



Belmont Quarry Development – Part B

Substantive Application
Appendix B.3 – Contamination Reports
Winstone Aggregates

16 August 2026



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Appendix B.3.A – PSI/DSI – OBDA
Winstone Aggregates

16 August 2026



7 August 2026

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Dear Shalini,

PRELIMINARY AND DETAILED SITE INVESTIGATION - BELMONT QUARRY – PROPOSED OVERBURDEN DISPOSAL AREA

1.0 Introduction and Background

Winstone Aggregates Limited (Winstone; the client) owns and operates Belmont Quarry in Lower Hutt, Wellington. The quarry's current Overburden Disposal Area (OBDA) has reached overburden placement capacity. Therefore, a new OBDA is proposed immediately north of the quarry. The proposed OBDA will be constructed across 10 stages and will accommodate approximately 2.8 million m³ of overburden including topsoil, subsoil, weathered greywackes and process and pond fines over a 35-year period.

Winstone has engaged Pattle Delamore Partners Limited (PDP) to undertake a preliminary and detailed site investigation (PSI/DSI) for the area of the proposed OBDA (the site) at Belmont Quarry, as shown in Figure 1, attached. The PSI has been produced in support of Winstone's substantive aspect of the Belmont Quarry Development Fast-Track Approval Application (FAA). This version of the report (dated July 2026) supersedes the previously issued report.

The PSI/DSI has been directed and reviewed by a Suitably Qualified and Experienced Practitioner (SQEP) with respect to contaminated land and has been undertaken in accordance with the Ministry for the Environment's (MfE) *Contaminated Land Management Guidelines (CLMG) No. 1 – Guidelines for Reporting on contaminated Sites in New Zealand* (MfE, 2021a) and *CLMG No. 5 – Site Investigation and Analysis of Soils* (MfE, 2021b). A certifying statement to this effect is provided in Appendix A.

2.0 Objectives and Scope

The objectives of the PSI/DSI are to:

- ✧ Determine whether any Hazardous and Industrial List (HAIL)¹ or other potentially contaminating activities, either from historical or current activities, have been undertaken within the proposed OBDA;

¹ The Hazardous Activities and Industries List (HAIL) is a compilation of activities and industries that are considered likely to cause land contamination resulting from hazardous substance use, storage or disposal. The HAIL is intended to identify most situations in New Zealand where hazardous substances could cause, and in many cases have caused, land contamination.

- ✧ Conduct a preliminary assessment of the potential contaminated land risks of any identified HAIL activities;
- ✧ Assess, by means of soil sampling and analysis, for the presence of any residual contamination impacts to surface and near-surface soils from these current or historical activities;
- ✧ Assess the requirements/likelihood for potential consents in relation to the Resource Management (*National Environmental Standard for Assessing and Managing Contaminants in Soil to Protect Human Health*) Regulations 2011 (NESC) and the contaminated land rules within the Greater Wellington Regional Council's (GWRC's) *Natural Resources Plan* (NRP; 2023); and
- ✧ Provide recommendations for further investigations, if required.

The scope of work included:

- ✧ Obtaining and reviewing a selection of publicly available historical aerial imagery of the site;
- ✧ Reviewing GWRC Selected Land Use Register (SLUR) for the site;
- ✧ Viewing property files for the site held by the Hutt City Council (HCC);
- ✧ Reviewing publicly available geological and hydrogeological information for the site;
- ✧ Visiting the Belmont Quarry and Regional Park to undertake a site walkover;
- ✧ Initial soil sampling at ground surface level and 0.3 m below ground level (bgl) for heavy metals and semi-quantitative asbestos;
- ✧ Delineation (lateral and vertical) of elevated contaminants up to 0.5 m bgl;
- ✧ Comparison of the results against the relevant criteria;
- ✧ Assessing the requirements of the NESC and the contaminated land rules within the GWRC's NRP;
- ✧ Assessing whether any further investigation work is recommended to inform site management and/or consenting and/or soil disturbance requirements; and
- ✧ Preparation of this PSI/DSI report.

3.0 Property Description and Background

Belmont Quarry is located at 541 Hebden Crescent, Belmont, Wellington. The investigation is limited to the parcel of land directly adjacent to the northern boundary of Belmont Quarry referred to as the 'proposed OBDA' (the site), shown in Figure 1 (Appendix B).

The site is located across a 23.86 ha, irregularly shaped area, which extends across three parcels of land legally described as Part Section 200A Hutt DIST, Section 255 Hutt DIST and Part Section Hutt DIST. The site is currently owned by the Department of Conservation (DOC), forms part of Belmont Regional Park and is zoned as Recreation Reserve under HCC's District Plan.

Land use surrounding the site is as follows:

- ✧ North: Dense bush within Belmont Regional Park.
- ✧ East: Dense bush.
- ✧ South: Belmont Quarry.
- ✧ West: Dense bush within Belmont Regional Park and Belmont Quarry.

4.0 Topography, Geology and Hydrology

The geological map of the region indicates that the site is underlain by undifferentiated Rakaia Terrane Triassic sandstone and mudstone². These comprise alternating sandstone and mudstone, poorly bedded sandstone with minor coloured mudstone, conglomerate, basalt and chert.

There are various small streams, likely ephemeral, flowing through the site in an easterly, southerly and westerly direction discharging into larger gullies located outside of the site boundary, which flow to the south-southeast towards the Hutt River. The stream locations are presented on Figure 1, provided in Appendix B. There are also several steep gullies throughout the site which are likely to contain ephemeral streams.

The Hutt River is located approximately 530 m to the southeast of the site. This flows in a south-westerly direction discharging into Wellington Harbour.

The hydrology report undertaken for the proposed OBDA development concluded that the surficial geology within the proposed OBDA comprises a relatively thin layer of regolith, derived from both in situ weathering and colluvial processes, overlying generally impermeable greywacke bedrock. The report concluded that these conditions are not conducive to the formation of aquifers or significant groundwater resources and that any groundwater is therefore likely to only exist within the regolith in the heads of gullies or other concave depressions following heavy or prolonged rainfall.

5.0 Site History

The purpose of the information review is to establish past land uses at the property and therefore the potential for soil contamination to have arisen from those uses.

5.1 Historical Aerial Photographs

Five historical aerial photographs were obtained from Retrolens (dated between 1942 and 2000), and five aerial photographs were sourced from Google Earth Pro (dated between 2004 and 2024). The aerial photographs are provided in Appendix C. A summary is provided below.

Table 1: Historical Aerial Photograph Review

Date	Description
1942	The site and surrounding area appear to be predominately grassed and in pastoral use. A small building and coppice of trees are visible in the western portion of the site. The site appears to be part of a wider farm, with an access track running from the site's northern boundary to farm buildings (including an animal race and associated buildings).
1957	Dense vegetation cover is present across most of the site. Three pylons are visible in the north-western, central and south-western areas of the site. No other significant changes were observed.
1966	Significant vegetation clearance has occurred in the eastern portion of the site. Sheep are visible across the site. The adjacent quarry (i.e. Belmont Quarry) to the south is now well established.
1984	The onsite structures are no longer present. No other significant changes were observed.

² <https://data.gns.cri.nz/geology/> accessed 29/01/26

Table 1: Historical Aerial Photograph Review

2000	The site is now covered in varying degrees of dense vegetation. There appears to be some minor ground disturbance on the site's south-western boundary associated with Belmont Quarry, which is well established to the south of the site. The two previously identified pylons located in the central and south-western areas of the site are no longer present.
2004	Increased ground disturbance associated with Belmont Quarry is visible in the south-western portion of the site. The access track to the north appears to be more defined. No other significant changes were observed.
2009	The minor ground disturbance previously observed has been revegetated. No other significant changes were observed.
2024	No significant changes observed from the 2009 aerial image.

5.2 Property Files

Property files for the site were obtained from HCC. The files contained a resource consent from HCC, dated June 2009, to undertake the refurbishment of the transmission towers at 580 Western Hutt Road, Lower Hutt. The refurbishment was required due to the weathering and corrosion of the towers and would include dry blasting to remove rust, painting and then galvanising the foundations.

None of the other acquired documents contained relevant information to the site history and/or potential for contamination.

5.3 Greater Wellington Regional Council Historical Information

The GWRC maintains a SLUR of properties that it knows to be either contaminated, or to have a past use or industry with a greater potential for contamination.

A review of the GWRC website³ indicated that the site is not on the SLUR. This was confirmed via email correspondence from GWRC.

5.4 Client Provided Information

According to information supplied by the client, the site formerly operated as a working farm. It was obtained by HCC under the Public Works Act for housing but was later deemed surplus and subsequently acquired by DOC in 1989.

Information obtained from the archaeological report (Clough & Associates Ltd, 2026) produced for the proposed OBDA development identified that an archaeological site (R27/910) is recorded within the proposed OBDA which comprised a collapsed 20th century farm building. The report states that the building was possibly associated with a former piggery. Conversations with Ellen Cameron, (Clough & Associates Ltd), the archaeologist who prepared the report, on 07/08/2026 identified that this was based on anecdotal information, but that no evidence of a piggery was identified during their site walkover or in any of their information review.

6.0 Summary of Site History

A review of historical information and information provided by the client indicates that the site was originally utilised for farmland from the earliest available image in 1942 before being acquired by DOC in 1989. A small building and associated structure were present from at least 1942 until 1966; however, it is not clear what their use was. Since at least 1984 the site has been predominantly covered in varying

³ <https://mapping.gw.govt.nz/gwrc/>

degrees of bush with an access track observed on the northern boundary. Minor soil disturbance was observed on the site's southern boundary between 2000 and 2009. The soil disturbance is likely associated with the neighbouring rock extraction activities at Belmont Quarry. It is considered that the likelihood of soil contamination from this activity is considered low and therefore has not been considered further.

A pylon has been present in the north-western part of the site from its first observation in 1957 to the present day.

The site is not currently listed on GWRC's SLUR.

7.0 Site Walkover

A site walkover was undertaken on 28 January 2026 and again during site works on 18 February 2026 and 4 March 2026, photographs from these visits are provided in Appendix D. Key features are shown on Figure 1, appended.

Key site features are outlined below:

- ✧ The site can be accessed by a gravel track from Hebden Crescent to the top of the ridgeline adjacent to the transmission pylon. This area is covered with long grasses turning to dense bush.
- ✧ A track leads to a roped off area to protect locally rare trees within the north-eastern portion of the site.
- ✧ Two streams run through the site, likely to be ephemeral, with steep slopes at the head of the gullies within the north-eastern portion of the site (see Figure 1 for the location of these streams).
- ✧ There is a cleared access track which runs from the gravel access road to the north of the site through to the central portion of the site.
- ✧ A pile of degraded corrugated metal sheets and a roof frame were observed in the central part of the site, understood to be from a historical farm shed from the early 1900s, located adjacent to a cleared area in the vicinity of the former dwelling.
- ✧ Abandoned farm machinery was observed in two locations, at the head of a gully and near the stream, both in the north-eastern part of the site.
- ✧ A pile of corrugated roofing material was observed in the south-western portion of the site.
- ✧ The southern portion of the site was predominately inaccessible due to dense vegetation and steep slopes.

8.0 Site Characterisation

The MfE maintains a HAIL, which is a compilation of activities and industries that are considered likely to cause land contamination resulting from hazardous substance use, storage or disposal. The HAIL is intended to identify situations in New Zealand where hazardous substances could cause, and in many cases have caused, land contamination.

The archaeological assessment produced for the site identified that the site may have possibly been a former piggery. Conversations with the author of the assessment identified that this was based on anecdotal information. A review of historical aerial images identified that a small building and an associated structure were present from at least 1942 until 1966. No evidence of stock yards, pens, effluent ponds, or other features typically associated with a piggery were observed in the aerial images. It is therefore considered unlikely that the site was operated as a commercial piggery and therefore has not been considered further in this assessment.

The abrasive blasting of the present-day transmission pylons falls within HAIL Category D1: Metal extraction, refining and reprocessing, storage and use.

Two small buildings were present onsite during the period when use of asbestos containing materials (ACM) and lead-based paints was prevalent. As such, it is possible that deteriorating and weathering of this material may have impacted site soils. The extent of contamination is expected to be limited to surface soils of the original ground level. If asbestos and lead are present in these soils at concentrations sufficient to constitute a risk to human health or the environment the affected soils could fall within Category 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.

In addition, the degradation of metal products overtime has the potential for contaminants to leach into the surrounding soils. Given the age of the historical onsite structures the corrugated sheeting is likely to be galvanised steel in which the metal was coated with zinc to prevent rust. Therefore, potential contaminants in the surrounding soils from the metal sheets are zinc and cadmium (cadmium may be coexisting with zinc as a byproduct of anti-corrosion products (galvanising steel))⁴. Similar to the above, the extent of contamination is expected to be limited to surface soils in the vicinity of the historical structures/corrugated sheeting. If zinc and cadmium are present in these soils at concentrations sufficient to constitute a risk to human health or the environment the affected soils could fall within Category 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.

9.0 Preliminary Conceptual Site Model

A risk to human health or the environment can only exist if there is a contaminant source (i.e. contaminated soil, dust or water), a receptor (i.e. people) and an exposure pathway between the source and the receptor. An absence of any one of these components means no risk can exist.

A preliminary conceptual site model (CSM) is set out in Table 2 below. The table presents the potential contaminant sources as per Section 8, the future receptors (i.e. users of the site associated with the development of the proposed OBDA, the receiving environment (ephemeral streams located on site) and the potential pathways whereby the receptors could be exposed directly or indirectly to soil contaminants. The likelihood of contamination, based on the site history, and the likelihood of exposure based on the proposed site use, can then be assessed to determine where a complete pathway is likely to exist.

⁴ <https://www.sciencedirect.com/science/article/abs/pii/S0921344912000031>.

Table 2: Preliminary Conceptual Site Model – Proposed OBDA, Belmont Quarry

Source	Exposure Pathway	Possible Receptor	Pathway Linkage
Soil contamination associated with blasting of the current transmission pylon	Dermal contact, ingestion of soil, inhalation of dust/vapours	OBDA Excavation workers	Incomplete: Proposed OBDA design plans identify that no soil disturbance is to occur in the immediate vicinity of the transmission pylon.
Lead and asbestos soil contamination as a result of historical demolition and construction of historical structures	Dermal contact, ingestion of soil, inhalation of dust	OBDA Excavation workers	Potentially Complete: Should contamination exist within the underlying soils, a risk may be present to excavation and maintenance workers. This will be managed through the implementation of a contaminated site management plan/remedial action plan (CSMP/RAP) and appropriate personal protection equipment (PPE).
	Infiltration of lead to groundwater	Groundwater users	Incomplete: There are no bores or aquifers within the site boundary.
	Surface water runoff	Surface water runoff to downstream aquatic environments including the ephemeral streams located onsite	Potentially Complete: If contaminants are present in the shallow soils on site, there is potential that they may become mobile and leach into waterways. Some potential contaminant sources are close to the water ways and may periodically leach into the surface water.
Zinc and cadmium soil contamination as a results of degrading metals sheets	Dermal contact, ingestion of soil, inhalation of dust	OBDA Excavation workers	Potentially Complete: Should contamination exist within the underlying soils, a risk may be present to excavation and maintenance workers. This will be managed through the implementation of a contaminated site management plan (CSMP) and appropriate personal protection equipment (PPE).
	Infiltration to groundwater	Groundwater users	Incomplete: There are no bores or aquifers within the site boundary.
	Surface water run off	Surface water runoff to downstream aquatic environments including the ephemeral streams located onsite	Potentially Complete: If contaminants are present in the shallow soils on site, there is potential that they may become mobile and leach into waterways. Some potential contaminant sources are close to the water ways and may periodically leach into the surface water.

10.0 Soil Sampling Plan

The aim of the soil sampling strategy was to specifically target areas where the former structures, degrading metal sheets, and abandoned farm equipment were identified during the site walkover. The aim of sampling at these locations was to assess potential risks to site workers who may have regular contact with surface soils and to assess the risk to the ephemeral streams onsite, as well as to inform appropriate soil management and disposal requirements.

Initial soil sampling was to be undertaken immediately adjacent to the contaminant source with additional delineation sampling undertaken at approximately 1 m, 2 m, 5 m, and 10 m from the original sampling locations with samples obtained from the surface, 0.3 m bgl and 0.5 m bgl to characterise the lateral and vertical extent of contamination and to confirm whether impacts were localised.

11.0 Site Investigation Activities

11.1 Intrusive Investigation

Initial soil sampling was undertaken on 18 February 2026 at six targeted locations (SS01 – SS06), with soil collected at the near-surface (0.0 m bgl) and at 0.3 m bgl to characterise soil conditions and to assess the presence of potential contaminants. Select samples were analysed for key contaminants of concern (see Table 3). Following a review of the initial analytical results (refer to Section 12), delineation sampling was undertaken 4 March 2026 at a further 16 locations positioned at regular intervals (1 m, 2 m, 5 m, and 10 m) from the original source areas. Delineation samples were collected at depths of 0.05 m bgl, 0.3 m bgl and 0.5 m bgl. Furthermore, sampling was completed at one additional location (SS07) adjacent to the former dwelling and one location adjacent to metal sheeting (SS08) at depths of 0.05 m bgl, 0.3 m bgl and 0.5 m bgl, and an additional deeper sample was collected at the original SS03 location at a depth of 0.5 m bgl. Additionally, one bulk material sample comprising corrugated roofing material recovered from at SS01 was collected.

A total of 69 soil samples and one bulk material sample were collected across the initiation sampling (12 samples) and delineation sampling (57 soil samples and one bulk material sample) events.

Due to time constraints and practicalities associated with the investigation scope, delineation sampling was only undertaken downgradient of the contaminant source as this was considered to be the preferential pathway for any contaminant migration. Additional sampling will be undertaken during remedial works at the site to fully delineate any associated contamination.

The rationale associated with each sampling location is presented in Table 3, below.

Table 3: Soil Sampling Rationale Summary

Target Area Observations	Sample Location	Site Walkover Photograph Reference	Sampling Rationale
Corrugated roofing material	SS01	Photograph 7	One bulk material sample comprising fibrous roofing material was analysed for asbestos. Soil samples were placed on hold cold pending a review of the bulk analysis.
General coverage	SS02	NA	Samples were placed on hold cold. No analysis was undertaken due to no contaminant source.
Degraded metal sheeting	SS03	Photograph 8	Heavy metals and potential asbestos associated with historical onsite structures and activities.
	SS04		
Historical dwelling and existing roof structure	SS05	Photograph 9	
Abandoned machinery	SS06	Photograph 10	
Historical dwelling and existing roof structure	SS07	Photograph 9	
Degraded metal sheeting	SS08	N/A	
Second piece of abandoned machinery	No samples obtained	N/A	
			Due to time constraints no samples were obtained from this location. Additional sampling will be undertaken during remedial works at the site to determine analytical concentrations.

Sampling was completed by two PDP environmental scientists using hand excavation methods. All locations were backfilled upon completion. Quality assurance and quality control measures were implemented during the soil sampling investigation to ensure sample integrity and to minimise the potential for cross-contamination. A fresh pair of nitrile gloves were worn to transfer the material from the auger hole to a glass sample jar and plastic pottle. Sampling equipment was decontaminated between samples with a solution of Decon90 diluted in water. The jars were placed into a chilly bin containing ice and sent via courier to Hill Laboratories, an IANZ accredited laboratory, under PDP's Chain of Custody (COC) procedures.

11.1 Laboratory Analysis

The following analytical analysis was undertaken:

- ✧ Eight soil samples collected at 0.05 m bgl and 0.3 m bgl immediately adjacent to the degrading metal sheeting (SS03 and SS04), the former roof structure (SS05), and the abandoned farm equipment (SS06) were analysed for a suite of heavy metals (arsenic, cadmium, chromium, copper, lead, nickel and zinc).
- ✧ Twenty delineation samples from SS03, SS04, SS05, and SS06 collected at depths of 0.05 m bgl and 0.3 m bgl at 1 m from the source and at 0.05 m bgl at distances of 2 m and 5 m from the source were analysed for a suite of heavy metals.
- ✧ Three soil samples were collected adjacent to historical structures or in areas where anthropogenic materials were encountered and were analysed for semi-quantitative asbestos.
- ✧ The bulk material sample comprising corrugated roofing material recovered from SS01 was analysed for asbestos presence/absence⁵.
- ✧ The remaining soil samples were placed on hold at the laboratory pending review of the results.

11.2 Field Observations

The lithology across the site was generally comparable. During soil sampling, the following was observed:

- ✧ Glass fragments were observed at the surface at SS03 and SS04.
- ✧ The surface samples comprised a brown silty leaf litter, underlain by a medium brown sand at SS01 and a brown silty clay across the other sampling locations.
- ✧ Water was encountered at 0.3 m bgl in SS03 and at 0.2 m bgl in SS06. This water is interpreted to be perched surface water, likely resulting from recent rainfall, with infiltration restricted by the underlying clayey soil matrix.
- ✧ Corrugated roofing material, suspected to comprise ACM, were observed at sampling location SS01. No other suspected ACM was observed.
- ✧ No staining or olfactory evidence of contamination was noted on any soil material.

Photographs are appended in Appendix D.

12.0 Soil Sampling Results

Laboratory results of the soil analysis, along with comparison to applicable assessment criteria, for initial and delineation sampling are provided in Tables 3 and 4, respectively (see Appendix E). The laboratory reports and associated chain of custody documentation are included in Appendix F. Only results above the laboratory method detection limit have been tabulated.

12.1 Initial Sampling

The initial sampling results were generally comparable across the site for arsenic, chromium, copper and nickel.

Surface samples within the vicinity of exposed metal sheeting and the roof structure (SS03, SS04 and SS05) all contained elevated zinc and cadmium within shallow soils, with the greatest concentrations noted to be 4,100 mg/kg (SS03_0.0) and 9.1 mg/kg (SS03_0.0) respectively. Zinc concentrations generally decreased

⁵ No soil samples from this location were analysed as the bulk material was confirmed to not contain asbestos (see Section 12 for further detail).

with depth with the exclusion of sampling location SS03_0.5, which recorded a zinc concentration of 1,520 mg/kg.

Lead was also comparably elevated in five samples, with concentrations ranging from 108 to 350 mg/kg (SS06_0.05 and SS03_0.5, respectively).

12.2 Delineation Sampling

Across most delineation locations, zinc concentrations decreased with increasing lateral distance from the contamination source material. At SS03, zinc measured 480 mg/kg at 1 m from the source (SS03a_0.05), representing an order-of-magnitude decrease compared with surface concentrations immediately adjacent to the source materials. Cadmium showed a similar trend, decreasing from 9.1 mg/kg in the surface sample (SS03_0.0) to 1.01 mg/kg at 1 m from the source (SS03a_0.05).

An exception was identified at SS08a and SS08b, where elevated zinc concentrations of 1,570 mg/kg and 1,210 mg/kg, respectively, were detected in surface soils despite being 1 m and 2 m from the original source areas, respectively. These locations are situated on a steeper downgradient slope relative to other sampling points, indicating that surface runoff, may have contributed to a wider lateral spread of contaminants.

Zinc and cadmium concentrations at 0.3 m bgl were generally also significantly lower than corresponding surface samples, indicating limited vertical migration.

Overall, the results demonstrate that zinc and cadmium contamination is predominantly shallow, with concentrations decreasing with depth and generally attenuating laterally away from source areas. This distribution is consistent with contamination arising from the long-term weathering and degradation of metal materials, rather than widespread contamination.

Slightly elevated lead was observed in SS03a_0.05, SS03b_0.05, SS05a_0.05 and SS05a_0.3 at concentrations between 210 mg/kg (SS05a_0.05) and 370 mg/kg (SS05a_0.3).

Asbestos was not detected in any of the three soil samples analysed. Asbestos was not detected in the bulk material sample obtained at SS01, therefore no additional soil sampling was undertaken within this location

13.0 Applicable Soil Criteria

In accordance with MfE's *Contaminated Land Management Guidelines No.2 – Hierarchy and Application in New Zealand of Environmental Guideline Values* (MfE, 2011a), New Zealand risk-based standards or guidelines should be used where the exposure assumptions and exposure scenarios are relevant to the site. Where New Zealand guidelines do not exist, overseas risk-based guidelines may be used.

There are soil contaminant standards (SCS) contained in MfE's *Methodology for Deriving Standards for Contaminants in Soil to Protect Human Health* (2011b) for all heavy metals analysed, with the exception of nickel and zinc. For nickel and zinc, results have been compared to soil guidelines values (SGV) contained in the *Australian National Environmental Protection (Assessment of Site Contamination) Amendment Measure 2013* (NEPM, 2013) criteria. Samples were compared to the values associated with commercial/industrial land use.

To assess environmental risk (as well as soil disposal options), soils were compared to Class 3 waste acceptance criteria (WAC) published in *Technical Guidelines for Disposal to Land* (WasteMINZ, 2023).

14.0 Comparison of Results to Applicable Soil Criteria

14.1 Human Health Risk Assessment

All samples analysed for heavy metals contained concentrations below the utilised human health SCS/SGV for commercial/industrial land use and asbestos was not detected in any of the analysed samples. Therefore, soils at the site are not considered to pose an unacceptable risk to human health for commercial/industrial land use or for short term exposure for OBDA workers.

14.2 Environmental Risk Assessment

Class 3 WAC (WasteMINZ, 2023) have been used as proxy to assess whether the detected soil concentrations pose a risk to the on- or offsite environment receptors. The WasteMINZ guidelines contain WAC, which have been developed to provide confidence that materials placed within a facility do not result in an unacceptable adverse effect on human health or environmental receptors. For landfills with limited or no engineered containment, the WAC are the primary control on potential effects from the fill or waste material.

Of the five landfill classes, the WAC for Class 3 landfills is considered to be the most relevant in relation to assessing the potential discharge of contaminants from the site during earthworks at the site. This is because Class 3 landfills are assumed to have no engineering containment but engineered runoff controls exist both during the operational and post-closure phases which will also be the case during the proposed earthworks at the site. Furthermore, the Class 3 WAC have been developed to consider protection of groundwater drinking water and aquatic environment protection pathways from the leaching of contaminants within the soil via groundwater or seepage. In this way, the Class 3 WAC can be used as a proxy to assess the risk to groundwater (the groundwater pathway has been assessed as incomplete at this site) and/or surface water from soil contaminant concentrations at the site.

The soil analytical results presented in Tables 4 and 5, have been compared against the Class 3 WAC. All heavy metal concentrations, excluding zinc, returned concentrations below the Class 3 WAC.

Out of the 22 samples, a total of four samples exceed the Class 3 criteria for zinc (1,200 mg/kg) with concentrations ranging from 1,210 mg/kg to 4,100 mg/kg. However, given the observed localised sources of this contamination it is considered that these exceedances are likely to be isolated hotspots associated with the degradation of metal sheeting.

Based on the entire data set of testing undertaken at the site and observed sources it is expected that the contamination is localised to the source areas and is constrained both laterally and vertically. Generally, within 2 m, and 3 m within SS08, of the source soils comply with guideline values. With the exception of SS03, where zinc was slightly elevated above Class 3 guidelines at 0.5 m bgl, soils at 0.3 m bgl contained significantly lower zinc concentrations than 0.05 m bgl. This suggests that the impacted soils are likely limited to near the source material and are not highly mobile. Based on the source material and the current results data set further reductions in zinc concentrations are expected below 0.5m.

A Remediation Action Plan (RAP) (PDP, 2026) has been completed in conjunction with this report and should be read alongside this document. The RAP identifies “hotspots” as the material within a minimum 2 m radius from the contamination source to a minimum depth of 0.5 m bgl must be removed from site. Material associated with the “hotspots” will be subject to site validation, to demonstrate the concentration of contaminants in the material remaining on site complies with the applicable soil criteria and as such poses no environmental risk. The material that exceeds the Class 3 WAC criteria shall be removed from site and disposed of at a Class A landfill facility.

It is also assumed that all earthworks associated with the development of the OBDA will be undertaken in a manner that minimises any potential adverse effects on the environment. Erosion and sediment control

systems will be implemented during earthworks, and defined practices and procedures as detailed in the RAP (PDP, 2026) will be adhered to. This means that there is unlikely to be an unacceptable risk to the environment from zinc either on-site or off-site during earthworks.

15.0 Updated Conceptual Site Model

A preliminary CSM was developed using the information acquired in the PSI component of this report. The CSM has been updated to reflect the findings of the DSI component, as summarised below in Table 3 below.

Table 3: Updated Conceptual Site Model – Proposed OBDA, Belmont Quarry

Source	Exposure Pathway	Possible Receptor	Pathway Linkage
Soil contamination associated with blasting of the current transmission pylon	Dermal contact, ingestion of soil, inhalation of dust/vapours	OBDA Excavation workers	Incomplete: Proposed OBDA design plans identify that no soil disturbance is to occur in the immediate vicinity of the transmission pylon.
Lead and asbestos soil contamination as a result of historical demolition and construction of historical structures	Dermal contact, ingestion of soil, inhalation of dust	OBDA Excavation workers	Incomplete: Concentrations in analysed soil samples were either below the relevant SCS/SGV or below detection limits.
	Infiltration of lead to groundwater	Groundwater users	Incomplete: There are no bores or aquifers within the site boundary.
	Surface water runoff	Downstream aquatic environments	Incomplete: Lead concentrations in analysed soil samples were below environmental thresholds. Asbestos was not detected in analysed soil or bulk material samples.
Zinc and cadmium soil contamination as a results of degrading metals sheets	Dermal contact, ingestion of soil, inhalation of dust	OBDA Excavation workers	Incomplete: Concentrations in analysed soil samples were either below the relevant SCS/SGV or below detection limits.
	Infiltration to groundwater	Groundwater users	Incomplete: There are no bores or aquifers within the site boundary.
	Surface water runoff	Downstream aquatic environments (ephemeral streams located onsite. Distances from the contaminant source range between immediately adjacent to approximately ~20 m away)	Complete but will be managed: Soils with zinc concentrations above environmental thresholds will be remediated in accordance with the site's RAP (PDP, 2026). Controls outlined in the RAP will be followed.

16.0 Regulatory Considerations

16.1 NESCS

The NESCS seeks to control activities on contaminated land so as to protect human health. The regulations apply to a “piece of land” which is described by one of the following (regulation 5(7)):

- (a) *an activity or industry described in the HAIL 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.*

Secondly, as HAIL land, the NESCS will apply if one or more of the regulated activities in sub-clauses (2) – (6) of regulation 5 is to take place. Given the proposed use of the site, the applicable activity that could apply is sub clauses (4).

- (4) *An activity is disturbing the soil of the piece of land, which—*
 - (a) *means disturbing the soil of the piece of land for a particular purpose:*
 - (b) *does not include disturbing the soil of the piece of land, whatever the purpose, if the land is land to which regulation 33(9) or 36 of the Resource Management (National Environmental Standard for Electricity Transmission Activities) Regulations 2009 applies.*

Maintenance of the transmission pylon falls under the Resource Management (*National Environmental Standard for Electricity Transmission Activities*) Regulations. As such, the NESCS does not apply to soil disturbance associated with transmission maintenance within the vicinity of the current transmission pylon. In addition, no soil disturbance is proposed in the vicinity of the pylon as part of the development of the OBDA.

The results of the intrusive investigation indicate zinc concentrations in the delineated, immediate surrounds of the degraded metal may pose a risk to the environment and as such meet the threshold for HAIL category I.

As such, it is considered that in relation to soil disturbance, the HAIL ‘piece of land’ as described by the NESCS, pertains to a minimum 2 m radius area surrounding the metal and machinery and a 3 m radius around SS08⁶.

The remainder of the OBDA footprint has been characterised and does not meet the definition of HAIL land.

Accordingly, the proposed activity is classified as a controlled activity under the NESCS.

16.2 GWRC NRP

The GWRC NRP has three rules relating to contaminated land. An assessment of the relevant rules is shown below.

- ✧ R81: The production of this DSI report is a permitted activity provided the report is submitted to GWRC within two months following the completion of the investigation.
- ✧ R82: The results of the DSI indicate that elevated zinc concentrations are present at the site at a quantity that may pose a risk to the environment.

⁶ Noting that only one transect from each hotspot has been undertaken and additional sampling will be undertaken during the remedial work to determine the hotspot extent.

- ✧ R83: As results of the investigation do not comply with R82, the proposed development is considered a discretionary activity under rule R83. The discretionary status relates only to disturbance and remediation of the minimum 2 m radius areas surrounding the metal and machinery and 3 m surrounding SS08. General OBDA earthworks outside of these delineated areas will be managed through standard earthworks controls, RAP implementation, and an unexpected discovery protocol.

17.0 Soil Management and Disposal Assessment

It is understood that onsite topsoil is to be stripped during enabling works prior to the commencement of each stage of development, during the construction of the haulage road and during Stage 1 of the OBDA, stockpiled and reused on site during the construction of the OBDA.

The majority of the sampled soils are considered suitable for reuse onsite under a commercial/industrial land use scenario. However, soils impacted by the metal sheeting and machinery, within a lateral extent of approximately 2 m, and 3 m at SS08, and to a minimum depth of up to 0.5 m bgl, will require offsite disposal due to elevated zinc concentrations that may present an environmental risk⁶.

To assess soil disposal options, laboratory results have been compared to WAC for Class A landfills (MfE, 2004).

Several samples representative of soil to be disposed of offsite exceeded the Class A WAC for lead and zinc. Subsequent toxicity characteristic leaching procedure (TCLP) analysis on samples SS03_0.5 and SS5_0.5 returned lead and zinc leachate concentrations below the MfE Class A leachate criteria. Extrapolation of the TCLP results indicates that soils from other sampling locations, which were not subject to TCLP analysis, would also fall well within the Class A landfill leachate criteria. Subsequently, all sampled material requiring offsite disposal may be disposed of a Class A landfill pending approval from the receiving facility.

18.0 Conclusions

PDP have been engaged by Winstone to undertake a PSI/DSI for the proposed OBDA at Belmont Quarry. The report has been produced in support of Winstone's substantive aspect of the Belmont Quarry Development Fast-Track FAA.

Key findings of this investigation are summarised as follows:

- ✧ A review of historical information indicates that the site was historically used for farming purposes, with two small buildings present between 1942 and 1966, followed by progressive revegetation. A transmission pylon has been present on the northern part of the site since at least 1957.
- ✧ A site walkover identified discarded, degrading sheet metal and abandoned farm machinery at several locations and as such an intrusive investigation was undertaken to assess potential impacts of leaching of heavy metals and the presence of asbestos in the shallow surface soils. The intrusive investigation identified the following:
 - Laboratory results indicate that arsenic, chromium, copper and nickel concentrations across the site are generally consistently low.
 - Comparatively elevated zinc and occasionally cadmium concentrations (above the waste acceptance criteria for Class 3 landfills which have been used as proxy to assess environmental risk) were identified in shallow surface soils in isolated areas in the vicinity of exposed metal sheeting, roof structures and machinery. Sampling to date identified zinc and cadmium concentrations generally decrease with depth and lateral spread, indicating likely limited migration.

- Asbestos was not detected in any soil or bulk material samples analysed.
- All soil samples complied with applicable human health soil contaminant standards for commercial/industrial land use, and as such soils are not considered to pose an unacceptable risk to human health, including for short-term exposure of OBDA workers.
- The results of the intrusive investigation indicate zinc concentrations in the delineated, immediate surrounds of the degraded metal may pose a risk to the ephemeral streams onsite if not managed and as such meet the threshold for HAIL category I. As such, it is considered that in relation to soil disturbance, the HAIL 'piece of land' as described by the NESCS, pertains to a minimum 2 m radius area surrounding the metal and machinery and a minimum 3 m radius at SS08. This soil will require offsite disposal at a Class A landfill. Additional delineation sampling will be required during remedial excavation work at the site to confirm the extent of the "hotspot" areas. Additional sampling will be completed during remedial works in the vicinity of the secondary piece of machinery that was unable to be sampled during the PSI/DSI. The results will be used to determine contaminant concentrations and guide the appropriate remedial management of any identified contamination.
- The identified contamination is limited to discrete, localised hotspot areas associated with the degraded metal and machinery, with no potential HAIL activities identified across the remainder of the site. Provided the recommended remediation is undertaken, the residual risk to the receiving environment will be appropriately managed, and as such the site is considered suitable for its proposed use as an OBDA.

19.0 References

- Clough & Associates Ltd, 2026. *Wellington Belmont Quarry, Proposed OBDA: Archaeological Assessment*. Prepared for Winstone Aggregates A Division of Fletcher Concrete and Infrastructure Ltd.
- GWRC, 2023. *Natural Resources Plan for the Wellington Region*.
- MfE, 2004. *Hazardous Waste Guidelines Landfill Waste Acceptance Criteria and Landfill Classification*. Ministry for the Environment, Wellington
- MfE, 2011a. *Contaminated Land Management Guidelines No. 2 – Hierarchy and Application in New Zealand of Environmental Guideline Values*. Ministry for the Environment, Wellington.
- MfE, 2011b. *Methodology for Deriving Standards for Contaminants in Soil to Protect Human Health*. Ministry for the Environment, Wellington.
- MfE, 2011c. *Guidelines for Assessing and Managing Petroleum Hydrocarbon Contaminated Sites in New Zealand*. Ministry for the Environment, Wellington.
- MfE, 2021a. *Contaminated Land Management Guidelines No. 1 – Guidelines for Reporting on Contaminated Sites in New Zealand revised 2021*. Ministry for the Environment, Wellington.
- MfE, 2021b. *Contaminated Land Management Guidelines No. 5 – Site Investigation and Analysis of Soils revised 2021*. Ministry for the Environment, Wellington.
- NEPM, 2013. *Australian National Environmental Protection (Assessment of Site Contamination) Amendment Measure 2013*.
- PDP, 2026. *Remedial Action Plan – Proposed Overburden Disposal Area*.
- WasteMINZ, 2023. *Technical Guidelines for Disposal to Land – Waste Management Institute New Zealand: Revision 3.1*.

20.0 Limitations

This report has been prepared by Pattle Delamore Partners Limited (PDP) on the basis of information provided by Winstone Aggregates Limited (Winstone) and others not directly contracted by PDP for the work, including Hutt City Council, Greater Wellington Regional Council and Retrolens. PDP has not independently verified the provided information and has relied upon it being accurate and sufficient for use by PDP in preparing the report. PDP accepts no responsibility for errors or omissions in, or the currency or sufficiency of, the provided information.

This assessment is limited to collection and analysis of soil samples from discrete sampling locations. Interpretations of subsurface conditions, including contaminant concentrations, are not guaranteed at distance away from the specific points of sampling.

The laboratory test results provide an approximation of the concentration of the tested analytes and are subject to the inherent limitations of the laboratory techniques used for the tests.

The information contained within this document applies to sampling undertaken on the dates stated in this document, or if none is stated, the date of this document. With time, the site conditions and environmental standards may change. Accordingly, the reported assessment and conclusions are not guaranteed to apply at a later date.

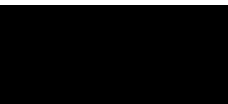
This report has been prepared by PDP on the specific instructions of Winstone Aggregates Limited a division of Fletcher Concrete and Infrastructure Ltd for the limited purposes described in the report. PDP acknowledges that this report may be used and relied upon by the expert panel appointed under the Fast-track Approvals Act 2024. PDP accepts no liability if the report is used for a different purpose or if it is used or relied on by any other person. Any such use or reliance will be solely at their own risk. This report has been prepared in accordance with the Environment Court's Code of Conduct for Expert Witnesses, contained in the Environment Court's Practice Note 2023. The authors of this report agree to comply with the Code of Conduct, and confirm that unless otherwise stated, the issues addressed in this report are within the area of expertise of the authors. No material facts have been omitted that might alter or detracted from the opinions expressed in this report.

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Yours faithfully

PATTLE DELAMORE PARTNERS LIMITED

Prepared by



Jess Campbell

Senior Environmental Scientist

Reviewed by



Melody Robyns

Service Leader – Contaminated Land

Approved by



Hamish Wilson

Technical Director – Contaminated Land

Appendix A: Certifying Statement

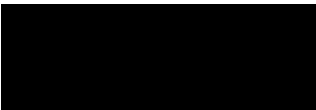
I, Hamish Wilson, of Pattle Delamore Partners certify that this preliminary/detailed site investigation meets the requirements of the Resource Management (*National Environmental Standard for Assessing and Managing Contaminants in Soil to Protect Human Health*) Regulations 2011 (the NES-CS) because it has been:

- a. Completed by a suitably qualified and experienced practitioner;
- b. Reported on in accordance with the current edition of *Contaminated land management guidelines No. 1 – Reporting on contaminated sites in New Zealand*; and
- c. Certified by a suitably qualified and experienced practitioner.

Evidence of the qualifications and experience of the suitably qualified and experienced practitioner(s) who have done this investigation and certified this report is provided below.

This certification applies to the date of this report.

Signed,



Hamish Wilson

Technical Director – Contaminated Land

Hamish Wilson – Project Director

Hamish is an environmental engineer with over 26 years of experience in undertaking environmental and contaminated land assessments. Hamish has a BE in Civil and Resource Engineering from the University of Auckland. Hamish has experience with undertaking and managing site investigations, environmental assessments, and monitoring programmes for a range of environmental issues, across a broad range of media including soil, sediment, surface water, groundwater, and ground gas; and for a wide range of contaminants including heavy metals, petroleum hydrocarbons, and asbestos. Hamish has experience in the assessment of data (including statistical analysis) to undertake risk assessments, including Tier 2 risk assessments. He has familiarity with and understanding of the current contaminated land regulation and practice in New Zealand including assessments against the NES-CS; and in the consenting of contaminated sites.

Melody Robyns – Project Manager and PSI Report Reviewer

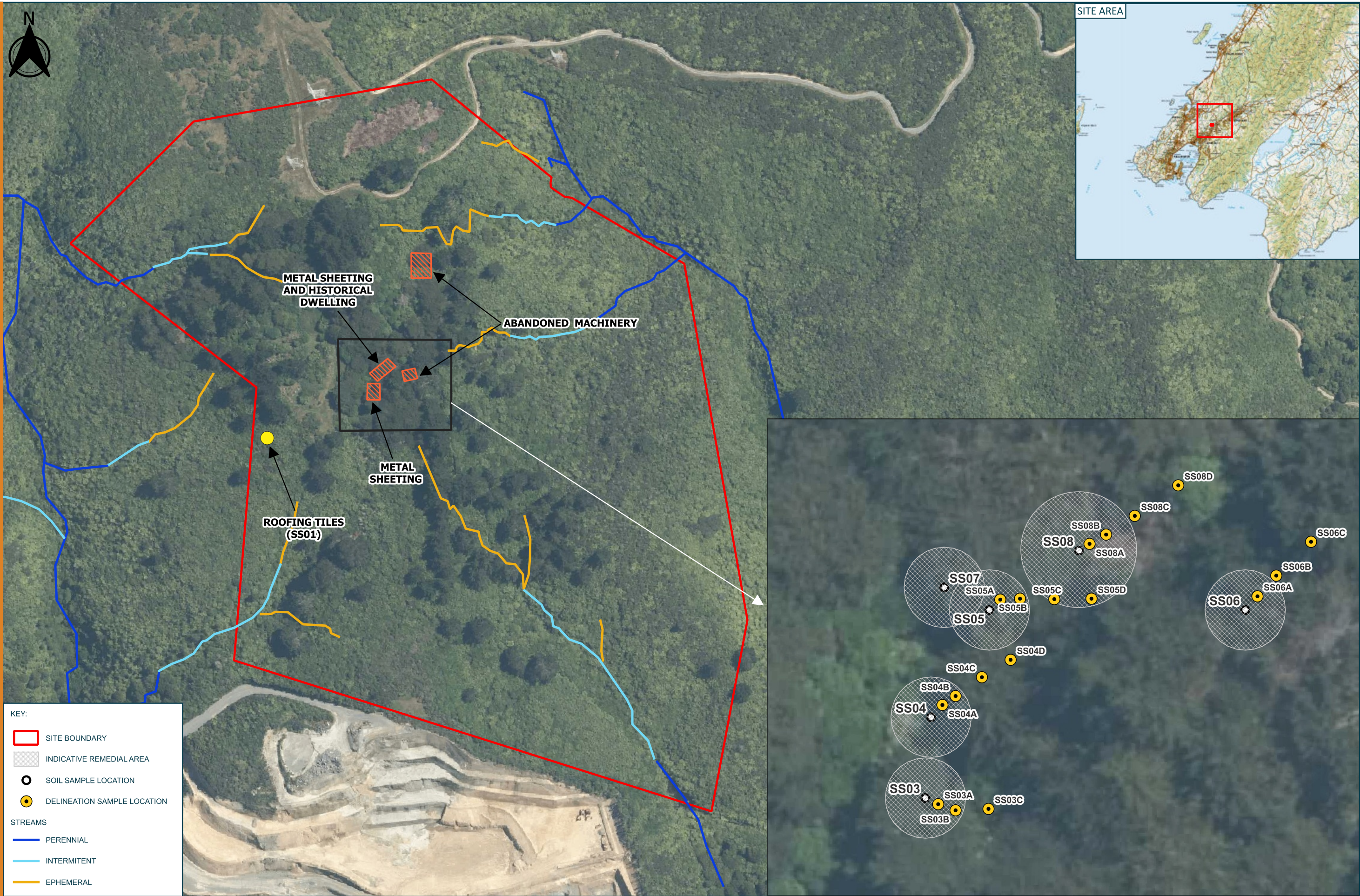
Melody is an Environmental Scientist with a Master of Science in Physical Geography. Melody has a background in environmental site investigations and contaminated land assessments. She is an experienced project manager with over 10 years' experience and is competent in risk identification, mitigation and problem solving. Her involvement in projects includes project management, technical input, risk assessments and liaison with stakeholders.

Jess Campbell – Author

Jess is an Environmental Geologist with over 6 years' experience in undertaking contaminated land assessments across New Zealand and the UK. She has a MSci in Geology and Physical Geography from the University of Liverpool. Jess has practical experience in undertaking and managing investigations and ongoing monitoring of soil and groundwater for industrial, commercial and residential land development projects. Jess has experience in the interpretation and implementation of the NES-CS, project management, risk assessments and liaison with stakeholders.



Appendix B: Figure 1 – Site Location Plan





Appendix C: Historical Aerial Photographs



Historical Aerial Photograph 1: 1942 (Retrolens)



Historical Aerial Photograph 2: 1957 (Retrolens)



Historical Aerial Photograph 3: 1966 (Retrolens)



Historical Aerial Photograph 4: 1984 (Retrolens)



Historical Aerial Photograph 5: 2000 (Retrolens)



Historical Aerial Photograph 6: 2004 (Google Earth Pro)



Historical Aerial Photograph 7: 2009 (Google Earth Pro)



Historical Aerial Photograph 8: 2013 (Google Earth Pro)



Historical Aerial Photograph 9: 2019 (Google Earth Pro)



Historical Aerial Photograph 10: 2024 (Google Earth Pro)



Appendix D: Site Walkover Photographs



Photograph 1: View of onsite pylons, looking north.



Photograph 2: General overview of cleared area.



Photograph 3: General overview of shorter vegetation, looking south.



Photograph 4: General overview of dense vegetation, looking southwest.



Photograph 5: General overview of dense bush looking southeast.



Photograph 6: Access track to the north of the site, looking north.



Photograph 7: Photo of potential asbestos at SS01.



Photograph 8: Example of metal sheeting at SS03 and SS04.



Photograph 9: Roof structure at former dwelling (SS05).



Photograph 10: Example of abandoned machinery at SS06.



Photograph 11: General overview of lithology encountered.



Photograph 12: General overview of lithology encountered.



Appendix E: Analytical Tables



Table 4: Soil Analytical Results - Heavy Metals ¹ - Commercial/Industrial LAND USE ²

Sample Name	SS03_0.0	SS03_0.3	SS03_0.5	SS04_0.0	SS04_0.3	SS05_0.0	SS05_0.3	SS06_0.0	SS06_0.3	SS07_0.0	SS07_0.3	SS07_0.5	NES SCSs & SGVs ³	WasteMINZ WAC ⁵	
Laboratory Reference	4104589.5	4104589.6	4121793.1	4104589.7	4104589.8	4104589.9	4104589.10	4104589.11	4104589.12	4121793.43	4121793.44	4121793.45			
Date Sampled	18 Feb 2026		4 Mar 2026	18 Feb 2026						4 Mar 2026					
Property Address	Belmont Regional Park												Commercial / industrial	Class A	Class 3
Sample Location	SS03	SS03	SS03	SS04	SS04	SS05	SS05	SS06	SS06	SS07	SS07	SS07			
Contaminant Source	Discarded metal sheeting														
Sample Depth (meters below ground level)	0.0	0.3	0.5	0.0	0.3	0.0	0.3	0.0	0.3	0.0	0.3	0.5			
Heavy Metals															
Arsenic	< 4	3	4	3	2	< 4	4	4	6	2	3	3	70	100	140
Cadmium	9.1	1.5	3.5	1.73	0.13	2.2	0.47	0.43	< 0.10	1.85	2.4	0.24	1,300	20	10
Chromium	5	13	16	13	14	11	16	13	17	11	13	13	6,300 ^{3a}	100	150
Copper	43	29	35	14	5	15	15	17	10	10	16	6	>10,000	100	280
Lead	191	59	350	46	13.5	151	45	108	29	74	113	33	3,300 ^{3b}	100	460
Nickel	15	11	18	7	7	8	9	8	9	9	16	7	6,000 ⁴	200	320
Zinc	4,100	820	1,520	1,040	101	1,170	240	100	61	890	1,030	230	400,000 ⁴	200	1,200
TCLP															
Cadmium	0.0134	-	-	-	-	0.0026	-	-	-	-	-	-	-	1	-
Lead	0.032	-	-	-	-	0.0143	-	-	-	-	-	-		5	
Zinc	5.3	-	-	-	-	0.99	-	-	-	-	-	-		10	

100	Result exceeds Class A landfill Waste Acceptance Criteria
100	Result exceeds Class 3 Waste Acceptance Criteria
-	Parameter not tested / Guideline value not available

- Notes.
- Results in mg/kg.
 - Based on proposed future commercial/industrial land-use.
 - NES Soil Contaminant Standards (SCSs) from 'Methodology for Deriving Standards for Contaminants in Soil to Protect Human Health' (MfE, 2011) - Commercial/industrial values adopted.
 - 3a. SCS value is for chromium VI.
 - 3b. SCS value is for inorganic lead.
 - Guideline values from 'Schedule B(1) Guideline on Investigation Levels for Soils and Groundwater National Environment Protection Measure' (NEPM), updated May, 2013 - Commercial/industrial values adopted.
 - Waste Acceptance Criteria (WAC) from Waste Management Institute New Zealand (WasteMINZ) 'Technical Guidelines for Disposal to Land, Revision 3.1' (WasteMINZ, 2023). Refer to references therein.



Table 5: Soil Analytical Results for Delineation - Heavy Metals ¹ - Commercial/Industrial LAND USE ²

Sample Name	SS03a_0.05	SS03a_0.3	SS03b_0.05	SS03c_0.05	SS04a_0.05	SS04a_0.3	SS04b_0.05	SS04c_0.05	SS05a_0.05	SS05a_0.3	NES SCSs & SGVs ³	WasteMINZ WAC ⁵	
Laboratory Reference	4121793.2	4121793.3	4121793.5	4121793.8	4121793.11	4121793.12	4121793.14	4121793.17	4121793.23	4121793.24			
Date Sampled	4 Mar 2026												
Property Address	Belmont Regional Park										Commercial / industrial	Class A	Class 3
Contaminant Source	Discarded metal sheeting								Historical dwelling				
Distance from original sample location (m)	1		2	5	1		2	5	1				
Sample Depth (meters below ground level)	0.05	0.3	0.05	0.05	0.05	0.3	0.05	0.05	0.05	0.3			
Heavy Metals													
Arsenic	3	2	4	3	3	3	2	3	5	5	70	100	140
Cadmium	1.01	0.27	0.86	0.33	0.54	0.22	0.26	0.2	0.46	0.41	1,300	20	10
Chromium	14	13	74	13	12	13	14	13	19	19	6,300 ^{3a}	100	150
Copper	43	12	24	29	9	8	8	8	13	13	>10,000	100	280
Lead	230	41	220	46	23	16.9	19.0	22	210	370	3,300 ^{3b}	100	460
Nickel	10	7	42	7	7	6	7	6	11	11	6,000 ⁴	200	320
Zinc	480	182	350	150	340	162	180	107	270	230	400,000 ⁴	200	1,200

Sample Name	SS05b_0.05	SS05c_0.05	SS06a_0.05	SS06a_0.3	SS06b_0.05	SS06c_0.05	SS08a_0.05	SS08a_0.3	SS08b_0.05	SS08c_0.05	NES SCSs & SGVs ³	WasteMINZ WAC ⁶	
Laboratory Reference	4121793.26	4121793.29	4121793.35	4121793.36	4121793.38	4121793.41	4121793.46	4121793.47	4121793.49	4121793.52			
Date Sampled	4 Mar 2026												
Property Address	Belmont Regional Park										Commercial / industrial	Class A	Class 3
Source	Historical dwelling		Abandoned machinery			Discarded metal sheeting near dwelling							
Distance from orginal sample location (m)	2	5	1		2	5	1		2	5			
Sample Depth (meters below ground level)	0.05	0.05	0.05	0.3	0.05	0.05	0.05	0.3	0.05	0.05			
Heavy Metals													
Arsenic	5	3	3	3	3	5	3	2	2	3	70	100	140
Cadmium	0.59	0.15	0.28	0.11	0.25	0.27	2.3	0.53	1.32	0.24	1,300	20	10
Chromium	17	15	16	17	15	21	11	13	11	13	6,300 ^{3a}	100	150
Copper	14	9	43	24	21	11	18	7	8	6	>10,000	100	280
Lead	64	77	46	26	30	29	25	16.4	24	33	3,300 ^{3b}	100	460
Nickel	10	9	9	9	10	11	7	7	6	7	6,000 ⁴	200	320
Zinc	270	91	81	59	71	177	1,570	410	1,210	230	400,000 ⁴	200	1,200

100	Result exceeds Class A landfill Waste Acceptance Criteria
100	Result exceeds Class 3 Waste Acceptance Criteria
-	Parameter not tested / Guideline value not available

- Notes.
- Results in mg/kg.
 - Based on proposed future commercial/industrial land-use.
 - NES Soil Contaminant Standards (SCSs) from 'Methodology for Deriving Standards for Contaminants in Soil to Protect Human Health' (MfE, 2011) - Commercial/industrial values adopted.
 - 3a. SCS value is for chromium VI.
 - 3b. SCS value is for inorganic lead.
 - Guideline values from 'Schedule B(1) Guideline on Investigation Levels for Soils and Groundwater National Environment Protection Measure' (NEPM), updated May, 2013 - Commercial/industrial values adopted.
 - Waste Acceptance Criteria (WAC) from Waste Management Institute New Zealand (WasteMINZ) 'Technical Guidelines for Disposal to Land, Revision 3.1' (WasteMINZ, 2023). Refer to references therein.



Appendix F: Lab Results and Chain of Custody

From: Pattle Delamore Partners Ltd

Office: ☐ Auckland ☐ Hamilton ☐ Tauranga ☒ Wellington ☐ Christchurch ☐ Invercargill

Submitted by: J Campbell Ph No.: [REDACTED]

To: Hu

Quote No.: [REDACTED]

PDP Job No.: 1055680020



10-4

Chain of Custody Record

Additional Information

Sent:

Name: J Campbell

Signature: [REDACTED]

Date and time: 18/2/26

Received:

☐ Room temp. ☐ Chilled Temp.: ____°C
☐ Frozen

Name: _____

Signature: _____

Date and time: _____

Analyses via email

Results to:

☐ lab.samples@pdp

☒ Email submitter: [REDACTED]

☒ Email other: [REDACTED]

Priority:

☐ Normal

☐ High

☐ Urgent

Results required by: ____ / ____ / ____

Invoice to:

☐ PDP

☐ Other: _____

Sample ID	Date	Time	Sample type	Analyses Requested	Notes
SS01-0.0	18/2		S	Hold Cold	
SS01-0.3					
SS02-0.0					
SS02-0.3					
SS03-0.0					
SS03-0.3					
SS04-0.0					
SS04-0.3					
SS05-0.0					
SS05-0.3					
SS06-0.0					
SS06-0.3					

Sample type: S Soil GW Groundwater SAL Saline FW Freshwater GEO Geothermal SW Stormwater
SED Sediment BIO Biota WW Wastewater P Potable O Other: _____

Job Information Summary

Page 1 of 2

Client:	Pattle Delamore Partners Limited	Lab No:	4104589
Contact:	Melody Robyns	Date Registered:	19-Feb-2026 5:00 pm
	C/- Pattle Delamore Partners Limited	Priority:	High
	PO Box 6136	Quote No:	81087
	Wellington 6141	Order No:	
		Client Reference:	A035680020
		Add. Client Ref:	
		Submitted By:	Jessica Campbell
		Charge To:	Pattle Delamore Partners Limited
		Target Date:	10-Mar-2026 4:30 pm

Samples

No	Sample Name	Sample Type	Containers	Tests Requested
1	SS01_0.0 18-Feb-2026	Soil	GSoil300, GSoil300	Hold Cold
2	SS01_0.3 18-Feb-2026	Soil	GSoil300, GSoil300	Hold Cold
3	SS02_0.0 18-Feb-2026	Soil	GSoil300, GSoil300	Hold Cold
4	SS02_0.3 18-Feb-2026	Soil	GSoil300, GSoil300	Hold Cold
5	SS03_0.0 18-Feb-2026	Soil	GSoil300, GSoil300	Heavy Metals, Screen Level, TCLP Profile
6	SS03_0.3 18-Feb-2026	Soil	GSoil300, GSoil300	Heavy Metals, Screen Level
7	SS04_0.0 18-Feb-2026	Soil	GSoil300, GSoil300	Heavy Metals, Screen Level
8	SS04_0.3 18-Feb-2026	Soil	GSoil300, GSoil300	Heavy Metals, Screen Level
9	SS05_0.0 18-Feb-2026	Soil	GSoil300, GSoil300	Heavy Metals, Screen Level, TCLP Profile
10	SS05_0.3 18-Feb-2026	Soil	GSoil300, GSoil300	Heavy Metals, Screen Level
11	SS06_0.0 18-Feb-2026	Soil	GSoil300, GSoil300	Heavy Metals, Screen Level
12	SS06_0.3 18-Feb-2026	Soil	GSoil300, GSoil300	Heavy Metals, Screen Level
13	SS03_0.0 [TCLP Extract]	TCLP Extract	TCLPext	Total Lead, Total Zinc
14	SS05_0.0 [TCLP Extract]	TCLP Extract	TCLPext	Total Lead, Total Zinc

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).	-	5-12
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	5-12
TCLP Profile	Extraction at 30 +/- 2 rpm for 18 +/- 2 hours, (Ratio 1g sample : 20g extraction fluid). US EPA 1311.	-	5, 9
TCLP Profile			
TCLP Weight of Sample Taken	Gravimetric. US EPA 1311.	0.1 g	5, 9
TCLP Initial Sample pH	pH meter. US EPA 1311.	0.1 pH Units	5, 9
TCLP Acid Adjusted Sample pH	pH meter. US EPA 1311.	0.1 pH Units	5, 9
TCLP Extractant Type	US EPA 1311.	-	5, 9
TCLP Extraction Fluid pH	pH meter. US EPA 1311.	0.1 pH Units	5, 9
TCLP Post Extraction Sample pH	pH meter. US EPA 1311.	0.1 pH Units	5, 9

Sample Type: Aqueous			
Test	Method Description	Default Detection Limit	Sample No
Individual Tests			
Total Digestion of Extracted Samples	Nitric acid digestion. APHA 3030 E (modified) : Online Edition.	-	13-14
Total Lead	Nitric acid digestion, ICP-MS, screen level. APHA 3125 B : Online Edition.	0.0021 g/m ³	13-14
Total Zinc	Nitric acid digestion, ICP-MS, screen level. APHA 3125 B : Online Edition.	0.053 g/m ³	13-14

Certificate of Analysis

Page 1 of 2

Client:	Pattle Delamore Partners Limited	Lab No:	4104589	SPv4
Contact:	Melody Robyns	Date Received:	19-Feb-2026	
	C/- Pattle Delamore Partners Limited	Date Reported:	11-Mar-2026	(Amended)
	PO Box 6136	Quote No:	81087	
	Wellington 6141	Order No:		
		Client Reference:	A035680020	
		Submitted By:	Jessica Campbell	

Sample Type: Soil

Sample Name:	SS03_0.0	SS03_0.3	SS04_0.0	SS04_0.3	SS05_0.0
	18-Feb-2026	18-Feb-2026	18-Feb-2026	18-Feb-2026	18-Feb-2026
Lab Number:	4104589.5	4104589.6	4104589.7	4104589.8	4104589.9

Individual Tests

TCLP Weight of Sample Taken	g	50	-	-	-	50
TCLP Initial Sample pH	pH Units	7.0	-	-	-	7.3
TCLP Acid Adjusted Sample pH	pH Units	1.6	-	-	-	1.7
TCLP Extractant Type*	NaOH/Acetic acid at pH 4.93 +/- 0.05	-	-	-	-	NaOH/Acetic acid at pH 4.93 +/- 0.05
TCLP Extraction Fluid pH	pH Units	4.9	-	-	-	4.9
TCLP Post Extraction Sample pH	pH Units	5.0	-	-	-	5.0

Heavy Metals, Screen Level

Total Recoverable Arsenic	mg/kg dry wt	< 4	3	3	2	< 4
Total Recoverable Cadmium	mg/kg dry wt	9.1	1.50	1.73	0.13	2.2
Total Recoverable Chromium	mg/kg dry wt	5	13	13	14	11
Total Recoverable Copper	mg/kg dry wt	43	29	14	5	15
Total Recoverable Lead	mg/kg dry wt	191	59	46	13.5	151
Total Recoverable Nickel	mg/kg dry wt	15	11	7	7	8
Total Recoverable Zinc	mg/kg dry wt	4,100	820	1,040	101	1,170

Sample Name:	SS05_0.3 18-Feb-2026	SS06_0.0 18-Feb-2026	SS06_0.3 18-Feb-2026
Lab Number:	4104589.10	4104589.11	4104589.12

Heavy Metals, Screen Level

Total Recoverable Arsenic	mg/kg dry wt	4	4	6
Total Recoverable Cadmium	mg/kg dry wt	0.47	0.43	< 0.10
Total Recoverable Chromium	mg/kg dry wt	16	13	17
Total Recoverable Copper	mg/kg dry wt	15	17	10
Total Recoverable Lead	mg/kg dry wt	45	108	29
Total Recoverable Nickel	mg/kg dry wt	9	8	9
Total Recoverable Zinc	mg/kg dry wt	240	100	61

Sample Type: Aqueous

Sample Name:	SS03_0.0 [TCLP Extract]	SS05_0.0 [TCLP Extract]
Lab Number:	4104589.13	4104589.14

Individual Tests

Total Cadmium	g/m ³	0.0134	0.0026
Total Lead	g/m ³	0.032	0.0143
Total Zinc	g/m ³	5.3	0.99

Analyst's Comments

Amended Report: This certificate of analysis replaces report '4104589-SPv3' issued on 10-Mar-2026 at 10:57 am.
Reason for amendment: Additional analysis added at clients request.



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.

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).	-	5-12
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	5-12
TCLP Profile*	Extraction at 30 +/- 2 rpm for 18 +/- 2 hours, (Ratio 1g sample : 20g extraction fluid). US EPA 1311.	-	5, 9
TCLP Profile			
TCLP Weight of Sample Taken	Gravimetric. US EPA 1311.	0.1 g	5, 9
TCLP Initial Sample pH	pH meter. US EPA 1311.	0.1 pH Units	5, 9
TCLP Acid Adjusted Sample pH	pH meter. US EPA 1311.	0.1 pH Units	5, 9
TCLP Extractant Type*	US EPA 1311.	-	5, 9
TCLP Extraction Fluid pH	pH meter. US EPA 1311.	0.1 pH Units	5, 9
TCLP Post Extraction Sample pH	pH meter. US EPA 1311.	0.1 pH Units	5, 9

Sample Type: Aqueous			
Test	Method Description	Default Detection Limit	Sample No
Individual Tests			
Total Digestion of Extracted Samples*	Nitric acid digestion. APHA 3030 E (modified) : Online Edition.	-	13-14
Total Cadmium	Nitric acid digestion, ICP-MS, screen level. APHA 3125 B : Online Edition.	0.0011 g/m ³	13-14
Total Lead	Nitric acid digestion, ICP-MS, screen level. APHA 3125 B : Online Edition.	0.0021 g/m ³	13-14
Total Zinc	Nitric acid digestion, ICP-MS, screen level. APHA 3125 B : Online Edition.	0.053 g/m ³	13-14

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

Testing was completed between 20-Feb-2026 and 11-Mar-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.



Kim Harrison MSc
Client Services Manager - Environmental

Certificate of Analysis

Page 1 of 2

Client:	Pattle Delamore Partners Limited	Lab No:	4105834	A2Pv1
Contact:	Melody Robyns C/- Pattle Delamore Partners Limited PO Box 6136 Wellington 6141	Date Received:	19-Feb-2026	
		Date Reported:	26-Feb-2026	
		Quote No:	81087	
		Order No:		
		Client Reference:	A035680020	
		Submitted By:	Jessica Campbell	

Sample Type: Soil

Sample Name:	SS04_0.0 18-Feb-2026	SS05_0.0 18-Feb-2026
Lab Number:	4105834.6	4105834.8
Asbestos Presence / Absence	Asbestos NOT detected.	Asbestos NOT detected.
Description of Asbestos Form	-	-
Asbestos in ACM as % of Total Sample* % w/w	< 0.001	< 0.001
Combined Fibrous Asbestos + Asbestos Fines as % of Total Sample* % w/w	< 0.001	< 0.001
Asbestos as Fibrous Asbestos as % of Total Sample* % w/w	< 0.001	< 0.001
Asbestos as Asbestos Fines as % of Total Sample* % w/w	< 0.001	< 0.001
As Received Weight g	417.7	232.8
Dry Weight g	261.6	81.6
Moisture* %	37	65
Sample Fraction >10mm g dry wt	0.5	2.6
Sample Fraction <10mm to >2mm g dry wt	121.5	13.8
Sample Fraction <2mm g dry wt	138.3	65.0
<2mm Subsample Weight g dry wt	50.2	51.2
Weight of Asbestos in ACM (Non-Friable) g dry wt	< 0.00001	< 0.00001
Weight of Asbestos as Fibrous Asbestos (Friable) g dry wt	< 0.00001	< 0.00001
Weight of Asbestos as Asbestos Fines (Friable)* g dry wt	< 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.



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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.

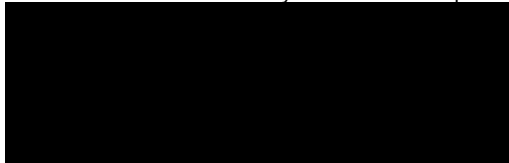
Sample Type: Soil			
Test	Method Description	Default Detection Limit	Sample No
New Zealand Guidelines Semi Quantitative Asbestos in Soil			
As Received Weight	Measurement on analytical balance. Analysed at Hill Laboratories - Asbestos; Unit 1, 17 Print Place, Middleton, Christchurch.	0.1 g	6, 8
Dry Weight	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	6, 8
Moisture*	Sample dried at 100 to 105°C. Calculation = (As received weight - Dry weight) / as received weight x 100.	1 %	6, 8
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	6, 8
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	6, 8
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	6, 8
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%	6, 8
Description of Asbestos Form	Description of asbestos form and/or shape if present.	-	6, 8
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	6, 8
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	6, 8
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	6, 8
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	6, 8
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	6, 8
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	6, 8
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	6, 8

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

Testing was completed on 26-Feb-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.

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Laboratory Technician - Asbestos

Lab No: 4105834-A2Pv1

Hill Labs

Page 2 of 2



Jah Job No: Date Recv: 19-Feb-26 17:14

Received by: Darryl Brown



PDP Job No.: ~~600~~ 71035680020

PDP Invercargill
Tel: +64 3 422 1690

Job Information Summary

Page 1 of 1

Client:	Pattle Delamore Partners Limited	Lab No:	4105838
Contact:	Melody Robyns	Date Registered:	19-Feb-2026 5:15 pm
	C/- Pattle Delamore Partners Limited	Priority:	High
	PO Box 6136	Quote No:	81087
	Wellington 6141	Order No:	
		Client Reference:	A035680020
		Add. Client Ref:	
		Submitted By:	Jessica Campbell
		Charge To:	Pattle Delamore Partners Limited
		Target Date*:	25-Feb-2026 4:30 pm

* As the samples require analysis at a Hill Labs location that is different to where they were received, the Target Date for reporting has been extended.

Samples

No	Sample Name	Sample Type	Containers	Tests Requested
1	SS01 Bulk 18-Feb-2026	Building Material	cpBag	Asbestos in Bulk Material

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
Sample Weight on receipt	Sample weight (approximate). Analysed at Hill Laboratories - Asbestos; 204 Thorndon Quay, Wellington.	0.01 g	1
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
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

Certificate of Analysis

Page 1 of 2

Client:	Pattle Delamore Partners Limited	Lab No:	4105838	A2Pv1
Contact:	Melody Robyns C/- Pattle Delamore Partners Limited PO Box 6136 Wellington 6141	Date Received:	19-Feb-2026	
		Date Reported:	25-Feb-2026	
		Quote No:	81087	
		Order No:		
		Client Reference:	A035680020	
		Submitted By:	Jessica Campbell	

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
SS01 Bulk 18-Feb-2026	4105838.1	Paper	166.77	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.

Analyst's Comments

Due to excessive sample size a representative sub sample was prepared from the original sample for laboratory testing.

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
Sample Weight on receipt	Sample weight (approximate). Analysed at Hill Laboratories - Asbestos; 204 Thorndon Quay, Wellington.	0.01 g	1
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
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



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

Testing was completed between 24-Feb-2026 and 25-Feb-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.

A large black rectangular redaction box covering the signature area.

Kelsey Rohloff BSc
Laboratory Technician - Asbestos



PATTLE DELAMORE PARTNERS LTD

Request for Analyses

NOTE: Please acknowledge receipt of these samples by signing this form and emailing to submitter.

From: Pattle Delamore Partners Ltd

To: Phil LabsOffice: ☐ Auckland ☐ Hamilton ☐ Tauranga ☒ Wellington ☐ Christchurch ☐ Invercargill

Quote No.:

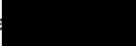
Submitted by: J Campbell

Ph No.:

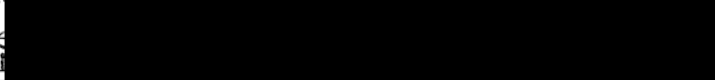
PDP Job No.: A035680020

Chain of Custody Record

Additional Information

Sent:
Name: J Campbell
Signature: 
Date and time: _____

Received: ☐ Room temp. ☐ Chilled Temp.: _____ °C
☐ Frozen
Name: _____
Signature: _____
Date and time: _____

Results to: ☐ lab.samples@pdp.co.nz☒ Email submitter: ☒ Email other: _____Priority: ☐ Normal ☐ High ☐ Urgent

Results required by: ____ / ____ / ____

Invoice to: ☐ PDP ☐ Other:

Sample ID	Date	Time	Sample type	Analyses Requested	Notes
SS03a-0.05	3/3/26		S		
SS03a-0.3					
SS03a-0.5					
SS03b-0.05					
SS03b-0.3					
SS03b-0.5					
SS03c-0.05					
SS03c-0.3					
SS03c-0.5					
SS03-0.5					
SS07-0.05					
SS07-0.3					
SS07-0.5					
SS08a-0.05					
SS08a-0.3					
SS08a-0.5					
SS08b-0.05					
SS08b-0.3					
SS08b-0.5					
SS08c-0.3					
SS08d-0.5					
SS08e					

Sr

12.1



W Groundwater

SAL Saline

FW Freshwater

GEO Geothermal

SW Stormwater

O Biota

WW Wastewater

P Potable

O Other: _____

Received by: Nathaniel Sue

Note: Samples may contain dangerous or hazardous substances

Page ____ of ____

PI 4121793
Te 9 7880PDP Tauranga
Tel: +64 7 985 6440PDP Wellington
Tel: +64 4 471 4130PDP Christchurch
Tel: +64 3 345 7100PDP Invercargill
Tel: +64 3 422 1690

Date Recv: 06-Mar-26 06:25



PATTLE DELAMORE PARTNERS LTD

Request for Analyses

NOTE: Please acknowledge receipt of these samples by signing this form and emailing to submitter.

From: Pattle Delamore Partners Ltd

To: Hill Labs

Office: ☐ Auckland ☐ Hamilton ☐ Tauranga ☒ Wellington ☐ Christchurch ☐ Invercargill

Quote No.: _____

Submitted by: J Campbell

Ph No.: _____

PDP Job No.: A035680070

Chain of Custody Record

Additional Information

Sent:

Name: J Campbell
Signature: _____
Date and time: 3/3/26Received: ☐ Room temp. ☐ Chilled Temp.: ____ °C
☐ FrozenName: _____
Signature: _____
Date and time: _____Asbestos
samples

Results to:

☐ lab.samples@pdp.co.nz☒ Email submitter: _____☒ Email other: _____Priority: ☐ Normal ☐ High ☐ Urgent

Results required by: ____ / ____ / ____

Invoice to:

☐ PDP☐ Other: _____

Sample ID	Date	Time	Sample type	Analyses Requested	Notes
SS03a - 0.05	3/3/26		S		
SS03b - 0.05					
SS03c - 0.05					
SS04a - 0.05					
SS04b - 0.05					
SS04c - 0.05					
SS04d - 0.05					
SS07 - 0.05					
SS07 - 0.3					
SS08a - 0.05					
SS08b - 0.05					
SS08c - 0.05					
SS08d - 0.05					
SS06a - 0.05					
SS06b - 0.05					
SS06c - 0.05					
SS05a - 0.05					
SS05b - 0.05					
SS05c - 0.05					
SS05d - 0.05					

3W Groundwater

SAL Saline

FW Freshwater

GEO Geothermal

SW Stormwater

BIO Biota

WW Wastewater

P Potable

O Other: _____

Request for Analyses

**NOTE: Please acknowledge . . .
of these samples by signing this
form and emailing to submitter.**

From: Pattle Delamore Partners Ltd

Office: ☐ Auckland ☐ Hamilton ☐ Tauranga ☒ Wellington ☐ Christchurch ☐ Invercargill

Submitted by: J Campbell

Ph N

To: Plus Cab

Quote No.:

PDP Job No.: A035680020

Chain of Custody Record

Additional Information

Sent:

Name: J Campbell

Signature: _____

Date and time: 3/3/26

Received: ☐ Room temp. ☐ Chilled Temp.: ____°C
☐ Frozen

Name: _____

Signature: _____

Date and time: _____

Results to: ☐ lab.samples@pdp.co.nz

☒ Email submitter:

☒ Email other:

Priority: ☐ Normal ☐ High ☐ Urgent

Results required by: / /

Invoice to: ☐ PDP ☐ Other: [REDACTED]

[illegible]

GW Groundwater

SAL Saline

FW Freshwater

GEO Geothermal

SW Stormwater

310 Biota

WW Wastewater

P Potable

0 Other:

02

Note: Samples may contain dangerous or hazardous substances

Page of

lton
949 7880

PDP Tauranga
Tel: +64 7 985 6440

PDP Wellington
Tel: +64 4 471 4130

PDP Christchurch
Tel: +64 3 345 7100

PDP Invercargill
Tel: +64 3 422 1690

Request for Analyses

NOTE: Please acknowledge receipt of these samples by signing this form and emailing to submitter.

From: Pattle Delamore Partners Ltd

To: Hill Labs

Office: ☐ Auckland ☐ Hamilton ☐ Tauranga ☒ Wellington ☐ Christchurch ☐ Invercargill

Quote No.: _____

Submitted by: Jes C Ph No.:

PDP Job No.: 1035680070

Chain of Custody Record

Additional Information

Sent: _____

Name: Jess C

Signature: _____

Date and time: 3/3/26

Received: ☐ Room temp. ☐ Chilled Temp.: _____°C
☐ Frozen

Name: _____

Signature: _____

Date and time: _____

Results to: ☐ lab.samples@pdp.co.uk
☒ Email submitter: _____
☒ Email other: _____

Priority: ☐ Normal ☐ High ☐ Urgent

Results required by: / /

Invoice to: ☐ PDP ☐ Other:

[illegible]

GW Groundwater

SAL Saline

FW Freshwater

GEO Geothermal

SW Stormwater

BIO Biota

WW Wastewater

P Potable

0 Other:

1.nZ

Note: Samples may contain dangerous or hazardous substances

Page of

ilton
949 7880

PDP Tauranga
Tel: +64 7 985 6440

PDP Wellington
Tel: +64 4 471 4130

PDP Christchurch
Tel: +64 3 345 7100

PDP Invercargill
Tel: +64 3 422 1690

Job Information Summary

Page 1 of 2

Client:	Pattle Delamore Partners Limited	Lab No:	4121793
Contact:	Melody Robyns	Date Registered:	06-Mar-2026 2:03 pm
	C/- Pattle Delamore Partners Limited	Priority:	High
	PO Box 6136	Quote No:	81087
	Wellington 6141	Order No:	
		Client Reference:	A035680020
		Add. Client Ref:	
		Submitted By:	Jessica Campbell
		Charge To:	Pattle Delamore Partners Limited
		Target Date:	10-Mar-2026 4:30 pm

Samples

No	Sample Name	Sample Type	Containers	Tests Requested
1	SS03_0.5 03-Mar-2026	Soil	GSoil300, GSoil300	Heavy Metals, Screen Level
2	SS03a_0.05 03-Mar-2026	Soil	GSoil300, GSoil300	Heavy Metals, Screen Level
3	SS03a_0.3 03-Mar-2026	Soil	GSoil300, GSoil300	Heavy Metals, Screen Level
4	SS03a_0.5 03-Mar-2026	Soil	GSoil300, GSoil300	Hold Cold
5	SS03b_0.05 03-Mar-2026	Soil	GSoil300, GSoil300	Heavy Metals, Screen Level
6	SS03b_0.3 03-Mar-2026	Soil	GSoil300, GSoil300	Hold Cold
7	SS03b_0.5 03-Mar-2026	Soil	GSoil300, GSoil300	Hold Cold
8	SS03c_0.05 03-Mar-2026	Soil	GSoil300, GSoil300	Heavy Metals, Screen Level
9	SS03c_0.3 03-Mar-2026	Soil	GSoil300, GSoil300	Hold Cold
10	SS03c_0.5 03-Mar-2026	Soil	GSoil300, GSoil300	Hold Cold
11	SS04a_0.05 03-Mar-2026	Soil	GSoil300, GSoil300	Heavy Metals, Screen Level
12	SS04a_0.3 03-Mar-2026	Soil	GSoil300, GSoil300	Heavy Metals, Screen Level
13	SS04a_0.5 03-Mar-2026	Soil	GSoil300, GSoil300	Hold Cold
14	SS04b_0.05 03-Mar-2026	Soil	GSoil300, GSoil300	Heavy Metals, Screen Level
15	SS04b_0.3 04-Mar-2026	Soil	GSoil300, GSoil300	Hold Cold
16	SS04b_0.5 04-Mar-2026	Soil	GSoil300, GSoil300	Hold Cold
17	SS04c_0.05 04-Mar-2026	Soil	GSoil300, GSoil300	Heavy Metals, Screen Level
18	SS04c_0.3 04-Mar-2026	Soil	GSoil300, GSoil300	Hold Cold
19	SS04c_0.5 04-Mar-2026	Soil	GSoil300, GSoil300	Hold Cold
20	SS04d_0.05 04-Mar-2026	Soil	GSoil300, GSoil300	Hold Cold
21	SS04d_0.3 04-Mar-2026	Soil	GSoil300, GSoil300	Hold Cold
22	SS04d_0.5 04-Mar-2026	Soil	GSoil300, GSoil300	Hold Cold
23	SS05a_0.05 04-Mar-2026	Soil	GSoil300, GSoil300	Heavy Metals, Screen Level
24	SS05a_0.3 04-Mar-2026	Soil	GSoil300, GSoil300	Heavy Metals, Screen Level
25	SS05a_0.5 04-Mar-2026	Soil	GSoil300, GSoil300	Hold Cold
26	SS05b_0.05 04-Mar-2026	Soil	GSoil300, GSoil300	Heavy Metals, Screen Level
27	SS05b_0.3 04-Mar-2026	Soil	GSoil300, GSoil300	Hold Cold
28	SS05b_0.5 04-Mar-2026	Soil	GSoil300, GSoil300	Hold Cold
29	SS05c_0.05 04-Mar-2026	Soil	GSoil300, GSoil300	Heavy Metals, Screen Level
30	SS05c_0.3 04-Mar-2026	Soil	GSoil300, GSoil300	Hold Cold
31	SS05c_0.5 04-Mar-2026	Soil	GSoil300, GSoil300	Hold Cold
32	SS05d_0.05 04-Mar-2026	Soil	GSoil300, GSoil300	Hold Cold
33	SS05d_0.3 04-Mar-2026	Soil	GSoil300, GSoil300	Hold Cold
34	SS05d_0.5 04-Mar-2026	Soil	GSoil300, GSoil300	Hold Cold
35	SS06a_0.05 04-Mar-2026	Soil	GSoil300, GSoil300	Heavy Metals, Screen Level
36	SS06a_0.3 04-Mar-2026	Soil	GSoil300, GSoil300	Heavy Metals, Screen Level
37	SS06a_0.5 04-Mar-2026	Soil	GSoil300, GSoil300	Hold Cold

Samples				
No	Sample Name	Sample Type	Containers	Tests Requested
38	SS06b_0.05 04-Mar-2026	Soil	GSoil300, GSoil300	Heavy Metals, Screen Level
39	SS06b_0.3 04-Mar-2026	Soil	GSoil300, GSoil300	Hold Cold
40	SS06b_0.5 04-Mar-2026	Soil	GSoil300, GSoil300	Hold Cold
41	SS06c_0.05 04-Mar-2026	Soil	GSoil300, GSoil300	Heavy Metals, Screen Level
42	SS06c_0.3 04-Mar-2026	Soil	GSoil300, GSoil300	Hold Cold
43	SS07_0.05 04-Mar-2026	Soil	GSoil300, GSoil300	Heavy Metals, Screen Level
44	SS07_0.3 04-Mar-2026	Soil	GSoil300, GSoil300	Heavy Metals, Screen Level
45	SS07_0.5 04-Mar-2026	Soil	GSoil300, GSoil300	Heavy Metals, Screen Level
46	SS08a_0.05 04-Mar-2026	Soil	GSoil300, GSoil300	Heavy Metals, Screen Level
47	SS08a_0.3 04-Mar-2026	Soil	GSoil300, GSoil300	Heavy Metals, Screen Level
48	SS08a_0.5 04-Mar-2026	Soil	GSoil300, GSoil300	Hold Cold
49	SS08b_0.05 04-Mar-2026	Soil	GSoil300, GSoil300	Heavy Metals, Screen Level
50	SS08b_0.3 04-Mar-2026	Soil	GSoil300, GSoil300	Hold Cold
51	SS08b_0.5 04-Mar-2026	Soil	GSoil300, GSoil300	Hold Cold
52	SS08c_0.05 04-Mar-2026	Soil	GSoil300, GSoil300	Heavy Metals, Screen Level
53	SS08c_0.45 04-Mar-2026	Soil	GSoil300, GSoil300	Hold Cold
54	SS08c_0.5 04-Mar-2026	Soil	GSoil300, GSoil300	Hold Cold
55	SS08d_0.05 04-Mar-2026	Soil	GSoil300, GSoil300	Hold Cold
56	SS08d_0.3 04-Mar-2026	Soil	GSoil300, GSoil300	Hold Cold
57	SS08d_0.5 04-Mar-2026	Soil	GSoil300, GSoil300	Hold Cold

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).	-	1-3, 5, 8, 11-12, 14, 17, 23-24, 26, 29, 35-36, 38, 41, 43-47, 49, 52
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	1-3, 5, 8, 11-12, 14, 17, 23-24, 26, 29, 35-36, 38, 41, 43-47, 49, 52

Certificate of Analysis

Page 1 of 2

Client:	Pattle Delamore Partners Limited	Lab No:	4121793	SPV3
Contact:	Melody Robyns	Date Received:	06-Mar-2026	
	C/- Pattle Delamore Partners Limited	Date Reported:	17-Mar-2026	(Amended)
	PO Box 6136	Quote No:	81087	
	Wellington 6141	Order No:		
		Client Reference:	A035680020	
		Submitted By:	Jessica Campbell	

Sample Type: Soil

Sample Name:	SS03_0.5	SS03a_0.05	SS03a_0.3	SS03b_0.05	SS03c_0.05
	04-Mar-2026	04-Mar-2026	04-Mar-2026	04-Mar-2026	04-Mar-2026
Lab Number:	4121793.1	4121793.2	4121793.3	4121793.5	4121793.8

Heavy Metals, Screen Level

Total Recoverable Arsenic	mg/kg dry wt	4	3	2	4	3
Total Recoverable Cadmium	mg/kg dry wt	3.5	1.01	0.27	0.86	0.33
Total Recoverable Chromium	mg/kg dry wt	16	14	13	74	13
Total Recoverable Copper	mg/kg dry wt	35	43	12	24	29
Total Recoverable Lead	mg/kg dry wt	350	230	41	220	46
Total Recoverable Nickel	mg/kg dry wt	18	10	7	42	7
Total Recoverable Zinc	mg/kg dry wt	1,520	480	182	350	150

Sample Name:	SS04a_0.05	SS04a_0.3	SS04b_0.05	SS04c_0.05	SS05a_0.05
	04-Mar-2026	04-Mar-2026	04-Mar-2026	04-Mar-2026	04-Mar-2026
Lab Number:	4121793.11	4121793.12	4121793.14	4121793.17	4121793.23

Heavy Metals, Screen Level

Total Recoverable Arsenic	mg/kg dry wt	3	3	2	3	5
Total Recoverable Cadmium	mg/kg dry wt	0.54	0.22	0.26	0.20	0.46
Total Recoverable Chromium	mg/kg dry wt	12	13	14	13	19
Total Recoverable Copper	mg/kg dry wt	9	8	8	8	13
Total Recoverable Lead	mg/kg dry wt	23	16.9	19.0	22	210
Total Recoverable Nickel	mg/kg dry wt	7	6	7	6	11
Total Recoverable Zinc	mg/kg dry wt	340	162	180	107	270

Sample Name:	SS05a_0.3	SS05b_0.05	SS05c_0.05	SS06a_0.05	SS06a_0.3
	04-Mar-2026	04-Mar-2026	04-Mar-2026	04-Mar-2026	04-Mar-2026
Lab Number:	4121793.24	4121793.26	4121793.29	4121793.35	4121793.36

Heavy Metals, Screen Level

Total Recoverable Arsenic	mg/kg dry wt	5	5	3	3	3
Total Recoverable Cadmium	mg/kg dry wt	0.41	0.59	0.15	0.28	0.11
Total Recoverable Chromium	mg/kg dry wt	19	17	15	16	17
Total Recoverable Copper	mg/kg dry wt	13	14	9	43	24
Total Recoverable Lead	mg/kg dry wt	370	64	77	46	26
Total Recoverable Nickel	mg/kg dry wt	11	10	9	9	9
Total Recoverable Zinc	mg/kg dry wt	230	270	91	81	59

Sample Name:	SS06b_0.05	SS06c_0.05	SS07_0.05	SS07_0.3	SS07_0.5
	04-Mar-2026	04-Mar-2026	04-Mar-2026	04-Mar-2026	04-Mar-2026
Lab Number:	4121793.38	4121793.41	4121793.43	4121793.44	4121793.45

Heavy Metals, Screen Level

Total Recoverable Arsenic	mg/kg dry wt	3	5	2	3	3
Total Recoverable Cadmium	mg/kg dry wt	0.25	0.27	1.85	2.4	1.47
Total Recoverable Chromium	mg/kg dry wt	15	21	11	13	16
Total Recoverable Copper	mg/kg dry wt	21	11	10	16	14



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:		SS06b_0.05 04-Mar-2026	SS06c_0.05 04-Mar-2026	SS07_0.05 04-Mar-2026	SS07_0.3 04-Mar-2026	SS07_0.5 04-Mar-2026
Lab Number:		4121793.38	4121793.41	4121793.43	4121793.44	4121793.45
Heavy Metals, Screen Level						
Total Recoverable Lead	mg/kg dry wt	30	29	74	113	72
Total Recoverable Nickel	mg/kg dry wt	10	11	9	16	17
Total Recoverable Zinc	mg/kg dry wt	71	177	890	1,030	920

Sample Name:		SS08a_0.05 04-Mar-2026	SS08a_0.3 04-Mar-2026	SS08b_0.05 04-Mar-2026	SS08c_0.05 04-Mar-2026
Lab Number:		4121793.46	4121793.47	4121793.49	4121793.52
Heavy Metals, Screen Level					
Total Recoverable Arsenic	mg/kg dry wt	3	2	2	3
Total Recoverable Cadmium	mg/kg dry wt	2.3	0.53	1.32	0.24
Total Recoverable Chromium	mg/kg dry wt	11	13	11	13
Total Recoverable Copper	mg/kg dry wt	18	7	8	6
Total Recoverable Lead	mg/kg dry wt	25	16.4	24	33
Total Recoverable Nickel	mg/kg dry wt	7	7	6	7
Total Recoverable Zinc	mg/kg dry wt	1,570	410	1,210	230

Analyst's Comments

Amended Report: This certificate of analysis replaces report '4121793-SPv2' issued on 10-Mar-2026 at 4:14 pm.
Reason for amendment: Some dates amended.

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).	-	1-3, 5, 8, 11-12, 14, 17, 23-24, 26, 29, 35-36, 38, 41, 43-47, 49, 52
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	1-3, 5, 8, 11-12, 14, 17, 23-24, 26, 29, 35-36, 38, 41, 43-47, 49, 52
SPLP Profile	Extraction at 30 +/- 2 rpm for 18 +/- 2 hours, (Ratio 1g sample : 20g extraction fluid). US EPA 1312.	-	1-2, 24

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

Testing was completed between 07-Mar-2026 and 10-Mar-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.

Ara Heron BSc (Tech)
Client Services Manager - Environmental



PATTLE DELAMORE PARTNERS LTD

Request for Analyses

NOTE: Please acknowledge receipt of these samples by signing this form and emailing to submitter.

From: Pattle Delamore Partners Ltd

To: Flint LabsOffice: ☐ Auckland ☐ Hamilton ☐ Tauranga ☒ Wellington ☐ Christchurch ☐ Invercargill

Quote No.: _____

Submitted by: J Campbell

Ph No.: _____

PDP Job No.: A035680020

Chain of Custody Record

Additional Information

Sent:

Name: J Campbell

Signature: _____

Date and time: _____

Received: ☐ Room temp. ☐ Chilled Temp.: _____ °C☐ Frozen

Name: _____

Signature: _____

Date and time: _____

Results to:

☐ lab.samples@pdp.co.nz☒ Email submitter: _____☒ Email other: _____Priority: ☐ Normal ☐ High ☐ Urgent

Results required by: ____ / ____ / ____

Invoice to:

☐ PDP☐ Other: _____

Sample ID	Date	Time	Sample type	Analyses Requested	Notes
SS03a-0.05	3/3/26		S		
SS03a-0.3					
SS03a-0.5					
SS03b-0.05					
SS03b-0.3					
SS03b-0.5					
SS03c-0.05					
SS03c-0.3					
SS03c-0.5					
SS03-0.5					
SS07-0.05					
SS07-0.3					
SS07-0.5					
SS08a-0.05					
SS08a-0.3					
SS08a-0.5					
SS08b-0.05					
SS08b-0.3					
SS08b-0.5					
SS08c-0.3					
SS08d-0.5					
SS08e					

SP

3141230167

W Groundwater

SAL Saline

FW Freshwater

GEO Geothermal

SW Stormwater

O Biota

WW Wastewater

P Potable

O Other: _____

- Received by: Gabriel Hazard

Note: Samples may contain dangerous or hazardous substances

Page ____ of ____

412 3016

Date Recv: 06-Mar-26 14:03

Job No: _____

9 7880

PDP Tauranga

Tel: +64 7 985 6440

PDP Wellington

Tel: +64 4 471 4130

PDP Christchurch

Tel: +64 3 345 7100

PDP Invercargill

Tel: +64 3 422 1690



PATTLE DELAMORE PARTNERS LTD

Request for Analyses

NOTE: Please acknowledge receipt of these samples by signing this form and emailing to submitter.

From: Pattle Delamore Partners Ltd

To: Hill Labs

Office: ☐ Auckland ☐ Hamilton ☐ Tauranga ☒ Wellington ☐ Christchurch ☐ Invercargill

Quote No.:

Submitted by: J Campbell

Ph No.:

PDP Job No.: A035680020

Chain of Custody Record

Additional Information

Sent:

Name: J Campbell

Signature:

Date and time: 3/3/26

Received: ☐ Room temp. ☐ Chilled Temp.: °C
☐ Frozen

Name:

Signature:

Date and time:

Asbestos
samplesResults to: ☐ lab.samples@pdp.co☒ Email submitter:☒ Email other:Priority: ☐ Normal ☐ High ☐ Urgent

Results required by: / /

Invoice to:

☐ PDP

Sample ID	Date	Time	Sample type	Analyses Requested	Notes
SS03a-0.05	3/3/26		S		
SS03b-0.05					
SS03c-0.05					
SS04a-0.05					
SS04b-0.05					
SS04c-0.05					
SS04d-0.05					
SS07-0.05					
SS07-0.3					
SS08a-0.05					
SS08b-0.05					
SS08c-0.05					
SS08d-0.05					
SS06a-0.05					
SS06b-0.05					
SS06c-0.05					
SS05a-0.05					
SS05b-0.05					
SS05c-0.05					
SS05d-0.05					

SW Groundwater

SAL Saline

FW Freshwater

GEO Geothermal

SW Stormwater

BIO Biota

WW Wastewater

P Potable

O Other:

12

Note: Samples may contain dangerous or hazardous substances

Page ___ of ___

PDP
949 7880PDP Tauranga
Tel: +64 7 985 6440PDP Wellington
Tel: +64 4 471 4130PDP Christchurch
Tel: +64 3 345 7100PDP Invercargill
Tel: +64 3 422 1690



**NOTE: Please acknowledge . . .
of these samples by signing this
form and emailing to submitter.**

PDP Job No.: AD35680020

Chain of Custody Record		Additional Information
Sent: Name: <u>J Campbell</u> Signature: <u>[Redacted]</u> Date and time: <u>3/3/26</u>	Received: ☐ Room temp. ☐ Chilled Temp.: ____°C ☐ Frozen Name: _____ Signature: _____ Date and time: _____	

Results to: ☐ lab.samples@pdp.com ☒ Email submitter: [REDACTED] ☒ Email other: [REDACTED]	Priority: ☐ Normal ☐ High ☐ Urgent Results required by: ____ / ____ / ____
Invoice to: ☐ PDP ☐ [REDACTED]	

[illegible]

0 Other: _____

Page of

PDP Invercargill
Tel: +64 3 422 1690

Request for Analyses

NOTE: Please acknowledge receipt of these samples by signing this form and emailing to submitter.

From: Pattle Delamore Partners Ltd

To: Hill Labs

Office: ☐ Auckland ☐ Hamilton ☐ Tauranga ☒ Wellington ☐ Christchurch ☐ Invercargill

Quote No.: _____

Submitted by: Jes C Ph No.:

PDP Job No.: W035680070

Chain of Custody Record

Additional Information

Sent:

Name: Jess C

Signature: _____

Date and time: 3/3/20

Received: ☐ Room temp. ☐ Chilled Temp.: ____°C
☐ Frozen

Name: _____

Signature: _____

Date and time:

Results to: ☐ lab.samples@pdp.co

☒ Email submitter:

☒ Email other: _____

Priority: ☐ Normal ☐ High ☐ Urgent

Results required by: / /

Invoice to: ☐ PDP ☐ Other:

[illegible]

GW Groundwater

SAL Saline

FW Freshwater

GEO Geothermal

SW Stormwater

BIO Biota

WW Wastewater

P Potable

0 Other:

402

Note: Samples may contain dangerous or hazardous substances

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949 7880

PDP Tauranga

Tel: +64 7 985 6440

PDP Wellington

Tel: +64 4 471 4130

PDP Christchurch

Tel: +64 3 345 7100

PDP Invercargill

Tel: +64 3 422 1690

Job Information Summary

Page 1 of 2

Client:	Pattle Delamore Partners Limited	Lab No:	4123016
Contact:	Melody Robyns	Date Registered:	06-Mar-2026 2:46 pm
	C/- Pattle Delamore Partners Limited	Priority:	High
	PO Box 6136	Quote No:	81087
	Wellington 6141	Order No:	
		Client Reference:	A035680020
		Add. Client Ref:	
		Submitted By:	Jessica Campbell
		Charge To:	Pattle Delamore Partners Limited
		Target Date*:	11-Mar-2026 4:30 pm

* As the samples require analysis at a Hill Labs location that is different to where they were received, the Target Date for reporting has been extended.

Samples

No	Sample Name	Sample Type	Containers	Tests Requested
1	SS03a_0.05 04-Mar-2026	Soil	PSoil500Asb	Hold Cold
2	SS03b_0.05 04-Mar-2026	Soil	PSoil500Asb	Hold Cold
3	SS03c_0.05 04-Mar-2026	Soil	PSoil500Asb	Hold Cold
4	SS04a_0.05 04-Mar-2026	Soil	PSoil500Asb	Hold Cold
5	SS04b_0.05 04-Mar-2026	Soil	PSoil500Asb	Hold Cold
6	SS04c_0.05 04-Mar-2026	Soil	PSoil500Asb	Hold Cold
7	SS04d_0.05 04-Mar-2026	Soil	PSoil500Asb	Hold Cold
8	SS05a_0.05 04-Mar-2026	Soil	PSoil500Asb	Hold Cold
9	SS05b_0.05 04-Mar-2026	Soil	PSoil500Asb	Hold Cold
10	SS05c_0.05 04-Mar-2026	Soil	PSoil500Asb	Hold Cold
11	SS05d_0.05 04-Mar-2026	Soil	PSoil500Asb	Hold Cold
12	SS06a_0.05 04-Mar-2026	Soil	PSoil500Asb	Hold Cold
13	SS06b_0.05 04-Mar-2026	Soil	PSoil500Asb	Hold Cold
14	SS06c_0.05 04-Mar-2026	Soil	PSoil500Asb	Hold Cold
15	SS07_0.05 04-Mar-2026	Soil	PSoil500Asb	Hold Cold
16	SS07_0.3 04-Mar-2026	Soil	PSoil500Asb	New Zealand Guidelines Semi Quantitative Asbestos in Soil
17	SS08a_0.05 04-Mar-2026	Soil	PSoil500Asb	Hold Cold
18	SS08b_0.05 04-Mar-2026	Soil	PSoil500Asb	Hold Cold
19	SS08c_0.05 04-Mar-2026	Soil	PSoil500Asb	Hold Cold
20	SS08d_0.05 04-Mar-2026	Soil	PSoil500Asb	Hold Cold

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	16
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	16
Moisture	Sample dried at 100 to 105°C. Calculation = (As received weight - Dry weight) / as received weight x 100.	1 %	16
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	16

Sample Type: Soil			
Test	Method Description	Default Detection Limit	Sample No
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	16
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	16
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%	16
Description of Asbestos Form	Description of asbestos form and/or shape if present.	-	16
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	16
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	16
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	16
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	16
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	16
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	16
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	16

Certificate of Analysis

Page 1 of 2

Client:	Pattle Delamore Partners Limited	Lab No:	4123016	A2Pv1
Contact:	Melody Robyns C/- Pattle Delamore Partners Limited PO Box 6136 Wellington 6141	Date Received:	06-Mar-2026	
		Date Reported:	10-Mar-2026	
		Quote No:	81087	
		Order No:		
		Client Reference:	A035680020	
		Submitted By:	Jessica Campbell	

Sample Type: Soil

Sample Name:	SS07_0.3 04-Mar-2026
Lab Number:	4123016.16
Asbestos Presence / Absence	Asbestos NOT detected.
Description of Asbestos Form	-
Asbestos in ACM as % of Total Sample*	% w/w < 0.001
Combined Fibrous Asbestos + Asbestos Fines as % of Total Sample*	% w/w < 0.001
Asbestos as Fibrous Asbestos as % of Total Sample*	% w/w < 0.001
Asbestos as Asbestos Fines as % of Total Sample*	% w/w < 0.001
As Received Weight	g 472.6
Dry Weight	g 296.3
Moisture*	% 37
Sample Fraction >10mm	g dry wt 16.6
Sample Fraction <10mm to >2mm	g dry wt 120.2
Sample Fraction <2mm	g dry wt 159.0
<2mm Subsample Weight	g dry wt 52.2
Weight of Asbestos in ACM (Non-Friable)	g dry wt < 0.00001
Weight of Asbestos as Fibrous Asbestos (Friable)	g dry wt < 0.00001
Weight of Asbestos as Asbestos Fines (Friable)*	g dry wt < 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.



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.

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	16
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	16
Moisture*	Sample dried at 100 to 105°C. Calculation = (As received weight - Dry weight) / as received weight x 100.	1 %	16
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	16
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	16
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	16
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%	16
Description of Asbestos Form	Description of asbestos form and/or shape if present.	-	16
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	16
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	16
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	16
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	16
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	16
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	16
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	16

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

Testing was completed on 10-Mar-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.



John Keneth Paglingayan BApSc
Laboratory Technician - Asbestos



Belmont Quarry Development – Part B

Substantive Application
Appendix B.3.B – PSI – Overburden Source Area
Winstone Aggregates

16 August 2026



3 August 2026

✦ Shalini Sanjeshni
Project Coordinator
Winstone Aggregates Limited
PO Box 17195
Greenlane
AUCKLAND 1051

Dear Shalini,

PRELIMINARY SITE INVESTIGATION - BELMONT QUARRY - OVERBURDEN SOURCE AREA

1.0 Introduction

Winstone Aggregates Limited (Winstone; the client) owns and operates Belmont Quarry in Lower Hutt, Wellington. The quarry's current Overburden Disposal Area (OBDA) will shortly reach overburden placement capacity. Therefore, a new OBDA is proposed immediately north of the quarry. The proposed OBDA will be constructed across 10 stages and will accommodate approximately 2.8 million m³ of overburden including topsoil, subsoil, weathered greywackes and process and pond fines over a 35-year period.

Pattle Delamore Partners Limited (PDP) has been engaged by Winstone to undertake a Preliminary Site Investigation (PSI) for the overburden source area located at Belmont Quarry. The PSI has been produced in support of Winstone's substantive aspect of the Belmont Quarry Development Fast-Track Approval Application (FAA).

This report should be read in conjunction with the Preliminary/Detailed Site Investigation for the Belmont Quarry Proposed Overburden Disposal Area (PDP, 2026), which relates to the proposed overburden disposal area assessed as part of the wider project.

This PSI has been undertaken at the direction of and supervised by a Suitably Qualified and Experienced Practitioner (SQEP) for Contaminated Land and has been undertaken in accordance with the Ministry for the Environment (MfE) *Contaminated Land Management Guidelines No. 1 – Guidelines for Reporting on Contaminated Sites in New Zealand* (MfE, 2021). A certifying statement to this effect is provided in Appendix A.

2.0 Objectives and Scope

The objectives of the PSI are to:

- ✧ Determine whether any Hazardous and Industrial List (HAIL)¹ or other potentially contaminating activities, either from historical or current activities, have been undertaken within the Belmont Quarry overburden source area.
- ✧ Conduct a preliminary assessment of the potential contaminated land risks of any identified HAIL activities.
- ✧ Assess the requirements/likelihood for potential consents in relation to the Resource Management (*National Environmental Standard for Assessing and Managing Contaminants in Soil to Protect Human Health*) Regulations 2011 (NESCS) and the contaminated land rules within the Greater Wellington Regional Council's (GWRC's) *Natural Resources Plan* (NRP).
- ✧ Provide recommendations of further investigations, if required.

The scope of work included:

- ✧ Obtaining and reviewing a selection of publicly available historical aerial imagery of the site.
- ✧ Viewing property files held by Hutt City Council (HCC).
- ✧ Reviewing GWRC Selected Land Use Register (SLUR) and obtaining any relevant environmental information held by the council.
- ✧ Reviewing site photographs provided by the client.
- ✧ Reviewing publicly available geological and hydrogeological information for the site.
- ✧ Preparation of this report.

3.0 Property Description and Background

Belmont Quarry is located at 541 Hebden Crescent, Belmont, Wellington. The investigation is limited to an approximate 10.6 ha, irregularly shaped area extending across part of two parcels of land legally described as LOT 1 DP 60552 WN31B/39 and PT LOT 1 DP 22561 BLKK IX BELMONT SD, herein referred to as the site. A plan of the site is outlined in Figure 1, (Appendix B).

The site is zoned as 'Extraction' under the HCC District Plan.

Land use surrounding the site is as follows:

- ✧ North: Dense bush within Belmont Regional Park.
- ✧ East: Dense bush within Belmont Regional Park, with State Highway 2 (Western Hutt Road) and the Hutt River beyond. To the southeast is the Firth Masonry.
- ✧ South: Belmont Quarry with State Highway 2 (Western Hutt Road) beyond.
- ✧ West: Belmont Quarry with bush and residential properties beyond.

¹ The Hazardous Activities and Industries List (HAIL) is a compilation of activities and industries that are considered likely to cause land contamination resulting from hazardous substance use, storage or disposal. The HAIL is intended to identify most situations in New Zealand where hazardous substances could cause, and in many cases have caused, land contamination.

4.0 Geology and Hydrogeology

The geological map of the region indicates that the site is underlain by undifferentiated Rakaia Terrane Triassic sandstone and mudstone². These comprise alternating sandstone and mudstone, poorly bedded sandstone with minor coloured mudstone, conglomerate, basalt, and chert.

An active fault named Wellington Fault is located approximately 400 m to the southeast of the site.

The nearest surface water body is the Hutt River, which is located approximately 500 m to the southeast of the site. This flows in a south westerly direction, discharging into Wellington Harbour.

Based on this, groundwater beneath the site is inferred to flow in a south-eastern direction discharging into the Hutt River.

A review of the GWRC map viewer identified no bores within a 500 m radius of the site.

5.0 Information Review

The purpose of the information review is to establish past land uses at the property and therefore the potential for soil contamination to have arisen from those uses.

5.1 Historical Aerial Photographs

Five historical aerial photographs (dated between 1942 and 2000) were obtained from Retrolens and 21 aerial photographs were sourced from Google Earth Pro (dated between 2004 and 2025). The aerial photographs for the site are provided in Appendix C. A summary is provided below.

Table 1: Historical Aerial Photograph Review

Date	Reference	Description
1942	Photograph 1	The site and surrounding area appear to be predominately grassed and in pastoral use. Dense bush cover is observed along the site boundary in the western and southeastern areas of the site. A gully is present running south through the centre of the site.
1957	Photograph 2	The site appears to have obtained more bush/vegetative cover.
1966	Photograph 3	The site appears to have been developed into farmland with some areas of bush remaining centrally and to the west and southeast of the site. Multiple tracks are observed through the central, eastern and western areas of the site, with the far eastern area of the site. Belmont Quarry is located offsite and is now visible to the south of the site.
1984	Photograph 4	The site appears to have more vegetative cover, and a track, connected to Belmont Quarry, intersects the southwestern area of the site.
1995	Photograph 5	Belmont Quarry has now expanded into the site, and a terraced quarry area can be observed across the site. Part of a road extends from the site into the wider property to the north of the site. Miscellaneous items and equipment, and a small structure appear to be located in the northern area of the site.

² <https://data.gns.cri.nz/geology/> accessed 10/03/2026

Table 1: Historical Aerial Photograph Review

Date	Reference	Description
1996	Photograph 6	The quarry area has been further developed to the east of the site. Further miscellaneous items, equipment and tyres are observed in the northern area of the site. A small cleared area is present offsite to the northeast.
2000	Photograph 7	The quarry area has been further developed across the site and vegetation cover can be observed in the eastern area of the site where a quarried area had been previously, as observed in the 1996 historical photograph. Externally to the site, a track and earth disturbance area is visible north of the site's northern boundary.
2004	Photograph 8	The quarry area has been further developed across the site. Miscellaneous items are observed across the northern area of the site.
2005	Photograph 9	The quarry area to the east and west of the site has been further developed.
2009	Photograph 10	The quarry area has extended into the central area of the site, the terraced area along the southern boundary has been further developed and extends offsite. The small portico structure is no longer present onsite. Externally to the site, the quarried area to the north is now covered by vegetation.
2011	Photograph 11	No significant changes have been made to the site.
2012	Photograph 12	The central-eastern area of the site has been further developed into a quarry. Miscellaneous items appear to be stored in the central northern area of the site.
2013	Photograph 13	The quarried terrace to the southeast of the site has been further developed and extends offsite. Miscellaneous items including spare pieces of culvert pipe are visible in the central area of the site.
2014	Photograph 14	Stockpiled aggregate material is visible in the central and western areas of the site.
January 2015	Photograph 15	The stockpiled aggregate material is more clearly visible. Tyres are visible in the northern area of the site.
May 2015	Photograph 16	The aggregate stockpiles are no longer present on the site and further expansion of the quarry is visible to the south of the site.
September 2015	Photograph 17	Further benching is observed in the quarry area to the south of the site.
2017	Photograph 18	The quarry area has expanded to the southeast of the site, and a large stockpile of what appears to be quarried material is visible in the north of the site.
February 2018	Photograph 19	Further expansion of the quarry area to the southeast of the site is observed and the amount of material to the north of the site has increased.
March 2018	Photograph 20	Further expansion of the quarry area to the southeast of the site is observed. A small white shed is situated in the west of the site.

Table 1: Historical Aerial Photograph Review

Date	Reference	Description
April 2018	Photograph 21	Further expansion of the quarry area to the southeast of the site is observed.
October 2018	Photograph 22	The quarry area to the southeast of the site has been further developed, as more terraces are observed. Stockpiled material comprising pipes and potentially aggregate, is visible in the central area of the site and the existing stockpiled aggregate to the northeast of this appears to have slightly increased in size.
April 2019	Photograph 23	The roading in the southwest area of the site has been further developed and spans across a wider area.
2021	Photograph 24	Further development of the quarry has occurred across the site. Tyres and miscellaneous items are stored in the central area of the site, and a pile of tyres are visible to the north.
2022	Photograph 25	Further development of the quarry has occurred across the site.
2024	Photograph 26	Further development of the quarry has occurred across the northern area of the site.
2025	Photograph 27	Further development of the quarry has occurred across the northern area of the site.
2026	Photograph 28	Minimal changes have been made to the site.

5.2 Belmont Quarry Property Files

Property files for the site were obtained from HCC. Documents relevant to the site history and/or contamination potential for the site are summarised below with relevant documents attached in Appendix D.

The files contained the following information:

- ✧ A Certificate of Compliance, dated September 2006, to deposit overburden material within Belmont Quarry. The document described the removal of vegetation and that the deposition of overburden material would be brought to and from the area from other parts of the quarry. Included in this file is a figure depicting the maximum extent of area upon which overburden is to be deposited, which intersects with the western area of the site.
- ✧ A report titled Cottle Land Assessment of Ecology Values, dated March 2007, includes a figure, titled Figure 1: Location of Cottle Land, which shows the area to the north of the site, located within the adjacent proposed overburden disposal area (PDP, 2026) to be an extension of the quarry and appears to contain stockpiled materials.
- ✧ A figure, dated April 2008, shows the approximate footprint of a proposed OBDA which intersects with the southern area of the site. The OBDA is described as containing material unsuitable for aggregate production and includes topsoil and weathered rock, sourced from the existing work faces of Belmont Quarry.
- ✧ A document pertaining to the wider property, titled proposed truckstop development (dated 1998), details a proposal for the installation of a truck stop facility, located within the southeast section of Belmont Quarry, outside of the current site boundary. This involved the removal of an existing 40,000 L underground storage tank (UST) and dispenser and replacing it with an above

ground 40,000 L diesel storage tank. The UST is depicted in an additional hand drawn site plan, dated August 1991, confirming its location near the office and main office block, which are situated to the southeast of the overall property, adjacent to State Highway 2 (Western Hutt Road) (i.e. outside the overburden source area).

5.3 Greater Wellington Regional Council Historical Information

The GWRC maintains a SLUR of properties that it knows to be either contaminated, or to have a past use or industry with a greater potential for contamination.

A review of the GWRC website confirmed that the site falls within the SLUR delineation for the overall property (LOT 1 DP 60552), which is currently listed under the HAIL category:

- ✧ Mineral extraction, refining and reprocessing, storage and use - Mining industries (excluding gravel extraction) including exposure of faces or release of groundwater containing hazardous contaminants, or the storage of hazardous wastes including waste dumps or dam tailings; and
- ✧ Chemical manufacture, application and bulk storage - Storage tanks or drums for fuel, chemicals or liquid waste.

The file notes identify the HAIL area as pertaining to Winstone Aggregates Belmont Quarry.

The file note also states *“that there is evidence of hydrocarbon contamination surrounding fuel drums from photos on file. Old machinery and other waste is stored at the quarry, along with one large underground storage tank (containing hydrocarbons) and smaller containers of acetylene and LPG”*.

Information provided by GWRC (URS, 2010) shows that the UST used for storing diesel has been removed from the property and replaced with an aboveground storage tank (AST). The associated figure shows that the UST and diesel AST were located adjacent to the quarry office and outside the site boundary for the overburden source area. The report states that all analytical results for samples representative of soil remaining on the site (as defined in the report) comply with the corresponding Oil Industry Guidelines Soil Tier 1 Soil Acceptance Criteria for commercial/industrial land use.

5.4 Client Provided Information

A draft geotechnical appraisal report provided by the client (Baseline Geotechnical, 2025), refers to the soil lithology identified at locations within the site. The material in the northeastern corner of the site is stated to have been gravel rich colluvium, supported by a buttress of unweathered rock. To the southeast of this area, the soil lithology is referred to as silt and gravel rich colluvium, and highly weathered greywacke rock respectively. The area further to the southeast has been identified as variably weathered greywacke.

Communications with the Belmont Quarry Manager identified the miscellaneous items observed through the historical aerial images onsite as being spare culvert pipe, boulders, spare parts comprised of steel and tyres. It was also communicated that no storage of chemicals or petroleum related products had occurred on the site. Belmont Quarry also provided current aerial photographs (Photographs 28 and 29) of the site which show no significant changes since the 2025 historical aerial photograph (Photograph 27).

6.0 Summary of Site History

A review of historical information and information provided by the client indicates that the site comprised farmland with varying bush density between the earliest available image in 1942 and 1984. The site was developed into a quarry area between 1984 and 1995. Within the northern area of the quarry miscellaneous items and equipment appear to be present, in addition to a small temporary building structure which was present at the site between circa 1995 and 2009.

The northern area of the site comprised of areas where miscellaneous items, and equipment were situated across the central and northern areas of the site, in different quantities and locations between the years of 1995 and present day. Communications with the Belmont Quarry Manager identified the miscellaneous items observed in the historical aerial photographs as spare parts, mainly comprised of steel, tyres, boulders and spare culvert pipe.

A small quantity of tyres are located in the northern area of the site and have been observed in historical aerial photographs since 2013.

Significant expansion of the quarry area to the east of the site takes place in 2021 with further quarrying activities occurring between 2021 and the last available aerial photograph in 2025.

The site is listed on the GWRC SLUR. The presence of a truck stop facility and the associated former UST, current AST, and containers of acetylene and LPG referenced in the GWRC SLUR, are relevant only to the southern portion of the property, which is outside of the site boundary and spatially separate to the overburden source area. Additionally, no tanks or drums for fuel, chemicals or liquid waste was reported or observed to have been stored on the site.

7.0 Site Characterisation

The wider Belmont Quarry property is listed on GWRC's SLUR for mining extraction (quarrying activities) and the bulk storage of drums for fuel, chemicals or liquid waste.

However, rock quarrying for aggregate or building stone, such as Belmont Quarry, is an activity that is excluded from the MfE HAIL list as it is considered that the likelihood of soil contamination from gravel or rock materials is considered low.

The review of historical information also indicates that the bulk storage of drums for fuel, chemicals or liquid waste were located within isolated areas within Belmont Quarry and situated toward the centre of the property, outside of the site boundary and spatially separate to the overburden source area. Communication with the Site Manager for Winstone Aggregates confirmed that no chemical or fuel storage has been undertaken at the site.

A review of the available information indicates that no HAIL activities have occurred on the site.

8.0 Regulatory Considerations

The NESCS seeks to control activities on contaminated land so as to protect human health. The regulations apply to a "piece of land" which is described by one of the following (regulation 5(7)):

- (a) an activity or industry described in the HAIL 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 review of historical information and analytical results indicates that it is unlikely that an activity which falls within the MfE's Hazardous Activities and Industries List has been undertaken on the site. It is therefore not considered "a piece of land" as described in regulation 5(7) of the NESCS, and therefore these regulations do not apply to the proposed change in land use.

Therefore, it is also considered that contaminated land Rules R81 – R83 of GWRC's NRP do not apply.

9.0 Conclusions

PDP has been engaged by Winstone (the client) to undertake a PSI for the overburden source area located at Belmont Quarry, to support Winstone's substantive aspect of the Belmont Quarry Development FAA.

Key findings of this investigation are summarised as follows:

- ✧ The site has been developed from farmland to an expansion of Belmont Quarry between 1984 and 1995.
- ✧ Minor amounts of materials and quarry related items, were temporarily stored in various locations at the site between 1995 and present day.
- ✧ The presence of a truck stop facility and the associated former UST, current AST, and containers of acetylene and LPG that were referenced in the GWRC SLUR, are relevant only to the southern portion of the property, which is outside of the site boundary and spatially separate to the overburden source area.
- ✧ Rock quarrying for aggregate or building stone, such as Belmont Quarry, is an activity that is excluded from the MfE HAIL list as it is considered that the likelihood of soil contamination from gravel or rock materials is considered low. The review of historical information also indicates that the bulk storage of drums for fuel, chemicals or liquid waste were within isolated areas within Belmont Quarry and situated toward the centre of the overall property, outside of the site boundary and spatially separate to the overburden source area.
- ✧ Therefore, based on the scope of the PSI it is more likely than not that no HAIL activities have been undertaken across the overburden source area. It is therefore considered that the NESCS and the contaminated land rules in GWRC's NRP do not apply.

10.0 References

- Baseline Geotechnical, 2025. Geotechnical Appraisal Report – Land Exchange Belmont Quarry Development Project. Prepared for Winstone Aggregates.
- PDP, 2026. Preliminary/Detailed Site Investigation - Belmont Quarry – Proposed Overburden Disposal Area. Prepared for Winstone Aggregates Limited.
- MfE, 2021. Contaminated Land Management Guidelines No. 1 – Guidelines for Reporting on Contaminated Sites in New Zealand revised 2021. Ministry for the Environment, Wellington.
- URS, 2010. Underground Petroleum Storage System Decommissioning at Winstone Aggregates, Belmont Quarry, Lower Hutt Tank Pull Report. Prepared for BP Oil New Zealand Limited.

11.0 Limitations

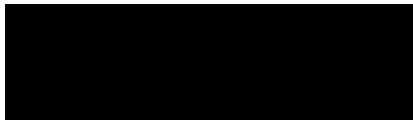
This report has been prepared by Pattle Delamore Partners Limited (PDP) on the basis of information provided by Winstone Aggregates Limited and others not directly contracted by PDP for the work, including Hutt City Council, Greater Wellington Regional Council and Retrolens. PDP has not independently verified the provided information and has relied upon it being accurate and sufficient for use by PDP in preparing the report. PDP accepts no responsibility for errors or omissions in, or the currency or sufficiency of, the provided information.

This report has been prepared by PDP on the specific instructions of Winstone Aggregates Limited a division of Fletcher Concrete and Infrastructure Ltd for the limited purposes described in the report. PDP acknowledges that this report may be used and relied upon by the expert panel appointed under the Fast-track Approvals Act 2024. PDP accepts no liability if the report is used for a different purpose or if it is used or relied on by any other person. Any such use or reliance will be solely at their own risk. This report has been prepared in accordance with the Environment Court's Code of Conduct for Expert Witnesses, contained in the Environment Court's Practice Note 2023. The authors of this report agree to comply with the Code of Conduct, and confirm that unless otherwise stated, the issues addressed in this report are within the area of expertise of the authors. No material facts have been omitted that might alter or detracted from the opinions expressed in this report. © 2026 Pattie Delamore Partners Limited

Yours faithfully

PATTLE DELAMORE PARTNERS LIMITED

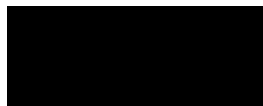
Prepared by



Bailey Johnson

Environmental Scientist

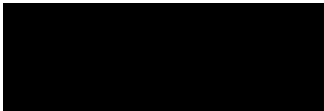
Reviewed by



Melody Robyns

Service Leader – Contaminated Land

Approved by



Hamish Wilson

Technical Director – Contaminated Land

Appendix A: Certifying Statement

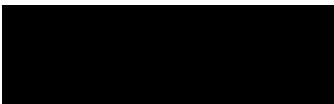
I, Hamish Wilson, of Pattle Delamore Partners certify that this preliminary site investigation meets the requirements of the Resource Management (*National Environmental Standard for Assessing and Managing Contaminants in Soil to Protect Human Health*) Regulations 2011 (the NESCS) because it has been:

- a. Completed by a suitably qualified and experienced practitioner;
- b. Reported on in accordance with the current edition of *Contaminated land management guidelines No. 1 – Reporting on contaminated sites in New Zealand*; and
- c. Certified by a suitably qualified and experienced practitioner.

Evidence of the qualifications and experience of the suitably qualified and experienced practitioner(s) who have done this investigation and certified this report is provided below.

This certification applies to the date of this report.

Signed,



Hamish Wilson

Technical Director – Contaminated Land

Hamish Wilson – Project Director

Hamish is an environmental engineer with over 26 years of experience in undertaking environmental and contaminated land assessments. Hamish has a BE in Civil and Resource Engineering from the University of Auckland. Hamish has experience with undertaking and managing site investigations, environmental assessments, and monitoring programmes for a range of environmental issues, across a broad range of media including soil, sediment, surface water, groundwater, and ground gas; and for a wide range of contaminants including heavy metals, petroleum hydrocarbons, and asbestos. Hamish has experience in the assessment of data (including statistical analysis) to undertake risk assessments, including Tier 2 risk assessments. He has familiarity with and understanding of the current contaminated land regulation and practice in New Zealand including assessments against the NES-CS; and in the consenting of contaminated sites.

Melody Robyns – Project Manager and PSI Report Reviewer

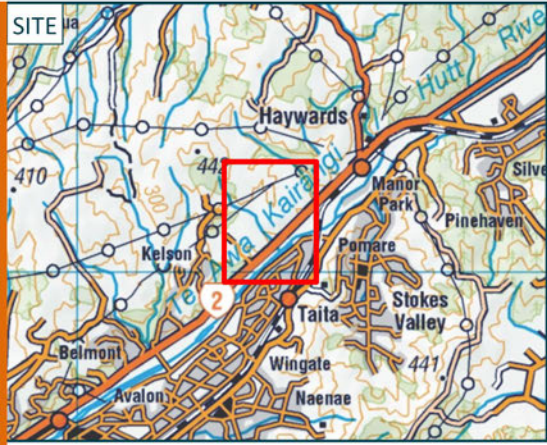
Melody is an Environmental Scientist with a Master of Science in Physical Geography. Melody has a background in environmental site investigations and contaminated land assessments. She is an experienced project manager with over 10 years' experience and is competent in risk identification, mitigation and problem solving. Her involvement in projects includes project management, technical input, risk assessments and liaison with stakeholders.

Bailey Johnson – Report Author

Bailey is an Environmental Scientist with a background in environmental site investigations and contaminated land assessments and reporting. She has carried out or contributed to a variety of soil sampling, surface water and ground water monitoring projects. Bailey has worked on a variety of contaminated site types, including service stations, oil terminals, production stations, airport complexes, commercial/industrial, residential and agricultural sites. She is skilled in the supervision of contractors and heavy machinery, including drill rigs and excavators, and the design and implementation of site-specific health and safety procedures.

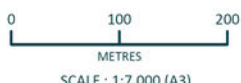


Appendix B: Figure



KEY :

	SITE BOUNDARY
	BELMONT QUARRY
	PARCEL BOUNDARY



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FOR DISCUSSION
11/03/2026

A	ISSUED FOR REVIEW	MAR 26	DO
NO.	REVISION	DATE	BY

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CLIENT



FIGURE

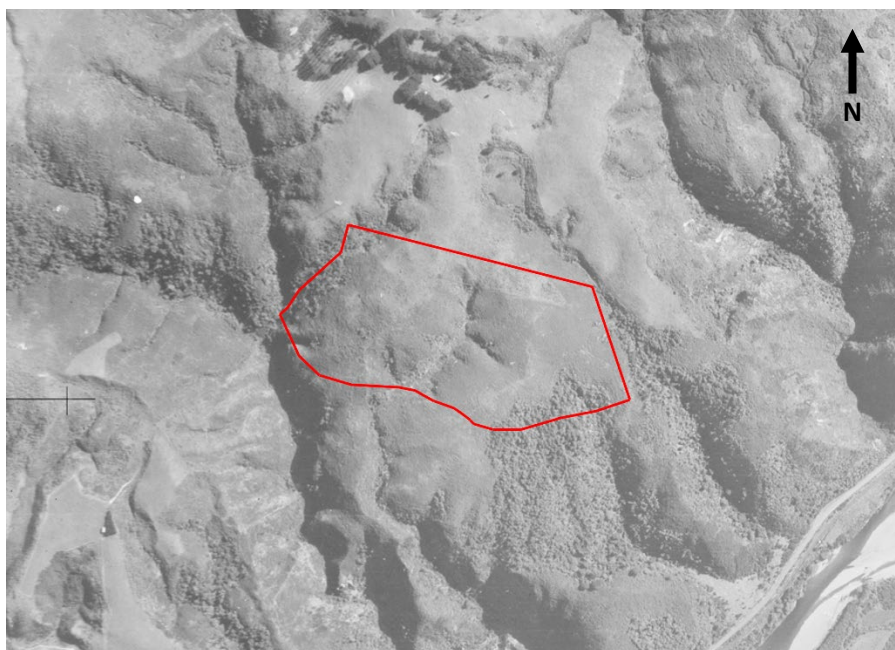
FIGURE 1: SITE LOCATION PLAN

PROJECT

PRELIMINARY SITE INVESTIGATION - BELMONT QUARRY - OVERBURDEN SOURCE AREA



Appendix C: Historical Aerial Photographs



Photograph 1: 1942 sourced from Retrolens



Photograph 2: 1957 sourced from Retrolens



Photograph 3: 1966 sourced from Retrolens



Photograph 4: 1984 sourced from Retrolens



Photograph 5: 1995 sourced from Retrolens



Photograph 6: 1996 sourced from Retrolens



Photograph 7: 2000 sourced from Retrolens



Photograph 8: 2004 sourced from Google Earth Pro



Photograph 9: 2005 sourced from Google Earth Pro



Photograph 10: 2009 sourced from Google Earth Pro



Photograph 11: 2011 sourced from Google Earth Pro



Photograph 12: 2012 sourced from Google Earth Pro



Photograph 13: 2013 sourced from Google Earth Pro



Photograph 14: 2014 sourced from Google Earth Pro



Photograph 15: January 2015 sourced from Google Earth Pro



Photograph 16: May 2015 sourced from Google Earth Pro



Photograph 17: September 2015 sourced from Google Earth Pro



Photograph 18: 2017 sourced from Google Earth Pro



Photograph 19: February 2018 sourced from Google Earth Pro



Photograph 20: March 2018 sourced from Google Earth Pro



Photograph 21: April 2018 sourced from Google Earth Pro



Photograph 22: October 2018 sourced from Google Earth Pro



Photograph 23: April 2019 sourced from Google Earth Pro



Photograph 24: 2021 sourced from Google Earth Pro



Photograph 25: 2022 sourced from Google Earth Pro



Photograph 26: 2024 sourced from Google Earth Pro



Photograph 27: 2025 sourced from Google Earth Pro



Photograph 28: 2026 sourced from Belmont Quarry



Photograph 29: 2026 sourced from Belmont Quarry



Appendix D: Property Files



7 September 2006

Contact: Environmental Approvals
Group/Divison: Customer Services
Telephone: [REDACTED]
Facsimile: [REDACTED]
E-Mail: [REDACTED]
OurReference: RM20-H32-BQ

Kevin Bligh
Resource Management Advisor
Winstone Aggregates
PO Box 17-195
Auckland

Dear Kevin Bligh

RESOURCE MANAGEMENT ACT 1991 - SECTION 139: CERTIFICATE OF COMPLIANCE WITH CITY OF LOWER HUTT DISTRICT PLAN TO DEPOSIT OVERBURDEN MATERIAL WITHIN BELMONT QUARRY

DECISION

1. I refer to your application received 4 April 2006 for a Certificate of Compliance pursuant to section 139 of the Resource Management Act 1991, and the further information submitted on 3 May 2006 and 14 August 2006, to deposit overburden material and remove native vegetation within the Belmont Quarry listed at 541 Hebden Crescent, Lower Hutt (being Lot 1 DP 60552).
2. After assessing the application, I certify that the proposal as submitted is a permitted activity in terms of the City of Lower Hutt District Plan on this day, 7th September 2006, and that the application for a Certificate of Compliance is granted.

THE PROPOSAL

3. The applicant, Winstone Aggregates, has applied for a Certificate of Compliance pursuant to Section 139 of the Resource Management Act 1991 to deposit overburden material and remove native vegetation within Belmont Quarry.
4. The applicant has stated that future development of the quarry involves deposition of overburden material within a steep gully at the western end of the site as shown on the plans submitted with the application and held on Council file RM20-H35-BQ. The proposal also involves the removal of native vegetation from the gully and hillside. The material will total approximately 1,500,000m². The material will not be deposited within 25m of the any site boundaries nor will vegetation removal

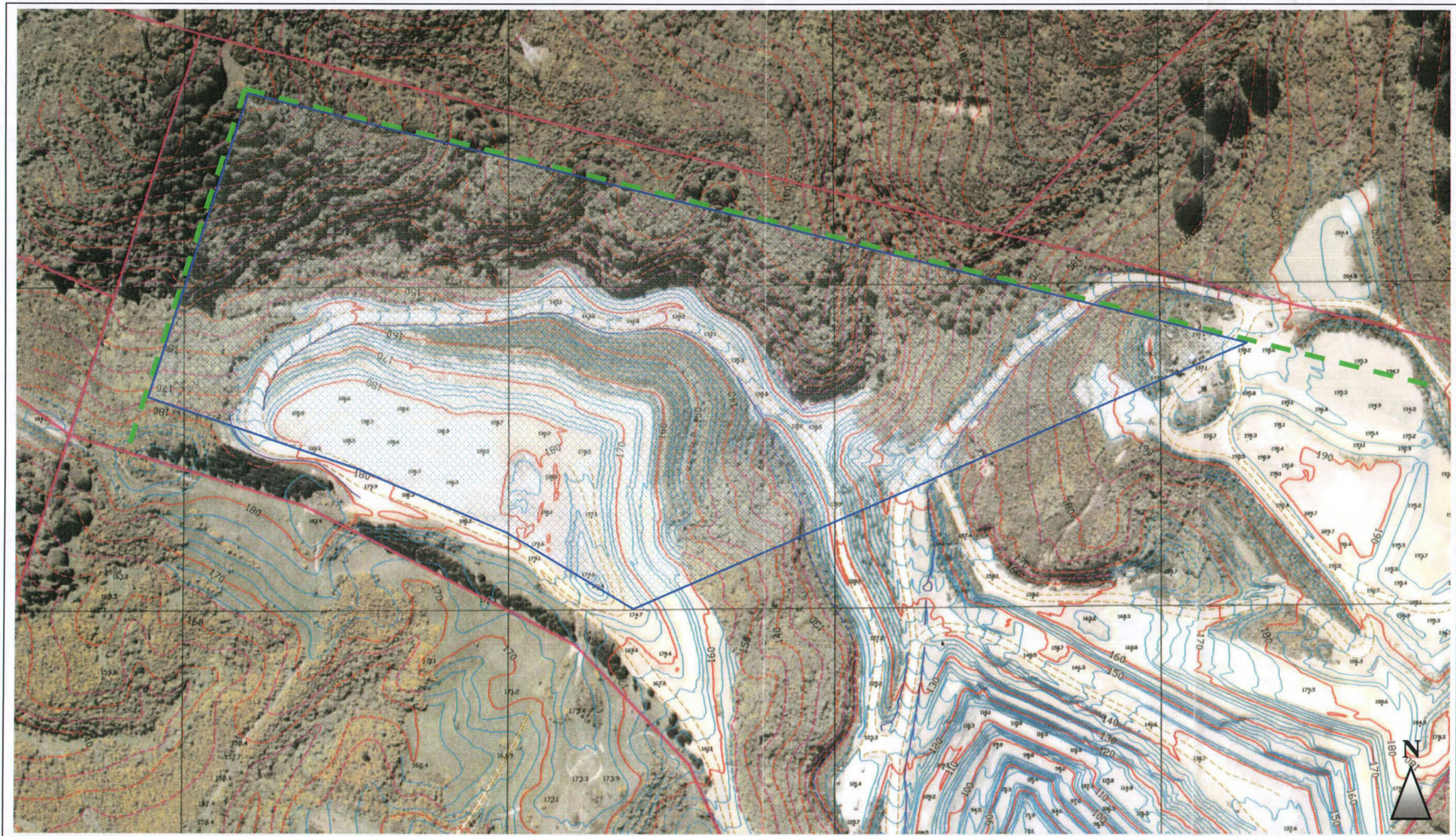


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Tel: +64-4-570 6666, Fax: +64-4-569 4290, Web: www.huttcity.info

WINNER - 2002 New Zealand Performance Excellence Awards

WINNER - 2004 New Zealand Business Excellence Commendation Award - Bronze

Appendix 2 - Area Proposed to be Filled



Key:

--- Buffer Strip - 25m in accordance with Rule 6D 2.1.1 (k) of Hutt City District Plan.

Maximum extent of area upon which overburden is to be deposited.

Scale: 0 50 100 200
(Metres)

Overall Scale: 1:2500

Aerial Photograph Flown: March 2005

PROVED PLAN

7/09/06

MM066176

Introduction

Winstone Aggregates – a division of Fletcher Concrete and Infrastructure Limited (Winstone) operates the Belmont Quarry in the Hutt Valley. The legal description of the site is Lot 1 DP 60552. A locality plan is attached as Appendix 1. Quarrying on the site takes place in accordance with the rules set out in the Extraction Activity Area of the Hutt City District Plan, by way of existing use rights in accordance with Section 10 of the Resource Management Act 1991, and under a number of authorisations from the Wellington Regional Council.

Future development of the site will require the removal and disposal of overburden (material overlying the mineral deposit, which itself does not contain saleable or processable minerals), to facilitate ongoing access to the underlying mineral resource necessary for construction and roading activities within the Wellington region.

Winstone is currently investigating a number of options for future overburden disposal, including filling an existing bush gully in the northwest corner of the Belmont site. It is for the filling of this bush gully that Winstone hereby applies for a Certificate of Compliance in accordance with Section 139 of the RMA. The proposed area to be filled is identified in detail on the plan in Appendix 2.

Proposal

Approximately 1,500,000m³ of material is intended to be disposed of within the bush gully described above, requiring the removal of existing native vegetation.

Some of the area within which the overburden is to be deposited was formerly identified by the Hutt City Plan as being within Significant Natural Resource 3 – Boulder Hill Bush, as identified in Appendix Significant Natural, Cultural and Archaeological Resources 1 and shown on Significant Natural, Cultural and Archaeological Resources Map Appendix 1A. However, in accordance with Rule 14E 2.2 (iii), rule 14E 2.2 requiring a restricted discretionary activity consent for any activity or site development within an SNR ceased to apply at 31 December 2005 in the case of privately owned land. Copies of Map Appendix 1A and an enlarged map obtained from Council showing the previous extent of SNR 3 are included as Appendix 3.

It is important to realise, as shown on the plan in Appendix 2, that a 25 metre buffer strip of vegetation will be maintained along the northern and western boundaries of the site in accordance with the requirements of Rule 6D 2.1.1 (k) which states:

(k) Buffer Strip:

A 25m buffer strip of indigenous vegetation shall be maintained within the site along the boundaries of the Extraction Activity Area, shown in Appendix Extraction 1A and 1B.

The applicable appendix (Extraction 1A) from the District Plan, is included as Appendix 4 of this application.

On this basis, and applying the permissive presumption pertaining to Section 9 of the Act with regards to Chapter 14E: Significant Natural, Cultural & Archaeological Resources, Winstone consider that disposing of overburden in the area shown in



Figure 1: Location of Cottle Land and the proposed overburden disposal area.

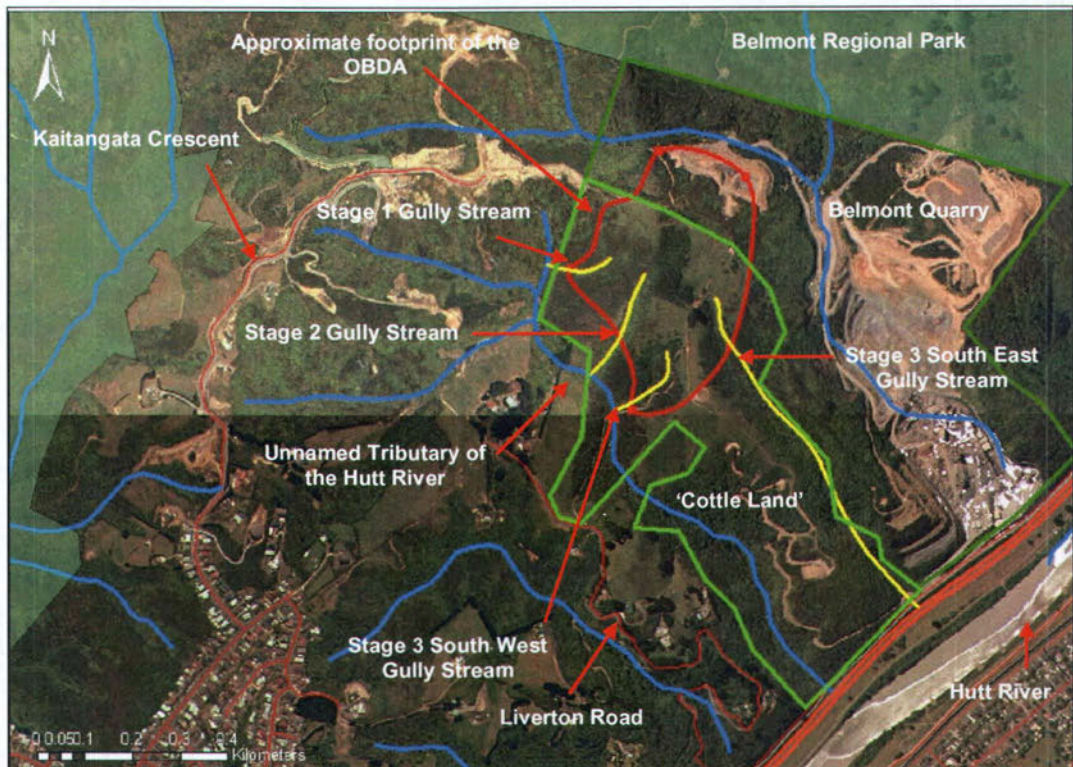


Figure 1: The application site is located in the foothills along the western side of the Hutt Valley (on the north western side of State Highway 2). The 'Cottle Land' property boundary is outlined in bright green. The OBDA will have a footprint of 14.6ha (as indicated approximately in red) and will be located at the north western end of the 'Cottle Land'. The permanently flowing unnamed tributary of the Hutt River is indicated in blue and is located in the south western side of the property. Four ephemeral streams are indicated in yellow.

The legal description of the property is Lots 4, 5 and 100 DP 322126. The land is held in Certificate of Title WN31B/40. The OBDA is spread across Lots 4, 5 and 100 DP 322126.

The approximate location of the application site is shown in Figure 1, including the approximate flow paths of the four ephemeral streams gullies (Stage 1, 2, 3 south west (SW) and 3 south east (SE)) and the unnamed tributary of the Hutt River as thick yellow and blue lines respectively.

3. Background

The applicant owns and operates Belmont Quarry on the adjacent block of land. The quarry has been operating since the early 1900s and is a regionally significant source of aggregate within the Wellington Region and produces a range of products necessary for construction and roading activities. The applicant envisages that there will be an ongoing demand for aggregate to be supplied within the region, and in order to satisfy that demand the applicant will need to continue to provide aggregate products from Belmont Quarry.

In the case of this application, overburden is the material which is unsuitable for aggregate production and includes top soil and weathered rock. This overburden material would be sourced from the existing working faces of the

Belmont Quarry including the southern face where the early stages of further mining activities is currently occurring.

To enable the ongoing mineral extraction from Belmont Quarry, overburden, must first be removed and disposed of to facilitate ongoing access to the underlying aggregate resource.

The overburden from the existing quarrying of the northern face has been placed within a disposal area located to the northwest of the quarry face, but still within the quarry site. However, the existing OBDA is reaching capacity and a new area needs to be developed to allow access to further hard rock.

In assessing and reviewing the various options for disposal sites, the applicant has identified and determined that the most suitable option at this stage is to develop a new OBDA on a piece of land that is located adjacent and immediately south west of the existing quarry site.

4. Proposal/description of activities

The applicant has detailed their proposal to construct a new OBDA in the application and further information (received on the 13 June 2007 and the 18 December 2007, and during the site visit 5 June 2007). A summary of the proposal is detailed below:

- The placement of 1.3 million m³ of overburden material from Winstone Aggregates Belmont Quarry onto the neighbouring 'Cottle Land' over a total area of 14.6 ha over a maximum of seven earthworks seasons over 12 years.
- Earthworks to establish suitable land to dispose of the overburden, including the stripping of vegetation and topsoil and the filling/reclamation of portions of four ephemeral tributaries of the Hutt River by the OBDA.
- Discharge of sediment laden stormwater from the OBDA into tributaries of the Hutt River.
- Discharge of dust from the working areas of the OBDA.

Overburden deposition typically includes the following sequence of works:

4.1.1 Timeline of OBDA construction

The applicant proposes to construct the OBDA over a maximum of seven earthworks seasons over 12 years (once works have commenced). The earthworks seasons will each last no more than 6 months between October and April.

The applicant has proposed the hours of operation of the OBDA be from 7am-6pm Monday – Friday and 7am-1pm Saturday. No work is proposed to occur on Sundays or on public holidays.

Topsoil stripping

Areas where earthworks are to be undertaken or overburden is to be placed will be stripped of topsoil progressively with only enough topsoil being stripped at any one time to facilitate immediate development.

Topsoil will be stored in mounds adjacent to the earthworks for subsequent placement on the final batter faces.

Site development works

Works include construction of an access road, installation of drainage within the gully inverts and forming sediment retention ponding areas and other silt control measures, such as bunds, contour drains and soakage pits.

A bund of granular overburden will be formed at the toe of each gully and granular overburden will be used to construct the face of the overburden batter slope. Soft material in the gully invert beneath the toe of the overburden batter slope may be excavated and a shear key of granular material placed as required to ensure the stability of the batter slope.

Overburden Placement

Overburden material from the quarry will be placed in layers (lifts), each being approximately 2.0 to 5.0 metres thick.

As the material is placed on the earthworks surface, it will be bladed and compacted using a bulldozer or wheeled compactor. A bulldozer or excavator will be used to shape the batter slope to its final profile.

Once the overburden works for each season are completed, the batter slopes will be stabilised against erosion by hydroseeding. Topsoil will be placed on the final batter slopes and mulch may be applied if available or deemed appropriate.

Reinstatement and Revegetation

Reinstatement works will be undertaken on an ongoing basis. Once the overburden works for each season are completed the batter slopes visible to adjacent dwellings will be hydroseed with a grass mix. Final batter slopes will be top soiled and vegetated as outlined in this document.

Water Management Activities

Suitable water management practices will be used to manage the potential effects of project work activities on surface water run off and slope stability. These are described in the Sediment Control Management Plan prepared as part of the consent application.

Site Water Requirements and Discharges

Water required for dust suppression will be sourced from within Belmont Quarry.

Stormwater runoff from the earthworks and seepages from the gully inverts will be discharged at the toe of the overburden batter slopes following appropriate treatment to remove sediment.

Stages of the Project

In order to assist understanding of the sequence of change to the overburden landform over time the project is described as three stages, as shown in Figures 2 and 3, and summarised below.

Stage 1	Stage 1 Footprint: 2.65ha Max height: RL 180m	Overburden placement will begin in the base of the gully near the western boundary of the site.
Stage 2	Total Footprint: 6.90ha Max height: RL 180m	Filling will progressively move southeast into the second gully to the south, which be filled from the base up.

**PROPOSED TRUCKSTOP DEVELOPMENT
WINSTONE AGGREGATES
HEBDEN CRESCENT, LOWER HUTT**

1 INTRODUCTION

- 1.1 This report is submitted in support of the application lodged on behalf of Fuelquip Services Limited ("Fuelquip") seeking land use consent to install and operate a truckstop facility at Winstone Aggregates, Hebden Crescent, Lower Hutt.
- 1.2 This report is prepared in accordance with the requirements of Section 88 and the Fourth Schedule of the Resource Management Act 1991. It is intended to provide the information necessary for a full understanding of the proposal and any actual or potential effects that the proposed activity may have on the environment.
- 1.3 This report contains the following information:
- A description of the site and the surrounding locality;
 - A description of the proposed activity;
 - An assessment of the effects of the proposal on the environment;
 - An analysis of the provisions of the Transitional and Proposed District Plans which are relevant to the application; and
 - A statement regarding the written approval requirements.

2 SITE AND LOCATION

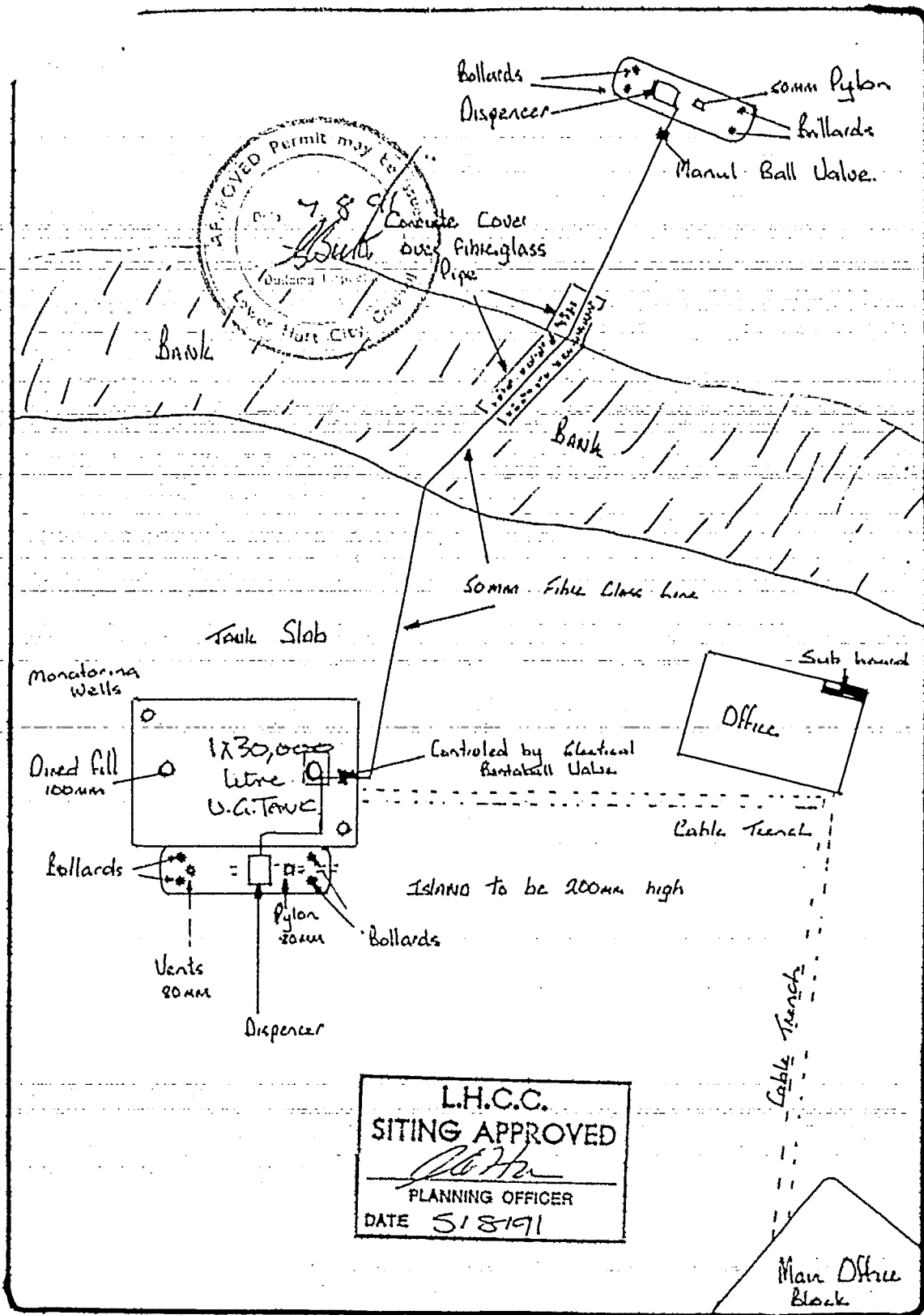
- 2.1 The subject site is located in the Belmont Quarry within the western hills overlooking Lower Hutt. Access to the site is obtained via Hebden Crescent.
- 2.2 The subject site has the legal description of Lot 1, DP 60552. The Certificate of Title that relates to the subject site is attached as Appendix 2 to this report.
- 2.3 An existing quarry operated by Winstone Aggregates is located on the subject site. The quarry comprises workshop, office buildings and other buildings and structures associated with the operation of the quarry.
- 2.4 The subject site is surrounded by hills covered in vegetation to the north, west and the east. State Highway 2 and the Hutt River are located to the south of the site with areas of residential properties located beyond both the road and the river.

3 THE PROPOSAL

- 3.1 Fuelquip proposes to install a truckstop facility within the Belmont Quarry. The proposal would involve the removal of an existing underground 40,000 litre storage tank with dispenser island which is currently located towards the front of the subject site in the position shown on the site plan attached as Appendix 1 to this report.
- 3.2 The proposed replacement tank would comprise an above ground 40,000 litre diesel portable fuelling facility with three dispensers connected via above ground and underground pipelines. The proposed installation would be located in the position above the existing underground tank. The base of the proposed tank would be approximately 12m by 2.5m.
- 3.3 The three dispensers connected to the above ground tank would be located in three separate positions. The first dispenser would be installed on a specifically constructed concrete dispenser island approximately 16 metres north of the proposed tank installation. Fuel to the dispenser island would be supplied via an underground pipe. The second dispenser would be mounted at the northern end of the above ground tank with all pipe work running above ground. The third dispenser would be installed on a dispenser island, approximately 25 metres east of the above ground tank. Fuel to the third dispenser would be supplied via an underground pipe.
- 3.4 The proposed truckstop facility would be primarily for the filling of quarry vehicles, such as loaders, trucks and general earthmoving machinery. The facility would also be available for the refuelling of commercial trucks visiting the quarry to procure quarry materials.
- 3.5 The installation would be unstaffed with the exception of the driver filling his or her vehicle. Fuel from the truckstop facility would be accessed via a card reading system.
- 3.6 The installation of the truckstop facility would meet all relevant Occupational Safety and Health requirements and Dangerous Goods Class 3 requirements. Tank installation would be carried out by an experienced Fuelquip installation team.

4 DISTRICT PLAN PROVISIONS

- 4.1 Under the Transitional District Plan (Western Hills Section) the subject site is situated within the *Quarry Zone*, whereas under the Proposed District Plan the site is located within the *Extraction Activity Area*.
- 4.2 Under the Transitional District Plan, buildings accessory to the *winning and processing of materials occurring naturally in the vicinity* is a Permitted Activity (Section O(4)(e)). The proposed above ground tank is a replacement of an existing underground tank. Both the existing facility and the proposed replacement facility is primarily for the use of refueling quarry vehicles and is therefore considered to be accessory to and an important component to the operation of the Belmont Quarry. In addition, the proposed above ground tank would fully comply with the bulk and location requirements set out in Section O(6) of the Transitional District Plan. The proposed truckstop is therefore deemed a Permitted Activity under the Transitional District Plan.



FILE No.....

PERMIT No. 57103.....

DATE 20/8/91.....

ADDRESS HEBDEN CRES.....



Belmont Quarry Development – Part B

Substantive Application
Appendix B.3.C – Remedial Action Plan (RAP)
Winstone Aggregates

16 August 2026

Remedial Action Plan – Proposed Overburden Disposal Area

✦ Prepared for

Winstone Aggregates Limited

✦ August 2026



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Quality Control Sheet

TITLE Remedial Action Plan – Proposed Overburden Disposal Area

CLIENT Winstone Aggregates Limited

ISSUE DATE 3 August 2026

JOB REFERENCE A035680020

Revision History					
REV	Date	Status/Purpose	Prepared By	Reviewed by	Approved
0	17/03/2026	For client review	Jess Campbell	Melody Robyns	Jordan Vaughn
1	16/04/2026	Final	Jess Campbell Bailey Johnson	Melody Robyns	Hamish Wilson
2	13/05/2026	Revised draft for client review	Jess Campbell Bailey Johnson	Melody Robyns	Hamish Wilson
3	03/06/26	Final	Jess Campbell Bailey Johnson	Melody Robyns	Hamish Wilson
4	02/07/26	Final	Melody Robyns	Hamish Wilson	Hamish Wilson
5	03/08/26	Final	Melody Robyns	Hamish Wilson	Hamish Wilson

DOCUMENT CONTRIBUTORS

Prepared by

SIGNATURE

Jess Campbell

Bailey Johnson

Reviewed by

Approved by

SIGNATURE

Melody Robyns

Hamish Wilson

WINSTONE AGGREGATES LIMITED - REMEDIAL ACTION PLAN – PROPOSED OVERBURDEN
DISPOSAL AREA

Limitations:

This report has been prepared by Pattle Delamore Partners Limited (PDP) on the basis of information provided by Winstone Aggregates Limited. PDP has not independently verified the provided information and has relied upon it being accurate and sufficient for use by PDP in preparing the report. PDP accepts no responsibility for errors or omissions in, or the currency or sufficiency of, the provided information.

This report has been prepared by PDP on the specific instructions of Winstone Aggregates Limited a division of Fletcher Concrete and Infrastructure Ltd for the limited purposes described in the report. PDP acknowledges that this report may be used and relied upon by the expert panel appointed under the Fast-track Approvals Act 2024. PDP accepts no liability if the report is used for a different purpose or if it is used or relied on by any other person. Any such use or reliance will be solely at their own risk. This report has been prepared in accordance with the Environment Court's Code of Conduct for Expert Witnesses, contained in the Environment Court's Practice Note 2023. The authors of this report agree to comply with the Code of Conduct, and confirm that unless otherwise stated, the issues addressed in this report are within the area of expertise of the authors. No material facts have been omitted that might alter or detract from the opinions expressed in this report.

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Appendices

Appendix A: Figures

Appendix B: Site Photographs

1.0 Introduction

Pattle Delamore Partners Limited (PDP) have been engaged by Winstone Aggregates Limited (Winstone; the client) to produce a '*Remedial Action Plan*' (RAP) for the disturbance, handling and disposal of soil in the affected area of the proposed overburden disposal area (OBDA), Belmont Quarry (the Site – as shown in Figure 1 attached in Appendix A). This RAP may also apply to any new discoveries of unexpected contamination identified throughout the site redevelopment.

Given that the current OBDA is projected to meet capacity within the next 10 years, a new OBDA is proposed immediately to the north of Belmont Quarry. The proposed OBDA will be constructed across 10 stages and will accommodate approximately 2.8 million m³ of overburden including topsoil, subsoil, weathered greywackes and process and pond fines over a 35-year period.

This RAP has been prepared alongside a preliminary/detailed site investigation (PSI/DSI; PDP, 2026b) report produced as an aspect of the Belmont Quarry Development Fast-Track Approval Application (FAA). The PSI/DSI should be read in conjunction with this document.

This RAP (dated July 2026; Version 4) has been updated to address client comments and therefore supersedes the previous versions.

This report has been written in general accordance with the Ministry for the Environment (MfE) Contaminated Land Management Guideline (CLMG) No. 1 – *Reporting on Contaminated Sites in New Zealand* (MfE, 2021).

1.1 Objectives

The objectives of the RAP are to set out the practices and procedures to be undertaken during earthworks in order to avoid, remedy or mitigate the risk to human health (i.e. site workers) and the environment. This RAP has been prepared to address the contaminated soils that have been encountered during intrusive investigations undertaken at the site, and to provide guidance on how these soils should be managed, along with any unexpected discoveries of contamination during the development works. The RAP relates to land in the vicinity of the corrugated metal sheets and abandoned farm machinery identified during the PSI/DSI which are shown in Figure 1, Appendix A. This RAP may also apply to any new discoveries of degrading metal and/or machinery identified throughout the site redevelopment.

This RAP is intended for use by contractors and the environmental consultant engaged in the remedial works. It summarises the nature and extent of existing contamination, outlines procedures for the safe handling, removal, and disposal of contaminated soils, and specifies validation sampling and record-keeping

requirements. This RAP should be read in conjunction with the site-specific Erosion and Sediment Control Plan prepared for the development of the OBDA.

2.0 Site Description and Background

The site is located across a 23.86 ha, irregularly shaped area, which extends across three parcels of land legally described as Part Section 200A Hutt DIST, Section 255 Hutt DIST and Part Section Hutt DIST. The site is currently owned by the Department of Conservation (DOC), forms part of Belmont Regional Park and is zoned as Recreation Reserve under Hutt City Council's (HCC's) District Plan.

The site is covered in medium to dense vegetation with an access track through the centre. During the site walkover, evidence of previous a historical dwelling and abandoned farming equipment was observed to the central/eastern portion of the site.

2.1 Summary of Site History

PDP was engaged by Winstone to undertake a PSI/DSI for the proposed OBDA at Belmont Quarry. Key findings of the investigation are summarised as follows:

- ✧ A review of historical information indicates that the site was historically used for farming purposes, with two small buildings present between 1942 and 1966, followed by progressive revegetation. A transmission pylon had been present on the northern part of the site since at least 1957.
- ✧ A site walkover identified discarded, degrading sheet metal and abandoned farm machinery at several locations and as such an intrusive investigation was undertaken to assess potential impacts of leaching of heavy metals and the presence of asbestos in the shallow surface soils. The intrusive investigation identified the following:
 - Laboratory results indicate that arsenic, chromium, copper, lead and nickel concentrations across the site are generally consistent across sample locations.
 - Elevated zinc and cadmium concentrations were identified in shallow surface soils in the vicinity of exposed metal sheeting, roof structures and machinery. Limited soil sampling indicates that zinc and cadmium concentrations generally decrease with depth and lateral spread, indicating limited migration. Additional soil sampling will be undertaken during the remedial works to confirm this.
 - Asbestos was not detected in any soil or bulk material samples analysed. In addition, asbestos was not observed onsite at any of the investigation locations, the site surface or any of the building materials remaining onsite.

- All soil samples complied with applicable human health soil contaminant standards for commercial/industrial land use, and as such soils are not considered to pose an unacceptable risk to human health, including for short-term exposure of OBDA workers.
- The results of the intrusive investigation indicated that zinc concentrations around the degraded metal may pose a risk to the environment particularly the ephemeral streams located within the site boundary (see Figure 1 for locations) and as such meet the threshold for Hazardous and Industrial List (HAIL)¹ category I.

3.0 Proposed Remediation

Based on the laboratory results of the PSI/DSI (PDP, 2026b), the objective of the remedial works is to remove zinc-contaminated soil from the “hotspots” associated with degrading corrugated metal sheets at SS03, SS04, SS05 and SS08, the abandoned farm machinery at SS06, and any other waste metal/machinery identified during the site redevelopment. The locations of the corrugated metal sheets and abandoned farm machinery identified during the PSI/DSI are shown in Figure 1, Appendix A. Photographs provided in Appendix B.

To remove the contamination associated with the “hotspots” a minimum two-metre buffer will be placed around the source material, with a three-metre around SS08, and soils will be excavated to a minimum depth of 0.5 m below ground level (bgl) within these areas. Excavated soils will then be removed from site and disposed of to a Class A landfill facility. Removing the top 0.5 m of soil (as a minimum) aims to remove the “hotspots”, therefore reducing the environmental risk by removing the source material. Field screening using a portable XRF analyser and laboratory analysis will be undertaken at the base and sides of each excavation to confirm that the impacted soil has been removed. The scale of laboratory analysis, including the analytical suite and the number of samples, is to be determined at the time of excavation, and is further detailed in Section 9.0.

Additional sampling will also be undertaken during remedial works in the vicinity of the secondary piece of machinery that was unable to be sampled during the PSI/DSI. The results will be used to determine contaminant concentrations and guide the appropriate remedial management of any identified contamination.

¹ The Hazardous Activities and Industries List (HAIL) is a compilation of activities and industries that are considered likely to cause land contamination resulting from hazardous substance use, storage or disposal. The HAIL is intended to identify most situations in New Zealand where hazardous substances could cause, and in many cases have caused, land contamination.

In order to assess the suitability of site soils to remain onsite, the laboratory analysis and XRF results will be compared to the following target remediation criteria which are based on applicable human health and environmental criteria for the site:

- ✧ The soil contaminant standards (SCS) contained in MfE's Methodology for Deriving Standards for Contaminants in Soil to Protect Human Health (2011b) for all heavy metals analysed, with the exception of nickel and zinc. For nickel and zinc, results will be compared to soil guidelines values (SGV) contained in the Australian National Environmental Protection (Assessment of Site Contamination) Amendment Measure 2013 (NEPM, 2013) criteria. Samples will be compared to the values associated with commercial/industrial land use.
- ✧ To assess environmental risk, soils will be compared to the Class 3 waste acceptance criteria (WAC) published in Technical Guidelines for Disposal to Land (WasteMINZ, 2023).

These measures will also apply to any new discoveries of degrading metal identified throughout the site redevelopment.

Excavations will be undertaken in accordance with the management controls detailed in this document.

4.0 Roles and Responsibilities

4.1 Role of Landowner (Winstone Aggregates Limited)

Winstone is proposed to be the landowner of the site and is responsible for implementing the requirements of this RAP in relation to the development activities at the site. Winstone must distribute this RAP and communicate the known extent of residual contamination and associated hazards to workers and contractors conducting work at the site.

4.2 Role of the Site Manager

Winstone shall nominate a Site Manager to be responsible for providing general oversight for the entire project and is the link between the contractor, the nominated Suitably Qualified and Experienced Practitioner (SQEP) and the Winstone. It is the Site Manager's responsibility to ensure site works are undertaken in accordance with the Resource Consent.

The Site Manager will ensure that site personnel and other relevant engaged parties working at the site adhere to requirements of the RAP. This includes:

- ✧ The implementation, management and monitoring of the erosion and sediment control systems.

- ✧ The management and disposal of surplus materials disturbed, including any unexpected, contaminated soil identified/encountered during the works.
- ✧ Monitoring and record keeping throughout the duration of the works.
- ✧ Implementing spill response procedures in the event of a spillage of hazardous substances.

4.3 Role of SQEP (Pattle Delamore Partners)

The PDP representative identified in Table 1 is the nominated Contaminated Land Consultant who is the SQEP and is the first point of call in the event that visual or olfactory evidence of contamination is encountered and/or previously unidentified sources of soil contamination are identified during the works.

The SQEP can also assist with identifying appropriate facilities for disposal of contaminated material from the site.

4.4 Key Contacts

The key project contacts are outlined below:

Table 1: Key Contacts		
Contact	Name	Contact Details
Landowner	Winstone Aggregates Limited	Shalini Sanjeshni
Site Manager	TBC	TBC
Contractor	TBC	TBC
Contaminated Land Consultant/SQEP	Melody Robyns – Pattle Delamore Partners Limited	[REDACTED] [REDACTED]
Contaminated Land – Technical Director/ SQEP	Hamish Wilson – Pattle Delamore Partners Limited	[REDACTED] [REDACTED]
Hutt City Council	General Enquiries	04 570 6666
Greater Wellington Regional Council	Environmental and Pollution	0800 496 734 .
	Discovery of Artefacts	notifications@gw.govt.nz

4.5 Distribution

A copy of this RAP shall be kept onsite at all times. It is the responsibility of the site manager to distribute the information contained within this RAP to any workers, subcontractors and personnel entering the site to ensure compliance. The provision of this RAP is mandatory to all persons (workers, contractors, subcontractors and visitors) who enter the site during the construction works.

4.6 Implementation

It is the responsibility of the site manager and any workers, contractors, subcontractors and visitors (as applicable) to adhere to the requirements of the RAP and ensure compliance.

The site manager shall liaise with the contaminated land consultant/SQEP to ensure that the work is being carried out in accordance with the RAP, organise site inspections required in accordance with the RAP and discuss any contaminated land issues or any sampling requirements during the construction activities, including any unexpected discoveries.

4.7 Review and Update

This RAP must be reviewed and amended as necessary. This could be in response to changes to the proposed OBDA construction methodology, findings of additional investigations, and/or during future earthworks at the site to ensure the environmental and human health risks associated with the identified contaminants at the site are managed appropriately.

Any update or amendment to the RAP is to be approved by the contaminated land consultant/SQEP prior to implementation of the change. It is the responsibility of the landowner to issue the updated RAP to the site manager as it is made available.

If updated, old versions of the RAP should not be referred to and should be deleted from, or archived in, computer systems with physical copies marked as “superseded” or disposed of.

5.0 Current Identified Risk to Site Workers and Environment

A risk (e.g. to human health and/or the environment) can only arise if there is a hazard (e.g. contaminated soil), a receptor (e.g. people) and an exposure pathway between the hazard and the receptor.

As outlined in the PSI/DSI, the key contaminants of concern identified in the PSI/DSI (PDP, 2026b) are heavy metals (zinc and cadmium) which may have an adverse effect on the receiving environmental (the ephemeral streams located onsite) through infiltration to groundwater and/or surface water run-off. No risk to human health was identified.

Although no asbestos was encountered during the investigation, not all parts of the site were accessible and given the age of the historical structures on site the presence of asbestos cannot be ruled out.

6.0 Management Procedures

This section details precautions which must be undertaken whilst working on the site to mitigate potential risks to human health and the environment. The health and safety procedures and measures outlined in the RAP should be incorporated into the overarching, site specific Health and Safety Plan.

6.1 Site Controls

This section sets out general management procedures and requirements for the site.

1. This plan applies to the proposed OBDA, specifically the areas identified in Figure 1 where impacted soils were detected.
2. All personnel involved in the excavation works are to be familiar with this plan and must ensure that the requirements of this plan have been followed.
3. A copy of this plan is to remain available at the site office at all times so that reference can be made to the plan when undertaking any excavations works within the site.
4. Overall responsibility for the implementation of this plan shall be held by Winstone Aggregates Limited. However, the specific requirements and provisions of the management plan will be under the control of the Site Manager (see Section 4.2).
5. This plan relates solely to potential soil contamination within the proposed OBDA associated with degrading metal debris. Should impacts from other contaminants be discovered during works, a SQEP should assess the requirement for any additional investigation and/or management controls.

The RAP is limited to assisting Winstone and its agents and contractors in meeting their legal obligations with respect to health, safety and the environment in dealing with potentially contaminated soil within the proposed OBDA. It is not intended to cover the general safety procedures required for typical excavation and redevelopment works. The RAP is not intended to relieve the owner of their legal responsibilities.

6.2 Health and Safety

The Contractor shall mobilise to site with all the necessary equipment to undertake the redevelopment works (including the remediation of any potential contaminated soils as identified in the PSI/DSI) in a safe manner and in compliance with the controls detailed in this RAP.

Under the *Health and Safety at Work Act* (HSWA, 2015), the Contractor must undertake the works in accordance with the relevant health and safety regulations and meet all their obligations as a ‘*person in control of a business or undertaking*’ (PCBU). The main potential hazards associated with the soil disturbance works are expected to be personal physical injury, and site worker human health exposure to surface soil contaminants.

6.2.1 PPE Requirements

The Contractor shall ensure that during soil disturbance works across the site, all personnel are wearing standard personal protective equipment (PPE). The minimum PPE shall include:

- ✧ Sturdy steel cap footwear (not exposed steel cap),
- ✧ Full coverage overalls/clothing,
- ✧ Safety glasses, and
- ✧ Hard hats (when earthmoving equipment is present).

In addition, during the removal of the contaminated soils at the site, the contractors must wear nitrile gloves and maintain strong hygiene controls (as outlined in the following section). The use of dust masks may be required if there is potential for the dust generation and inhalation of contaminated dust during the remedial works.

6.2.2 Personal Hygiene

All personnel working on the site should:

- ✧ Avoid skin contact with contaminated soil.
- ✧ Not consume food or beverages anywhere near excavated soil.
- ✧ Always wash their hands before smoking/vaping or eating, and do not touch their face after handling contaminated soil.

7.0 Earthwork Controls

The following section provides details for controls that are to be followed for general earthworks across the wider site.

7.1 Erosion and Sediment Control

It is understood that site specific erosion and sediment control (ESC) measures are to be implemented and will be provided in a separate document. These measures should be in accordance with GWRC's *Erosion and Sediment Control Guide for Land Disturbing Activities in the Wellington Region* (GWRC, 2021).

The Site Manager will be responsible for undertaking periodic inspections / maintenance of the ESC measures throughout the soil disturbance works.

7.2 Dust Suppression

Exposed earthwork areas shall be maintained to minimise the release of dust into the atmosphere, and appropriate measures to reduce the dust release to acceptable levels must be implemented as required. Appropriate dust control measures must be undertaken in accordance with the Dust Management Plan produced for the redevelopment works (PDP, 2026a) and at a minimum include the following:

- ✧ All site workers will be advised of the need to minimise dust by the responsible operation of machinery and vehicles (e.g. limit site traffic speed to reduce the production of dust, access into/out of the site to be via the stabilised surfaces).
- ✧ Exposed areas will be minimised as far as practicable.
- ✧ Water sprays will be used on exposed soils to suppress dust, ensuring that any water used is not allowed to migrate beyond the work zone, and
- ✧ Dust generating activities will be limited or suspended during periods of high wind.

7.3 Stockpile Management

Stockpiling of zinc contaminated soils should be avoided where possible, if temporary stockpiling (of potential or confirmed contamination) is required then the stockpiles shall be managed as follows:

- ✧ All stockpiles of zinc contaminated material shall be located within the site boundary and monitored for dust generation;
- ✧ Silt socks shall be installed around stockpiles where required to ensure sediment laden stormwater from the stockpile cannot enter surface water;

- ✧ Controls shall be installed to prevent runoff from leaving the area and stormwater from other areas entering the stockpile area;
- ✧ Given the nature of the site, placing soils on polythene is likely not feasible. If soils cannot be placed on polythene sheeting, when removed the surface soils beneath the stockpile will be excavated 100 mm bgl to remove any potential contamination of the underlying material;
- ✧ Be covered or dampened during dry and windy conditions; and
- ✧ If significant rainfall is forecast, the stockpiles shall be covered by a suitable material to prevent contaminated stormwater discharge.

Any material removed during the works that is potentially or confirmed as contaminated shall be disposed of at a facility authorised indicated as appropriate by the SQEP to receive such material.

8.0 Soil Management Controls

8.1 Soil Reuse

Areas shown in Figure 1 are to be excavated and removed from site due to elevated zinc concentrations and the associated environmental risk.

All remaining sampled soil that did not report elevated zinc concentrations are suitable for reuse at the site.

8.2 Soil Disposal

The PSI/DSI concluded that impacted soils, present in the vicinity of the discarded metal sheeting and historical building, are suitable for disposal at a Class A landfill facility. The Site Manager should liaise with the SQEP regarding the intended soil disposal locations, to ensure compliance against the applicable waste acceptance criteria is maintained.

The conceptual site model for the remaining soils at the site does not identify potential sources of contamination. As the primary land use of the site has historically been for pastoral purposes, it is likely that these soils meet the definition of cleanfill. However, should this material require offsite disposal landfill facilities may require additional testing to confirm acceptability of the material. The acceptance criteria for cleanfill facilities within Wellington varies across the region and therefore comparison to any specific cleanfill criteria has not been undertaken and will be required on a case by case basis depending on the location of the cleanfill site. It is recommended that preapproval be obtained for soil disposal prior to the onset of any soil disposal works.

Documentation showing the landfill acceptance of all soil at the site shall be provided to the SQEP along with disposal certificates/dockets.

8.3 Soil Sampling Requirements

Soil sampling may be required for the additional characterisation of soils to assist with off-site disposal options. The following soil sampling procedures shall be implemented:

- ✧ The contaminated land consultant/SQEP will determine the number and density of samples collected, dependent on the objectives of the sampling.
- ✧ All sampling will be overseen by a contaminated land consultant/SQEP.
- ✧ The samples will be collected using a fresh pair of nitrile gloves for each sample.
- ✧ To avoid cross-contamination between samples, any hand-held sampling equipment will be decontaminated between sampling locations using Decon90 and water.
- ✧ Soil samples will be placed into laboratory supplied containers. The samples will be submitted to an accredited laboratory under chain of custody documentation.
- ✧ Upon receipt of the laboratory analysis, the contaminated land consultant/SQEP shall assess the results to determine the fate of the characterised material.

8.4 Contaminated Soil Handling Measures

Contaminated soil shall be loaded directly into covered and water-tight trucks for off-site disposal to an approved facility. Trucks and other contractor vehicles shall not drive across the contaminated area prior to or during the removal of the contaminated soils and should remain on stabilised areas wherever possible. Truck wheels shall be inspected and cleaned (via manual sweeping) as necessary prior to egress from the site to prevent tracking of soil onto public roads.

8.5 Record Keeping

The Site Manager shall ensure that records are kept of all excavation, handling and disposal of soil at the site. This includes soil disposal dockets. Photographs and a detailed site plan showing the final extent and dimensions of the excavated areas, including after the removal of any identified contaminated soils is to be provided by the Contractor to the SQEP for verification and provided to the Site Manager for their records.

9.0 Validation Sampling

The limited soil sampling undertaken to date, combined with the observed source materials indicates that the heavy metal contamination is localised and will be removed through targeted excavation of identified “hotspot” areas. Sampling both through analytical analysis and field screening with a portable XRF analyser will be undertaken on the sides and bases of excavations during the remedial works to guide the remedial excavations and confirm that zinc, cadmium concentrations, and other metals as appropriate, comply with the applicable soil criteria and as such that the material remaining on site poses no environmental risk.

In order to assess the suitability of site soils to remain onsite, the laboratory analysis and XRF results will be compared to the following human health and environmental criteria:

- ✧ The soil contaminant standards (SCS) contained in MfE’s Methodology for Deriving Standards for Contaminants in Soil to Protect Human Health (2011b) for all heavy metals analysed, with the exception of nickel and zinc. For nickel and zinc, results will be compared to soil guidelines values (SGV) contained in the Australian National Environmental Protection (Assessment of Site Contamination) Amendment Measure 2013 (NEPM, 2013) criteria. Samples will be compared to the values associated with commercial/industrial land use.
- ✧ To assess environmental risk, soils will be compared to the Class 3 waste acceptance criteria (WAC) published in Technical Guidelines for Disposal to Land (WasteMINZ, 2023).

The number and depth of soil samples obtained will be decided based on the size of the excavation. Samples will be submitted to an accredited laboratory for the analysis of cadmium and zinc only. The results of these samples will be used to confirm the XRF results and to demonstrate that the remedial work has been effective.

Photographs of each excavated “hotspot” area shall be obtained, and the physical extents of the “hotspot” excavations shall be recorded.

Any remaining soils found to have elevated concentrations of zinc and cadmium (as applicable) after the excavation works will require excavation and further validation sampling undertaken.

A validation report will be prepared which will outline the remedial works which were undertaken and present the results of the validation sampling. The report format, interpretation of results and assessment will be in accordance with MfE (2021) guidelines for reporting on contaminated sites.

10.0 Complaints Procedures

The Site Manager shall have a procedure in place for recording and responding to any complaints resulting from the development operations. Contact details for the Site Manager shall be displayed on the noticeboard at the entrance of the site. The Site Manager shall advise the SQEP of any soil disturbance complaints received and the SQEP shall provide technical advice to the Site Manager on how to respond.

11.0 Unexpected Discovery Protocols

While the previous investigations have provided an indication of the types of contaminants that may be encountered during earthworks, it is recognised that during future earthworks relating to the construction of the OBDA of the site, contamination (other than that already identified) may be encountered. All site workers shall be aware of the procedures that must be followed in the event that unexpected contamination is discovered.

If additional metal sheeting or abandoned farm machinery is encountered during works, the affected area shall be delineated with a 2 m exclusion zone around the source material. All soils and materials within the delineated area shall be excavated to a minimum depth of 0.5 m below ground level (bgl) and disposed of offsite. Further validation sampling shall be carried out to confirm the zinc and cadmium concentrations of the remaining material comply with the applicable soil criteria.

Additional typical indicators of contamination may include but not be limited to:

- ✧ Unusually stained or discoloured soils
- ✧ The presence of refuse or household rubbish
- ✧ Any unusual odours or vapours
- ✧ Asbestos-containing materials (e.g., construction debris and/or cement sheet fragments)
- ✧ Buried containers or drums

If visual or olfactory indicators of possible contamination are encountered, beyond that shown on Figure 1, then all works in the area shall cease immediately and the site manager must be contacted, and HCC notified. The area of concern must be fenced/barricaded/isolated and (as necessary) covered with a tarpaulin to prevent other site workers from entering the area.

The contaminated land consultant/SQEP shall be contacted to determine the appropriate course of action and the possible need for further investigation.

12.0 References

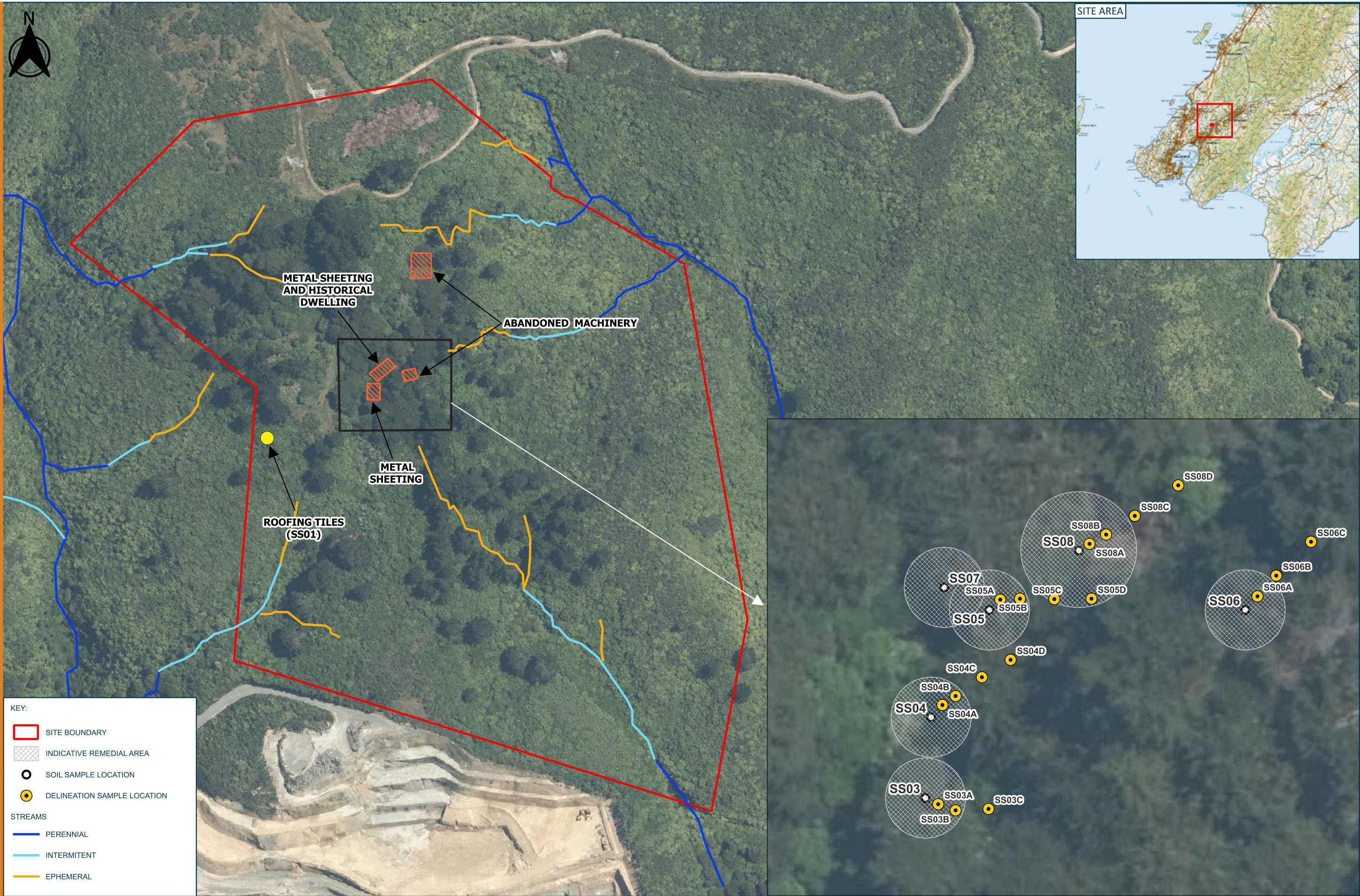
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FIGURE

FIGURE 1: SITE LOCATION AND SAMPLING PLAN

PROJECT

A035680020: WINSTONE AGGREGATES LIMITED - REMEDIAL ACTION PLAN - PROPOSED OVERBURDEN DISPOSAL AREA



Photograph 1: Example of sheeting which may be found.



Photograph 2: Example of roof structure.



Photograph 3: Example of covered metal which may be found.



Photograph 4: Example of machinery which may be found.