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Preliminary Site Investigation
28 & 30 Forrest Road, East Hills NSW 2213

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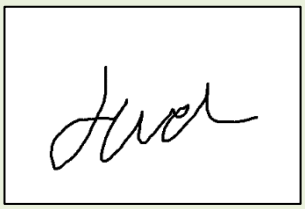	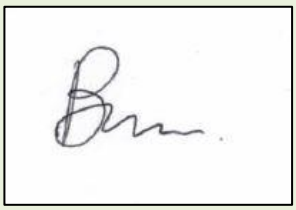
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Revision Number	Status	Date
1	Final	8-Jul-24

Executive Summary

Compaction & Soil Testing Services [CSTS] has been engaged by Peter White to conduct a Preliminary Site Investigation with sampling for Lot 37 and 38 in the proposed development of a childcare centre on 28 & 30 Forrest Road, East Hills NSW 2213 [the site]. This assessment has been conducted in accordance with *NSW EPA Consultant Reporting on contaminated land 2020* [1]. It is currently understood that the site is under assessment for the development of a community centre.

The objectives of this investigation were to:

- Determine the potential for site contamination,
- Assess whether the site is suitable, from a contamination perspective, for residential land use,
- Provide conclusions and recommendations regarding the contamination status of the site, and the need for potential further investigation.

The site known as 28 and 30 Forrest Road, East Hills NSW 2213, covers an area of approximately 2320m^2. Both Lots are currently used as residential properties. The site is bound by a church to the North, Forrest Road to the West, and residential properties to the East and South.

Based on the available information, the site was vacant, unused, vegetated land until the 1950s. From circa 1950's until now, the site has been used for residential properties.

Based on the observed site conditions and the available historical and landscape information, a number of potential contaminants of concern have been identified. These include Heavy Metals, TRH, BTEXN, PAH, PCB, OCP, OPP and Asbestos. Potential exposure pathways for these contaminants have been identified as dermal contact, ingestion, inhalation and plant uptake. The identified receptors include current and future site users, construction workers and the neighbouring community.

Based on the conducted assessment, CSTS has concluded that the site known as 28 and 30 Forrest Road, East Hills NSW 2213, from a contamination perspective, is acceptable for the proposed use of a community centre.

CSTS recommends that, during the process of development, should any indicators of potential contamination be encountered, this office is to be contacted immediately for further assessment. Should there be any change in the proposed development, all conclusions and recommendations are to be reviewed.

Should you have any queries about the methodology, findings, conclusion or recommendations of this Preliminary Site Investigation, please do not hesitate to contact our office on (02) 9675 7522.

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1. Introduction

1.1. Background

Compaction & Soil Testing Services [CSTS] has been engaged by Peter White to conduct a Preliminary Site Investigation for 28 & 30 Forrest Road, East Hills NSW 2213 [the site]. This assessment has been conducted in accordance with *NSW EPA Consultants reporting on contaminated land 2020* [1]. It is currently understood that the site is under assessment for the proposed development of a childcare centre.

1.2. Objectives

The objectives of this investigation were to;

- Determine the potential for site contamination.
- Assess whether the site is suitable, from a contamination perspective, for the proposed development.
- Provide conclusions and recommendations regarding the contamination status of the site, and the need for potential further investigation.

2. Scope of Works

In order to achieve the objectives of this report, the following scope of works was undertaken;

- Review of Lotsearch Pty Ltd, 2023, Environmental Risk and Planning Report; 28 & 30 Forrest Street, East Hills NSW 2213 (LS-042479 EP),
- Site inspection to determine the existing site condition and potential areas of environmental concern,
- Excavation of six (6) test pits for the assessment of material condition and the recovery of samples,
- Recovery and laboratory transfer of six (6) primary soil samples,
- Implementation of a quality assurance and quality control regime,
- Determination of Potential Areas of Environmental Concern,
- Correlation of data and compilation of this Preliminary Site Investigation Report.

3. Site Identification

The site is known as 28 & 30 Forrest Road, East Hills NSW 2213, Lot 37 and 38 (DP14650) respectively [the site] located at latitude -33.960663, longitude 150.98721 (GD94). Both Lots are residential properties with approximate dimensions of 15m x 75m. Each lot has an area of approximately 1160^{2}m (total area of approximately 2320m^2). Lot 38 is situated the North of Lot 37. The site is bound by a church to the

North, Forrest Road to the West, and residential properties to the East and South. The site is zoned for low density residential land use and is located within the Canterbury-Blacktown Local Government Area.

4. Site Condition

4.1. Site Observations

A qualified consultant from CSTS inspected the site on the 12th of April 2023. Both lots 37 and 38 had rectangular front yards with areas of approximately 85m^2 each. Both houses on the site were determined to be in good condition; however, the use of asbestos as a building material in the walls of the houses was not ruled out. As such, CSTS recommends a hazard material survey be undertaken in the house prior to demolition. Entering the site through a gate located on 30 Forrest Street, East Hills (Lot 38 of DP14650), a concrete hardstand driveway could be noted leading into the rear of the property. The rear of the property had a gravelly surface towards the centre and soil being located on the edges of the property. To the South-East of the site, a square concrete hardstand with an area of approximately 250m^2 and a depth of 1m was noted. Towards the rear of the site, several piles of construction material could be observed, including; metal pipes, beams and containers, wood stacks and several other types of construction material. A shipping container was located on the concrete hardstand area, which appeared to contain further construction material. On the front yard of 28 Forrest Street, East Hills (Lot 37 of DP14650), a bowrider boat could be seen. Moving through to the rear, several cars and a van were parked along a hardstand driveway. On the rear, a grass backyard with a trampoline and a large tree could be seen.

Six (6) test-pits were excavated on the site, three (3) on 30 Forrest Street, East Hills (Lot 38 of DP14650), and three (3) on 28 Forrest Street, East Hills (Lot 37 of DP14650). All test-pits were dug to between 0.3m-0.5m. The material within the test-pits at sampling depth was determined to consist predominantly of dark brown or light grey brown silty sandy clay in all test-pits. During the recovery of samples, no indications of significant contamination, such as material staining or the emission of odours were noted.

Refer to Appendix A – Site Drawings and Appendix B – Site Photographs

4.2. Landscape Characteristics

The Lotsearch Pty Ltd, 2023, Environmental Risk and Planning Report and the New South Wales Department of Planning and Environment, *eSPADE Tool*, [6] were used to determine various characteristics of the geological the hydrogeological landscape underlying the site.

eSPADE identifies the site to be primarily in a region of a Blacktown (9030bt) landscape. This landscape is characterised by gently undulating rises on Wianamatta Group shales. Local relief to 30m, slopes usually >5%. Broad rounded crests and ridges with gently inclined slopes. Soils are shallow to moderately deep (>100cm) hardsetting mottled texture contrast soils, reds and brown podzolic soils on crests grading to Yellow podzolic soils on lower slopes and in drainages lines. A small portion of the site may also

lie on a Lucas Heights (9030lh) landscape. This landscape is characterised by gently undulating crests and ridges on plateau surfaces of the Mittagong Formation (alternating bands of shale and fine-grained sandstones). Local relief to 30 m, slopes <10%. Rock outcrop is absent. The soils are moderately deep (50–150 cm), hardsetting yellow podzolic Soils and yellow soloths.

Hawkesbury sandstone is the dominant lithology underlying the site. The elevation of the site is between approximately 10 – 12m AHD, sloping down to the east of the site.

The site lies on acid sulphate soils Class 5. This denotes that the site lies on an area located within 500m of adjacent Class 1, 2, 3 or 4 land. Acid sulfate soils are not typically found in Class 5 areas. The site is not located within a naturally occurring asbestos zone [7].

The site lies on an area of very low salinity potential. The onsite aquifers have been described as porous, extensive aquifers of low to moderate productivity. One (1) groundwater borehole was identified in a 2km radius. The bore was drilled to a depth of 4m and is 1073m to the South-east of the site.

For more information on the landscape characteristics, refer to Appendix E – Lotsearch Pty Ltd, 2023, Environmental Risk and Planning Report; 28 & 30 Forrest Street, East Hills NSW 2213 (LS-042479 EP).

4.3. Regulatory Searches

Within the list of NSW EPA contaminated land record of notices, no sites have currently been notified to the EPA in East Hills under the *NSW Contaminated Land Management Act 1997* [2].

Under the POEO Act 1997, a license is held for railway systems activities 47m to the North-west by Sydney Trains. A license to carry out waste disposal by application to land and the general recovery of waste, 961m to the North, is held by Canterbury-Bankstown Council.

Five (5) former licenses for the application of herbicides have been surrendered under the POEO Act 1997 in the area of Georges River and surrounding waterways.

The Botany Bay area and Georges River located 368m south, as well as the Holsworthy Barracks, located 1351m to the South-west, are currently part of the EPA's PFAS investigation program. The Department of Defence is also investigating contamination at the Holsworthy Barracks, and has identified PFAS contamination within the area of the Holsworthy Barracks.

An Environmental Planning Instrument (EPI) heritage item of local significance exists 416m to the South-west of the site.

For more information on the regulatory searches, refer to Appendix E – Lotsearch Pty Ltd, 2023, Environmental Risk and Planning Report; 28 & 30 Forrest Street, East Hills NSW 2213 (LS-042479 EP).

5. Site History

A summary of the sites known historical uses from aerial imagery and historical documentation is provided below in **Table 1**.

Table 1: Summary of Historical use of the site and its surroundings

Date	Site	Surroundings
1943	The site is an unused, vacant vegetated area.	The surrounding land is unused, vacant vegetated land with farmland to the North-east, and a railway line approximately 70m to the North-west. A train station is situated 120m to the South-west.
1965	Residential properties on Lot 37 and 38 have been developed. The houses are on the East side of the property towards Forrest Road with long backyard areas extending to the West.	The surrounding area is a low density residential area. The site is directly adjacent to what appears to be residential properties to the South and East with Forrest Road to the West. Either a residential property or public-use building such as a church is to the North. The railway line and station have remained and continue to remain today.
1975	Little appears to have changed on the site.	Little has changed in the surrounding area. A residential property has been built to the East of the site on Cowland Avenue directly adjoining Lot 37.
1986	Extensions have been carried out on the house of Lot 37. A shed has been built on Lot 38.	Little has changed in the surrounding area. The property adjacent, to the North of the site, has had extensions.
2000	The roof of Lot 37 appears to have been painted or had works done on it.	A hardstand carpark appears to have been built on the church.
2009	Several trees have been removed from the rear of both lots.	The property to the North has undergone work and has become a church. The property adjacent, to the South of the site, has had been subdivided for the development of another residential property.

2015	A concrete driveway has been developed on Lot 37. A concrete area has been constructed on Lot 37 which appears to be used to store vehicles including cars, trucks boats, forklifts and excavators. Construction material including timber also appears to have been stored here.	Little appears to have changed in the surrounding area.
2020	Most of the backyard of Lot 38 has been paved with gravel and turned into a storage area seemingly as an extension to the previous works on Lot 37. As with Lot 37, this area appears to have stored vehicles and building materials.	The house to the South, adjacent to the Lot 37 has been demolished.
2023	Little appears to have changed on the site since 2020. Many more cars have appeared to be stored on the site.	The residential property to the East of the site on Cowland Avenue directly adjoining Lot 37 has been demolished.

Historical images are included in the Lotsearch Pty Ltd report. Refer to Appendix E – Lotsearch Pty Ltd, 2023, Environmental Risk and Planning Report; 28 & 30 Forrest Street, East Hills NSW 2213 (LS-042479 EP).

6. Conceptual Site Model

The conceptual site model containing the potential contaminants of concern, likely sources, potential pathways and receptors is presented in **Table 2**.

Table 2: Conceptual Site Model

Contaminant of Concern	Sources	Potential Pathways	Receptors
Asbestos	• Poor demolition practices from surrounding • Potential historic filling from unknown origins • Materials potentially within existing structures.	• Airborne migration of fibres	• Current site users • Future site users • Construction workers • Neighbouring community
Heavy Metals	• Historic building construction, particularly Lead based paints, leaching from Zinc-plated roofing and Arsenic from treated timbers • Potential historic filling from unknown origins • Vehicle exhaust depositions	• Dermal Contact • Ingestion • Plant uptake	• Current site users • Future site users • Construction workers
BTEX	• Spills & leaks from stored fuels & vehicles • Vehicle deposition	• Dermal Contact • Ingestion • Plant uptake	• Current site users • Future site users • Construction workers
TRH	• Spills & leaks from stored fuels & vehicles • Vehicle deposition • Vehicle & plant maintenance	• Dermal Contact • Inhalation • Ingestion • Plant uptake	• Current site users • Future site users • Construction workers
PAH	• Potential buried ash • Vehicle deposition	• Dermal Contact • Inhalation • Ingestion	• Current site users • Future site users • Construction workers
Pesticides	• Possible use within garden areas • Historic application	• Dermal Contact • Ingestion • Plant uptake	• Current site users • Future site users • Construction workers
PCB	• Hydraulic fluids • Electrical equipment	• Dermal Contact • Ingestion	• Current site users • Future site users • Construction workers

7. Data Quality Objectives

The Data Quality Objective [DQO] process was applied to the investigation to ensure that all data collection activities were appropriate and achieved the project objectives. The DQO process consists of seven (7) steps, outlined below, which define the type, quality, and quantity of data needed to support decisions relating to the environmental condition of a site.

7.1. Step 1: State the problem

The site has a number of potential sources of contamination, as outlined within Section 6. The 'problem' as it stands, is that the site may contain contamination which has the potential to affect the suitability of the property. The purpose of this investigation is to determine the condition of the soil within the site and to provide recommendations where necessary. CSTS notes that groundwater may be encountered during development, though assessment of groundwater condition was not included within this preliminary site investigation.

7.2. Step 2: Identify the decision

Data is required in order to determine the condition of the soil within the site. It will be necessary to decide: 'Is the site suitable for residential land use?' To allow for the decision to be made, it will be necessary to consider the following questions;

- What are the potential sources of contamination at the site?
- Does the material within the site contain contaminants?
- Where contaminants are present, do the concentrations have the potential to adversely impact on human health or the environment?
- What, if any, further remediation action is required?

7.3. Step 3: Identify inputs for the decision

Key data required for the decision making process includes:

- Visual assessment of the site and material condition,
- Identification of the concentration of potential soil contaminants,
- Comparison of the results of the laboratory analysis to the applicable guidelines to evaluate the suitability of the site for the proposed development.

7.4. Step 4: Identify the site boundaries

The boundaries of the study area are the site boundaries show within Appendix A. The study is temporally limited to the day of sampling, that is, 02 July 2016.

7.5. Step 5: Develop a decision rule

The assessment includes a comparison of individual soil sample results to the Residential A Health Investigation Levels detailed within Schedule B1 of *NEPC National Environmental Protection (Assessment of Site Contamination) Measure* [3]. The assessment criteria are outlined and justified in Section 11.

7.6. Step 6: Specify limits on decision errors

Two types of decision errors may occur due to uncertainties or limitations in the project data set:

- A site is deemed uncontaminated when, in fact, it is contaminated,
- A site is deemed contaminated when, in fact, it is uncontaminated.

The consequences for incorrectly assessing a site as posing an unacceptable risk are considered less significant than the consequences for incorrectly assessing a site as posing acceptable risk.

Factors that may contribute to one of the above decision errors include:

- Sampling error – the sampling program does not adequately detect the variability of a contaminant from point to point across the site. That is, the samples collected are not representative of the site conditions,
- Measurement error – may occur through the sample collection, handling, preparation, analysis, and data reduction processes.

The combination of the above errors is known as 'total study error' and is minimised through the correct choice of sampling design and measurement systems.

CSTS has adopted an acceptable error rate of 5% for false negative results. CSTS has defined a false negative result as classifying the site uncontaminated when, in fact, it is contaminated. This acceptable rate of error is derived to provide a 95% level of confidence, accounting for potential errors and limitations that may arise.

CSTS has adopted an acceptable error rate of 5% for false positive results. CSTS has defined a false positive result as classifying the site contaminated when, in fact, it is uncontaminated. This acceptable rate of error is derived to provide a 95% level of confidence, accounting for potential errors and limitations that may arise.

7.7. Optimise the design

In order to optimise the design, a soil sampling plan was implemented as outlined within Section 8. Quality assurance and quality control procedures were implemented as outlined within Section 9.

8. Sampling Process

As this investigation is preliminary, sampling locations were fewer than that of the recommended minimum rate within the *NSW EPA Sampling Design Part 1 – Application* [4]. Soil samples were recovered from the near-surface profiles. Six (6) test-pits were excavated in accessible areas to provide spatial coverage of the site, with one (1) sample recovered from each test-pit.

Sampling did not include asbestos as the site is not yet demolished, and therefore, the site will need an assessment of asbestos to be undertaken post-demolition.

The test-pits were excavated using a shovel to depths of between 0.3m and 0.5m bgl. Each sample was recovered using a pair of nitrile gloves to transfer a portion of the material into a laboratory supplied 250mL glass jar with Teflon seal lid. Each sample was sealed and labelled with the project code and sample ID before being transferred into a chilled container to begin the cool down process as required prior to the chemical analysis of the soil.

When the samples had been recovered, the test-pits were refilled with the excavated material in accordance with Work Health and Safety requirements. The chilled container was sealed and transported to Eurofins Pty Ltd under stringent chain or custody procedures. Upon receipt of the samples, the laboratory checked the samples to confirm their condition, including the integrity of the sample jar seals. When satisfied, the laboratory returned a sample receipt. Laboratory documentation is located within Appendix D.

9. Quality Assurance & Quality Control

9.1. Field quality measures

Site works were conducted by an experienced Environmental Consultant on the 12th of April 2023 in accordance with the *CSTS Field Operating Manual* [5] on Standard Operating Procedures for Environmental Sampling and Monitoring. This includes but is not limited to; the methods of sampling, decontamination of sampling equipment, sample preparation and storage, the documentation of site conditions, and the completion of chain of custody documentation.

9.2. Laboratory quality assessment

Eurofins Pty Ltd is accredited by NATA (NATA accreditation number 1261) for chemical testing services.

Eurofins Pty Ltd has a quality system compliant to ISO/IEC 17025 and work to documented procedures in accordance with this standard. This includes but is not limited to; participation in proficiency testing, use of certified reference materials and statistical analysis of quality control data.

Quality control samples are included in the laboratory's testing schedules at or above frequencies stipulated within the *NEPC National Environmental Protection (Assessment of Site Contamination) Measure* [3], and in accordance with their NATA accreditation. These include the use of calibration standards, calibration verification standards, method blanks, matrix spikes and duplicates, laboratory control samples, surrogates and internal standards.

10. Data Evaluation

Data Quality Indicators [DQI] are used to document and quantify compliance, or otherwise with the requirements of the Data Quality Objectives [DQO]. They are used to assess the reliability of the field procedures and analytical results.

The DQIs are Completeness, Comparability, Representativeness, Precision, and Accuracy. Evaluation of the DQIs is documented in **Table 3**.

Table 3: Data Quality Indicators

DQI	Consideration		Compliance
Completeness[1]	Field	All critical locations sampled	A total of six (6) samples were collected from six (6) test-pits excavated within the site. As this was a preliminary assessment, this is considered adequate.
		All samples collected (from grid and at depth)	All samples were collected in accordance with the sampling plan
		SOPs appropriate and complied with	All samples were collected in accordance with relevant guidelines, industry practices, and Australian Standards
		Experienced sampler	Samples were recovered by a suitably qualified and experienced sampler
		Documentation correct	All required documentation was completed including written site records and photographic logs
	Laboratory	All critical samples analysed according to SAQP	All of the recovered samples were analysed by a NATA accredited laboratory
		All analytes analysed according to SAQP	Each recovered sample was analysed for the analytes required by the SAQPs in accordance with the context for which the sample was recovered
		Appropriate methods and LORs	Eurofins Pty Ltd is a suitably qualified NATA accredited laboratory, therefore the appropriate methods and LORs were adopted for the testing, as outlined within the analytical reports
		Sample documentation complete	Appropriate chain of custody documentation was completed. A sample receipt was provided detailing the condition of the samples upon receipt
		Sample holding times complied with	All samples were analysed within the appropriate holding times as detailed in *NEPM 2013*

Comparability[2]	Field	Same SOPs used on each occasion	Each sample was recovered in accordance with the SOPs
		Experienced sampler	Samples were recovered by a suitably qualified and experienced sampler
		Climatic conditions	The samples were collected over a period of less than two (2) hours, therefore the climatic conditions are deemed to have a negligible impact on the comparability of the samples.
		Same types of samples collected	The type of samples collected was consistent
	Laboratory	Sample analytical methods used	Eurofins Pty Ltd is a suitably qualified NATA accredited laboratory, therefore the appropriate methods were adopted for the testing, as outlined within the analytical reports
		Sample LORs	Eurofins Pty Ltd is a suitably qualified NATA accredited laboratory, therefore the appropriate LORs were adopted for the testing, as outlined within the analytical reports
		Same laboratories	Eurofins Pty Ltd conducted all of the analytical testing
		Same units	The same units were used for the respective analytes
Representativeness[3]	Field	Appropriate media sampled according to SAQP	The SAQP was limited to soil condition investigation. All samples were recovered in accordance with the SAQP
		All media identified in SAQP	The sampling investigation was limited to the analysis of the soil
	Laboratory	All samples analysed according to SAQP	Eurofins Pty Ltd is a suitably qualified NATA accredited laboratory, therefore all samples were analysed in accordance with the appropriate requirements
Precision[4]	Field	SOPs appropriate and complied with	All samples were recovered in accordance with the SOPs
	Laboratory	Laboratory and inter-laboratory duplicates	Laboratory and inter-laboratory duplicates are analysed as a component of the standard operating procedures of Eurofins Pty Ltd in accordance with the conditions of their NATA accreditation
Accuracy[5]	Field	SOPs appropriate and complied with	All samples were recovered in accordance with the SOPs
	Laboratory		Eurofins Pty Ltd is a suitably qualified NATA accredited laboratory, therefore all samples were analysed accurately in accordance with the appropriate requirements.

11. Assessment Criteria

As the site is to be developed as a childcare centre, CSTS considers the appropriate Health Investigation Level (HIL) to be HIL 'A'; residential land use scenario with garden/accessible soil. Therefore, the results of the laboratory analysis have been compared to the most conservative value from either, the relevant ESL, HIL or HSL, referred to within the *NEPC National Environmental Protection (Assessment of Site Contamination) Measure* [3]. Provided the detected concentrations do not exceed these levels, the site can be considered suitable for residential land use with minimal soil access from a health risk perspective.

Table 4: Assessment Criteria (mg/kg)

Analyte	Residential A Health Investigation Level[1]
Arsenic	100
Cadmium	20
Chromium	100
Copper	6000
Lead	300
Mercury	10
Nickel	400
Zinc	7400
PAH	300
B(a)P TEQ[2]	3
Benzene	0.7
Toluene	480
Ethyl-benzene	68
Xylene	110
TRH F1	50
TRH F2	280
TRH F3	1300
TRH F4	5600
DDT + DDE + DDD	240
Aldrin + Dieldrin	6
Chlordane	50
Endosulfan	270
Endrin	10
Heptachlor	6
HCB	10
Methoxychlor	300
Chlorpyrifos	160
PCB	1

Adapted from Schedule B(1) of *NEPC National Environmental Protection (Assessment of Site Contamination) Measure* [3] and *Friebel.E & Nadebaum.P, Health screening levels for petroleum hydrocarbons in soil and groundwater* [4].

12. Results

The laboratory analysis of the recovered samples was undertaken by experienced technicians from Eurofins Pty Ltd in accordance with relevant Australian Standards and the conditions of their NATA accreditation.

The laboratory analysis detected Arsenic, Cadmium, Chromium, Copper, Lead, Nickel, Zinc, Total PAH, TRH (F3 and F4), Aldrin + Dieldrin within the recovered samples. The concentration of Lead within sample TP-5 exceeded the HIL A criteria detailed within the NEPM 2013. The concentrations of all other detected analytes were below the respective assessment criteria.

No concentrations of BTEX, TRH (F1 and F2), OPP or PCB were detected above the laboratory limits of reporting within any of the recovered samples.

Refer to **Tables 5 & 6**.

Table 5: Laboratory Results (mg/kg)

Sample ID	Priority Metals								Polycyclic Aromatic Hydrocarbons		BTEX			
	Arsenic	Cadmium	Chromium	Copper	Lead	Mercury	Nickel	Zinc	PAH	B(a)P TEQ	Benzene	Toluene	Ethyl-benzene	Xylene
TP-1	21	< 0.4	39	18	67	< 0.1	7.2	180	<0.5	<0.5	<0.1	<0.1	<0.1	<0.3
TP-2	11	0.4	23	31	56	< 0.1	8.6	130	1.2	<0.5	<0.1	<0.1	<0.1	<0.3
TP-3	7.5	0.7	19	39	77	< 0.1	5.9	200	<0.5	<0.5	<0.1	<0.1	<0.1	<0.3
TP-4	3.1	1	9.3	24	50	< 0.1	< 5	160	<0.5	<0.5	<0.1	<0.1	<0.1	<0.3
TP-5	7	< 0.4	15	21	***360***	< 0.1	< 5	130	<0.5	<0.5	<0.1	<0.1	<0.1	<0.3
TP-6	9.6	< 0.4	19	9.3	38	< 0.1	< 5	31	<0.5	<0.5	<0.1	<0.1	<0.1	<0.3
Assessment Criteria	**100**	**20**	**100**	**6000**	**300**	**10**	**400**	**7400**	**300**	**3**	**0.7**	**480**	**68**	**110**

Adapted from Eurofins Analytical Report 979974and the NEPC National Environmental Protection (Assessment of Site Contamination) Measure [3]

Table 6: Laboratory Results (mg/kg)

Sample ID	Total Recoverable Hydrocarbons				Organochlorine & Organophosphate Pesticides									PCB
	TRH F1	TRH F2	TRH F3	TRH F4	DDT + DDE + DDD	Aldrin + Dieldrin	Chlordane	Endosulfan	Endrin	Heptachlor	HCB	Methoxychlor	Chlorpyrifos	PCB
TP-1	<20	<50	<100	<100	<0.05	0.47	<0.1	<0.05	<0.05	<0.05	<0.05	<0.05	<0.2	<0.1
TP-2	<20	<50	<180	190	<0.5	<0.5	<1	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<1
TP-3	<20	<50	110	<100	<0.05	<0.05	<0.1	<0.05	<0.05	<0.05	<0.05	<0.05	<0.2	<0.1
TP-4	<20	<50	<100	<100	<0.05	0.07	<0.1	<0.05	<0.05	<0.05	<0.05	<0.05	<0.2	<0.1
TP-5	<20	<50	<100	<100	<0.05	<0.05	<0.1	<0.05	<0.05	<0.05	<0.05	<0.05	<0.2	<0.1
TP-6	<20	<50	<100	<100	<0.5	<0.5	<1	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<1
Assessment Criteria	**50**	**280**	**1300**	**5600**	**240**	**6**	**50**	**270**	**10**	**6**	**10**	**300**	**160**	**1**

Adapted from Eurofins Analytical Report 979974 and the NEPC National Environmental Protection (Assessment of Site Contamination) Measure [3]

13. Site Characterisation

The site has historically been used primarily for residential purposes. At the time of the inspection, the site comprised two (2) houses, both houses on the site were determined to be in good condition; however, the use of asbestos as a building material in the walls of the houses was not ruled out. As such, CSTS recommends a hazard material survey be undertaken in the house prior to demolition. The surrounding area of low density residential zoning is considered to be of low risk to the site. The exceedance of lead concentration found within test-pit 5 was located within the front yard of Lot 37. High levels of heavy metals such as lead are relatively common within the Greater Sydney Region. The presence lead could be due to several contaminating activities such as; the use of lead paints, leaded petroleum leakage, the use of lead piping or unsafe renovation practices on the site. Potential exposure routes include dermal exposure to contaminated soil, ingestion of plants grown the site following the plant uptake of lead and the ingestion of contaminated soil by small children on site. The main exposed population is the future users of the site. To further assess the extent of contamination, soil testing should be conducted on the site post demolition.

14. Conclusions & Recommendations

Based on the conducted assessment, CSTS has concluded that the site known as 28 & 30 Forrest Road, East Hills NSW 2213 can be made suitable, from a contamination perspective, for residential land use with minimal soil access opportunities, providing the following recommendations are implemented.

- Conduct a hazardous materials survey to confirm the presence or absence of Asbestos and other potential hazards within the existing structures,

- Demolition of existing structures in accordance with recommendations of the hazardous materials survey and the removal of anthropogenic inclusions such as bricks and concrete,

- Conduct a further soil assessment on the contamination status of the material onsite post-demolition including within currently inaccessible portion of hardstand concrete on the South-east of the site.

CSTS recommends that, during the process of development, should any indicators of potential contamination be encountered, this office is to be contacted immediately for further assessment. Should there be any change in the proposed development, all conclusions and recommendations are to be reviewed. Specifically, if the proposed development will involve an alternate final land use, the findings of this report will require revision and further assessment may be necessary.

15. Limitations

This report pertains to the site known as 28 & 30 Forrest Road, East Hills NSW 2213 at the time of the visual assessment and sample recovery. Should there be any variations in the site conditions since the abovementioned date (such as the importation of fill, chemical spillage, illegal dumping etc.), further assessment will be required. Should any suspect material be encountered, we recommend that this office be contacted immediately for further assessment. Neither Compaction & Soil Testing Services Pty Ltd, nor any other reputable firm can give unqualified warranties on the condition of the site and subsurface conditions.

While Compaction & Soil Testing Services Pty Ltd takes all reasonable due care and diligence, we offer no absolute warranty for the material below or between the locations sampled and investigated. Unless otherwise stated, Compaction & Soil Testing Services Pty Ltd has made no effort to verify the validity of the information gathered from external sources, and assumes it provides a reliable foundation for the assessment. Compaction & Soil Testing Services Pty Ltd does not assume any liability for site conditions unobserved or inaccessible at the time of the investigation.

This report has been prepared for the particular project described and no responsibility is accepted for the use of any part of this report in any other context or for any other purpose. If there is any change in the proposed development described within this report, then all recommendations are to be reviewed. No other warranty, expressed or implied, is made or intended. Copyright of this report remains the property of Compaction & Soil Testing Services Pty Ltd.

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Should you have any queries about the methodology, findings, conclusions or recommendations of this Stage 1 Preliminary Site Investigation, please do not hesitate to contact our office on (02) 9675 7522.

16. References

[1] – New South Wales Environmental Protection Authority 2020, *Contaminated Lands Guidelines; Consultants reporting on contaminated land*, NSW EPA, Parramatta NSW Australia

[2] – New South Wales State Government 1997, *Contaminated Land Management Act 1997*, NSW State Government, Sydney NSW Australia.

[3] – National Environmental Protection Council 2013, *National Environment Protection (Assessment of Site Contamination) Measure 1999*, Australian Federal Government, Canberra ACT Australia

[4] – New South Wales Environmental Protection Agency 2022, *Sampling Design Part 1 – Application*, NSW EPA, Parramatta NSW Australia

[5] – Compaction & Soil Testing Services Pty Ltd, 2014, *Field Manual on Standard Operating Procedures for Environmental Sampling and Monitoring*

[6] – New South Wales Department of Planning and Environment, *eSPADE Tool*, accessed 8/07/2024 via https://www.environment.nsw.gov.au/eSpade2WebApp

[7] – New South Wales Department of Planning and Environment, *Naturally Occurring Asbestos in NSW*, accessed 8/07/2024 via https://trade.maps.arcgis.com/apps/PublicInformation/index.html?appid=87434b6ec7dd4aba8cb664d8e646fb06

[8] – Nearmap Aerial Imagery, part of Nearmap Australia Pty Ltd, Barangaroo NSW Australia

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Appendix A - Drawings

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Drawn:	KD	**Site Drawing – Sampling Layout** Site drawing for 28 & 30 Forrest Street, East Hills 2213 NSW. Lot 37 and 38 of DP14650. Approximate GPS Coordinates of (GDA2020): -33.960654, 150.987223. Source: Nearmaps, dated 18 January 2023	Drawing No:	AA 001
Approved:	PS		Project Code	
Date:	5/05/2023		PWC4778	

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Drawn:	KD	**Site Drawing – Surrounding Area** Site drawing of surrounding area, East Hills 2213 NSW. Approximate GPS Coordinates of (GDA2020): -33.960654, 150.987223. Source: Nearmaps, dated 18 January 2023	Drawing No:	AA 002
Approved:	PS		Project Code	
Date:	5/05/2023		PWC4778	

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Appendix B:

Photographs

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Photograph 1, 2, 3, 4 and 5 – Rear section of Lot 38, located on the East of the site of interest, showing piles of wood, fencing and various construction materials. 30 Forrest Street, East Hills 2213 NSW. Approximate GPS Coordinates of (GDA2020): -33.960527, 150.98728.

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Photograph 6, 7, 8 – Rear section of Lot 37, located on the East of the site of interest, showing several vehicles and a tree. 28 Forrest Street, East Hills 2213 NSW. Approximate GPS Coordinates of (GDA2020): -33.960653, 150.987359.

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Photograph 9 – Driveway section of Lot 38, located on the East of the site of interest, showing test-pit 1. 30 Forrest Street, East Hills 2213 NSW. Approximate GPS Coordinates of (GDA2020): -33.960602, 150.98705.

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Photograph 10 – Rear section of Lot 37, showing test-pit 3. 28 Forrest Street, East Hills 2213 NSW. Approximate GPS Coordinates of (GDA2020): -33.960555, 150.987409.

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Photograph 11 – Driveway section of Lot 38, showing test-pit 6. 30 Forrest Street, East Hills 2213 NSW. Approximate GPS Coordinates of (GDA2020): -33.960664, 150.98737.

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Photograph 12 – Driveway section of Lot 37, located on the East of the site of interest, showing test-pit 1. 28 Forrest Street, East Hills 2213 NSW. Approximate GPS Coordinates of (GDA2020): -33.960917, 150.9869.

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Email: office@csts.net.au Web: www.csts.net.au

Photograph 12 – Driveway section of Lot 37, located on the East of the site of interest, showing test-pit 1. 30 Forrest Street, East Hills 2213 NSW. Approximate GPS Coordinates of (GDA2020): -33.960778, 150.986843.

C.S.T.S.
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Appendix C:

Laboratory Results

CHAIN OF CUSTODY RECORD

Eurofins | Environment Testing 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	CSTS	Project №	EH	Project Manager	Neil Groat
Address	1/78 Owen St, Glendenning	Project Name	East Hills	EDD Format ESdat, EQuIS etc	
Contact Name	Karl Davis				
Phone №	0415338117				
Special Directions					
Purchase Order					
Quote ID №					

Sampler(s)	K. D
Handed over by	K. D
Email for Invoice	invoice@csts.net.au
Email for Results	ra@csts.net.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)	B7A	B15	Containers: 500mL Plastic	250mL Plastic	125mL Plastic	200mL Amber Glass	40mL VOA vial	500mL PFAS Bottle	Jar (Glass or HDPE)	Other (Asbestos AS4964, WA Guidelines)	Sample Comments / Dangerous Goods Hazard Warning
1	TP-1	11/04	S	X	X							X		
2	TP-2	11/04	S											
3	TP-3	11/04	S											
4	TP-4	11/04	S											
5	TP-5	11/04	S											
6	TP-6	11/04	S											
17														
18														
19														
20														
	Total Counts													

Containers Change container type & size if necessary

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( )

Method of Shipment	☐ Courier (#	☑ Hand Delivered	☐ Postal	Name	Karl Davis	Signature		Date	11/04	Time	4:00pm
Laboratory Use Only	Received By	Rsimmons	SYD | BNE | MEL | PER | ADL | NTL | DRW	Signature		Date	11/11	Time	8:01	Temperature	20.5
	Received By		SYD | BNE | MEL | PER | ADL | NTL | DRW	Signature		Date		Time		Report №	

Eurofins Environment Testing Australia Pty Ltd

Submission of samples to the laboratory will be deemed as acceptance of Eurofins | Environment Testing Standard Terms and Conditions unless agreed otherwise. A copy is available on request

QSX005_R10 Modified by Dr R Symons Approved by G Jackson Approved on 8 August 2019

979974

Compaction & Soil Testing
1/78 Owen St
Glendenning
NSW 2761

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: **Karl Davis**

Report **979974-S**
Project name EAST HILLS
Project ID EH
Received Date Apr 11, 2023

Client Sample ID			**TP-1**	[G01]**TP-2**	**TP-3**	**TP-4**
Sample Matrix			**Soil**	**Soil**	**Soil**	**Soil**
Eurofins Sample No.			**S23-Ap0022182**	**S23-Ap0022183**	**S23-Ap0022184**	**S23-Ap0022185**
Date Sampled			**Apr 11, 2023**	**Apr 11, 2023**	**Apr 11, 2023**	**Apr 11, 2023**
Test/Reference	LOR	Unit				
Total Recoverable Hydrocarbons						
TRH C6-C9	20	mg/kg	< 20	< 20	< 20	< 20
TRH C10-C14	20	mg/kg	24	25	< 20	< 20
TRH C15-C28	50	mg/kg	< 50	80	58	< 50
TRH C29-C36	50	mg/kg	< 50	140	77	< 50
TRH C10-C36 (Total)	50	mg/kg	< 50	245	135	< 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	180	110	< 100
TRH >C34-C40	100	mg/kg	< 100	190	< 100	< 100
TRH >C10-C40 (total)*	100	mg/kg	< 100	370	110	< 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	%	138	54	62	116
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
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

Client Sample ID			TP-1	[G01]TP-2	TP-3	TP-4
Sample Matrix			Soil	Soil	Soil	Soil
Eurofins Sample No.			S23-Ap0022182	S23-Ap0022183	S23-Ap0022184	S23-Ap0022185
Date Sampled			Apr 11, 2023	Apr 11, 2023	Apr 11, 2023	Apr 11, 2023
Test/Reference	LOR	Unit				
Polycyclic Aromatic Hydrocarbons						
Dibenz(a.h)anthracene	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
Fluoranthene	0.5	mg/kg	< 0.5	0.6	< 0.5	< 0.5
Fluorene	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
Indeno(1.2.3-cd)pyrene	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
Naphthalene	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
Phenanthrene	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
Pyrene	0.5	mg/kg	< 0.5	0.6	< 0.5	< 0.5
Total PAH*	0.5	mg/kg	< 0.5	1.2	< 0.5	< 0.5
2-Fluorobiphenyl (surr.)	1	%	112	121	115	103
p-Terphenyl-d14 (surr.)	1	%	107	105	103	101
Organochlorine Pesticides						
Chlordanes - Total	0.1	mg/kg	< 0.1	< 1	< 0.1	< 0.1
4.4'-DDD	0.05	mg/kg	< 0.05	< 0.5	< 0.05	< 0.05
4.4'-DDE	0.05	mg/kg	< 0.05	< 0.5	< 0.05	< 0.05
4.4'-DDT	0.05	mg/kg	< 0.05	< 0.5	< 0.05	< 0.05
a-HCH	0.05	mg/kg	< 0.05	< 0.5	< 0.05	< 0.05
Aldrin	0.05	mg/kg	< 0.05	< 0.5	< 0.05	< 0.05
b-HCH	0.05	mg/kg	< 0.05	< 0.5	< 0.05	< 0.05
d-HCH	0.05	mg/kg	< 0.05	< 0.5	< 0.05	< 0.05
Dieldrin	0.05	mg/kg	0.47	< 0.5	< 0.05	0.07
Endosulfan I	0.05	mg/kg	< 0.05	< 0.5	< 0.05	< 0.05
Endosulfan II	0.05	mg/kg	< 0.05	< 0.5	< 0.05	< 0.05
Endosulfan sulphate	0.05	mg/kg	< 0.05	< 0.5	< 0.05	< 0.05
Endrin	0.05	mg/kg	< 0.05	< 0.5	< 0.05	< 0.05
Endrin aldehyde	0.05	mg/kg	< 0.05	< 0.5	< 0.05	< 0.05
Endrin ketone	0.05	mg/kg	< 0.05	< 0.5	< 0.05	< 0.05
g-HCH (Lindane)	0.05	mg/kg	< 0.05	< 0.5	< 0.05	< 0.05
Heptachlor	0.05	mg/kg	< 0.05	< 0.5	< 0.05	< 0.05
Heptachlor epoxide	0.05	mg/kg	< 0.05	< 0.5	< 0.05	< 0.05
Hexachlorobenzene	0.05	mg/kg	< 0.05	< 0.5	< 0.05	< 0.05
Methoxychlor	0.05	mg/kg	< 0.05	< 0.5	< 0.05	< 0.05
Toxaphene	0.5	mg/kg	< 0.5	< 10	< 0.5	< 0.5
Aldrin and Dieldrin (Total)*	0.05	mg/kg	0.47	< 0.5	< 0.05	0.07
DDT + DDE + DDD (Total)*	0.05	mg/kg	< 0.05	< 0.5	< 0.05	< 0.05
Vic EPA IWRG 621 OCP (Total)*	0.1	mg/kg	0.47	< 1	< 0.1	< 0.1
Vic EPA IWRG 621 Other OCP (Total)*	0.1	mg/kg	< 0.1	< 1	< 0.1	< 0.1
Dibutylchlorendate (surr.)	1	%	118	128	119	102
Tetrachloro-m-xylene (surr.)	1	%	107	111	105	90
Organophosphorus Pesticides						
Azinphos-methyl	0.2	mg/kg	< 0.2	< 0.5	< 0.2	< 0.2
Bolstar	0.2	mg/kg	< 0.2	< 0.5	< 0.2	< 0.2
Chlorfenvinphos	0.2	mg/kg	< 0.2	< 0.5	< 0.2	< 0.2
Chlorpyrifos	0.2	mg/kg	< 0.2	< 0.5	< 0.2	< 0.2
Chlorpyrifos-methyl	0.2	mg/kg	< 0.2	< 0.5	< 0.2	< 0.2
Coumaphos	2	mg/kg	< 2	< 5	< 2	< 2
Demeton-S	0.2	mg/kg	< 0.2	< 0.5	< 0.2	< 0.2
Demeton-O	0.2	mg/kg	< 0.2	< 0.5	< 0.2	< 0.2
Diazinon	0.2	mg/kg	< 0.2	< 0.5	< 0.2	< 0.2
Dichlorvos	0.2	mg/kg	< 0.2	< 0.5	< 0.2	< 0.2

Client Sample ID			TP-1	[G01]TP-2	TP-3	TP-4
Sample Matrix			Soil	Soil	Soil	Soil
Eurofins Sample No.			S23-Ap0022182	S23-Ap0022183	S23-Ap0022184	S23-Ap0022185
Date Sampled			Apr 11, 2023	Apr 11, 2023	Apr 11, 2023	Apr 11, 2023
Test/Reference	LOR	Unit				
Organophosphorus Pesticides						
Dimethoate	0.2	mg/kg	< 0.2	< 0.5	< 0.2	< 0.2
Disulfoton	0.2	mg/kg	< 0.2	< 0.5	< 0.2	< 0.2
EPN	0.2	mg/kg	< 0.2	< 0.5	< 0.2	< 0.2
Ethion	0.2	mg/kg	< 0.2	< 0.5	< 0.2	< 0.2
Ethoprop	0.2	mg/kg	< 0.2	< 0.5	< 0.2	< 0.2
Ethyl parathion	0.2	mg/kg	< 0.2	< 0.5	< 0.2	< 0.2
Fenitrothion	0.2	mg/kg	< 0.2	< 0.5	< 0.2	< 0.2
Fensulfothion	0.2	mg/kg	< 0.2	< 0.5	< 0.2	< 0.2
Fenthion	0.2	mg/kg	< 0.2	< 0.5	< 0.2	< 0.2
Malathion	0.2	mg/kg	< 0.2	< 0.5	< 0.2	< 0.2
Merphos	0.2	mg/kg	< 0.2	< 0.5	< 0.2	< 0.2
Methyl parathion	0.2	mg/kg	< 0.2	< 0.5	< 0.2	< 0.2
Mevinphos	0.2	mg/kg	< 0.2	< 0.5	< 0.2	< 0.2
Monocrotophos	2	mg/kg	< 2	< 5	< 2	< 2
Naled	0.2	mg/kg	< 0.2	< 0.5	< 0.2	< 0.2
Omethoate	2	mg/kg	< 2	< 5	< 2	< 2
Phorate	0.2	mg/kg	< 0.2	< 0.5	< 0.2	< 0.2
Pirimiphos-methyl	0.2	mg/kg	< 0.2	< 0.5	< 0.2	< 0.2
Pyrazophos	0.2	mg/kg	< 0.2	< 0.5	< 0.2	< 0.2
Ronnel	0.2	mg/kg	< 0.2	< 0.5	< 0.2	< 0.2
Terbufos	0.2	mg/kg	< 0.2	< 0.5	< 0.2	< 0.2
Tetrachlorvinphos	0.2	mg/kg	< 0.2	< 0.5	< 0.2	< 0.2
Tokuthion	0.2	mg/kg	< 0.2	< 0.5	< 0.2	< 0.2
Trichloronate	0.2	mg/kg	< 0.2	< 0.5	< 0.2	< 0.2
Triphenylphosphate (surr.)	1	%	112	106	104	124
Polychlorinated Biphenyls						
Aroclor-1016	0.1	mg/kg	< 0.1	< 1	< 0.1	< 0.1
Aroclor-1221	0.1	mg/kg	< 0.1	< 1	< 0.1	< 0.1
Aroclor-1232	0.1	mg/kg	< 0.1	< 1	< 0.1	< 0.1
Aroclor-1242	0.1	mg/kg	< 0.1	< 1	< 0.1	< 0.1
Aroclor-1248	0.1	mg/kg	< 0.1	< 1	< 0.1	< 0.1
Aroclor-1254	0.1	mg/kg	< 0.1	< 1	< 0.1	< 0.1
Aroclor-1260	0.1	mg/kg	< 0.1	< 1	< 0.1	< 0.1
Total PCB*	0.1	mg/kg	< 0.1	< 1	< 0.1	< 0.1
Dibutylchlorendate (surr.)	1	%	118	128	119	102
Tetrachloro-m-xylene (surr.)	1	%	107	111	105	90
Phenols (Halogenated)						
2-Chlorophenol	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
2.4-Dichlorophenol	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
2.4.5-Trichlorophenol	1	mg/kg	< 1	< 1	< 1	< 1
2.4.6-Trichlorophenol	1	mg/kg	< 1	< 1	< 1	< 1
2.6-Dichlorophenol	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
4-Chloro-3-methylphenol	1	mg/kg	< 1	< 1	< 1	< 1
Pentachlorophenol	1	mg/kg	< 1	< 1	< 1	< 1
Tetrachlorophenols - Total	10	mg/kg	< 10	< 10	< 10	< 10
Total Halogenated Phenol*	1	mg/kg	< 1	< 1	< 1	< 1

Client Sample ID			TP-1	[G01]TP-2	TP-3	TP-4
Sample Matrix			Soil	Soil	Soil	Soil
Eurofins Sample No.			S23-Ap0022182	S23-Ap0022183	S23-Ap0022184	S23-Ap0022185
Date Sampled			Apr 11, 2023	Apr 11, 2023	Apr 11, 2023	Apr 11, 2023
Test/Reference	LOR	Unit				
Phenols (non-Halogenated)						
2-Cyclohexyl-4.6-dinitrophenol	20	mg/kg	< 20	< 20	< 20	< 20
2-Methyl-4.6-dinitrophenol	5	mg/kg	< 5	< 5	< 5	< 5
2-Nitrophenol	1	mg/kg	< 1	< 1	< 1	< 1
2.4-Dimethylphenol	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
2.4-Dinitrophenol	5	mg/kg	< 5	< 5	< 5	< 5
2-Methylphenol (o-Cresol)	0.2	mg/kg	< 0.2	< 0.5	< 0.2	< 0.2
3&4-Methylphenol (m&p-Cresol)	0.4	mg/kg	< 0.4	< 1	< 0.4	< 0.4
Total cresols*	0.5	mg/kg	< 0.5	< 1	< 0.5	< 0.5
4-Nitrophenol	5	mg/kg	< 5	< 5	< 5	< 5
Dinoseb	20	mg/kg	< 20	< 20	< 20	< 20
Phenol	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
Phenol-d6 (surr.)	1	%	109	102	110	101
Total Non-Halogenated Phenol*	20	mg/kg	< 20	< 20	< 20	< 20
Heavy Metals						
Arsenic	2	mg/kg	21	11	7.5	3.1
Cadmium	0.4	mg/kg	< 0.4	0.4	0.7	1.0
Chromium	5	mg/kg	39	23	19	9.3
Copper	5	mg/kg	18	31	39	24
Lead	5	mg/kg	67	56	77	50
Mercury	0.1	mg/kg	< 0.1	< 0.1	< 0.1	< 0.1
Nickel	5	mg/kg	7.2	8.6	5.9	< 5
Zinc	5	mg/kg	180	130	200	160
Sample Properties						
% Moisture	1	%	17	16	27	12

Client Sample ID			TP-5	[G01]TP-6
Sample Matrix			Soil	Soil
Eurofins Sample No.			S23-Ap0022186	S23-Ap0022187
Date Sampled			Apr 11, 2023	Apr 11, 2023
Test/Reference	LOR	Unit		
Total Recoverable Hydrocarbons				
TRH C6-C9	20	mg/kg	< 20	< 20
TRH C10-C14	20	mg/kg	< 20	< 20
TRH C15-C28	50	mg/kg	< 50	< 50
TRH C29-C36	50	mg/kg	< 50	< 50
TRH C10-C36 (Total)	50	mg/kg	< 50	< 50
TRH C6-C10	20	mg/kg	< 20	< 20
TRH C6-C10 less BTEX (F1)[N04]	20	mg/kg	< 20	< 20
TRH >C10-C16	50	mg/kg	< 50	< 50
TRH >C10-C16 less Naphthalene (F2)[N01]	50	mg/kg	< 50	< 50
TRH >C16-C34	100	mg/kg	< 100	< 100
TRH >C34-C40	100	mg/kg	< 100	< 100
TRH >C10-C40 (total)*	100	mg/kg	< 100	< 100

Client Sample ID			TP-5	[G01]TP-6
Sample Matrix			Soil	Soil
Eurofins Sample No.			S23-Ap0022186	S23-Ap0022187
Date Sampled			Apr 11, 2023	Apr 11, 2023
Test/Reference	LOR	Unit		
BTEX				
Benzene	0.1	mg/kg	< 0.1	< 0.1
Toluene	0.1	mg/kg	< 0.1	< 0.1
Ethylbenzene	0.1	mg/kg	< 0.1	< 0.1
m&p-Xylenes	0.2	mg/kg	< 0.2	< 0.2
o-Xylene	0.1	mg/kg	< 0.1	< 0.1
Xylenes - Total*	0.3	mg/kg	< 0.3	< 0.3
4-Bromofluorobenzene (surr.)	1	%	127	129
Total Recoverable Hydrocarbons - 2013 NEPM Fractions				
Naphthalene[N02]	0.5	mg/kg	< 0.5	< 0.5
Polycyclic Aromatic Hydrocarbons				
Benzo(a)pyrene TEQ (lower bound) *	0.5	mg/kg	< 0.5	< 0.5
Benzo(a)pyrene TEQ (medium bound) *	0.5	mg/kg	0.6	0.6
Benzo(a)pyrene TEQ (upper bound) *	0.5	mg/kg	1.2	1.2
Acenaphthene	0.5	mg/kg	< 0.5	< 0.5
Acenaphthylene	0.5	mg/kg	< 0.5	< 0.5
Anthracene	0.5	mg/kg	< 0.5	< 0.5
Benz(a)anthracene	0.5	mg/kg	< 0.5	< 0.5
Benzo(a)pyrene	0.5	mg/kg	< 0.5	< 0.5
Benzo(b&j)fluoranthene[N07]	0.5	mg/kg	< 0.5	< 0.5
Benzo(g.h.i)perylene	0.5	mg/kg	< 0.5	< 0.5
Benzo(k)fluoranthene	0.5	mg/kg	< 0.5	< 0.5
Chrysene	0.5	mg/kg	< 0.5	< 0.5
Dibenz(a.h)anthracene	0.5	mg/kg	< 0.5	< 0.5
Fluoranthene	0.5	mg/kg	< 0.5	< 0.5
Fluorene	0.5	mg/kg	< 0.5	< 0.5
Indeno(1.2.3-cd)pyrene	0.5	mg/kg	< 0.5	< 0.5
Naphthalene	0.5	mg/kg	< 0.5	< 0.5
Phenanthrene	0.5	mg/kg	< 0.5	< 0.5
Pyrene	0.5	mg/kg	< 0.5	< 0.5
Total PAH*	0.5	mg/kg	< 0.5	< 0.5
2-Fluorobiphenyl (surr.)	1	%	103	118
p-Terphenyl-d14 (surr.)	1	%	99	103
Organochlorine Pesticides				
Chlordanes - Total	0.1	mg/kg	< 0.1	< 1
4.4'-DDD	0.05	mg/kg	< 0.05	< 0.5
4.4'-DDE	0.05	mg/kg	< 0.05	< 0.5
4.4'-DDT	0.05	mg/kg	< 0.05	< 0.5
a-HCH	0.05	mg/kg	< 0.05	< 0.5
Aldrin	0.05	mg/kg	< 0.05	< 0.5
b-HCH	0.05	mg/kg	< 0.05	< 0.5
d-HCH	0.05	mg/kg	< 0.05	< 0.5
Dieldrin	0.05	mg/kg	< 0.05	< 0.5
Endosulfan I	0.05	mg/kg	< 0.05	< 0.5
Endosulfan II	0.05	mg/kg	< 0.05	< 0.5
Endosulfan sulphate	0.05	mg/kg	< 0.05	< 0.5
Endrin	0.05	mg/kg	< 0.05	< 0.5
Endrin aldehyde	0.05	mg/kg	< 0.05	< 0.5
Endrin ketone	0.05	mg/kg	< 0.05	< 0.5
g-HCH (Lindane)	0.05	mg/kg	< 0.05	< 0.5

Client Sample ID			TP-5	[G01]TP-6
Sample Matrix			Soil	Soil
Eurofins Sample No.			S23-Ap0022186	S23-Ap0022187
Date Sampled			Apr 11, 2023	Apr 11, 2023
Test/Reference	LOR	Unit		
Organochlorine Pesticides				
Heptachlor	0.05	mg/kg	< 0.05	< 0.5
Heptachlor epoxide	0.05	mg/kg	< 0.05	< 0.5
Hexachlorobenzene	0.05	mg/kg	< 0.05	< 0.5
Methoxychlor	0.05	mg/kg	< 0.05	< 0.5
Toxaphene	0.5	mg/kg	< 0.5	< 10
Aldrin and Dieldrin (Total)*	0.05	mg/kg	< 0.05	< 0.5
DDT + DDE + DDD (Total)*	0.05	mg/kg	< 0.05	< 0.5
Vic EPA IWRG 621 OCP (Total)*	0.1	mg/kg	< 0.1	< 1
Vic EPA IWRG 621 Other OCP (Total)*	0.1	mg/kg	< 0.1	< 1
Dibutylchlorendate (surr.)	1	%	117	65
Tetrachloro-m-xylene (surr.)	1	%	85	91
Organophosphorus Pesticides				
Azinphos-methyl	0.2	mg/kg	< 0.2	< 0.5
Bolstar	0.2	mg/kg	< 0.2	< 0.5
Chlorfenvinphos	0.2	mg/kg	< 0.2	< 0.5
Chlorpyrifos	0.2	mg/kg	< 0.2	< 0.5
Chlorpyrifos-methyl	0.2	mg/kg	< 0.2	< 0.5
Coumaphos	2	mg/kg	< 2	< 5
Demeton-S	0.2	mg/kg	< 0.2	< 0.5
Demeton-O	0.2	mg/kg	< 0.2	< 0.5
Diazinon	0.2	mg/kg	< 0.2	< 0.5
Dichlorvos	0.2	mg/kg	< 0.2	< 0.5
Dimethoate	0.2	mg/kg	< 0.2	< 0.5
Disulfoton	0.2	mg/kg	< 0.2	< 0.5
EPN	0.2	mg/kg	< 0.2	< 0.5
Ethion	0.2	mg/kg	< 0.2	< 0.5
Ethoprop	0.2	mg/kg	< 0.2	< 0.5
Ethyl parathion	0.2	mg/kg	< 0.2	< 0.5
Fenitrothion	0.2	mg/kg	< 0.2	< 0.5
Fensulfothion	0.2	mg/kg	< 0.2	< 0.5
Fenthion	0.2	mg/kg	< 0.2	< 0.5
Malathion	0.2	mg/kg	< 0.2	< 0.5
Merphos	0.2	mg/kg	< 0.2	< 0.5
Methyl parathion	0.2	mg/kg	< 0.2	< 0.5
Mevinphos	0.2	mg/kg	< 0.2	< 0.5
Monocrotophos	2	mg/kg	< 2	< 5
Naled	0.2	mg/kg	< 0.2	< 0.5
Omethoate	2	mg/kg	< 2	< 5
Phorate	0.2	mg/kg	< 0.2	< 0.5
Pirimiphos-methyl	0.2	mg/kg	< 0.2	< 0.5
Pyrazophos	0.2	mg/kg	< 0.2	< 0.5
Ronnel	0.2	mg/kg	< 0.2	< 0.5
Terbufos	0.2	mg/kg	< 0.2	< 0.5
Tetrachlorvinphos	0.2	mg/kg	< 0.2	< 0.5
Tokuthion	0.2	mg/kg	< 0.2	< 0.5
Trichloronate	0.2	mg/kg	< 0.2	< 0.5
Triphenylphosphate (surr.)	1	%	117	93

Client Sample ID			TP-5	[G01]TP-6
Sample Matrix			Soil	Soil
Eurofins Sample No.			S23-Ap0022186	S23-Ap0022187
Date Sampled			Apr 11, 2023	Apr 11, 2023
Test/Reference	LOR	Unit		
Polychlorinated Biphenyls				
Aroclor-1016	0.1	mg/kg	< 0.1	< 1
Aroclor-1221	0.1	mg/kg	< 0.1	< 1
Aroclor-1232	0.1	mg/kg	< 0.1	< 1
Aroclor-1242	0.1	mg/kg	< 0.1	< 1
Aroclor-1248	0.1	mg/kg	< 0.1	< 1
Aroclor-1254	0.1	mg/kg	< 0.1	< 1
Aroclor-1260	0.1	mg/kg	< 0.1	< 1
Total PCB*	0.1	mg/kg	< 0.1	< 1
Dibutylchlorendate (surr.)	1	%	117	65
Tetrachloro-m-xylene (surr.)	1	%	85	91
Phenols (Halogenated)				
2-Chlorophenol	0.5	mg/kg	< 0.5	< 0.5
2.4-Dichlorophenol	0.5	mg/kg	< 0.5	< 0.5
2.4.5-Trichlorophenol	1	mg/kg	< 1	< 1
2.4.6-Trichlorophenol	1	mg/kg	< 1	< 1
2.6-Dichlorophenol	0.5	mg/kg	< 0.5	< 0.5
4-Chloro-3-methylphenol	1	mg/kg	< 1	< 1
Pentachlorophenol	1	mg/kg	< 1	< 1
Tetrachlorophenols - Total	10	mg/kg	< 10	< 10
Total Halogenated Phenol*	1	mg/kg	< 1	< 1
Phenols (non-Halogenated)				
2-Cyclohexyl-4.6-dinitrophenol	20	mg/kg	< 20	< 20
2-Methyl-4.6-dinitrophenol	5	mg/kg	< 5	< 5
2-Nitrophenol	1	mg/kg	< 1	< 1
2.4-Dimethylphenol	0.5	mg/kg	< 0.5	< 0.5
2.4-Dinitrophenol	5	mg/kg	< 5	< 5
2-Methylphenol (o-Cresol)	0.2	mg/kg	< 0.2	< 0.2
3&4-Methylphenol (m&p-Cresol)	0.4	mg/kg	< 0.4	< 0.4
Total cresols*	0.5	mg/kg	< 0.5	< 0.5
4-Nitrophenol	5	mg/kg	< 5	< 5
Dinoseb	20	mg/kg	< 20	< 20
Phenol	0.5	mg/kg	< 0.5	< 0.5
Phenol-d6 (surr.)	1	%	97	126
Total Non-Halogenated Phenol*	20	mg/kg	< 20	< 20
Heavy Metals				
Arsenic	2	mg/kg	7.0	9.6
Cadmium	0.4	mg/kg	< 0.4	< 0.4
Chromium	5	mg/kg	15	19
Copper	5	mg/kg	21	9.3
Lead	5	mg/kg	360	38
Mercury	0.1	mg/kg	< 0.1	< 0.1
Nickel	5	mg/kg	< 5	< 5
Zinc	5	mg/kg	130	31
Sample Properties				
% Moisture	1	%	13	13

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 17, 2023	14 Days
- Method: LTM-ORG-2010 TRH C6-C40			
Total Recoverable Hydrocarbons - 2013 NEPM Fractions	Sydney	Apr 17, 2023	14 Days
- Method: LTM-ORG-2010 TRH C6-C40			
Total Recoverable Hydrocarbons - 2013 NEPM Fractions	Sydney	Apr 17, 2023	14 Days
- Method: LTM-ORG-2010 TRH C6-C40			
BTEX	Sydney	Apr 17, 2023	14 Days
- Method: LTM-ORG-2010 BTEX and Volatile TRH			
Polycyclic Aromatic Hydrocarbons	Sydney	Apr 17, 2023	14 Days
- Method: LTM-ORG-2130 PAH and Phenols in Soil and Water			
Phenols (Halogenated)	Sydney	Apr 17, 2023	14 Days
- Method: LTM-ORG-2130 PAH and Phenols in Soil and Water			
Phenols (non-Halogenated)	Sydney	Apr 17, 2023	14 Days
- Method: LTM-ORG-2130 PAH and Phenols in Soil and Water			
Metals M8	Sydney	Apr 17, 2023	28 Days
- Method: LTM-MET-3040 Metals in Waters, Soils & Sediments by ICP-MS			
Eurofins Suite B15			
Organochlorine Pesticides	Sydney	Apr 17, 2023	14 Days
- Method: LTM-ORG-2220 OCP & PCB in Soil and Water			
Organophosphorus Pesticides	Sydney	Apr 17, 2023	14 Days
- Method: LTM-ORG-2200 Organophosphorus Pesticides by GC-MS			
Polychlorinated Biphenyls	Sydney	Apr 17, 2023	28 Days
- Method: LTM-ORG-2220 OCP & PCB in Soil and Water			
% Moisture	Sydney	Apr 12, 2023	14 Days
- Method: LTM-GEN-7080 Moisture			

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NSW 2761

Project Name: EAST HILLS
Project ID: EH

Order No.:
Report #: 979974
Phone: 02 9675 7522
Fax: 02 9675 7544

Received: Apr 11, 2023 4:01 PM
Due: Apr 18, 2023
Priority: 5 Day
Contact Name: Karl Davis

Eurofins Analytical Services Manager : Hannah Mawbey

Sample Detail						Eurofins Suite B15	Moisture Set	Eurofins Suite B7A
Sydney Laboratory - NATA # 1261 Site # 18217						X	X	X
External Laboratory								
No	**Sample ID**	**Sample Date**	**Sampling Time**	**Matrix**	**LAB ID**			
1	TP-1	Apr 11, 2023		Soil	S23-Ap0022182	X	X	X
2	TP-2	Apr 11, 2023		Soil	S23-Ap0022183	X	X	X
3	TP-3	Apr 11, 2023		Soil	S23-Ap0022184	X	X	X
4	TP-4	Apr 11, 2023		Soil	S23-Ap0022185	X	X	X
5	TP-5	Apr 11, 2023		Soil	S23-Ap0022186	X	X	X
6	TP-6	Apr 11, 2023		Soil	S23-Ap0022187	X	X	X
Test Counts						6	6	6

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Internal Quality Control Review and Glossary

General

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

Holding Times

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

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

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

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

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

Units

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

Terms

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

QC - Acceptance Criteria

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

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

Results <10 times the LOR: No Limit

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

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

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

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

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							
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	

Test	Units	Result 1			Acceptance Limits	Pass Limits	Qualifying Code
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	
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	
Method Blank							
Polychlorinated Biphenyls							
Aroclor-1016	mg/kg	< 0.1			0.1	Pass	
Aroclor-1221	mg/kg	< 0.1			0.1	Pass	
Aroclor-1232	mg/kg	< 0.1			0.1	Pass	
Aroclor-1242	mg/kg	< 0.1			0.1	Pass	
Aroclor-1248	mg/kg	< 0.1			0.1	Pass	
Aroclor-1254	mg/kg	< 0.1			0.1	Pass	

Test	Units	Result 1			Acceptance Limits	Pass Limits	Qualifying Code
Aroclor-1260	mg/kg	< 0.1			0.1	Pass	
Total PCB*	mg/kg	< 0.1			0.1	Pass	
Method Blank							
Phenols (Halogenated)							
2-Chlorophenol	mg/kg	< 0.5			0.5	Pass	
2.4-Dichlorophenol	mg/kg	< 0.5			0.5	Pass	
2.4.5-Trichlorophenol	mg/kg	< 1			1	Pass	
2.4.6-Trichlorophenol	mg/kg	< 1			1	Pass	
2.6-Dichlorophenol	mg/kg	< 0.5			0.5	Pass	
4-Chloro-3-methylphenol	mg/kg	< 1			1	Pass	
Pentachlorophenol	mg/kg	< 1			1	Pass	
Tetrachlorophenols - Total	mg/kg	< 10			10	Pass	
Method Blank							
Phenols (non-Halogenated)							
2-Cyclohexyl-4.6-dinitrophenol	mg/kg	< 20			20	Pass	
2-Methyl-4.6-dinitrophenol	mg/kg	< 5			5	Pass	
2-Nitrophenol	mg/kg	< 1			1	Pass	
2.4-Dimethylphenol	mg/kg	< 0.5			0.5	Pass	
2.4-Dinitrophenol	mg/kg	< 5			5	Pass	
2-Methylphenol (o-Cresol)	mg/kg	< 0.2			0.2	Pass	
3&4-Methylphenol (m&p-Cresol)	mg/kg	< 0.4			0.4	Pass	
4-Nitrophenol	mg/kg	< 5			5	Pass	
Dinoseb	mg/kg	< 20			20	Pass	
Phenol	mg/kg	< 0.5			0.5	Pass	
Method Blank							
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	
LCS - % Recovery							
Total Recoverable Hydrocarbons							
TRH C6-C9	%	102			70-130	Pass	
TRH C10-C14	%	85			70-130	Pass	
TRH C6-C10	%	103			70-130	Pass	
TRH >C10-C16	%	84			70-130	Pass	
LCS - % Recovery							
BTEX							
Benzene	%	100			70-130	Pass	
Toluene	%	101			70-130	Pass	
Ethylbenzene	%	102			70-130	Pass	
m&p-Xylenes	%	105			70-130	Pass	
o-Xylene	%	104			70-130	Pass	
Xylenes - Total*	%	105			70-130	Pass	
LCS - % Recovery							
Total Recoverable Hydrocarbons - 2013 NEPM Fractions							
Naphthalene	%	93			70-130	Pass	
LCS - % Recovery							
Polycyclic Aromatic Hydrocarbons							
Acenaphthene	%	103			70-130	Pass	

Test	Units	Result 1			Acceptance Limits	Pass Limits	Qualifying Code
Acenaphthylene	%	98			70-130	Pass	
Anthracene	%	94			70-130	Pass	
Benz(a)anthracene	%	101			70-130	Pass	
Benzo(a)pyrene	%	108			70-130	Pass	
Benzo(b&j)fluoranthene	%	96			70-130	Pass	
Benzo(g.h.i)perylene	%	99			70-130	Pass	
Benzo(k)fluoranthene	%	115			70-130	Pass	
Chrysene	%	109			70-130	Pass	
Dibenz(a.h)anthracene	%	97			70-130	Pass	
Fluoranthene	%	91			70-130	Pass	
Fluorene	%	98			70-130	Pass	
Indeno(1.2.3-cd)pyrene	%	97			70-130	Pass	
Naphthalene	%	99			70-130	Pass	
Phenanthrene	%	84			70-130	Pass	
Pyrene	%	91			70-130	Pass	
LCS - % Recovery							
Organochlorine Pesticides							
Chlordanes - Total	%	96			70-130	Pass	
4.4'-DDD	%	111			70-130	Pass	
4.4'-DDE	%	95			70-130	Pass	
4.4'-DDT	%	90			70-130	Pass	
a-HCH	%	101			70-130	Pass	
Aldrin	%	99			70-130	Pass	
b-HCH	%	91			70-130	Pass	
d-HCH	%	91			70-130	Pass	
Dieldrin	%	99			70-130	Pass	
Endosulfan I	%	94			70-130	Pass	
Endosulfan II	%	99			70-130	Pass	
Endosulfan sulphate	%	84			70-130	Pass	
Endrin	%	80			70-130	Pass	
Endrin aldehyde	%	88			70-130	Pass	
Endrin ketone	%	93			70-130	Pass	
g-HCH (Lindane)	%	96			70-130	Pass	
Heptachlor	%	100			70-130	Pass	
Heptachlor epoxide	%	100			70-130	Pass	
Hexachlorobenzene	%	95			70-130	Pass	
Methoxychlor	%	119			70-130	Pass	
LCS - % Recovery							
Organophosphorus Pesticides							
Diazinon	%	109			70-130	Pass	
Dimethoate	%	103			70-130	Pass	
Ethion	%	125			70-130	Pass	
Mevinphos	%	120			70-130	Pass	
LCS - % Recovery							
Polychlorinated Biphenyls							
Aroclor-1016	%	88			70-130	Pass	
Aroclor-1260	%	84			70-130	Pass	
LCS - % Recovery							
Phenols (Halogenated)							
2-Chlorophenol	%	106			25-140	Pass	
2.4-Dichlorophenol	%	109			25-140	Pass	
2.4.5-Trichlorophenol	%	84			25-140	Pass	
2.4.6-Trichlorophenol	%	107			25-140	Pass	
2.6-Dichlorophenol	%	115			25-140	Pass	

Test	Units	Result 1			Acceptance Limits	Pass Limits	Qualifying Code
4-Chloro-3-methylphenol	%	97			25-140	Pass	
Pentachlorophenol	%	127			25-140	Pass	
Tetrachlorophenols - Total	%	71			25-140	Pass	
LCS - % Recovery							
Phenols (non-Halogenated)							
2-Cyclohexyl-4.6-dinitrophenol	%	111			25-140	Pass	
2-Methyl-4.6-dinitrophenol	%	91			25-140	Pass	
2-Nitrophenol	%	101			25-140	Pass	
2.4-Dimethylphenol	%	100			25-140	Pass	
2.4-Dinitrophenol	%	83			25-140	Pass	
2-Methylphenol (o-Cresol)	%	102			25-140	Pass	
3&4-Methylphenol (m&p-Cresol)	%	102			25-140	Pass	
4-Nitrophenol	%	107			25-140	Pass	
Dinoseb	%	98			25-140	Pass	
Phenol	%	103			25-140	Pass	
LCS - % Recovery							
Heavy Metals							
Arsenic	%	102			80-120	Pass	
Cadmium	%	107			80-120	Pass	
Chromium	%	106			80-120	Pass	
Copper	%	108			80-120	Pass	
Lead	%	104			80-120	Pass	
Mercury	%	102			80-120	Pass	
Nickel	%	109			80-120	Pass	
Zinc	%	109			80-120	Pass	

Test	Lab Sample ID	QA Source	Units	Result 1			Acceptance Limits	Pass Limits	Qualifying Code
Spike - % Recovery									
Total Recoverable Hydrocarbons				Result 1					
TRH C10-C14	S23-Ap0013221	NCP	%	117			70-130	Pass	
TRH >C10-C16	S23-Ap0013221	NCP	%	115			70-130	Pass	
Spike - % Recovery									
Polycyclic Aromatic Hydrocarbons				Result 1					
Acenaphthene	S23-Ap0034025	NCP	%	109			70-130	Pass	
Acenaphthylene	S23-Ap0034025	NCP	%	116			70-130	Pass	
Benzo(b&j)fluoranthene	S23-Ap0034025	NCP	%	122			70-130	Pass	
Benzo(g.h.i)perylene	S23-Ap0034025	NCP	%	112			70-130	Pass	
Dibenz(a.h)anthracene	S23-Ap0034025	NCP	%	103			70-130	Pass	
Fluorene	S23-Ap0034025	NCP	%	99			70-130	Pass	
Indeno(1.2.3-cd)pyrene	S23-Ap0034025	NCP	%	100			70-130	Pass	
Naphthalene	S23-Ap0034025	NCP	%	107			70-130	Pass	
Spike - % Recovery									
Organochlorine Pesticides				Result 1					
Chlordanes - Total	S23-Ap0034025	NCP	%	91			70-130	Pass	
4.4'-DDD	S23-Ap0034025	NCP	%	96			70-130	Pass	
4.4'-DDE	S23-Ap0034025	NCP	%	88			70-130	Pass	
4.4'-DDT	S23-Ap0018778	NCP	%	84			70-130	Pass	
a-HCH	S23-Ap0034025	NCP	%	106			70-130	Pass	
Aldrin	S23-Ap0034025	NCP	%	103			70-130	Pass	
b-HCH	S23-Ap0034025	NCP	%	96			70-130	Pass	
d-HCH	S23-Ap0034025	NCP	%	91			70-130	Pass	
Dieldrin	S23-Ap0034025	NCP	%	104			70-130	Pass	
Endosulfan I	S23-Ap0034025	NCP	%	91			70-130	Pass	
Endosulfan II	S23-Ap0018778	NCP	%	87			70-130	Pass	
Endosulfan sulphate	S23-Ap0018778	NCP	%	85			70-130	Pass	

Test	Lab Sample ID	QA Source	Units	Result 1			Acceptance Limits	Pass Limits	Qualifying Code
Endrin	S23-Ap0034025	NCP	%	71			70-130	Pass	
Endrin aldehyde	S23-Ap0034025	NCP	%	87			70-130	Pass	
Endrin ketone	S23-Ap0034025	NCP	%	86			70-130	Pass	
g-HCH (Lindane)	S23-Ap0034025	NCP	%	99			70-130	Pass	
Heptachlor	S23-Ap0034025	NCP	%	106			70-130	Pass	
Heptachlor epoxide	S23-Ap0034025	NCP	%	95			70-130	Pass	
Hexachlorobenzene	S23-Ap0034025	NCP	%	101			70-130	Pass	
Methoxychlor	S23-Ap0034025	NCP	%	71			70-130	Pass	
Spike - % Recovery									
Organophosphorus Pesticides				Result 1					
Diazinon	S23-Ap0034025	NCP	%	100			70-130	Pass	
Dimethoate	S23-Ap0034025	NCP	%	81			70-130	Pass	
Ethion	S23-Ap0034025	NCP	%	75			70-130	Pass	
Mevinphos	S23-Ap0034025	NCP	%	77			70-130	Pass	
Spike - % Recovery									
Polychlorinated Biphenyls				Result 1					
Aroclor-1016	S23-Ap0034025	NCP	%	89			70-130	Pass	
Aroclor-1260	S23-Ap0034025	NCP	%	86			70-130	Pass	
Spike - % Recovery									
Phenols (Halogenated)				Result 1					
2-Chlorophenol	S23-Ap0034025	NCP	%	99			30-130	Pass	
2.4-Dichlorophenol	S23-Ap0034025	NCP	%	101			30-130	Pass	
2.6-Dichlorophenol	S23-Ap0034025	NCP	%	113			30-130	Pass	
4-Chloro-3-methylphenol	S23-Ap0034025	NCP	%	78			30-130	Pass	
Spike - % Recovery									
Phenols (non-Halogenated)				Result 1					
2-Methyl-4.6-dinitrophenol	S23-Ap0034025	NCP	%	85			30-130	Pass	
2.4-Dimethylphenol	S23-Ap0034025	NCP	%	81			30-130	Pass	
2.4-Dinitrophenol	S23-Ap0034025	NCP	%	92			70-130	Pass	
2-Methylphenol (o-Cresol)	S23-Ap0034025	NCP	%	88			30-130	Pass	
3&4-Methylphenol (m&p-Cresol)	S23-Ap0034025	NCP	%	84			30-130	Pass	
4-Nitrophenol	S23-Ap0034025	NCP	%	105			30-130	Pass	
Dinoseb	S23-Ap0034025	NCP	%	70			30-130	Pass	
Phenol	S23-Ap0034025	NCP	%	100			30-130	Pass	
Spike - % Recovery									
Heavy Metals				Result 1					
Arsenic	S23-Ap0025746	NCP	%	96			75-125	Pass	
Cadmium	S23-Ap0025746	NCP	%	99			75-125	Pass	
Chromium	S23-Ap0025746	NCP	%	97			75-125	Pass	
Copper	S23-Ap0025746	NCP	%	99			75-125	Pass	
Lead	S23-Ap0025746	NCP	%	98			75-125	Pass	
Mercury	S23-Ap0025746	NCP	%	100			75-125	Pass	
Nickel	S23-Ap0025746	NCP	%	97			75-125	Pass	
Zinc	S23-Ap0025746	NCP	%	98			75-125	Pass	
Spike - % Recovery									
Total Recoverable Hydrocarbons				Result 1					
TRH C6-C9	S23-Ap0022185	CP	%	85			70-130	Pass	
TRH C6-C10	S23-Ap0022185	CP	%	86			70-130	Pass	
Spike - % Recovery									
BTEX				Result 1					
Benzene	S23-Ap0022185	CP	%	92			70-130	Pass	
Toluene	S23-Ap0022185	CP	%	80			70-130	Pass	
Ethylbenzene	S23-Ap0022185	CP	%	90			70-130	Pass	
m&p-Xylenes	S23-Ap0022185	CP	%	92			70-130	Pass	

Test	Lab Sample ID	QA Source	Units	Result 1			Acceptance Limits	Pass Limits	Qualifying Code
o-Xylene	S23-Ap0022185	CP	%	93			70-130	Pass	
Xylenes - Total*	S23-Ap0022185	CP	%	93			70-130	Pass	
Spike - % Recovery									
Total Recoverable Hydrocarbons - 2013 NEPM Fractions				Result 1					
Naphthalene	S23-Ap0022185	CP	%	71			70-130	Pass	
Spike - % Recovery									
Polycyclic Aromatic Hydrocarbons				Result 1					
Pyrene	N23-Ap0009355	NCP	%	85			70-130	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 C6-C9	S23-Ap0022531	NCP	mg/kg	< 20	< 20	<1	30%	Pass	
TRH C10-C14	W23-Ma0069020	NCP	mg/kg	< 20	< 20	<1	30%	Pass	
TRH C15-C28	W23-Ma0069020	NCP	mg/kg	740	700	6.1	30%	Pass	
TRH C29-C36	W23-Ma0069020	NCP	mg/kg	920	910	1.8	30%	Pass	
TRH C6-C10	S23-Ap0022531	NCP	mg/kg	< 20	< 20	<1	30%	Pass	
TRH >C10-C16	W23-Ma0069020	NCP	mg/kg	< 50	< 50	<1	30%	Pass	
TRH >C16-C34	W23-Ma0069020	NCP	mg/kg	1500	1400	4.0	30%	Pass	
TRH >C34-C40	W23-Ma0069020	NCP	mg/kg	590	600	1.3	30%	Pass	
Duplicate									
BTEX				Result 1	Result 2	RPD			
Benzene	S23-Ap0022531	NCP	mg/kg	< 0.1	< 0.1	<1	30%	Pass	
Toluene	S23-Ap0022531	NCP	mg/kg	< 0.1	< 0.1	<1	30%	Pass	
Ethylbenzene	S23-Ap0022531	NCP	mg/kg	< 0.1	< 0.1	<1	30%	Pass	
m&p-Xylenes	S23-Ap0022531	NCP	mg/kg	< 0.2	< 0.2	<1	30%	Pass	
o-Xylene	S23-Ap0022531	NCP	mg/kg	< 0.1	< 0.1	<1	30%	Pass	
Xylenes - Total*	S23-Ap0022531	NCP	mg/kg	< 0.3	< 0.3	<1	30%	Pass	
Duplicate									
Total Recoverable Hydrocarbons - 2013 NEPM Fractions				Result 1	Result 2	RPD			
Naphthalene	S23-Ap0022531	NCP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
Duplicate									
Organochlorine Pesticides				Result 1	Result 2	RPD			
Chlordanes - Total	S23-Ap0032018	NCP	mg/kg	< 0.1	< 0.1	<1	30%	Pass	
4.4'-DDD	S23-Ap0032018	NCP	mg/kg	< 0.05	< 0.05	<1	30%	Pass	
4.4'-DDE	S23-Ap0032018	NCP	mg/kg	< 0.05	< 0.05	<1	30%	Pass	
4.4'-DDT	S23-Ap0032018	NCP	mg/kg	< 0.05	< 0.05	<1	30%	Pass	
a-HCH	S23-Ap0032018	NCP	mg/kg	< 0.05	< 0.05	<1	30%	Pass	
Aldrin	S23-Ap0032018	NCP	mg/kg	< 0.05	< 0.05	<1	30%	Pass	
b-HCH	S23-Ap0032018	NCP	mg/kg	< 0.05	< 0.05	<1	30%	Pass	
d-HCH	S23-Ap0032018	NCP	mg/kg	< 0.05	< 0.05	<1	30%	Pass	
Dieldrin	S23-Ap0032018	NCP	mg/kg	< 0.05	< 0.05	<1	30%	Pass	
Endosulfan I	S23-Ap0032018	NCP	mg/kg	< 0.05	< 0.05	<1	30%	Pass	
Endosulfan II	S23-Ap0032018	NCP	mg/kg	< 0.05	< 0.05	<1	30%	Pass	
Endosulfan sulphate	S23-Ap0032018	NCP	mg/kg	< 0.05	< 0.05	<1	30%	Pass	
Endrin	S23-Ap0032018	NCP	mg/kg	< 0.05	< 0.05	<1	30%	Pass	
Endrin aldehyde	S23-Ap0032018	NCP	mg/kg	< 0.05	< 0.05	<1	30%	Pass	
Endrin ketone	S23-Ap0032018	NCP	mg/kg	< 0.05	< 0.05	<1	30%	Pass	
g-HCH (Lindane)	S23-Ap0032018	NCP	mg/kg	< 0.05	< 0.05	<1	30%	Pass	
Heptachlor	S23-Ap0032018	NCP	mg/kg	< 0.05	< 0.05	<1	30%	Pass	
Heptachlor epoxide	S23-Ap0032018	NCP	mg/kg	< 0.05	< 0.05	<1	30%	Pass	
Hexachlorobenzene	S23-Ap0032018	NCP	mg/kg	< 0.05	< 0.05	<1	30%	Pass	
Methoxychlor	S23-Ap0032018	NCP	mg/kg	< 0.05	< 0.05	<1	30%	Pass	
Toxaphene	S23-Ap0032018	NCP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	

Duplicate									
Organophosphorus Pesticides				Result 1	Result 2	RPD			
Azinphos-methyl	S23-Ap0032018	NCP	mg/kg	< 0.2	< 0.2	<1	30%	Pass	
Bolstar	S23-Ap0032018	NCP	mg/kg	< 0.2	< 0.2	<1	30%	Pass	
Chlorfenvinphos	S23-Ap0032018	NCP	mg/kg	< 0.2	< 0.2	<1	30%	Pass	
Chlorpyrifos	S23-Ap0032018	NCP	mg/kg	< 0.2	< 0.2	<1	30%	Pass	
Chlorpyrifos-methyl	S23-Ap0032018	NCP	mg/kg	< 0.2	< 0.2	<1	30%	Pass	
Coumaphos	S23-Ap0032018	NCP	mg/kg	< 2	< 2	<1	30%	Pass	
Demeton-S	S23-Ap0032018	NCP	mg/kg	< 0.2	< 0.2	<1	30%	Pass	
Demeton-O	S23-Ap0032018	NCP	mg/kg	< 0.2	< 0.2	<1	30%	Pass	
Diazinon	S23-Ap0032018	NCP	mg/kg	< 0.2	< 0.2	<1	30%	Pass	
Dichlorvos	S23-Ap0032018	NCP	mg/kg	< 0.2	< 0.2	<1	30%	Pass	
Dimethoate	S23-Ap0032018	NCP	mg/kg	< 0.2	< 0.2	<1	30%	Pass	
Disulfoton	S23-Ap0032018	NCP	mg/kg	< 0.2	< 0.2	<1	30%	Pass	
EPN	S23-Ap0032018	NCP	mg/kg	< 0.2	< 0.2	<1	30%	Pass	
Ethion	S23-Ap0032018	NCP	mg/kg	< 0.2	< 0.2	<1	30%	Pass	
Ethoprop	S23-Ap0032018	NCP	mg/kg	< 0.2	< 0.2	<1	30%	Pass	
Ethyl parathion	S23-Ap0032018	NCP	mg/kg	< 0.2	< 0.2	<1	30%	Pass	
Fenitrothion	S23-Ap0032018	NCP	mg/kg	< 0.2	< 0.2	<1	30%	Pass	
Fensulfothion	S23-Ap0032018	NCP	mg/kg	< 0.2	< 0.2	<1	30%	Pass	
Fenthion	S23-Ap0032018	NCP	mg/kg	< 0.2	< 0.2	<1	30%	Pass	
Malathion	S23-Ap0032018	NCP	mg/kg	< 0.2	< 0.2	<1	30%	Pass	
Merphos	S23-Ap0032018	NCP	mg/kg	< 0.2	< 0.2	<1	30%	Pass	
Methyl parathion	S23-Ap0032018	NCP	mg/kg	< 0.2	< 0.2	<1	30%	Pass	
Mevinphos	S23-Ap0032018	NCP	mg/kg	< 0.2	< 0.2	<1	30%	Pass	
Monocrotophos	S23-Ap0032018	NCP	mg/kg	< 2	< 2	<1	30%	Pass	
Naled	S23-Ap0032018	NCP	mg/kg	< 0.2	< 0.2	<1	30%	Pass	
Omethoate	S23-Ap0032018	NCP	mg/kg	< 2	< 2	<1	30%	Pass	
Phorate	S23-Ap0032018	NCP	mg/kg	< 0.2	< 0.2	<1	30%	Pass	
Pirimiphos-methyl	S23-Ap0032018	NCP	mg/kg	< 0.2	< 0.2	<1	30%	Pass	
Pyrazophos	S23-Ap0032018	NCP	mg/kg	< 0.2	< 0.2	<1	30%	Pass	
Ronnel	S23-Ap0032018	NCP	mg/kg	< 0.2	< 0.2	<1	30%	Pass	
Terbufos	S23-Ap0032018	NCP	mg/kg	< 0.2	< 0.2	<1	30%	Pass	
Tetrachlorvinphos	S23-Ap0032018	NCP	mg/kg	< 0.2	< 0.2	<1	30%	Pass	
Tokuthion	S23-Ap0032018	NCP	mg/kg	< 0.2	< 0.2	<1	30%	Pass	
Trichloronate	S23-Ap0032018	NCP	mg/kg	< 0.2	< 0.2	<1	30%	Pass	
Duplicate									
Polychlorinated Biphenyls				Result 1	Result 2	RPD			
Aroclor-1016	S23-Ap0032018	NCP	mg/kg	< 0.1	< 0.1	<1	30%	Pass	
Aroclor-1221	S23-Ap0032018	NCP	mg/kg	< 0.1	< 0.1	<1	30%	Pass	
Aroclor-1232	S23-Ap0032018	NCP	mg/kg	< 0.1	< 0.1	<1	30%	Pass	
Aroclor-1242	S23-Ap0032018	NCP	mg/kg	< 0.1	< 0.1	<1	30%	Pass	
Aroclor-1248	S23-Ap0032018	NCP	mg/kg	< 0.1	< 0.1	<1	30%	Pass	
Aroclor-1254	S23-Ap0032018	NCP	mg/kg	< 0.1	< 0.1	<1	30%	Pass	
Aroclor-1260	S23-Ap0032018	NCP	mg/kg	< 0.1	< 0.1	<1	30%	Pass	
Total PCB*	S23-Ap0032018	NCP	mg/kg	< 0.1	< 0.1	<1	30%	Pass	
Duplicate									
Sample Properties				Result 1	Result 2	RPD			
% Moisture	S23-Ap0022136	NCP	%	3.2	3.3	2.1	30%	Pass	
Duplicate									
Heavy Metals				Result 1	Result 2	RPD			
Arsenic	S23-Ap0022185	CP	mg/kg	3.1	3.3	5.1	30%	Pass	
Cadmium	S23-Ap0022185	CP	mg/kg	1.0	0.9	4.2	30%	Pass	
Chromium	S23-Ap0022185	CP	mg/kg	9.3	8.7	6.7	30%	Pass	
Copper	S23-Ap0022185	CP	mg/kg	24	26	5.8	30%	Pass	
Lead	S23-Ap0022185	CP	mg/kg	50	54	6.7	30%	Pass	

Duplicate									
Heavy Metals				Result 1	Result 2	RPD			
Mercury	S23-Ap0022185	CP	mg/kg	< 0.1	< 0.1	<1	30%	Pass	
Zinc	S23-Ap0022185	CP	mg/kg	160	160	5.8	30%	Pass	
Duplicate									
Heavy Metals				Result 1	Result 2	RPD			
Arsenic	S23-Ap0022186	CP	mg/kg	7.0	4.1	51	30%	Fail	Q15
Cadmium	S23-Ap0022186	CP	mg/kg	< 0.4	< 0.4	<1	30%	Pass	
Chromium	S23-Ap0022186	CP	mg/kg	15	8.3	59	30%	Fail	Q15
Copper	S23-Ap0022186	CP	mg/kg	21	22	3.3	30%	Pass	
Lead	S23-Ap0022186	CP	mg/kg	360	310	15	30%	Pass	
Mercury	S23-Ap0022186	CP	mg/kg	< 0.1	< 0.1	<1	30%	Pass	
Nickel	S23-Ap0022186	CP	mg/kg	< 5	< 5	<1	30%	Pass	
Zinc	S23-Ap0022186	CP	mg/kg	130	130	<1	30%	Pass	
Duplicate									
Polycyclic Aromatic Hydrocarbons				Result 1	Result 2	RPD			
Acenaphthene	S23-Ap0022187	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
Acenaphthylene	S23-Ap0022187	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
Anthracene	S23-Ap0022187	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
Benz(a)anthracene	S23-Ap0022187	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
Benzo(a)pyrene	S23-Ap0022187	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
Benzo(b&j)fluoranthene	S23-Ap0022187	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
Benzo(g.h.i)perylene	S23-Ap0022187	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
Benzo(k)fluoranthene	S23-Ap0022187	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
Chrysene	S23-Ap0022187	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
Dibenz(a.h)anthracene	S23-Ap0022187	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
Fluoranthene	S23-Ap0022187	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
Fluorene	S23-Ap0022187	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
Indeno(1.2.3-cd)pyrene	S23-Ap0022187	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
Naphthalene	S23-Ap0022187	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
Phenanthrene	S23-Ap0022187	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
Pyrene	S23-Ap0022187	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
Duplicate									
Phenols (Halogenated)				Result 1	Result 2	RPD			
2-Chlorophenol	S23-Ap0022187	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
2.4-Dichlorophenol	S23-Ap0022187	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
2.4.5-Trichlorophenol	S23-Ap0022187	CP	mg/kg	< 1	< 1	<1	30%	Pass	
2.4.6-Trichlorophenol	S23-Ap0022187	CP	mg/kg	< 1	< 1	<1	30%	Pass	
2.6-Dichlorophenol	S23-Ap0022187	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
4-Chloro-3-methylphenol	S23-Ap0022187	CP	mg/kg	< 1	< 1	<1	30%	Pass	
Pentachlorophenol	S23-Ap0022187	CP	mg/kg	< 1	< 1	<1	30%	Pass	
Tetrachlorophenols - Total	S23-Ap0022187	CP	mg/kg	< 10	< 10	<1	30%	Pass	
Duplicate									
Phenols (non-Halogenated)				Result 1	Result 2	RPD			
2-Cyclohexyl-4.6-dinitrophenol	S23-Ap0022187	CP	mg/kg	< 20	< 20	<1	30%	Pass	
2-Methyl-4.6-dinitrophenol	S23-Ap0022187	CP	mg/kg	< 5	< 5	<1	30%	Pass	
2-Nitrophenol	S23-Ap0022187	CP	mg/kg	< 1	< 1	<1	30%	Pass	
2.4-Dimethylphenol	S23-Ap0022187	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
2.4-Dinitrophenol	S23-Ap0022187	CP	mg/kg	< 5	< 5	<1	30%	Pass	
2-Methylphenol (o-Cresol)	S23-Ap0022187	CP	mg/kg	< 0.2	0.2	55	30%	Fail	Q15
3&4-Methylphenol (m&p-Cresol)	S23-Ap0022187	CP	mg/kg	< 0.4	< 0.4	<1	30%	Pass	
4-Nitrophenol	S23-Ap0022187	CP	mg/kg	< 5	< 5	<1	30%	Pass	
Dinoseb	S23-Ap0022187	CP	mg/kg	< 20	< 20	<1	30%	Pass	
Phenol	S23-Ap0022187	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	

Comments

Sample Integrity

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

Qualifier Codes/Comments

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

Authorised by:

Adam Bateup	Analytical Services Manager
Mickael Ros	Senior Analyst-Metal
Raymond Siu	Senior Analyst-Volatile
Roopesh Rangarajan	Senior Analyst-Organic

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.