Detailed Site Investigation

Westhaven Residential Development Fast Track Substantive Application

To: Carter Group Ltd

From: EHS Support New Zealand Ltd

Date: 23 October 2026

Job No.: NZL.07950

Executive Summary

- The site currently comprises paddock areas (Holmes, Brookside and Skellerup Blocks), a small farm with a dwelling and sheds (152 Edwards Road), and a poultry farm with poultry sheds, general farm sheds and three dwellings (243 Dunns Crossing Road).
- EHS Support understands that approvals are sought under the Fast Track Approvals Act 2024 (FFTA) for the Rolleston West Residential Development (Westhaven). The project is a listed project in Schedule 2 of the FTAA and comprises of residential and commercial sites along with reserves, roads and other supporting infrastructure.
- Investigation results indicate that the site has been subjected to activities on the Hazardous Activities and Industries List (HAIL). As such the Resource Management (National Environmental Standard for Assessing and Managing Contaminants in Soil to Protect Human Health) Regulations 2011 (NESCS) will apply to the proposed site redevelopment work.
- Shallow site geology comprises silty topsoil up to 0.5 m thick overlying sandy Gravel. Groundwater is likely to be encountered at depths in excess of 3.0 m below ground level.
- One or more of arsenic, cadmium, lead, Total Petroleum Hydrocarbons (TPH) and asbestos were detected at concentrations in excess of Soil Contaminant Standards (SCS) for residential land use in a number of locations:
  - Associated with a waste pit (TP5) within the 243 Dunns Crossing Road area of the site.
  - In areas around sheds within 243 Dunns Crossing Road area of the site where ACM (cement board fragments) were observed.
  - Associated with a diesel above ground storage tank located in the 243 Dunns Crossing Road area of the site.
  - Associated with an offal pit, a burn pile and a garage / workshop in the 152 Edwards Road area of the site.
  - In an isolated sample within the Holmes Block area of the site.
- Concentrations in excess of background of a number of heavy metals are present in shallow soils across areas of the site associated with the waste and offal pits, a burn pile and around site buildings.
- Application for consent under the Resource Management (National Environmental Standard for Assessing and Managing Contaminants in Soil to Protect Human Health) Regulations 2011 (NESCS) to subdivide, change land use and disturb / remove contaminated soils will be

required. As contaminant concentrations in excess of Soil Contaminant Standards (SCS) for the proposed land use (residential) were detected the NESCS consent application will be a restricted discretionary activity under Regulation 10 of the NESCS.

- As concentrations in excess of the applicable SCS were detected, contamination management / remediation will be required. A Remediation Action Plan (RAP) will be required prior to earthworks commencing on-site to outline contamination management requirements. A Site Validation Report (SVR) will be required once remediation works are undertaken.
- Contaminated soils have been detected at the site. Should offsite disposal of these soils be required during site development works, these soils are not suitable for disposal as cleanfill and will require disposal to a licensed disposal facility. Re-use of contaminated soils within the site, e.g. movement of soils to less sensitive areas within the site, would also likely be an acceptable management option for these soils; however, such reuse may be subject to district and regional council consent.

1 Introduction

EHS Support New Zealand Ltd (EHS Support) was engaged by Carter Group Ltd to undertake a Detailed Site Investigation (DSI) over the proposed Rolleston West Residential Development (Westhaven) on the southwest side of Rolleston. This investigation was conducted in accordance with our short form agreement dated 5 June 2026. This report is subject to the limitations set out in **Appendix A**.

The project is a listed project in Schedule 2 of the Fast-track Approvals Act 2024 (FTAA), and a substantive application is to be lodged under the FTAA seeking the necessary approvals to enable the project. An Assessment of Environmental Effects (AEE); Novo Group Ltd and Inovo Projects Ltd (October 2026), *Assessment of Environmental Effects for the Rolleston West Westhaven Residential Development*, sets out details of the application.

This assessment has been prepared in accordance with the Code of Conduct for Expert Witnesses contained in the Environment Court Practice Note 2023. The authors have complied with that Code in preparing this report and confirm that the opinions expressed are within their respective areas of expertise, except where reliance has been placed on limitations or opinions provided by others.

1.1 Background

The site area covered by this DSI comprises the following, and is indicated in **Figure 1**:

- Westhaven Central comprising:
  - 243 Dunns Crossing Road (Lots 3-4 DP 20007).
  - Brookside Block (Lot 1 DP 82068).
  - 152 Edwards Road (Lots 1 and 2 DP 72132).
- Holmes Block (Section 2 Survey Office Plan 480906).

The Westhaven Residential Development also includes the Skellerup and Skellerup South Blocks (**Figure 1**, Part RS 31356, Part Section 4 RES 1342, Part RS 31354, Rs 25807, Rs 23614). This area of the Westhaven Residential Development was covered by a previous DSI, EHS Support report dated 9 October 2025, *Detailed Site Investigation, West Rolleston Residential – Skellerup Block*. The results of this DSI are discussed in **Sections 2.1 and 6.1** with the DSI report attached as **Appendix F**.



FIGURE 1: SITE LAYOUT

The site currently comprises paddock areas (Holmes, Brookside and Skellerup Blocks), a small farm with dwelling and sheds (152 Edwards Road) and a poultry farm with poultry sheds, general farm sheds and three dwellings (243 Dunns Crossing Road). EHS Support understands that the site is already zoned for residential development under the Partially Operative Selwyn District Plan (Appeals Version, 'POSDP'). The purpose of this DSI is to support the substantive application under

the FTAA for the redevelopment of the site including residential lots, commercial lots and reserve areas.

The Resource Management (National Environmental Standard for Assessing and Managing Contaminants in Soil to Protect Human Health) Regulations 2011 (NESCS) apply to certain activities on sites that have, have had, or are more likely than not to have had an activity on the Hazardous Activities and Industries List (HAIL) carried out on the site. Part of the site is identified on Environment Canterbury's (ECan) listed land use register (LLUR) as having had activities on the HAIL occur on it, namely A10 – persistent pesticide use (poultry farm on 243 Dunns Crossing Road).

The LLUR listing for the site also references two existing Preliminary Site Investigations (PSI) that were undertaken to support a private plan change; Coffey Services (NZ) Limited (20 January 2021), *Preliminary Site Investigation - Rolleston West Plan Change* which covers the Holmes and Skellerup Blocks, and Fraser Thomas Ltd (13 October 2021), *Preliminary Site Investigation Brookside Road Plan Change*, covering the remainder of the site area (these PSI reports can be provided upon request). While key PSI findings are summarised in the following sections of this report, the PSIs should be read in conjunction with this DSI. [

The proposed development will require subdivision and change of land use, plus soil disturbance and offsite disposal of surplus soils - activities covered by the NESCS, and accordingly an investigation of the site was required. Additional Regional Council consents may also apply. The objectives of this Detailed Site Investigation (DSI) were to verify the HAIL status of the site and to characterise potential soil contamination, enabling determination of NESCS consent and contamination management requirements.

1.2 Scope of Work

The scope of works for this DSI supervised by an EHS Support suitably qualified and experienced practitioner (SQEP) was:

- Review of the 2021 PSI reports.
- Development of an investigation programme including collection of soil samples from 83 locations across the site.
- Analysis of selected collected samples for potential contaminants of concern (COCs).
- Preparation of a DSI report.

The investigation / soil sampling works described in this report were conducted with reference to the processes set out in Ministry for the Environment (MfE, 2021) Contaminated Land Management Guidelines No.5: *Site Investigation and Analysis of Soils*, and this report prepared with reference to MfE (2021) Contaminated Land Management Guideline No.1: *Reporting on Contaminated Sites in New Zealand*.

2 Previous Site Investigations

As set out in **Section 1.1** this DSI follows two PSIs that were conducted over the site area in 2021, with the wider Westhaven development area also including the Skellerup and Skellerup South Blocks, which are covered by a 2025 DSI. Key findings of the previous reports were as follows:

2.1 Skellerup and Skellerup South, EHS Support (2025)

The EHS Support 2025 DSI indicates the Skellerup and Skellerup South Blocks were initially assessed via the Coffey Services 2021 PSI (**Section 2.3**) and a TetraTech Coffey (NZ) Limited PSI dated 30 September 2021, *Skellerup South Plan Change Preliminary Site Investigation*, with these PSIs indicating that a potential HAIL activity had occurred. However, the 2025 DSI soil sampling undertaken did not detect any evidence of significant soil contamination, with no analysed contaminants of concern detected at concentrations in excess of background. As no analysed contaminants of concern were detected at concentrations in excess of background, the DSI concluded that, in accordance with Regulation 5(9) of the NESCS, the requirements of the NESCS do not apply to the Skellerup and Skellerup South Blocks.

2.2 Fraser Thomas Ltd (2021)

The Fraser Thomas Ltd PSI covered the Westhaven Central Block (**Figure 1**); 243 Dunns Crossing Road, the Brookside Block and 152 Edwards Road. No HAIL activities were identified over the Brookside Block. Potential HAIL activities identified by the PSI over 243 Dunns Crossing Road and 152 Edwards Road included the following, and are indicated on a plan taken from the PSI report and included as **Appendix B**:

- HAIL A10 - Persistent pesticide use related to poultry sheds.
- HAIL A17 - Storage tanks or drums for fuel related to the presence of above ground storage tanks (AST).
- HAIL E1 - Asbestos products disposal and/or buildings containing asbestos products known to be in a deteriorated condition. This relates to buildings that potentially contain asbestos being present on site and suspected burial of asbestos containing materials (ACM) within waste pits.
- HAIL I - Land subject to intentional or accidental release of hazardous substances in sufficient quantity that it could be a risk to human health or the environment. The PSI includes the following within HAIL I:
    - potential contamination associated with lead containing paint on pre-1950s buildings.
    - potential waste pits (noting that EHS Support would consider disposal of waste in pits is better classified as HAIL G3).
    - Burn pile including evidence of anthropogenic material.

The PSI also identified HAIL G5 related to wastewater disposal fields from toilets and ablution blocks associated with poultry farm operations. EHS Support considers it highly unlikely that such disposal fields will have resulted in soil contamination that could present a risk to human health, and accordingly this has not been considered further in this DSI.

2.3 Coffey Services (NZ) Limited (2021)

The Coffey Services (NZ) Limited PSI covered the Holmes Block, and suggested HAIL A10 (persistent pesticide use) had occurred over this area of the site as a result of agricultural cropping.

EHS Support consider it highly unlikely that current (farmland, agriculture) and historic (general farmland, plantation forest) land uses will have included significant use of persistent pesticides that could result in the presence of significant soil contamination, and as such, would not consider these HAIL activities to have occurred on the site. Limited soil sampling (refer to **Section 4**) was undertaken over the Holmes Block as part of the DSI to verify this interpretation / conclusion.

3 Site Information

A detailed site description and review of site history are presented in the PSI reports. A summary and any additional observations or findings during the DSI are set out in the following sections.

3.1 Site Description

At the time of the DSI field works, conducted during June 2026, the site appeared generally as is indicated on **Figure 1**, and on **Figures 2 to 9** included in **Appendix C**.

The Holmes and Brookside Blocks comprised paddocks and cropped fields. 243 Dunns Crossing Road comprised a farm area with grassed paddocks, poultry sheds, general farm sheds and three dwellings. 152 Edwards Road comprises paddock areas, including a dwelling, large garage / workshop and an open bay pole shed.

The following potential HAIL activities / areas of ground contamination were observed during the DSI site inspection:

- Cement board fragments (potential ACM) were noted in a number of locations around existing buildings on the 243 Dunns Crossing Road area of the site.
- A pit backfilled with concrete and brick in the southwest corner of 243 Dunns Crossing Road.
- A stockpile of potential poultry shed cleanings along the southern boundary of 243 Dunns Crossing Road.
- Areas of derelict machinery / vehicle storage, including visible oil staining of soils, and a small burn pile in the paddock area north of the dwelling in the 152 Edwards Road portion of the site.
- Oil staining and the presence of metal shavings were visible around parts of the garage / workshop beside the dwelling in 152 Edwards Road.

Observations during sampling are summarised in **Section 5** below.

3.2 Site History

Holmes Block

- Paddock and scrub in 1940s.
- Plantation forestry from pre 1960s until 2008.
- Paddocks and cropping from 2008 to the current day.

Brookside Block (part of Westhaven Central)

- Paddocks and cropping from pre 1940s until the current day.

243 Dunns Crossing Road (part of Westhaven Central)

- Paddock from pre 1940s until the current day.
- Structures in southeast corner and central portion of the site visible in 1940s and 1960s (both no longer present by the 1970s.
- Two of the three dwellings and the poultry farm sheds are firsts apparent in an aerial photograph dated 1970-1974.
- Third dwelling present by the 1980s.

152 Edwards Road (part of Westhaven Central)

- Paddock from pre 1940s until the current day.
- Open Bay pole shed present visible in the early 1980s, dwelling and garage present from the mid 1980s.

3.3 Geology

A CMW Geosciences Ltd report dated 23 July 2026; *Westhaven Residential Development Fast-track Substantive Application - Geotechnical Report*, indicates geology across the site area generally comprises up to 0.5 m of silty topsoil overlying sandy Gravel. Soils encountered during DSI soil sampling comprised up to 0.2 m of silt topsoil overlying sandy Gravel.

A Pattle Delamore Partners Ltd (PDP) report dated October 2026; *Westhaven Residential Development Fast-track Substantive Application – Groundwater Level Assessment* indicates that the depth to groundwater is greatest in the north (Holmes Block), with the depth to groundwater under the highest groundwater conditions predicted to vary between approximately 7 m and 10.5 m below ground level in the north. In the southern development area the highest predicted groundwater level is expected to vary between approximately 6.5 m bgl in the north of the Brookside Block to 1.5 m bgl in the south of the Skellerup South Block.

A review of ECan's database indicates that there are two active groundwater abstraction wells present on the site; M36/0015 located in the central area of 243 Dunns Crossing Road, and M36/5022 located beside the dwelling and garage in 152 Edwards Road. M36/0015, used for irrigation and stock watering, is 36.3 m deep with the borelog indicating gravel with the well screened from 27 m. M36/5022, used for irrigation and domestic supply is 25 m deep with the borelog indicating sandy Gravel with the well screened from 23 m. Information on the ECan database indicates a water level in M36/5022 of 5.1 m below the measuring point.

4 Site Characterisation

4.1 Conceptual Site Model

On the basis of the PSI history review and DSI site inspection the following HAIL activities were identified for the site:

- HAIL A10 - Persistent pesticide use related to poultry sheds.
- HAIL A17 - Storage tanks or drums for fuel related to the presence of above ground storage tanks (AST).
- HAIL E1 – Asbestos. Observed potential ACM around buildings and within waste pits.
- HAIL G3 – Waste pits present within 243 Dunns Crossing Road and Offal pits within 152 Edwards Road.
- HAIL I - Potential contamination associated with lead containing paint on pre 1950s buildings, and with a burn pile.

Given the identified HAIL activities, the primary contaminants of potential concern for this investigation were considered to include heavy metals (arsenic, cadmium, chromium, copper, lead, nickel and zinc), organochlorine pesticides (OCPs), polycyclic aromatic hydrocarbons (PAHs), Total Petroleum Hydrocarbons (TPH) and asbestos.

The most sensitive planned future site use is residential. On this basis the following potential receptors were identified as being relevant to the site:

- Future residential land use; occupiers and visitors.
- Earthworks, maintenance and excavation contractors who may come into contact with potentially contaminated soil during site development works.

If encountered, soil contaminants may enter the body through inhalation, ingestion or skin adsorption.

This DSI was focussed on assessment of soil contamination and NESCS compliance. As such, assessment of potential groundwater contamination was outside the scope of the DSI. However, given that groundwater is present at depths in excess of 3.0 m, that the completed development will have a reticulated water supply, the nature, degree and limited extent of contamination detected (refer **Section 5**), and that shallow groundwater is highly unlikely to be abstracted for use, it is considered unlikely potential groundwater contamination (if any) could present a significant risk to human health.

4.2 Soil Sampling

DSI soil sampling was undertaken over three site visits on 12 June, 15 June and 4 July 2026. Soil samples were collected from 83 locations on a combination grid and targeted basis. The soil sampling regime undertaken is set out in **Table 1**. Soil sample locations are indicated on **Figure 2 (key)** and **Figures 3 to 9, Appendix C**. Note that no HAIL activities were identified within the Brookside Block and accordingly, collection of soil samples from this area of the site was not considered necessary.

Table 1: Sampling and Analysis Plan

Sample Number	Purpose	CoC
Holmes Block (Figure 9)		
HB-S01 to HB-S20	HAIL A10 – Agricultural use. Grid sampling.	Heavy metals, OCPs
243 Dunns Crossing Road (Figures 3 to 7)		
TP1–TP4 (Figure 3)	HAIL G3/ I - Potential waste burial identified by PSI. Targeted sampling	Heavy metals
TP5, TP6 (Figure 5)	HAIL G3 – waste burial. Targeted sampling.	Heavy metals, PAH
TP7 (Figure 6)	HAIL G3 – waste burial. Targeted sampling.	Heavy metals, PAH
TP8, TP8A (Figure 7)	HAIL I / G3 – potential waste burial (PSI identified backfilled irrigation channel, possible farm dump)	No samples collected (no visual or olfactory evidence of waste or ground contamination)
TP8B (Figure 7)	HAIL I / G3 – pit filled with concrete and brick.	No samples collected (no visual or olfactory evidence of anything other than concrete and brick)
TP9 (Figure 7)	HAIL I – stockpile identified by PSI.	Heavy metals
S9 (Figure 3)	HAIL I – machinery storage area.	Heavy metals
S10 (Figure 3)	HAIL A17 – beside diesel AST.	Heavy Metals, TPH
S11-S18 (Figure 4), S19–S22 (Figure 3), S23-S26 (Figure 5),	HAIL A10 – poultry sheds. Targeted sampling.	Heavy metals, OCP

S27-S30 (Figure 6), S31-S38 (Figure 7)		
S39-S42 (Figure 7)	HAIL I – stockpiled soils, possibly poultry shed scrapings. Targeted sampling.	Heavy metals
S43, S44 (Figure 3)	HAIL I – 1960's dwelling. Targeted sampling.	Heavy metals
S45-S50 (Figure 4)	HAIL I – pre 1960's building and stock yard. Targeted sampling.	Heavy metals, OCP
S51-S54 (Figure 7)	HAIL I – pre 1960's building. Targeted sampling.	Heavy metals
ACM1, ASB1, ACM3, ASB3 (Figure 3)	HAIL E1 – small areas of potential ACM (cement board fragments) on the northeast and southwest corners of a shed.	(ACM, material sample) - Asbestos (ASB) Asbestos in soil – semi quantitative
ACM2, ASB2 (Figure 5)	HAIL G3 / E1 – fragments of potential ACM in waste pit at location TP5.	(ACM, material sample) - Asbestos (ASB) Asbestos in soil – semi quantitative
ACM4, ACM5 (Figure 6)	HAIL E1 – fragment of potential ACM along the northeast wall of a poultry shed.	Material sample - Asbestos
ACM6 (Figure 6)	HAIL E1 – small area of potential ACM fragments adjacent to a power pole.	Material sample - Asbestos
ACM7, ACM8 (Figure 7)	HAIL E1 – potential ACM fragments observed at these locations adjacent to poultry shed.	Material sample - Asbestos
152 Edwards Road (Figure 8)		
TP10	HAIL G3 – offal pit.	Heavy metals, PAH
S1	HAIL I – machinery storage. Targeted.	Heavy metals
S2, S3, S4	HAIL I – burn pile. Targeted.	Heavy metals
S5, S6	HAIL I – machinery / derelict vehicle storage. Targeted.	Heavy metals, TPH
S7, S8	HAIL F4 – oil staining and metals shavings observed adjacent to workshop area. Targeted.	Heavy metals, TPH

Samples were collected by an EHS Support suitably qualified and experienced practitioner (SQEP). The exception to this was samples HB-S01 to HB-S20 from the Holmes Block which were collected by suitably qualified personnel from CMW Geosciences Limited.

Locations TP1 to TP10 comprise machine excavated test pits. The test pits were advanced to at least 0.5 m depth, or the depth of fill in waste or offal pit locations. Direct grab samples were collected from the pit walls and/or excavator bucket at regular intervals. As indicated in **Table 1**, collection of samples from Test Pits TP8, TP8A and TP8B was not considered to be necessary as no visual or olfactory evidence of HAIL activities or ground contamination was observed at these locations.

Samples S1 to S54 and HB-S01 to HB-S20 were collected manually using a hand auger. Samples were collected from the surface (0-0.15 m) at each sampling location.

All samples were collected with a freshly gloved hand. Where used, sampling equipment (hand auger) was cleaned between sample locations.

4.3 Laboratory Analysis

All collected soil samples were submitted to Hill Laboratories Ltd under chain of custody documentation. Selected (on the basis of field observations and to ensure site coverage) samples were analysed for contaminants of concern as follows:

- 76 selected soil samples were laboratory analysed for heavy metals (arsenic, cadmium, chromium, copper, lead, nickel and zinc).
- Four samples collected from the waste / offal pits encountered were analysed for PAHs.
- Samples collected by the AST in 243 Dunns Crossing Road and from areas of observed stained ground in 152 Edwards Road were analysed for TPH.
- Two individual samples (S49 and S50) from an area of historic stock yards were analysed for OCPs.
- A number of composite samples were also analysed for OCPs as follows:
  - S11, S13, S15, S17 – Poultry shed
  - S19, S20, S21, S22 – Poultry shed
  - S23, 24, 25, 26 – Poultry shed
  - S27, 28, 29, 30 – Poultry shed
  - S32, 34, 36, 38 – Poultry shed
  - HB-S01, HB-S02, HB-S05, HB-S06 – Holmes Block
  - HB-S03, HB-S04, HB-S07, HB-S08 – Holmes Block
  - HB-S09, HB-S10, HB-S13, HB-S14 – Holmes Block
  - HB-S11, HB-S12, HB-S15, HB-S16 – Holmes Block
  - HB-S17, HB-S18, HB-S19, HB-S20 – Holmes Block

4.4 Quality Assurance and Quality Control

Field works undertaken by EHS Support and CMW Geosciences Limited has been managed by a Suitably Qualified and Experienced Practitioner (SQEP) and this report was reviewed by a SQEP. With regards to laboratory analysis, Hill Laboratories is a recognised laboratory endorsed by International Accreditation New Zealand (IANZ). The analyses undertaken were performed in accordance with the terms of accreditation. No issues that affected the quality of the reported results was noted. The laboratory QA reports are included in **Appendix E**.

5 Results and Discussion

5.1 Observations

Observations during the DSI sampling program included the following:

- Cement board fragments were noted in a number of locations around some of the poultry sheds, and a farm shed within the 243 Dunns Crossing Road area of the site.
- A waste pit was present at sampling location TP5. Waste materials encountered included plastic, glass and metal fragments, and cement board fragments, which were mixed with gravel.
- The potential waste pit at sampling location TP7 comprised sandy Gravel with minor plastic (sileage type wrap) and numerous bones.
- No visual or olfactory evidence of waste materials was observed at possible fill sites where test pits TP8 and TP8A were located, or within a stockpile north of this area (TP9). The stockpile comprised mixed silt and gravel and is considered likely to have resulted from excavation of the footprint of some of the poultry sheds.

- The pit at location TP8B was filled with concrete and brick fragments. No other anthropogenic material was observed.
- The offal pit at the northern end of 152 Edwards Road (TP10) comprised a thin cover of sandy gravel and silt overlying predominantly domestic refuse (bottles and plastics). The refuse was present to a depth of approximately 2.5 m below ground level.
- The remnants of a burn pile, including the presence of treated timber fragments, was present north of the dwelling in the 152 Edwards Road area of the site (sample location S3).
- Visible oil staining was present adjacent to the garage / workshop doors and in areas of machinery storage within 152 Edwards Road.
- The AST observed within 152 Edwards Road during the 2021 PSI covering this area was no longer present during the DSI.

5.2 Applicable Soil Guideline Values

To evaluate the soil analytical data, results have been compared to the following guideline values for the protection of human health, and for assessing potential risks to the receiving environment. Adopted Soil Contaminant Standards (SCS) and guideline values are presented in the results tables.

- Background concentrations for heavy metals have been adopted from Environment Canterbury Report R07/1/2: *Background Concentrations of Selected Trace Elements in Canterbury Soils. Addendum 1: Additional Samples and Timaru Specific Background Levels*. A number of soil types are present in the wider area of the site. Regional Recent soil values, being the soil type used for acceptance at most Christchurch area cleanfill facilities, have been adopted.
- Background concentrations for PAHs have been adopted from Environment Canterbury Report R07/19: *Background Concentrations of Polycyclic Aromatic Hydrocarbons in Christchurch Urban Soil*.
- Background concentrations for TPH have been adopted from Class 5 (Cleanfill) waste acceptance criteria as detailed in WMINZ September 2023, *Technical Guidelines for Disposal to Land Revision 3.1*.
- The MfE (2012) *User's Guide: National Environmental Standard for Assessing and Managing Contaminants in Soil to Protect Human Health* details SCS for selected contaminants. The planned site redevelopment will result in predominately residential land use of the site. Accordingly, SCS for residential land use (10 % home grown produce consumption) have been adopted.
- For the two heavy metals analysed for which SCSs are not available; nickel and zinc, the National Environment Protection Council (NEPC) (2013), Australian National Environmental Protection (Assessment of Site Contamination) Measure (NEPM) Health Investigation Levels for a Residential scenario have been adopted.
- For TPH, MfE (1999), *Guidelines for Assessing and Managing Petroleum Hydrocarbon Contaminated Sites in New Zealand* have been referenced. Tier 1 criteria for Residential Use, all pathways, sand, groundwater 1-4m, have been adopted.
- For asbestos, the BRANZ (2017), *New Zealand Guidelines for Assessing and Managing Asbestos in Soil* have been referenced with guidelines for residential land use adopted.
- To assess potential ecological risks to waterways results have been compared to Toxicant Default Guideline Values for Sediment from ANZECC & ARMCANZ (2018), *Australian and New Zealand Guidelines for Fresh and Marine Water Quality*. GV-High values (ANZG GV-High) have been adopted as waterways on the site are generally modified, and additionally EHS Support understand that ECan consider stormwater discharge from soils with residual concentrations less than GV-High to present low risk.

5.3 Analytical Results

Heavy metals, PAH and TPH analytical results are summarised in **Tables 2 and 3, Appendix D.** OCPs and asbestos results are discussed below. Laboratory Reports are included in **Appendix E**. DSI soil analytical results can be summarised as follows:

243 Dunns Crossing Road

- Arsenic was detected at a concentration in excess of SCS for residential land use in a single sample collected from the waste pit at sampling location TP5.
- Concentrations in excess of background of one or more of arsenic, cadmium, lead and zinc were detected at a number of locations around this area of the site.
- Zinc concentrations in excess of ANZG GV-High were detected in 4 samples from the 243 Dunns Crossing Road area of the site.
- TPH in the C10-C14 band was detected at a concentration slightly in excess of human health guidelines in sample S10 collected beside the diesel AST. The TPH chromatogram confirms the presence of diesel.
- OCPs were not detected above the laboratory limit of detection in any of the individual or composite samples analysed for OCPs.
- PAHs were either not detected above the laboratory limit of detection or present at concentrations less than background in the samples analysed for PAHs.
- The presence of asbestos was confirmed in all of cement board samples ACM1, ACM2, ACM3, ACM4, ACM5, and ACM7. Asbestos was not detected in samples ACM6 and ACM8.
- An asbestos fines concentration of 0.0689 % weight/weight (wt/wt), in excess of the human health acceptance criteria of 0.001% wt/wt for residential land use was detected in sample ASB1. Asbestos was not detected above the laboratory limit of detection in soil samples ASB2 and ASB3.

152 Edwards Road

- Arsenic and cadmium were detected at concentrations in excess of SCS for residential land use in samples collected from the offal pit (TP10), and from the burn pile (S3 and S4). Concentrations in excess of background of chromium, copper, lead and zinc were also detected at these sampling locations.
- Cadmium was detected at a concentration in excess of SCS in sample S7, collected beside the garage. Chromium, copper, lead, nickel, zinc and TPH concentrations in excess of background were also detected in this sampling location (samples S7 and S8).
- Arsenic, copper, zinc and TPH concentrations in excess of ANZG GV-High were detected in samples collected from the offal pit and burnpile, and associated with the garage / workshop.
- PAHs were either not detected above the laboratory limit of detection or present at concentrations less than background in the samples analysed for PAHs

Holmes Block

- With the exception of sample HB-S13, no heavy metals were detected at concentrations in excess of background.

- Lead and zinc were detected at concentrations in excess of background in sample HB-S13, with the concentration of lead slightly in excess of SCS for residential land use. This is considered an anomalous result, with no clear contaminant source.
- OCPs were not detected in the composite samples analysed.

6 Conclusions

6.1 Summary

The site is located on land which has been identified as having accommodated a variety of HAIL activities:

- HAIL A10 - Persistent pesticide use related to poultry sheds.
- HAIL A17 - Storage tanks or drums for fuel related to the presence of above ground storage tanks (AST).
- HAIL E1 – Asbestos. Observed potential ACM around buildings and within waste pits.
- HAIL G3 – Waste pits present within 243 Dunns Crossing Road and Offal pits within 152 Edwards Road.
- HAIL I - potential contamination associated with lead containing paint on pre 1950s buildings, and with a burn pile.

One or more of arsenic, cadmium, lead, TPH and asbestos were detected at a concentration in excess of SCS for residential land use in a number of locations:

- In a waste pit (TP5) within the 243 Dunns Crossing Road area of the site.
- In areas around sheds within 243 Dunns Crossing Road where ACM (cement board fragments) were observed.
- In an area of soil staining associated with a diesel AST located in the 243 Dunns Crossing Road area of the site.
- Associated with an offal pit in the 152 Edwards Road area of the site.
- Associated with a burn pile in the 152 Edwards Road area of the site.
- Associated with a garage / workshop within the 152 Edwards Road area of the site.
- In an isolated sample collected from the Holmes Block area of the site.

Concentrations in excess of background of a number of heavy metals are present in shallow soils across areas of the site associated with waste and offal pits, a burn pile, and site buildings.

As set out in **Section 2.1**, no analysed contaminants of concern were detected at concentrations in excess of background in samples collected from the Skellerup and Skellerup South Blocks during the 2025 DSI covering this area of the development.

6.2 Regulatory Considerations

Concentrations in excess of background were detected and as such the NESCS Regulations will apply to proposed redevelopment activities at this site. Concentrations in excess of SCS for the applicable residential land use were detected, and as such an application for consent to subdivide and disturb / remove soils will be required as a restricted discretionary activity under Regulation 10 of the NESCS.

As concentrations in excess of the applicable SCS were detected, contamination management / remediation will be required. A Remediation Action Plan (RAP) will be required prior to earthworks commencing to outline contamination management requirements. A Site Validation Report (SVR) will be required once remediation works are undertaken.

As contaminations in excess of background and ANZG GV-High were detected, regional council consents are also required. The necessary regional consents required for the development, and which will manage effects related to contaminated soils, are set out within the AEE prepared to support the substantive application.

6.3 Development Considerations

Contaminated soils have been detected at the site. Should offsite disposal of these soils be required during site development works, these soils are not suitable for disposal as cleanfill and will require disposal to a licensed disposal facility.

Re-use of contaminated soil within the site (e.g. outside residential lots in reserve or road reserve areas) would also likely be an acceptable management option for these soils, subject to appropriate conditions to manage and control the effects. A RAP will be required to be prepared prior to construction, and suitable conditions should be volunteered setting out all proposed contamination management methodologies for soils exceeding SCS and background concentrations as part of the AEE.

7 Closure

EHS Support thanks you for the opportunity to prepare this DSI Report. Should you have any questions or require additional information, please feel free to contact me at 027 700 7603.

This DSI has been undertaken by a SQEP with reference to MfE Contaminated Land Management Guidelines No. 5, and reported on with reference to MfE Contaminated Land Management Guidelines No.1. This report has been reviewed by Warren Sharp, a contaminated land specialist with over 28 years' experience and who holds CEnvP-SCS certification.

Sincerely,



Warren Sharp
Principal, CEnvP-SCS (SC41092)
EHS Support New Zealand Ltd

Appendix A - Limitations Statement

EHS Support New Zealand Limited ("EHS Support") has prepared this document in accordance with the usual care and thoroughness of the consulting profession for the use of Carter Group Ltd and the applicable regulatory authorities. It is based on generally accepted practices and standards at the time it was prepared. No other warranty, expressed or implied, is made as to the professional advice included in this document. It is prepared in accordance with the scope of work and for the purpose outlined in the Short Form Agreement for Consultant Engagement dated 5 June 2026.

The methodology adopted and sources of information used by EHS Support are outlined in this document. EHS Support has made no independent verification of this information beyond the agreed scope of works and EHS Support assumes no responsibility for any inaccuracies or omissions. No indications were found during the preparation of this document that information contained in this document as provided to EHS Support was false.

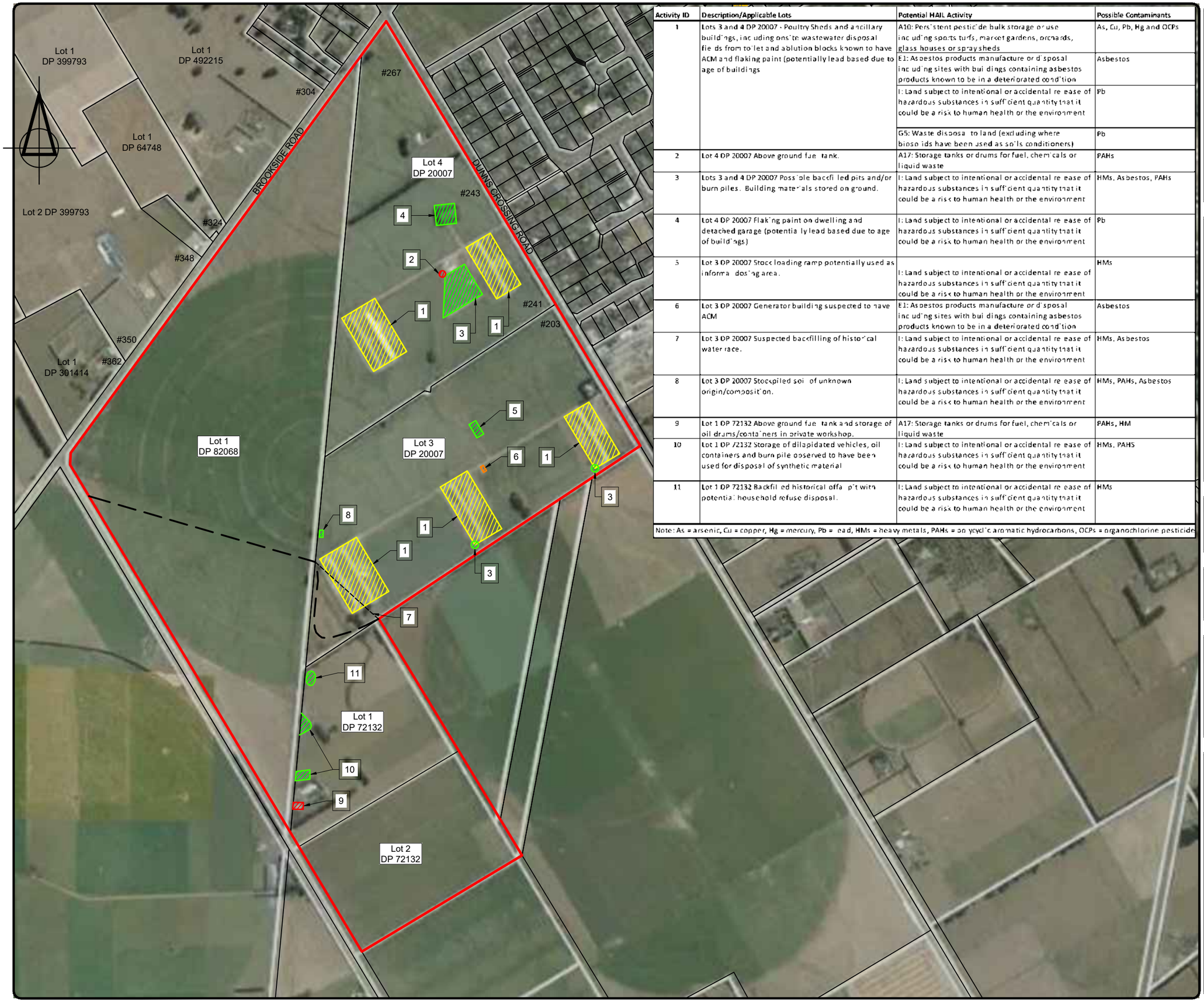
This document was prepared on the issue date and is based on the information available at the time of preparation. EHS Support disclaims responsibility for any changes that may have occurred after this time.

This document should be read in full. No responsibility is accepted for use of any part of this document in any other context or for any other purpose. This document does not purport to give legal advice. Legal advice can only be given by qualified legal practitioners.

Where conditions encountered at the subject site are subsequently found to differ significantly from those anticipated in this document, EHS Support must be notified of any such findings and be provided with an opportunity to review the recommendations of this document.

Whilst to the best of our knowledge information contained in this document is accurate at the date of issue, subsurface conditions, including groundwater levels and flow direction can change in a limited time, as well as natural processes or works of man at the subject site or on adjacent properties. Changes in applicable standards may also occur as a result of legislation or the broadening of knowledge. Accordingly, the findings of this report may be invalidated, wholly or in part, by changes beyond our control. Therefore, this document and the information contained herein should only be regarded as valid at the time of writing, unless otherwise explicitly stated in this document.

Appendix B – Fraser Thomas PSI HAIL Locations



Activity ID	Description/Applicable Lots	Potential HAIL Activity	Possible Contaminants
1	Lots 3 and 4 DP 20007 - Poultry Sheds and ancillary buildings, including onsite wastewater disposal fields from toilet and ablution blocks known to have ACM and flaking paint (potentially lead based due to age of buildings	A10: Persistent pesticide bulk storage or use including sports turfs, market gardens, orchards, glass houses or spray sheds	As, Cu, Pb, Hg and OCPs
		E1: Asbestos products manufacture or disposal including sites with buildings containing asbestos products known to be in a deteriorated condition	Asbestos
		I: Land subject to intentional or accidental release of hazardous substances in sufficient quantity that it could be a risk to human health or the environment	Pb
		G5: Waste disposal to land (excluding where biosolids have been used as soils conditioners)	Pb
2	Lot 4 DP 20007 Above ground fuel tank.	A17: Storage tanks or drums for fuel, chemicals or liquid waste	PAHs
3	Lots 3 and 4 DP 20007 Possible backfilled pits and/or burn piles. Building materials stored on ground.	I: Land subject to intentional or accidental release of hazardous substances in sufficient quantity that it could be a risk to human health or the environment	HMs, Asbestos, PAHs
4	Lot 4 DP 20007 Flaking paint on dwelling and detached garage (potentially lead based due to age of buildings)	I: Land subject to intentional or accidental release of hazardous substances in sufficient quantity that it could be a risk to human health or the environment	Pb
5	Lot 3 DP 20007 Stock loading ramp potentially used as informal dosing area.	I: Land subject to intentional or accidental release of hazardous substances in sufficient quantity that it could be a risk to human health or the environment	HMs
6	Lot 3 DP 20007 Generator building suspected to have ACM	E1: Asbestos products manufacture or disposal including sites with buildings containing asbestos products known to be in a deteriorated condition	Asbestos
7	Lot 3 DP 20007 Suspected backfilling of historical water race.	I: Land subject to intentional or accidental release of hazardous substances in sufficient quantity that it could be a risk to human health or the environment	HMs, Asbestos
8	Lot 3 DP 20007 Stockpiled soil of unknown origin/composition.	I: Land subject to intentional or accidental release of hazardous substances in sufficient quantity that it could be a risk to human health or the environment	HMs, PAHs, Asbestos
9	Lot 1 DP 72132 Above ground fuel tank and storage of oil drums/containers in private workshop.	A17: Storage tanks or drums for fuel, chemicals or liquid waste	PAHs, HM
10	Lot 1 DP 72132 Storage of dilapidated vehicles, oil containers and burn pile observed to have been used for disposal of synthetic material	I: Land subject to intentional or accidental release of hazardous substances in sufficient quantity that it could be a risk to human health or the environment	HMs, PAHs
11	Lot 1 DP 72132 Backfilled historical offal pit with potential household refuse disposal.	I: Land subject to intentional or accidental release of hazardous substances in sufficient quantity that it could be a risk to human health or the environment	HMs

Note: As = arsenic, Cu = copper, Hg = mercury, Pb = lead, HMs = heavy metals, PAHs = polycyclic aromatic hydrocarbons, OCPs = organochlorine pesticides

SURVEYED			APPROVED DATE
DESIGNED			SF
DRAWN	SG	11/10/2021	
CAD	GS	12/10/2021	
CHECKED			

REVISION	CHANGES	CHECKED	DATE

NOTES

1. This plan has been adopted from Grip map. The location and extent of the site boundaries and site features are therefore considered to be approximate only.

CLIENT

GALLINA NOMINEES, HEINZ WATTIE PENSION FUND, AND BROOKSIDE ROAD RESIDENTIAL LTD

PROJECT

BROOKSIDE ROAD PLAN CHANGE, ROLLESTON

TITLE

SITE PLAN

Fraser Thomas

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SCALE 1:7500 (A3)

DRAWING No E01082-01

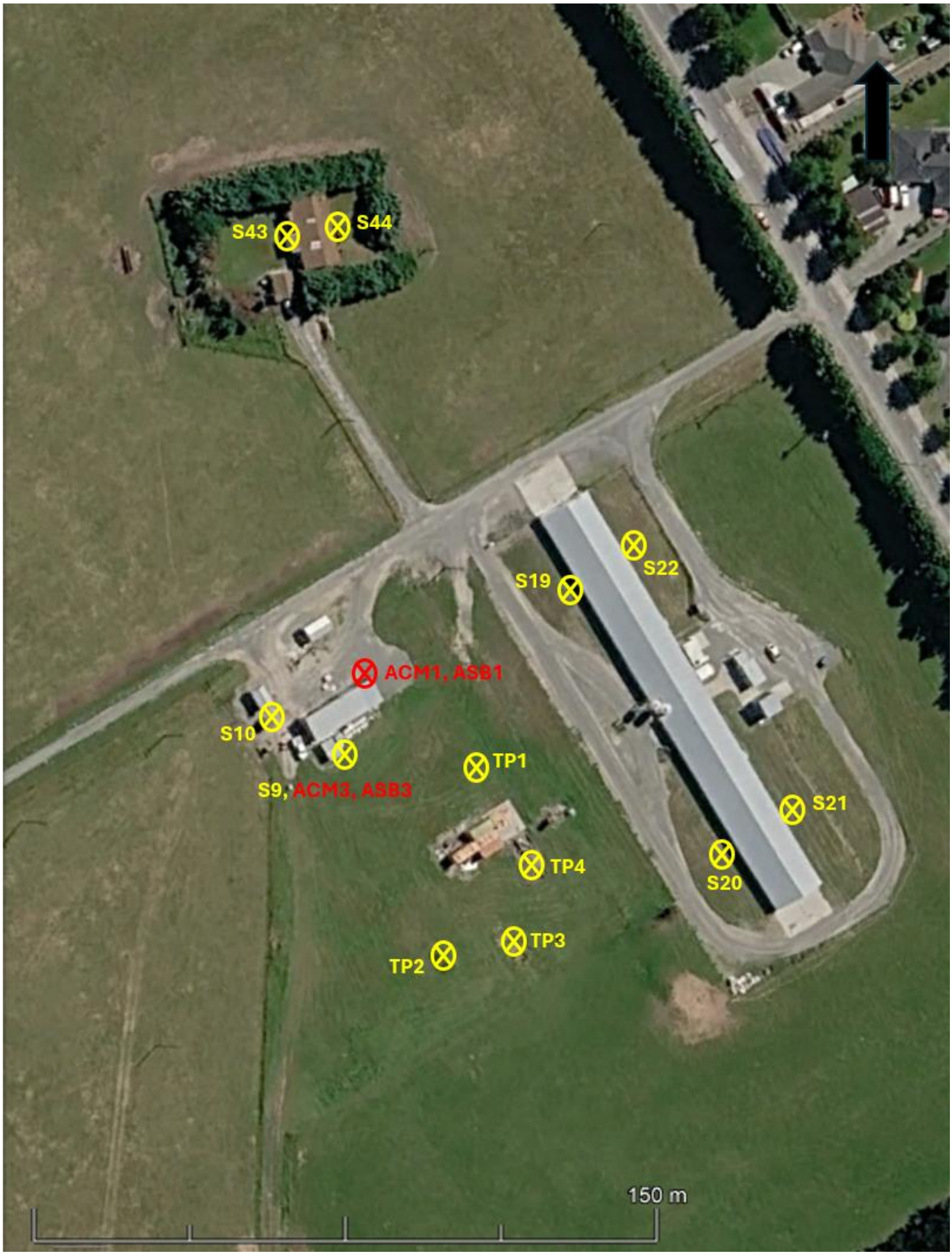
REVISION A

SHEET 1 of 1

Appendix C – Figures



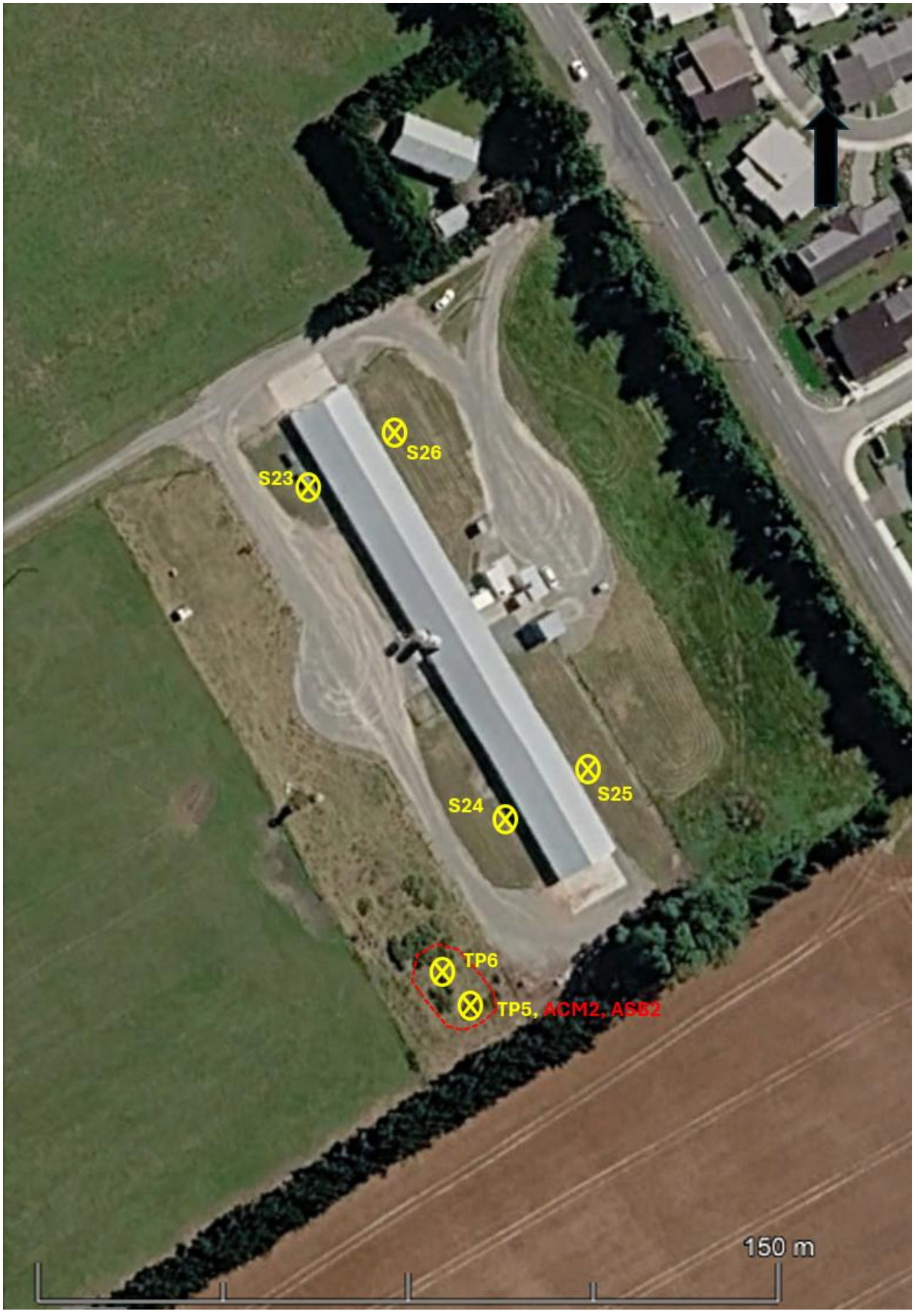
EHS Support	**Figure 2:** Sample Location Plans Key	
	NZL.07950	**July 2026**



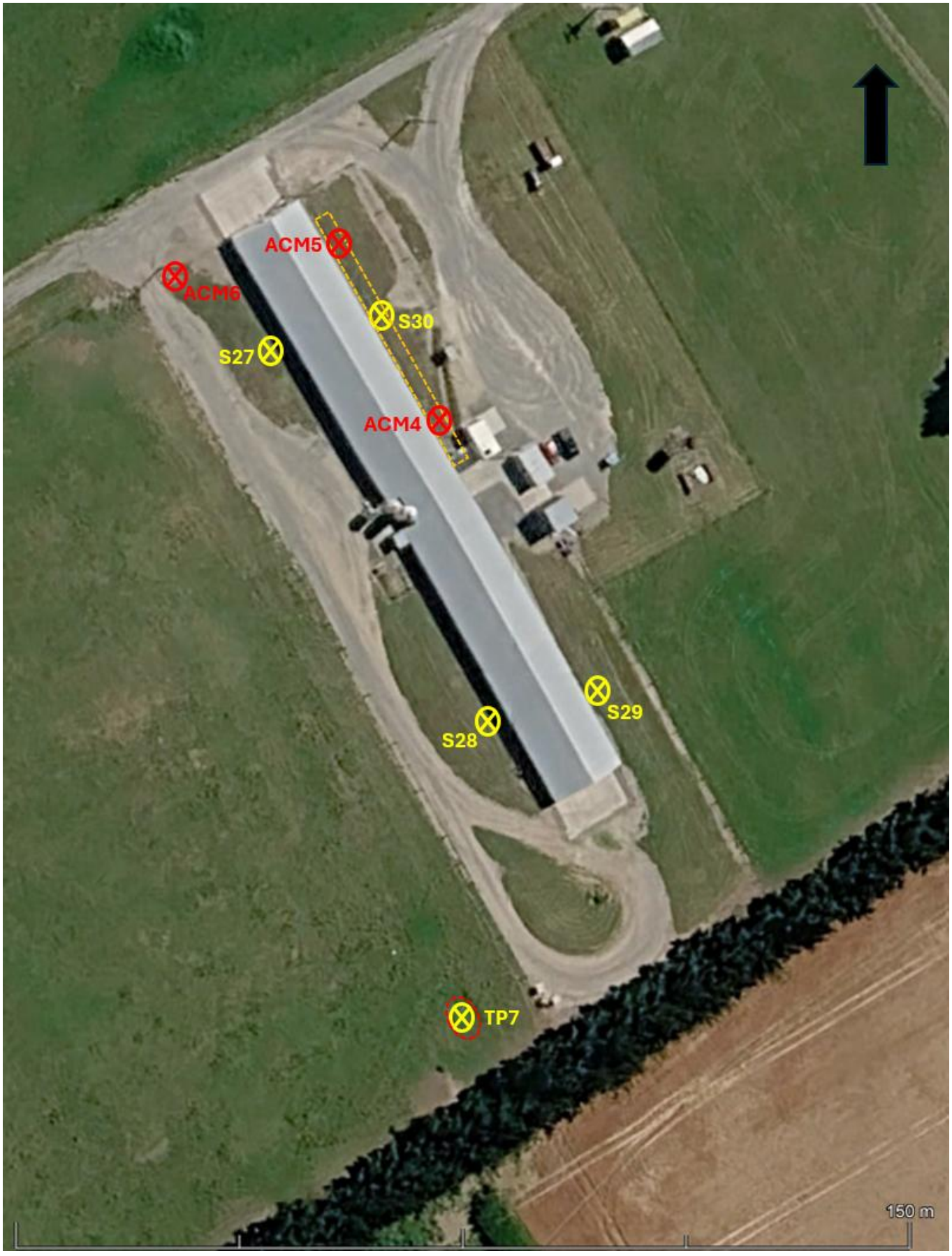
EHS Support	**Figure 3:** Sample Locations 243 Dunns Crossing - North	
	NZL.07950	**July 2026**



EHS Support	**Figure 4:** Sample Locations 243 Dunns Crossing - Central
NZL	



EHS Support	**Figure 5:** Sample Locations 243 Dunns Crossing – South (1)	
	NZL.07950	**July 2026**



EHS Support	**Figure 6:** Sample Locations 243 Dunns Crossing – South (2)	
	NZL.07950	**July 2026**

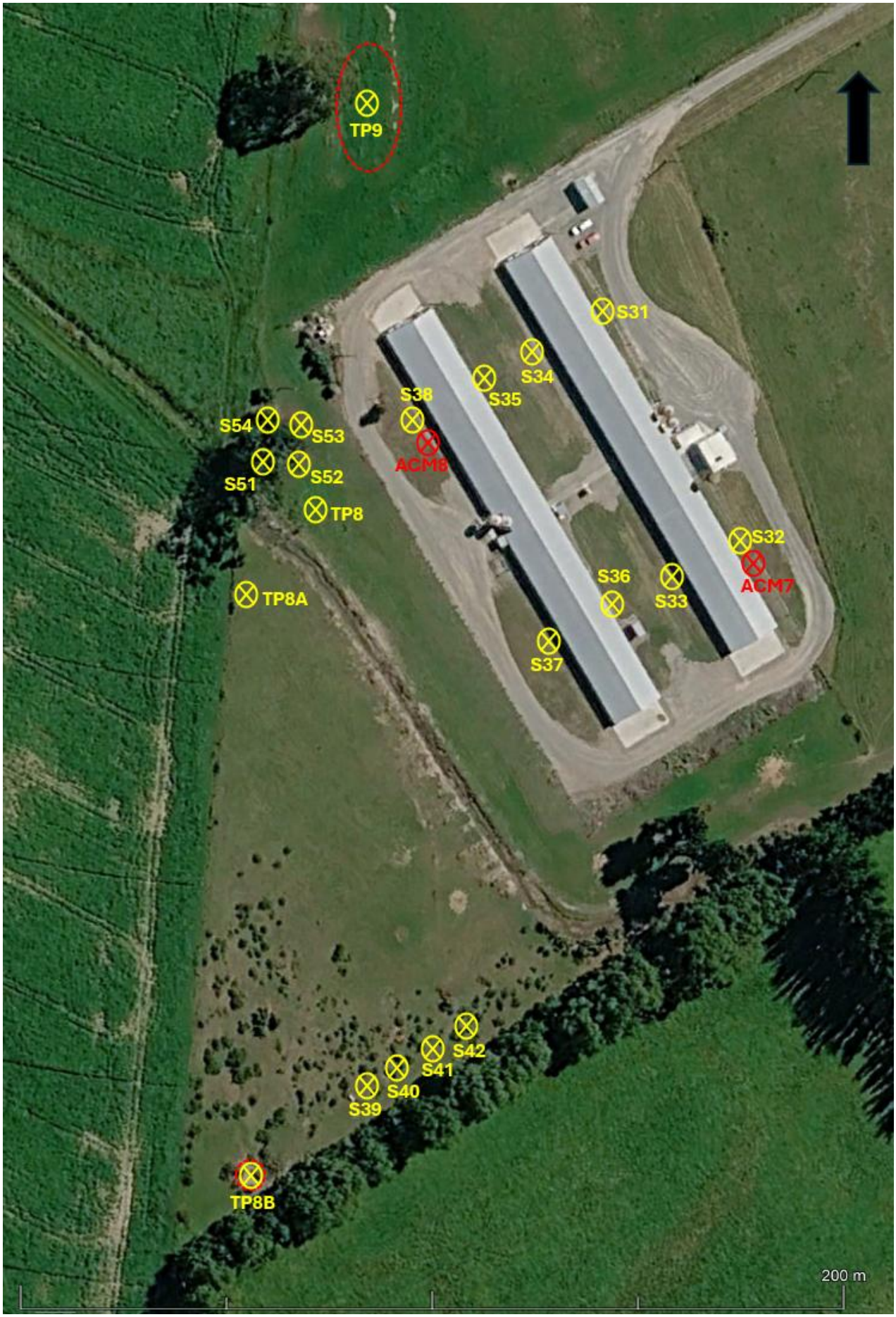
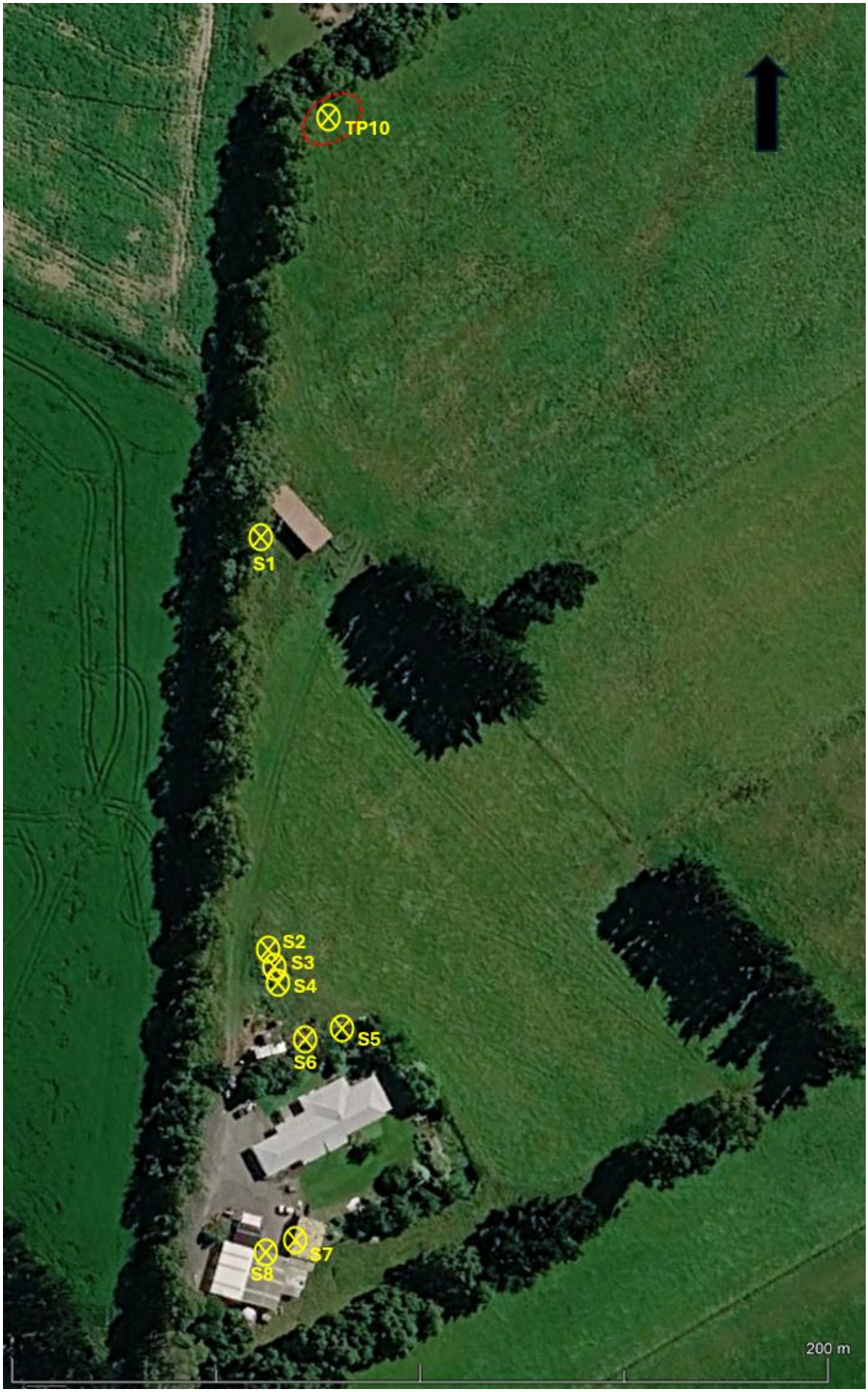


Figure 7: Sample Locations 243 Dunns Crossing – South (3)

NZL.07950

July 2026



EHS Support	**Figure 8:** Sample Locations 152 Edwards	
	NZL.07950	**July 2026**



EHS Support	**Figure 9:** Sample Locations Holmes Block	
	NZL.07950	**July 2026**

Appendix D – Tables

Table 2: Soil Analytical Results - Westhaven Residential Development

			Arsenic	Cadmium	Chromium	Copper	Lead	Nickel	Zinc	B(a)P TEQ	Total PAHs
SCS Residential Land Use[1]			**20**	**3**	**460 [2]**	**>10,000**	**210**	**400 [3]**	**7,400 [3]**	**10**	**-**
ANZG-GV High[6]			**70**	**10**	**370**	**270**	**220**	**52**	**410**	**-**	**50**
Background[4,5]			**12.58**	**0.19**	**22.7**	**20.3**	**40.96**	**20.7**	**93.94**	**0.92**	**-**
Sample	**Depth**	**Lab ID**									
243 Dunns Crossing Road (north, Figure 3)											
TP1	0.0	4243426.1	3	0.15	11	5	13.6	7	63	-	-
	0.3	4243426.2	3	< 0.10	13	3	13.1	8	49	-	-
TP2	+0.5	4243426.3	3	< 0.10	12	3	12.5	7	46	-	-
	0.0	4243426.4	4	< 0.10	13	4	13	8	57	-	-
TP3	0.0	4243426.6	3	< 0.10	12	3	13.2	7	48	-	-
TP4	0.0	4243426.8	6	**0.75**	13	6	17.6	7	**1120**	-	-
	0.3	4243426.9	5	**0.1**	13	4	14.4	8	**470**	-	-
S9	0.0	4243426.30	9	**0.47**	18	10	15.9	10	**1230**	-	-
S10	0.0	4243426.31	**16**	0.19	12	7	21	6	59	-	-
S19	0.0	4243426.40	10	< 0.10	16	10	39	8	**138**	-	-
S21	0.0	4243426.42	4	< 0.10	12	7	31	7	**197**	-	-
S34	0.0	4243426.55	5	< 0.10	19	12	**42**	9	67	-	-
S36	0.0	4243426.57	6	< 0.10	15	9	28	10	**99**	-	-
243 Dunns Crossing Road (central, Figure 4)											
S11	0.0	4243426.32	5	< 0.10	18	7	25	7	**200**	-	-
S13	0.0	4243426.34	4	< 0.10	13	6	33	7	**350**	-	-
S15	0.0	4243426.36	5	0.12	17	10	20	12	**149**	-	-
S17	0.0	4243426.38	4	< 0.10	11	4	12.5	7	56	-	-
S45	0.0	4259062.1	3	0.15	11	7	39	7	65	-	-
S46	0.0	4259062.2	3	0.12	10	6	**72**	6	80	-	-
S47	0.0	4259062.3	3	0.12	10	6	**50**	6	79	-	-
S48	0.0	4259062.4	3	0.14	10	5	23	6	**136**	-	-
S49	0.0	4259062.5	3	0.12	10	6	24	7	91	-	-
S50	0.0	4259062.6	3	< 0.10	10	4	29	6	50	-	-
243 Dunns Crossing Road (south - 1, Figure 5)											
TP5	0.5	4243426.10	**39**	**0.86**	**37**	**37**	35	9	**1040**	-	-
	1.0	4243426.11	**16**	0.13	18	12	19.4	8	**155**	<0.026	<0.3
TP6	0.0	4243426.12	**19**	**0.3**	22	22	32	6	**210**	-	-
	0.5	4243426.13	**13**	**0.3**	16	17	20	11	**260**	-	-
S23	0.0	4243426.44	5	< 0.10	14	7	26	9	**124**	-	-
S25	0.0	4243426.46	5	< 0.10	15	9	28	8	**112**	-	-
243 Dunns Crossing Road (south - 2, Figure 6)											
TP7	0.0	4243426.14	6	0.13	13	19	13.7	8	**192**	-	-
	0.5	4243426.15	7	**0.2**	15	**33**	14.7	9	**350**	<0.029	<0.3
	1.0	4243426.16	7	0.16	14	**27**	13.6	8	**290**	-	-
S27	0.0	4243426.48	8	< 0.10	18	9	29	10	**103**	-	-
S29	0.0	4243426.50	4	< 0.10	13	6	26	6	**95**	-	-
243 Dunns Crossing Road (south - 3, Figure 7)											
TP9	0.0	4243426.17	2	< 0.10	10	3	10.7	7	39	-	-
	0.5	4243426.18	2	< 0.10	10	3	10.6	6	39	-	-
S32	0.0	4243426.53	6	0.14	19	20	**89**	9	**1,300**	-	-
S38	0.0	4243426.59	5	< 0.10	14	6	25	9	69	-	-
S39	0.0	4243426.60	2	< 0.10	8	6	10.5	5	70	-	-
S41	0.0	4243426.62	3	< 0.10	11	3	12.4	7	43	-	-
S43	0.0	4243426.64	5	0.14	13	8	32	7	**310**	-	-
S44	0.0	4243426.65	8	**0.21**	21	**30**	**70**	12	**240**	-	-
S51	0.0	4259062.7	6	< 0.10	11	8	29	6	67	-	-
S52	0.0	4259062.8	3	0.19	9	15	**87**	6	**150**	-	-
S53	0.0	4259062.9	3	< 0.10	9	8	17.6	6	79	-	-
S54	0.0	4259062.1	3	0.17	9	11	18.9	6	**105**	-	-
152 Edwards Road (Figure 8)											
TP10	0.5	4243426.19	**82**	**3**	**50**	**260**	**141**	11	**850**	-	-
	1.0	4243426.20	**48**	**1.46**	**37**	**740**	**132**	13	**600**	0.85	5.3
	2.0	4243426.21	**33**	**5**	**35**	**1270**	**47**	**21**	**540**	<0.026	<0.3
S1	0.0	4243426.22	3	0.1	11	6	14.5	7	**139**	-	-
S2	0.0	4243426.23	5	0.13	13	5	14.1	8	55	-	-
S3	0.0	4243426.24	**70**	**6.9**	**110**	**370**	**101**	19	**1230**	-	-
S4	0.0	4243426.25	**64**	**1.82**	**41**	**2200**	**114**	13	**1040**	-	-
S5	0.0	4243426.26	4	0.11	13	8	14.4	8	**100**	-	-
S6	0.0	4243426.27	4	< 0.10	12	6	13.4	7	66	-	-
S7	0.0	4243426.28	5	**4.1**	**51**	**80**	**167**	18	**580**	-	-
S8	0.0	4243426.29	6	**0.97**	**76**	**138**	**150**	**55**	**440**	-	-
Holmes Block (Figure 9)											
HB_S01	0.0	4243426.66	3	< 0.10	10	4	15.1	6	42	-	-
HB_S02	0.0	4243426.67	3	< 0.10	11	3	13.1	7	43	-	-
HB_S03	0.0	4243426.68	3	< 0.10	11	4	11.4	6	45	-	-
HB_S04	0.0	4243426.69	3	< 0.10	12	4	12.8	7	48	-	-
HB_S05	0.0	4243426.70	3	< 0.10	11	4	15.8	6	45	-	-
HB_S06	0.0	4243426.71	3	< 0.10	11	4	14	6	44	-	-
HB_S07	0.0	4243426.72	3	< 0.10	10	4	12.3	6	42	-	-
HB_S08	0.0	4243426.73	3	< 0.10	12	4	13	7	49	-	-
HB_S09	0.0	4243426.74	3	< 0.10	10	5	17.3	7	46	-	-
HB_S10	0.0	4243426.75	3	< 0.10	11	4	13.8	7	46	-	-
HB_S11	0.0	4243426.76	3	< 0.10	13	4	13.4	7	45	-	-
HB_S12	0.0	4243426.77	3	< 0.10	10	4	18.9	6	45	-	-
HB_S13	0.0	4243426.78	5	0.18	12	10	**220**	8	**131**	-	-
HB_S14	0.0	4243426.79	3	< 0.10	12	6	14.7	7	53	-	-
HB_S15	0.0	4243426.80	4	< 0.10	11	4	13.1	6	46	-	-
HB_S16	0.0	4243426.81	3	< 0.10	10	4	11	6	47	-	-
HB_S17	0.0	4243426.82	3	< 0.10	10	4	14.2	7	46	-	-
HB_S18	0.0	4243426.83	3	< 0.10	10	5	13.7	6	43	-	-
HB_S19	0.0	4243426.84	3	< 0.10	11	3	12.3	7	43	-	-
HB_S20	0.0	4243426.85	3	< 0.10	10	4	15	6	43	-	-

Notes:

All results in mg/kg

Highlight - indicates exceeds SCS for residential land use

Bold - indicates exceeds ANZG-GV High guideline values.

Bold - indicates exceeds adopted background criteria

1. Resource Management (National Environmental Standard for Assessing and Managing Contaminants in Soil to Protect Human Health) Regulations 2011 (NESCS).
2. NES SCS criteria presented are for Chromium (VI)
3. National Environment Protection Council (NEPC) (2013). National Environmental Protection (Assessment of Site Contamination) Measure 2013.
4. Environment Canterbury Report R07/1/2(Ecan 2007). Background concentrations of selected trace elements in Canterbury soils. Addendum 1: Additional samples and Timaru specific background levels. Regional Recent.
5. Environment Canterbury Report R07/19. Background Concentrations of Polycyclic Aromatic Hydrocarbons in Christchurch Urban Soils.
6. ANZECC & ARMCANZ (2000), Australian and New Zealand Guidelines for Fresh and Marine Water Quality. Toxicant Default Guideline Value for Sediment GV-High.

Table 3: Soil Analytical Results - TPH

			C7-C9	C10-C14	C15-C36	TPH (C7-C36)
MfE Petroleum - Residential[1]			**120**	**560**	**> 20,000**	**-**
ANZG-GV High[2]			**-**	**-**	**-**	**550**
Background[3]			**110**	**58**	**-**	**-**
Sample	**Location**	**Lab ID**				
S5	152 Edwards Road	4243426.26	< 20	< 20	49	< 80
S6		4243426.27	< 20	< 20	57	< 80
S7		4243426.28	26	**380**	18,800	**19,200**
S8		4243426.29	< 20	23	720	**750**
S10	243 Dunns Crossing	4243426.31	< 20	**590**	6,700	**7,300**

Notes:

All results in mg/kg

Highlight - indicates exceeds residential land use guideline value

Bold - indicates exceeds adopted background criteria

Bold - indicates exceeds ANZG - GV High sediment guidleine value

1. Ministry for the Enviornment 1999, Guidelines for Assessing and Managing Petroleum Hydrocarbon Contaminated Sites in New Zealand. Tier 1 Residential Use, all pathways, sand, groundwater 1-4m.

2. ANZECC & ARMCANZ (2000), Australian and New Zealand Guidelines for Fresh and Marine Water Quality. Toxicant Default Guideline Value for Sediment. GV-High.

3. WMINZ September 2023, Technical Guidelines for Disposal to Land Revision 3.1. Class 5 WAC.

Appendix E – Laboratory Reports

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Hamilton 3240 New Zealand

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Certificate of Analysis

Client:	EHS Support New Zealand Limited	**Lab No:**	4259062 SPv1
Contact:	Warren Sharp C/- EHS Support New Zealand Limited Unit 8B 1 Portage Road New Lynn Auckland 0600	**Date Received:**	06-Jul-2026
		Date Reported:	09-Jul-2026
		Quote No:	92248
		Order No:	
		Client Reference:	NZL.07950
		Submitted By:	Warren Sharp

Sample Type: Soil

Sample Name:		S45 04-Jul-2026	S46 04-Jul-2026	S47 04-Jul-2026	S48 04-Jul-2026	S49 04-Jul-2026
Lab Number:		4259062.1	4259062.2	4259062.3	4259062.4	4259062.5
Individual Tests						
Dry Matter	g/100g as rcvd	-	-	-	-	93
Heavy Metals, Screen Level						
Total Recoverable Arsenic	mg/kg dry wt	3	3	3	3	3
Total Recoverable Cadmium	mg/kg dry wt	0.15	0.12	0.12	0.14	0.12
Total Recoverable Chromium	mg/kg dry wt	11	10	10	10	10
Total Recoverable Copper	mg/kg dry wt	7	6	6	5	6
Total Recoverable Lead	mg/kg dry wt	39	72	50	23	24
Total Recoverable Nickel	mg/kg dry wt	7	6	6	6	7
Total Recoverable Zinc	mg/kg dry wt	65	80	79	136	91
Organochlorine Pesticides Screening in Soil						
Aldrin	mg/kg dry wt	-	-	-	-	< 0.011
alpha-BHC	mg/kg dry wt	-	-	-	-	< 0.011
beta-BHC	mg/kg dry wt	-	-	-	-	< 0.011
delta-BHC	mg/kg dry wt	-	-	-	-	< 0.011
gamma-BHC (Lindane)	mg/kg dry wt	-	-	-	-	< 0.011
cis-Chlordane	mg/kg dry wt	-	-	-	-	< 0.011
trans-Chlordane	mg/kg dry wt	-	-	-	-	< 0.011
2,4'-DDD	mg/kg dry wt	-	-	-	-	< 0.011
4,4'-DDD	mg/kg dry wt	-	-	-	-	< 0.011
2,4'-DDE	mg/kg dry wt	-	-	-	-	< 0.011
4,4'-DDE	mg/kg dry wt	-	-	-	-	< 0.011
2,4'-DDT	mg/kg dry wt	-	-	-	-	< 0.011
4,4'-DDT	mg/kg dry wt	-	-	-	-	< 0.011
Total DDT Isomers	mg/kg dry wt	-	-	-	-	< 0.07
Dieldrin	mg/kg dry wt	-	-	-	-	< 0.011
Endosulfan I	mg/kg dry wt	-	-	-	-	< 0.011
Endosulfan II	mg/kg dry wt	-	-	-	-	< 0.011
Endosulfan sulphate	mg/kg dry wt	-	-	-	-	< 0.011
Endrin	mg/kg dry wt	-	-	-	-	< 0.011
Endrin aldehyde	mg/kg dry wt	-	-	-	-	< 0.011
Endrin ketone	mg/kg dry wt	-	-	-	-	< 0.011
Heptachlor	mg/kg dry wt	-	-	-	-	< 0.011
Heptachlor epoxide	mg/kg dry wt	-	-	-	-	< 0.011
Hexachlorobenzene	mg/kg dry wt	-	-	-	-	< 0.011
Methoxychlor	mg/kg dry wt	-	-	-	-	< 0.011

This Laboratory is accredited by International Accreditation New Zealand (IANZ), which represents New Zealand in the International Laboratory Accreditation Cooperation (ILAC). Through the ILAC Mutual Recognition Arrangement (ILAC-MRA) this accreditation is internationally recognised.
The tests reported herein have been performed in accordance with the terms of accreditation, with the exception of tests marked * or any comments and interpretations, which are not accredited.

Sample Type: Soil						
Sample Name:		S50 04-Jul-2026	S51 04-Jul-2026	S52 04-Jul-2026	S53 04-Jul-2026	S54 04-Jul-2026
Lab Number:		4259062.6	4259062.7	4259062.8	4259062.9	4259062.10
Individual Tests						
Dry Matter	g/100g as rcvd	93	-	-	-	-
Heavy Metals, Screen Level						
Total Recoverable Arsenic	mg/kg dry wt	3	6	3	3	3
Total Recoverable Cadmium	mg/kg dry wt	< 0.10	< 0.10	0.19	< 0.10	0.17
Total Recoverable Chromium	mg/kg dry wt	10	11	9	9	9
Total Recoverable Copper	mg/kg dry wt	4	8	15	8	11
Total Recoverable Lead	mg/kg dry wt	29	29	87	17.6	18.9
Total Recoverable Nickel	mg/kg dry wt	6	6	6	6	6
Total Recoverable Zinc	mg/kg dry wt	50	67	150	79	105
Organochlorine Pesticides Screening in Soil						
Aldrin	mg/kg dry wt	< 0.011	-	-	-	-
alpha-BHC	mg/kg dry wt	< 0.011	-	-	-	-
beta-BHC	mg/kg dry wt	< 0.011	-	-	-	-
delta-BHC	mg/kg dry wt	< 0.011	-	-	-	-
gamma-BHC (Lindane)	mg/kg dry wt	< 0.011	-	-	-	-
cis-Chlordane	mg/kg dry wt	< 0.011	-	-	-	-
trans-Chlordane	mg/kg dry wt	< 0.011	-	-	-	-
2,4'-DDD	mg/kg dry wt	< 0.011	-	-	-	-
4,4'-DDD	mg/kg dry wt	< 0.011	-	-	-	-
2,4'-DDE	mg/kg dry wt	< 0.011	-	-	-	-
4,4'-DDE	mg/kg dry wt	< 0.011	-	-	-	-
2,4'-DDT	mg/kg dry wt	< 0.011	-	-	-	-
4,4'-DDT	mg/kg dry wt	< 0.011	-	-	-	-
Total DDT Isomers	mg/kg dry wt	< 0.07	-	-	-	-
Dieldrin	mg/kg dry wt	< 0.011	-	-	-	-
Endosulfan I	mg/kg dry wt	< 0.011	-	-	-	-
Endosulfan II	mg/kg dry wt	< 0.011	-	-	-	-
Endosulfan sulphate	mg/kg dry wt	< 0.011	-	-	-	-
Endrin	mg/kg dry wt	< 0.011	-	-	-	-
Endrin aldehyde	mg/kg dry wt	< 0.011	-	-	-	-
Endrin ketone	mg/kg dry wt	< 0.011	-	-	-	-
Heptachlor	mg/kg dry wt	< 0.011	-	-	-	-
Heptachlor epoxide	mg/kg dry wt	< 0.011	-	-	-	-
Hexachlorobenzene	mg/kg dry wt	< 0.011	-	-	-	-
Methoxychlor	mg/kg dry wt	< 0.011	-	-	-	-

Summary of Methods

The following table(s) gives a brief description of the methods used to conduct the analyses for this job. The detection limits given below are those attainable in a relatively simple matrix. Detection limits may be higher for individual samples should insufficient sample be available, or if the matrix requires that dilutions be performed during analysis. A detection limit range indicates the lowest and highest detection limits in the associated suite of analytes. A full listing of compounds and detection limits are available from the laboratory upon request. Unless otherwise indicated, analyses were performed at Hill Labs, 28 Duke Street, Frankton, Hamilton 3204.

Sample Type: Soil			
Test	**Method Description**	**Default Detection Limit**	**Sample No**
Environmental Solids Sample Drying*	Air dried at 35°C Used for sample preparation. May contain a residual moisture content of 2-5%. (Free water removed before analysis, non-soil objects such as sticks, leaves, grass and stones also removed).	-	1-10
Heavy Metals, Screen Level	Dried sample, < 2mm fraction. Nitric/Hydrochloric acid digestion. Complies with NES Regulations. ICP-MS screen level, interference removal by Kinetic Energy Discrimination if required. US EPA 200.2 (modified), APHA 3125 B: Online Edition.	0.10 - 4 mg/kg dry wt	1-10
Organochlorine Pesticides Screening in Soil	Sonication extraction, GC-ECD analysis. Tested on as received sample. In-house based on US EPA 8081.	0.010 - 0.06 mg/kg dry wt	5-6
Dry Matter	Dried at 103°C for 4-22hr (removes 3-5% more water than air dry) , gravimetry. (Free water removed before analysis, non-soil objects such as sticks, leaves, grass and stones also removed). US EPA 3550.	0.10 g/100g as rcvd	5-6

These samples were collected by yourselves (or your agent) and analysed as received at the laboratory.

Testing was completed between 07-Jul-2026 and 09-Jul-2026. For completion dates of individual analyses please contact the laboratory.

Samples are held at the laboratory after reporting for a length of time based on the stability of the samples and analytes being tested (considering any preservation used), and the storage space available. Once the storage period is completed, the samples are discarded unless otherwise agreed with the customer. Extended storage times may incur additional charges.

This certificate of analysis must not be reproduced, except in full, without the written consent of the signatory.



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Client Services Manager - Environmental

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Quality Assurance Report

Client:	EHS Support New Zealand Limited	**Lab No:**	4259062	QCPv1
Contact:	Warren Sharp	**Date Received:**	06-Jul-2026	
	C/- EHS Support New Zealand Limited	**Date Reported:**	09-Jul-2026	
	Unit 8B 1 Portage Road	**Quote No:**	92248	
	New Lynn	**Order No:**		
	Auckland 0600	**Client Reference:**	NZL.07950	
		Submitted By:	Warren Sharp	

Sample Specific QCs

Organochlorine Pesticides Screening in Soil

		4259062.5	Control Limits	Outside Limit (Yes/No)
2,4,5,6-tetrachloro-m-xylene	%	79	40 – 120	No

Organochlorine Pesticides Screening in Soil

		4259062.6	Control Limits	Outside Limit (Yes/No)
2,4,5,6-tetrachloro-m-xylene	%	80	40 – 120	No

Blank QCs

Digest Blank 1 PrepWS esDig - WS: High Volume Environmental Soils by ICP-MS (HVesTR): 14270.13

		Results	Control Limits	Outside Limit (Yes/No)
Total Recoverable Arsenic	mg/kg dry wt	< 2 ± 1.3	-2.0 – 2.0	No
Total Recoverable Cadmium	mg/kg dry wt	< 0.10 ± 0.065	-0.100 – 0.100	No
Total Recoverable Chromium	mg/kg dry wt	< 2 ± 1.4	-2.0 – 2.0	No
Total Recoverable Copper	mg/kg dry wt	< 2 ± 1.3	-2.0 – 2.0	No
Total Recoverable Lead	mg/kg dry wt	< 0.4 ± 0.26	-0.40 – 0.40	No
Total Recoverable Nickel	mg/kg dry wt	< 2 ± 1.4	-2.0 – 2.0	No
Total Recoverable Zinc	mg/kg dry wt	< 4 ± 2.7	-4.0 – 4.0	No

Digest Blank 2 PrepWS esDig - WS: High Volume Environmental Soils by ICP-MS (HVesTR): 14270.32

		Results	Control Limits	Outside Limit (Yes/No)
Total Recoverable Arsenic	mg/kg dry wt	< 2 ± 1.3	-2.0 – 2.0	No
Total Recoverable Cadmium	mg/kg dry wt	< 0.10 ± 0.065	-0.100 – 0.100	No
Total Recoverable Chromium	mg/kg dry wt	< 2 ± 1.4	-2.0 – 2.0	No
Total Recoverable Copper	mg/kg dry wt	< 2 ± 1.3	-2.0 – 2.0	No
Total Recoverable Lead	mg/kg dry wt	< 0.4 ± 0.26	-0.40 – 0.40	No
Total Recoverable Nickel	mg/kg dry wt	< 2 ± 1.4	-2.0 – 2.0	No
Total Recoverable Zinc	mg/kg dry wt	< 4 ± 2.7	-4.0 – 4.0	No

Digest Blank 1 PrepWS esDig - WS: High Volume Environmental Soils by ICP-MS (HVesTR): 14271.13

		Results	Control Limits	Outside Limit (Yes/No)
Total Recoverable Arsenic	mg/kg dry wt	< 2 ± 1.3	-2.0 – 2.0	No
Total Recoverable Cadmium	mg/kg dry wt	< 0.10 ± 0.065	-0.100 – 0.100	No
Total Recoverable Chromium	mg/kg dry wt	< 2 ± 1.4	-2.0 – 2.0	No
Total Recoverable Copper	mg/kg dry wt	< 2 ± 1.3	-2.0 – 2.0	No
Total Recoverable Lead	mg/kg dry wt	< 0.4 ± 0.26	-0.40 – 0.40	No
Total Recoverable Nickel	mg/kg dry wt	< 2 ± 1.4	-2.0 – 2.0	No
Total Recoverable Zinc	mg/kg dry wt	< 4 ± 2.7	-4.0 – 4.0	No

Digest Blank 2 PrepWS esDig - WS: High Volume Environmental Soils by ICP-MS (HVesTR): 14271.32				
		Results	Control Limits	Outside Limit (Yes/No)
Total Recoverable Arsenic	mg/kg dry wt	< 2 ± 1.3	-2.0 – 2.0	No
Total Recoverable Cadmium	mg/kg dry wt	< 0.10 ± 0.065	-0.100 – 0.100	No
Total Recoverable Chromium	mg/kg dry wt	< 2 ± 1.4	-2.0 – 2.0	No
Total Recoverable Copper	mg/kg dry wt	< 2 ± 1.3	-2.0 – 2.0	No
Total Recoverable Lead	mg/kg dry wt	< 0.4 ± 0.26	-0.40 – 0.40	No
Total Recoverable Nickel	mg/kg dry wt	< 2 ± 1.4	-2.0 – 2.0	No
Total Recoverable Zinc	mg/kg dry wt	< 4 ± 2.7	-4.0 – 4.0	No

Digest Blank 1 PrepWS esDig - WS: High Volume Environmental Soils by ICP-MS (HVesTR): 14273.13				
		Results	Control Limits	Outside Limit (Yes/No)
Total Recoverable Arsenic	mg/kg dry wt	< 2 ± 1.3	-2.0 – 2.0	No
Total Recoverable Cadmium	mg/kg dry wt	< 0.10 ± 0.065	-0.100 – 0.100	No
Total Recoverable Chromium	mg/kg dry wt	< 2 ± 1.4	-2.0 – 2.0	No
Total Recoverable Copper	mg/kg dry wt	< 2 ± 1.3	-2.0 – 2.0	No
Total Recoverable Lead	mg/kg dry wt	< 0.4 ± 0.26	-0.40 – 0.40	No
Total Recoverable Nickel	mg/kg dry wt	< 2 ± 1.4	-2.0 – 2.0	No
Total Recoverable Zinc	mg/kg dry wt	< 4 ± 2.7	-4.0 – 4.0	No

Digest Blank 2 PrepWS esDig - WS: High Volume Environmental Soils by ICP-MS (HVesTR): 14273.22				
		Results	Control Limits	Outside Limit (Yes/No)
Total Recoverable Arsenic	mg/kg dry wt	< 2 ± 1.3	-2.0 – 2.0	No
Total Recoverable Cadmium	mg/kg dry wt	< 0.10 ± 0.065	-0.100 – 0.100	No
Total Recoverable Chromium	mg/kg dry wt	< 2 ± 1.4	-2.0 – 2.0	No
Total Recoverable Copper	mg/kg dry wt	< 2 ± 1.3	-2.0 – 2.0	No
Total Recoverable Lead	mg/kg dry wt	< 0.4 ± 0.26	-0.40 – 0.40	No
Total Recoverable Nickel	mg/kg dry wt	< 2 ± 1.4	-2.0 – 2.0	No
Total Recoverable Zinc	mg/kg dry wt	< 4 ± 2.7	-4.0 – 4.0	No

Blank 1 PrepWS xsSHOC - WS: Organochlorine Pesticides Soil Analysis: 9838.1				
		Results	Control Limits	Outside Limit (Yes/No)
Aldrin	mg/kg dry wt	< 0.010 ± 0.0030	0.0 – 0.0100	No
alpha-BHC	mg/kg dry wt	< 0.010 ± 0.0030	0.0 – 0.0100	No
beta-BHC	mg/kg dry wt	< 0.010 ± 0.0028	0.0 – 0.0100	No
delta-BHC	mg/kg dry wt	< 0.010 ± 0.0029	0.0 – 0.0100	No
gamma-BHC (Lindane)	mg/kg dry wt	< 0.010 ± 0.0031	0.0 – 0.0100	No
cis-Chlordane	mg/kg dry wt	< 0.010 ± 0.0030	0.0 – 0.0100	No
trans-Chlordane	mg/kg dry wt	< 0.010 ± 0.0030	0.0 – 0.0100	No
2,4'-DDD	mg/kg dry wt	< 0.010 ± 0.0029	0.0 – 0.0100	No
4,4'-DDD	mg/kg dry wt	< 0.010 ± 0.0024	0.0 – 0.0100	No
2,4'-DDE	mg/kg dry wt	< 0.010 ± 0.0030	0.0 – 0.0100	No
4,4'-DDE	mg/kg dry wt	< 0.010 ± 0.0023	0.0 – 0.0100	No
2,4'-DDT	mg/kg dry wt	< 0.010 ± 0.0021	0.0 – 0.0100	No
4,4'-DDT	mg/kg dry wt	< 0.010 ± 0.0017	0.0 – 0.0100	No
Dieldrin	mg/kg dry wt	< 0.010 ± 0.0026	0.0 – 0.0100	No
Endosulfan I	mg/kg dry wt	< 0.010 ± 0.0029	0.0 – 0.0100	No
Endosulfan II	mg/kg dry wt	< 0.010 ± 0.0026	0.0 – 0.0100	No
Endosulfan sulphate	mg/kg dry wt	< 0.010 ± 0.0013	0.0 – 0.0100	No
Endrin	mg/kg dry wt	< 0.010 ± 0.00048	0.0 – 0.0100	No

Blank 1 PrepWS xsSHOC - WS: Organochlorine Pesticides Soil Analysis: 9838.1				
		Results	**Control Limits**	**Outside Limit (Yes/No)**
Endrin aldehyde	mg/kg dry wt	< 0.010 ± 0.0019	0.0 – 0.0100	No
Endrin ketone	mg/kg dry wt	< 0.010 ± 0.0024	0.0 – 0.0100	No
Heptachlor	mg/kg dry wt	< 0.010 ± 0.0029	0.0 – 0.0100	No
Heptachlor epoxide	mg/kg dry wt	< 0.010 ± 0.0031	0.0 – 0.0100	No
Hexachlorobenzene	mg/kg dry wt	< 0.010 ± 0.0029	0.0 – 0.0100	No
Methoxychlor	mg/kg dry wt	< 0.010 ± 0.00048	0.0 – 0.0100	No

QC Spike QCs

LCS OC/PAH PrepWS xsSHOC - WS: Organochlorine Pesticides Soil Analysis: 9838.2				
		Results	**Control Limits**	**Outside Limit (Yes/No)**
Aldrin	%	81 ± 25	80 – 121	No
alpha-BHC	%	79 ± 24	76 – 121	No
beta-BHC	%	77 ± 30	75 – 113	No
delta-BHC	%	80 ± 28	74 – 114	No
gamma-BHC (Lindane)	%	76 ± 22	78 – 116	**Yes** [#1]
cis-Chlordane	%	82 ± 27	78 – 118	No
trans-Chlordane	%	72 ± 22	70 – 121	No
2,4'-DDD	%	80 ± 29	75 – 114	No
4,4'-DDD	%	85 ± 41	75 – 120	No
2,4'-DDE	%	93 ± 30	73 – 118	No
4,4'-DDE	%	81 ± 41	73 – 116	No
2,4'-DDT	%	98 ± 51	70 – 124	No
4,4'-DDT	%	93 ± 54	65 – 120	No
Dieldrin	%	80 ± 36	75 – 124	No
Endosulfan I	%	80 ± 29	81 – 120	**Yes** [#1]
Endosulfan II	%	77 ± 34	72 – 117	No
Endosulfan sulphate	%	82 ± 51	76 – 120	No
Endrin	%	80 ± 53	78 – 124	No
Endrin aldehyde	%	95 ± 54	84 – 127	No
Endrin ketone	%	84 ± 41	69 – 115	No
Heptachlor	%	90 ± 31	74 – 120	No
Heptachlor epoxide	%	80 ± 23	79 – 119	No
Hexachlorobenzene	%	97 ± 33	77 – 116	No
Methoxychlor	%	99 ± 66	70 – 125	No

Sample Spike QCs

Spike OC/PAH PrepWS xsSHOC - WS: Organochlorine Pesticides Soil Analysis: 9838.8				
		Results	**Control Limits**	**Outside Limit (Yes/No)**
Aldrin	%	95 ± 29	83 – 122	No
alpha-BHC	%	94 ± 29	80 – 122	No
beta-BHC	%	89 ± 34	79 – 114	No
delta-BHC	%	94 ± 32	76 – 118	No
gamma-BHC (Lindane)	%	100 ± 29	80 – 117	No
cis-Chlordane	%	93 ± 30	80 – 120	No
trans-Chlordane	%	85 ± 26	70 – 121	No
2,4'-DDD	%	101 ± 37	74 – 120	No
4,4'-DDD	%	109 ± 53	75 – 125	No

Spike OC/PAH PrepWS xsSHOC - WS: Organochlorine Pesticides Soil Analysis: 9838.8				
		Results	Control Limits	Outside Limit (Yes/No)
2,4'-DDE	%	103 ± 33	74 – 119	No
4,4'-DDE	%	83 ± 42	76 – 120	No
2,4'-DDT	%	104 ± 55	72 – 126	No
4,4'-DDT	%	90 ± 53	63 – 123	No
Dieldrin	%	94 ± 42	75 – 126	No
Endosulfan I	%	94 ± 34	83 – 120	No
Endosulfan II	%	95 ± 42	72 – 119	No
Endosulfan sulphate	%	99 ± 62	78 – 124	No
Endrin	%	95 ± 63	82 – 126	No
Endrin aldehyde	%	111 ± 63	84 – 131	No
Endrin ketone	%	106 ± 51	70 – 119	No
Heptachlor	%	92 ± 32	79 – 123	No
Heptachlor epoxide	%	103 ± 29	81 – 119	No
Hexachlorobenzene	%	118 ± 41	77 – 119	No
Methoxychlor	%	107 ± 71	71 – 133	No

Reference Material QCs

SETOC-704 QC - WS: High Volume Environmental Soils by ICP-MS (HVesTR): 14270.14				
		Results	Control Limits	Outside Limit (Yes/No)
Total Recoverable Arsenic	mg/kg dry wt	11.3 ± 2.2	8.9 – 13.5	No
Total Recoverable Cadmium	mg/kg dry wt	0.83 ± 0.16	0.67 – 0.99	No
Total Recoverable Chromium	mg/kg dry wt	25.6 ± 3.6	21 – 30	No
Total Recoverable Copper	mg/kg dry wt	13.7 ± 2.5	10.5 – 16.2	No
Total Recoverable Lead	mg/kg dry wt	33.4 ± 6.3	26 – 40	No
Total Recoverable Nickel	mg/kg dry wt	14.2 ± 2.3	11.6 – 16.7	No
Total Recoverable Zinc	mg/kg dry wt	201 ± 30	162 – 230	No

SETOC-704 QC - WS: High Volume Environmental Soils by ICP-MS (HVesTR): 14270.50				
		Results	Control Limits	Outside Limit (Yes/No)
Total Recoverable Arsenic	mg/kg dry wt	11.0 ± 2.1	8.9 – 13.5	No
Total Recoverable Cadmium	mg/kg dry wt	0.83 ± 0.16	0.67 – 0.99	No
Total Recoverable Chromium	mg/kg dry wt	24.8 ± 3.5	21 – 30	No
Total Recoverable Copper	mg/kg dry wt	13.1 ± 2.5	10.5 – 16.2	No
Total Recoverable Lead	mg/kg dry wt	30.2 ± 5.7	26 – 40	No
Total Recoverable Nickel	mg/kg dry wt	13.6 ± 2.2	11.6 – 16.7	No
Total Recoverable Zinc	mg/kg dry wt	193 ± 29	162 – 230	No

SETOC-704 QC - WS: High Volume Environmental Soils by ICP-MS (HVesTR): 14271.14				
		Results	Control Limits	Outside Limit (Yes/No)
Total Recoverable Arsenic	mg/kg dry wt	11.2 ± 2.2	8.9 – 13.5	No
Total Recoverable Cadmium	mg/kg dry wt	0.84 ± 0.16	0.67 – 0.99	No
Total Recoverable Chromium	mg/kg dry wt	25.9 ± 3.7	21 – 30	No
Total Recoverable Copper	mg/kg dry wt	13.5 ± 2.5	10.5 – 16.2	No
Total Recoverable Lead	mg/kg dry wt	32.8 ± 6.2	26 – 40	No
Total Recoverable Nickel	mg/kg dry wt	14.0 ± 2.3	11.6 – 16.7	No
Total Recoverable Zinc	mg/kg dry wt	198 ± 30	162 – 230	No

SETOC-704 QC - WS: High Volume Environmental Soils by ICP-MS (HVesTR): 14271.52				
		Results	**Control Limits**	**Outside Limit (Yes/No)**
Total Recoverable Arsenic	mg/kg dry wt	11.3 ± 2.2	8.9 – 13.5	No
Total Recoverable Cadmium	mg/kg dry wt	0.84 ± 0.16	0.67 – 0.99	No
Total Recoverable Chromium	mg/kg dry wt	26.1 ± 3.7	21 – 30	No
Total Recoverable Copper	mg/kg dry wt	13.9 ± 2.6	10.5 – 16.2	No
Total Recoverable Lead	mg/kg dry wt	33.9 ± 6.4	26 – 40	No
Total Recoverable Nickel	mg/kg dry wt	14.5 ± 2.3	11.6 – 16.7	No
Total Recoverable Zinc	mg/kg dry wt	201 ± 30	162 – 230	No

SETOC-704 QC - WS: High Volume Environmental Soils by ICP-MS (HVesTR): 14273.14				
		Results	**Control Limits**	**Outside Limit (Yes/No)**
Total Recoverable Arsenic	mg/kg dry wt	10.7 ± 2.1	8.9 – 13.5	No
Total Recoverable Cadmium	mg/kg dry wt	0.83 ± 0.16	0.67 – 0.99	No
Total Recoverable Chromium	mg/kg dry wt	24.8 ± 3.5	21 – 30	No
Total Recoverable Copper	mg/kg dry wt	13.6 ± 2.5	10.5 – 16.2	No
Total Recoverable Lead	mg/kg dry wt	32.1 ± 6.0	26 – 40	No
Total Recoverable Nickel	mg/kg dry wt	14.2 ± 2.3	11.6 – 16.7	No
Total Recoverable Zinc	mg/kg dry wt	196 ± 29	162 – 230	No

SETOC-704 QC - WS: High Volume Environmental Soils by ICP-MS (HVesTR): 14273.40				
		Results	**Control Limits**	**Outside Limit (Yes/No)**
Total Recoverable Arsenic	mg/kg dry wt	11.5 ± 2.2	8.9 – 13.5	No
Total Recoverable Cadmium	mg/kg dry wt	0.86 ± 0.17	0.67 – 0.99	No
Total Recoverable Chromium	mg/kg dry wt	25.7 ± 3.6	21 – 30	No
Total Recoverable Copper	mg/kg dry wt	13.9 ± 2.6	10.5 – 16.2	No
Total Recoverable Lead	mg/kg dry wt	34.6 ± 6.5	26 – 40	No
Total Recoverable Nickel	mg/kg dry wt	14.9 ± 2.4	11.6 – 16.7	No
Total Recoverable Zinc	mg/kg dry wt	204 ± 30	162 – 230	No

Analyst's Comments

[#1] The Laboratory Control Spike (LCS) recovery for this analyte was below the acceptable recovery range of the method. The corresponding sample result was accepted because the sample spike recovery was within the expected range.

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Certificate of Analysis

Client:	EHS Support New Zealand Limited	**Lab No:**	4243426	SPv2
Contact:	Warren Sharp C/- EHS Support New Zealand Limited Unit 8B 1 Portage Road New Lynn Auckland 0600	**Date Received:** **Date Reported:** **Quote No:** **Order No:** **Client Reference:** **Submitted By:**	16-Jun-2026 30-Jun-2026 92248 NZL. 07950 Warren Sharp	

Sample Type: Soil

		Sample Name:	TP1_0 12-Jun-2026	TP1_0.3 12-Jun-2026	TP2_+0.5 12-Jun-2026	TP2_0 12-Jun-2026	TP3_0 12-Jun-2026
		Lab Number:	4243426.1	4243426.2	4243426.3	4243426.4	4243426.6
Heavy Metals, Screen Level							
Total Recoverable Arsenic	mg/kg dry wt		3	3	3	4	3
Total Recoverable Cadmium	mg/kg dry wt		0.15	< 0.10	< 0.10	< 0.10	< 0.10
Total Recoverable Chromium	mg/kg dry wt		11	13	12	13	12
Total Recoverable Copper	mg/kg dry wt		5	3	3	4	3
Total Recoverable Lead	mg/kg dry wt		13.6	13.1	12.5	13.0	13.2
Total Recoverable Nickel	mg/kg dry wt		7	8	7	8	7
Total Recoverable Zinc	mg/kg dry wt		63	49	46	57	48

		Sample Name:	TP4_0 12-Jun-2026	TP4_0.3 12-Jun-2026	TP5_0.5 12-Jun-2026	TP5_1.0 12-Jun-2026	TP6_0 12-Jun-2026
		Lab Number:	4243426.8	4243426.9	4243426.10	4243426.11	4243426.12
Individual Tests							
Dry Matter	g/100g as rcvd		-	-	-	91	-
Heavy Metals, Screen Level							
Total Recoverable Arsenic	mg/kg dry wt		6	5	39	16	19
Total Recoverable Cadmium	mg/kg dry wt		0.75	0.10	0.86	0.13	0.3
Total Recoverable Chromium	mg/kg dry wt		13	13	37	18	22
Total Recoverable Copper	mg/kg dry wt		6	4	37	12	22
Total Recoverable Lead	mg/kg dry wt		17.6	14.4	35	19.4	32
Total Recoverable Nickel	mg/kg dry wt		7	8	9	8	6
Total Recoverable Zinc	mg/kg dry wt		1,120	470	1,040	155	210
Polycyclic Aromatic Hydrocarbons Screening in Soil (19 analytes)*							
Total of Reported PAHs (19) in Soil	mg/kg dry wt		-	-	-	< 0.3	-
Acenaphthylene	mg/kg dry wt		-	-	-	< 0.011	-
Acenaphthene	mg/kg dry wt		-	-	-	< 0.011	-
Anthracene	mg/kg dry wt		-	-	-	< 0.011	-
Benzo[a]anthracene	mg/kg dry wt		-	-	-	< 0.011	-
Benzo[a]pyrene (BAP)	mg/kg dry wt		-	-	-	< 0.011	-
Benzo[a]pyrene Potency Equivalency Factor (PEF) NES*	mg/kg dry wt		-	-	-	< 0.026	-
Benzo[a]pyrene Toxic Equivalence (TEF)*	mg/kg dry wt		-	-	-	< 0.026	-
Benzo[b]fluoranthene + Benzo[j]fluoranthene	mg/kg dry wt		-	-	-	< 0.011	-
Benzo[g,h,i]perylene	mg/kg dry wt		-	-	-	< 0.011	-
Benzo[k]fluoranthene	mg/kg dry wt		-	-	-	< 0.011	-
Chrysene	mg/kg dry wt		-	-	-	< 0.011	-
Dibenzo[a,h]anthracene	mg/kg dry wt		-	-	-	< 0.011	-
Fluoranthene	mg/kg dry wt		-	-	-	< 0.011	-

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The tests reported herein have been performed in accordance with the terms of accreditation, with the exception of tests marked * or any comments and interpretations, which are not accredited.

Sample Type: Soil						
Sample Name:		TP4_0 12-Jun-2026	TP4_0.3 12-Jun-2026	TP5_0.5 12-Jun-2026	TP5_1.0 12-Jun-2026	TP6_0 12-Jun-2026
Lab Number:		4243426.8	4243426.9	4243426.10	4243426.11	4243426.12
Polycyclic Aromatic Hydrocarbons Screening in Soil (19 analytes)*						
Fluorene	mg/kg dry wt	-	-	-	< 0.011	-
Indeno(1,2,3-c,d)pyrene	mg/kg dry wt	-	-	-	< 0.011	-
Naphthalene	mg/kg dry wt	-	-	-	< 0.06	-
Phenanthrene	mg/kg dry wt	-	-	-	< 0.011	-
Pyrene	mg/kg dry wt	-	-	-	< 0.011	-

Sample Name:		TP6_0.5 12-Jun-2026	TP7_0 12-Jun-2026	TP7_0.5 12-Jun-2026	TP7_1.0 12-Jun-2026	TP9_0 12-Jun-2026
Lab Number:		4243426.13	4243426.14	4243426.15	4243426.16	4243426.17
Individual Tests						
Dry Matter	g/100g as rcvd	-	-	83	-	-
Heavy Metals, Screen Level						
Total Recoverable Arsenic	mg/kg dry wt	13	6	7	7	2
Total Recoverable Cadmium	mg/kg dry wt	0.30	0.13	0.20	0.16	< 0.10
Total Recoverable Chromium	mg/kg dry wt	16	13	15	14	10
Total Recoverable Copper	mg/kg dry wt	17	19	33	27	3
Total Recoverable Lead	mg/kg dry wt	20	13.7	14.7	13.6	10.7
Total Recoverable Nickel	mg/kg dry wt	11	8	9	8	7
Total Recoverable Zinc	mg/kg dry wt	260	192	350	290	39
Polycyclic Aromatic Hydrocarbons Screening in Soil (19 analytes)*						
Total of Reported PAHs (19) in Soil	mg/kg dry wt	-	-	< 0.3	-	-
Acenaphthylene	mg/kg dry wt	-	-	< 0.012	-	-
Acenaphthene	mg/kg dry wt	-	-	< 0.012	-	-
Anthracene	mg/kg dry wt	-	-	< 0.012	-	-
Benzo[a]anthracene	mg/kg dry wt	-	-	< 0.012	-	-
Benzo[a]pyrene (BAP)	mg/kg dry wt	-	-	< 0.012	-	-
Benzo[a]pyrene Potency Equivalency Factor (PEF) NES*	mg/kg dry wt	-	-	< 0.029	-	-
Benzo[a]pyrene Toxic Equivalence (TEF)*	mg/kg dry wt	-	-	< 0.028	-	-
Benzo[b]fluoranthene + Benzo[j] fluoranthene	mg/kg dry wt	-	-	< 0.012	-	-
Benzo[g,h,i]perylene	mg/kg dry wt	-	-	< 0.012	-	-
Benzo[k]fluoranthene	mg/kg dry wt	-	-	< 0.012	-	-
Chrysene	mg/kg dry wt	-	-	< 0.012	-	-
Dibenzo[a,h]anthracene	mg/kg dry wt	-	-	< 0.012	-	-
Fluoranthene	mg/kg dry wt	-	-	0.014	-	-
Fluorene	mg/kg dry wt	-	-	< 0.012	-	-
Indeno(1,2,3-c,d)pyrene	mg/kg dry wt	-	-	< 0.012	-	-
Naphthalene	mg/kg dry wt	-	-	< 0.06	-	-
Phenanthrene	mg/kg dry wt	-	-	< 0.012	-	-
Pyrene	mg/kg dry wt	-	-	0.015	-	-

Sample Name:		TP9_0.5 12-Jun-2026	TP10_0.5 12-Jun-2026	TP10_1.0 12-Jun-2026	TP10_2.0 12-Jun-2026	S1 12-Jun-2026
Lab Number:		4243426.18	4243426.19	4243426.20	4243426.21	4243426.22
Individual Tests						
Dry Matter	g/100g as rcvd	-	-	91	94	-
Heavy Metals, Screen Level						
Total Recoverable Arsenic	mg/kg dry wt	2	82	48	33	3
Total Recoverable Cadmium	mg/kg dry wt	< 0.10	3.0	1.46	5.0	0.10
Total Recoverable Chromium	mg/kg dry wt	10	50	37	35	11
Total Recoverable Copper	mg/kg dry wt	3	260	740	1,270	6
Total Recoverable Lead	mg/kg dry wt	10.6	141	132	47	14.5
Total Recoverable Nickel	mg/kg dry wt	6	11	13	21	7
Total Recoverable Zinc	mg/kg dry wt	39	850	600	540	139

Sample Type: Soil						
Sample Name:		TP9_0.5 12-Jun-2026	TP10_0.5 12-Jun-2026	TP10_1.0 12-Jun-2026	TP10_2.0 12-Jun-2026	S1 12-Jun-2026
Lab Number:		4243426.18	4243426.19	4243426.20	4243426.21	4243426.22
Polycyclic Aromatic Hydrocarbons Screening in Soil (19 analytes)*						
Total of Reported PAHs (19) in Soil	mg/kg dry wt	-	-	5.3	< 0.3	-
Acenaphthylene	mg/kg dry wt	-	-	0.158	< 0.011	-
Acenaphthene	mg/kg dry wt	-	-	0.013	< 0.011	-
Anthracene	mg/kg dry wt	-	-	0.128	< 0.011	-
Benzo[a]anthracene	mg/kg dry wt	-	-	0.32	< 0.011	-
Benzo[a]pyrene (BAP)	mg/kg dry wt	-	-	0.54	< 0.011	-
Benzo[a]pyrene Potency Equivalency Factor (PEF) NES*	mg/kg dry wt	-	-	0.85	< 0.026	-
Benzo[a]pyrene Toxic Equivalence (TEF)*	mg/kg dry wt	-	-	0.84	< 0.026	-
Benzo[b]fluoranthene + Benzo[j] fluoranthene	mg/kg dry wt	-	-	0.70	< 0.011	-
Benzo[g,h,i]perylene	mg/kg dry wt	-	-	0.62	< 0.011	-
Benzo[k]fluoranthene	mg/kg dry wt	-	-	0.26	< 0.011	-
Chrysene	mg/kg dry wt	-	-	0.30	< 0.011	-
Dibenzo[a,h]anthracene	mg/kg dry wt	-	-	0.114	< 0.011	-
Fluoranthene	mg/kg dry wt	-	-	0.59	< 0.011	-
Fluorene	mg/kg dry wt	-	-	0.034	< 0.011	-
Indeno(1,2,3-c,d)pyrene	mg/kg dry wt	-	-	0.59	< 0.011	-
Naphthalene	mg/kg dry wt	-	-	< 0.06	< 0.06	-
Phenanthrene	mg/kg dry wt	-	-	0.33	< 0.011	-
Pyrene	mg/kg dry wt	-	-	0.63	< 0.011	-

Sample Name:		S2 12-Jun-2026	S3 12-Jun-2026	S4 12-Jun-2026	S5 12-Jun-2026	S6 12-Jun-2026
Lab Number:		4243426.23	4243426.24	4243426.25	4243426.26	4243426.27
Individual Tests						
Dry Matter	g/100g as rcvd	-	-	-	86	84
Heavy Metals, Screen Level						
Total Recoverable Arsenic	mg/kg dry wt	5	70	64	4	4
Total Recoverable Cadmium	mg/kg dry wt	0.13	6.9	1.82	0.11	< 0.10
Total Recoverable Chromium	mg/kg dry wt	13	110	41	13	12
Total Recoverable Copper	mg/kg dry wt	5	370	2,200	8	6
Total Recoverable Lead	mg/kg dry wt	14.1	101	114	14.4	13.4
Total Recoverable Nickel	mg/kg dry wt	8	19	13	8	7
Total Recoverable Zinc	mg/kg dry wt	55	1,230	1,040	100	66
Total Petroleum Hydrocarbons in Soil						
C7 - C9	mg/kg dry wt	-	-	-	< 20	< 20
C10 - C14	mg/kg dry wt	-	-	-	< 20	< 20
C15 - C36	mg/kg dry wt	-	-	-	49	57
Total hydrocarbons (C7 - C36)	mg/kg dry wt	-	-	-	< 80	< 80

Sample Name:		S7 15-Jun-2026	S8 15-Jun-2026	S9 15-Jun-2026	S10 15-Jun-2026	S11 15-Jun-2026
Lab Number:		4243426.28	4243426.29	4243426.30	4243426.31	4243426.32
Individual Tests						
Dry Matter	g/100g as rcvd	97	97	-	86	-
Heavy Metals, Screen Level						
Total Recoverable Arsenic	mg/kg dry wt	5	6	9	16	5
Total Recoverable Cadmium	mg/kg dry wt	4.1	0.97	0.47	0.19	< 0.10
Total Recoverable Chromium	mg/kg dry wt	51	76	18	12	18
Total Recoverable Copper	mg/kg dry wt	80	138	10	7	7
Total Recoverable Lead	mg/kg dry wt	167	150 #1	15.9	21	25
Total Recoverable Nickel	mg/kg dry wt	18	55	10	6	7
Total Recoverable Zinc	mg/kg dry wt	580	440	1,230	59	200
Total Petroleum Hydrocarbons in Soil						
C7 - C9	mg/kg dry wt	26	< 20	-	< 20	-
C10 - C14	mg/kg dry wt	380	23	-	590	-

Sample Type: Soil						
Sample Name:		S7 15-Jun-2026	S8 15-Jun-2026	S9 15-Jun-2026	S10 15-Jun-2026	S11 15-Jun-2026
Lab Number:		4243426.28	4243426.29	4243426.30	4243426.31	4243426.32
Total Petroleum Hydrocarbons in Soil						
C15 - C36	mg/kg dry wt	18,800	720	-	6,700	-
Total hydrocarbons (C7 - C36)	mg/kg dry wt	19,200	750	-	7,300	-

Sample Name:		S13 15-Jun-2026	S15 15-Jun-2026	S17 15-Jun-2026	S19 15-Jun-2026	S21 15-Jun-2026
Lab Number:		4243426.34	4243426.36	4243426.38	4243426.40	4243426.42
Heavy Metals, Screen Level						
Total Recoverable Arsenic	mg/kg dry wt	4	5	4	10	4
Total Recoverable Cadmium	mg/kg dry wt	< 0.10	0.12	< 0.10	< 0.10	< 0.10
Total Recoverable Chromium	mg/kg dry wt	13	17	11	16	12
Total Recoverable Copper	mg/kg dry wt	6	10	4	10	7
Total Recoverable Lead	mg/kg dry wt	33	20	12.5	39	31
Total Recoverable Nickel	mg/kg dry wt	7	12	7	8	7
Total Recoverable Zinc	mg/kg dry wt	350	149	56	138	197

Sample Name:		S23 15-Jun-2026	S25 15-Jun-2026	S27 15-Jun-2026	S29 15-Jun-2026	S32 15-Jun-2026
Lab Number:		4243426.44	4243426.46	4243426.48	4243426.50	4243426.53
Heavy Metals, Screen Level						
Total Recoverable Arsenic	mg/kg dry wt	5	5	8	4	6
Total Recoverable Cadmium	mg/kg dry wt	< 0.10	< 0.10	< 0.10	< 0.10	0.14
Total Recoverable Chromium	mg/kg dry wt	14	15	18	13	19
Total Recoverable Copper	mg/kg dry wt	7	9	9	6	20
Total Recoverable Lead	mg/kg dry wt	26	28	29	26	89
Total Recoverable Nickel	mg/kg dry wt	9	8	10	6	9
Total Recoverable Zinc	mg/kg dry wt	124	112	103	95	1,300

Sample Name:		S34 15-Jun-2026	S36 15-Jun-2026	S38 15-Jun-2026	S39 15-Jun-2026	S41 15-Jun-2026
Lab Number:		4243426.55	4243426.57	4243426.59	4243426.60	4243426.62
Heavy Metals, Screen Level						
Total Recoverable Arsenic	mg/kg dry wt	5	6	5	2	3
Total Recoverable Cadmium	mg/kg dry wt	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10
Total Recoverable Chromium	mg/kg dry wt	19	15	14	8	11
Total Recoverable Copper	mg/kg dry wt	12	9	6	6	3
Total Recoverable Lead	mg/kg dry wt	42	28	25	10.5	12.4
Total Recoverable Nickel	mg/kg dry wt	9	10	9	5	7
Total Recoverable Zinc	mg/kg dry wt	67	99	69	70	43

Sample Name:		S43 15-Jun-2026	S44 15-Jun-2026	WH-HB_S01 12-Jun-2026	WH-HB_S02 12-Jun-2026	WH-HB_S03 12-Jun-2026
Lab Number:		4243426.64	4243426.65	4243426.66	4243426.67	4243426.68
Heavy Metals, Screen Level						
Total Recoverable Arsenic	mg/kg dry wt	5	8	3	3	3
Total Recoverable Cadmium	mg/kg dry wt	0.14	0.21	< 0.10	< 0.10	< 0.10
Total Recoverable Chromium	mg/kg dry wt	13	21	10	11	11
Total Recoverable Copper	mg/kg dry wt	8	30	4	3	4
Total Recoverable Lead	mg/kg dry wt	32	70	15.1	13.1	11.4
Total Recoverable Nickel	mg/kg dry wt	7	12	6	7	6
Total Recoverable Zinc	mg/kg dry wt	310	240	42	43	45

Sample Name:		WH-HB_S04 12-Jun-2026	WH-HB_S05 12-Jun-2026	WH-HB_S06 12-Jun-2026	WH-HB_S07 12-Jun-2026	WH-HB_S08 12-Jun-2026
Lab Number:		4243426.69	4243426.70	4243426.71	4243426.72	4243426.73
Heavy Metals, Screen Level						
Total Recoverable Arsenic	mg/kg dry wt	3	3	3	3	3
Total Recoverable Cadmium	mg/kg dry wt	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10
Total Recoverable Chromium	mg/kg dry wt	12	11	11	10	12
Total Recoverable Copper	mg/kg dry wt	4	4	4	4	4
Total Recoverable Lead	mg/kg dry wt	12.8	15.8	14.0	12.3	13.0
Total Recoverable Nickel	mg/kg dry wt	7	6	6	6	7
Total Recoverable Zinc	mg/kg dry wt	48	45	44	42	49

Sample Type: Soil						
Sample Name:		WH-HB_S09 12-Jun-2026	WH-HB_S10 12-Jun-2026	WH-HB_S11 12-Jun-2026	WH-HB_S12 12-Jun-2026	WH-HB_S13 12-Jun-2026
Lab Number:		4243426.74	4243426.75	4243426.76	4243426.77	4243426.78
Heavy Metals, Screen Level						
Total Recoverable Arsenic	mg/kg dry wt	3	3	3	3	5
Total Recoverable Cadmium	mg/kg dry wt	< 0.10	< 0.10	< 0.10	< 0.10	0.18
Total Recoverable Chromium	mg/kg dry wt	10	11	13	10	12
Total Recoverable Copper	mg/kg dry wt	5	4	4	4	10
Total Recoverable Lead	mg/kg dry wt	17.3	13.8	13.4	18.9	220
Total Recoverable Nickel	mg/kg dry wt	7	7	7	6	8
Total Recoverable Zinc	mg/kg dry wt	46	46	45	45	131

Sample Name:		WH-HB_S14 12-Jun-2026	WH-HB_S15 12-Jun-2026	WH-HB_S16 12-Jun-2026	WH-HB_S17 12-Jun-2026	WH-HB_S18 12-Jun-2026
Lab Number:		4243426.79	4243426.80	4243426.81	4243426.82	4243426.83
Heavy Metals, Screen Level						
Total Recoverable Arsenic	mg/kg dry wt	3	4	3	3	3
Total Recoverable Cadmium	mg/kg dry wt	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10
Total Recoverable Chromium	mg/kg dry wt	12	11	10	10	10
Total Recoverable Copper	mg/kg dry wt	6	4	4	4	5
Total Recoverable Lead	mg/kg dry wt	14.7	13.1	11.0	14.2	13.7
Total Recoverable Nickel	mg/kg dry wt	7	6	6	7	6
Total Recoverable Zinc	mg/kg dry wt	53	46	47	46	43

Sample Name:		WH-HB_S19 12-Jun-2026	WH-HB_S20 12-Jun-2026	Composite of S11, S13, S15 & S17	Composite of S19, S20, S21 & S22	Composite of S23, S24, S25 & S26
Lab Number:		4243426.84	4243426.85	4243426.86	4243426.87	4243426.88
Individual Tests						
Dry Matter	g/100g as rcvd	-	-	87	86	87
Heavy Metals, Screen Level						
Total Recoverable Arsenic	mg/kg dry wt	3	3	-	-	-
Total Recoverable Cadmium	mg/kg dry wt	< 0.10	< 0.10	-	-	-
Total Recoverable Chromium	mg/kg dry wt	11	10	-	-	-
Total Recoverable Copper	mg/kg dry wt	3	4	-	-	-
Total Recoverable Lead	mg/kg dry wt	12.3	15.0	-	-	-
Total Recoverable Nickel	mg/kg dry wt	7	6	-	-	-
Total Recoverable Zinc	mg/kg dry wt	43	43	-	-	-
Organochlorine Pesticides Screening in Soil						
Aldrin	mg/kg dry wt	-	-	< 0.012	< 0.012	< 0.012
alpha-BHC	mg/kg dry wt	-	-	< 0.012	< 0.012	< 0.012
beta-BHC	mg/kg dry wt	-	-	< 0.012	< 0.012	< 0.012
delta-BHC	mg/kg dry wt	-	-	< 0.012	< 0.012	< 0.012
gamma-BHC (Lindane)	mg/kg dry wt	-	-	< 0.012	< 0.012	< 0.012
cis-Chlordane	mg/kg dry wt	-	-	< 0.012	< 0.012	< 0.012
trans-Chlordane	mg/kg dry wt	-	-	< 0.012	< 0.012	< 0.012
2,4'-DDD	mg/kg dry wt	-	-	< 0.012	< 0.012	< 0.012
4,4'-DDD	mg/kg dry wt	-	-	< 0.012	< 0.012	< 0.012
2,4'-DDE	mg/kg dry wt	-	-	< 0.012	< 0.012	< 0.012
4,4'-DDE	mg/kg dry wt	-	-	< 0.012	< 0.012	< 0.012
2,4'-DDT	mg/kg dry wt	-	-	< 0.012	< 0.012	< 0.012
4,4'-DDT	mg/kg dry wt	-	-	< 0.012	< 0.012	< 0.012
Total DDT Isomers	mg/kg dry wt	-	-	< 0.07	< 0.07	< 0.07
Dieldrin	mg/kg dry wt	-	-	< 0.012	< 0.012	< 0.012
Endosulfan I	mg/kg dry wt	-	-	< 0.012	< 0.012	< 0.012
Endosulfan II	mg/kg dry wt	-	-	< 0.012	< 0.012	< 0.012
Endosulfan sulphate	mg/kg dry wt	-	-	< 0.012	< 0.012	< 0.012
Endrin	mg/kg dry wt	-	-	< 0.012	< 0.012	< 0.012
Endrin aldehyde	mg/kg dry wt	-	-	< 0.012	< 0.012	< 0.012
Endrin ketone	mg/kg dry wt	-	-	< 0.012	< 0.012	< 0.012
Heptachlor	mg/kg dry wt	-	-	< 0.012	< 0.012	< 0.012

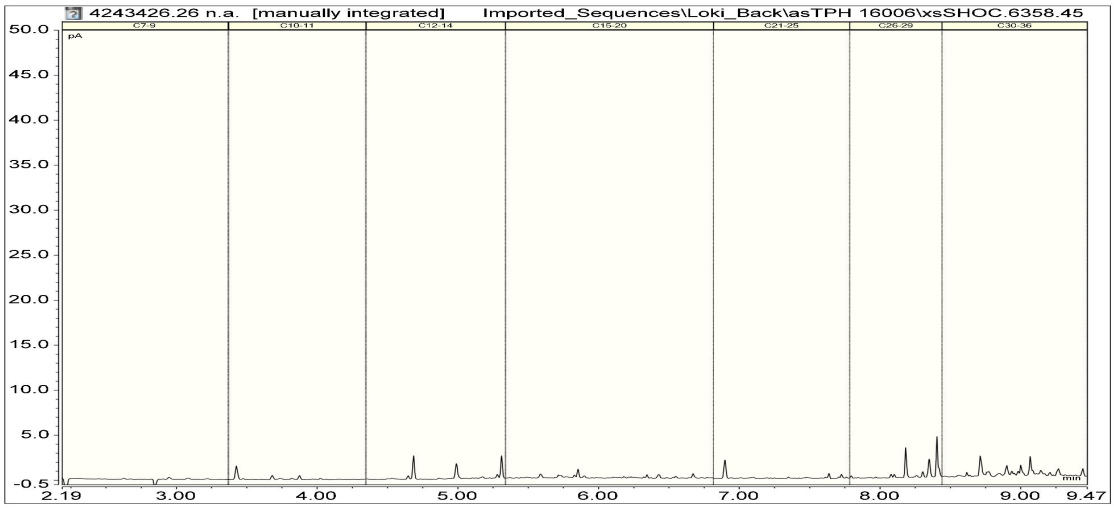
Sample Type: Soil						
Sample Name:		WH-HB_S19 12-Jun-2026	WH-HB_S20 12-Jun-2026	Composite of S11, S13, S15 & S17	Composite of S19, S20, S21 & S22	Composite of S23, S24, S25 & S26
Lab Number:		4243426.84	4243426.85	4243426.86	4243426.87	4243426.88
Organochlorine Pesticides Screening in Soil						
Heptachlor epoxide	mg/kg dry wt	-	-	< 0.012	< 0.012	< 0.012
Hexachlorobenzene	mg/kg dry wt	-	-	< 0.012	< 0.012	< 0.012
Methoxychlor	mg/kg dry wt	-	-	< 0.012	< 0.012	< 0.012

Sample Name:		Composite of S27, S28, S29 & S30	Composite of S32, S34, S36 & S38	Composite of WH-HB_S01, WH-HB_S02, WH-HB_S05 & WH-HB_S06	Composite of WH-HB_S03, WH-HB_S04, WH-HB_S07 & WH-HB_S08	Composite of WH-HB_S09, WH-HB_S10, WH-HB_S13 & WH-HB_S14
Lab Number:		4243426.89	4243426.90	4243426.91	4243426.92	4243426.93
Individual Tests						
Dry Matter	g/100g as rcvd	87	91	86	83	81
Organochlorine Pesticides Screening in Soil						
Aldrin	mg/kg dry wt	< 0.012	< 0.011	< 0.012	< 0.012	< 0.012
alpha-BHC	mg/kg dry wt	< 0.012	< 0.011	< 0.012	< 0.012	< 0.012
beta-BHC	mg/kg dry wt	< 0.012	< 0.011	< 0.012	< 0.012	< 0.012
delta-BHC	mg/kg dry wt	< 0.012	< 0.011	< 0.012	< 0.012	< 0.012
gamma-BHC (Lindane)	mg/kg dry wt	< 0.012	< 0.011	< 0.012	< 0.012	< 0.012
cis-Chlordane	mg/kg dry wt	< 0.012	< 0.011	< 0.012	< 0.012	< 0.012
trans-Chlordane	mg/kg dry wt	< 0.012	< 0.011	< 0.012	< 0.012	< 0.012
2,4'-DDD	mg/kg dry wt	< 0.012	< 0.011	< 0.012	< 0.012	< 0.012
4,4'-DDD	mg/kg dry wt	< 0.012	< 0.011	< 0.012	< 0.012	< 0.012
2,4'-DDE	mg/kg dry wt	< 0.012	< 0.011	< 0.012	< 0.012	< 0.012
4,4'-DDE	mg/kg dry wt	< 0.012	< 0.011	< 0.012	< 0.012	< 0.012
2,4'-DDT	mg/kg dry wt	< 0.012	< 0.011	< 0.012	< 0.012	< 0.012
4,4'-DDT	mg/kg dry wt	< 0.012	< 0.011	< 0.012	< 0.012	< 0.012
Total DDT Isomers	mg/kg dry wt	< 0.07	< 0.07	< 0.07	< 0.07	< 0.08
Dieldrin	mg/kg dry wt	< 0.012	< 0.011	< 0.012	< 0.012	< 0.012
Endosulfan I	mg/kg dry wt	< 0.012	< 0.011	< 0.012	< 0.012	< 0.012
Endosulfan II	mg/kg dry wt	< 0.012	< 0.011	< 0.012	< 0.012	< 0.012
Endosulfan sulphate	mg/kg dry wt	< 0.012	< 0.011	< 0.012	< 0.012	< 0.012
Endrin	mg/kg dry wt	< 0.012	< 0.011	< 0.012	< 0.012	< 0.012
Endrin aldehyde	mg/kg dry wt	< 0.012	< 0.011	< 0.012	< 0.012	< 0.012
Endrin ketone	mg/kg dry wt	< 0.012	< 0.011	< 0.012	< 0.012	< 0.012
Heptachlor	mg/kg dry wt	< 0.012	< 0.011	< 0.012	< 0.012	< 0.012
Heptachlor epoxide	mg/kg dry wt	< 0.012	< 0.011	< 0.012	< 0.012	< 0.012
Hexachlorobenzene	mg/kg dry wt	< 0.012	< 0.011	< 0.012	< 0.012	< 0.012
Methoxychlor	mg/kg dry wt	< 0.012	< 0.011	< 0.012	< 0.012	< 0.012

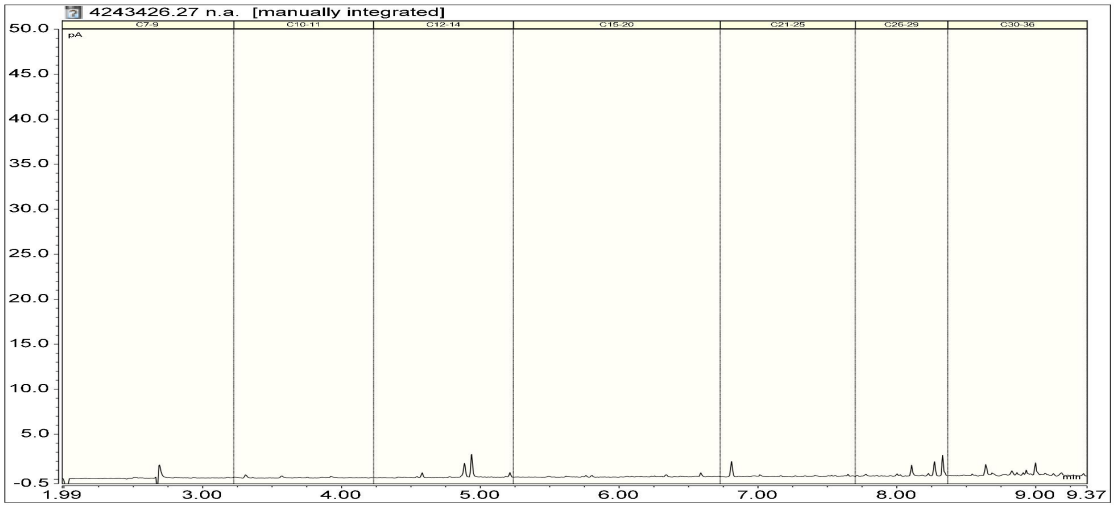
Sample Name:		Composite of WH-HB_S11, WH-HB_S12, WH-HB_S15 & WH-HB_S16	Composite of WH-HB_S17, WH-HB_S18, WH-HB_S19 & WH-HB_S20
Lab Number:		4243426.94	4243426.95
Individual Tests			
Dry Matter	g/100g as rcvd	84	87
Organochlorine Pesticides Screening in Soil			
Aldrin	mg/kg dry wt	< 0.012	< 0.012
alpha-BHC	mg/kg dry wt	< 0.012	< 0.012
beta-BHC	mg/kg dry wt	< 0.012	< 0.012
delta-BHC	mg/kg dry wt	< 0.012	< 0.012
gamma-BHC (Lindane)	mg/kg dry wt	< 0.012	< 0.012
cis-Chlordane	mg/kg dry wt	< 0.012	< 0.012
trans-Chlordane	mg/kg dry wt	< 0.012	< 0.012
2,4'-DDD	mg/kg dry wt	< 0.012	< 0.012
4,4'-DDD	mg/kg dry wt	< 0.012	< 0.012
2,4'-DDE	mg/kg dry wt	< 0.012	< 0.012
4,4'-DDE	mg/kg dry wt	< 0.012	< 0.012

Sample Type: Soil			
	Sample Name:	Composite of WH-HB_S11, WH-HB_S12, WH-HB_S15 & WH-HB_S16	Composite of WH-HB_S17, WH-HB_S18, WH-HB_S19 & WH-HB_S20
	Lab Number:	4243426.94	4243426.95
Organochlorine Pesticides Screening in Soil			
2,4'-DDT	mg/kg dry wt	< 0.012	< 0.012
4,4'-DDT	mg/kg dry wt	< 0.012	< 0.012
Total DDT Isomers	mg/kg dry wt	< 0.07	< 0.07
Dieldrin	mg/kg dry wt	< 0.012	< 0.012
Endosulfan I	mg/kg dry wt	< 0.012	< 0.012
Endosulfan II	mg/kg dry wt	< 0.012	< 0.012
Endosulfan sulphate	mg/kg dry wt	< 0.012	< 0.012
Endrin	mg/kg dry wt	< 0.012	< 0.012
Endrin aldehyde	mg/kg dry wt	< 0.012	< 0.012
Endrin ketone	mg/kg dry wt	< 0.012	< 0.012
Heptachlor	mg/kg dry wt	< 0.012	< 0.012
Heptachlor epoxide	mg/kg dry wt	< 0.012	< 0.012
Hexachlorobenzene	mg/kg dry wt	< 0.012	< 0.012
Methoxychlor	mg/kg dry wt	< 0.012	< 0.012

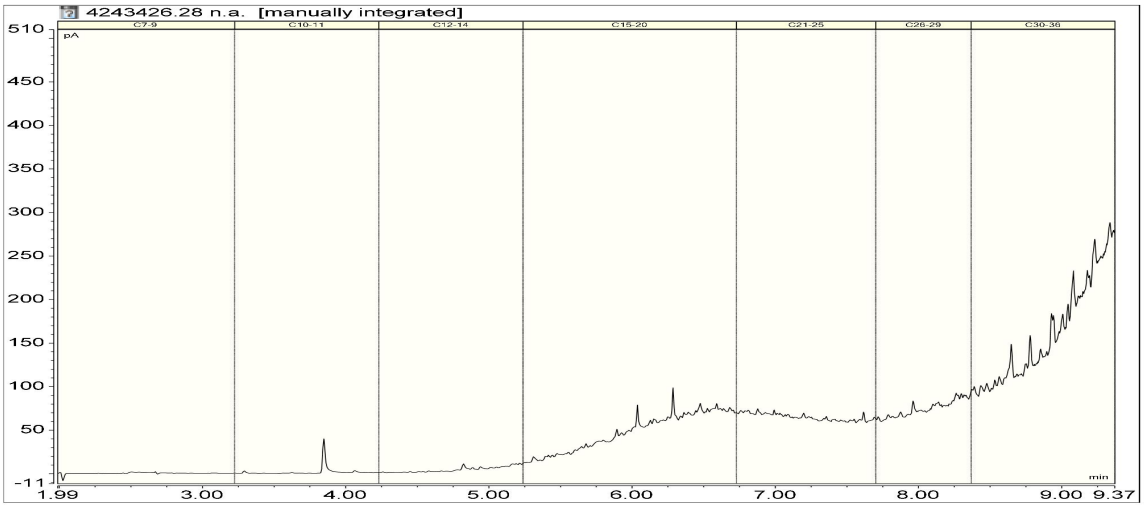
4243426.26
S5 12-Jun-2026
Client Chromatogram for TPH by FID



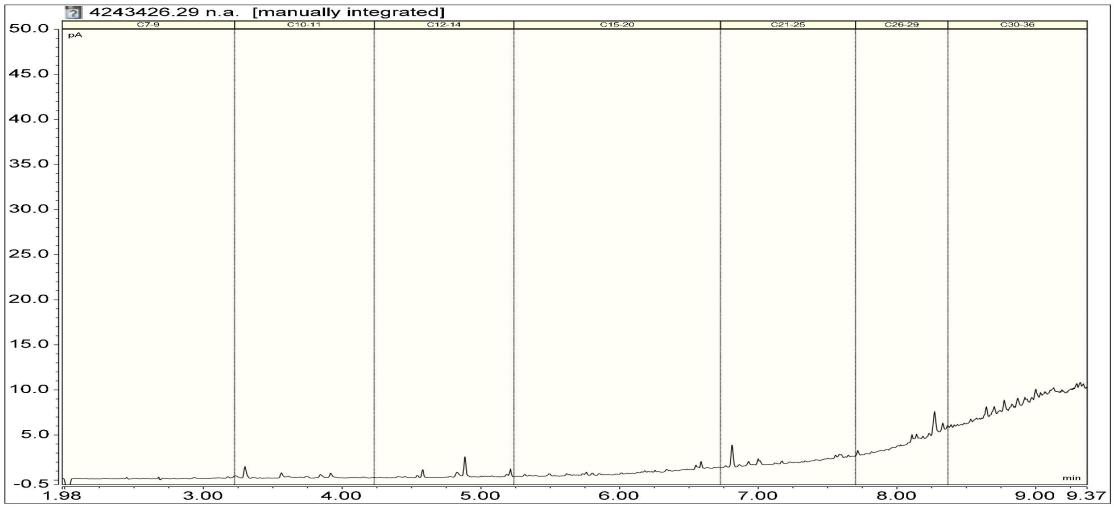
4243426.27
S6 12-Jun-2026
Client Chromatogram for TPH by FID



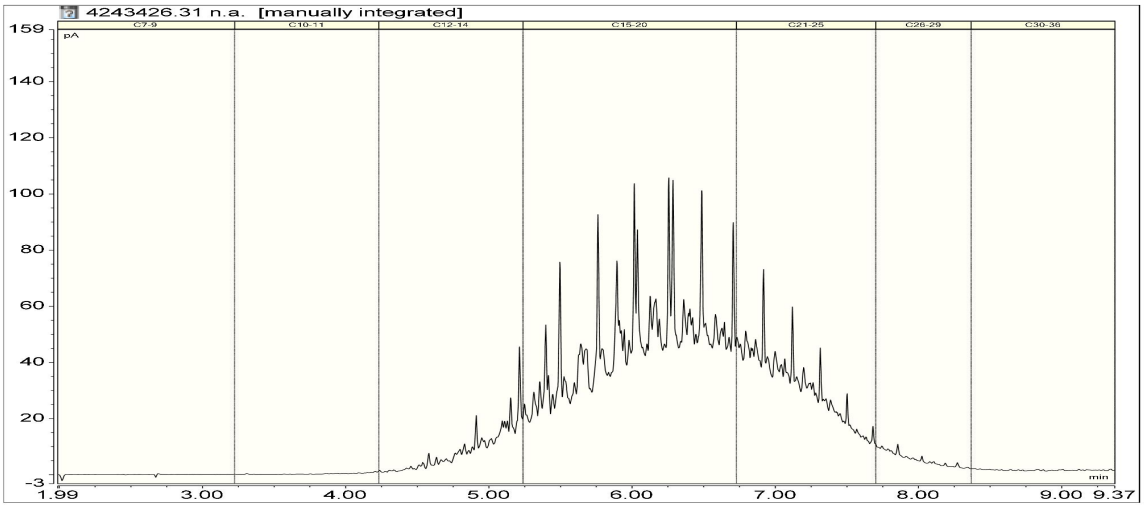
4243426.28
S7 15-Jun-2026
Client Chromatogram for TPH by FID



4243426.29
S8 15-Jun-2026
Client Chromatogram for TPH by FID



4243426.31
S10 15-Jun-2026
Client Chromatogram for TPH by FID



Analyst's Comments

It has been noted that the System Monitoring Compounds in the PAH analysis on samples 4243426.11 and .21, had lower than expected recoveries between 49% & 55% for sample 11 and 62% & 63% for sample 21. Therefore the results may be underestimated.

#1 It should be noted that the replicate analyses performed on this sample as part of our in-house Quality Assurance procedures showed greater variation than would normally be expected. This may reflect the heterogeneity of the sample. The average of the results of the replicate analyses has been reported.

Summary of Methods

The following table(s) gives a brief description of the methods used to conduct the analyses for this job. The detection limits given below are those attainable in a relatively simple matrix. Detection limits may be higher for individual samples should insufficient sample be available, or if the matrix requires that dilutions be performed during analysis. A detection limit range indicates the lowest and highest detection limits in the associated suite of analytes. A full listing of compounds and detection limits are available from the laboratory upon request.
Unless otherwise indicated, analyses were performed at Hill Labs, 28 Duke Street, Frankton, Hamilton 3204.

Sample Type: Soil

Test	Method Description	Default Detection Limit	Sample No
Individual Tests			
Environmental Solids Sample Drying*	Air dried at 35°C Used for sample preparation. May contain a residual moisture content of 2-5%. (Free water removed before analysis, non-soil objects such as sticks, leaves, grass and stones also removed).	-	1-4, 6, 8-32, 34, 36, 38, 40, 42, 44, 46, 48, 50, 53, 55, 57, 59-60, 62, 64-85
Total of Reported PAHs in Soil	Sonication extraction, GC-MS/MS analysis. In-house based on US EPA 8270.	0.03 mg/kg dry wt	11, 15, 20-21
Dry Matter	Dried at 103°C for 4-22hr (removes 3-5% more water than air dry) , gravimetry. (Free water removed before analysis, non-soil objects such as sticks, leaves, grass and stones also removed). US EPA 3550.	0.10 g/100g as rcvd	11, 15, 20-21, 26-29, 31, 86-95
Composite Environmental Solid Samples*	Individual sample fractions mixed together to form a composite fraction.	-	32, 34, 36, 38, 40-51, 53, 55, 57, 59, 66-85
Benzo[a]pyrene Potency Equivalency Factor (PEF) NES*	BaP Potency Equivalence calculated from; Benzo(a)anthracene x 0.1 + Benzo(b)fluoranthene x 0.1 + Benzo(j)fluoranthene x 0.1 + Benzo(k)fluoranthene x 0.1 + Benzo(a)pyrene x 1.0 + Chrysene x 0.01 + Dibenzo(a,h)anthracene x 1.0 + Fluoranthene x 0.01 + Indeno(1,2,3-c,d)pyrene x 0.1. Ministry for the Environment. 2011. Methodology for Deriving Standards for Contaminants in Soil to Protect Human Health. Wellington: Ministry for the Environment.	0.024 mg/kg dry wt	11, 15, 20-21
Benzo[a]pyrene Toxic Equivalence (TEF)*	Benzo[a]pyrene Toxic Equivalence (TEF) calculated from; Benzo[a]pyrene x 1.0 + Benzo(a)anthracene x 0.1 + Benzo(b) fluoranthene x 0.1 + Benzo(k)fluoranthene x 0.1 + Chrysene x 0.01 + Dibenzo(a,h)anthracene x 1.0 + Indeno(1,2,3-c,d)pyrene x 0.1. Guidelines for assessing and managing contaminated gasworks sites in New Zealand (GMG) (MfE, 1997).	0.024 mg/kg dry wt	11, 15, 20-21
Heavy Metals, Screen Level	Dried sample, < 2mm fraction. Nitric/Hydrochloric acid digestion. Complies with NES Regulations. ICP-MS screen level, interference removal by Kinetic Energy Discrimination if required. US EPA 200.2 (modified), APHA 3125 B: Online Edition.	0.10 - 4 mg/kg dry wt	1-4, 6, 8-32, 34, 36, 38, 40, 42, 44, 46, 48, 50, 53, 55, 57, 59-60, 62, 64-85
Organochlorine Pesticides Screening in Soil	Sonication extraction, GC-ECD analysis. Tested on as received sample. In-house based on US EPA 8081.	0.010 - 0.06 mg/kg dry wt	86-95
Polycyclic Aromatic Hydrocarbons Screening in Soil (19 analytes)*	Sonication extraction, GC-MS/MS analysis. Tested on as received sample.	0.010 - 0.05 mg/kg dry wt	11, 15, 20-21
Total Petroleum Hydrocarbons in Soil			
Client Chromatogram for TPH by FID	Small peaks associated with QC compounds may be visible in chromatograms with low TPH concentrations. QC peaks are as follows: one peak in the C12 - 14 band, the C21 - 25 band and the C30 - 36 band. All QC peaks are corrected for in the reported TPH concentrations.	-	26-29, 31
C7 - C9	Solvent extraction, GC-FID analysis. Tested on as received sample. In-house based on US EPA 8015.	20 mg/kg dry wt	26-29, 31
C10 - C14	Solvent extraction, GC-FID analysis. Tested on as received sample. In-house based on US EPA 8015.	20 mg/kg dry wt	26-29, 31
C15 - C36	Solvent extraction, GC-FID analysis. Tested on as received sample. In-house based on US EPA 8015.	40 mg/kg dry wt	26-29, 31
Total hydrocarbons (C7 - C36)	Calculation: Sum of carbon bands from C7 to C36. In-house based on US EPA 8015.	70 mg/kg dry wt	26-29, 31

These samples were collected by yourselves (or your agent) and analysed as received at the laboratory.

Testing was completed between 18-Jun-2026 and 30-Jun-2026. For completion dates of individual analyses please contact the laboratory.

Samples are held at the laboratory after reporting for a length of time based on the stability of the samples and analytes being tested (considering any preservation used), and the storage space available. Once the storage period is completed, the samples are discarded unless otherwise agreed with the customer. Extended storage times may incur additional charges.

This certificate of analysis must not be reproduced, except in full, without the written consent of the signatory.



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Quality Assurance Report

Client:	EHS Support New Zealand Limited	**Lab No:**	4243426	QCPv1
Contact:	Warren Sharp	**Date Received:**	16-Jun-2026	
	C/- EHS Support New Zealand Limited	**Date Reported:**	30-Jun-2026	
	Unit 8B 1 Portage Road	**Quote No:**	92248	
	New Lynn	**Order No:**		
	Auckland 0600	**Client Reference:**	NZL. 07950	
		Submitted By:	Warren Sharp	

Sample Specific QCs

Polycyclic Aromatic Hydrocarbons Screening in Soil (19 analytes)

		4243426.11	Control Limits	Outside Limit (Yes/No)
1-methylnaphthalene-d10	%	54	65 – 130	**Yes** #1
Benzo[a]pyrene-d12	%	49	70 – 140	**Yes** #1
Fluoranthene-d10	%	55	66 – 130	**Yes** #1

Polycyclic Aromatic Hydrocarbons Screening in Soil (19 analytes)

		4243426.15	Control Limits	Outside Limit (Yes/No)
1-methylnaphthalene-d10	%	76	65 – 130	No
Benzo[a]pyrene-d12	%	71	70 – 140	No
Fluoranthene-d10	%	75	66 – 130	No

Polycyclic Aromatic Hydrocarbons Screening in Soil (19 analytes)

		4243426.20	Control Limits	Outside Limit (Yes/No)
1-methylnaphthalene-d10	%	106	65 – 130	No
Benzo[a]pyrene-d12	%	96	70 – 140	No
Fluoranthene-d10	%	104	66 – 130	No

Polycyclic Aromatic Hydrocarbons Screening in Soil (19 analytes)

		4243426.21	Control Limits	Outside Limit (Yes/No)
1-methylnaphthalene-d10	%	63	65 – 130	**Yes** #1
Benzo[a]pyrene-d12	%	62	70 – 140	**Yes** #1
Fluoranthene-d10	%	63	66 – 130	**Yes** #1

Organochlorine Pesticides Screening in Soil

		4243426.86	Control Limits	Outside Limit (Yes/No)
2,4,5,6-tetrachloro-m-xylene	%	65	40 – 120	No

Organochlorine Pesticides Screening in Soil

		4243426.87	Control Limits	Outside Limit (Yes/No)
2,4,5,6-tetrachloro-m-xylene	%	56	40 – 120	No

Organochlorine Pesticides Screening in Soil

		4243426.88	Control Limits	Outside Limit (Yes/No)
2,4,5,6-tetrachloro-m-xylene	%	88	40 – 120	No

Organochlorine Pesticides Screening in Soil

		4243426.89	Control Limits	Outside Limit (Yes/No)
2,4,5,6-tetrachloro-m-xylene	%	82	40 – 120	No

Organochlorine Pesticides Screening in Soil

		4243426.90	Control Limits	Outside Limit (Yes/No)
2,4,5,6-tetrachloro-m-xylene	%	51	40 – 120	No

Organochlorine Pesticides Screening in Soil				
		4243426.91	Control Limits	Outside Limit (Yes/No)
2,4,5,6-tetrachloro-m-xylene	%	91	40 – 120	No

Organochlorine Pesticides Screening in Soil				
		4243426.92	Control Limits	Outside Limit (Yes/No)
2,4,5,6-tetrachloro-m-xylene	%	82	40 – 120	No

Organochlorine Pesticides Screening in Soil				
		4243426.93	Control Limits	Outside Limit (Yes/No)
2,4,5,6-tetrachloro-m-xylene	%	95	40 – 120	No

Organochlorine Pesticides Screening in Soil				
		4243426.94	Control Limits	Outside Limit (Yes/No)
2,4,5,6-tetrachloro-m-xylene	%	88	40 – 120	No

Organochlorine Pesticides Screening in Soil				
		4243426.95	Control Limits	Outside Limit (Yes/No)
2,4,5,6-tetrachloro-m-xylene	%	96	40 – 120	No

Blank QCs

Digest Blank 1 PrepWS esDig - WS: High Volume Environmental Soils by ICP-MS (HVesTR): 14161.13				
		Results	Control Limits	Outside Limit (Yes/No)
Total Recoverable Arsenic	mg/kg dry wt	< 2 ± 1.3	-2.0 – 2.0	No
Total Recoverable Cadmium	mg/kg dry wt	< 0.10 ± 0.065	-0.100 – 0.100	No
Total Recoverable Chromium	mg/kg dry wt	< 2 ± 1.4	-2.0 – 2.0	No
Total Recoverable Copper	mg/kg dry wt	< 2 ± 1.3	-2.0 – 2.0	No
Total Recoverable Lead	mg/kg dry wt	< 0.4 ± 0.26	-0.40 – 0.40	No
Total Recoverable Nickel	mg/kg dry wt	< 2 ± 1.4	-2.0 – 2.0	No
Total Recoverable Zinc	mg/kg dry wt	< 4 ± 2.7	-4.0 – 4.0	No

Digest Blank 2 PrepWS esDig - WS: High Volume Environmental Soils by ICP-MS (HVesTR): 14161.43				
		Results	Control Limits	Outside Limit (Yes/No)
Total Recoverable Arsenic	mg/kg dry wt	< 2 ± 1.3	-2.0 – 2.0	No
Total Recoverable Cadmium	mg/kg dry wt	< 0.10 ± 0.065	-0.100 – 0.100	No
Total Recoverable Chromium	mg/kg dry wt	< 2 ± 1.4	-2.0 – 2.0	No
Total Recoverable Copper	mg/kg dry wt	< 2 ± 1.3	-2.0 – 2.0	No
Total Recoverable Lead	mg/kg dry wt	< 0.4 ± 0.26	-0.40 – 0.40	No
Total Recoverable Nickel	mg/kg dry wt	< 2 ± 1.4	-2.0 – 2.0	No
Total Recoverable Zinc	mg/kg dry wt	< 4 ± 2.7	-4.0 – 4.0	No

50x Manual Dilution Digest Blank PrepWS esDig - WS: High Volume Environmental Soils by ICP-MS (HVesTR): 14161.73				
		Results	Control Limits	Outside Limit (Yes/No)
Total Recoverable Arsenic	mg/kg dry wt	< 2 ± 1.3	-2.0 – 2.0	No
Total Recoverable Cadmium	mg/kg dry wt	< 0.10 ± 0.065	-0.100 – 0.100	No
Total Recoverable Chromium	mg/kg dry wt	< 2 ± 1.4	-2.0 – 2.0	No
Total Recoverable Copper	mg/kg dry wt	< 2 ± 1.3	-2.0 – 2.0	No
Total Recoverable Lead	mg/kg dry wt	< 0.4 ± 0.26	-0.40 – 0.40	No
Total Recoverable Nickel	mg/kg dry wt	< 2 ± 1.4	-2.0 – 2.0	No
Total Recoverable Zinc	mg/kg dry wt	< 4 ± 2.7	-4.0 – 4.0	No

Digest Blank 1 PrepWS esDig - WS: High Volume Environmental Soils by ICP-MS (HVesTR): 14165.13				
		Results	Control Limits	Outside Limit (Yes/No)
Total Recoverable Arsenic	mg/kg dry wt	< 2 ± 1.3	-2.0 – 2.0	No
Total Recoverable Cadmium	mg/kg dry wt	< 0.10 ± 0.065	-0.100 – 0.100	No

Digest Blank 1 PrepWS esDig - WS: High Volume Environmental Soils by ICP-MS (HVesTR): 14165.13				
		Results	Control Limits	Outside Limit (Yes/No)
Total Recoverable Chromium	mg/kg dry wt	< 2 ± 1.4	-2.0 – 2.0	No
Total Recoverable Copper	mg/kg dry wt	< 2 ± 1.3	-2.0 – 2.0	No
Total Recoverable Lead	mg/kg dry wt	< 0.4 ± 0.26	-0.40 – 0.40	No
Total Recoverable Nickel	mg/kg dry wt	< 2 ± 1.4	-2.0 – 2.0	No
Total Recoverable Zinc	mg/kg dry wt	< 4 ± 2.7	-4.0 – 4.0	No

Digest Blank 2 PrepWS esDig - WS: High Volume Environmental Soils by ICP-MS (HVesTR): 14165.36				
		Results	Control Limits	Outside Limit (Yes/No)
Total Recoverable Arsenic	mg/kg dry wt	< 2 ± 1.3	-2.0 – 2.0	No
Total Recoverable Cadmium	mg/kg dry wt	< 0.10 ± 0.065	-0.100 – 0.100	No
Total Recoverable Chromium	mg/kg dry wt	< 2 ± 1.4	-2.0 – 2.0	No
Total Recoverable Copper	mg/kg dry wt	< 2 ± 1.3	-2.0 – 2.0	No
Total Recoverable Lead	mg/kg dry wt	< 0.4 ± 0.26	-0.40 – 0.40	No
Total Recoverable Nickel	mg/kg dry wt	< 2 ± 1.4	-2.0 – 2.0	No
Total Recoverable Zinc	mg/kg dry wt	< 4 ± 2.7	-4.0 – 4.0	No

Blank 1 PrepWS xsSHOC - WS: Polycyclic Aromatic Hydrocarbons Soil Analysis: 18402.1				
		Results	Control Limits	Outside Limit (Yes/No)
Acenaphthylene	mg/kg dry wt	< 0.010 ± 0.0066	0.0 – 0.0100	No
Acenaphthene	mg/kg dry wt	< 0.010 ± 0.0060	0.0 – 0.0100	No
Anthracene	mg/kg dry wt	< 0.010 ± 0.0060	0.0 – 0.0100	No
Benzo[a]anthracene	mg/kg dry wt	< 0.010 ± 0.0062	0.0 – 0.0100	No
Benzo[a]pyrene (BAP)	mg/kg dry wt	< 0.010 ± 0.0066	0.0 – 0.0100	No
Benzo[b]fluoranthene + Benzo[j] fluoranthene	mg/kg dry wt	< 0.010 ± 0.0064	0.0 – 0.0100	No
Benzo[g,h,i]perylene	mg/kg dry wt	< 0.010 ± 0.0064	0.0 – 0.0100	No
Benzo[k]fluoranthene	mg/kg dry wt	< 0.010 ± 0.0066	0.0 – 0.0100	No
Chrysene	mg/kg dry wt	< 0.010 ± 0.0066	0.0 – 0.0100	No
Dibenzo[a,h]anthracene	mg/kg dry wt	< 0.010 ± 0.0066	0.0 – 0.0100	No
Fluoranthene	mg/kg dry wt	< 0.010 ± 0.0067	0.0 – 0.0100	No
Fluorene	mg/kg dry wt	< 0.010 ± 0.0067	0.0 – 0.0100	No
Indeno(1,2,3-c,d)pyrene	mg/kg dry wt	< 0.010 ± 0.0066	0.0 – 0.0100	No
Naphthalene	mg/kg dry wt	< 0.05 ± 0.032	0.0 – 0.050	No
Phenanthrene	mg/kg dry wt	< 0.010 ± 0.0067	0.0 – 0.0100	No
Pyrene	mg/kg dry wt	< 0.010 ± 0.0066	0.0 – 0.0100	No

Digest Blank 1 PrepWS esDig - WS: High Volume Environmental Soils by ICP-MS (HVesTR): 14166.13				
		Results	Control Limits	Outside Limit (Yes/No)
Total Recoverable Arsenic	mg/kg dry wt	< 2 ± 1.3	-2.0 – 2.0	No
Total Recoverable Cadmium	mg/kg dry wt	< 0.10 ± 0.065	-0.100 – 0.100	No
Total Recoverable Chromium	mg/kg dry wt	< 2 ± 1.4	-2.0 – 2.0	No
Total Recoverable Copper	mg/kg dry wt	< 2 ± 1.3	-2.0 – 2.0	No
Total Recoverable Lead	mg/kg dry wt	< 0.4 ± 0.26	-0.40 – 0.40	No
Total Recoverable Nickel	mg/kg dry wt	< 2 ± 1.4	-2.0 – 2.0	No
Total Recoverable Zinc	mg/kg dry wt	< 4 ± 2.7	-4.0 – 4.0	No

Digest Blank 2 PrepWS esDig - WS: High Volume Environmental Soils by ICP-MS (HVesTR): 14166.23				
		Results	Control Limits	Outside Limit (Yes/No)
Total Recoverable Arsenic	mg/kg dry wt	< 2 ± 1.3	-2.0 – 2.0	No
Total Recoverable Cadmium	mg/kg dry wt	< 0.10 ± 0.065	-0.100 – 0.100	No

Digest Blank 2 PrepWS esDig - WS: High Volume Environmental Soils by ICP-MS (HVesTR): 14166.23				
		Results	Control Limits	Outside Limit (Yes/No)
Total Recoverable Chromium	mg/kg dry wt	< 2 ± 1.4	-2.0 – 2.0	No
Total Recoverable Copper	mg/kg dry wt	< 2 ± 1.3	-2.0 – 2.0	No
Total Recoverable Lead	mg/kg dry wt	< 0.4 ± 0.27	-0.40 – 0.40	No
Total Recoverable Nickel	mg/kg dry wt	< 2 ± 1.4	-2.0 – 2.0	No
Total Recoverable Zinc	mg/kg dry wt	< 4 ± 2.7	-4.0 – 4.0	No

Digest Blank 1 PrepWS esDig - WS: High Volume Environmental Soils by ICP-MS (HVesTR): 14171.13				
		Results	Control Limits	Outside Limit (Yes/No)
Total Recoverable Arsenic	mg/kg dry wt	< 2 ± 1.3	-2.0 – 2.0	No
Total Recoverable Cadmium	mg/kg dry wt	< 0.10 ± 0.065	-0.100 – 0.100	No
Total Recoverable Chromium	mg/kg dry wt	< 2 ± 1.4	-2.0 – 2.0	No
Total Recoverable Copper	mg/kg dry wt	< 2 ± 1.3	-2.0 – 2.0	No
Total Recoverable Lead	mg/kg dry wt	< 0.4 ± 0.26	-0.40 – 0.40	No
Total Recoverable Nickel	mg/kg dry wt	< 2 ± 1.4	-2.0 – 2.0	No
Total Recoverable Zinc	mg/kg dry wt	< 4 ± 2.7	-4.0 – 4.0	No

Digest Blank 2 PrepWS esDig - WS: High Volume Environmental Soils by ICP-MS (HVesTR): 14171.43				
		Results	Control Limits	Outside Limit (Yes/No)
Total Recoverable Arsenic	mg/kg dry wt	< 2 ± 1.3	-2.0 – 2.0	No
Total Recoverable Cadmium	mg/kg dry wt	< 0.10 ± 0.065	-0.100 – 0.100	No
Total Recoverable Chromium	mg/kg dry wt	< 2 ± 1.4	-2.0 – 2.0	No
Total Recoverable Copper	mg/kg dry wt	< 2 ± 1.3	-2.0 – 2.0	No
Total Recoverable Lead	mg/kg dry wt	< 0.4 ± 0.26	-0.40 – 0.40	No
Total Recoverable Nickel	mg/kg dry wt	< 2 ± 1.4	-2.0 – 2.0	No
Total Recoverable Zinc	mg/kg dry wt	< 4 ± 2.7	-4.0 – 4.0	No

Digest Blank 1 PrepWS esDig - WS: High Volume Environmental Soils by ICP-MS (HVesTR): 14173.51				
		Results	Control Limits	Outside Limit (Yes/No)
Total Recoverable Copper	mg/kg dry wt	< 2 ± 1.3	-2.0 – 2.0	No

Digest Blank 1 PrepWS esDig - WS: High Volume Environmental Soils by ICP-MS (HVesTR): 14177.13				
		Results	Control Limits	Outside Limit (Yes/No)
Total Recoverable Lead	mg/kg dry wt	< 0.4 ± 0.26	-0.40 – 0.40	No

Digest Blank 2 PrepWS esDig - WS: High Volume Environmental Soils by ICP-MS (HVesTR): 14177.46				
		Results	Control Limits	Outside Limit (Yes/No)
Total Recoverable Lead	mg/kg dry wt	< 0.4 ± 0.26	-0.40 – 0.40	No

Blank 1 PrepWS xsSHOC - WS: Organochlorine Pesticides Soil Analysis: 9785.1				
		Results	Control Limits	Outside Limit (Yes/No)
Aldrin	mg/kg dry wt	< 0.010 ± 0.0030	0.0 – 0.0100	No
alpha-BHC	mg/kg dry wt	< 0.010 ± 0.0030	0.0 – 0.0100	No
beta-BHC	mg/kg dry wt	< 0.010 ± 0.0028	0.0 – 0.0100	No
delta-BHC	mg/kg dry wt	< 0.010 ± 0.0029	0.0 – 0.0100	No
gamma-BHC (Lindane)	mg/kg dry wt	< 0.010 ± 0.0031	0.0 – 0.0100	No
cis-Chlordane	mg/kg dry wt	< 0.010 ± 0.0030	0.0 – 0.0100	No
trans-Chlordane	mg/kg dry wt	< 0.010 ± 0.0030	0.0 – 0.0100	No
2,4'-DDD	mg/kg dry wt	< 0.010 ± 0.0029	0.0 – 0.0100	No
4,4'-DDD	mg/kg dry wt	< 0.010 ± 0.0024	0.0 – 0.0100	No
2,4'-DDE	mg/kg dry wt	< 0.010 ± 0.0030	0.0 – 0.0100	No
4,4'-DDE	mg/kg dry wt	< 0.010 ± 0.0023	0.0 – 0.0100	No

Blank 1 PrepWS xsSHOC - WS: Organochlorine Pesticides Soil Analysis: 9785.1				
		Results	Control Limits	Outside Limit (Yes/No)
2,4'-DDT	mg/kg dry wt	< 0.010 ± 0.0021	0.0 – 0.0100	No
4,4'-DDT	mg/kg dry wt	< 0.010 ± 0.0017	0.0 – 0.0100	No
Dieldrin	mg/kg dry wt	< 0.010 ± 0.0026	0.0 – 0.0100	No
Endosulfan I	mg/kg dry wt	< 0.010 ± 0.0029	0.0 – 0.0100	No
Endosulfan II	mg/kg dry wt	< 0.010 ± 0.0026	0.0 – 0.0100	No
Endosulfan sulphate	mg/kg dry wt	< 0.010 ± 0.0013	0.0 – 0.0100	No
Endrin	mg/kg dry wt	< 0.010 ± 0.00048	0.0 – 0.0100	No
Endrin aldehyde	mg/kg dry wt	< 0.010 ± 0.0019	0.0 – 0.0100	No
Endrin ketone	mg/kg dry wt	< 0.010 ± 0.0024	0.0 – 0.0100	No
Heptachlor	mg/kg dry wt	< 0.010 ± 0.0029	0.0 – 0.0100	No
Heptachlor epoxide	mg/kg dry wt	< 0.010 ± 0.0031	0.0 – 0.0100	No
Hexachlorobenzene	mg/kg dry wt	< 0.010 ± 0.0029	0.0 – 0.0100	No
Methoxychlor	mg/kg dry wt	< 0.010 ± 0.00048	0.0 – 0.0100	No

Blank 1 PrepWS xsSHOC - WS: Organochlorine Pesticides Soil Analysis: 9786.1				
		Results	Control Limits	Outside Limit (Yes/No)
Aldrin	mg/kg dry wt	< 0.010 ± 0.0040	0.0 – 0.0100	No
alpha-BHC	mg/kg dry wt	< 0.010 ± 0.0030	0.0 – 0.0100	No
beta-BHC	mg/kg dry wt	< 0.010 ± 0.0028	0.0 – 0.0100	No
delta-BHC	mg/kg dry wt	< 0.010 ± 0.0029	0.0 – 0.0100	No
gamma-BHC (Lindane)	mg/kg dry wt	< 0.010 ± 0.0031	0.0 – 0.0100	No
cis-Chlordane	mg/kg dry wt	< 0.010 ± 0.0030	0.0 – 0.0100	No
trans-Chlordane	mg/kg dry wt	< 0.010 ± 0.0030	0.0 – 0.0100	No
2,4'-DDD	mg/kg dry wt	< 0.010 ± 0.0029	0.0 – 0.0100	No
4,4'-DDD	mg/kg dry wt	< 0.010 ± 0.0024	0.0 – 0.0100	No
2,4'-DDE	mg/kg dry wt	< 0.010 ± 0.0030	0.0 – 0.0100	No
4,4'-DDE	mg/kg dry wt	< 0.010 ± 0.0023	0.0 – 0.0100	No
2,4'-DDT	mg/kg dry wt	< 0.010 ± 0.0021	0.0 – 0.0100	No
4,4'-DDT	mg/kg dry wt	< 0.010 ± 0.0017	0.0 – 0.0100	No
Dieldrin	mg/kg dry wt	< 0.010 ± 0.0026	0.0 – 0.0100	No
Endosulfan I	mg/kg dry wt	< 0.010 ± 0.0029	0.0 – 0.0100	No
Endosulfan II	mg/kg dry wt	< 0.010 ± 0.0026	0.0 – 0.0100	No
Endosulfan sulphate	mg/kg dry wt	< 0.010 ± 0.0013	0.0 – 0.0100	No
Endrin	mg/kg dry wt	< 0.010 ± 0.00048	0.0 – 0.0100	No
Endrin aldehyde	mg/kg dry wt	< 0.010 ± 0.0057	0.0 – 0.0100	No
Endrin ketone	mg/kg dry wt	< 0.010 ± 0.0024	0.0 – 0.0100	No
Heptachlor	mg/kg dry wt	< 0.010 ± 0.0040	0.0 – 0.0100	No
Heptachlor epoxide	mg/kg dry wt	< 0.010 ± 0.0031	0.0 – 0.0100	No
Hexachlorobenzene	mg/kg dry wt	< 0.010 ± 0.0029	0.0 – 0.0100	No
Methoxychlor	mg/kg dry wt	< 0.010 ± 0.00048	0.0 – 0.0100	No

Digest Blank 1 PrepWS esDig - WS: High Volume Environmental Soils by ICP-MS (HVesTR): 14179.13				
		Results	Control Limits	Outside Limit (Yes/No)
Total Recoverable Arsenic	mg/kg dry wt	< 2 ± 1.3	-2.0 – 2.0	No
Total Recoverable Cadmium	mg/kg dry wt	< 0.10 ± 0.065	-0.100 – 0.100	No
Total Recoverable Chromium	mg/kg dry wt	< 2 ± 1.4	-2.0 – 2.0	No
Total Recoverable Copper	mg/kg dry wt	< 2 ± 1.3	-2.0 – 2.0	No

Digest Blank 1 PrepWS esDig - WS: High Volume Environmental Soils by ICP-MS (HVesTR): 14179.13				
		Results	Control Limits	Outside Limit (Yes/No)
Total Recoverable Lead	mg/kg dry wt	< 0.4 ± 0.26	-0.40 – 0.40	No
Total Recoverable Nickel	mg/kg dry wt	< 2 ± 1.4	-2.0 – 2.0	No
Total Recoverable Zinc	mg/kg dry wt	< 4 ± 2.7	-4.0 – 4.0	No

Digest Blank 2 PrepWS esDig - WS: High Volume Environmental Soils by ICP-MS (HVesTR): 14179.55				
		Results	Control Limits	Outside Limit (Yes/No)
Total Recoverable Arsenic	mg/kg dry wt	< 2 ± 1.3	-2.0 – 2.0	No
Total Recoverable Cadmium	mg/kg dry wt	< 0.10 ± 0.065	-0.100 – 0.100	No
Total Recoverable Chromium	mg/kg dry wt	< 2 ± 1.4	-2.0 – 2.0	No
Total Recoverable Copper	mg/kg dry wt	< 2 ± 1.3	-2.0 – 2.0	No
Total Recoverable Lead	mg/kg dry wt	< 0.4 ± 0.26	-0.40 – 0.40	No
Total Recoverable Nickel	mg/kg dry wt	< 2 ± 1.4	-2.0 – 2.0	No
Total Recoverable Zinc	mg/kg dry wt	< 4 ± 2.7	-4.0 – 4.0	No

Blank 1 PrepWS xsSHOC - WS: Organochlorine Pesticides Soil Analysis: 9788.1				
		Results	Control Limits	Outside Limit (Yes/No)
Aldrin	mg/kg dry wt	< 0.010 ± 0.0030	0.0 – 0.0100	No
alpha-BHC	mg/kg dry wt	< 0.010 ± 0.0030	0.0 – 0.0100	No
beta-BHC	mg/kg dry wt	< 0.010 ± 0.0028	0.0 – 0.0100	No
delta-BHC	mg/kg dry wt	< 0.010 ± 0.0029	0.0 – 0.0100	No
gamma-BHC (Lindane)	mg/kg dry wt	< 0.010 ± 0.0031	0.0 – 0.0100	No
cis-Chlordane	mg/kg dry wt	< 0.010 ± 0.0030	0.0 – 0.0100	No
trans-Chlordane	mg/kg dry wt	< 0.010 ± 0.0030	0.0 – 0.0100	No
2,4'-DDD	mg/kg dry wt	< 0.010 ± 0.0029	0.0 – 0.0100	No
4,4'-DDD	mg/kg dry wt	< 0.010 ± 0.0024	0.0 – 0.0100	No
2,4'-DDE	mg/kg dry wt	< 0.010 ± 0.0030	0.0 – 0.0100	No
4,4'-DDE	mg/kg dry wt	< 0.010 ± 0.0023	0.0 – 0.0100	No
2,4'-DDT	mg/kg dry wt	< 0.010 ± 0.0021	0.0 – 0.0100	No
4,4'-DDT	mg/kg dry wt	< 0.010 ± 0.0017	0.0 – 0.0100	No
Dieldrin	mg/kg dry wt	< 0.010 ± 0.0026	0.0 – 0.0100	No
Endosulfan I	mg/kg dry wt	< 0.010 ± 0.0029	0.0 – 0.0100	No
Endosulfan II	mg/kg dry wt	< 0.010 ± 0.0026	0.0 – 0.0100	No
Endosulfan sulphate	mg/kg dry wt	< 0.010 ± 0.0013	0.0 – 0.0100	No
Endrin	mg/kg dry wt	< 0.010 ± 0.00048	0.0 – 0.0100	No
Endrin aldehyde	mg/kg dry wt	< 0.010 ± 0.0019	0.0 – 0.0100	No
Endrin ketone	mg/kg dry wt	< 0.010 ± 0.0024	0.0 – 0.0100	No
Heptachlor	mg/kg dry wt	< 0.010 ± 0.0029	0.0 – 0.0100	No
Heptachlor epoxide	mg/kg dry wt	< 0.010 ± 0.0031	0.0 – 0.0100	No
Hexachlorobenzene	mg/kg dry wt	< 0.010 ± 0.0029	0.0 – 0.0100	No
Methoxychlor	mg/kg dry wt	< 0.010 ± 0.00048	0.0 – 0.0100	No

Digest Blank 1 PrepWS esDig - WS: High Volume Environmental Soils by ICP-MS (HVesTR): 14180.13				
		Results	Control Limits	Outside Limit (Yes/No)
Total Recoverable Arsenic	mg/kg dry wt	< 2 ± 1.3	-2.0 – 2.0	No
Total Recoverable Cadmium	mg/kg dry wt	< 0.10 ± 0.065	-0.100 – 0.100	No
Total Recoverable Chromium	mg/kg dry wt	< 2 ± 1.4	-2.0 – 2.0	No
Total Recoverable Copper	mg/kg dry wt	< 2 ± 1.3	-2.0 – 2.0	No
Total Recoverable Lead	mg/kg dry wt	< 0.4 ± 0.26	-0.40 – 0.40	No

Digest Blank 1 PrepWS esDig - WS: High Volume Environmental Soils by ICP-MS (HVesTR): 14180.13				
		Results	Control Limits	Outside Limit (Yes/No)
Total Recoverable Nickel	mg/kg dry wt	< 2 ± 1.4	-2.0 – 2.0	No
Total Recoverable Zinc	mg/kg dry wt	< 4 ± 2.7	-4.0 – 4.0	No

Digest Blank 2 PrepWS esDig - WS: High Volume Environmental Soils by ICP-MS (HVesTR): 14180.56				
		Results	Control Limits	Outside Limit (Yes/No)
Total Recoverable Arsenic	mg/kg dry wt	< 2 ± 1.3	-2.0 – 2.0	No
Total Recoverable Cadmium	mg/kg dry wt	< 0.10 ± 0.065	-0.100 – 0.100	No
Total Recoverable Chromium	mg/kg dry wt	< 2 ± 1.4	-2.0 – 2.0	No
Total Recoverable Copper	mg/kg dry wt	< 2 ± 1.3	-2.0 – 2.0	No
Total Recoverable Lead	mg/kg dry wt	< 0.4 ± 0.26	-0.40 – 0.40	No
Total Recoverable Nickel	mg/kg dry wt	< 2 ± 1.4	-2.0 – 2.0	No
Total Recoverable Zinc	mg/kg dry wt	< 4 ± 2.7	-4.0 – 4.0	No

Blank 1 PrepWS xsSHOC - WS: Organochlorine Pesticides Soil Analysis: 9791.1				
		Results	Control Limits	Outside Limit (Yes/No)
Aldrin	mg/kg dry wt	< 0.010 ± 0.0030	0.0 – 0.0100	No
alpha-BHC	mg/kg dry wt	< 0.010 ± 0.0030	0.0 – 0.0100	No
beta-BHC	mg/kg dry wt	< 0.010 ± 0.0028	0.0 – 0.0100	No
delta-BHC	mg/kg dry wt	< 0.010 ± 0.0029	0.0 – 0.0100	No
gamma-BHC (Lindane)	mg/kg dry wt	< 0.010 ± 0.0031	0.0 – 0.0100	No
cis-Chlordane	mg/kg dry wt	< 0.010 ± 0.0030	0.0 – 0.0100	No
trans-Chlordane	mg/kg dry wt	< 0.010 ± 0.0030	0.0 – 0.0100	No
2,4'-DDD	mg/kg dry wt	< 0.010 ± 0.0029	0.0 – 0.0100	No
4,4'-DDD	mg/kg dry wt	< 0.010 ± 0.0024	0.0 – 0.0100	No
2,4'-DDE	mg/kg dry wt	< 0.010 ± 0.0030	0.0 – 0.0100	No
4,4'-DDE	mg/kg dry wt	< 0.010 ± 0.0023	0.0 – 0.0100	No
2,4'-DDT	mg/kg dry wt	< 0.010 ± 0.0021	0.0 – 0.0100	No
4,4'-DDT	mg/kg dry wt	< 0.010 ± 0.0017	0.0 – 0.0100	No
Dieldrin	mg/kg dry wt	< 0.010 ± 0.0026	0.0 – 0.0100	No
Endosulfan I	mg/kg dry wt	< 0.010 ± 0.0029	0.0 – 0.0100	No
Endosulfan II	mg/kg dry wt	< 0.010 ± 0.0026	0.0 – 0.0100	No
Endosulfan sulphate	mg/kg dry wt	< 0.010 ± 0.0013	0.0 – 0.0100	No
Endrin	mg/kg dry wt	< 0.010 ± 0.00048	0.0 – 0.0100	No
Endrin aldehyde	mg/kg dry wt	< 0.010 ± 0.0019	0.0 – 0.0100	No
Endrin ketone	mg/kg dry wt	< 0.010 ± 0.0024	0.0 – 0.0100	No
Heptachlor	mg/kg dry wt	< 0.010 ± 0.0029	0.0 – 0.0100	No
Heptachlor epoxide	mg/kg dry wt	< 0.010 ± 0.0031	0.0 – 0.0100	No
Hexachlorobenzene	mg/kg dry wt	< 0.010 ± 0.0029	0.0 – 0.0100	No
Methoxychlor	mg/kg dry wt	< 0.010 ± 0.00048	0.0 – 0.0100	No

QC Spike QCs

LCS OC/PAH xsSHOC - WS: Polycyclic Aromatic Hydrocarbons Soil Analysis: 18402.2				
		Results	Control Limits	Outside Limit (Yes/No)
Acenaphthylene	%	90.0 ± 8.2	75 – 118	No
Acenaphthene	%	104 ± 30	84 – 119	No
Anthracene	%	94 ± 29	79 – 121	No
Benzo[a]anthracene	%	99 ± 26	81 – 123	No
Benzo[a]pyrene (BAP)	%	105.0 ± 8.0	76 – 123	No

LCS OC/PAH xsSHOC - WS: Polycyclic Aromatic Hydrocarbons Soil Analysis: 18402.2				
		Results	Control Limits	Outside Limit (Yes/No)
Benzo[b]fluoranthene + Benzo[j]fluoranthene	%	99 ± 21	80 – 121	No
Benzo[g,h,i]perylene	%	102 ± 18	80 – 124	No
Benzo[k]fluoranthene	%	102 ± 13	79 – 121	No
Chrysene	%	104 ± 16	83 – 121	No
Dibenzo[a,h]anthracene	%	101 ± 13	78 – 124	No
Fluoranthene	%	102 ± 11	81 – 122	No
Fluorene	%	107 ± 13	86 – 122	No
Indeno(1,2,3-c,d)pyrene	%	104.0 ± 9.6	83 – 123	No
Naphthalene	%	109 ± 27	84 – 118	No
Phenanthrene	%	108 ± 16	84 – 120	No
Pyrene	%	106 ± 14	79 – 123	No

LCS OC/PAH PrepWS xsSHOC - WS: Organochlorine Pesticides Soil Analysis: 9785.2				
		Results	Control Limits	Outside Limit (Yes/No)
Aldrin	%	96 ± 29	80 – 121	No
alpha-BHC	%	89 ± 27	76 – 121	No
beta-BHC	%	87 ± 34	75 – 113	No
delta-BHC	%	86 ± 30	74 – 114	No
gamma-BHC (Lindane)	%	87 ± 25	78 – 116	No
cis-Chlordane	%	87 ± 28	78 – 118	No
trans-Chlordane	%	81 ± 25	76 – 121	No
2,4'-DDD	%	94 ± 34	75 – 114	No
4,4'-DDD	%	103 ± 50	75 – 120	No
2,4'-DDE	%	102 ± 33	73 – 118	No
4,4'-DDE	%	89 ± 45	73 – 116	No
2,4'-DDT	%	99 ± 52	70 – 124	No
4,4'-DDT	%	97 ± 57	65 – 120	No
Dieldrin	%	94 ± 42	84 – 124	No
Endosulfan I	%	98 ± 36	81 – 120	No
Endosulfan II	%	95 ± 42	72 – 117	No
Endosulfan sulphate	%	106 ± 66	76 – 120	No
Endrin	%	96 ± 64	78 – 124	No
Endrin aldehyde	%	114 ± 64	84 – 127	No
Endrin ketone	%	92 ± 45	69 – 115	No
Heptachlor	%	99 ± 34	74 – 120	No
Heptachlor epoxide	%	100 ± 29	79 – 119	No
Hexachlorobenzene	%	94 ± 32	77 – 116	No
Methoxychlor	%	111 ± 74	70 – 125	No

LCS OC/PAH PrepWS xsSHOC - WS: Organochlorine Pesticides Soil Analysis: 9786.2				
		Results	Control Limits	Outside Limit (Yes/No)
Aldrin	%	83 ± 25	80 – 121	No
alpha-BHC	%	88 ± 27	76 – 121	No
beta-BHC	%	82 ± 32	75 – 113	No
delta-BHC	%	91 ± 31	74 – 114	No
gamma-BHC (Lindane)	%	82 ± 23	78 – 116	No
cis-Chlordane	%	80 ± 26	78 – 118	No

LCS OC/PAH PrepWS xsSHOC - WS: Organochlorine Pesticides Soil Analysis: 9786.2				
		Results	Control Limits	Outside Limit (Yes/No)
trans-Chlordane	%	80 ± 25	76 – 121	No
2,4'-DDD	%	87 ± 32	75 – 114	No
4,4'-DDD	%	90 ± 44	75 – 120	No
2,4'-DDE	%	94 ± 31	73 – 118	No
4,4'-DDE	%	80 ± 41	73 – 116	No
2,4'-DDT	%	94 ± 49	70 – 124	No
4,4'-DDT	%	94 ± 55	65 – 120	No
Dieldrin	%	87 ± 39	84 – 124	No
Endosulfan I	%	87 ± 32	81 – 120	No
Endosulfan II	%	86 ± 38	72 – 117	No
Endosulfan sulphate	%	89 ± 56	76 – 120	No
Endrin	%	85 ± 57	78 – 124	No
Endrin aldehyde	%	103 ± 58	84 – 127	No
Endrin ketone	%	81 ± 39	69 – 115	No
Heptachlor	%	84 ± 29	74 – 120	No
Heptachlor epoxide	%	90 ± 26	79 – 119	No
Hexachlorobenzene	%	107 ± 37	77 – 116	No
Methoxychlor	%	89 ± 59	70 – 125	No

LCS OC/PAH PrepWS xsSHOC - WS: Organochlorine Pesticides Soil Analysis: 9788.2				
		Results	Control Limits	Outside Limit (Yes/No)
Aldrin	%	88 ± 27	80 – 121	No
alpha-BHC	%	84 ± 26	76 – 121	No
beta-BHC	%	84 ± 32	75 – 113	No
delta-BHC	%	92 ± 32	74 – 114	No
gamma-BHC (Lindane)	%	85 ± 24	78 – 116	No
cis-Chlordane	%	82 ± 27	78 – 118	No
trans-Chlordane	%	77 ± 24	76 – 121	No
2,4'-DDD	%	86 ± 31	75 – 114	No
4,4'-DDD	%	91 ± 44	75 – 120	No
2,4'-DDE	%	91 ± 30	73 – 118	No
4,4'-DDE	%	80 ± 41	73 – 116	No
2,4'-DDT	%	96 ± 50	70 – 124	No
4,4'-DDT	%	85 ± 50	65 – 120	No
Dieldrin	%	84 ± 37	84 – 124	No
Endosulfan I	%	86 ± 31	81 – 120	No
Endosulfan II	%	86 ± 38	72 – 117	No
Endosulfan sulphate	%	88 ± 55	76 – 120	No
Endrin	%	86 ± 57	78 – 124	No
Endrin aldehyde	%	104 ± 59	84 – 127	No
Endrin ketone	%	80 ± 39	69 – 115	No
Heptachlor	%	85 ± 29	74 – 120	No
Heptachlor epoxide	%	91 ± 26	79 – 119	No
Hexachlorobenzene	%	96 ± 33	77 – 116	No
Methoxychlor	%	87 ± 58	70 – 125	No

LCS TPH PrepWS xsSHOC - Total Petroleum Hydrocarbon Soil Analysis: 15982.3				
		Results	Control Limits	Outside Limit (Yes/No)
Total hydrocarbons (C7 - C36)	%	94 ± 44	74 – 108	No

LCS OC/PAH PrepWS xsSHOC - WS: Organochlorine Pesticides Soil Analysis: 9791.2				
		Results	Control Limits	Outside Limit (Yes/No)
Aldrin	%	84 ± 26	80 – 121	No
alpha-BHC	%	81 ± 25	76 – 121	No
beta-BHC	%	82 ± 32	75 – 113	No
delta-BHC	%	85 ± 29	74 – 114	No
gamma-BHC (Lindane)	%	78 ± 22	78 – 116	No
cis-Chlordane	%	79 ± 26	78 – 118	No
trans-Chlordane	%	80 ± 25	76 – 121	No
2,4'-DDD	%	83 ± 30	75 – 114	No
4,4'-DDD	%	87 ± 42	75 – 120	No
2,4'-DDE	%	91 ± 30	73 – 118	No
4,4'-DDE	%	80 ± 41	73 – 116	No
2,4'-DDT	%	87 ± 46	70 – 124	No
4,4'-DDT	%	79 ± 46	65 – 120	No
Dieldrin	%	81 ± 36	84 – 124	**Yes** [#2]
Endosulfan I	%	85 ± 31	81 – 120	No
Endosulfan II	%	84 ± 37	72 – 117	No
Endosulfan sulphate	%	93 ± 58	76 – 120	No
Endrin	%	84 ± 56	78 – 124	No
Endrin aldehyde	%	99 ± 56	84 – 127	No
Endrin ketone	%	87 ± 42	69 – 115	No
Heptachlor	%	89 ± 31	74 – 120	No
Heptachlor epoxide	%	87 ± 25	79 – 119	No
Hexachlorobenzene	%	82 ± 28	77 – 116	No
Methoxychlor	%	84 ± 56	70 – 125	No

LCS TPH PrepWS xsSHOC - Total Petroleum Hydrocarbon Soil Analysis: 16006.3				
		Results	Control Limits	Outside Limit (Yes/No)
Total hydrocarbons (C7 - C36)	%	101 ± 44	74 – 108	No

Sample Spike QCs

Spike OC/PAH PrepWS xsSHOC - WS: Organochlorine Pesticides Soil Analysis: 9785.14				
		Results	Control Limits	Outside Limit (Yes/No)
Aldrin	%	107 ± 33	83 – 122	No
alpha-BHC	%	106 ± 32	80 – 122	No
beta-BHC	%	102 ± 39	79 – 114	No
delta-BHC	%	95 ± 33	76 – 118	No
gamma-BHC (Lindane)	%	101 ± 29	80 – 117	No
cis-Chlordane	%	92 ± 30	80 – 120	No
trans-Chlordane	%	86 ± 26	79 – 121	No
2,4'-DDD	%	101 ± 37	74 – 120	No
4,4'-DDD	%	111 ± 54	75 – 125	No
2,4'-DDE	%	110 ± 36	74 – 119	No
4,4'-DDE	%	97 ± 49	76 – 120	No
2,4'-DDT	%	105 ± 55	72 – 126	No

Spike OC/PAH PrepWS xsSHOC - WS: Organochlorine Pesticides Soil Analysis: 9785.14				
		Results	Control Limits	Outside Limit (Yes/No)
4,4'-DDT	%	105 ± 61	63 – 123	No
Dieldrin	%	99 ± 44	86 – 126	No
Endosulfan I	%	105 ± 38	83 – 120	No
Endosulfan II	%	99 ± 44	72 – 119	No
Endosulfan sulphate	%	121 ± 76	78 – 124	No
Endrin	%	105 ± 70	82 – 126	No
Endrin aldehyde	%	123 ± 69	84 – 131	No
Endrin ketone	%	103 ± 50	70 – 119	No
Heptachlor	%	114 ± 39	79 – 123	No
Heptachlor epoxide	%	106 ± 30	81 – 119	No
Hexachlorobenzene	%	109 ± 38	77 – 119	No
Methoxychlor	%	131 ± 87	71 – 133	No

Spike OC/PAH PrepWS xsSHOC - WS: Organochlorine Pesticides Soil Analysis: 9786.21				
		Results	Control Limits	Outside Limit (Yes/No)
Aldrin	%	93 ± 28	83 – 122	No
alpha-BHC	%	95 ± 29	80 – 122	No
beta-BHC	%	89 ± 34	79 – 114	No
delta-BHC	%	96 ± 33	76 – 118	No
gamma-BHC (Lindane)	%	87 ± 25	80 – 117	No
cis-Chlordane	%	85 ± 28	80 – 120	No
trans-Chlordane	%	83 ± 25	79 – 121	No
2,4'-DDD	%	92 ± 34	74 – 120	No
4,4'-DDD	%	95 ± 46	75 – 125	No
2,4'-DDE	%	99 ± 32	74 – 119	No
4,4'-DDE	%	84 ± 43	76 – 120	No
2,4'-DDT	%	104 ± 55	72 – 126	No
4,4'-DDT	%	108 ± 63	63 – 123	No
Dieldrin	%	92 ± 41	86 – 126	No
Endosulfan I	%	91 ± 33	83 – 120	No
Endosulfan II	%	88 ± 39	72 – 119	No
Endosulfan sulphate	%	95 ± 59	78 – 124	No
Endrin	%	93 ± 62	82 – 126	No
Endrin aldehyde	%	112 ± 63	84 – 131	No
Endrin ketone	%	87 ± 42	70 – 119	No
Heptachlor	%	99 ± 34	79 – 123	No
Heptachlor epoxide	%	94 ± 27	81 – 119	No
Hexachlorobenzene	%	98 ± 34	77 – 119	No
Methoxychlor	%	104 ± 69	71 – 133	No

Spike OC/PAH PrepWS xsSHOC - WS: Organochlorine Pesticides Soil Analysis: 9788.13				
		Results	Control Limits	Outside Limit (Yes/No)
Aldrin	%	98 ± 30	83 – 122	No
alpha-BHC	%	95 ± 29	80 – 122	No
beta-BHC	%	94 ± 36	79 – 114	No
delta-BHC	%	100 ± 35	76 – 118	No
gamma-BHC (Lindane)	%	95 ± 27	80 – 117	No

Spike OC/PAH PrepWS xsSHOC - WS: Organochlorine Pesticides Soil Analysis: 9788.13				
		Results	Control Limits	Outside Limit (Yes/No)
cis-Chlordane	%	89 ± 29	80 – 120	No
trans-Chlordane	%	82 ± 25	79 – 121	No
2,4'-DDD	%	96 ± 35	74 – 120	No
4,4'-DDD	%	103 ± 50	75 – 125	No
2,4'-DDE	%	99 ± 32	74 – 119	No
4,4'-DDE	%	88 ± 45	76 – 120	No
2,4'-DDT	%	101 ± 53	72 – 126	No
4,4'-DDT	%	88 ± 52	63 – 123	No
Dieldrin	%	90 ± 40	86 – 126	No
Endosulfan I	%	93 ± 34	83 – 120	No
Endosulfan II	%	88 ± 39	72 – 119	No
Endosulfan sulphate	%	98 ± 61	78 – 124	No
Endrin	%	94 ± 63	82 – 126	No
Endrin aldehyde	%	109 ± 62	84 – 131	No
Endrin ketone	%	89 ± 43	70 – 119	No
Heptachlor	%	105 ± 36	79 – 123	No
Heptachlor epoxide	%	95 ± 27	81 – 119	No
Hexachlorobenzene	%	102 ± 35	77 – 119	No
Methoxychlor	%	96 ± 64	71 – 133	No

Matrix Spike TPH PrepWS xsSHOC - Total Petroleum Hydrocarbon Soil Analysis: 15982.17				
		Results	Control Limits	Outside Limit (Yes/No)
Total hydrocarbons (C7 - C36)	%	90 ± 43	71 – 104	No

Spike OC/PAH PrepWS xsSHOC - WS: Organochlorine Pesticides Soil Analysis: 9791.22				
		Results	Control Limits	Outside Limit (Yes/No)
Aldrin	%	93 ± 28	83 – 122	No
alpha-BHC	%	91 ± 28	80 – 122	No
beta-BHC	%	91 ± 35	79 – 114	No
delta-BHC	%	90 ± 31	76 – 118	No
gamma-BHC (Lindane)	%	87 ± 25	80 – 117	No
cis-Chlordane	%	88 ± 29	80 – 120	No
trans-Chlordane	%	82 ± 25	79 – 121	No
2,4'-DDD	%	98 ± 36	74 – 120	No
4,4'-DDD	%	108 ± 52	75 – 125	No
2,4'-DDE	%	100 ± 33	74 – 119	No
4,4'-DDE	%	93 ± 47	76 – 120	No
2,4'-DDT	%	94 ± 49	72 – 126	No
4,4'-DDT	%	89 ± 52	63 – 123	No
Dieldrin	%	89 ± 40	86 – 126	No
Endosulfan I	%	95 ± 35	83 – 120	No
Endosulfan II	%	94 ± 42	72 – 119	No
Endosulfan sulphate	%	114 ± 71	78 – 124	No
Endrin	%	95 ± 63	82 – 126	No
Endrin aldehyde	%	120 ± 68	84 – 131	No
Endrin ketone	%	108 ± 52	70 – 119	No
Heptachlor	%	101 ± 35	79 – 123	No

Spike OC/PAH PrepWS xsSHOC - WS: Organochlorine Pesticides Soil Analysis: 9791.22				
		Results	Control Limits	Outside Limit (Yes/No)
Heptachlor epoxide	%	94 ± 27	81 – 119	No
Hexachlorobenzene	%	88 ± 30	77 – 119	No
Methoxychlor	%	99 ± 66	71 – 133	No

Reference Material QCs

SETOC-704 QC - WS: High Volume Environmental Soils by ICP-MS (HVesTR): 14161.14				
		Results	Control Limits	Outside Limit (Yes/No)
Total Recoverable Arsenic	mg/kg dry wt	12.0 ± 2.3	8.9 – 13.5	No
Total Recoverable Cadmium	mg/kg dry wt	0.86 ± 0.17	0.67 – 0.99	No
Total Recoverable Chromium	mg/kg dry wt	27.1 ± 3.8	21 – 30	No
Total Recoverable Copper	mg/kg dry wt	14.1 ± 2.6	10.5 – 16.2	No
Total Recoverable Lead	mg/kg dry wt	34.2 ± 6.4	26 – 40	No
Total Recoverable Nickel	mg/kg dry wt	14.5 ± 2.3	11.6 – 16.7	No
Total Recoverable Zinc	mg/kg dry wt	203 ± 30	162 – 230	No

SETOC-704 QC - WS: High Volume Environmental Soils by ICP-MS (HVesTR): 14161.32				
		Results	Control Limits	Outside Limit (Yes/No)
Total Recoverable Arsenic	mg/kg dry wt	11.4 ± 2.2	8.9 – 13.5	No
Total Recoverable Cadmium	mg/kg dry wt	0.87 ± 0.17	0.67 – 0.99	No
Total Recoverable Chromium	mg/kg dry wt	26.4 ± 3.7	21 – 30	No
Total Recoverable Copper	mg/kg dry wt	13.8 ± 2.6	10.5 – 16.2	No
Total Recoverable Lead	mg/kg dry wt	34.3 ± 6.4	26 – 40	No
Total Recoverable Nickel	mg/kg dry wt	14.6 ± 2.3	11.6 – 16.7	No
Total Recoverable Zinc	mg/kg dry wt	199 ± 30	162 – 230	No

SETOC-704 QC - WS: High Volume Environmental Soils by ICP-MS (HVesTR): 14161.74				
		Results	Control Limits	Outside Limit (Yes/No)
Total Recoverable Arsenic	mg/kg dry wt	10.6 ± 2.1	8.9 – 13.5	No
Total Recoverable Cadmium	mg/kg dry wt	0.76 ± 0.15	0.67 – 0.99	No
Total Recoverable Chromium	mg/kg dry wt	24.1 ± 3.4	21 – 30	No
Total Recoverable Copper	mg/kg dry wt	12.3 ± 2.4	10.5 – 16.2	No
Total Recoverable Lead	mg/kg dry wt	31.8 ± 6.0	26 – 40	No
Total Recoverable Nickel	mg/kg dry wt	13.6 ± 2.2	11.6 – 16.7	No
Total Recoverable Zinc	mg/kg dry wt	188 ± 28	162 – 230	No

SETOC-704 QC - WS: High Volume Environmental Soils by ICP-MS (HVesTR): 14165.14				
		Results	Control Limits	Outside Limit (Yes/No)
Total Recoverable Arsenic	mg/kg dry wt	11.4 ± 2.2	8.9 – 13.5	No
Total Recoverable Cadmium	mg/kg dry wt	0.88 ± 0.17	0.67 – 0.99	No
Total Recoverable Chromium	mg/kg dry wt	25.8 ± 3.7	21 – 30	No
Total Recoverable Copper	mg/kg dry wt	13.6 ± 2.5	10.5 – 16.2	No
Total Recoverable Lead	mg/kg dry wt	33.4 ± 6.3	26 – 40	No
Total Recoverable Nickel	mg/kg dry wt	14.3 ± 2.3	11.6 – 16.7	No
Total Recoverable Zinc	mg/kg dry wt	204 ± 30	162 – 230	No

SETOC-704 QC - WS: High Volume Environmental Soils by ICP-MS (HVesTR): 14165.56				
		Results	Control Limits	Outside Limit (Yes/No)
Total Recoverable Arsenic	mg/kg dry wt	11.9 ± 2.3	8.9 – 13.5	No
Total Recoverable Cadmium	mg/kg dry wt	0.86 ± 0.17	0.67 – 0.99	No
Total Recoverable Chromium	mg/kg dry wt	26.5 ± 3.7	21 – 30	No

SETOC-704 QC - WS: High Volume Environmental Soils by ICP-MS (HVesTR): 14165.56				
		Results	Control Limits	Outside Limit (Yes/No)
Total Recoverable Copper	mg/kg dry wt	13.8 ± 2.6	10.5 – 16.2	No
Total Recoverable Lead	mg/kg dry wt	33.9 ± 6.4	26 – 40	No
Total Recoverable Nickel	mg/kg dry wt	14.0 ± 2.3	11.6 – 16.7	No
Total Recoverable Zinc	mg/kg dry wt	204 ± 30	162 – 230	No

SETOC-704 QC - WS: High Volume Environmental Soils by ICP-MS (HVesTR): 14166.14				
		Results	Control Limits	Outside Limit (Yes/No)
Total Recoverable Arsenic	mg/kg dry wt	13.0 ± 2.4	8.9 – 13.5	No
Total Recoverable Cadmium	mg/kg dry wt	0.93 ± 0.18	0.67 – 0.99	No
Total Recoverable Chromium	mg/kg dry wt	29.1 ± 4.1	21 – 30	No
Total Recoverable Copper	mg/kg dry wt	14.9 ± 2.7	10.5 – 16.2	No
Total Recoverable Lead	mg/kg dry wt	37.2 ± 7.0	26 – 40	No
Total Recoverable Nickel	mg/kg dry wt	15.5 ± 2.4	11.6 – 16.7	No
Total Recoverable Zinc	mg/kg dry wt	215 ± 32	162 – 230	No

SETOC-704 QC - WS: High Volume Environmental Soils by ICP-MS (HVesTR): 14166.24				
		Results	Control Limits	Outside Limit (Yes/No)
Total Recoverable Arsenic	mg/kg dry wt	11.6 ± 2.2	8.9 – 13.5	No
Total Recoverable Cadmium	mg/kg dry wt	0.84 ± 0.16	0.67 – 0.99	No
Total Recoverable Chromium	mg/kg dry wt	25.8 ± 3.6	21 – 30	No
Total Recoverable Copper	mg/kg dry wt	13.3 ± 2.5	10.5 – 16.2	No
Total Recoverable Lead	mg/kg dry wt	34.0 ± 6.4	26 – 40	No
Total Recoverable Nickel	mg/kg dry wt	14.3 ± 2.3	11.6 – 16.7	No
Total Recoverable Zinc	mg/kg dry wt	198 ± 30	162 – 230	No

SETOC-704 QC - WS: High Volume Environmental Soils by ICP-MS (HVesTR): 14171.14				
		Results	Control Limits	Outside Limit (Yes/No)
Total Recoverable Arsenic	mg/kg dry wt	11.3 ± 2.2	8.9 – 13.5	No
Total Recoverable Cadmium	mg/kg dry wt	0.84 ± 0.16	0.67 – 0.99	No
Total Recoverable Chromium	mg/kg dry wt	26.2 ± 3.7	21 – 30	No
Total Recoverable Copper	mg/kg dry wt	13.4 ± 2.5	10.5 – 16.2	No
Total Recoverable Lead	mg/kg dry wt	32.8 ± 6.2	26 – 40	No
Total Recoverable Nickel	mg/kg dry wt	14.2 ± 2.3	11.6 – 16.7	No
Total Recoverable Zinc	mg/kg dry wt	201 ± 30	162 – 230	No

SETOC-704 QC - WS: High Volume Environmental Soils by ICP-MS (HVesTR): 14171.37				
		Results	Control Limits	Outside Limit (Yes/No)
Total Recoverable Arsenic	mg/kg dry wt	13.4 ± 2.4	8.9 – 13.5	No
Total Recoverable Cadmium	mg/kg dry wt	0.98 ± 0.19	0.67 – 0.99	No
Total Recoverable Chromium	mg/kg dry wt	31.4 ± 4.3	21 – 30	**Yes** [#3]
Total Recoverable Copper	mg/kg dry wt	16.8 ± 3.0	10.5 – 16.2	**Yes** [#3]
Total Recoverable Lead	mg/kg dry wt	40.9 ± 7.7	26 – 40	**Yes** [#3]
Total Recoverable Nickel	mg/kg dry wt	17.3 ± 2.6	11.6 – 16.7	**Yes** [#3]
Total Recoverable Zinc	mg/kg dry wt	240 ± 36	162 – 230	**Yes** [#3]

SETOC-704 QC - WS: High Volume Environmental Soils by ICP-MS (HVesTR): 14173.52				
		Results	Control Limits	Outside Limit (Yes/No)
Total Recoverable Copper	mg/kg dry wt	13.4 ± 2.5	10.5 – 16.2	No

SETOC-704 QC - WS: High Volume Environmental Soils by ICP-MS (HVesTR): 14177.14				
		Results	**Control Limits**	**Outside Limit (Yes/No)**
Total Recoverable Lead	mg/kg dry wt	34.3 ± 6.5	26 – 40	No

SETOC-704 QC - WS: High Volume Environmental Soils by ICP-MS (HVesTR): 14177.31				
		Results	**Control Limits**	**Outside Limit (Yes/No)**
Total Recoverable Lead	mg/kg dry wt	34.7 ± 6.5	26 – 40	No

SETOC-704 QC - WS: High Volume Environmental Soils by ICP-MS (HVesTR): 14179.14				
		Results	**Control Limits**	**Outside Limit (Yes/No)**
Total Recoverable Arsenic	mg/kg dry wt	11.9 ± 2.3	8.9 – 13.5	No
Total Recoverable Cadmium	mg/kg dry wt	0.87 ± 0.17	0.67 – 0.99	No
Total Recoverable Chromium	mg/kg dry wt	25.8 ± 3.7	21 – 30	No
Total Recoverable Copper	mg/kg dry wt	13.7 ± 2.5	10.5 – 16.2	No
Total Recoverable Lead	mg/kg dry wt	34.0 ± 6.4	26 – 40	No
Total Recoverable Nickel	mg/kg dry wt	14.4 ± 2.3	11.6 – 16.7	No
Total Recoverable Zinc	mg/kg dry wt	203 ± 30	162 – 230	No

SETOC-704 QC - WS: High Volume Environmental Soils by ICP-MS (HVesTR): 14179.47				
		Results	**Control Limits**	**Outside Limit (Yes/No)**
Total Recoverable Arsenic	mg/kg dry wt	11.7 ± 2.2	8.9 – 13.5	No
Total Recoverable Cadmium	mg/kg dry wt	0.84 ± 0.16	0.67 – 0.99	No
Total Recoverable Chromium	mg/kg dry wt	24.8 ± 3.5	21 – 30	No
Total Recoverable Copper	mg/kg dry wt	13.0 ± 2.5	10.5 – 16.2	No
Total Recoverable Lead	mg/kg dry wt	32.7 ± 6.1	26 – 40	No
Total Recoverable Nickel	mg/kg dry wt	14.0 ± 2.3	11.6 – 16.7	No
Total Recoverable Zinc	mg/kg dry wt	194 ± 29	162 – 230	No

SETOC-704 QC - WS: High Volume Environmental Soils by ICP-MS (HVesTR): 14180.14				
		Results	**Control Limits**	**Outside Limit (Yes/No)**
Total Recoverable Arsenic	mg/kg dry wt	10.7 ± 2.1	8.9 – 13.5	No
Total Recoverable Cadmium	mg/kg dry wt	0.82 ± 0.16	0.67 – 0.99	No
Total Recoverable Chromium	mg/kg dry wt	25.4 ± 3.6	21 – 30	No
Total Recoverable Copper	mg/kg dry wt	13.6 ± 2.5	10.5 – 16.2	No
Total Recoverable Lead	mg/kg dry wt	34.0 ± 6.4	26 – 40	No
Total Recoverable Nickel	mg/kg dry wt	14.3 ± 2.3	11.6 – 16.7	No
Total Recoverable Zinc	mg/kg dry wt	198 ± 30	162 – 230	No

SETOC-704 QC - WS: High Volume Environmental Soils by ICP-MS (HVesTR): 14180.48				
		Results	**Control Limits**	**Outside Limit (Yes/No)**
Total Recoverable Arsenic	mg/kg dry wt	11.4 ± 2.2	8.9 – 13.5	No
Total Recoverable Cadmium	mg/kg dry wt	0.87 ± 0.17	0.67 – 0.99	No
Total Recoverable Chromium	mg/kg dry wt	26.8 ± 3.8	21 – 30	No
Total Recoverable Copper	mg/kg dry wt	14.1 ± 2.6	10.5 – 16.2	No
Total Recoverable Lead	mg/kg dry wt	34.8 ± 6.5	26 – 40	No
Total Recoverable Nickel	mg/kg dry wt	15.2 ± 2.4	11.6 – 16.7	No
Total Recoverable Zinc	mg/kg dry wt	205 ± 31	162 – 230	No

Analyst's Comments

[#1] The recovery of the System Monitoring Compound (SMC) was low and outside the acceptable ranges, due to the matrix of the sample. The reported result may therefore be an under-estimate of the actual sample concentration.

[#2] The Laboratory Control Sample (LCS) spike recovery for this analyte was below the acceptable recovery range of the method. The corresponding sample result was accepted as the recovery is deemed to be fit for purpose when compared against generic 80-120% limits.

[#3] The recovery for this analyte was outside the acceptable recovery range of the method. The corresponding sample result was accepted because the related recovery in the other QC material analysed was within the expected range.

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Certificate of Analysis

Client:	EHS Support New Zealand Limited	**Lab No:**	4243432	A2Pv1
Contact:	Warren Sharp	**Date Received:**	16-Jun-2026	
	C/- EHS Support New Zealand Limited	**Date Reported:**	18-Jun-2026	
	Unit 8B 1 Portage Road	**Quote No:**	92248	
	New Lynn	**Order No:**		
	Auckland 0600	**Client Reference:**	NZL. 07950	
		Submitted By:	Warren Sharp	

Sample Type: Soil

Sample Name:		ASB 1 12-Jun-2026	ASB 2 12-Jun-2026	ASB 3 15-Jun-2026
Lab Number:		4243432.1	4243432.2	4243432.3
Asbestos Presence / Absence		Amosite (Brown Asbestos), Chrysotile (White Asbestos) and Crocidolite (Blue Asbestos) detected.	Asbestos NOT detected.	Asbestos NOT detected.
Description of Asbestos Form		ACM debris	-	-
Asbestos in ACM as % of Total Sample*	% w/w	< 0.001	< 0.001	< 0.001
Combined Fibrous Asbestos + Asbestos Fines as % of Total Sample*	% w/w	0.011	< 0.001	< 0.001
Asbestos as Fibrous Asbestos as % of Total Sample*	% w/w	< 0.001	< 0.001	< 0.001
Asbestos as Asbestos Fines as % of Total Sample*	% w/w	0.011	< 0.001	< 0.001
As Received Weight	g	639.3	493.2	344.9
Dry Weight	g	613.4	463.8	318.8
Moisture*	%	4	6	8
Sample Fraction >10mm	g dry wt	211.1	123.0	152.7
Sample Fraction <10mm to >2mm	g dry wt	205.0	138.8	67.1
Sample Fraction <2mm	g dry wt	196.3	201.3	98.6
<2mm Subsample Weight	g dry wt	52.4	59.4	54.2
Weight of Asbestos in ACM (Non-Friable)	g dry wt	< 0.00001	< 0.00001	< 0.00001
Weight of Asbestos as Fibrous Asbestos (Friable)	g dry wt	< 0.00001	< 0.00001	< 0.00001
Weight of Asbestos as Asbestos Fines (Friable)*	g dry wt	0.06897	< 0.00001	< 0.00001

This Laboratory is accredited by International Accreditation New Zealand (IANZ), which represents New Zealand in the International Laboratory Accreditation Cooperation (ILAC). Through the ILAC Mutual Recognition Arrangement (ILAC-MRA) this accreditation is internationally recognised.
The tests reported herein have been performed in accordance with the terms of accreditation, with the exception of tests marked * or any comments and interpretations, which are not accredited.

Glossary of Terms
• Loose fibres (Minor) - One or two fibres/fibre bundles identified during analysis by stereo microscope/PLM.
• Loose fibres (Major) - Three or more fibres/fibre bundles identified during analysis by stereo microscope/PLM.
• ACM Debris (Minor) - One or two small (<2mm) pieces of material attached to fibres identified during analysis by stereo microscope/PLM.
• ACM Debris (Major) - Large (>2mm) piece, or more than three small (<2mm) pieces of material attached to fibres identified during analysis by stereo microscope/PLM.
• Unknown Mineral Fibres - Mineral fibres of unknown type detected by polarised light microscopy including dispersion staining. The fibres detected may or may not be asbestos fibres. To confirm the identities, another independent analytical technique may be required.
• Trace - Trace levels of asbestos, as defined by AS4964-2004.
For further details, please contact the Asbestos Team.

Please refer to the BRANZ New Zealand Guidelines for Assessing and Managing Asbestos in Soil.
https://www.branz.co.nz/asbestos

The following assumptions have been made:

1. Asbestos Fines in the <2mm fraction, after homogenisation, is evenly distributed throughout the fraction
2. The weight of asbestos in the sample is unaffected by the ashing process.

Results are representative of the sample provided to Hill Laboratories only.

Summary of Methods

The following table(s) gives a brief description of the methods used to conduct the analyses for this job. The detection limits given below are those attainable in a relatively simple matrix. Detection limits may be higher for individual samples should insufficient sample be available, or if the matrix requires that dilutions be performed during analysis. A detection limit range indicates the lowest and highest detection limits in the associated suite of analytes. A full listing of compounds and detection limits are available from the laboratory upon request.
Unless otherwise indicated, analyses were performed at Hill Labs, 28 Duke Street, Frankton, Hamilton 3204.

Sample Type: Soil

Test	Method Description	Default Detection Limit	Sample No
New Zealand Guidelines Semi Quantitative Asbestos in Soil			
As Received Weight	Measurement on analytical balance. Analysed at Hill Laboratories - Asbestos; Unit 1, 17 Print Place, Middleton, Christchurch.	0.1 g	1-3
Dry Weight	Sample dried at 100 to 105°C, measurement on balance. Analysed at Hill Laboratories - Asbestos; Unit 1, 17 Print Place, Middleton, Christchurch.	0.1 g	1-3
Moisture*	Sample dried at 100 to 105°C. Calculation = (As received weight - Dry weight) / as received weight x 100.	1 %	1-3
Sample Fraction >10mm	Sample dried at 100 to 105°C, 10mm sieve, measurement on analytical balance. Analysed at Hill Laboratories - Asbestos; Unit 1, 17 Print Place, Middleton, Christchurch.	0.1 g dry wt	1-3
Sample Fraction <10mm to >2mm	Sample dried at 100 to 105°C, 10mm and 2mm sieve, measurement on analytical balance. Analysed at Hill Laboratories - Asbestos; Unit 1, 17 Print Place, Middleton, Christchurch.	0.1 g dry wt	1-3
Sample Fraction <2mm	Sample dried at 100 to 105°C, 2mm sieve, measurement on analytical balance. Analysed at Hill Laboratories - Asbestos; Unit 1, 17 Print Place, Middleton, Christchurch.	0.1 g dry wt	1-3
Asbestos Presence / Absence	Examination using Low Powered Stereomicroscopy followed by 'Polarised Light Microscopy' including 'Dispersion Staining Techniques'. Analysed at Hill Laboratories - Asbestos; Unit 1, 17 Print Place, Middleton, Christchurch. AS 4964 (2004) - Method for the Qualitative Identification of Asbestos in Bulk Samples.	0.01%	1-3
Description of Asbestos Form	Description of asbestos form and/or shape if present.	-	1-3
Weight of Asbestos in ACM (Non-Friable)	Measurement on analytical balance, from the >10mm Fraction. Weight of asbestos based on assessment of ACM form. Analysed at Hill Laboratories - Asbestos; Unit 1, 17 Print Place, Middleton, Christchurch. New Zealand Guidelines for Assessing and Managing Asbestos in Soil, November 2017.	0.00001 g dry wt	1-3
Asbestos in ACM as % of Total Sample*	Calculated from weight of asbestos in ACM and sample dry weight. New Zealand Guidelines for Assessing and Managing Asbestos in Soil, November 2017.	0.001 % w/w	1-3
Weight of Asbestos as Fibrous Asbestos (Friable)	Measurement on analytical balance, from the >10mm Fraction. Analysed at Hill Laboratories - Asbestos; Unit 1, 17 Print Place, Middleton, Christchurch. New Zealand Guidelines for Assessing and Managing Asbestos in Soil, November 2017.	0.00001 g dry wt	1-3
Asbestos as Fibrous Asbestos as % of Total Sample*	Calculated from weight of fibrous asbestos and sample dry weight. New Zealand Guidelines for Assessing and Managing Asbestos in Soil, November 2017.	0.001 % w/w	1-3
Weight of Asbestos as Asbestos Fines (Friable)*	Measurement on analytical balance, from the <10mm Fractions. Analysed at Hill Laboratories - Asbestos; Unit 1, 17 Print Place, Middleton, Christchurch. New Zealand Guidelines for Assessing and Managing Asbestos in Soil, November 2017.	0.00001 g dry wt	1-3

Sample Type: Soil			
Test	**Method Description**	**Default Detection Limit**	**Sample No**
Asbestos as Asbestos Fines as % of Total Sample*	Calculated from weight of asbestos fines and sample dry weight. New Zealand Guidelines for Assessing and Managing Asbestos in Soil, November 2017.	0.001 % w/w	1-3
Combined Fibrous Asbestos + Asbestos Fines as % of Total Sample*	Calculated from weight of fibrous asbestos plus asbestos fines and sample dry weight. New Zealand Guidelines for Assessing and Managing Asbestos in Soil, November 2017.	0.001 % w/w	1-3

These samples were collected by yourselves (or your agent) and analysed as received at the laboratory.

Testing was completed on 18-Jun-2026. For completion dates of individual analyses please contact the laboratory.

Samples are held at the laboratory after reporting for a length of time based on the stability of the samples and analytes being tested (considering any preservation used), and the storage space available. Once the storage period is completed, the samples are discarded unless otherwise agreed with the customer. Extended storage times may incur additional charges.

This certificate of analysis must not be reproduced, except in full, without the written consent of the signatory.



Dexter Paguirigan Dip Chem Engineering Tech
Laboratory Technician - Asbestos

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Certificate of Analysis

Client:	EHS Support New Zealand Limited	**Lab No:**	4243425	A2Pv1
Contact:	Warren Sharp	**Date Received:**	16-Jun-2026	
	C/- EHS Support New Zealand Limited	**Date Reported:**	18-Jun-2026	
	Unit 8B 1 Portage Road	**Quote No:**	92248	
	New Lynn	**Order No:**		
	Auckland 0600	**Client Reference:**	NZL. 07950	
		Submitted By:	Warren Sharp	

Sample Type: Building Material

Sample Name	Lab Number	Sample Category*	Sample Weight on receipt (g)	Asbestos Presence / Absence	Description of Asbestos in Non Homogeneous Samples
ACM1 12-Jun-2026	4243425.1	Cement Product	23.24	Amosite (Brown Asbestos) detected. Chrysotile (White Asbestos) detected. Crocidolite (Blue Asbestos) detected.	N/A
ACM2 12-Jun-2026	4243425.2	Cement Product	65.66	Amosite (Brown Asbestos) detected. Chrysotile (White Asbestos) detected. Crocidolite (Blue Asbestos) detected.	N/A
ACM3 15-Jun-2026	4243425.3	Cement Product	45.07	Amosite (Brown Asbestos) detected. Chrysotile (White Asbestos) detected.	N/A
ACM4 15-Jun-2026	4243425.4	Cement Product	30.30	Amosite (Brown Asbestos) detected. Chrysotile (White Asbestos) detected. Crocidolite (Blue Asbestos) detected.	N/A
ACM5 15-Jun-2026	4243425.5	Cement Product	40.38	Amosite (Brown Asbestos) detected. Chrysotile (White Asbestos) detected. Crocidolite (Blue Asbestos) detected.	N/A
ACM6 15-Jun-2026	4243425.6	Cement Product	55.03	Asbestos NOT detected. Organic fibres detected.	N/A
ACM7 15-Jun-2026	4243425.7	Cement Product	20.16	Amosite (Brown Asbestos) detected. Chrysotile (White Asbestos) detected.	N/A
ACM8 15-Jun-2026	4243425.8	Cement Product	55.38	Asbestos NOT detected. Organic fibres detected.	N/A

Glossary of Terms

- Loose fibres (Minor) - One or two fibres/fibre bundles identified during analysis by stereo microscope/PLM.
- Loose fibres (Major) - Three or more fibres/fibre bundles identified during analysis by stereo microscope/PLM.
- ACM Debris (Minor) - One or two small (<2mm) pieces of material attached to fibres identified during analysis by stereo microscope/PLM.
- ACM Debris (Major) - Large (>2mm) piece, or more than three small (<2mm) pieces of material attached to fibres identified during analysis by stereo microscope/PLM.
- Unknown Mineral Fibres - Mineral fibres of unknown type detected by polarised light microscopy including dispersion staining. The fibres detected may or may not be asbestos fibres. To confirm the identities, another independent analytical technique may be required.
- Trace - Trace levels of asbestos, as defined by AS4964-2004.

For further details, please contact the Asbestos Team.

Summary of Methods

The following table(s) gives a brief description of the methods used to conduct the analyses for this job. The detection limits given below are those attainable in a relatively simple matrix. Detection limits may be higher for individual samples should insufficient sample be available, or if the matrix requires that dilutions be performed during analysis. A detection limit range indicates the lowest and highest detection limits in the associated suite of analytes. A full listing of compounds and detection limits are available from the laboratory upon request.
Unless otherwise indicated, analyses were performed at Hill Labs, 28 Duke Street, Frankton, Hamilton 3204.

Sample Type: Building Material

Test	Method Description	Default Detection Limit	Sample No
Asbestos in Bulk Material			
Sample Category*	Assessment of sample type. Analysed at Hill Laboratories - Asbestos; 204 Thorndon Quay, Wellington.	-	1-8
Sample Weight on receipt	Sample weight (approximate). Analysed at Hill Laboratories - Asbestos; 204 Thorndon Quay, Wellington.	0.01 g	1-8

This Laboratory is accredited by International Accreditation New Zealand (IANZ), which represents New Zealand in the International Laboratory Accreditation Cooperation (ILAC). Through the ILAC Mutual Recognition Arrangement (ILAC-MRA) this accreditation is internationally recognised.
The tests reported herein have been performed in accordance with the terms of accreditation, with the exception of tests marked * or any comments and interpretations, which are not accredited.

Sample Type: Building Material			
Test	**Method Description**	**Default Detection Limit**	**Sample No**
Asbestos Presence / Absence	Examination using Low Powered Stereomicroscopy followed by 'Polarised Light Microscopy' including 'Dispersion Staining Techniques'. Analysed at Hill Laboratories - Asbestos; 204 Thorndon Quay, Wellington. AS 4964 (2004) - Method for the Qualitative Identification of Asbestos in Bulk Samples.	0.01%	1-8
Description of Asbestos in Non Homogeneous Samples	Form, dimensions and/or weight of asbestos fibres present. AS 4964 (2004) - Method for the Qualitative Identification of Asbestos in Bulk Samples.	-	1-8

These samples were collected by yourselves (or your agent) and analysed as received at the laboratory.

Testing was completed between 17-Jun-2026 and 18-Jun-2026. For completion dates of individual analyses please contact the laboratory.

Samples are held at the laboratory after reporting for a length of time based on the stability of the samples and analytes being tested (considering any preservation used), and the storage space available. Once the storage period is completed, the samples are discarded unless otherwise agreed with the customer. Extended storage times may incur additional charges.

This certificate of analysis must not be reproduced, except in full, without the written consent of the signatory.



Kelsey Rohloff BSc
Laboratory Technician - Asbestos

Appendix F – Skellerup and Skellerup South Block DSI (2025)

Detailed Site Investigation

West Rolleston Residential – Skellerup Block

To: West Rolleston Residential Ltd

From: EHS Support New Zealand Ltd

Date: 9 October 2025

Job No.: NZL.07183

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1 Introduction

EHS Support New Zealand Ltd (EHS Support) was engaged by West Rolleston Residential Ltd to undertake a Detailed Site Investigation (DSI) over the Skellerup and Skellerup South Blocks, Dunns Crossing Road and Selwyn Roads, Rolleston (the "site"). This investigation was conducted in accordance with our short form agreement dated 12 September 2025. This report is subject to the limitations set out in **Appendix A**.

1.1 Background

The site currently comprises farmland in two blocks. EHS Support understands that redevelopment of the blocks for residential purposes is proposed.

The Resource Management (National Environmental Standard for Assessing and Managing Contaminants in Soil to Protect Human Health) Regulations 2011 (NESCS) apply to certain activities on sites that have, have had, or are more likely than not to have had an activity on the Hazardous Activities and Industries List (HAIL) carried out on the site. The site is identified on Environment Canterbury's (ECan) listed land use register (LLUR) as having had an activity on the HAIL occur on it, namely A10 – persistent pesticide use.

The LLUR listing for the sites is based on two existing Preliminary Site Investigations (PSI) that were undertaken to support plan change: Coffey Services (NZ) Limited (20 January 2021), *Preliminary Site Investigation - Rolleston West Plan Change* which covers the Skellerup Block, and TetraTech Coffey (NZ) Limited (30 September 2021), *Skellerup South Plan Change Preliminary Site Investigation*, covering the Skellerup South Block.

The proposed residential development will require subdivision and change of land use, plus soil disturbance and offsite disposal of surplus soils - activities covered by the NESCS, and accordingly an investigation of the site was required. The objectives of this Detailed Site Investigation (DSI) were to verify the HAIL status of the site and to characterise potential soil contamination, enabling determination of NESCS consent and contamination management requirements.

1.2 Scope of Work

In order to achieve the investigation objectives the DSI was undertaken in accordance with the staged process defined by Ministry for the Environment (MfE, 2021) Contaminated Land Management Guidelines No. 5: *Site Investigation and Analysis of Soils*, and the findings are presented in accordance with MfE (2021) Contaminated Land Management Guideline No.1: *Reporting on Contaminated Sites in New Zealand*. The scope of works supervised by an EHS Support suitably qualified and experienced practitioner (SQEP) was:

- A Desk Study primarily comprising review of the existing PSI reports.
- A site walkover inspection to identify potential visual indicators of ground contamination.
- Collection of soil samples from 29 locations across the site.
- Analysis of selected collected samples for potential contaminants of concern (COCs).
- Preparation of an investigation report in accordance with the requirements of the NESCS.

2 Site Information

2.1 Site Description

The site, located on the corner of Dunns Crossing Road and Selwyn Road, Rolleston is legally described as (Skellerup Block) Part RS 31356, Part Section 4 RES 1342, Part RS 31354, and as (Skellerup South Block) Rs 25807, Rs 23614. The site is flat and has a combined area of approximately 101 ha. At the time of the DSI site inspection, conducted on 23 September 2025, the site appeared generally as is indicated in **Figure 1** and comprised general farm / agricultural land.

The majority of the Skellerup Block is served by two irrigators and has been ploughed, with ploughing activities underway in the central portion of the site during the site visit. Stock (cows) were present at the northern and southern ends of the Skellerup Block during the site visit. A number of tires were stacked along the fence line in the southwest corner of the block. Remnant silage wrap was also present in this area suggesting the tires were used for sileage piles. No visual evidence of significant HAIL activities or ground contamination was observed over the Skellerup Block during the site inspection.

The Skellerup South block comprised farm paddocks. No stock were present during the site visit. An area of filling was observed in the central north area of the block during the site visit, this being the location of a former pond identified in historic aerial photographs. While no anthropogenic materials were observed, the fill materials used did not appear consistent with other soils encountered onsite. The remnants of a duck hunting mai mai was present immediately south of the infilled pond area. The pond appeared to have been fed by an open drain that ran along the southwest boundary of the Skellerup South block and then to the pond location. The drain contained standing water and appeared to fed by a drain or possible irrigation channel from the property west of the block. Aside from the fill materials in the former pond area, no visual evidence of significant HAIL activities or ground contamination was observed over the Skellerup South Block during the site inspection.

The property is bordered by Dunns Crossing Road and then a mix of residential and rural property to the northeast, by Selwyn Road and then rural land to the southeast, and by rural land to the southwest and northwest. The remnants of a possible orchard were observed adjacent to the southwest corner of the Skellerup Block / southwest boundary of the Skellerup South Block.

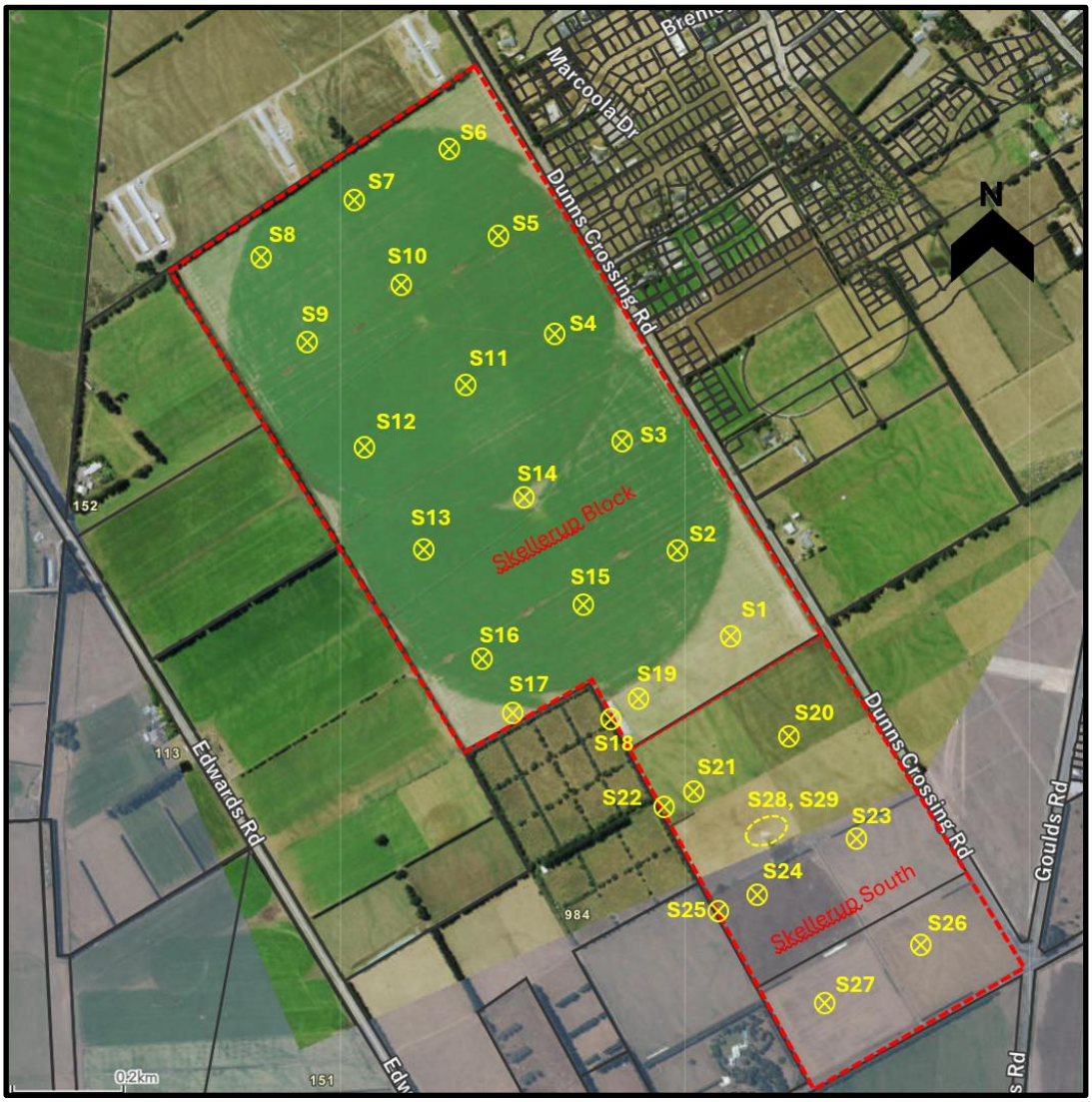

FIGURE 1: SITE LAYOUT. DSI SAMPLE LOCATIONS IN YELLOW

2.2 Geology

Institute of Geological and Nuclear Sciences 1:250,000 series Map 16, *Christchurch*, indicates site geology to comprise brownish grey river alluvium. Surface soils encountered during this DSI comprised a mix of silt and silt with medium to coarse gravel. Groundwater was not encountered during the DSI.

ECan's CanterburyMaps database indicates a number of boreholes are present within or in the vicinity of the site. An onsite well, Bore M36/8581, is located in the northeast corner of the Skellerup Block, and is listed as being for irrigation purposes. The log for this bore indicates geology to comprise sandy or clay bound gravels present to the bore depth of 87.2 m. Bore M36/4387 located across Dunns Crossing Road from the Skellerup South Block indicates sandy and clay bound gravels to the bore depth of 35.6 m. Water levels recorded in these wells exceed 10 m below ground level and reflect the deep confined / semiconfined aquifers underlying the wider area. Information from the New Zealand Geotechnical Database for investigation locations within the residential areas northeast of the site suggest shallow groundwater could be encountered within 2.0m depth.

2.3 Site History

The existing PSIs established site history via review of historical aerial photographs. Historic photographs, and in particular those available on GoogleEarth, were reviewed during this DSI to verify PSI findings and evaluate any significant changes that may have occurred on site since the PSI's were completed.

The historic aerial photograph record indicates the Skellerup Block was a pine plantation from pre the 1940's to between mid-2008 and mid-2009. The irrigators currently present on the site appear to have commenced operation late in 2012. An inferred sileage stockpile is visible in the southwest corner of the block in an aerial image dated January 2021. No further changes of note are apparent over the Skellerup Block to the most recent imagery reviewed dated March 2025.

The Skellerup South Block has comprised farmland from before 1940's to the current day. Ponded water is visible intermittently in the area of the former pond until 2017 when a larger water body is present (inferred constructed pond). The pond is still present in the most recent imagery reviewed dated March 2025.

The majority of land around the site has been in rural use since prior to the 1940's. The potential orchard southwest of the site is first visible in the mid 2010's.

3 Site Characterisation

The Coffey Services (NZ) Limited and TetraTech Coffey (NZ) Limited PSIs suggested HAIL A10 (persistent pesticide use) had occurred over the site area, and that the southwest corner of the Skellerup Block and southwest boundary area of the Skellerup South Block could have been impacted by sprays used on the potential orchard neighbouring the site.

EHS Support consider it highly unlikely that current (farmland, agriculture) and historic (general farmland, plantation forest) land uses will have included significant use of persistent pesticides that could result in the presence of significant soil contamination, and as such, would not consider these HAIL activities to have occurred on the site.

Similarly, given the age of the potential orchard southwest of the site (post 2010's), EHS Support consider it unlikely the site would have been impacted by HAIL activities on the neighbouring property.

Limited soil sampling was undertaken to verify this interpretation / conclusion. The soil sampling comprised random grid based sampling over the wider site area (23 locations). Targeted samples (S17, S18, S22 and S25) were also collected along the boundary adjacent to the potential offsite orchard, and two targeted samples (S28 and S29) collected from the fill materials in the former pond location within the Skellerup South Block.

DSI soil sampling was undertaken on 23 September 2025. A surface (0.0 – 0.15 m depth) soil sample was collected from each location using a hand auger, which was cleaned between sampling locations. All collected samples were submitted to Hill Laboratories Ltd and analysed for seven heavy metals, considered to be a primary indicator of the potential for soil contamination to be present at the site.

All fieldwork was managed by a Suitably Qualified and Experienced Practitioner (SQEP). With regards to laboratory analysis, Hill Laboratories is a recognised laboratory endorsed by International Accreditation New Zealand (IANZ). The analyses undertaken were performed in accordance with the terms of accreditation. No issues were noted for the samples analysed. Given the nature of the DSI (soil sampling only), no quality assurance samples were collected.

4 Results

To evaluate the soil analytical data, results have been compared to background and NESCS Soil Contaminant Standards (SCS) as follows. Adopted SCS and background criteria are presented in the results table.

- Background concentrations for heavy metals have been adopted from Environment Canterbury Report R07/1/2: *Background Concentrations of Selected Trace Elements in Canterbury Soils. Addendum 1: Additional Samples and Timaru Specific Background Levels*. Values for the Regional YBST soil group, being background at the site, have been adopted.
- The MfE (2012) *User's Guide: National Environmental Standard for Assessing and Managing Contaminants in Soil to Protect Human Health* details SCS for selected contaminants. The planned site redevelopment will result in residential use of the site. Accordingly, SCS for residential land use have been adopted.
- For the two heavy metals analysed for which SCSs are not available; nickel and zinc, the National Environment Protection Council (NEPC) (2013), Australian National Environmental Protection (Assessment of Site Contamination) Measure (NEPM) Health Investigation Levels for a Residential A scenario have been adopted.

Soil analytical results are summarised in **Table 1** below. The Laboratory Reports are included as **Appendix B**. Soil analytical results can be summarised as follows:

- No analysed heavy metals were detected at concentrations in excess of the adopted SCS for residential land use.
- No analysed heavy metals were detected at concentrations in excess of adopted background.

5 Conclusions

While the PSI's conducted on the site indicated the potential for HAIL activities to have occurred, soil sampling undertaken did not detect any evidence of significant soil contamination, with no analysed contaminants of concern detected at concentrations in excess of background.

No analysed contaminants of concern were detected at concentrations in excess of background, and as such, in accordance with Regulation 5(9) of the NESCS, the requirements of the NESCS do not apply to the site.

Excluding accidental discovery scenarios, no further soil contamination management is considered to be required. Surplus soils from the site that may be generated by development activities are considered to be suitable for disposal as cleanfill, subject to receiving facility acceptance.

Table 1: Soil Analytical Results - Skellerup and Skellerup South									
			Arsenic	Cadmium	Chromium	Copper	Lead	Nickel	Zinc
SCS Residential Land Use[1]			20	3	460 [2]	>10,000	210	400 [3]	7,400 [3]
Background - Regional YBST[4]			6.35	0.14	19.89	11.68	19.75	13.91	69.58
Sample	Depth (m)	Lab ID							
S1	0-0.15	3992024.1	3	< 0.10	12	6	14.2	7	50
S2	0-0.15	3992024.2	3	< 0.10	13	7	14.1	9	57
S3	0-0.15	3992024.3	4	< 0.10	13	5	15.8	8	52
S4	0-0.15	3992024.4	3	< 0.10	13	5	14.8	8	49
S5	0-0.15	3992024.5	3	< 0.10	12	5	13.9	8	50
S6	0-0.15	3992024.6	3	< 0.10	11	5	13	7	48
S7	0-0.15	3992024.7	4	< 0.10	13	5	15.3	8	53
S8	0-0.15	3992024.8	3	< 0.10	12	5	13.7	7	47
S9	0-0.15	3992024.9	3	< 0.10	12	5	14	7	52
S10	0-0.15	3992024.10	3	< 0.10	13	5	14.3	9	51
S11	0-0.15	3992024.11	4	< 0.10	14	6	15.4	9	56
S12	0-0.15	3992024.12	4	< 0.10	14	5	15.6	8	56
S13	0-0.15	3992024.13	4	< 0.10	13	5	15.5	8	53
S14	0-0.15	3992024.14	3	< 0.10	12	5	13.9	8	52
S15	0-0.15	3992024.15	4	< 0.10	14	5	14.5	9	51
S16	0-0.15	3992024.16	4	< 0.10	14	5	16.7	9	57
S17	0-0.15	3992024.17	4	< 0.10	15	5	17	9	64
S18	0-0.15	3992024.18	4	< 0.10	13	6	16	8	59
S19	0-0.15	3992024.19	4	< 0.10	13	6	15.9	8	55
S20	0-0.15	3992024.20	3	0.11	15	5	14.4	9	53
S21	0-0.15	3992024.21	3	0.1	14	5	14.9	8	53
S22	0-0.15	3992024.22	4	< 0.10	13	6	16.8	8	55
S23	0-0.15	3992024.23	4	0.1	14	6	14.8	8	54
S24	0-0.15	3992024.24	4	0.1	14	5	15.3	9	55
S25	0-0.15	3992024.25	4	< 0.10	14	5	18.6	8	60
S26	0-0.15	3992024.26	4	0.1	14	5	14.8	9	56
S27	0-0.15	3992024.27	4	< 0.10	14	5	15.1	9	55
S28	0-0.15	3992024.28	4	< 0.10	14	7	15.8	10	46
S29	0-0.15	3992024.29	3	< 0.10	13	6	14.2	11	45

Notes:
All results in mg/kg

1. Resource Management (National Environmental Standard for Assessing and Managing Contaminants in Soil to Protect Human Health) Regulations 2011 (NESCS). Residential Land Use (10% produce).
2. NES SCS criteria presented are for Chromium (VI)
3. National Environment Protection Council (NEPC) (2013). National Environmental Protection (Assessment of Site Contamination) Measure 2013 Schedule B1.
4. ECan Report R07/1/2. Background Concentrations of selected trace elements in Canterbury Soils. Regional YBST.

6 Closure

This DSI meets the requirements of the NESCS as it has been undertaken by a SQEP in accordance with MfE Contaminated Land Management Guidelines No. 5, and reported on in accordance with MfE Contaminated Land Management Guidelines No.1. This report has been reviewed by Warren Sharp, a contaminated land specialist with over 28 years' experience and who holds CEnvP-SCS certification.

Sincerely,



Warren Sharp
Principal, CEnvP-SCS (SC41092)
EHS Support New Zealand Ltd

Appendix A - Limitations Statement

EHS Support New Zealand Limited ("EHS Support") has prepared this document in accordance with the usual care and thoroughness of the consulting profession for the use of West Rolleston Residential Ltd and only those third parties who have been authorised in writing by EHS Support to rely on this document. It is based on generally accepted practices and standards at the time it was prepared. No other warranty, expressed or implied, is made as to the professional advice included in this document. It is prepared in accordance with the scope of work and for the purpose outlined in the Short Form Agreement for Consultant Engagement dated 12 September 2025.

The methodology adopted and sources of information used by EHS Support are outlined in this document. EHS Support has made no independent verification of this information beyond the agreed scope of works and EHS Support assumes no responsibility for any inaccuracies or omissions. No indications were found during the preparation of this document that information contained in this document as provided to EHS Support was false.

This document was prepared on the issue date and is based on the information available at the time of preparation. EHS Support disclaims responsibility for any changes that may have occurred after this time.

This document should be read in full. No responsibility is accepted for use of any part of this document in any other context or for any other purpose or by third parties. This document does not purport to give legal advice. Legal advice can only be given by qualified legal practitioners.

Where conditions encountered at the subject site are subsequently found to differ significantly from those anticipated in this document, EHS Support must be notified of any such findings and be provided with an opportunity to review the recommendations of this document.

Whilst to the best of our knowledge information contained in this document is accurate at the date of issue, subsurface conditions, including groundwater levels and flow direction can change in a limited time, as well as natural processes or works of man at the subject site or on adjacent properties. Changes in applicable standards may also occur as a result of legislation or the broadening of knowledge. Accordingly, the findings of this report may be invalidated, wholly or in part, by changes beyond our control. Therefore, this document and the information contained herein should only be regarded as valid at the time of writing, unless otherwise explicitly stated in this document.

Appendix B – Laboratory Reports

R J Hill Laboratories Limited
28 Duke Street Frankton 3204
Private Bag 3205
Hamilton 3240 New Zealand

0508 HILL LAB (44 555 22)
+64 7 858 2000
mail@hill-labs.co.nz
www.hill-labs.co.nz

Certificate of Analysis

Client:	EHS Support New Zealand Limited	**Lab No:**	3992024	SPv1
Contact:	Warren Sharp	**Date Received:**	23-Sep-2025	
	C/- EHS Support New Zealand Limited	**Date Reported:**	29-Sep-2025	
	Unit 8B 1 Portage Road	**Quote No:**	92248	
	New Lynn	**Order No:**		
	Auckland 0600	**Client Reference:**	01783	
		Submitted By:	Warren Sharp	

Sample Type: Soil

	Sample Name:	S1 23-Sep-2025	S2 23-Sep-2025	S3 23-Sep-2025	S4 23-Sep-2025	S5 23-Sep-2025
	Lab Number:	3992024.1	3992024.2	3992024.3	3992024.4	3992024.5
Heavy Metals, Screen Level						
Total Recoverable Arsenic	mg/kg dry wt	3	3	4	3	3
Total Recoverable Cadmium	mg/kg dry wt	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10
Total Recoverable Chromium	mg/kg dry wt	12	13	13	13	12
Total Recoverable Copper	mg/kg dry wt	6	7	5	5	5
Total Recoverable Lead	mg/kg dry wt	14.2	14.1	15.8	14.8	13.9
Total Recoverable Nickel	mg/kg dry wt	7	9	8	8	8
Total Recoverable Zinc	mg/kg dry wt	50	57	52	49	50

	Sample Name:	S6 23-Sep-2025	S7 23-Sep-2025	S8 23-Sep-2025	S9 23-Sep-2025	S10 23-Sep-2025
	Lab Number:	3992024.6	3992024.7	3992024.8	3992024.9	3992024.10
Heavy Metals, Screen Level						
Total Recoverable Arsenic	mg/kg dry wt	3	4	3	3	3
Total Recoverable Cadmium	mg/kg dry wt	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10
Total Recoverable Chromium	mg/kg dry wt	11	13	12	12	13
Total Recoverable Copper	mg/kg dry wt	5	5	5	5	5
Total Recoverable Lead	mg/kg dry wt	13.0	15.3	13.7	14.0	14.3
Total Recoverable Nickel	mg/kg dry wt	7	8	7	7	9
Total Recoverable Zinc	mg/kg dry wt	48	53	47	52	51

	Sample Name:	S11 23-Sep-2025	S12 23-Sep-2025	S13 23-Sep-2025	S14 23-Sep-2025	S15 23-Sep-2025
	Lab Number:	3992024.11	3992024.12	3992024.13	3992024.14	3992024.15
Heavy Metals, Screen Level						
Total Recoverable Arsenic	mg/kg dry wt	4	4	4	3	4
Total Recoverable Cadmium	mg/kg dry wt	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10
Total Recoverable Chromium	mg/kg dry wt	14	14	13	12	14
Total Recoverable Copper	mg/kg dry wt	6	5	5	5	5
Total Recoverable Lead	mg/kg dry wt	15.4	15.6	15.5	13.9	14.5
Total Recoverable Nickel	mg/kg dry wt	9	8	8	8	9
Total Recoverable Zinc	mg/kg dry wt	56	56	53	52	51

	Sample Name:	S16 23-Sep-2025	S17 23-Sep-2025	S18 23-Sep-2025	S19 23-Sep-2025	S20 23-Sep-2025
	Lab Number:	3992024.16	3992024.17	3992024.18	3992024.19	3992024.20
Heavy Metals, Screen Level						
Total Recoverable Arsenic	mg/kg dry wt	4	4	4	4	3
Total Recoverable Cadmium	mg/kg dry wt	< 0.10	< 0.10	< 0.10	< 0.10	0.11
Total Recoverable Chromium	mg/kg dry wt	14	15	13	13	15
Total Recoverable Copper	mg/kg dry wt	5	5	6	6	5
Total Recoverable Lead	mg/kg dry wt	16.7	17.0	16.0	15.9	14.4
Total Recoverable Nickel	mg/kg dry wt	9	9	8	8	9
Total Recoverable Zinc	mg/kg dry wt	57	64	59	55	53

This Laboratory is accredited by International Accreditation New Zealand (IANZ), which represents New Zealand in the International Laboratory Accreditation Cooperation (ILAC). Through the ILAC Mutual Recognition Arrangement (ILAC-MRA) this accreditation is internationally recognised.
The tests reported herein have been performed in accordance with the terms of accreditation, with the exception of tests marked * or any comments and interpretations, which are not accredited.

Sample Type: Soil						
Sample Name:		S21 23-Sep-2025	S22 23-Sep-2025	S23 23-Sep-2025	S24 23-Sep-2025	S25 23-Sep-2025
Lab Number:		3992024.21	3992024.22	3992024.23	3992024.24	3992024.25
Heavy Metals, Screen Level						
Total Recoverable Arsenic	mg/kg dry wt	3	4	4	4	4
Total Recoverable Cadmium	mg/kg dry wt	0.10	< 0.10	0.10	0.10	< 0.10
Total Recoverable Chromium	mg/kg dry wt	14	13	14	14	14
Total Recoverable Copper	mg/kg dry wt	5	6	6	5	5
Total Recoverable Lead	mg/kg dry wt	14.9	16.8	14.8	15.3	18.6
Total Recoverable Nickel	mg/kg dry wt	8	8	8	9	8
Total Recoverable Zinc	mg/kg dry wt	53	55	54	55	60

Sample Name:		S26 23-Sep-2025	S27 23-Sep-2025	S28 23-Sep-2025	S29 23-Sep-2025
Lab Number:		3992024.26	3992024.27	3992024.28	3992024.29
Heavy Metals, Screen Level					
Total Recoverable Arsenic	mg/kg dry wt	4	4	4	3
Total Recoverable Cadmium	mg/kg dry wt	0.10	< 0.10	< 0.10	< 0.10
Total Recoverable Chromium	mg/kg dry wt	14	14	14	13
Total Recoverable Copper	mg/kg dry wt	5	5	7	6
Total Recoverable Lead	mg/kg dry wt	14.8	15.1	15.8	14.2
Total Recoverable Nickel	mg/kg dry wt	9	9	10	11
Total Recoverable Zinc	mg/kg dry wt	56	55	46	45

Summary of Methods

The following table(s) gives a brief description of the methods used to conduct the analyses for this job. The detection limits given below are those attainable in a relatively simple matrix. Detection limits may be higher for individual samples should insufficient sample be available, or if the matrix requires that dilutions be performed during analysis. A detection limit range indicates the lowest and highest detection limits in the associated suite of analytes. A full listing of compounds and detection limits are available from the laboratory upon request. Unless otherwise indicated, analyses were performed at Hill Labs, 28 Duke Street, Frankton, Hamilton 3204.

Sample Type: Soil			
Test	**Method Description**	**Default Detection Limit**	**Sample No**
Environmental Solids Sample Drying*	Air dried at 35°C Used for sample preparation. May contain a residual moisture content of 2-5%. (Free water removed before analysis, non-soil objects such as sticks, leaves, grass and stones also removed).	-	1-29
Heavy Metals, Screen Level	Dried sample, < 2mm fraction. Nitric/Hydrochloric acid digestion. Complies with NES Regulations. ICP-MS screen level, interference removal by Kinetic Energy Discrimination if required. US EPA 200.2 (modified), APHA 3125 B: Online Edition.	0.10 - 4 mg/kg dry wt	1-29

These samples were collected by yourselves (or your agent) and analysed as received at the laboratory.

Testing was completed between 24-Sep-2025 and 29-Sep-2025. For completion dates of individual analyses please contact the laboratory.

Samples are held at the laboratory after reporting for a length of time based on the stability of the samples and analytes being tested (considering any preservation used), and the storage space available. Once the storage period is completed, the samples are discarded unless otherwise agreed with the customer. Extended storage times may incur additional charges.

This certificate of analysis must not be reproduced, except in full, without the written consent of the signatory.



Martin Cowell - BSc
Client Services Manager - Environmental

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Quality Assurance Report

Client:	EHS Support New Zealand Limited	**Lab No:**	3992024	QCPv1
Contact:	Warren Sharp	**Date Received:**	23-Sep-2025	
	C/- EHS Support New Zealand Limited	**Date Reported:**	29-Sep-2025	
	Unit 8B 1 Portage Road	**Quote No:**	92248	
	New Lynn	**Order No:**		
	Auckland 0600	**Client Reference:**	01783	
		Submitted By:	Warren Sharp	

Blank QCs

Digest Blank 1 PrepWS esDig - WS: High Volume Environmental Soils by ICP-MS (HVesTR): 12742.13

		Results	Control Limits	Outside Limit (Yes/No)
Total Recoverable Arsenic	mg/kg dry wt	< 2 ± 1.3	-2.0 – 2.0	No
Total Recoverable Cadmium	mg/kg dry wt	< 0.10 ± 0.065	-0.100 – 0.100	No
Total Recoverable Chromium	mg/kg dry wt	< 2 ± 1.4	-2.0 – 2.0	No
Total Recoverable Copper	mg/kg dry wt	< 2 ± 1.3	-2.0 – 2.0	No
Total Recoverable Lead	mg/kg dry wt	< 0.4 ± 0.26	-0.40 – 0.40	No
Total Recoverable Nickel	mg/kg dry wt	< 2 ± 1.4	-2.0 – 2.0	No
Total Recoverable Zinc	mg/kg dry wt	< 4 ± 2.7	-4.0 – 4.0	No

Digest Blank 2 PrepWS esDig - WS: High Volume Environmental Soils by ICP-MS (HVesTR): 12742.52

		Results	Control Limits	Outside Limit (Yes/No)
Total Recoverable Arsenic	mg/kg dry wt	< 2 ± 1.3	-2.0 – 2.0	No
Total Recoverable Cadmium	mg/kg dry wt	< 0.10 ± 0.065	-0.100 – 0.100	No
Total Recoverable Chromium	mg/kg dry wt	< 2 ± 1.4	-2.0 – 2.0	No
Total Recoverable Copper	mg/kg dry wt	< 2 ± 1.3	-2.0 – 2.0	No
Total Recoverable Lead	mg/kg dry wt	< 0.4 ± 0.26	-0.40 – 0.40	No
Total Recoverable Nickel	mg/kg dry wt	< 2 ± 1.4	-2.0 – 2.0	No
Total Recoverable Zinc	mg/kg dry wt	< 4 ± 2.7	-4.0 – 4.0	No

Digest Blank 1 PrepWS esDig - WS: High Volume Environmental Soils by ICP-MS (HVesTR): 12744.13

		Results	Control Limits	Outside Limit (Yes/No)
Total Recoverable Arsenic	mg/kg dry wt	< 2 ± 1.3	-2.0 – 2.0	No
Total Recoverable Cadmium	mg/kg dry wt	< 0.10 ± 0.065	-0.100 – 0.100	No
Total Recoverable Chromium	mg/kg dry wt	< 2 ± 1.4	-2.0 – 2.0	No
Total Recoverable Copper	mg/kg dry wt	< 2 ± 1.3	-2.0 – 2.0	No
Total Recoverable Lead	mg/kg dry wt	< 0.4 ± 0.26	-0.40 – 0.40	No
Total Recoverable Nickel	mg/kg dry wt	< 2 ± 1.4	-2.0 – 2.0	No
Total Recoverable Zinc	mg/kg dry wt	< 4 ± 2.7	-4.0 – 4.0	No

Digest Blank 2 PrepWS esDig - WS: High Volume Environmental Soils by ICP-MS (HVesTR): 12744.35

		Results	Control Limits	Outside Limit (Yes/No)
Total Recoverable Arsenic	mg/kg dry wt	< 2 ± 1.3	-2.0 – 2.0	No
Total Recoverable Cadmium	mg/kg dry wt	< 0.10 ± 0.065	-0.100 – 0.100	No
Total Recoverable Chromium	mg/kg dry wt	< 2 ± 1.4	-2.0 – 2.0	No
Total Recoverable Copper	mg/kg dry wt	< 2 ± 1.3	-2.0 – 2.0	No
Total Recoverable Lead	mg/kg dry wt	< 0.4 ± 0.26	-0.40 – 0.40	No
Total Recoverable Nickel	mg/kg dry wt	< 2 ± 1.4	-2.0 – 2.0	No

Digest Blank 2 PrepWS esDig - WS: High Volume Environmental Soils by ICP-MS (HVesTR): 12744.35				
		Results	**Control Limits**	**Outside Limit (Yes/No)**
Total Recoverable Zinc	mg/kg dry wt	< 4 ± 2.7	-4.0 – 4.0	No

Digest Blank 1 PrepWS esDig - WS: High Volume Environmental Soils by ICP-MS (HVesTR): 12745.13				
		Results	**Control Limits**	**Outside Limit (Yes/No)**
Total Recoverable Arsenic	mg/kg dry wt	< 2 ± 1.3	-2.0 – 2.0	No
Total Recoverable Cadmium	mg/kg dry wt	< 0.10 ± 0.065	-0.100 – 0.100	No
Total Recoverable Chromium	mg/kg dry wt	< 2 ± 1.4	-2.0 – 2.0	No
Total Recoverable Copper	mg/kg dry wt	< 2 ± 1.3	-2.0 – 2.0	No
Total Recoverable Lead	mg/kg dry wt	< 0.4 ± 0.26	-0.40 – 0.40	No
Total Recoverable Nickel	mg/kg dry wt	< 2 ± 1.4	-2.0 – 2.0	No
Total Recoverable Zinc	mg/kg dry wt	< 4 ± 2.7	-4.0 – 4.0	No

Digest Blank 2 PrepWS esDig - WS: High Volume Environmental Soils by ICP-MS (HVesTR): 12745.37				
		Results	**Control Limits**	**Outside Limit (Yes/No)**
Total Recoverable Arsenic	mg/kg dry wt	< 2 ± 1.3	-2.0 – 2.0	No
Total Recoverable Cadmium	mg/kg dry wt	< 0.10 ± 0.065	-0.100 – 0.100	No
Total Recoverable Chromium	mg/kg dry wt	< 2 ± 1.4	-2.0 – 2.0	No
Total Recoverable Copper	mg/kg dry wt	< 2 ± 1.3	-2.0 – 2.0	No
Total Recoverable Lead	mg/kg dry wt	< 0.4 ± 0.26	-0.40 – 0.40	No
Total Recoverable Nickel	mg/kg dry wt	< 2 ± 1.4	-2.0 – 2.0	No
Total Recoverable Zinc	mg/kg dry wt	< 4 ± 2.7	-4.0 – 4.0	No

Digest Blank 1 PrepWS esDig - WS: High Volume Environmental Soils by ICP-MS (HVesTR): 12753.13				
		Results	**Control Limits**	**Outside Limit (Yes/No)**
Total Recoverable Arsenic	mg/kg dry wt	< 2 ± 1.3	-2.0 – 2.0	No
Total Recoverable Cadmium	mg/kg dry wt	< 0.10 ± 0.065	-0.100 – 0.100	No
Total Recoverable Chromium	mg/kg dry wt	< 2 ± 1.4	-2.0 – 2.0	No
Total Recoverable Copper	mg/kg dry wt	< 2 ± 1.3	-2.0 – 2.0	No
Total Recoverable Lead	mg/kg dry wt	< 0.4 ± 0.26	-0.40 – 0.40	No
Total Recoverable Nickel	mg/kg dry wt	< 2 ± 1.4	-2.0 – 2.0	No
Total Recoverable Zinc	mg/kg dry wt	< 4 ± 2.7	-4.0 – 4.0	No

Digest Blank 2 PrepWS esDig - WS: High Volume Environmental Soils by ICP-MS (HVesTR): 12753.51				
		Results	**Control Limits**	**Outside Limit (Yes/No)**
Total Recoverable Arsenic	mg/kg dry wt	< 2 ± 1.3	-2.0 – 2.0	No
Total Recoverable Cadmium	mg/kg dry wt	< 0.10 ± 0.065	-0.100 – 0.100	No
Total Recoverable Chromium	mg/kg dry wt	< 2 ± 1.4	-2.0 – 2.0	No
Total Recoverable Copper	mg/kg dry wt	< 2 ± 1.3	-2.0 – 2.0	No
Total Recoverable Lead	mg/kg dry wt	< 0.4 ± 0.26	-0.40 – 0.40	No
Total Recoverable Nickel	mg/kg dry wt	< 2 ± 1.4	-2.0 – 2.0	No
Total Recoverable Zinc	mg/kg dry wt	< 4 ± 2.7	-4.0 – 4.0	No

50x Manual Dilution Digest Blank PrepWS esDig - WS: High Volume Environmental Soils by ICP-MS (HVesTR): 12753.71				
		Results	**Control Limits**	**Outside Limit (Yes/No)**
Total Recoverable Arsenic	mg/kg dry wt	< 2 ± 1.3	-2.0 – 2.0	No
Total Recoverable Cadmium	mg/kg dry wt	< 0.10 ± 0.065	-0.100 – 0.100	No
Total Recoverable Chromium	mg/kg dry wt	< 2 ± 1.4	-2.0 – 2.0	No
Total Recoverable Copper	mg/kg dry wt	< 2 ± 1.3	-2.0 – 2.0	No
Total Recoverable Lead	mg/kg dry wt	< 0.4 ± 0.26	-0.40 – 0.40	No
Total Recoverable Nickel	mg/kg dry wt	< 2 ± 1.4	-2.0 – 2.0	No

50x Manual Dilution Digest Blank PrepWS esDig - WS: High Volume Environmental Soils by ICP-MS (HVesTR): 12753.71				
		Results	**Control Limits**	**Outside Limit (Yes/No)**
Total Recoverable Zinc	mg/kg dry wt	< 4 ± 2.7	-4.0 – 4.0	No

Digest Blank 1 PrepWS esDig - WS: High Volume Environmental Soils by ICP-MS (HVesTR): 12758.73				
		Results	**Control Limits**	**Outside Limit (Yes/No)**
Total Recoverable Lead	mg/kg dry wt	< 0.4 ± 0.26	-0.40 – 0.40	No

Reference Material QCs

SETOC-705 QC - WS: High Volume Environmental Soils by ICP-MS (HVesTR): 12742.14				
		Results	**Control Limits**	**Outside Limit (Yes/No)**
Total Recoverable Arsenic	mg/kg dry wt	10.7 ± 2.1	9.1 – 12.7	No
Total Recoverable Cadmium	mg/kg dry wt	0.85 ± 0.17	0.70 – 0.98	No
Total Recoverable Chromium	mg/kg dry wt	25.1 ± 3.6	21 – 30	No
Total Recoverable Copper	mg/kg dry wt	13.1 ± 2.5	11.0 – 15.3	No
Total Recoverable Lead	mg/kg dry wt	32.3 ± 6.1	28 – 38	No
Total Recoverable Nickel	mg/kg dry wt	14.0 ± 2.3	11.7 – 16.3	No
Total Recoverable Zinc	mg/kg dry wt	193 ± 29	166 – 230	No

SETOC-705 QC - WS: High Volume Environmental Soils by ICP-MS (HVesTR): 12742.33				
		Results	**Control Limits**	**Outside Limit (Yes/No)**
Total Recoverable Arsenic	mg/kg dry wt	11.1 ± 2.2	9.1 – 12.7	No
Total Recoverable Cadmium	mg/kg dry wt	0.86 ± 0.17	0.70 – 0.98	No
Total Recoverable Chromium	mg/kg dry wt	27.0 ± 3.8	21 – 30	No
Total Recoverable Copper	mg/kg dry wt	13.4 ± 2.5	11.0 – 15.3	No
Total Recoverable Lead	mg/kg dry wt	33.4 ± 6.3	28 – 38	No
Total Recoverable Nickel	mg/kg dry wt	13.8 ± 2.3	11.7 – 16.3	No
Total Recoverable Zinc	mg/kg dry wt	195 ± 29	166 – 230	No

SETOC-705 QC - WS: High Volume Environmental Soils by ICP-MS (HVesTR): 12744.14				
		Results	**Control Limits**	**Outside Limit (Yes/No)**
Total Recoverable Arsenic	mg/kg dry wt	11.5 ± 2.2	9.1 – 12.7	No
Total Recoverable Cadmium	mg/kg dry wt	0.87 ± 0.17	0.70 – 0.98	No
Total Recoverable Chromium	mg/kg dry wt	27.0 ± 3.8	21 – 30	No
Total Recoverable Copper	mg/kg dry wt	13.7 ± 2.5	11.0 – 15.3	No
Total Recoverable Lead	mg/kg dry wt	33.8 ± 6.4	28 – 38	No
Total Recoverable Nickel	mg/kg dry wt	14.3 ± 2.3	11.7 – 16.3	No
Total Recoverable Zinc	mg/kg dry wt	204 ± 31	166 – 230	No

SETOC-705 QC - WS: High Volume Environmental Soils by ICP-MS (HVesTR): 12744.54				
		Results	**Control Limits**	**Outside Limit (Yes/No)**
Total Recoverable Arsenic	mg/kg dry wt	12.2 ± 2.3	9.1 – 12.7	No
Total Recoverable Cadmium	mg/kg dry wt	0.92 ± 0.18	0.70 – 0.98	No
Total Recoverable Chromium	mg/kg dry wt	28.3 ± 4.0	21 – 30	No
Total Recoverable Copper	mg/kg dry wt	14.7 ± 2.7	11.0 – 15.3	No
Total Recoverable Lead	mg/kg dry wt	36.2 ± 6.8	28 – 38	No
Total Recoverable Nickel	mg/kg dry wt	15.5 ± 2.4	11.7 – 16.3	No
Total Recoverable Zinc	mg/kg dry wt	217 ± 32	166 – 230	No

SETOC-705 QC - WS: High Volume Environmental Soils by ICP-MS (HVesTR): 12745.14				
		Results	**Control Limits**	**Outside Limit (Yes/No)**
Total Recoverable Arsenic	mg/kg dry wt	10.7 ± 2.1	9.1 – 12.7	No
Total Recoverable Cadmium	mg/kg dry wt	0.90 ± 0.17	0.70 – 0.98	No

SETOC-705 QC - WS: High Volume Environmental Soils by ICP-MS (HVesTR): 12745.14				
		Results	Control Limits	Outside Limit (Yes/No)
Total Recoverable Chromium	mg/kg dry wt	26.9 ± 3.8	21 – 30	No
Total Recoverable Copper	mg/kg dry wt	12.9 ± 2.4	11.0 – 15.3	No
Total Recoverable Lead	mg/kg dry wt	32.8 ± 6.2	28 – 38	No
Total Recoverable Nickel	mg/kg dry wt	14.1 ± 2.3	11.7 – 16.3	No
Total Recoverable Zinc	mg/kg dry wt	186 ± 28	166 – 230	No

SETOC-705 QC - WS: High Volume Environmental Soils by ICP-MS (HVesTR): 12745.49				
		Results	Control Limits	Outside Limit (Yes/No)
Total Recoverable Arsenic	mg/kg dry wt	10.9 ± 2.1	9.1 – 12.7	No
Total Recoverable Cadmium	mg/kg dry wt	0.87 ± 0.17	0.70 – 0.98	No
Total Recoverable Chromium	mg/kg dry wt	26.1 ± 3.7	21 – 30	No
Total Recoverable Copper	mg/kg dry wt	13.0 ± 2.5	11.0 – 15.3	No
Total Recoverable Lead	mg/kg dry wt	32.2 ± 6.1	28 – 38	No
Total Recoverable Nickel	mg/kg dry wt	13.9 ± 2.3	11.7 – 16.3	No
Total Recoverable Zinc	mg/kg dry wt	191 ± 29	166 – 230	No

SETOC-705 QC - WS: High Volume Environmental Soils by ICP-MS (HVesTR): 12753.14				
		Results	Control Limits	Outside Limit (Yes/No)
Total Recoverable Arsenic	mg/kg dry wt	10.5 ± 2.1	9.1 – 12.7	No
Total Recoverable Cadmium	mg/kg dry wt	0.81 ± 0.16	0.70 – 0.98	No
Total Recoverable Chromium	mg/kg dry wt	25.7 ± 3.6	21 – 30	No
Total Recoverable Copper	mg/kg dry wt	13.0 ± 2.5	11.0 – 15.3	No
Total Recoverable Lead	mg/kg dry wt	30.8 ± 5.8	28 – 38	No
Total Recoverable Nickel	mg/kg dry wt	14.2 ± 2.3	11.7 – 16.3	No
Total Recoverable Zinc	mg/kg dry wt	190 ± 28	166 – 230	No

SETOC-705 QC - WS: High Volume Environmental Soils by ICP-MS (HVesTR): 12753.32				
		Results	Control Limits	Outside Limit (Yes/No)
Total Recoverable Arsenic	mg/kg dry wt	10.0 ± 2.0	9.1 – 12.7	No
Total Recoverable Cadmium	mg/kg dry wt	0.82 ± 0.16	0.70 – 0.98	No
Total Recoverable Chromium	mg/kg dry wt	26.3 ± 3.7	21 – 30	No
Total Recoverable Copper	mg/kg dry wt	13.1 ± 2.5	11.0 – 15.3	No
Total Recoverable Lead	mg/kg dry wt	32.4 ± 6.1	28 – 38	No
Total Recoverable Nickel	mg/kg dry wt	14.2 ± 2.3	11.7 – 16.3	No
Total Recoverable Zinc	mg/kg dry wt	193 ± 29	166 – 230	No

SETOC-705 QC - WS: High Volume Environmental Soils by ICP-MS (HVesTR): 12753.72				
		Results	Control Limits	Outside Limit (Yes/No)
Total Recoverable Arsenic	mg/kg dry wt	9.8 ± 2.0	9.1 – 12.7	No
Total Recoverable Cadmium	mg/kg dry wt	0.80 ± 0.16	0.70 – 0.98	No
Total Recoverable Chromium	mg/kg dry wt	23.4 ± 3.4	21 – 30	No
Total Recoverable Copper	mg/kg dry wt	12.4 ± 2.4	11.0 – 15.3	No
Total Recoverable Lead	mg/kg dry wt	29.8 ± 5.6	28 – 38	No
Total Recoverable Nickel	mg/kg dry wt	12.9 ± 2.2	11.7 – 16.3	No
Total Recoverable Zinc	mg/kg dry wt	180 ± 27	166 – 230	No

SETOC-705 QC - WS: High Volume Environmental Soils by ICP-MS (HVesTR): 12758.74				
		Results	Control Limits	Outside Limit (Yes/No)
Total Recoverable Lead	mg/kg dry wt	33.2 ± 6.2	28 – 38	No