG264, *Asbestos: The Survey Guide* (2012).
ISO (also ISO/IEC)	International Organization for Standardization / International Electrotechnical Commission.
K Factor	Microscope constant (**K**) as derived from the effective filter area of the given AFM membrane used for collecting the sample (**A**) and the projected eyepiece graticule area of the specific microscope used for the analysis (**a**).
LOR	Limit of Reporting.
MFM (also NOHSC:3003)	Membrane Filter Method. As described by the Australian Government National Occupational Health and Safety Commission, *Guidance Note on the Membrane Filter Method for Estimating Airborne Asbestos Fibres*, 2nd Edition [NOHSC:3003(2005)].
NEPM (also ASC NEPM)	National Environment Protection (Assessment of Site Contamination) Measure, (2013, as amended).
Organic	Organic Fibres Detected. Organic may refer to Natural or Man-Made Polymeric Fibres. Identified in accordance with AS 4964-2004.
PCM	Phase Contrast Microscopy. As used for Fibre Counting according to the MFM.
PLM	Polarised Light Microscopy. As used for Fibre Identification and Trace Analysis according to AS 4964-2004.
Sampling	Unless otherwise stated Eurofins are not responsible for sampling equipment or the sampling process.
SMF	Synthetic Mineral Fibre Detected. SMF may also refer to Man Made Vitreous Fibres. Identified in accordance with AS 4964-2004.
SRA	Sample Receipt Advice.
Trace Analysis	Analytical procedure used to detect the presence of respirable fibres (particularly asbestos) in a given sample matrix.
UK HSE HSG	United Kingdom, Health and Safety Executive, Health and Safety Guidance, publication.
UMF	Unidentified Mineral Fibre Detected. Fibrous minerals that are detected but have not been unequivocally identified by PLM with DS according the AS 4964-2004. May include (but not limited to) Actinolite, Anthophyllite or Tremolite asbestos.
WA DOH	Reference document for the NEPM. Government of Western Australia, *Guidelines for the Assessment, Remediation and Management of Asbestos-Contaminated Sites in Western Australia* (updated 2021), including Appendix Four: *Laboratory analysis*
Weighted Average	Combined average % w/w asbestos content of all asbestos-containing finds in the given aliquot or total soil sample (**$\%_{WA}$**).

Comments

The samples received were not collected in an approved asbestos bag and was therefore sub-sampled from the 250mL glass jar. Valid sub-sampling procedures were applied so as to ensure that the sub-samples to be analysed accurately represented the samples received.

Sample Integrity

Custody Seals Intact (if used)	N/A
Attempt to Chill was evident	Yes
Sample correctly preserved	Yes
Appropriate sample containers have been used	Yes
Sample containers for volatile analysis received with minimal headspace	Yes
Samples received within HoldingTime	Yes
Some samples have been subcontracted	No

Asbestos Counter/Identifier:

Chamath JHM Annakkage	Senior Analyst-Asbestos

Authorised by:

Sayeed Abu	Senior Analyst-Asbestos

Glenn Jackson
General Manager

Final Report – this report replaces any previously issued Report

- Indicates Not Requested

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

Measurement uncertainty of test data is available on request or please click here.

Appendix B –Soil Log Profile Descriptions

Soil Log Profile Descriptions				
Test Pit	**Depth (m)**	**Soil Description**	**Soil Type**	**Samples**
BH1	0-0.15	Concrete		
	0.15-0.25	Coarse Sand	Fill	BH1-1
	0.25+	Natural silty clay with dark grey organics	Natural	
BH2	0-0.15	Concrete		
	0.15-0.45	Coarse Sand	Fill	BH2-1
	0.45+	Natural silty clay with dark grey organics	Natural	
BH3	0-0.2	Coarse Sand	Fill	BH3-1
	0.2+	Natural silty clay with dark grey organics	Natural	
BH4	0-0.1	Concrete		
	0.1-0.4	Sandy gravelly clay	Fill	BH4-1
	0.4-0.6	Silty Clay fill	Fill	BH4-2
	0.6+	Silty Clay	Natural	BH4-3
BH5	0-0.1	Concrete		
	0.1-0.2	Coarse Sand	Fill	
	0.2-0.5	Clay fill	Fill	BH5-1
	0.5+	Natural grey clay	Natural	
BH6	0-0.3	Silty sandy topsoil	Fill	BH6-1
	0.3-0.5	Natural grey clay with orange mottle	Natural	
BH7	0-0.4	Silty sandy topsoil	Fill	BH7-1 BH7-1A
	0.4-0.6	Natural grey clay with orange mottle	Natural	BH7-2
BH8	0-0.3	Clayey sandy topsoil	Fill	BH8-1
	0.3-0.5	Natural grey clay with orange mottle	Natural	BH8-2
BH9	0-0.3	Clayey sandy topsoil	Fill	BH9-1
	0.3-0.5	Natural grey clay with orange mottle	Natural	BH9-2
BH10	0-0.3	Clayey sandy topsoil	Fill	BH10-1
	0.3-0.5	Natural grey clay with orange mottle	Natural	
BH11	0-0.3	Clayey sandy topsoil	Fill	BH11-1
	0.3-0.5	Natural grey clay with orange mottle	Natural	BH11-2
BH12	0-0.1	Concrete		
	0.1-0.2	Coarse Sand	Fill	BH12-1
	0.2-0.75	Gravelly clay	Fill	BH12-2
	0.75-1.2	Gravelly clay with traces of Asphalt	Fill	BH12-3
	1.2-1.3	Natural silty clay	Natural	
BH13	0-0.1	Concrete		
	0.1-0.2	Coarse Sand	Fill	
	0.2-0.6	Light brown grey fill	Fill	BH13-1
	0.6+	Natural silty clay	Natural	BH13-2

Appendix C – Development Plans

LEGEND

- SITE BOUNDARY
- NEIGHBOURING RESIDENCE
- EXISTING STRUCTURE (RETAIN)
- EXISTING PLANTING
- PROPOSED PLANTING
- DEEPSOIL LANDSCAPE
- STAGE 1
- STAGE 2
- STAGE 3A
- STAGE 3B
- STAGE 3C

COMPLETE STAGE 3 WORKS

0 5 10 25 50m

PROJECT

CIVITAS STAGE 3

Morgan, Murray & Forsyth St, Wagga

DRAWING TITLE

PROPOSED SITE PLAN

N

REV	DATE	AMENDMENT	INITIALS	CHECK
SK01	2022-07-26	FOR INFORMATION	DT	AS
SK02	2022-08-25	FOR INFORMATION	DT	AS
SK03	2022-12-06	FOR REVIEW	DT	AS
SK04	2023-05-12	FOR REVIEW	RS	RS

PROJECT NO.	DRAWING NO.	REVISION
3175	DA1021	SK04
SCALE	1 : 500 @ A1	
DRAWN	RS	
DATE	2023-05-12	
NSW NOM ARB ARCH Reg:	Glen Ollerton. Reg. No. 7621	

mdp architecture

Autodesk Docs://3175 - Damasa - Civitas Stage 3/3175-Civitas Stage 3 - Central_V22.rvt

1 GROUND FLOOR SITE

Scale: 1 : 500

CLIENT

Damasa Pty Ltd

PROJECT

CIVITAS STAGE 3

Morgan, Murray & Forsyth St, Wagga

DRAWING TITLE

GROUND FLOOR SITE

Autodesk Docs://3175 - Damasa - Civitas Stage 3/3175-Civitas Stage 3 - Central_V22.rvt

N

REV	DATE	AMENDMENT	INITIALS	CHECK
SK01	2023-05-12	FOR REVIEW	RS	RS

PROJECT NO.	DRAWING NO.	REVISION
3175	DA1090	SK01
SCALE	1 : 500 @ A1	
DRAWN	RS	
DATE	2023-05-12	
NSW NOM ARB ARCH Reg:	Glen Ollerton. Reg. No. 7621	

mdp architecture

Revision	Date	Details	Initials	Checked
SK01	2023-05-12	FOR REVIEW	RS	RS

SURVEY NOTES

Survey data included in this drawing is based on survey drawing and is provided for preliminary design purposes only.
As this drawing is based on information supplied by others, reference must be made to original survey drawings verified against site conditions.

GENERAL NOTES

Morrison Design Partnership Pty. Limited accept no responsibility for the usability, completeness or accuracy of data transferred electronically.
Recipients should when necessary request a hard copy version for verification.
This drawing shall be read in conjunction with all architectural and other Consultants drawings and specifications and with such other written instructions as may be issued during the course of the contract.
Figured dimensions shall be taken in preference to scaling.
All level, datum points and dimensions on this drawing shall be verified by the builder on site.
All discrepancies shall be referred to the architect for direction before proceeding with any works. **DO NOT SCALE THIS DRAWING.**

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Client

DAMASA PTY LTD

Project Management

mdp architecture

PROJECT:

CIVITAS STAGE 3

Morgan, Murray & Forsyth St, Wagga

DRAWING:

GROUND FLOOR SITE PLAN

PROJECT NO.	REVISION NO.
3175	***SK01***
DRAWING NO. *DA4103*	

SCALE: **1 : 200 @ B1** DRAWN: **RS**

DATE: **2023-05-12**

NSW NOM ARB ARCHITECT: Glen Ollerton, Reg No. 7621