TOITŪ TE WHENUA

LAND INFORMATION NEW ZEALAND

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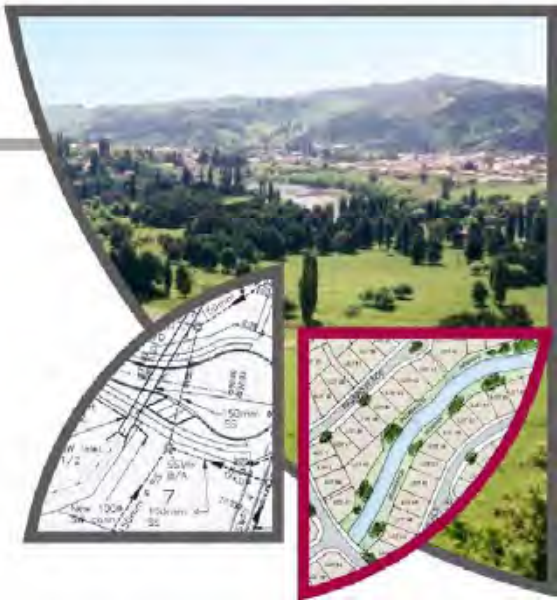

146 TE MAWHAI ROAD, TE AWAMUTU

FORMER TOKANUI HOSPITAL
DEMOLITION AND REMEDIATION
REMEDIAL ACTION PLAN – CONTAMINATED SOIL

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146 TE MAWHAI ROAD
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REMEDIAL ACTION PLAN – CONTAMINATED SOIL

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REMEDIAL ACTION PLAN - CONTAMINATED SOIL

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ACRONYMS

ACM	Asbestos Containing Material
ANZECC	Australian and New Zealand Environment and Conservation Council
AoC	Areas of Concern
BTEX	Benzene, Toluene, Ethylbenzene and Xylenes
CFG	CFG Heritage Ltd
CLMGs	Contaminated Land Management Guidelines
CLMG 2	Contaminated Land Management Guidelines No. 2 Hierarchy and Application in New Zealand of Environmental Guideline Values (Revised 2011)
CoPC	Contaminants of Potential Concern
CSM	Conceptual Site Model
DDRMP	Demolition, Deconstruction and Remediation Management Plan
DSI	Detailed Site Investigation
ECSP	Erosion and Sediment Control Plan
FTL	Fraser Thomas Ltd
HAIL	Hazardous Activities and Industries List
HNZPTA	Heritage New Zealand Pouhere Taonga Act 2014
HPL	Highly Productive Land
HSNO	Hazardous Substances and New Organisms Act 1996
LBP	Lead Based Paint
LINZ	Toitū Te Whenua Land Information New Zealand
LNAPL	Light Non-Aqueous Phase Liquid
LUC	Land use capability
MfE	Ministry for the Environment
NESCS	National Environmental Standard for Assessing and Managing Contaminants in Soil
PAHs	Polycyclic Aromatic Hydrocarbons
PCB	Polychlorinated biphenyls
PCE	Perchloroethylene
PID	Photo Ionisation Detector
PPE/RPE	Personal/Respiratory Protective Equipment
ppm	parts per million
PSI	Preliminary Site Investigation
RAP	Remedial Action Plan
ROR	Remedial Options Report
SAP	Sampling Analysis Plan
SSRA	Site Specific Risk Assessment
SSM	Site Specific Managed
SSRR	Site Specific Rural Residential
SQEP	Suitably Qualified and Experienced Practitioner
SVOC	Semi-volatile organic compounds
SVR	Site Validation Report

SPLP	Synthetic Precipitation Leaching Procedure
TBig	The Building Intelligence Group Ltd
TCE	Trichloroethylene
TCLP	Toxicity Characteristic Leaching Procedure
TPH	Total Petroleum Hydrocarbons
VOC	Volatile organic compounds
WAC	Waste Acceptance Criteria
WDC	Waipa District Council
WRC	Waikato Regional Council
WWTP	Wastewater Treatment Plant
XRF	X-Ray Fluorescence

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REMEDIAL ACTION PLAN - CONTAMINATED SOIL

1.0 INTRODUCTION

The former Tokanui Psychiatric Hospital (the site) is approximately 80 hectares (ha) in area and is located roughly 14 km southeast of Te Awamutu, Waikato. The site was developed in 1912, and operated through to 1998. It contains 74 buildings, a decommissioned wastewater treatment plant (WWTP), swimming pool, eight substations, closed landfill (also referred to as the 'existing disposal site') and substantial roading and underground infrastructure and services. The site location and extent are shown in Figure 1 below.

Figure 1: Site location and extent

The former Tokanui Hospital is a deferred selection property in the Ngāti Maniapoto Deed of Settlement (the Deed) and forms part of the Maniapoto Settlement Claims Act 2022, which gives effect to the Deed. The Tokanui situation is unique as no other property included in a Treaty settlement has required demolition and remediation on this scale, or required a commitment to undertake remediation in a deed of settlement.

The land within the site boundary is presently in a degraded state, arising from the hospital buildings and associated infrastructure still present on it. Many of the former Tokanui Hospital buildings remain, and these buildings are generally in very poor condition. While a range of potential site contamination issues have been ruled out through earlier investigations (summarised in Section 4 below), the primary contamination issues relate to localised contamination of soil around the building perimeters (forming a 'halo' around the buildings) from lead-based paint and/or asbestos. Accordingly, the Deed requires that before offering the land to Ngāti Maniapoto, the Crown must demolish and remove buildings and structures, and remediate the land, leaving it in a grassed state.

More specifically in relation to soil contamination, under Section 9.3 of the Deed, the Crown has agreed to use best endeavours to remediate the Site to:

a) 85% of the Site area (being the total land area of the Tokanui Hospital deferred selection properties) to "the rural residential remediation standard" (defined as "an acceptable standard or standards for rural residential use chosen in accordance with Contaminated Land Management Guidelines No. 2 Hierarchy and Application in New Zealand of Environmental Guideline Values (Revised 2011) (CLMG 2), or derived through a site-specific risk assessment); and
b) A contiguous area not exceeding 15% of the total Site area to "the managed remediation standard" (defined as "an applicable standard or standards for recreational use chosen in accordance with CLMG 2, or derived through a site-specific risk assessment, but where use may be subject to controls (for example, in relation to excavating, erecting buildings, or domestic gardening)".

The Deed sets out a process that, prior to demolition and remediation, commits the Crown to a number of reports including a Detailed Site Investigation (DSI) and Remedial Action Plan (RAP).

This RAP has been prepared to satisfy part of the requirements of the Deed and to provide the remedial requirements for the demolition and remediation of the site occupied by the former Tokanui Hospital in relation to soil contamination. It also provides a detailed summary of the previous investigations completed by Fraser Thomas Ltd (FTL) and other consultants and outlines the areas and volumes of soil requiring management and/or removal (excluding previous remedial works up to 2018) during the demolition and remediation of the site.

In this report, the following terminology is used:

- Low Level contamination exceeds the Site-Specific Rural Residential (SSRR) Remedial Standard but not the Site-Specific Managed (SSM) Remedial Standard;
- Moderate contamination exceeds the SSM Standard;
- High level contamination exceeds Class B criteria for asbestos contamination.

No high level contamination has been found on-site from the investigations undertaken to date. Hence, this classification is defined here solely to capture any such material that may be found by accidental discovery during the works.

Preparation of this report has been managed, reviewed, and approved by a FTL Suitably Qualified and Experienced Practitioner (SQEP), as defined in the Resource Management (National Environmental Standard for Assessing and Managing Contaminants in Soil to Protect Human Health) Regulations 2011 (NESCS). This report has been peer reviewed by an external SQEP, Dr Dave Bull of HAIL Environmental Ltd (HAIL Environmental), with their review comments incorporated into this final version.

2.0 RATIONALE, OBJECTIVES AND SCOPE OF WORK

The main rationale and objectives for this investigation were:

- To review and summarise existing contaminated land information for the subject site;
- To prepare a RAP to address potential human health and environmental risks during the proposed land disturbance works associated with the site remediation; and
- To deliver the project in alignment with Te Ao Māori, incorporating cultural considerations as a dimension in their own right as part of the remediation of the site.

3.0 SITE DETAILS

3.1 LOCATION, PROPERTY DETAILS AND LAND USE

Details of the site where the demolition and remediation of damaged and/or contaminated infrastructure is proposed are listed in Table 1, including the current land use.

Table 1: Property Details

Registered Owner	Address	Legal Description	Title	Area (ha)	Land Use
His Majesty the King	149 Te Mawhai Road, Tokanui	Section 1 SO 44852	N/A	~80 ha	Rural Zone (Waipa District Plan, 2019 – Map 12)

3.2 TOPOGRAPHY

The site is located in a predominantly undulating area, with some hills and gullies. The elevation ranges between 29 m and 46 m above sea level.

3.3 SOILS

The Manaaki Whenua Landcare Research 'Soils Map Viewer' (Manaaki Whenua Landcare Research, 2022) identifies two main soil types underlying the Site, Orthic Gley soils (in blue) and Orthic Allophanic soils (in grey), as shown in Figure 2 below.

GHD (2022) advised that Landcare Research provides the following definitions and descriptors for these soil types:

*"– **Orthic Gley Soils** are ordinary Gley Soils, usually found on older land surfaces. They are strongly affected by waterlogging and have been chemically reduced. They have light grey subsoils, usually with reddish brown or brown mottles. The grey colours usually extend to more than 90 cm depth. Waterlogging occurs in winter and spring, and some soils remain wet all year (Manaaki Whenua Landcare Research, 2022).*

*– **Orthic Allophanic Soils** are deep Allophanic Soils, dominated by allophane (also imogolite or ferrihydrite) minerals. These stiff, jelly-like minerals coat the sand and silt grains and maintain porous, low-density structure with weak strength. The soils are identified by a distinctly greasy feel when moistened and rubbed firmly between the fingers. The soil is easy to dig and samples crumble easily when crushed in the hand (Manaaki Whenua Landcare Research, 2022). Due to their large specific surface area and small particle size, allophanes are very reactive and have a high ion exchange capability This may lead to charged contaminants such as metal ions adsorbing to the surface of these grains (Parfitt, 1990; McLaren & Cameron, 1996)."*

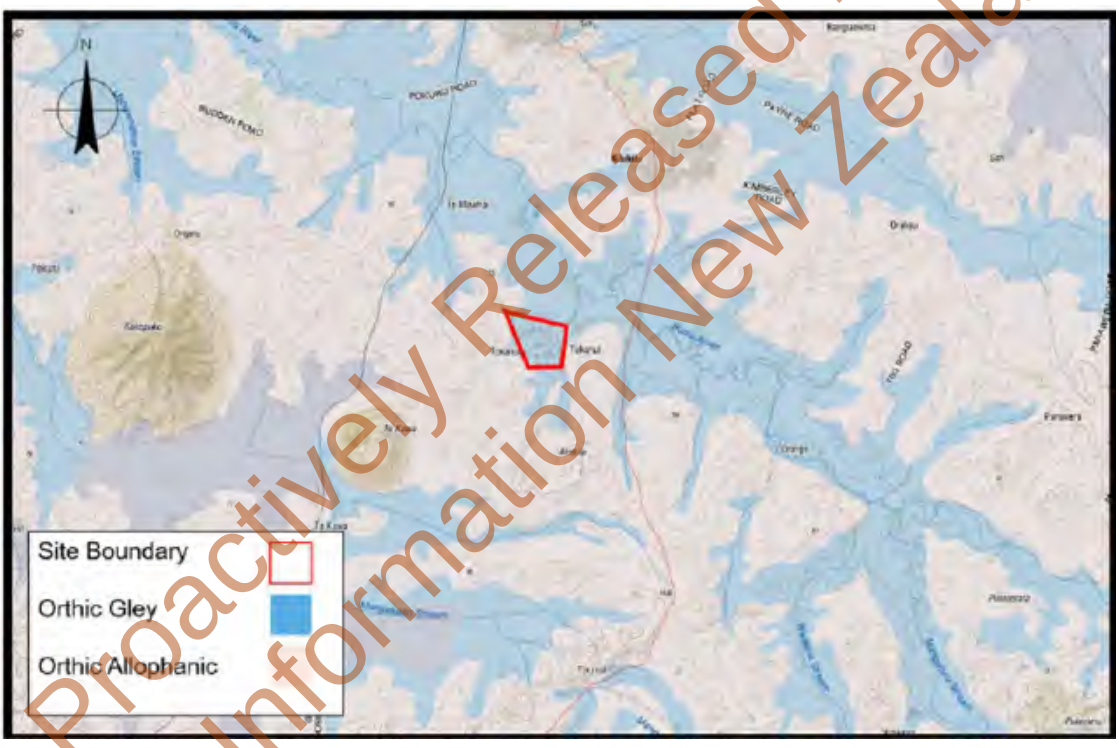

Figure 2: Published soil map (Source: GHD, PSI, May 2022)

Land use capability (LUC) maps (refer Figure 3) indicate that most of the site falls under LUC Class 2 which is defined as "*very good multiple-use land, slight limitations, suitable for cropping, viticulture, berry fruit, pastoralism, tree crops and forestry*". However, Soil and LUC Consultant, Dr Scott Fraser, has advised that the LUC maps do not accurately reflect the presence of the hospital on the Tokanui village land in the 1980s, which will have affected the land use capability.

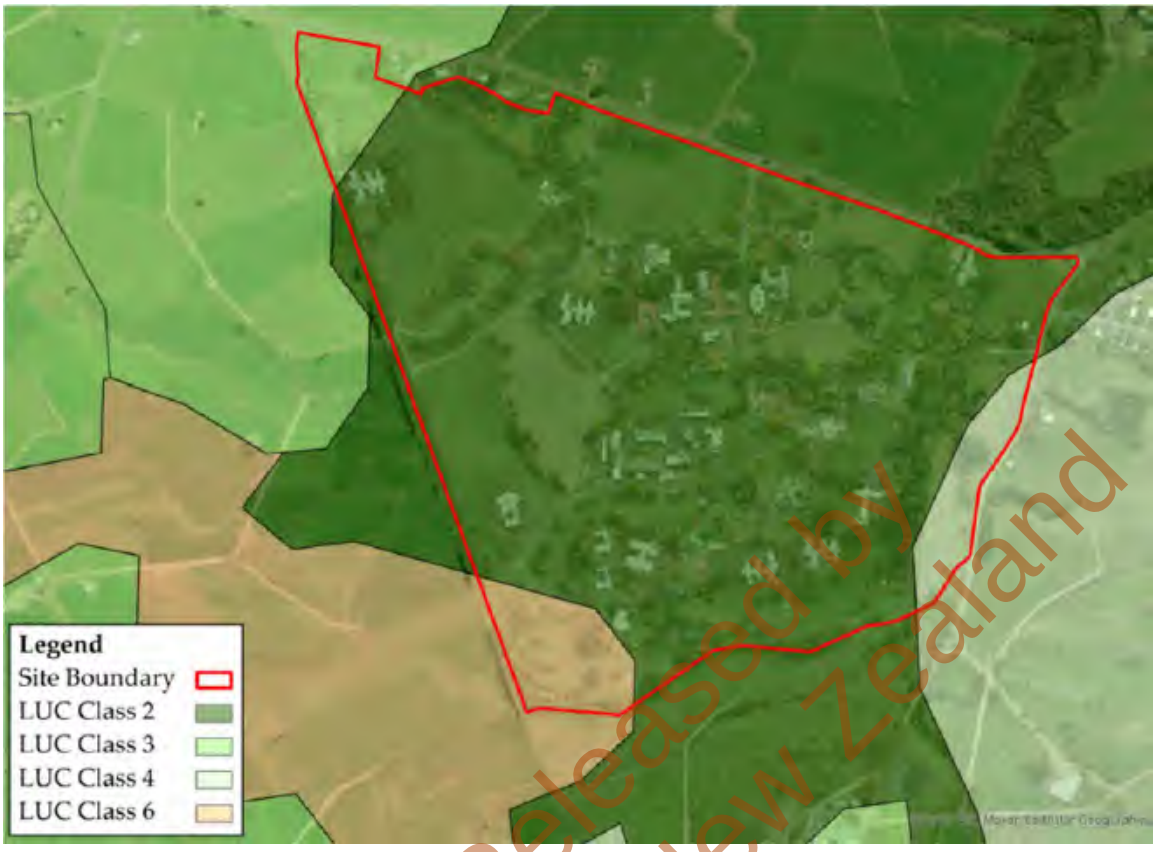

Figure 3: Land Use Capability Map – Tokanui Hospital Site

3.4 GEOLOGY

The Institute of Geological and Nuclear Sciences geological web map (NZ 1:250,000) indicates that the site is predominantly underlain by middle Pleistocene to late Pleistocene River deposits consisting of locally derived pumiceous clays, sandy clays and gravels of the Tauranga Group.

A small portion of the former Tokanui Hospital are underlain by early Pleistocene to middle Pleistocene River and igneous deposits consisting of alluvium dominated by primary and reworked, non-welded ignimbrite of the Walton Subgroup, which is part of the Tauranga Group.

Figure 4 below shows the underlying geology of the area.

Figure 4: Published Geology Map (source: GHD, PSI, May 2022)

3.5 GROUNDWATER

The Waikato Regional Plan defines the region's aquifers. They are typically based on catchments rather than on hydro-stratigraphy (distinct hydrogeological units). The Site is located within the area classified by Waikato Regional Council, WRC as the Waipa Aquifer under Section 3.3 of the Waikato Regional Plan (Map 11) (WRC, 2012). This aquifer underlies an area of approximately 1,420 km^2 within the Waikato Region and is considered to be a regional aquifer, comprising groupings of multiple units of undifferentiated unconfined and leaky aquifers (GHD, 2022).

An Environment Waikato database search was done for all groundwater bores within 1 km radius of the landfilling area, the results of which are shown on Figure 5. This search showed there are six groundwater bores within 1 km of the site, of which only one is located downgradient (north) of the landfill. This bore (Bore 72, Station 10906) uses water for nursery irrigation (abstraction depth not stated) according to the Environment Waikato database. However, the nursery is part of the Pūniu River Care operation and they have advised by email from Shannon Te Huia (8 August 2024) that they no longer use this bore, but instead have a water surface take from the Wharekōrino Stream as described further below (and is illustrated in closer detail in Figure 9). There is one further downgradient bore just outside the 1 km limit - Bore 72, Station 4997 – which takes water for household supply and stock watering purposes, according to the Environment Waikato database.

Figure 5: Environment Waikato Groundwater Bore Database Search Results

3.6 SURFACE WATER

CFG Heritage Ltd (CFG) (July 2024) refer to the hospital site being located at the junction of three waterways, noted in ML 6748 drawn in 1889 as Makaroa, Tarutahi and Wharekōrino Swamps as shown in Figure 6.

Figure 6: Tokanui Hospital Site – Historical Plan showing former swamps (from CFG, July 2024)

Of these swamps, the Wharekōrino Stream is still present and flows through the stie from south to north, separating the hospital area from the historical existing disposal site area, which is located on the eastern portion of the Site. This stream includes swamp like features, while the Tarutahi Swamp appears to be part of the Wharekōrino Stream above the site, and the Makaroa Swamp is no longer present.

Investigation of the Site's stormwater system has found that runoff from upgradient farmland to the west of the site has been piped through the site as shown in Figure 7 below, meaning these historical watercourses have been infilled and also realigned as the stormwater pipe system alignment differs from the historical swamp/watercourse alignment.

Figure 7: Tokanui Hospital Site – Current Trunk Stormwater Reticulation conveying upgradient runoff through Site

Wetlands identified on the site from the ecological investigation (SLR, 2024), taking into account the latest definition of what is a natural inland wetland from the National Policy Statement - Freshwater Management (January 2024) are shown in Figure 8.

Figure 8: Tokanui Hospital Site – Natural Wetland Extents from SLR Ecological Assessment

Pūniu River Care have a resource consent AUTH144702.01.01 valid till October 2037 to take water from the Wharekōrino Stream for irrigation of a 3-ha plant nursery during September-March inclusive, based on a daily maximum take of 100 m^3 and total annual take of not more than 10,000 m^3. The inlet structure is located on the Wharekōrino Stream at the location of the red dot shown below in Figure 9, with Bore 72, Station 10906, indicated by a yellow dot.

Figure 9: Pūniu River Care Surface Water Take Inlet Location (red dot) on Wharekōrino Stream; yellow dot is location of their bore which is no longer used

3.7 PROPOSED DEVELOPMENT

No development is currently proposed for the subject site. This RAP has been prepared to provide the remedial requirements for the demolition and remediation of the site occupied by the former Tokanui Hospital in accordance with the Schedule 9 of the Property Redress Schedule of the Deed – the Tokanui Hospital Deferred Selection Process. As noted previously, the requirement for demolition and remediation forms part of the Maniapoto Settlement Claims Act 2022, which gives effect to the Deed.

4.0 PREVIOUS INVESTIGATIONS

A number of contaminated land investigations have been undertaken on the former hospital site in recent years. This section covers the following:

(a) Section 4.1 - Overview of earlier reports that were completed over the period 2015-2019 and more recent complementary reports (2023-24), describing their relevance.

(b) Sections 4.2-4.3 – Overview of PSI and DSI work undertaken by GHD (2023-24), building on the earlier reports completed before then, referred to in section 4.1.

(c) Section 4.4 – Overview of further work undertaken by FTL and HAIL Environmental, addressing identified gaps in the GHD work.

(d) Section 4.5 – summary of the site specific remedial standards developed by HAIL Environmental, followed by characterisation of the soil contamination present on-site from all the relevant investigations referred to above against these standards. This section also includes a summary of potential HAIL activities previously identified that were confirmed to not apply to the site. The complete compiled results from relevant former contamination investigations by other consultants have been assessed against the site specific remediation standards in spreadsheet format in Appendix C, while these consultants' original results and corresponding figures are included in Appendix D. The additional FTL/HAIL Environmental sampling results are set out in the FTL/HAIL Environmental Addendum DSI report (2024) and are not included in this RAP. The combined results have been used in determining the contaminated soil remediation requirements set out in this report.

4.1 EARLIER AND COMPLEMENTARY REPORTS

Table 2: Summary of Earlier and Complementary Reports

Report	Relevance
Opus Ltd (2015a) – Tokanui Psychiatric Hospital Site Scoping, Contaminated PSI Report	Initial contamination assessment of the Site and potential effects on the proposed site use (pasture), for inclusion in the Opus Demolition Plan. The PSI included a review of the Site's history to understand likely HAIL activities at the Site, identified key Areas of Concern (AoC) and likely Contaminants of Potential Concern (CoPC) arising from the identified HAIL activities, and developed a Conceptual Site Model (CSM).
Opus Ltd (2015b) – Tokanui Hospital	Summarises findings from March 2015 PSI and associated material quantities estimates: 42,000 m^3 general demolition materials; 9,300 m^3 contaminated soil and 25,000 m^3 external paving and

Report	Relevance
Demolition Waste Management Plan	concrete, but with no supporting details on the derivation of these quantities.
Opus Ltd (2015c) – Tokanui Building Inspection Reports	Building inspection reports, including assessing whether lead paint and asbestos are potentially or actually present.
AECOM (2018a) – Tokanui Hospital Environmental Compliance Observations	Outline of environmental compliance issues identified by AECOM Ltd (AECOM) and recommended immediate and longer-term actions to address these issues, with many of these actions being addressed in subsequent AECOM work.
AECOM (2018b) – AST Removal and Mechanical Pit Dewatering	Documents AECOM's supervision of ECL Group Ltd (contractor) engaged to empty and remove two above ground storage tanks adjacent to the former Boiler House (building B68); empty and remove four waste oil drums and containers outside the former Assistant Engineer's Office (building B66) and within the former petrol station (building B16); and dewater the mechanical pit in the former petrol station. Works were undertaken in Jul 2018, with 16,000 litres of waste oil and water removed from these sources (including dewatering of the UST from the former Store (building B65) covered under AECOM (2018c) below. No sampling or other analysis of soil or water were undertaken as part of this investigation. Refer GHD PSI for further details.
AECOM (2018c) – UPSS Removal Former Tokanui Hospital	Documents removal of a 5,000 L underground petroleum storage system (UPSS) in an unlined pit and associated fuel lines located near the former store (building B65) by ECL Group in July 2018, associated soil sampling and a risk assessment. Approximately 20 tonnes of hydrocarbon impacted soil and bedding material was removed from the southern wall of the tank pit site and disposed of at the Hampton Downs Landfill, while appropriate validation sampling was also undertaken. Refer GHD PSI for further details.
AECOM (2018d) – PSI Gap Assessment	Review of Opus PSI (2015) to identify any data gaps and make updates, based on other 2018 investigations. Refer GHD PSI for further details.
AECOM (2018e) – UPSS Decommissioning at Tokanui Hospital	Documents decommissioning and removal of UPSS from the former petrol station (building B16), associated soil sampling and a risk assessment. Two 10,000 litre steel tanks (one petrol, one diesel) in good condition, installed circa 1979, and associated lines and dispensers were removed in July 2018 by Petroleum Services Limited. Approximately 31.4 tonnes of minor hydrocarbon impacted material was removed from the Site and disposed of at the Hampton Downs Landfill; validation soil sampling was also undertaken. Refer GHD PSI for further details.
AECOM (2018f) – Tokanui Hospital Site Remediation: Options Description and Cost Estimation	High level analysis of three demolition options to understand the pros/cons of each option and potential range of future costs, based on do-minimum approach versus complete site remediation to an agricultural land use scenario with demolition waste managed either offsite or onsite.
AECOM (2019a) - Tokanui Hospital Site Remediation: Onsite	Onsite land disposal feasibility study to identify if there were any areas onsite suitable for the management of demolition waste materials and any associated significant regulatory issues. The

Report	Relevance
Land Disposal Feasibility Study	assessment was based on an estimated demolition waste volume of 156,000 m^3 (loose measure), onsite disposal facility of minimum volume 80,000 m^3 and assumed waste acceptance criteria (WAC), which were materials based rather than contaminant based, and included asbestos and lead contaminated soils. Five potential sites were identified. This study did not take into account cultural or archaeological sites of significance or some other constraints (e.g. wetlands), which have since been identified through further assessments undertaken by LINZ.
AECOM (2019b) – Tokanui Hospital: Detailed Site Investigation (draft)	DSI of Site to assess soil and contaminant conditions and associated risks to human health and the environment, based on an agricultural land use, in line with district plan zoning. Primary focus of soil sampling was to get a preliminary understanding of the horizontal and vertical extent of soil contamination as a result of hazardous building materials – namely asbestos roofing and lead based paint; however, it did not investigate other potential HAIL activities identified in earlier reports. Refer GHD PSI for more details.
AECOM (2019c) – Tokanui Hospital Site Remediation – (refined) Detailed Options Assessment	Revision of Oct 2018 Detailed Options Assessment to provide a higher level of cost certainty, incorporating the findings from AECOM's DSI for the Site, a review of the existing Site Asbestos Register and materials quantity assessment. Costings spreadsheets were developed for each option on a "measure and value" approach (i.e. quantity x rate = cost), with rates provided by a number of North Island demolition contractors.
WSP (2019a) – Tokanui Village and Hospital Wastewater Upgrade DSI Investigation	DSI of Hospital WWTP ahead of WWTP decommissioning. Desktop study identified the potential use of oils and solvents at the WWTP, biological waste from the wastewater treatment process, and asbestos. Sampling results found heavy metals above background concentrations, but below applicable human health guideline values. Volatile organic compounds and asbestos were not detected in any of the building samples.
4Sight Consulting Ltd (2023) – Asbestos and Lead Paint Building Investigations	Comprehensive assessment of all buildings at the Site for ACM and lead-based paint to better quantify the location, extent and magnitude of hazardous building materials across the site. The building surveys specifically identified asbestos within the structures so it can be removed safely prior to demolition commencing, and identified lead-based paint within the structures to inform waste characterisation and handling requirements. Due to the extensive scale of the works, the surveys were provided across four separate reports, relating to four separate areas, with these areas being established for reporting purposes only. As part of the surveys, 4Sight (now SLR Consulting Ltd) have produced plans of individual buildings showing their findings, along with supporting spreadsheets.
Fraser Thomas Ltd (2023) – Tokanui Hospital Horizontal Infrastructure Investigation	Investigation and assessment of the condition and extent of all existing "horizontal infrastructure" on the Site, comprising all roading and associated paved areas; one retaining wall; water, stormwater and wastewater reticulation; building heating system, comprising an underground concrete ducting system, with steam and condensate pipes that were formerly used to heat the Site buildings; and utilities – power and telecom. Investigation involved a desktop review of available information and comprehensive site investigations

Report	Relevance
	(including site walkovers, pavement test pits and deflection measurements, CCTV (closed circuit television) and underground services detection, hydro excavation and topographical survey), followed by compiling updated horizontal infrastructure plans and assessment of materials quantities. Multi-criteria assessment and costing of a range of remedial options for each type of horizontal infrastructure, leading to selection of a preferred option for each infrastructure type with final options confirmed following engagement with iwi and approved by joint-Ministers (refer LINZ Iwi Engagement report, November 2024).
Fraser Thomas Ltd (2024) – Former Tokanui Hospital – Existing Disposal Sites – Intrusive Investigation Report	Intrusive investigation of existing disposal sites, determining the horizontal and vertical extent of the landfilled area, the nature and estimated depth/volume of the deposited fill materials, overlying cap and topsoil details and key issues and risks.

The above list is not an exhaustive list of investigations undertaken on the site, but only covers those investigations that have identified contamination requiring management or remediation.

More recent contamination investigations are outlined and detailed below.

4.2 PRELIMINARY SITE INVESTIGATION – GHD (OCT 2023)

GHD undertook a PSI of the entire Site in order to comply with Ministry for the Environment (MfE) Contaminated Land Management Guidelines (CLMGs). This involved:

(a) reviewing available information and data from existing reports;
(b) identifying and closing out any data gaps;
(c) identifying all potential sources of contamination on the MfE Hazardous Activities and Industries List (HAIL activities) which may have occurred at the Site for the purposes of a change of land use under the NESCS from hospital back to rural land and compliance with the terms of the Deed; and
(d) refinement of the conceptual site model developed by AECOM to reflect PSI findings and to inform design of the DSI intrusive investigation Sampling and Analysis Plan (SAP).

The PSI identified a total of 43 locations where HAIL activities potentially or actually occurred on-site.

4.3 SAMPLING ANALYSIS PLAN & DSI – GHD (JAN 2024)

GHD developed a Sampling Analysis Plan (SAP) based on their PSI findings and undertook a DSI of the entire Site over the period March to September 2023. This report provides a factual description of their findings. While these reports were prepared as two separate deliverables for LINZ, the SAP is included as an appendix in the DSI.

Sampling was undertaken in accordance with the SAP, with some minor departures. GHD undertook soil sampling at 192 locations and sediment sampling in nine locations. Overall, 329 samples were collected from across the Site, the majority of which were analysed at an IANZ accredited lab for a range of analytes, as explained further below.

As part of this work, HAIL Environmental Ltd (HAIL Environmental) undertook X-Ray Fluorescence (XRF) analysis on 95 transects and individual sampling points, and composite samples from 10 areas of the Site. A combined XRF and leachate analysis was undertaken in the halos of three buildings. HAIL Environmental Ltd samples were analysed in situ with an XRF, and composite samples were collected with a push sampler and composited on site.

The GHD/HAIL Environmental field investigations found that the underlying geology generally comprised clays and sands in the northern part of the Site, and clay in the southwestern portion of the Site. The observed geology is broadly consistent with the published soil and geological information, although allophanic soils appear to reach further north than the published soil data. Groundwater was encountered in one location at a depth of 2.1 m below ground level.

Demolition fill was observed in areas of the Site where demolition had historically occurred, and in the horticultural area. Paint flakes were observed around several buildings.

Samples were delivered to Hill Laboratories in Hamilton for analysis of the contaminants of concern identified during the PSI, namely:

(a) Heavy metals, these being common contaminants associated with human activities;
(b) TPHs (Total Petroleum Hydrocarbons), a screening analysis used to assess the presence of hydrocarbons in soil;
(c) Benzene, Toluene, Ethylbenzene and Xylenes (BTEX), a group of contaminants associated with petrol;
(d) PAHs (Polycyclic Aromatic Hydrocarbons), a group of contaminants associated with diesel fuel and incomplete burnt material;
(e) PCB (Polychlorinated biphenyls), a group of contaminants associated with electrical transformers;
(f) VOC (Volatile organic compounds), a group of hydrocarbon contaminants associated with fuels, solvents and cleaning products;
(g) SVOC (Semi-volatile organic compounds), a group of hydrocarbon contaminants which are commonly associated with industrial processes;
(h) Pesticides, from former agrichemical use;
(i) Dioxins, as an impurity in some insecticides (e.g. 2,4,5-T) and byproduct of incineration; and,
(j) Asbestos, from building materials.

Screening for volatile compounds with a photo ionisation detector (PID) did not detect the presence of soil vapours around the laundry (building B74) (e.g. associated with dry cleaning chemicals) or the former service station (building B17) (associated with fuels). Low levels of hydrocarbons were identified with the PID near where the former Store (building B65) fuel

bowser was located (with results ranging between 27 – 28 parts per million (ppm)). Of the 128 samples analysed for asbestos, 12 samples had detections of asbestos.

The soil and sediment sampling results are discussed and interpreted in the HAIL Environmental Site-Specific Risk Assessment (SSRA) Report.

4.4 SUPPLEMENTARY DSI – FTL & HAIL ENVIRONMENTAL (2024)

Following review of the combined AECOM and GHD soil sampling locations and results, FTL and HAIL Environmental undertook an additional supplementary investigation covering the following:

(a) Additional XRF transects around building halos with a relatively low sampling density;
(b) Additional asbestos sampling around building halos with a relatively low sampling density;
(c) Leachability testing of selected samples to assess potential environmental effects if these soils are left onsite, and potential leachability if disposed off-site to landfill.
(d) Investigation of other specific areas of interest – namely Area I (suspected fill area) and the Culvert 2 embankment.

Findings from this investigation have been reported in a combined report, which includes the earlier XRF sampling and leaching testing from 2023, undertaken by HAIL Environmental as part of the GHD DSI. These results are discussed and interpreted in the HAIL Environmental Site Specific Risk Assessment report. The findings of this investigation have been used to inform this RAP.

During this intrusive investigation work, a number of locations were identified where potential fill pockets may be present, potentially associated with historical demolition works or former site construction activities. These pockets appeared to be relatively minor and it was decided to handle them under the accidental discovery process during site demolition works. These locations are identified as NBA (non-building areas) 1-11 on Drawing 33097/R52.

Test pitting and soil testing in Area I found that the majority of this area comprises silts/sands with minor gravels and clay while construction and demolition debris and some asbestos contamination is present in isolated areas.

Investigation of the soils in the Culvert 2 embankment (see Drawing 33097/R52 for location) found that the majority of these soils are suitable for reuse as backfill material within the hospital as part of the demolition works, apart from some pockets of construction and demolition waste and some asbestos pipework that can be separated out as part of the embankment removal process.

4.5 SITE SPECIFIC RISK ASSESSMENT (SSRA) – HAIL ENVIRONMENTAL (APRIL 2024)

HAIL Environmental undertook a SSRA, that established remedial standards in accordance with the Deed requirements, defining these standards for the “rural residential remediation

standard" (85% of Site) and "managed remediation standard" (not more than 15% of Site). Specifically, the remedial standards have been derived to pose minimal risk to food production, to people who live on the land, and to soil quality. In relevant parts of the block, the standards also seek to protect water quality and wetland values including the associated mahinga kai (traditional value of food resources and their ecosystems). The resulting remedial standards are stated in Table 3.

Table 3: Site-specific Soil Contaminant Remedial Standards

Scenario	*Wetland*[1]	*Rural residential*[1]	*Managed*[1]
Arsenic	9	9	70
Cadmium	0.3	0.9	10
Chromium	100	150	150
Copper	50	280	280
Lead	70	120	460
Mercury	3	3	3
Zinc	150	350	450
DDT[2]	1	2	2
ACM[2]	0.01 %	0.01 %	0.01 %
AF/FA[2]	0.001 %	0.001 %	0.001 %
Fuels and Oils	No odour or staining	No LNAPL[2]	No LNAPL[2]
Benzene	0.11	0.11	0.11*
BaP_{eq}[2]	6	6	35
Hazardous Wastes	Absent	Absent	-

Notes:

1. **All concentrations milligrams per kilogram dry weight, except asbestos % weight for weight, fuels/oils and hazardous wastes.**
2. **DDT, dichlorodiphenyltrichloroethane, is an insecticide banned in the 1970s. ACM refers to fragments of asbestos-containing materials, up to 7 mm in size. AF/FA is asbestos fines (AF) and fibrous asbestos (FA). BaP_{eq} is a way of expressing the toxicity-weighted concentration of a group of chemicals called polycyclic aromatic hydrocarbons (PAHs) that are formed by incomplete burning of organic materials. LNAPL (light non-aqueous phase liquid) is a groundwater contaminant such as petrol, diesel or oil that is less dense than water and not very soluble in water.**

***Only within 100 m of surface water.**

The SSRA also reviewed and interpreted the sampling data collected by various parties to date.

Confirmed sources of soil contamination on the Site include:

(a) Buildings that had asbestos cement roofs or cladding panels, and/or had been painted with lead-based paints, resulting in localised contamination of the building HALOs.

Table 4: Building Halo Contamination

Item	Affected Building Halos
Buildings with heavy metal and asbestos halo contamination	B11, B13, B20, B21, B29, B30, B31, B33, B35, B55, B56, B58, B66, B74, B75, S1
Buildings with asbestos halo contamination (but no heavy metal contamination)	B67, S2, S8
Buildings with heavy metal contamination (but no asbestos contamination)	B2, B3, B5, B7, B8, B10, B12, B15, B16, B17, B18, B19, B21, B22, B23, B24, B26, B27, B28, B37, B38, B41, B43, B48, B49, B50, B51, B52, B59, B60, B63, B70, B71, B73, PAV, CHP

Note: Contamination in this context means any contaminant concentration exceeding the rural residential remediation standard (lower standard). BXX = building XX, SX = Substation X, PAV = pavilion, CHP = chapel.

Halo sampling identified elevated lead concentrations in shallow soils around buildings. Lead concentrations generally decreased with distance from the buildings and with depth in the soil. Zinc was also found at elevated concentrations in shallow soils around many of the buildings where lead was elevated – these generally decreased with distance from the building and with depth in the soil. Other heavy metals, particularly arsenic and cadmium, were also found at elevated concentrations in some locations.

Leachability sampling was completed on a subset of buildings, namely B2, B11, B12, B19, B21, B38, B55, B56 and B59. This comprised using Toxicity Characteristic Leaching Procedure (TCLP) testing and/or Synthetic Precipitation Leaching Procedure (SPLP) analysis for lead and zinc. The TCLP test simulates leaching from soil within a typical municipal landfill in the operating phase where acidic conditions dominate, whereas the SPLP test simulates leaching from rainfall in the natural environment.

On this basis, the average TCLP-leachable lead concentration for the most impacted samples – from the halos of buildings with high-lead paints at 0.5 m distance and 0.0 m depth (average total concentration 455 mg/kg) is predicted to be 0.59 mg/L, while the corresponding average SPLP is predicted to be 0.01 mg/L, which is significantly lower, indicating leaching from lead impacted soils on the Site is almost negligible.

(b) Farming. The GHD DSI included ten composite topsoil samples from ten open space areas around the Site and nine composite topsoil samples from the former gardening area in the northeast (COMPX). The AECOM investigation included six test pits from open space areas, TPA-E and TPZ. The sampling results showed that open space and agricultural area samples collected during the investigations meet adopted rural residential remedial standards and cleanfill criteria. One location, the Gardener Building (B59), did detect some acid herbicides at low levels, with subsequent repeat sampling by HAIL Environmental Ltd not detecting any acid herbicides, while organochlorine pesticides were detected in the composite sample but at trace level for total DDT (0.46 mg/kg).

(c) Using and storing fuels. The three AECOM tank removal reports showed that traces of fuels and oils remained in tank pits at the former service station (building B16) and former store (building B65), and under fuel lines. Those reports did not cover the workshop (building B16) or some parts of the fuel storage systems, which were picked up in the GHD DSI; again, only traces of fuels and oils were seen. Benzene was only detected once, at 1.5 mg/kg in one wall of the tank pit by the store, but is not expected to represent a risk to groundwater due to the presence of clay soils in this area. PAHs were not often found, and even then, were generally at trace levels. One exception was by the former Store (building B65), where 7.2 mg/kg of BAP (Eq) was recorded in a shallow soil sample. This appears most likely to be due to cross-contamination with historic asphalt at this location and is considered low risk.

(d) Landfilling. Intrusive investigation of the closed landfill on-site (existing disposal site) is covered in a separate report by FTL, and is outside the scope of the Deed in terms of remediation requirements. Various options have been considered for landfill repair and upgrade works and are reported on separately ion the Existing Disposal Site Repair and Upgrade Works report. The preferred option provides for depositing contaminated soil from the hospital demolition works within the landfill as part of the existing disposal site repair/upgrade works, which is relevant to this RAP, as explained further in the next section of this report.

(e) Localised hotspots: A number of localised hotspots were identified:

- Separate to the farming area mentioned above, localised hotspots within the greenhouse and shed footprints in part of the agricultural area in the north of the land, between buildings B34 and B35, where heavy metal concentrations are elevated. Remediation requirements are shown in drawing 33097/R57.
- Where waste has been buried around substation (building S2), around building B26 (rubble and other fill material, brick and wire), resulting in contamination with heavy metals. S2 is covered by NBA06 under the accidental discoverable protocols which is shown in RAP drawing 33097/R52. The Northern section of building 26 is covered by area NBA11 under the accidental discoverable protocols which is shown in RAP drawing 33097/R52. Remediation requirements for the “demolished structure” area are shown in drawing 33097/R58.
- Surface waste and dirt on hard standing near B66 contained asbestos, lead and zinc above managed remedial criteria, as well as substantially elevated arsenic and boron**.** This remedial area is covered and shown in RAP drawing 33097/R40. The surface waste and dirt on hard stand near B66 will be removed as part of the environmental clean of B66 - these works will all be above ground and no soil disturbance will occur.
- Area I: localised fill area, with some construction and demolition waste and asbestos contamination. Remediation requirements are covered in drawings 33097/R53 and R564.
- Culvert 2 embankment: Localised pockets of construction and demolition waste within existing compacted soil embankment across the Wharekōrino Stream. Remediation requirements are covered in drawing 33097/R55.

- Localised area with slightly elevated arsenic levels within the WWTP compound. Remediation requirements are covered in drawing 33097/R56.
- Some suspected fill pockets (11) around the site, referred to as non-building areas (NBAs). These are shown on drawing 33097/R52.

The last four hotspots are discussed in the FTL/HAIL Environmental Addendum DSI (2024).

Overall, the combined soil sampling undertaken across the Site indicates that it is generally **not contaminated**, with the principal contamination issues being limited to asbestos and lead from building materials in localised areas around building halos. Investigations to date have identified nothing that is likely to compromise the Deed; rather, the contaminants identified are limited in extent and can readily be remediated or managed. Soils around the buildings listed above will require some remediation to meet the adopted standards, while limited remediation or management is also required in the localised hotspot areas referred to above.

Importantly, Table 5, below identifies the potential HAIL activities listed in the GHD PSI that were found **not** to be an issue.

Table 5: Potential HAIL Activities from GHD PSI that are NOT an Issue

Location	Potential Contaminants of Concern	Results Summary and Interpretation
Dentist (B8)	Mercury	Only the closest sample B8 HA01 collected below the dentist building contained elevated mercury, 1.2 mg/kg at surface, which is below the rural residential remedial standard of 3 mg/kg. Mercury was much lower in composite sample COMP10 from below the dental surgery, at 0.11 mg/kg, and was not detected in the XRF transects adjacent to the dentist. Similarly, mercury levels were low in nearby AECOM samples S1-S5, at 0.07-0.12mg/kg. On this basis, it is considered that there is insufficient evidence for this contamination source.
Laundry (B74)	Trichloroethylene (TCE) and perchloroethylene (PCE), from possible dry cleaning	No chlorinated solvents were reported in soil samples from around B74, nor were there any field observations of volatile compounds (which would include solvents) or solvent odours (GHD DSI).
Morgues (old (B19) and new (B25)	Heavy metals (e.g. mercury)	No evidence found of any heavy metal contamination.
Potential Sheep dip	Heavy metals, pesticides	No evidence found of any sheep dip.

Sports turfs	Arsenic, copper, lead and organochlorine pesticides	Historic bowling green and tennis court areas were sampled, with arsenic within background levels and no OCPs detected.
Substations (S1-S8)	PCBs, used in transformer oils from 1940s-70s.	No PCBs found in samples around or under substations.
WWTP, water treatment plant, swimming pool	Heavy metals, asbestos	Soil samples from these locations overall met rural residential remedial criteria for heavy metal contaminants, and were not reported to contain asbestos.
Fire Station (B69)	PFOS/PFAS, Fire Retardants	GHD PSI interview with previous site manager revealed that a small water truck was only ever present on site, with water being the only substance used in the event of a fire (understand there were no fires onsite).

5.0 REMEDIAL OPTIONS

As discussed in section 4.5, the principal soil contamination issues on the site are limited to low-moderate level contamination, relating to asbestos and lead from building materials in localised areas around building halos.

After characterising the contamination at the site, various soil remedial options were selected for initial consideration to help inform the RAP. Selected options are listed below. For further information on each option, please see the corresponding section of the Remedial Options Report (ROR) referenced in the brackets after each option:

- Option 1: Use soil as backfill material within designated areas on the Site, for cavities created by the demolition process (Section 9.1.1);
- Option 2: Blending soils with cleaner material to acceptable concentrations (Section 9.1.2);
- Option 3: Stabilisation within a designated management area (Section 9.1.3);
- Option 4: Bioremediation and/or destruction (Section 9.1.4);
- Option 5: Containment within a designated management area (Section 9.1.5);
- Option 6: Containment within the existing Disposal Site (Section 9.1.6);
- Option 7: Off-site Disposal to Landfill (Section 9.1.7); and,
- Option 8: Combination of Options (Section 9.1.8).

Following initial consideration and engagement with iwi at multiple project hui as described in the Iwi Engagement Report (LINZ, 2024), of the above selection of potential remedial options for the site, these potential options were refined further, based on suitability characteristics determined by severity of contamination, and specific site constraints (see below Table 6).

Table 6: Options Summary, including Site Specific Constraints

Option	Name	Low Level Contaminated Soil		Moderate Level Contaminated Soil	Specific Site Constraints for each option
		No Asbestos	With Asbestos		
1	Reuse as Backfill	Suitable	Not Suitable	Not Suitable	Industrial area preferred site, to minimise potential HPL issues
2	Blending	Suitable	Not Suitable	Potentially Suitable (if asbestos free)	If blending moderate level soils to low level status, will result in larger volume of low-level contaminated soils, with possible Highly Productive Land (HPL) issues
3	Stabilisation	Not applicable – rejected for further consideration			
4	Bioremediation/ destruction	Not applicable – rejected for further consideration			
5	New containment cell on-site	Suitable	Suitable	Suitable	Industrial area is preferred location – avoids alluvial soils, HPL and stormwater issues
6	Utilise existing disposal site(s)	Suitable	Suitable	Suitable	Northern site within 65m of cluster of residential houses and ~40m from farm house on adjacent property
7	Off-site disposal	Suitable	Suitable	Suitable	None
8	Combination	Varies - see Table 13 in ROR			

In summary, Options 3 & 4 (stabilisation, and bioremediation/destruction respectively) were considered to be unviable, and were rejected for further consideration.

Following this, a multi-criteria assessment based on the Mauri model (See ROR Options Evaluation in ROR Executive Summary (FTL, August 2024) & Iwi Engagement Report (LINZ, November 2024)) was undertaken for the remaining remedial options. The assessment was undertaken looking at environmental, social, cultural, and economic criteria, with different weightings and a scoring system, consistent with the Mauri model, as explained in the ROR.

The result of the multi criteria assessment was Option 6 being the preferred option. This option presents an opportunity to add the low-level and moderate level soils to the existing landfill, while undertaking separate remedial works planned by LINZ at the same time (improved capping, groundwater diversion and flood risk reduction). This will result in decreased negative environmental, social and cultural effects of the existing disposal sites, compared with the existing situation, in a cost-effective way.

6.0 CONCEPTUAL SITE MODEL

The Conceptual Site Model (CSM) for the site in the context of this RAP focuses on the main exposure scenario that has been identified – risk to future site users.

Potential risks from contaminated soil to contractors during demolition and remediation works will be mitigated through all workers following the RAP requirements, including appropriate personal/respiratory protective equipment (PPE/RPE). Other potential risks from hazardous materials during demolition will be managed through the Demolition Management Plan and Asbestos Removal Control Plan (noting these plans are not related to contaminants in soil) and the Erosion and Sediment Control Plan (ESCP).

The above narrative is captured below in the CSM represented in Table 7 in tabular format and in visual format in Figure 10 below.

Post-demolition and remediation, contamination sources will have been removed, based on the current known extent of contamination, meaning the risk to future site users is significantly reduced or eliminated, following the remediation works. In addition, the existing disposal site will undergo repair and upgrade works as described in the associated FTL report (November 2024) and will continue to be monitored and managed by LINZ in perpetuity (see Aftercare and Management Plan (FTL, October 2024) for specifics relating to long term monitoring and management of the existing disposal site).

Table 7: Conceptual Site Model

Source	Contaminants of Concern	Potential Pathways	Potential Receptors	Pre-Remediation Pathway Complete?	Post-Remediation Pathway Complete?	Comments
Hospital buildings	Asbestos, heavy metals (notably lead, zinc, cadmium and arsenic)	Ingestion and dermal contact of contaminated soils; Inhalation of asbestos fibres or metals in contaminated dust	Future site users	Complete	Incomplete	Without remediation, the pathway will be complete. Post-remedial works, the pathway will be incomplete, as remedial works will address soil contamination issues, eliminating contamination sources through removal of hospital buildings and infrastructure, making site fit for purpose for future users
			Off-site residents	Potentially	Incomplete	Windblown dust during site demolition and remedial works may potentially affect off-site residents. However, this will be managed with appropriate controls. Post-remediation, this pathway will be incomplete.
		Stormwater runoff	Ecological receptors (flora and fauna)	Complete	Incomplete	Site has extensive stormwater drainage system (catchpits & pipes) that collects site runoff and discharges it to a small stream that flows into the Wharekōrino Stream near the former wastewater treatment plant, just upstream of Te Mawhai Road. Stream sediment sampling found slightly elevated levels of heavy metals, including cadmium, copper, lead and zinc, but well within ANZECC ISQG-low trigger values, other than two marginally elevated zinc concentrations (250 and 260 mg/kg vs trigger of 200 mg/kg) without allowing for any dilution. Removal of site buildings and soil remediation will eliminate this source. Sediment found in the stormwater system during demolition works should be tested for contamination and disposed of accordingly.
			Future site users	Potentially	Incomplete	Remedial works will address soil contamination issues and eliminate contamination sources through removal of hospital buildings and infrastructure, making site fit for purpose for future users.

			Off-site residents	Potentially	Incomplete	Remedial works will address soil contamination issues and eliminate contamination sources through removal of hospital buildings and infrastructure, making site fit for purpose for future users.
		Leaching of contaminants to groundwater	Downgradient water users;	Incomplete	Incomplete	Testing has shown both lead and zinc are not readily leached from site soils under natural conditions. As there is only one groundwater abstraction bore within 1km downstream of the site where water is consented for use for nursery irrigation at the Mangatoatoa Marae, it is considered unlikely that any potential contaminant migration via groundwater would pose an unacceptable risk to human health. Remedial works will eliminate contamination sources through removal of hospital buildings and infrastructure.
			Ecological receptors (flora and fauna)	Incomplete	Incomplete	Shallow groundwater from the site is likely to flow into the Wharekōrino Stream, with potential ecological effects covered above under stormwater.
Localised Hotspots	Demolition waste/ fill	Ingestion and dermal contact of contaminated soils; Inhalation of asbestos fibres or metals in contaminated dust	Future site users	Complete	Incomplete	Contamination relates to localised, well-defined areas. Without remediation, the pathway will be complete, but localised to small parts of the site. Post-remedial works, the pathway will be incomplete, as remedial works will address soil contamination issues isolating or eliminating the source from the receptor, making site fit for purpose for future users.
			Off-site residents	Potentially	Incomplete	Windblown dust during site demolition and remedial works may potentially affect off-site residents. However, this will be managed with appropriate controls. Post-remediation, this pathway will be incomplete.
		Stormwater runoff	Ecological receptors (flora and fauna)	Unlikely	Incomplete	Small pockets of demolition waste/fill found were all buried below ground level and unlikely to cause contamination of stormwater runoff. Post-remedial works, the pathway will be incomplete, as remedial works will address soil contamination issues, isolating or eliminating the source from the receptor, making site fit for purpose for future users.

			Future site users	Potentially	Incomplete	Remedial works will address soil contamination issues, while these contamination sources relate to historical activities that ceased many years ago, making site fit for purpose for future users.
			Off-site residents	Potentially	Incomplete	Remedial works will address soil contamination issues, while these contamination sources relate to historical activities that ceased many years ago, making site fit for purpose for future users.
		Leaching of contaminants to groundwater	Downgradient water users;	Incomplete	Incomplete	Contaminants in these sources are present at low concentrations and are unlikely to leach to groundwater. As above, there is only one groundwater abstraction bore within 1km downstream of the site where water is used for nursery irrigation at the Mangatoatoa Marae, it is considered unlikely that any potential contaminant migration via groundwater would pose an unacceptable risk to human health. Remedial works will address soil contamination issues, isolating or eliminating the source from the receptor.
			Ecological receptors	Incomplete	Incomplete	Shallow groundwater from the site is likely to flow into the Wharekōrino Stream, with potential ecological effects covered above under stormwater.

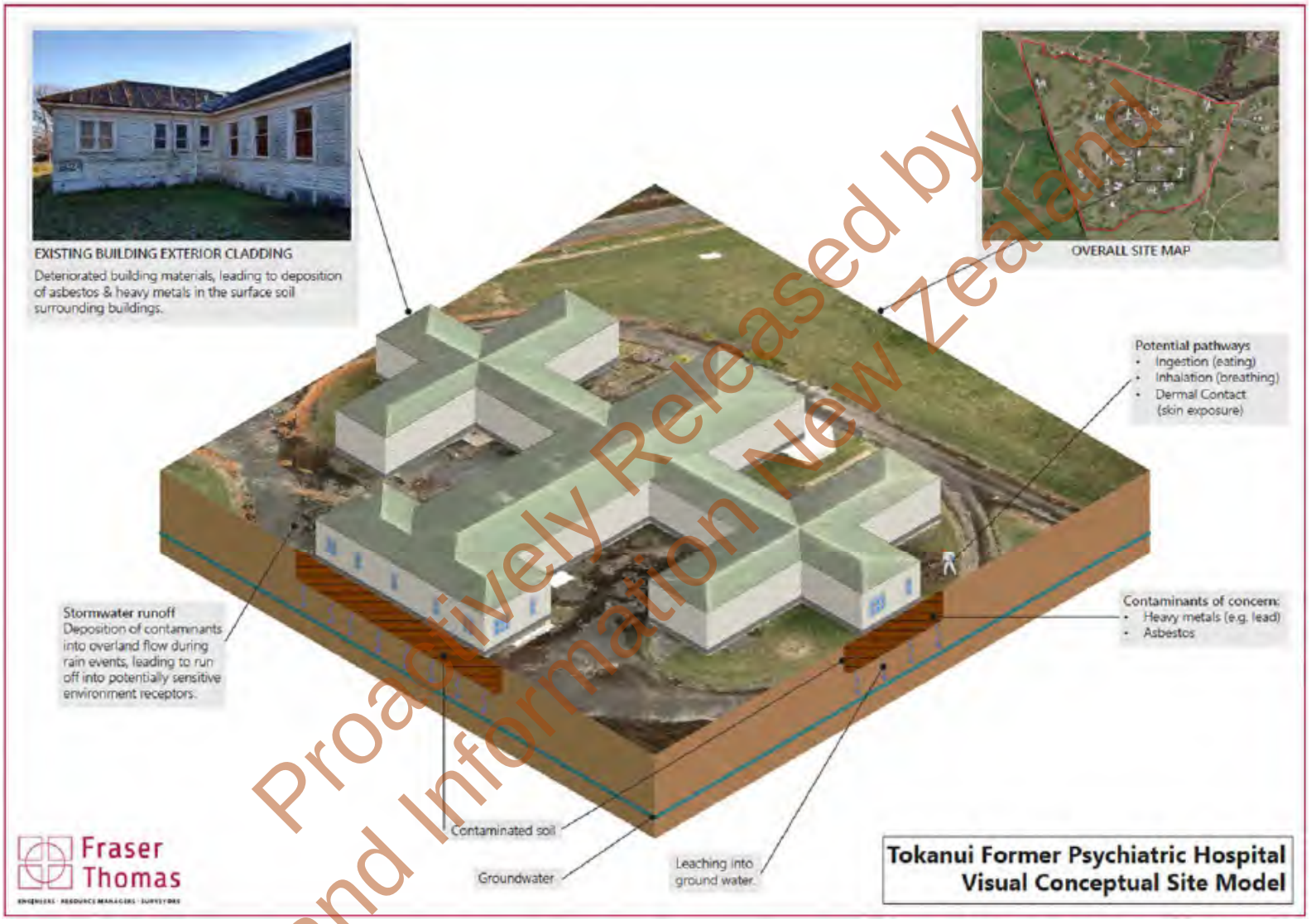

Figure 10: Visual CSM

7.0 REMEDIAL ACTION PLAN

7.1 INTRODUCTION

Contaminant concentrations in soils at the site vary based on distance from buildings and depth within the soil profile.

Extensive results analysis has been completed in order to define the areas and extents of contamination across the site. This has allowed site contamination to be categorised as below (Note: (2-6) cross-reference to Table 10 below):

- (1) Background Level (at or below the expected Background Concentrations for the site);
- (2) Low Level Contamination (Exceeding Site-Specific Rural Residential Soil Remedial Standard but not the Managed Remedial Standard);
- (3) Moderate Contamination (Exceeding Site-Specific Managed Remedial Standard);
- (4) Halo Scrape Contamination (further scrape to pick up any contamination that may have been deposited into building halo during building demolition works);
- (5) Inaccessible Uncharacterised Contamination (Material in void spaces that has not yet been categorised due to inaccessibility): and
- (6) Inferred asbestos contaminated soils around asbestos watermains.

In addition, "High level contamination" has been defined as contamination exceeding Class B criteria for asbestos contamination (refer section 7.7 for further details). No such contamination has been found on-site from the investigations undertaken to date. Hence, this classification is included here to capture any such material that may be found by accidental discovery during the works.

The RAP presented herein focuses on the remedial measures, validation sampling and the management of the soils with levels of contaminants elevated above the site-specific remedial targets that will be disturbed and removed during the proposed remedial activities.

7.2 ROLES AND RESPONSIBILITIES

Key personnel are listed in Table 8 below, along with expected roles and responsibilities. These roles and responsibilities are preliminary, with not all roles assigned, and flexibility is sought to update this table once consent is granted and demolition works planning is more advanced. This can be achieved by requiring a final RAP to be provided for Council review and approval prior to works starting, with an updated table of roles and responsibilities included.

Table 8: Key Personnel Roles and Responsibilities

Position/Role	Name	Responsibility	Email	Phone
LINZ Managers	Bryan Daly	LINZ project manager for demolition works	BDaly@linz.govt.nz	027 264 6885
	Kim Wepasnick	LINZ technical advisor on contaminated land and RMA, HNZPTA related matters.	KWepasnick@linz.govt.nz	022 059 8062
LINZ Onsite Project Manager	Jacob Bray & Mitchell Braun,TBig	LINZ representative on-site, responsible for project management, including arranging regular site meetings with contractors, managing LINZ/contractor communications, etc.	j.bray@tbig.co.nz m.braun@tbig.co.nz	027 635 5539 027 444 3224
LINZ Site Security	Mark Collins	Responsible for site security		021 183 6985
Cultural Monitor/Kaitiaki	TBC	Responsible for site cultural induction to contractors and ongoing cultural monitoring.	TBC	TBC
Project Archaeologist	Danielle Trilford, CFG	S45 Archaeologist. Responsible for briefing contractors on potential archaeological issues, ongoing archaeological monitoring and investigation of accidental discoveries in accordance with the Archaeological Authority *(application in progress at the time of this report)*.	danielle.t@cfgheritage.com	022 010 9968
Contractor Project Manager(s)	TBC	Responsible for managing project works for contractor, including oversight of all contract works, staff and sub-contractors	TBC	TBC
Contractor Site Supervisors	TBC	Working under the Contractor Project Manager(s), responsible for supervision of all contract works, including staff and sub-contractors.	TBC	TBC
Asbestos Licensed Assessors & Hazardous Building Material Specialists	TBC	**Asbestos Related Works:** Undertaking review of Asbestos Removal Control Plans and Safe Work Methods, undertaking independent clearances after asbestos building material removal; and undertaking independent clearances after asbestos contaminated soil removal associated with	TBC	TBC

		building subfloor void inspections and halo removals (may include soil testing associated with removal)[2]. **Other Hazardous Building Material Works:** Completing lead-based paint and other hazardous building material (e.g. guano) clearances (where required) on all non-ACM or ferrous materials prior to removal from site (i.e. concrete, blockwork, wood).		
SQEP	Sean Finnigan (FTL)	• Accidental discovery investigations (e.g. sampling unidentified contaminated soils such as C&D waste pockets). • Responding to contractor RFIs and issuing consultant advice notes, relating to contamination. • Review and signoff on all contaminated soil related deliverables	**sfinnigan@ftl.co.nz**	**021 0223 0510**
SQEP Representative	Elliot Bish (FTL)	• Accidental discovery investigations; • Regular site attendance, including attending site meetings • Validation sampling (XRF and lab) for contaminated soil (i.e. Halo scrape and any additional work following subfloor ACM removal and clearance from licensed assessor[1] and associated reporting	**ebish@ftl.co.nz**	**021 225 4572**
Risk Assessor / LINZ Peer Reviewer	Dave Bull (HAIL)	•	**dbull@hailenvironmental.co.nz**	**021 036 7764**

Notes:

1. There is potentially some overlap between the Asbestos Assessor and SQEP/SQEP Representative in relation to soil testing and validation works for some items (e.g. subfloor space, asbestos pipe removals). This will be resolved in the final version of this plan and discussed and agreed at the pre-start meeting.

7.3 DEMOLITION AND REMEDIAL WORKS SCHEDULE

Table 9 sets out the proposed sequencing of works for the entire project, with items relevant to contaminated soil highlighted in red.

Table 9: Proposed Work Sequencing

Phase	Works	Indicative Timeframe
1	1. Site establishment; 2. Environmental Clean of Structures; 3. ACM Removals (including void spaces except for sub-floor); 4. Lead based paint (LBP) Removals; 5. Visual clearance inspections; 6. Soft strip and salvage; 7. Structural demolition and salvage; 8. Removal of demolished materials; 9. Sub-floor investigation	8.5 months – 2.2 yrs
2	1. Sub Floor ACM remediation (including soils) (assessor); 2. Slab and foundation removal; 3. Contaminated low/moderate level soil removal and validation (including HALO scrape) (SQEP); 4. Backfilling and topsoiling.	4.5 - 6 months
3	1. ACM Services removal, outside of building footprints, requiring asbestos clearance (assessor) and contaminated soil removal and validation (SQEP) (if any); 2. Stormwater/wastewater services removal; 3. Concrete duct and other service removal; 4. Hardstand (roading/paving) removal, including embankment over Wharekōrino Stream; 5. Backfilling and finishing/topsoiling/grassing. 6. WWTP demolition and remediation works.	11 - 13 months

Note: Phase 1 - In some buildings, consideration may be given to undertaking the sub-floor investigation earlier, as it is possible that above floor demolition activities may mobilise any sub-floor asbestos contamination (e.g. dust from vibration). The sub-floor investigation will not involve any soil disturbance other than very small volumes for soil sampling, which will inform the soil removal requirements, which will be undertaken in accordance with this RAP.

7.4 ADHERENCE WITH STANDARDS, CODES, REGULATIONS AND GUIDELINES

It is expected that all contractors will follow applicable standards, codes, regulations and guidelines during the contract, including but not limited to the following:

- Auckland Council, ACS740 Recycled Aggregates, version 1.0, Rev 0, December 2023;
- BRANZ (2014), "Waste Reduction – Demolition";

- BRANZ and ALGA (2017), "New Zealand Guidelines for Assessing and Managing Asbestos in Soil";
- Codes of Practices for Hazardous Substances – refer epa.govt.nz and worksafe.govt.nz for further information;
- Ministry for the Environment, "Contaminated Land Management Guidelines" No 1 to 5;
- Worksafe New Zealand "Demolition – Best Practice Guidelines for Demolition in New Zealand";
- Worksafe New Zealand (2016), "Management and Removal of Asbestos – Approved Code of Practice"; and
- Worksafe New Zealand (2016) "Excavation Safety Good Practice Guidelines"

7.5 REMEDIATION GOALS

Under Section 9.3 of the Deed, the Crown has agreed to use best endeavours to remediate the Site to:

a) 85% of the Site area to "the rural residential remediation standard"; and
b) A contiguous area not exceeding 15% of the total Site area to "the managed remediation standard";

As defined in section 1 of this report.

7.6 REMEDIAL VOLUMES

As detailed above, the previous environmental investigations at the site have identified soils on site containing varying degrees of contamination. These degrees of contamination have been classified into categories, these have been further expanded on in Table 10, below.

Note: This table should be read in conjunction with the attached RAP Drawings 33097/R01 – 33097/R59 when determining specific locations of management/remediation measures.

Table 10: Tokanui Hospital Site Remediation: Estimated Contaminated Soil Volumes (solid measure)

Contamination Level Classification	Contaminated Soils Description	Source	Estimated Volumes (m^3)
Low Level (2)	Exceeds site specific rural residential soil remedial standard but not the managed remedial standard.	Near Buildings	**977**
		Other Areas[4]	**797**
Moderate Level (3)	Exceeds site specific managed remedial standard.	Near Buildings	**1,426**
		Other Areas[4]	**55**
		TOTAL	**3,255**
PROVISIONAL ALLOWANCES			
Estimated halo scrape post-building demolition[2] (4)		Some	**869**
Estimated building subfloor space scrape, post-building demolition[3] (5)		Some	**1,930**

Inferred asbestos contaminated soil around asbestos watermains[1] (6)	Likely	**328**
Contingency	Some Likely	**1,400**
TOTAL INCLUDING PROVISIONAL ALLOWANCES		**7,782**
(Rounded)		**(7,800)**

Notes:

1. **Assumed that on average a 100 mm wide ring of soil around the asbestos watermains that are to be removed is contaminated with asbestos. Soil testing may be undertaken at the time of watermain removal at the discretion of the assessor to confirm the volume of soil requiring remediation. This is addressed further in the separate Demolition Management Plan for the Site.**
2. **Provisional allowance made for soil scrape around all buildings, post-demolition and post-contaminated soils removal, comprising 1m wide strip x 150 mm deep, excluding areas already remediated (Halo Scrape).**
3. **Provisional allowance made for soil scrape across the subfloor space of all buildings excluding those with concrete floor slabs, post-demolition and post-contaminated soils removal comprising building footprint areas x 150 mm depth.**
4. **Other areas comprise Area I, Culvert 2 embankment, WWTP, Agricultural Area and Demolished Structure area.**
5. **Refer Section 7.1 for explanation of numbers (1) to (6).**

7.7 REMEDIAL APPROACH

The remediation of the site will involve the excavation and disposal of all soils containing concentrations of contaminants elevated above the site-specific remedial standards (i.e. both low and moderate-level contaminated soil) to the existing disposal site on-site. The associated rural residential and managed remediation standards are defined in Table 3 of this report.

Furthermore:

(a) In this report, 'high level' contamination is defined as greater than Class B for asbestos contamination – i.e. AF/FA > 0.01%; ACM > 1%). It is important to note that no high level contamination has been found on-site from the extensive investigations undertaken to date. If any such high level contamination is found by accidental discovery during the site demolition and remedial works, the preference is for it to be removed from site and disposed of offsite to a suitably licensed Class 1 disposal facility. Further delineation may be undertaken to better determine the horizontal and vertical extent of any high level contamination as part of this process.

The existing onsite disposal site (post-repair and upgrade works) will have a 600mm thick cap and will therefore comply with the "soft cap" minimum 0.5m thickness requirement in the BRANZ New Zealand Guidelines for Assessing and Managing Asbestos in Soil (Table 5), enabling all levels of asbestos soil contamination to be disposed within it. However, the decision has been made to preferably remove all asbestos contaminated soil exceeding Class B within the hospital site to an off-site approved landfill primarily in relation to the controls required for handling this asbestos during loading, transfer, unloading and disposal, taking into account the proximity of nearby residential dwellings.

(b) In the event the managed remedial standard needs to be implemented because it not feasible to remediate to the rural residential remediation standard, prior to proceeding with works, LINZ will discuss and reach a decision on this with Iwi. In the event that the managed remedial standard is implemented, any ongoing management requirements will be set out in an Ongoing Site Management Plan (to be prepared at such time). This may also require a variation to the associated resource consent, which would be discussed with Council and then applied for.

(c) As some areas (e.g. Area I, Culvert 2 embankment) contain pockets of construction and demolition (C&D) waste, an additional remediation criterion has been added based on removal of fill material containing more than 5% C&D materials to either the existing disposal site or off-site to an approved landfill, at the discretion of the SQEP.

(d) Some contaminated soil removal works are proposed within some vegetated areas of the site, including within or near the driplines of some trees. Mitigation measures to reduce removal of, or harm to, vegetation are set out in the DDRMP.

7.8 ASBESTOS CONTROLS

7.8.1 GENERAL

There are areas of the site where soil removals must be completed under asbestos controls, based on the soil contamination identified to date, specifically:

- Low-Level Contamination = Unlicensed Asbestos Controls or Asbestos Related Works;
- Moderate Level Contamination = Asbestos Related Works, Class B/A Licensed Works;
- Halo Scrape = to be confirmed on-site (likely asbestos related works or same controls as closest remedial/management area);
- Asbestos Pipe & Soil removal = Class B/A Licensed Work (depends on condition); and
- Sub-floor Scrape = Class A or B Licensed Removal Work (dependent on material identified in sub-floor void) followed by Class A or B (or most applicable asbestos controls) soil scrape (depends on degree of contamination).

The areas requiring these controls are detailed in the attached Drawings R04 – R58, while the specific requirements for the individual asbestos work categories are provided in Appendix B. Regarding asbestos air monitoring, this is required for all Class A work, and is at the discretion of the asbestos assessor for all other removal work scenarios.

Following removal of all Class A or B asbestos contaminated soil materials from site, visual clearance inspections will be carried out (by independent licensed asbestos assessors, where required as per section 7.8), followed by validation soil sampling (completed by SQEP), which will be undertaken from the remedial and management areas to determine the success of the remedial activities, and to inform the contamination status of the site post remediation. It is worth noting that prior to giving clearance, the assessor may also undertake soil sampling and direct the contractor to undertake additional soil removal prior to the location being subsequently validated by the SQEP for NESCS purposes.

An exemplar of a proposed validation sampling location plan is provided as Drawing R59.

7.8.2 SUB FLOOR VOID INVESTIGATIONS & REMEDIATION

During building demolition, specifically likely after all above ground building infrastructure has been removed (i.e. only floor level and below remaining), the sub floor void spaces of all structures that have subfloor voids will be inspected by the independent assessor. Findings from this inspection will be provided to the SQEP and risk assessor to determine the best path forward. There are specific structures that require careful inspection due to high-risk contamination hazards - these are detailed below in Table 11. Once these inspections are done, any contaminated soil from the subfloor void spaces will be removed using the appropriate controls set out in this RAP.

Table 11: Known Buildings with High-Risk Contamination Hazards

Building ID	Hazard
B02	Class A Asbestos in Void Spaces
B11	Class A Asbestos in Void Spaces
B13	Class A Asbestos in Void Spaces
B15	Class A Asbestos in Void Spaces
B58	Class A Asbestos in Void Spaces
B20	Class A Asbestos in Void Spaces
B21	Class A Asbestos in Void Spaces
B22	Class A Asbestos in Void Spaces
B23	Class A Asbestos in Void Spaces
B29	Class A Asbestos in Void Spaces
B30	Class A Asbestos in Void Spaces
B33	Class A Asbestos in Void Spaces
B49	Class B in Subfloor Void Space
B50	Class B in Subfloor Void Space
B51	Class A Asbestos in Void Spaces
B53	Class B in Subfloor Void Space
B55	Class A Asbestos in Void Spaces
B56	Class A Asbestos in Void Spaces
B70	Class A Asbestos in Void Spaces
B74	Class A Asbestos in Void Spaces

Note: Void spaces can mean roof/ceiling voids and subfloor voids. It is intended that roof/ceiling voids will be cleaned and clearance certificates provided as part of above ground infrastructure removal. These buildings have been identified as high-risk following review of the 4Sight Consulting 'Tokanui Asbestos and Lead Survey Reports' (4Sight Consulting, 2022).

7.8.3 BUILDING HALO SCRAPES

Post removal of all contaminated soils and building materials, a 1 m wide x 0.15 m deep 'Halo scrape' will be completed for every building. This scrape is essentially a quality control

measure, to ensure any potential contaminants that may fall into the remedial areas during the building demolition are captured, and removed.

All soils captured in this way will be transported immediately to the onsite existing disposal site, for prompt placement within the filling area.

7.9 OTHER NON-BUILDING AREAS

7.9.1 SUSPECTED FILL POCKETS

Suspected fill pocket locations (NBA 1-11) are shown on drawing R52. During demolition works in the vicinity of each of these locations, specific checks will be undertaken to confirm whether or not these areas contain more than 5% C&D waste or contaminants exceeding the site specific remedial standards. These checks will be undertaken by the SQEP, at appropriate sampling frequencies in accordance with CLMG sampling densities taking into account the nature of the contamination and visual observations. The 5% criteria will be measured on a cross-sectional area (if insitu) or volume (if in stockpile) basis. If any such contamination is confirmed, the contaminants will be managed or removed and disposed of appropriately in accordance with the requirements set out in this RAP, particularly the approach set out in section 7.7.

Works in these areas will be handled under the site's accidental discovery processes set out in section 7.19 of this RAP.

7.9.2 AREA I AND CULVERT 2 EMBANKMENT

Area I contains pockets or layers of construction and demolition debris and some asbestos contamination in isolated areas. Remediation works in this area are shown on drawings R53 and R54 for Area I and drawing R55 for the culvert 2 embankment. It is recommended that excavation in these locations be overseen by a SQEP or their representative. All asbestos soil contamination should be removed in accordance with the requirements of this RAP, while it is recommended that any construction and demolition debris (>5% by volume) be separated from soil.

Validation testing requirements will be decided by the SQEP. Validation recommended by the SQEP will be peer reviewed by an independent SQEP risk assessor if LINZ feel this is necessary.

Area I can then be reinstated using residual soils and topped up with other subsoils and topsoil as appropriate.

The culvert 2 embankment will not need reinstatement as the entire embankment is being removed (See FTL DDRMP).

7.9.3 WWTP COMPOUND

Within the WWTP, there is an isolated minor arsenic hotspot next to the redundant UV treatment system and flow meter. Soil from this area will be removed as shown on drawing R56, followed by reinstatement with clean topsoil. No validation sampling is considered necessary as the contamination is likely localized leaching from the treated timber posts, and validation and potential further remediation could negatively impact on the adjacent wetland and stream.

7.9.4 AGRICULTURAL AREA

Within the former agricultural area, there are 12 small areas with low level contamination and one small area with moderate level contamination. These areas will be remediated as shown on drawing 33097/R57, followed by validation sampling, where required. Some of these areas are relatively close to tree driplines; if validation sampling indicates the contamination extends under tree driplines and further soil removal is required, then the procedures set out in the DDRMP will be followed.

7.9.5 DEMOLISHED STRUCTURE AREA

Within the demolished structure area, two areas of low level (1) and moderate level (1) contamination will be remediated as shown on drawing R58, followed by validation sampling, where required. While one of these areas appears to be partially under the tree dripline, this area coincides with an old access track and hence the potential for encountering roots within the remediation depth (0.25m) is considered less likely. In any case, if the remediation area is under the dripline of any trees or validation sampling indicates the contamination extends under tree driplines and further soil removal is required, then the procedures set out in the DDRMP will be followed.

7.10 SUPERVISION AND SITE VALIDATION

All soils containing contaminants elevated above the site-specific remedial standards will require remediation by excavation and on-site disposal at the existing disposal site. The estimated area/volume may increase following validation sampling within the remedial and management areas shown in Drawings 33097/04-56.

In addition, if, during remedial works, high level contamination is identified, this material will preferably be disposed of offsite at a licensed class 1 facility, rather than the onsite disposal facility.

7.10.1 SUPERVISION

While NESCS and relevant CLM guidelines require works to be overseen by a SQEP, LINZ consider a SQEP to be a person who holds or is working towards a Certified Environmental

Practitioner – Site Contamination (CEnvP-SC) specialist accreditation*; LINZ also require that all reports are reviewed and approved by a CEnvP-SC.

All remedial works must be undertaken by suitably qualified and experienced contractors and observed by a SQEP. This shall include attendance on-site:

- At the pre-start meeting and following the installation of all erosion and sediment controls, prior to contaminated soil being taken to the existing disposal site;
- Attendance at regular site meetings (anticipated fortnightly frequency);
- Site inspection on completion of remedial works, including validation sampling; and
- Following any accidental discoveries relating to soil contamination.

7.10.2 CONTRACTOR REQUIREMENTS

The contractor is required to adhere to all requirements listed in the attached Drawings 33097/04 – 58 and within this RAP. The key requirements are:

- Understanding the areas and extents of contamination surrounding each site structure, ensuring the correct volume of contaminated soils are removed;
- Documenting the process of removal via photo logs and notes. Photos must show the depth and extent of remedial areas (with these being georeferenced), with tape measurements included in the photos for scale;
- Documenting truck movements (for soil tracking purposes) and forwarding them to the SQEP to confirm the soil volumes removed from site, and to verify that the disposal method is in accordance with this RAP.
- Additional record keeping requirements as set out in Section 7.18 of this RAP.
- Provide this documentation to the SQEP to complete the Site Validation Report (SVR).

The SQEP may also undertake independent checks and audits to check the above works are being completed to the expected standard.

7.10.3 VALIDATION SAMPLING AND REPORTING

Following removal, validation sampling for identified contaminants of concern will be undertaken within the remedial areas at the locations shown in Figure R59 (validation exemplar). This plan is provided as an example of the intended validation approach. The sampling density shown in Figure R59 is intended to inform validation sampling for other remedial areas on the site, supplemented by actual lab results and photos of sampling locations for these other buildings.

If elevated levels of contaminants above the adopted site specific rural residential standard are found as a result of the validation sampling, the SQEP will determine the additional land area and depth requiring remediation and the appropriate disposal location (on-site landfill or disposal off-site to appropriate landfill facility). Further validation samples will be collected as required and further remediation undertaken until the remediation objectives are achieved.

* The Certified Environmental Practitioner (CEnvP) Scheme is the leading certifying body for environmental and social practitioners in Australia and New Zealand. https://www.cenvp.org/

LINZ would be advised of any additional remediation requirements and likely costs in advance of undertaking any additional works, with formal discussion and approval of any additional works that will incur significant additional costs.

Following completion of all remedial earthworks, a Site Validation Report (SVR), prepared by a SQEP shall be provided to Waipā District Council (WDC) and Waikato Regional Council (WRC), confirming the land disturbance activities have been carried out according to this RAP. The SVR will be prepared in accordance with CLMG 1 and at a high-level include the following:

- Summary of the works undertaken.
- Any changes or variations made to the approved RAP.
- Log of accidental discoveries and how they were dealt with.
- Records of the volume of materials disposed of to the onsite existing disposal site.
- Records of the volumes of any contaminated materials disposed of off-site.
- Validation sampling locations and results.
- Test results and records of onsite soils used for backfilling excavation cavities.
- Test results and dockets (quantities) of imported clean fill (if any).
- Plan showing locations of any soils remaining onsite with above background but within site specific risk assessment levels.

7.11 ON-SITE SOILS REUSED FOR BACKFILL

Suitable soil materials, primarily comprising natural ground, topsoil and capping materials within the onsite disposal site and from the Culvert 2 embankment area will be used as backfill materials for excavation cavities created by the demolition works. These cavities include building footings/foundations, removed roading areas and services.

Soil sampling has already been undertaken from the Culvert 2 embankment soils and from the existing Disposal Site topsoil and capping layers. These results, along with review of associated test pit logs will be used to confirm the suitability of these soils for use as backfill materials, based on compliance with the site-specific remedial standards for rural residential land use. Supplementary sampling will be undertaken where required to achieve an appropriate sampling density, depending on the source to confirm compliance with the adopted remedial standard. Visual checks and supplementary XRF screening/lab testing may also be undertaken during excavation and transfer of these soils, based on SQEP guidance.

7.12 IMPORTED CLEANFILL

Any imported soil brought to the site (if required) shall be verified cleanfill, as defined in the consent conditions for the site.

Any imported fill will be checked for compliance with the above, prior to being imported to site. Information should be provided specifying the source of the clean fill, and laboratory testing certification provided to confirm it is cleanfill as defined above. The SQEP may

undertake visual checks and supplementary sampling at their discretion to independently verify the acceptability of the material.

7.13 EROSION AND SEDIMENT CONTROL

This section provides an overview of proposed erosion and sediment controls. A full Erosion and Sediment Control Plan (ESCP) is provided as a separate document as part of the consent application package.

7.13.1 GENERAL

Activities onsite will involve various earthworks activities that have the potential for adverse environmental effects. Egress of silt and sediment in stormwater to nearby water bodies is to be minimised due to the presence of contaminants in soil. These contaminants bind to soil particles and hence good silt and sediment control is required to ensure contaminants are not released into the wider environment.

The site is generally flat, with some undulating areas, while the management works involve the excavation of cavities into the natural ground. Provisional erosion and sediment control measures are based on installing filter socks or shallow (approximately 150 mm high) earthen bunds along the upslope boundary of the removal areas to prevent clean runoff from outside the removal areas entering the excavation cavity, while silt fences will be located on the downslope side of demolition works areas to treat any dirty runoff originating from these areas. The need and extent of such bunding can be discussed at the pre-start meeting.

Any water accumulating in excavation cavities will be allowed to soak into the underlying ground. If ponded water is going to impede works progress, it will be pumped out using a portable pump and disposed to nearby grassed areas or, if none exist, collected in a tanker and disposed to an on-site sediment removal pond or decanting earth bund, prior to discharge to the site's stormwater system, or pumped out into an intermediate bulk container (IBC) for transfer to an on-site sediment removal pond or disposal off-site. Where necessary, water quality testing will be undertaken to confirm this is appropriate.

All sediment control works are to be operational prior to any other works commencing on site and shall remain in place until development works are complete and measures are in place to minimise erosion. All erosion and sediment controls shall comply with the Waikato Regional Council document 'Erosion & Sediment Control Guidelines for Soil Disturbing Activities' dated January 2009, technical report number No.2009/02, updated in 2014, with current information on specific items found online (https://waikatoregion.govt.nz/services/publications/tr200902/).

Good construction practices including the following shall be employed, during land disturbance activities:

- Inspection of silt and sediment controls prior to and after rainfall, and at the end of each day's work.
- Regular inspection of nearby roads for tracking of sediment to assess the adequacy of the control measures being used.
- Stabilisation of disturbed areas as soon as possible, by placing fill, topsoil and grass/mulch or sealed surface, as appropriate, in accordance with the proposed construction plans.

7.13.2 VEHICLE SILT/SEDIMENT TRACKING MITIGATION

If vehicles transporting materials on/off site can be restricted to paved areas, then their wheels are less likely to require cleaning prior to leaving the site.

For any vehicles trafficking unsealed areas, they are likely to pick up silt/sediment on their wheels, which could subsequently be deposited on internal roading within the site and/or the public road network. For such vehicles, they will be required to pass through a stabilised construction entrance, prior to leaving the site. This comprises a stabilised accessway, complying with updated TR2009/02 requirements; i.e. it will maintain a minimum of 50-75 mm washed gravel depth of 150 mm over a minimum 10 m length and minimum 4 m width on a geotextile layer. This will minimise the deposition of sediment onto adjacent properties.

Alternatively, the contractor may provide a wheel wash or water blaster, subject to runoff being directed to an appropriate treatment device, prior to discharge off-site.

7.14 DUST, NOISE AND VIBRATION

7.14.1 DUST

Dust control aims to prevent or reduce the movement of dust from disturbed soil surfaces that may create nuisance, health hazards, traffic safety problems and/or off-site damage and discharge to the environment.

The activities that will take place at the site which may generate discharges to the air are;

- Deconstruction and demolition;
- Earthworks;
- Vehicle and plant movements;
- Bulk materials handling;
- Wind generated dust from dry exposed surfaces such as stockpiles, roads and impervious surfaces.

The major factors that influence dust emissions from surfaces are;

- Wind speed across the surface - the critical wind speed for pick up is 5 m/s, while dust pickup increases rapidly for wind speed above 10 m/s;
- The percentage of fine particles in the material on the surface;
- The area of exposed surface;

- Disturbances such as traffic, demolition, excavation, loading and unloading of materials;
- The height of the source above the surrounding ground level.

Standard dust control measures will be used to control dust at the site and soil disturbance measures will be suspended if dry and windy conditions prevail, or alternatively the disturbance area shall be watered and maintained in a slightly moist state to minimise dust generation.

Dust management during the excavation works and stockpiling will generally comply with the procedures set out in *Good Practice Guide for Assessing and Managing Dust* (Ministry for the Environment, 2016).

Dust will be controlled at the works site using appropriate measures from the following toolbox:

- Minimising the extent of the exposed area at any one time.
- Limiting traffic to specified construction access roads and minimising travel distances by optimising site layout.
- Controlling vehicle speeds.
- Maintaining road surfaces.
- Minimising tracking of dirt on vehicle wheels onto paved surfaces.
- Minimising drop heights when loading and unloading vehicles.
- Limiting stockpile heights.
- Providing shelter from the wind for stockpiles.
- Consolidating and sealing off loose surface material.
- Progressive placement of hardfill (sub-basecourse) for hardstand areas and mulching and grass establishment, as works are completed in grassed/vegetated areas.
- Use of water carts to dampen exposed areas.
- Use of soil binders to form a cohesive membrane or protective crust that reduces windblown dust generation (contingency measure).
- Use of textiles as temporary covers on stockpiles or partially completed batter slopes, or as permanent cover (e.g. vegetation promotion blanket) on completed areas (contingency measure).

In the event that asbestos fibres are identified in dust through air monitoring or other sampling, if the concentration of asbestos fibres exceeds the airborne contamination standard, then works in the area will stop, and the dust mitigation controls implemented in the area will be assessed and reviewed. If the licensed asbestos assessor deems necessary, these controls may be increased to further mitigate risks posed from exposure to dust.

Water for water cart usage will be sourced from a separate supply takeoff point to be provided to a central location on-site by LINZ, utilising the existing public water supply reticulation along Te Mawhai Road. Water usage will be carefully monitored to avoid overwatering, which may result in subsequent runoff of the dust laden water.

Any materials that are stockpiled onsite should be kept damp through water application. If stockpiled materials are expected to remain onsite long-term, then a polymer-based emulsion should be considered for application, to reduce ongoing dust generation issues.

Waste oil and any hazardous substance that is not licensed as a dust suppressant under HSNO are specifically excluded from being used as a dust suppressant.

7.14.2 NOISE

All works will be undertaken in accordance with the requirements of NZS 6803: 1999 'Acoustic – Construction Noise' and any relevant resource consent conditions. All works on the site and the use of associated heavy machinery shall be undertaken between the following hours only:

- Monday to Saturday: 7.30 am to 7.00 pm
- Sunday and Public Holidays: No work

The New Zealand Standard NZS 6803:1999 "Acoustics – Construction Noise" (NZS6803) provides comprehensive guidelines for measuring and assessing noise from both existing and proposed construction work, including activities such as maintenance and demolition. Compliance with the noise limits in NZS 6803 should ensure that noise from demolition and/or removal of underground structures is assessed and managed in accordance with regulations and to minimise disruptions to the surrounding area.

NZS 6803 provides noise limits (at 1 m from the facade of any dwellings occupied during the works) to control and manage noise. The recommended noise limits for works, with an expected duration exceeding 20 weeks, are reproduced in Table 12 below (sourced from the SLR Acoustic Assessment, November 2024).

Table 12: Noise Compliance Requirements

Time of Week	Time Period	Long-term duration (more than 20 weeks)	
		L_{Aeq}, dB	L_{Amax}, dB
Weekdays	6:30 am – 7:30 am	55	75
	7:30 am – 6:00 pm	70	85
	6:00 pm – 8:00 pm	65	80
	8:00 pm – 6:30 am	45	75
Saturdays	6:30 am – 7:30 am	45	75
	7:30 am – 6:00 pm	70	85
	6:00 pm – 8:00 pm	45	75
	8:00 pm – 6:30 am	45	75
Sundays and public holidays	6:30 am – 7:30 am	45	75
	7:30 am – 6:00 pm	55	85
	6:00 pm – 8:00 pm	45	75
	8:00 pm – 6:30 am	45	75

The nearest residence to the Hospital site is in the northern section of the site, and is approximately 46m away from the nearest infrastructure removal works (separation distances for building demolition are considerably greater). To ensure compliance with the required noise limits, the Acoustic assessment has recommended that an excavator no larger than 20T is used for the removal of underground structures in this area. It is expected that all other residences will not be affected by noise compliance issues. Similarly, the operating hours of noisy activities (e.g. hydraulic breaker and concrete crusher) would be restricted to not occur after 6pm on working days.

Noise from other activities such as loading dump trucks and dump truck movements (on the basis that they would be quieter or at a similar level than those discussed above) would be expected to either comply or be controlled to achieve compliance with the relevant noise limit 70 dB LAeq, at surrounding receivers.

7.14.3 VIBRATION

Any effects of vibration will be temporary and limited to the duration of construction works. The effects of vibration will be limited by following relevant measures from DIN 4150-3:1999 "Structural Vibration – Part 3 Effects of Vibration on Structures".

7.15 PEDESTRIAN ACCESS

Warning signs will be erected advising locals and the general public that this is a multiple hazards site, and no unauthorised entry is permitted. As works will mainly take place within the premises of the private property, pedestrian access will not be affected.

All construction works will be undertaken in accordance with the appropriate occupational health and safety guidelines to ensure the safety of the construction workers, visitors to the site and general public is maintained.

7.16 VEHICLE ACCESS

Site access shall be via a single point, being the main entrance off Te Mawhai Road (located at 146 Te Mawhai Road, Tokanui). LINZ will establish a site access pass system that positively identifies all employees of Main Contractors, Minor Contractors, Sub-contractors, LINZ and their representatives, who have been authorised to undertake work on the site and have undertaken a formal site induction (in addition to any other induction requirements of their employer or a contractor). LINZ, at their discretion, may allow visitors to enter the site, when escorted by an authorised person.

The site speed limit is set at 15 km/hr maximum.

7.17 TRAFFIC GENERATION & TRANSPORTATION

Generally, heavy vehicle movements associated with land disturbance and remedial works operations are limited to the delivery and removal of the machinery and plant required to undertake the works, the removal of contaminated soil and the import of cleanfill materials.

In this instance, these movements will be further limited, as internal roads will be used to access the onsite existing disposal site.

The following measures shall be employed to ensure that there are limited impacts on the surrounding roading network resulting from the land disturbance operation:

- The entry/exit point is clearly defined and will ensure that the safe and convenient movement of traffic, pedestrians and cyclists is not compromised.
- A water blaster or wheel wash facility is to be provided on-site, between the existing disposal site and internal access road within the Hospital site, to ensure any contaminated soils are not tracked across site and onto the adjacent public road network.
- Haulage routes are to be planned/defined and vehicles are to remain on the paved areas at all times.
- The adjoining roading network is to be kept clear of mud and debris at all times.

7.18 RECORD KEEPING

The Contractor shall keep full records of all materials imported to site and reused, recycled or disposed of off-site including:

- Quantity of material in tonnes or m^3 as appropriate (dockets/receipts)
- Type of material
- Source site

- Date of delivery
- Location on Tokanui site where material sourced from (if sourced on site)
- Supporting photos
- Proof of compliance with clean fill criteria for materials imported to site.

This information shall be provided to LINZ or their representative on a monthly or milestone basis.

LINZ will undertake independent audits of site operations to verify that consent requirements are being met.

7.19 ACCIDENTAL DISCOVERY PROTOCOLS

7.19.1 CONTAMINATION

If during demolition and/or remediation earthworks, any contractor encounters any visually stained or odorous soil, ACM, rubbish/building debris or other hazardous materials that appear to be contaminated that has not previously been identified, they shall stop work within a 5m radius of that area and advise the project SQEP who will then visit the site to determine the nature and extent of the potentially contaminated soil. This is likely to involve the collection of soil samples and laboratory analysis, followed by assessment to determine suitable disposal facility or alternative remedial option in consultation with LINZ. Subject to the approval of the SQEP, the affected material may be relocated to a secure stockpile, underlain and covered with tarpaulins or placed in covered bins, while waiting for the laboratory results.

Council will be notified by the SQEP of any significant accidental discovery and be given the opportunity to approve the solution, if required, depending on the scale of the works.

Work shall not recommence within this area unless authorised by the project manager or nominated LINZ representative. All accidental discovery events will be recorded (photos and notes) for inclusion in the Site Validation Report.

7.19.2 ARCHAEOLOGICAL DISCOVERY PROTOCOL

The protocols detailed in the CFG (2024) report and archaeological authority should be followed in the event of the accidental or unexpected discovery of archaeological features, including human remains.

7.20 NEAREST MEDICAL CENTRE

The nearest medical centre is:

Mahoe Medical Centre
Mega Centre

670/4 Cambridge Road, Te Awamutu 3840
Tel: 07 872 0923
administration@mahoemed.co.nz
Hours: 8am-8pm Mon – Fri; 9am-3pm Sat-Sun

7.21 COMMUNICATION WITH NEIGHBOURS

All communications between contractors and Iwi, Hapu or any stakeholders must be approved by LINZ and be in accordance with the official communications plan for this project.

7.21.1 INFORMATION FOR NEIGHBOURS

The nearby neighbours who may be affected by noise, dust or vehicle fumes will be made aware of:

- The extent and duration of the works and type of works proposed;
- The reasons for the demolition and remediation works; and
- A line of communication from the nearby property owners to:
  (i) Contractor's representative.
  (ii) The representative of the consultants managing the project.
  (iii) The LINZ representative.

This line of communication will normally include work, after hours and mobile telephone numbers and a priority list of who to contact first to obtain assistance.

7.21.2 INFORMATION FOR THE GENERAL PUBLIC

Information to be provided to the general public will be in accordance with the official communications plan for this project.

7.21.3 COMPLAINTS

All contractors shall include a detailed procedure for the management of complaints from the public and other stakeholders in their Site Management Plan.

A Complaints register shall be developed and maintained by the Contractor in a structured, clear and legible format. As a minimum, the following information about any complaints shall be recorded:

- The contact details of the complainant, including name, entity represented (if any), address, contact telephone number(s).
- The nature and description of the complaint.
- The location of the complainant, and of the place where the complaint was first noticed.
- Date and time of the complaint, plus any other details relevant to the complaint e.g. the prevailing wind direction for a dust complaint.
- How the complaint was resolved or followed up.

Any complaints identified as relevant to the construction activities shall be notified to the LINZ project representative as soon as practicable and within the same working day as a minimum. LINZ (or their nominated agent) shall be responsible for notifying Waipa District Council or Environment Waikato (as applicable) within 24 hours of receipt of a complaint, in accordance with any consent conditions, if required.

LINZ (or its nominated party), in conjunction with the contractor, will be responsible for investigating and resolving all complaints as soon as practicable.

All complaints and means of resolution shall be discussed and minuted at the next project site meeting, to ensure that lessons learned are incorporated into forward work practices.

7.22 HEALTH & SAFETY

The Contractors involved in this project have a duty to conduct activities in such a manner so that the health and safety of their employees carrying out the works are safeguarded to the best of their ability.

In addition to the standard health and safety procedures and measures on a construction site, the following basic precautions are to be implemented:

(i) Commitment

- Commitment to active management of health and safety.
- Set clear goals and areas of responsibility.

(ii) Planning

- Comprehensive hazard identification.
- Hazard assessment.
- Determination of appropriate control measures and management strategies.

(iii) Action

Control measures and management strategies implemented including:

- Information.
- Training and supervision.
- Workplace/worker monitoring.
- Emergency procedures.
- Accident reporting and investigation.

(iv) Application

- The Health and Safety Plan applies to principals, employees, contractors, sub-contractors and all land modification, civil and construction works being carried out on the development.

Health and safety concerns primarily relate to dealing with contaminated soil. For this site, the main exposure pathway for humans is through ingestion of and dermal contact with soil during remedial works. The associated human health risk is considered small and can be effectively mitigated against by construction workers wearing disposable nitrile gloves during earthworks and adherence to strict hygiene procedures, including no eating, drinking or smoking in the area where excavation works are being undertaken. These activities must take place away from work areas. Soap and water shall be provided for washing hands thoroughly prior to food consumption.

Asbestos controls are covered in Section 7.8 with details provided in Appendix B.

8.0 CONCLUSIONS AND RECOMMENDATIONS

Based on the information presented in this report, the future site should be considered remediated in accordance with the terms of the Deed, provided remediation is undertaken on the areas confirmed as 'contaminated'. All excavated contaminated soil identified in previous investigations requires disposal to the onsite existing disposal facility or offsite disposal at a suitably licensed Class 1 facility as outlined in this RAP.

If any visually stained, fibrous or odorous soil is encountered during site remedial, works should stop in this area and the SQEP should be advised immediately. Fraser Thomas will then inspect the relevant area and advise LINZ appropriate further investigation and/or remedial actions. As this may have implications on the Deed, LINZ will engage with iwi prior to confirming agreed remedial actions with council.

9.0 LIMITATIONS

We have performed our services for this project in accordance with current professional standards for an assessment of the nature and extent of any soil contamination on-site, based upon preliminary & detailed site assessment investigations and current regulatory standards for site contamination. The scope of the site assessment activities was generally in accordance with the Ministry for Environment Contaminated Land Management Guideline's (Parts 1 (2021), 2 (2011) and 5 (2021)) and the NESCS (2011). Conclusions on actual or potential contamination cannot be applied to areas outside of the proposed area of development assessed in this RAP.

We do not assume any liability for misrepresentation or items not visible, accessible or present at the subject site during the time of the site inspection. Copyright of this report is held by Fraser Thomas Ltd. The professional opinion expressed herein has been prepared solely for, and is furnished to our client, Land Information New Zealand, on the express condition that it will only be used for the works and the purpose for which it is intended.

No liability is accepted by this firm or by any principal, or director, or any servant or agent of this firm, in respect of its use by any other person, and any other person who relies upon any

matter contained in this report does so entirely at its own risk. This disclaimer shall apply notwithstanding that this report may be made available to any person by any person in connection with any application for permission or approval, or pursuant to any requirement of law.

Figures

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VRP01: Potential Affected Vegetation Removal Plan: HALO Soil Remediation

Toitū Te Whenua Land Information New Zealand
Remedial Action Plan
Former Tokanui Hospital Demolition and Remediation Project
Tokanui, Te Awamutu

Date:	05/11/2024
Figure Reference:	33097/VRP01
Drawn by:	EB
Reviewed by:	SF
Job Number:	33205

N

0 55 110 220 330 440 550

Meters

Drawings

TOITŪ TE WHENUA – LAND INFORMATION NEW ZEALAND

FORMER TOKANUI HOSPITAL DEMOLITION AND REMEDIATION

33097

REMEDIAL ACTION PLAN

CONTAMINATED SOIL

13/11/2024

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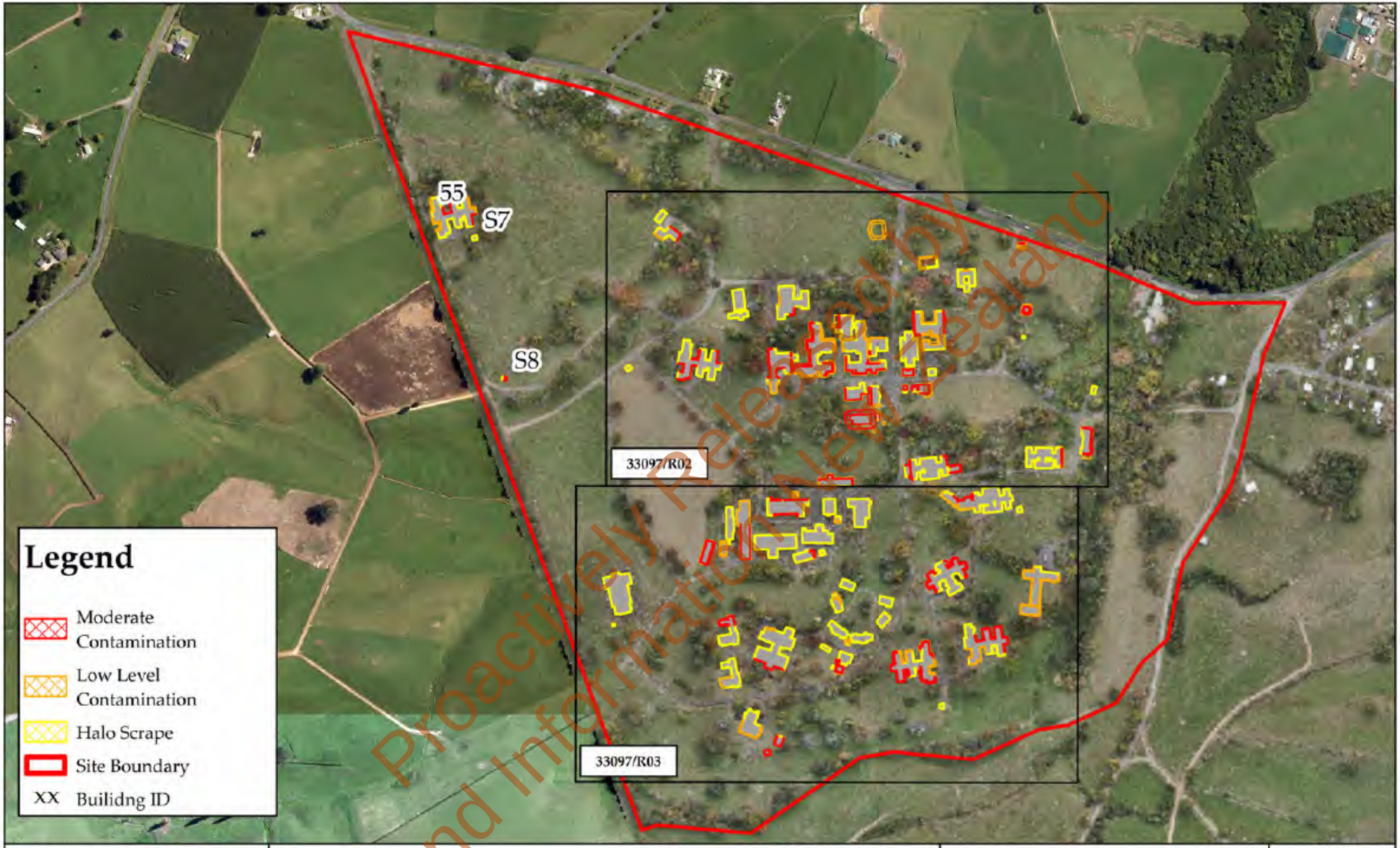
List of Drawings

Drawing	Drawing Title	Revision	Drawing	Drawing Title	Revision
33097/R01	Site Layout	A	33097/R31	B53 & B54	A
33097/R02	Site Layout	A	33097/R32	B55 & S7	A
33097/R03	Site Layout	A	33097/R33	B56	A
33097/R04	B01, B09 & S2	A	33097/R34	B57 & Pool Shed	A
33097/R05	B02	A	33097/R35	B58	A
33097/R06	B03 & CHP	A	33097/R36	B59, B60 & B61	A
33097/R07	B05, B06, B07 & B08	A	33097/R37	B62	A
33097/R08	B10 & B11	A	33097/R38	B63	A
33097/R09	B12	A	33097/R39	B65	A
33097/R10	B13	A	33097/R40	B66 & B67	A
33097/R11	B14 & B15	A	33097/R41	B68	A
33097/R12	B16, B17, B18 & B19	A	33097/R42	B69 & S4	A
33097/R13	B20, B21 & B22	A	33097/R43	B70	A
33097/R14	B23	A	33097/R44	B71	A
33097/R15	B24	A	33097/R45	B73 & B74	A
33097/R16	B25	A	33097/R46	B75 & B76	A
33097/R17	B26	A	33097/R47	PAV	A
33097/R18	B27, B28 & S3	A	33097/R48	S1	A
33097/R19	B29	A	33097/R49	S6	A
33097/R20	B30 & B31	A	33097/R50	S8	A
33097/R21	B33	A	33097/R51	B32	A
33097/R22	B34 & B35	A	33097/R52	NBA Location Plan	A
33097/R23	B36, B37, B38 & B39	A	33097/R53	NBA (Area I - Topsoil)	A
33097/R24	B40, B41, B42 & B47	A	33097/R54	NBA (Area I - Fill)	A
33097/R25	B43, B44, B77	A	33097/R55	NBA (Culvert 2 Embankment)	A
33097/R26	B45 & B46	A	33097/R56	NBA (Former WWTP)	A
33097/R27	B48	A	33097/R57	NBA (Agricultural Area)	A
33097/R28	B49	A	33097/R58	NBA (Demolished Structure)	A
33097/R29	B50	A	33097/R59	Proposed Validation Sample Location - B33	A
33097/R30	B51, B52 & S5	A			



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Drawing 33097/R01: Remedial Action Plan - Site Layout

Toitū Te Whenua Land Information New Zealand
Former Tokanui Hospital Demolition and Remediation Project
Remedial Action Plan

Date:	05/09/2024
Revision No:	A
Drawn:	EB
Reviewed:	SF

N

0 55 110 220 330 440 550
Meters

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Drawing 33097/R02: Remedial Action Plan - Site Layout

Toitū Te Whenua Land Information New Zealand
Former Tokanui Hospital Demolition and Remediation Project
Remedial Action Plan

Date:	05/09/2024
Revision No:	A
Drawn:	EB
Reviewed:	SF

N

0 20 40 80 120 160 200
Meters

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Drawing 33097/R03: Remedial Action Plan - Site Layout

Toitū Te Whenua Land Information New Zealand
Former Tokanui Hospital Demolition and Remediation Project
Remedial Action Plan

Date:	05/09/2024
Revision No:	A
Drawn:	EB
Reviewed:	SF

N

0 20 40 80 120 160 200
Meters

Building	Remedial/Management Area	Area (m²)	Depth (m)	Volume (m³)
B01	Halo Scrape	158	0.1	15.8
B09	Halo Scrape	36		3.6
S2	R1	25	0.3	7.5
S2	Halo Scrape	26	0.1	2.6
Total Area/Volume		245	-	29.5

FIGURE SCALE = 1:500 AT A4
MEASURE BUILDING BUFFERS OFFSET FROM BUILDING WALL CLADDING

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Drawing 33097/R04: Remedial Action Plan - B01, B09 & S2

Toitū Te Whenua Land Information New Zealand
Former Tokanui Hospital Demolition and Remediation Project
Remedial Action Plan

Date:	05/09/2024
Revision No:	A
Drawn:	EB
Reviewed:	SF

N

0 4 8 16 24 32 40
Meters

CONTRACTORS REQUIRED TO TAKE PHOTOS OF FINISHED EXCAVATIONS WITH TAPE MEASURE IN PHOTO SHOWING WIDTH AND DEPTHS OF EXCAVATIONS.

ALL DISPOSAL DOCKETS MUST BE FORMATTED AS (BUILDING NUMBER, REMEDIAL/MANAGEMENT AREA, DATE, TIME

E.G. DOCKET LABEL SHOULD READ:
B02,M1,25/10/24,12:30

SUBFLOOR INVESTIGATION TO BE COMPLETED AFTER ABOVE GROUND INFRASTRUCTURE REMOVAL.

Building	Remedial/Management Area	Area (m²)	Depth (m)	Volume (m³)
B02	R1	60.5	0.3	18.2
	R2	51	0.4	20.4
	M1	61	0.25	15.3
	M2	215	0.7	150.5
	Halo Scrape 1	72	0.1	7.2
	Halo Scrape 2	50	0.1	5.0
Total Area/Volume		509.5		216.5

FIGURE SCALE = 1:500 AT A4
MEASURE BUILDING BUFFERS OFFSET FROM BUILDING WALL CLADDING

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Drawing 33097/R05: Remedial Action Plan - B02

Toitū Te Whenua Land Information New Zealand
Former Tokanui Hospital Demolition and Remediation Project
Remedial Action Plan

Date:	05/09/2024
Revision No:	A
Drawn:	EB
Reviewed:	SF

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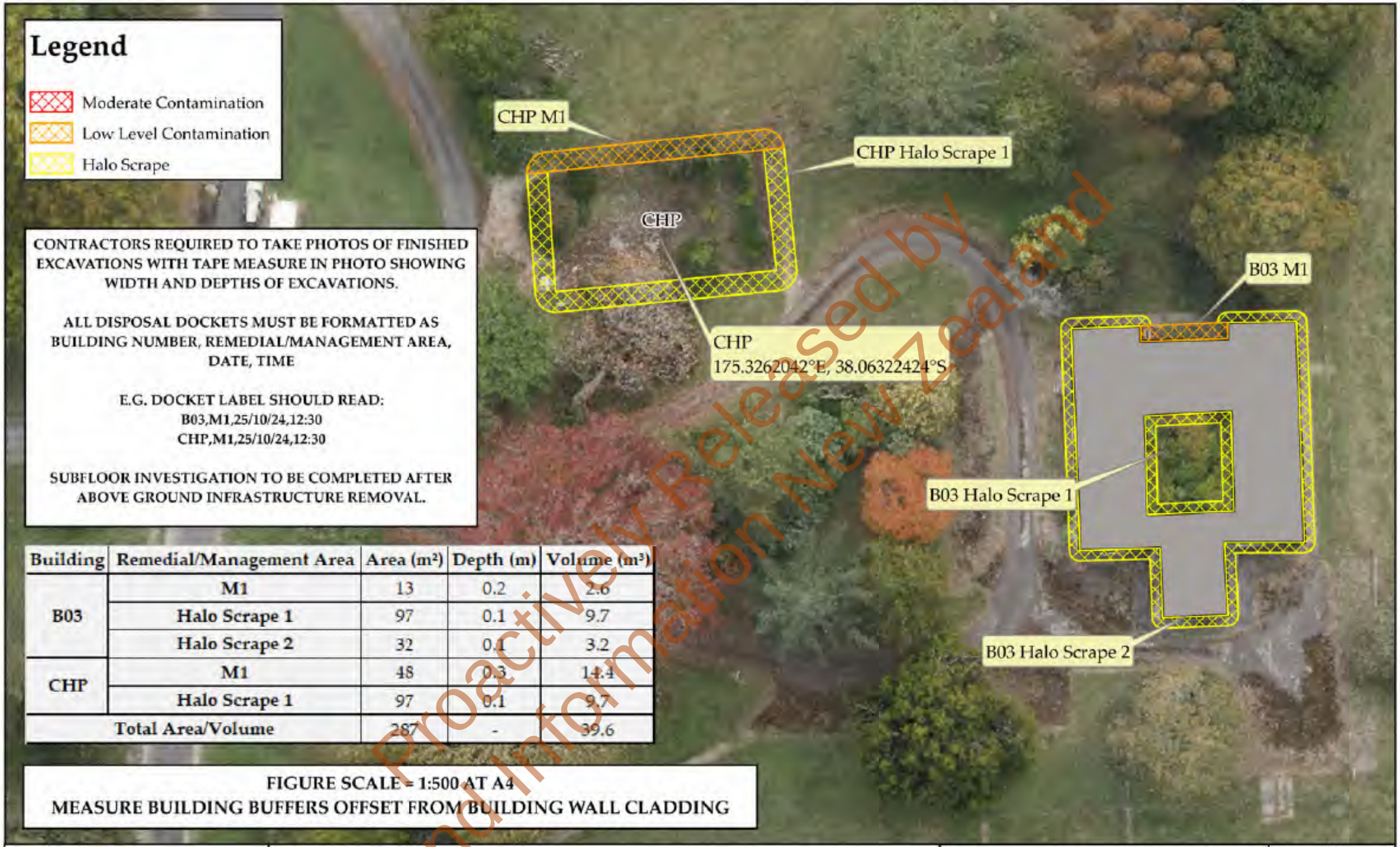
0 4 8 16 24 32 40
Meters



CONTRACTORS REQUIRED TO TAKE PHOTOS OF FINISHED EXCAVATIONS WITH TAPE MEASURE IN PHOTO SHOWING WIDTH AND DEPTHS OF EXCAVATIONS.

ALL DISPOSAL DOCKETS MUST BE FORMATTED AS BUILDING NUMBER, REMEDIAL/MANAGEMENT AREA, DATE, TIME

E.G. DOCKET LABEL SHOULD READ:
B03,M1,25/10/24,12:30
CHP,M1,25/10/24,12:30

SUBFLOOR INVESTIGATION TO BE COMPLETED AFTER ABOVE GROUND INFRASTRUCTURE REMOVAL.

Building	Remedial/Management Area	Area (m²)	Depth (m)	Volume (m³)
B03	M1	13	0.2	2.6
	Halo Scrape 1	97	0.1	9.7
	Halo Scrape 2	32	0.1	3.2
CHP	M1	48	0.3	14.4
	Halo Scrape 1	97	0.1	9.7
Total Area/Volume		287	-	39.6

FIGURE SCALE = 1:500 AT A4
MEASURE BUILDING BUFFERS OFFSET FROM BUILDING WALL CLADDING

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Drawing 33097/R06: Remedial Action Plan - B03 & CHP

Toitū Te Whenua Land Information New Zealand
Former Tokanui Hospital Demolition and Remediation Project
Remedial Action Plan

Date:	05/09/2024
Revision No:	A
Drawn:	EB
Reviewed:	SF

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0 4 8 16 24 32 40
Meters

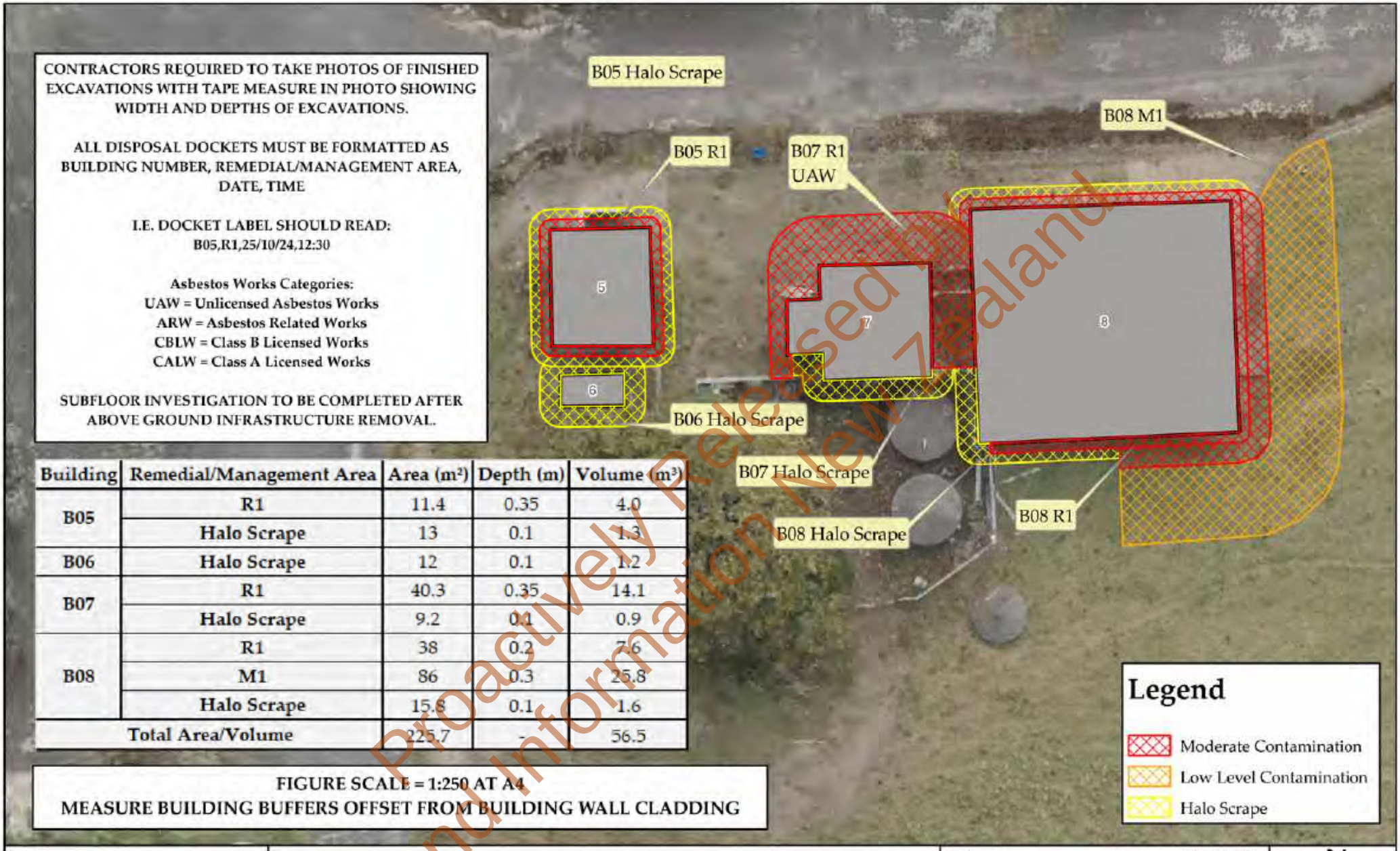
CONTRACTORS REQUIRED TO TAKE PHOTOS OF FINISHED EXCAVATIONS WITH TAPE MEASURE IN PHOTO SHOWING WIDTH AND DEPTHS OF EXCAVATIONS.

ALL DISPOSAL DOCKETS MUST BE FORMATTED AS BUILDING NUMBER, REMEDIAL/MANAGEMENT AREA, DATE, TIME

I.E. DOCKET LABEL SHOULD READ:
B05,R1,25/10/24,12:30

Asbestos Works Categories:
UAW = Unlicensed Asbestos Works
ARW = Asbestos Related Works
CBLW = Class B Licensed Works
CALW = Class A Licensed Works

SUBFLOOR INVESTIGATION TO BE COMPLETED AFTER ABOVE GROUND INFRASTRUCTURE REMOVAL.



Building	Remedial/Management Area	Area (m²)	Depth (m)	Volume (m³)
B05	R1	11.4	0.35	4.0
	Halo Scrape	13	0.1	1.3
B06	Halo Scrape	12	0.1	1.2
B07	R1	40.3	0.35	14.1
	Halo Scrape	9.2	0.1	0.9
B08	R1	38	0.2	7.6
	M1	86	0.3	25.8
	Halo Scrape	15.8	0.1	1.6
Total Area/Volume		225.7	-	56.5

FIGURE SCALE = 1:250 AT A4
MEASURE BUILDING BUFFERS OFFSET FROM BUILDING WALL CLADDING

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Drawing 33097/R07: Remedial Action Plan - B05, B06, B07 & B08

Toitū Te Whenua Land Information New Zealand
Former Tokanui Hospital Demolition and Remediation Project
Remedial Action Plan

Date:	05/09/2024
Revision No:	A
Drawn:	EB
Reviewed:	SF

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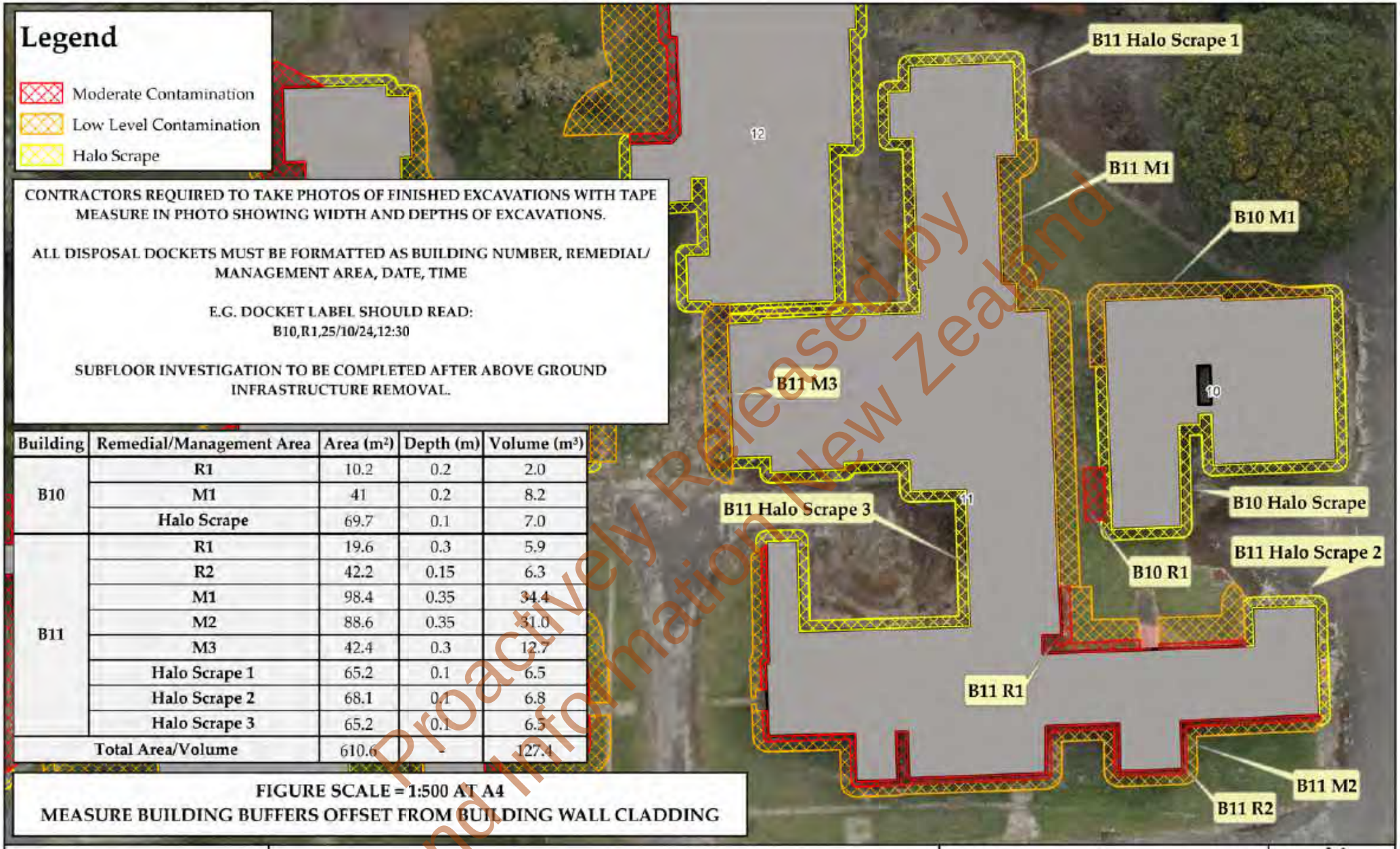
Meters



CONTRACTORS REQUIRED TO TAKE PHOTOS OF FINISHED EXCAVATIONS WITH TAPE MEASURE IN PHOTO SHOWING WIDTH AND DEPTHS OF EXCAVATIONS.

ALL DISPOSAL DOCKETS MUST BE FORMATTED AS BUILDING NUMBER, REMEDIAL/ MANAGEMENT AREA, DATE, TIME

E.G. DOCKET LABEL SHOULD READ:
B10,R1,25/10/24,12:30

SUBFLOOR INVESTIGATION TO BE COMPLETED AFTER ABOVE GROUND INFRASTRUCTURE REMOVAL.

Building	Remedial/Management Area	Area (m²)	Depth (m)	Volume (m³)
B10	R1	10.2	0.2	2.0
	M1	41	0.2	8.2
	Halo Scrape	69.7	0.1	7.0
B11	R1	19.6	0.3	5.9
	R2	42.2	0.15	6.3
	M1	98.4	0.35	34.4
	M2	88.6	0.35	31.0
	M3	42.4	0.3	12.7
	Halo Scrape 1	65.2	0.1	6.5
	Halo Scrape 2	68.1	0.1	6.8
	Halo Scrape 3	65.2	0.1	6.5
Total Area/Volume		610.6	-	127.4

FIGURE SCALE = 1:500 AT A4
MEASURE BUILDING BUFFERS OFFSET FROM BUILDING WALL CLADDING

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Drawing 33097/R08: Remedial Action Plan - B10 & B11

Toitū Te Whenua Land Information New Zealand
Former Tokanui Hospital Demolition and Remediation Project
Remedial Action Plan

Date:	05/09/2024
Revision No:	A
Drawn:	EB
Reviewed:	SF

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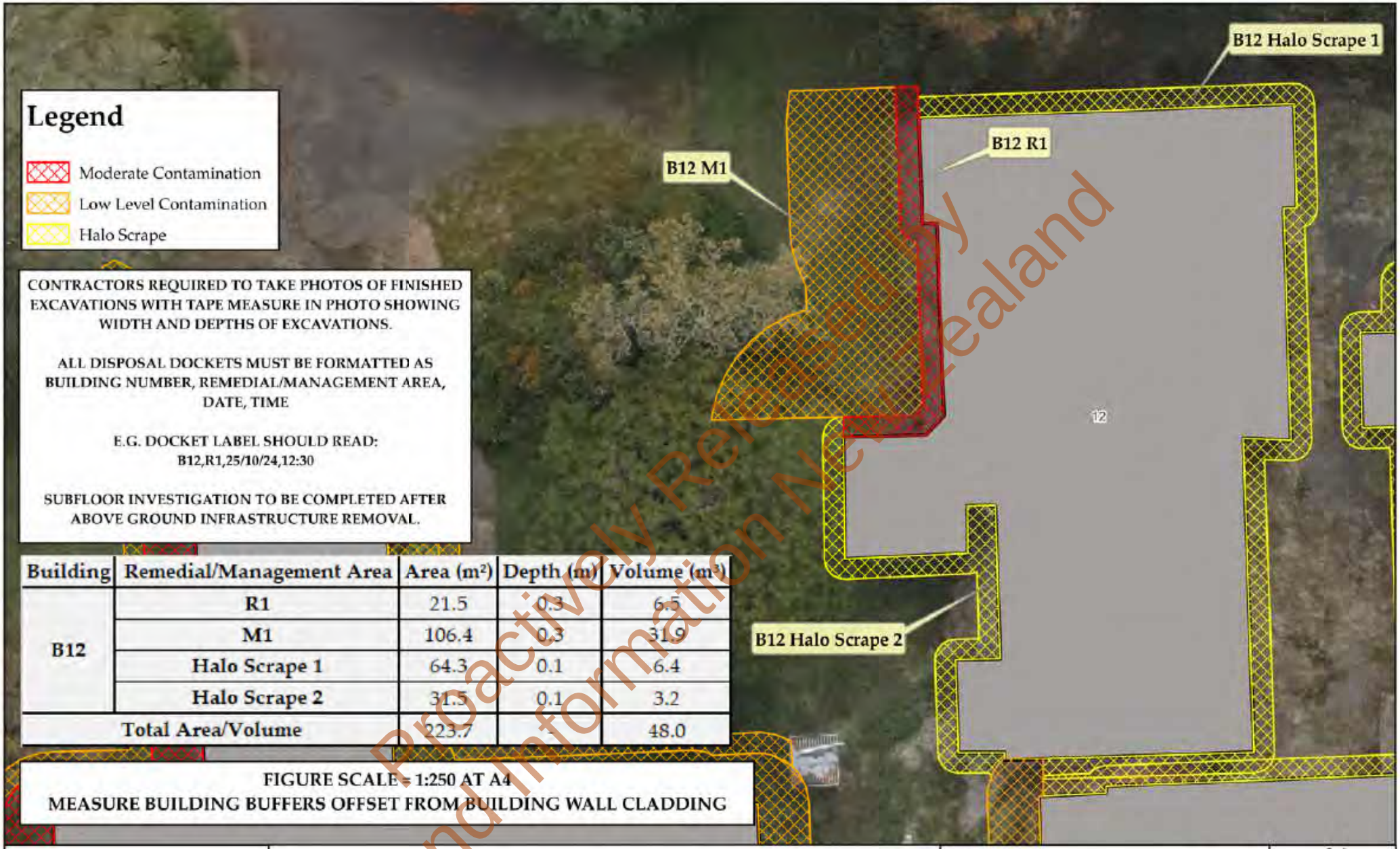
Meters



Legend

- Moderate Contamination
- Low Level Contamination
- Halo Scrape

CONTRACTORS REQUIRED TO TAKE PHOTOS OF FINISHED EXCAVATIONS WITH TAPE MEASURE IN PHOTO SHOWING WIDTH AND DEPTHS OF EXCAVATIONS.

ALL DISPOSAL DOCKETS MUST BE FORMATTED AS BUILDING NUMBER, REMEDIAL/MANAGEMENT AREA, DATE, TIME

E.G. DOCKET LABEL SHOULD READ:
B12,R1,25/10/24,12:30

SUBFLOOR INVESTIGATION TO BE COMPLETED AFTER ABOVE GROUND INFRASTRUCTURE REMOVAL.

Building	Remedial/Management Area	Area (m^2)	Depth (m)	Volume (m^3)
B12	R1	21.5	0.3	6.5
	M1	106.4	0.3	31.9
	Halo Scrape 1	64.3	0.1	6.4
	Halo Scrape 2	31.5	0.1	3.2
Total Area/Volume		223.7		48.0

FIGURE SCALE = 1:250 AT A4
MEASURE BUILDING BUFFERS OFFSET FROM BUILDING WALL CLADDING

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Drawing 33097/R09: Remedial Action Plan - B12

Toitū Te Whenua Land Information New Zealand
Former Tokanui Hospital Demolition and Remediation Project
Remedial Action Plan

Date:	05/09/2024
Revision No:	A
Drawn:	EB
Reviewed:	SF

N

0 2 4 8 12 16 20
Meters

CONTRACTORS REQUIRED TO TAKE PHOTOS OF FINISHED EXCAVATIONS WITH TAPE MEASURE IN PHOTO SHOWING WIDTH AND DEPTHS OF EXCAVATIONS.

ALL DISPOSAL DOCKETS MUST BE FORMATTED AS (BUILDING NUMBER, REMEDIAL/MANAGEMENT AREA, DATE, TIME

E.G. DOCKET LABEL SHOULD READ:
B13,R1,25/10/24,12:30

Asbestos Works Categories:
UAW = Unlicensed Asbestos Works
ARW = Asbestos Related Works
CBLW = Class B Licensed Works
CALW = Class A Licensed Works

SUBFLOOR INVESTIGATION TO BE COMPLETED AFTER ABOVE GROUND INFRASTRUCTURE REMOVAL.

Building	Remedial/Management Area	Area (m²)	Depth (m)	Volume (m³)
B13	R1	58.9	0.5	29.5
	R2	261.1	0.7	182.8
	M1	154.4	0.4	61.8
	M2	235.3	0.35	82.4
	M3	65.6	0.4	26.2
	Halo Scrape 1	10.9	0.1	1.1
	Halo Scrape 2	47.8	0.1	4.8
Total Area/Volume		834	-	388.4

FIGURE SCALE = 1:500 AT A4
MEASURE BUILDING BUFFERS OFFSET FROM BUILDING WALL CLADDING

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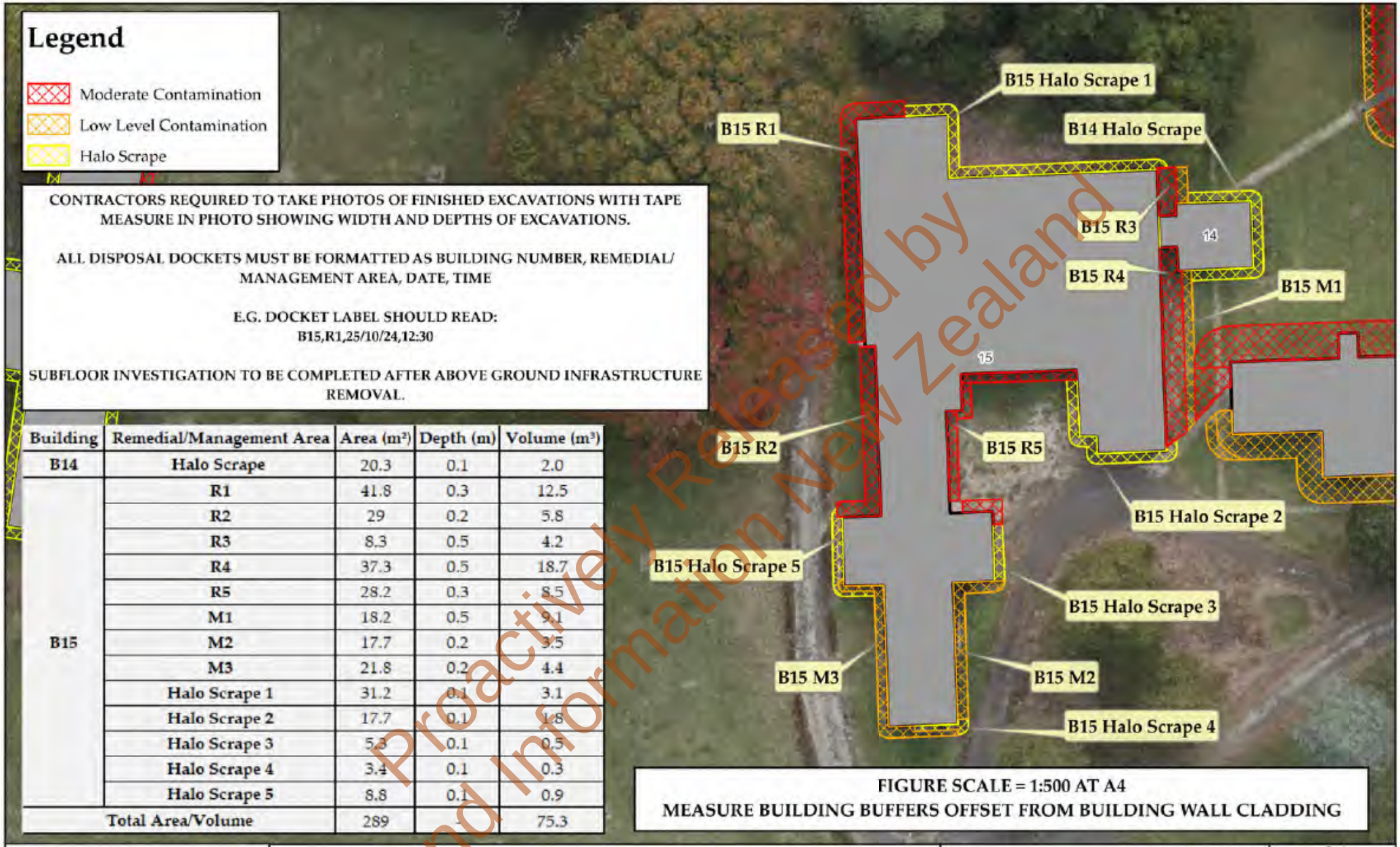
Drawing 33097/R10: Remedial Action Plan - B13

Toitū Te Whenua Land Information New Zealand
Former Tokanui Hospital Demolition and Remediation Project
Remedial Action Plan

Date:	05/09/2024
Revision No:	A
Drawn:	EB
Reviewed:	SF

N

0 4 8 16 24 32 40
Meters



CONTRACTORS REQUIRED TO TAKE PHOTOS OF FINISHED EXCAVATIONS WITH TAPE MEASURE IN PHOTO SHOWING WIDTH AND DEPTHS OF EXCAVATIONS.

ALL DISPOSAL DOCKETS MUST BE FORMATTED AS BUILDING NUMBER, REMEDIAL/ MANAGEMENT AREA, DATE, TIME

E.G. DOCKET LABEL SHOULD READ:
B15,R1,25/10/24,12:30

SUBFLOOR INVESTIGATION TO BE COMPLETED AFTER ABOVE GROUND INFRASTRUCTURE REMOVAL.

Building	Remedial/Management Area	Area (m²)	Depth (m)	Volume (m³)
B14	Halo Scrape	20.3	0.1	2.0
B15	R1	41.8	0.3	12.5
	R2	29	0.2	5.8
	R3	8.3	0.5	4.2
	R4	37.3	0.5	18.7
	R5	28.2	0.3	8.5
	M1	18.2	0.5	9.1
	M2	17.7	0.2	3.5
	M3	21.8	0.2	4.4
	Halo Scrape 1	31.2	0.1	3.1
	Halo Scrape 2	17.7	0.1	1.8
	Halo Scrape 3	5.3	0.1	0.5
	Halo Scrape 4	3.4	0.1	0.3
	Halo Scrape 5	8.8	0.1	0.9
Total Area/Volume		289		75.3

FIGURE SCALE = 1:500 AT A4
MEASURE BUILDING BUFFERS OFFSET FROM BUILDING WALL CLADDING

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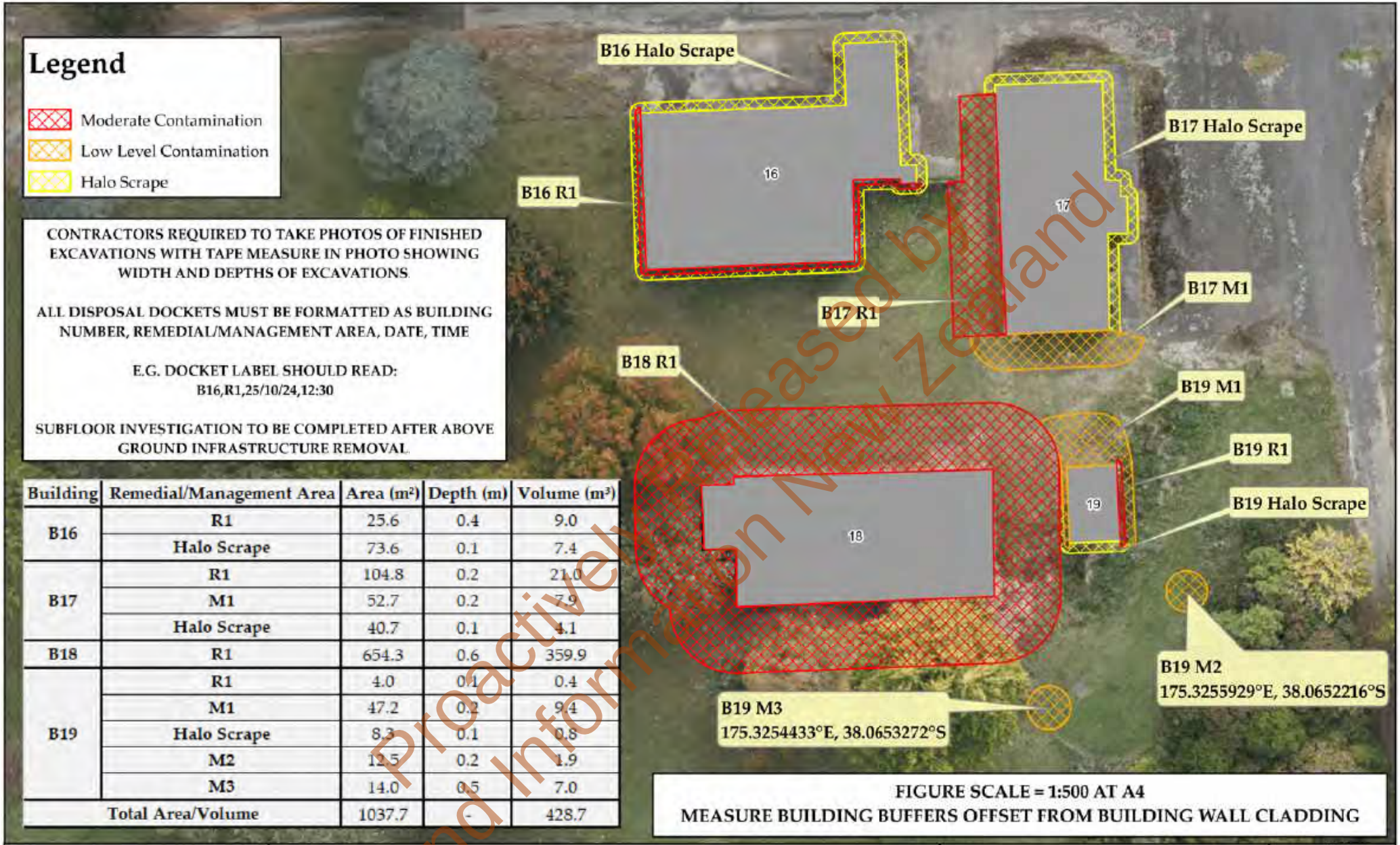
Drawing 33097/R11: Remedial Action Plan - B14 & B15

Toitū Te Whenua Land Information New Zealand
Former Tokanui Hospital Demolition and Remediation Project
Remedial Action Plan

Date:	05/09/2024
Revision No:	A
Drawn:	EB
Reviewed:	SF

N

0 4 8 16 24 32 40
Meters



CONTRACTORS REQUIRED TO TAKE PHOTOS OF FINISHED EXCAVATIONS WITH TAPE MEASURE IN PHOTO SHOWING WIDTH AND DEPTHS OF EXCAVATIONS.

ALL DISPOSAL DOCKETS MUST BE FORMATTED AS BUILDING NUMBER, REMEDIAL/MANAGEMENT AREA, DATE, TIME

E.G. DOCKET LABEL SHOULD READ:
B16,R1,25/10/24,12:30

SUBFLOOR INVESTIGATION TO BE COMPLETED AFTER ABOVE GROUND INFRASTRUCTURE REMOVAL.

Building	Remedial/Management Area	Area (m²)	Depth (m)	Volume (m³)
B16	R1	25.6	0.4	9.0
	Halo Scrape	73.6	0.1	7.4
B17	R1	104.8	0.2	21.0
	M1	52.7	0.2	7.9
	Halo Scrape	40.7	0.1	4.1
B18	R1	654.3	0.6	359.9
B19	R1	4.0	0.1	0.4
	M1	47.2	0.2	9.4
	Halo Scrape	8.3	0.1	0.8
	M2	12.5	0.2	1.9
	M3	14.0	0.5	7.0
Total Area/Volume		1037.7	-	428.7

FIGURE SCALE = 1:500 AT A4
MEASURE BUILDING BUFFERS OFFSET FROM BUILDING WALL CLADDING

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Drawing 33097/R12: Remedial Action Plan - B16, B17, B18 & B19

Toitū Te Whenua Land Information New Zealand
Former Tokanui Hospital Demolition and Remediation Project
Remedial Action Plan

Date:	05/09/2024
Revision No:	A
Drawn:	EB
Reviewed:	SF

N

0 4 8 16 24 32 40
Meters

Legend

- Moderate Contamination
- Low Level Contamination
- Halo Scrape

CONTRACTORS REQUIRED TO TAKE PHOTOS OF FINISHED EXCAVATIONS WITH TAPE MEASURE IN PHOTO SHOWING WIDTH AND DEPTHS OF EXCAVATIONS.

ALL DISPOSAL DOCKETS MUST BE FORMATTED AS BUILDING NUMBER, REMEDIAL/MANAGEMENT AREA, DATE, TIME

E.G. DOCKET LABEL SHOULD READ:
B21,R1,25/10/24,12:30

Asbestos Works Categories:
UAW = Unlicensed Asbestos Works
ARW = Asbestos Related Works
CBLW = Class B Licensed Works
CALW = Class A Licensed Works

SUBFLOOR INVESTIGATION TO BE COMPLETED AFTER ABOVE GROUND INFRASTRUCTURE REMOVAL.

Building	Remedial/Management Area	Area (m²)	Depth (m)	Volume (m³)
B20	Halo Scrape	19.8	0.1	1.9
B21	R1	22.8	0.35	7.9
	R2	22.8	0.35	7.9
	R3	25.7	0.2	5.1
	Halo Scrape 1	73.9	0.1	7.4
	Halo Scrape 2	118.2	0.1	11.8
B22	Halo Scrape	33.7	0.1	3.4
	R1	56.1	0.2	11.2
Total Area/Volume		373	-	56.6

FIGURE SCALE = 1:500 AT A4
MEASURE BUILDING BUFFERS OFFSET FROM BUILDING WALL CLADDING

Fraser Thomas
Over 50 Years
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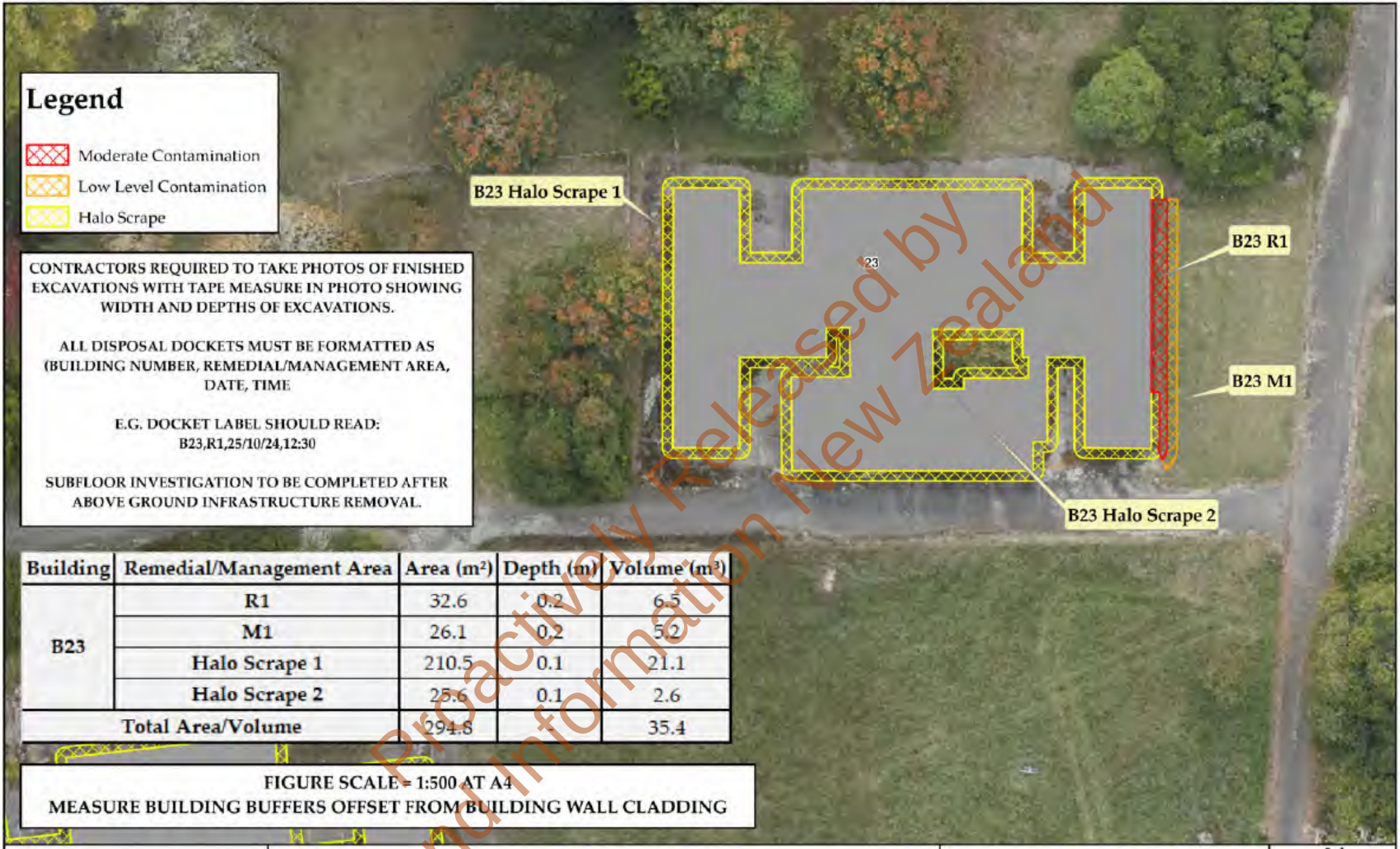
Drawing 33097/R13: Remedial Action Plan - B20, B21 & B22

Toitū Te Whenua Land Information New Zealand
Former Tokanui Hospital Demolition and Remediation Project
Remedial Action Plan

Date:	05/09/2024
Revision No:	A
Drawn:	EB
Reviewed:	SF

N

0 4 8 16 24 32 40
Meters



CONTRACTORS REQUIRED TO TAKE PHOTOS OF FINISHED EXCAVATIONS WITH TAPE MEASURE IN PHOTO SHOWING WIDTH AND DEPTHS OF EXCAVATIONS.

ALL DISPOSAL DOCKETS MUST BE FORMATTED AS (BUILDING NUMBER, REMEDIAL/MANAGEMENT AREA, DATE, TIME

E.G. DOCKET LABEL SHOULD READ:
B23,R1,25/10/24,12:30

SUBFLOOR INVESTIGATION TO BE COMPLETED AFTER ABOVE GROUND INFRASTRUCTURE REMOVAL.

Building	Remedial/Management Area	Area (m^2)	Depth (m)	Volume (m^3)
B23	R1	32.6	0.2	6.5
	M1	26.1	0.2	5.2
	Halo Scrape 1	210.5	0.1	21.1
	Halo Scrape 2	25.6	0.1	2.6
Total Area/Volume		294.8		35.4

FIGURE SCALE = 1:500 AT A4
MEASURE BUILDING BUFFERS OFFSET FROM BUILDING WALL CLADDING

Fraser Thomas
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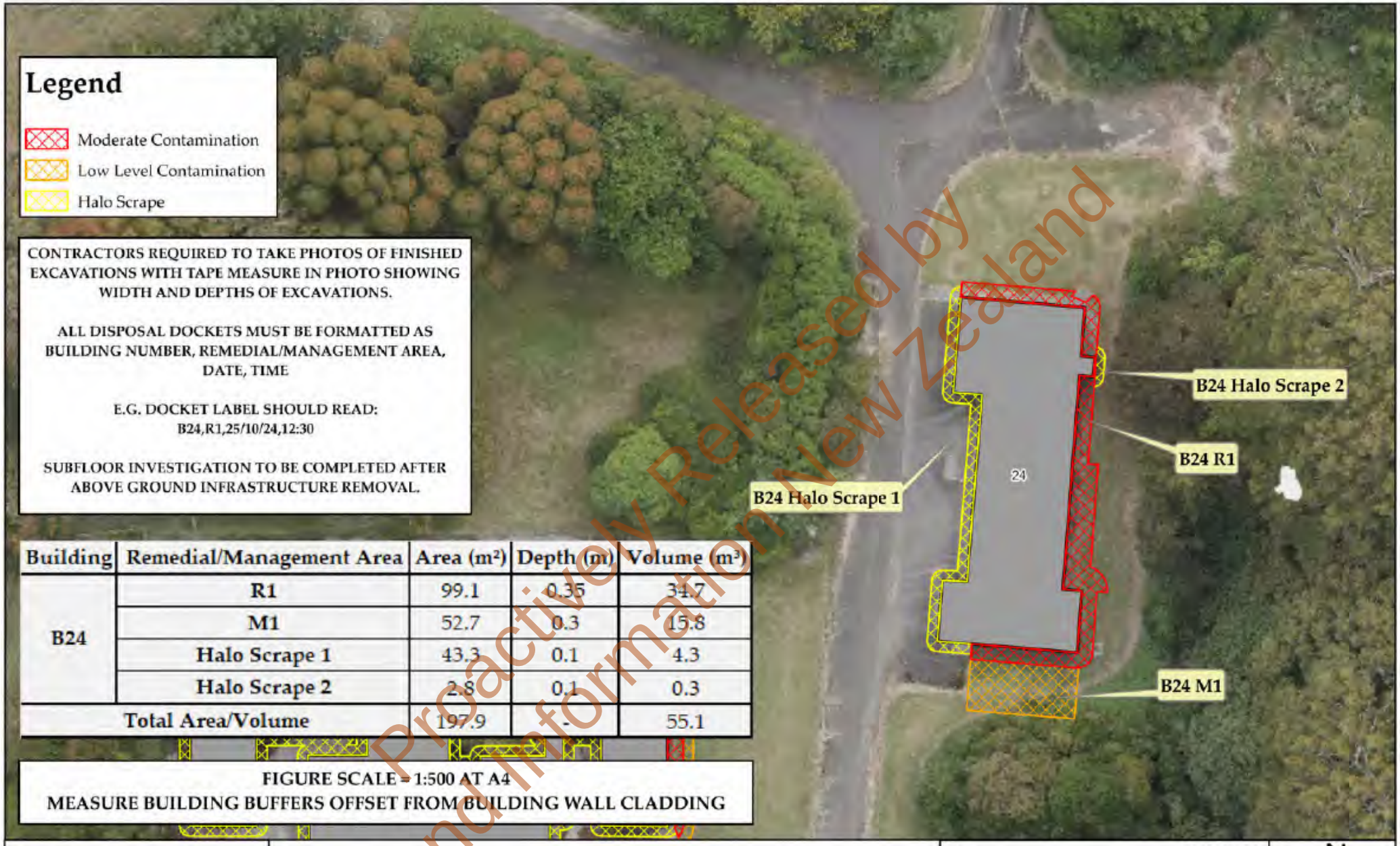
Drawing 33097/R14: Remedial Action Plan - B23

Toitū Te Whenua Land Information New Zealand
Former Tokanui Hospital Demolition and Remediation Project
Remedial Action Plan

Date:	05/09/2024
Revision No:	A
Drawn:	EB
Reviewed:	SF

N

0 4 8 16 24 32 40
Meters



Building	Remedial/Management Area	Area (m²)	Depth (m)	Volume (m³)
B24	R1	99.1	0.35	34.7
	M1	52.7	0.3	15.8
	Halo Scrape 1	43.3	0.1	4.3
	Halo Scrape 2	2.8	0.1	0.3
Total Area/Volume		197.9	-	55.1

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Drawing 33097/R15: Remedial Action Plan - B24

Toitū Te Whenua Land Information New Zealand
Former Tokanui Hospital Demolition and Remediation Project
Remedial Action Plan

Date:	05/09/2024
Revision No:	A
Drawn:	EB
Reviewed:	SF

N

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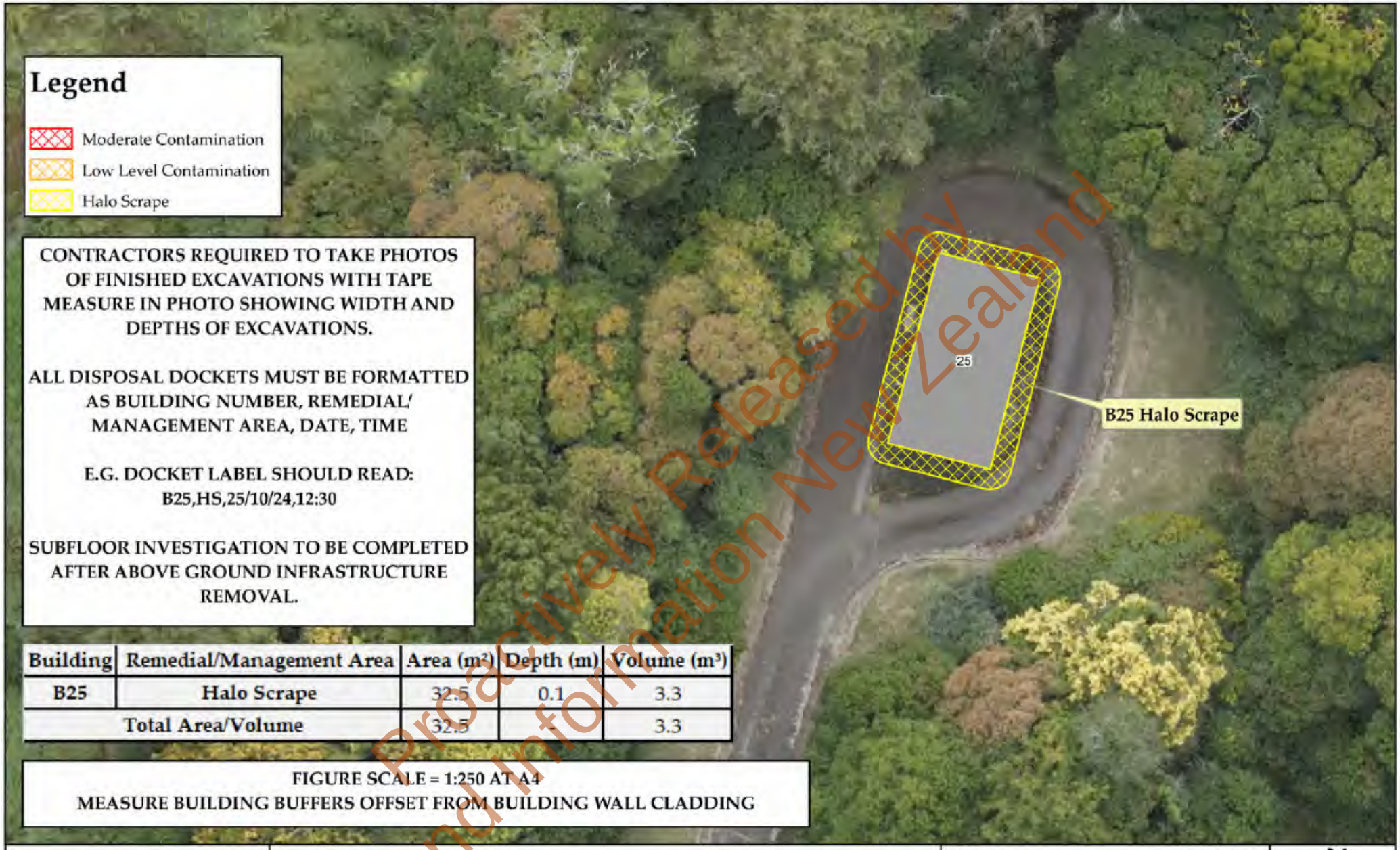
Meters



CONTRACTORS REQUIRED TO TAKE PHOTOS OF FINISHED EXCAVATIONS WITH TAPE MEASURE IN PHOTO SHOWING WIDTH AND DEPTHS OF EXCAVATIONS.

ALL DISPOSAL DOCKETS MUST BE FORMATTED AS BUILDING NUMBER, REMEDIAL/ MANAGEMENT AREA, DATE, TIME

E.G. DOCKET LABEL SHOULD READ:
B25,HS,25/10/24,12:30

SUBFLOOR INVESTIGATION TO BE COMPLETED AFTER ABOVE GROUND INFRASTRUCTURE REMOVAL.

Building	Remedial/Management Area	Area (m^2)	Depth (m)	Volume (m^3)
B25	Halo Scrape	32.5	0.1	3.3
Total Area/Volume		32.5	-	3.3

FIGURE SCALE = 1:250 AT A4
MEASURE BUILDING BUFFERS OFFSET FROM BUILDING WALL CLADDING

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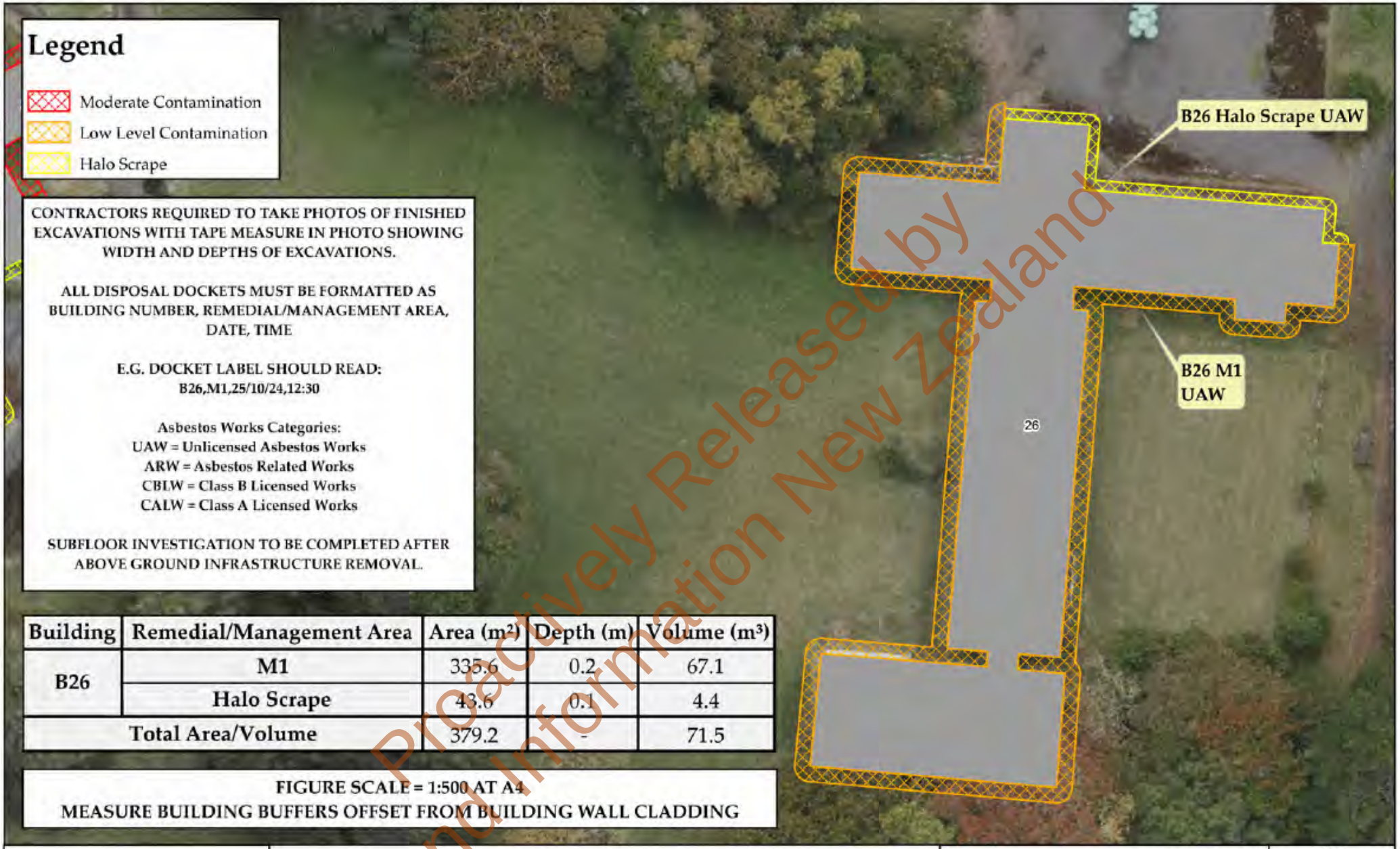
Drawing 33097/R16: Remedial Action Plan - B25

Toitū Te Whenua Land Information New Zealand
Former Tokanui Hospital Demolition and Remediation Project
Remedial Action Plan

Date:	05/09/2024
Revision No:	A
Drawn:	EB
Reviewed:	SF

N

0 2 4 8 12 16 20
Meters



CONTRACTORS REQUIRED TO TAKE PHOTOS OF FINISHED EXCAVATIONS WITH TAPE MEASURE IN PHOTO SHOWING WIDTH AND DEPTHS OF EXCAVATIONS.

ALL DISPOSAL DOCKETS MUST BE FORMATTED AS BUILDING NUMBER, REMEDIAL/MANAGEMENT AREA, DATE, TIME

E.G. DOCKET LABEL SHOULD READ:
B26,M1,25/10/24,12:30

Asbestos Works Categories:
UAW = Unlicensed Asbestos Works
ARW = Asbestos Related Works
CBLW = Class B Licensed Works
CALW = Class A Licensed Works

SUBFLOOR INVESTIGATION TO BE COMPLETED AFTER ABOVE GROUND INFRASTRUCTURE REMOVAL.

Building	Remedial/Management Area	Area (m^2)	Depth (m)	Volume (m^3)
B26	M1	335.6	0.2	67.1
	Halo Scrape	43.6	0.1	4.4
Total Area/Volume		379.2	-	71.5

FIGURE SCALE = 1:500 AT A4
MEASURE BUILDING BUFFERS OFFSET FROM BUILDING WALL CLADDING

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Drawing 33097/R17: Remedial Action Plan - B26

Toitū Te Whenua Land Information New Zealand
Former Tokanui Hospital Demolition and Remediation Project
Remedial Action Plan

Date:	05/09/2024
Revision No:	A
Drawn:	EB
Reviewed:	SF

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0 4 8 16 24 32 40
Meters

CONTRACTORS REQUIRED TO TAKE PHOTOS OF FINISHED EXCAVATIONS WITH TAPE MEASURE IN PHOTO SHOWING WIDTH AND DEPTHS OF EXCAVATIONS.

ALL DISPOSAL DOCKETS MUST BE FORMATTED AS BUILDING NUMBER, REMEDIAL/MANAGEMENT AREA, DATE, TIME

E.G. DOCKET LABEL SHOULD READ:
B27,R1,25/10/24,12:30

SUBFLOOR INVESTIGATION TO BE COMPLETED AFTER ABOVE GROUND INFRASTRUCTURE REMOVAL.

Building	Remedial/Management Area	Area (m²)	Depth (m)	Volume (m³)
B27	R1	68	0.15	10.2
	M1	52.4	0.1	5.2
	Halo Scrape 1	230.5	0.1	23.1
	Halo Scrape 2	12.2	0.1	1.2
B28	Halo Scrape	28.7	0.1	2.9
S3	Halo Scrape	27	0.1	2.7
Total Area/Volume		418.8		45.3

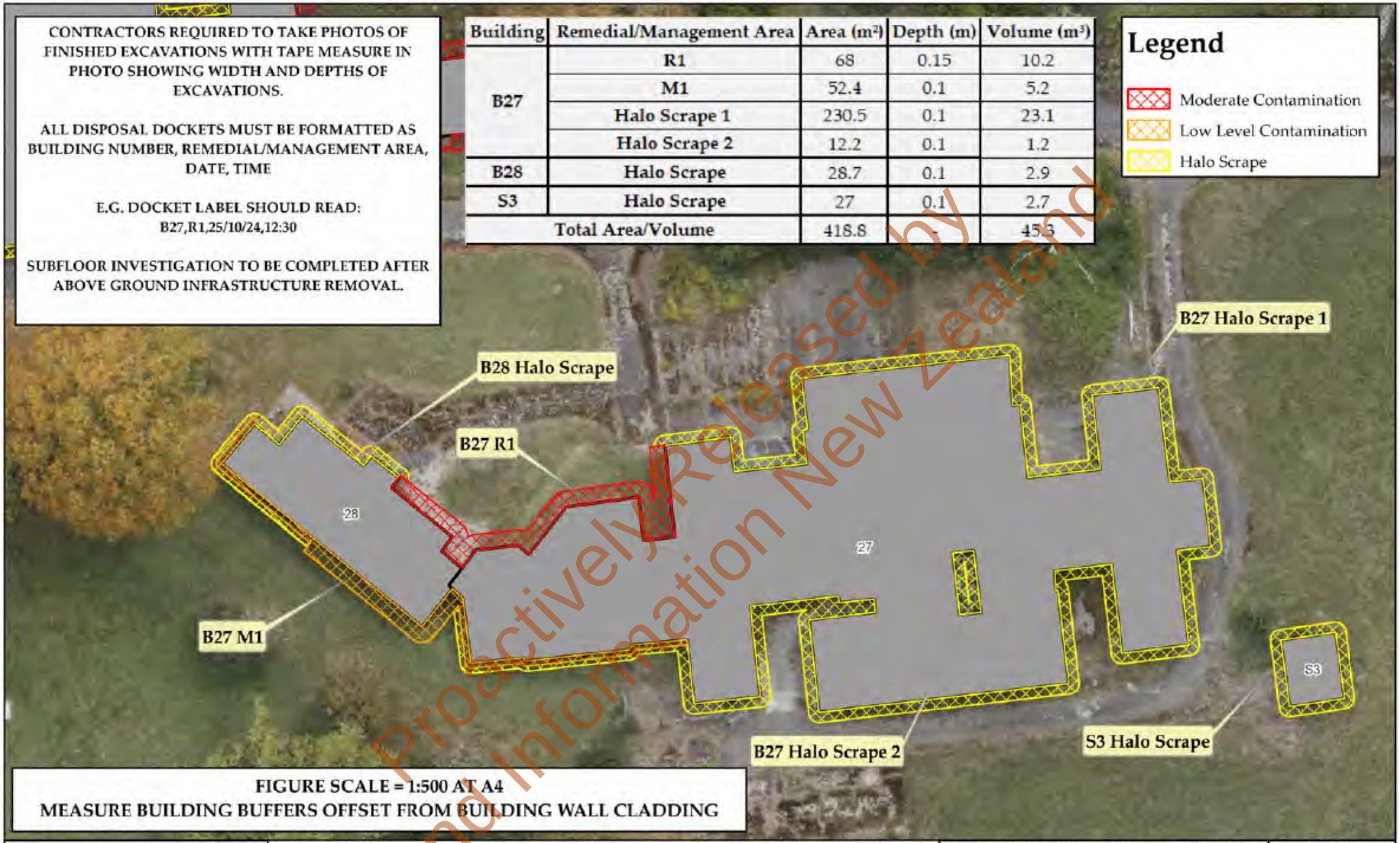

FIGURE SCALE = 1:500 AT A4
MEASURE BUILDING BUFFERS OFFSET FROM BUILDING WALL CLADDING

Fraser Thomas
Over 50 Years
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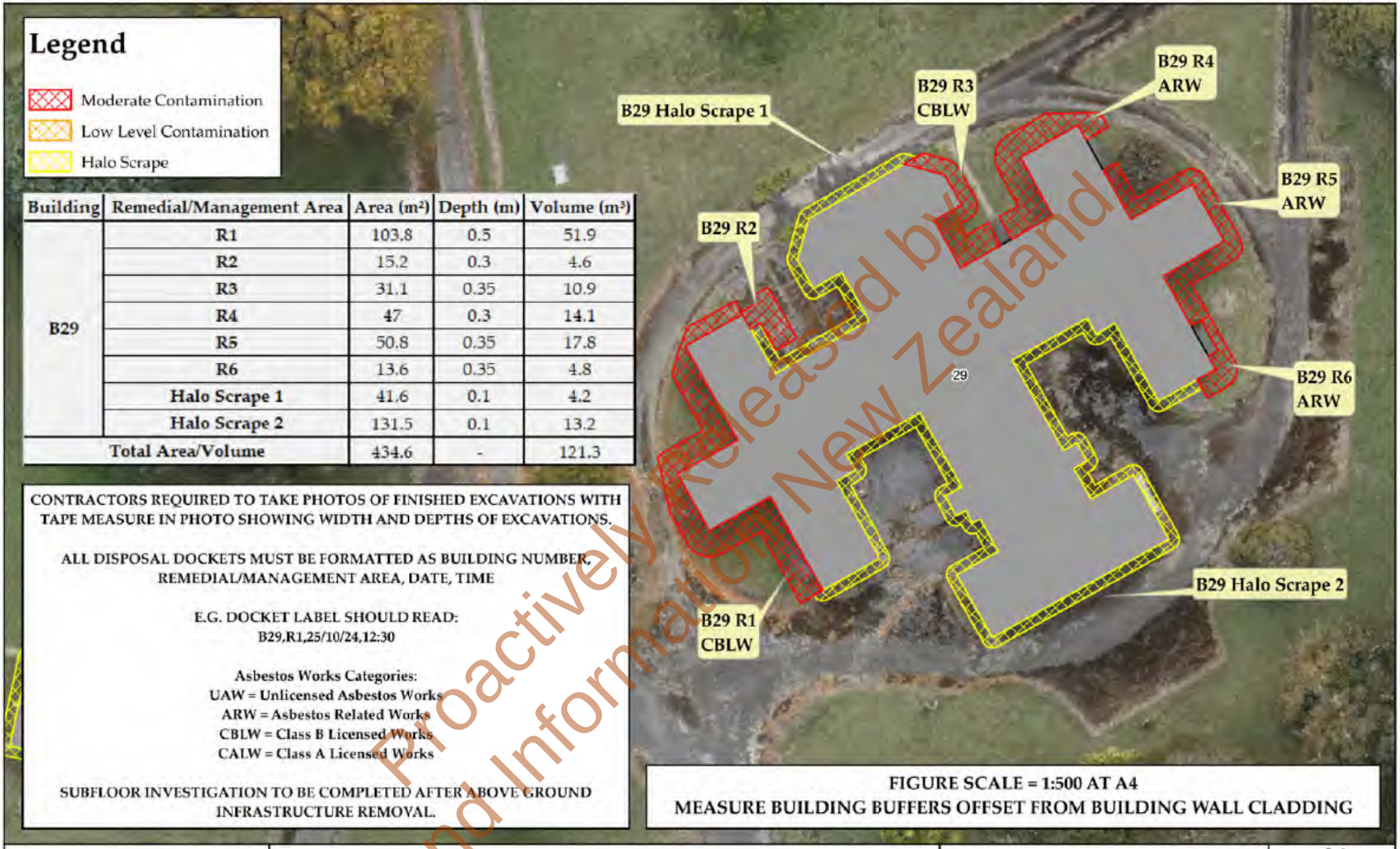
Drawing 33097/R18: Remedial Action Plan - B27, B28 & S3

Toitū Te Whenua Land Information New Zealand
Former Tokanui Hospital Demolition and Remediation Project
Remedial Action Plan

Date:	05/09/2024
Revision No:	A
Drawn:	EB
Reviewed:	SF

N

0 4 8 16 24 32 40
Meters



Building	Remedial/Management Area	Area (m²)	Depth (m)	Volume (m³)
B29	R1	103.8	0.5	51.9
	R2	15.2	0.3	4.6
	R3	31.1	0.35	10.9
	R4	47	0.3	14.1
	R5	50.8	0.35	17.8
	R6	13.6	0.35	4.8
	Halo Scrape 1	41.6	0.1	4.2
	Halo Scrape 2	131.5	0.1	13.2
Total Area/Volume		434.6	-	121.3

CONTRACTORS REQUIRED TO TAKE PHOTOS OF FINISHED EXCAVATIONS WITH TAPE MEASURE IN PHOTO SHOWING WIDTH AND DEPTHS OF EXCAVATIONS.

ALL DISPOSAL DOCKETS MUST BE FORMATTED AS BUILDING NUMBER, REMEDIAL/MANAGEMENT AREA, DATE, TIME

E.G. DOCKET LABEL SHOULD READ:
B29,R1,25/10/24,12:30

Asbestos Works Categories:
UAW = Unlicensed Asbestos Works
ARW = Asbestos Related Works
CBLW = Class B Licensed Works
CALW = Class A Licensed Works

SUBFLOOR INVESTIGATION TO BE COMPLETED AFTER ABOVE GROUND INFRASTRUCTURE REMOVAL.

FIGURE SCALE = 1:500 AT A4
MEASURE BUILDING BUFFERS OFFSET FROM BUILDING WALL CLADDING

Over 50 Years
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Drawing 33097/R19: Remedial Action Plan - B29

Toitū Te Whenua Land Information New Zealand
Former Tokanui Hospital Demolition and Remediation Project
Remedial Action Plan

Date:	05/09/2024
Revision No:	A
Drawn:	EB
Reviewed:	SF

N

0 4 8 16 24 32 40
Meters

Legend

- Moderate Contamination
- Low Level Contamination
- Halo Scrape

FIGURE SCALE = 1:500 AT A4
MEASURE BUILDING BUFFERS OFFSET FROM BUILDING WALL CLADDING

CONTRACTORS REQUIRED TO TAKE PHOTOS OF FINISHED EXCAVATIONS WITH TAPE MEASURE IN PHOTO SHOWING WIDTH AND DEPTHS OF EXCAVATIONS.

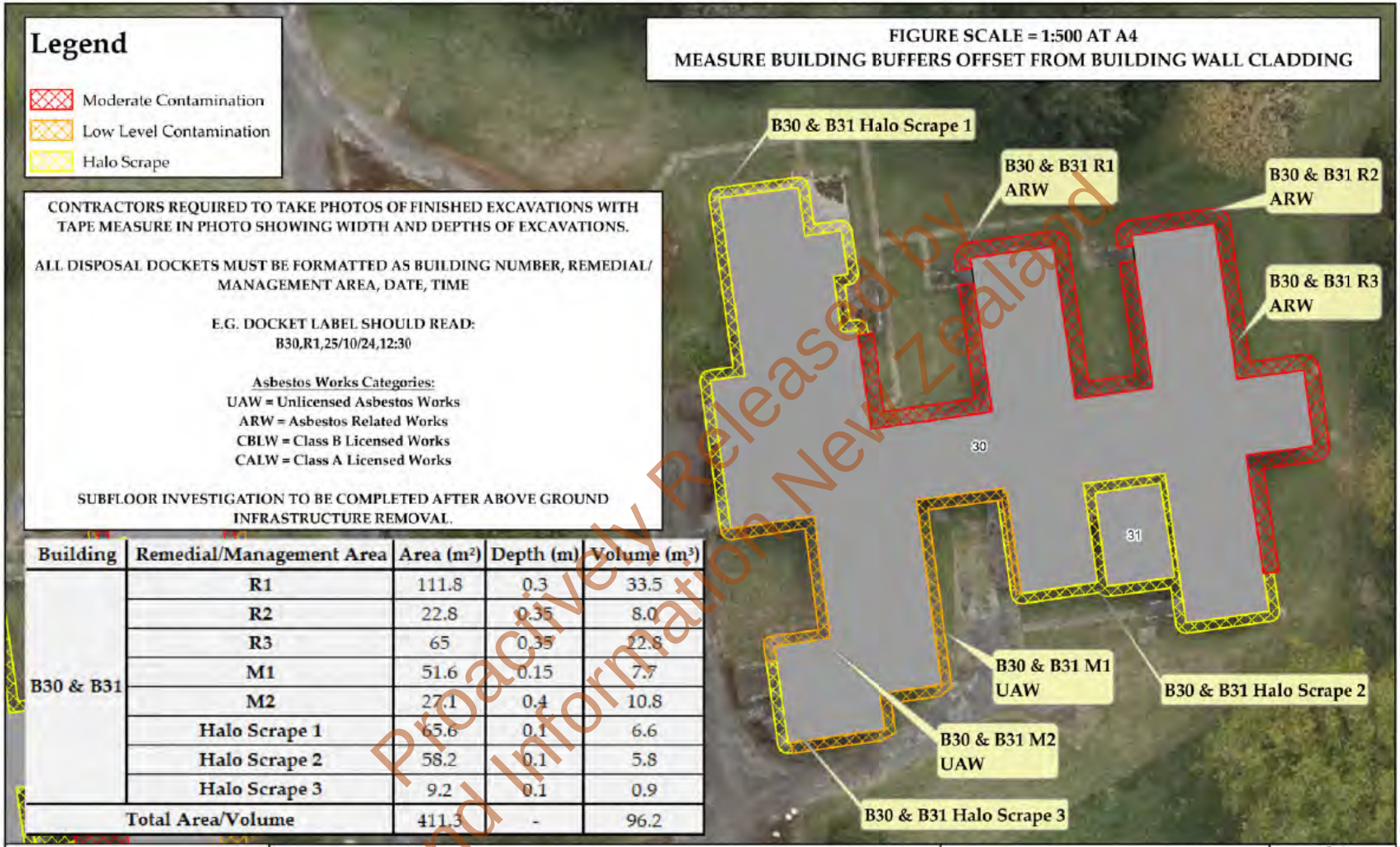
ALL DISPOSAL DOCKETS MUST BE FORMATTED AS BUILDING NUMBER, REMEDIAL/ MANAGEMENT AREA, DATE, TIME

E.G. DOCKET LABEL SHOULD READ:
B30,R1,25/10/24,12:30

Asbestos Works Categories:
UAW = Unlicensed Asbestos Works
ARW = Asbestos Related Works
CBLW = Class B Licensed Works
CALW = Class A Licensed Works

SUBFLOOR INVESTIGATION TO BE COMPLETED AFTER ABOVE GROUND INFRASTRUCTURE REMOVAL.

Building	Remedial/Management Area	Area (m²)	Depth (m)	Volume (m³)
B30 & B31	R1	111.8	0.3	33.5
	R2	22.8	0.35	8.0
	R3	65	0.35	22.8
	M1	51.6	0.15	7.7
	M2	27.1	0.4	10.8
	Halo Scrape 1	65.6	0.1	6.6
	Halo Scrape 2	58.2	0.1	5.8
	Halo Scrape 3	9.2	0.1	0.9
Total Area/Volume		411.3	-	96.2



Fraser Thomas
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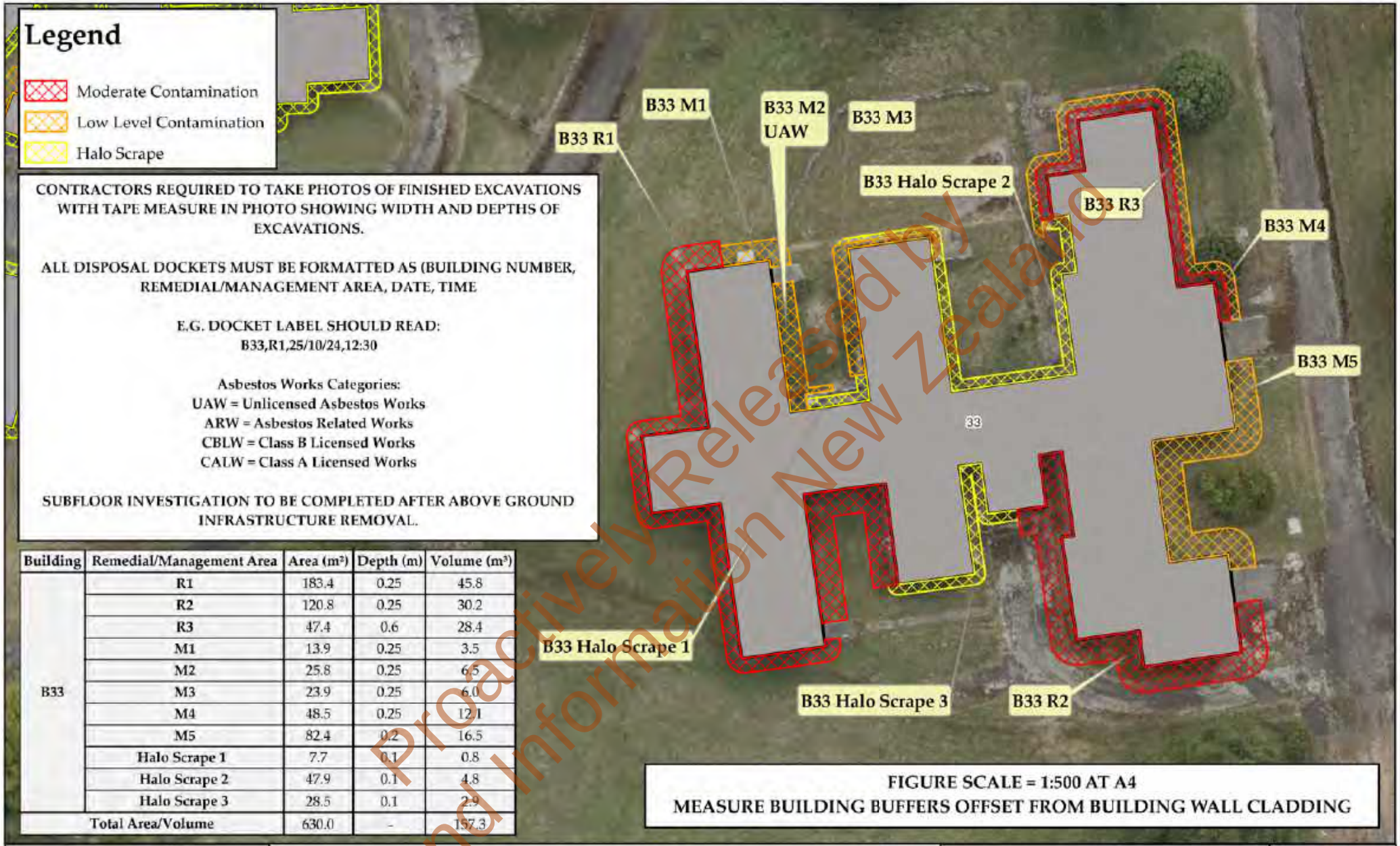
Drawing 33097/R20: Remedial Action Plan - B30 & B31

Toitū Te Whenua Land Information New Zealand
Former Tokanui Hospital Demolition and Remediation Project
Remedial Action Plan

Date:	05/09/2024
Revision No:	A
Drawn:	EB
Reviewed:	SF

N

0 4 8 16 24 32 40
Meters



CONTRACTORS REQUIRED TO TAKE PHOTOS OF FINISHED EXCAVATIONS WITH TAPE MEASURE IN PHOTO SHOWING WIDTH AND DEPTHS OF EXCAVATIONS.

ALL DISPOSAL DOCKETS MUST BE FORMATTED AS (BUILDING NUMBER, REMEDIAL/MANAGEMENT AREA, DATE, TIME

E.G. DOCKET LABEL SHOULD READ:
B33,R1,25/10/24,12:30

Asbestos Works Categories:
UAW = Unlicensed Asbestos Works
ARW = Asbestos Related Works
CBLW = Class B Licensed Works
CALW = Class A Licensed Works

SUBFLOOR INVESTIGATION TO BE COMPLETED AFTER ABOVE GROUND INFRASTRUCTURE REMOVAL.

Building	Remedial/Management Area	Area (m²)	Depth (m)	Volume (m³)
B33	R1	183.4	0.25	45.8
	R2	120.8	0.25	30.2
	R3	47.4	0.6	28.4
	M1	13.9	0.25	3.5
	M2	25.8	0.25	6.5
	M3	23.9	0.25	6.0
	M4	48.5	0.25	12.1
	M5	82.4	0.2	16.5
	Halo Scrape 1	7.7	0.1	0.8
	Halo Scrape 2	47.9	0.1	4.8
	Halo Scrape 3	28.5	0.1	2.9
Total Area/Volume		630.0	-	157.3

FIGURE SCALE = 1:500 AT A4
MEASURE BUILDING BUFFERS OFFSET FROM BUILDING WALL CLADDING

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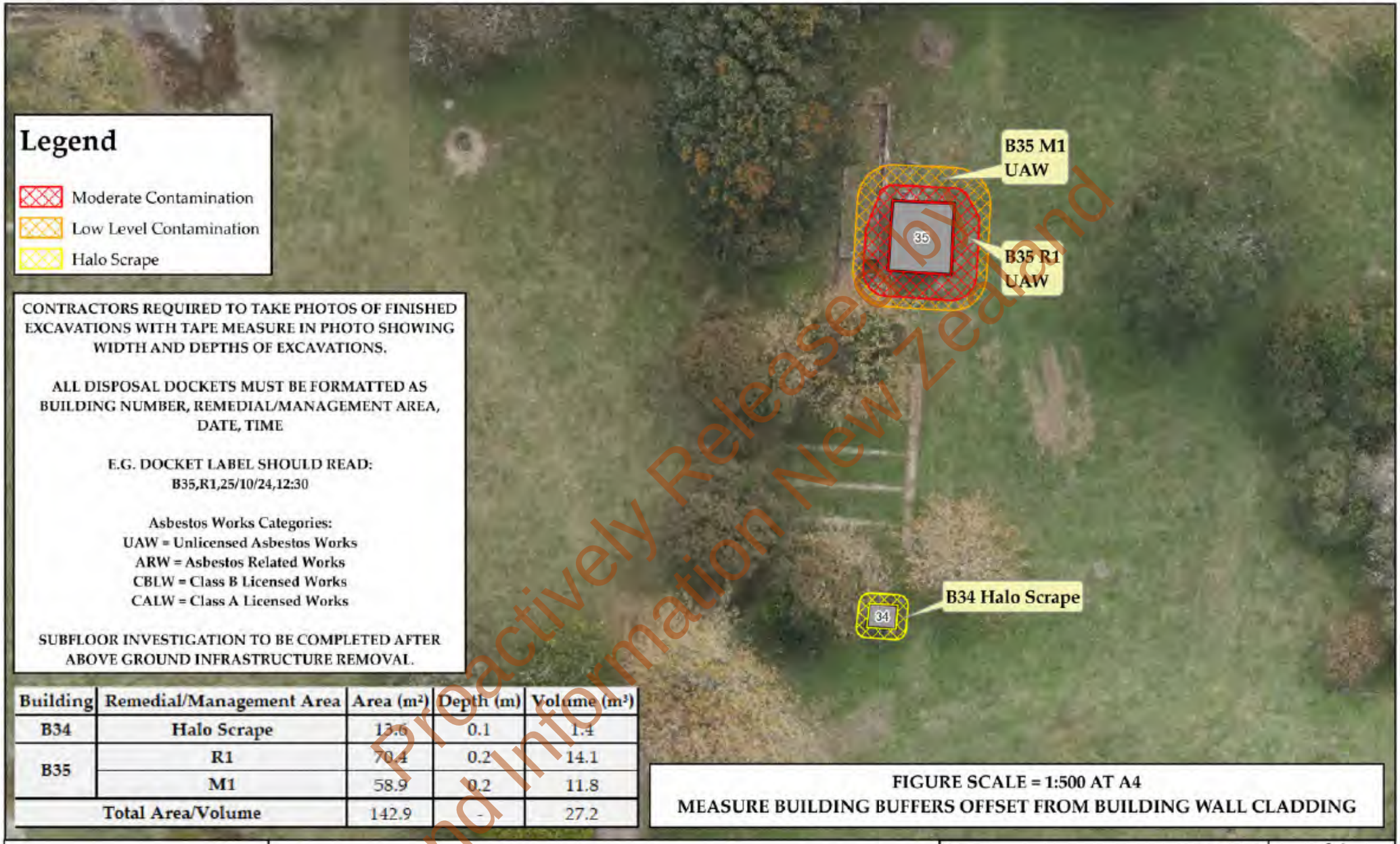
Drawing 33097/R21: Remedial Action Plan - B33

Toitū Te Whenua Land Information New Zealand
Former Tokanui Hospital Demolition and Remediation Project
Remedial Action Plan

Date:	06/09/2024
Revision No:	A
Drawn:	EB
Reviewed:	SF

N

0 4 8 16 24 32 40
Meters



CONTRACTORS REQUIRED TO TAKE PHOTOS OF FINISHED EXCAVATIONS WITH TAPE MEASURE IN PHOTO SHOWING WIDTH AND DEPTHS OF EXCAVATIONS.

ALL DISPOSAL DOCKETS MUST BE FORMATTED AS BUILDING NUMBER, REMEDIAL/MANAGEMENT AREA, DATE, TIME

E.G. DOCKET LABEL SHOULD READ:
B35,R1,25/10/24,12:30

Asbestos Works Categories:
UAW = Unlicensed Asbestos Works
ARW = Asbestos Related Works
CBLW = Class B Licensed Works
CALW = Class A Licensed Works

SUBFLOOR INVESTIGATION TO BE COMPLETED AFTER ABOVE GROUND INFRASTRUCTURE REMOVAL.

Building	Remedial/Management Area	Area (m²)	Depth (m)	Volume (m³)
B34	Halo Scrape	13.6	0.1	1.4
B35	R1	70.4	0.2	14.1
	M1	58.9	0.2	11.8
Total Area/Volume		142.9	-	27.2

FIGURE SCALE = 1:500 AT A4
MEASURE BUILDING BUFFERS OFFSET FROM BUILDING WALL CLADDING

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Drawing 33097/R22: Remedial Action Plan - B34 & B35

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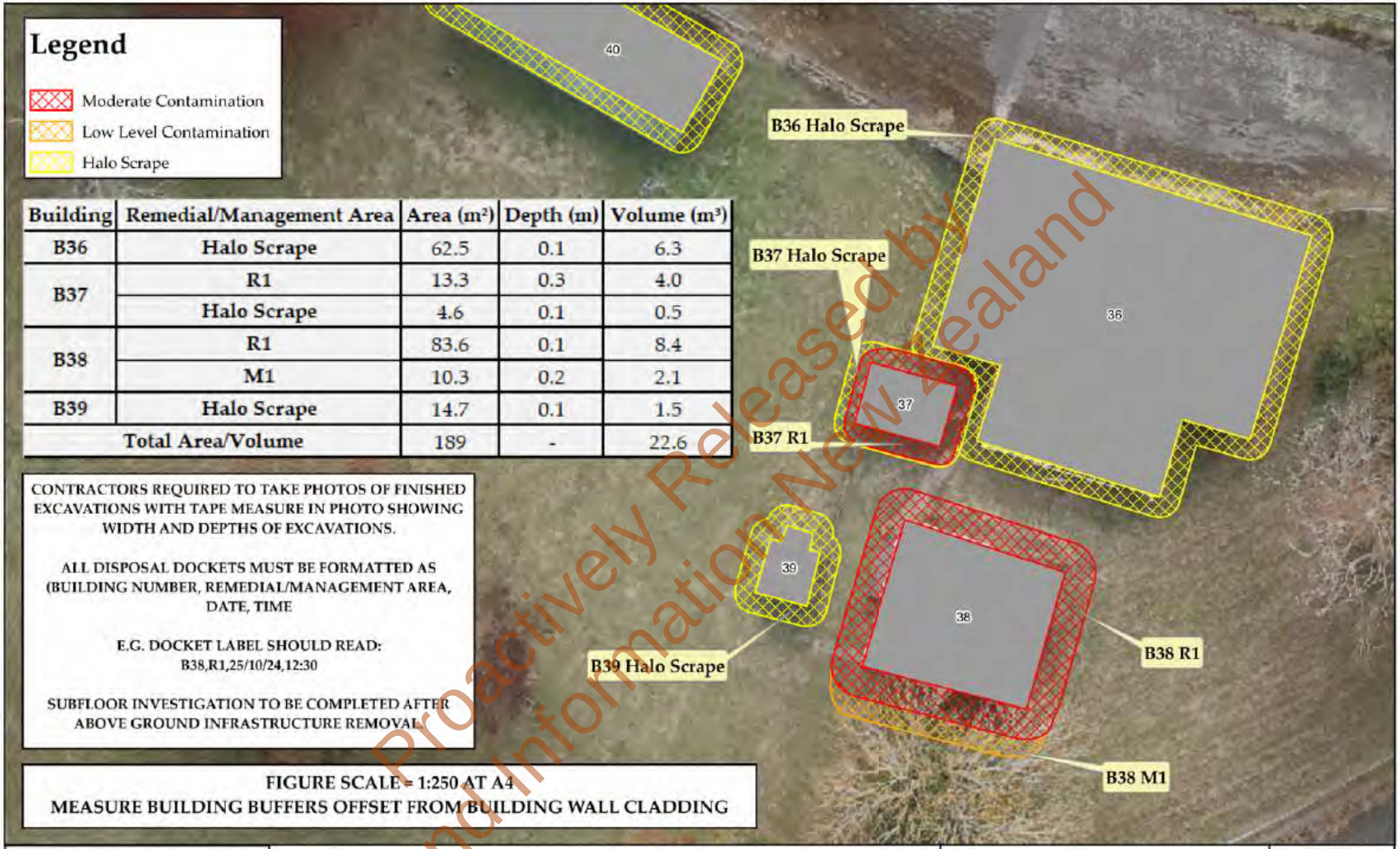
Former Tokanui Hospital Demolition and Remediation Project
Remedial Action Plan

Date:	06/09/2024
Revision No:	A
Drawn:	EB
Reviewed:	SF

N

0 4 8 16 24 32 40
Meters



Building	Remedial/Management Area	Area (m²)	Depth (m)	Volume (m³)
B36	Halo Scrape	62.5	0.1	6.3
B37	R1	13.3	0.3	4.0
	Halo Scrape	4.6	0.1	0.5
B38	R1	83.6	0.1	8.4
	M1	10.3	0.2	2.1
B39	Halo Scrape	14.7	0.1	1.5
Total Area/Volume		189	-	22.6

CONTRACTORS REQUIRED TO TAKE PHOTOS OF FINISHED EXCAVATIONS WITH TAPE MEASURE IN PHOTO SHOWING WIDTH AND DEPTHS OF EXCAVATIONS.

ALL DISPOSAL DOCKETS MUST BE FORMATTED AS (BUILDING NUMBER, REMEDIAL/MANAGEMENT AREA, DATE, TIME

E.G. DOCKET LABEL SHOULD READ:
B38,R1,25/10/24,12:30

SUBFLOOR INVESTIGATION TO BE COMPLETED AFTER ABOVE GROUND INFRASTRUCTURE REMOVAL

FIGURE SCALE = 1:250 AT A4
MEASURE BUILDING BUFFERS OFFSET FROM BUILDING WALL CLADDING

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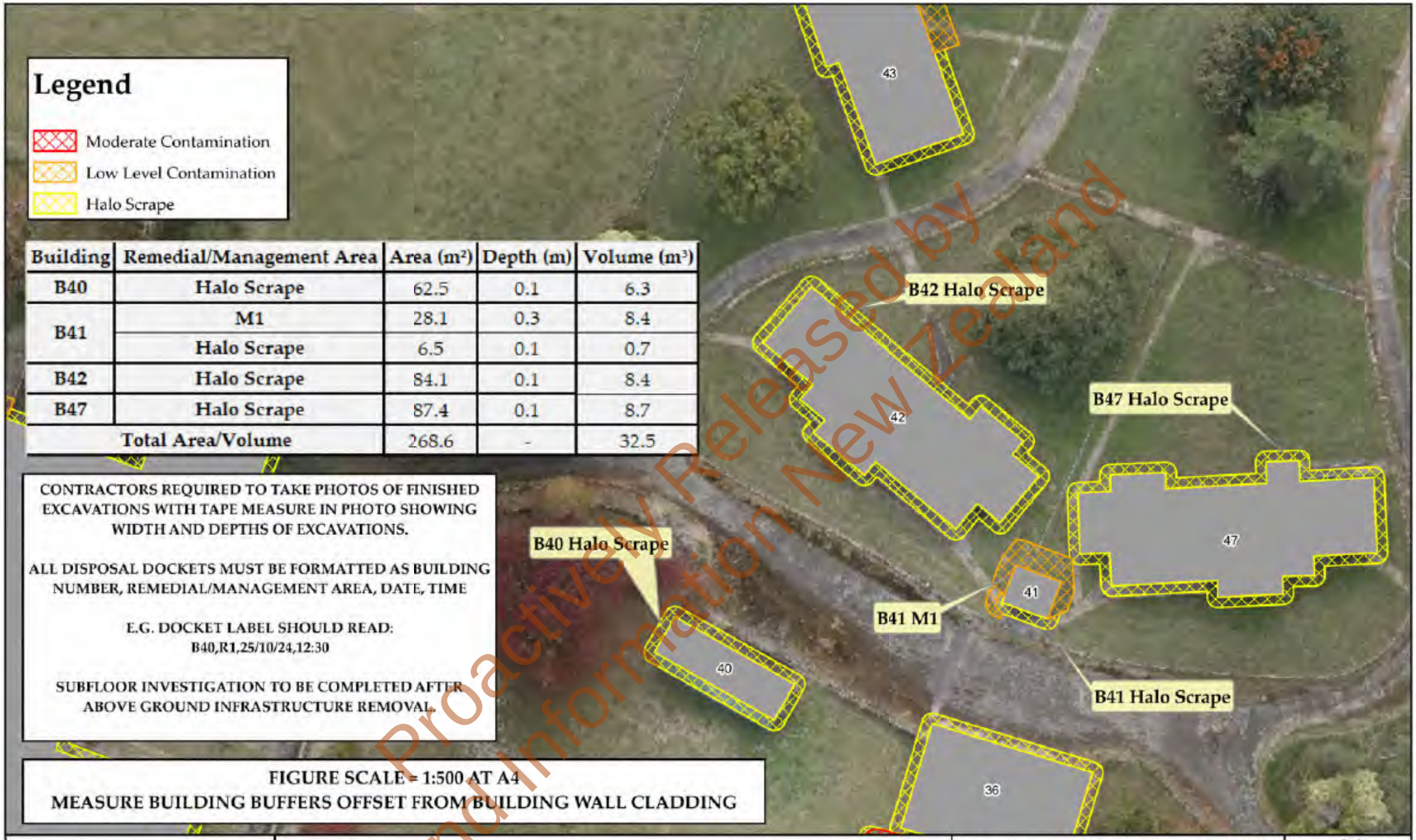
Drawing 33097/R23: Remedial Action Plan - B36, B37, B38 & B39

Toitū Te Whenua Land Information New Zealand
Former Tokanui Hospital Demolition and Remediation Project
Remedial Action Plan

Date:	06/09/2024
Revision No:	A
Drawn:	EB
Reviewed:	SF

N

0 2 4 8 12 16 20
Meters



Building	Remedial/Management Area	Area (m²)	Depth (m)	Volume (m³)
B40	Halo Scrape	62.5	0.1	6.3
B41	M1	28.1	0.3	8.4
	Halo Scrape	6.5	0.1	0.7
B42	Halo Scrape	84.1	0.1	8.4
B47	Halo Scrape	87.4	0.1	8.7
Total Area/Volume		268.6	-	32.5

CONTRACTORS REQUIRED TO TAKE PHOTOS OF FINISHED EXCAVATIONS WITH TAPE MEASURE IN PHOTO SHOWING WIDTH AND DEPTHS OF EXCAVATIONS.

ALL DISPOSAL DOCKETS MUST BE FORMATTED AS BUILDING NUMBER, REMEDIAL/MANAGEMENT AREA, DATE, TIME

E.G. DOCKET LABEL SHOULD READ:
B40,R1,25/10/24,12:30

SUBFLOOR INVESTIGATION TO BE COMPLETED AFTER ABOVE GROUND INFRASTRUCTURE REMOVAL.

FIGURE SCALE = 1:500 AT A4
MEASURE BUILDING BUFFERS OFFSET FROM BUILDING WALL CLADDING

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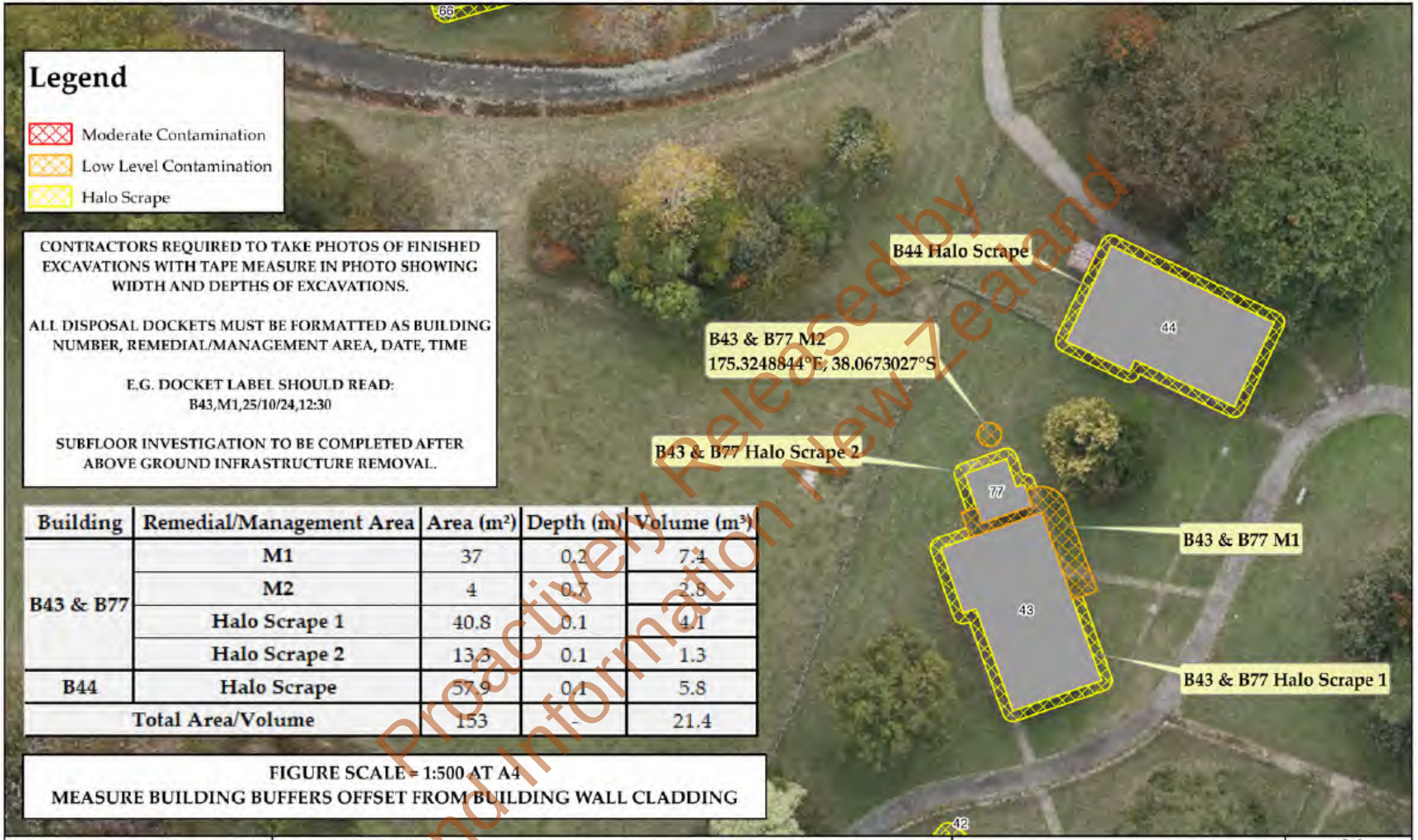
Drawing 33097/R24: Remedial Action Plan - B40, B41, B42 & B47

Toitū Te Whenua Land Information New Zealand
Former Tokanui Hospital Demolition and Remediation Project
Remedial Action Plan

Date:	06/09/2024
Revision No:	A
Drawn:	EB
Reviewed:	SF

N

0 4 8 16 24 32 40
Meters



CONTRACTORS REQUIRED TO TAKE PHOTOS OF FINISHED EXCAVATIONS WITH TAPE MEASURE IN PHOTO SHOWING WIDTH AND DEPTHS OF EXCAVATIONS.

ALL DISPOSAL DOCKETS MUST BE FORMATTED AS BUILDING NUMBER, REMEDIAL/MANAGEMENT AREA, DATE, TIME

E.G. DOCKET LABEL SHOULD READ:
B43,M1,25/10/24,12:30

SUBFLOOR INVESTIGATION TO BE COMPLETED AFTER ABOVE GROUND INFRASTRUCTURE REMOVAL.

Building	Remedial/Management Area	Area (m²)	Depth (m)	Volume (m³)
B43 & B77	M1	37	0.2	7.4
	M2	4	0.7	2.8
	Halo Scrape 1	40.8	0.1	4.1
	Halo Scrape 2	13.3	0.1	1.3
B44	Halo Scrape	57.9	0.1	5.8
Total Area/Volume		153	-	21.4

FIGURE SCALE = 1:500 AT A4
MEASURE BUILDING BUFFERS OFFSET FROM BUILDING WALL CLADDING

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Drawing 33097/R25: Remedial Action Plan - B43, B44 & B77

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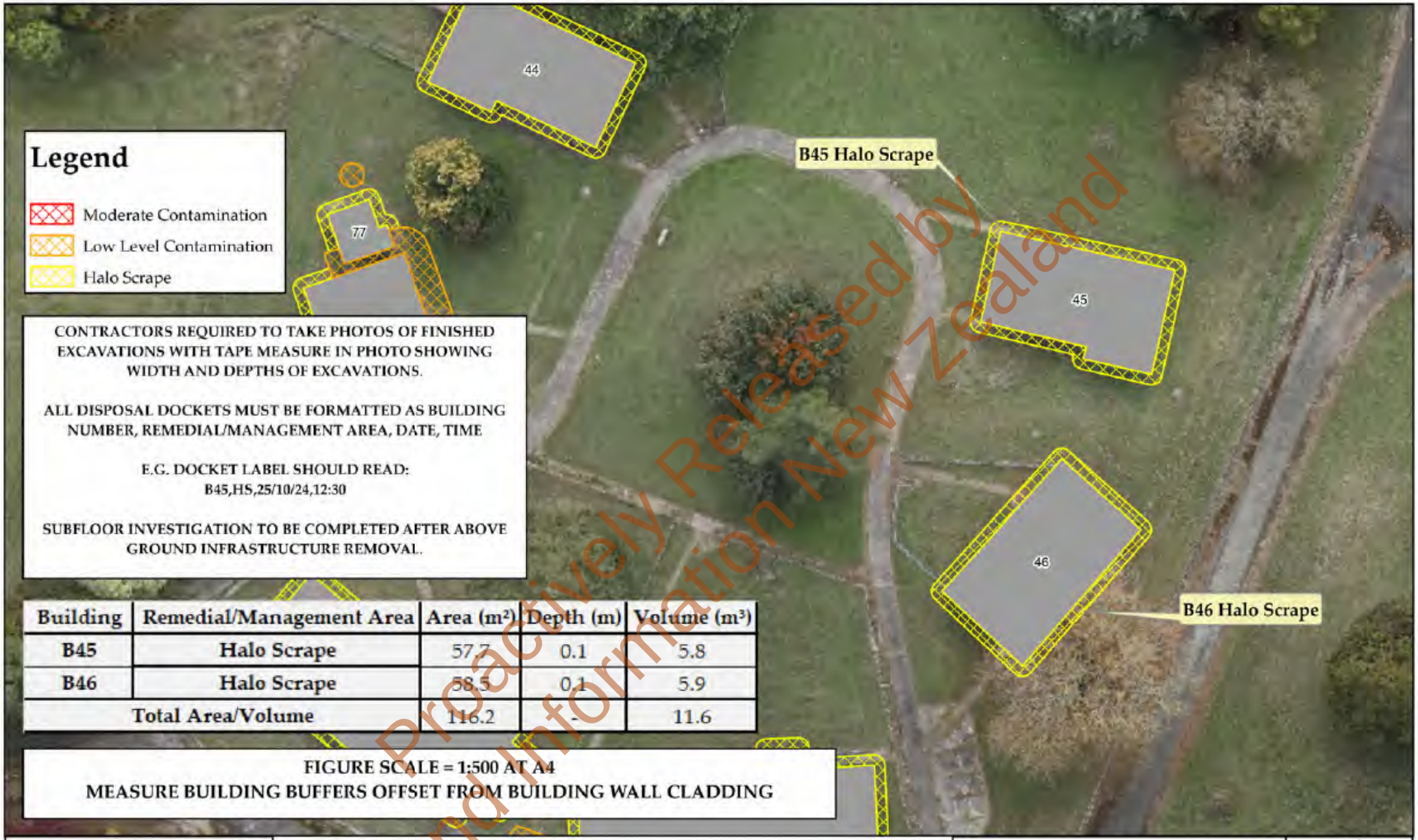
Former Tokanui Hospital Demolition and Remediation Project
Remedial Action Plan

Date:	06/09/2024
Revision No:	A
Drawn:	EB
Reviewed:	SF

N

0 4 8 16 24 32 40
Meters



Legend

- Moderate Contamination
- Low Level Contamination
- Halo Scrape

CONTRACTORS REQUIRED TO TAKE PHOTOS OF FINISHED EXCAVATIONS WITH TAPE MEASURE IN PHOTO SHOWING WIDTH AND DEPTHS OF EXCAVATIONS.

ALL DISPOSAL DOCKETS MUST BE FORMATTED AS BUILDING NUMBER, REMEDIAL/MANAGEMENT AREA, DATE, TIME

E.G. DOCKET LABEL SHOULD READ:
B45,HS,25/10/24,12:30

SUBFLOOR INVESTIGATION TO BE COMPLETED AFTER ABOVE GROUND INFRASTRUCTURE REMOVAL.

Building	Remedial/Management Area	Area (m²)	Depth (m)	Volume (m³)
B45	Halo Scrape	57.7	0.1	5.8
B46	Halo Scrape	58.5	0.1	5.9
Total Area/Volume		116.2	-	11.6

FIGURE SCALE = 1:500 AT A4
MEASURE BUILDING BUFFERS OFFSET FROM BUILDING WALL CLADDING

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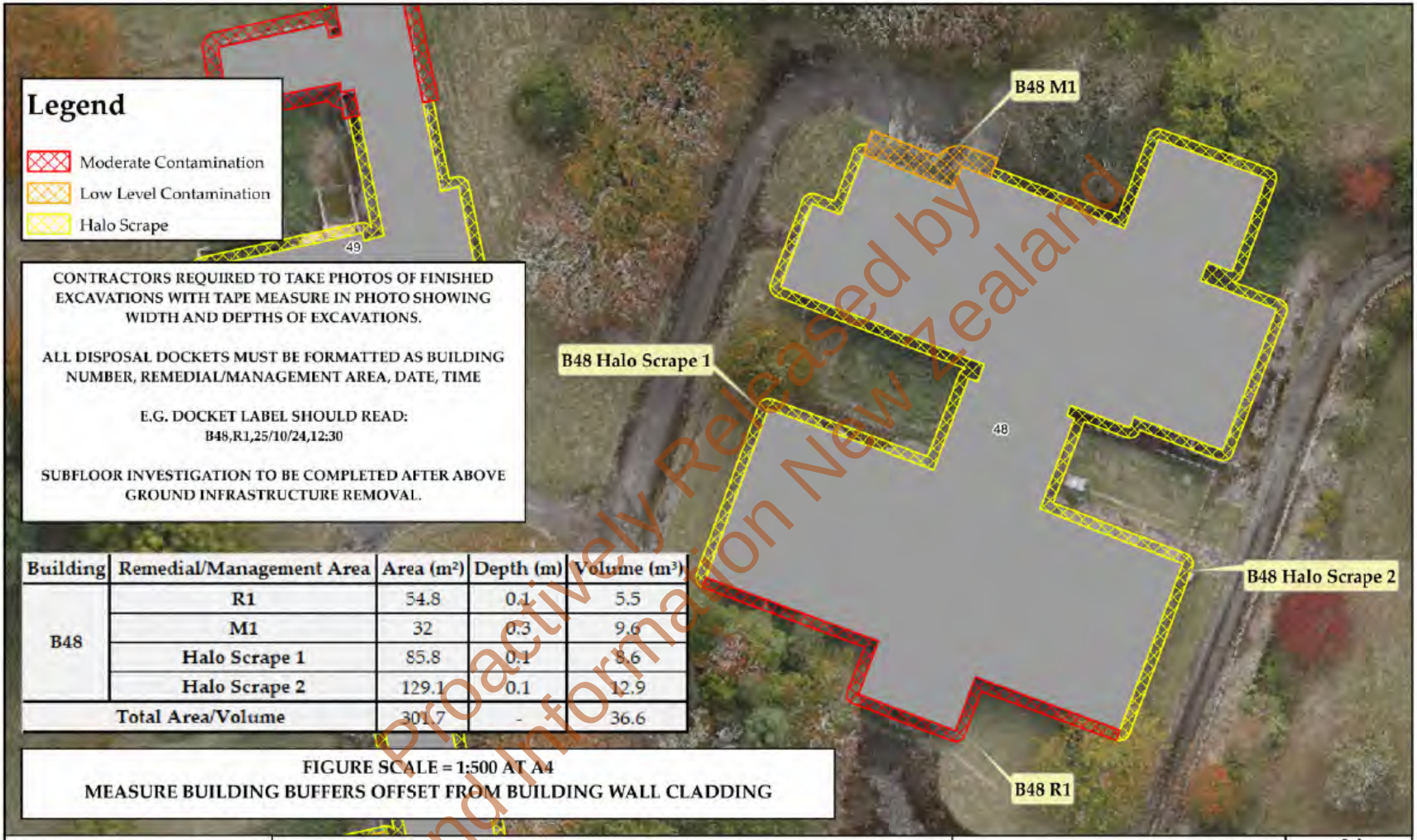
Drawing 33097/R26: Remedial Action Plan - B45 & B46

Toitū Te Whenua Land Information New Zealand
Former Tokanui Hospital Demolition and Remediation Project
Remedial Action Plan

Date:	06/09/2024
Revision No:	A
Drawn:	EB
Reviewed:	SF

N

0 4 8 16 24 32 40
Meters



Building	Remedial/Management Area	Area (m²)	Depth (m)	Volume (m³)
B48	R1	54.8	0.1	5.5
	M1	32	0.3	9.6
	Halo Scrape 1	85.8	0.1	8.6
	Halo Scrape 2	129.1	0.1	12.9
Total Area/Volume		301.7	-	36.6

FIGURE SCALE = 1:500 AT A4
MEASURE BUILDING BUFFERS OFFSET FROM BUILDING WALL CLADDING

Fraser Thomas
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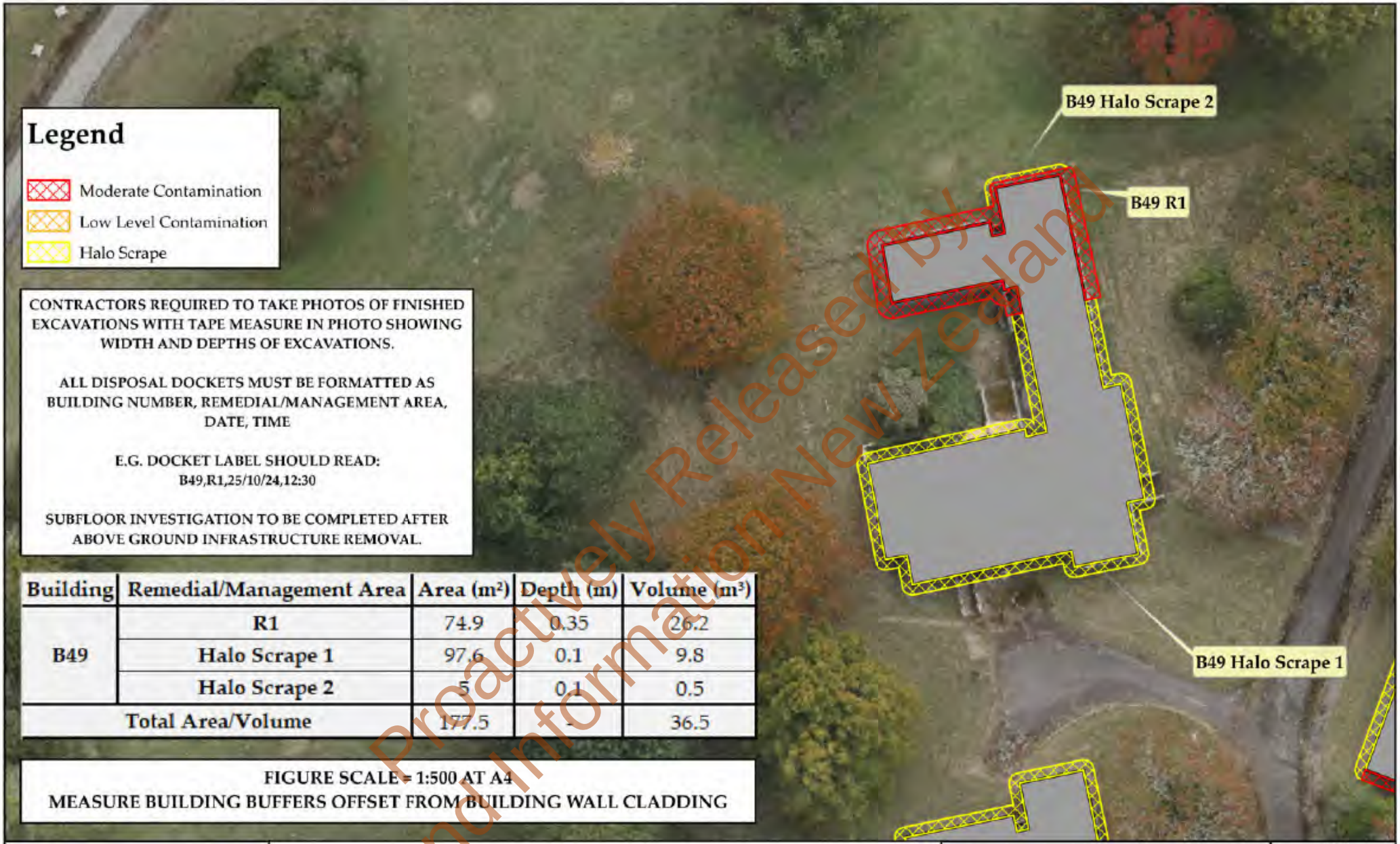
Drawing 33097/R27: Remedial Action Plan - B48

Toitū Te Whenua Land Information New Zealand
Former Tokanui Hospital Demolition and Remediation Project
Remedial Action Plan

Date:	06/09/2024
Revision No:	A
Drawn:	EB
Reviewed:	SF

N

0 4 8 16 24 32 40
Meters



Legend

- Moderate Contamination
- Low Level Contamination
- Halo Scrape

CONTRACTORS REQUIRED TO TAKE PHOTOS OF FINISHED EXCAVATIONS WITH TAPE MEASURE IN PHOTO SHOWING WIDTH AND DEPTHS OF EXCAVATIONS.

ALL DISPOSAL DOCKETS MUST BE FORMATTED AS BUILDING NUMBER, REMEDIAL/MANAGEMENT AREA, DATE, TIME

E.G. DOCKET LABEL SHOULD READ:
B49,R1,25/10/24,12:30

SUBFLOOR INVESTIGATION TO BE COMPLETED AFTER ABOVE GROUND INFRASTRUCTURE REMOVAL.

Building	Remedial/Management Area	Area (m^2)	Depth (m)	Volume (m^3)
B49	R1	74.9	0.35	26.2
	Halo Scrape 1	97.6	0.1	9.8
	Halo Scrape 2	5	0.1	0.5
Total Area/Volume		177.5	-	36.5

FIGURE SCALE = 1:500 AT A4
MEASURE BUILDING BUFFERS OFFSET FROM BUILDING WALL CLADDING

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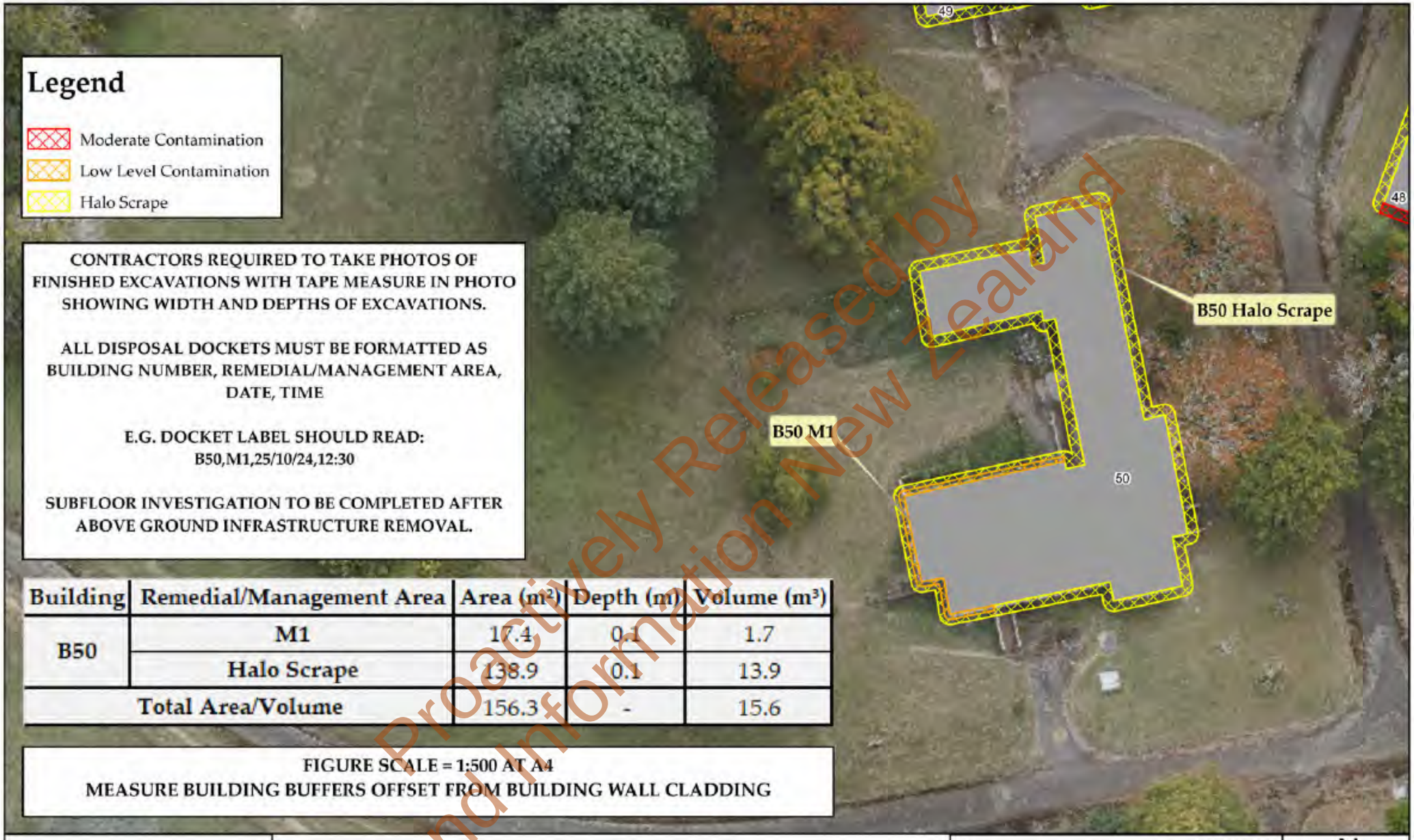
Drawing 33097/R28: Remedial Action Plan - B49

Toitū Te Whenua Land Information New Zealand
Former Tokanui Hospital Demolition and Remediation Project
Remedial Action Plan

Date:	06/09/2024
Revision No:	A
Drawn:	EB
Reviewed:	SF

N

0 4 8 16 24 32 40
Meters



Building	Remedial/Management Area	Area (m²)	Depth (m)	Volume (m³)
B50	M1	17.4	0.1	1.7
	Halo Scrape	138.9	0.1	13.9
Total Area/Volume		156.3	-	15.6

FIGURE SCALE = 1:500 AT A4
MEASURE BUILDING BUFFERS OFFSET FROM BUILDING WALL CLADDING

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Drawing 33097/R29: Remedial Action Plan - B50

Toitū Te Whenua Land Information New Zealand
Former Tokanui Hospital Demolition and Remediation Project
Remedial Action Plan

Date:	06/09/2024
Revision No:	A
Drawn:	EB
Reviewed:	SF

N

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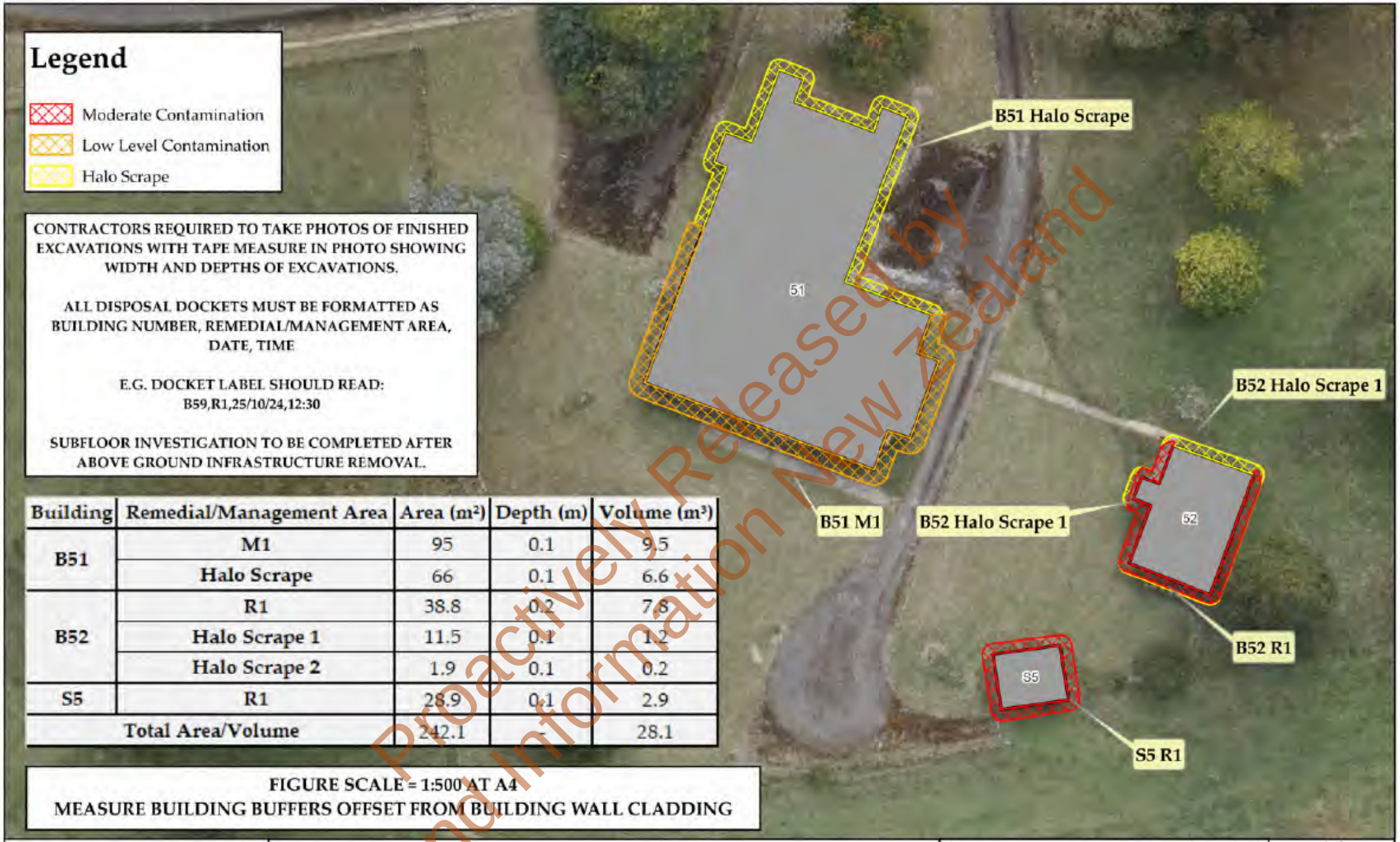
Meters



CONTRACTORS REQUIRED TO TAKE PHOTOS OF FINISHED EXCAVATIONS WITH TAPE MEASURE IN PHOTO SHOWING WIDTH AND DEPTHS OF EXCAVATIONS.

ALL DISPOSAL DOCKETS MUST BE FORMATTED AS BUILDING NUMBER, REMEDIAL/MANAGEMENT AREA, DATE, TIME

E.G. DOCKET LABEL SHOULD READ:
B59,R1,25/10/24,12:30

SUBFLOOR INVESTIGATION TO BE COMPLETED AFTER ABOVE GROUND INFRASTRUCTURE REMOVAL.

Building	Remedial/Management Area	Area (m²)	Depth (m)	Volume (m³)
B51	M1	95	0.1	9.5
	Halo Scrape	66	0.1	6.6
B52	R1	38.8	0.2	7.8
	Halo Scrape 1	11.5	0.1	1.2
	Halo Scrape 2	1.9	0.1	0.2
S5	R1	28.9	0.1	2.9
Total Area/Volume		242.1		28.1

FIGURE SCALE = 1:500 AT A4
MEASURE BUILDING BUFFERS OFFSET FROM BUILDING WALL CLADDING

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Drawing 33097/R30: Remedial Action Plan - B51, B52 & S5

Toitū Te Whenua Land Information New Zealand
Former Tokanui Hospital Demolition and Remediation Project
Remedial Action Plan

Date:	06/09/2024
Revision No:	A
Drawn:	EB
Reviewed:	SF

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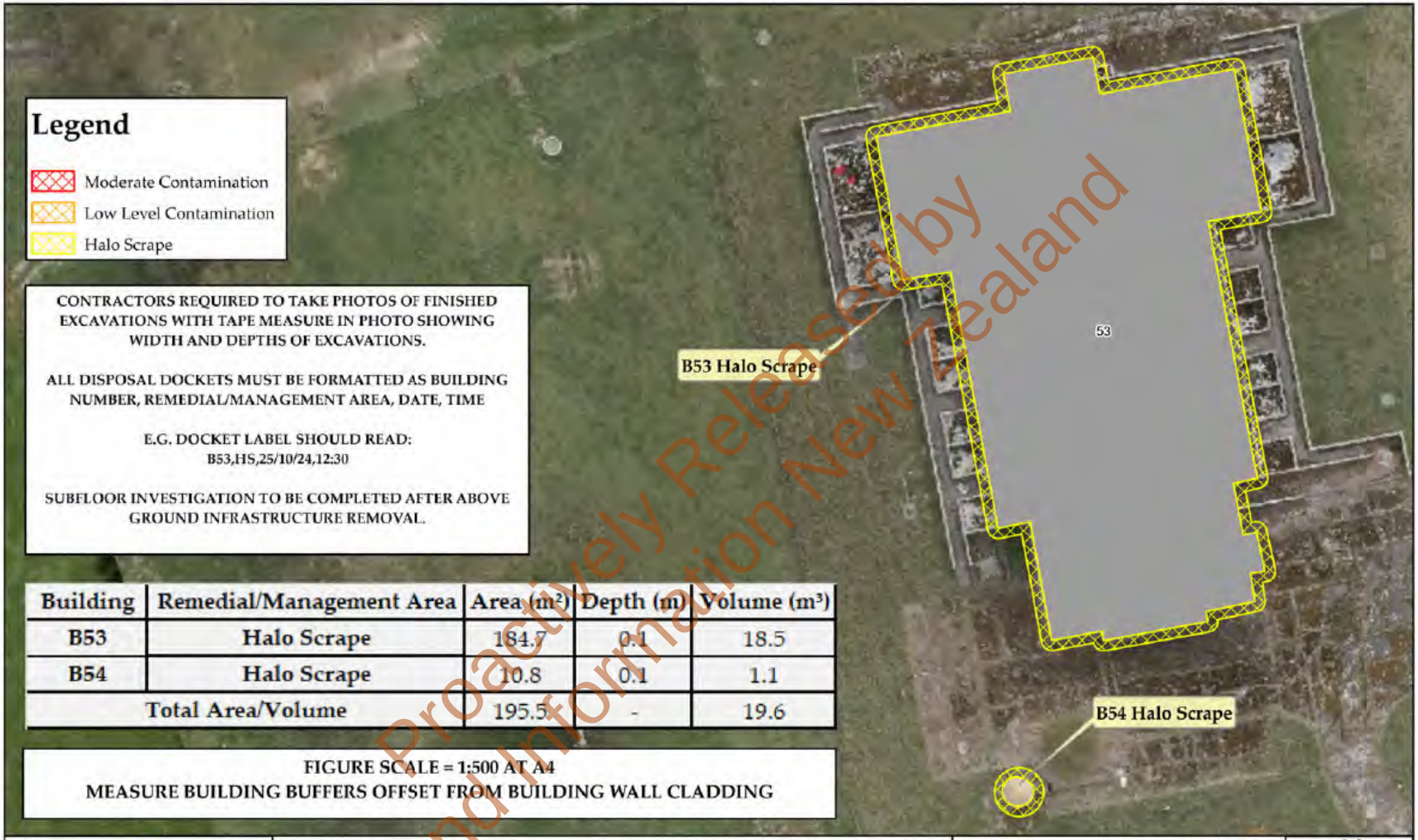
Meters



CONTRACTORS REQUIRED TO TAKE PHOTOS OF FINISHED EXCAVATIONS WITH TAPE MEASURE IN PHOTO SHOWING WIDTH AND DEPTHS OF EXCAVATIONS.

ALL DISPOSAL DOCKETS MUST BE FORMATTED AS BUILDING NUMBER, REMEDIAL/MANAGEMENT AREA, DATE, TIME

E.G. DOCKET LABEL SHOULD READ:
B53,HS,25/10/24,12:30

SUBFLOOR INVESTIGATION TO BE COMPLETED AFTER ABOVE GROUND INFRASTRUCTURE REMOVAL.

Building	Remedial/Management Area	Area (m^2)	Depth (m)	Volume (m^3)
B53	Halo Scrape	184.7	0.1	18.5
B54	Halo Scrape	10.8	0.1	1.1
Total Area/Volume		195.5	-	19.6

FIGURE SCALE = 1:500 AT A4
MEASURE BUILDING BUFFERS OFFSET FROM BUILDING WALL CLADDING

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Drawing 33097/R31: Remedial Action Plan - B53 & B54

Toitū Te Whenua Land Information New Zealand
Former Tokanui Hospital Demolition and Remediation Project
Remedial Action Plan

Date:	06/09/2024
Revision No:	A
Drawn:	EB
Reviewed:	SF

N

0 4 8 16 24 32 40
Meters

Legend

- Moderate Contamination
- Low Level Contamination
- Halo Scrape

CONTRACTORS REQUIRED TO TAKE PHOTOS OF FINISHED EXCAVATIONS WITH TAPE MEASURE IN PHOTO SHOWING WIDTH AND DEPTHS OF EXCAVATIONS.

ALL DISPOSAL DOCKETS MUST BE FORMATTED AS BUILDING NUMBER, REMEDIAL/MANAGEMENT AREA, DATE, TIME

E.G. DOCKET LABEL SHOULD READ:
B55,R1,25/10/24,12:30

Asbestos Works Categories:
UAW = Unlicensed Asbestos Works
ARW = Asbestos Related Works
CBLW = Class B Licensed Works
CALW = Class A Licensed Works

SUBFLOOR INVESTIGATION TO BE COMPLETED AFTER ABOVE GROUND INFRASTRUCTURE REMOVAL.

Building	Remedial/Management Area	Area (m²)	Depth (m)	Volume (m³)
B55	R1	35.4	0.15	5.3
	R2	20.1	0.4	8.0
	M1	35.1	0.2	7.0
	M2	52.1	0.15	7.8
	M3	80.8	0.2	16.2
	Halo Scrape 1	57.7	0.1	5.8
	Halo Scrape 2	45.3	0.1	4.5
	Halo Scrape 3	125	0.1	12.5
S7	Halo Scrape	25.1	0.1	2.5
Total Area/Volume		476.6	-	69.7

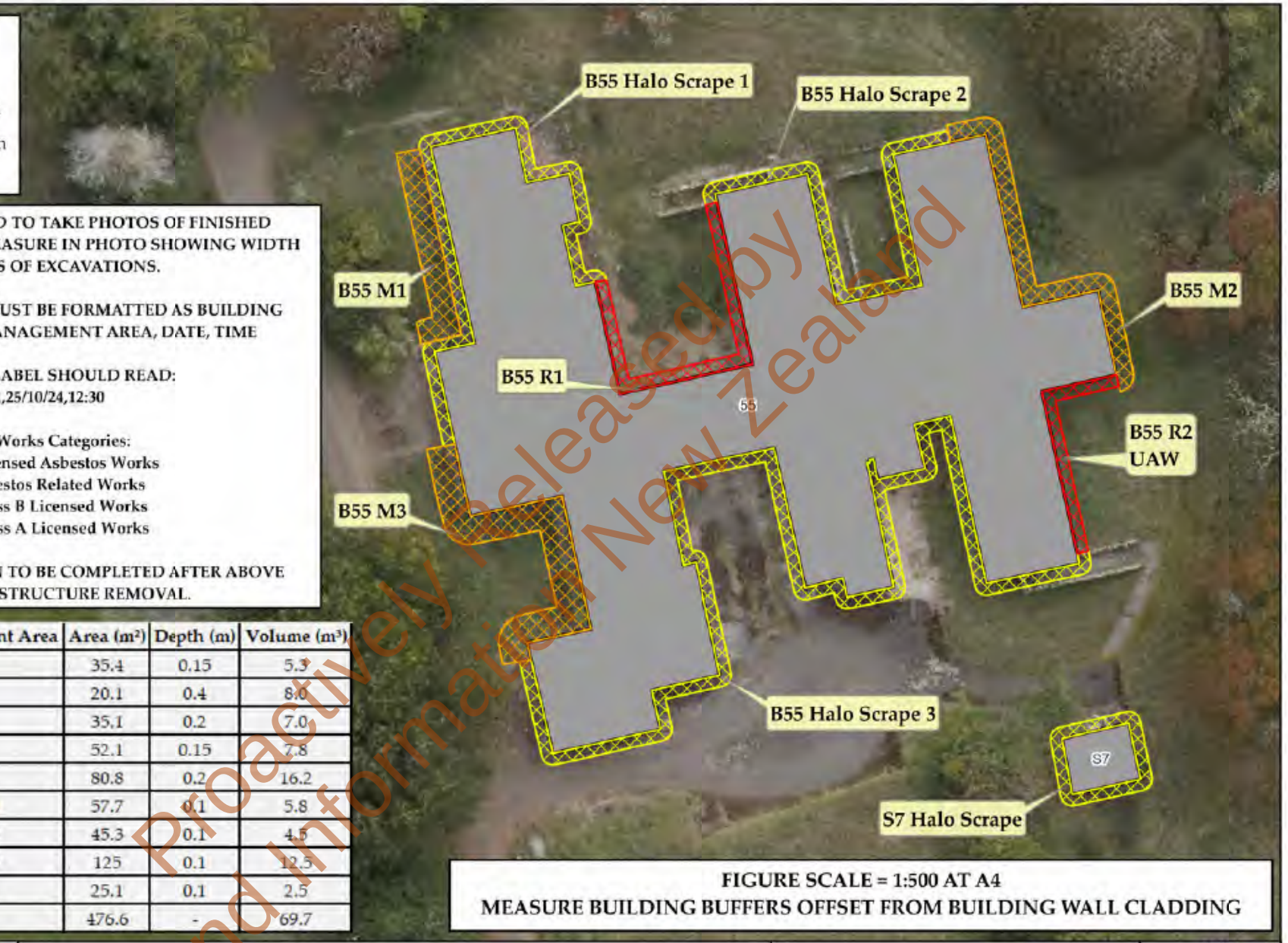

FIGURE SCALE = 1:500 AT A4
MEASURE BUILDING BUFFERS OFFSET FROM BUILDING WALL CLADDING

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Drawing 33097/R32: Remedial Action Plan - B55 & S7

Toitū Te Whenua Land Information New Zealand
Former Tokanui Hospital Demolition and Remediation Project
Remedial Action Plan

Date:	06/09/2024
Revision No:	A
Drawn:	EB
Reviewed:	SF

N

0 4 8 16 24 32 40
Meters

Building	Remedial/Management Area	Area (m²)	Depth (m)	Volume (m³)
B56	R1	45.1	0.4	18.0
	R2	25.4	0.15	3.8
	R3	31.7	0.15	4.8
	R4	11.6	0.4	4.6
	R5	23.2	0.15	3.5
	Halo Scrape 1	48.3	0.1	4.8
	Halo Scrape 2	99.2	0.1	9.9
	Halo Scrape 3	3.7	0.1	0.4
	Halo Scrape 4	12.0	0.1	1.2
	Halo Scrape 5	77.1	0.1	7.7
Total Area/Volume		377.3	-	58.8

CONTRACTORS REQUIRED TO TAKE PHOTOS OF FINISHED EXCAVATIONS WITH TAPE MEASURE IN PHOTO SHOWING WIDTH AND DEPTHS OF EXCAVATIONS.

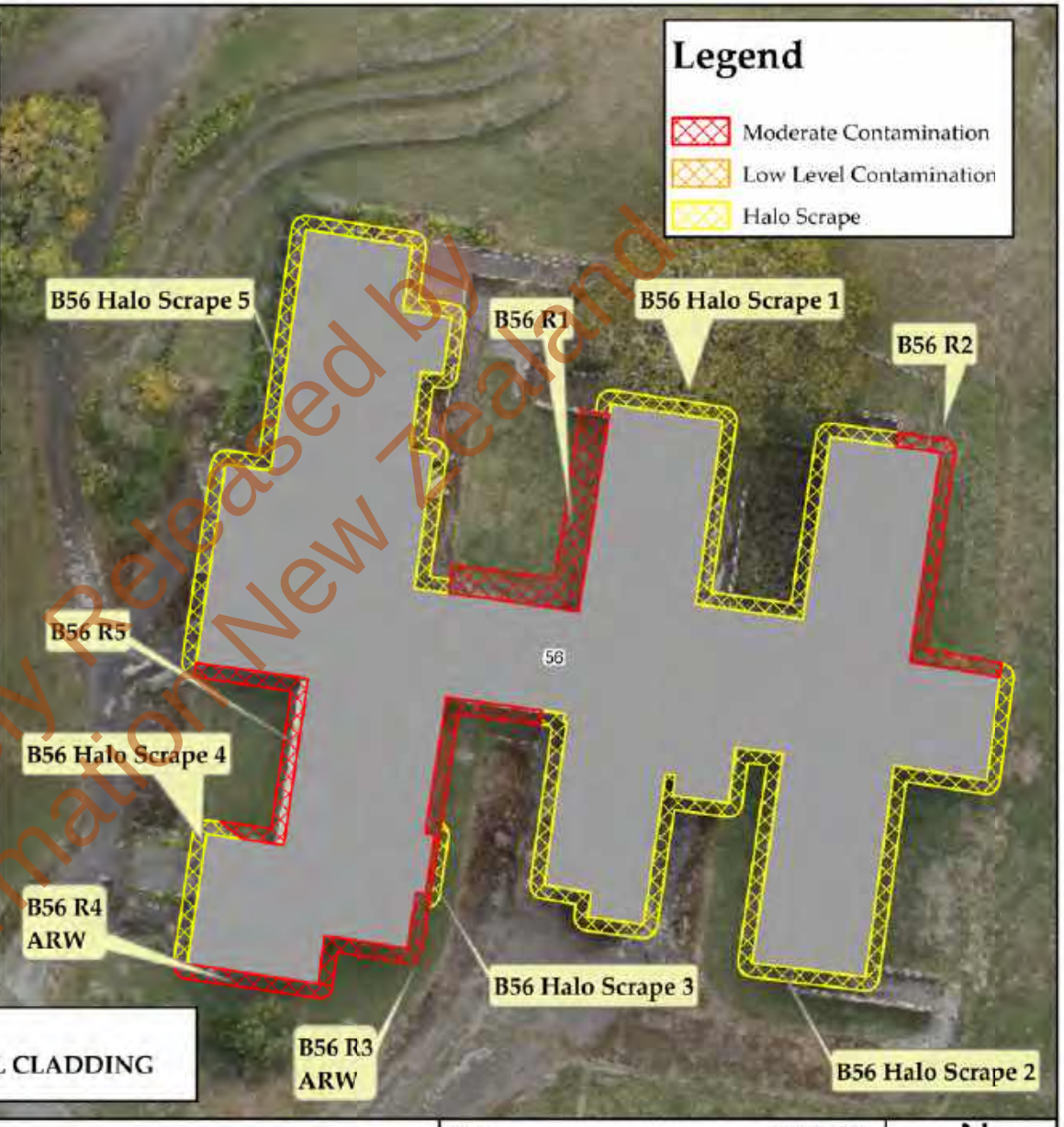
ALL DISPOSAL DOCKETS MUST BE FORMATTED AS BUILDING NUMBER, REMEDIAL/MANAGEMENT AREA, DATE, TIME

E.G. DOCKET LABEL SHOULD READ:
B56,R1,25/10/24,12:30

Asbestos Works Categories:
UAW = Unlicensed Asbestos Works
ARW = Asbestos Related Works
CBLW = Class B Licensed Works
CALW = Class A Licensed Works

SUBFLOOR INVESTIGATION TO BE COMPLETED AFTER ABOVE GROUND INFRASTRUCTURE REMOVAL

FIGURE SCALE = 1:500 AT A4
MEASURE BUILDING BUFFERS OFFSET FROM BUILDING WALL CLADDING



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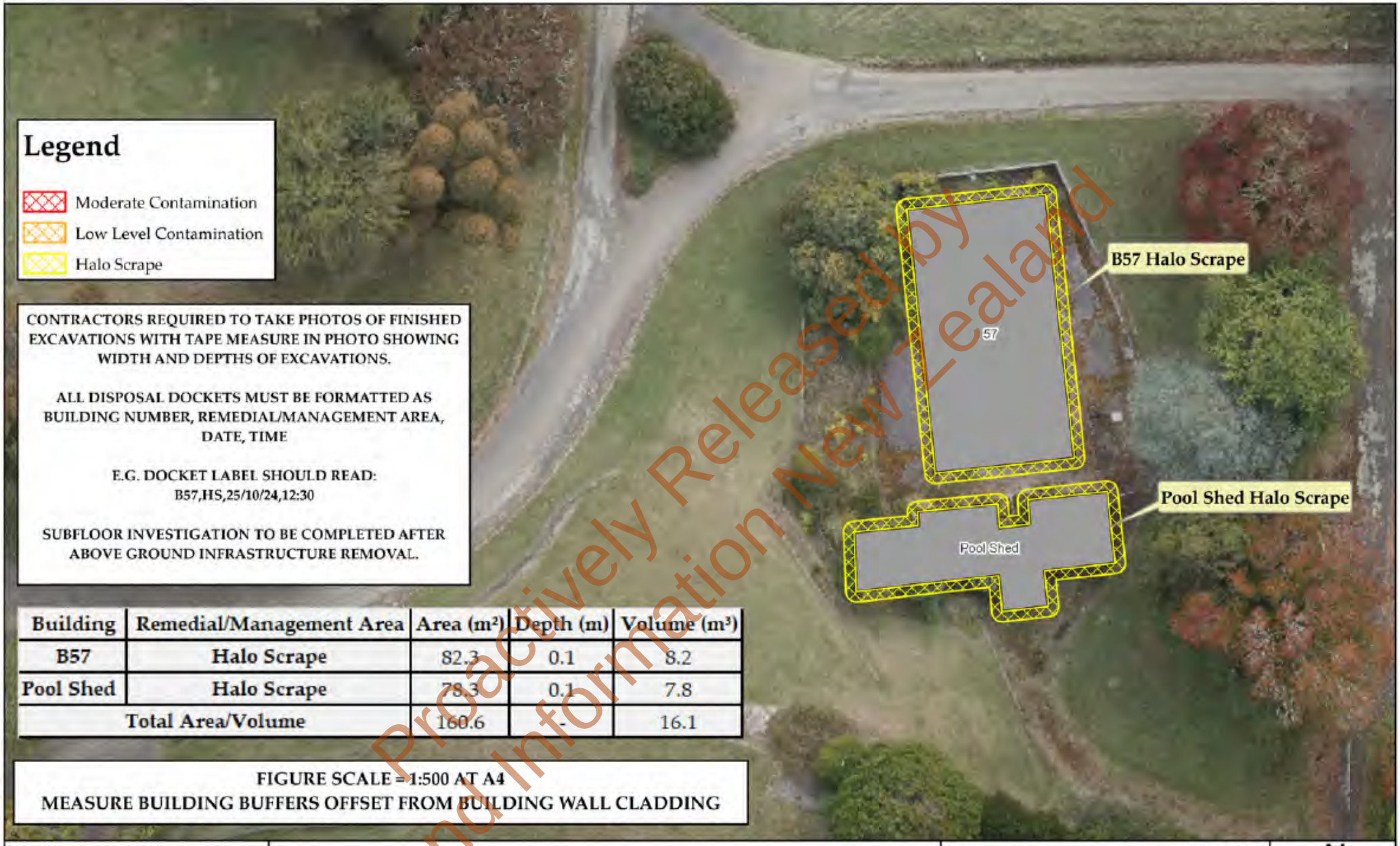
Drawing 33097/R33: Remedial Action Plan - B56

Toitū Te Whenua Land Information New Zealand
Former Tokanui Hospital Demolition and Remediation Project
Remedial Action Plan

Date:	06/09/2024
Revision No:	A
Drawn:	EB
Reviewed:	SF

N

0 4 8 16 24 32 40
Meters



CONTRACTORS REQUIRED TO TAKE PHOTOS OF FINISHED EXCAVATIONS WITH TAPE MEASURE IN PHOTO SHOWING WIDTH AND DEPTHS OF EXCAVATIONS.

ALL DISPOSAL DOCKETS MUST BE FORMATTED AS BUILDING NUMBER, REMEDIAL/MANAGEMENT AREA, DATE, TIME

E.G. DOCKET LABEL SHOULD READ:
B57,HS,25/10/24,12:30

SUBFLOOR INVESTIGATION TO BE COMPLETED AFTER ABOVE GROUND INFRASTRUCTURE REMOVAL.

Building	Remedial/Management Area	Area (m²)	Depth (m)	Volume (m³)
B57	Halo Scrape	82.3	0.1	8.2
Pool Shed	Halo Scrape	78.3	0.1	7.8
Total Area/Volume		160.6	-	16.1

FIGURE SCALE = 1:500 AT A4
MEASURE BUILDING BUFFERS OFFSET FROM BUILDING WALL CLADDING

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Drawing 33097/R34: Remedial Action Plan - B57 & Pool Shed

Toitū Te Whenua Land Information New Zealand
Former Tokanui Hospital Demolition and Remediation Project
Remedial Action Plan

Date:	06/09/2024
Revision No:	A
Drawn:	EB
Reviewed:	SF

N

0 4 8 16 24 32 40
Meters

CONTRACTORS REQUIRED TO TAKE PHOTOS OF FINISHED EXCAVATIONS WITH TAPE MEASURE IN PHOTO SHOWING WIDTH AND DEPTHS OF EXCAVATIONS.

ALL DISPOSAL DOCKETS MUST BE FORMATTED AS (BUILDING NUMBER, REMEDIAL/MANAGEMENT AREA, DATE, TIME

E.G. DOCKET LABEL SHOULD READ:
B58,R1,25/10/24,12:30

Asbestos Works Categories:
UAW = Unlicensed Asbestos Works
ARW = Asbestos Related Works
CBLW = Class B Licensed Works
CALW = Class A Licensed Works

SUBFLOOR INVESTIGATION TO BE COMPLETED AFTER ABOVE GROUND INFRASTRUCTURE REMOVAL.

Building	Remedial/Management Area	Area (m²)	Depth (m)	Volume (m³)
B58	R1	30.4	0.25	7.6
	M1	10	0.4	4.0
	Halo Scrape 1	53.1	0.1	5.3
	Halo Scrape 2	122.2	0.1	12.2
Total Area/Volume		215.7	-	29.1

FIGURE SCALE = 1:500 AT A4
MEASURE BUILDING BUFFERS OFFSET FROM BUILDING WALL CLADDING

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Drawing 33097/R35: Remedial Action Plan - B58

Toitū Te Whenua Land Information New Zealand
Former Tokanui Hospital Demolition and Remediation Project
Remedial Action Plan

Date:	06/09/2024
Revision No:	A
Drawn:	EB
Reviewed:	SF

N

0 4 8 16 24 32 40
Meters

Building	Remedial/Management Area	Area (m²)	Depth (m)	Volume (m³)
B59	R1	136.6	0.3	41.0
	M1	42.2	0.3	12.7
	Halo Scrape	4.8	0.1	0.5
B60	M1	100	0.2	20.0
B61	Halo Scrape	13.1	0.1	1.3
Total Area/Volume		296.7	-	75.4

CONTRACTORS REQUIRED TO TAKE PHOTOS OF FINISHED EXCAVATIONS WITH TAPE MEASURE IN PHOTO SHOWING WIDTH AND DEPTHS OF EXCAVATIONS.

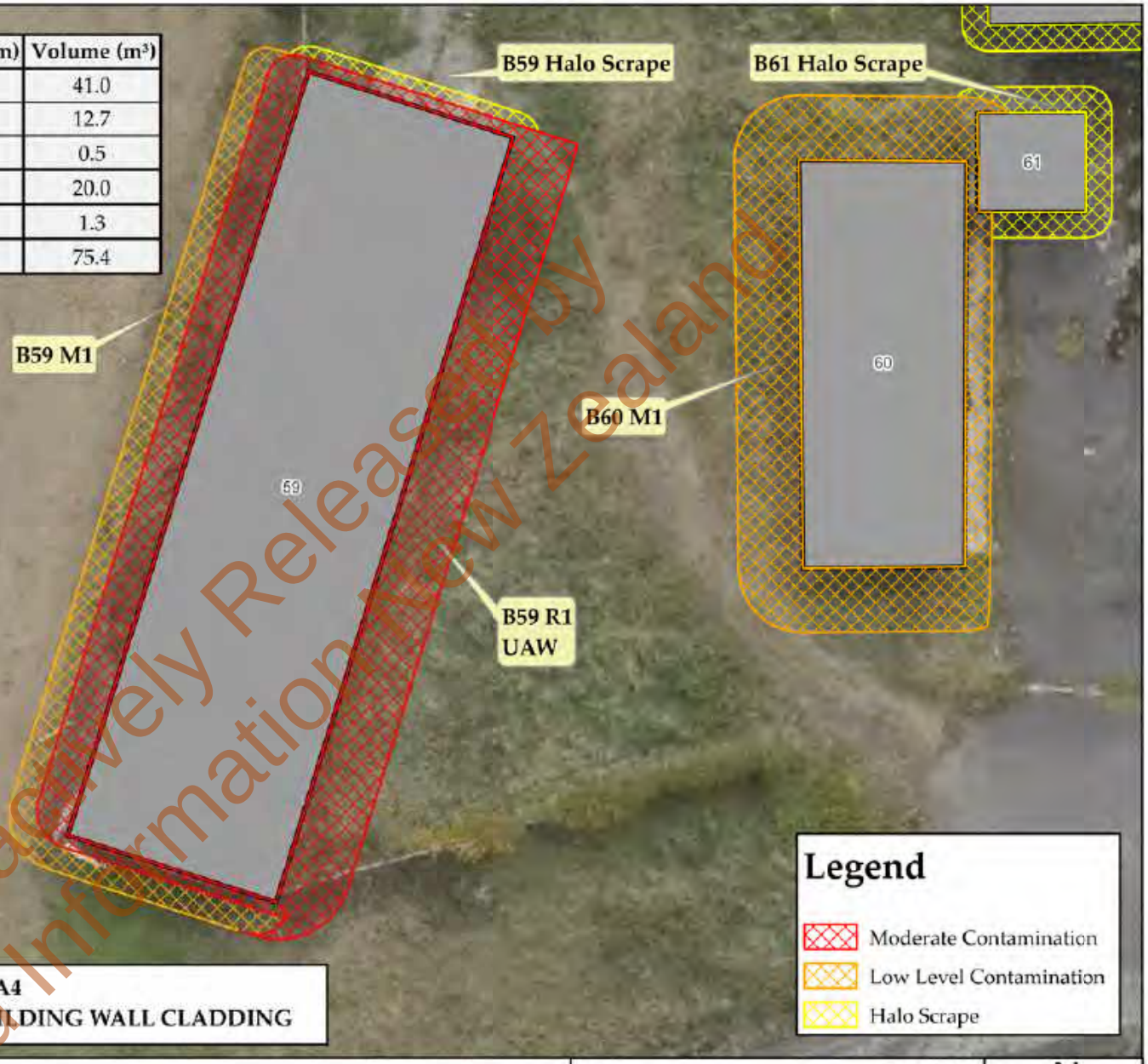
ALL DISPOSAL DOCKETS MUST BE FORMATTED AS (BUILDING NUMBER, REMEDIAL/ MANAGEMENT AREA, DATE, TIME

E.G. DOCKET LABEL SHOULD READ:
B59,R1,25/10/24,12:30

Asbestos Works Categories:
UAW = Unlicensed Asbestos Works
ARW = Asbestos Related Works
CBLW = Class B Licensed Works
CALW = Class A Licensed Works

SUBFLOOR INVESTIGATION TO BE COMPLETED AFTER ABOVE GROUND INFRASTRUCTURE REMOVAL.

FIGURE SCALE = 1:250 AT A4
MEASURE BUILDING BUFFERS OFFSET FROM BUILDING WALL CLADDING



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Drawing 33097/R36: Remedial Action Plan - B59, B60 & B61

Toitū Te Whenua Land Information New Zealand
Former Tokanui Hospital Demolition and Remediation Project
Remedial Action Plan

Date:	06/09/2024
Revision No:	A
Drawn:	EB
Reviewed:	SF

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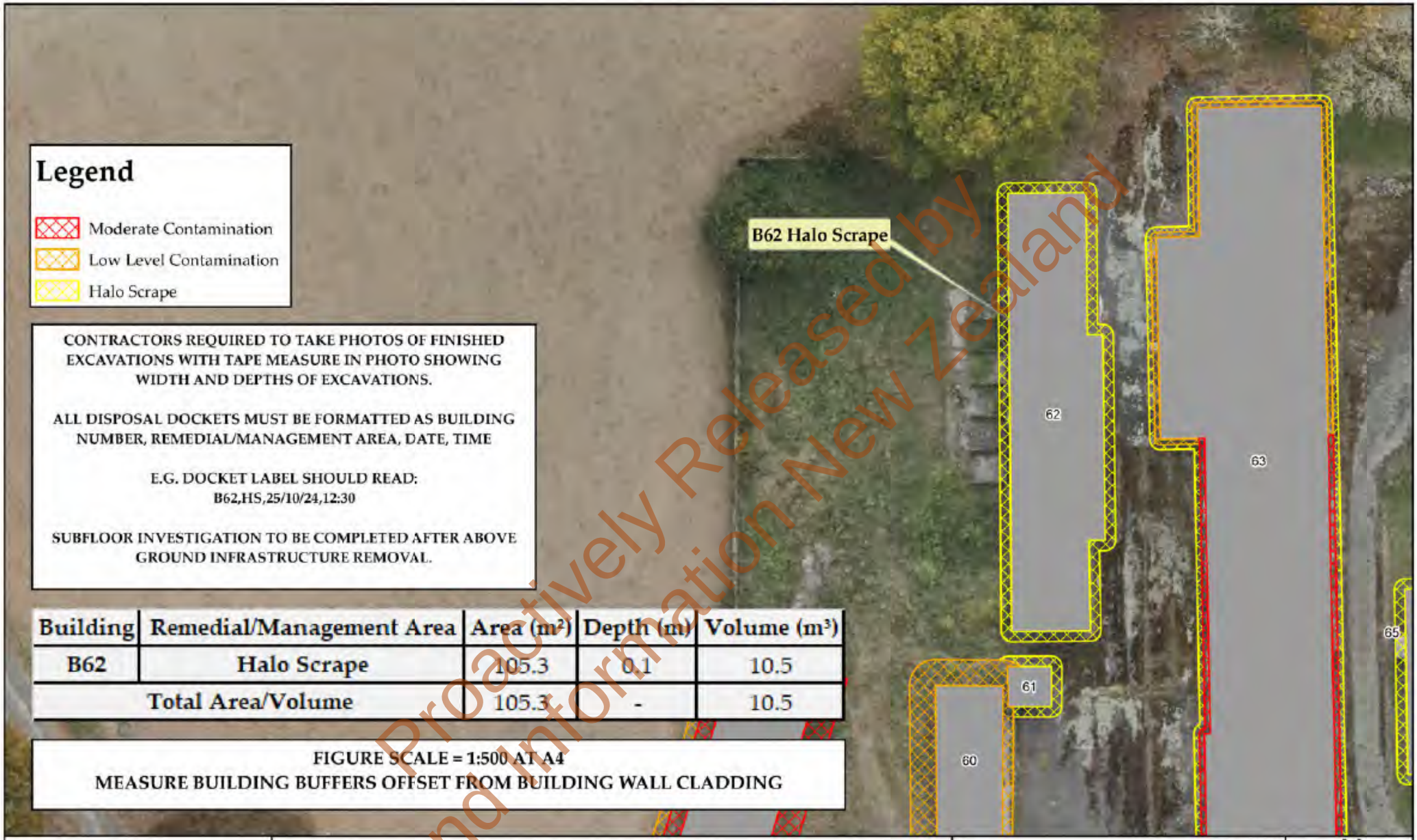
Meters



Legend

- Moderate Contamination
- Low Level Contamination
- Halo Scrape

CONTRACTORS REQUIRED TO TAKE PHOTOS OF FINISHED EXCAVATIONS WITH TAPE MEASURE IN PHOTO SHOWING WIDTH AND DEPTHS OF EXCAVATIONS.

ALL DISPOSAL DOCKETS MUST BE FORMATTED AS BUILDING NUMBER, REMEDIAL/MANAGEMENT AREA, DATE, TIME

E.G. DOCKET LABEL SHOULD READ:
B62,HS,25/10/24,12:30

SUBFLOOR INVESTIGATION TO BE COMPLETED AFTER ABOVE GROUND INFRASTRUCTURE REMOVAL.

Building	Remedial/Management Area	Area (m^2)	Depth (m)	Volume (m^3)
B62	Halo Scrape	105.3	0.1	10.5
Total Area/Volume		105.3	-	10.5

FIGURE SCALE = 1:500 AT A4
MEASURE BUILDING BUFFERS OFFSET FROM BUILDING WALL CLADDING

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Drawing 33097/R37: Remedial Action Plan - B62

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Former Tokanui Hospital Demolition and Remediation Project
Remedial Action Plan

Date:	06/09/2024
Revision No:	A
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0 4 8 16 24 32 40
Meters

CONTRACTORS REQUIRED TO TAKE PHOTOS OF FINISHED EXCAVATIONS WITH TAPE MEASURE IN PHOTO SHOWING WIDTH AND DEPTHS OF EXCAVATIONS.

ALL DISPOSAL DOCKETS MUST BE FORMATTED AS BUILDING NUMBER, REMEDIAL/ MANAGEMENT AREA, DATE, TIME

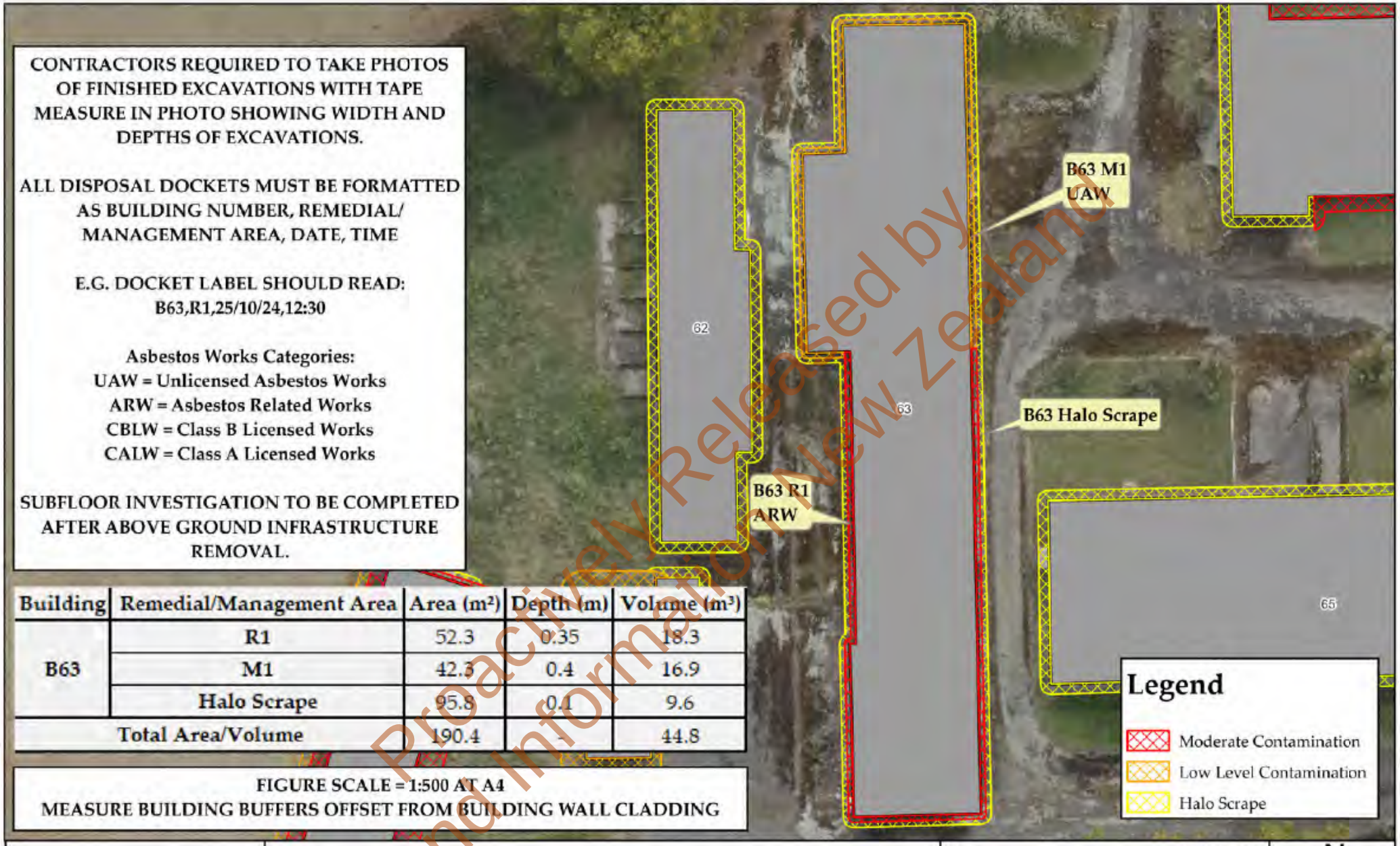
E.G. DOCKET LABEL SHOULD READ:
B63,R1,25/10/24,12:30

Asbestos Works Categories:
UAW = Unlicensed Asbestos Works
ARW = Asbestos Related Works
CBLW = Class B Licensed Works
CALW = Class A Licensed Works

SUBFLOOR INVESTIGATION TO BE COMPLETED AFTER ABOVE GROUND INFRASTRUCTURE REMOVAL.

Building	Remedial/Management Area	Area (m²)	Depth (m)	Volume (m³)
B63	R1	52.3	0.35	18.3
	M1	42.3	0.4	16.9
	Halo Scrape	95.8	0.1	9.6
Total Area/Volume		190.4	-	44.8

FIGURE SCALE = 1:500 AT A4
MEASURE BUILDING BUFFERS OFFSET FROM BUILDING WALL CLADDING



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Drawing 33097/R38: Remedial Action Plan - B63

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Remedial Action Plan

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Revision No:	A
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Meters

CONTRACTORS REQUIRED TO TAKE PHOTOS OF FINISHED EXCAVATIONS WITH TAPE MEASURE IN PHOTO SHOWING WIDTH AND DEPTHS OF EXCAVATIONS.

ALL DISPOSAL DOCKETS MUST BE FORMATTED AS BUILDING NUMBER, REMEDIAL/MANAGEMENT AREA, DATE, TIME

E.G. DOCKET LABEL SHOULD READ:
B65,HS,25/10/24,12:30

SUBFLOOR INVESTIGATION TO BE COMPLETED AFTER ABOVE GROUND INFRASTRUCTURE REMOVAL.

Building	Remedial/Management Area	Area (m^2)	Depth (m)	Volume (m^3)
B65	Halo Scrape	171.3	0.1	17.1
Total Area/Volume		171.3	-	17.1

FIGURE SCALE = 1:500 AT A4
MEASURE BUILDING BUFFERS OFFSET FROM BUILDING WALL CLADDING

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Drawing 33097/R39: Remedial Action Plan - B65

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Remedial Action Plan

Date:	06/09/2024
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0 4 8 16 24 32 40
Meters

CONTRACTORS REQUIRED TO TAKE PHOTOS OF FINISHED EXCAVATIONS WITH TAPE MEASURE IN PHOTO SHOWING WIDTH AND DEPTHS OF EXCAVATIONS.

ALL DISPOSAL DOCKETS MUST BE FORMATTED AS (BUILDING NUMBER, REMEDIAL/MANAGEMENT AREA, DATE, TIME

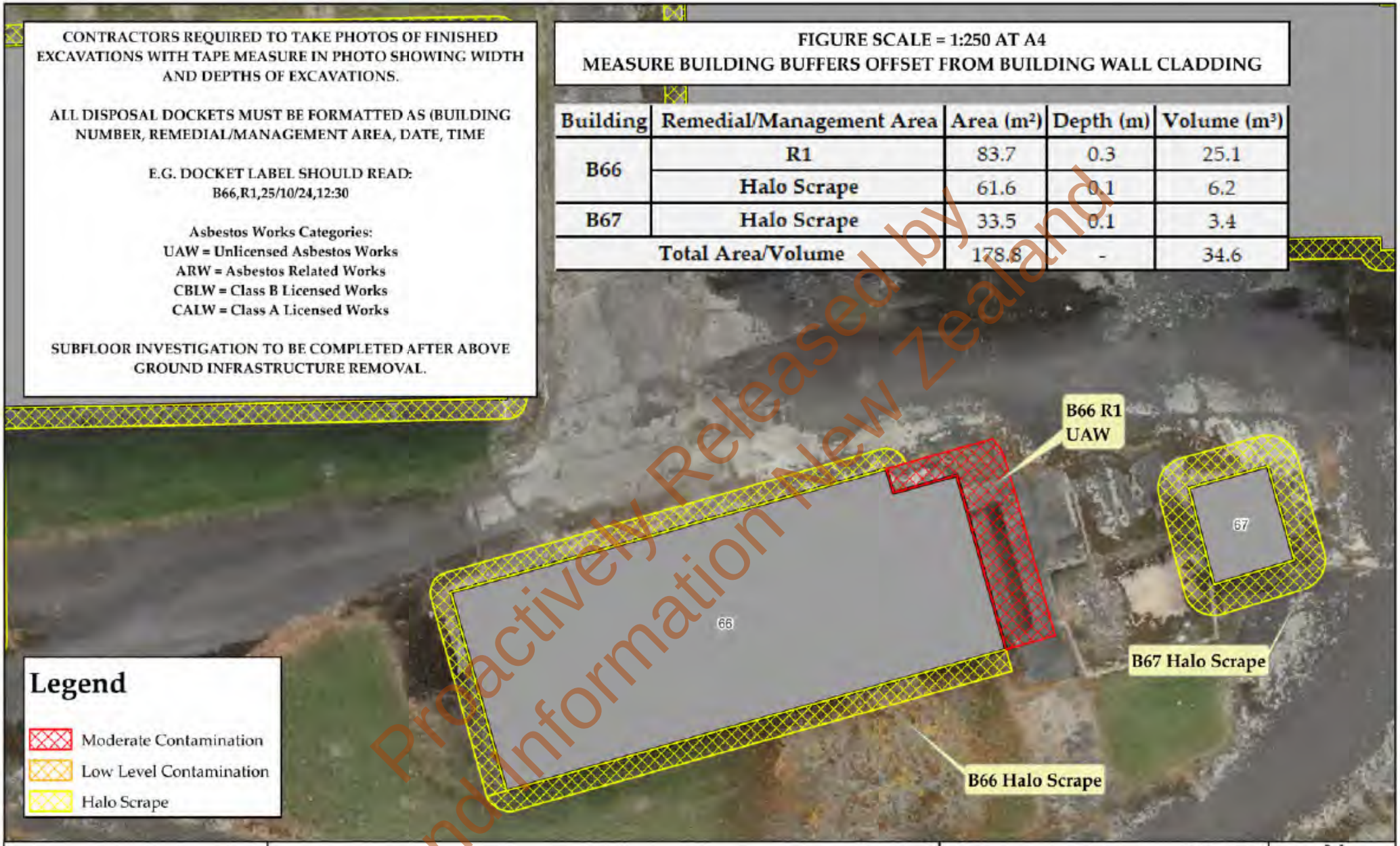
E.G. DOCKET LABEL SHOULD READ:
B66,R1,25/10/24,12:30

Asbestos Works Categories:
UAW = Unlicensed Asbestos Works
ARW = Asbestos Related Works
CBLW = Class B Licensed Works
CALW = Class A Licensed Works

SUBFLOOR INVESTIGATION TO BE COMPLETED AFTER ABOVE GROUND INFRASTRUCTURE REMOVAL.

FIGURE SCALE = 1:250 AT A4
MEASURE BUILDING BUFFERS OFFSET FROM BUILDING WALL CLADDING

Building	Remedial/Management Area	Area (m²)	Depth (m)	Volume (m³)
B66	R1	83.7	0.3	25.1
	Halo Scrape	61.6	0.1	6.2
B67	Halo Scrape	33.5	0.1	3.4
Total Area/Volume		178.8	-	34.6



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Drawing 33097/R40: Remedial Action Plan - B66 & B67

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Remedial Action Plan

Date:	06/09/2024
Revision No:	A
Drawn:	EB
Reviewed:	SF

N

0 2 4 8 12 16 20
Meters

Building	Remedial/Management Area	Area (m²)	Depth (m)	Volume (m³)
B68	Halo Scrape	136.8	0.1	13.7
Total Area/Volume		136.8	-	13.7

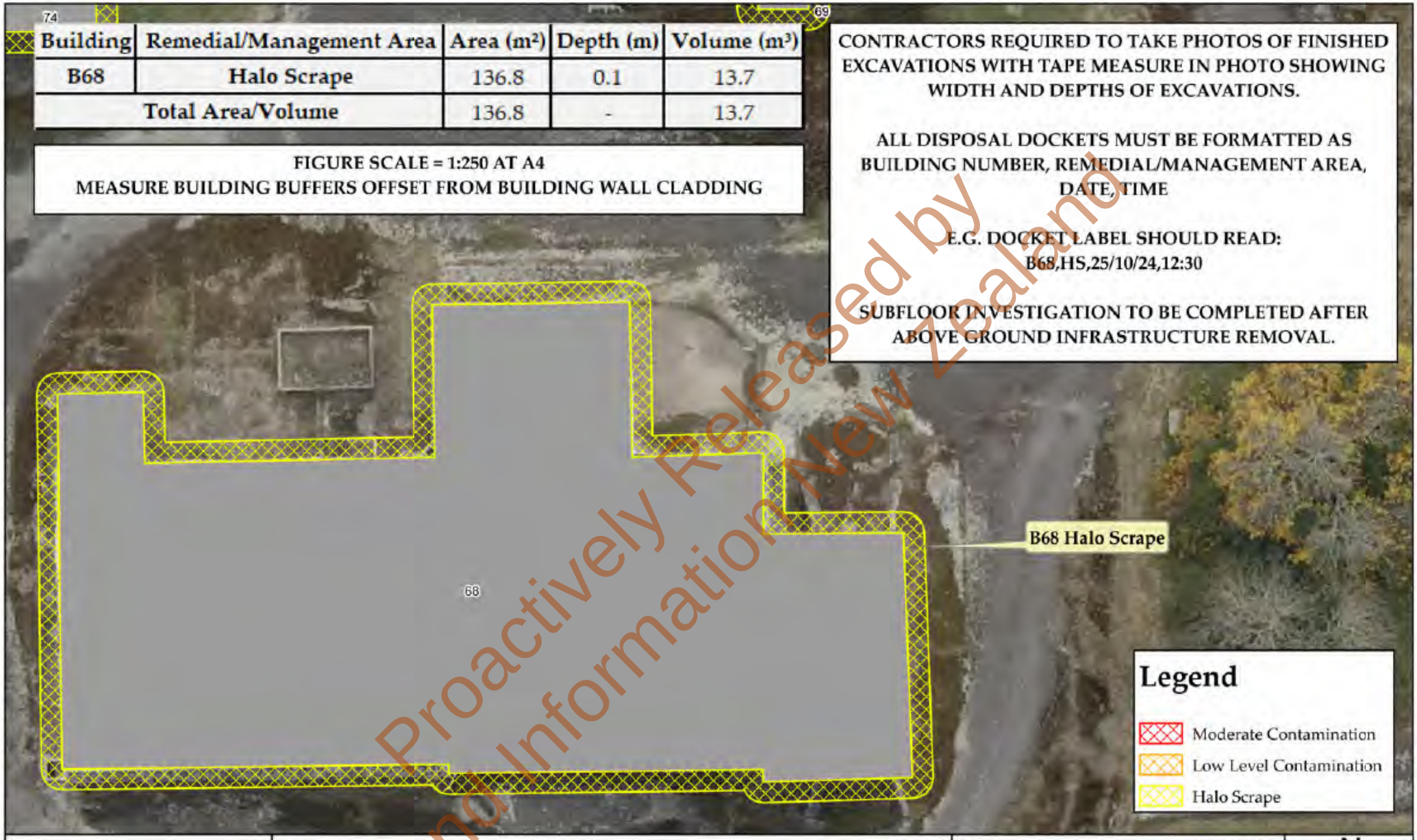
FIGURE SCALE = 1:250 AT A4
MEASURE BUILDING BUFFERS OFFSET FROM BUILDING WALL CLADDING

CONTRACTORS REQUIRED TO TAKE PHOTOS OF FINISHED EXCAVATIONS WITH TAPE MEASURE IN PHOTO SHOWING WIDTH AND DEPTHS OF EXCAVATIONS.

ALL DISPOSAL DOCKETS MUST BE FORMATTED AS BUILDING NUMBER, REMEDIAL/MANAGEMENT AREA, DATE, TIME

E.G. DOCKET LABEL SHOULD READ:
B68,HS,25/10/24,12:30

SUBFLOOR INVESTIGATION TO BE COMPLETED AFTER ABOVE GROUND INFRASTRUCTURE REMOVAL.



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Drawing 33097/R41: Remedial Action Plan - B68

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Reviewed:	SF

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0 2 4 8 12 16 20
Meters

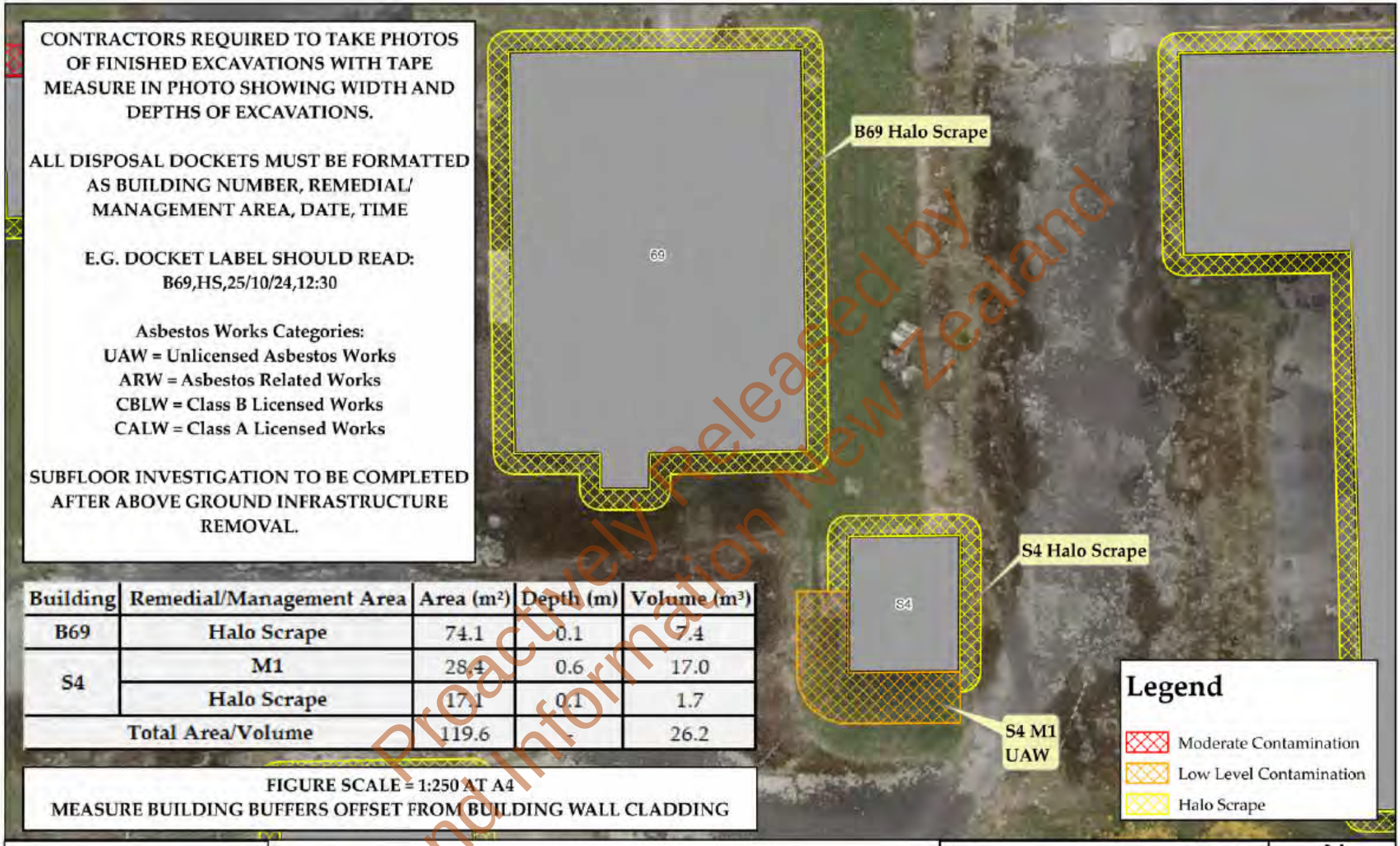
CONTRACTORS REQUIRED TO TAKE PHOTOS OF FINISHED EXCAVATIONS WITH TAPE MEASURE IN PHOTO SHOWING WIDTH AND DEPTHS OF EXCAVATIONS.

ALL DISPOSAL DOCKETS MUST BE FORMATTED AS BUILDING NUMBER, REMEDIAL/ MANAGEMENT AREA, DATE, TIME

E.G. DOCKET LABEL SHOULD READ:
B69,HS,25/10/24,12:30

Asbestos Works Categories:
UAW = Unlicensed Asbestos Works
ARW = Asbestos Related Works
CBLW = Class B Licensed Works
CALW = Class A Licensed Works

SUBFLOOR INVESTIGATION TO BE COMPLETED AFTER ABOVE GROUND INFRASTRUCTURE REMOVAL.



Building	Remedial/Management Area	Area (m²)	Depth (m)	Volume (m³)
B69	Halo Scrape	74.1	0.1	7.4
S4	M1	28.4	0.6	17.0
	Halo Scrape	17.1	0.1	1.7
Total Area/Volume		119.6	-	26.2

FIGURE SCALE = 1:250 AT A4
MEASURE BUILDING BUFFERS OFFSET FROM BUILDING WALL CLADDING

Fraser Thomas
Over 50 Years
ENGINEERS • RESOURCE MANAGERS • SURVEYORS

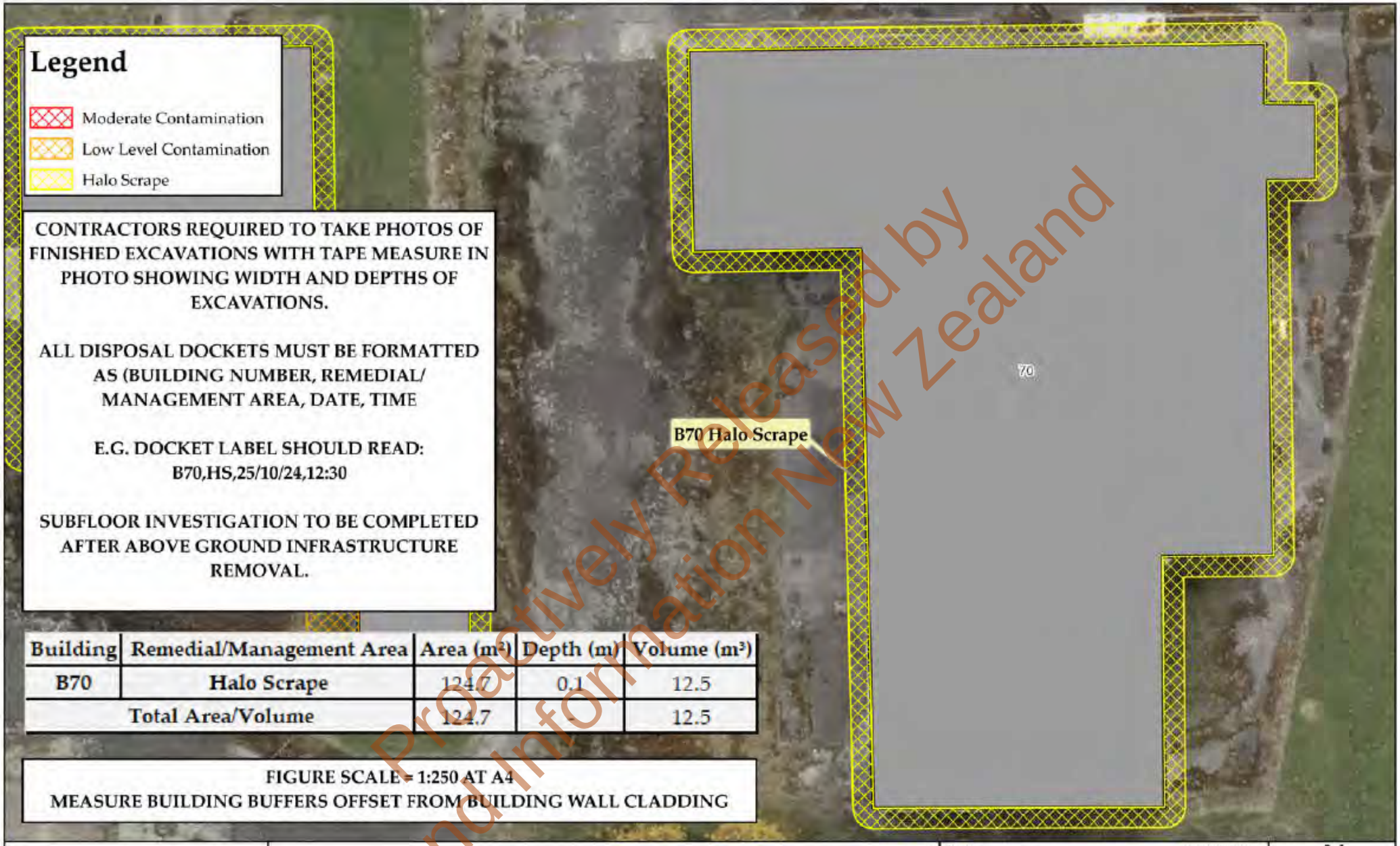
Drawing 33097/R42: Remedial Action Plan - B69 & S4

Toitū Te Whenua Land Information New Zealand
Former Tokanui Hospital Demolition and Remediation Project
Remedial Action Plan

Date:	06/09/2024
Revision No:	A
Drawn:	EB
Reviewed:	SF

N

0 2 4 8 12 16 20
Meters



Building	Remedial/Management Area	Area (m²)	Depth (m)	Volume (m³)
B70	Halo Scrape	124.7	0.1	12.5
Total Area/Volume		124.7	-	12.5

Over 50 Years Fraser Thomas
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Drawing 33097/R43: Remedial Action Plan - B70

Toitū Te Whenua Land Information New Zealand
Former Tokanui Hospital Demolition and Remediation Project
Remedial Action Plan

Date:	06/09/2024
Revision No:	A
Drawn:	EB
Reviewed:	SF

N

0 2 4 8 12 16 20
Meters

CONTRACTORS REQUIRED TO TAKE PHOTOS OF FINISHED EXCAVATIONS WITH TAPE MEASURE IN PHOTO SHOWING WIDTH AND DEPTHS OF EXCAVATIONS.

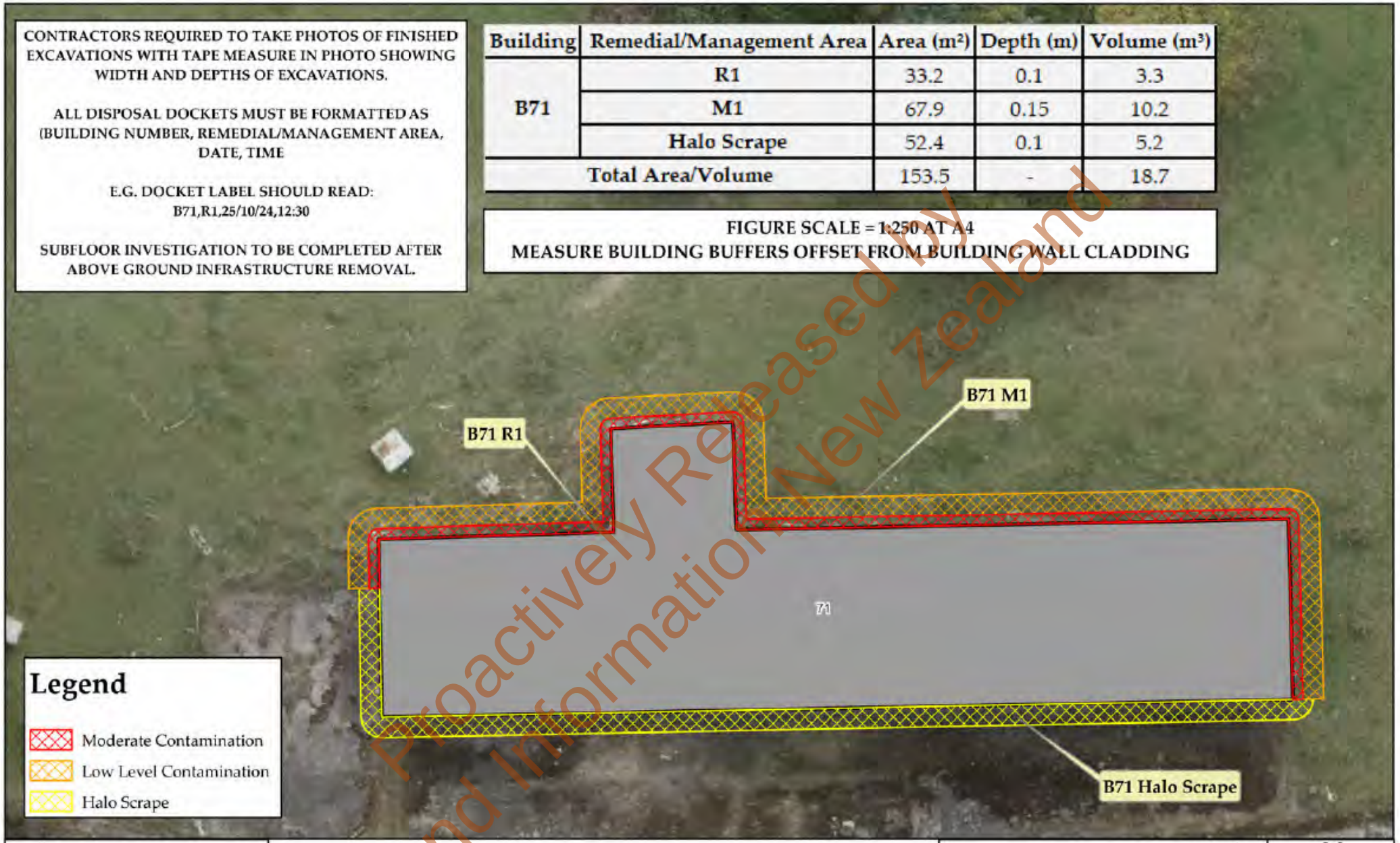
ALL DISPOSAL DOCKETS MUST BE FORMATTED AS (BUILDING NUMBER, REMEDIAL/MANAGEMENT AREA, DATE, TIME

E.G. DOCKET LABEL SHOULD READ:
B71,R1,25/10/24,12:30

SUBFLOOR INVESTIGATION TO BE COMPLETED AFTER ABOVE GROUND INFRASTRUCTURE REMOVAL.

Building	Remedial/Management Area	Area (m^2)	Depth (m)	Volume (m^3)
B71	R1	33.2	0.1	3.3
	M1	67.9	0.15	10.2
	Halo Scrape	52.4	0.1	5.2
Total Area/Volume		153.5	-	18.7

FIGURE SCALE = 1:250 AT A4
MEASURE BUILDING BUFFERS OFFSET FROM BUILDING WALL CLADDING



Legend

- Moderate Contamination
- Low Level Contamination
- Halo Scrape

Fraser Thomas
Over 50 Years
ENGINEERS • RESOURCE MANAGERS • SURVEYORS

Drawing 33097/R44: Remedial Action Plan - B71

Toitū Te Whenua Land Information New Zealand
Former Tokanui Hospital Demolition and Remediation Project
Remedial Action Plan

Date:	06/09/2024
Revision No:	A
Drawn:	EB
Reviewed:	SF

N

0 2 4 8 12 16 20
Meters

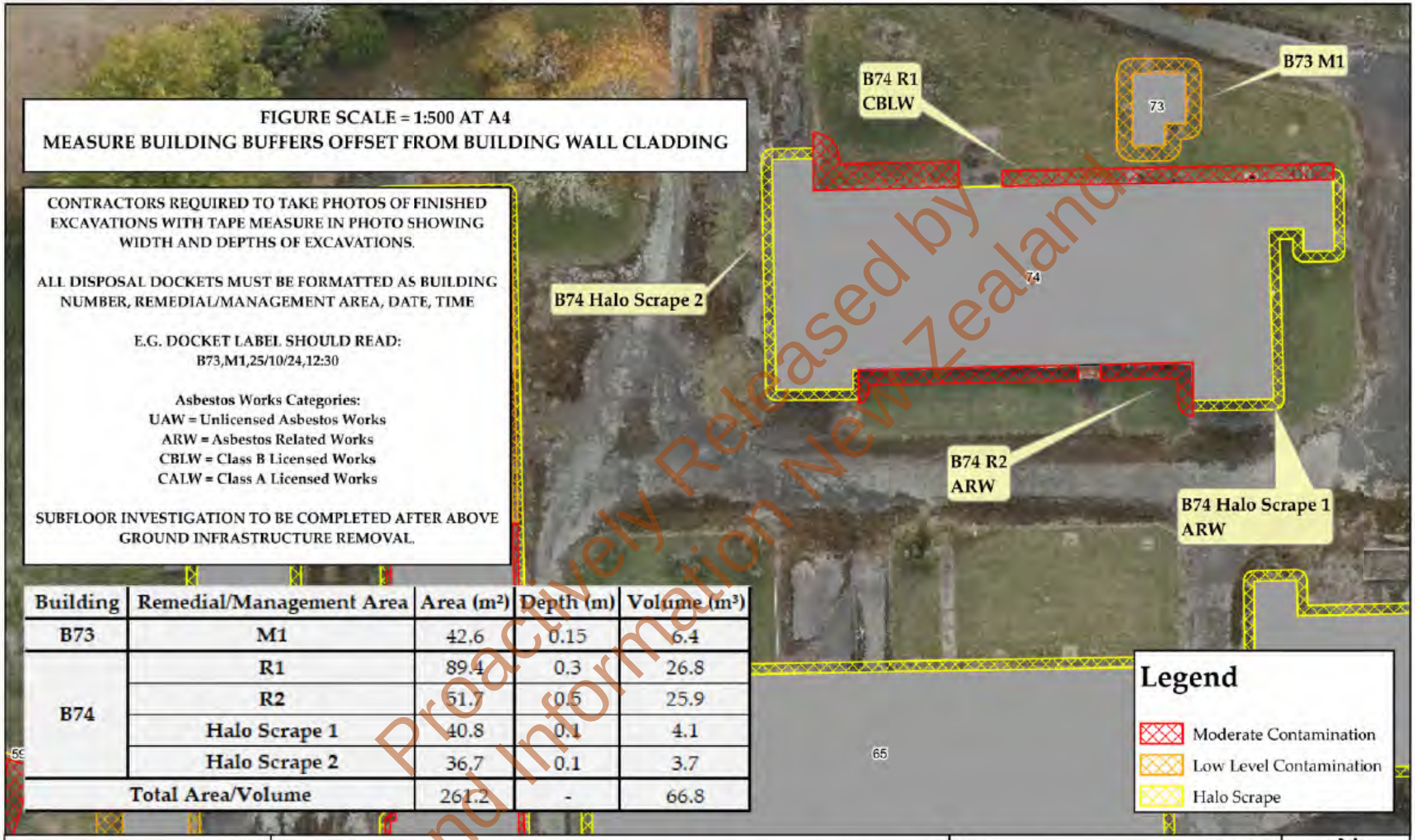


FIGURE SCALE = 1:500 AT A4
MEASURE BUILDING BUFFERS OFFSET FROM BUILDING WALL CLADDING

CONTRACTORS REQUIRED TO TAKE PHOTOS OF FINISHED EXCAVATIONS WITH TAPE MEASURE IN PHOTO SHOWING WIDTH AND DEPTHS OF EXCAVATIONS.

ALL DISPOSAL DOCKETS MUST BE FORMATTED AS BUILDING NUMBER, REMEDIAL/MANAGEMENT AREA, DATE, TIME

E.G. DOCKET LABEL SHOULD READ:
B73,M1,25/10/24,12:30

Asbestos Works Categories:
UAW = Unlicensed Asbestos Works
ARW = Asbestos Related Works
CBLW = Class B Licensed Works
CALW = Class A Licensed Works

SUBFLOOR INVESTIGATION TO BE COMPLETED AFTER ABOVE GROUND INFRASTRUCTURE REMOVAL.

Building	Remedial/Management Area	Area (m²)	Depth (m)	Volume (m³)
B73	M1	42.6	0.15	6.4
B74	R1	89.4	0.3	26.8
	R2	51.7	0.5	25.9
	Halo Scrape 1	40.8	0.1	4.1
	Halo Scrape 2	36.7	0.1	3.7
Total Area/Volume		261.2	-	66.8

Fraser Thomas
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Drawing 33097/R45: Remedial Action Plan - B73 & B74

Toitū Te Whenua Land Information New Zealand
Former Tokanui Hospital Demolition and Remediation Project
Remedial Action Plan

Date:	06/09/2024
Revision No:	A
Drawn:	EB
Reviewed:	SF

N

0 4 8 16 24 32 40
Meters

FIGURE SCALE = 1:500 AT A4
MEASURE BUILDING BUFFERS OFFSET FROM BUILDING WALL CLADDING

CONTRACTORS REQUIRED TO TAKE PHOTOS OF FINISHED EXCAVATIONS WITH TAPE MEASURE IN PHOTO SHOWING WIDTH AND DEPTHS OF EXCAVATIONS.

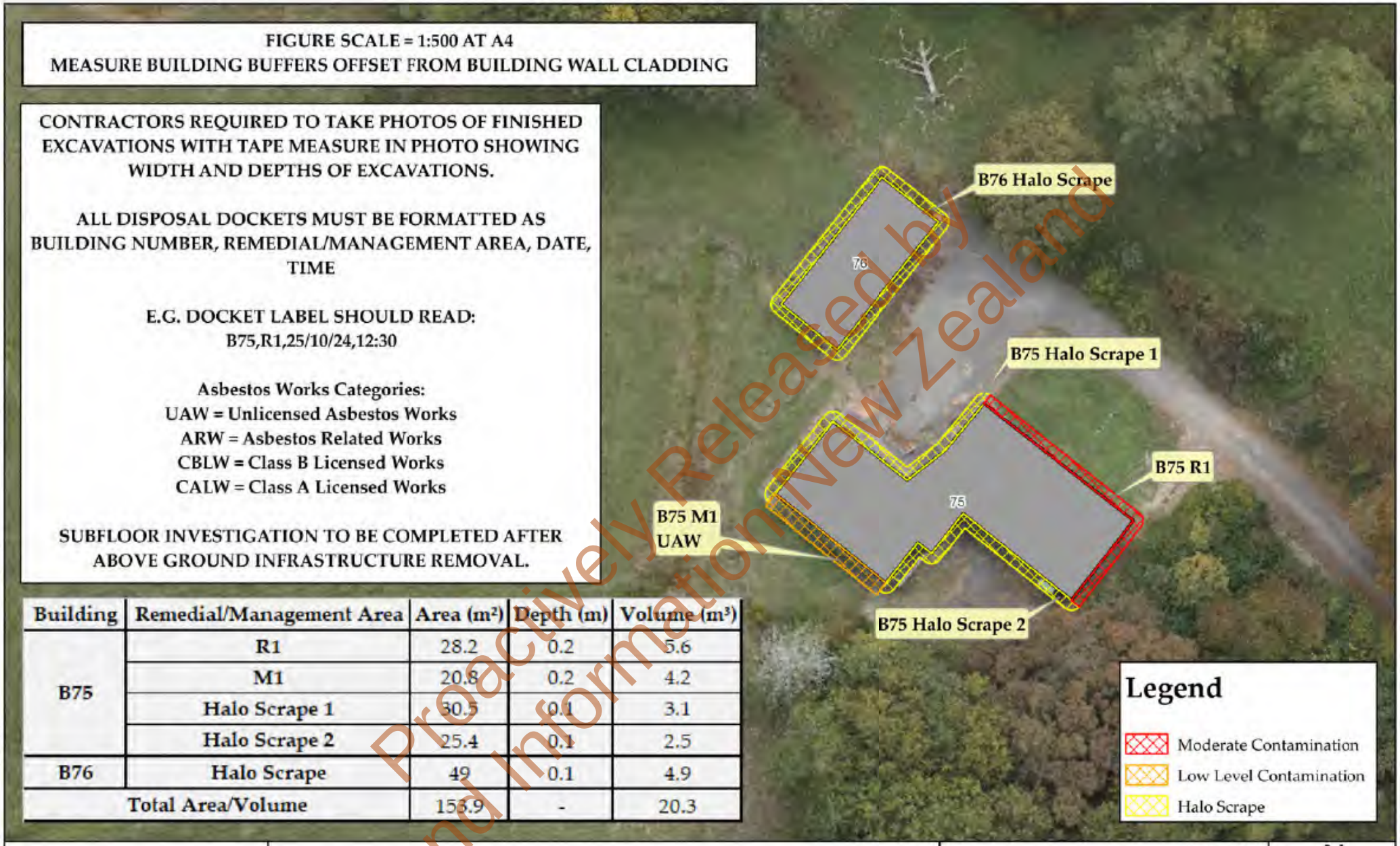
ALL DISPOSAL DOCKETS MUST BE FORMATTED AS BUILDING NUMBER, REMEDIAL/MANAGEMENT AREA, DATE, TIME

E.G. DOCKET LABEL SHOULD READ:
B75,R1,25/10/24,12:30

Asbestos Works Categories:
UAW = Unlicensed Asbestos Works
ARW = Asbestos Related Works
CBLW = Class B Licensed Works
CALW = Class A Licensed Works

SUBFLOOR INVESTIGATION TO BE COMPLETED AFTER ABOVE GROUND INFRASTRUCTURE REMOVAL.

Building	Remedial/Management Area	Area (m²)	Depth (m)	Volume (m³)
B75	R1	28.2	0.2	5.6
	M1	20.8	0.2	4.2
	Halo Scrape 1	30.5	0.1	3.1
	Halo Scrape 2	25.4	0.1	2.5
B76	Halo Scrape	49	0.1	4.9
Total Area/Volume		153.9	-	20.3



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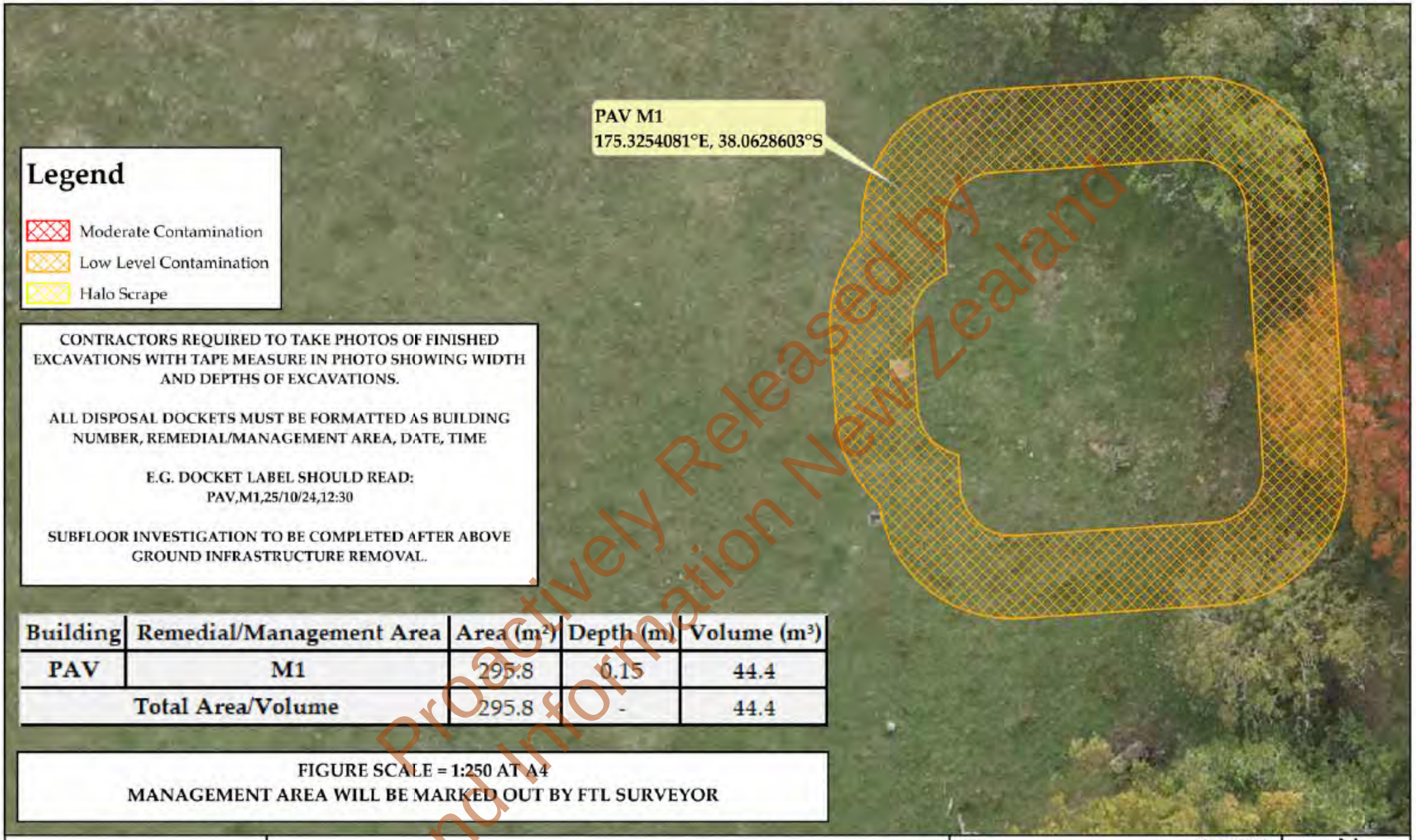
Drawing 33097/R46: Remedial Action Plan - B75 & B76

Toitū Te Whenua Land Information New Zealand
Former Tokanui Hospital Demolition and Remediation Project
Remedial Action Plan

Date:	06/09/2024
Revision No:	A
Drawn:	EB
Reviewed:	SF

N

0 4 8 16 24 32 40
Meters



Legend

- Moderate Contamination
- Low Level Contamination
- Halo Scrape

CONTRACTORS REQUIRED TO TAKE PHOTOS OF FINISHED EXCAVATIONS WITH TAPE MEASURE IN PHOTO SHOWING WIDTH AND DEPTHS OF EXCAVATIONS.

ALL DISPOSAL DOCKETS MUST BE FORMATTED AS BUILDING NUMBER, REMEDIAL/MANAGEMENT AREA, DATE, TIME

E.G. DOCKET LABEL SHOULD READ:
PAV,M1,25/10/24,12:30

SUBFLOOR INVESTIGATION TO BE COMPLETED AFTER ABOVE GROUND INFRASTRUCTURE REMOVAL.

Building	Remedial/Management Area	Area (m^2)	Depth (m)	Volume (m^3)
PAV	M1	295.8	0.15	44.4
Total Area/Volume		295.8	-	44.4

FIGURE SCALE = 1:250 AT A4
MANAGEMENT AREA WILL BE MARKED OUT BY FTL SURVEYOR

Fraser Thomas
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Drawing 33097/R47: Remedial Action Plan - PAV

Toitū Te Whenua Land Information New Zealand
Former Tokanui Hospital Demolition and Remediation Project
Remedial Action Plan

Date:	06/09/2024
Revision No:	A
Drawn:	EB
Reviewed:	SF

N

0 2 4 8 12 16 20
Meters

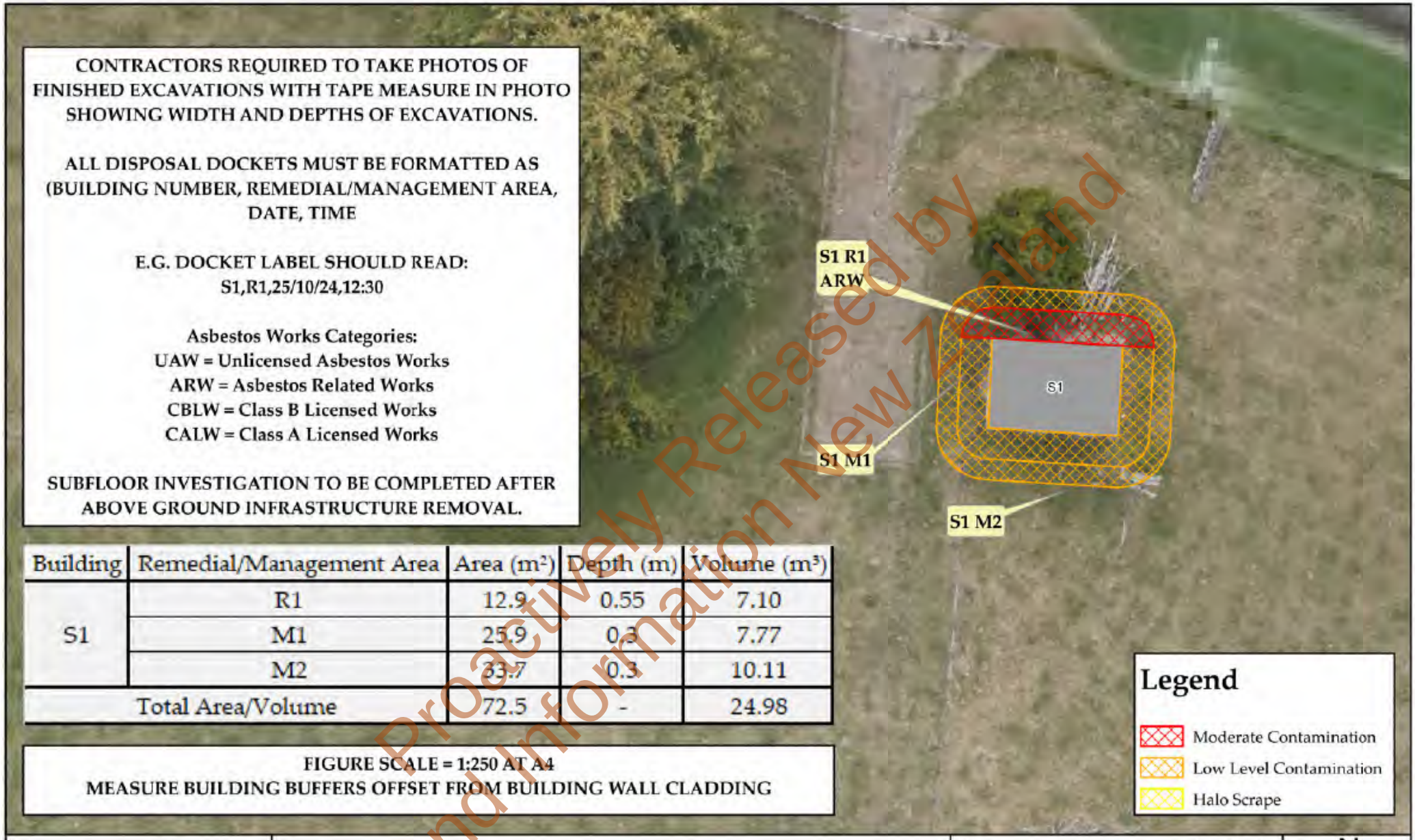
CONTRACTORS REQUIRED TO TAKE PHOTOS OF FINISHED EXCAVATIONS WITH TAPE MEASURE IN PHOTO SHOWING WIDTH AND DEPTHS OF EXCAVATIONS.

ALL DISPOSAL DOCKETS MUST BE FORMATTED AS (BUILDING NUMBER, REMEDIAL/MANAGEMENT AREA, DATE, TIME

E.G. DOCKET LABEL SHOULD READ:
S1,R1,25/10/24,12:30

Asbestos Works Categories:
UAW = Unlicensed Asbestos Works
ARW = Asbestos Related Works
CBLW = Class B Licensed Works
CALW = Class A Licensed Works

SUBFLOOR INVESTIGATION TO BE COMPLETED AFTER ABOVE GROUND INFRASTRUCTURE REMOVAL.



Building	Remedial/Management Area	Area (m²)	Depth (m)	Volume (m³)
S1	R1	12.9	0.55	7.10
	M1	25.9	0.3	7.77
	M2	33.7	0.3	10.11
Total Area/Volume		72.5	-	24.98

FIGURE SCALE = 1:250 AT A4
MEASURE BUILDING BUFFERS OFFSET FROM BUILDING WALL CLADDING

Fraser Thomas
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Drawing 33097/R48: Remedial Action Plan - S1

Toitū Te Whenua Land Information New Zealand
Former Tokanui Hospital Demolition and Remediation Project
Remedial Action Plan

Date:	06/09/2024
Revision No:	A
Drawn:	EB
Reviewed:	SF

N

0 2 4 8 12 16 20
Meters

Legend

- Moderate Contamination
- Low Level Contamination
- Halo Scrape

CONTRACTORS REQUIRED TO TAKE PHOTOS OF FINISHED EXCAVATIONS WITH TAPE MEASURE IN PHOTO SHOWING WIDTH AND DEPTHS OF EXCAVATIONS.

ALL DISPOSAL DOCKETS MUST BE FORMATTED AS BUILDING NUMBER, REMEDIAL/MANAGEMENT AREA, DATE, TIME

E.G. DOCKET LABEL SHOULD READ: S6,HS,25/10/24,12:30

SUBFLOOR INVESTIGATION TO BE COMPLETED AFTER ABOVE GROUND INFRASTRUCTURE REMOVAL.

Building	Remedial/Management Area	Area (m^2)	Depth (m)	Volume (m^3)
S6	Halo Scrape	25.5	0.1	2.6
Total Area/Volume		25.5	-	2.6

FIGURE SCALE = 1:250 AT A4
MEASURE BUILDING BUFFERS OFFSET FROM BUILDING WALL CLADDING

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Drawing 33097/R49: Remedial Action Plan - S6

Toitū Te Whenua Land Information New Zealand
Former Tokanui Hospital Demolition and Remediation Project
Remedial Action Plan

Date:	06/09/2024
Revision No:	A
Drawn:	EB
Reviewed:	SF

N

0 2 4 8 12 16 20
Meters

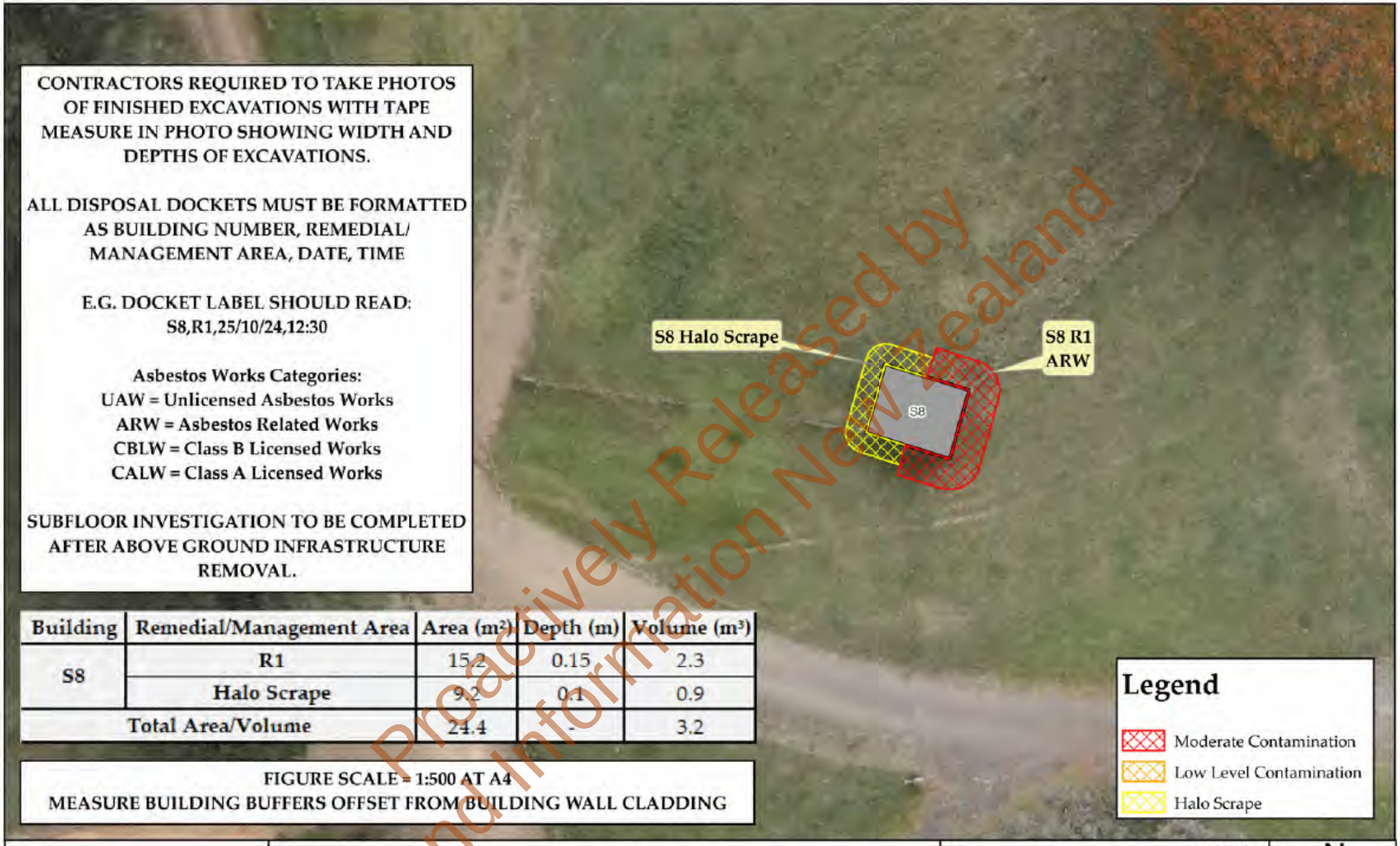
CONTRACTORS REQUIRED TO TAKE PHOTOS OF FINISHED EXCAVATIONS WITH TAPE MEASURE IN PHOTO SHOWING WIDTH AND DEPTHS OF EXCAVATIONS.

ALL DISPOSAL DOCKETS MUST BE FORMATTED AS BUILDING NUMBER, REMEDIAL/ MANAGEMENT AREA, DATE, TIME

E.G. DOCKET LABEL SHOULD READ:
S8,R1,25/10/24,12:30

Asbestos Works Categories:
UAW = Unlicensed Asbestos Works
ARW = Asbestos Related Works
CBLW = Class B Licensed Works
CALW = Class A Licensed Works

SUBFLOOR INVESTIGATION TO BE COMPLETED AFTER ABOVE GROUND INFRASTRUCTURE REMOVAL.



Building	Remedial/Management Area	Area (m²)	Depth (m)	Volume (m³)
S8	R1	15.2	0.15	2.3
	Halo Scrape	9.2	0.1	0.9
Total Area/Volume		24.4	-	3.2

FIGURE SCALE = 1:500 AT A4
MEASURE BUILDING BUFFERS OFFSET FROM BUILDING WALL CLADDING

Fraser Thomas
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Drawing 33097/R50: Remedial Action Plan - S8

Toitū Te Whenua Land Information New Zealand
Former Tokanui Hospital Demolition and Remediation Project
Remedial Action Plan

Date:	06/09/2024
Revision No:	A
Drawn:	EB
Reviewed:	SF

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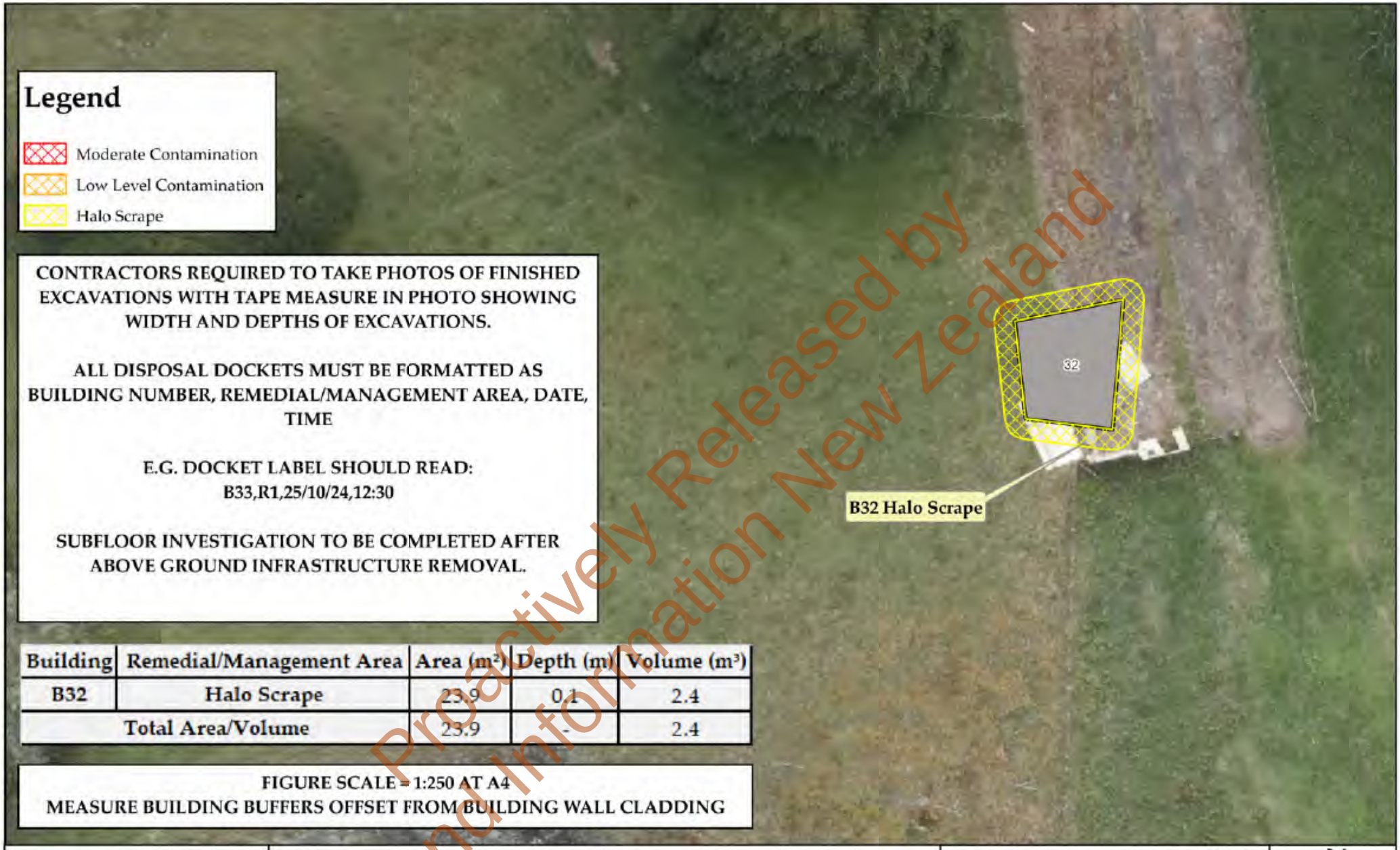
Meters



CONTRACTORS REQUIRED TO TAKE PHOTOS OF FINISHED EXCAVATIONS WITH TAPE MEASURE IN PHOTO SHOWING WIDTH AND DEPTHS OF EXCAVATIONS.

ALL DISPOSAL DOCKETS MUST BE FORMATTED AS BUILDING NUMBER, REMEDIAL/MANAGEMENT AREA, DATE, TIME

E.G. DOCKET LABEL SHOULD READ:
B33,R1,25/10/24,12:30

SUBFLOOR INVESTIGATION TO BE COMPLETED AFTER ABOVE GROUND INFRASTRUCTURE REMOVAL.

Building	Remedial/Management Area	Area (m^2)	Depth (m)	Volume (m^3)
B32	Halo Scrape	23.9	0.1	2.4
Total Area/Volume		23.9	-	2.4

FIGURE SCALE = 1:250 AT A4
MEASURE BUILDING BUFFERS OFFSET FROM BUILDING WALL CLADDING

Fraser Thomas
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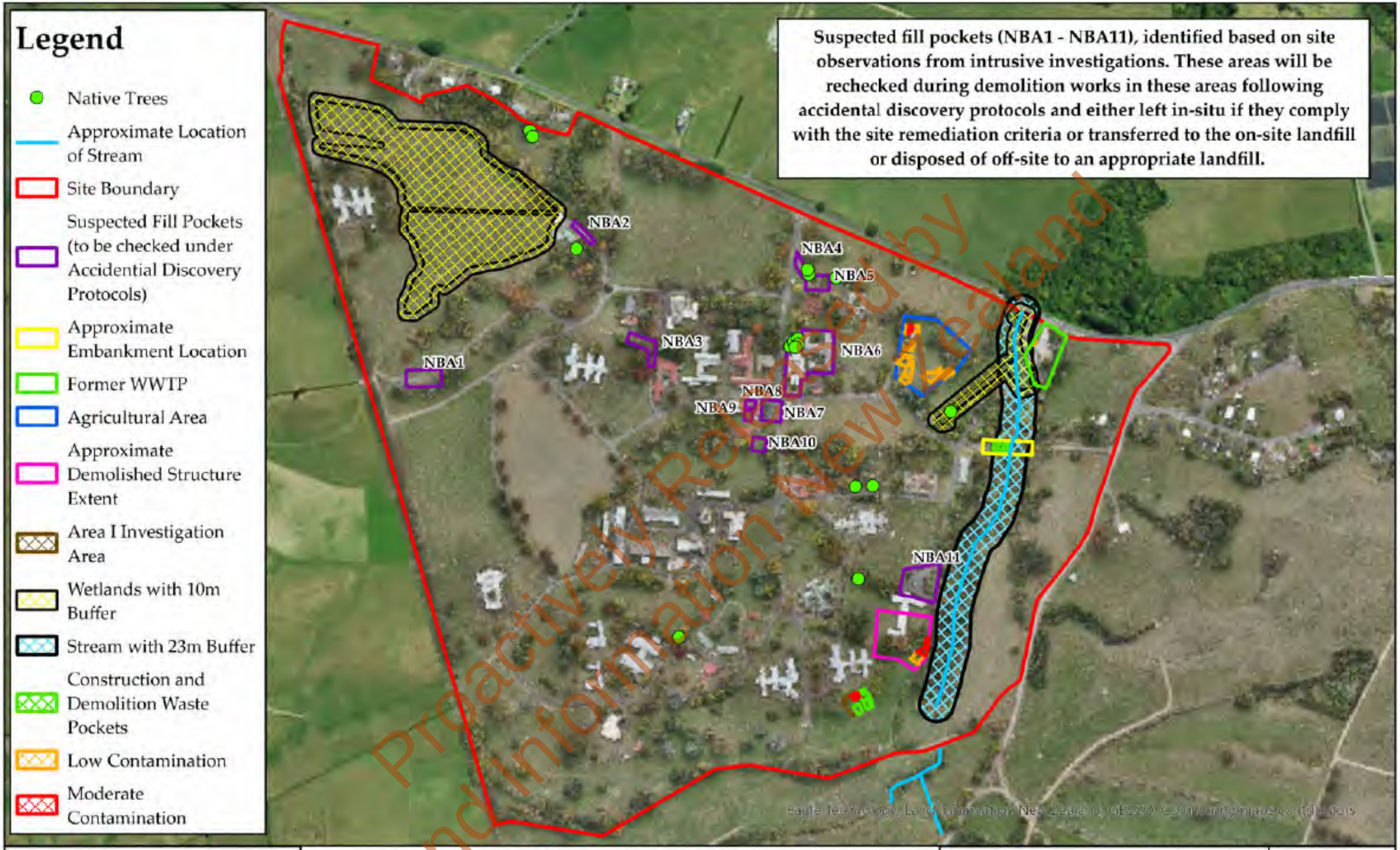
Drawing 33097/R51: Remedial Action Plan - B32

Toitū Te Whenua Land Information New Zealand
Former Tokanui Hospital Demolition and Remediation Project
Remedial Action Plan

Date:	06/09/2024
Revision No:	A
Drawn:	EB
Reviewed:	SF

N

0 2 4 8 12 16 20
Meters



Over 50 Years
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Drawing 33097/R52: Remedial Action Plan - NBA Location Plan

Toitū Te Whenua Land Information New Zealand
Former Tokanui Hospital Demolition and Remediation Project
Tokanui

Date:	05/11/2024
Revision No:	A
Drawn by:	AF
Reviewed by:	SF

N

0 70 140 280 420 560
Meters

REMEDIATION IS REQUIRED IN THIS AREA FOR CONTAMINATED SOIL AND FILL MATERIAL CONTAINING ≥5% CONSTRUCTION AND DEMOLITION (C&D) WASTE. REMEDIATION AREAS ARE ESTIMATED AND SQEP STANDOVER REQUIRED DURING THESE WORKS TO CONFIRM EXCAVATION REQUIREMENTS.

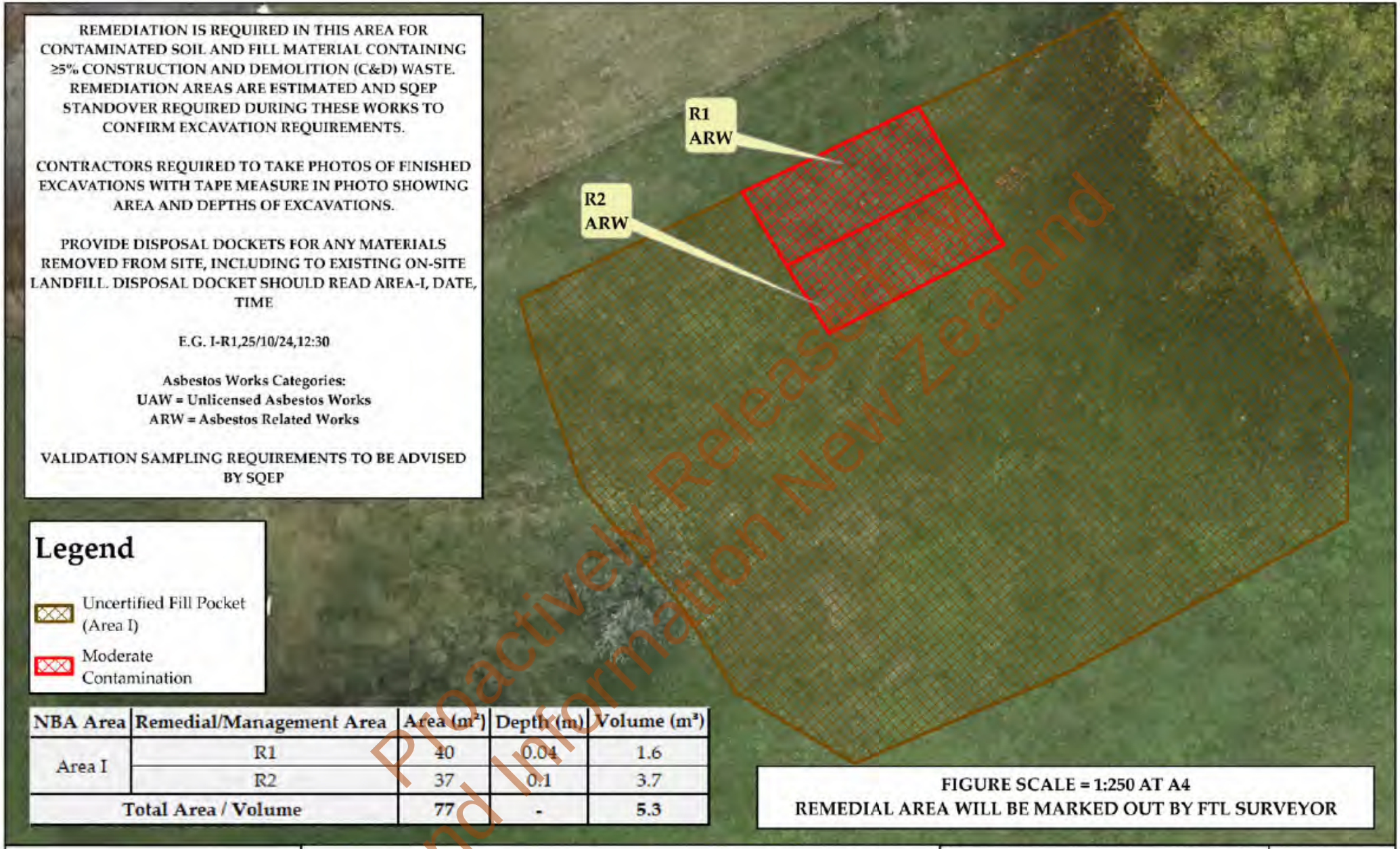
CONTRACTORS REQUIRED TO TAKE PHOTOS OF FINISHED EXCAVATIONS WITH TAPE MEASURE IN PHOTO SHOWING AREA AND DEPTHS OF EXCAVATIONS.

PROVIDE DISPOSAL DOCKETS FOR ANY MATERIALS REMOVED FROM SITE, INCLUDING TO EXISTING ON-SITE LANDFILL. DISPOSAL DOCKET SHOULD READ AREA-I, DATE, TIME

E.G. I-R1,25/10/24,12:30

Asbestos Works Categories:
UAW = Unlicensed Asbestos Works
ARW = Asbestos Related Works

VALIDATION SAMPLING REQUIREMENTS TO BE ADVISED BY SQEP



Legend

- Uncertified Fill Pocket (Area I)
- Moderate Contamination

NBA Area	Remedial/Management Area	Area (m²)	Depth (m)	Volume (m³)
Area I	R1	40	0.04	1.6
	R2	37	0.1	3.7
Total Area / Volume		**77**	**-**	**5.3**

FIGURE SCALE = 1:250 AT A4
REMEDIAL AREA WILL BE MARKED OUT BY FTL SURVEYOR

Over 50 Years Fraser Thomas
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Drawing 33097/R53: Remedial Action Plan - NBA (Area I - Topsoil)

Toitū Te Whenua Land Information New Zealand
Former Tokanui Hospital Demolition and Remediation Project
Tokanui

Date:	17/09/2024
Revision No:	A
Drawn:	AF
Reviewed:	SF

N

0 2 4 7 11 14
Meters

REMEDIATION IS REQUIRED IN THIS AREA FOR CONTAMINATED SOIL AND FILL MATERIAL CONTAINING ≥5% CONSTRUCTION AND DEMOLITION (C&D) WASTE. REMEDIATION AREAS ARE ESTIMATED AND SQEP STANDOVER REQUIRED DURING THESE WORKS TO CONFIRM EXCAVATION REQUIREMENTS, INCLUDING ASBESTOS CONTROLS.

CONTRACTORS REQUIRED TO TAKE PHOTOS OF FINISHED EXCAVATIONS WITH TAPE MEASURE IN PHOTO SHOWING AREA AND DEPTHS OF EXCAVATIONS.

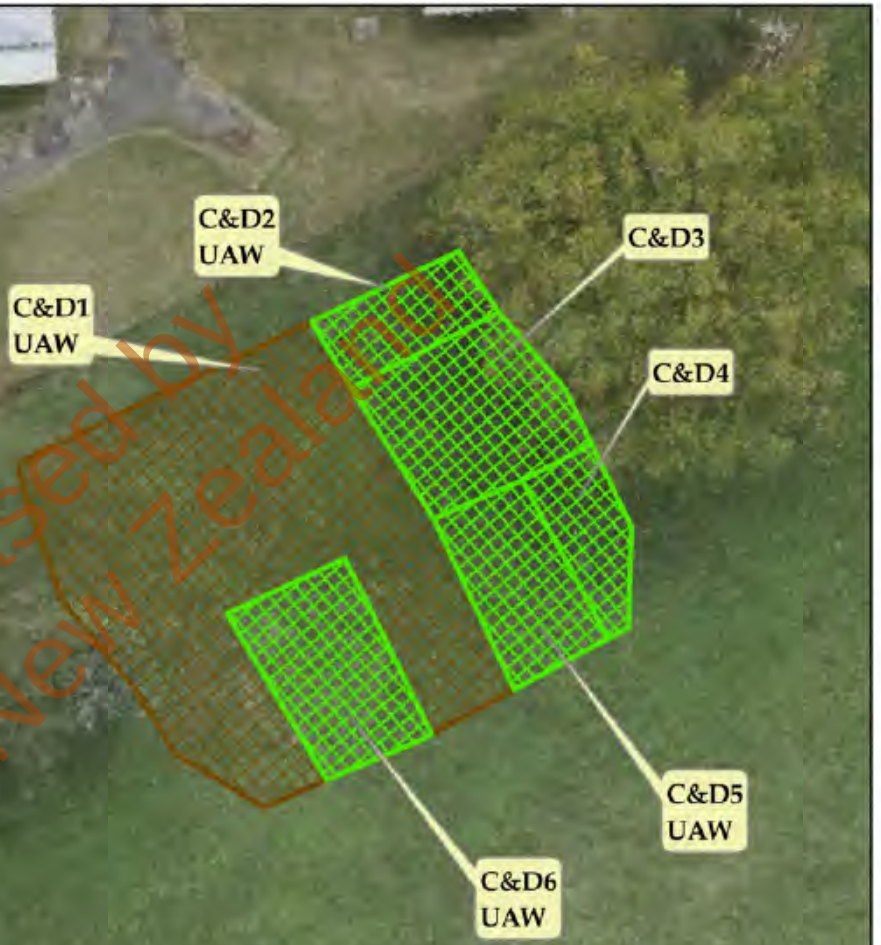
PROVIDE DISPOSAL DOCKETS FOR ANY MATERIALS REMOVED FROM SITE, INCLUDING TO EXISTING ON-SITE LANDFILL. DISPOSAL DOCKET SHOULD READ AREA-I, DATE, TIME

E.G. I-C&D1,25/10/24,12:30

Asbestos Works Categories:
UAW = Unlicensed Asbestos Works

VALIDATION SAMPLING REQUIREMENTS TO BE ADVISED BY SQEP

NBA Area	Remedial/Management Area	Area (m²)	Depth (m)	Volume (m³)	Main Contaminant (Depth)
Area I	C&D1	39	0.1 - 0.3	7.8	PACM (0.2m)
			0.5 - 0.8	11.7	PACM (0.6 - 0.7m)
			0.9 - 1.1	7.8	PACM (1.0m)
	C&D2	54	1.3 - 1.5	10.8	PACM (1.4m)
	C&D3	120	1.4 - 1.6	24	C&D (1.5m)
	C&D4	49	0.1 - 2.0	93.1	C&D (0.1 - 2.0m)
	C&D5	82	0.7 - 0.9	16.4	PACM (0.8m)
	C&D6	103	0.2 - 0.8	61.8	C&D (0.2 - 0.8m)
			0.8 -1.9	113.3	C&D (0.8 - 1.9m)
Total Area / Volume		447	-	346.7	-



Legend

- Uncertified Fill Pocket (Area I)
- Construction and Demolition Waste Pockets

FIGURE SCALE = 1:500 AT A4
C&D WASTE POCKETS WILL BE MARKED OUT BY FTL SURVEYOR

Fraser Thomas
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Drawing 33097/R54: Remedial Action Plan - NBA (Area I - Fill)

Toitū Te Whenua Land Information New Zealand
Former Tokanui Hospital Demolition and Remediation Project
Tokanui

Date:	17/09/2024
Revision No:	A
Drawn:	AF
Reviewed:	SF

N

0 4 7 14 21 28
Meters

REMEDIATION IS REQUIRED IN THIS AREA FOR CONTAMINATED SOIL AND FILL MATERIAL CONTAINING ≥5% CONSTRUCTION AND DEMOLITION (C&D) WASTE. REMEDIATION AREAS ARE ESTIMATED AND SQEP STANDOVER REQUIRED DURING THESE WORKS TO CONFIRM EXCAVATION REQUIREMENTS, INCLUDING ASBESTOS CONTROLS.

CONTRACTORS REQUIRED TO TAKE PHOTOS OF FINISHED EXCAVATIONS WITH TAPE MEASURE IN PHOTO SHOWING AREA AND DEPTHS OF EXCAVATIONS.

PROVIDE DISPOSAL DOCKETS FOR ANY MATERIALS REMOVED FROM SITE, INCLUDING TO EXISTING ON-SITE LANDFILL. DISPOSAL DOCKET SHOULD READ AREA-I, DATE, TIME

E.G. E-C&D1,25/10/24,12:30

VALIDATION SAMPLING REQUIREMENTS TO BE ADVISED BY SQEP

NOTE: 200mm DIAMETER ASBESTOS WATERMAIN ACROSS EMBANKMENT WILL BE REMOVED AS PART OF DEMOLITION WORK

Legend

- Approximate Embankment Location
- Construction and Demolition Waste Pockets
- Approximate Location of Stream
- Location of Asbestos Watermain

NBA Area	Remedial/Management Area	Area (m²)	Depth (m)	Volume (m³)	Main Contaminant
Embankment	C&D1	60	0 - 0.3	18	Possible Coal tar
		60	1.4 - 2.4	60	C&D
	C&D2	60	1.4 -2.0	36	C&D
		60	1.8 - 2.2	24	Possible Asbestos Pipe
	C&D3	60	1.6 - 2.2	36	C&D
Total Area / Volume		300	-	174	-

FIGURE SCALE = 1:500 AT A4
C&D WASTE POCKETS WILL BE MARKED OUT BY FTL SURVEYOR

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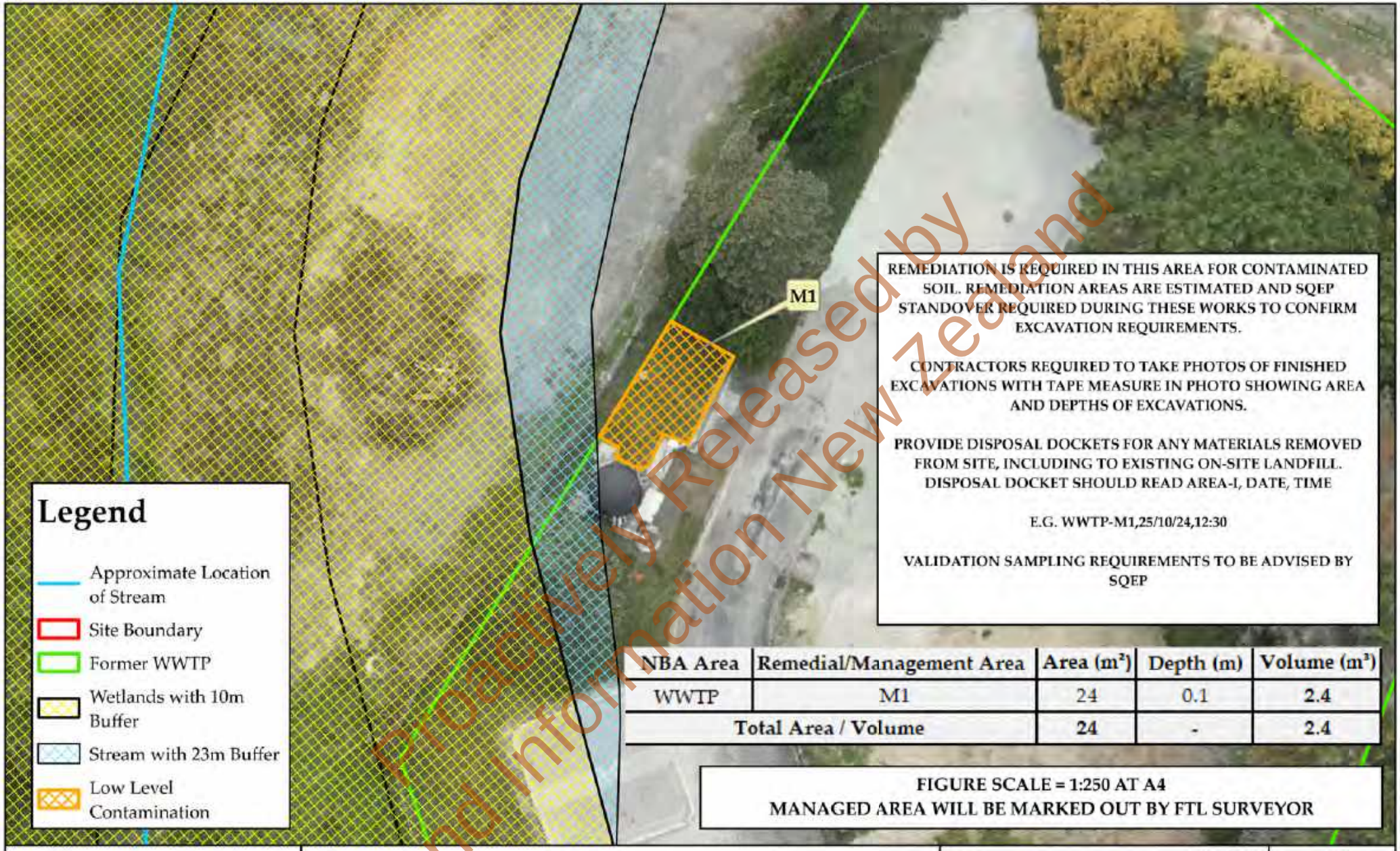
Drawing 33097/R55: Remedial Action Plan - NBA (Culvert 2 Embankment)

Toitū Te Whenua Land Information New Zealand
Former Tokanui Hospital Demolition and Remediation Project
Tokanui

Date:	17/09/2024
Revision No:	A
Drawn:	AF
Reviewed:	SF

N

0 5 10 20 30 40
Meters



Legend

- Approximate Location of Stream
- Site Boundary
- Former WWTP
- Wetlands with 10m Buffer
- Stream with 23m Buffer
- Low Level Contamination

REMEDIATION IS REQUIRED IN THIS AREA FOR CONTAMINATED SOIL. REMEDIATION AREAS ARE ESTIMATED AND SQEP STANDOVER REQUIRED DURING THESE WORKS TO CONFIRM EXCAVATION REQUIREMENTS.

CONTRACTORS REQUIRED TO TAKE PHOTOS OF FINISHED EXCAVATIONS WITH TAPE MEASURE IN PHOTO SHOWING AREA AND DEPTHS OF EXCAVATIONS.

PROVIDE DISPOSAL DOCKETS FOR ANY MATERIALS REMOVED FROM SITE, INCLUDING TO EXISTING ON-SITE LANDFILL. DISPOSAL DOCKET SHOULD READ AREA-I, DATE, TIME

E.G. WWTP-M1,25/10/24,12:30

VALIDATION SAMPLING REQUIREMENTS TO BE ADVISED BY SQEP

NBA Area	Remedial/Management Area	Area (m²)	Depth (m)	Volume (m³)
WWTP	M1	24	0.1	2.4
Total Area / Volume		**24**	-	**2.4**

FIGURE SCALE = 1:250 AT A4
MANAGED AREA WILL BE MARKED OUT BY FTL SURVEYOR

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Drawing 33097/R56: Remedial Action Plan - NBA (Former Wastewater Treatment Plant)

Toitū Te Whenua Land Information New Zealand
Former Tokanui Hospital Demolition and Remediation Project
Tokanui

Date:	17/09/2024
Revision No:	A
Drawn:	AF
Reviewed:	SF

N

0 2.5 5 10 15 20
Meters

REMEDIATION IS REQUIRED IN THIS AREA FOR CONTAMINATED SOIL REMEDIATION AREAS ARE ESTIMATED AND SQEP STANDOVER REQUIRED DURING THESE WORKS TO CONFIRM EXCAVATION REQUIREMENTS.

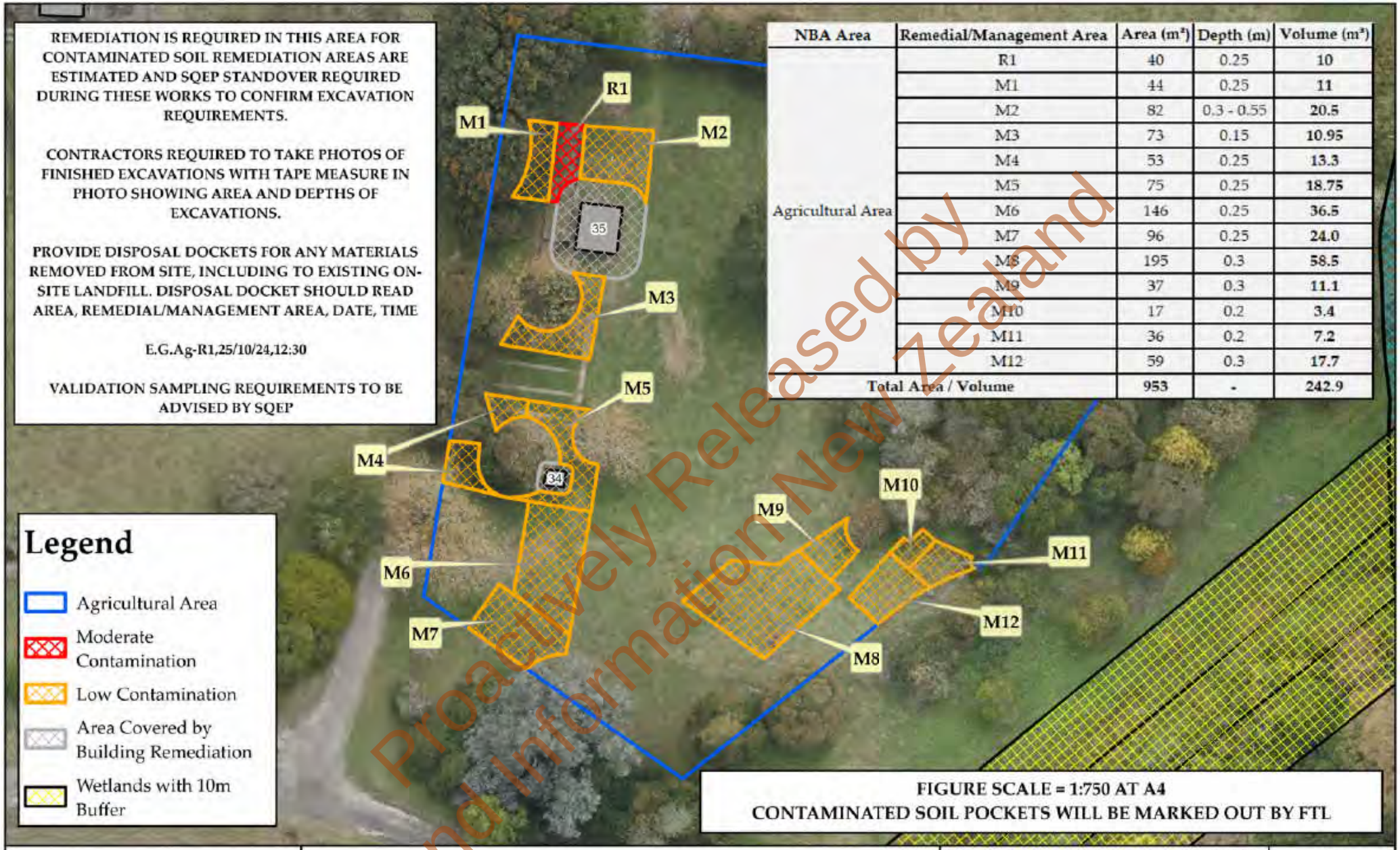
CONTRACTORS REQUIRED TO TAKE PHOTOS OF FINISHED EXCAVATIONS WITH TAPE MEASURE IN PHOTO SHOWING AREA AND DEPTHS OF EXCAVATIONS.

PROVIDE DISPOSAL DOCKETS FOR ANY MATERIALS REMOVED FROM SITE, INCLUDING TO EXISTING ON-SITE LANDFILL. DISPOSAL DOCKET SHOULD READ AREA, REMEDIAL/MANAGEMENT AREA, DATE, TIME

E.G.Ag-R1,25/10/24,12:30

VALIDATION SAMPLING REQUIREMENTS TO BE ADVISED BY SQEP

NBA Area	Remedial/Management Area	Area (m²)	Depth (m)	Volume (m³)
Agricultural Area	R1	40	0.25	10
	M1	44	0.25	11
	M2	82	0.3 - 0.55	20.5
	M3	73	0.15	10.95
	M4	53	0.25	13.3
	M5	75	0.25	18.75
	M6	146	0.25	36.5
	M7	96	0.25	24.0
	M8	195	0.3	58.5
	M9	37	0.3	11.1
	M10	17	0.2	3.4
	M11	36	0.2	7.2
	M12	59	0.3	17.7
Total Area / Volume		953	-	242.9



Legend

- Agricultural Area
- Moderate Contamination
- Low Contamination
- Area Covered by Building Remediation
- Wetlands with 10m Buffer

FIGURE SCALE = 1:750 AT A4
CONTAMINATED SOIL POCKETS WILL BE MARKED OUT BY FTL

Over 50 Years Fraser Thomas
ENGINEERS • RESOURCE MANAGERS • SURVEYORS

Drawing 33097/R57: Remedial Action Plan - NBA (Agricultural Area)

Toitū Te Whenua Land Information New Zealand
Former Tokanui Hospital Demolition and Remediation Project
Tokanui

Date:	05/10/2024
Revision No:	A
Drawn:	AF
Reviewed:	SF

N

0 10 20 40 60
Meters

REMEDIATION IS REQUIRED IN THIS AREA FOR CONTAMINATED SOIL REMEDIATION AREAS ARE ESTIMATED AND SQEP STANDOVER REQUIRED DURING THESE WORKS TO CONFIRM EXCAVATION REQUIREMENTS.

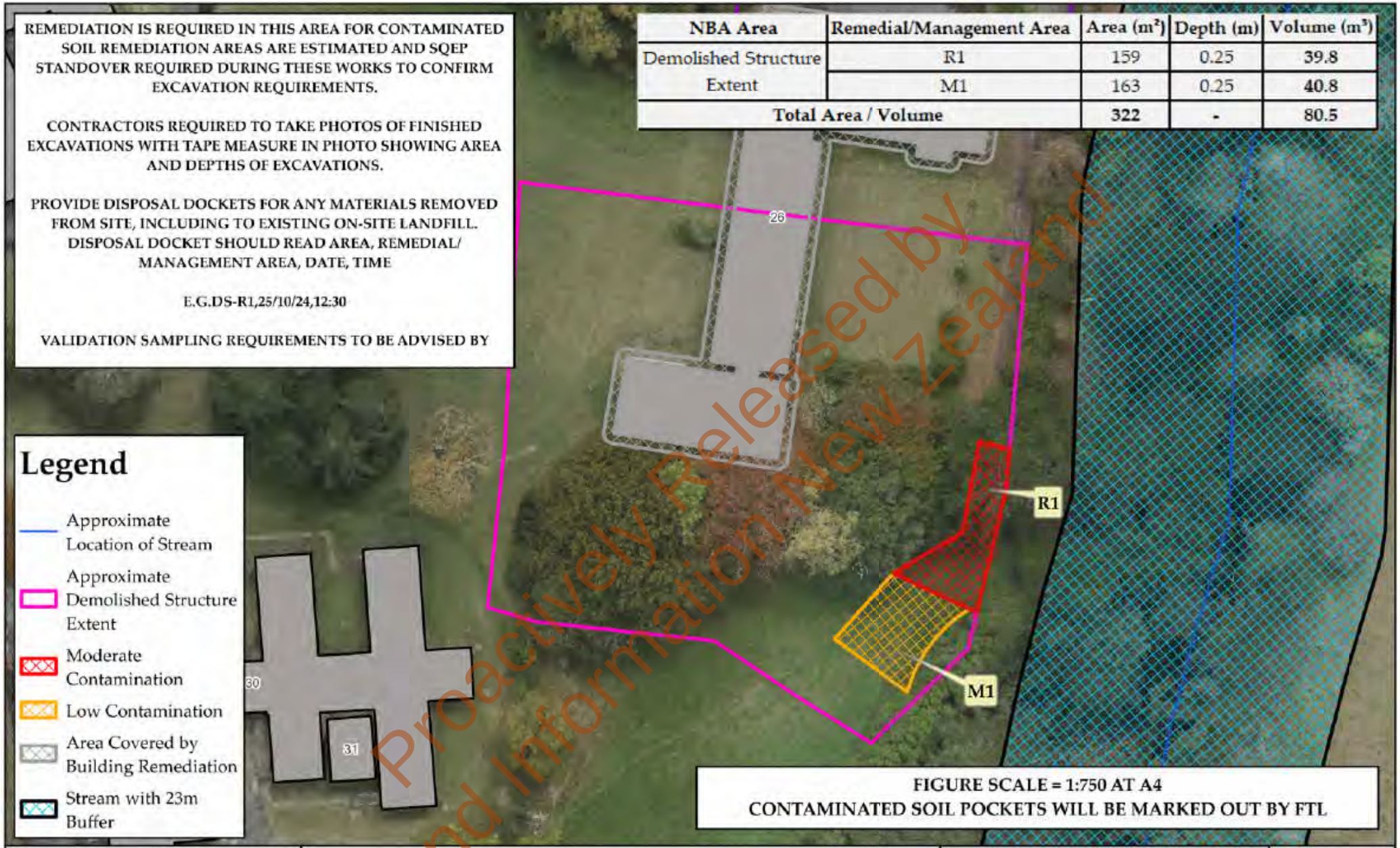
CONTRACTORS REQUIRED TO TAKE PHOTOS OF FINISHED EXCAVATIONS WITH TAPE MEASURE IN PHOTO SHOWING AREA AND DEPTHS OF EXCAVATIONS.

PROVIDE DISPOSAL DOCKETS FOR ANY MATERIALS REMOVED FROM SITE, INCLUDING TO EXISTING ON-SITE LANDFILL. DISPOSAL DOCKET SHOULD READ AREA, REMEDIAL/ MANAGEMENT AREA, DATE, TIME

E.G.DS-R1,25/10/24,12:30

VALIDATION SAMPLING REQUIREMENTS TO BE ADVISED BY

NBA Area	Remedial/Management Area	Area (m^2)	Depth (m)	Volume (m^3)
Demolished Structure Extent	R1	159	0.25	**39.8**
	M1	163	0.25	**40.8**
Total Area / Volume		**322**	**-**	**80.5**



Legend

- Approximate Location of Stream
- Approximate Demolished Structure Extent
- Moderate Contamination
- Low Contamination
- Area Covered by Building Remediation
- Stream with 23m Buffer

FIGURE SCALE = 1:750 AT A4
CONTAMINATED SOIL POCKETS WILL BE MARKED OUT BY FTL

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Drawing 33097/R58: Remedial Action Plan - NBA (Demolished Structure)

Toitū Te Whenua Land Information New Zealand
Former Tokanui Hospital Demolition and Remediation Project
Tokanui

Date:	05/11/2024
Revision No:	A
Drawn:	AF
Reviewed:	SF

N

0 15 30 60
Meters

Fraser Thomas
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Drawing 33097/59: Proposed Validation Sample Location Plan - B33

Toitū Te Whenua Land Information New Zealand
Former Tokanui Hospital Demolition and Remediation Project
Remedial Action Plan

Date:	13/09/2024
Revision No:	A
Drawn:	EB
Reviewed:	SF

N

0 3 7 13 20 26 33
Meters

Appendix A

Ministry for the Environment Contaminated Site Report Checklist

TOITŪ TE WHENUA – LAND INFORMATION NEW ZEALAND
FORMER TOKANUI HOSPITAL DEMOLITION AND REMEDIATION
149 TE MAWHAI ROAD, TOKANUI, TE AWAMUTU

REMEDIAL ACTION PLAN - CONTAMINATED SOIL
SUMMARY CONTAMINATED SITES REPORT CHECKLIST

No.	Content	Required	Required if relied on
1.	**Introduction** ○ description of the site, report purpose, regulatory context (including references to consents if already granted)	þ	
2.	**Site Description** ○ Site layout ○ Summary of previous investigations	þ	
3.	**Scope and Purpose of remediation** ○ Summary of contamination ○ Remediation strategy, objectives, and milestones ○ Summary of remedial options/ROR	þ	
4.	**Remediation method(s)** ○ proposed remediation method(s) to address the risk posed by the contaminants to the environment and/or human health) ○ proposed timing of the remediation (schedule of works) ○ proposed mitigation methods and/or controls to address the risk posed by the contaminants to the environment and/or human health during the remedial works (including health and safety of workers, and environmental controls) ○ proposed contamination management measures, including the frequency and location of monitoring of specified contaminants. ○ proposed remediation activity record keeping.	þ	
5.	**Standard of remediation** ○ Proposed standard of the remediation on completion. ○ Proposed site validation strategy and methods to demonstrate the degree to which remedial objectives have been met	þ	
6.	**Unexpected contamination discovery protocols**	þ	
7.	**References**	þ	
	Appendices: relevant supporting information		

Appendix B

Asbestos Work Controls

Unlicensed Asbestos Work (<NESCS, <0.001% w/w Fibrous asbestos or asbestos fines, <0.01% w/w ACM)
General Requirements:
• Does not require a license or resource consent, and an Asbestos Removal/Management Control Plan is not required.
• Air monitoring not required but recommended.
PPE requirements:
Disposable coveralls rated type 5, category 3, nitrile gloves, steel toe capped gumboots or safety footwear with disposable overshoes.
RPE requirements:
No asbestos-specific RPE if SQEP confirms unlikely to exceed trace levels in air monitoring (0.01 f/ml) and/or if air monitoring confirms asbestos below 0.01 f/ml.
Dust/asbestos fibre suppression:
Water via localised points. Addition of surfactants and polymers where the location is sensitive (such as adjacent to busy centres, schools).
Temporary cover of contaminated area awaiting remediation.
Decontamination facilities:
Foot wash and used PPE collection area.

Asbestos Related Work (>NESCS Controls, >0.001% w/w Fibrous asbestos or asbestos fines, >0.01% w/w ACM)
General Requirements:
• Does not require a license or resource consent, and an Asbestos Removal/Management Control Plan is not required.
• Air monitoring not required but recommended
• Asbestos-related work involving soil should be overseen by a person competent at managing asbestos in soil, i.e. a suitably qualified and experienced practitioner (SQEP).
PPE requirements:
Disposable coveralls rated type 5, category 3, nitrile gloves, steel toe capped gumboots or safety footwear with disposable overshoes.
RPE requirements:
Disposable P2 dust mask.
Dust/asbestos fibre suppression:
Water via localised points. Addition of surfactants and polymers where the location is sensitive (such as adjacent to busy centres, schools).
Temporary cover of contaminated area awaiting remediation.
Decontamination facilities:
Basic disposable wet decontamination tent or trailer. Consider powered and plumbed decontamination unit if project scale warrants.

Class B work (>0.01 w/w% Fibrous Asbestos or Asbestos fines, >1% w/w ACM)
General Requirements:
• Asbestos Removal/Management Control Plan required under regulation 32 of the Asbestos Regulations– to be prepared by a licensed removalist.
• Air monitoring (recommended not required), clearance inspection and clearance certificate required by a competent person (see note 2 below for definition).
• **Clearance inspections** must be conducted by a **competent person** after Class B licensed asbestos removal work (Part G section 28 of the ACOP and required under regulation 41 of the Asbestos Regulations).
• WorkSafe must be notified 5 days before starting licensed asbestos removal work, as per regulation 34 of the Asbestos Regulations.
PPE requirements:
Disposable coveralls rated type 5, category 3, nitrile gloves, steel toe capped gumboots or safety footwear with disposable overshoes.
RPE requirements:
Half-face P3 respirator with particulate filter. Consider increasing to full-face if friable ACM present.
Dust/asbestos fibre suppression:
Water and asbestos-encapsulating polymer emulsion product applied before starting work and during as required. Consider adding a surfactant to water for amphibole fibres (brown and blue).
Decontamination facilities:
Basic disposable wet decontamination tent and foot wash.

Class A work (>1% w/w Fibrous Asbestos or Asbestos Fines)
General Requirements:
• Asbestos Removal/Management Control Plan required under regulation 32 of the Asbestos Regulations– to be prepared by a licensed removalist.
• Air monitoring, clearance inspection and clearance certificate required by a licensed assessor
• **Clearance inspections** must be conducted by an **independent assessor** (see note 1) after Class A licensed asbestos removal work (Part G section 28 of the ACOP and required under regulation 41 of the Asbestos Regulations).
• WorkSafe must be notified 5 days before starting licensed asbestos removal work, as per regulation 34 of the Asbestos Regulations.
PPE requirements:
Disposable coveralls rated type 5, category 3, nitrile gloves, steel toe capped gumboots or safety footwear with disposable overshoes.
RPE requirements:
Full-face P3 respirator with particulate filter. Consider increasing to power-assisted if required.
Dust/asbestos fibre suppression:
Water and asbestos-encapsulating polymer emulsion product applied before starting work and during as required. Consider adding a surfactant to water for amphibole fibres (brown and blue).
Decontamination facilities:
3-stage wet decontamination unit or trailer. Consider powered and plumbed decontamination unit if project scale warrants. Negative pressure unit also required.

Note 1 (source BRANZ Guidelines, 2019):

Independent licensed assessor

Under the Asbestos Regulations, an independent licensed asbestos assessor is a person who is licensed by WorkSafe New Zealand to conduct air monitoring and clearance inspections for friable and non-friable asbestos projects.

For asbestos in soil, the role of an independent assessor is to provide support to high-risk remedial projects (involving friable asbestos), undertake air monitoring and provide clearance on Class A removal work under regulation 41 of the Asbestos Regulations.

Licensed asbestos removalist

Under the Asbestos Regulations, this is a PCBU with a Class A or Class B licence for asbestos removal. It should be noted that, for asbestos-contaminated soil, work should be completed in collaboration with a SQEP.

Note 2:

People conducting Clearance inspections:

Clearance inspections can be conducted by:

- an independent licensed asbestos assessor, or

- an independent competent person.

This also includes when the work requiring clearance is being carried out in homes.

In this case, a competent person is a person who, through training or experience, has the skills and knowledge of asbestos removal industry practice, and holds:

- a certificate in relation to a training course specified by WorkSafe for asbestos assessor work, or
- a tertiary qualification in occupational health and safety, occupational hygiene, science, or environmental health.

Appendix C

Compiled Results Analysis

General Notes

* = Residual concentrations detected

1. Upper limit background concentrations for selected elements in soil of the Waikato region, acid recoverable data, sourced from: https://www.waikatoregion.govt.nz/services/regional-services/waste-hazardous-substances-and-contaminated-sites/contaminated-sites/natural-background-concentrations/

2. Site Specific Remedial Standards as presented in HAIL Environmental Ltd Site Specific Risk Assessment, Version 3.2, dated Feburary 2024

3. BRANZ 2017 Asbestos in Soil guidelines of 0.01% w/w % ACM or 0.001% w/w for % FA & AF fraction for Residential sites (Residential guidelines applied to assess risk to Remedial workers)

Underlined:	Above background concentrations
RED:	Exceeded SSRA Rural Residential Standard
BOLD:	Exceeded SSRA Managed Standard
ND:	Not detected
-	Not tested for

Former Tokanui Psychiatric Hospital: Previous Consultant Results

Sample Collector	Background Concentrations [1]	Site Specific Remedial Standards - Rural Residential [2]	Site Specific Remedial Standards - Managed [2]	GHD	GHD	GHD	AECOM	AECOM	AECOM	AECOM	AECOM	AECOM
Sample Name				B7 TP03	B7 TP04	B8 HA01	B13_A_S1_0.0	B13_A_S1_0.25	B13_A_S1_0.5	B13_B_S2_0.0	B13_B_S2_0.25	B13_B_S2_0.5
Sample Depth (m)				0.1	0.1	0.1	0	0.25	0.5	0	0.25	0.5
Lab Number				3220306_1	3220306_2	3219033_1	3219033_1	19-17902-486	19-17902-488	19-17902-489	19-17902-490	19-17902-491
Heavy Metals (mg/kg dry weight)	**95% upper limit for background (mg/kg)**											
Arsenic	6.8	9	70	5	5	8	5.37	3.63	2.29	3.32	3.34	2.42
Beryllium	-	-	-	-	-	-	0.721	0.823	0.578	0.671	0.904	0.798
Boron	-	-	-	-	-	-	3.61	2.34	1.79	1.78	1.75	1.27
Cadmium	0.22	0.9	10	0.19	0.16	0.92	0.531	0.343	0.118	0.237	0.138	0.0547
Chromium	30	150	150	8	7	12	30.1	14.9	13.2	16.3	10.5	9.71
Copper	25	280	280	185	20	130	30.3	26.4	14.3	24.8	20.6	14.4
Lead	20	120	460	80	51	**750**	**1100**	314	145	345	94.2	24
Mercury	0.23	3	3	-	-	-	0.155	0.128	0.1	0.122	0.124	0.115
Nickel	7.6	-	-	-	-	-	6.35	5.91	4.68	7.87	4.88	4.51
Zinc	53	350	450	116	130	440	**505**	324	127	173	108	58.2
OCPs												
Total DDT	-	2	2	-	-	-	-	-	-	-	-	-
PAHs												
BAP Eq	-	6	35	-	-	-	-	-	-	-	-	-
Benzene	-	0.11	0.11	-	-	-	-	-	-	-	-	-
TPHs												
C7-C9	-	-	-	-	-	-	-	-	-	-	-	-
C10-C14	-	-	-	-	-	-	-	-	-	-	-	-
C15-C36	-	-	-	-	-	-	-	-	-	-	-	-
Total Hydrocarbons	-	-	-	-	-	-	-	-	-	-	-	-
Asbestos (S/Q)	-	-	-	ND	ND	ND	ND	ND	ND	ND	ND	ND
AF/FA [3]	ND	0.001	0.001	-	-	-	-	-	-	-	-	-
% ACM [3]	ND	0.01	0.01	-	-	-	-	-	-	-	-	-

Former Tokanui Psychiatric Hospital: Previous Consultant Results

Sample Collector	Background Concentrations [1]	Site Specific Remedial Standards - Rural Residential [2]	Site Specific Remedial Standards - Managed [2]	AECOM	AECOM	AECOM	AECOM	AECOM	AECOM	AECOM	AECOM	AECOM
Sample Name				B13_C_S3_0.0	B13_A_S4_0.0	B13_A_S4_0.25	B13_A_S4_0.5	B13_B_S5_0.0	B13_B_S5_0.25	B13_B_S5_0.5	B13_C_S6_0.0	B13_A_S7_0.0
Sample Depth (m)				0	0	0.25	0.5	0	0.25	0.5	0	0
Lab Number				19-22250-1	19-17902-492	19-17902-493	19-17902-494	19-17902-495	19-17902-496	19-17902-497	19-22250-3	19-17902-498
Heavy Metals (mg/kg dry weight)	**95% upper limit for background (mg/kg)**											
Arsenic	6.8	9	70	3.19	4.78	4.17	3.61	4.09	3.48	3.83	3.67	4.45
Beryllium	-	-	-	0.685	0.947	1.08	1.1	1.05	1.14	1.07	0.958	0.923
Boron	-	-	-	4.29	2.71	4.17	2.75	3.3	2.81	2.15	4.14	1.97
Cadmium	0.22	0.9	10	0.173	0.271	0.314	0.137	0.215	0.22	0.166	0.22	0.265
Chromium	30	150	150	11.1	14.7	14.6	11.7	10.7	10.4	12.6	10.2	12.8
Copper	25	280	280	21.6	24.6	27.9	21.5	34.4	26	22.4	28.2	36.8
Lead	20	120	460	201	368	334	65.5	287	138	68.1	271	357
Mercury	0.23	3	3	0.0949	0.175	0.154	0.185	0.156	0.176	0.191	0.12	0.192
Nickel	7.6	-	-	4.74	5.86	6.15	6.36	6.9	6.3	6.54	6.55	5.45
Zinc	53	350	450	127	220	259	109	150	136	92.3	128	288
OCPs												
Total DDT	-	2	2	-	-	-	-	-	-	-	-	-
PAHs												
BAP Eq	-	6	35	-	-	-	-	-	-	-	-	-
Benzene	-	0.11	0.11	-	-	-	-	-	-	-	-	-
TPHs												
C7-C9	-	-	-	-	-	-	-	-	-	-	-	-
C10-C14	-	-	-	-	-	-	-	-	-	-	-	-
C15-C36	-	-	-	-	-	-	-	-	-	-	-	-
Total Hydrocarbons	-	-	-	-	-	-	-	-	-	-	-	-
Asbestos (S/Q)	-	-	-	ND	ND	ND	ND	ND	ND	ND	ND	ND
AF/FA [3]	ND	0.001	0.001	-	-	-	-	-	-	-	-	-
% ACM [3]	ND	0.01	0.01	-	-	-	-	-	-	-	-	-

Former Tokanui Psychiatric Hospital: Previous Consultant Results

Sample Collector	Background Concentrations [1]	Site Specific Remedial Standards - Rural Residential [2]	Site Specific Remedial Standards - Managed [2]	AECOM	AECOM	AECOM	AECOM	AECOM	AECOM	AECOM	AECOM	AECOM
Sample Name				B13_A_S7_0.25	B13_A_S7_0.5	B13_B_S8_0.0	B13_B_S8_0.25	B13_C_S9_0.0	B13_C_S9_0.25	B13_C_S9_0.5	B13_A_S10_0.0	B13_A_S10_0.25
Sample Depth (m)				0.25	0.5	0	0.25	0	0.25	0.5	0	0.25
Lab Number				19-17902-499	19-17902-500	19-17902-501	19-17902-502	19-17902-504	19-17902-505	19-21608-19	19-17902-507	19-17902-508
Heavy Metals (mg/kg dry weight)	**95% upper limit for background (mg/kg)**											
Arsenic	6.8	9	70	3.52	3.14	4.31	3.14	4.29	3.92	3.1	4.66	3.74
Beryllium	-	-	-	1.38	0.926	1.02	0.967	1.11	1.07	0.67	0.966	0.877
Boron	-	-	-	2.27	1.55	2.81	1.61	2.77	2.62	1.6	2.42	2.17
Cadmium	0.22	0.9	10	0.393	0.125	0.305	0.0984	0.268	0.271	0.066	0.307	0.255
Chromium	30	150	150	12.6	11.5	13.9	9.73	11.9	11.2	10	15.8	12.1
Copper	25	280	280	30.3	16.7	48.9	18.1	32.3	26.2	13	30.4	29
Lead	20	120	460	229	55	301	32.4	244	362	50.9	291	173
Mercury	0.23	3	3	0.194	0.155	0.187	0.159	0.187	0.151	0.1	0.188	0.17
Nickel	7.6	-	-	6.8	5.59	5.7	5.47	6.43	6.39	4.3	5.84	5.57
Zinc	53	350	450	264	94	222	77.9	199	181	70.5	270	220
OCPs												
Total DDT	-	2	2	-	-	-	-	-	-	-	-	-
PAHs												
BAP Eq	-	6	35	-	-	-	-	-	-	-	-	-
Benzene	-	0.11	0.11	-	-	-	-	-	-	-	-	-
TPHs												
C7-C9	-	-	-	-	-	-	-	-	-	-	-	-
C10-C14	-	-	-	-	-	-	-	-	-	-	-	-
C15-C36	-	-	-	-	-	-	-	-	-	-	-	-
Total Hydrocarbons	-	-	-	-	-	-	-	-	-	-	-	-
Asbestos (S/Q)	-	-	-	ND	ND	ND	ND	ND	ND	ND	ND	ND
AF/FA [3]	ND	0.001	0.001	-	-	-	-	-	-	-	-	-
% ACM [3]	ND	0.01	0.01	-	-	-	-	-	-	-	-	-

Former Tokanui Psychiatric Hospital: Previous Consultant Results

Sample Collector	Background Concentrations [1]	Site Specific Remedial Standards - Rural Residential [2]	Site Specific Remedial Standards - Managed [2]	AECOM	AECOM	AECOM	AECOM	AECOM	AECOM	AECOM	AECOM	AECOM
Sample Name				B13_A_S10_0.5	B13_B_S11_0.0	B13_B_S11_0.25	B13_C_S12_0.0	B13_A_S13_0.0	B13_A_S13_0.25	B13_A_S13_0.5	B13_B_S14_0.0	B13_B_S14_0.25
Sample Depth (m)				0.5	0	0.25	0	0	0.25	0.5	0	0.25
Lab Number				19-17902-509	19-17902-510	19-17902-511	19-22250-5	19-17902-513	19-17902-514	19-17902-515	19-17902-516	19-17902-517
Heavy Metals (mg/kg dry weight)	95% upper limit for background (mg/kg)											
Arsenic	6.8	9	70	3.44	3.8	3.1	3.56	5.55	4.66	4.14	5.01	4.01
Beryllium	-	-	-	0.847	1.12	1.83	0.865	1.03	1.13	1.52	1.05	1.16
Boron	-	-	-	1.93	1.95	4.3	2.59	2.08	2.33	2.07	5.9	2.94
Cadmium	0.22	0.9	10	0.101	0.299	0.281	0.149	0.648	0.392	0.437	0.474	0.483
Chromium	30	150	150	11.9	10.4	8.54	10.5	26.7	17.4	13.3	16.1	10.4
Copper	25	280	280	19.9	45.1	31.2	51.4	31.6	35.8	34.1	36.3	32.7
Lead	20	120	460	48.3	148	44.6	100	**1200**	**1580**	**584**	**2580**	**1140**
Mercury	0.23	3	3	0.173	0.138	0.171	0.103	0.196	0.204	0.197	0.168	0.164
Nickel	7.6	-	-	6.49	5.45	5.37	5.03	6.44	6.21	7.05	6.24	5.48
Zinc	53	350	450	101	191	146	133	**919**	**599**	402	281	220
OCPs												
Total DDT	-	2	2	-	-	-	-	-	-	-	-	-
PAHs												
BAP Eq	-	6	35	-	-	-	-	-	-	-	-	-
Benzene	-	0.11	0.11	-	-	-	-	-	-	-	-	-
TPHs												
C7-C9	-	-	-	-	-	-	-	-	-	-	-	-
C10-C14	-	-	-	-	-	-	-	-	-	-	-	-
C15-C36	-	-	-	-	-	-	-	-	-	-	-	-
Total Hydrocarbons	-	-	-	-	-	-	-	-	-	-	-	-
Asbestos (S/Q)	-	-	-	ND	ND	ND	ND	Asbestos (Unspecified) Detected	Asbestos (Unspecified) Detected	ND	ND	ND
AF/FA [3]	ND	0.001	0.001	-	-	-	-	**0.019**	**0.002**	-	-	-
% ACM [3]	ND	0.01	0.01	-	-	-	-	-	-	-	-	-

Former Tokanui Psychiatric Hospital: Previous Consultant Results

Sample Collector	Background Concentrations [1]	Site Specific Remedial Standards - Rural Residential [2]	Site Specific Remedial Standards - Managed [2]	AECOM	AECOM	AECOM	AECOM	AECOM	AECOM	AECOM	AECOM	AECOM
Sample Name				B13_B_S14_0.5	B13_C_S15_0.0	B13_A_S16_0.0	B13_A_S16_0.25	B13_A_S16_0.5	B13_B_S17_0.0	B13_B_S17_0.25	B13_C_S18_0.0	B13_C_S18_0.25
Sample Depth (m)				0.5	0	0	0.25	0.5	0	0.25	0	0.25
Lab Number				19-17902-518	19-22250-7	19-17902-519	19-17902-520	19-17902-521	19-17902-522	19-17902-523	19-17902-525	19-17902-526
Heavy Metals (mg/kg dry weight)	**95% upper limit for background (mg/kg)**											
Arsenic	6.8	9	70	3.58	4.22	6.6	5.48	4.43	5.52	3.77	5.27	4.64
Beryllium	-	-	-	1.58	0.884	0.955	0.852	0.785	0.953	0.702	0.96	0.916
Boron	-	-	-	2.35	4.4	1.99	1.25	1.25	2.21	1.25	1.59	1.25
Cadmium	0.22	0.9	10	0.422	0.315	0.431	0.26	0.21	0.321	0.0661	0.21	0.1
Chromium	30	150	150	9.15	13.2	36	13.4	10.3	18.3	8.68	12.4	9.53
Copper	25	280	280	35.6	29.3	33.9	26.6	17	27.7	16.2	24.5	19.2
Lead	20	120	460	265	**2250**	**1100**	**1530**	287	**920**	31.4	176	52.8
Mercury	0.23	3	3	0.178	0.142	0.199	0.159	0.0787	0.13	0.0675	0.123	0.0874
Nickel	7.6	-	-	6.12	5.15	7.01	5.39	4.84	5.55	5.15	5.28	4.96
Zinc	53	350	450	181	212	**671**	**499**	273	272	44.9	125	62.4
OCPs												
Total DDT	-	2	2	-	-	-	-	-	-	-	-	-
PAHs												
BAP Eq	-	6	35	-	-	-	-	-	-	-	-	-
Benzene	-	0.11	0.11	-	-	-	-	-	-	-	-	-
TPHs												
C7-C9	-	-	-	-	-	-	-	-	-	-	-	-
C10-C14	-	-	-	-	-	-	-	-	-	-	-	-
C15-C36	-	-	-	-	-	-	-	-	-	-	-	-
Total Hydrocarbons	-	-	-	-	-	-	-	-	-	-	-	-
Asbestos (S/Q)	-	-	-	ND	ND	ND	ND	ND	ND	ND	ND	ND
AF/FA [3]	ND	0.001	0.001	-	-	-	-	-	-	-	-	-
% ACM [3]	ND	0.01	0.01	-	-	-	-	-	-	-	-	-

Former Tokanui Psychiatric Hospital: Previous Consultant Results

Sample Collector	Background Concentrations [1]	Site Specific Remedial Standards - Rural Residential [2]	Site Specific Remedial Standards - Managed [2]	AECOM	AECOM	AECOM	AECOM	AECOM	AECOM	AECOM	AECOM	AECOM
Sample Name				B13_A_S19_0.0	B13_A_S19_0.25	B13_A_S19_0.5	B13_B_S20_0.0	B13_B_S20_0.25	B13_B_S20_0.5	B13_C_S21_0.0	B13_A_S22_0.0	B13_A_S22_0.25
Sample Depth (m)				0	0.25	0.5	0	0.25	0.5	0	0	0.25
Lab Number				19-17902-528	19-17902-529	19-17902-530	19-17902-531	19-17902-532	19-17902-533	19-22250-9	19-17902-534	19-17902-535
Heavy Metals (mg/kg dry weight)	95% upper limit for background (mg/kg)											
Arsenic	6.8	9	70	5.38	5.61	4.48	4.78	4.15	2.53	3.73	5.98	4.1
Beryllium	-	-	-	0.899	0.863	0.737	0.844	0.761	0.634	0.754	0.883	0.789
Boron	-	-	-	4.77	3.24	1.95	2.18	1.25	1.25	2.26	2.26	1.76
Cadmium	0.22	0.9	10	0.577	0.342	0.177	0.203	0.0857	0.0286	0.129	0.546	0.528
Chromium	30	150	150	11.7	12	10.3	10.6	9.63	9.08	9.93	110	27.1
Copper	25	280	280	30.5	31.1	18.6	21.8	15.9	14.2	132	31.9	29.3
Lead	20	120	460	**1670**	**1570**	**503**	**891**	109	32.9	202	**2660**	**978**
Mercury	0.23	3	3	0.146	0.123	0.0765	0.113	0.0772	0.0663	0.0991	0.222	0.127
Nickel	7.6	-	-	5.88	5.89	4.88	5.27	4.95	4.65	24.3	7.44	17.9
Zinc	53	350	450	330	220	114	151	55.5	41.7	84	**1500**	**608**
OCPs												
Total DDT	-	2	2	-	-	-	-	-	-	-	-	-
PAHs												
BAP Eq	-	6	35	-	-	-	-	-	-	-	-	-
Benzene	-	0.11	0.11	-	-	-	-	-	-	-	-	-
TPHs												
C7-C9	-	-	-	-	-	-	-	-	-	-	-	-
C10-C14	-	-	-	-	-	-	-	-	-	-	-	-
C15-C36	-	-	-	-	-	-	-	-	-	-	-	-
Total Hydrocarbons	-	-	-	-	-	-	-	-	-	-	-	-
Asbestos (S/Q)	-	-	-	ND	ND	ND	ND	ND	ND	ND	ND	ND
AF/FA [3]	ND	0.001	0.001	-	-	-	-	-	-	-	-	-
% ACM [3]	ND	0.01	0.01	-	-	-	-	-	-	-	-	-

Former Tokanui Psychiatric Hospital: Previous Consultant Results

Sample Collector	Background Concentrations [1]	Site Specific Remedial Standards - Rural Residential [2]	Site Specific Remedial Standards - Managed [2]	AECOM	AECOM	AECOM	AECOM	AECOM	AECOM	AECOM	AECOM	AECOM
Sample Name				B13_A_S22_0.5	B13_B_S23_0.0	B13_B_S23_0.25	B13_B_S23_0.5	B13_C_S24_0.0	B13_D_S25_0.0	B13_D_S26_0.0	B13_D_S27_0.0	B13_O_S28_0.0
Sample Depth (m)				0.5	0	0.25	0.5	0	0	0	0	0
Lab Number				19-17902-536	19-17902-537	19-17902-538	19-17902-539	19-22250-11	19-22250-13	19-22250-15	19-22250-17	19-22250-23
Heavy Metals (mg/kg dry weight)	95% upper limit for background (mg/kg)											
Arsenic	6.8	9	70	3.42	4.53	3.4	3.2	3.61	3.56	3.88	3.59	3.67
Beryllium	-	-	-	0.634	0.845	0.817	0.644	0.712	0.762	0.76	0.946	0.712
Boron	-	-	-	1.25	1.77	2.72	1.25	2.25	2.64	2.14	3.05	2.06
Cadmium	0.22	0.9	10	0.26	0.326	0.24	0.162	0.192	0.142	0.168	0.198	0.163
Chromium	30	150	150	12.6	27.7	14.5	15.5	13.1	11.4	7.94	10.8	8.09
Copper	25	280	280	19.3	22.3	20.4	16.2	17.6	24.7	18.6	30.2	19.8
Lead	20	120	460	120	**1040**	325	282	**465**	208	67	188	39.1
Mercury	0.23	3	3	0.0649	0.145	0.115	0.0865	0.117	0.108	0.0882	0.209	0.111
Nickel	7.6	-	-	5.61	6.25	6.07	4.98	5.15	5.75	3.99	5.41	4.1
Zinc	53	350	450	288	**632**	249	200	244	130	90	151	67.7
OCPs												
Total DDT	-	2	2	-	-	-	-	-	-	-	-	-
PAHs												
BAP Eq	-	6	35	-	-	-	-	-	-	-	-	-
Benzene	-	0.11	0.11	-	-	-	-	-	-	-	-	-
TPHs												
C7-C9	-	-	-	-	-	-	-	-	-	-	-	-
C10-C14	-	-	-	-	-	-	-	-	-	-	-	-
C15-C36	-	-	-	-	-	-	-	-	-	-	-	-
Total Hydrocarbons	-	-	-	-	-	-	-	-	-	-	-	-
Asbestos (S/Q)	-	-	-	ND	ND	ND	ND	ND	ND	ND	ND	ND
AF/FA [3]	ND	0.001	0.001	-	-	-	-	-	-	-	-	-
% ACM [3]	ND	0.01	0.01	-	-	-	-	-	-	-	-	-

Former Tokanui Psychiatric Hospital: Previous Consultant Results

Sample Collector	Background Concentrations [1]	Site Specific Remedial Standards - Rural Residential [2]	Site Specific Remedial Standards - Managed [2]	AECOM	AECOM	AECOM	AECOM	AECOM	AECOM	AECOM	AECOM	AECOM
Sample Name				B13_O_S29_0.0	B13_C_S30_0.0	B16_A_S1_0.0	B16_A_S1_0.25	B16_B_S2_0.0	B16_B_S2_0.25	B16_C_S3_0.0	B16_A_S4_0.0	B16_A_S4_0.25
Sample Depth (m)				0	0	0	0.25	0	0.25	0	0	0.25
Lab Number				19-22250-24	19-22250-19	19-17902-540	19-21608-1	19-17902-543	19-17902-544	19-17902-546	19-17902-549	19-21608-2
Heavy Metals (mg/kg dry weight)	**95% upper limit for background (mg/kg)**											
Arsenic	6.8	9	70	3.66	6.12	5.16	2.9	8.33	7.02	8.38	7.61	3.3
Beryllium	-	-	-	0.937	0.845	1.04	0.71	1.48	1.1	0.979	0.914	0.92
Boron	-	-	-	3.95	2.9	1.98	1.3	3.15	1.88	1.44	2.69	1.4
Cadmium	0.22	0.9	10	0.179	0.346	0.371	0.085	0.709	0.239	0.131	0.411	0.055
Chromium	30	150	150	9.17	11.8	9.94	9.8	11	10.5	10.3	11.1	8.4
Copper	25	280	280	21.6	30.8	21	20.1	43.8	20.7	15.7	18.1	13.4
Lead	20	120	460	84.8	281	101	24.8	21	40	27.5	87.6	18.9
Mercury	0.23	3	3	0.112	0.154	0.125	0.15	0.258	0.162	0.135	0.119	0.15
Nickel	7.6	-	-	5.34	5.12	6.01	5.5	6.07	6.01	5.29	5.5	4.4
Zinc	53	350	450	104	146	**816**	372	162	159	115	**1270**	89.9
OCPs												
Total DDT	-	2	2	-	-	-	-	-	-	-	-	-
PAHs												
BAP Eq	-	6	35	-	-	-	-	-	-	-	-	-
Benzene	-	0.11	0.11	-	-	0.05	-	-	-	-	0.05	-
TPHs												
C7-C9	-	-	-	-	-	10	-	-	-	-	10	-
C10-C14	-	-	-	-	-	15	-	-	-	-	15	-
C15-C36	-	-	-	-	-	25	-	-	-	-	25	-
Total Hydrocarbons	-	-	-	-	-	-	-	-	-	-	-	-
Asbestos (S/Q)	-	-	-	ND	ND	ND	ND	ND	ND	ND	ND	ND
AF/FA [3]	ND	0.001	0.001	-	-	-	-	-	-	-	-	-
% ACM [3]	ND	0.01	0.01	-	-	-	-	-	-	-	-	-

Former Tokanui Psychiatric Hospital: Previous Consultant Results

Sample Collector	Background Concentrations [1]	Site Specific Remedial Standards - Rural Residential [2]	Site Specific Remedial Standards - Managed [2]	AECOM	AECOM	AECOM	GHD	GHD	GHD	GHD	GHD	GHD
Sample Name				B16_B_S5_0.0	B16_B_S5_0.25	B16_C_S6_0.0	B16 TP01	B16 TP01	B16 TP02	B16 TP02	B16 TP04	B16 TP06
Sample Depth (m)				0	0.25	0	0.1	0.5	0.1	0.5	0.1	0.5
Lab Number				19-17902-552	19-17902-553	19-17902-555	3299078_245	3299078_246	3299078_248	3299078_249	3209697_9	3209697_11
Heavy Metals (mg/kg dry weight)	**95% upper limit for background (mg/kg)**											
Arsenic	6.8	9	70	5.01	4.2	4.16	-	-	-	-	6	4
Beryllium	-	-	-	1.05	1.16	0.936	-	-	-	-		
Boron	-	-	-	1.72	2.05	2.24	-	-	-	-		
Cadmium	0.22	0.9	10	0.217	0.31	0.261	-	-	-	-	0.47	0.11
Chromium	30	150	150	10.4	10.4	8.83	-	-	-	-	12	9
Copper	25	280	280	22.8	35	20.4	-	-	-	-	64	14
Lead	20	120	460	47.1	38.4	55.5	-	-	-	-	196	20
Mercury	0.23	3	3	0.163	0.16	0.136	-	-	-	-		
Nickel	7.6	-	-	4.98	5.28	4.86	-	-	-	-		
Zinc	53	350	450	132	134	128	-	-	-	-	155	47
OCPs												
Total DDT	-	2	2	-	-	-	-	-	-	-	-	-
PAHs												
BAP Eq	-	6	35	-	-	-	0.011	0.017	0.011	0.013	0.011	-
Benzene	-	0.11	0.11	-	-	-	**0.16**	**0.19**	**0.15**	**0.3**	**0.15**	-
TPHs												
C7-C9	-	-	-	-	-	-	20	20	20	20	20	-
C10-C14	-	-	-	-	-	-	20	20	20	20	20	-
C15-C36	-	-	-	-	-	-	40	40	40	40	45	-
Total Hydrocarbons	-	-	-	-	-	-	80	80	80	80	80	-
Asbestos (S/Q)	-	-	-	ND	ND	ND	ND	ND	ND	ND	ND	ND
AF/FA [3]	ND	0.001	0.001	-	-	-	-	-	-	-	-	-
% ACM [3]	ND	0.01	0.01	-	-	-	-	-	-	-	-	-

Former Tokanui Psychiatric Hospital: Previous Consultant Results

Sample Collector	Background Concentrations [1]	Site Specific Remedial Standards - Rural Residential [2]	Site Specific Remedial Standards - Managed [2]	GHD	GHD	GHD	GHD	GHD	AECOM	AECOM	AECOM	AECOM
Sample Name				B16 TP07	B16 TP08	B16 TP08	B16 TP09	B16 TP09	B18_A_S1_0.0	B18_A_S1_0.25	B18_A_S1_0.5	B18_B_S2_0.0
Sample Depth (m)				0.1	0.1	0.5	0.1	0.5	0	0.25	0.5	0
Lab Number				3209697_15	3209697_17	3209697_18	3209697_13	3212716_13	19-17902-558	19-17902-559	19-17902-560	19-17902-561
Heavy Metals (mg/kg dry weight)	**95% upper limit for background (mg/kg)**											
Arsenic	6.8	9	70	5	-	-	-	-	6.29	4.66	4.42	4.56
Beryllium	-	-	-		-	-	-	-	1.39	1.07	1.02	1.16
Boron	-	-	-		-	-	-	-	10.4	7.51	7.01	15.6
Cadmium	0.22	0.9	10	0.24	-	-	-	-	0.46	0.225	0.216	0.302
Chromium	30	150	150	9	-	-	-	-	13.7	11.8	11.4	11.8
Copper	25	280	280	21	-	-	-	-	68.3	31.8	27.9	34.5
Lead	20	120	460	51	-	-	-	-	319	238	199	101
Mercury	0.23	3	3		-	-	-	-	0.198	0.161	0.158	0.15
Nickel	7.6	-	-		-	-	-	-	15.2	8.42	7.44	13.1
Zinc	53	350	450	108	-	-	-	-	292	165	146	177
OCPs												
Total DDT	-	2	2	-	-	-	-	-	-	-	-	-
PAHs												
BAP Eq	-	6	35	0.041	0.022	0.014	0.021	0.014	-	-	-	-
Benzene	-	0.11	0.11	**0.3**	**0.3**	-	**0.3**	-	-	-	-	-
TPHs												
C7-C9	-	-	-	20	20	20	20	20	-	-	-	-
C10-C14	-	-	-	20	20	20	20	20	-	-	-	-
C15-C36	-	-	-	40	40	40	40	40	-	-	-	-
Total Hydrocarbons	-	-	-	80	80	80	80	80	-	-	-	-
Asbestos (S/Q)	-	-	-	ND	ND	ND	ND	ND	ND	ND	ND	ND
AF/FA [3]	ND	0.001	0.001	-	-	-	-	-	-	-	-	-
% ACM [3]	ND	0.01	0.01	-	-	-	-	-	-	-	-	-

Former Tokanui Psychiatric Hospital: Previous Consultant Results

Sample Collector	Background Concentrations [1]	Site Specific Remedial Standards - Rural Residential [2]	Site Specific Remedial Standards - Managed [2]	AECOM	AECOM	AECOM	AECOM	AECOM	AECOM	AECOM	AECOM	AECOM
Sample Name				B18_B_S2_0.25	B18_C_S3_0.0	B18_C_S3_0.25	B18_A_S4_0.0	B18_A_S4_0.25	B18_A_S4_0.5	B18_B_S5_0.0	B18_B_S5_0.25	B18_B_S5_0.5
Sample Depth (m)				0.25	0	0.25	0	0.25	0.5	0	0.25	0.5
Lab Number				19-17902-562	19-17902-564	19-21608-15	19-17902-567	19-17902-568	19-17902-569	19-17902-570	19-17902-571	19-17902-572
Heavy Metals (mg/kg dry weight)	95% upper limit for background (mg/kg)											
Arsenic	6.8	9	70	3.39	3.42	2.8	17.9	5.35	7.95	14.3	7.32	4.1
Beryllium	-	-	-	1.01	1.11	0.89	0.856	1.28	1.22	0.833	1.5	2.08
Boron	-	-	-	3.96	16.8	4.7	6.83	3.37	3.38	5.38	5.1	4.21
Cadmium	0.22	0.9	10	0.164	0.259	0.14	0.596	0.309	0.48	0.407	0.622	0.841
Chromium	30	150	150	9.38	10.9	8.2	22.8	11.2	13	21.4	13.9	9.79
Copper	25	280	280	19.7	23.1	15.4	179	50	65.6	126	88	40.8
Lead	20	120	460	21.1	72.7	22.9	**668**	108	157	**472**	197	41.6
Mercury	0.23	3	3	0.172	0.148	0.14	0.147	0.192	0.197	0.2	0.248	0.272
Nickel	7.6	-	-	5.36	15.4	5.55	8.31	6.66	6.8	9.04	7.84	6.22
Zinc	53	350	450	77.2	140	76.5	**598**	187	249	373	283	172
OCPs												
Total DDT	-	2	2	-	-	-	-	-	-	-	-	-
PAHs												
BAP Eq	-	6	35	-	-	-	-	-	-	-	-	-
Benzene	-	0.11	0.11	-	-	-	-	-	-	-	-	-
TPHs												
C7-C9	-	-	-	-	-	-	-	-	-	-	-	-
C10-C14	-	-	-	-	-	-	-	-	-	-	-	-
C15-C36	-	-	-	-	-	-	-	-	-	-	-	-
Total Hydrocarbons	-	-	-	-	-	-	-	-	-	-	-	-
Asbestos (S/Q)	-	-	-	ND	ND	ND	ND	ND	ND	ND	ND	ND
AF/FA [3]	ND	0.001	0.001	-	-	-	-	-	-	-	-	-
% ACM [3]	ND	0.01	0.01	-	-	-	-	-	-	-	-	-

Former Tokanui Psychiatric Hospital: Previous Consultant Results

Sample Collector	Background Concentrations [1]	Site Specific Remedial Standards - Rural Residential [2]	Site Specific Remedial Standards - Managed [2]	AECOM	AECOM	AECOM	AECOM	AECOM	AECOM	AECOM	AECOM	AECOM
Sample Name				B18_C_S6_0.0	B18_C_S6_0.25	B18_C_S6_0.5	B18_A_S7_0.0	B18_A_S7_0.25	B18_B_S8_0.0	B18_B_S8_0.25	B18_C_S9_0.0	B18_C_S9_0.25
Sample Depth (m)				0	0.25	0.5	0	0.25	0	0.25	0	0.25
Lab Number				19-17902-573	19-17902-574	19-17902-575	19-17902-576	19-17902-577	19-17902-579	19-17902-580	19-17902-582	19-17902-583
Heavy Metals (mg/kg dry weight)	95% upper limit for background (mg/kg)											
Arsenic	6.8	9	70	10.6	6.35	4.07	11.5	4.01	5.4	4.18	7.42	5.75
Beryllium	-	-	-	0.8	1.58	2.09	1.06	1.11	1.02	0.965	0.957	1.03
Boron	-	-	-	4.4	4.64	3.38	4.73	2.35	3.85	2.57	5.09	3.61
Cadmium	0.22	0.9	10	0.478	0.708	0.564	0.279	0.0785	0.283	0.0719	0.229	0.0663
Chromium	30	150	150	19.2	12.8	9.6	13.1	9.01	11.7	10.8	11.5	11.9
Copper	25	280	280	71	50.9	28.3	62.4	20.3	37.6	21.1	36.9	23.5
Lead	20	120	460	231	115	23.9	417	46	351	68.4	205	40.3
Mercury	0.23	3	3	0.141	0.239	0.287	0.167	0.133	0.157	0.154	0.137	0.158
Nickel	7.6	-	-	8.67	8.11	6.6	6.61	4.87	5.71	5.2	6.52	5.67
Zinc	53	350	450	221	236	155	**1340**	353	**515**	168	351	115
OCPs												
Total DDT	-	2	2	-	-	-	-	-	-	-	-	-
PAHs												
BAP Eq	-	6	35	-	-	-	-	-	-	-	-	-
Benzene	-	0.11	0.11	-	-	-	-	-	-	-	-	-
TPHs												
C7-C9	-	-	-	-	-	-	-	-	-	-	-	-
C10-C14	-	-	-	-	-	-	-	-	-	-	-	-
C15-C36	-	-	-	-	-	-	-	-	-	-	-	-
Total Hydrocarbons	-	-	-	-	-	-	-	-	-	-	-	-
Asbestos (S/Q)	-	-	-	ND	ND	ND	ND	ND	ND	ND	ND	ND
AF/FA [3]	ND	0.001	0.001	-	-	-	-	-	-	-	-	-
% ACM [3]	ND	0.01	0.01	-	-	-	-	-	-	-	-	-

Former Tokanui Psychiatric Hospital: Previous Consultant Results

Sample Collector	Background Concentrations [1]	Site Specific Remedial Standards - Rural Residential [2]	Site Specific Remedial Standards - Managed [2]	AECOM	AECOM	AECOM	AECOM	AECOM	AECOM	AECOM	GHD	GHD
Sample Name				B18_D_S10_0.0	B18_D_S11_0.0	B18_D_S12_0.0	B18_A_S13_0.0	B18_B_S14_0.0	B18_C_S15_0.0	B18_O_S16_0.0	B19 TP01	B19 TP01
Sample Depth (m)				0	0	0	0	0	0	0	0.1	0.5
Lab Number				19-22250-53	19-22250-54	19-22250-55	19-22250-57	19-22250-60	19-22250-63	19-22250-66	3299078_251	3299078_252
Heavy Metals (mg/kg dry weight)	**95% upper limit for background (mg/kg)**											
Arsenic	6.8	9	70	4.69	4.89	8.42	19.4	21.6	17.7	30.1	12	5
Beryllium	-	-	-	0.753	1.6	0.939	0.56	0.306	0.47	0.974	-	-
Boron	-	-	-	4.55	49.7	4.33	4.85	7.62	6.8	5.99	-	-
Cadmium	0.22	0.9	10	0.161	0.289	0.341	3.64	0.96	0.468	0.55	0.27	0.1
Chromium	30	150	150	8.12	11.7	14.2	29.4	22.1	19.6	38	12	8
Copper	25	280	280	22.8	29.9	75.1	**547**	160	80.2	**356**	36	18
Lead	20	120	460	150	232	217	181	106	111	**657**	240	54
Mercury	0.23	3	3	0.105	0.134	0.162	0.0638	0.0488	0.0865	0.142	-	-
Nickel	7.6	-	-	4.12	25	7.52	16.7	17.7	23.6	7.73	-	-
Zinc	53	350	450	248	168	185	**2770**	**943**	343	407	171	76
OCPs												
Total DDT	-	2	2	-	-	-	-	-	-	-	-	-
PAHs												
BAP Eq	-	6	35	-	-	-	-	-	-	-	-	-
Benzene	-	0.11	0.11	-	-	-	-	-	-	-	-	-
TPHs												
C7-C9	-	-	-	-	-	-	-	-	-	-	-	-
C10-C14	-	-	-	-	-	-	-	-	-	-	-	-
C15-C36	-	-	-	-	-	-	-	-	-	-	-	-
Total Hydrocarbons	-	-	-	-	-	-	-	-	-	-	-	-
Asbestos (S/Q)	-	-	-	ND	ND	ND	ND	ND	ND	ND	ND	ND
AF/FA [3]	ND	0.001	0.001	-	-	-	-	-	-	-	-	-
% ACM [3]	ND	0.01	0.01	-	-	-	-	-	-	-	-	-

Former Tokanui Psychiatric Hospital: Previous Consultant Results

Sample Collector	Background Concentrations [1]	Site Specific Remedial Standards - Rural Residential [2]	Site Specific Remedial Standards - Managed [2]	GHD	GHD	AECOM	AECOM	AECOM	AECOM	AECOM	AECOM	AECOM
Sample Name				B19 TP02	B19 TP02	B24_A_S1_0.0	B24_A_S1_0.25	B24_A_S1_0.5	B24_A_S2_0.0	B24_A_S2_0.25	B24_B_S3_0.0	B24_B_S3_0.25
Sample Depth (m)				0.1	0.5	0	0.25	0.5	0	0.25	0	0.25
Lab Number				3299078_254	3299078_255	19-17902-1	19-17902-2	19-17902-3	19-17902-10	19-17902-11	19-17902-13	19-17902-14
Heavy Metals (mg/kg dry weight)	**95% upper limit for background (mg/kg)**											
Arsenic	6.8	9	70	7	3	6.13	4	3	4.91	2.57	4.65	2.49
Beryllium	-	-	-	-	-	1.08	0.649	0.596	0.885	0.538	0.935	0.83
Boron	-	-	-	-	-	3.64	3.72	3.91	1.58	1.75	1.94	2.41
Cadmium	0.22	0.9	10	0.8	0.1	1.29	0.215	0.153	1.76	0.278	0.38	0.116
Chromium	30	150	150	11	9	15.4	14.5	10.4	22.9	8.01	15.3	7.21
Copper	25	280	280	43	10	93.2	22.2	17.3	**312**	18.5	64.2	11
Lead	20	120	460	58	20	**478**	98.1	60.1	307	24.3	116	23.2
Mercury	0.23	3	3	-	-	0.199	0.115	0.103	0.207	0.0996	0.137	0.131
Nickel	7.6	-	-	-	-	4.97	5.28	4.58	5.53	3.89	4.91	4.3
Zinc	53	350	450	131	42	**1250**	196	141	**1120**	329	235	63.7
OCPs												
Total DDT	-	2	2	-	-	-	-	-	-	-	-	-
PAHs												
BAP Eq	-	6	35	-	-	-	-	-	-	-	-	-
Benzene	-	0.11	0.11	-	-	-	-	-	-	-	-	-
TPHs												
C7-C9	-	-	-	-	-	-	-	-	-	-	-	-
C10-C14	-	-	-	-	-	-	-	-	-	-	-	-
C15-C36	-	-	-	-	-	-	-	-	-	-	-	-
Total Hydrocarbons	-	-	-	-	-	-	-	-	-	-	-	-
Asbestos (S/Q)	-	-	-	ND	ND	ND	ND	ND	ND	ND	ND	ND
AF/FA [3]	ND	0.001	0.001	-	-	-	-	-	-	-	-	-
% ACM [3]	ND	0.01	0.01	-	-	-	-	-	-	-	-	-

Former Tokanui Psychiatric Hospital: Previous Consultant Results

Sample Collector	Background Concentrations [1]	Site Specific Remedial Standards - Rural Residential [2]	Site Specific Remedial Standards - Managed [2]	AECOM	AECOM	AECOM	AECOM	AECOM	AECOM	AECOM	AECOM	AECOM
Sample Name				B24_A_S4_0.0	B24_A_S4_0.25	B24_A_S4_0.5	B24_A_S5_0.0	B24_A_S5_0.25	B24_A_S6_0.0	B24_A_S6_0.25	B24_B_S7_0.0	B24_B_S7_0.25
Sample Depth (m)				0	0.25	0.5	0	0.25	0	0.25	0	0.25
Lab Number				19-17902-19	19-17902-20	19-17902-21	19-17902-22	19-17902-23	19-17902-25	19-17902-26	19-17902-4	19-17902-5
Heavy Metals (mg/kg dry weight)	**95% upper limit for background (mg/kg)**											
Arsenic	6.8	9	70	3.56	3.56	4.44	5.17	3.48	4.29	4.17	5.48	3.6
Beryllium	-	-	-	0.845	0.921	1.11	0.927	0.902	0.59	0.6	0.901	1.09
Boron	-	-	-	1.5	1.86	1.41	1.35	1.91	2.03	1.62	3.5	2.9
Cadmium	0.22	0.9	10	2.32	0.346	0.386	1.42	0.206	1.62	0.169	0.519	0.265
Chromium	30	150	150	53.7	10.5	10.7	24.6	9.3	113	15.5	18.4	9.83
Copper	25	280	280	152	31.6	33.3	79.8	23.7	**389**	24.3	76.9	21.1
Lead	20	120	460	447	47.1	59.4	313	32.3	**537**	61.9	242	30.4
Mercury	0.23	3	3	0.112	0.154	0.179	0.173	0.329	0.098	0.126	0.159	0.114
Nickel	7.6	-	-	3.92	4.98	5.14	4.69	4.92	4.05	4.93	5.71	4.98
Zinc	53	350	450	**1360**	428	316	**1360**	149	**1180**	112	253	98.9
OCPs												
Total DDT	-	2	2	-	-	-	-	-	-	-	-	-
PAHs												
BAP Eq	-	6	35	-	-	-	-	-	-	-	-	-
Benzene	-	0.11	0.11	-	-	-	-	-	-	-	-	-
TPHs												
C7-C9	-	-	-	-	-	-	-	-	-	-	-	-
C10-C14	-	-	-	-	-	-	-	-	-	-	-	-
C15-C36	-	-	-	-	-	-	-	-	-	-	-	-
Total Hydrocarbons	-	-	-	-	-	-	-	-	-	-	-	-
Asbestos (S/Q)	-	-	-	ND	ND	ND	ND	ND	ND	ND	ND	ND
AF/FA [3]	ND	0.001	0.001	-	-	-	-	-	-	-	-	-
% ACM [3]	ND	0.01	0.01	-	-	-	-	-	-	-	-	-

Former Tokanui Psychiatric Hospital: Previous Consultant Results

Sample Collector	Background Concentrations [1]	Site Specific Remedial Standards - Rural Residential [2]	Site Specific Remedial Standards - Managed [2]	AECOM	AECOM	AECOM	AECOM	AECOM	AECOM	AECOM	AECOM	AECOM
Sample Name				B24_C_S8_0.0	B24_C_S8_0.25	B24_B_S9_0.0	B24_B_S9_0.25	B24_B_S10_0.0	B24_B_S10_0.25	B24_B_S10_0.5	B24_B_S11_0.0	B24_C_S11_0.25
Sample Depth (m)				0	0.25	0	0.25	0	0.25	0.5	0	0.25
Lab Number				19-17902-16	19-17902-17	19-17902-91	19-17902-92	19-17902-97	19-17902-98	19-21608-7	19-17902-103	19-17902-104
Heavy Metals (mg/kg dry weight)	**95% upper limit for background (mg/kg)**											
Arsenic	6.8	9	70	3.31	2.61	3.73	3.46	3.6	3.88	3.5	5.04	3.26
Beryllium	-	-	-	0.778	0.598	0.938	0.837	0.895	0.931	1.1	1.14	0.59
Boron	-	-	-	2.56	1.91	2.04	2.21	1.88	1.84	1.6	3.28	2.02
Cadmium	0.22	0.9	10	0.322	0.143	1.04	0.197	0.414	0.181	0.34	0.314	0.11
Chromium	30	150	150	12	9.18	20	10.2	13.2	10.8	9.1	11.3	12.9
Copper	25	280	280	124	15.7	80.3	26.1	41	20.9	20.6	33.8	11.6
Lead	20	120	460	99.9	35.1	103	30	110	71.7	26.6	59.9	43.2
Mercury	0.23	3	3	0.104	0.097	0.127	0.133	0.122	0.856	0.23	0.211	0.126
Nickel	7.6	-	-	6.46	4.47	4.32	4.53	4.68	5.24	4.9	6.41	4.57
Zinc	53	350	450	154	70.2	751	159	300	153	143	155	87.7
OCPs												
Total DDT	-	2	2	-	-	-	-	-	-	-	-	-
PAHs												
BAP Eq	-	6	35	-	-	-	-	-	-	-	-	-
Benzene	-	0.11	0.11	-	-	-	-	-	-	-	-	-
TPHs												
C7-C9	-	-	-	-	-	-	-	-	-	-	-	-
C10-C14	-	-	-	-	-	-	-	-	-	-	-	-
C15-C36	-	-	-	-	-	-	-	-	-	-	-	-
Total Hydrocarbons	-	-	-	-	-	-	-	-	-	-	-	-
Asbestos (S/Q)	-	-	-	ND	ND	ND	ND	ND	ND	ND	ND	ND
AF/FA [3]	ND	0.001	0.001	-	-	-	-	-	-	-	-	-
% ACM [3]	ND	0.01	0.01	-	-	-	-	-	-	-	-	-

Former Tokanui Psychiatric Hospital: Previous Consultant Results

Sample Collector	Background Concentrations [1]	Site Specific Remedial Standards - Rural Residential [2]	Site Specific Remedial Standards - Managed [2]	AECOM	AECOM	AECOM	AECOM	AECOM	AECOM	AECOM	AECOM	AECOM
Sample Name				B24_C_S12_0.0	B24_C_S12_0.25	B24_C_S13_0.0	B24_C_S13_0.25	B24_C_S14_0.0	B24_C_S14_0.25	B24_D_S15_0.0	B24_D_S16_0.0	B24_D_S17_0.0
Sample Depth (m)				0	0.25	0	0.25	0	0.25	0	0	0
Lab Number				19-17902-7	19-21608-6	19-17902-94	19-17902-95	19-17902-100	19-21608-8	19-22250-41	19-22250-43	19-22250-44
Heavy Metals (mg/kg dry weight)	**95% upper limit for background (mg/kg)**											
Arsenic	6.8	9	70	3.67	3.5	3.62	2.87	3.49	2.5	3.42	3.12	2.76
Beryllium	-	-	-	0.672	0.98	0.912	0.724	0.959	0.65	0.753	0.852	0.761
Boron	-	-	-	4.75	3	2.05	1.43	2.05	1.3	7.18	2.78	2.57
Cadmium	0.22	0.9	10	0.39	0.22	0.365	0.142	0.345	0.061	0.29	0.228	0.233
Chromium	30	150	150	19.8	12	18.2	9.31	16.7	7.2	10.7	14	10.9
Copper	25	280	280	30	21.7	41.6	19.6	31.1	11.8	29.5	22.9	20.7
Lead	20	120	460	97.8	69	366	27.6	115	18.7	337	78.6	39.9
Mercury	0.23	3	3	0.125	0.13	0.15	0.115	0.258	0.082	0.104	0.112	0.105
Nickel	7.6	-	-	6.11	5.26	5.87	4.26	4.89	3.2	5.32	7.04	3.89
Zinc	53	350	450	146	105	531	97.9	281	40.2	112	98.4	124
OCPs												
Total DDT	-	2	2	-	-	-	-	-	-	-	-	-
PAHs												
BAP Eq	-	6	35	-	-	-	-	-	-	-	-	-
Benzene	-	0.11	0.11	-	-	-	-	-	-	-	-	-
TPHs												
C7-C9	-	-	-	-	-	-	-	-	-	-	-	-
C10-C14	-	-	-	-	-	-	-	-	-	-	-	-
C15-C36	-	-	-	-	-	-	-	-	-	-	-	-
Total Hydrocarbons	-	-	-	-	-	-	-	-	-	-	-	-
Asbestos (S/Q)	-	-	-	ND	ND	ND	ND	ND	ND	ND	ND	ND
AF/FA [3]	ND	0.001	0.001	-	-	-	-	-	-	-	-	-
% ACM [3]	ND	0.01	0.01	-	-	-	-	-	-	-	-	-

Former Tokanui Psychiatric Hospital: Previous Consultant Results

Sample Collector	Background Concentrations [1]	Site Specific Remedial Standards - Rural Residential [2]	Site Specific Remedial Standards - Managed [2]	AECOM	AECOM	GHD	GHD	GHD	GHD	GHD	GHD	GHD
Sample Name				B24_D_S18_0.0	B24_O_S19_0.0	B25 HA01	B25 HA02	B25 HA03	B25 HA01	B25 HA02	B25 HA03	B26TP01
Sample Depth (m)				0	0	0.1	0.1	0.1	0.5	0.5	0.5	0.1
Lab Number				19-22250-45	19-22250-47	3299078_257	3299078_260	3299078_263	3299078_258	3299078_261	3299078_264	3299080_99
Heavy Metals (mg/kg dry weight)	**95% upper limit for background (mg/kg)**											
Arsenic	6.8	9	70	2.87	2.47	6	6	4	4	5	5	8
Beryllium	-	-	-	0.82	0.651	-	-	-	-	-	-	-
Boron	-	-	-	2.17	1.79	-	-	-	-	-	-	-
Cadmium	0.22	0.9	10	0.217	0.121	0.21	0.1	0.1	0.1	0.1	0.1	0.31
Chromium	30	150	150	10.8	7.59	9	9	9	7	9	11	13
Copper	25	280	280	17.9	13.2	18	17	12	8	14	12	69
Lead	20	120	460	65.1	27.2	17.8	22	16.7	15.5	16.6	16.8	290
Mercury	0.23	3	3	0.136	0.0855	-	-	-	-	-	-	-
Nickel	7.6	-	-	4.3	3.81	-	-	-	-	-	-	-
Zinc	53	350	450	107	68.3	109	65	77	34	42	57	158
OCPs												
Total DDT	-	2	2	-	-	-	-	-	-	-	-	-
PAHs												
BAP Eq	-	6	35	-	-	-	-	-	-	-	-	0.7
Benzene	-	0.11	0.11	-	-	-	-	-	-	-	-	-
TPHs												
C7-C9	-	-	-	-	-	-	-	-	-	-	-	20
C10-C14	-	-	-	-	-	-	-	-	-	-	-	20
C15-C36	-	-	-	-	-	-	-	-	-	-	-	64
Total Hydrocarbons	-	-	-	-	-	-	-	-	-	-	-	80
Asbestos (S/Q)	-	-	-	ND	ND	ND	ND	ND	ND	ND	ND	ND
AF/FA [3]	ND	0.001	0.001	-	-	-	-	-	-	-	-	-
% ACM [3]	ND	0.01	0.01	-	-	-	-	-	-	-	-	-

Former Tokanui Psychiatric Hospital: Previous Consultant Results

Sample Collector	Background Concentrations [1]	Site Specific Remedial Standards - Rural Residential [2]	Site Specific Remedial Standards - Managed [2]	GHD	GHD	GHD	GHD	AECOM	AECOM	AECOM	AECOM	AECOM
Sample Name				B26 TP02	B26 TP02	B26 TP03	B26 TP03	B29_A_S1	B29_A_S1_0.25	B29_A_S1_0.5	B29_B_S2_0.0	B29_B_S2_0.25
Sample Depth (m)				0.1	0.5	0.1	0.5	0	0.25	0.5	0	0.25
Lab Number				3299080_100	3299080_101	3299080_103	3299080_104	19-17902-106	19-17902-107	19-17902-108	19-17902-109	19-21608-3
Heavy Metals (mg/kg dry weight)	95% upper limit for background (mg/kg)											
Arsenic	6.8	9	70	7	6	7	6	6.24	5.55	4.06	4.91	5.4
Beryllium	-	-	-	-	-	-	-	-	1.39	0.786	1.45	1
Boron	-	-	-	-	-	-	-	-	2.15	1.25	2.47	1.3
Cadmium	0.22	0.9	10	0.33	0.13	0.42	0.28	0.317	0.128	0.0313	0.312	0.064
Chromium	30	150	150	13	13	12	11	14.5	12.4	7.42	10.9	11
Copper	25	280	280	71	38	68	43	52.8	33.1	21.4	142	28.6
Lead	20	120	460	260	44	260	260	248	81.7	24	84.9	17
Mercury	0.23	3	3	-	-	-	-	-	0.116	0.0968	0.177	0.13
Nickel	7.6	-	-	-	-	-	-	-	6.06	6.26	20.8	5.01
Zinc	53	350	450	149	63	151	103	188	75.5	38.9	140	39.4
OCPs												
Total DDT	-	2	2	-	-	-	-	-	-	-	-	-
PAHs												
BAP Eq	-	6	35	0.5	0.5	0.5	0.5	-	-	-	-	-
Benzene	-	0.11	0.11	-	-	-	-	-	-	-	-	-
TPHs												
C7-C9	-	-	-	20	30	20	30	-	-	-	-	-
C10-C14	-	-	-	20	20	20	20	-	-	-	-	-
C15-C36	-	-	-	54	40	99	40	-	-	-	-	-
Total Hydrocarbons	-	-	-	80	90	99	90	-	-	-	-	-
Asbestos (S/Q)	-	-	-	ND	Amosite detected	ND	ND	Asbestos (Unspecified) Detected	ND	ND	ND	ND
AF/FA [3]	ND	0.001	0.001	-	-	-	-	**0.007**	-	-	-	-
% ACM [3]	ND	0.01	0.01	-	-	-	-	-	-	-	-	-

Former Tokanui Psychiatric Hospital: Previous Consultant Results

Sample Collector	Background Concentrations [1]	Site Specific Remedial Standards - Rural Residential [2]	Site Specific Remedial Standards - Managed [2]	AECOM	AECOM	AECOM	AECOM	AECOM	AECOM	AECOM	AECOM	AECOM
Sample Name				B29_C_S3_0.0	B29_A_S4_0.0	B29_A_S4_0.25	B29_A_S4_0.5	B29_B_S5_0.0	B29_B_S5_0.25	B29_C_S6_0.0	B29_C_S6_0.25	B29_A_S7_0.0
Sample Depth (m)				0	0	0.25	0.5	0	0.25	0	0.25	0
Lab Number				19-17902-112	19-17902-115	19-17902-116	19-17902-117	19-17902-118	19-17902-119	19-17902-121	19-17902-122	19-17902-124
Heavy Metals (mg/kg dry weight)	95% upper limit for background (mg/kg)											
Arsenic	6.8	9	70	5.28	5.74	5.16	4.02	6.63	6.31	7.49	5.26	6.53
Beryllium	-	-	-	1.62	1.18	1.13	0.92	1.23	1.44	1.15	0.961	1.15
Boron	-	-	-	2.7	4.73	3.99	2.33	3.68	5.48	5.05	3.94	3.29
Cadmium	0.22	0.9	10	0.321	0.244	0.246	0.086	0.206	0.197	0.219	0.176	0.284
Chromium	30	150	150	12	14.1	15.6	17	17.5	22.7	15.5	15	14.1
Copper	25	280	280	39.6	50.2	49.6	68.6	49.1	75.6	42.9	45.6	41.9
Lead	20	120	460	53.3	315	147	58.2	45	54.6	73.1	48.8	**746**
Mercury	0.23	3	3	0.174	0.218	0.185	0.312	0.197	0.343	0.161	0.199	0.173
Nickel	7.6	-	-	6.88	9.05	10	11.6	12.8	14.8	12.4	11.8	7.02
Zinc	53	350	450	135	145	136	84	92.5	105	108	88.5	205
OCPs												
Total DDT	-	2	2	-	-	-	-	-	-	-	-	-
PAHs												
BAP Eq	-	6	35	-	-	-	-	-	-	-	-	-
Benzene	-	0.11	0.11	-	-	-	-	-	-	-	-	-
TPHs												
C7-C9	-	-	-	-	-	-	-	-	-	-	-	-
C10-C14	-	-	-	-	-	-	-	-	-	-	-	-
C15-C36	-	-	-	-	-	-	-	-	-	-	-	-
Total Hydrocarbons	-	-	-	-	-	-	-	-	-	-	-	-
Asbestos (S/Q)	-	-	-	ND	ND	ND	ND	ND	ND	ND	ND	Asbestos (Unspecified) Detected
AF/FA [3]	ND	0.001	0.001	-	-	-	-	-	-	-	-	**0.002**
% ACM [3]	ND	0.01	0.01	-	-	-	-	-	-	-	-	-

Former Tokanui Psychiatric Hospital: Previous Consultant Results

Sample Collector	Background Concentrations [1]	Site Specific Remedial Standards - Rural Residential [2]	Site Specific Remedial Standards - Managed [2]	AECOM	AECOM	AECOM	AECOM	AECOM	AECOM	AECOM	AECOM	AECOM
Sample Name				B29_A_S7_0.25	B29_A_S7_0.5	B29_B_S8_0.0	B29_B_S8_0.25	B29_C_S9_0.0	B29_C_S9_0.25	B29_A_S10_0.0	B29_A_S10_0.25	B29_C_S11_0.0
Sample Depth (m)				0.25	0.5	0	0.25	0	0.25	0	0.25	0
Lab Number				19-17902-125	19-21608-4	19-17902-127	19-17902-128	19-17902-130	19-17902-131	19-17902-133	19-17902-134	19-17902-136
Heavy Metals (mg/kg dry weight)	**95% upper limit for background (mg/kg)**											
Arsenic	6.8	9	70	6.69	3.8	5.39	6.45	6.34	6.68	5.42	6.4	3.78
Beryllium	-	-	-	1.28	0.78	1.31	2.11	0.874	1.36	1.23	1.14	0.693
Boron	-	-	-	2.1	1.3	2.96	2.14	3.19	2.64	2.8	2.79	2.64
Cadmium	0.22	0.9	10	0.138	0.02	0.319	0.0967	0.219	0.115	0.315	0.212	0.203
Chromium	30	150	150	15.6	8.4	12.5	15.5	12	15.6	12.6	13.6	16.2
Copper	25	280	280	34.2	20	37.3	35.7	28.8	42.2	35.2	30.3	20.4
Lead	20	120	460	74.1	19.1	125	23.7	43.1	32.6	83.7	47.5	91
Mercury	0.23	3	3	0.121	0.069	0.155	0.124	0.102	0.15	0.192	0.188	0.0946
Nickel	7.6	-	-	6	4.9	7.27	6.28	9.01	8.86	6.62	6.91	4.73
Zinc	53	350	450	66.5	33.4	129	50	94.4	68.2	**744**	387	142
OCPs												
Total DDT	-	2	2	-	-	-	-	-	-	-	-	-
PAHs												
BAP Eq	-	6	35	-	-	-	-	-	-	-	-	-
Benzene	-	0.11	0.11	-	-	-	-	-	-	-	-	-
TPHs												
C7-C9	-	-	-	-	-	-	-	-	-	-	-	-
C10-C14	-	-	-	-	-	-	-	-	-	-	-	-
C15-C36	-	-	-	-	-	-	-	-	-	-	-	-
Total Hydrocarbons	-	-	-	-	-	-	-	-	-	-	-	-
Asbestos (S/Q)	-	-	-	ND	ND	ND	ND	ND	ND	Asbestos (Unspecified) Detected	Asbestos (Unspecified) Detected	Asbestos (Unspecified) Detected
AF/FA [3]	ND	0.001	0.001	-	-	-	-	-	-	**0.029**	**0.0014**	-
% ACM [3]	ND	0.01	0.01	-	-	-	-	-	-	-	-	-

Former Tokanui Psychiatric Hospital: Previous Consultant Results

Sample Collector	Background Concentrations [1]	Site Specific Remedial Standards - Rural Residential [2]	Site Specific Remedial Standards - Managed [2]	AECOM	AECOM	AECOM	AECOM	AECOM	AECOM	AECOM	AECOM	AECOM
Sample Name				B29_B_S11_0.25	B29_C_S12_0.0	B29_C_S12_0.25	B29_A_S13_0.0	B29_A_S13_0.25	B29_A_S13_0.5	B29_B_S14_0.0	B29_B_S14_0.25	B29_B_S14_0.5
Sample Depth (m)				0.25	0	0.25	0	0.25	0.5	0	0.25	0.5
Lab Number				19-17902-137	19-17902-139	19-17902-140	19-17902-142	19-17902-143	19-17902-144	19-17902-145	19-17902-146	19-17902-147
Heavy Metals (mg/kg dry weight)	95% upper limit for background (mg/kg)											
Arsenic	6.8	9	70	8.01	5.77	7.84	9.22	5.37	5.04	5.53	5.06	4.07
Beryllium	-	-	-	1.05	1.25	1.23	1.07	1.47	1.54	1.15	1.56	0.97
Boron	-	-	-	2.84	2.69	2.31	2.87	2.37	5.73	4.34	3.22	2.35
Cadmium	0.22	0.9	10	0.124	0.311	0.156	0.401	0.469	0.276	0.41	0.228	0.128
Chromium	30	150	150	15.4	11.2	14.7	12.7	11	10.8	12.1	10.6	8.2
Copper	25	280	280	21.3	33.1	24.4	93.4	42.5	35.4	42.6	30.1	13.2
Lead	20	120	460	35.4	154	45.1	355	93.6	56.2	97.2	28.1	25.4
Mercury	0.23	3	3	0.169	0.185	0.221	0.212	0.181	0.181	0.253	0.187	0.157
Nickel	7.6	-	-	7.54	5.71	7.4	6.51	6.52	5.56	5.73	5.53	4.13
Zinc	53	350	450	83.9	120	74.5	**712**	194	181	154	90.4	50.4
OCPs												
Total DDT	-	2	2	-	-	-	-	-	-	-	-	-
PAHs												
BAP Eq	-	6	35	-	-	-	-	-	-	-	-	-
Benzene	-	0.11	0.11	-	-	-	-	-	-	-	-	-
TPHs												
C7-C9	-	-	-	-	-	-	-	-	-	-	-	-
C10-C14	-	-	-	-	-	-	-	-	-	-	-	-
C15-C36	-	-	-	-	-	-	-	-	-	-	-	-
Total Hydrocarbons	-	-	-	-	-	-	-	-	-	-	-	-
Asbestos (S/Q)	-	-	-	ND	ND	ND	ND	ND	ND	ND	ND	ND
AF/FA [3]	ND	0.001	0.001	-	-	-	-	-	-	-	-	-
% ACM [3]	ND	0.01	0.01	-	-	-	-	-	-	-	-	-

Former Tokanui Psychiatric Hospital: Previous Consultant Results

Sample Collector	Background Concentrations [1]	Site Specific Remedial Standards - Rural Residential [2]	Site Specific Remedial Standards - Managed [2]	AECOM	AECOM	AECOM	AECOM	AECOM	AECOM	AECOM	AECOM	AECOM
Sample Name				B29_C_S15_0.0	B29_C_S15_0.25	B29_C_S15_0.5	B29_A_S16_0.0	B29_A_S16_0.25	B29_A_S16_0.5	B29_B_S17_0.0	B29_B_S17_0.25	B29_B_S17_0.5
Sample Depth (m)				0	0.25	0.5	0	0.25	0.5	0	0.25	0.5
Lab Number				19-17902-148	19-17902-149	19-17902-150	19-17902-151	19-17902-152	19-17902-153	19-17902-154	19-17902-155	19-21608-5
Heavy Metals (mg/kg dry weight)	**95% upper limit for background (mg/kg)**											
Arsenic	6.8	9	70	5.2	4.95	6.89	4.54	6.44	4.61	5.59	5.9	5.3
Beryllium	-	-	-	1.14	1.12	1.32	1.06	1.28	1.27	1.1	1.3	1.3
Boron	-	-	-	3.72	1.6	2.29	2.77	2.7	2.2	3.39	3.01	1.8
Cadmium	0.22	0.9	10	0.223	0.0895	0.0789	0.236	0.341	0.213	0.351	0.3	0.16
Chromium	30	150	150	12.1	8.72	9.23	10.3	13.1	11.6	12.9	14.1	11
Copper	25	280	280	32.4	13.3	9.84	40.6	68.3	38.4	43.2	40.6	33.1
Lead	20	120	460	81.1	24.7	22.1	285	237	60.9	148	70.2	21.5
Mercury	0.23	3	3	0.166	0.14	0.283	0.161	0.189	0.167	0.159	0.198	0.2
Nickel	7.6	-	-	7.6	4.9	5.49	5.76	8.22	7.68	7.53	11.3	8.24
Zinc	53	350	450	107	46.4	33	159	292	101	155	105	79.8
OCPs												
Total DDT	-	2	2	-	-	-	-	-	-	-	-	-
PAHs												
BAP Eq	-	6	35	-	-	-	-	-	-	-	-	-
Benzene	-	0.11	0.11	-	-	-	-	-	-	-	-	-
TPHs												
C7-C9	-	-	-	-	-	-	-	-	-	-	-	-
C10-C14	-	-	-	-	-	-	-	-	-	-	-	-
C15-C36	-	-	-	-	-	-	-	-	-	-	-	-
Total Hydrocarbons	-	-	-	-	-	-	-	-	-	-	-	-
Asbestos (S/Q)	-	-	-	ND	ND	ND	Asbestos (Unspecified) Detected	Asbestos (Unspecified) Detected	Asbestos (Unspecified) Detected	ND	ND	ND
AF/FA [3]	ND	0.001	0.001	-	-	-	0.001	**0.0011**	**0.0013**	-	-	-
% ACM [3]	ND	0.01	0.01	-	-	-	-	-	-	-	-	-

Former Tokanui Psychiatric Hospital: Previous Consultant Results

Sample Collector	Background Concentrations [1]	Site Specific Remedial Standards - Rural Residential [2]	Site Specific Remedial Standards - Managed [2]	AECOM	AECOM	AECOM	AECOM	AECOM	AECOM	AECOM	AECOM	AECOM
Sample Name				B29_C_S18_0.0	B29_A_S19_0.0	B29_A_S19_0.25	B29_A_S19_0.5	B29_B_S20_0.0	B29_C_S21_0.0	B29_O_S23_0.0	B33_A_S1_0.0	B33_A_S1_0.25
Sample Depth (m)				0	0	0.25	0.5	0	0	0	0	0.25
Lab Number				19-17902-157	19-17902-160	19-17902-161	19-17902-162	19-17902-163	19-17902-166	19-22250-73	19-17902-200	19-17902-201
Heavy Metals (mg/kg dry weight)	95% upper limit for background (mg/kg)											
Arsenic	6.8	9	70	5.83	5.65	6.39	4.97	5.31	4.82	3.76	4.89	7.75
Beryllium	-	-	-	1.31	1.32	1.43	1.15	1.44	1.23	0.749	0.963	1.05
Boron	-	-	-	6.88	3.06	3.01	2.71	2.39	2.51	2.7	1.94	2.56
Cadmium	0.22	0.9	10	0.369	0.381	0.324	0.235	0.38	0.28	0.211	0.261	0.109
Chromium	30	150	150	11.8	12.7	12.5	15	11	10.2	10.3	13.5	12.9
Copper	25	280	280	44.5	59.3	76.8	48.1	62.7	38.9	31.4	63.6	29.3
Lead	20	120	460	61.2	147	60.5	50	61.5	61	68.1	**611**	42.9
Mercury	0.23	3	3	0.165	0.197	0.2	0.157	0.178	0.155	0.152	0.106	0.127
Nickel	7.6	-	-	7.26	7.61	7.43	23	6.3	6.31	5.56	5.39	7.47
Zinc	53	350	450	115	165	103	91.5	133	107	93.4	**924**	204
OCPs												
Total DDT	-	2	2	-	-	-	-	-	-	-	-	-
PAHs												
BAP Eq	-	6	35	-	-	-	-	-	-	-	-	-
Benzene	-	0.11	0.11	-	-	-	-	-	-	-	-	-
TPHs												
C7-C9	-	-	-	-	-	-	-	-	-	-	-	-
C10-C14	-	-	-	-	-	-	-	-	-	-	-	-
C15-C36	-	-	-	-	-	-	-	-	-	-	-	-
Total Hydrocarbons	-	-	-	-	-	-	-	-	-	-	-	-
Asbestos (S/Q)	-	-	-	ND	Asbestos (Unspecified) Detected	Asbestos (Unspecified) Detected	Asbestos (Unspecified) Detected	Asbestos (Unspecified) Detected	ND	ND	ND	ND
AF/FA [3]	ND	0.001	0.001	-	**0.019**	**0.003**	**0.0011**	-	-	-	-	-
% ACM [3]	ND	0.01	0.01	-	-	-	-	-	-	-	-	-

Former Tokanui Psychiatric Hospital: Previous Consultant Results

Sample Collector	Background Concentrations [1]	Site Specific Remedial Standards - Rural Residential [2]	Site Specific Remedial Standards - Managed [2]	AECOM	AECOM	AECOM	AECOM	AECOM	AECOM	AECOM	AECOM	AECOM
Sample Name				B33_A_S1_0.5	B33_B_S2_0.0	B33_B_S2_0.25	B33_C_S3_0.0	B33_C_S3_0.25	B33_A_S4_0.0	B33_A_S4_0.25	B33_B_S5_0.0	B33_B_S5_0.25
Sample Depth (m)				0.5	0	0.25	0	0.25	0	0.25	0	0.25
Lab Number				19-17902-202	19-17902-203	19-17902-204	19-17902-206	19-17902-207	19-17902-209	19-17902-210	19-17902-212	19-17902-213
Heavy Metals (mg/kg dry weight)	95% upper limit for background (mg/kg)											
Arsenic	6.8	9	70	6.2	4.81	5.23	9.41	5.35	5.77	6.46	5.72	5.19
Beryllium	-	-	-	1.02	1.01	1.13	1.09	1.1	1.11	1.3	1.21	1.32
Boron	-	-	-	3.62	4.67	3.85	3.69	3.66	4.7	5	3.97	3.9
Cadmium	0.22	0.9	10	0.117	0.395	0.225	0.341	0.174	0.424	0.403	0.454	0.348
Chromium	30	150	150	9.78	18.5	9.77	21.8	8.52	10.2	11.3	9.68	9.26
Copper	25	280	280	22.7	61.5	32.7	56.5	25.8	48.1	47.7	37.5	35.9
Lead	20	120	460	20.7	287	20.8	101	16.5	46.1	35.7	25.9	18.8
Mercury	0.23	3	3	0.154	0.136	0.196	0.131	0.181	0.609	0.33	0.234	0.227
Nickel	7.6	-	-	5.18	19.1	5.72	24.1	5.21	5.35	5.91	4.83	4.73
Zinc	53	350	450	100	966	89.2	225	70.8	175	126	108	87.6
OCPs												
Total DDT	-	2	2	-	-	-	-	-	-	-	-	-
PAHs												
BAP Eq	-	6	35	-	-	-	-	-	-	-	-	-
Benzene	-	0.11	0.11	-	-	-	-	-	-	-	-	-
TPHs												
C7-C9	-	-	-	-	-	-	-	-	-	-	-	-
C10-C14	-	-	-	-	-	-	-	-	-	-	-	-
C15-C36	-	-	-	-	-	-	-	-	-	-	-	-
Total Hydrocarbons	-	-	-	-	-	-	-	-	-	-	-	-
Asbestos (S/Q)	-	-	-	ND	ND	ND	ND	ND	ND	ND	ND	ND
AF/FA [3]	ND	0.001	0.001	-	-	-	-	-	-	-	-	-
% ACM [3]	ND	0.01	0.01	-	-	-	-	-	-	-	-	-

Former Tokanui Psychiatric Hospital: Previous Consultant Results

Sample Collector	Background Concentrations [1]	Site Specific Remedial Standards - Rural Residential [2]	Site Specific Remedial Standards - Managed [2]	AECOM	AECOM	AECOM	AECOM	AECOM	AECOM	AECOM	AECOM	AECOM
Sample Name				B33_C_S6_0.0	B33_A_S7_0.0	B33_A_S7_0.25	B33_A_S7_0.5	B33_B_S8_0.0	B33_B_S8_0.25	B33_C_S9_0.0	B33_A_S10_0.0	B33_A_S10_0.25
Sample Depth (m)				0	0	0.25	0.5	0	0.25	0	0	0.25
Lab Number				19-17902-215	19-17902-218	19-17902-219	19-17902-220	19-17902-221	19-17902-222	19-17902-224	19-17902-227	19-17902-228
Heavy Metals (mg/kg dry weight)	**95% upper limit for background (mg/kg)**											
Arsenic	6.8	9	70	3.03	9.33	7.06	5	7.43	7.25	6.44	6.16	6.21
Beryllium	-	-	-	0.631	1.15	0.987	0.815	1.07	1.01	1.16	1.03	1.31
Boron	-	-	-	1.47	3.78	2.57	2.14	2.35	2.35	2.4	3.53	5.05
Cadmium	0.22	0.9	10	0.131	2.87	0.196	0.0797	1.23	0.146	0.303	0.369	0.377
Chromium	30	150	150	6.94	13.7	11.6	13.2	11.6	14.6	11.3	11.7	9.93
Copper	25	280	280	13.1	36.8	21.8	34.6	32.4	28.8	33.1	46.4	42.2
Lead	20	120	460	6.99	303	27.8	19.1	178	24.3	63.7	189	28.3
Mercury	0.23	3	3	0.0763	0.189	0.128	0.106	0.166	0.14	0.178	0.464	0.405
Nickel	7.6	-	-	3.67	7.58	6.6	6.03	6.84	8.62	7.25	6.24	5.57
Zinc	53	350	450	49.4	**4200**	307	112	**1850**	121	146	250	106
OCPs												
Total DDT	-	2	2	-	-	-	-	-	-	-	-	-
PAHs												
BAP Eq	-	6	35	-	-	-	-	-	-	-	-	-
Benzene	-	0.11	0.11	-	-	-	-	-	-	-	-	-
TPHs												
C7-C9	-	-	-	-	-	-	-	-	-	-	-	-
C10-C14	-	-	-	-	-	-	-	-	-	-	-	-
C15-C36	-	-	-	-	-	-	-	-	-	-	-	-
Total Hydrocarbons	-	-	-	-	-	-	-	-	-	-	-	-
Asbestos (S/Q)	-	-	-	ND	ND	ND	ND	ND	ND	ND	ND	ND
AF/FA [3]	ND	0.001	0.001	-	-	-	-	-	-	-	-	-
% ACM [3]	ND	0.01	0.01	-	-	-	-	-	-	-	-	-

Former Tokanui Psychiatric Hospital: Previous Consultant Results

Sample Collector	Background Concentrations [1]	Site Specific Remedial Standards - Rural Residential [2]	Site Specific Remedial Standards - Managed [2]	AECOM	AECOM	AECOM	AECOM	AECOM	AECOM	AECOM	AECOM	AECOM
Sample Name				B33_B_S11_0.0	B33_B_S11_0.25	B33_C_S12_0.0	B33_A_S13_0.0	B33_A_S13_0.25	B33_A_S13_0.5	B33_B_S14_0.0	B33_B_S14_0.25	B33_A_S16_0.0
Sample Depth (m)				0	0.25	0	0	0.25	0.5	0	0.25	0
Lab Number				19-17902-230	19-21608-9	19-17902-233	19-17902-236	19-17902-237	19-17902-238	19-17902-239	19-17902-240	19-17902-242
Heavy Metals (mg/kg dry weight)	**95% upper limit for background (mg/kg)**											
Arsenic	6.8	9	70	4.8	5.5	4.74	8.1	6.7	6.42	5.22	7.34	7.56
Beryllium	-	-	-	0.984	1.3	1.1	1.04	1.64	1.43	1.1	1.18	1.02
Boron	-	-	-	2.32	2.6	3.42	3.65	3.02	2.88	2.93	3.05	6.12
Cadmium	0.22	0.9	10	0.336	0.34	0.433	0.953	0.805	0.419	0.492	0.402	0.537
Chromium	30	150	150	9.01	8.4	8.65	14.7	11.3	11.3	10.2	12.6	12.1
Copper	25	280	280	37.2	34.1	38.4	179	103	52.5	56.1	53.5	125
Lead	20	120	460	83.2	12.4	63	420	149	59.2	126	68.1	103
Mercury	0.23	3	3	0.255	0.24	0.228	0.921	0.506	0.274	0.325	0.229	1.02
Nickel	7.6	-	-	4.87	4.6	4.77	7.61	6.85	6.66	6.02	6.3	8.5
Zinc	53	350	450	131	72.7	131	**1230**	**757**	**498**	165	116	278
OCPs												
Total DDT	-	2	2	-	-	-	-	-	-	-	-	-
PAHs												
BAP Eq	-	6	35	-	-	-	-	-	-	-	-	-
Benzene	-	0.11	0.11	-	-	-	-	-	-	-	-	-
TPHs												
C7-C9	-	-	-	-	-	-	-	-	-	-	-	-
C10-C14	-	-	-	-	-	-	-	-	-	-	-	-
C15-C36	-	-	-	-	-	-	-	-	-	-	-	-
Total Hydrocarbons	-	-	-	-	-	-	-	-	-	-	-	-
Asbestos (S/Q)	-	-	-	ND	ND	ND	ND	ND	ND	ND	ND	ND
AF/FA [3]	ND	0.001	0.001	-	-	-	-	-	-	-	-	-
% ACM [3]	ND	0.01	0.01	-	-	-	-	-	-	-	-	-

Former Tokanui Psychiatric Hospital: Previous Consultant Results

Sample Collector	Background Concentrations [1]	Site Specific Remedial Standards - Rural Residential [2]	Site Specific Remedial Standards - Managed [2]	AECOM	AECOM	AECOM	AECOM	AECOM	AECOM	AECOM	AECOM	AECOM
Sample Name				B33_A_S16_0.25	B33_A_S16_0.5	B33_B_S17_0.0	B33_C_S18_0.0	B33_C_S18_0.25	B33_A_S19_0.0	B33_A_S19_0.25	B33_B_S20_0.0	B33_B_S20_0.25
Sample Depth (m)				0.25	0.5	0	0	0.25	0	0.25	0	0.25
Lab Number				19-17902-243	19-17902-244	19-17902-245	19-17902-248	19-21608-10	19-17902-251	19-17902-252	19-17902-254	19-17902-255
Heavy Metals (mg/kg dry weight)	**95% upper limit for background (mg/kg)**											
Arsenic	6.8	9	70	8.14	6.05	7.36	6.27	6.4	8.45	7	19.2	8.12
Beryllium	-	-	-	1.15	1.12	1.28	1.26	1.39	1.13	1.21	0.791	1.49
Boron	-	-	-	8.25	5.28	5.68	4.68	2.9	7.01	4.41	3.29	8.24
Cadmium	0.22	0.9	10	0.578	0.24	0.567	0.482	0.28	0.445	0.22	0.294	0.495
Chromium	30	150	150	12.7	9.7	11.1	10	11	12	11.6	21.7	11.8
Copper	25	280	280	120	41.1	73.1	59.1	51.7	39.8	48.8	28.6	48.5
Lead	20	120	460	85.5	26.2	65.8	74.6	18.9	101	31.6	45.3	55.6
Mercury	0.23	3	3	0.897	0.273	0.346	0.332	0.27	0.239	0.334	0.144	0.265
Nickel	7.6	-	-	7.54	5.85	6	5.24	31.2	5.42	7.09	5.59	7.11
Zinc	53	350	450	270	127	196	152	74.7	248	90.8	132	127
OCPs												
Total DDT	-	2	2	-	-	-	-	-	-	-	-	-
PAHs												
BAP Eq	-	6	35	-	-	-	-	-	-	-	-	-
Benzene	-	0.11	0.11	-	-	-	-	-	-	-	-	-
TPHs												
C7-C9	-	-	-	-	-	-	-	-	-	-	-	-
C10-C14	-	-	-	-	-	-	-	-	-	-	-	-
C15-C36	-	-	-	-	-	-	-	-	-	-	-	-
Total Hydrocarbons	-	-	-	-	-	-	-	-	-	-	-	-
Asbestos (S/Q)	-	-	-	ND	ND	ND	ND	ND	Asbestos (Unspecified) Detected	ND	ND	ND
AF/FA [3]	ND	0.001	0.001	-	-	-	-	-	-	-	-	-
% ACM [3]	ND	0.01	0.01	-	-	-	-	-	-	-	-	-

Former Tokanui Psychiatric Hospital: Previous Consultant Results

Sample Collector	Background Concentrations [1]	Site Specific Remedial Standards - Rural Residential [2]	Site Specific Remedial Standards - Managed [2]	AECOM	AECOM	AECOM	AECOM	AECOM	AECOM	AECOM	AECOM	AECOM
Sample Name				B33_A_S22_0.0	B33_A_S22_0.25	B33_B_S23_0.0	B33_B_S23_0.25	B33_C_S24_0.0	B33_C_S24_0.25	B33_A_S25_0.0	B33_A_S25_0.25	B33_B_S26_0.0
Sample Depth (m)				0	0.25	0	0.25	0	0.25	0	0.25	0
Lab Number				19-17902-260	19-17902-261	19-17902-263	19-17902-264	19-17902-266	19-21608-11	19-17902-269	19-17902-270	19-17902-272
Heavy Metals (mg/kg dry weight)	**95% upper limit for background (mg/kg)**											
Arsenic	6.8	9	70	5.82	5.81	5.55	5.5	5.88	5.9	7.8	7.55	7.81
Beryllium	-	-	-	1.03	1.47	1.12	1.41	1.34	1.45	1.42	1.27	1.28
Boron	-	-	-	4.15	3.37	3.09	2.94	6.42	2.9	4.6	4.95	3.58
Cadmium	0.22	0.9	10	0.321	0.239	0.341	0.166	0.361	0.24	0.504	0.276	0.378
Chromium	30	150	150	10.3	10.2	9.42	10	10.1	10	12.1	12.4	13
Copper	25	280	280	43.9	32.2	40.1	34.8	43.5	30	**4100**	44.3	49.3
Lead	20	120	460	203	21.2	247	16.2	71.7	15	201	34.1	46.1
Mercury	0.23	3	3	0.516	0.264	0.254	0.239	0.236	0.28	0.415	0.37	0.241
Nickel	7.6	-	-	5.46	5.99	5.26	5.75	6.23	6.05	8.49	7.06	6.74
Zinc	53	350	450	**2640**	**1170**	**1170**	88	185	55.7	**898**	130	103
OCPs												
Total DDT	-	2	2	-	-	-	-	-	-	-	-	-
PAHs												
BAP Eq	-	6	35	-	-	-	-	-	-	-	-	-
Benzene	-	0.11	0.11	-	-	-	-	-	-	-	-	-
TPHs												
C7-C9	-	-	-	-	-	-	-	-	-	-	-	-
C10-C14	-	-	-	-	-	-	-	-	-	-	-	-
C15-C36	-	-	-	-	-	-	-	-	-	-	-	-
Total Hydrocarbons	-	-	-	-	-	-	-	-	-	-	-	-
Asbestos (S/Q)	-	-	-	ND	ND	ND	ND	ND	ND	ND	ND	ND
AF/FA [3]	ND	0.001	0.001	-	-	-	-	-	-	-	-	-
% ACM [3]	ND	0.01	0.01	-	-	-	-	-	-	-	-	-

Former Tokanui Psychiatric Hospital: Previous Consultant Results

Sample Collector	Background Concentrations [1]	Site Specific Remedial Standards - Rural Residential [2]	Site Specific Remedial Standards - Managed [2]	AECOM	AECOM	AECOM	AECOM	AECOM	AECOM	GHD	GHD	GHD
Sample Name				B33_B_S26_0.25	B33_C_S27_0.0	B33_D_S28_0.0	B33_D_S29_0.0	B33_D_S30_0.0	B33_D_S31_0.0	B34 TP 01 0.10	B34 TP 01 0.50	B34 TP 02 0.10
Sample Depth (m)				0.25	0	0	0	0	0	0.1	0.5	0.1
Lab Number				19-17902-273	19-17902-275	19-22250-48	19-22250-49	19-22250-50	19-22250-51	3299078.1	3299078.2	3299078.4
Heavy Metals (mg/kg dry weight)	**95% upper limit for background (mg/kg)**											
Arsenic	6.8	9	70	8.53	7.86	4.71	5.17	5.36	4.07	11	6	21
Beryllium	-	-	-	1.26	1.42	1.15	1.3	1.21	1.16	-	-	-
Boron	-	-	-	3.83	3.5	3.56	4.31	3.57	3.73	< 20	< 20	< 20
Cadmium	0.22	0.9	10	0.209	0.497	0.273	0.575	0.373	0.348	0.23	0.21	0.35
Chromium	30	150	150	13.8	13.7	12.7	10.3	10.6	7.84	11	9	12
Copper	25	280	280	39.3	57.5	35	55.6	54	34.7	26	26	60
Lead	20	120	460	28.6	42.1	63.2	50.7	36.2	49.9	38	40	121
Mercury	0.23	3	3	0.228	0.281	0.139	0.353	0.352	0.184	0.1	0.14	0.13
Nickel	7.6	-	-	6.9	7.52	11	5.78	5.67	4.33	7	4	9
Zinc	53	350	450	80.3	104	155	114	96.4	98.1	138	88	133
OCPs												
Total DDT	-	2	2	-	-	-	-	-	-	0.11	0.08	0.2
PAHs												
BAP Eq	-	6	35	-	-	-	-	-	-	-	-	-
Benzene	-	0.11	0.11	-	-	-	-	-	-	-	-	-
TPHs												
C7-C9	-	-	-	-	-	-	-	-	-	-	-	-
C10-C14	-	-	-	-	-	-	-	-	-	-	-	-
C15-C36	-	-	-	-	-	-	-	-	-	-	-	-
Total Hydrocarbons	-	-	-	-	-	-	-	-	-	-	-	-
Asbestos (S/Q)	-	-	-	ND	ND	ND	ND	ND	ND	ND	ND	ND
AF/FA [3]	ND	0.001	0.001	-	-	-	-	-	-	-	-	-
% ACM [3]	ND	0.01	0.01	-	-	-	-	-	-	-	-	-

Former Tokanui Psychiatric Hospital: Previous Consultant Results

Sample Collector	Background Concentrations [1]	Site Specific Remedial Standards - Rural Residential [2]	Site Specific Remedial Standards - Managed [2]	GHD	GHD	GHD	GHD	GHD	GHD	GHD	GHD	GHD
Sample Name				B34 TP 02 0.50	B34 TP 03 0.10	B34 TP 03 0.50	B34 TP 04 0.10	B34 TP 04 0.50	B34 TP 05 0.10	B34 TP 05 0.50	B34 TP 06 0.10	B34 TP 06 0.50
Sample Depth (m)				0.5	0.1	0.5	0.1	0.5	0.1	0.5	0.1	0.5
Lab Number				3299078.5	3299078.7	3299078.8	3299078.1	3299078.1	3299078.1	3299078.1	3299078.2	3299078.2
Heavy Metals (mg/kg dry weight)	**95% upper limit for background (mg/kg)**											
Arsenic	6.8	9	70	4	7	4	3	5	41	4	8	3
Beryllium	-	-	-	-	-	-	-	-	-	-	-	-
Boron	-	-	-	< 20	< 20	< 20	< 20	< 20	< 20	< 20	< 20	< 20
Cadmium	0.22	0.9	10	0.11	0.33	0.26	0.1	0.1	0.43	0.1	0.35	0.1
Chromium	30	150	150	11	11	8	5	9	26	10	10	9
Copper	25	280	280	18	34	26	12	17	56	11	41	19
Lead	20	120	460	21	39	22	20	24	105	23	187	22
Mercury	0.23	3	3	0.17	0.14	0.12	0.1	0.1	0.15	0.1	0.12	0.1
Nickel	7.6	-	-	5	9	5	3	4	38	4	10	5
Zinc	53	350	450	48	92	72	38	39	220	32	210	52
OCPs												
Total DDT	-	2	2	0.1	0.09	0.09	0.08	0.09	0.08	0.09	0.34	0.09
PAHs												
BAP Eq	-	6	35	-	-	-	-	-	-	-	-	-
Benzene	-	0.11	0.11	-	-	-	-	-	-	-	-	-
TPHs												
C7-C9	-	-	-	-	-	-	-	-	-	-	-	-
C10-C14	-	-	-	-	-	-	-	-	-	-	-	-
C15-C36	-	-	-	-	-	-	-	-	-	-	-	-
Total Hydrocarbons	-	-	-	-	-	-	-	-	-	-	-	-
Asbestos (S/Q)	-	-	-	ND	ND	ND	ND	ND	ND	ND	ND	ND
AF/FA [3]	ND	0.001	0.001	-	-	-	-	-	-	-	-	-
% ACM [3]	ND	0.01	0.01	-	-	-	-	-	-	-	-	-

Former Tokanui Psychiatric Hospital: Previous Consultant Results

Sample Collector	Background Concentrations [1]	Site Specific Remedial Standards - Rural Residential [2]	Site Specific Remedial Standards - Managed [2]	GHD	GHD	GHD	GHD	GHD	GHD	GHD	GHD	GHD
Sample Name				B34 TP 07 0.10	B34 TP 07 0.50	B35 HA01 0.10	B35 HA01 0.50	B35 HA04 0.10	B35 HA04 0.50	B35 TP 01 0.10	B35 TP 01 0.50	B35 TP 02 0.10
Sample Depth (m)				0.1	0.5	0.1	0.5	0.1	0.5	0.1	0.5	0.1
Lab Number				3299078.2	3299078.2	3299078.2	3299078.2	3299078.2	3299078.2	3299078.2	3299078.2	3299078.3
Heavy Metals (mg/kg dry weight)	**95% upper limit for background (mg/kg)**											
Arsenic	6.8	9	70	8	4	11	3	10	5	3	6	2
Beryllium	-	-	-	-	-	-	-	-	-	-	-	-
Boron	-	-	-	23	< 20	< 20	< 20	< 20	< 20	< 20	< 20	< 20
Cadmium	0.22	0.9	10	0.34	0.1	0.5	0.1	0.41	0.1	0.1	0.1	0.16
Chromium	30	150	150	24	9	14	7	11	9	8	8	82
Copper	25	280	280	37	13	57	12	43	14	14	9	70
Lead	20	120	460	49	21	**630**	54	360	87	29	21	28
Mercury	0.23	3	3	0.1	0.1	0.54	0.1	0.23	0.1	0.1	0.1	0.19
Nickel	7.6	-	-	40	4	7	3	6	3	5	4	250
Zinc	53	350	450	110	33	260	43	210	74	30	29	103
OCPs												
Total DDT	-	2	2	0.08	0.09	0.43	0.09	0.74	-	0.08	0.09	0.07
PAHs												
BAP Eq	-	6	35	-	-	-	-	-	-	-	-	-
Benzene	-	0.11	0.11	-	-	-	-	-	-	-	-	-
TPHs												
C7-C9	-	-	-	-	-	-	-	-	-	-	-	-
C10-C14	-	-	-	-	-	-	-	-	-	-	-	-
C15-C36	-	-	-	-	-	-	-	-	-	-	-	-
Total Hydrocarbons	-	-	-	-	-	-	-	-	-	-	-	-
Asbestos (S/Q)	-	-	-	ND	ND	ND	ND	ND	ND	ND	ND	ND
AF/FA [3]	ND	0.001	0.001	-	-	-	-	-	-	-	-	-
% ACM [3]	ND	0.01	0.01	-	-	-	-	-	-	-	-	-

Former Tokanui Psychiatric Hospital: Previous Consultant Results

Sample Collector	Background Concentrations [1]	Site Specific Remedial Standards - Rural Residential [2]	Site Specific Remedial Standards - Managed [2]	GHD	GHD	GHD	GHD	GHD	GHD	GHD	AECOM	AECOM
Sample Name				B35 TP 02 0.50	B35 TP 03 0.10	B35 TP 03 0.50	B35 TP 04 0.10	B35 TP 04 0.50	B35 TP 05 0.10	B35 TP 05 0.50	B41_A_S1_0.0	B41_B_S2_0.0
Sample Depth (m)				0.5	0.1	0.5	0.1	0.5	0.1	0.5	0	0
Lab Number				3299078.3	3299078.3	3299078.3	3299078.3	3299078.3	3299078.3	3299078.4	19-17902-278	19-17902-281
Heavy Metals (mg/kg dry weight)	**95% upper limit for background (mg/kg)**											
Arsenic	6.8	9	70	10	29	5	5	5	19	7	12.3	7.06
Beryllium	-	-	-	-	-	-	-	-	-	-	1.09	1.18
Boron	-	-	-	< 20	185	< 20	< 20	< 20	< 20	< 20	3.1	3.43
Cadmium	0.22	0.9	10	0.13	0.38	0.1	0.1	0.17	0.1	0.1	0.165	0.237
Chromium	30	150	150	13	12	8	7	9	5	11	15.1	14.6
Copper	25	280	280	22	59	9	13	19	9	10	46.6	44
Lead	20	120	460	21	260	18.4	30	35	69	23	38.4	38.1
Mercury	0.23	3	3	0.14	0.1	0.1	0.1	0.18	0.1	0.1	0.221	0.283
Nickel	7.6	-	-	13	13	3	5	4	2	4	7.99	8.15
Zinc	53	350	450	65	270	29	66	59	53	37	114	107
OCPs												
Total DDT	-	2	2	0.1	0.49	0.09	0.08	0.09	0.07	0.09	-	-
PAHs												
BAP Eq	-	6	35	-	-	-	-	-	-	-	-	-
Benzene	-	0.11	0.11	-	-	-	-	-	-	-	-	-
TPHs												
C7-C9	-	-	-	-	-	-	-	-	-	-	-	-
C10-C14	-	-	-	-	-	-	-	-	-	-	-	-
C15-C36	-	-	-	-	-	-	-	-	-	-	-	-
Total Hydrocarbons	-	-	-	-	-	-	-	-	-	-	-	-
Asbestos (S/Q)	-	-	-	ND	Amosite and Chrysotile detected	ND	ND	ND	ND	ND	ND	ND
AF/FA [3]	ND	0.001	0.001	-	0.001	-	-	-	-	-	-	-
% ACM [3]	ND	0.01	0.01	-	0.001	-	-	-	-	-	-	-

Former Tokanui Psychiatric Hospital: Previous Consultant Results

Sample Collector	Background Concentrations [1]	Site Specific Remedial Standards - Rural Residential [2]	Site Specific Remedial Standards - Managed [2]	AECOM	AECOM	AECOM	AECOM	AECOM	AECOM	AECOM	AECOM	AECOM
Sample Name				B41_C_S3_0.0	B41_C_S3_0.25	B41_A_S4_0.0	B41_B_S5_0.0	B41_C_S6_0.0	B41_A_S7_0.0	B41_A_S7_0.25	B41_B_S8_0.0	B41_C_S9_0.0
Sample Depth (m)				0	0.25	0	0	0	0	0.25	0	0
Lab Number				19-17902-284	19-21608-17	19-17902-287	19-17902-290	19-17902-293	19-17902-296	19-17902-297	19-17902-299	19-17902-302
Heavy Metals (mg/kg dry weight)	95% upper limit for background (mg/kg)											
Arsenic	6.8	9	70	6.53	5.6	16.4	9.43	7.04	32.3	10.1	7.62	6.06
Beryllium	-	-	-	1.06	0.97	1.12	0.994	1.03	0.732	0.703	0.794	0.73
Boron	-	-	-	2.32	1.7	1.94	4.02	2.81	2.42	1.25	2.29	2.47
Cadmium	0.22	0.9	10	0.225	0.077	0.101	0.152	0.136	0.126	0.0621	0.125	0.131
Chromium	30	150	150	13	12	14.5	14	13.6	13.7	9.63	11.5	12.4
Copper	25	280	280	38.4	47.5	42.8	54	36	25.7	17.9	27.8	25.5
Lead	20	120	460	33.6	24.1	47.4	43.4	28	60	35.1	39.8	43.6
Mercury	0.23	3	3	1.09	0.36	0.161	0.17	0.174	0.161	0.0951	0.148	0.168
Nickel	7.6	-	-	7.13	5.94	7.49	6.92	7.33	6	4.28	6.49	5.88
Zinc	53	350	450	95	59.2	88.3	90.3	75.6	162	60.8	108	110
OCPs												
Total DDT	-	2	2	-	-	-	-	-	-	-	-	-
PAHs												
BAP Eq	-	6	35	-	-	-	-	-	-	-	-	-
Benzene	-	0.11	0.11	-	-	-	-	-	-	-	-	-
TPHs												
C7-C9	-	-	-	-	-	-	-	-	-	-	-	-
C10-C14	-	-	-	-	-	-	-	-	-	-	-	-
C15-C36	-	-	-	-	-	-	-	-	-	-	-	-
Total Hydrocarbons	-	-	-	-	-	-	-	-	-	-	-	-
Asbestos (S/Q)	-	-	-	ND	ND	ND	ND	ND	ND	ND	ND	ND
AF/FA [3]	ND	0.001	0.001	-	-	-	-	-	-	-	-	-
% ACM [3]	ND	0.01	0.01	-	-	-	-	-	-	-	-	-

Former Tokanui Psychiatric Hospital: Previous Consultant Results

Sample Collector	Background Concentrations [1]	Site Specific Remedial Standards - Rural Residential [2]	Site Specific Remedial Standards - Managed [2]	AECOM	AECOM	AECOM	AECOM	AECOM	AECOM	AECOM	AECOM	AECOM
Sample Name				B43_A_S1_0.0	B43_A_S1_0.25	B43_B_S2_0.0	B43_C_S3_0.25	B43_A_S4_0.0	B43_B_S5_0.0	B43_C_S6_0.0	B43_A_S7_0.0	B43_A_S7_0.25
Sample Depth (m)				0	0.25	0	0.25	0	0	0	0	0.25
Lab Number				19-17902-305	19-17902-306	19-17902-308	19-17902-312	19-17902-314	19-17902-317	19-17902-320	19-17902-323	19-17902-324
Heavy Metals (mg/kg dry weight)	**95% upper limit for background (mg/kg)**											
Arsenic	6.8	9	70	6.77	8.36	7	5.86	7.39	8.17	7.62	16.9	8.75
Beryllium	-	-	-	1.27	1.22	1.18	1.01	1.28	1.14	1.14	0.981	1.34
Boron	-	-	-	3.71	3.41	2.98	1.43	4.56	3.34	2.88	3.32	4.85
Cadmium	0.22	0.9	10	0.396	0.298	0.236	0.0637	0.186	0.213	0.209	0.409	0.15
Chromium	30	150	150	13.2	14.2	15.8	14.9	20.3	15.9	14.2	19.1	16.2
Copper	25	280	280	42.5	41.5	41.6	35.9	64.1	44	41.2	86.8	51.3
Lead	20	120	460	30.6	26.3	23.8	16.1	52.7	44.6	27.8	99.5	25.8
Mercury	0.23	3	3	0.254	0.206	0.203	0.12	0.322	0.201	0.222	0.199	0.212
Nickel	7.6	-	-	7.35	7.83	13.3	8.85	9.82	7.68	7.17	10.1	8.62
Zinc	53	350	450	112	93.5	87	52.8	151	151	95	247	89
OCPs												
Total DDT	-	2	2	-	-	-	-	-	-	-	-	-
PAHs												
BAP Eq	-	6	35	-	-	-	-	-	-	-	-	-
Benzene	-	0.11	0.11	-	-	-	-	-	-	-	-	-
TPHs												
C7-C9	-	-	-	-	-	-	-	-	-	-	-	-
C10-C14	-	-	-	-	-	-	-	-	-	-	-	-
C15-C36	-	-	-	-	-	-	-	-	-	-	-	-
Total Hydrocarbons	-	-	-	-	-	-	-	-	-	-	-	-
Asbestos (S/Q)	-	-	-	ND	ND	ND	ND	ND	ND	ND	ND	ND
AF/FA [3]	ND	0.001	0.001	-	-	-	-	-	-	-	-	-
% ACM [3]	ND	0.01	0.01	-	-	-	-	-	-	-	-	-

Former Tokanui Psychiatric Hospital: Previous Consultant Results

Sample Collector	Background Concentrations [1]	Site Specific Remedial Standards - Rural Residential [2]	Site Specific Remedial Standards - Managed [2]	AECOM	AECOM	AECOM	AECOM	AECOM	AECOM	AECOM	AECOM	AECOM
Sample Name				B43_A_S7_0.25	B43_C_S9_0.0	B43_A_S10_0.0	B43_B_S11_0.0	B43_C_S12_0.0	B43_A_S13_0.0	B43_B_S14_0.0	B43_B_S14_0.25	
Sample Depth (m)				0	0	0	0	0	0	0	0.25	0
Lab Number				19-17902-326	19-17902-329	19-17902-332	19-17902-335	19-17902-338	19-17902-341	19-17902-344	19-17902-345	19-17902-347
Heavy Metals (mg/kg dry weight)	**95% upper limit for background (mg/kg)**											
Arsenic	6.8	9	70	11.6	8.51	8.86	5.99	6.14	7.14	4.64	6	6.05
Beryllium	-	-	-	1.09	1.09	0.842	0.936	0.904	0.972	0.696	1.27	1.24
Boron	-	-	-	3.16	2.89	3.22	2.35	2.89	3	1.83	4.23	2.44
Cadmium	0.22	0.9	10	0.296	0.326	0.153	0.194	0.188	0.142	0.172	0.245	0.256
Chromium	30	150	150	15.2	14.9	15.8	14.8	12.3	15.9	8.87	15.6	13.6
Copper	25	280	280	46.9	42.8	37.9	39.3	31.3	40.2	32.7	49.2	39.2
Lead	20	120	460	44.2	36.6	40.4	30.1	28.8	27.9	12.8	17.8	24.9
Mercury	0.23	3	3	0.194	0.19	0.181	0.183	0.151	0.217	0.106	0.227	0.219
Nickel	7.6	-	-	8.66	8.22	7.62	7.57	6.13	8.36	4.53	7.71	6.94
Zinc	53	350	450	133	112	102	84.9	84	88.9	204	126	87.5
OCPs												
Total DDT	-	2	2	-	-	-	-	-	-	-	-	-
PAHs												
BAP Eq	-	6	35	-	-	-	-	-	-	-	-	-
Benzene	-	0.11	0.11	-	-	-	-	-	-	-	-	-
TPHs												
C7-C9	-	-	-	-	-	-	-	-	-	-	-	-
C10-C14	-	-	-	-	-	-	-	-	-	-	-	-
C15-C36	-	-	-	-	-	-	-	-	-	-	-	-
Total Hydrocarbons	-	-	-	-	-	-	-	-	-	-	-	-
Asbestos (S/Q)	-	-	-	ND	ND	ND	ND	ND	ND	ND	ND	ND
AF/FA [3]	ND	0.001	0.001	-	-	-	-	-	-	-	-	-
% ACM [3]	ND	0.01	0.01	-	-	-	-	-	-	-	-	-

Former Tokanui Psychiatric Hospital: Previous Consultant Results

Sample Collector	Background Concentrations [1]	Site Specific Remedial Standards - Rural Residential [2]	Site Specific Remedial Standards - Managed [2]	AECOM	AECOM	AECOM	AECOM	AECOM	AECOM	AECOM	AECOM	AECOM
Sample Name				B43_A_S16_0.0	B43_B_S17_0.0	B43_C_S18_0.0	B43_C_S18_0.5	B49_A_S1_0.0	B49_B_S2_0.0	B49_C_S3_0.0	B49_A_S4_0.0	B49_A_S7_0.0
Sample Depth (m)				0	0	0	0.5	0	0	0	0	0
Lab Number				19-17902-350	19-17902-353	19-17902-356	19-17902-358	19-17902-359	19-17902-362	19-17902-365	19-17902-368	19-17902-377
Heavy Metals (mg/kg dry weight)	**95% upper limit for background (mg/kg)**											
Arsenic	6.8	9	70	6.6	5.26	5.58	44	5.47	7.04	7.8	5.86	6.69
Beryllium	-	-	-	0.979	1.01	1.08	1.09	1.02	1.08	1.02	1.12	0.87
Boron	-	-	-	4.23	3.84	3.01	2.51	2.37	2.43	1.54	2.26	1.8
Cadmium	0.22	0.9	10	0.288	0.26	0.255	0.125	0.128	0.128	0.112	0.19	0.0832
Chromium	30	150	150	12.6	12	12.8	33.4	16.1	18	17.5	22.3	13.1
Copper	25	280	280	32.3	33.6	36.2	70.6	34.6	39.4	39.5	46.9	22
Lead	20	120	460	22.8	24.3	29.5	187	26.5	37	42.2	27	23.3
Mercury	0.23	3	3	0.152	0.155	0.177	0.214	0.156	0.177	0.177	0.253	0.168
Nickel	7.6	-	-	6.55	6.66	6.7	11.3	7.15	7.77	8.01	9.56	5.55
Zinc	53	350	450	111	85.4	83.8	84.3	88.8	94.6	88.7	275	110
OCPs												
Total DDT	-	2	2	-	-	-	-	-	-	-	-	-
PAHs												
BAP Eq	-	6	35	-	-	-	-	-	-	-	-	-
Benzene	-	0.11	0.11	-	-	-	-	-	-	-	-	-
TPHs												
C7-C9	-	-	-	-	-	-	-	-	-	-	-	-
C10-C14	-	-	-	-	-	-	-	-	-	-	-	-
C15-C36	-	-	-	-	-	-	-	-	-	-	-	-
Total Hydrocarbons	-	-	-	-	-	-	-	-	-	-	-	-
Asbestos (S/Q)	-	-	-	ND	ND	ND	ND	ND	ND	ND	ND	ND
AF/FA [3]	ND	0.001	0.001	-	-	-	-	-	-	-	-	-
% ACM [3]	ND	0.01	0.01	-	-	-	-	-	-	-	-	-

Former Tokanui Psychiatric Hospital: Previous Consultant Results

Sample Collector	Background Concentrations [1]	Site Specific Remedial Standards - Rural Residential [2]	Site Specific Remedial Standards - Managed [2]	AECOM	AECOM	AECOM	AECOM	AECOM	AECOM	AECOM	AECOM	AECOM
Sample Name				B49_A_S10_0.0	B49_A_S10_0.25	B49_B_S11_0.0	B49_C_S12_0.0	B49_A_S13_0.0	B49_B_S14_0.0	B49_C_S15_0.0	B49_A_S16_0.0	B49_A_S16_0.25
Sample Depth (m)				0	0.25	0	0	0	0	0	0	0.25
Lab Number				19-17902-386	19-17902-387	19-17902-389	19-17902-392	19-17902-395	19-17902-398	19-17902-401	19-17902-404	19-17902-405
Heavy Metals (mg/kg dry weight)	95% upper limit for background (mg/kg)											
Arsenic	6.8	9	70	17.3	8.66	7.87	6.88	5.54	6.17	7.23	14.2	7.57
Beryllium	-	-	-	0.914	1.02	1.12	1.05	0.611	0.844	1.05	0.857	0.922
Boron	-	-	-	2.1	2.95	6.09	2.16	2.84	2.62	3.71	2.33	1.71
Cadmium	0.22	0.9	10	0.15	0.194	0.296	0.154	0.135	0.142	0.196	0.0946	0.171
Chromium	30	150	150	12.9	13.3	13.3	12	8.64	13.2	14.7	12.6	12.3
Copper	25	280	280	31.7	37.5	56	29.3	18.1	30.2	39.4	27.6	27.6
Lead	20	120	460	27.6	19.5	25.9	29.8	14.2	29.6	29.7	26.3	18.3
Mercury	0.23	3	3	0.199	0.202	0.218	0.169	0.101	0.192	0.178	0.137	0.148
Nickel	7.6	-	-	5.66	6.64	8.84	5.83	4.7	6.58	7.73	5.32	5.94
Zinc	53	350	450	**1890**	**828**	343	115	**615**	78.8	123	**1160**	**932**
OCPs												
Total DDT	-	2	2	-	-	-	-	-	-	-	-	-
PAHs												
BAP Eq	-	6	35	-	-	-	-	-	-	-	-	-
Benzene	-	0.11	0.11	-	-	-	-	-	-	-	-	-
TPHs												
C7-C9	-	-	-	-	-	-	-	-	-	-	-	-
C10-C14	-	-	-	-	-	-	-	-	-	-	-	-
C15-C36	-	-	-	-	-	-	-	-	-	-	-	-
Total Hydrocarbons	-	-	-	-	-	-	-	-	-	-	-	-
Asbestos (S/Q)	-	-	-	ND	ND	ND	ND	ND	ND	ND	ND	ND
AF/FA [3]	ND	0.001	0.001	-	-	-	-	-	-	-	-	-
% ACM [3]	ND	0.01	0.01	-	-	-	-	-	-	-	-	-

Former Tokanui Psychiatric Hospital: Previous Consultant Results

Sample Collector	Background Concentrations [1]	Site Specific Remedial Standards - Rural Residential [2]	Site Specific Remedial Standards - Managed [2]	AECOM	AECOM	AECOM	AECOM	AECOM	AECOM	AECOM	AECOM	AECOM
Sample Name				B49_B_S17_0.0	B49_C_S18_0.0	B49_A_S19_0.0	B49_B_S20_0.0	B49_C_S21_0.0	B58_A_S1_0.0	B58_A_S1	B58_A_S1_0.5	B58_A_S2_0.0
Sample Depth (m)				0	0	0	0	0	0	0.25	0.5	0
Lab Number				19-17902-407	19-17902-410	19-17902-413	19-17902-416	19-17902-419	19-17902-585	19-17902-586	19-17902-587	19-17902-588
Heavy Metals (mg/kg dry weight)	**95% upper limit for background (mg/kg)**											
Arsenic	6.8	9	70	5.38	5.84	5.3	5.26	5.81	4.69	-	-	6.28
Beryllium	-	-	-	0.689	0.906	0.533	0.666	0.743	0.876	-	-	0.924
Boron	-	-	-	3.05	2.72	1.25	2.44	3.22	3.13	-	-	3.4
Cadmium	0.22	0.9	10	0.162	0.154	0.0801	0.1	0.127	0.463	-	-	0.239
Chromium	30	150	150	9.44	13.2	9.17	8.99	9.27	11.4	-	-	18.3
Copper	25	280	280	19.7	29.2	12.8	15.9	21.3	32	-	-	34.4
Lead	20	120	460	22.3	19.4	17.8	21.1	23.5	64.4	-	-	131
Mercury	0.23	3	3	0.118	0.142	0.0933	0.0995	0.137	0.298	-	-	0.152
Nickel	7.6	-	-	4.8	6.63	4.05	4.23	4.43	5.97	-	-	6.98
Zinc	53	350	450	144	74.1	71.8	53.8	62.7	141	-	-	172
OCPs												
Total DDT	-	2	2	-	-	-	-	-	-	-	-	-
PAHs												
BAP Eq	-	6	35	-	-	-	-	-	-	-	-	-
Benzene	-	0.11	0.11	-	-	-	-	-	-	-	-	-
TPHs												
C7-C9	-	-	-	-	-	-	-	-	-	-	-	-
C10-C14	-	-	-	-	-	-	-	-	-	-	-	-
C15-C36	-	-	-	-	-	-	-	-	-	-	-	-
Total Hydrocarbons	-	-	-	-	-	-	-	-	-	-	-	-
Asbestos (S/Q)	-	-	-	ND	ND	ND	ND	ND	Asbestos (Unspecified) Detected	Asbestos (Unspecified) Detected	Asbestos (Unspecified) Detected	Asbestos (Unspecified) Detected
AF/FA [3]	ND	0.001	0.001	-	-	-	-	-	**0.013**	0.001	0.001	**0.020**
% ACM [3]	ND	0.01	0.01	-	-	-	-	-	0.002	0.001	0.001	0.003

Former Tokanui Psychiatric Hospital: Previous Consultant Results

Sample Collector	Background Concentrations [1]	Site Specific Remedial Standards - Rural Residential [2]	Site Specific Remedial Standards - Managed [2]	AECOM	AECOM	AECOM	AECOM	GHD	GHD	GHD	GHD	GHD
Sample Name				B58_A_S2_0.25	B58_B_S3 0.0	B58_B_S4_0.0	B59 TP01	B59 TP01	B59 TP02 0.1	B59 TP02 0.5	B59 TP03 0.1	B59 TP04 0.10
Sample Depth (m)				0.25	0	0	0.1	0.6	0.1	0.5	0.1	0.1
Lab Number				19-21608-18	19-22250-67	19-22250-69	3214115_22	3214115_23	3299078.3	3299078.3	3299078.3	3299078.2
Heavy Metals (mg/kg dry weight)	**95% upper limit for background (mg/kg)**											
Arsenic	6.8	9	70	2	-	6.59	-	-	4	4	4	8
Beryllium	-	-	-	0.49	-	0.809	-	-	-	-	-	-
Boron	-	-	-	1.3	-	2.21	-	-	< 20	< 20	< 20	175
Cadmium	0.22	0.9	10	0.041	-	0.161	-	-	< 0.10	< 0.10	0.12	0.4
Chromium	30	150	150	8.1	-	9.14	-	-	26	28	30	25
Copper	25	280	280	10.1	-	22.5	-	-	16	16	13	28
Lead	20	120	460	16.6	-	42.6	-	-	12	12.9	13.1	61
Mercury	0.23	3	3	0.06	-	0.124	-	-	0.1	0.1	0.1	0.12
Nickel	7.6	-	-	3.6	-	5.41	-	-	12	15	15	25
Zinc	53	350	450	34.3	-	80.3	-	-	60	61	137	135
OCPs												
Total DDT	-	2	2	-	-	-	0.46	0.09	0.07	0.07	0.07	0.07
PAHs												
BAP Eq	-	6	35	-	-	-	-	-	-	-	-	-
Benzene	-	0.11	0.11	-	-	-	-	-	-	-	-	-
TPHs												
C7-C9	-	-	-	-	-	-	-	-	-	-	-	-
C10-C14	-	-	-	-	-	-	-	-	-	-	-	-
C15-C36	-	-	-	-	-	-	-	-	-	-	-	-
Total Hydrocarbons	-	-	-	-	-	-	-	0.015	-	-	-	-
Asbestos (S/Q)	-	-	-	ND	Asbestos (Unspecified) Detected	ND	ND	ND	ND	ND	ND	ND
AF/FA [3]	ND	0.001	0.001	-	-	-	-	-	-	-	-	-
% ACM [3]	ND	0.01	0.01	-	-	-	-	-	-	-	-	-

Former Tokanui Psychiatric Hospital: Previous Consultant Results

Sample Collector	Background Concentrations [1]	Site Specific Remedial Standards - Rural Residential [2]	Site Specific Remedial Standards - Managed [2]	GHD	GHD	GHD	GHD	GHD	GHD	GHD	GHD	GHD
Sample Name				B59 TP04 0.50	B59 TP07	B63 TP01	B63 TP01	B63 TP03	B63 TP04	B65 TP01 0.1	B65 TP01 0.5	B65 TP01 1.5
Sample Depth (m)				0.5	0.1	0.1	0.5	0.1	0.2	0.1	0.5	1.5
Lab Number				3299078.2	3214115_24	3299078_222	3299078_223	3213233_25	3213233_27	3299078.3	3299078.3	3299078.3
Heavy Metals (mg/kg dry weight)	**95% upper limit for background (mg/kg)**											
Arsenic	6.8	9	70	11	-	5	-	2	3	-	-	-
Beryllium	-	-	-	-	-	-	-	-	-	-	-	-
Boron	-	-	-	< 20	-	-	-	-	-	-	-	-
Cadmium	0.22	0.9	10	0.22	-	0.1	-	0.1	0.1	-	-	-
Chromium	30	150	150	9	-	9	-	4	8	-	-	-
Copper	25	280	280	14	-	11	-	4	10	-	-	-
Lead	20	120	460	23	-	8.2	-	4.3	16.5	-	-	-
Mercury	0.23	3	3	0.1	-	-	-	-	-	-	-	-
Nickel	7.6	-	-	3	-	-	-	-	-	-	-	-
Zinc	53	350	450	56	-	54	-	22	37	-	-	-
OCPs												
Total DDT	-	2	2	0.09	0.07	-	-	-	-	0.05	-	-
PAHs												
BAP Eq	-	6	35	-	0.5	-	0.011	-	-	0.016	-	-
Benzene	-	0.11	0.11	-	-	-	-	**0.16**	**0.3**	**20**	0.07	-
TPHs												
C7-C9	-	-	-	-	-	-		20	20	20	20	-
C10-C14	-	-	-	-	-	-	20	20	300	20	-	40
C15-C36	-	-	-	-	-	-	40	40	320	40	-	80
Total Hydrocarbons	-	-	-	-	-	-	80	80	4.9	80	-	0.32
Asbestos (S/Q)	-	-	-	ND	ND	ND	ND	ND	ND	ND	ND	ND
AF/FA [3]	ND	0.001	0.001	-	-	-	-	-	-	-	-	-
% ACM [3]	ND	0.01	0.01	-	-	-	-	-	-	-	-	-

Former Tokanui Psychiatric Hospital: Previous Consultant Results

Sample Collector	Background Concentrations [1]	Site Specific Remedial Standards - Rural Residential [2]	Site Specific Remedial Standards - Managed [2]	GHD	GHD	GHD	GHD	GHD	GHD	GHD	GHD	GHD
Sample Name				B65 TP01	B65 TP02 0.1	B65 TP02	B65 TP02 2.0	B65 TP03 0.1	B65 TP03 0.5	B65 TP03 1.5	B66 TP01	B66 TP01
Sample Depth (m)				1.5	0.1	1	2	0.1	0.5	1.5	0.1	0.9
Lab Number				3299078_278	3299078.3	3299078_280	3299078.4	3299078.3	3299078.3	3299078.3	3213233_22	3213233_23
Heavy Metals (mg/kg dry weight)	**95% upper limit for background (mg/kg)**											
Arsenic	6.8	9	70	-	-	-	-	-	-	-	2	2
Beryllium	-	-	-	-	-	-	-	-	-	-	-	-
Boron	-	-	-	-	-	-	-	-	-	-	-	-
Cadmium	0.22	0.9	10	-	-	-	-	-	-	-	0.1	0.1
Chromium	30	150	150	-	-	-	-	-	-	-	6	6
Copper	25	280	280	-	-	-	-	-	-	-	**870**	13
Lead	20	120	460	-	-	-	-	-	-	-	12.1	16.9
Mercury	0.23	3	3	-	-	-	-	-	-	-	-	-
Nickel	7.6	-	-	-	-	-	-	-	-	-	-	-
Zinc	53	350	450	-	-	-	-	-	-	-	40	32
OCPs												
Total DDT	-	2	2	0.08	0.07	0.07	0.17	0.05	-	0.08	-	-
PAHs												
BAP Eq	-	6	35	-	-	-	-	0.015	-	0.35	-	-
Benzene	-	0.11	0.11	**30**	**20**	**30**	**30**	**20**	0.07	**30**	0.05	**30**
TPHs												
C7-C9	-	-	-	20	20	20	30	20	30	20	20	20
C10-C14	-	-	-	40	-	40	40	20	-	20	2500	40
C15-C36	-	-	-	90	-	90	80	40	-	78	2500	90
Total Hydrocarbons	-	-	-	0.016	-	0.017	0.75	90	-	80	0.7	0.015
Asbestos (S/Q)	-	-	-	ND	ND	ND	ND	ND	ND	ND	ND	ND
AF/FA [3]	ND	0.001	0.001	-	-	-	-	-	-	-	-	-
% ACM [3]	ND	0.01	0.01	-	-	-	-	-	-	-	-	-

Former Tokanui Psychiatric Hospital: Previous Consultant Results

Sample Collector	Background Concentrations [1]	Site Specific Remedial Standards - Rural Residential [2]	Site Specific Remedial Standards - Managed [2]	GHD	GHD	GHD	GHD	GHD	GHD	GHD	GHD	GHD
Sample Name				B66 TP01	B66 HA01	B66 HA02	B67 HA01 0.10	B67 HA01 0.50	B67 HA02 0.10	B67 HA02 0.50	B68 TP01	B68 TP01
Sample Depth (m)				1.1			0.1	0.5	0.1	0.5	0.2	0.6
Lab Number				3213233_24	3299078.2	3299078.2	3299078.2	3299078.2	3299078.2	3299078.2	3214115_37	3214115_38
Heavy Metals (mg/kg dry weight)	**95% upper limit for background (mg/kg)**											
Arsenic	6.8	9	70	6	30	28	4	3	6	7	-	-
Beryllium	-	-	-	-	-	-	-	-	-	-	-	-
Boron	-	-	-	-	2700	360	< 20	< 20	580	84	-	-
Cadmium	0.22	0.9	10	0.1	1.93	2.6	0.1	0.1	0.17	0.1	-	-
Chromium	30	150	150	12	47	31	9	5	18	15	-	-
Copper	25	280	280	44	220	154	12	4	46	22	-	-
Lead	20	120	460	15.5	**1470**	**780**	6.3	4.5	29	17.5	-	-
Mercury	0.23	3	3	-	0.77	0.3	0.1	0.1	0.1	0.1	-	-
Nickel	7.6	-	-	-	140	38	7	3	29	6	-	-
Zinc	53	350	450	61	**1910**	**1190**	33	24	72	45	-	-
OCPs												
Total DDT	-	2	2	-	0.3	0.4	-	-	-	-	-	-
PAHs												
BAP Eq	-	6	35	-	-	0.5	0.5	-	0.6	-	-	-
Benzene	-	0.11	0.11	-	**40**	**40**	-	-	-	-	-	**30**
TPHs												
C7-C9	-	-	-	-	30	80	-	-	-	-	20	20
C10-C14	-	-	-	-	17800	-	-	-	-	20	20	40
C15-C36	-	-	-	-	17900	-	-	-	-	82	124	90
Total Hydrocarbons	-	-	-	-	3.2	-	-	-	-	83	127	-
Asbestos (S/Q)	-	-	-	ND	ND	ND	ND	ND	ND	ND	ND	ND
AF/FA [3]	ND	0.001	0.001	-	-	-	-	-	-	-	-	-
% ACM [3]	ND	0.01	0.01	-	-	-	-	-	-	-	-	-

Former Tokanui Psychiatric Hospital: Previous Consultant Results

Sample Collector	Background Concentrations [1]	Site Specific Remedial Standards - Rural Residential [2]	Site Specific Remedial Standards - Managed [2]	GHD	GHD	GHD	GHD	GHD	GHD	GHD	GHD	GHD
Sample Name				B68 TP02	B68 TP03	B68 TP03	B68 TP04	B68 TP04	B68 TP06	B68 TP06	B68 TP07	B68 TP07
Sample Depth (m)				0.2	0.2	0.5	0.1	0.5	0.1	0.5	0.1	0.2
Lab Number				3214115_39	3214115_40	3214115_41	3214115_42	3214115_43	3213233_7	3211645_8	3213233_10	3211645_10
Heavy Metals (mg/kg dry weight)	**95% upper limit for background (mg/kg)**											
Arsenic	6.8	9	70	-	-	-	-	-	8	-	-	-
Beryllium	-	-	-	-	-	-	-	-	-	-	-	-
Boron	-	-	-	-	-	-	-	-	-	-	-	-
Cadmium	0.22	0.9	10	-	-	-	-	-	0.1	-	-	-
Chromium	30	150	150	-	-	-	-	-	15	-	-	-
Copper	25	280	280	-	-	-	-	-	18	-	-	-
Lead	20	120	460	-	-	-	-	-	10.8	-	-	-
Mercury	0.23	3	3	-	-	-	-	-	-	-	-	-
Nickel	7.6	-	-	-	-	-	-	-	-	-	-	-
Zinc	53	350	450	-	-	-	-	-	51	-	-	-
OCPs												
Total DDT	-	2	2	-	-	-	-	-	-	-	-	-
PAHs												
BAP Eq	-	6	35	-	0.015	0.38	0.015	0.011	0.012	-	-	-
Benzene	-	0.11	0.11	-	-	-	-	-	-	-	-	-
TPHs												
C7-C9	-	-	-	20	20	30	20	30	20	20	-	20
C10-C14	-	-	-	20	20	20	20	20	20	-	20	20
C15-C36	-	-	-	40	40	83	40	40	40	-	40	40
Total Hydrocarbons	-	-	-	80	90	84	90	80	80	-	80	80
Asbestos (S/Q)	-	-	-	ND	ND	ND	ND	ND	ND	ND	ND	ND
AF/FA [3]	ND	0.001	0.001	-	-	-	-	-	-	-	-	-
% ACM [3]	ND	0.01	0.01	-	-	-	-	-	-	-	-	-

Former Tokanui Psychiatric Hospital: Previous Consultant Results

Sample Collector	Background Concentrations [1]	Site Specific Remedial Standards - Rural Residential [2]	Site Specific Remedial Standards - Managed [2]	GHD	GHD	GHD	GHD	GHD	AECOM	AECOM	AECOM	AECOM
Sample Name				B68 TP08	B68 HA01	B71 TP01 0.10	B71 TP01 0.50	B71 TP02 0.10	B71 TP02	B73_A_S1_0.0	B73_A_S1_0.25	B73_A_S1_0.5
Sample Depth (m)				0.2	0.05	0.1	0.5	0.1	0.5	0	0.25	0.5
Lab Number				3213233_12	3362681_4	3299078.2	3299078.2	3299078.2	3299078_235	19-17902-422	19-17902-423	19-17902-424
Heavy Metals (mg/kg dry weight)	95% upper limit for background (mg/kg)											
Arsenic	6.8	9	70	3	76	6	5	6	5	5.05	5.81	4.71
Beryllium	-	-	-	-	-	-	-	-	-	0.85	1.32	1.16
Boron	-	-	-	-	-	< 20	< 20	< 20	-	2.92	2.55	1.9
Cadmium	0.22	0.9	10	0.1	0.4	0.16	0.1	0.26	0.1	0.236	0.129	0.0744
Chromium	30	150	150	4	46	10	12	11	26	10.4	10.9	11.2
Copper	25	280	280	3	151	24	32	35	62	33.1	24.6	22.1
Lead	20	120	460	3.8	17.5	23	18.4	27	22	283	97.4	35.7
Mercury	0.23	3	3	-	-	0.11	0.13	0.15	-	0.124	0.111	0.092
Nickel	7.6	-	-	-	-	6	7	6	-	5	6.04	6.1
Zinc	53	350	450	20	670	65	42	66	67	129	94.7	67.6
OCPs												
Total DDT	-	2	2	-	-	-	-	-	-	-	-	-
PAHs												
BAP Eq	-	6	35	-	1.3	0.5	-	0.6	-	-	-	-
Benzene	-	0.11	0.11	-	1.8	-	0.3	-	-	-	-	-
TPHs												
C7-C9	-	-	-	20	70	-	-	-	-	-	-	-
C10-C14	-	-	-	-	20	-	-	-	-	-	-	-
C15-C36	-	-	-	-	40	-	-	-	-	-	-	-
Total Hydrocarbons	-	-	-	-	90	-	-	-	-	-	-	-
Asbestos (S/Q)	-	-	-	ND	ND	ND	ND	ND	ND	ND	ND	ND
AF/FA [3]	ND	0.001	0.001	-	-	-	-	-	-	-	-	-
% ACM [3]	ND	0.01	0.01	-	-	-	-	-	-	-	-	-

Former Tokanui Psychiatric Hospital: Previous Consultant Results

Sample Collector	Background Concentrations [1]	Site Specific Remedial Standards - Rural Residential [2]	Site Specific Remedial Standards - Managed [2]	AECOM	AECOM	GHD	GHD	GHD	GHD	GHD	GHD	GHD
Sample Name				B73_B_S2_0.0	B73_C_S3_0.0	B73_C_S3_0.25	B73 TP01 0.1	B73 TP01 0.5	B74 HA01 0.1	B74 HA01 0.5	B74 HA02 0.1	B74 HA02 0.5
Sample Depth (m)				0	0	0.25	0.1	0.5	0.1	0.5	0.1	0.5
Lab Number				19-17902-425	19-17902-428	19-17902-429	3299078.3	3299078.3	3299078.3	3299078.3	3299078.3	3299078.3
Heavy Metals (mg/kg dry weight)	**95% upper limit for background (mg/kg)**											
Arsenic	6.8	9	70	5.33	5.09	5.48	7	7	6	4	4	5
Beryllium	-	-	-	0.731	0.791	0.743	-	-	-	-	-	-
Boron	-	-	-	3.06	2.43	2.19	< 20	< 20	< 20	< 20	< 20	< 20
Cadmium	0.22	0.9	10	0.171	0.187	0.133	0.4	**< 0.10**	**< 0.10**	**< 0.10**	**< 0.10**	**< 0.10**
Chromium	30	150	150	11.8	11.9	10	10	10	10	8	12	14
Copper	25	280	280	34.3	200	78.5	20	20	21	17	22	26
Lead	20	120	460	68.2	55.9	28.4	47	20	22	17.9	23	20
Mercury	0.23	3	3	0.0927	0.121	0.101	0.13	0.1	0.1	0.1	0.1	0.12
Nickel	7.6	-	-	5.52	6.02	5.39	4	4	6	5	9	7
Zinc	53	350	450	97.2	97	77.7	73	36	52	41	73	52
OCPs												
Total DDT	-	2	2	-	-	-	-	-	0.3	-	0.3	-
PAHs												
BAP Eq	-	6	35	-	-	0.017	0.015	-	-	-	-	-
Benzene	-	0.11	0.11	-	-	-	**0.3**	**0.3**	-	**0.3**	-	**0.3**
TPHs												
C7-C9	-	-	-	-	-	-	30	20	-	-	-	-
C10-C14	-	-	-	-	-	20	20	-	-	-	-	20
C15-C36	-	-	-	-	-	40	40	-	-	-	-	40
Total Hydrocarbons	-	-	-	-	-	90	80	-	-	-	-	90
Asbestos (S/Q)	-	-	-	ND	ND	ND	ND	ND	ND	ND	ND	ND
AF/FA [3]	ND	0.001	0.001	-	-	-	-	-	-	-	-	-
% ACM [3]	ND	0.01	0.01	-	-	-	-	-	-	-	-	-

Former Tokanui Psychiatric Hospital: Previous Consultant Results

Sample Collector	Background Concentrations [1]	Site Specific Remedial Standards - Rural Residential [2]	Site Specific Remedial Standards - Managed [2]	GHD	GHD	GHD	GHD	GHD	GHD	GHD	GHD	GHD
Sample Name				B74 TP01	B74 TP02	B74 TP02	B74 TP02	B74 TP02	B74 TP03	B74 TP03	B74 TP04	B74 TP04
Sample Depth (m)				0.1	0.1	0.5	1.9	2.1	0.1	2.2	0.1	0.7
Lab Number				3214115_26	3214115_28	3214115_29	3214115_31	3214115_32	3214115_33	3214115_35	3211645_24	3211645_25
Heavy Metals (mg/kg dry weight)	95% upper limit for background (mg/kg)											
Arsenic	6.8	9	70	-	-	-	-	-	-	-	-	-
Beryllium	-	-	-	-	-	-	-	-	-	-	-	-
Boron	-	-	-	-	-	-	-	-	-	-	-	-
Cadmium	0.22	0.9	10	-	-	-	-	-	-	-	-	-
Chromium	30	150	150	-	-	-	-	-	-	-	-	-
Copper	25	280	280	-	-	-	-	-	-	-	-	-
Lead	20	120	460	-	-	-	-	-	-	-	-	-
Mercury	0.23	3	3	-	-	-	-	-	-	-	-	-
Nickel	7.6	-	-	-	-	-	-	-	-	-	-	-
Zinc	53	350	450	-	-	-	-	-	-	-	-	-
OCPs												
Total DDT	-	2	2	-	-	-	0.3	0.3	-	0.3	-	-
PAHs												
BAP Eq	-	6	35	-	-	-	-	-	-	-	-	-
Benzene	-	0.11	0.11	**0.3**	**0.3**	-	**30**	**30**	**0.3**	**30**	**0.15**	**30**
TPHs												
C7-C9	-	-	-	30	20	30	20	20	30	20	20	20
C10-C14	-	-	-	20	20	40	50	20	40	20	40	40
C15-C36	-	-	-	49	40	90	100	40	90	41	90	90
Total Hydrocarbons	-	-	-	80	90	-	0.02	90	-	80	-	-
Asbestos (S/Q)	-	-	-	ND	ND	ND	ND	ND	ND	ND	ND	ND
AF/FA [3]	ND	0.001	0.001	-	-	-	-	-	-	-	-	-
% ACM [3]	ND	0.01	0.01	-	-	-	-	-	-	-	-	-

Former Tokanui Psychiatric Hospital: Previous Consultant Results

Sample Collector	Background Concentrations [1]	Site Specific Remedial Standards - Rural Residential [2]	Site Specific Remedial Standards - Managed [2]	GHD	GHD	GHD	GHD	GHD	GHD	GHD	GHD	GHD
Sample Name				B74 TP04	B74 TP06	B74 TP06	B74 TP07	B74 TP08	B74 TP08	B74 TP08	B74 TP09	B74 TP09
Sample Depth (m)				2.1	0.1	2.5	0.1	0.1	0.5	2.1	0.1	0.5
Lab Number				3211645_26	3211645_16	3211645_18	3211645_19	3299078_292	3299078_293	3299078_297	3299078_298	3299078_299
Heavy Metals (mg/kg dry weight)	**95% upper limit for background (mg/kg)**											
Arsenic	6.8	9	70	-	-	-	-	-	-	-	-	-
Beryllium	-	-	-	-	-	-	-	-	-	-	-	-
Boron	-	-	-	-	-	-	-	-	-	-	-	-
Cadmium	0.22	0.9	10	-	-	-	-	-	-	-	-	-
Chromium	30	150	150	-	-	-	-	-	-	-	-	-
Copper	25	280	280	-	-	-	-	-	-	-	-	-
Lead	20	120	460	-	-	-	-	-	-	-	-	-
Mercury	0.23	3	3	-	-	-	-	-	-	-	-	-
Nickel	7.6	-	-	-	-	-	-	-	-	-	-	-
Zinc	53	350	450	-	-	-	-	-	-	-	-	-
OCPs												
Total DDT	-	2	2	0.3	-	0.3	-	-	-	0.3	-	-
PAHs												
BAP Eq	-	6	35	-	-	-	-	-	-	-	-	-
Benzene	-	0.11	0.11	**30**	**0.3**	**20**	**0.3**	**0.3**	**0.3**	-	**0.3**	**0.4**
TPHs												
C7-C9	-	-	-	20	30	20	30	-	-	-	-	-
C10-C14	-	-	-	20	40	20	-	-	-	-	-	-
C15-C36	-	-	-	54	80	40	-	-	-	-	-	-
Total Hydrocarbons	-	-	-	90	-	90	-	-	-	-	-	-
Asbestos (S/Q)	-	-	-	ND	ND	ND	ND	ND	ND	ND	ND	ND
AF/FA [3]	ND	0.001	0.001	-	-	-	-	-	-	-	-	-
% ACM [3]	ND	0.01	0.01	-	-	-	-	-	-	-	-	-

Former Tokanui Psychiatric Hospital: Previous Consultant Results

Sample Collector	Background Concentrations [1]	Site Specific Remedial Standards - Rural Residential [2]	Site Specific Remedial Standards - Managed [2]	AECOM	AECOM	AECOM	AECOM	AECOM	AECOM	AECOM	AECOM	AECOM
Sample Name				B74 TP09	B74_A_S1_0.0	B74_A_S1_0.25	B74_A_S1	B74_B_S2_0.0	B74_B_S2	B74_B_S2	B74_C_S3_0.0	B74_C_S3
Sample Depth (m)				2	0	0.25	0.5	0	0.25	0.5	0	0.25
Lab Number				3299078_302	19-17902-431	19-17902-432	19-17902-433	19-17902-434	19-17902-435	19-17902-436	19-17902-437	19-17902-438
Heavy Metals (mg/kg dry weight)	**95% upper limit for background (mg/kg)**											
Arsenic	6.8	9	70	-	6.84	6.87	-	6.48	-	-	6.48	-
Beryllium	-	-	-	-	1.05	1.03	-	0.919	-	-	0.884	-
Boron	-	-	-	-	2.31	3.21	-	1.98	-	-	2.3	-
Cadmium	0.22	0.9	10	-	0.694	0.452	-	0.287	-	-	0.286	-
Chromium	30	150	150	-	12.3	12.3	-	11.2	-	-	11.1	-
Copper	25	280	280	-	48.2	47.3	-	33.5	-	-	28.6	-
Lead	20	120	460	-	60.6	64.7	-	36.4	-	-	27.8	-
Mercury	0.23	3	3	-	0.151	0.142	-	0.151	-	-	0.15	-
Nickel	7.6	-	-	-	6.89	6.79	-	5.68	-	-	5.7	-
Zinc	53	350	450	-	139	146	-	95.6	-	-	70.9	-
OCPs												
Total DDT	-	2	2	0.3	-	-	-	-	-	-	-	-
PAHs												
BAP Eq	-	6	35	-	-	-	-	-	-	-	-	-
Benzene	-	0.11	0.11	-	-	-	-	-	-	-	-	-
TPHs												
C7-C9	-	-	-	-	-	-	-	-	-	-	-	-
C10-C14	-	-	-	73	-	-	-	-	-	-	-	-
C15-C36	-	-	-	109	-	-	-	-	-	-	-	-
Total Hydrocarbons	-	-	-	-	-	-	-	-	-	-	-	-
Asbestos (S/Q)	-	-	-	ND	Asbestos (Unspecified) Detected	Asbestos (Unspecified) Detected	Asbestos (Unspecified) Detected	Asbestos (Unspecified) Detected	Asbestos (Unspecified) Detected	ND	Asbestos (Unspecified) Detected	ND
AF/FA [3]	ND	0.001	0.001	-	**0.008**	**0.039**	**0.008**	0.001	**0.011**	-	**0.002**	0.001
% ACM [3]	ND	0.01	0.01	-	0.001	**0.012**	0.001	0.001	0.001	-	0.001	0.001

Former Tokanui Psychiatric Hospital: Previous Consultant Results

Sample Collector	Background Concentrations [1]	Site Specific Remedial Standards - Rural Residential [2]	Site Specific Remedial Standards - Managed [2]	AECOM	AECOM	AECOM	AECOM	AECOM	AECOM	AECOM	AECOM	AECOM
Sample Name				B74_C_S3	B74_A_S4_0.0	B74_A_S4_0.25	B74_A_S4	B74_B_S5_0.0	B74_C_S6_0.0	B74_C_S6_0.25	B74_A_S7_0.0	B74_A_S7_0.25
Sample Depth (m)				0.5	0	0.25	0.5	0	0	0.25	0	0.25
Lab Number				19-17902-439	19-17902-440	19-17902-441	19-17902-442	19-17902-443	19-17902-446	19-21608-12	19-17902-449	19-17902-450
Heavy Metals (mg/kg dry weight)	**95% upper limit for background (mg/kg)**											
Arsenic	6.8	9	70	-	9.63	6.06	-	7.97	5.82	6	5.84	5.61
Beryllium	-	-	-	-	1.14	1.17	-	0.974	0.937	0.89	0.972	0.973
Boron	-	-	-	-	3.99	2.4	-	6.4	4.05	4.9	7.27	4.02
Cadmium	0.22	0.9	10	-	0.426	0.245	-	0.509	0.303	0.21	0.374	0.295
Chromium	30	150	150	-	12.6	12.7	-	12	12	8.5	11.7	11.2
Copper	25	280	280	-	58.4	40.4	-	35.2	43.2	16.8	127	58.3
Lead	20	120	460	-	104	61.6	-	55.9	77.3	19.5	230	81.1
Mercury	0.23	3	3	-	0.121	0.109	-	0.129	0.119	0.14	0.18	0.155
Nickel	7.6	-	-	-	8.69	7.97	-	8.5	6.45	3.6	6.55	5.55
Zinc	53	350	450	-	169	120	-	104	90.5	51.7	206	93.7
OCPs												
Total DDT	-	2	2	-	-	-	-	-	-	-	-	-
PAHs												
BAP Eq	-	6	35	-	-	-	-	-	-	-	-	-
Benzene	-	0.11	0.11	-	-	-	-	-	-	-	-	-
TPHs												
C7-C9	-	-	-	-	-	-	-	-	-	-	-	-
C10-C14	-	-	-	-	-	-	-	-	-	-	-	-
C15-C36	-	-	-	-	-	-	-	-	-	-	-	-
Total Hydrocarbons	-	-	-	-	-	-	-	-	-	-	-	-
Asbestos (S/Q)	-	-	-	ND	Asbestos (Unspecified) Detected	Asbestos (Unspecified) Detected	Asbestos (Unspecified) Detected	ND	ND	Asbestos (Unspecified) Detected	Asbestos (Unspecified) Detected	ND
AF/FA [3]	ND	0.001	0.001	0.001	**0.003**	**0.006**	-	-	-	**0.011**	**0.011**	-
% ACM [3]	ND	0.01	0.01	0.001	0.001	0.001	-	-	-	0.001	0.001	-

Former Tokanui Psychiatric Hospital: Previous Consultant Results

Sample Collector	Background Concentrations [1]	Site Specific Remedial Standards - Rural Residential [2]	Site Specific Remedial Standards - Managed [2]	AECOM	AECOM	AECOM	AECOM	AECOM	AECOM	AECOM	AECOM	AECOM
Sample Name				B74_A_S7_0.5	B74_B_S8_0.0	B74_C_S9_0.0	B74_A_S10_0.0	B74_B_S11_0.0	B74_C_S12_0.0	B74_A_S13_0.0	B74_A_S13_0.25	B74_A_S13
Sample Depth (m)				0.5	0	0	0	0	0	0	0	0.5
Lab Number				19-21608-13	19-17902-452	19-17902-455	19-17902-458	19-17902-461	19-17902-464	19-17902-467	19-17902-468	19-17902-469
Heavy Metals (mg/kg dry weight)	**95% upper limit for background (mg/kg)**											
Arsenic	6.8	9	70	5	4.73	4.64	6.63	5.78	5.61	8.6	6.12	-
Beryllium	-	-	-	0.87	1.07	0.866	1.55	0.987	1.71	1.57	1.22	-
Boron	-	-	-	4	3.55	2.94	5.75	3.54	4.35	4.1	2.8	-
Cadmium	0.22	0.9	10	0.23	0.346	0.193	0.348	0.209	0.249	0.676	0.298	-
Chromium	30	150	150	10	11.2	9.91	13.4	13	13.5	15.6	16	-
Copper	25	280	280	38.8	36.2	23.9	56.2	32	50	123	56.2	-
Lead	20	120	460	47.6	47.5	29.2	49.9	29.1	38.6	215	62.3	-
Mercury	0.23	3	3	0.14	0.182	0.145	0.208	0.121	0.212	0.28	0.177	-
Nickel	7.6	-	-	5.1	6.92	5.28	8.32	7.29	8.07	13.7	9.14	-
Zinc	53	350	450	71.3	134	64.4	206	192	134	345	140	-
OCPs												
Total DDT	-	2	2	-	-	-	-	-	-	-	-	-
PAHs												
BAP Eq	-	6	35	-	-	-	-	-	-	-	-	-
Benzene	-	0.11	0.11	-	-	-	-	-	-	-	-	-
TPHs												
C7-C9	-	-	-	-	-	-	-	-	-	-	-	-
C10-C14	-	-	-	-	-	-	-	-	-	-	-	-
C15-C36	-	-	-	-	-	-	-	-	-	-	-	-
Total Hydrocarbons	-	-	-	-	-	-	-	-	-	-	-	-
Asbestos (S/Q)	-	-	-	ND	ND	ND	ND	ND	Asbestos (Unspecified) Detected	Asbestos (Unspecified) Detected	Asbestos (Unspecified) Detected	ND
AF/FA [3]	ND	0.001	0.001	-	-	-	-	-	**0.002**	**0.002**	**0.004**	-
% ACM [3]	ND	0.01	0.01	-	-	-	-	-	0.001	0.001	0.001	-

Former Tokanui Psychiatric Hospital: Previous Consultant Results

Sample Collector	Background Concentrations [1]	Site Specific Remedial Standards - Rural Residential [2]	Site Specific Remedial Standards - Managed [2]	AECOM	AECOM	AECOM	AECOM	AECOM	AECOM	AECOM	AECOM	AECOM
Sample Name				B74_B_S14_0.0	B74_B_S14_0.25	B74_C_S15_0.0	B74_A_S16_0.0	B74_A_S16_0.25	B74_A_S16_0.5	B74_B_S17_0.0	B74_C_S18_0.0	B74_D_S19_0.0
Sample Depth (m)				0	0.25	0	0	0.25	0.5	0	0	0
Lab Number				19-17902-470	19-21608-14	19-17902-473	19-17902-476	19-17902-477	19-17902-478	19-17902-479	19-17902-482	19-22250-35
Heavy Metals (mg/kg dry weight)	**95% upper limit for background (mg/kg)**											
Arsenic	6.8	9	70	6.33	5	6.11	8.64	8.81	7.01	6.23	6.93	3.88
Beryllium	-	-	-	1.69	1	1.68	1.07	1.17	1.08	1.13	1.11	0.518
Boron	-	-	-	3.54	3	3.79	4.22	1.9	2.21	3	3.44	6.26
Cadmium	0.22	0.9	10	0.353	0.22	0.427	0.391	0.257	0.211	0.34	0.34	0.345
Chromium	30	150	150	14	12.6	13.3	17.8	17.1	17.7	15.2	12.1	6.69
Copper	25	280	280	62	34	59.9	55.1	39.6	56.2	40.1	27.1	41
Lead	20	120	460	86	35.5	56.1	**758**	270	126	69.1	39.4	25.3
Mercury	0.23	3	3	0.299	0.25	0.226	0.204	0.151	0.203	0.2	0.16	0.132
Nickel	7.6	-	-	9.09	6.76	7.78	8.03	8.56	11.3	7.41	6.12	3.62
Zinc	53	350	450	236	82.1	185	**3200**	**1400**	**1540**	262	106	41.8
OCPs												
Total DDT	-	2	2	-	-	-	-	-	-	-	-	-
PAHs												
BAP Eq	-	6	35	-	-	-	-	-	-	-	-	-
Benzene	-	0.11	0.11	-	-	-	-	-	-	-	-	-
TPHs												
C7-C9	-	-	-	-	-	-	-	-	-	-	-	-
C10-C14	-	-	-	-	-	-	-	-	-	-	-	-
C15-C36	-	-	-	-	-	-	-	-	-	-	-	-
Total Hydrocarbons	-	-	-	-	-	-	-	-	-	-	-	-
Asbestos (S/Q)	-	-	-	ND	ND	ND	ND	ND	ND	ND	ND	ND
AF/FA [3]	ND	0.001	0.001	-	-	-	-	-	-	-	-	-
% ACM [3]	ND	0.01	0.01	-	-	-	-	-	-	-	-	-

Former Tokanui Psychiatric Hospital: Previous Consultant Results

Sample Collector	Background Concentrations [1]	Site Specific Remedial Standards - Rural Residential [2]	Site Specific Remedial Standards - Managed [2]	AECOM	AECOM	AECOM	AECOM	AECOM	AECOM	AECOM	AECOM	AECOM
Sample Name				B74_D_S20	B74_E_S21	TP1 0.0	TP1 0.5	TP1	TP2 0.0	TP2 0.5	TP3 0.0	TP3 0.5
Sample Depth (m)				0	0	0	0.5	2	0	0.5	0	0.5
Lab Number				19-22250-37	19-22250-39	19-17902-28	19-17902-29	19-17902-32	19-17902-34	19-17902-35	19-17902-39	19-17902-40
Heavy Metals (mg/kg dry weight)	**95% upper limit for background (mg/kg)**											
Arsenic	6.8	9	70	-	-	6.11	5.16	-	8.24	7.29	8.62	4.99
Beryllium	-	-	-	-	-	1.05	0.75	-	0.86	0.993	1.09	1.09
Boron	-	-	-	-	-	2.23	2.31	-	4.41	1.7	1.86	1.66
Cadmium	0.22	0.9	10	-	-	0.303	0.0558	-	0.102	0.0371	0.0394	0.0433
Chromium	30	150	150	-	-	14.2	9.81	-	13.8	9.61	20.7	24.1
Copper	25	280	280	-	-	40.9	13.7	-	41.5	13.5	58.2	106
Lead	20	120	460	-	-	48.8	16.1	-	27.4	17.8	20	18.4
Mercury	0.23	3	3	-	-	2.65	0.273	-	0.335	0.0832	0.65	0.231
Nickel	7.6	-	-	-	-	11.4	4.31	-	12.8	4.28	12.2	16.5
Zinc	53	350	450	-	-	97.2	47.5	-	89.1	57.8	65.1	102
OCPs												
Total DDT	-	2	2	-	-	-	-	0.05	-	-	-	-
PAHs												
BAP Eq	-	6	35	-	-	-	-	-	-	-	-	-
Benzene	-	0.11	0.11	-	-	-	0.05	**10**	-	-	-	0.05
TPHs												
C7-C9	-	-	-	-	-	-	10	15	-	-	-	10
C10-C14	-	-	-	-	-	-	-	-	-	15	-	-
C15-C36	-	-	-	-	-	-	-	-	-	25	-	-
Total Hydrocarbons	-	-	-	-	-	-	-	-	-	50	-	-
Asbestos (S/Q)	-	-	-	ND	ND	ND	ND	ND	ND	ND	ND	ND
AF/FA [3]	ND	0.001	0.001	-	-	-	-	-	-	-	-	-
% ACM [3]	ND	0.01	0.01	-	-	-	-	-	-	-	-	-

Former Tokanui Psychiatric Hospital: Previous Consultant Results

Sample Collector	Background Concentrations [1]	Site Specific Remedial Standards - Rural Residential [2]	Site Specific Remedial Standards - Managed [2]	AECOM	AECOM	AECOM	AECOM	AECOM	AECOM	AECOM	AECOM	AECOM
Sample Name				TP4 0.0	TP5 0.0	TP5 0.5	TP6 0.0	TP7 0.0	TP8 0.0	TP9 0.0	TP10 0.0	TP11 0.0
Sample Depth (m)				0	0	0.5	0	0	0	0	0	0
Lab Number				19-17902-45	19-17902-50	19-17902-51	19-17902-55	19-17902-60	19-17902-65	19-17902-70	19-17902-76	19-17902-81
Heavy Metals (mg/kg dry weight)	**95% upper limit for background (mg/kg)**											
Arsenic	6.8	9	70	2.81	14.8	4.5	3.99	7.16	9.89	4.5	6.62	6.45
Beryllium	-	-	-	1.12	0.927	0.651	1.75	0.786	0.827	0.937	0.675	1.03
Boron	-	-	-	1.49	2.5	1.46	1.78	3.48	71.4	2.61	8.01	59.2
Cadmium	0.22	0.9	10	0.0736	0.169	0.0196	0.126	0.104	0.0819	0.216	0.142	0.0877
Chromium	30	150	150	23.2	16.8	8.96	145	20.8	12	10.2	14.2	18.2
Copper	25	280	280	20.3	35.2	13	70.1	22.5	24.3	25.1	55.8	22.1
Lead	20	120	460	14.1	30.2	13	9.01	17.5	25.6	24.2	44.2	17.2
Mercury	0.23	3	3	0.0563	0.148	0.0941	0.0475	0.092	0.12	0.12	0.108	0.119
Nickel	7.6	-	-	18.2	6.98	4.58	225	23.5	6.9	5.42	13.7	15.3
Zinc	53	350	450	65.4	75.1	27	108	73.9	62.8	79	90.6	74.9
OCPs												
Total DDT	-	2	2	-	-	-	-	-	-	-	-	-
PAHs												
BAP Eq	-	6	35	-	-	-	-	-	-	-	-	-
Benzene	-	0.11	0.11	-	-	-	-	-	-	-	-	-
TPHs												
C7-C9	-	-	-	-	-	-	-	-	-	-	-	-
C10-C14	-	-	-	-	-	-	-	-	-	-	-	-
C15-C36	-	-	-	-	-	-	-	-	-	-	-	-
Total Hydrocarbons	-	-	-	-	-	-	-	-	-	-	-	-
Asbestos (S/Q)	-	-	-	ND	ND	ND	ND	ND	ND	ND	ND	ND
AF/FA [3]	ND	0.001	0.001	-	-	-	-	-	-	-	-	-
% ACM [3]	ND	0.01	0.01	-	-	-	-	-	-	-	-	-

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Sample Collector	Background Concentrations [1]	Site Specific Remedial Standards - Rural Residential [2]	Site Specific Remedial Standards - Managed [2]	AECOM	AECOM	AECOM	AECOM	AECOM	AECOM	AECOM	AECOM	AECOM
Sample Name				TP11 1.0	TP12 0.0	TP12 0.5	TPA 0.0	TPB	TPC 1.5	TPD	TPE	TPZ 0.0
Sample Depth (m)				1	0	0.5	0	2	1.5	1	0.5	0
Lab Number				19-17902-83	19-17902-86	19-17902-87	19-17902-195	19-17902-194	19-17902-188	19-17902-182	19-17902-176	19-17902-169
Heavy Metals (mg/kg dry weight)	**95% upper limit for background (mg/kg)**											
Arsenic	6.8	9	70	0.911	5.73	6.03	3.33	3.31	3.14	4.92	3.31	5.6
Beryllium	-	-	-	0.396	1.04	1.11	0.976	-	0.401	1.11	0.672	1.18
Boron	-	-	-	30.3	7.9	6.05	1.6	-	1.25	1.25	1.25	3.8
Cadmium	0.22	0.9	10	0.0152	0.254	0.0818	0.162	0.0507	0.0274	0.0415	0.0203	0.147
Chromium	30	150	150	10.5	13.7	22.8	7.73	9.61	7.08	14.8	5.94	20.9
Copper	25	280	280	23.9	34.3	35.9	18	14.2	9.56	35.8	5.07	50
Lead	20	120	460	23.4	49.8	17	24.3	18.6	28.3	17.5	17.2	33.9
Mercury	0.23	3	3	0.0629	0.158	0.12	0.178	-	0.0679	0.147	0.0543	0.18
Nickel	7.6	-	-	6.54	9.85	7.38	4.37	-	3.11	7.76	1.69	12.5
Zinc	53	350	450	36.8	99.3	58.1	61	51.6	35.2	43.3	29.7	98.8
OCPs												
Total DDT	-	2	2	-	-	-	-	-	-	-	-	-
PAHs												
BAP Eq	-	6	35	-	-	-	-	-	-	-	-	-
Benzene	-	0.11	0.11	-	-	-	-	-	-	-	-	0.05
TPHs												
C7-C9	-	-	-	-	-	-	-	-	-	-	-	10
C10-C14	-	-	-	-	-	-	15	-	40	-	15	-
C15-C36	-	-	-	-	-	-	108	-	90	-	25	-
Total Hydrocarbons	-	-	-	-	-	-	-	-		-	-	-
Asbestos (S/Q)	-	-	-	ND	ND	Asbestos (Unspecified) Detected	ND	ND	ND	ND	ND	Asbestos Detected
AF/FA [3]	ND	0.001	0.001	-	-	0.001	-	-	-	-	-	**0.003**
% ACM [3]	ND	0.01	0.01	-	-	0.001	-	-	-	-	-	0.001

Former Tokanui Psychiatric Hospital: Previous Consultant Results

Sample Collector	Background Concentrations [1]	Site Specific Remedial Standards - Rural Residential [2]	Site Specific Remedial Standards - Managed [2]	AECOM	AECOM	AECOM	AECOM	AECOM	AECOM	AECOM	AECOM	AECOM
Sample Name				TPZ 0.5	WG_S1_0.0	WG_S1_0.25	WG_S2_0.0	WG_S2_0.25	WG_S3_0.0	WG_S3_0.25	WG_S4_0.0	WG_S4_0.25
Sample Depth (m)				0.5	0	0.25	0	0.25	0	0.25	0	0.25
Lab Number				19-17902-170	19-17902-591	19-17902-592	19-17902-594	19-17902-595	19-17902-597	19-17902-598	19-17902-599	19-17902-600
Heavy Metals (mg/kg dry weight)	**95% upper limit for background (mg/kg)**											
Arsenic	6.8	9	70	5.38	6.67	4.66	5.9	6.9	6.34	5.51	5.36	5.63
Beryllium	-	-	-	1.48	0.559	1.7	0.544	0.899	0.768	1.04	0.771	0.775
Boron	-	-	-	4.79	2.11	1.66	3.52	3.47	2.2	2.27	1.36	1.88
Cadmium	0.22	0.9	10	0.0553	0.236	0.118	0.129	0.0896	0.187	0.148	0.11	0.0617
Chromium	30	150	150	29.2	13	23.2	10.7	22.2	18.3	22.6	13.1	17.1
Copper	25	280	280	66.8	32.9	99.7	19.9	39	49.2	58.1	30.3	41.4
Lead	20	120	460	17.2	53.4	23.2	24.1	67.8	34.8	39.1	33	27.7
Mercury	0.23	3	3	0.183	0.323	0.295	0.12	0.13	0.397	0.345	0.131	0.128
Nickel	7.6	-	-	15.2	11.4	14.5	5.31	11.7	12.4	14.1	6.86	11
Zinc	53	350	450	91.8	95.5	85.8	64.3	80.3	93.2	97.3	58.5	69.2
OCPs												
Total DDT	-	2	2	-	-	-	-	-	-	-	-	-
PAHs												
BAP Eq	-	6	35	-	-	-	-	-	-	-	-	-
Benzene	-	0.11	0.11	0.05	-	-	-	-	-	-	-	-
TPHs												
C7-C9	-	-	-	10	-	-	-	-	-	-	-	-
C10-C14	-	-	-	-	-	-	-	-	-	-	-	-
C15-C36	-	-	-	-	-	-	-	-	-	-	-	-
Total Hydrocarbons	-	-	-	-	-	-	-	-	-	-	-	-
Asbestos (S/Q)	-	-	-	ND	ND	ND	ND	ND	ND	ND	ND	ND
AF/FA [3]	ND	0.001	0.001	-	-	-	-	-	-	-	-	-
% ACM [3]	ND	0.01	0.01	-	-	-	-	-	-	-	-	-

Former Tokanui Psychiatric Hospital: Previous Consultant Results

Sample Collector	Background Concentrations [1]	Site Specific Remedial Standards - Rural Residential [2]	Site Specific Remedial Standards - Managed [2]	AECOM	AECOM	AECOM	AECOM	AECOM	AECOM	AECOM	AECOM	AECOM
Sample Name				WG_S5_0.0	WG_S5_0.25	S1_A_S1_0.0	S1_A_S1_0.25	S1_A_S1_0.5	S1_B_S2_0.0	S1_B_S2_0.25	S1_C_S3_0.0	S1_C_S3_0.25
Sample Depth (m)				0	0.25	0	0.25	0.5	0	0.25	0	0.25
Lab Number				19-17902-602	19-17902-603	19-17902-605	19-17902-606	19-17902-607	19-17902-608	19-17902-609	19-17902-611	19-21608-16
Heavy Metals (mg/kg dry weight)	95% upper limit for background (mg/kg)											
Arsenic	6.8	9	70	8.95	6.9	11	9.08	20.8	8.48	5.26	7.15	4.8
Beryllium	-	-	-	0.542	1.09	0.9	1.02	0.961	1.34	1.01	1.41	0.84
Boron	-	-	-	2.09	2.5	3.58	4.5	2.62	2.67	1.62	3.14	4
Cadmium	0.22	0.9	10	0.342	0.148	0.345	0.214	0.388	0.549	0.203	0.584	0.17
Chromium	30	150	150	16.9	17.9	15.4	13.9	13.6	15.2	12.4	15.8	11
Copper	25	280	280	37.1	38.3	57.7	107	256	52.8	30.1	51.7	24.6
Lead	20	120	460	273	43.7	242	143	**1490**	116	50.1	123	47
Mercury	0.23	3	3	0.304	0.193	0.133	0.135	0.204	0.193	0.119	0.221	0.15
Nickel	7.6	-	-	14.2	10.7	7.14	5.98	5.84	7.04	5.73	8.39	4.9
Zinc	53	350	450	141	97.3	249	163	209	166	99	232	92.7
OCPs												
Total DDT	-	2	2	-	-	-	-	-	-	-	-	-
PAHs												
BAP Eq	-	6	35	-	-	-	-	-	-	-	-	-
Benzene	-	0.11	0.11	-	-	-	-	-	-	-	-	-
TPHs												
C7-C9	-	-	-	-	-	-	-	-	-	-	-	-
C10-C14	-	-	-	-	-	-	-	-	-	-	-	-
C15-C36	-	-	-	-	-	-	-	-	-	-	-	-
Total Hydrocarbons	-	-	-	-	-	-	-	-	-	-	-	-
Asbestos (S/Q)	-	-	-	ND	ND	Asbestos (Unspecified) Detected	ND	ND	ND	ND	ND	ND
AF/FA [3]	ND	0.001	0.001	-	-	**0.003**	-	-	-	-	-	-
% ACM [3]	ND	0.01	0.01	-	-	0.001	-	-	-	-	-	-

Former Tokanui Psychiatric Hospital: Previous Consultant Results

Sample Collector	Background Concentrations [1]	Site Specific Remedial Standards - Rural Residential [2]	Site Specific Remedial Standards - Managed [2]	AECOM	AECOM	AECOM	AECOM	AECOM	AECOM	AECOM	AECOM	AECOM
Sample Name				S1_A_S4_0.0	S1_A_S4_0.25	S1_B_S5_0.0	S1_C_S6_0.0	S1_D_S7_0.0	FA_S1_0.0	FA_S2_0.0	FA_S3_0.0	FA_S4_0.0
Sample Depth (m)				0	0.25	0	0	0	0	0	0	0
Lab Number				19-17902-614	19-17902-615	19-17902-617	19-17902-620	19-22250-70	19-22250-25	19-22250-27	19-22250-29	19-22250-31
Heavy Metals (mg/kg dry weight)	**95% upper limit for background (mg/kg)**											
Arsenic	6.8	9	70	20.5	4.35	10.2	7.18	7.71	4.11	4.55	4.07	4.49
Beryllium	-	-	-	1	0.957	0.969	1.09	0.946	0.83	0.966	1.22	1.06
Boron	-	-	-	4.5	3.04	4.74	4.8	3.75	5.48	8.67	7.56	10.5
Cadmium	0.22	0.9	10	0.4	0.103	0.306	0.436	0.37	0.153	0.236	0.23	0.243
Chromium	30	150	150	16.4	11.7	12.8	11.8	14	9.09	7.38	8.35	8.85
Copper	25	280	280	40.2	20.1	36	47.4	80.2	28.8	109	24.8	34.5
Lead	20	120	460	34.9	24.4	31.2	31.3	53.7	57.4	106	39.7	119
Mercury	0.23	3	3	0.208	0.136	0.157	0.216	0.14	0.097	0.0711	0.124	0.107
Nickel	7.6	-	-	6.04	5.55	5.5	6.06	6.78	6.77	8.55	5.27	8
Zinc	53	350	450	204	62.4	154	157	237	96.6	122	112	145
OCPs												
Total DDT	-	2	2	-	-	-	-	-	-	-	-	-
PAHs												
BAP Eq	-	6	35	-	-	-	-	-	-	-	-	-
Benzene	-	0.11	0.11	-	-	-	-	-	-	-	-	-
TPHs												
C7-C9	-	-	-	-	-	-	-	-	-	-	-	-
C10-C14	-	-	-	-	-	-	-	20	-	-	-	-
C15-C36	-	-	-	-	-	-	-	40	-	-	-	-
Total Hydrocarbons	-	-	-	-	-	-	-	80	-	-	-	-
Asbestos (S/Q)	-	-	-	ND	ND	ND	ND	ND	ND	ND	ND	ND
AF/FA [3]	ND	0.001	0.001	-	-	-	-	-	-	-	-	-
% ACM [3]	ND	0.01	0.01	-	-	-	-	-	-	-	-	-

Former Tokanui Psychiatric Hospital: Previous Consultant Results

Sample Collector	Background Concentrations [1]	Site Specific Remedial Standards - Rural Residential [2]	Site Specific Remedial Standards - Managed [2]	AECOM	GHD	GHD	GHD	GHD	GHD	GHD	GHD	GHD
Sample Name				FA_S5_0.0	BWL TP 01 0.10	BWL TP 01 0.50	BWL TP 02 0.10	BWL TP 02 0.50	BWL TP 03 0.10	BWL TP 03 0.50	BWL TP 04 0.10	BWL TP 04 0.50
Sample Depth (m)				0	0.1	0.5	0.1	0.5	0.1	0.5	0.1	0.5
Lab Number				19-22250-33	3299078.4	3299078.4	3299078.4	3299078.4	3299078.4	3299078.4	3299078.5	3299078.5
Heavy Metals (mg/kg dry weight)	**95% upper limit for background (mg/kg)**											
Arsenic	6.8	9	70	4.52	4	2	4	2	4	3	5	3
Beryllium	-	-	-	0.686	-	-	-	-	-	-	-	-
Boron	-	-	-	8.56	< 20	< 20	< 20	< 20	< 20	< 20	< 20	< 20
Cadmium	0.22	0.9	10	0.216	0.14	0.1	0.17	0.1	0.2	0.1	0.33	0.1
Chromium	30	150	150	7.85	8	6	8	5	9	7	9	6
Copper	25	280	280	25.5	17	10	16	5	21	13	36	6
Lead	20	120	460	42	34	15	33	17.1	30	18.2	82	21
Mercury	0.23	3	3	0.101	0.1	0.1	0.12	0.1	0.15	0.1	0.18	0.1
Nickel	7.6	-	-	4.95	4	3	5	3	5	4	5	3
Zinc	53	350	450	75.1	74	51	77	21	72	39	103	28
OCPs												
Total DDT	-	2	2	-	-	-	-	-	-	-	-	-
PAHs												
BAP Eq	-	6	35	0.015	-	-	-	-	-	-	-	-
Benzene	-	0.11	0.11	-	-	-	-	-	-	-	-	-
TPHs												
C7-C9	-	-	-	-	-	-	-	-	-	-	-	-
C10-C14	-	-	-	-	-	-	-	-	-	-	-	-
C15-C36	-	-	-	-	-	-	-	-	-	-	-	-
Total Hydrocarbons	-	-	-	-	-	-	-	-	-	-	-	-
Asbestos (S/Q)	-	-	-	ND	ND	ND	ND	ND	ND	ND	ND	ND
AF/FA [3]	ND	0.001	0.001	-	-	-	-	-	-	-	-	-
% ACM [3]	ND	0.01	0.01	-	-	-	-	-	-	-	-	-

Former Tokanui Psychiatric Hospital: Previous Consultant Results

Sample Collector	Background Concentrations [1]	Site Specific Remedial Standards - Rural Residential [2]	Site Specific Remedial Standards - Managed [2]	GHD	GHD	GHD	GHD	GHD	GHD	GHD	GHD	GHD
Sample Name				BWL TP 05 0.10	BWL TP 05 0.50	BWL TP 06 0.10	BWL TP 06 0.50	HT COMPC3 0.10	HT COMPE2 0.10	HT COMPE4 0.10	HT TP25	HT TP25
Sample Depth (m)				0.1	0.5	0.1	0.5	0.1	0.1	0.1	0.2	0.5
Lab Number				3299078.5	3299078.5	3299078.5	3299078.5	3299078.8	3299078.1	3299078.1	3209697_28	3209697_29
Heavy Metals (mg/kg dry weight)	**95% upper limit for background (mg/kg)**											
Arsenic	6.8	9	70	3	3	6	3	5	9	5	11	-
Beryllium	-	-	-	-	-	-	-	-	-	-	-	-
Boron	-	-	-	< 20	< 20	< 20	< 20	< 20	23	47	-	-
Cadmium	0.22	0.9	10	0.1	0.1	0.2	0.1	0.3	0.36	0.13	0.22	-
Chromium	30	150	150	5	6	9	6	8	10	11	11	-
Copper	25	280	280	9	10	19	6	30	42	29	109	-
Lead	20	120	460	15.6	17.2	18.6	16.3	30	36	22	51	-
Mercury	0.23	3	3	0.1	0.1	0.15	0.1	0.43	0.21	0.1	-	-
Nickel	7.6	-	-	2	3	5	3	4	5	27	-	-
Zinc	53	350	450	36	45	74	23	119	175	72	97	-
OCPs												
Total DDT	-	2	2	-	-	-	-	0.09	0.08	0.07	0.08	-
PAHs												
BAP Eq	-	6	35	-	-	-	-	-	-	-	-	-
Benzene	-	0.11	0.11	-	-	-	-	-	-	-	-	-
TPHs												
C7-C9	-	-	-	-	-	-	-	-	-	-	20	-
C10-C14	-	-	-	-	-	-	-	-	-	20	20	-
C15-C36	-	-	-	-	-	-	-	-	-	40	40	-
Total Hydrocarbons	-	-	-	-	-	-	-	-	-	80	80	-
Asbestos (S/Q)	-	-	-	ND	ND	ND	ND	ND	ND	ND	ND	ND
AF/FA [3]	ND	0.001	0.001	-	-	-	-	-	-	-	-	-
% ACM [3]	ND	0.01	0.01	-	-	-	-	-	-	-	-	-

Former Tokanui Psychiatric Hospital: Previous Consultant Results

Sample Collector	Background Concentrations [1]	Site Specific Remedial Standards - Rural Residential [2]	Site Specific Remedial Standards - Managed [2]	GHD	GHD	GHD	GHD	GHD	GHD	GHD	GHD	GHD
Sample Name				HT TP25	HT TP27	HT TP27	HT TP27	HT TP28	HT TP 29 0.10	HT TP 29 0.50	HT TP 30 0.10	HT TP 30 0.50
Sample Depth (m)				1.2	0.1	0.5	0.7	0.1	0.1	0.5	0.1	0.5
Lab Number				3209697_30	3209697_31	3209697_32	3209697_33	3209697_35	3299078.1	3299078.1	3299078.1	3299078.1
Heavy Metals (mg/kg dry weight)	95% upper limit for background (mg/kg)											
Arsenic	6.8	9	70	2	7	3	3	4	7	3	18	4
Beryllium	-	-	-	-	-	-	-	-	-	-	-	-
Boron	-	-	-	-	-	-	-	-	< 20	< 20	79	< 20
Cadmium	0.22	0.9	10	0.1	0.14	0.1	0.1	0.1	0.34	0.1	0.39	0.1
Chromium	30	150	150	7	13	8	6	9	9	9	9	9
Copper	25	280	280	10	28	9	9	27	32	8	39	13
Lead	20	120	460	19.3	83	18.3	22	43	159	19.8	145	21
Mercury	0.23	3	3	-	-	-	-	-	0.14	0.1	0.12	0.1
Nickel	7.6	-	-	-	-	-	-	-	7	4	16	4
Zinc	53	350	450	28	81	31	44	50	148	33	121	38
OCPs												
Total DDT	-	2	2	-	0.07	-	-	0.08	-	-	-	-
PAHs												
BAP Eq	-	6	35	-	-	0.5	-	-	0.5	-	0.5	0.5
Benzene	-	0.11	0.11	-	-	-	-	-	-	-	-	-
TPHs												
C7-C9	-	-	-	-	20	-	-	20	-	-	-	-
C10-C14	-	-	-	40	20	-	40	-	-	-	-	-
C15-C36	-	-	-	90	40	-	80	-	-	-	-	-
Total Hydrocarbons	-	-	-	0.048	80	-	0.52	-	-	-	-	-
Asbestos (S/Q)	-	-	-	ND	ND	ND	ND	ND	ND	ND	ND	ND
AF/FA [3]	ND	0.001	0.001	-	-	-	-	-	-	-	-	-
% ACM [3]	ND	0.01	0.01	-	-	-	-	-	-	-	-	-

Former Tokanui Psychiatric Hospital: Previous Consultant Results

Sample Collector	Background Concentrations [1]	Site Specific Remedial Standards - Rural Residential [2]	Site Specific Remedial Standards - Managed [2]	GHD	GHD	GHD	GHD	GHD	GHD	GHD	GHD	GHD
Sample Name				HT TP 31 0.10	HT TP 31 0.50	WWTP TP01	WWTP TP01	WWTP TP02	WWTP TP02	WWTP TP03	WWTP TP03	WWTP TP04
Sample Depth (m)				0.1	0.5	0.1	0.5	0.1	0.5	0.1	0.5	0.1
Lab Number				3299078.1	3299078.1	3299078.2	3299078.2	3299080_36	3299080_37	3299080_39	3299080_40	3299080_42
Heavy Metals (mg/kg dry weight)	**95% upper limit for background (mg/kg)**											
Arsenic	6.8	9	70	7	5	3	2	3	2	5	2	7
Beryllium	-	-	-	-	-	-	-	-	-	-	-	-
Boron	-	-	-	25	< 20	< 20	< 20	-	-	-	-	-
Cadmium	0.22	0.9	10	0.19	0.22	0.12	0.1	0.13	0.1	0.22	0.1	0.1
Chromium	30	150	150	11	8	7	5	8	5	8	7	11
Copper	25	280	280	26	26	14	14	15	14	26	14	14
Lead	20	120	460	83	38	17.5	16.2	19.8	15.1	114	17.6	15.6
Mercury	0.23	3	3	0.1	0.1	0.1	0.1	-				
Nickel	7.6	-	-	11	6	4	4	-				
Zinc	53	350	450	123	88	59	38	57	44	103	39	78
OCPs												
Total DDT	-	2	2	-	-	-	-	-	-	-	-	-
PAHs												
BAP Eq	-	6	35	-	-	0.5	0.5	0.5	0.5	0.5	0.5	-
Benzene	-	0.11	0.11	-	-	**0.3**	-	**0.3**	-	**0.3**	-	**0.16**
TPHs												
C7-C9	-	-	-	-	-	-	-	-	-	-	-	-
C10-C14	-	-	-	-	-	-	-	-	-	-	-	-
C15-C36	-	-	-	-	-	-	-	-	-	-	-	-
Total Hydrocarbons	-	-	-	-	-	-	-	-	-	-	-	-
Asbestos (S/Q)	-	-	-	ND	ND	ND	ND	ND	ND	ND	ND	ND
AF/FA [3]	ND	0.001	0.001	-	-	-	-	-	-	-	-	-
% ACM [3]	ND	0.01	0.01	-	-	-	-	-	-	-	-	-

Former Tokanui Psychiatric Hospital: Previous Consultant Results

Sample Collector	Background Concentrations [1]	Site Specific Remedial Standards - Rural Residential [2]	Site Specific Remedial Standards - Managed [2]	GHD	GHD	GHD	GHD	GHD	GHD	GHD	GHD	GHD
Sample Name				WWTP TP04	WWTP DIS-SED 0.10	WWTP SEEPAGE-SED 0.10	DS01 TP01 0.10	DS01 TP01 0.50	DS01 TP02 0.10	DS01 TP03 0.10	DS01 TP03 0.50	DS01 TP04 0.10
Sample Depth (m)				0.5	0.1	0.1	0.1	0.5	0.1	0.1	0.5	0.1
Lab Number				3299080_43	3299078.2	3299078.2	3299078.2	3299078.2	3299078.2	3299078.2	3299078.2	3299078.2
Heavy Metals (mg/kg dry weight)	**95% upper limit for background (mg/kg)**											
Arsenic	6.8	9	70	6	4	5	6	6	5	7	3	6
Beryllium	-	-	-	-	-	-	-	-	-	-	-	-
Boron	-	-	-	-	-	-	< 20	< 20	< 20	< 20	< 20	< 20
Cadmium	0.22	0.9	10	0.13	< 0.10	< 0.10	0.1	0.1	0.17	0.13	0.1	0.1
Chromium	30	150	150	11	8	8	8	7	9	9	3	6
Copper	25	280	280	14	18	21	30	24	16	25	4	13
Lead	20	120	460	15.4	15.1	17.7	44	38	24	34	32	29
Mercury	0.23	3	3		0.1	0.31	0.13	0.1	0.1	0.1	0.1	0.1
Nickel	7.6	-	-		5	4	4	4	5	4	< 2	3
Zinc	53	350	450	81	56	47	41	35	63	49	20	30
OCPs												
Total DDT	-	2	2	-	-	-	-	-	-	-	-	-
PAHs												
BAP Eq	-	6	35	-	1.3	1.3	-	-	-	-	-	-
Benzene	-	0.11	0.11	-	0.04	0.04	-	-	-	-	-	-
TPHs												
C7-C9	-	-	-	-	-	-	-	-	-	-	-	-
C10-C14	-	-	-	-	20	-	-	-	-	-	-	-
C15-C36	-	-	-	-	40	-	-	-	-	-	-	-
Total Hydrocarbons	-	-	-	-	90	-	-	-	-	-	-	-
Asbestos (S/Q)	-	-	-	ND	ND	ND	ND	ND	ND	ND	ND	ND
AF/FA [3]	ND	0.001	0.001	-	-	-	-	-	-	-	-	-
% ACM [3]	ND	0.01	0.01	-	-	-	-	-	-	-	-	-

Former Tokanui Psychiatric Hospital: Previous Consultant Results

Sample Collector	Background Concentrations [1]	Site Specific Remedial Standards - Rural Residential [2]	Site Specific Remedial Standards - Managed [2]	GHD	GHD	GHD	GHD	GHD	GHD	GHD	GHD	GHD
Sample Name				DS01 TP05 0.10	DS01 TP05 0.50	DS02 TP01 0.1	DS02 TP01 0.5	DS02 TP02 0.1	DS02 TP03 0.1	DS02 TP03 0.5	DS02 TP04 0.1	DS02 TP05 0.1
Sample Depth (m)				0.1	0.5	0.1	0.5	0.1	0.1	0.5	0.1	0.1
Lab Number				3299078.2	3299078.2	3299078.3	3299078.3	3299078.3	3299078.3	3299078.3	3299078.3	3299078.3
Heavy Metals (mg/kg dry weight)	**95% upper limit for background (mg/kg)**											
Arsenic	6.8	9	70	6	3	6	4	7	6	6	5	6
Beryllium	-	-	-	-	-	-	-	-	-	-	-	-
Boron	-	-	-	< 20	< 20	< 20	< 20	< 20	< 20	< 20	< 20	< 20
Cadmium	0.22	0.9	10	0.18	0.1	0.25	< 0.10	0.21	0.62	0.16	0.23	0.48
Chromium	30	150	150	10	6	15	32	14	13	14	8	17
Copper	25	280	280	20	5	51	70	45	55	56	20	50
Lead	20	120	460	30	31	47	21	25	490	71	36	240
Mercury	0.23	3	3	0.1	0.1	0.27	0.43	0.19	0.11	0.1	0.15	0.14
Nickel	7.6	-	-	5	< 2	8	14	8	7	11	4	7
Zinc	53	350	450	50	24	94	83	72	200	290	75	109
OCPs												
Total DDT	-	2	2	-	-	-	-	-	-	-	-	-
PAHs												
BAP Eq	-	6	35	-	-	-	-	-	-	-	-	-
Benzene	-	0.11	0.11	-	-	-	-	-	-	-	-	-
TPHs												
C7-C9	-	-	-	-	-	-	-	-	-	-	-	-
C10-C14	-	-	-	-	-	-	-	-	-	-	-	-
C15-C36	-	-	-	-	-	-	-	-	-	-	-	-
Total Hydrocarbons	-	-	-	-	-	-	-	-	-	-	-	-
Asbestos (S/Q)	-	-	-	ND	ND	ND	ND	ND	ND	ND	ND	ND
AF/FA [3]	ND	0.001	0.001	-	-	-	-	-	-	-	-	-
% ACM [3]	ND	0.01	0.01	-	-	-	-	-	-	-	-	-

Former Tokanui Psychiatric Hospital: Previous Consultant Results

Sample Collector	Background Concentrations [1]	Site Specific Remedial Standards - Rural Residential [2]	Site Specific Remedial Standards - Managed [2]	GHD	GHD	GHD	GHD	GHD	GHD	GHD	GHD	GHD
Sample Name				DS02 TP05 0.5	DS03 TP01	DS03 TP02	DS03 TP03	DS03 TP01	DS03 TP02	DS03 TP03	DS03 TP04	DS03 TP04
Sample Depth (m)				0.5	0.1	0.1	0.1	0.5	0.5	0.5	0.1	0.5
Lab Number				3299078.3	3299080_122	3299080_125	3299080_128	3299080_123	3299080_126	3299080_129	3299080_131	3299080_132
Heavy Metals (mg/kg dry weight)	**95% upper limit for background (mg/kg)**											
Arsenic	6.8	9	70	4	5	5	4	5	3	3	8	4
Beryllium	-	-	-	-	-	-	-	-	-	-	-	-
Boron	-	-	-	< 20	< 20		-	-	-	-	-	-
Cadmium	0.22	0.9	10	**< 0.10**	0.27	0.39	0.37	0.1	0.1	0.1	0.27	0.1
Chromium	30	150	150	9	10	9	9	9	9	9	12	10
Copper	25	280	280	28	39	23	101	11	11	9	98	9
Lead	20	120	460	19.9	191	34	112	31	18.1	22	47	18.7
Mercury	0.23	3	3	0.1	0.1	-	-	-	-	-	-	-
Nickel	7.6	-	-	6	4	-	-	-	-	-	-	-
Zinc	53	350	450	30	181	85	112	45	40	31	91	39
OCPs												
Total DDT	-	2	2	-	-	-	-	-	-	-	-	-
PAHs												
BAP Eq	-	6	35	-	-	-	-	-	-	-	-	-
Benzene	-	0.11	0.11	-	-	-	-	-	-	-	-	-
TPHs												
C7-C9	-	-	-	-	-	-	-	-	-	-	-	-
C10-C14	-	-	-	-	-	-	-	-	-	-	-	-
C15-C36	-	-	-	-	-	-	-	-	-	-	-	-
Total Hydrocarbons	-	-	-	-	-	-	-	-	-	-	-	-
Asbestos (S/Q)	-	-	-	ND	ND	ND	ND	ND	ND	ND	Asbestos (Chrysotile) detected	ND
AF/FA [3]	ND	0.001	0.001	-	-	-	-	-	-	-	0.001	-
% ACM [3]	ND	0.01	0.01	-	-	-	-	-	-	-	0.001	-

Former Tokanui Psychiatric Hospital: Previous Consultant Results

Sample Collector	Background Concentrations [1]	Site Specific Remedial Standards - Rural Residential [2]	Site Specific Remedial Standards - Managed [2]	GHD	GHD	GHD	GHD	GHD	GHD	GHD	GHD	GHD
Sample Name				COMP A	COMP A	COMP B	COMP B	COMP C 0.1	COMP C 0.5	COMP D 0.1	COMP D 0.5	COMP E 0.1
Sample Depth (m)				0.1	0.5	0.1	0.5	0.1	0.5	0.1	0.5	0.1
Lab Number				3299078_339	3299078_340	3299078_341	3299078_342	3299078.3	3299078.3	3299078.3	3299078.3	3299078.3
Heavy Metals (mg/kg dry weight)	**95% upper limit for background (mg/kg)**											
Arsenic	6.8	9	70	6	4	6	3	6	2	8	4	6
Beryllium	-	-	-	-	-	-	-	-	-	-	-	-
Boron	-	-	-	-	-	-	-	340	41	< 20	< 20	70
Cadmium	0.22	0.9	10	0.4	0.1	0.36	0.1	0.25	< 0.10	0.51	< 0.10	0.32
Chromium	30	150	150	9	8	9	8	10	8	9	9	10
Copper	25	280	280	42	13	35	14	33	22	50	13	36
Lead	20	120	460	31	21	27	18.4	24	19.4	33	21	83
Mercury	0.23	3	3	-	-	-	-	0.33	0.1	0.18	0.1	0.12
Nickel	7.6	-	-	-	-	-	-	6	5	5	3	8
Zinc	53	350	450	117	42	126	36	82	44	140	38	97
OCPs												
Total DDT	-	2	2	0.09	0.09	0.09	0.08	0.09	0.09	0.08	0.08	0.1
PAHs												
BAP Eq	-	6	35	-	-	-	-	-	-	-	-	-
Benzene	-	0.11	0.11	-	-	-	-	-	-	-	-	-
TPHs												
C7-C9	-	-	-	-	-	-	-	-	-	-	-	-
C10-C14	-	-	-	-	-	-	-	-	-	-	-	-
C15-C36	-	-	-	-	-	-	-	-	-	-	-	-
Total Hydrocarbons	-	-	-	-	-	-	-	-	-	-	-	-
Asbestos (S/Q)	-	-	-	ND	ND	ND	ND	ND	ND	ND	ND	ND
AF/FA [3]	ND	0.001	0.001	-	-	-	-	-	-	-	-	-
% ACM [3]	ND	0.01	0.01	-	-	-	-	-	-	-	-	-

Former Tokanui Psychiatric Hospital: Previous Consultant Results

Sample Collector	Background Concentrations [1]	Site Specific Remedial Standards - Rural Residential [2]	Site Specific Remedial Standards - Managed [2]	GHD	GHD	GHD	GHD	GHD	GHD	GHD	GHD	GHD
Sample Name				COMP E 0.5	COMP F 0.1	COMP F 0.5	COMP G 0.1	COMP G 0.5	COMP H 0.1	COMP H 0.5	SB1 TP01	SB1 TP01
Sample Depth (m)				0.5	0.1	0.5	0.1	0.5	0.1	0.5	0.1	0.5
Lab Number				3299078.3	3299078.3	3299078.4	3299078.4	3299078.4	3299078.4	3299078.4	3299078.4	3299078.4
Heavy Metals (mg/kg dry weight)	95% upper limit for background (mg/kg)											
Arsenic	6.8	9	70	3	6	5	8	5	8	5	4	2
Beryllium	-	-	-	-	-	-	-	-	-	-	-	-
Boron	-	-	-	< 20	< 20	< 20	23	< 20	360	< 20	< 20	< 20
Cadmium	0.22	0.9	10	< 0.10	0.29	0.16	0.47	0.23	0.36	< 0.10	< 0.10	< 0.10
Chromium	30	150	150	8	9	9	11	9	11	9	11	8
Copper	25	280	280	11	34	24	64	28	42	16	13	11
Lead	20	120	460	17.1	74	33	56	23	57	23	17.5	16.4
Mercury	0.23	3	3	0.1	0.18	0.13	0.51	0.15	0.3	0.1	0.1	0.1
Nickel	7.6	-	-	4	5	5	10	6	19	4	3	4
Zinc	53	350	450	33	118	87	157	70	123	35	42	35
OCPs												
Total DDT	-	2	2	0.08	0.09	0.08	0.08	0.09	0.08	0.09	-	-
PAHs												
BAP Eq	-	6	35	-	-	-	-	-	-	1.6	-	0.42
Benzene	-	0.11	0.11	-	-	-	-	-	-	-	-	-
TPHs												
C7-C9	-	-	-	-	-	-	-	-	-	-	20	-
C10-C14	-	-	-	-	-	-	-	-	-	60	20	20
C15-C36	-	-	-	-	-	-	-	-	-	120	40	40
Total Hydrocarbons	-	-	-	-	-	-	-	-	-	300	80	80
Asbestos (S/Q)	-	-	-	ND	ND	ND	ND	ND	ND	ND	ND	ND
AF/FA [3]	ND	0.001	0.001	-	-	-	-	-	-	-	-	-
% ACM [3]	ND	0.01	0.01	-	-	-	-	-	-	-	-	-

Former Tokanui Psychiatric Hospital: Previous Consultant Results

Sample Collector	Background Concentrations [1]	Site Specific Remedial Standards - Rural Residential [2]	Site Specific Remedial Standards - Managed [2]	GHD	GHD	GHD	GHD	GHD	GHD	GHD	GHD	GHD
Sample Name				SB2 TP01	SB2 TP02	SB2 TP02	SB2 TP03	SB2 TP03	SB3 TP01	SB4 TP01	SB4 TP01	SB4 TP02
Sample Depth (m)				0.1	0.2	0.7	0.2	0.5	0.5	0.1	0.5	0.2
Lab Number				3299078.4	3209697_1	3209697_2	3209697_3	3209697_4	3299078_389	3213233_1	3211645_2	3213233_3
Heavy Metals (mg/kg dry weight)	**95% upper limit for background (mg/kg)**											
Arsenic	6.8	9	70	6	4	-	4	-	-	6	-	15
Beryllium	-	-	-	-	-	-	-	-	-	-	-	-
Boron	-	-	-	< 20	-	-	-	-	-	-	-	-
Cadmium	0.22	0.9	10	< 0.10	0.1	-	0.1	-	-	0.24	-	0.28
Chromium	30	150	150	9	15	-	10	-	-	10	-	13
Copper	25	280	280	39	19	-	21	-	-	26	-	42
Lead	20	120	460	27	18.4	-	38	-	-	27	-	23
Mercury	0.23	3	3	0.1	-	-	-	-	-	-	-	-
Nickel	7.6	-	-	6	-	-	-	-	-	-	-	-
Zinc	53	350	450	68	96	-	139	-	-	116	-	98
OCPs												
Total DDT	-	2	2	-	-	-	-	-	-	-	-	-
PAHs												
BAP Eq	-	6	35	-	-	-	-	0.42	0.017	0.028	0.017	-
Benzene	-	0.11	0.11	-	-	20	-	-	-	-	-	-
TPHs												
C7-C9	-	-	-	20	20	20	20	20	30	20	30	30
C10-C14	-	-	-	-	20	92	20	20	20	20	20	20
C15-C36	-	-	-	-	53	92	88	40	40	48	40	40
Total Hydrocarbons	-	-	-	-	80		98	80	90	80	90	90
Asbestos (S/Q)	-	-	-	ND	ND	ND	ND	ND	ND	ND	ND	ND
AF/FA [3]	ND	0.001	0.001	-	-	-	-	-	-	-	-	-
% ACM [3]	ND	0.01	0.01	-	-	-	-	-	-	-	-	-

Former Tokanui Psychiatric Hospital: Previous Consultant Results

Sample Collector	Background Concentrations [1]	Site Specific Remedial Standards - Rural Residential [2]	Site Specific Remedial Standards - Managed [2]	GHD	GHD	GHD	GHD	GHD	GHD	GHD	GHD	GHD
Sample Name				SB4 TP02	SB4 TP03	SB4 TP03	SB5 TP01	SB5 TP 01	SB6 TP01	SB7 TP01	SB7 TP01	SB8 TP01
Sample Depth (m)				0.5	0.1	0.4	0.1	0.5	0.1	0.1	0.5	0.2
Lab Number				3213233_4	3213233_5	3213233_6	3299078.4	3299078.4	3299078.4	3299078.4	3299078.4	3362681_1
Heavy Metals (mg/kg dry weight)	**95% upper limit for background (mg/kg)**											
Arsenic	6.8	9	70	12	9	-	5	4	5	4	3	6
Beryllium	-	-	-	-	-	-	-	-	-	-	-	-
Boron	-	-	-	-	-	-	< 20	< 20	< 20	< 20	< 20	-
Cadmium	0.22	0.9	10	0.1	0.25	-	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10	0.1
Chromium	30	150	150	5	10	-	21	16	20	18	15	15
Copper	25	280	280	15	24	-	59	49	48	73	21	54
Lead	20	120	460	12.2	35	-	25	25	10.7	25	11.7	18.8
Mercury	0.23	3	3	-	-	-	0.16	0.1	0.1	0.1	0.1	-
Nickel	7.6	-	-	-	-	-	9	9	11	11	8	-
Zinc	53	350	450	29	132	-	78	78	63	66	56	41
OCPs												
Total DDT	-	2	2	-	-	-	-	-	-	-	-	-
PAHs												
BAP Eq	-	6	35	0.136	-	0.136	-	-	-	-	-	-
Benzene	-	0.11	0.11	-	-	-	-	-	-	-	-	-
TPHs												
C7-C9	-	-	-	30	20	30	30	30	20	20	20	30
C10-C14	-	-	-	20	-	30	20	30	20	-	20	-
C15-C36	-	-	-	40	-	60	40	60	40	-	40	-
Total Hydrocarbons	-	-	-	90	-	110	80	110	80	-	80	-
Asbestos (S/Q)	-	-	-	ND	ND	ND	ND	ND	ND	ND	ND	ND
AF/FA [3]	ND	0.001	0.001	-	-	-	-	-	-	-	-	-
% ACM [3]	ND	0.01	0.01	-	-	-	-	-	-	-	-	-

Former Tokanui Psychiatric Hospital: Previous Consultant Results

Sample Collector	Background Concentrations [1]	Site Specific Remedial Standards - Rural Residential [2]	Site Specific Remedial Standards - Managed [2]	GHD	GHD	GHD	GHD	GHD	GHD	GHD	GHD	GHD
Sample Name				SB8 TP01	SB8 HA01	SB8 HA01	SB8 HA02	SB8 HA02	SB8 HA03	SB8 HA03	SB8 HA04	SB8 HA04
Sample Depth (m)				0.5	0.1	0.5	0.1	0.5	0.1	0.5	0.1	0.5
Lab Number				3362681_2	3362886_1	3362886_2	3362886_4	3362886_6	3362886_3	3362886_5	3362886_7	3362886_8
Heavy Metals (mg/kg dry weight)	**95% upper limit for background (mg/kg)**											
Arsenic	6.8	9	70	6	-	-	-	-	-	-	-	-
Beryllium	-	-	-	-	-	-	-	-	-	-	-	-
Boron	-	-	-	-	-	-	-	-	-	-	-	-
Cadmium	0.22	0.9	10	0.1	-	-	-	-	-	-	-	-
Chromium	30	150	150	13	-	-	-	-	-	-	-	-
Copper	25	280	280	27	-	-	-	-	-	-	-	-
Lead	20	120	460	18.6	-	-	-	-	-	-	-	-
Mercury	0.23	3	3	-	-	-	-	-	-	-	-	-
Nickel	7.6	-	-	-	-	-	-	-	-	-	-	-
Zinc	53	350	450	39	-	-	-	-	-	-	-	-
OCPs												
Total DDT	-	2	2	-	-	-	-	-	-	-	-	-
PAHs												
BAP Eq	-	6	35	-	-	-	-	-	-	-	-	-
Benzene	-	0.11	0.11	-	-	-	-	-	-	-	-	-
TPHs												
C7-C9	-	-	-	30	-	-	-	-	-	-		
C10-C14	-	-	-	20	-	-	-	-	-	-	30	20
C15-C36	-	-	-	40	-	-	-	-	-	-	50	40
Total Hydrocarbons	-	-	-	90	-	-	-	-	-	-	110	90
Asbestos (S/Q)	-	-	-	ND	ND	ND	Asbestos (Chrysotile) detected	ND	ND	ND	ND	ND
AF/FA [3]	ND	0.001	0.001	-	-	-	**0.003**	-	-	-	-	-
% ACM [3]	ND	0.01	0.01	-	-	-	0.001	-	-	-	-	-

Former Tokanui Psychiatric Hospital: Previous Consultant Results

Sample Collector	Background Concentrations [1]	Site Specific Remedial Standards - Rural Residential [2]	Site Specific Remedial Standards - Managed [2]	GHD	GHD	GHD	GHD	GHD	GHD	GHD	GHD	GHD
Sample Name				STR SED 01 0.3	STR SED 01 0.05	STR SED 02 0.3	STR SED 02 0.05	STR SED 03 0.3	STR SED 03 0.05	STR SED 04 0.3	STR SED 04 0.05	HSP SED 01 0.05
Sample Depth (m)				0.3	0.05	0.3	0.05	0.3	0.05	0.3	0.05	0.05
Lab Number				3299078.4	3299078.4	3299078.4	3299078.4	3299078.4	3299078.4	3299078.4	3299078.4	3299078.4
Heavy Metals (mg/kg dry weight)	**95% upper limit for background (mg/kg)**											
Arsenic	6.8	9	70	5	4	7	6	5	5	2	4	5
Beryllium	-	-	-	-	-	-	-	-	-	-	-	-
Boron	-	-	-	-	-	-	-	-	-	-	-	-
Cadmium	0.22	0.9	10	0.12	0.11	0.41	0.41	0.3	0.24	< 0.10	0.19	0.16
Chromium	30	150	150	9	9	12	11	11	10	9	10	9
Copper	25	280	280	16	16	27	28	31	28	10	18	27
Lead	20	120	460	30	37	27	23	130	42	15.4	15	55
Mercury	0.23	3	3	0.1	0.1	0.11	0.1	0.1	0.1	0.1	0.1	0.1
Nickel	7.6	-	-	4	4	7	6	7	6	4	4	6
Zinc	53	350	450	88	77	126	127	115	111	52	75	98
OCPs												
Total DDT	-	2	2	0.006	0.007	0.009	0.01	0.024	0.031	0.006	0.016	0.006
PAHs												
BAP Eq	-	6	35	2.2	2.2	1.9	1.6	1.3	2.6	-	2.3	1.3
Benzene	-	0.11	0.11	0.04	0.04	0.11	0.11	0.06	0.05	0.04	**0.13**	0.06
TPHs												
C7-C9	-	-	-	30	30	50	50	40	30	30	60	30
C10-C14	-	-	-	40	40	40	30	-	50	-	40	20
C15-C36	-	-	-	80	80	117	95	-	90	-	80	40
Total Hydrocarbons	-	-	-	150	150	144	119	-	190	-	170	90
Asbestos (S/Q)	-	-	-	ND	ND	ND	ND	ND	ND	ND	ND	ND
AF/FA [3]	ND	0.001	0.001	-	-	-	-	-	-	-	-	-
% ACM [3]	ND	0.01	0.01	-	-	-	-	-	-	-	-	-

Former Tokanui Psychiatric Hospital: Previous Consultant Results

Sample Collector	Background Concentrations [1]	Site Specific Remedial Standards - Rural Residential [2]	Site Specific Remedial Standards - Managed [2]	GHD	GHD	GHD	GHD	GHD	GHD	GHD	GHD	GHD
Sample Name				HSP SED01	HSP SED 01 0.3	HSP SED 02 0.3	HSP SED 02 0.05	HSP SED 03 0.3	HSP SED 03 0.05	HSP SED 04 0.3	HSP SED 04 0.05	HSP SED 05 0.3
Sample Depth (m)				0.1	0.3	0.3	0.05	0.3	0.05	0.3	0.05	0.3
Lab Number				3299078_401	3299078.4	3299078.4	3299078.4	3299078.4	3299078.4	3299078.4	3299078.4	3299078.4
Heavy Metals (mg/kg dry weight)	**95% upper limit for background (mg/kg)**											
Arsenic	6.8	9	70	5	5	6	5	7	6	6	5	6
Beryllium	-	-	-	-	-	-	-	-	-	-	-	-
Boron	-	-	-	-	-	-	-	-	-	-	-	-
Cadmium	0.22	0.9	10	0.32	0.12	0.45	0.23	0.24	0.25	0.44	0.42	0.1
Chromium	30	150	150	11	10	8	12	10	9	9	9	7
Copper	25	280	280	47	27	42	41	27	27	67	54	15
Lead	20	120	460	143	43	32	68	96	33	63	42	13
Mercury	0.23	3	3	-	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1
Nickel	7.6	-	-	-	6	5	7	6	5	6	7	4
Zinc	53	350	450	185	90	160	141	117	125	260	250	47
OCPs												
Total DDT	-	2	2	0.006	0.006	0.014	0.024	0.22	0.43	0.031	0.033	0.006
PAHs												
BAP Eq	-	6	35	1.5	2.3	1.3	1.4	2.3	2.6	1.7	1.3	1.5
Benzene	-	0.11	0.11	**0.12**	0.03	0.11	0.03	0.04	0.06	0.11	**0.13**	0.08
TPHs												
C7-C9	-	-	-	50	30	50	30	30	30	50	60	40
C10-C14	-	-	-	-	40	30	30	40	59	30	30	30
C15-C36	-	-	-	-	80	47	50	300	210	60	50	50
Total Hydrocarbons	-	-	-	-	170	90	90	340	260	120	90	110
Asbestos (S/Q)	-	-	-	ND	ND	ND	ND	ND	ND	ND	ND	ND
AF/FA [3]	ND	0.001	0.001	-	-	-	-	-	-	-	-	-
% ACM [3]	ND	0.01	0.01	-	-	-	-	-	-	-	-	-

Former Tokanui Psychiatric Hospital: Previous Consultant Results

Sample Collector	Background Concentrations [1]	Site Specific Remedial Standards - Rural Residential [2]	Site Specific Remedial Standards - Managed [2]	GHD	GHD	GHD	GHD	GHD	GHD	GHD	GHD	GHD
Sample Name				HSP SED 05 0.05	CHP TP01	CHP TP01	CHP TP04	CHP TP04 0.6	NUR TP01 0.10	NUR TP01 0.50	NUR TP02 0.10	NUR TP02 0.50
Sample Depth (m)				0.05	0.2	0.5	0.2	0.6	0.1	0.5	0.1	0.5
Lab Number				3299078.4	3209697_5	3212716_5	3209697_7	3209697.8	3299078.2	3299078.2	3299078.2	3299078.2
Heavy Metals (mg/kg dry weight)	**95% upper limit for background (mg/kg)**											
Arsenic	6.8	9	70	2	3	2	4	3	5	6	6	6
Beryllium	-	-	-	-	-	-	-	-	-	-	-	-
Boron	-	-	-	-	-	-	-	< 20	< 20	< 20	< 20	< 20
Cadmium	0.22	0.9	10	0.1	0.1	0.1	0.13	0.1	0.15	0.1	0.25	0.16
Chromium	30	150	150	7	9	7	7	5	21	18	19	14
Copper	25	280	280	17	11	10	117	17	48	44	33	40
Lead	20	120	460	10.7	163	19.8	35	19.4	24	26	35	47
Mercury	0.23	3	3	0.1	-	-	-	0.1	0.17	0.16	0.11	0.17
Nickel	7.6	-	-	5	-	-	-	3	9	8	10	9
Zinc	53	350	450	51	56	24	280	66	93	70	129	93
OCPs												
Total DDT	-	2	2	0.006	-	-	-	-	-	-	-	-
PAHs												
BAP Eq	-	6	35	1.4	-	-	-	-	-	-	-	-
Benzene	-	0.11	0.11	-	-	-	-	-	-	-	-	-
TPHs												
C7-C9	-	-	-	30	-	-	-	-	-	-	-	-
C10-C14	-	-	-	30	-	-	-	-	-	-	-	-
C15-C36	-	-	-	50	-	-	-	-	-	-	-	-
Total Hydrocarbons	-	-	-	100	-	-	-	-	-	-	-	-
Asbestos (S/Q)	-	-	-	ND	ND	ND	ND	ND	ND	Chrysotile detected	ND	ND
AF/FA [3]	ND	0.001	0.001	-	-	-	-	-	-	0.001	-	-
% ACM [3]	ND	0.01	0.01	-	-	-	-	-	-	0.001	-	-

Former Tokanui Psychiatric Hospital: Previous Consultant Results

Sample Collector	Background Concentrations [1]	Site Specific Remedial Standards - Rural Residential [2]	Site Specific Remedial Standards - Managed [2]	GHD	GHD	GHD	GHD	GHD	GHD	GHD	GHD	GHD
Sample Name				NUR TP03 0.10	NUR TP03 0.50	NUR TP04 0.10	NUR TP04	PAV TP01 0.10	PAV TP01 0.50	PAV TP02 0.10	PAV TP02	DIP HA01
Sample Depth (m)				0.1	0.5	0.1	0.5	0.1	0.5	0.1	0.5	0.1
Lab Number				3299078.2	3299078.2	3299078.2	3299080_73	3299078.2	3299078.2	3299078.2	3299080_79	3299080_96
Heavy Metals (mg/kg dry weight)	**95% upper limit for background (mg/kg)**											
Arsenic	6.8	9	70	5	4	6	-	4	4	3	-	9
Beryllium	-	-	-	-	-	-	-	-	-	-	-	-
Boron	-	-	-	< 20	< 20	< 20	-	< 20	< 20	< 20	-	-
Cadmium	0.22	0.9	10	0.15	0.1	0.27	-	0.19	0.1	0.12	-	0.43
Chromium	30	150	150	18	15	17	-	16	7	6	-	12
Copper	25	280	280	39	40	40	-	33	21	41	-	50
Lead	20	120	460	27	23	34	-	41	23	45	-	88
Mercury	0.23	3	3	0.14	0.16	0.13	-	0.13	0.15	0.12	-	-
Nickel	7.6	-	-	10	10	9	-	5	5	3	-	-
Zinc	53	350	450	73	51	84	-	143	46	76	-	220
OCPs												
Total DDT	-	2	2	-	-	-	-	-	-	-	-	0.11
PAHs												
BAP Eq	-	6	35	1.1	-	0.5	0.5	-	-	-	-	-
Benzene	-	0.11	0.11	-	-	-	-	-	-	-	-	-
TPHs												
C7-C9	-	-	-	-	-	-	-	-	-	-	-	-
C10-C14	-	-	-	-	-	-	-	-	-	-	-	-
C15-C36	-	-	-	-	-	-	-	-	-	-	-	-
Total Hydrocarbons	-	-	-	-	-	-	-	-	-	-	-	-
Asbestos (S/Q)	-	-	-	ND	ND	ND	ND	ND	ND	ND	ND	ND
AF/FA [3]	ND	0.001	0.001	-	-	-	-	-	-	-	-	-
% ACM [3]	ND	0.01	0.01	-	-	-	-	-	-	-	-	-

Former Tokanui Psychiatric Hospital: Previous Consultant Results

Sample Collector	Background Concentrations [1]	Site Specific Remedial Standards - Rural Residential [2]	Site Specific Remedial Standards - Managed [2]	GHD	GHD	GHD	GHD	GHD	GHD	GHD	GHD	GHD
Sample Name				DIP HA02	DIP HA03	DIP TP01	DIP TP02	DIP TP03	BWL TP01	BWL TP01	BWL TP02	BWL TP02
Sample Depth (m)				0.1	0.1	0.2	0.2	0.2	0.1	0.5	0.1	0.5
Lab Number				3299080_97	3299080_98	3209697_19	3209697_22	3209697_25	3299078_37	3299078_38	3299078_39	3299078_40
Heavy Metals (mg/kg dry weight)	**95% upper limit for background (mg/kg)**											
Arsenic	6.8	9	70	12	16	11	7	14	4	2	4	2
Beryllium	-	-	-	-	-	-	-	-	-	-	-	-
Boron	-	-	-	-	-	-	-	-	-	-	-	-
Cadmium	0.22	0.9	10	0.5	0.35	0.27	0.27	0.23	0.14	0.1	0.17	0.1
Chromium	30	150	150	10	15	14	8	15	8	6	8	5
Copper	25	280	280	75	72	54	55	60	17	10	16	5
Lead	20	120	460	104	85	65	80	59	34	15	33	17.1
Mercury	0.23	3	3	-	-	-	-	-	-	-	-	-
Nickel	7.6	-	-	-	-	-	-	-	-	-	-	-
Zinc	53	350	450	164	160	134	97	95	74	51	77	21
OCPs												
Total DDT	-	2	2	0.09	0.09	0.08	0.08	0.08	0.09	0.09	0.09	-
PAHs												
BAP Eq	-	6	35	-	-	-	-	-	-	-	-	-
Benzene	-	0.11	0.11	-	-	-	-	-	-	-	-	-
TPHs												
C7-C9	-	-	-	-	-	-	-	-	-	-	-	-
C10-C14	-	-	-	-	-	-	-	20	-	-	-	-
C15-C36	-	-	-	-	-	-	-	40	-	-	-	-
Total Hydrocarbons	-	-	-	-	-	-	-	80	-	-	-	-
Asbestos (S/Q)	-	-	-	ND	ND	ND	ND	ND	ND	ND	ND	ND
AF/FA [3]	ND	0.001	0.001	-	-	-	-	-	-	-	-	-
% ACM [3]	ND	0.01	0.01	-	-	-	-	-	-	-	-	-

Former Tokanui Psychiatric Hospital: Previous Consultant Results

Sample Collector	Background Concentrations [1]	Site Specific Remedial Standards - Rural Residential [2]	Site Specific Remedial Standards - Managed [2]	GHD	GHD	GHD	GHD	GHD	GHD	GHD	GHD	GHD
Sample Name				BWL TP03	BWL TP03	BWL TP04	BWL TP04	BWL TP05	BWL TP05	BWL TP06	BWL TP06	NW FILL TP01
Sample Depth (m)				0.1	0.5	0.1	0.5	0.1	0.5	0.1	0.5	0.1
Lab Number				3299078_42	3299078_43	3299078_45	3299078_46	3299078_48	3299078_49	3299078_50	3299078_51	3362886_36
Heavy Metals (mg/kg dry weight)	**95% upper limit for background (mg/kg)**											
Arsenic	6.8	9	70	4	3	5	3	3	3	6	3	6
Beryllium	-	-	-	-	-	-	-	-	-	-	-	-
Boron	-	-	-	-	-	-	-	-	-	-	-	-
Cadmium	0.22	0.9	10	0.2	0.1	0.33	0.1	0.1	0.1	0.2	0.1	0.18
Chromium	30	150	150	9	7	9	6	5	6	9	6	10
Copper	25	280	280	21	13	36	6	9	10	19	6	25
Lead	20	120	460	30	18.2	82	21	15.6	17.2	18.6	16.3	13.6
Mercury	0.23	3	3	-	-	-	-	-	-	-	-	-
Nickel	7.6	-	-	-	-	-	-	-	-	-	-	-
Zinc	53	350	450	72	39	103	28	36	45	74	23	43
OCPs												
Total DDT	-	2	2	0.09	0.09	0.1	-	0.08	0.08	0.09	-	-
PAHs												
BAP Eq	-	6	35	-	-	-	-	-	-	-	-	-
Benzene	-	0.11	0.11	-	-	-	-	-	-	-	-	-
TPHs												
C7-C9	-	-	-	-	-	-	-	-	-	-	-	-
C10-C14	-	-	-	-	-	-	-	-	-	-	-	-
C15-C36	-	-	-	-	-	-	-	-	-	-	-	-
Total Hydrocarbons	-	-	-	-	-	-	-	-	-	-	-	-
Asbestos (S/Q)	-	-	-	ND	ND	ND	ND	ND	ND	ND	ND	ND
AF/FA [3]	ND	0.001	0.001	-	-	-	-	-	-	-	-	-
% ACM [3]	ND	0.01	0.01	-	-	-	-	-	-	-	-	-

Former Tokanui Psychiatric Hospital: Previous Consultant Results

Sample Collector	Background Concentrations [1]	Site Specific Remedial Standards - Rural Residential [2]	Site Specific Remedial Standards - Managed [2]	GHD	GHD	GHD	GHD	GHD	GHD	GHD	GHD	GHD
Sample Name				NW FILL TP01	NW FILL TP02	NW FILL TP02	NW FILL TP03	NW FILL TP03	NW FILL TP04	NW FILL TP04	SCH TP01	SCH TP01
Sample Depth (m)				0.5	0.1	0.5	0.1	0.5	0.1	0.5	0.1	0.3
Lab Number				3362886_37	3362886_39	3362886_40	3362886_42	3362886_43	3362886_44	3362886_45	3219033_7	3219033_8
Heavy Metals (mg/kg dry weight)	**95% upper limit for background (mg/kg)**											
Arsenic	6.8	9	70	5	4	-	4	4	5	-	-	-
Beryllium	-	-	-	-	-	-	-	-	-	-	-	-
Boron	-	-	-	-	-	-	-	-	-	-	-	-
Cadmium	0.22	0.9	10	0.1	0.22	-	0.34	0.1	0.13	-	-	-
Chromium	30	150	150	12	8	-	8	12	11	-	-	-
Copper	25	280	280	19	28	-	26	13	19	-	-	-
Lead	20	120	460	15.3	15	-	12.4	14.4	14.9	-	-	-
Mercury	0.23	3	3	-	-	-	-	-	-	-	-	-
Nickel	7.6	-	-	-	-	-	-	-	-	-	-	-
Zinc	53	350	450	31	71	-	50	26	27	-	-	-
OCPs												
Total DDT	-	2	2	-	-	-	-	-	-	-	-	-
PAHs												
BAP Eq	-	6	35	-	0.5	-	0.5	-	-	-	-	-
Benzene	-	0.11	0.11	-	-	-	-	-	-	-	-	-
TPHs												
C7-C9	-	-	-	-	-	-	-	-	-	-	-	-
C10-C14	-	-	-	-	-	-	-	-	-	-	-	-
C15-C36	-	-	-	-	-	-	-	-	-	-	-	-
Total Hydrocarbons	-	-	-	-	-	-	-	-	-	-	-	-
Asbestos (S/Q)	-	-	-	ND	ND	ND	ND	ND	ND	ND	ND	ND
AF/FA [3]	ND	0.001	0.001	-	-	-	-	-	-	-	-	-
% ACM [3]	ND	0.01	0.01	-	-	-	-	-	-	-	-	-

Former Tokanui Psychiatric Hospital: Previous Consultant Results

Sample Collector	Background Concentrations [1]	Site Specific Remedial Standards - Rural Residential [2]	Site Specific Remedial Standards - Managed [2]	GHD	GHD	GHD	GHD	GHD	GHD	GHD	GHD	GHD
Sample Name				SCH TP02	SCH TP02	SCH TP03	SCH TP04	SCH TP04	WD2 TP01	WD2 TP02	WD2 TP03	WD2 TP04
Sample Depth (m)				0.1	0.3	0.1	0.1	0.5	0.1	0.1	0.1	0.1
Lab Number				3220306_4	3219033_10	3219033_11	3219033_13	3219033_14	3216641_64	3216641_66	3216641_68	3216641_71
Heavy Metals (mg/kg dry weight)	**95% upper limit for background (mg/kg)**											
Arsenic	6.8	9	70	-	-	-	-	-	5	4	8	4
Beryllium	-	-	-	-	-	-	-	-	-	-	-	-
Boron	-	-	-	-	-	-	-	-	-	-	-	-
Cadmium	0.22	0.9	10	-	-	-	-	-	0.14	0.2	0.29	0.15
Chromium	30	150	150	-	-	-	-	-	9	8	9	8
Copper	25	280	280	-	-	-	-	-	16	15	23	22
Lead	20	120	460	-	-	-	-	-	41	35	45	89
Mercury	0.23	3	3	-	-	-	-	-	-	-	-	-
Nickel	7.6	-	-	-	-	-	-	-	-	-	-	-
Zinc	53	350	450	-	-	-	-	-	62	60	94	79
OCPs												
Total DDT	-	2	2	-	-	-	-	-	-	-	-	-
PAHs												
BAP Eq	-	6	35	-	-	-	-	-	-	-	-	-
Benzene	-	0.11	0.11	-	-	-	-	-	-	-	-	-
TPHs												
C7-C9	-	-	-	-	-	-	-	-	-	-	-	-
C10-C14	-	-	-	-	-	-	-	15	-	-	-	-
C15-C36	-	-	-	-	-	-	-	25	-	-	-	-
Total Hydrocarbons	-	-	-	-	-	-	-	50	-	-	-	-
Asbestos (S/Q)	-	-	-	ND	ND	ND	ND	ND	ND	ND	ND	ND
AF/FA [3]	ND	0.001	0.001	-	-	-	-	-	-	-	-	-
% ACM [3]	ND	0.01	0.01	-	-	-	-	-	-	-	-	-

Former Tokanui Psychiatric Hospital: Previous Consultant Results

Sample Collector	Background Concentrations [1]	Site Specific Remedial Standards - Rural Residential [2]	Site Specific Remedial Standards - Managed [2]	GHD	GHD	GHD	GHD	GHD	GHD	GHD	GHD	GHD
Sample Name				WD2 TP05	WD2 TP06	WD2 TP07	WD2 TP08	WD2 TP09	WDF TP01	WDF TP02	WDF TP03	WDF TP03
Sample Depth (m)				0.1	0.1	0.1	0.2	0.1	0.1	0.1	0.1	0.5
Lab Number				3216641_73	3216641_44	3216641_42	3216641_40	3216641_37	3362886_27	3362886_30	3362886_33	3362886_34
Heavy Metals (mg/kg dry weight)	**95% upper limit for background (mg/kg)**											
Arsenic	6.8	9	70	4	16	4	16	16	5	4	4	3
Beryllium	-	-	-	-	-	-	-	-	-	-	-	-
Boron	-	-	-	-	-	-	-	-	-	-	-	-
Cadmium	0.22	0.9	10	0.14	0.3	0.13	0.3	0.26	0.11	0.15	0.1	0.1
Chromium	30	150	150	8	10	9	9	9	14	18	27	26
Copper	25	280	280	18	28	20	24	23	33	61	85	35
Lead	20	120	460	42	43	29	44	39	33	320	19.5	20
Mercury	0.23	3	3	-	-	-	-	-	-	-	-	-
Nickel	7.6	-	-	-	-	-	-	-	-	-	-	-
Zinc	53	350	450	78	79	51	81	93	56	91	47	53
OCPs												
Total DDT	-	2	2	-	-	-	-	-	-	-	-	-
PAHs												
BAP Eq	-	6	35	-	-	-	-	-	-	-	-	-
Benzene	-	0.11	0.11	-	-	-	-	-	-	-	-	-
TPHs												
C7-C9	-	-	-	-	-	-	-	-	-	-	-	-
C10-C14	-	-	-	-	-	-	-	-	-	-	-	-
C15-C36	-	-	-	-	-	-	-	-	-	-	-	-
Total Hydrocarbons	-	-	-	-	-	-	-	-	-	-	-	-
Asbestos (S/Q)	-	-	-	ND	ND	ND	ND	ND	ND	ND	ND	ND
AF/FA [3]	ND	0.001	0.001	-	-	-	-	-	-	-	-	-
% ACM [3]	ND	0.01	0.01	-	-	-	-	-	-	-	-	-

Former Tokanui Psychiatric Hospital: Previous Consultant Results

Sample Collector	Background Concentrations [1]	Site Specific Remedial Standards - Rural Residential [2]	Site Specific Remedial Standards - Managed [2]	GHD	GHD	GHD	GHD	GHD	GHD	GHD	GHD	GHD
Sample Name				WDG TP01	WDG TP02	WDG TP03	WDG TP03	WDH TP01	WDH TP02	WDH TP03	WDH TP03	WG_S1
Sample Depth (m)				0.1	0.1	0.1	0.5	0.1	0.1	0.1	0.5	0
Lab Number				3362886_18	3362886_21	3362886_24	3362886_25	3362886_9	3362886_12	3362886_15	3362886_16	19-17902-591
Heavy Metals (mg/kg dry weight)	**95% upper limit for background (mg/kg)**											
Arsenic	6.8	9	70	5	5	4	3	4	3	4	3	6.67
Beryllium	-	-	-	-	-	-	-	-	-	-	-	-
Boron	-	-	-	-	-	-	-	-	-	-	-	-
Cadmium	0.22	0.9	10	0.12	0.1	0.1	0.1	0.11	0.1	0.12	0.1	0.236
Chromium	30	150	150	18	12	22	25	12	14	20	24	13
Copper	25	280	280	47	21	61	41	35	25	38	101	32.9
Lead	20	120	460	44	18.6	16.3	16.4	38	24	48	16	53.4
Mercury	0.23	3	3	-	-	-	-	-	-	-	-	-
Nickel	7.6	-	-	-	-	-	-	-	-	-	-	-
Zinc	53	350	450	66	31	62	58	61	58	103	53	95.5
OCPs												
Total DDT	-	2	2	-	-	-	-	-	-	-	-	-
PAHs												
BAP Eq	-	6	35	-	-	-	-	-	-	0.5	0.5	-
Benzene	-	0.11	0.11	-	-	-	-	-	-	-	-	-
TPHs												
C7-C9	-	-	-	-	-	-	-	-	-	-	-	-
C10-C14	-	-	-	-	-	-	-	-	-	-	-	-
C15-C36	-	-	-	-	-	-	-	-	-	-	-	-
Total Hydrocarbons	-	-	-	-	-	-	-	-	-	-	-	-
Asbestos (S/Q)	-	-	-	ND	ND	ND	ND	ND	ND	ND	ND	ND
AF/FA [3]	ND	0.001	0.001	-	-	-	-	-	-	-	-	-
% ACM [3]	ND	0.01	0.01	-	-	-	-	-	-	-	-	-

Former Tokanui Psychiatric Hospital: Previous Consultant Results

Sample Collector	Background Concentrations [1]	Site Specific Remedial Standards - Rural Residential [2]	Site Specific Remedial Standards - Managed [2]	GHD	GHD	GHD	GHD	GHD	GHD	GHD	GHD	GHD
Sample Name				WG_S1	WG_S2	WG_S2	WG_S3	WG_S3	WG_S4	WG_S4	WG_S5	WG_S5
Sample Depth (m)				0.25	0	0.25	0	0.25	0	0.25	0	0.25
Lab Number				19-17902-592	19-17902-594	19-17902-595	19-17902-597	19-17902-598	19-17902-599	19-17902-600	19-17902-602	19-17902-603
Heavy Metals (mg/kg dry weight)	95% upper limit for background (mg/kg)											
Arsenic	6.8	9	70	4.66	5.9	6.9	6.34	5.51	5.36	5.63	8.95	6.9
Beryllium	-	-	-	-	-	-	-	-	-	-	-	-
Boron	-	-	-	-	-	-	-	-	-	-	-	-
Cadmium	0.22	0.9	10	0.118	0.129	0.0896	0.187	0.148	0.11	0.0617	0.342	0.148
Chromium	30	150	150	23.2	10.7	22.2	18.3	22.6	13.1	17.1	16.9	17.9
Copper	25	280	280	99.7	19.9	39	49.2	58.1	30.3	41.4	37.1	38.3
Lead	20	120	460	23.2	24.1	67.8	34.8	39.1	33	27.7	273	43.7
Mercury	0.23	3	3	-	-	-	-	-	-	-	-	-
Nickel	7.6	-	-	-	-	-	-	-	-	-	-	-
Zinc	53	350	450	85.8	64.3	80.3	93.2	97.3	58.5	69.2	141	97.3
OCPs												
Total DDT	-	2	2	-	-	-	-	-	-	-	**35**	-
PAHs												
BAP Eq	-	6	35	-	-	-	-	-	-	-	-	-
Benzene	-	0.11	0.11	-	-	-	-	-	-	-	-	-
TPHs												
C7-C9	-	-	-	-	-	-	-	-	-	-	-	-
C10-C14	-	-	-	-	-	-	-	-	-	-	-	-
C15-C36	-	-	-	-	-	-	-	-	-	-	-	-
Total Hydrocarbons	-	-	-	-	-	-	-	-	-	-	-	-
Asbestos (S/Q)	-	-	-	ND	ND	ND	ND	ND	ND	ND	ND	ND
AF/FA [3]	ND	0.001	0.001	-	-	-	-	-	-	-	-	-
% ACM [3]	ND	0.01	0.01	-	-	-	-	-	-	-	-	-

Former Tokanui Psychiatric Hospital: Previous Consultant Results

Sample Collector	Background Concentrations [1]	Site Specific Remedial Standards - Rural Residential [2]	Site Specific Remedial Standards - Managed [2]	GHD	GHD	GHD	GHD	GHD	GHD	?		
Sample Name				TK005	TK006	TK007	TK008	TK009	TK010	DUP A1	DUP B1	DUP C1
Sample Depth (m)				0.9	0.9	2	0.9	0.9	2	-	-	-
Lab Number				18-25515-5	18-25515-6	18-25515-7	18-25515-8	18-25515-9	18-25515-10	3299078.1	3299078.1	3299078.2
Heavy Metals (mg/kg dry weight)	**95% upper limit for background (mg/kg)**											
Arsenic	6.8	9	70	-	-	-	-	-	-	4	5	8
Beryllium	-	-	-	-	-	-	-	-	-	-	-	-
Boron	-	-	-	-	-	-	-	-	-	< 20	< 20	< 20
Cadmium	0.22	0.9	10	-	-	-	-	-	-	0.1	0.31	0.13
Chromium	30	150	150	-	-	-	-	-	-	9	9	10
Copper	25	280	280	-	-	-	-	-	-	13	28	26
Lead	20	120	460	-	-	-	-	-	-	20	111	34
Mercury	0.23	3	3	-	-	-	-	-	-	0.1	0.17	0.1
Nickel	7.6	-	-	-	-	-	-	-	-	4	6	5
Zinc	53	350	450	-	-	-	-	-	-	32	102	54
OCPs												
Total DDT	-	2	2	0.05	0.05	1.53	0.055	0.05	0.058	-	-	-
PAHs												
BAP Eq	-	6	35	-	-	-	-	-	-	-	-	-
Benzene	-	0.11	0.11	-	-	-	-	-	-	-	-	-
TPHs												
C7-C9	-	-	-	10	10	18	10	10	10	-	-	-
C10-C14	-	-	-	15	15	18	20	15	17	-	-	-
C15-C36	-	-	-	**37**	**145**	**119**	**111**	-	25	-	-	-
Total Hydrocarbons	-	-	-	**<50**	**145**	**119**	**111**	-	**50**	-	-	-
Asbestos (S/Q)	-	-	-	ND	ND	ND	ND	ND	ND	ND	ND	ND
AF/FA [3]	ND	0.001	0.001	-	-	-	-	-	-	-	-	-
% ACM [3]	ND	0.01	0.01	-	-	-	-	-	-	-	-	-

Former Tokanui Psychiatric Hospital: Previous Consultant Results

Sample Collector	Background Concentrations [1]	Site Specific Remedial Standards - Rural Residential [2]	Site Specific Remedial Standards - Managed [2]	WSP	WSP	WSP	WSP	WSP	WSP	WSP	WSP
Sample Name				TH01	TH01	TH02	TH02	TH03	TH03	TH04	TH04
Sample Depth (m)				0.05	1.2	0.05	1.1	0.05	1.1	0.1	1.1
Lab Number				19-38083-7	19-38083-8	19-38083-9	19-38083-10	19-38083-11	19-38083-12	19-38083-15	19-38083-16
Heavy Metals (mg/kg dry weight)	**95% upper limit for background (mg/kg)**										
Arsenic	6.8	9	70	5.8	2.9	4	2.2	3.9	1.6	3.4	1.4
Beryllium	-	-	-	-	-	-	-	-	-	-	-
Boron	-	-	-	-	-	-	-	-	-	-	-
Cadmium	0.22	0.9	10	0.0071	0.028	0.2	0.037	0.11	0.03	0.098	0.028
Chromium	30	150	150	11	8.5	26.6	9.5	24.9	8.6	8.8	8.7
Copper	25	280	280	9.26	20.8	18.4	20.8	19.1	18.1	16.8	18.1
Lead	20	120	460	12.9	18.2	20.6	18.6	19.7	15.7	22.3	15.8
Mercury	0.23	3	3	0.098	0.068	0.19	0.073	0.09	0.056	0.13	0.057
Nickel	7.6	-	-	4.7	5.54	12.2	6.21	12.1	5.4	5.06	5.19
Zinc	53	350	450	83.8	52.2	94.1	62.1	77	58.9	70.8	54.7
OCPs											
Total DDT	-	2	2	-	-	-	-	-	-	-	-
PAHs											
BAP Eq	-	6	35	-	-	-	-	-	-	-	-
Benzene	-	0.11	0.11	-	-	-	-	-	-	-	-
TPHs											
C7-C9	-	-	-	-	-	-	-	-	-	-	-
C10-C14	-	-	-	-	-	-	-	-	-	-	-
C15-C36	-	-	-	-	-	-	-	-	-	-	-
Total Hydrocarbons	-	-	-	-	-	-	-	-	-	-	-
Asbestos (S/Q)	-	-	-	ND	-	ND	-	ND	-	ND	-
AF/FA [3]	ND	0.001	0.001	-	-	-	-	-	-	-	-
% ACM [3]	ND	0.01	0.01	-	-	-	-	-	-	-	-

Former Tokanui Psychiatric Hospital: Previous Consultant Results							
Sample Collector	**Background Concentrations [1]**	**Site Specific Remedial Standards - Rural Residential [2]**	**Site Specific Remedial Standards - Managed [2]**	WSP	WSP	WSP	WSP
Sample Name				TH05	TH05	TH06	TH06
Sample Depth (m)				0.1	0.9	0.1	0.9
Lab Number				19-38083-17	19-38083-18	19-38083-19	19-38083-20
Heavy Metals (mg/kg dry weight)	**95% upper limit for background (mg/kg)**						
Arsenic	6.8	9	70	12	3.6	15	3.6
Beryllium	-	-	-	-	-	-	-
Boron	-	-	-	-	-	-	-
Cadmium	0.22	0.9	10	0.25	0.036	0.3	0.037
Chromium	30	150	150	10	12	11	8.2
Copper	25	280	280	73.6	22	84.6	15.9
Lead	20	120	460	53.3	22.6	73.5	19.8
Mercury	0.23	3	3	0.2	0.094	0.18	0.062
Nickel	7.6	-	-	5.79	6.27	7.24	4.7
Zinc	53	350	450	91.4	50	105	39.8
OCPs							
Total DDT	-	2	2	-	-	-	-
PAHs							
BAP Eq	-	6	35	-	-	-	-
Benzene	-	0.11	0.11	-	-	-	-
TPHs							
C7-C9	-	-	-	-	-	-	-
C10-C14	-	-	-	-	-	-	-
C15-C36	-	-	-	-	-	-	-
Total Hydrocarbons	-	-	-	-	-	-	-
Asbestos (S/Q)	-	-	-	ND	-	ND	-
AF/FA [3]	ND	0.001	0.001	-	-	-	-
% ACM [3]	ND	0.01	0.01	-	-	-	-

Appendix D

Compiled Results – AECOM, GHD & WSP

Figures only – results compiled in Appendix C and compared with site specific standards – original results and lab transcripts can be supplied on request

AECOM

ISO A3 297mm x 420mm

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SPATIAL REFERENCE
Scale: 1:600 (A3 size)
10 5 0 10 20 m
Map features depicted in terms of NZTM 2000 projection.

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KEY PLAN

PROJECT NUMBER
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SHEET TITLE
Figure 3b: Commercial Area Test Pits

MAP NUMBER
PAGE 2 OF 2

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SAMPLE ID	DISTANCE FROM THE BUILDING
S1	0.5m
S2	1.5m
S3	2.5m
S22	3.5m
S4	0.5m
S5	1.5m
S6	2.5m
S23	6.5m
S7	0.5m
S8	1.5m
S9	2.5m
S10	0.5m
S11	1.5m
S12	2.5m
S13	0.5m
S14	1.5m
S15	2.5m
S16	0.5m
S17	1.5m
S18	2.5m
S24	3.5m
S19	0.5m
S20	1.5m
S21	2.5m

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SPATIAL REFERENCE

Scale: 1:250 (A3 size)

6,5 3,25 0 6,5 m

Map features depicted in terms of NZTM 2000 projection.

Data Sources:
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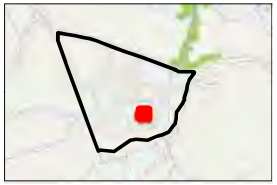

PROJECT NUMBER

60580619

SHEET TITLE

Figure 4a : Building Sample Locations Building 29

MAP NUMBER

PAGE 1 OF 13

ISO A3 297mm x 420mm

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SAMPLE ID	DISTANCE FROM THE BUILDING
S1	0.5m
S3	1.5m
S2	0.5m
S4	1.5m

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SPATIAL REFERENCE

Scale: 1:250 (A3 size)

6.5 3.25 0 6.5 m

Map features depicted in terms of NZTM 2000 projection.

Data Sources:
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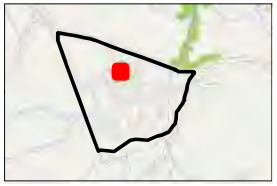

PROJECT NUMBER

60580619

SHEET TITLE

Figure 4b : Building Sample Locations
Building 58
(Rec Hall)

MAP NUMBER

PAGE 2 OF 13

SAMPLE ID	DISTANCE FROM THE BUILDING	SAMPLE ID	DISTANCE FROM THE BUILDING
BUILDING 73		BUILDING 74	
S1	1.3m	S1	1.0m
S2	2.3m	S2	1.5m
S3	3.3m	S3	2.5m
		S20	3.5m
		S21	4.5m
		S4	1.0m
		S5	1.5m
		S6	2.5m
		S19	3.5m
		S7	1.5m
		S8	2.5m
		S9	3.5m
		S10	0.5m
		S11	1.5m
		S12	2.5m
		S13	1.2m
		S14	2.2m
		S15	3.2m
		S16	0.5m
		S17	1.5m
		S18	2.5m

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SPATIAL REFERENCE

Scale: 1:200 (A3 size)

5 2.5 0 5 m

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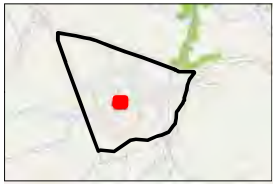

PROJECT NUMBER

60580619

SHEET TITLE

Figure 4c : Building Sample Locations Building 73 and 74 (Laundry)

MAP NUMBER

PAGE 3 OF 13

ISO A3 297mm x 420mm

SAMPLE ID	DISTANCE FROM THE BUILDING
S1	0.5m
S2	1.5m
S3	2.5m
S4	0.5m
S5	1.5m
S6	2.5m
S29	6.5m
S7	0.5m
S8	1.5m
S9	2.5m
S27	3.5m
S10	0.5m
S11	1.5m
S12	2.5m
S13	0.5m
S14	1.5m
S15	2.5m
S16	0.5m
S17	1.5m
S18	2.5m
S26	3.5m
S28	6.5m
S19	0.5m
S20	1.5m
S21	2.5m
S22	0.5m
S23	1.5m
S24	2.5m
S25	3.5m
S30	2.3m
S31	3.3m

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SPATIAL REFERENCE
Scale: 1:250 (A3 size)
6,5 3,25 0 6,5 m
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Data Sources:
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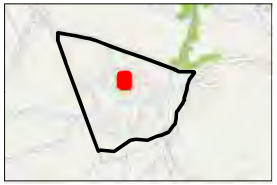

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SHEET TITLE
Figure 4d : Building Sample Locations
Building 13
(Ward C)

MAP NUMBER
PAGE 4 OF 13

ISO A3 297mm x 420mm

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SAMPLE ID	DISTANCE FROM THE BUILDING
S1	0.5m
S2	1.5m
S3	2.5m
S11	3.5m
S4	1.3m
S5	2.3m
S6	3.3m
S12	3.5m
S16	6.5m
S7	0.5m
S8	1.5m
S9	2.5m
S10	3.5m
S13	0.5m
S14	1.5m
S15	2.5m

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SPATIAL REFERENCE

Scale: 1:150 (A3 size)

4 2 0 4 m

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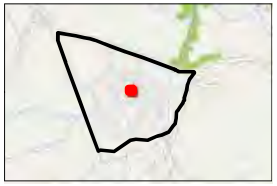

PROJECT NUMBER

60580619

SHEET TITLE

Figure 4e : Building Sample Locations
Building 18
(Shed 6)

MAP NUMBER

PAGE 5 OF 13

SAMPLE ID	DISTANCE FROM THE BUILDING
S1	0.5m
S7	1.5m
S12	2.5m
S15	3.5m
S2	0.5m
S3	1.5m
S8	2.5m
S16	3.5m
S4	0.5m
S9	1.5m
S13	2.5m
S17	3.5m
S19	6.5m
S5	0.5m
S10	1.5m
S14	2.5m
S18	3.5m
S6	1.6m
S11	2.5m

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SPATIAL REFERENCE

Scale: 1:200 (A3 size)

5 2.5 0 5 m

Map features depicted in terms of NZTM 2000 projection.

Data Sources:
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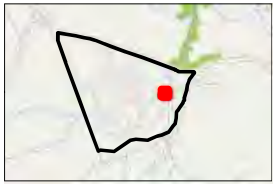

PROJECT NUMBER

60580619

SHEET TITLE

Figure 4f : Building Sample Locations
Building 24
(Ward 22)

MAP NUMBER

PAGE 6 OF 13

SAMPLE ID	DISTANCE FROM THE BUILDING
S1	0.5m
S2	1.5m
S3	2.5m
S28	3.5m
S4	0.5m
S5	1.5m
S6	2.5m
S7	0.5m
S8	1.5m
S9	2.5m
S10	0.5m
S11	1.5m
S12	2.5m
S13	1.2m
S14	2.5m
S29	3.5m
S16	0.5m
S17	1.5m
S18	2.5m
S30	3.5m
S19	0.5m
S20	1.5m
S21	2.5m
S22	0.5m
S23	1.5m
S24	2.5m
S31	3.5m
S32	6.5m
S25	0.5m
S26	1.5m
S27	2.5m

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Scale: 1:250 (A3 size)

6.5 3.25 0 6.5 m

Map features depicted in terms of NZTM 2000 projection.

Data Sources:
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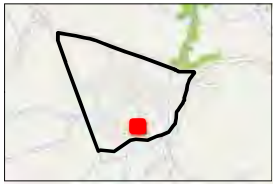

PROJECT NUMBER

60580619

SHEET TITLE

Figure 4g : Building Sample Locations
Building 33
(Ward 9)

MAP NUMBER

PAGE 7 OF 13

ISO A3 297mm x 420mm

SAMPLE ID	DISTANCE FROM THE BUILDING
S1	0.5m
S2	1.5m
S3	2.5m
S4	0.5m
S5	1.5m
S6	2.5m
S7	0.5m
S8	1.5m
S9	2.3m

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SPATIAL REFERENCE

Scale: 1:150 (A3 size)

4 2 0 4 m

Map features depicted in terms of NZTM 2000 projection.

Data Sources:
Cadastral Boundaries – LINZ NZ Cadastral Dataset 2018

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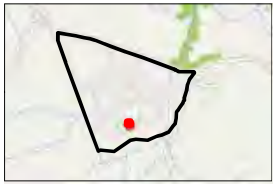

PROJECT NUMBER

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SHEET TITLE

Figure 4h : Building Sample Locations Building 41

MAP NUMBER

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ISO A3 297mm x 420mm

SAMPLE ID	DISTANCE FROM THE BUILDING
S1	0.5m
S2	1.5m
S3	2.5m
S4	0.5m
S5	1.5m
S6	2.5m
S7	1.0m
S8	2.5m
S9	3.5m
S10	0.5m
S11	1.5m
S12	2.5m
S13	0.5m
S14	1.5m
S15	2.5m
S16	0.5m
S17	1.5m
S18	2.5m

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SPATIAL REFERENCE
Scale: 1:200 (A3 size)
5 2.5 0 5 m
Map features depicted in terms of NZTM 2000 projection.
Data Sources:
Cadastral Boundaries – LINZ NZ Cadastral Dataset 2018

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ISSUE/REVISION

Rev	Date	Description
A	26/07/2019	DRAFT

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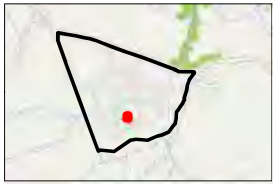

PROJECT NUMBER
60580619

SHEET TITLE
Figure 4i : Building Sample Locations
Building 43
(Building 14)

MAP NUMBER
PAGE 9 OF 13

ISO A3 297mm x 420mm

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Filename: \\nzchc1fp001.au.aecomnet.com\Projects\605X\605806194. Tech Work Area\4.99 GIS\02_Maps\Sampling_Map_Series.mxd

SAMPLE ID	DISTANCE FROM THE BUILDING
S1	0.5m
S2	1.5m
S3	2.5m
S4	0.5m
S5	1.5m
S6	2.5m

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TOKANUI HOSPITAL DETAILED SITE INVESTIGATION

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LAND INFORMATION NEW ZEALAND

CONSULTANT

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SPATIAL REFERENCE

Scale: 1:125 (A3 size)

3 1.5 0 3 m

Map features depicted in terms of NZTM 2000 projection.

Data Sources:
Cadastral Boundaries – LINZ NZ Cadastral Dataset 2018

PROJECT MANAGEMENT

Approved	LK	Date	26/07/2019
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Designed	SS	Date	26/07/2019
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Rev	Date	Description
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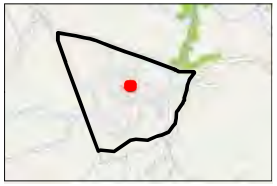

PROJECT NUMBER

60580619

SHEET TITLE

Figure 4j : Building Sample Locations Building 16

MAP NUMBER

PAGE 10 OF 13

ISO A3 297mm x 420mm

SAMPLE ID	DISTANCE FROM THE BUILDING
S1	0.5m
S2	1.5m
S3	2.5m
S4	0.5m
S5	1.5m
S6	2.5m
S7	0.5m
S8	1.5m
S9	2.5m
S10	0.5m
S11	1.5m
S12	2.5m
S13	0.9m
S14	1.5m
S15	2.5m
S16	0.5m
S17	1.5m
S18	2.5m
S19	0.5m
S20	1.5m
S21	2.5m

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SPATIAL REFERENCE
Scale: 1:200 (A3 size)
5 2.5 0 5 m
Map features depicted in terms of NZTM 2000 projection.
Data Sources:
Cadastral Boundaries – LINZ NZ Cadastral Dataset 2018

PROJECT MANAGEMENT

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Checked	LK	Date	26/07/2019
Designed	SS	Date	26/07/2019
Drawn	SS	Date	26/07/2019

ISSUE/REVISION

Rev	Date	Description
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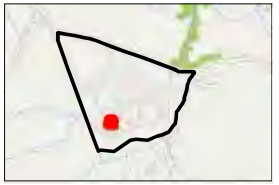

PROJECT NUMBER
60580619

SHEET TITLE
Figure 4k : Building Sample Locations
Building 49
(Ward 17)

MAP NUMBER
PAGE 11 OF 13

ISO A3 297mm x 420mm

SAMPLE ID	DISTANCE FROM THE BUILDING
S1	0.5m
S2	1.5m
S3	2.5m
S7	3.5m
S4	0.5m
S5	1.5m
S6	2.5m

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SPATIAL REFERENCE

Scale: 1:150 (A3 size)

4 2 0 4 m

Map features depicted in terms of NZTM 2000 projection.

Data Sources:
Cadastral Boundaries – LINZ NZ Cadastral Dataset 2018

PROJECT MANAGEMENT

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Checked	LK	Date	26/07/2019
Designed	SS	Date	26/07/2019
Drawn	SS	Date	26/07/2019

ISSUE/REVISION

Rev	Date	Description
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KEY PLAN

PROJECT NUMBER

60580619

SHEET TITLE

Figure 4I : Building Sample Locations Substation 1

MAP NUMBER

PAGE 12 OF 13

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ISO A3 297mm x 420mm

Last saved by: SERGEY.SOKOLOV (2019-07-26) Last Plotted: 2019-05-21
Filename: \\nzchc1fp001.au.aecomnet.com\Projects\605X\605806194. Tech Work Area\4.99 GIS\02_Maps\Sampling_Map_Series.mxd

SAMPLE ID	Lat	Long
S1	-38.064075	175.321041
S2	-38.064036	175.320877
S3	-38.063971	175.321099
S4	-38.063856	175.321143
S5	-38.063945	175.321232

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SPATIAL REFERENCE

Scale: 1:250 (A3 size)

6.5 3.25 0 6.5 m

Map features depicted in terms of NZTM 2000 projection.

Data Sources:
Cadastral Boundaries – LINZ NZ Cadastral Dataset 2018

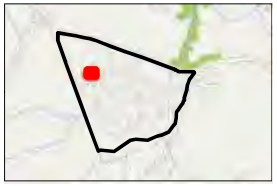
PROJECT MANAGEMENT

Approved	LK	Date	26/07/2019
Checked	LK	Date	26/07/2019
Designed	SS	Date	26/07/2019
Drawn	SS	Date	26/07/2019

ISSUE/REVISION

Rev	Date	Description
A	26/07/2019	DRAFT

KEY PLAN



PROJECT NUMBER

60580619

SHEET TITLE

Figure 4m: Building Sample Locations Former Ward G

MAP NUMBER

PAGE 13 OF 13

ISO A3 297mm x 420mm

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CLIENT

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CONSULTANT

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SPATIAL REFERENCE

Scale: 1:650 (A3 size)

10 5 0 10 20 m

Map features depicted in terms of NZTM 2000 projection.

PROJECT MANAGEMENT

Approved	LK	Date	29/07/2019
Checked	LK	Date	29/07/2019
Designed	SS	Date	29/07/2019
Drawn	SS	Date	29/07/2019

ISSUE/REVISION

Rev	Date	Description
A	29/07/2019	DRAFT

KEY PLAN

PROJECT NUMBER

60580619

SHEET TITLE

Figure 5 – Stormwater Collection Area

MAP NUMBER

PAGE 1 OF 1

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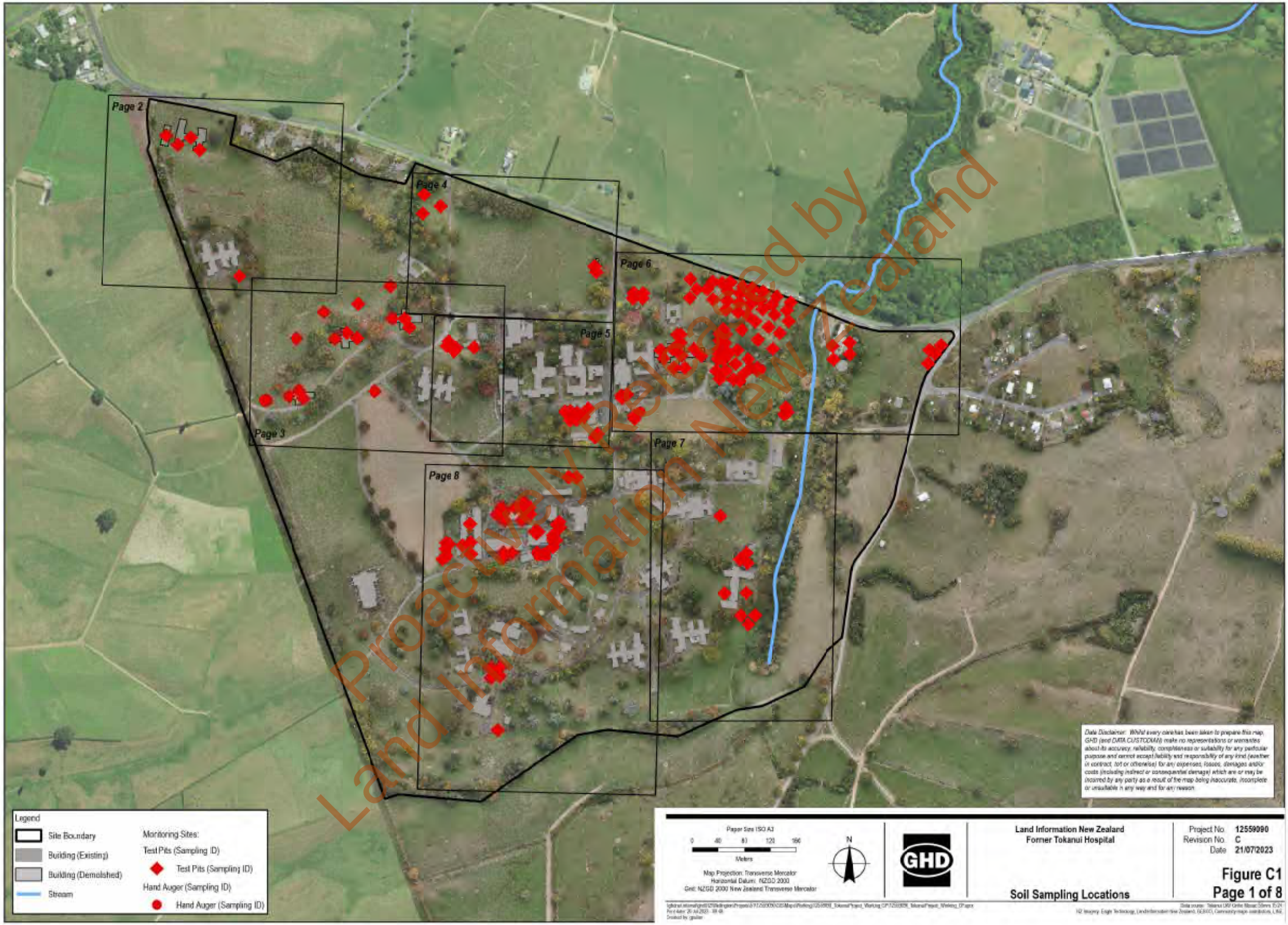

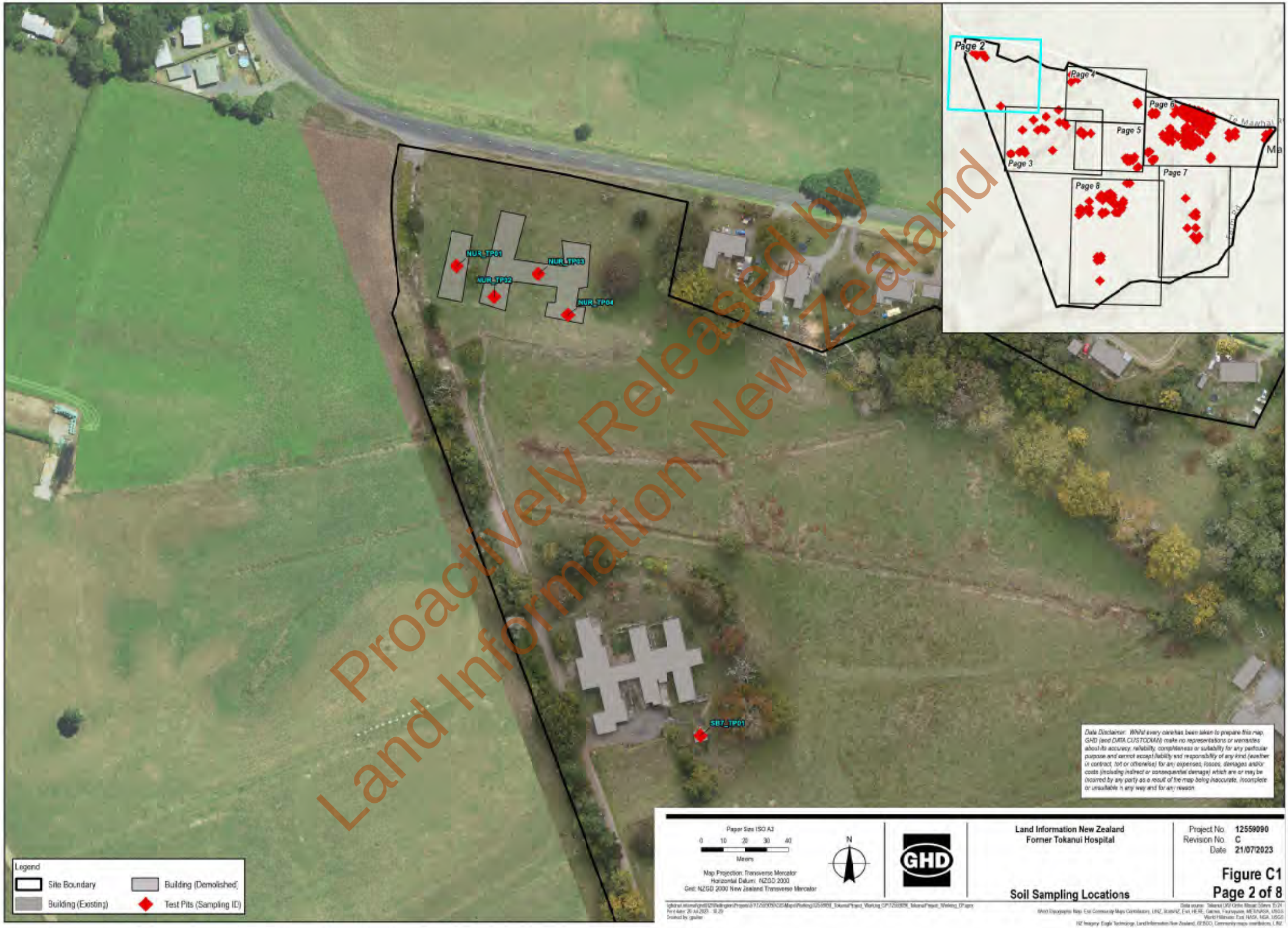

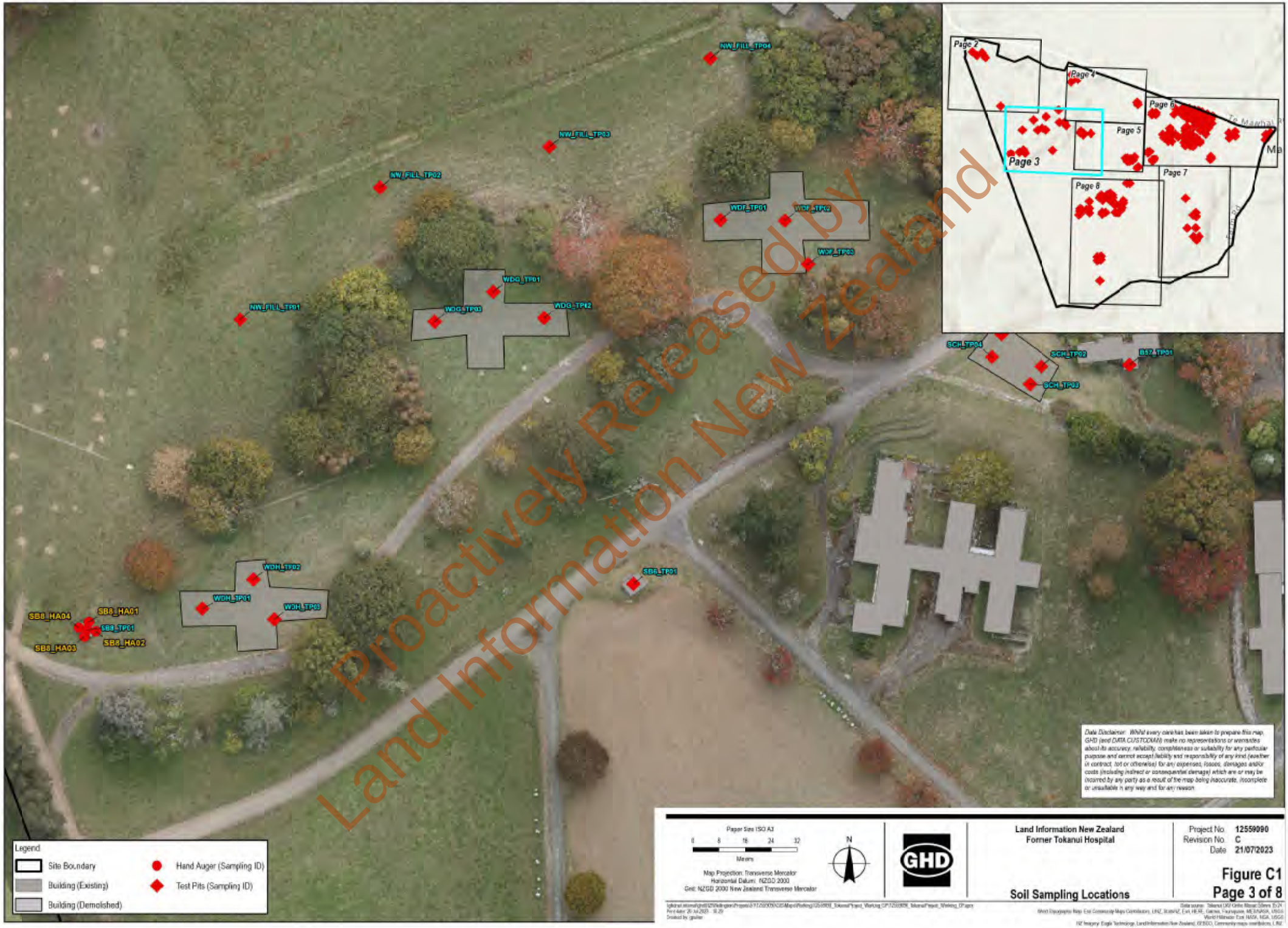

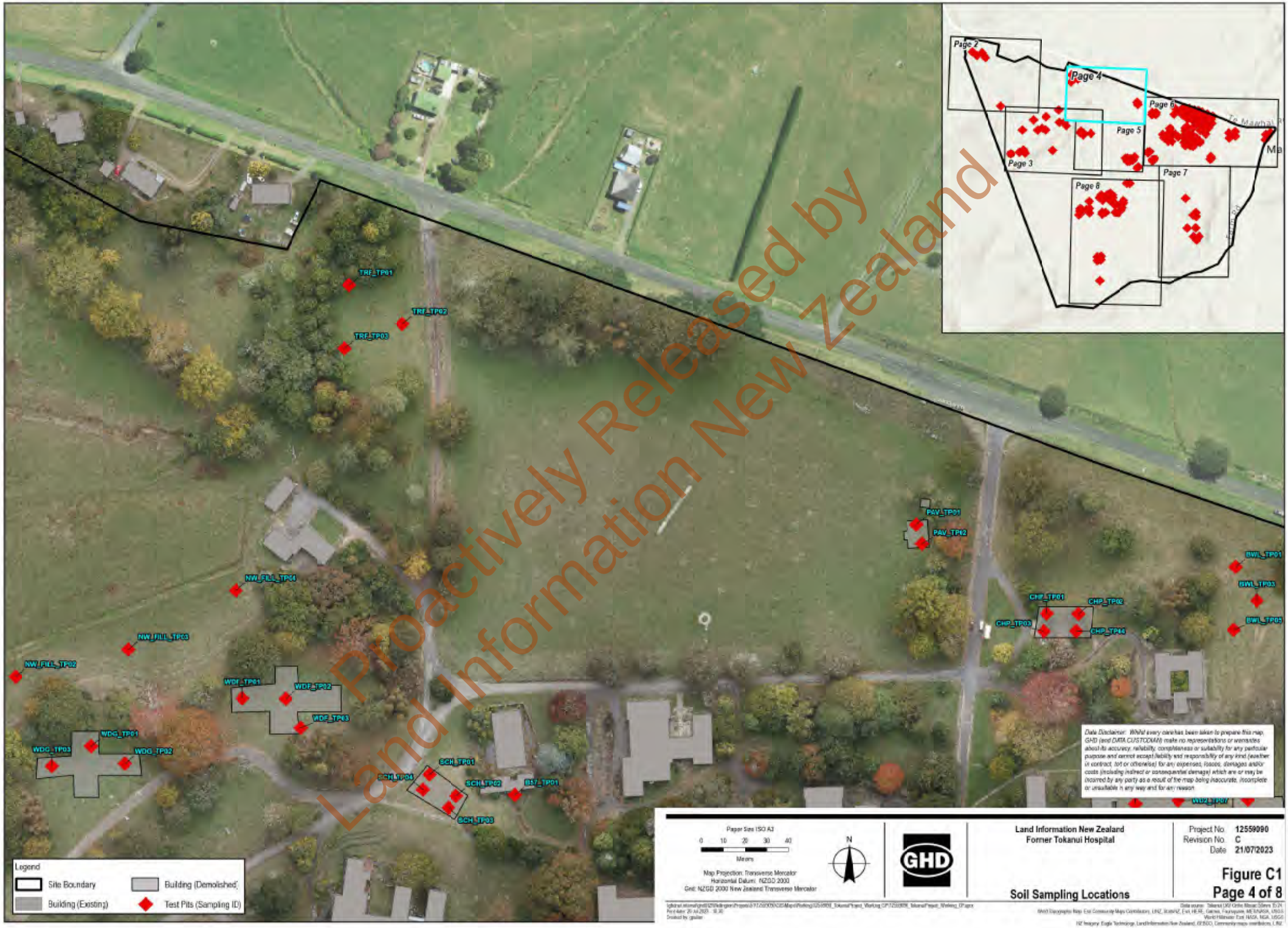

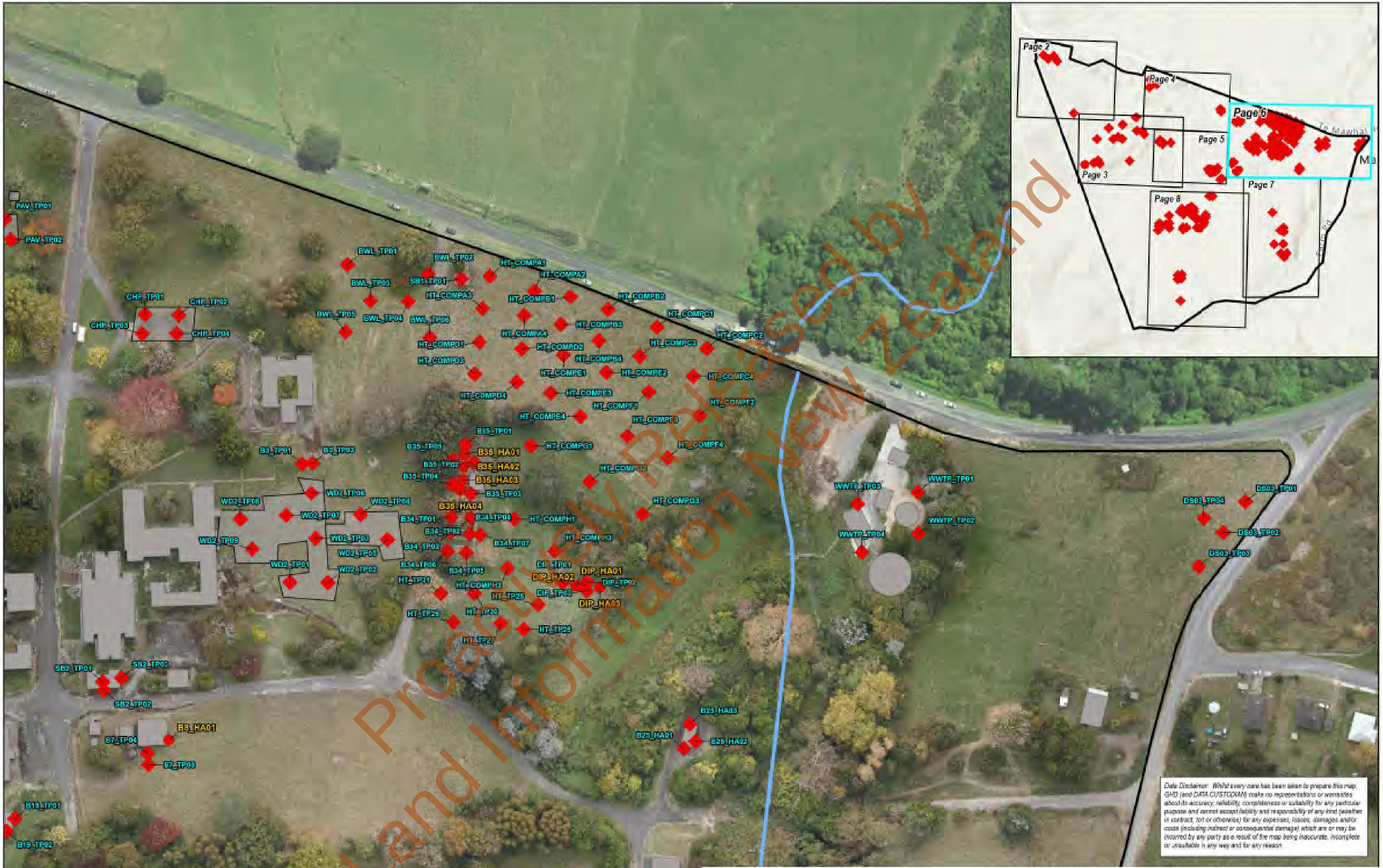

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Paper Size ISO A3

0 10 20 30 40

Metres

Map Projection: Transverse Mercator
Horizontal Datum: NZGD 2000
Grid: NZGD 2000 New Zealand Transverse Mercator

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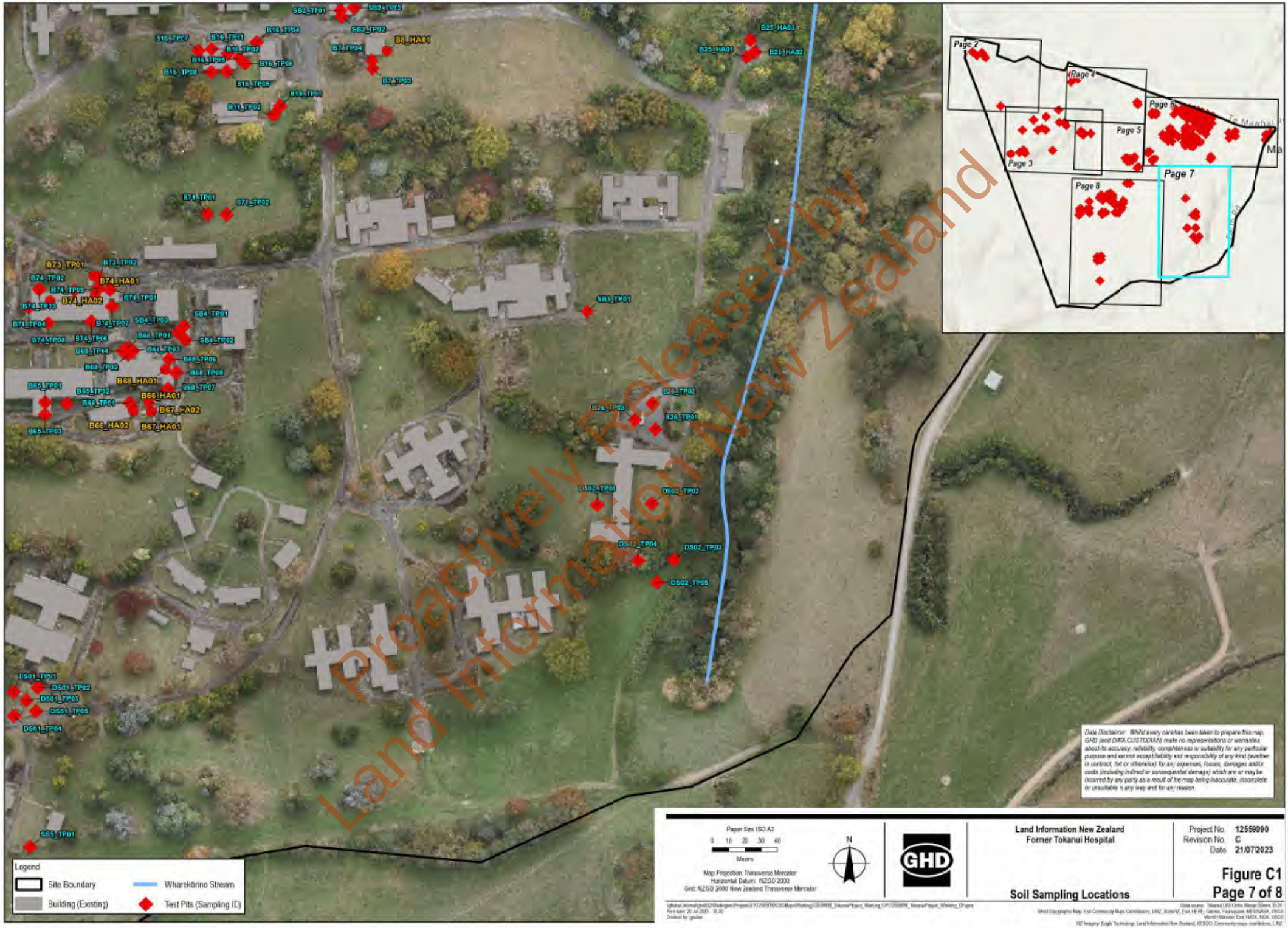
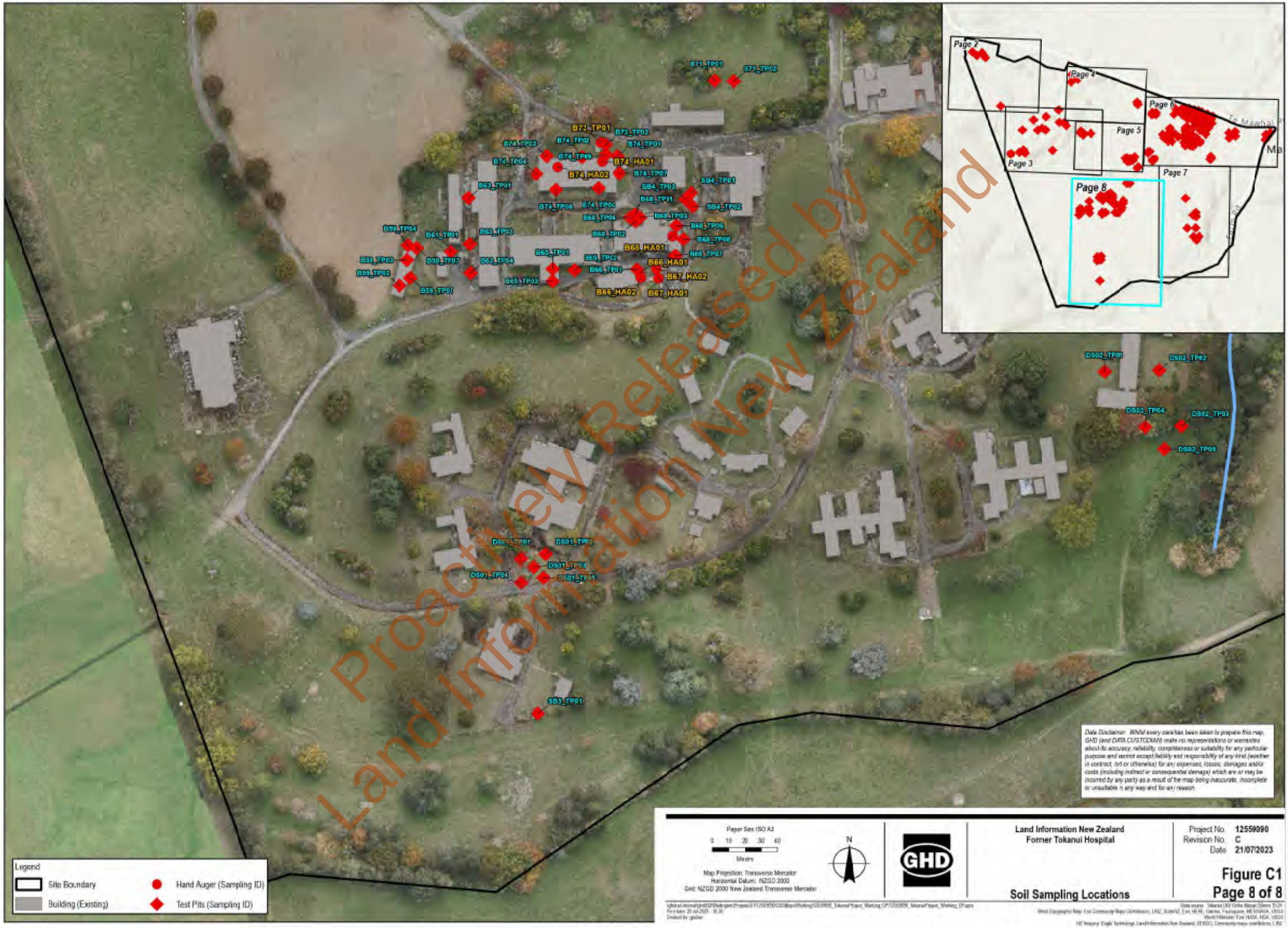
Land Information New Zealand
Former Tokanui Hospital

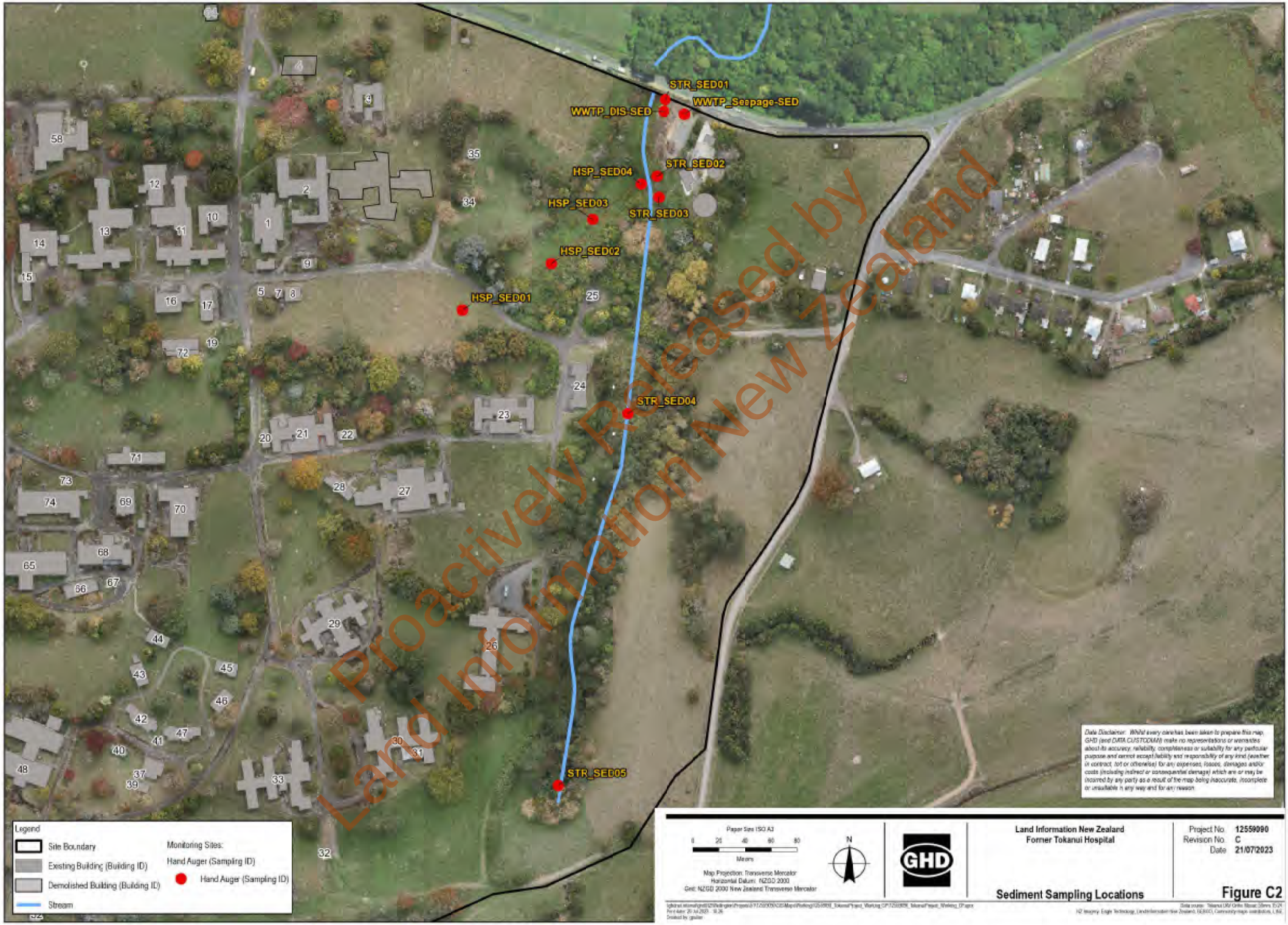
Soil Sampling Locations

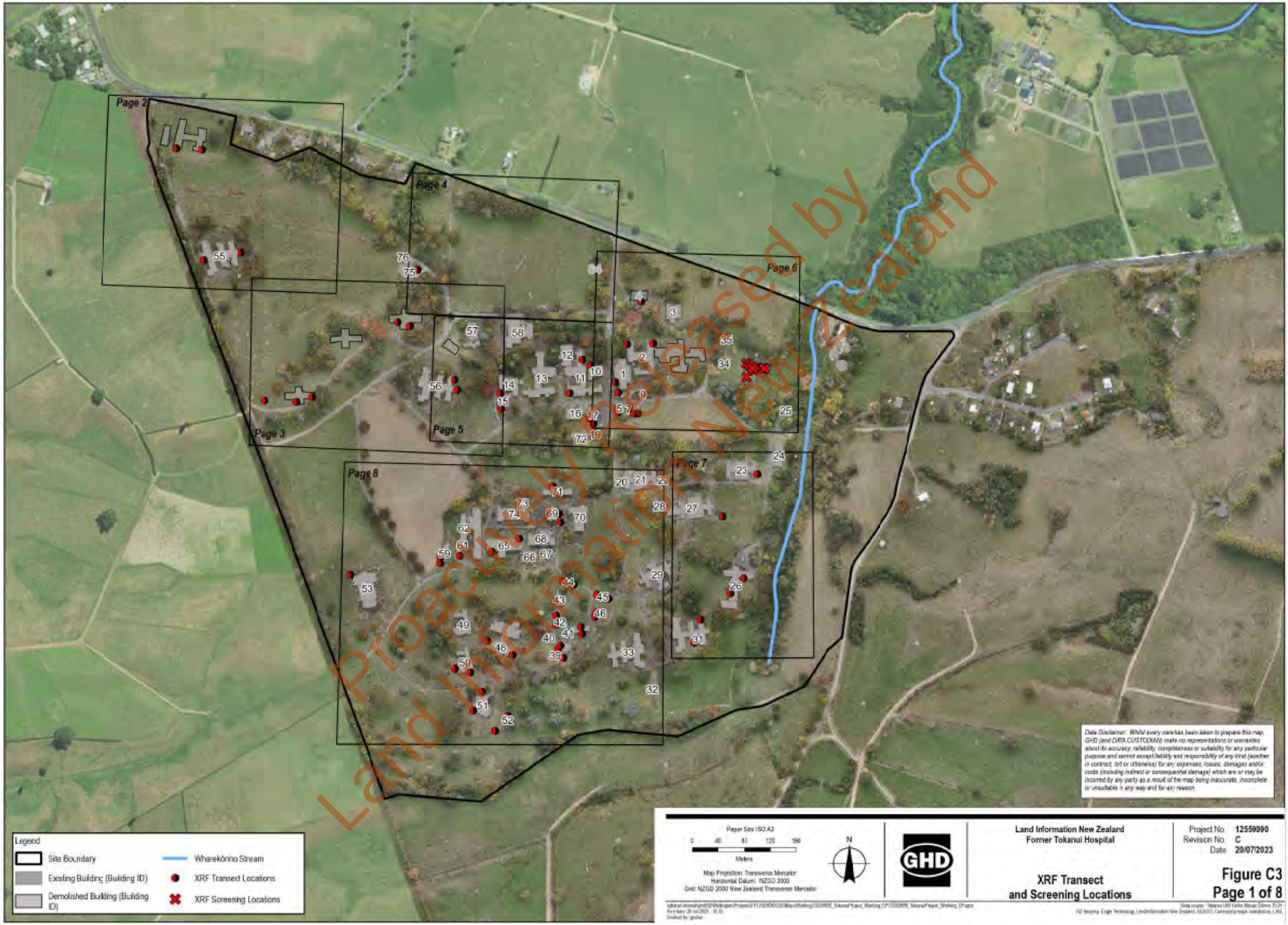
Project No. 12559090
Revision No. C
Date 21/07/2023

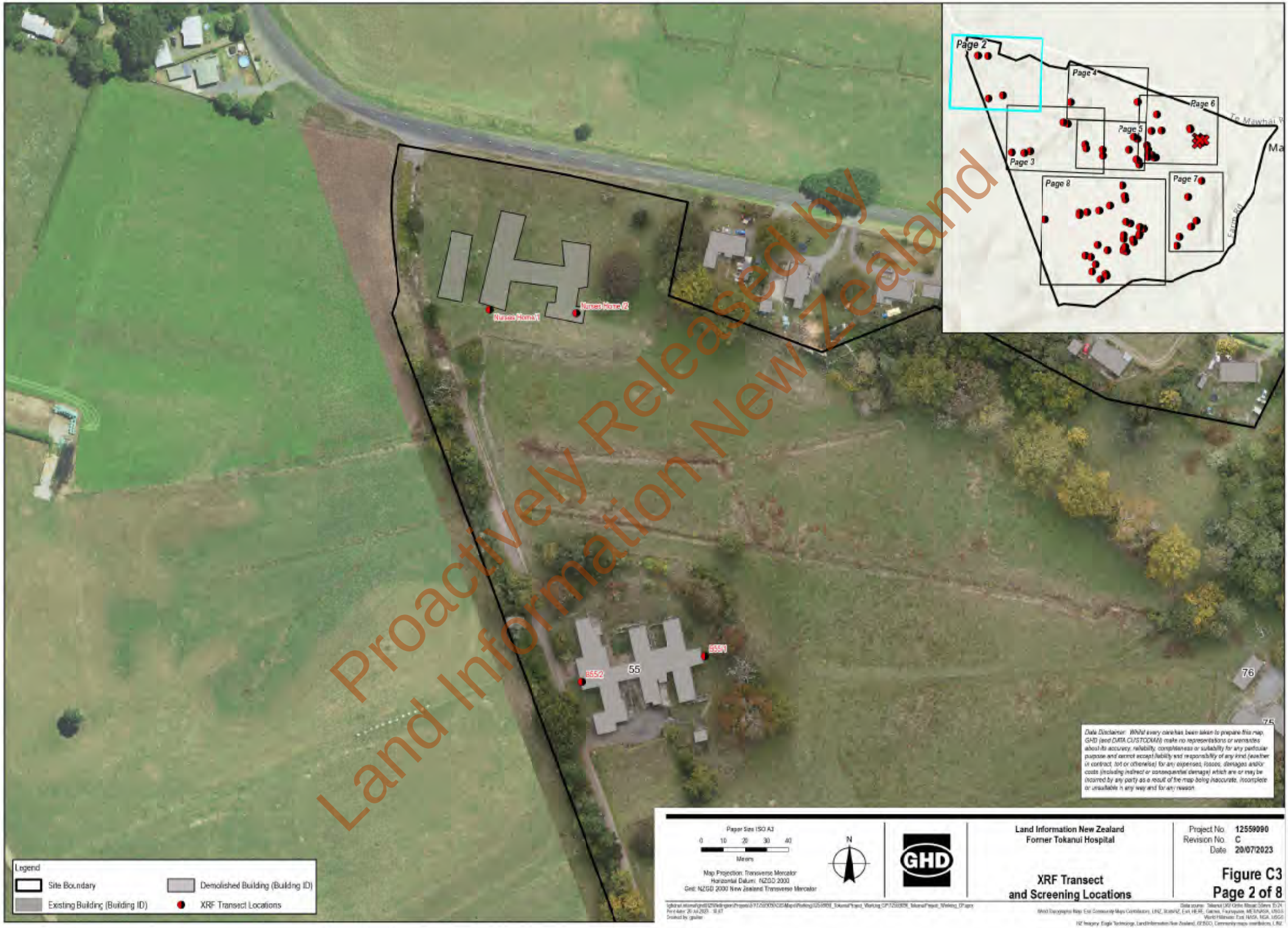
Figure C1
Page 6 of 8

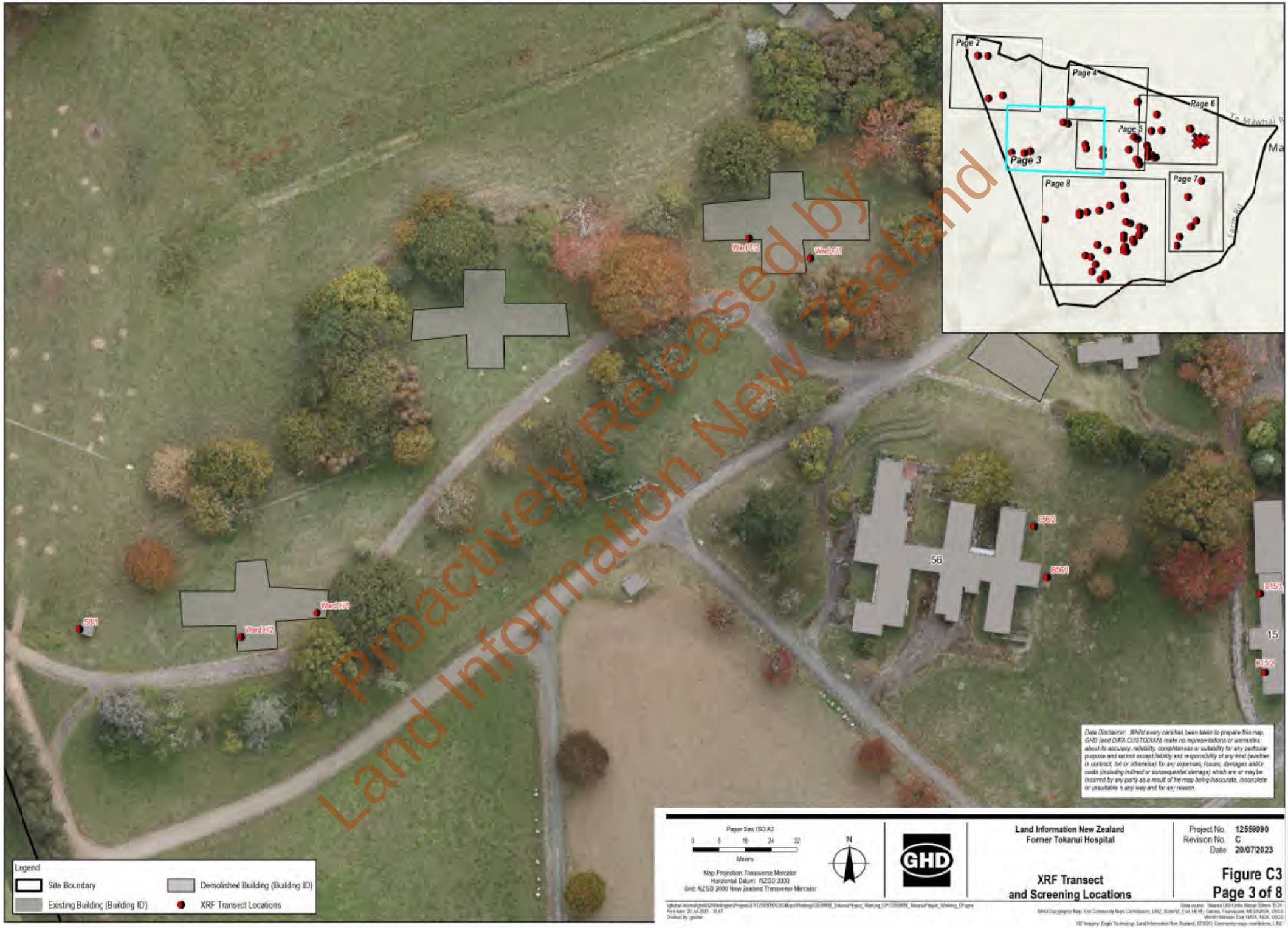












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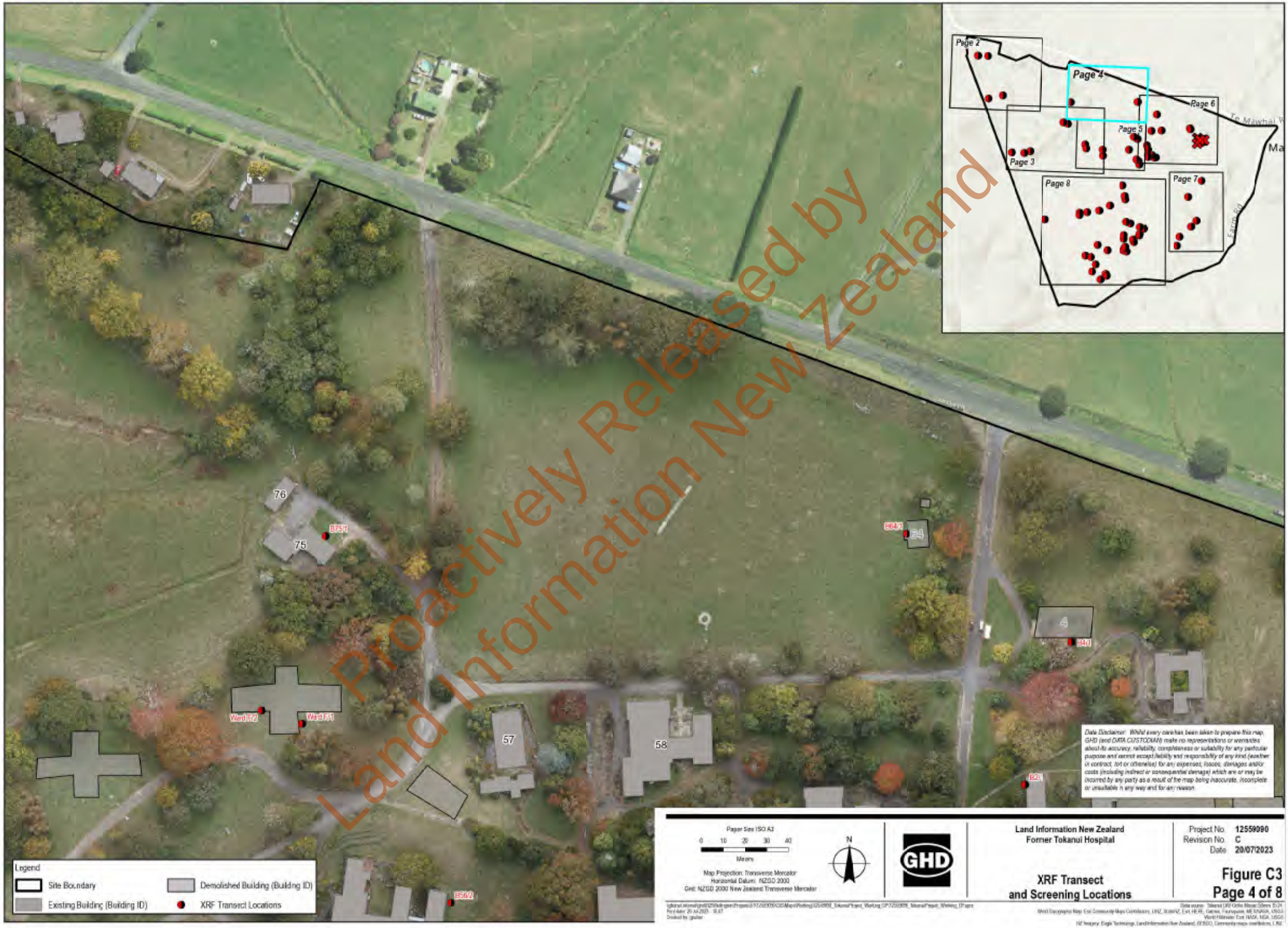

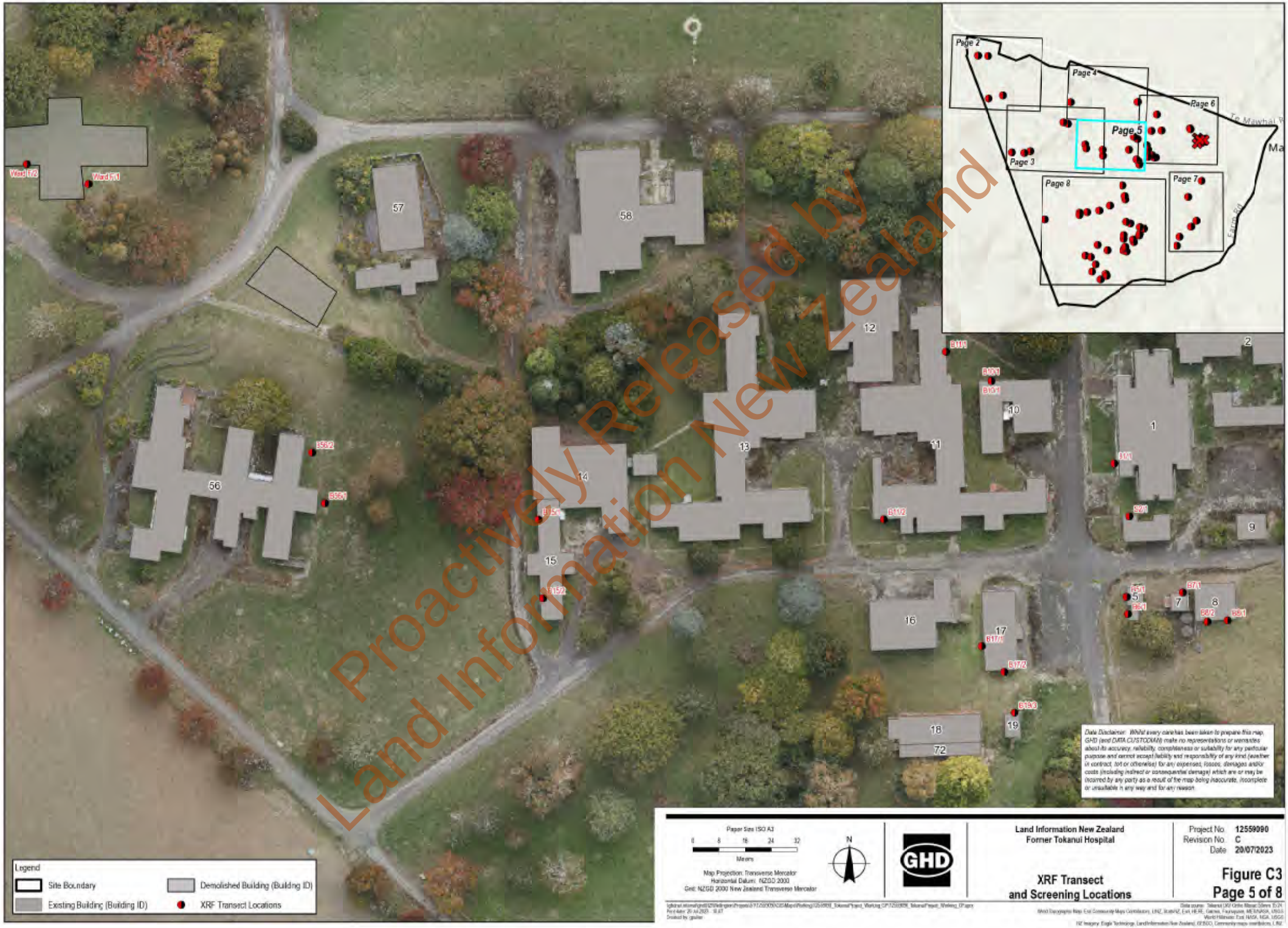

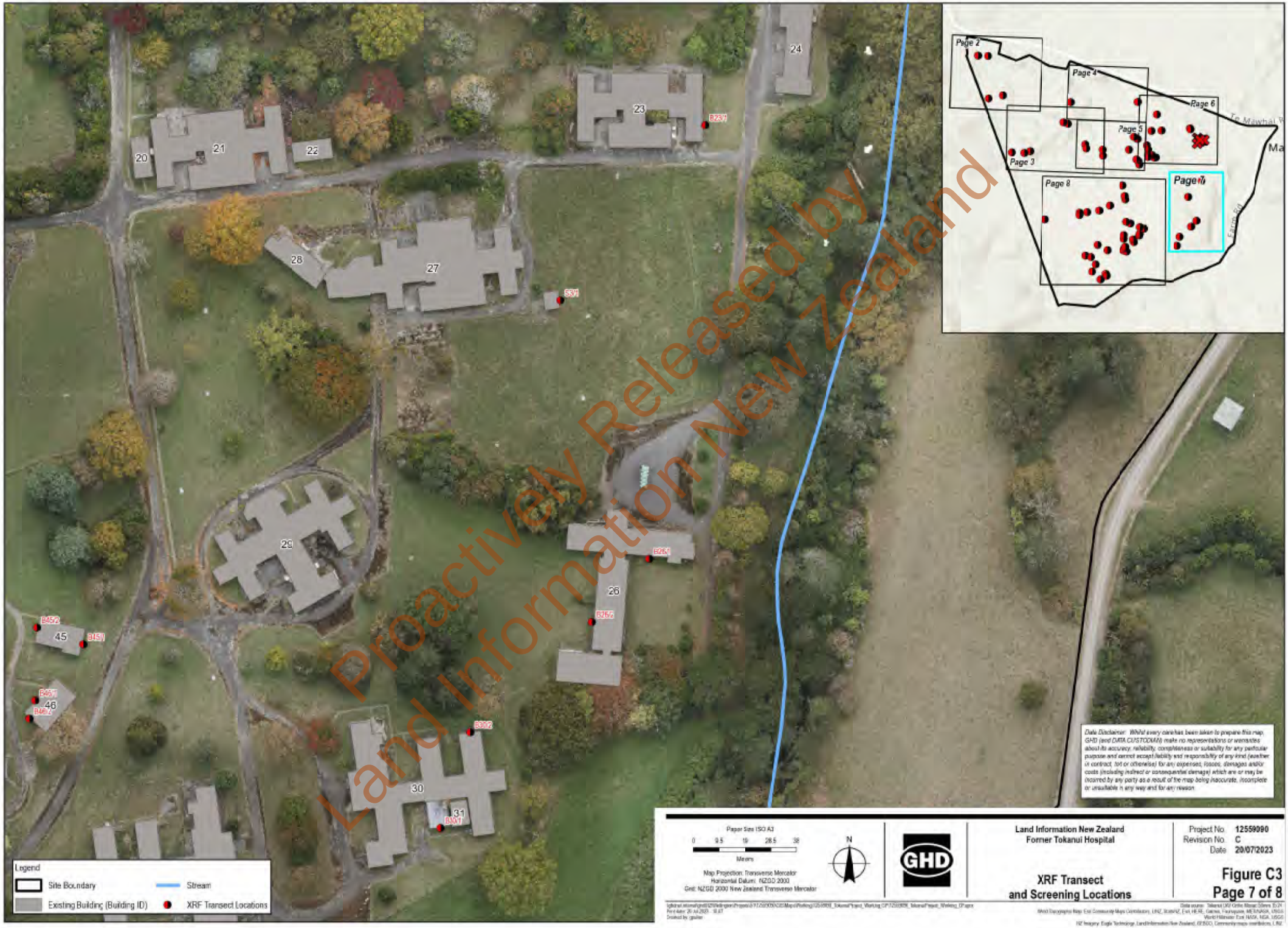

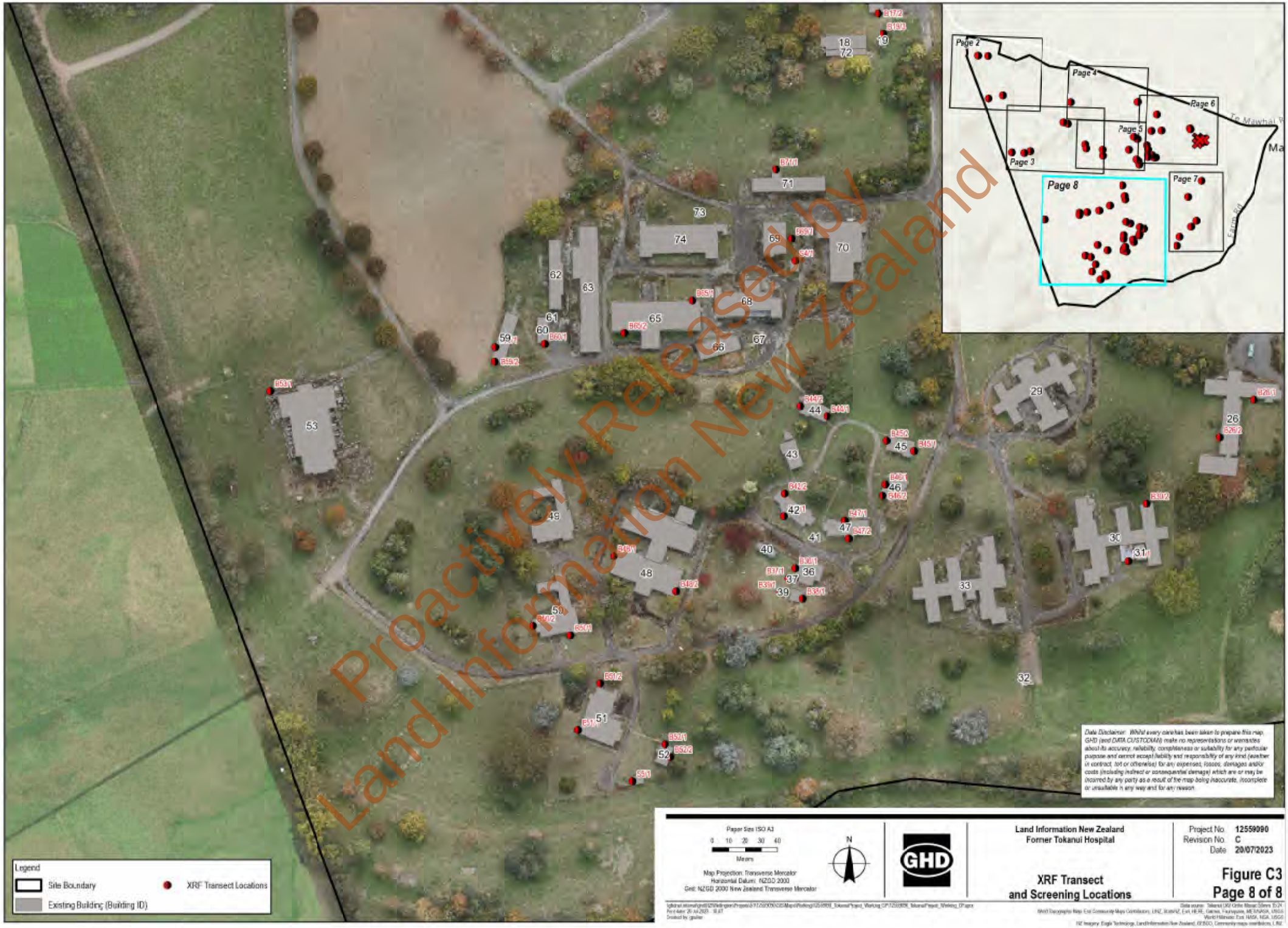
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Page 4
Page 6
Page 5
Page 3
Page 8
Page 7
Legend
Site Boundary
XRF Transect Locations
Existing Building (Building ID)
Paper Size ISO A3
0 10 20 30 40
Metres
Map Projection: Transverse Mercator
Horizontal Datum: NZGD 2000
Grid: NZGD 2000 New Zealand Transverse Mercator
N
GHD
Land Information New Zealand
Former Tokanui Hospital
XRF Transect
and Screening Locations
Project No. 12559090
Revision No. C
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Figure C3
Page 8 of 8
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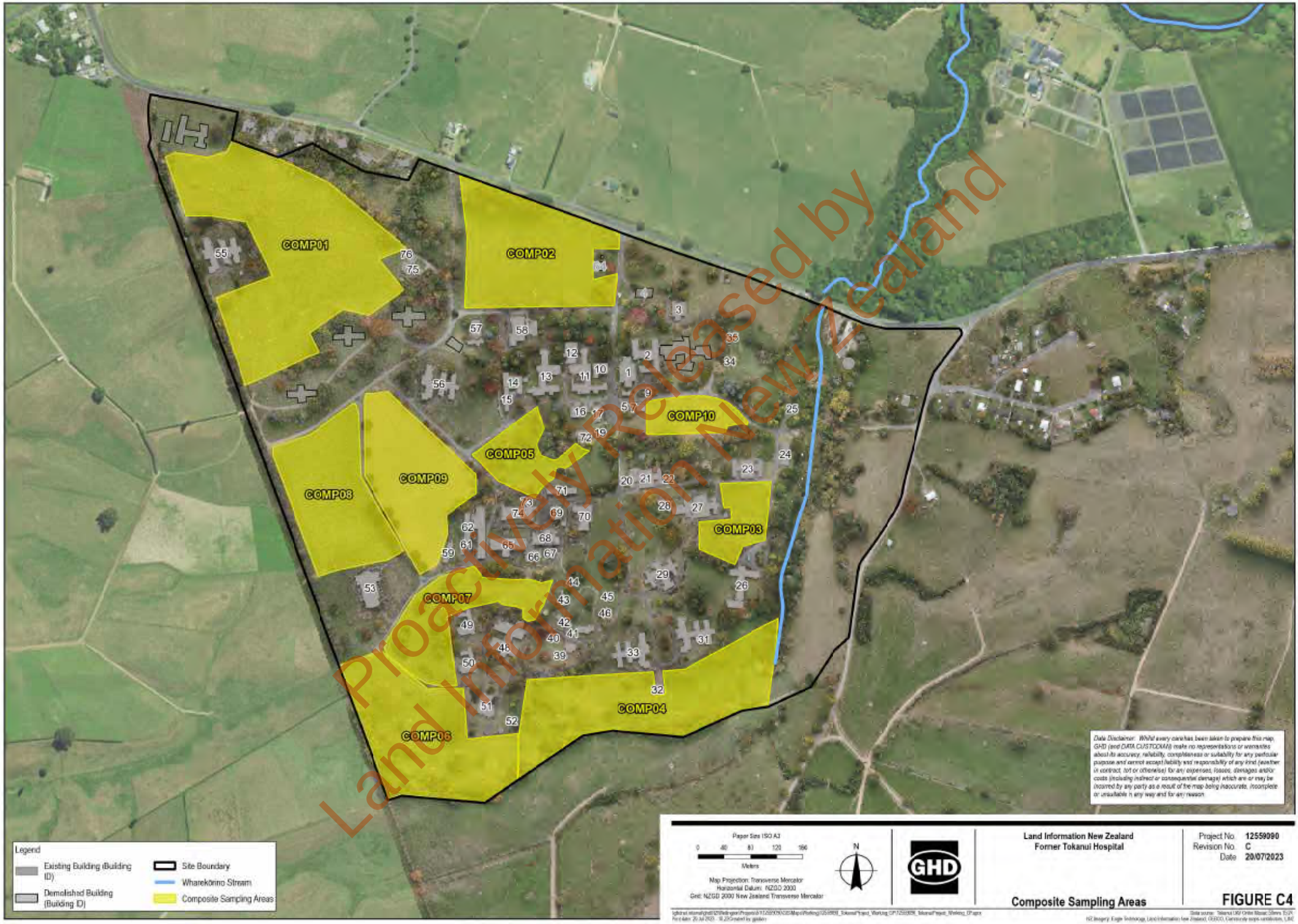

WSP

Figure 4a - Sample Locations

Tokanui Hospital Wastewater Treatment Plant

Geospatial
Level 3, 100 Beaumont St, Auckland 1010 | Tel (09) 355 9500

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Project Number:	Author:	Client:
3-39371.00	Harmond Santos	Land Information New Zealand
Date:	**Approved by:**	
04/11/2019	Rachael Forrest	