



SOUTHERN LINKS 1: RESIDENTIAL DEVELOPMENT - DETAILED SITE INVESTIGATION

Prepared by Swiftsure Consultants Ltd

30 August 2026

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Swiftsure Consultants Ltd Document Control:

Report Title	Southern Links Stage 1: Residential Development – Detailed Site Investigation		
Client	Saxby Road JV Ltd	Client Contact	Dillon Kelliher
Date	Revision Details / Status		
30 August 2026	Final for Release		

SQEP Certifying Statement

I certify that the site has been assessed in accordance with current New Zealand Regulations and guidance documents and reported in general accordance with the Ministry for the Environment's Contaminated Land Management Guidelines No. 1: Reporting on Contaminated Sites in New Zealand (dated 2021).

I am considered by Swiftsure Consultants Ltd Limited to be a suitably qualified and experienced practitioner (SQEP) able to certify reports pursuant to the Resource Management (National Environmental Standard for Assessing and Managing Contaminants in Soil to Protect Human Health) Regulations 2011.

Emma Lewis, Contaminated Land Specialist



Dated 30 August 2026

1 Introduction

Swiftsure Consultants Ltd (“Swiftsure”) has prepared a Detailed Site Investigation (DSI) for the site at Saxbys Road, Deanwell, Hamilton (also known as the “Residential Block”) (the “site”).

2 Project Description

The SL1 Residential South development forms part of the residential component of Southern Links 1, a listed project under FTAA 2024. The Southern Links 1 project is a combined 106ha development, including residential and industrial activities. The residential component comprises circa 46ha and is in single ownership and is currently used for rural farming activities. The landholding includes five land parcels legally described as Lot 2 DP 589463 (22.21 ha); Part Lot 2 DP 25668 and Part Lot 1 DP 25668 (33.64 ha); Lot 3 DP 394366 and Lot 1 DP South Auckland 51518 (7.58 ha); Lot 1 DPSA 69842, Lot 2 DPSA 11357, Lot 1 DPSA 75305 and Section 1 SO 60814 (26.13 ha); and Part Lot 1 DP 25668 (26.50 ha). This site is part of the wider Southern Links Growth Cell, a circa 440ha contiguous land area that stretches the south-western edge of Hamilton that includes the Hamilton Southern Links (RoNS) designation.

The proposal seeks approval for a Substantive Application under the Fast-Track Approvals Act 2024 for a comprehensively master planned and staged residential development. This includes all necessary resource consents under the Resource Management Act 1991, including regional, district approvals where required.

The residential component provides for the establishment of circa 938 residential units, together with a neighbourhood commercial node, open spaces, waterbodies, and infrastructure devices including wetlands and roading.

The proposal includes substantial enabling works to establish developable land, including bulk earthworks across the site. An integrated stormwater management system including wetlands, detention/attenuation devices and treatment ponds supports the development. Ecological restoration is integrated via riparian and corridor planting with appropriate design measures being adopted to enhance and protect key features including the upper tributaries of the Mangakōtukutuku Stream and associated drains.

Access and integration with the surrounding Hamilton area is provided through connected transport framework, including the establishment of intersections, roading, and walking and cycle networks, along with upgrades to existing transport infrastructure. The residential development is proposed to be serviced via a coordinated strategy, including the extension of public networks, upgrades, and installation of appropriate infrastructure.

3 Purpose and Scope

The purpose of this investigation is to assess whether:

- The site is a ‘piece of land’ under the NES-CS¹.
- Determine if the risk posed by contaminants is unacceptable to the NES-CS.

¹ Resource Management (National Environmental Standard for Assessing and Managing Contaminants in Soil to Protect Human Health) Regulations 2011 (NESC).

The objectives of the DSI are to:

- To collect field data to identify the nature and concentration of the contamination present on the site.
- Assess the potential risk to human health and the environment.
- Support consent application under the NES-CS.

The ground investigation component of soils investigation comprised the following:

- Excavation of 17 hand dug pits to a maximum depth of 0.2m below ground level (bgl) and collection of 17 soil samples.
- Collection of 4 surface sub samples (one composite sample) from the paddocks.
- Screening analysis of soil samples (including 1 for QA/QC purposes) for a combination of the following screening suite of contaminants of concern:
 - Heavy metals (arsenic, cadmium, chromium, copper, nickel, lead and zinc).
 - Semi Volatile Organic Compounds (SVOCs).
 - Asbestos (semi quantitative).
- Assessment under the applicable regulatory contaminated land framework.
- Preparation of this report presenting and assessing the results of the investigation.

This assessment has been undertaken and reported in general accordance with the following:

- Contaminated Land Management Guidelines No. 1: Reporting on Contaminated Sites in New Zealand (revised 2021).
- Contaminated Land Management Guidelines No. 5: Site Investigation and Analysis of Soils (revised 2021).
- New Zealand Guidelines for Assessing and Managing Asbestos in Soil, BRANZ (November 2017).

4 Acid Sulphate Soils

A review of the Waikato Regional Council (WRC) resources, including their technical guidance² and the PDP mapping tool, indicates that the site and surrounding area are classified as having a “*high probability of occurrence of acid sulphate soils*”. From a contaminated land perspective, the primary risk arises when these soils are disturbed and exposed to oxygen, resulting in oxidation and the generation of sulfuric acid. This can pose a risk to sensitive receptors, particularly surface water and aquatic ecosystems.

At present, there is no specific national or regional guidance in New Zealand for the management of acid sulphate soils. The available technical guidance indicates that management should be risk-based, with measures potentially including minimising disturbance, particularly in proximity to sensitive

² Waikato region acid sulphate soils preliminary risk assessment, Waikato Regional Council Technical Report 2023/24

receptors. The document also references the Queensland Acid Sulphate Soils Technical Manual (Dear et al., 2014) as a useful benchmark.

An Acid Sulphate Management Plan has been prepared by Swiftsure (August 2026). The plan applies to earthworks undertaken as part of the Southern Links Stage 1 Southern Residential Block and Northern Industrial Block. It is intended to sit alongside the project Construction Environmental Management Plan (CEMP), erosion and sediment control measures, contaminated soils management plans and construction methodology. The plan addresses naturally occurring potential acid sulphate soil (PASS) and actual acid sulphate soil (AASS). It does not replace the separate requirements for managing anthropogenic soil contamination identified by the Swiftsure contaminated land investigations.

5 Regulatory Assessment

5.1 National Environmental Standard: Contaminated Land

Assessment under the *Resource Management (National Environmental Standard for Assessing and Managing Contaminants in Soil to Protect Human Health) Regulations 2011* (NES-CS) was undertaken as part of the PSI. The PSI determined that the following HAIL³ activities have been identified for this site on a more likely than not basis:

- **E1** - Asbestos products manufacture or disposal including sites with buildings containing asbestos products known to be in a deteriorated condition (current and former structures).
- **I** - any other land that has been subject to the intentional or accidental release of a hazardous substance in sufficient quantity that it could be a risk to human health or the environment.

The PSI determined that the Residential Site involved activities classified as triggers under the NES-CS, and it is unlikely that the Permitted Activity criteria specified in Regulations 8(3) and 8(4) would be satisfied. Consequently, resource consent would be required for soil disturbance and change of land use pursuant to the NES-CS provisions.

A DSI was required to demonstrate that the 'piece of land' is appropriate for the intended land use by assessing the concentrations present in soil against the applicable standard for the land.

6 Site Description

The Southern Links 1 project is a combined 106ha development, including residential and industrial activities. The residential component comprises circa 46ha and is in single ownership and is currently used for rural farming activities. The landholding includes five land parcels legally described as Lot 2 DP 589463 (22.21 ha); Part Lot 2 DP 25668 and Part Lot 1 DP 25668 (33.64 ha); Lot 3 DP 394366 and Lot 1 DP South Auckland 51518 (7.58 ha); Lot 1 DPSA 69842, Lot 2 DPSA 11357, Lot 1 DPSA 75305 and Section 1 SO 60814 (26.13 ha); and Part Lot 1 DP 25668 (26.50 ha). This site is part of the wider Southern Links Growth Cell, a circa 440ha contiguous land area that stretches the south-western edge of Hamilton that includes the Hamilton Southern Links (RoNS) designation.

The Residential Site location is shown in **Figure 1** and an aerial image of the SL1 Block is shown in **Figure 2**. The area of proposed development is topographically flat across the site with no elevation changes included on the Waipa District Council online mapping layer.

³ Hazardous Activities and Industries List (MfE)

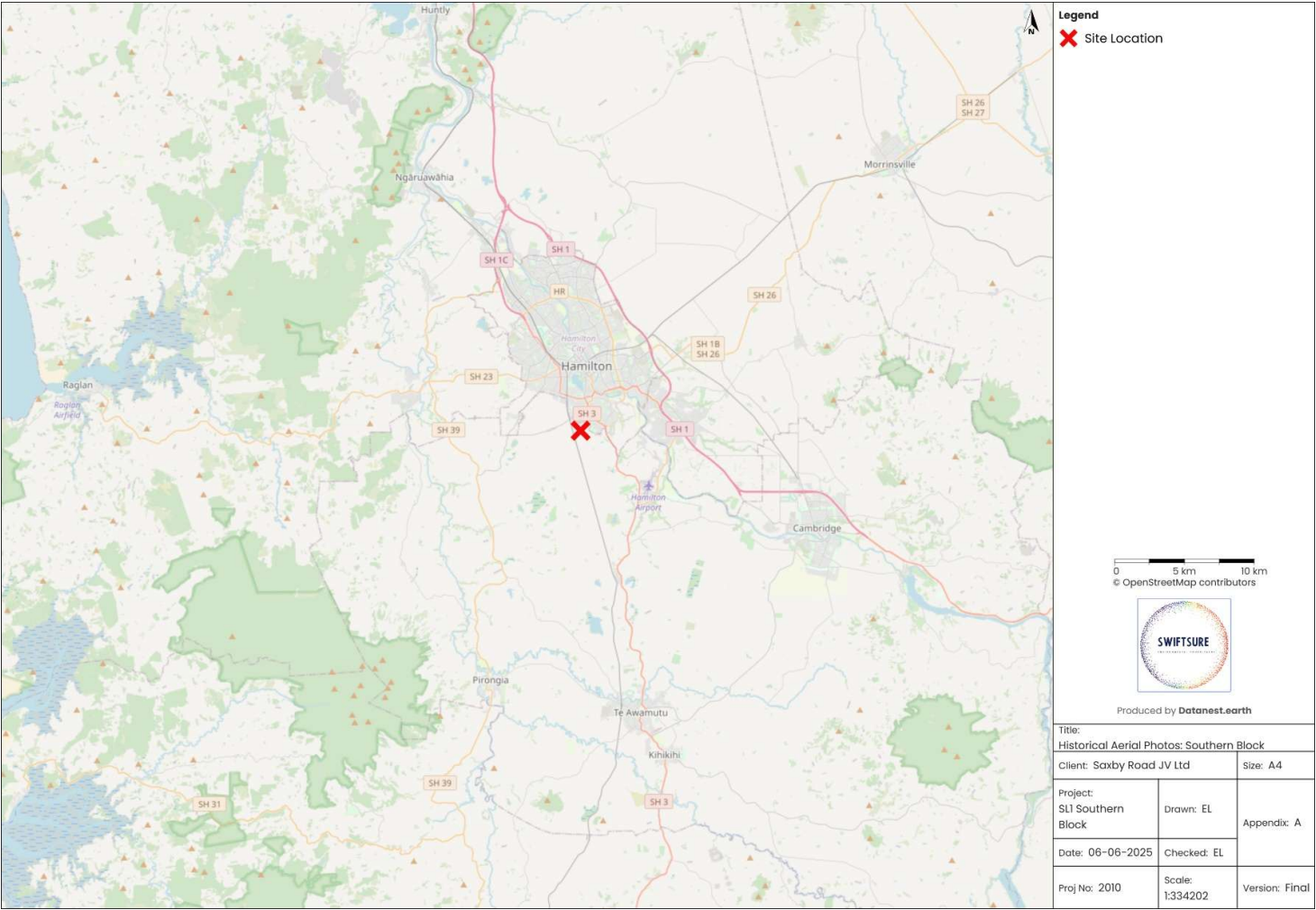


Figure 1: Site Location



Figure 2: Aerial images of the SL1 Southern Block

7 Published Geology

7.1 Geology and Hydrogeology

Geological maps⁴ for the area indicate the site is underlain by Late Pleistocene River deposits. Cross bedded pumice and sand, silt and gravel with interbedded peat. From the CMW report it has indicated that there are predominantly dense sands to very stiff silts.

The project hydrogeological effects assessment⁵ identifies the site to be located within the highly modified Mangaotukutuku Stream catchment. There is one headwater stream and farm drains present on the site. Hamilton Lake and the Waikato River are located approximately 2.5km to the north of the site.

There are four bores within 500m of the Site⁵ as follows:

Table 1: Bore Information

Bore ID	Static Water Level (m)	Status
Bore 72 – Station 1628	9.1	Existing
Bore 70 – Station 501	4	Existing
Bore 70 – Station 363	-	-
Bore 72 – Station 4049	2.65	Existing

7.2 Geomorphology

Existing geotechnical assessments for the SL1 area⁶ state that the site is within a wetland/alluvial plain and that this landform is defined by an essentially level to gently undulating plain at between RL43m and RL35m (Moturiki Datum) that lies to the west of the Low Hamilton Hills. The report states that the plains are often crossed with a network of open drains which are typical of farmland in peat areas. Most of the site is low-lying flat farmland.

7.3 Groundwater

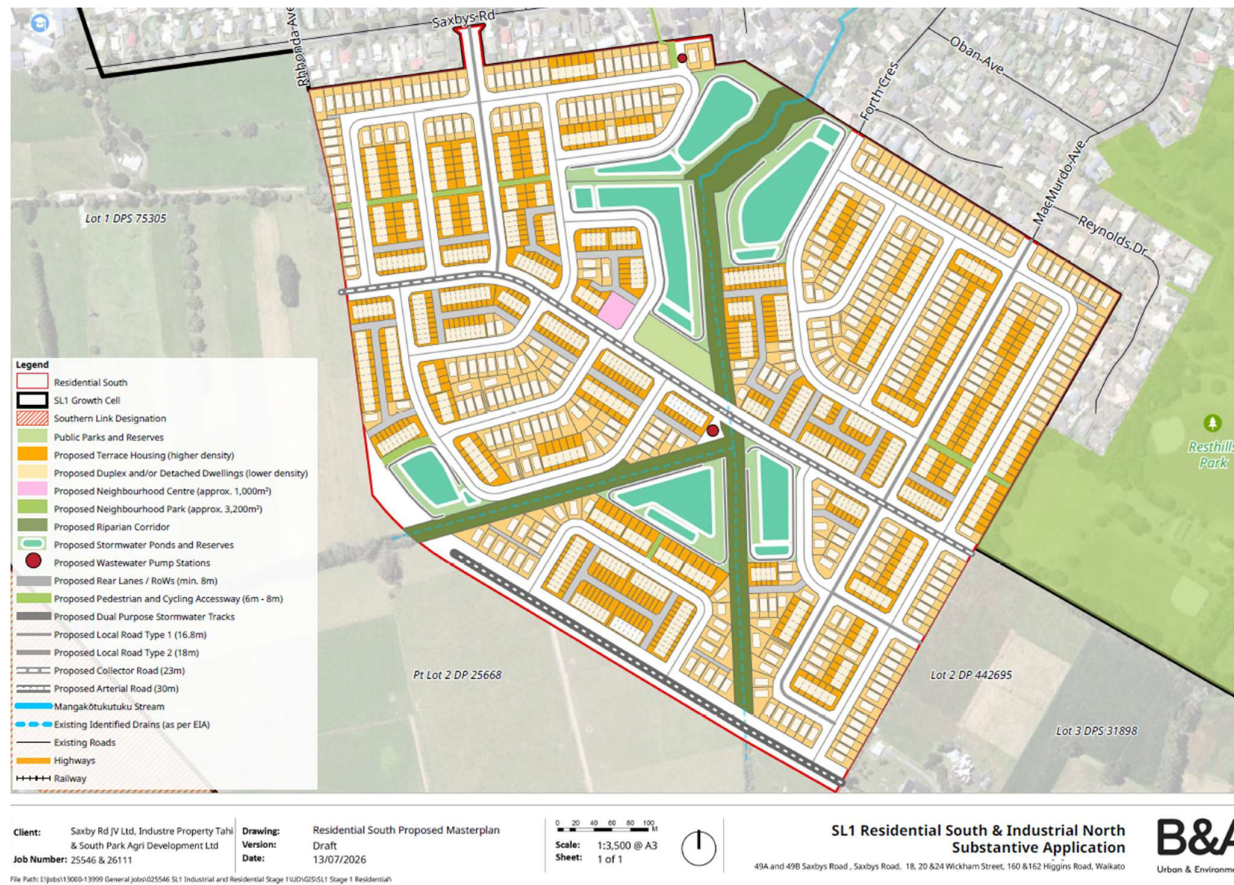
The Geotechnical report⁶ states that groundwater was encountered between 0.0m to >16.2m below the existing ground surface at time of testing. Groundwater within the Low Hamilton Hills areas is expected to get closer to the ground surface the lower in elevation the ground surface is. Perched groundwater tables can be present within the layered Walton Subgroup deposits.

⁴ Geological Map of New Zealand: 1:125K. Institute of Geological and Nuclear Sciences Ltd, 2010.

⁵ Southern Links 1 Residential Stage 1 Southern Block Hydrogeological Effects Assessment, Wallbridge Gilbert Aztec, May 2026.

⁶ Southern Links 1 – Residential Development, Hamilton. Geotechnical Investigation Report. CMW Geosciences, 15 July 2026.

Figure 3: Residential Master Plan



8 Summary of Desk Study Information

The Preliminary Site Investigation (PSI) identified several areas of potential contamination associated with historical site activities, including the former residential dwellings, a disused milking shed and adjacent storage area. These features were considered potential sources of asbestos and lead contamination, while the long-term agricultural use of the property indicated the potential for elevated cadmium concentrations associated with historical phosphate fertiliser application.

9 Sampling & Analysis Plan

The purpose of this Sampling and Analysis Plan (SAP) is to guide the collection, handling, and analysis of environmental samples to assess potential contamination at the site during the soil investigation.

9.1 Contaminants of Concern

Based on the PSI, the following contaminants of concern have been identified:

Table 2: Contaminants of Concern

Source Area	Potential Contaminants
Pasture	Cadmium
Dairy sheds	Asbestos
Garage	Asbestos
Former and existing buildings constructed pre 1980s	Asbestos Lead
Laydown/storage area of miscellaneous items	Hydrocarbons Heavy metals SVOCs

9.2 Sampling Rationale

Sampling locations were selected to investigate identified source areas and background conditions.

Samples were targeted towards the potential hotspots identified from the PSI; namely the former and existing structures constructed pre-1980s. Targeted sampling was also undertaken around the concrete pad edge of the laydown area where contaminants would most likely have accumulated from runoff. Generally, a surface/shallow soil sample was collected as an initial assessment of contamination. Sampling density was in general accordance with the GAMAS⁷ and MfE CLMG Guidelines⁸.

⁷ Guidelines for Assessing and Managing Asbestos in Soil.

⁸ Contaminated Land Management Guidelines No. 5: Site Investigation and Analysis of Soils (revised 2021).

A grid-based sampling approach was adopted in the grazing paddocks for composite sampling of shallow soils of super-phosphate application.

9.3 Site Investigation Methodology

Soil sampling was undertaken on 18 July 2025. Approximate sample locations are shown in **Appendix A**.

Using a stainless-steel trowel and hand auger which were decontaminated using a solution of Decon90® and nitrile gloves which were replaced between sample locations, samples were collected and placed directly in laboratory supplied plastic or glass jars as appropriate. Samples were shipped to Hill Laboratories Ltd (Hill Labs) under chain of custody (COC) documentation. The COC is included in **Appendix B**, and the laboratory analytical reports are available in **Appendix C**.

Soil samples were analysed for a combination of heavy metals (including lead), asbestos, semi volatile organic compounds (SVOC) and cadmium.

9.4 Observations

The ground conditions surrounding the existing dwellings consist of compacted turf, herbaceous topsoil, and underlying sandy silt. No evidence of fill material was observed. Suspected asbestos-containing material (ACM) debris was identified at the rear of the main residential dwelling, likely associated with the recent removal of a covered deck. Additional suspected ACM debris was also observed on the ground within the carport area. The debris was sampled for analysis. The ground conditions at the layout area comprised compacted fill material. Photographs taken during the soil investigation are provided as **Appendix A**.

The grazed paddocks comprised herbaceous silty loam.

9.5 Investigation Criteria

The risk assessment has been based on land use scenarios for 'Residential' purposes with reference to the Masterplan Design (**Figure 3**).

The following environmental criteria were adopted for this assessment:

- Updated development of soil guideline values for the protection of ecological receptors (Eco-SGVs): Technical document. Manaaki Whenua Landcare Research Lincoln. 2019.
- USEPA Regional Screening Levels.

The following human health criteria were adopted for this assessment:

- Resource Management (National Environmental Standard for Assessing and Managing Contaminants in Soil to Protect Human Health) Regulations 2011 (Residential land use).
- Guidelines for Assessing and Managing Asbestos in Soil, BRANZ 2017.

The following background criteria were adopted to this assessment:

- Predicted Background Soil Concentrations, Manaaki Whenua Landcare Research, 2023.

10 Results

A summary of the results is presented in **Appendix B**. Provided below is a summary of the results. **Appendix C** provides the analytical results provided by the laboratory.

10.1 Heavy Metals

A total of 17 targeted soil samples (S01 to S17) were analysed for a suite of heavy metals and metalloids, including arsenic, cadmium, chromium, copper, lead, nickel and zinc. Heavy metals and metalloids were detected in all samples analysed. Concentrations of arsenic, cadmium, copper, lead and zinc exceeded the adopted background concentrations in one or more samples, while chromium and nickel remained below the adopted background criteria.

Three samples (S03, S04 and S05) exceeded the adopted residential human health criteria:

- S03: Lead.
- S04: Arsenic, cadmium and lead.
- S05: Arsenic and lead.

No analytes exceeded the adopted commercial/industrial human health criteria.

Zinc exceeded the adopted residential environmental criterion in seven samples (S04, S05, S07, S08, S11, S12 and S17). Of these, zinc concentrations in S04, S05, S07 and S08 also exceeded the adopted commercial/industrial environmental criterion. Copper exceeded the adopted residential environmental criterion in sample S12 only.

The highest concentrations of arsenic, cadmium, lead and zinc were generally associated with the former iron/timber farm shed area. Lower-level exceedances of the adopted background concentrations were more widespread across the site, consistent with long-term agricultural land use.

10.2 Cadmium

Eight soil samples (F1 to F8) were collected from the grazed paddocks using a systematic grid sampling approach and analysed for cadmium to assess the potential influence of historical superphosphate fertiliser application. Soil pH ranged from 5.9 to 7.3, and cadmium concentrations ranged from 0.47 mg/kg to 0.69 mg/kg.

All paddock samples exceeded the adopted background concentration (0.28 mg/kg) but remained below the adopted human health criteria (residential 3 mg/kg and commercial/industrial 1,300 mg/kg). The results indicate widespread low-level cadmium consistent with long-term agricultural use and historical phosphate fertiliser application but do not indicate an unacceptable risk to human health or the environment within the grazed paddock areas.

10.3 Asbestos

Ten soil samples were analysed for semi-quantitative asbestos. Two bulk suspected asbestos containing materials (ACMs) were analysed for presence/absence. The results returned an absence result. One soil sample returned a positive result with a concentration above the adopted human health criteria (S09).

10.4 Organics

There were no detections of SVOCs in any samples.

10.5 Quality Assurance

In accordance with the MfE guidance (CLMG No 5), field duplicates were taken in order to provide information on the overall variability of results, as well as to indicate potential errors or bias sampling technique and the analytical laboratory testing.

The relative percentage difference (RPD) between parent and duplicate samples are assessed, and RPDs of less than 30% - 50% are generally appropriate for soil investigation works.

Sample QA was a field replicate of S04; replicates were analysed for heavy elements. The mean relative percentage difference for all heavy elements was 5% and well within the data quality objective.

11 Discussion and Risk Assessment

The PSI identified the principal potential sources of contamination as the former residential dwellings, disused dairy shed, garage, cattle shed, adjacent laydown/storage area and historical agricultural activities. The DSI was designed to investigate these potential sources and assess whether they had resulted in soil contamination.

The investigation confirmed that the site soils cannot be classified as cleanfill, with concentrations of arsenic, cadmium, copper, lead and zinc commonly exceeding the adopted natural background concentrations. However, contaminant concentrations exceeding the adopted human health and environmental assessment criteria were generally confined to discrete hotspots associated with historical site activities rather than being widespread across the site.

Targeted sampling around the former dwelling and adjacent iron/timber farm shed identified the highest concentrations of contaminants. Arsenic, cadmium and lead exceeded the adopted residential human health criteria in sample S04, while arsenic and lead exceeded the criteria in sample S05. Lead also exceeded the residential human health criterion in sample S03, and copper exceeded the residential human health criterion in sample S17. No analytes exceeded the adopted commercial/industrial human health criteria. Zinc exceeded the adopted residential environmental criterion in seven samples, with four of these also exceeding the commercial/industrial environmental criterion. Copper exceeded the residential environmental criterion in one sample.

The distribution of elevated arsenic, cadmium, lead and zinc indicates localised contamination associated with historical farm infrastructure rather than a site-wide source. Elevated lead concentrations adjacent to the former dwelling are consistent with weathering and deterioration of historical lead-based paints. Similarly, the elevated metal concentrations surrounding the iron/timber farm shed suggest contamination associated with historical farm activities undertaken in this area.

Systematic grid sampling of the grazed paddocks identified cadmium concentrations ranging from 0.47 to 0.69 mg/kg, with soil pH ranging from 5.9 to 7.3. Although all paddock samples exceeded the adopted background concentration, none exceeded the adopted human health or environmental assessment criteria. These results are consistent with long-term application of phosphate fertilisers, which is common in pastoral soils throughout the Waikato and Bay of Plenty regions. The isolated cadmium concentration exceeding the residential human health criterion (3.1 mg/kg in sample S04) was collected from the former iron/timber farm shed area rather than the grazed paddocks and is therefore considered representative of a localised source rather than widespread agricultural contamination. In accordance with the *Methodology for Deriving Standards for Contaminants in Soil to Protect Human Health*, the residential soil contaminant standard for cadmium is based on a default soil pH of 5 and is applied irrespective of measured site pH.

Ten soil samples were analysed for asbestos. Asbestos was detected in one sample at a concentration exceeding the human health criteria adjacent to the disused milking shed. No ACMs were identified in the three bulk material samples analysed.

While the investigation indicates that asbestos contamination is limited in extent, the absence of a building asbestos survey means the presence of ACMs within the existing pre-2000 structures remains unconfirmed. Consequently, the potential for additional localised asbestos contamination associated with the weathering or disturbance of building materials cannot be excluded.

Overall, the investigation indicates that contaminant concentrations exceeding the adopted human health and environmental assessment criteria are localised and associated with historical buildings,

farm infrastructure and associated activities. Widespread contamination was not identified across the site, although elevated background concentrations of cadmium are evident within the grazed paddocks and are considered consistent with the site's long-term agricultural use.

12 Updated Conceptual Site Model

Based on the soil investigation, the updated conceptual site model is shown in **Table 3**. Included are the HAIL codes considered to apply on a '*more likely than not*' basis.

Table 3: Conceptual Site Model

Source	Contaminant of Concern	HAIL Code	Exposure Pathway	Potential Receptor	Pathway Complete?
Former and existing buildings constructed pre 1980s	Asbestos Lead	E1 - Asbestos products manufacture or disposal including sites with buildings containing asbestos products known to be in a deteriorated condition (current and former structures). I- any other land that has been subject to the intentional or accidental release of a hazardous substance in sufficient quantity that it could be a risk to human health or the environment.	Exposure of workers to contaminants in soils and groundwater during site redevelopment – dermal contact, ingestion or inhalation of dust/vapours	Construction workers.	Pathway complete – Contaminants in soils are at levels to pose a risk to human health.
			Exposure of future site users to contaminants in soils – dermal contact, ingestion or inhalation of dust/vapours.	Future site users.	Pathway complete – Contaminants in soils are at levels to pose a risk to human health.
			Exposure of general public to contaminants in soils– dermal contact, ingestion or inhalation of dust/vapours.	General public.	Incomplete Pathway – General public do not have access to the site.
			Groundwater resources for public consumption.	Leaching and migration of soil contaminants into groundwater.	Potential Pathway –Lead in soils may be at levels to have the potential to leach.
			Surface water	Sediment and runoff directly into surface water.	Pathway complete – Lead in soils are at levels to pose a risk to receiving environmental receptors.
			Exposure of workers to contaminants in soils and groundwater during site redevelopment – dermal contact, ingestion or inhalation of dust/vapours.	Construction workers.	Pathway complete – Contaminants in soils are at levels to pose a risk to human health.

Source	Contaminant of Concern	HAIL Code	Exposure Pathway	Potential Receptor	Pathway Complete?
Disused milking shed and laydown/storage area	Asbestos Heavy metals SVOCs	E1 - Asbestos products manufacture or disposal including sites with buildings containing asbestos products known to be in a deteriorated condition (current and former structures). I- any other land that has been subject to the intentional or accidental release of a hazardous substance in sufficient quantity that it could be a risk to human health or the environment.	Exposure of future site users to contaminants in soils – dermal contact, ingestion or inhalation of dust/vapours.	Future site users.	Pathway complete – Contaminants in soils are at levels to pose a risk to human health.
			Exposure of general public to contaminants in soils– dermal contact, ingestion or inhalation of dust/vapours.	General public.	Incomplete Pathway – General public do not have access to the site.
			Groundwater resources for public consumption.	Leaching and migration of soil contaminants into groundwater.	Potential Pathway –Heavy metals in soils may be at levels to have the potential to leach.
			Surface water	Sediment and runoff directly into surface water.	Pathway complete – Heavy metals in soils are at levels to pose a risk to receiving environmental receptors.
Superphosphate application	Cadmium	I- any other land that has been subject to the intentional or accidental release of a hazardous substance in sufficient quantity that it could be a risk to human health or the environment.	Exposure of workers to contaminants in soils and groundwater during site redevelopment – dermal contact, ingestion or inhalation of dust/vapours.	Construction workers.	Pathway complete – Contaminants in soils are at levels to pose a risk to human health.
			Exposure of future site users to contaminants in soils – dermal contact, ingestion or inhalation of dust/vapours.	Future site users.	Pathway complete – Contaminants in soils are at levels to pose a risk to human health.
			Exposure of general public to contaminants in soils– dermal contact, ingestion or inhalation of dust/vapours.	General public.	Incomplete Pathway – General public do not have access to the site.
			Groundwater resources for public consumption.	Leaching and migration of soil contaminants into groundwater.	Incomplete Pathway –Contaminants not at levels to have the potential to leach.
			Surface water	Sediment and runoff directly into surface water.	Incomplete Pathway –Contaminants not at levels to have the potential to leach.

12.1 National Environmental Standard: Contaminated Land

The *Resource Management (National Environmental Standard for Assessing and Managing Contaminants in Soil to Protect Human Health) Regulations 2011* (NES-CS) applies to land as per clause 5(7):

“Land covered:

- (7) *The piece of land is a piece of land that is described by 1 of the following:*
- (a) *an activity or industry described in the HAIL³ is being undertaken on it;*
 - (b) *an activity or industry described in the HAIL has been undertaken on it;*
 - (c) *it is more likely than not that an activity or industry described in the HAIL is being or has been undertaken on it.”*

The following HAIL⁹ activities have been identified for this site on a more likely than not basis:

- **E1** - Asbestos products manufacture or disposal including sites with buildings containing asbestos products known to be in a deteriorated condition (current and former structures).
- **I**- any other land that has been subject to the intentional or accidental release of a hazardous substance in sufficient quantity that it could be a risk to human health or the environment.

The NES-CS applies to five activities taking place on land identified to have potentially contaminative activities being undertaken on it, as listed on the HAIL. Should a trigger activity be undertaken, the regulations of the NES-CS will apply.

Table 4: NES-SC Trigger Activities

Trigger Activity
Does the proposed activity at the site include the removal or replacement of all, or part of, a fuel storage system?
Does the proposed activity at the site include soil sampling?
Does the proposed activity at the site involve the disturbance of soil?
Does the proposed activity at the site involve the subdivision of the land?
Does the proposed activity involve a change of land use?

12.2 Soil Disturbance

Regulation 8(3) of the NESCS provides for the disturbance of contaminated soil on a “piece of land” (as per Regulation 5(7) as a Permitted Activity, providing that the criteria in **Table 5** (below) are met.

The Preliminary Site Investigation (PSI)¹⁰ has determined several smaller ‘pieces of land’- specifically the halo around the former and existing buildings, and the disused milking shed and surrounding laydown area. On a ‘more likely than not’ basis the use of superphosphates is not considered a HAIL activity.

⁹ Hazardous Activities and Industries List (MfE)

¹⁰ Preliminary Site Investigation, Swiftsure Consultants Ltd (30 June 2025)

Table 5: Permitted Activity Soil Disturbance Criteria

	Criteria	Complies
1	Appropriate dust, erosion and sediment controls are put in place to limit contaminant mobility for the duration of the works and until the site is in an erosion free state.	Yes
2	The soil is in an erosion free state within one month of the completion of works.	Yes
3	The volume of soil disturbance must be no more than 25 m ³ per 500 m ² of the "piece of land".	Unlikely
4	Soil must not be taken away from the site that exceeds 5 m ³ per 500 m ² of the "piece of land" per year.	Unlikely
5	Soil for off-site disposal must be taken to an appropriate facility.	Yes
6	Duration of the works must not exceed two months.	To be confirmed
7	On-site containment of contaminants must not be compromised.	Yes

Based on the above assessment, the proposed soil disturbance and disposal volumes were considered unlikely to meet the permitted activity limits specified in Regulation 8(3) of the NES-CS. Soil disturbance (including soil disposal) will therefore require a land use consent and a DSI was required.

12.3 Change of Land Use

Regulation 8(4) of the NES-CS provides for subdividing or changing use of the piece of land as a Permitted Activity, providing that the criteria in **Table 6** are met.

Regulation 8(4) allows land-use change of a piece of land where it can be demonstrated it is highly unlikely that there will be a risk to human health given the intended activity. Highly unlikely should be interpreted in a plain English way to mean a high probability that there is no serious or real and substantial risk¹¹.

Based on the findings of the PSI and considering the likely nature of any contamination as well as potential exposure pathways, there is a potential risk to human health associated with the proposed activity on the site. Under the intended land use, direct or indirect exposure to contaminated soil is considered reasonably likely to pose a risk to human health. Consequently, the proposed change in land use is unlikely to comply with the permitted activity criteria specified under Regulation 8(4) of the NES-CS. As such, a land use consent will be required and this DSI was required.

¹¹ Users' Guide: NES for Assessing and Managing Contaminants in Soil to Protect Human Health, 2012

Table 6: Permitted Activity Criteria for Change of Land Use

	Criteria	Complies
1	A preliminary site investigation of the land or piece of land must exist.	Yes
2	The report on the preliminary site investigation must state that it is highly unlikely that there will be a risk to human health if the activity is done to the piece of land.	No
3	The report must be accompanied by a relevant site plan to which the report is referenced.	Yes
4	The consent authority must have the report and the plan.	Yes

12.4 Soil Contaminant Standards (SCSs)

The DSI confirms that the soil contamination exceeds applicable standards (SCSs), triggering Regulation 10 of the NES-CS. As such, the proposed activity is a restricted discretionary activity.

12.5 Waikato Regional Plan

The Waikato Regional Plan defines 'contaminated land' as:

- a) *If there is an applicable national environmental standard on contaminants in soil, the land is more contaminated than the standard allows; or*
- b) *If there is no applicable national environmental standard on contaminants in soil, the land has a hazardous substance in or on it that-*
 - i) *Has significant adverse effects on the environment; or*
 - ii) *Is reasonably likely to have significant adverse effects on the environment.*

Given contaminants have been found to exceed the Soil Contaminant Standards (SCSs) the site is therefore classified as 'contaminated'.

Rules relating to discharges from remediation of contaminated land are defined in Module 5 of the Waikato Regional Plan section 5.3 (Contaminated Land). It states the following:

Permitted Activity Rule – Discharges from Remediation of Contaminated Land

Any discharge arising from remediation of contaminated land is a permitted activity, subject to the following conditions:

- a. any discharge to air arising from the activity shall comply with the conditions and standards and terms in Section 6.1.8 except where the matters addressed in Section 6.1.8 are already addressed by conditions on resource consents for the site.
- b. No contaminants from the remediation of the contaminated land shall be discharged into water or onto land unless discharged to a landfill authorised in Section 5.2.7.
- c. The Waikato Regional Council shall be provided with the following reports prepared in compliance with Contaminated Land Management Guideline No.1: Reporting on Contaminated

Sites in New Zealand (Ministry for the Environment, Wellington, NZ, updated October 2003) prior to commencement of land remediation:

- i. detailed site investigation report
 - ii. site remedial action plan
- d. After remediation is completed, copies of the following reports prepared in compliance with Contaminated Land Management Guideline No.1: Reporting on Contaminated Sites in New Zealand (Ministry for the Environment, Wellington, NZ, updated October 2003) must be provided to the Waikato Regional Council:
- i. site validation report
 - ii. ongoing monitoring and management plan.
- e. Any updates of these reports shall be provided to the Waikato Regional Council if a change in investigation, remediation and monitoring strategy occurs.

13 Conclusion and Recommendations

The combined findings of the desk study and soil investigation confirm that the site has been subject to several sources of contamination, primarily associated with historical land use and aging infrastructure. Key contributors include superphosphate application, the disused dairy and cattle sheds, garage, laydown/storage area, and the 1970s-era residential dwellings.

Contaminants detected in shallow soils - specifically heavy metals (including arsenic, copper, lead, zinc, and cadmium) and asbestos - were found to exceed both natural background concentrations and relevant human health and/or environmental guideline values for residential land use. While contamination is primarily concentrated in localized hotspots where current infrastructure is located, the findings also suggest a broader distribution of impacted shallow soils across surrounding pastureland due to the use of superphosphate application.

The DSI has found that the soil contamination exceeds the applicable standard for the land, and under Regulation 10 of the NES-CS the proposed activity must be considered as a restricted discretionary activity.

Further risk assessment and appropriate management or remediation measures will be required before any change in land use or development can proceed, particularly for residential purposes.

This DSI has provided a first stage investigation of the soils and a supplementary soils investigation prior to bulk earthworks will be necessary to provide further delineation of the impacted soils so as to inform remedial options, disposal volumes and associated costs.

The Conceptual Site Model has identified various complete exposure pathways during the redevelopment and the future use of the site. Site management (including a Contaminated Soils Management and Remediation Plan (CSMRP)) is required to be implemented to manage the risks from the identified contaminated soils. A draft CSMRP has been prepared outlining the strategy for the remediation and management of contaminated soil during earthworks.

Prior to development of the site and removal of structures it is recommended an asbestos surveyor be engaged to assess the risk posed by ACM materials used in structures prior to site development.

14 Limitations

This report is the property of Saxby Road JV Ltd and Swiftsure Consultants Ltd. It was produced for the purpose stated above in accordance with the conditions of the contract dated 14 May 2025. It does not purport to provide legal or financial advice. Swiftsure Consultants Ltd accepts no liability to any other party or for any other purpose.

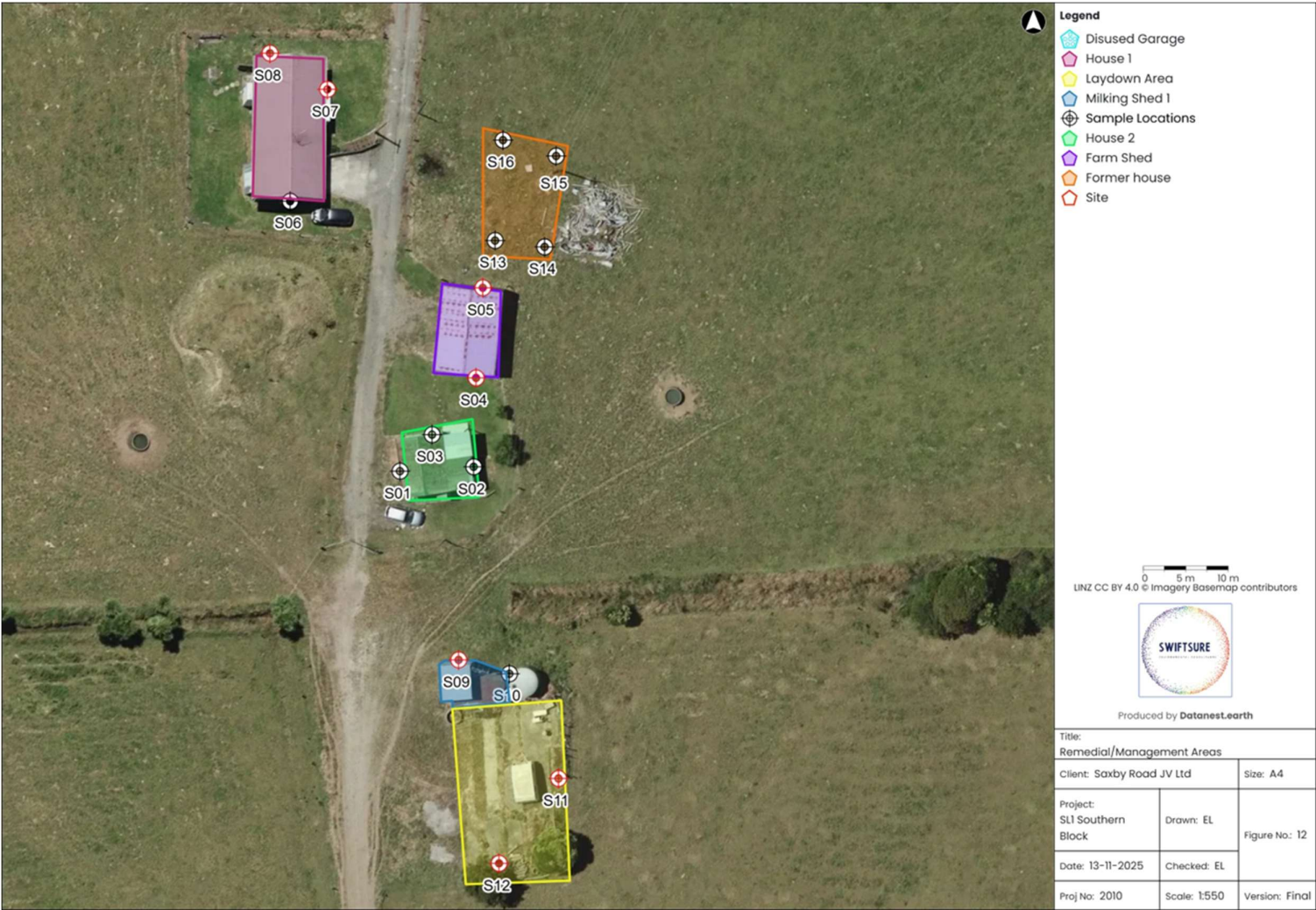
Characterisation of subsurface conditions is dependent on the number of sample locations, methods of sampling and the uniformity of subsurface conditions. Whilst contaminant concentrations may be estimated at chosen sample locations, conditions at any location removed from the specific points of sampling can only be inferred based on geological and hydrogeological conditions and the nature and the extent of identified contamination. Subsurface conditions can vary, resulting in uneven distribution of contaminants across a site which cannot be defined by these investigations. In addition, with time, the site conditions and environmental guidelines could change so that the reported assessments and conclusions are no longer valid. The conclusions of this report are made on the basis that the site conditions revealed by the investigation are representative of the actual conditions across the site at the time of sampling.

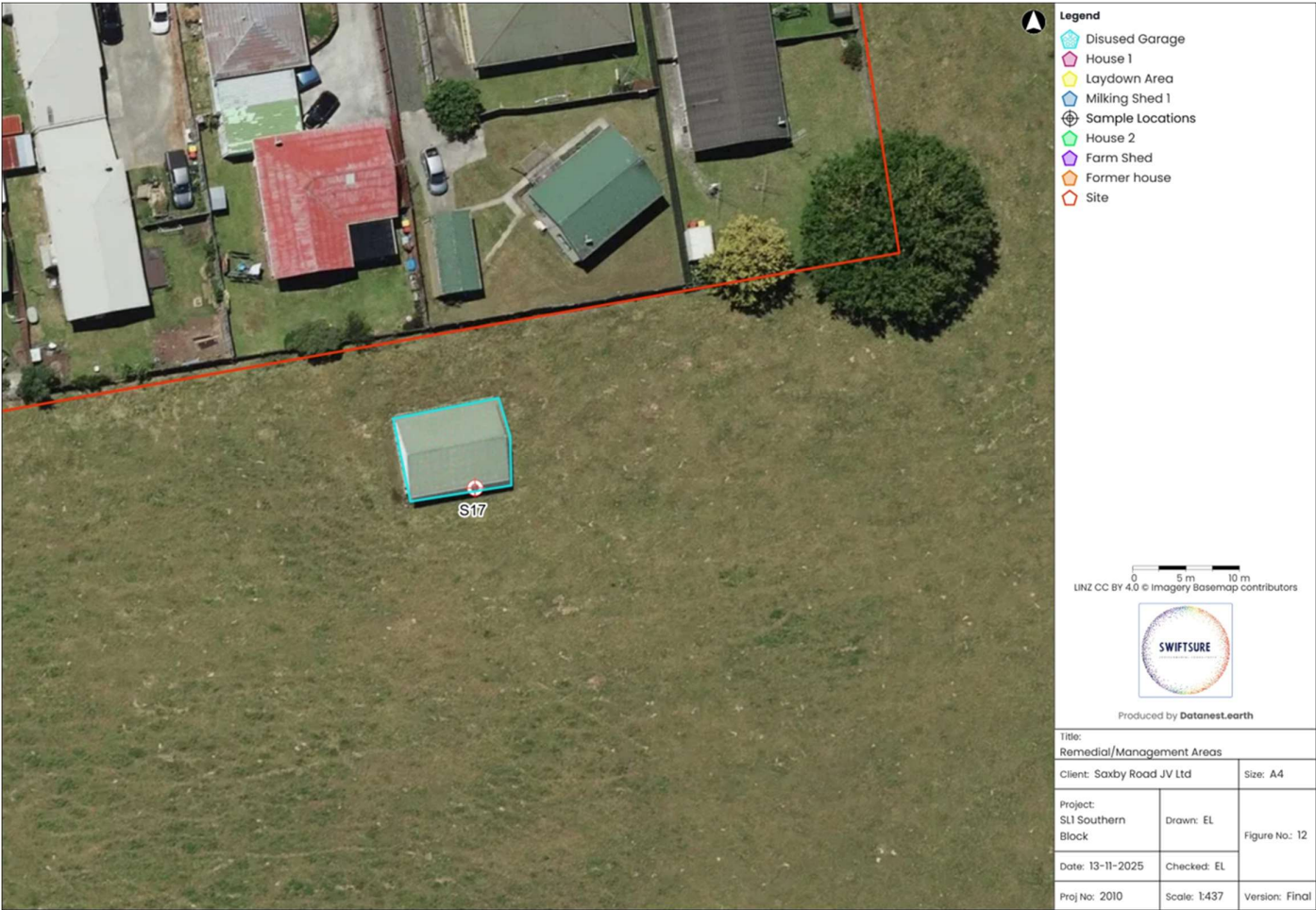
We have only reviewed readily available information. This information may contain errors and omissions, for which we cannot be responsible: we have not validated any information unless specifically stated.

The recommendations in this report are based on information provide to Swiftsure Consultants Ltd at the time of writing this report.

This report is current as of 30 August 2026. Site conditions may change in future, as may regulations and guidance. Readers must make their own judgements as to whether this report remains current at the time of reading, and/or seek further advice from Swiftsure Consultants Ltd.

APPENDIX A: Sample Locations





APPENDIX B: Site Photographs









APPENDIX C: Summary of Results

Sample Information			Heavy Metals/Metalloids							Asbestos			Organics
Sample	Depth (m bgl)	pH	Arsenic	Cadmium	Chromium	Copper	Lead	Nickel	Zinc	Asbestos Type	Asbestos Containing Material in Soil (ACM)	Asbestos Fines/Friable Asbestos (AF/FA)	SVOCs
S01	0.1	-	-	-	-	-	123	-	-	-	-	-	All below laboratory detection
S02	0.1	-	-	-	-	-	35	-	-	-	-	-	
S03	0.1	-	-	-	-	-	880	-	-	Asbestos NOT detected	-	-	
S04	0.1	-	32	3.1	31	61	300	17	2400	-	-	-	
S05	0.1	-	25	1.27	32	38	220	10	770	-	-	-	
S06	0.1	-	7	0.33	13	21	29	4	115	-	-	-	
S07	0.1	-	7	0.39	13	37	178	5	860	Asbestos NOT detected	-	-	
S08	0.1	-	11	0.42	15	32	152	5	550	-	-	-	
S09	0.1	-	11	0.38	11	32	82	6	230	Chrysotile – fibre cdment, ACM debris and loose fibres	0.011	0.007	
S10	0.1	-	12	<0.10	9	14	41	6	87	Asbestos NOT detected	-	-	
S11	0.1	-	8	0.41	20	38	42	10	320	Asbestos NOT detected	-	-	
S12	0.1	-	10	0.55	25	320	70	20	370	Asbestos NOT detected	-	-	
S13	0.1	-	7	0.68	21	26	33	7	83	Asbestos NOT detected	-	-	
S14	0.1	-	7	0.75	34	27	31	5	188	Asbestos NOT detected	-	-	
S15	0.1	-	6	0.53	8	18	21	3	220	Asbestos NOT detected	-	-	
S16	0.1	-	5	0.8	41	18	11.4	9	101	Asbestos NOT detected	-	-	
S17	0.1	-	11	0.52	36	149	77	11	350	-	-	-	
F1	0.1	5.9	-	0.5	-	-	-	-	-	-	-	-	
F2	0.1	6.0	-	0.68	-	-	-	-	-	-	-	-	
F3	0.1	7.2	-	0.47	-	-	-	-	-	-	-	-	
F4	0.1	6.1	-	0.58	-	-	-	-	-	-	-	-	
F5	0.1	6.0	-	0.62	-	-	-	-	-	-	-	-	
F6	0.1	6.0	-	0.5	-	-	-	-	-	-	-	-	
F7	0.1	7.3	-	0.49	-	-	-	-	-	-	-	-	
F8	0.1	6.0	-	0.69	-	-	-	-	-	-	-	-	
ACM - 1	-	-	-	-	-	-	-	-	-	Asbestos NOT detected	-	-	
ACM - 2	-	-	-	-	-	-	-	-	-	Asbestos NOT detected	-	-	

Sample Information			Heavy Metals/Metalloids							Asbestos			Organics
Assessment Criteria													
			Arsenic	Cadmium	Chromium	Copper	Lead	Nickel	Zinc	Asbestos Type	Asbestos Containing Material in Soil (ACM)	Asbestos Fines/Friable Asbestos (AF/FA)	-
Background Criteria ¹²			12.67	0.28	60.5	40.17	30.08	32.88	101.8	-	-	-	-
Human Health Criteria (Commercial/Industrial) ¹³			70	1,300	6,300	>10,000	3,300	6,000	400,000	-	-	-	-
Human Health Criteria (Residential) ¹⁴			20	3	460	>10,000	210	1,200	8,000	-	-	-	-
Environmental Criteria (Commercial/Industrial) ¹⁵			150	33	650	420	2,500	-	480	-	-	-	-
Environmental Criteria (Residential) ¹⁶			60	12	390	240	900	-	300	-	-	-	-
Asbestos Guidelines ¹⁷			-	-	-	-	-	-	-	-	0.01% Residential 0.05% Commercial/Industrial	0.001%	-

¹² Predicted Background Soil Concentrations, Manaaki Whenua Landcare Research, 2023.

¹³ Resource Management (National Environmental Standard for Assessing and Managing Contaminants in Soil to Protect Human Health) Regulations 2011 (Commercial/Industrial land use).

¹⁴ Resource Management (National Environmental Standard for Assessing and Managing Contaminants in Soil to Protect Human Health) Regulations 2011 (Residential land use).

¹⁵ Landcare Research: Technical Document. Eco-Soil Guideline Value for typical soil, aged contamination source, and a commercial/industrial land use.

¹⁶ Landcare Research: Technical Document. Eco-Soil Guideline Value for typical soil, aged contamination source, and a residential land use.

¹⁷ NZ Guidelines for Assessing and Managing Asbestos in Soil, BRANZ 2017

APPENDIX D:

Laboratory Analytical Results



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Hamilton 3240 New Zealand

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Certificate of Analysis

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Client:	SwiftSure Consultants Limited	Lab No:	3941196	SPV1
Contact:	Emma Lewis	Date Received:	18-Jul-2025	
	C/- SwiftSure Consultants Limited	Date Reported:	24-Jul-2025	
	180C Crawford Road	Quote No:	139171	
	RD 1	Order No:		
	Tauranga 3171	Client Reference:	SL1 Southern Block	
		Submitted By:	Emma Lewis	

Sample Type: Soil					
Sample Name:	S01 18-Jul-2025	S02 18-Jul-2025	S03 18-Jul-2025	S04 18-Jul-2025	S05 18-Jul-2025
Lab Number:	3941196.1	3941196.2	3941196.3	3941196.4	3941196.5
Individual Tests					
Total Recoverable Lead	mg/kg dry wt	123	35	880	-
Heavy Metals, Screen Level					
Total Recoverable Arsenic	mg/kg dry wt	-	-	32	25
Total Recoverable Cadmium	mg/kg dry wt	-	-	3.1	1.27
Total Recoverable Chromium	mg/kg dry wt	-	-	31	32
Total Recoverable Copper	mg/kg dry wt	-	-	61	38
Total Recoverable Lead	mg/kg dry wt	-	-	300	220
Total Recoverable Nickel	mg/kg dry wt	-	-	17	10
Total Recoverable Zinc	mg/kg dry wt	-	-	2,400	770
Sample Name:	S06 18-Jul-2025	S07 18-Jul-2025	S08 18-Jul-2025	S09 18-Jul-2025	S10 18-Jul-2025
Lab Number:	3941196.6	3941196.7	3941196.8	3941196.9	3941196.10
Heavy Metals, Screen Level					
Total Recoverable Arsenic	mg/kg dry wt	7	7	11	12
Total Recoverable Cadmium	mg/kg dry wt	0.33	0.39	0.42	0.38
Total Recoverable Chromium	mg/kg dry wt	13	13	15	9
Total Recoverable Copper	mg/kg dry wt	21	37	32	14
Total Recoverable Lead	mg/kg dry wt	29	178	152	82
Total Recoverable Nickel	mg/kg dry wt	4	5	5	6
Total Recoverable Zinc	mg/kg dry wt	115	860	550	230
Sample Name:	S11 18-Jul-2025	S12 18-Jul-2025	S13 18-Jul-2025	S14 18-Jul-2025	S15 18-Jul-2025
Lab Number:	3941196.11	3941196.12	3941196.13	3941196.14	3941196.15
Individual Tests					
Dry Matter	g/100g as rcvd	65	62	-	-
Heavy Metals, Screen Level					
Total Recoverable Arsenic	mg/kg dry wt	8	10	7	6
Total Recoverable Cadmium	mg/kg dry wt	0.41	0.55	0.68	0.75
Total Recoverable Chromium	mg/kg dry wt	20	25	21	34
Total Recoverable Copper	mg/kg dry wt	38	320	26	27
Total Recoverable Lead	mg/kg dry wt	42	70	33	31
Total Recoverable Nickel	mg/kg dry wt	10	20	7	5
Total Recoverable Zinc	mg/kg dry wt	320	370	83	188
Haloethers in SVOC Soil Samples by GC-MS					
Bis(2-chloroethoxy) methane	mg/kg dry wt	< 0.5	< 0.5	-	-
Bis(2-chloroethyl)ether	mg/kg dry wt	< 0.5	< 0.5	-	-
Bis(2-chloroisopropyl)ether	mg/kg dry wt	< 0.5	< 0.5	-	-
4-Bromophenyl phenyl ether	mg/kg dry wt	< 0.5	< 0.5	-	-
4-Chlorophenyl phenyl ether	mg/kg dry wt	< 0.5	< 0.5	-	-

Sample Type: Soil						
Sample Name:		S11 18-Jul-2025	S12 18-Jul-2025	S13 18-Jul-2025	S14 18-Jul-2025	S15 18-Jul-2025
Lab Number:		3941196.11	3941196.12	3941196.13	3941196.14	3941196.15
Nitrogen containing compounds in SVOC Soil Samples by GC-MS						
2,4-Dinitrotoluene	mg/kg dry wt	< 1.0	< 1.0	*	*	*
2,6-Dinitrotoluene	mg/kg dry wt	< 1.0	< 1.0	*	*	*
Nitrobenzene	mg/kg dry wt	< 0.5	< 0.5	*	*	*
N-Nitrosodi-n-propylamine	mg/kg dry wt	< 1.0	< 1.0	*	*	*
N-Nitrosodiphenylamine + Diphenylamine	mg/kg dry wt	< 1.0	< 1.0	*	*	*
Organochlorine Pesticides in SVOC Soil Samples by GC-MS						
Aldrin	mg/kg dry wt	< 0.5	< 0.5	*	*	*
alpha-BHC	mg/kg dry wt	< 0.5	< 0.5	*	*	*
beta-BHC	mg/kg dry wt	< 0.5	< 0.5	*	*	*
delta-BHC	mg/kg dry wt	< 0.5	< 0.5	*	*	*
gamma-BHC (Lindane)	mg/kg dry wt	< 0.5	< 0.5	*	*	*
4,4'-DDD	mg/kg dry wt	< 0.5	< 0.5	*	*	*
4,4'-DDE	mg/kg dry wt	< 0.5	< 0.5	*	*	*
4,4'-DDT	mg/kg dry wt	< 1.0	< 1.0	*	*	*
Dieldrin	mg/kg dry wt	< 0.5	< 0.5	*	*	*
Endosulfan I	mg/kg dry wt	< 1.0	< 1.0	*	*	*
Endosulfan II	mg/kg dry wt	< 2	< 2	*	*	*
Endosulfan sulphate	mg/kg dry wt	< 1.0	< 1.0	*	*	*
Endrin	mg/kg dry wt	< 1.0	< 1.0	*	*	*
Endrin ketone	mg/kg dry wt	< 1.0	< 1.0	*	*	*
Heptachlor	mg/kg dry wt	< 0.5	< 0.5	*	*	*
Heptachlor epoxide	mg/kg dry wt	< 0.5	< 0.5	*	*	*
Hexachlorobenzene	mg/kg dry wt	< 0.5	< 0.5	*	*	*
Polycyclic Aromatic Hydrocarbons in SVOC Soil Samples by GC-MS*						
Acenaphthene	mg/kg dry wt	< 0.5	< 0.5	*	*	*
Acenaphthylene	mg/kg dry wt	< 0.5	< 0.5	*	*	*
Anthracene	mg/kg dry wt	< 0.5	< 0.5	*	*	*
Benzo[a]anthracene	mg/kg dry wt	< 0.5	< 0.5	*	*	*
Benzo[a]pyrene (BAP)	mg/kg dry wt	< 0.5	< 0.5	*	*	*
Benzo[b]fluoranthene + Benzo[j]fluoranthene	mg/kg dry wt	< 0.5	< 0.5	*	*	*
Benzo[g,h,i]perylene	mg/kg dry wt	< 0.5	< 0.5	*	*	*
Benzo[k]fluoranthene	mg/kg dry wt	< 0.5	< 0.5	*	*	*
1&2-Chloronaphthalene	mg/kg dry wt	< 0.5	< 0.5	*	*	*
Chrysene	mg/kg dry wt	< 0.5	< 0.5	*	*	*
Dibenzo[a,h]anthracene	mg/kg dry wt	< 0.5	< 0.5	*	*	*
Fluoranthene	mg/kg dry wt	< 0.5	< 0.5	*	*	*
Fluorene	mg/kg dry wt	< 0.5	< 0.5	*	*	*
Indeno(1,2,3-c,d)pyrene	mg/kg dry wt	< 0.5	< 0.5	*	*	*
2-Methylnaphthalene	mg/kg dry wt	< 0.5	< 0.5	*	*	*
Naphthalene	mg/kg dry wt	< 0.5	< 0.5	*	*	*
Phenanthrene	mg/kg dry wt	< 0.5	< 0.5	*	*	*
Pyrene	mg/kg dry wt	< 0.5	< 0.5	*	*	*
Benzo[a]pyrene Potency Equivalency Factor (PEF) NES*	mg/kg dry wt	< 1.3	< 1.3	*	*	*
Benzo[a]pyrene Toxic Equivalence (TEF)*	mg/kg dry wt	< 1.3	< 1.3	*	*	*
Phenols in SVOC Soil Samples by GC-MS						
4-Chloro-3-methylphenol	mg/kg dry wt	< 5	< 5	*	*	*
2-Chlorophenol	mg/kg dry wt	< 1.0	< 1.0	*	*	*
2,4-Dichlorophenol	mg/kg dry wt	< 1.0	< 1.0	*	*	*
2,4-Dimethylphenol	mg/kg dry wt	< 3	< 3	*	*	*
3 & 4-Methylphenol (m- + p-cresol)	mg/kg dry wt	< 3	< 3	*	*	*
2-Methylphenol (o-cresol)	mg/kg dry wt	< 1.0	< 1.0	*	*	*
2-Nitrophenol	mg/kg dry wt	< 5	< 5	*	*	*

Lab No: 3941196-SPv1

Hill Labs

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Sample Type: Soil						
Sample Name:		S11 18-Jul-2025	S12 18-Jul-2025	S13 18-Jul-2025	S14 18-Jul-2025	S15 18-Jul-2025
Lab Number:		3941196.11	3941196.12	3941196.13	3941196.14	3941196.15
Phenols in SVOC Soil Samples by GC-MS						
Pentachlorophenol (PCP)	mg/kg dry wt	< 30	< 30	*	*	*
Phenol	mg/kg dry wt	< 1.0	< 1.0	*	*	*
2,4,5-Trichlorophenol	mg/kg dry wt	< 1.0	< 1.0	*	*	*
2,4,6-Trichlorophenol	mg/kg dry wt	< 1.0	< 1.0	*	*	*
Plasticisers in SVOC Soil Samples by GC-MS						
Bis(2-ethylhexyl)phthalate	mg/kg dry wt	< 5	< 5	*	*	*
Butylbenzylphthalate	mg/kg dry wt	< 1.0	< 1.0	*	*	*
Di(2-ethylhexyl)adipate	mg/kg dry wt	< 1.0	< 1.0	*	*	*
Diethylphthalate	mg/kg dry wt	< 1.0	< 1.0	*	*	*
Dimethylphthalate	mg/kg dry wt	< 1.0	< 1.0	*	*	*
Di-n-butylphthalate	mg/kg dry wt	< 1.0	< 1.0	*	*	*
Di-n-octylphthalate	mg/kg dry wt	< 1.0	< 1.0	*	*	*
Other Halogenated compounds in SVOC Soil Samples by GC-MS						
1,2-Dichlorobenzene	mg/kg dry wt	< 1.0	< 1.0	*	*	*
1,3-Dichlorobenzene	mg/kg dry wt	< 1.0	< 1.0	*	*	*
1,4-Dichlorobenzene	mg/kg dry wt	< 1.0	< 1.0	*	*	*
Hexachlorobutadiene	mg/kg dry wt	< 1.0	< 1.0	*	*	*
Hexachloroethane	mg/kg dry wt	< 1.0	< 1.0	*	*	*
1,2,4-Trichlorobenzene	mg/kg dry wt	< 0.5	< 0.5	*	*	*
Other compounds in SVOC Soil Samples by GC-MS						
Benzyl alcohol	mg/kg dry wt	< 10	< 10	*	*	*
Carbazole	mg/kg dry wt	< 0.5	< 0.5	*	*	*
Dibenzofuran	mg/kg dry wt	< 0.5	< 0.5	*	*	*
Isophorone	mg/kg dry wt	< 0.5	< 0.5	*	*	*
Sample Name:		S16 18-Jul-2025	F1 18-Jul-2025	F2 18-Jul-2025	F3 18-Jul-2025	F4 18-Jul-2025
Lab Number:		3941196.16	3941196.17	3941196.18	3941196.19	3941196.20
Individual Tests						
Total Recoverable Cadmium	mg/kg dry wt	*	0.5	0.68	0.47	0.58
pH*	pH Units	*	5.9	6.0	7.2	6.1
Heavy Metals, Screen Level						
Total Recoverable Arsenic	mg/kg dry wt	5	*	*	*	*
Total Recoverable Cadmium	mg/kg dry wt	0.8	*	*	*	*
Total Recoverable Chromium	mg/kg dry wt	41	*	*	*	*
Total Recoverable Copper	mg/kg dry wt	18	*	*	*	*
Total Recoverable Lead	mg/kg dry wt	11.4	*	*	*	*
Total Recoverable Nickel	mg/kg dry wt	9	*	*	*	*
Total Recoverable Zinc	mg/kg dry wt	101	*	*	*	*
Sample Name:		F5 18-Jul-2025	F6 18-Jul-2025	F7 18-Jul-2025	F8 18-Jul-2025	S17 18-Jul-2025
Lab Number:		3941196.21	3941196.22	3941196.23	3941196.24	3941196.25
Individual Tests						
Total Recoverable Cadmium	mg/kg dry wt	0.62	0.5	0.49	0.69	*
pH*	pH Units	6.0	6.0	7.3	6.0	*
Heavy Metals, Screen Level						
Total Recoverable Arsenic	mg/kg dry wt	*	*	*	*	11
Total Recoverable Cadmium	mg/kg dry wt	*	*	*	*	0.52
Total Recoverable Chromium	mg/kg dry wt	*	*	*	*	36
Total Recoverable Copper	mg/kg dry wt	*	*	*	*	149
Total Recoverable Lead	mg/kg dry wt	*	*	*	*	77
Total Recoverable Nickel	mg/kg dry wt	*	*	*	*	11
Total Recoverable Zinc	mg/kg dry wt	*	*	*	*	350
Sample Name:		QA 18-Jul-2025				
Lab Number:		3941196.26				

Sample Type: Soil		
Sample Name:		QA 18-Jul-2025
Lab Number:		3941196.26
Heavy Metals, Screen Level		
Total Recoverable Arsenic	mg/kg dry wt	11
Total Recoverable Cadmium	mg/kg dry wt	0.53
Total Recoverable Chromium	mg/kg dry wt	32
Total Recoverable Copper	mg/kg dry wt	136
Total Recoverable Lead	mg/kg dry wt	81
Total Recoverable Nickel	mg/kg dry wt	11
Total Recoverable Zinc	mg/kg dry wt	350

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, Franklin, Hamilton J204.

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).	-	1-26
Environmental Solids Sample Drying*	Air dried at 35°C Used for sample preparation. May contain a residual moisture content of 2-5%.	-	17-24
Environmental Solids Sample Preparation	Air dried at 35°C and sieved, <2mm fraction. 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).	-	1-3, 17-24
Soil Prep Dry & Sieve for Agriculture	Air dried at 35°C and sieved, <2mm fraction.	-	17-24
Heavy Metals, Screen Level	Dried sample, < 2mm fraction. Nitric/Hydrochloric acid digestion US EPA 200.2. Complies with NES Regulations. ICP-MS screen level, interference removal by Kinetic Energy Discrimination if required.	0.10 - 4 mg/kg dry wt	4-16, 25-26
Semivolatile Organic Compounds Screening in Soil by GC-MS	Sonication extraction, GC-MS analysis. Tested on as received sample. In-house based on US EPA 8270.	0.024 - 30 mg/kg dry wt	11-12
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	11-12
Total Recoverable digestion	Nitric / hydrochloric acid digestion. US EPA 200.2 (modified).	-	1-3, 17-24
Total Recoverable Cadmium	Dried sample, sieved as specified (if required). Nitric/Hydrochloric acid digestion, ICP-MS, screen level. US EPA 200.2 (modified).	0.10 mg/kg dry wt	17-24
Total Recoverable Lead	Dried sample, sieved as specified (if required). Nitric/Hydrochloric acid digestion, ICP-MS, screen level. US EPA 200.2 (modified).	0.4 mg/kg dry wt	1-3
pH*	1:2 (v/v) soil : water slurry followed by potentiometric determination of pH. In-house.	0.1 pH Units	17-24

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

Testing was completed between 19-Jul-2025 and 24-Jul-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.

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Client Services Manager - Environmental



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Certificate of Analysis

Page 1 of 3

Client:	SwiftSure Consultants Limited	Lab No:	3941334	A2Pv1
Contact:	Emma Lewis	Date Received:	18-Jul-2025	
	C/- SwiftSure Consultants Limited	Date Reported:	24-Jul-2025	
	180C Crawford Road	Quote No:	139171	
	RD 1	Order No:		
	Tauranga 3171	Client Reference:	SL1 Southern Block	
		Submitted By:	Emma Lewis	

Sample Type: Soil						
Sample Name	Lab Number	As Received Weight Presence / Absence Testing (g)	Dry Weight Presence / Absence Testing (g)	<2mm Subsample Weight Presence / Absence Testing (g dry wt)	Asbestos Presence / Absence from Presence / Absence Testing	Description of Asbestos Form Presence / Absence Testing
S03	3941334.1	514.2	318.8	59.9	Asbestos NOT detected.	-
S11	3941334.5	536.5	356.2	52.8	Asbestos NOT detected.	-
S12	3941334.6	568.2	381.9	50.9	Asbestos NOT detected.	-
S13	3941334.7	426.0	249.1	50.3	Asbestos NOT detected.	-
S14	3941334.8	488.5	286.9	51.8	Asbestos NOT detected.	-

Sample Type: Soil						
Sample Name:		S07 18-Jul-2025	S09 18-Jul-2025	S10 18-Jul-2025	S15 18-Jul-2025	S16 18-Jul-2025
Lab Number:		3941334.2	3941334.3	3941334.4	3941334.9	3941334.10
Asbestos Presence / Absence		Asbestos NOT detected.	Chrysotile (White Asbestos) detected.	Asbestos NOT detected.	Asbestos NOT detected.	Asbestos NOT detected.
Description of Asbestos Form		-	Fibre cement, ACM debris and Loose fibres	-	-	-
Asbestos in ACM as % of Total Sample*	% w/w	< 0.001	0.011	< 0.001	< 0.001	< 0.001
Combined Fibrous Asbestos + Asbestos Fines as % of Total Sample*	% w/w	< 0.001	0.007	< 0.001	< 0.001	< 0.001
Asbestos as Fibrous Asbestos as % of Total Sample*	% w/w	< 0.001	< 0.001	< 0.001	< 0.001	< 0.001
Asbestos as Asbestos Fines as % of Total Sample*	% w/w	< 0.001	0.007	< 0.001	< 0.001	< 0.001
As Received Weight	g	513.2	612.9	549.4	492.8	408.0
Dry Weight	g	359.1	466.1	483.2	304.5	281.2
Moisture*	%	30	24	12	38	31
Sample Fraction >10mm	g dry wt	7.5	17.3	68.9	16.5	3.7
Sample Fraction <10mm to >2mm	g dry wt	29.6	95.3	202.4	25.5	30.7
Sample Fraction <2mm	g dry wt	319.8	352.4	210.4	261.2	245.3
<2mm Subsample Weight	g dry wt	51.2	54.8	51.1	50.3	53.0
Weight of Asbestos in ACM (Non-Friable)	g dry wt	< 0.00001	0.05258	< 0.00001	< 0.00001	< 0.00001
Weight of Asbestos as Fibrous Asbestos (Friable)	g dry wt	< 0.00001	< 0.00001	< 0.00001	< 0.00001	< 0.00001
Weight of Asbestos as Asbestos Fines (Friable)*	g dry wt	< 0.00001	0.03408	< 0.00001	< 0.00001	< 0.00001

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, Franklin, Hamilton 3204.

Sample Type: Soil			
Test	Method Description	Default Detection Limit	Sample No
Asbestos in Soil			
As Received Weight Presence / Absence Testing	Measurement on analytical balance. Analysed at Hill Laboratories - Asbestos; Unit 1, 17 Print Place, Middleton, Christchurch.	0.1 g	1, 5-8
Dry Weight Presence / Absence Testing	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, 5-8
<2mm Subsample Weight Presence / Absence Testing	Sample dried at 100 to 105°C, weight of <2mm sample fraction taken for asbestos identification if less than entire fraction. Analysed at Hill Laboratories - Asbestos; Unit 1, 17 Print Place, Middleton, Christchurch.	-	1, 5-8
Asbestos Presence / Absence from Presence / Absence Testing	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, 5-8
Description of Asbestos Form Presence / Absence Testing	Description of asbestos form and/or shape if present.	-	1, 5-8
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	2-4, 9-10
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	2-4, 9-10
Moisture*	Sample dried at 100 to 105°C. Calculation = (As received weight - Dry weight) / as received weight x 100.	1 %	2-4, 9-10
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	2-4, 9-10
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	2-4, 9-10
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	2-4, 9-10
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%	2-4, 9-10
Description of Asbestos Form	Description of asbestos form and/or shape if present.	-	2-4, 9-10

Sample Type: Soil			
Test	Method Description	Default Detection Limit	Sample No
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	2-4, 9-10
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	2-4, 9-10
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	2-4, 9-10
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	2-4, 9-10
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	2-4, 9-10
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	2-4, 9-10
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	2-4, 9-10

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

Testing was completed on 24-Jul-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.

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Dexter Paguirigan Dip Chem Engineering Tech
Laboratory Technician - Asbestos



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Certificate of Analysis

Page 1 of 2

Client:	SwiftSure Consultants Limited	Lab No:	3941338	A2Pv1
Contact:	Emma Lewis	Date Received:	18-Jul-2025	
	C/- SwiftSure Consultants Limited	Date Reported:	23-Jul-2025	
	180C Crawford Road	Quote No:	139171	
	RD 1	Order No:		
	Tauranga 3171	Client Reference:	SL1 Southern Block	
		Submitted By:	Emma Lewis	

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
ACM-1	3941338.1	Debris	121.87	Asbestos NOT detected. Organic fibres detected.	N/A
ACM-2	3941338.2	Fibre Cement	85.86	Asbestos NOT detected. Organic fibres detected.	N/A

Glossary of Terms

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 - Loose fibres (Major) - Three or more fibres/fibre bundles identified during analysis by stereo microscope/PLM.
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 - 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.	-	1-2
Sample Weight on receipt	Sample weight (approximate). Analysed at Hill Laboratories - Asbestos; 204 Thorndon Quay, Wellington.	0.01 g	1-2
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%	1-2
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.	-	1-2

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

Testing was completed on 22-Jul-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.

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Zandra Fenton BSc
Team Leader - Asbestos

