10 February 2023

Mr Dylan Pell
Metlifecare Limited
20 Kent Street
Newmarket
Auckland 1053

Dear Dylan

RE: Soil Screening Assessment - 99 Totara Road, Whenuapai, Auckland
(Our Reference: 19079.000.001_02)

1 Introduction

ENGEO Ltd was requested by Metlifecare Limited (MLC Limited) to undertake a soil screening assessment of the property at 99 Totara Road, Whenuapai, Auckland (Figure 1). This work has been carried out in accordance with our signed agreement dated 12 July 2021.

The purpose of the assessment was to provide services to assist in refining costs associated with management of contaminated soils. The field investigation scope was proposed to be sufficient for the purposes of a Detailed Site Investigation, if MLC Limited elects to proceed with the purchase.

2 Site Background

A desktop review of the site at 99 Totara Road identified historical land use listed on the Hazardous Activities and Industrial List (HAIL; MfE, 2011). Specifically, the HAIL land uses are as follows:

HAIL ID A10: Persistent pesticide use and bulk storage including sports turfs, market gardens, orchards, spray sheds and glasshouses.

> *The desktop review of the site (aerial imagery and council documents) indicates it is likely to have been subject to historical horticultural activities, as there are rows of crops present in the northern portion of the site. Horticultural activity appears present on site as recent as 2017.*

HAIL ID I: Any other land that has been subject to the intentional or accidental release of a hazardous substance in sufficient quantity that it could be a risk to human health or the environment.

> *Due to the age of the former buildings and current on site buildings, the potential for asbestos and / or lead-based paint may need to be considered. It is likely contamination from asbestos and / or lead is limited to within two meters from the exterior of buildings. This area of contamination is referred to as the 'building halo'.*

Given the identification of these potentially hazardous activities on site, it was considered that topsoils on site may contain concentrations of contaminants above the natural background levels. Further intrusive works were advised to assess the concentrations of contaminants in soil and assist with understanding potential costs associated with management and disposal of topsoils that may be required during redevelopment works.

3 Site Investigation

ENGEO visited the site on 15 July 2021 and made the following observations.

- The main residential dwelling comprises timber and brick with potential asbestos containing material (PACM) soffits.
- PACM observed on both of the implement sheds in the southwest of site.
- Topsoil on-site generally comprises a brown clayey silt with rootlets, and extends to a depth of between 0.25 – 0.35 metres below ground level (m bgl). Underlying material generally comprises a brown, grey or orange clayey silt.

Samples, collected from soft landscaped areas adjacent to the implement sheds in the south, were analysed for heavy metals / metalloids, organochlorine pesticides (OCPs) and asbestos. One sample was also analysed for polycyclic aromatic hydrocarbons (PAHs).

Samples from location S08 was also analysed for asbestos. This location was chosen for asbestos analysis due to the presence of a former building on site (see appended Figure 2).

Additional samples were collected from the balance of the site and were analysed for heavy metals / metalloids and OCPs. Five samples were analysed for PAHs.

See appended Figure 1 for soil sample locations.

4 Results Summary

It is worth noting that the underlying soils on site comprise primarily volcanic soils, however non-volcanic soils are mapped present by GNS in the southern portion of the site (GNS, 2018). As a conservative approach, data has been compared to volcanic soil criteria. Results have also been compared to environmental discharge (AC, 2001) and human health (high-density residential) criteria (NES, 2011). A summary of the testing results is provided below. A results table is included in Appendix 1 and full laboratory results are included in Appendix 2.

- Lead exceeded the adopted criteria (human health and environmental) in two samples from around the implement shed areas.
- Heavy metals (arsenic, cadmium, copper and lead) were detected above the regional volcanic background ranges in four samples from around the implement shed areas.
- Asbestos was detected within one sample from around the implement shed area (S28) in the form of fibrous asbestos / asbestos fines (FA / AF). However, the concentration of asbestos was below the laboratory limit of reporting (LOR) and does not present an unacceptable risk to human health.

- OCPs in the form of endrin ketone was detected in one sample (S02). As OCPs are not naturally occurring, any detection of OCPs is considered an exceedance of background criteria.
- PAHs were detected in two samples (S16 and S23). As PAHs are not naturally occurring, any detection of PAHs is considered an exceedance of background criteria.
- Soil analysis results from the remainder of the samples exhibited chemical concentrations within the natural regional background ranges.

The source of the OCP detection is likely associated with agricultural activities on-site. However, based on an assessment of the results, it is unlikely that this detection is representative of soil across the balance of the site and is instead considered an anomaly or “hotspot” of contamination.

The source of PAH concentration is unknown. However, the detection of PAHs at S23 is considered potentially associated with activities occurring across Totara Road or as a result of contaminant run-off from the road itself, and is not considered to represent widespread PAH contamination on-site.

It is possible that the PAH detection in S16 is associated with a historical area of burning, although not observed during the site investigation.

5 Soil Management Areas

Based on the results of the investigation, contamination above the adopted criteria for protection of human health or environmental receptors is limited to the ‘building halo’ of implement sheds in the southwest corner of site. These soils will require disposal to a licensed landfill facility, and gate tipping rates are considered likely to be in the order of $100 - $150 per tonne. Soil beneath the building footprints is conservatively included in the soil management areas. However, further testing could be undertaken to assess this. Assumed location, depths and area of soil exceeding relevant criteria is provided in the below table. Appended Figure 3 provides locations of soil management areas.

Table 1: Soil Management Areas

Samples	Max Sample Depth	Contaminant(s) / Exceedance(s)	Impacted Area
S28 and S30	0.1	Lead within building halo above the human health criteria; asbestos and heavy metals also detected above natural background concentrations.	Approximately 167 m^2 (includes building footprint) to an assumed depth of 0.3 m bgl. Estimated volume of 52 m^3.
S27 and 29	0.1	Heavy metals (arsenic, cadmium, copper and lead) within building halo above background criteria.	Approximately 427 m^2 (includes building footprint) to an assumed depth of 0.35 m bgl. Estimated volume of 150 m^3.

6 Conclusions

Results of the investigation indicate:

An estimated 50 m^3 of soils within the building footprint and building halo of the implement sheds (southwest corner) exhibited concentrations of lead above the adopted criteria, and will require removal to a licensed landfill facility. These soils are likely to attract soil disposal costs (tipping fees) of up to $150 per tonne.

A further 150 m^3 of soil from around the implement shed areas is known to be impacted above the natural background levels, though the material is considered suitable to remain on-site if necessary. If disposal of this material is required, it must be undertaken to a managed fill and tipping fees of approximately $30 - $50 per tonne could be assumed.

With regard to the general agricultural areas of site, 29 out of 30 samples analysed for persistent pesticides (specifically OCPs) did not contain concentrations above the laboratory limit of reporting, and the results are therefore considered to represent the natural background levels. The isolated detection of one OCP (endrin ketone) is considered to represent an outlier and may be a result of sampling error, lab error, or an isolated hotspot.

Four out of six samples analysed for PAHs did not contain PAHs above the laboratory limit of reporting and these concentrations are considered to represent the natural background levels. Benzo[ghi]perylene was detected in two out of six samples at low concentrations. Benzo[ghi]perylene is a byproduct of incomplete combustion and it is anticipated that the detections may represent a byproduct of previous site bonfires on-site, and / or as a result of runoff from Totara Road.

The effects of these activities are expected to be relatively isolated, and when making assumptions regarding the costs for disposal of topsoils from general areas of the site, a conservative assumption would be that 70% of topsoil will meet the criterion for cleanfill, and that the remaining 30% is suitable to reuse on site without restriction. If there is insufficient room to accommodate 30% of topsoils on-site as part of the redevelopment, then it would be reasonable to assume disposal rates of $30 - $50 per tonne would apply.

It is likely that stripping and mixing of topsoils would reduce PAH concentrations through the effects of dilution and, as such, a portion of the 30% discussed above could be retested and judged to meet cleanfill criteria. Further testing would be required to demonstrate the viability of such an approach.

In our experience, these issues are not unusual in this location and will not inhibit the development taking place on this site.

Redevelopment works are likely to be considered a restricted discretionary activity under Regulation 10 of the NES, (MfE, 2012) subject to submission of a Detailed Site Investigation Report, and Remedial Action Plan.

7 References

AC, 2001. Auckland Regional Council. (2001). Background Concentration of Inorganic Elements in Soils from the Auckland Region, Auckland Regional Council, Technical Publication No. 153.

GNS, 2018. Institute of Geological and Nuclear Sciences Ltd. 2018. 1:250,000 Geological Map 3, Auckland.

MfE, 2011. Ministry for the Environment. (2011). Hazardous Activities and Industries List (HAIL).

MfE, 2012. Ministry for the Environment. (2012). Users' Guide National Environmental Standard for Assessing and Managing Contaminants in Soil to Protect Human Health.

NES, 2011. The Resource Management (National Environmental Standard for Assessing and Managing Contaminants in Soil to Protect Human Health) Regulations (2011).

8 Limitations

i. We have prepared this report in accordance with the brief as provided. This report has been prepared for the use of our client, Metlifecare Limited, their professional advisers and the relevant Territorial Authorities in relation to the specified project brief described in this report. No liability is accepted for the use of any part of the report for any other purpose or by any other person or entity.

ii. The recommendations in this report are based on the ground conditions indicated from published sources, site assessments and subsurface investigations described in this report based on accepted normal methods of site investigations. Only a limited amount of information has been collected to meet the specific financial and technical requirements of the Client's brief and this report does not purport to completely describe all the site characteristics and properties. The nature and continuity of the ground between test locations has been inferred using experience and judgement and it should be appreciated that actual conditions could vary from the assumed model.

iii. Subsurface conditions relevant to construction works should be assessed by contractors who can make their own interpretation of the factual data provided. They should perform any additional tests as necessary for their own purposes.

iv. This Limitation should be read in conjunction with the Engineering NZ / ACENZ Standard Terms of Engagement.

v. This report is not to be reproduced either wholly or in part without our prior written permission.

We trust that this information meets your current requirements. Please do not hesitate to contact the undersigned on (09) 972 2205 if you require any further information.

Report prepared by

Tyler Paterson

Environmental Scientist

Report reviewed by

Jamie Rhodes, CEnvP (SC)

Associate Environmental Engineer

FIGURES

Legend

- Site Boundary
- Sample locations

10m 0 10 20 30 40 50m

© Nearmaps

ENGEO

Produced by **Evalu8.earth**

Title: Sampling Plan		
Client: MLC Limited		Figure No: 1 Size: A4
Project: 99 Totara Road, Whenuapai	Drawn: TP	
Date: 14-07-2021	Checked: JR	
Proj No: 19079.000.001	Scale: 1:2410	Version: Draft

Legend

- Sample locations

10m 0 10 20 30 40 50m

ENGEO

Produced by **Evalu8.earth**

Title: 1981 Aerial Overlay		
Client: MLC Limited		Figure No: 2 Size: A4
Project: 99 Totara Road, Whenuapai	Drawn: TP	
Date: 14-07-2021	Checked: JR	
Proj No: 19079.000.001	Scale: 1:2410	Version: Draft

Legend

- Sample locations
- Contaminants above human health criteria
- Contaminants above background criteria

2m 0 2 4 6m

ENGEO

Produced by **Evalu8.earth**

Title: Soil Management Arees		
Client: MLC Limited		Figure No: 3 Size: A4
Project: 99 Totara Road, Whenuapai	Drawn: TP	
Date: 14-07-2021	Checked: JR	
Proj No: 19079.000.001	Scale: 1:269	Version: Draft

APPENDIX 1

Results Table

Sample Analytical Results

Sample Name	Date	Sample Depth	OCPs	PAHs		Asbestos[6]		Metals							
			Endrin (ketone)	Benzo(a)pyrene EQ	Benzo (g,h,i)perylene	ACM	FA / AF	Arsenic	Cadmium	Chromium[4]	Copper	Lead	Mercury	Nickel	Zinc
	Units	m bgl	mg/kg	mg/kg	mg/kg	w/w	w/w	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg
Human Health Criteria for High-Density Residential Land Use[1]			-	24	-	0.04	0.001	45	230	1,500	>10,000	500	1,000	1,200[5]	60,000[5]
Permitted Activity Criteria[2]			-	20	-	> LOR	> LOR	100	7.5	400	325	250	0.75	320	1160
Background Criteria for Inorganic Elements (volcanic)[3]			>LOR	> LOR	> LOR	> LOR	> LOR	12	0.65	125	90	65	0.45	320	1160
S01	15-Jul-21	0.1	ND	NT	NT	NT	NT	1.3	0.19	2.3	2.5	6.3	0.12	1.2	15
S02	15-Jul-21	0.1	**0.1**	NT	NT	NT	NT	0.7	0.1	3.3	1.7	3.2	0.08	1	9.9
S03	15-Jul-21	0.1	ND	<LOR	<LOR	NT	NT	1.9	0.15	5	18	6.1	0.22	1.8	15
S04	15-Jul-21	0.1	ND	NT	NT	NT	NT	1.7	0.15	5	18	5.3	0.17	1.3	9
S05	15-Jul-21	0.1	ND	NT	NT	NT	NT	2.9	0.14	5.9	13	8.3	0.17	2.2	17
S06	15-Jul-21	0.1	ND	NT	NT	NT	NT	1.8	0.19	7.2	13	7	0.17	1.3	14
S07	15-Jul-21	0.1	ND	NT	NT	NT	NT	2.7	0.17	6.4	11	8	0.11	3.3	35
S08	15-Jul-21	0.1	ND	NT	NT	<LOR	<LOR	2.5	0.14	6	9.8	9.9	0.16	1.6	17
S09	15-Jul-21	0.1	ND	<LOR	<LOR	NT	NT	2.1	0.19	6.1	9.4	7.8	0.16	1.7	15
S10	15-Jul-21	0.1	ND	NT	NT	NT	NT	1.1	0.12	4.4	12	4.7	0.07	2.1	15
S11	15-Jul-21	0.1	ND	NT	NT	NT	NT	2.4	0.11	6.3	6.7	6.2	0.17	2	9.4
S12	15-Jul-21	0.1	ND	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT
S13	15-Jul-21	0.1	ND	NT	NT	NT	NT	1.8	0.2	7.1	7.6	8.3	0.18	1.3	12
S14	15-Jul-21	0.1	ND	NT	NT	NT	NT	1.3	0.21	4.6	16	5.3	0.12	1.1	15
S15	15-Jul-21	0.1	ND	NT	NT	NT	NT	2	0.2	9	15	12	0.23	2.5	25
S16	15-Jul-21	0.1	ND	**0.04**	**0.12**	NT	NT	3.1	0.1	5.7	7.7	8.3	0.24	1.4	7.5
S17	15-Jul-21	0.1	ND	NT	NT	NT	NT	2.5	0.18	5.6	12	5.8	0.21	1.6	12
S18	15-Jul-21	0.1	ND	NT	NT	NT	NT	5.2	0.3	9.8	8.3	15	0.17	2.9	37
S19	15-Jul-21	0.1	ND	NT	NT	NT	NT	7.2	0.33	16	10	17	0.27	4.5	38
S20	15-Jul-21	0.1	ND	<LOR	<LOR	NT	NT	1.4	0.04	5.4	1.8	5.5	0.14	1.1	8.2
S21	15-Jul-21	0.1	ND	NT	NT	NT	NT	2.1	0.15	6.3	2.6	6.7	0.11	1.4	11
S22	15-Jul-21	0.1	ND	NT	NT	NT	NT	0.8	0.16	3.2	2.7	4.2	0.07	1.1	9.3
S23	15-Jul-21	0.1	ND	<LOR	**0.14**	NT	NT	0.9	0.1	5.3	10	6.6	0.09	1.6	9.7
S24	15-Jul-21	0.1	ND	NT	NT	NT	NT	3.3	0.3	8.4	15	11	0.21	2.8	24
S25	15-Jul-21	0.1	ND	<LOR	<LOR	<LOR	<LOR	3.7	0.44	7.2	19	26	0.08	2	240
S26	15-Jul-21	0.1	ND	NT	NT	NT	NT	9	0.25	17	23	31	0.09	6.6	130
S27	15-Jul-21	0.1	ND	NT	NT	<LOR	<LOR	**21**	1.3	30	**98**	62	0.13	6.8	340
S28	15-Jul-21	0.05	ND	NT	NT	<LOR	**<LOR (0.00091)**	**44**	**0.68**	90	**130**	**1000**	0.1	46	930
S29	15-Jul-21	0.1	ND	NT	NT	<LOR	<LOR	7.3	0.63	9.8	12	**86**	0.23	4.2	470
S30	15-Jul-21	0.1	ND	NT	NT	<LOR	<LOR	**32**	**0.73**	25	39	**2100**	0.16	8.5	930

Notes:

-- Indicates not available or not referenced.

LOR = laboratory limit of reporting.

NT indicates samples were not analysed for that analyte.

ND indicates non-detect.

Only detected contaminants are included in the data table. For a full list of results refer to the appended laboratory reports.

1 Human Health Criteria from the NES (NES, 2011), except where noted. Exceedances shaded red.

2 Environmental discharge criteria from the AUP (AC, 2016a). Exceedances underlined.

3 Background Concentrations of Inorganic Elements in Soils from the Auckland Region (AC, 2001). Exceedances in **bold**

4 Criteria for Chromium VI were conservatively selected.

5 Criteria sourced from National Environment Protection (Assessment of Site Contamination) Measure (NEPM, 2013). Land Use Scenario – Residential "B".

6 Criteria sourced from BRANZ Guidelines (BRANZ, 2017)

APPENDIX 2

Full Laboratory Reports

Certificate of Analysis

NATA Accredited
Accreditation Number 1261
Site Number 1254

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.

ENGEO Ltd
6 Antares Place
Rosedale
Auckland New Zealand 0632

Attention:	Jamie Rhodes
Report	811309-AID
Project Name	TOTARA ROAD
Project ID	19070.000.001
Received Date	Jul 15, 2021
Date Reported	Jul 27, 2021

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 IANZ Accreditation does not cover the performance of this service (non-IANZ 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 TOTARA ROAD
Project ID 19070.000.001
Date Sampled Jul 15, 2021
Report 811309-AID

Client Sample ID	Eurofins Sample No.	Date Sampled	Sample Description	Result
S08 0.1	21-JI33298	Jul 15, 2021	Approximate Sample 69g / -mm Sample consisted of: Fine grained soil and rocks	No asbestos detected at the reporting limit of 0.01% w/w. Organic fibre detected. No respirable fibres detected.
S25 0.1	21-JI33334	Jul 15, 2021	Approximate Sample 556g / -mm Sample consisted of: Fine grained soil and rocks	No asbestos detected at the reporting limit of 0.01% w/w. Organic fibre detected. No respirable fibres detected.
S27 0.1	21-JI33338	Jul 15, 2021	Approximate Sample 464g / -mm Sample consisted of: Fine grained soil and rocks	No asbestos detected at the reporting limit of 0.01% w/w. Organic fibre detected. No respirable fibres detected.
S28 0.05	21-JI33340	Jul 15, 2021	Approximate Sample 239g / -mm Sample consisted of: Fine grained soil and rocks	Chrysotile and amosite asbestos detected in the form of bituminous material. Approximate raw weight of asbestos containing material = 0.011g* Total estimated asbestos content in the sample = 0.0022g* Total estimated asbestos concentration = 0.00091% w/w* No asbestos detected at the reporting limit of 0.01% w/w. Synthetic mineral fibre detected. Organic fibre detected. No respirable fibres detected.
S29 0.0-0.2	21-JI33341	Jul 15, 2021	Approximate Sample 306g / -mm Sample consisted of: Fine grained soil and rocks	No asbestos detected at the reporting limit of 0.01% w/w. Organic fibre detected. No respirable fibres detected.
S30 0.1	21-JI33343	Jul 15, 2021	Approximate Sample 426g / -mm Sample consisted of: Fine grained soil and rocks	No asbestos detected at the reporting limit of 0.01% w/w. Organic fibre detected. No respirable fibres 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	Melbourne	Jul 19, 2021	Indefinite

eurofins | Environment Testing

New Zealand

Auckland
35 O'Rorke Road
Penrose, Auckland 1061
Phone : +64 9 526 45 51
IANZ # 1327

Christchurch
43 Detroit Drive
Rolleston, Christchurch 7675
Phone : 0800 856 450
IANZ # 1290

Australia

Melbourne
6 Monterey Road
Dandenong South VIC 3175
Phone : +61 3 8564 5000
NATA # 1261
Site # 1254

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

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

Perth
46-48 Banksia Road
Welshpool WA 6106
Phone : +61 8 9251 9600
NATA # 1261
Site # 23736

Newcastle
4/52 Industrial Drive
Mayfield East NSW 2304
PO Box 60 Wickham 2293
Phone : +61 2 4968 8448
NATA # 1261 Site # 25079

NZBN: 9429046024954 web: www.eurofins.com.au email: EnviroSales@eurofins.com

Company Name: ENGEO Ltd
Address: 6 Antares Place
Rosedale
Auckland New Zealand 0632

Project Name: TOTARA ROAD
Project ID: 19070.000.001

Order No.:
Report #: 811309
Phone: 0011 64 9 9722 205
Fax:

Received: Jul 15, 2021 4:30 PM
Due: Jul 22, 2021
Priority: 5 Day
Contact Name: Jamie Rhodes

Eurofins Analytical Services Manager : Swati Shahaney

Sample Detail						Asbestos - AS4964	HOLD	Moisture Set	Organochlorine Pesticides (NZ MfE)	Metals M8 (NZ MfE)	Polycyclic Aromatic Hydrocarbons (NZ MfE)
Auckland Laboratory - IANZ# 1327							X	X	X	X	X
Christchurch Laboratory - IANZ# 1290											
Melbourne Laboratory - NATA Site # 1254						X					
External Laboratory											
No	**Sample ID**	**Sample Date**	**Sampling Time**	**Matrix**	**LAB ID**						
1	S01 0.1	Jul 15, 2021		Soil	K21-JI33284			X	X	X	
2	S01 0.3	Jul 15, 2021		Soil	K21-JI33285		X				
3	S02 0.1	Jul 15, 2021		Soil	K21-JI33286			X	X	X	
4	S02 0.3	Jul 15, 2021		Soil	K21-JI33287		X				
5	S03 0.1	Jul 15, 2021		Soil	K21-JI33288			X	X	X	X
6	S03 0.3	Jul 15, 2021		Soil	K21-JI33289		X				
7	S04 0.1	Jul 15, 2021		Soil	K21-JI33290			X	X	X	
8	S04 0.3	Jul 15, 2021		Soil	K21-JI33291		X				
9	S05 0.1	Jul 15, 2021		Soil	K21-JI33292			X	X	X	
10	S05 0.3	Jul 15, 2021		Soil	K21-JI33293		X				
11	S06 0.1	Jul 15, 2021		Soil	K21-JI33294			X	X	X	

eurofins | Environment Testing

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IANZ # 1290

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NATA # 1261
Site # 1254

Sydney
Unit F3, Building F
16 Mars Road
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NATA # 1261 Site # 18217

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

Perth
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NATA # 1261
Site # 23736

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Phone : +61 2 4968 8448
NATA # 1261 Site # 25079

Company Name: ENGEO Ltd
Address: 6 Antares Place
Rosedale
Auckland New Zealand 0632

Project Name: TOTARA ROAD
Project ID: 19070.000.001

Order No.:
Report #: 811309
Phone: 0011 64 9 9722 205
Fax:

Received: Jul 15, 2021 4:30 PM
Due: Jul 22, 2021
Priority: 5 Day
Contact Name: Jamie Rhodes

Eurofins Analytical Services Manager : Swati Shahaney

Sample Detail						Asbestos - AS4964	HOLD	Moisture Set	Organochlorine Pesticides (NZ MfE)	Metals M8 (NZ MfE)	Polycyclic Aromatic Hydrocarbons (NZ MfE)
Auckland Laboratory - IANZ# 1327							X	X	X	X	X
Christchurch Laboratory - IANZ# 1290											
Melbourne Laboratory - NATA Site # 1254						X					
External Laboratory											
12	S06 0.3	Jul 15, 2021		Soil	K21-JI33295		X				
13	S07 0.1	Jul 15, 2021		Soil	K21-JI33296			X	X	X	
14	S07 0.3	Jul 15, 2021		Soil	K21-JI33297		X				
15	S08 0.1	Jul 15, 2021		Soil	K21-JI33298	X		X	X	X	
16	S08 0.3	Jul 15, 2021		Soil	K21-JI33299		X				
17	S09 0.1	Jul 15, 2021		Soil	K21-JI33300			X	X	X	X
18	S09 0.3	Jul 15, 2021		Soil	K21-JI33301		X				
19	S10 0.1	Jul 15, 2021		Soil	K21-JI33302			X	X	X	
20	S10 0.3	Jul 15, 2021		Soil	K21-JI33303		X				
21	S11 0.1	Jul 15, 2021		Soil	K21-JI33304			X	X	X	
22	S11 0.3	Jul 15, 2021		Soil	K21-JI33305		X				
23	S12 0.1	Jul 15, 2021		Soil	K21-JI33306			X	X		
24	S12 0.3	Jul 15, 2021		Soil	K21-JI33307		X				

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New Zealand

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NATA # 1261
Site # 1254

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Phone : +61 2 9900 8400
NATA # 1261 Site # 18217

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NATA # 1261 Site # 20794

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NATA # 1261
Site # 23736

Newcastle
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PO Box 60 Wickham 2293
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Company Name: ENGEO Ltd
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Eurofins Analytical Services Manager : Swati Shahaney

Sample Detail						Asbestos - AS4964	HOLD	Moisture Set	Organochlorine Pesticides (NZ MfE)	Metals M8 (NZ MfE)	Polycyclic Aromatic Hydrocarbons (NZ MfE)
Auckland Laboratory - IANZ# 1327							X	X	X	X	X
Christchurch Laboratory - IANZ# 1290											
Melbourne Laboratory - NATA Site # 1254						X					
External Laboratory											
25	S12 0.45	Jul 15, 2021		Soil	K21-JI33308		X				
26	S13 0.1	Jul 15, 2021		Soil	K21-JI33309			X	X	X	
27	S13 0.3	Jul 15, 2021		Soil	K21-JI33310		X				
28	S14 0.1	Jul 15, 2021		Soil	K21-JI33311			X	X	X	
29	S14 0.3	Jul 15, 2021		Soil	K21-JI33312		X				
30	S15 0.1	Jul 15, 2021		Soil	K21-JI33313			X	X	X	
31	S15 0.3	Jul 15, 2021		Soil	K21-JI33314		X				
32	S16 0.1	Jul 15, 2021		Soil	K21-JI33315			X	X	X	X
33	S16 0.3	Jul 15, 2021		Soil	K21-JI33316		X				
34	S16 0.45	Jul 15, 2021		Soil	K21-JI33317		X				
35	S17 0.1	Jul 15, 2021		Soil	K21-JI33318			X	X	X	
36	S17 0.35	Jul 15, 2021		Soil	K21-JI33319		X				
37	S18 0.1	Jul 15, 2021		Soil	K21-JI33320			X	X	X	

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Sample Detail						Asbestos - AS4964	HOLD	Moisture Set	Organochlorine Pesticides (NZ MfE)	Metals M8 (NZ MfE)	Polycyclic Aromatic Hydrocarbons (NZ MfE)
Auckland Laboratory - IANZ# 1327							X	X	X	X	X
Christchurch Laboratory - IANZ# 1290											
Melbourne Laboratory - NATA Site # 1254						X					
External Laboratory											
38	S18 0.35	Jul 15, 2021		Soil	K21-JI33321		X				
39	S19 0.1	Jul 15, 2021		Soil	K21-JI33322			X	X	X	
40	S19 0.25	Jul 15, 2021		Soil	K21-JI33323		X				
41	S20 0.1	Jul 15, 2021		Soil	K21-JI33324			X	X	X	X
42	S20 0.3	Jul 15, 2021		Soil	K21-JI33325		X				
43	S21 0.1	Jul 15, 2021		Soil	K21-JI33326			X	X	X	
44	S21 0.3	Jul 15, 2021		Soil	K21-JI33327		X				
45	S22 0.1	Jul 15, 2021		Soil	K21-JI33328			X	X	X	
46	S22 0.3	Jul 15, 2021		Soil	K21-JI33329		X				
47	S23 0.1	Jul 15, 2021		Soil	K21-JI33330			X	X	X	X
48	S23 0.35	Jul 15, 2021		Soil	K21-JI33331		X				
49	S24 0.1	Jul 15, 2021		Soil	K21-JI33332			X	X	X	
50	S24 0.3	Jul 15, 2021		Soil	K21-JI33333		X				

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Eurofins Analytical Services Manager : Swati Shahaney

Sample Detail						Asbestos - AS4964	HOLD	Moisture Set	Organochlorine Pesticides (NZ MfE)	Metals M8 (NZ MfE)	Polycyclic Aromatic Hydrocarbons (NZ MfE)
Auckland Laboratory - IANZ# 1327							X	X	X	X	X
Christchurch Laboratory - IANZ# 1290											
Melbourne Laboratory - NATA Site # 1254						X					
External Laboratory											
51	S25 0.1	Jul 15, 2021		Soil	K21-JI33334	X		X	X	X	X
52	S25 0.3	Jul 15, 2021		Soil	K21-JI33335		X				
53	S26 0.1	Jul 15, 2021		Soil	K21-JI33336			X	X	X	
54	S26 0.4	Jul 15, 2021		Soil	K21-JI33337		X				
55	S27 0.1	Jul 15, 2021		Soil	K21-JI33338	X		X	X	X	
56	S27 0.35	Jul 15, 2021		Soil	K21-JI33339		X				
57	S28 0.05	Jul 15, 2021		Soil	K21-JI33340	X		X	X	X	
58	S29 0.0-0.2	Jul 15, 2021		Soil	K21-JI33341	X		X	X	X	
59	S29 0.2-0.45	Jul 15, 2021		Soil	K21-JI33342		X				
60	S30 0.1	Jul 15, 2021		Soil	K21-JI33343	X		X	X	X	
61	S30 0.35	Jul 15, 2021		Soil	K21-JI33344		X				
Test Counts						6	31	30	30	29	6

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 blue colour, 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 'Sample Preservation and Container Guide' for holding times (QS3001).

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

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

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

Units

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

Terms

Dry	Sample is dried by heating prior to analysis
LOR	Limit of Reporting
COC	Chain of Custody
SRA	Sample Receipt Advice
ISO	International Standards Organisation
AS	Australian Standards
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 (2009), including supporting document Recommended Procedures for Laboratory Analysis of Asbestos in Soil (2011)
NEPM	National Environment Protection (Assessment of Site Contamination) Measure, 2013 (as amended)
ACM	Asbestos Containing Materials. Asbestos contained within a non-asbestos matrix, typically presented in bonded and/or sound condition. For the purposes of the NEPM, ACM is generally restricted to those materials that do not pass a 7mm x 7mm sieve.
AF	Asbestos Fines. Asbestos containing materials, including friable, weathered and bonded materials, able to pass a 7mm x 7mm sieve. Considered under the NEPM as equivalent to “non-bonded / friable”.
FA	Fibrous Asbestos. Asbestos containing materials in a friable and/or severely weathered condition. For the purposes of the NEPM, FA is generally restricted to those materials that do not pass a 7mm x 7mm sieve.
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.
Trace Analysis	Analytical procedure used to detect the presence of respirable fibres in the matrix.

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
N/A	Not applicable

Asbestos Counter/Identifier:

Sophie Bush	Senior Analyst-Asbestos (VIC)

Authorised by:

Emily Daos	Senior Analyst-Asbestos (VIC)

Glenn Jackson
General Manager

Final Report – this report replaces any previously issued Report

- Indicates Not Requested

* Indicates ISO/IEC 17025:2017 accreditation does not cover the performance of this service

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

ENGEO Ltd
6 Antares Place
Rosedale
Auckland New Zealand 0632

All tests reported herein have been performed in accordance with the laboratory's scope of accreditation

Attention: **Jamie Rhodes**

Report **811309-S**
Project name TOTARA ROAD
Project ID 19070.000.001
Received Date Jul 15, 2021

Client Sample ID			**S01 0.1**	**S02 0.1**	**S03 0.1**	**S04 0.1**
Sample Matrix			**Soil**	**Soil**	**Soil**	**Soil**
Eurofins Sample No.			**K21-JI33284**	**K21-JI33286**	**K21-JI33288**	**K21-JI33290**
Date Sampled			**Jul 15, 2021**	**Jul 15, 2021**	**Jul 15, 2021**	**Jul 15, 2021**
Test/Reference	LOR	Unit				
Organochlorine Pesticides (NZ MfE)						
2.4'-DDD	0.01	mg/kg	< 0.01	< 0.01	< 0.01	< 0.01
2.4'-DDE	0.01	mg/kg	< 0.01	< 0.01	< 0.01	< 0.01
2.4'-DDT	0.01	mg/kg	< 0.01	< 0.01	< 0.01	< 0.01
4.4'-DDD	0.01	mg/kg	< 0.01	< 0.01	< 0.01	< 0.01
4.4'-DDE	0.01	mg/kg	< 0.01	< 0.01	< 0.01	< 0.01
4.4'-DDT	0.01	mg/kg	< 0.01	< 0.01	< 0.01	< 0.01
DDT + DDE + DDD (Total)*	0.01	mg/kg	< 0.01	< 0.01	< 0.01	< 0.01
a-HCH	0.01	mg/kg	< 0.01	< 0.01	< 0.01	< 0.01
Aldrin	0.01	mg/kg	< 0.01	< 0.01	< 0.01	< 0.01
b-HCH	0.01	mg/kg	< 0.01	< 0.01	< 0.01	< 0.01
Chlordanes - Total	0.01	mg/kg	< 0.01	< 0.01	< 0.01	< 0.01
cis-Chlordane	0.01	mg/kg	< 0.01	< 0.01	< 0.01	< 0.01
d-HCH	0.01	mg/kg	< 0.01	< 0.01	< 0.01	< 0.01
Dieldrin	0.01	mg/kg	< 0.01	< 0.01	< 0.01	< 0.01
Endosulfan I	0.01	mg/kg	< 0.01	< 0.01	< 0.01	< 0.01
Endosulfan II	0.01	mg/kg	< 0.01	< 0.01	< 0.01	< 0.01
Endosulfan sulphate	0.01	mg/kg	< 0.01	< 0.01	< 0.01	< 0.01
Endrin	0.01	mg/kg	< 0.01	< 0.01	< 0.01	< 0.01
Endrin aldehyde	0.01	mg/kg	< 0.1	< 0.1	< 0.1	< 0.1
Endrin ketone	0.01	mg/kg	< 0.01	0.10	< 0.01	< 0.01
g-HCH (Lindane)	0.01	mg/kg	< 0.01	< 0.01	< 0.01	< 0.01
Heptachlor	0.01	mg/kg	< 0.01	< 0.01	< 0.01	< 0.01
Heptachlor epoxide	0.01	mg/kg	< 0.01	< 0.01	< 0.01	< 0.01
Hexachlorobenzene	0.01	mg/kg	< 0.01	< 0.01	< 0.01	< 0.01
Methoxychlor	0.01	mg/kg	< 0.01	< 0.01	< 0.01	< 0.01
Toxaphene	0.1	mg/kg	< 0.1	< 0.1	< 0.1	< 0.1
trans-Chlordane	0.01	mg/kg	< 0.01	< 0.01	< 0.01	< 0.01
Dibutylchlorendate (surr.)	1	%	INT	INT	INT	INT
Tetrachloro-m-xylene (surr.)	1	%	INT	INT	57	INT
Metals M8 (NZ MfE)						
Arsenic	0.1	mg/kg	1.3	0.7	1.9	1.7
Cadmium	0.01	mg/kg	0.19	0.10	0.15	0.15
Chromium	0.1	mg/kg	2.3	3.3	5.0	5.0
Copper	0.1	mg/kg	2.5	1.7	18	18
Lead	0.1	mg/kg	6.3	3.2	6.1	5.3

Client Sample ID			S01 0.1	S02 0.1	S03 0.1	S04 0.1
Sample Matrix			Soil	Soil	Soil	Soil
Eurofins Sample No.			K21-JI33284	K21-JI33286	K21-JI33288	K21-JI33290
Date Sampled			Jul 15, 2021	Jul 15, 2021	Jul 15, 2021	Jul 15, 2021
Test/Reference	LOR	Unit				
Metals M8 (NZ MfE)						
Mercury	0.01	mg/kg	0.12	0.08	0.22	0.17
Nickel	0.1	mg/kg	1.2	1.0	1.8	1.3
Zinc	5	mg/kg	15	9.9	15	9.0
% Moisture	1	%	36	31	33	32
Polycyclic Aromatic Hydrocarbons (NZ MfE)						
Acenaphthene	0.03	mg/kg	-	-	< 0.03	-
Acenaphthylene	0.03	mg/kg	-	-	< 0.03	-
Anthracene	0.03	mg/kg	-	-	< 0.03	-
Benz(a)anthracene	0.03	mg/kg	-	-	< 0.03	-
Benzo(a)pyrene	0.03	mg/kg	-	-	< 0.03	-
Benzo(a)pyrene TEQ (lower bound)*	0.03	mg/kg	-	-	< 0.03	-
Benzo(a)pyrene TEQ (medium bound)*	0.03	mg/kg	-	-	0.04	-
Benzo(a)pyrene TEQ (upper bound)*	0.03	mg/kg	-	-	0.08	-
Benzo(b&j)fluoranthene[N07]	0.03	mg/kg	-	-	< 0.03	-
Benzo(g.h.i)perylene	0.03	mg/kg	-	-	< 0.03	-
Benzo(k)fluoranthene	0.03	mg/kg	-	-	< 0.03	-
Chrysene	0.03	mg/kg	-	-	< 0.03	-
Dibenz(a.h)anthracene	0.03	mg/kg	-	-	< 0.03	-
Fluoranthene	0.03	mg/kg	-	-	< 0.03	-
Fluorene	0.03	mg/kg	-	-	< 0.03	-
Indeno(1.2.3-cd)pyrene	0.03	mg/kg	-	-	< 0.03	-
Naphthalene	0.1	mg/kg	-	-	< 0.1	-
Phenanthrene	0.03	mg/kg	-	-	< 0.03	-
Pyrene	0.03	mg/kg	-	-	< 0.03	-
p-Terphenyl-d14 (surr.)	1	%	-	-	127	-
2-Fluorobiphenyl (surr.)	1	%	-	-	INT	-

Client Sample ID			S05 0.1	S06 0.1	S07 0.1	S08 0.1
Sample Matrix			Soil	Soil	Soil	Soil
Eurofins Sample No.			K21-JI33292	K21-JI33294	K21-JI33296	K21-JI33298
Date Sampled			Jul 15, 2021	Jul 15, 2021	Jul 15, 2021	Jul 15, 2021
Test/Reference	LOR	Unit				
Organochlorine Pesticides (NZ MfE)						
2.4'-DDD	0.01	mg/kg	< 0.01	< 0.01	< 0.01	< 0.01
2.4'-DDE	0.01	mg/kg	< 0.01	< 0.01	< 0.01	< 0.01
2.4'-DDT	0.01	mg/kg	< 0.01	< 0.01	< 0.01	< 0.01
4.4'-DDD	0.01	mg/kg	< 0.01	< 0.01	< 0.01	< 0.01
4.4'-DDE	0.01	mg/kg	< 0.01	< 0.01	< 0.01	< 0.01
4.4'-DDT	0.01	mg/kg	< 0.01	< 0.01	< 0.01	< 0.01
DDT + DDE + DDD (Total)*	0.01	mg/kg	< 0.01	< 0.01	< 0.01	< 0.01
a-HCH	0.01	mg/kg	< 0.01	< 0.01	< 0.01	< 0.01
Aldrin	0.01	mg/kg	< 0.01	< 0.01	< 0.01	< 0.01
b-HCH	0.01	mg/kg	< 0.01	< 0.01	< 0.01	< 0.01
Chlordanes - Total	0.01	mg/kg	< 0.01	< 0.01	< 0.01	< 0.01
cis-Chlordane	0.01	mg/kg	< 0.01	< 0.01	< 0.01	< 0.01
d-HCH	0.01	mg/kg	< 0.01	< 0.01	< 0.01	< 0.01
Dieldrin	0.01	mg/kg	< 0.01	< 0.01	< 0.01	< 0.01

Client Sample ID			S05 0.1	S06 0.1	S07 0.1	S08 0.1
Sample Matrix			Soil	Soil	Soil	Soil
Eurofins Sample No.			K21-JI33292	K21-JI33294	K21-JI33296	K21-JI33298
Date Sampled			Jul 15, 2021	Jul 15, 2021	Jul 15, 2021	Jul 15, 2021
Test/Reference	LOR	Unit				
Organochlorine Pesticides (NZ MfE)						
Endosulfan I	0.01	mg/kg	< 0.01	< 0.01	< 0.01	< 0.01
Endosulfan II	0.01	mg/kg	< 0.01	< 0.01	< 0.01	< 0.01
Endosulfan sulphate	0.01	mg/kg	< 0.01	< 0.01	< 0.01	< 0.01
Endrin	0.01	mg/kg	< 0.01	< 0.01	< 0.01	< 0.01
Endrin aldehyde	0.01	mg/kg	< 0.1	< 0.1	< 0.1	< 0.1
Endrin ketone	0.01	mg/kg	< 0.01	< 0.01	< 0.01	< 0.01
g-HCH (Lindane)	0.01	mg/kg	< 0.01	< 0.01	< 0.01	< 0.01
Heptachlor	0.01	mg/kg	< 0.01	< 0.01	< 0.01	< 0.01
Heptachlor epoxide	0.01	mg/kg	< 0.01	< 0.01	< 0.01	< 0.01
Hexachlorobenzene	0.01	mg/kg	< 0.01	< 0.01	< 0.01	< 0.01
Methoxychlor	0.01	mg/kg	< 0.01	< 0.01	< 0.01	< 0.01
Toxaphene	0.1	mg/kg	< 0.1	< 0.1	< 0.1	< 0.1
trans-Chlordane	0.01	mg/kg	< 0.01	< 0.01	< 0.01	< 0.01
Dibutylchlorendate (surr.)	1	%	INT	INT	INT	INT
Tetrachloro-m-xylene (surr.)	1	%	INT	INT	INT	INT
Metals M8 (NZ MfE)						
Arsenic	0.1	mg/kg	2.9	1.8	2.7	2.5
Cadmium	0.01	mg/kg	0.14	0.19	0.17	0.14
Chromium	0.1	mg/kg	5.9	7.2	6.4	6.0
Copper	0.1	mg/kg	13	13	11	9.8
Lead	0.1	mg/kg	8.3	7.0	8.0	9.9
Mercury	0.01	mg/kg	0.17	0.17	0.11	0.16
Nickel	0.1	mg/kg	2.2	1.3	3.3	1.6
Zinc	5	mg/kg	17	14	35	17
% Moisture	1	%	22	27	26	23

Client Sample ID			S09 0.1	S10 0.1	S11 0.1	S12 0.1
Sample Matrix			Soil	Soil	Soil	Soil
Eurofins Sample No.			K21-JI33300	K21-JI33302	K21-JI33304	K21-JI33306
Date Sampled			Jul 15, 2021	Jul 15, 2021	Jul 15, 2021	Jul 15, 2021
Test/Reference	LOR	Unit				
Organochlorine Pesticides (NZ MfE)						
2.4'-DDD	0.01	mg/kg	< 0.01	< 0.01	< 0.01	< 0.01
2.4'-DDE	0.01	mg/kg	< 0.01	< 0.01	< 0.01	< 0.01
2.4'-DDT	0.01	mg/kg	< 0.01	< 0.01	< 0.01	< 0.01
4.4'-DDD	0.01	mg/kg	< 0.01	< 0.01	< 0.01	< 0.01
4.4'-DDE	0.01	mg/kg	< 0.01	< 0.01	< 0.01	< 0.01
4.4'-DDT	0.01	mg/kg	< 0.01	< 0.01	< 0.01	< 0.01
DDT + DDE + DDD (Total)*	0.01	mg/kg	< 0.01	< 0.01	< 0.01	< 0.01
a-HCH	0.01	mg/kg	< 0.01	< 0.01	< 0.01	< 0.01
Aldrin	0.01	mg/kg	< 0.01	< 0.01	< 0.01	< 0.01
b-HCH	0.01	mg/kg	< 0.01	< 0.01	< 0.01	< 0.01
Chlordanes - Total	0.01	mg/kg	< 0.01	< 0.01	< 0.01	< 0.01
cis-Chlordane	0.01	mg/kg	< 0.01	< 0.01	< 0.01	< 0.01
d-HCH	0.01	mg/kg	< 0.01	< 0.01	< 0.01	< 0.01
Dieldrin	0.01	mg/kg	< 0.01	< 0.01	< 0.01	< 0.01
Endosulfan I	0.01	mg/kg	< 0.01	< 0.01	< 0.01	< 0.01

Client Sample ID			S09 0.1	S10 0.1	S11 0.1	S12 0.1
Sample Matrix			Soil	Soil	Soil	Soil
Eurofins Sample No.			K21-JI33300	K21-JI33302	K21-JI33304	K21-JI33306
Date Sampled			Jul 15, 2021	Jul 15, 2021	Jul 15, 2021	Jul 15, 2021
Test/Reference	LOR	Unit				
Organochlorine Pesticides (NZ MfE)						
Endosulfan II	0.01	mg/kg	< 0.01	< 0.01	< 0.01	< 0.01
Endosulfan sulphate	0.01	mg/kg	< 0.01	< 0.01	< 0.01	< 0.01
Endrin	0.01	mg/kg	< 0.01	< 0.01	< 0.01	< 0.01
Endrin aldehyde	0.01	mg/kg	< 0.1	< 0.1	< 0.1	< 0.1
Endrin ketone	0.01	mg/kg	< 0.01	< 0.01	< 0.01	< 0.01
g-HCH (Lindane)	0.01	mg/kg	< 0.01	< 0.01	< 0.01	< 0.01
Heptachlor	0.01	mg/kg	< 0.01	< 0.01	< 0.01	< 0.01
Heptachlor epoxide	0.01	mg/kg	< 0.01	< 0.01	< 0.01	< 0.01
Hexachlorobenzene	0.01	mg/kg	< 0.01	< 0.01	< 0.01	< 0.01
Methoxychlor	0.01	mg/kg	< 0.01	< 0.01	< 0.01	< 0.01
Toxaphene	0.1	mg/kg	< 0.1	< 0.1	< 0.1	< 0.1
trans-Chlordane	0.01	mg/kg	< 0.01	< 0.01	< 0.01	< 0.01
Dibutylchlorendate (surr.)	1	%	INT	INT	INT	INT
Tetrachloro-m-xylene (surr.)	1	%	INT	INT	INT	INT
Metals M8 (NZ MfE)						
Arsenic	0.1	mg/kg	2.1	1.1	2.4	-
Cadmium	0.01	mg/kg	0.19	0.12	0.11	-
Chromium	0.1	mg/kg	6.1	4.4	6.3	-
Copper	0.1	mg/kg	9.4	12	6.7	-
Lead	0.1	mg/kg	7.8	4.7	6.2	-
Mercury	0.01	mg/kg	0.16	0.07	0.17	-
Nickel	0.1	mg/kg	1.7	2.1	2.0	-
Zinc	5	mg/kg	15	15	9.4	-
% Moisture	1	%	23	25	25	32
Polycyclic Aromatic Hydrocarbons (NZ MfE)						
Acenaphthene	0.03	mg/kg	< 0.03	-	-	-
Acenaphthylene	0.03	mg/kg	< 0.03	-	-	-
Anthracene	0.03	mg/kg	< 0.03	-	-	-
Benz(a)anthracene	0.03	mg/kg	< 0.03	-	-	-
Benzo(a)pyrene	0.03	mg/kg	< 0.03	-	-	-
Benzo(a)pyrene TEQ (lower bound)*	0.03	mg/kg	< 0.03	-	-	-
Benzo(a)pyrene TEQ (medium bound)*	0.03	mg/kg	0.04	-	-	-
Benzo(a)pyrene TEQ (upper bound)*	0.03	mg/kg	0.08	-	-	-
Benzo(b&j)fluoranthene[N07]	0.03	mg/kg	< 0.03	-	-	-
Benzo(g.h.i)perylene	0.03	mg/kg	< 0.03	-	-	-
Benzo(k)fluoranthene	0.03	mg/kg	< 0.03	-	-	-
Chrysene	0.03	mg/kg	< 0.03	-	-	-
Dibenz(a.h)anthracene	0.03	mg/kg	< 0.03	-	-	-
Fluoranthene	0.03	mg/kg	< 0.03	-	-	-
Fluorene	0.03	mg/kg	< 0.03	-	-	-
Indeno(1.2.3-cd)pyrene	0.03	mg/kg	< 0.03	-	-	-
Naphthalene	0.1	mg/kg	< 0.1	-	-	-
Phenanthrene	0.03	mg/kg	< 0.03	-	-	-
Pyrene	0.03	mg/kg	< 0.03	-	-	-
p-Terphenyl-d14 (surr.)	1	%	74	-	-	-
2-Fluorobiphenyl (surr.)	1	%	INT	-	-	-

Client Sample ID			S13 0.1	S14 0.1	S15 0.1	S16 0.1
Sample Matrix			Soil	Soil	Soil	Soil
Eurofins Sample No.			K21-JI33309	K21-JI33311	K21-JI33313	K21-JI33315
Date Sampled			Jul 15, 2021	Jul 15, 2021	Jul 15, 2021	Jul 15, 2021
Test/Reference	LOR	Unit				
Organochlorine Pesticides (NZ MfE)						
2.4'-DDD	0.01	mg/kg	< 0.01	< 0.01	< 0.01	< 0.01
2.4'-DDE	0.01	mg/kg	< 0.01	< 0.01	< 0.01	< 0.01
2.4'-DDT	0.01	mg/kg	< 0.01	< 0.01	< 0.01	< 0.01
4.4'-DDD	0.01	mg/kg	< 0.01	< 0.01	< 0.01	< 0.01
4.4'-DDE	0.01	mg/kg	< 0.01	< 0.01	< 0.01	< 0.01
4.4'-DDT	0.01	mg/kg	< 0.01	< 0.01	< 0.01	< 0.01
DDT + DDE + DDD (Total)*	0.01	mg/kg	< 0.01	< 0.01	< 0.01	< 0.01
a-HCH	0.01	mg/kg	< 0.01	< 0.01	< 0.01	< 0.01
Aldrin	0.01	mg/kg	< 0.01	< 0.01	< 0.01	< 0.01
b-HCH	0.01	mg/kg	< 0.01	< 0.01	< 0.01	< 0.01
Chlordanes - Total	0.01	mg/kg	< 0.01	< 0.01	< 0.01	< 0.01
cis-Chlordane	0.01	mg/kg	< 0.01	< 0.01	< 0.01	< 0.01
d-HCH	0.01	mg/kg	< 0.01	< 0.01	< 0.01	< 0.01
Dieldrin	0.01	mg/kg	< 0.01	< 0.01	< 0.01	< 0.01
Endosulfan I	0.01	mg/kg	< 0.01	< 0.01	< 0.01	< 0.01
Endosulfan II	0.01	mg/kg	< 0.01	< 0.01	< 0.01	< 0.01
Endosulfan sulphate	0.01	mg/kg	< 0.01	< 0.01	< 0.01	< 0.01
Endrin	0.01	mg/kg	< 0.01	< 0.01	< 0.01	< 0.01
Endrin aldehyde	0.01	mg/kg	< 0.1	< 0.1	< 0.1	< 0.1
Endrin ketone	0.01	mg/kg	< 0.01	< 0.01	< 0.01	< 0.01
g-HCH (Lindane)	0.01	mg/kg	< 0.01	< 0.01	< 0.01	< 0.01
Heptachlor	0.01	mg/kg	< 0.01	< 0.01	< 0.01	< 0.01
Heptachlor epoxide	0.01	mg/kg	< 0.01	< 0.01	< 0.01	< 0.01
Hexachlorobenzene	0.01	mg/kg	< 0.01	< 0.01	< 0.01	< 0.01
Methoxychlor	0.01	mg/kg	< 0.01	< 0.01	< 0.01	< 0.01
Toxaphene	0.1	mg/kg	< 0.1	< 0.1	< 0.1	< 0.1
trans-Chlordane	0.01	mg/kg	< 0.01	< 0.01	< 0.01	< 0.01
Dibutylchlorendate (surr.)	1	%	INT	INT	INT	INT
Tetrachloro-m-xylene (surr.)	1	%	INT	INT	INT	INT
Metals M8 (NZ MfE)						
Arsenic	0.1	mg/kg	1.8	1.3	2.0	3.1
Cadmium	0.01	mg/kg	0.20	0.21	0.20	0.10
Chromium	0.1	mg/kg	7.1	4.6	9.0	5.7
Copper	0.1	mg/kg	7.6	13	15	7.7
Lead	0.1	mg/kg	8.3	5.3	12	8.3
Mercury	0.01	mg/kg	0.18	0.12	0.23	0.24
Nickel	0.1	mg/kg	1.3	1.1	2.5	1.4
Zinc	5	mg/kg	12	15	25	7.5
% Moisture	1	%	29	33	30	35
Polycyclic Aromatic Hydrocarbons (NZ MfE)						
Acenaphthene	0.03	mg/kg	-	-	-	< 0.03
Acenaphthylene	0.03	mg/kg	-	-	-	< 0.03
Anthracene	0.03	mg/kg	-	-	-	< 0.03
Benz(a)anthracene	0.03	mg/kg	-	-	-	< 0.03
Benzo(a)pyrene	0.03	mg/kg	-	-	-	< 0.03
Benzo(a)pyrene TEQ (lower bound)*	0.03	mg/kg	-	-	-	< 0.03
Benzo(a)pyrene TEQ (medium bound)*	0.03	mg/kg	-	-	-	0.04
Benzo(a)pyrene TEQ (upper bound)*	0.03	mg/kg	-	-	-	0.08

Client Sample ID			S13 0.1	S14 0.1	S15 0.1	S16 0.1
Sample Matrix			Soil	Soil	Soil	Soil
Eurofins Sample No.			K21-JI33309	K21-JI33311	K21-JI33313	K21-JI33315
Date Sampled			Jul 15, 2021	Jul 15, 2021	Jul 15, 2021	Jul 15, 2021
Test/Reference	LOR	Unit				
Polycyclic Aromatic Hydrocarbons (NZ MfE)						
Benzo(b&j)fluoranthene[N07]	0.03	mg/kg	-	-	-	< 0.03
Benzo(g.h.i)perylene	0.03	mg/kg	-	-	-	0.12
Benzo(k)fluoranthene	0.03	mg/kg	-	-	-	< 0.03
Chrysene	0.03	mg/kg	-	-	-	< 0.03
Dibenz(a.h)anthracene	0.03	mg/kg	-	-	-	< 0.03
Fluoranthene	0.03	mg/kg	-	-	-	< 0.03
Fluorene	0.03	mg/kg	-	-	-	< 0.03
Indeno(1.2.3-cd)pyrene	0.03	mg/kg	-	-	-	0.03
Naphthalene	0.1	mg/kg	-	-	-	< 0.1
Phenanthrene	0.03	mg/kg	-	-	-	< 0.03
Pyrene	0.03	mg/kg	-	-	-	< 0.03
p-Terphenyl-d14 (surr.)	1	%	-	-	-	145
2-Fluorobiphenyl (surr.)	1	%	-	-	-	INT

Client Sample ID			S17 0.1	S18 0.1	S19 0.1	S20 0.1
Sample Matrix			Soil	Soil	Soil	Soil
Eurofins Sample No.			K21-JI33318	K21-JI33320	K21-JI33322	K21-JI33324
Date Sampled			Jul 15, 2021	Jul 15, 2021	Jul 15, 2021	Jul 15, 2021
Test/Reference	LOR	Unit				
Organochlorine Pesticides (NZ MfE)						
2.4'-DDD	0.01	mg/kg	< 0.01	< 0.01	< 0.01	< 0.01
2.4'-DDE	0.01	mg/kg	< 0.01	< 0.01	< 0.01	< 0.01
2.4'-DDT	0.01	mg/kg	< 0.01	< 0.01	< 0.01	< 0.01
4.4'-DDD	0.01	mg/kg	< 0.01	< 0.01	< 0.01	< 0.01
4.4'-DDE	0.01	mg/kg	< 0.01	< 0.01	< 0.01	< 0.01
4.4'-DDT	0.01	mg/kg	< 0.01	< 0.01	< 0.01	< 0.01
DDT + DDE + DDD (Total)*	0.01	mg/kg	< 0.01	< 0.01	< 0.01	< 0.01
a-HCH	0.01	mg/kg	< 0.01	< 0.01	< 0.01	< 0.01
Aldrin	0.01	mg/kg	< 0.01	< 0.01	< 0.01	< 0.01
b-HCH	0.01	mg/kg	< 0.01	< 0.01	< 0.01	< 0.01
Chlordanes - Total	0.01	mg/kg	< 0.01	< 0.01	< 0.01	< 0.01
cis-Chlordane	0.01	mg/kg	< 0.01	< 0.01	< 0.01	< 0.01
d-HCH	0.01	mg/kg	< 0.01	< 0.01	< 0.01	< 0.01
Dieldrin	0.01	mg/kg	< 0.01	< 0.01	< 0.01	< 0.01
Endosulfan I	0.01	mg/kg	< 0.01	< 0.01	< 0.01	< 0.01
Endosulfan II	0.01	mg/kg	< 0.01	< 0.01	< 0.01	< 0.01
Endosulfan sulphate	0.01	mg/kg	< 0.01	< 0.01	< 0.01	< 0.01
Endrin	0.01	mg/kg	< 0.01	< 0.01	< 0.01	< 0.01
Endrin aldehyde	0.01	mg/kg	< 0.1	< 0.1	< 0.1	< 0.1
Endrin ketone	0.01	mg/kg	< 0.01	< 0.01	< 0.01	< 0.01
g-HCH (Lindane)	0.01	mg/kg	< 0.01	< 0.01	< 0.01	< 0.01
Heptachlor	0.01	mg/kg	< 0.01	< 0.01	< 0.01	< 0.01
Heptachlor epoxide	0.01	mg/kg	< 0.01	< 0.01	< 0.01	< 0.01
Hexachlorobenzene	0.01	mg/kg	< 0.01	< 0.01	< 0.01	< 0.01
Methoxychlor	0.01	mg/kg	< 0.01	< 0.01	< 0.01	< 0.01
Toxaphene	0.1	mg/kg	< 0.1	< 0.1	< 0.1	< 0.1
trans-Chlordane	0.01	mg/kg	< 0.01	< 0.01	< 0.01	< 0.01
Dibutylchlorendate (surr.)	1	%	INT	INT	INT	INT
Tetrachloro-m-xylene (surr.)	1	%	INT	INT	INT	INT

Client Sample ID			S17 0.1	S18 0.1	S19 0.1	S20 0.1
Sample Matrix			Soil	Soil	Soil	Soil
Eurofins Sample No.			K21-JI33318	K21-JI33320	K21-JI33322	K21-JI33324
Date Sampled			Jul 15, 2021	Jul 15, 2021	Jul 15, 2021	Jul 15, 2021
Test/Reference	LOR	Unit				
Metals M8 (NZ MfE)						
Arsenic	0.1	mg/kg	2.5	5.2	7.2	1.4
Cadmium	0.01	mg/kg	0.18	0.30	0.33	0.04
Chromium	0.1	mg/kg	5.6	9.8	16	5.4
Copper	0.1	mg/kg	12	8.3	10	1.8
Lead	0.1	mg/kg	5.8	15	17	5.5
Mercury	0.01	mg/kg	0.21	0.17	0.27	0.14
Nickel	0.1	mg/kg	1.6	2.9	4.5	1.1
Zinc	5	mg/kg	12	37	38	8.2
% Moisture	1	%	44	40	42	31
Polycyclic Aromatic Hydrocarbons (NZ MfE)						
Acenaphthene	0.03	mg/kg	-	-	-	< 0.03
Acenaphthylene	0.03	mg/kg	-	-	-	< 0.03
Anthracene	0.03	mg/kg	-	-	-	< 0.03
Benz(a)anthracene	0.03	mg/kg	-	-	-	< 0.03
Benzo(a)pyrene	0.03	mg/kg	-	-	-	< 0.03
Benzo(a)pyrene TEQ (lower bound)*	0.03	mg/kg	-	-	-	< 0.03
Benzo(a)pyrene TEQ (medium bound)*	0.03	mg/kg	-	-	-	0.04
Benzo(a)pyrene TEQ (upper bound)*	0.03	mg/kg	-	-	-	0.08
Benzo(b&j)fluoranthene[N07]	0.03	mg/kg	-	-	-	< 0.03
Benzo(g.h.i)perylene	0.03	mg/kg	-	-	-	< 0.03
Benzo(k)fluoranthene	0.03	mg/kg	-	-	-	< 0.03
Chrysene	0.03	mg/kg	-	-	-	< 0.03
Dibenz(a.h)anthracene	0.03	mg/kg	-	-	-	< 0.03
Fluoranthene	0.03	mg/kg	-	-	-	< 0.03
Fluorene	0.03	mg/kg	-	-	-	< 0.03
Indeno(1.2.3-cd)pyrene	0.03	mg/kg	-	-	-	< 0.03
Naphthalene	0.1	mg/kg	-	-	-	< 0.1
Phenanthrene	0.03	mg/kg	-	-	-	< 0.03
Pyrene	0.03	mg/kg	-	-	-	< 0.03
p-Terphenyl-d14 (surr.)	1	%	-	-	-	91
2-Fluorobiphenyl (surr.)	1	%	-	-	-	INT

Client Sample ID			S21 0.1	S22 0.1	S23 0.1	S24 0.1
Sample Matrix			Soil	Soil	Soil	Soil
Eurofins Sample No.			K21-JI33326	K21-JI33328	K21-JI33330	K21-JI33332
Date Sampled			Jul 15, 2021	Jul 15, 2021	Jul 15, 2021	Jul 15, 2021
Test/Reference	LOR	Unit				
Organochlorine Pesticides (NZ MfE)						
2.4'-DDD	0.01	mg/kg	< 0.01	< 0.01	< 0.01	< 0.01
2.4'-DDE	0.01	mg/kg	< 0.01	< 0.01	< 0.01	< 0.01
2.4'-DDT	0.01	mg/kg	< 0.01	< 0.01	< 0.01	< 0.01
4.4'-DDD	0.01	mg/kg	< 0.01	< 0.01	< 0.01	< 0.01
4.4'-DDE	0.01	mg/kg	< 0.01	< 0.01	< 0.01	< 0.01
4.4'-DDT	0.01	mg/kg	< 0.01	< 0.01	< 0.01	< 0.01
DDT + DDE + DDD (Total)*	0.01	mg/kg	< 0.01	< 0.01	< 0.01	< 0.01
a-HCH	0.01	mg/kg	< 0.01	< 0.01	< 0.01	< 0.01
Aldrin	0.01	mg/kg	< 0.01	< 0.01	< 0.01	< 0.01

Client Sample ID			S21 0.1	S22 0.1	S23 0.1	S24 0.1
Sample Matrix			Soil	Soil	Soil	Soil
Eurofins Sample No.			K21-JI33326	K21-JI33328	K21-JI33330	K21-JI33332
Date Sampled			Jul 15, 2021	Jul 15, 2021	Jul 15, 2021	Jul 15, 2021
Test/Reference	LOR	Unit				
Organochlorine Pesticides (NZ MfE)						
b-HCH	0.01	mg/kg	< 0.01	< 0.01	< 0.01	< 0.01
Chlordanes - Total	0.01	mg/kg	< 0.01	< 0.01	< 0.01	< 0.01
cis-Chlordane	0.01	mg/kg	< 0.01	< 0.01	< 0.01	< 0.01
d-HCH	0.01	mg/kg	< 0.01	< 0.01	< 0.01	< 0.01
Dieldrin	0.01	mg/kg	< 0.01	< 0.01	< 0.01	< 0.01
Endosulfan I	0.01	mg/kg	< 0.01	< 0.01	< 0.01	< 0.01
Endosulfan II	0.01	mg/kg	< 0.01	< 0.01	< 0.01	< 0.01
Endosulfan sulphate	0.01	mg/kg	< 0.01	< 0.01	< 0.01	< 0.01
Endrin	0.01	mg/kg	< 0.01	< 0.01	< 0.01	< 0.01
Endrin aldehyde	0.01	mg/kg	< 0.1	< 0.1	< 0.1	< 0.1
Endrin ketone	0.01	mg/kg	< 0.01	< 0.01	< 0.01	< 0.01
g-HCH (Lindane)	0.01	mg/kg	< 0.01	< 0.01	< 0.01	< 0.01
Heptachlor	0.01	mg/kg	< 0.01	< 0.01	< 0.01	< 0.01
Heptachlor epoxide	0.01	mg/kg	< 0.01	< 0.01	< 0.01	< 0.01
Hexachlorobenzene	0.01	mg/kg	< 0.01	< 0.01	< 0.01	< 0.01
Methoxychlor	0.01	mg/kg	< 0.01	< 0.01	< 0.01	< 0.01
Toxaphene	0.1	mg/kg	< 0.1	< 0.1	< 0.1	< 0.1
trans-Chlordane	0.01	mg/kg	< 0.01	< 0.01	< 0.01	< 0.01
Dibutylchlorendate (surr.)	1	%	INT	INT	INT	INT
Tetrachloro-m-xylene (surr.)	1	%	INT	INT	INT	INT
Metals M8 (NZ MfE)						
Arsenic	0.1	mg/kg	2.1	0.8	0.9	3.3
Cadmium	0.01	mg/kg	0.15	0.16	0.10	0.30
Chromium	0.1	mg/kg	6.3	3.2	5.3	8.4
Copper	0.1	mg/kg	2.6	2.7	10	15
Lead	0.1	mg/kg	6.7	4.2	6.6	11
Mercury	0.01	mg/kg	0.11	0.07	0.09	0.21
Nickel	0.1	mg/kg	1.4	1.1	1.6	2.8
Zinc	5	mg/kg	11	9.3	9.7	24
% Moisture	1	%	32	32	26	34
Polycyclic Aromatic Hydrocarbons (NZ MfE)						
Acenaphthene	0.03	mg/kg	-	-	< 0.03	-
Acenaphthylene	0.03	mg/kg	-	-	< 0.03	-
Anthracene	0.03	mg/kg	-	-	< 0.03	-
Benz(a)anthracene	0.03	mg/kg	-	-	< 0.03	-
Benzo(a)pyrene	0.03	mg/kg	-	-	< 0.03	-
Benzo(a)pyrene TEQ (lower bound)*	0.03	mg/kg	-	-	< 0.03	-
Benzo(a)pyrene TEQ (medium bound)*	0.03	mg/kg	-	-	0.04	-
Benzo(a)pyrene TEQ (upper bound)*	0.03	mg/kg	-	-	0.08	-
Benzo(b&j)fluoranthene[N07]	0.03	mg/kg	-	-	< 0.03	-
Benzo(g.h.i)perylene	0.03	mg/kg	-	-	0.14	-
Benzo(k)fluoranthene	0.03	mg/kg	-	-	< 0.03	-
Chrysene	0.03	mg/kg	-	-	< 0.03	-
Dibenz(a.h)anthracene	0.03	mg/kg	-	-	< 0.03	-
Fluoranthene	0.03	mg/kg	-	-	< 0.03	-
Fluorene	0.03	mg/kg	-	-	< 0.03	-
Indeno(1.2.3-cd)pyrene	0.03	mg/kg	-	-	< 0.03	-
Naphthalene	0.1	mg/kg	-	-	< 0.1	-

Client Sample ID			S21 0.1	S22 0.1	S23 0.1	S24 0.1
Sample Matrix			Soil	Soil	Soil	Soil
Eurofins Sample No.			K21-JI33326	K21-JI33328	K21-JI33330	K21-JI33332
Date Sampled			Jul 15, 2021	Jul 15, 2021	Jul 15, 2021	Jul 15, 2021
Test/Reference	LOR	Unit				
Polycyclic Aromatic Hydrocarbons (NZ MfE)						
Phenanthrene	0.03	mg/kg	-	-	< 0.03	-
Pyrene	0.03	mg/kg	-	-	< 0.03	-
p-Terphenyl-d14 (surr.)	1	%	-	-	INT	-
2-Fluorobiphenyl (surr.)	1	%	-	-	INT	-

Client Sample ID			S25 0.1	S26 0.1	S27 0.1	S28 0.05
Sample Matrix			Soil	Soil	Soil	Soil
Eurofins Sample No.			K21-JI33334	K21-JI33336	K21-JI33338	K21-JI33340
Date Sampled			Jul 15, 2021	Jul 15, 2021	Jul 15, 2021	Jul 15, 2021
Test/Reference	LOR	Unit				
Organochlorine Pesticides (NZ MfE)						
2.4'-DDD	0.01	mg/kg	< 0.01	< 0.01	< 0.01	< 0.01
2.4'-DDE	0.01	mg/kg	< 0.01	< 0.01	< 0.01	< 0.01
2.4'-DDT	0.01	mg/kg	< 0.01	< 0.01	< 0.01	< 0.01
4.4'-DDD	0.01	mg/kg	< 0.01	< 0.01	< 0.01	< 0.01
4.4'-DDE	0.01	mg/kg	< 0.01	< 0.01	< 0.01	< 0.01
4.4'-DDT	0.01	mg/kg	< 0.01	< 0.01	< 0.01	< 0.01
DDT + DDE + DDD (Total)*	0.01	mg/kg	< 0.01	< 0.01	< 0.01	< 0.01
a-HCH	0.01	mg/kg	< 0.01	< 0.01	< 0.01	< 0.01
Aldrin	0.01	mg/kg	< 0.01	< 0.01	< 0.01	< 0.01
b-HCH	0.01	mg/kg	< 0.01	< 0.01	< 0.01	< 0.01
Chlordanes - Total	0.01	mg/kg	< 0.01	< 0.01	< 0.01	< 0.01
cis-Chlordane	0.01	mg/kg	< 0.01	< 0.01	< 0.01	< 0.01
d-HCH	0.01	mg/kg	< 0.01	< 0.01	< 0.01	< 0.01
Dieldrin	0.01	mg/kg	< 0.01	< 0.01	< 0.01	< 0.01
Endosulfan I	0.01	mg/kg	< 0.01	< 0.01	< 0.01	< 0.01
Endosulfan II	0.01	mg/kg	< 0.01	< 0.01	< 0.01	< 0.01
Endosulfan sulphate	0.01	mg/kg	< 0.01	< 0.01	< 0.01	< 0.01
Endrin	0.01	mg/kg	< 0.01	< 0.01	< 0.01	< 0.01
Endrin aldehyde	0.01	mg/kg	< 0.1	< 0.1	< 0.1	< 0.1
Endrin ketone	0.01	mg/kg	< 0.01	< 0.01	< 0.01	< 0.01
g-HCH (Lindane)	0.01	mg/kg	< 0.01	< 0.01	< 0.01	< 0.01
Heptachlor	0.01	mg/kg	< 0.01	< 0.01	< 0.01	< 0.01
Heptachlor epoxide	0.01	mg/kg	< 0.01	< 0.01	< 0.01	< 0.01
Hexachlorobenzene	0.01	mg/kg	< 0.01	< 0.01	< 0.01	< 0.01
Methoxychlor	0.01	mg/kg	< 0.01	< 0.01	< 0.01	< 0.01
Toxaphene	0.1	mg/kg	< 0.1	< 0.1	< 0.1	< 0.1
trans-Chlordane	0.01	mg/kg	< 0.01	< 0.01	< 0.01	< 0.01
Dibutylchlorendate (surr.)	1	%	INT	51	INT	INT
Tetrachloro-m-xylene (surr.)	1	%	INT	85	INT	INT
Metals M8 (NZ MfE)						
Arsenic	0.1	mg/kg	3.7	9.0	21	44
Cadmium	0.01	mg/kg	0.44	0.25	1.3	0.68
Chromium	0.1	mg/kg	7.2	17	30	90
Copper	0.1	mg/kg	19	23	98	130
Lead	0.1	mg/kg	26	31	62	1000
Mercury	0.01	mg/kg	0.08	0.09	0.13	0.10
Nickel	0.1	mg/kg	2.0	6.6	6.8	46
Zinc	5	mg/kg	240	130	340	930

Client Sample ID			S25 0.1	S26 0.1	S27 0.1	S28 0.05
Sample Matrix			Soil	Soil	Soil	Soil
Eurofins Sample No.			K21-JI33334	K21-JI33336	K21-JI33338	K21-JI33340
Date Sampled			Jul 15, 2021	Jul 15, 2021	Jul 15, 2021	Jul 15, 2021
Test/Reference	LOR	Unit				
% Moisture	1	%	23	27	32	50
Polycyclic Aromatic Hydrocarbons (NZ MfE)						
Acenaphthene	0.03	mg/kg	< 0.03	-	-	-
Acenaphthylene	0.03	mg/kg	< 0.03	-	-	-
Anthracene	0.03	mg/kg	< 0.03	-	-	-
Benz(a)anthracene	0.03	mg/kg	< 0.03	-	-	-
Benzo(a)pyrene	0.03	mg/kg	< 0.03	-	-	-
Benzo(a)pyrene TEQ (lower bound)*	0.03	mg/kg	< 0.03	-	-	-
Benzo(a)pyrene TEQ (medium bound)*	0.03	mg/kg	0.04	-	-	-
Benzo(a)pyrene TEQ (upper bound)*	0.03	mg/kg	0.08	-	-	-
Benzo(b&j)fluoranthene[N07]	0.03	mg/kg	< 0.03	-	-	-
Benzo(g.h.i)perylene	0.03	mg/kg	< 0.03	-	-	-
Benzo(k)fluoranthene	0.03	mg/kg	< 0.03	-	-	-
Chrysene	0.03	mg/kg	< 0.03	-	-	-
Dibenz(a.h)anthracene	0.03	mg/kg	< 0.03	-	-	-
Fluoranthene	0.03	mg/kg	< 0.03	-	-	-
Fluorene	0.03	mg/kg	< 0.03	-	-	-
Indeno(1.2.3-cd)pyrene	0.03	mg/kg	< 0.03	-	-	-
Naphthalene	0.1	mg/kg	< 0.1	-	-	-
Phenanthrene	0.03	mg/kg	< 0.03	-	-	-
Pyrene	0.03	mg/kg	< 0.03	-	-	-
p-Terphenyl-d14 (surr.)	1	%	80	-	-	-
2-Fluorobiphenyl (surr.)	1	%	INT	-	-	-

Client Sample ID			S29 0.0-0.2	S30 0.1
Sample Matrix			Soil	Soil
Eurofins Sample No.			K21-JI33341	K21-JI33343
Date Sampled			Jul 15, 2021	Jul 15, 2021
Test/Reference	LOR	Unit		
Organochlorine Pesticides (NZ MfE)				
2.4'-DDD	0.01	mg/kg	< 0.01	< 0.01
2.4'-DDE	0.01	mg/kg	< 0.01	< 0.01
2.4'-DDT	0.01	mg/kg	< 0.01	< 0.01
4.4'-DDD	0.01	mg/kg	< 0.01	< 0.01
4.4'-DDE	0.01	mg/kg	< 0.01	< 0.01
4.4'-DDT	0.01	mg/kg	< 0.01	< 0.01
DDT + DDE + DDD (Total)*	0.01	mg/kg	< 0.01	< 0.01
a-HCH	0.01	mg/kg	< 0.01	< 0.01
Aldrin	0.01	mg/kg	< 0.01	< 0.01
b-HCH	0.01	mg/kg	< 0.01	< 0.01
Chlordanes - Total	0.01	mg/kg	< 0.01	< 0.01
cis-Chlordane	0.01	mg/kg	< 0.01	< 0.01
d-HCH	0.01	mg/kg	< 0.01	< 0.01
Dieldrin	0.01	mg/kg	< 0.01	< 0.01
Endosulfan I	0.01	mg/kg	< 0.01	< 0.01
Endosulfan II	0.01	mg/kg	< 0.01	< 0.01
Endosulfan sulphate	0.01	mg/kg	< 0.01	< 0.01
Endrin	0.01	mg/kg	< 0.01	< 0.01

Client Sample ID			S29 0.0-0.2	S30 0.1
Sample Matrix			Soil	Soil
Eurofins Sample No.			K21-JI33341	K21-JI33343
Date Sampled			Jul 15, 2021	Jul 15, 2021
Test/Reference	LOR	Unit		
Organochlorine Pesticides (NZ MfE)				
Endrin aldehyde	0.01	mg/kg	< 0.1	< 0.1
Endrin ketone	0.01	mg/kg	< 0.01	< 0.01
g-HCH (Lindane)	0.01	mg/kg	< 0.01	< 0.01
Heptachlor	0.01	mg/kg	< 0.01	< 0.01
Heptachlor epoxide	0.01	mg/kg	< 0.01	< 0.01
Hexachlorobenzene	0.01	mg/kg	< 0.01	< 0.01
Methoxychlor	0.01	mg/kg	< 0.01	< 0.01
Toxaphene	0.1	mg/kg	< 0.1	< 0.1
trans-Chlordane	0.01	mg/kg	< 0.01	< 0.01
Dibutylchlorendate (surr.)	1	%	INT	INT
Tetrachloro-m-xylene (surr.)	1	%	INT	INT
Metals M8 (NZ MfE)				
Arsenic	0.1	mg/kg	7.3	32
Cadmium	0.01	mg/kg	0.63	0.73
Chromium	0.1	mg/kg	9.8	25
Copper	0.1	mg/kg	12	39
Lead	0.1	mg/kg	86	2100
Mercury	0.01	mg/kg	0.23	0.16
Nickel	0.1	mg/kg	4.2	8.5
Zinc	5	mg/kg	470	930
% Moisture	1	%	33	35

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
Organochlorine Pesticides (NZ MfE)	Auckland	Jul 19, 2021	14 Days
- Method: LTM-ORG-2220 OCP & PCB in Soil and Water by GCMSMS			
Metals M8 (NZ MfE)	Auckland	Jul 19, 2021	6 Months
- Method: LTM-MET-3040 Metals in Waters, Soils & Sediments by ICP-MS			
Polycyclic Aromatic Hydrocarbons (NZ MfE)	Auckland	Jul 19, 2021	14 Days
- Method: LTM-ORG-2130 PAH and Phenols in Soil and Water by GC MSMS			
% Moisture	Auckland	Jul 19, 2021	14 Days
- Method: LTM-GEN-7080 Moisture Content in Soil by Gravimetry			

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Company Name: ENGEO Ltd
Address: 6 Antares Place
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Auckland New Zealand 0632

Project Name: TOTARA ROAD
Project ID: 19070.000.001

Order No.:
Report #: 811309
Phone: 0011 64 9 9722 205
Fax:

Received: Jul 15, 2021 4:30 PM
Due: Jul 22, 2021
Priority: 5 Day
Contact Name: Jamie Rhodes

Eurofins Analytical Services Manager : Swati Shahaney

Sample Detail						Asbestos - AS4964	HOLD	Moisture Set	Organochlorine Pesticides (NZ MfE)	Metals M8 (NZ MfE)	Polycyclic Aromatic Hydrocarbons (NZ MfE)
Auckland Laboratory - IANZ# 1327							X	X	X	X	X
Christchurch Laboratory - IANZ# 1290											
Melbourne Laboratory - NATA Site # 1254						X					
External Laboratory											
No	**Sample ID**	**Sample Date**	**Sampling Time**	**Matrix**	**LAB ID**						
1	S01 0.1	Jul 15, 2021		Soil	K21-JI33284			X	X	X	
2	S01 0.3	Jul 15, 2021		Soil	K21-JI33285		X				
3	S02 0.1	Jul 15, 2021		Soil	K21-JI33286			X	X	X	
4	S02 0.3	Jul 15, 2021		Soil	K21-JI33287		X				
5	S03 0.1	Jul 15, 2021		Soil	K21-JI33288			X	X	X	X
6	S03 0.3	Jul 15, 2021		Soil	K21-JI33289		X				
7	S04 0.1	Jul 15, 2021		Soil	K21-JI33290			X	X	X	
8	S04 0.3	Jul 15, 2021		Soil	K21-JI33291		X				
9	S05 0.1	Jul 15, 2021		Soil	K21-JI33292			X	X	X	
10	S05 0.3	Jul 15, 2021		Soil	K21-JI33293		X				
11	S06 0.1	Jul 15, 2021		Soil	K21-JI33294			X	X	X	

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Contact Name: Jamie Rhodes

Eurofins Analytical Services Manager : Swati Shahaney

Sample Detail						Asbestos - AS4964	HOLD	Moisture Set	Organochlorine Pesticides (NZ MfE)	Metals M8 (NZ MfE)	Polycyclic Aromatic Hydrocarbons (NZ MfE)
Auckland Laboratory - IANZ# 1327							X	X	X	X	X
Christchurch Laboratory - IANZ# 1290											
Melbourne Laboratory - NATA Site # 1254						X					
External Laboratory											
12	S06 0.3	Jul 15, 2021		Soil	K21-JI33295		X				
13	S07 0.1	Jul 15, 2021		Soil	K21-JI33296			X	X	X	
14	S07 0.3	Jul 15, 2021		Soil	K21-JI33297		X				
15	S08 0.1	Jul 15, 2021		Soil	K21-JI33298	X		X	X	X	
16	S08 0.3	Jul 15, 2021		Soil	K21-JI33299		X				
17	S09 0.1	Jul 15, 2021		Soil	K21-JI33300			X	X	X	X
18	S09 0.3	Jul 15, 2021		Soil	K21-JI33301		X				
19	S10 0.1	Jul 15, 2021		Soil	K21-JI33302			X	X	X	
20	S10 0.3	Jul 15, 2021		Soil	K21-JI33303		X				
21	S11 0.1	Jul 15, 2021		Soil	K21-JI33304			X	X	X	
22	S11 0.3	Jul 15, 2021		Soil	K21-JI33305		X				
23	S12 0.1	Jul 15, 2021		Soil	K21-JI33306			X	X		
24	S12 0.3	Jul 15, 2021		Soil	K21-JI33307		X				

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Company Name: ENGEO Ltd
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Project Name: TOTARA ROAD
Project ID: 19070.000.001

Order No.:
Report #: 811309
Phone: 0011 64 9 9722 205
Fax:

Received: Jul 15, 2021 4:30 PM
Due: Jul 22, 2021
Priority: 5 Day
Contact Name: Jamie Rhodes

Eurofins Analytical Services Manager : Swati Shahaney

Sample Detail						Asbestos - AS4964	HOLD	Moisture Set	Organochlorine Pesticides (NZ MfE)	Metals M8 (NZ MfE)	Polycyclic Aromatic Hydrocarbons (NZ MfE)
Auckland Laboratory - IANZ# 1327							X	X	X	X	X
Christchurch Laboratory - IANZ# 1290											
Melbourne Laboratory - NATA Site # 1254						X					
External Laboratory											
25	S12 0.45	Jul 15, 2021		Soil	K21-JI33308		X				
26	S13 0.1	Jul 15, 2021		Soil	K21-JI33309			X	X	X	
27	S13 0.3	Jul 15, 2021		Soil	K21-JI33310		X				
28	S14 0.1	Jul 15, 2021		Soil	K21-JI33311			X	X	X	
29	S14 0.3	Jul 15, 2021		Soil	K21-JI33312		X				
30	S15 0.1	Jul 15, 2021		Soil	K21-JI33313			X	X	X	
31	S15 0.3	Jul 15, 2021		Soil	K21-JI33314		X				
32	S16 0.1	Jul 15, 2021		Soil	K21-JI33315			X	X	X	X
33	S16 0.3	Jul 15, 2021		Soil	K21-JI33316		X				
34	S16 0.45	Jul 15, 2021		Soil	K21-JI33317		X				
35	S17 0.1	Jul 15, 2021		Soil	K21-JI33318			X	X	X	
36	S17 0.35	Jul 15, 2021		Soil	K21-JI33319		X				
37	S18 0.1	Jul 15, 2021		Soil	K21-JI33320			X	X	X	

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Project Name: TOTARA ROAD
Project ID: 19070.000.001

Order No.:
Report #: 811309
Phone: 0011 64 9 9722 205
Fax:

Received: Jul 15, 2021 4:30 PM
Due: Jul 22, 2021
Priority: 5 Day
Contact Name: Jamie Rhodes

Eurofins Analytical Services Manager : Swati Shahaney

Sample Detail						Asbestos - AS4964	HOLD	Moisture Set	Organochlorine Pesticides (NZ MfE)	Metals M8 (NZ MfE)	Polycyclic Aromatic Hydrocarbons (NZ MfE)
Auckland Laboratory - IANZ# 1327							X	X	X	X	X
Christchurch Laboratory - IANZ# 1290											
Melbourne Laboratory - NATA Site # 1254						X					
External Laboratory											
38	S18 0.35	Jul 15, 2021		Soil	K21-JI33321		X				
39	S19 0.1	Jul 15, 2021		Soil	K21-JI33322			X	X	X	
40	S19 0.25	Jul 15, 2021		Soil	K21-JI33323		X				
41	S20 0.1	Jul 15, 2021		Soil	K21-JI33324			X	X	X	X
42	S20 0.3	Jul 15, 2021		Soil	K21-JI33325		X				
43	S21 0.1	Jul 15, 2021		Soil	K21-JI33326			X	X	X	
44	S21 0.3	Jul 15, 2021		Soil	K21-JI33327		X				
45	S22 0.1	Jul 15, 2021		Soil	K21-JI33328			X	X	X	
46	S22 0.3	Jul 15, 2021		Soil	K21-JI33329		X				
47	S23 0.1	Jul 15, 2021		Soil	K21-JI33330			X	X	X	X
48	S23 0.35	Jul 15, 2021		Soil	K21-JI33331		X				
49	S24 0.1	Jul 15, 2021		Soil	K21-JI33332			X	X	X	
50	S24 0.3	Jul 15, 2021		Soil	K21-JI33333		X				

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Address: 6 Antares Place
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Project Name: TOTARA ROAD
Project ID: 19070.000.001

Order No.:
Report #: 811309
Phone: 0011 64 9 9722 205
Fax:

Received: Jul 15, 2021 4:30 PM
Due: Jul 22, 2021
Priority: 5 Day
Contact Name: Jamie Rhodes

Eurofins Analytical Services Manager : Swati Shahaney

Sample Detail						Asbestos - AS4964	HOLD	Moisture Set	Organochlorine Pesticides (NZ MfE)	Metals M8 (NZ MfE)	Polycyclic Aromatic Hydrocarbons (NZ MfE)
Auckland Laboratory - IANZ# 1327							X	X	X	X	X
Christchurch Laboratory - IANZ# 1290											
Melbourne Laboratory - NATA Site # 1254						X					
External Laboratory											
51	S25 0.1	Jul 15, 2021		Soil	K21-JI33334	X		X	X	X	X
52	S25 0.3	Jul 15, 2021		Soil	K21-JI33335		X				
53	S26 0.1	Jul 15, 2021		Soil	K21-JI33336			X	X	X	
54	S26 0.4	Jul 15, 2021		Soil	K21-JI33337		X				
55	S27 0.1	Jul 15, 2021		Soil	K21-JI33338	X		X	X	X	
56	S27 0.35	Jul 15, 2021		Soil	K21-JI33339		X				
57	S28 0.05	Jul 15, 2021		Soil	K21-JI33340	X		X	X	X	
58	S29 0.0-0.2	Jul 15, 2021		Soil	K21-JI33341	X		X	X	X	
59	S29 0.2-0.45	Jul 15, 2021		Soil	K21-JI33342		X				
60	S30 0.1	Jul 15, 2021		Soil	K21-JI33343	X		X	X	X	
61	S30 0.35	Jul 15, 2021		Soil	K21-JI33344		X				
Test Counts						6	31	30	30	29	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.

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

Units

mg/kg: milligrams per kilogram | **mg/L:** milligrams per litre | **ug/L:** micrograms per litre

ppm: Parts per million | **ppb:** Parts per billion | **%:** Percentage

org/100mL: Organisms per 100 millilitres | **NTU:** Nephelometric Turbidity Units | **MPN/100mL:** Most Probable Number of organisms per 100 millilitres

Terms

Dry	Where a moisture has been determined on a solid sample the result is expressed on a dry basis.
LOR	Limit of Reporting.
SPIKE	Addition of the analyte to the sample and reported as percentage recovery.
RPD	Relative Percent Difference between two Duplicate pieces of analysis.
LCS	Laboratory Control Sample - reported as percent recovery.
CRM	Certified Reference Material - reported as percent recovery.
Method Blank	In the case of solid samples these are performed on laboratory certified clean sands and in the case of water samples these are performed on de-ionised water.
Surr - Surrogate	The addition of a like compound to the analyte target and reported as percentage recovery.
Duplicate	A second piece of analysis from the same sample and reported in the same units as the result to show comparison.
USEPA	United States Environmental Protection Agency
APHA	American Public Health Association
TCLP	Toxicity Characteristic Leaching Procedure
COC	Chain of Custody
SRA	Sample Receipt Advice
QSM	US Department of Defense Quality Systems Manual Version 5.3
CP	Client Parent - QC was performed on samples pertaining to this report
NCP	Non-Client Parent - QC performed on samples not pertaining to this report, QC is representative of the sequence or batch that client samples were analysed within.
TEQ	Toxic Equivalency Quotient

QC - Acceptance Criteria

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

Results <10 times the LOR : No Limit

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

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

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

PFAS field samples that contain surrogate recoveries in excess of the QC limit designated in QSM 5.3 where no positive PFAS results have been reported have been reviewed and no data was affected.

WA DWER (n=10): PFBA, PFPeA, PFHxA, PFHpA, PFOA, PFBS, PFHxS, PFOS, 6:2 FTSA, 8:2 FTSA

QC Data General Comments

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

Quality Control Results

Test	Units	Result 1			Acceptance Limits	Pass Limits	Qualifying Code
Method Blank							
Organochlorine Pesticides (NZ MfE)							
2.4'-DDD	mg/kg	< 0.01			0.01	Pass	
2.4'-DDE	mg/kg	< 0.01			0.01	Pass	
2.4'-DDT	mg/kg	< 0.01			0.01	Pass	
4.4'-DDD	mg/kg	< 0.01			0.01	Pass	
4.4'-DDE	mg/kg	< 0.01			0.01	Pass	
4.4'-DDT	mg/kg	< 0.01			0.01	Pass	
a-HCH	mg/kg	< 0.01			0.01	Pass	
Aldrin	mg/kg	< 0.01			0.01	Pass	
b-HCH	mg/kg	< 0.01			0.01	Pass	
Chlordanes - Total	mg/kg	< 0.01			0.01	Pass	
cis-Chlordane	mg/kg	< 0.01			0.01	Pass	
d-HCH	mg/kg	< 0.01			0.01	Pass	
Dieldrin	mg/kg	< 0.01			0.01	Pass	
Endosulfan I	mg/kg	< 0.01			0.01	Pass	
Endosulfan II	mg/kg	< 0.01			0.01	Pass	
Endosulfan sulphate	mg/kg	< 0.01			0.01	Pass	
Endrin	mg/kg	< 0.01			0.01	Pass	
Endrin aldehyde	mg/kg	< 0.01			0.01	Pass	
Endrin ketone	mg/kg	< 0.01			0.01	Pass	
g-HCH (Lindane)	mg/kg	< 0.01			0.01	Pass	
Heptachlor	mg/kg	< 0.01			0.01	Pass	
Heptachlor epoxide	mg/kg	< 0.01			0.01	Pass	
Hexachlorobenzene	mg/kg	< 0.01			0.01	Pass	
Methoxychlor	mg/kg	< 0.01			0.01	Pass	
Toxaphene	mg/kg	< 0.1			0.1	Pass	
trans-Chlordane	mg/kg	< 0.01			0.01	Pass	
Method Blank							
Metals M8 (NZ MfE)							
Arsenic	mg/kg	< 0.1			0.1	Pass	
Cadmium	mg/kg	< 0.01			0.01	Pass	
Chromium	mg/kg	< 0.1			0.1	Pass	
Copper	mg/kg	< 0.1			0.1	Pass	
Lead	mg/kg	< 0.1			0.1	Pass	
Mercury	mg/kg	< 0.01			0.01	Pass	
Nickel	mg/kg	< 0.1			0.1	Pass	
Zinc	mg/kg	< 5			5	Pass	
Method Blank							
Polycyclic Aromatic Hydrocarbons (NZ MfE)							
Acenaphthene	mg/kg	< 0.03			0.03	Pass	
Acenaphthylene	mg/kg	< 0.03			0.03	Pass	
Anthracene	mg/kg	< 0.03			0.03	Pass	
Benz(a)anthracene	mg/kg	< 0.03			0.03	Pass	
Benzo(a)pyrene	mg/kg	< 0.03			0.03	Pass	
Benzo(b&j)fluoranthene	mg/kg	< 0.03			0.03	Pass	
Benzo(g.h.i)perylene	mg/kg	< 0.03			0.03	Pass	
Benzo(k)fluoranthene	mg/kg	< 0.03			0.03	Pass	
Chrysene	mg/kg	< 0.03			0.03	Pass	
Dibenz(a.h)anthracene	mg/kg	< 0.03			0.03	Pass	
Fluoranthene	mg/kg	< 0.03			0.03	Pass	
Fluorene	mg/kg	< 0.03			0.03	Pass	

Test	Units	Result 1			Acceptance Limits	Pass Limits	Qualifying Code
Indeno(1.2.3-cd)pyrene	mg/kg	< 0.03			0.03	Pass	
Naphthalene	mg/kg	< 0.1			0.1	Pass	
Phenanthrene	mg/kg	< 0.03			0.03	Pass	
Pyrene	mg/kg	< 0.03			0.03	Pass	
LCS - % Recovery							
Organochlorine Pesticides (NZ MfE)							
2.4'-DDD	%	112			70-130	Pass	
2.4'-DDE	%	72			70-130	Pass	
2.4'-DDT	%	92			70-130	Pass	
4.4'-DDD	%	129			70-130	Pass	
4.4'-DDE	%	78			70-130	Pass	
4.4'-DDT	%	93			70-130	Pass	
a-HCH	%	84			70-130	Pass	
Aldrin	%	73			70-130	Pass	
b-HCH	%	127			70-130	Pass	
Chlordanes - Total	%	70			70-130	Pass	
d-HCH	%	70			70-130	Pass	
Dieldrin	%	108			70-130	Pass	
Endosulfan I	%	70			70-130	Pass	
Endosulfan II	%	83			70-130	Pass	
Endrin aldehyde	%	121			70-130	Pass	
Endrin ketone	%	79			70-130	Pass	
g-HCH (Lindane)	%	81			70-130	Pass	
Heptachlor	%	78			70-130	Pass	
Heptachlor epoxide	%	71			70-130	Pass	
Hexachlorobenzene	%	76			70-130	Pass	
trans-Chlordane	%	72			70-130	Pass	
LCS - % Recovery							
Metals M8 (NZ MfE)							
Arsenic	%	107			80-120	Pass	
Cadmium	%	108			80-120	Pass	
Chromium	%	101			80-120	Pass	
Copper	%	103			80-120	Pass	
Lead	%	102			80-120	Pass	
Mercury	%	107			80-120	Pass	
Nickel	%	101			80-120	Pass	
Zinc	%	114			80-120	Pass	
LCS - % Recovery							
Polycyclic Aromatic Hydrocarbons (NZ MfE)							
Acenaphthene	%	121			70-130	Pass	
Acenaphthylene	%	91			70-130	Pass	
Anthracene	%	116			70-130	Pass	
Benz(a)anthracene	%	106			70-130	Pass	
Benzo(a)pyrene	%	75			70-130	Pass	
Benzo(b&j)fluoranthene	%	101			70-130	Pass	
Benzo(k)fluoranthene	%	70			70-130	Pass	
Chrysene	%	120			70-130	Pass	
Dibenz(a.h)anthracene	%	130			70-130	Pass	
Fluorene	%	71			70-130	Pass	
Indeno(1.2.3-cd)pyrene	%	119			70-130	Pass	
Naphthalene	%	86			70-130	Pass	
Phenanthrene	%	116			70-130	Pass	

Test	Lab Sample ID	QA Source	Units	Result 1			Acceptance Limits	Pass Limits	Qualifying Code
Spike - % Recovery									
Organochlorine Pesticides (NZ MfE)				Result 1					
4.4'-DDE	K21-JI29454	NCP	%	78			70-130	Pass	
d-HCH	K21-JI29454	NCP	%	74			70-130	Pass	
Dieldrin	K21-JI29454	NCP	%	105			70-130	Pass	
Methoxychlor	K21-JI29454	NCP	%	76			70-130	Pass	
Spike - % Recovery									
Organochlorine Pesticides (NZ MfE)				Result 1					
2.4'-DDD	K21-JI33286	CP	%	82			70-130	Pass	
2.4'-DDE	K21-JI33286	CP	%	71			70-130	Pass	
2.4'-DDT	K21-JI33286	CP	%	97			70-130	Pass	
4.4'-DDD	K21-JI33286	CP	%	78			70-130	Pass	
4.4'-DDT	K21-JI33286	CP	%	88			70-130	Pass	
a-HCH	K21-JI33286	CP	%	96			70-130	Pass	
Aldrin	K21-JI33286	CP	%	83			70-130	Pass	
b-HCH	K21-JI33286	CP	%	124			70-130	Pass	
Endosulfan I	K21-JI33286	CP	%	76			70-130	Pass	
Endosulfan II	K21-JI33286	CP	%	77			70-130	Pass	
Endrin	K21-JI33286	CP	%	85			70-130	Pass	
g-HCH (Lindane)	K21-JI33286	CP	%	104			70-130	Pass	
Heptachlor	K21-JI33286	CP	%	91			70-130	Pass	
Hexachlorobenzene	K21-JI33286	CP	%	84			70-130	Pass	
Spike - % Recovery									
Polycyclic Aromatic Hydrocarbons (NZ MfE)				Result 1					
Acenaphthene	K21-JI33286	CP	%	129			70-130	Pass	
Acenaphthylene	K21-JI33286	CP	%	108			70-130	Pass	
Anthracene	K21-JI33286	CP	%	113			70-130	Pass	
Benzo(k)fluoranthene	K21-JI33286	CP	%	108			70-130	Pass	
Chrysene	K21-JI33286	CP	%	114			70-130	Pass	
Dibenz(a.h)anthracene	K21-JI33286	CP	%	112			70-130	Pass	
Indeno(1.2.3-cd)pyrene	K21-JI33286	CP	%	112			70-130	Pass	
Naphthalene	K21-JI33286	CP	%	93			70-130	Pass	
Spike - % Recovery									
Organochlorine Pesticides (NZ MfE)				Result 1					
4.4'-DDD	K21-JI33306	CP	%	116			70-130	Pass	
b-HCH	K21-JI33306	CP	%	77			70-130	Pass	
g-HCH (Lindane)	K21-JI33306	CP	%	85			70-130	Pass	
Hexachlorobenzene	K21-JI33306	CP	%	89			70-130	Pass	
trans-Chlordane	K21-JI33306	CP	%	76			70-130	Pass	
Spike - % Recovery									
Polycyclic Aromatic Hydrocarbons (NZ MfE)				Result 1					
Acenaphthene	K21-JI33306	CP	%	101			70-130	Pass	
Acenaphthylene	K21-JI33306	CP	%	75			70-130	Pass	
Benzo(a)pyrene	K21-JI33306	CP	%	76			70-130	Pass	
Benzo(k)fluoranthene	K21-JI33306	CP	%	72			70-130	Pass	
Dibenz(a.h)anthracene	K21-JI33306	CP	%	82			70-130	Pass	
Indeno(1.2.3-cd)pyrene	K21-JI33306	CP	%	112			70-130	Pass	
Naphthalene	K21-JI33306	CP	%	71			70-130	Pass	
Spike - % Recovery									
Organochlorine Pesticides (NZ MfE)				Result 1					
4.4'-DDT	K21-JI33328	CP	%	71			70-130	Pass	
a-HCH	K21-JI33328	CP	%	73			70-130	Pass	
b-HCH	K21-JI33328	CP	%	96			70-130	Pass	
Endrin ketone	K21-JI33328	CP	%	87			70-130	Pass	

Test	Lab Sample ID	QA Source	Units	Result 1			Acceptance Limits	Pass Limits	Qualifying Code
g-HCH (Lindane)	K21-JI33328	CP	%	106			70-130	Pass	
Hexachlorobenzene	K21-JI33328	CP	%	74			70-130	Pass	
Spike - % Recovery									
Polycyclic Aromatic Hydrocarbons (NZ MfE)				Result 1					
Acenaphthene	K21-JI33328	CP	%	85			70-130	Pass	
Acenaphthylene	K21-JI33328	CP	%	88			70-130	Pass	
Anthracene	K21-JI33328	CP	%	79			70-130	Pass	
Benz(a)anthracene	K21-JI33328	CP	%	119			70-130	Pass	
Benzo(k)fluoranthene	K21-JI33328	CP	%	109			70-130	Pass	
Chrysene	K21-JI33328	CP	%	113			70-130	Pass	
Naphthalene	K21-JI33328	CP	%	78			70-130	Pass	
Phenanthrene	K21-JI33328	CP	%	72			70-130	Pass	
Test	**Lab Sample ID**	**QA Source**	**Units**	**Result 1**			**Acceptance Limits**	**Pass Limits**	**Qualifying Code**
Duplicate									
Organochlorine Pesticides (NZ MfE)				Result 1	Result 2	RPD			
2.4'-DDD	K21-JI33284	CP	mg/kg	< 0.01	< 0.01	<1	30%	Pass	
2.4'-DDE	K21-JI33284	CP	mg/kg	< 0.01	< 0.01	<1	30%	Pass	
2.4'-DDT	K21-JI33284	CP	mg/kg	< 0.01	< 0.01	<1	30%	Pass	
4.4'-DDD	K21-JI33284	CP	mg/kg	< 0.01	< 0.01	<1	30%	Pass	
4.4'-DDE	K21-JI33284	CP	mg/kg	< 0.01	< 0.01	<1	30%	Pass	
4.4'-DDT	K21-JI33284	CP	mg/kg	< 0.01	< 0.01	<1	30%	Pass	
a-HCH	K21-JI33284	CP	mg/kg	< 0.01	< 0.01	<1	30%	Pass	
Aldrin	K21-JI33284	CP	mg/kg	< 0.01	< 0.01	<1	30%	Pass	
b-HCH	K21-JI33284	CP	mg/kg	< 0.01	< 0.01	<1	30%	Pass	
Chlordanes - Total	K21-JI33284	CP	mg/kg	< 0.01	< 0.01	<1	30%	Pass	
cis-Chlordane	K21-JI33284	CP	mg/kg	< 0.01	< 0.01	<1	30%	Pass	
d-HCH	K21-JI33284	CP	mg/kg	< 0.01	< 0.01	<1	30%	Pass	
Dieldrin	K21-JI33284	CP	mg/kg	< 0.01	< 0.01	<1	30%	Pass	
Endosulfan I	K21-JI33284	CP	mg/kg	< 0.01	< 0.01	<1	30%	Pass	
Endosulfan II	K21-JI33284	CP	mg/kg	< 0.01	< 0.01	<1	30%	Pass	
Endosulfan sulphate	K21-JI33284	CP	mg/kg	< 0.01	< 0.01	<1	30%	Pass	
Endrin	K21-JI33284	CP	mg/kg	< 0.01	< 0.01	<1	30%	Pass	
Endrin aldehyde	K21-JI33284	CP	mg/kg	< 0.1	< 0.1	<1	30%	Pass	
Endrin ketone	K21-JI33284	CP	mg/kg	< 0.01	< 0.01	<1	30%	Pass	
g-HCH (Lindane)	K21-JI33284	CP	mg/kg	< 0.01	< 0.01	<1	30%	Pass	
Heptachlor	K21-JI33284	CP	mg/kg	< 0.01	< 0.01	<1	30%	Pass	
Heptachlor epoxide	K21-JI33284	CP	mg/kg	< 0.01	< 0.01	<1	30%	Pass	
Hexachlorobenzene	K21-JI33284	CP	mg/kg	< 0.01	< 0.01	<1	30%	Pass	
Methoxychlor	K21-JI33284	CP	mg/kg	< 0.01	< 0.01	<1	30%	Pass	
trans-Chlordane	K21-JI33284	CP	mg/kg	< 0.01	< 0.01	<1	30%	Pass	
Duplicate									
Metals M8 (NZ MfE)				Result 1	Result 2	RPD			
Arsenic	K21-JI33284	CP	mg/kg	1.3	1.3	3.0	30%	Pass	
Cadmium	K21-JI33284	CP	mg/kg	0.19	0.20	7.0	30%	Pass	
Chromium	K21-JI33284	CP	mg/kg	2.3	2.4	4.0	30%	Pass	
Copper	K21-JI33284	CP	mg/kg	2.5	2.7	6.0	30%	Pass	
Lead	K21-JI33284	CP	mg/kg	6.3	6.5	3.0	30%	Pass	
Mercury	K21-JI33284	CP	mg/kg	0.12	0.10	13	30%	Pass	
Nickel	K21-JI33284	CP	mg/kg	1.2	1.2	1.0	30%	Pass	
Zinc	K21-JI33284	CP	mg/kg	15	15	6.0	30%	Pass	
Duplicate									
				Result 1	Result 2	RPD			
% Moisture	K21-JI33284	CP	%	36	37	3.0	30%	Pass	

Duplicate									
Polycyclic Aromatic Hydrocarbons (NZ MfE)				Result 1	Result 2	RPD			
Acenaphthene	K21-JI33284	CP	mg/kg	< 0.03	< 0.03	<1	30%	Pass	
Acenaphthylene	K21-JI33284	CP	mg/kg	< 0.03	< 0.03	<1	30%	Pass	
Anthracene	K21-JI33284	CP	mg/kg	< 0.03	< 0.03	<1	30%	Pass	
Benz(a)anthracene	K21-JI33284	CP	mg/kg	< 0.03	0.03	49	30%	Fail	Q15
Benzo(a)pyrene	K21-JI33284	CP	mg/kg	0.03	0.03	14	30%	Pass	
Benzo(b&j)fluoranthene	K21-JI33284	CP	mg/kg	< 0.03	< 0.03	<1	30%	Pass	
Benzo(g.h.i)perylene	K21-JI33284	CP	mg/kg	0.05	0.05	2.0	30%	Pass	
Benzo(k)fluoranthene	K21-JI33284	CP	mg/kg	< 0.03	< 0.03	<1	30%	Pass	
Chrysene	K21-JI33284	CP	mg/kg	0.03	< 0.03	26	30%	Pass	
Dibenz(a.h)anthracene	K21-JI33284	CP	mg/kg	< 0.03	< 0.03	<1	30%	Pass	
Fluoranthene	K21-JI33284	CP	mg/kg	< 0.03	< 0.03	<1	30%	Pass	
Fluorene	K21-JI33284	CP	mg/kg	< 0.03	< 0.03	<1	30%	Pass	
Indeno(1.2.3-cd)pyrene	K21-JI33284	CP	mg/kg	< 0.03	< 0.03	<1	30%	Pass	
Naphthalene	K21-JI33284	CP	mg/kg	< 0.1	< 0.1	<1	30%	Pass	
Phenanthrene	K21-JI33284	CP	mg/kg	< 0.03	< 0.03	<1	30%	Pass	
Pyrene	K21-JI33284	CP	mg/kg	< 0.03	< 0.03	<1	30%	Pass	
Duplicate									
Organochlorine Pesticides (NZ MfE)				Result 1	Result 2	RPD			
2.4'-DDD	K21-JI33304	CP	mg/kg	< 0.01	< 0.01	<1	30%	Pass	
2.4'-DDE	K21-JI33304	CP	mg/kg	< 0.01	< 0.01	<1	30%	Pass	
2.4'-DDT	K21-JI33304	CP	mg/kg	< 0.01	< 0.01	<1	30%	Pass	
4.4'-DDD	K21-JI33304	CP	mg/kg	< 0.01	< 0.01	<1	30%	Pass	
4.4'-DDE	K21-JI33304	CP	mg/kg	< 0.01	< 0.01	<1	30%	Pass	
4.4'-DDT	K21-JI33304	CP	mg/kg	< 0.01	< 0.01	<1	30%	Pass	
a-HCH	K21-JI33304	CP	mg/kg	< 0.01	< 0.01	<1	30%	Pass	
Aldrin	K21-JI33304	CP	mg/kg	< 0.01	< 0.01	<1	30%	Pass	
b-HCH	K21-JI33304	CP	mg/kg	< 0.01	< 0.01	<1	30%	Pass	
Chlordanes - Total	K21-JI33304	CP	mg/kg	< 0.01	< 0.01	<1	30%	Pass	
cis-Chlordane	K21-JI33304	CP	mg/kg	< 0.01	< 0.01	<1	30%	Pass	
d-HCH	K21-JI33304	CP	mg/kg	< 0.01	< 0.01	<1	30%	Pass	
Dieldrin	K21-JI33304	CP	mg/kg	< 0.01	< 0.01	<1	30%	Pass	
Endosulfan I	K21-JI33304	CP	mg/kg	< 0.01	< 0.01	<1	30%	Pass	
Endosulfan II	K21-JI33304	CP	mg/kg	< 0.01	< 0.01	<1	30%	Pass	
Endosulfan sulphate	K21-JI33304	CP	mg/kg	< 0.01	< 0.01	<1	30%	Pass	
Endrin	K21-JI33304	CP	mg/kg	< 0.01	< 0.01	<1	30%	Pass	
Endrin aldehyde	K21-JI33304	CP	mg/kg	< 0.1	< 0.1	<1	30%	Pass	
Endrin ketone	K21-JI33304	CP	mg/kg	< 0.01	< 0.01	<1	30%	Pass	
g-HCH (Lindane)	K21-JI33304	CP	mg/kg	< 0.01	< 0.01	<1	30%	Pass	
Heptachlor	K21-JI33304	CP	mg/kg	< 0.01	< 0.01	<1	30%	Pass	
Heptachlor epoxide	K21-JI33304	CP	mg/kg	< 0.01	< 0.01	<1	30%	Pass	
Hexachlorobenzene	K21-JI33304	CP	mg/kg	< 0.01	< 0.01	<1	30%	Pass	
Methoxychlor	K21-JI33304	CP	mg/kg	< 0.01	< 0.01	<1	30%	Pass	
trans-Chlordane	K21-JI33304	CP	mg/kg	< 0.01	< 0.01	<1	30%	Pass	
Duplicate									
Metals M8 (NZ MfE)				Result 1	Result 2	RPD			
Arsenic	K21-JI33304	CP	mg/kg	2.4	2.4	1.0	30%	Pass	
Cadmium	K21-JI33304	CP	mg/kg	0.11	0.11	2.0	30%	Pass	
Chromium	K21-JI33304	CP	mg/kg	6.3	6.6	4.0	30%	Pass	
Copper	K21-JI33304	CP	mg/kg	6.7	6.6	1.0	30%	Pass	
Lead	K21-JI33304	CP	mg/kg	6.2	6.3	3.0	30%	Pass	
Mercury	K21-JI33304	CP	mg/kg	0.17	0.17	1.0	30%	Pass	
Nickel	K21-JI33304	CP	mg/kg	2.0	2.0	1.0	30%	Pass	
Zinc	K21-JI33304	CP	mg/kg	9.4	10	11	30%	Pass	

Duplicate									
				Result 1	Result 2	RPD			
% Moisture	K21-JI33304	CP	%	25	25	<1	30%	Pass	
Duplicate									
Polycyclic Aromatic Hydrocarbons (NZ MfE)				Result 1	Result 2	RPD			
Acenaphthene	K21-JI33304	CP	mg/kg	< 0.03	< 0.03	<1	30%	Pass	
Acenaphthylene	K21-JI33304	CP	mg/kg	< 0.03	< 0.03	<1	30%	Pass	
Anthracene	K21-JI33304	CP	mg/kg	< 0.03	< 0.03	<1	30%	Pass	
Benz(a)anthracene	K21-JI33304	CP	mg/kg	< 0.03	< 0.03	<1	30%	Pass	
Benzo(a)pyrene	K21-JI33304	CP	mg/kg	< 0.03	< 0.03	<1	30%	Pass	
Benzo(b&j)fluoranthene	K21-JI33304	CP	mg/kg	< 0.03	< 0.03	<1	30%	Pass	
Benzo(g.h.i)perylene	K21-JI33304	CP	mg/kg	< 0.03	< 0.03	<1	30%	Pass	
Benzo(k)fluoranthene	K21-JI33304	CP	mg/kg	< 0.03	< 0.03	<1	30%	Pass	
Chrysene	K21-JI33304	CP	mg/kg	< 0.03	< 0.03	<1	30%	Pass	
Dibenz(a.h)anthracene	K21-JI33304	CP	mg/kg	< 0.03	< 0.03	<1	30%	Pass	
Fluoranthene	K21-JI33304	CP	mg/kg	< 0.03	< 0.03	<1	30%	Pass	
Fluorene	K21-JI33304	CP	mg/kg	< 0.03	< 0.03	<1	30%	Pass	
Indeno(1.2.3-cd)pyrene	K21-JI33304	CP	mg/kg	< 0.03	< 0.03	<1	30%	Pass	
Naphthalene	K21-JI33304	CP	mg/kg	< 0.1	< 0.1	<1	30%	Pass	
Phenanthrene	K21-JI33304	CP	mg/kg	< 0.03	< 0.03	<1	30%	Pass	
Pyrene	K21-JI33304	CP	mg/kg	< 0.03	< 0.03	<1	30%	Pass	
Duplicate									
Organochlorine Pesticides (NZ MfE)				Result 1	Result 2	RPD			
2.4'-DDD	K21-JI33326	CP	mg/kg	< 0.01	< 0.01	<1	30%	Pass	
2.4'-DDE	K21-JI33326	CP	mg/kg	< 0.01	< 0.01	<1	30%	Pass	
2.4'-DDT	K21-JI33326	CP	mg/kg	< 0.01	< 0.01	<1	30%	Pass	
4.4'-DDD	K21-JI33326	CP	mg/kg	< 0.01	< 0.01	<1	30%	Pass	
4.4'-DDE	K21-JI33326	CP	mg/kg	< 0.01	< 0.01	<1	30%	Pass	
4.4'-DDT	K21-JI33326	CP	mg/kg	< 0.01	< 0.01	<1	30%	Pass	
a-HCH	K21-JI33326	CP	mg/kg	< 0.01	< 0.01	<1	30%	Pass	
Aldrin	K21-JI33326	CP	mg/kg	< 0.01	< 0.01	<1	30%	Pass	
b-HCH	K21-JI33326	CP	mg/kg	< 0.01	< 0.01	<1	30%	Pass	
Chlordanes - Total	K21-JI33326	CP	mg/kg	< 0.01	< 0.01	<1	30%	Pass	
cis-Chlordane	K21-JI33326	CP	mg/kg	< 0.01	< 0.01	<1	30%	Pass	
d-HCH	K21-JI33326	CP	mg/kg	< 0.01	< 0.01	<1	30%	Pass	
Dieldrin	K21-JI33326	CP	mg/kg	< 0.01	< 0.01	<1	30%	Pass	
Endosulfan I	K21-JI33326	CP	mg/kg	< 0.01	< 0.01	<1	30%	Pass	
Endosulfan II	K21-JI33326	CP	mg/kg	< 0.01	< 0.01	<1	30%	Pass	
Endosulfan sulphate	K21-JI33326	CP	mg/kg	< 0.01	< 0.01	<1	30%	Pass	
Endrin	K21-JI33326	CP	mg/kg	< 0.01	< 0.01	<1	30%	Pass	
Endrin aldehyde	K21-JI33326	CP	mg/kg	< 0.1	< 0.1	<1	30%	Pass	
Endrin ketone	K21-JI33326	CP	mg/kg	< 0.01	< 0.01	<1	30%	Pass	
g-HCH (Lindane)	K21-JI33326	CP	mg/kg	< 0.01	< 0.01	<1	30%	Pass	
Heptachlor	K21-JI33326	CP	mg/kg	< 0.01	< 0.01	<1	30%	Pass	
Heptachlor epoxide	K21-JI33326	CP	mg/kg	< 0.01	< 0.01	<1	30%	Pass	
Hexachlorobenzene	K21-JI33326	CP	mg/kg	< 0.01	< 0.01	<1	30%	Pass	
Methoxychlor	K21-JI33326	CP	mg/kg	< 0.01	< 0.01	<1	30%	Pass	
trans-Chlordane	K21-JI33326	CP	mg/kg	< 0.01	< 0.01	<1	30%	Pass	
Duplicate									
				Result 1	Result 2	RPD			
% Moisture	K21-JI33326	CP	%	32	30	6.0	30%	Pass	

Duplicate									
Polycyclic Aromatic Hydrocarbons (NZ MfE)				Result 1	Result 2	RPD			
Acenaphthene	K21-Jl33326	CP	mg/kg	< 0.03	< 0.03	<1	30%	Pass	
Acenaphthylene	K21-Jl33326	CP	mg/kg	< 0.03	< 0.03	<1	30%	Pass	
Anthracene	K21-Jl33326	CP	mg/kg	< 0.03	< 0.03	<1	30%	Pass	
Benz(a)anthracene	K21-Jl33326	CP	mg/kg	< 0.03	< 0.03	<1	30%	Pass	
Benzo(a)pyrene	K21-Jl33326	CP	mg/kg	< 0.03	< 0.03	<1	30%	Pass	
Benzo(b&j)fluoranthene	K21-Jl33326	CP	mg/kg	< 0.03	< 0.03	<1	30%	Pass	
Benzo(g.h.i)perylene	K21-Jl33326	CP	mg/kg	< 0.03	< 0.03	<1	30%	Pass	
Benzo(k)fluoranthene	K21-Jl33326	CP	mg/kg	< 0.03	< 0.03	<1	30%	Pass	
Chrysene	K21-Jl33326	CP	mg/kg	< 0.03	< 0.03	<1	30%	Pass	
Dibenz(a.h)anthracene	K21-Jl33326	CP	mg/kg	< 0.03	< 0.03	<1	30%	Pass	
Fluoranthene	K21-Jl33326	CP	mg/kg	< 0.03	< 0.03	<1	30%	Pass	
Fluorene	K21-Jl33326	CP	mg/kg	< 0.03	< 0.03	<1	30%	Pass	
Indeno(1.2.3-cd)pyrene	K21-Jl33326	CP	mg/kg	< 0.03	< 0.03	<1	30%	Pass	
Naphthalene	K21-Jl33326	CP	mg/kg	< 0.1	< 0.1	<1	30%	Pass	
Phenanthrene	K21-Jl33326	CP	mg/kg	< 0.03	< 0.03	<1	30%	Pass	
Pyrene	K21-Jl33326	CP	mg/kg	< 0.03	< 0.03	<1	30%	Pass	
Duplicate									
Metals M8 (NZ MfE)				Result 1	Result 2	RPD			
Arsenic	K21-Jl33328	CP	mg/kg	0.8	0.8	2.0	30%	Pass	
Cadmium	K21-Jl33328	CP	mg/kg	0.16	0.17	7.0	30%	Pass	
Chromium	K21-Jl33328	CP	mg/kg	3.2	3.2	2.0	30%	Pass	
Copper	K21-Jl33328	CP	mg/kg	2.7	2.8	3.0	30%	Pass	
Lead	K21-Jl33328	CP	mg/kg	4.2	4.1	4.0	30%	Pass	
Mercury	K21-Jl33328	CP	mg/kg	0.07	0.07	7.0	30%	Pass	
Nickel	K21-Jl33328	CP	mg/kg	1.1	1.1	4.0	30%	Pass	
Zinc	K21-Jl33328	CP	mg/kg	9.3	9.3	<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
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:

Swati Shahaney	Analytical Services Manager
Michael Ritchie	Senior Analyst-Organic (NZN)
Shasti Ramachandran	Senior Analyst-Metal (NZN)
Sophie Bush	Senior Analyst-Asbestos (VIC)

Michael Ritchie
Head of Semi Volatiles (Key Technical Personnel)

Final Report – this report replaces any previously issued Report

- Indicates Not Requested

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

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