Attachment 9

Contaminated Soils Management Plan

Fergusson FN and Bledisloe North Wharf Extensions

Prepared for Ports of Auckland Ltd
Prepared by Beca Limited

19 September 2024

Contents

Revision History

Revision N°	Prepared By	Description	Date
	Maria Serrano	Report to support resource consent	

Document Acceptance

Action	Name	Signed	Date
Prepared by	Maria Serrano		
Reviewed by	Holly Scott Phillip Ware		
Approved by	Andy Harvey	 pp	
on behalf of	Beca Limited		

1 Introduction

1.1 Background

Beca Limited (Beca) has been commissioned by Port of Auckland Limited (PoAL) (the client) to prepare a Contaminated Soils Management Plan (CSMP) for the proposed Fergusson North and Bledisloe North Wharf extension areas, located within the Port of Auckland, in Auckland CBD.

This CSMP has been prepared based on the findings of a Preliminary Site Investigation/Detailed Site Investigation (PSI/DSI)[1] prepared by Beca for the proposed development in August 2024. **This document will need to work together with erosion and sediment control plans prepared by other parties for the proposed development.**

This CSMP has been prepared to detail recommended procedures for soil disturbance in relation to contaminated land and required actions in the event of an unexpected soil contamination discovery. This plan relates only to 'on land' areas and not the coastal marine and marine works.

1.2 Purpose & Scope

The purpose of this CSMP is to identify procedures that shall be undertaken during site development to control the disturbance and movement of soils, particularly identified contaminated soils within the development area (Figure 1).

This CSMP should be considered a 'live document' that informs the contractor of good practice procedures to manage contaminated soils during ground disturbance activities. This document will be reviewed and amended as necessary based on onsite observations over the course of the site works to address the potential human health risks associated with potentially contaminated soils. Any amendments made to the CSMP are to be approved by the Beca Suitably Qualified and Experienced Practitioner (SQEP) prior to implementation of the change.

This CSMP outlines procedures for the management of potential contaminants of concern identified in the Beca PSI/DSI, in the case of unexpected discovery (as discussed in **Section 7**), these procedures may need to be modified.

This CSMP has been prepared in general accordance with:

- Ministry for the Environment (MfE) Contaminated Land Management Guidelines No.1(CLMG No.1) – Reporting on Contaminated Sites in New Zealand (2021).
- Approved Code of Practice: Management and Removal of Asbestos. WorkSafe New Zealand (2016) (ACoP, 2016).
- New Zealand Guidelines for Assessing and Managing Asbestos in Soil. BRANZ (2017) (GAMAS).

This CSMP does not look to identify the presence of asbestos in buildings, structures, or services. Prior to any destructive works appropriate asbestos surveys and management controls should be established by a licenced asbestos provider.

1.3 Regulatory Context

The regulations of the National Environmental Standard for Assessing and Managing Contaminants in Soil to Protect Human Health (2011) (NESCS) are applicable. Consent will be required to undertake earthworks as

[1] Preliminary Site Investigation/Detailed Site Investigation – Contamination – Fergusson FN and Bledisloe North Wharf Extensions, Port of Auckland, Beca Ltd. 28 August 2024

part of the site redevelopment. This CSMP will support the consent application for earthworks under the NESCS, as well as the applications to Auckland Unitary Plan Operative in Part (AUP(OP)) (if required).

This document has been prepared to support the resource consent application and should be reviewed and updated as required, prior to the commencement of works once construction methodologies are finalised.

2 Site Overview

2.1 Site Location and Land Use

The site comprises two areas designated for the extension of Bledisloe North (BN) and Fergusson North (FN) Wharves, located within the wider PoAL property, Auckland (Figure 1). The areas of the site occupy approximately 15,700m² (BN wharf) and 2,600m² (FN wharf) for a combined site area of approximately 18,300m². The site falls across two land parcels associated with the Port of Auckland, legally described as:

- Part Lot 37 DP 131568
- Lot 13 DP 131563

The locations of the site in relation to these two land parcels is shown in Figure 1. The yellow lines represent the existing lot boundaries.

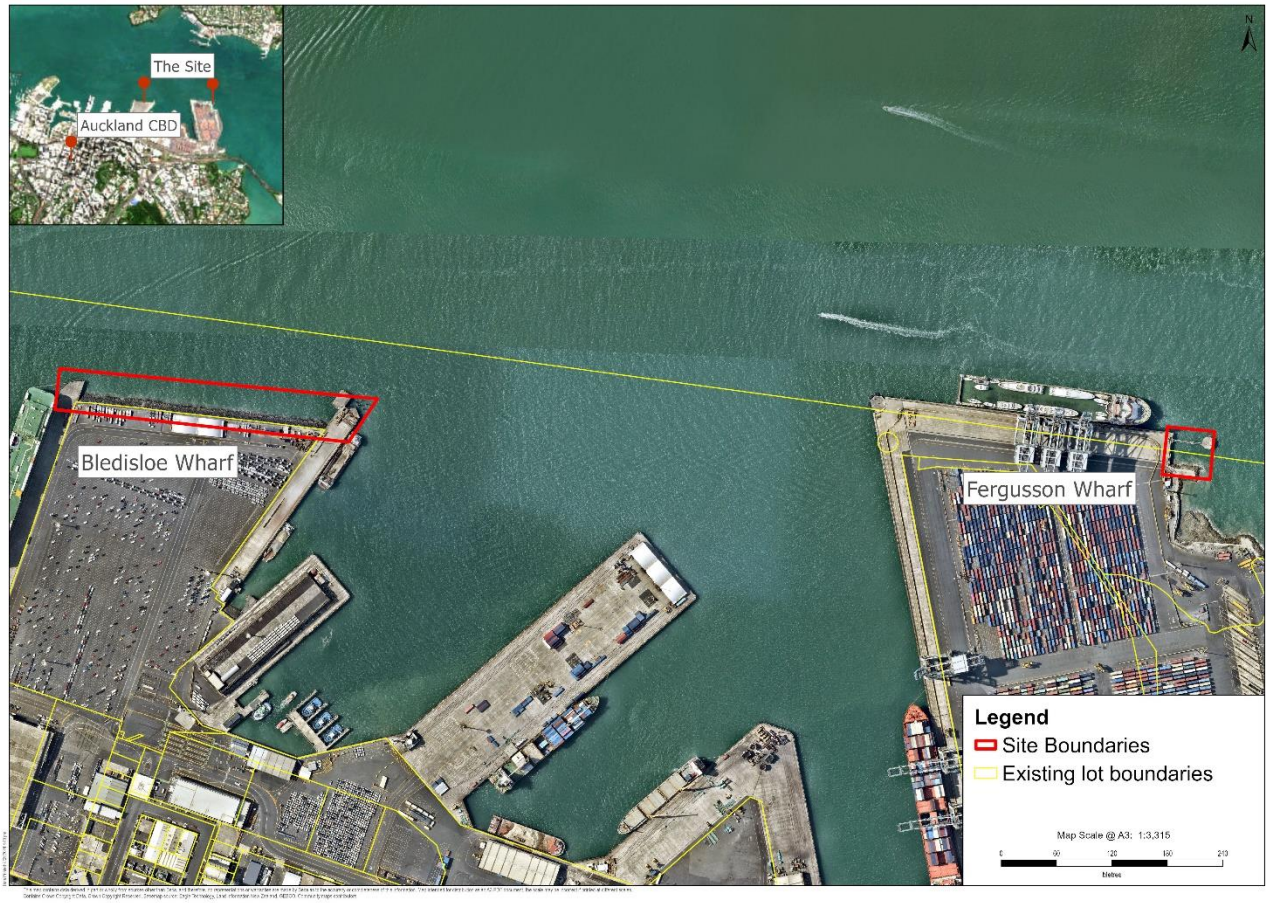

Figure 1 Site Location (outlined red) within Port of Auckland Property.

2.2 Proposed Works

Port of Auckland intend to construct the following:

- An extension to the existing Fergusson FN wharf to enable quay cranes to access full length of the ship. The new wharf extension will be approximately 45m long and 34m wide plus a triangle infill wharf of approximately 15m by 15m dimension. The wharf will consist of a pile supported concrete structure comprising flat deck similar to the existing wharf. Piles will be steel encased reinforced concrete, socketed into the Waitematā rock that underlies the site.

- A new Bledisloe North Wharf to provide new berth for cruise vessels and roll-on/roll off vessels. The new wharf will be approximately 330m long and 27.5m wide. The wharf will be a pile supported concrete deck structure similar to the existing Bledisloe and Fergusson wharves. Piles will be steel encased reinforced concrete, socketed into the Waitematā rock that underlies the site

The proposed development will involve earthworks for the establishment of piles and retaining walls. Final earthworks areas and volumes are to be confirmed. However, it is understood that earthworks will be limited to the northernmost 6m of the Bledisloe Wharf (for an area of approximately 1,400m²) and northernmost 6m of the mudcrete bund located at Fergusson Wharf (forming an area of approximately 200m²). Earthworks depth is understood to be around 6m bgl.

3 Site Contamination Summary

The site is located within two areas of PoAL land. A desktop study undertaken as part of the PSI/DSI identified that the first area falling within the northern portion of present-day Bledisloe (BN) Wharf includes a portion of land reclaimed between late 1970s and early 1980s. This area was identified as having been historically used for shipping containers handling, with the presence of a substation building (built in the 1970s) a smaller building (built between 1996 and 2001 and removed by 2012) and two concrete structures for management of heavy containers. This site area is currently being used for miscellaneous storage and carparking and is the location of two office portable buildings and a yard for marine maintenance which includes small storage of hazardous substances. The substation building remains present. The second area falls within the north-eastern portion of present-day Fergusson (FN) Wharf and includes a portion of land reclaimed around 2017 which comprises a mudcrete bund and a portion of a crane maintenance yard.

Areas Not Investigated – Further Work Required

The PSI/DSI identified additional areas on site in the eastern portion of the BN site area which could present a contaminated soil risk in the BN site area, including a substation building, storage of hazardous substances and two former concrete structures for management of heavy containers. However, as these areas were operational at the time of the PSI/DSI investigation, soil sampling across these areas was not viable. As a result, should disturbance works be proposed in these areas, **soil sampling across these areas will be required** at a suitable density to appropriately inform risk from soil contamination in soils, and based on laboratory results of this sampling, the procedures within this CSMP may require updating. The laboratory analysis to be undertaken to samples collected from these areas will be informed by the contaminants of concern identified in the PSI/DSI (Section 5).

3.1 Soil Observations and Results

Soil Observations

- All sampling locations were in areas of hardstand asphalt groundcover.
- The depth of concrete below the asphalt layer varied from 0.1m bgl to 1m bgl between the five borehole locations at BN site area.
- Engineered fill below the asphalt and concrete in the BN site area varied across locations and with depths. However, the engineering fill consisted mainly of gravel and sand, with silt, cobbles and boulders encountered at several locations. Soils consistent with those mapped as the Tauranga Group were reached at three locations at depths between 11m and 15.3m bgl. Depth of engineering fill was not reached at the shallower borehole target depths (maximum of 7.6m) in any of the remaining locations.
- Mudcrete material was found directly below concrete at the borehole advanced in the FN site area.
- A dark/black coloured soil with no odour was at two sampling locations in the BN site area.
- Groundwater was encountered during drilling of the boreholes at 2.6m bgl at one location in the western end of the BN area and at 0.5m bgl at the sampling location in the FN area, neither of these levels were confirmed as representing any perched or consistent water table.
- Standing water levels at the two groundwater sampling locations were recorded as 2.89m bgl in the FN area and 4.59m bgl in the BN location during groundwater sampling.

Soil Sampling Results

Based on the findings of the desktop study, soil sampling was undertaken as part of the PSI/DSI. Five machine boreholes within and surrounding the BN wharf site area and one machine borehole adjacent to the FN wharf area were advanced and soil sampling undertaken to a maximum depth of 7.6m below ground level (bgl). 14 soil samples (including a duplicate sample for quality control purposes) were analysed for contaminants of

concern identified during the PSI phase which included heavy metals, total petroleum hydrocarbons (TPH), polycyclic aromatic hydrocarbons (PAH) and asbestos.

All analyte concentrations were reported below the adopted human health protection criteria. While seven soil samples reported concentrations of nickel above the AUP(OP) environmental criteria, these nickel concentrations were reported below background concentrations for volcanic soils. Detections of TPH and PAHs were encountered in five and six soil samples, respectively. Seven samples returned concentrations of at least one heavy metal above the expected background concentrations for soils on site. Additionally, a detection of Chrysolite (white asbestos) was identified in one sample collected from BN, concentrations of combined Fibrous Asbestos and Asbestos Fines (FA/AF) in this sample were below the adopted human health criteria.

3.2 Groundwater Observations and Results

Groundwater sampling was undertaken as part of the PSI/DSI following the installation of two piezometers (one within the BN site area and one within the FN site area. Four groundwater samples (including one duplicate sample and one trip blank sample for quality controls purposes) were analysed for contaminants of concern identified during the PSI phase which included heavy metals, TPH, and PAH. Concentrations of all contaminants of concern in all groundwater samples were below the laboratory detection limits.

3.3 Additional Sampling for Disposal

Given that asbestos was detected in one soil sample collected during the PSI/DSI, the potential for asbestos presence across the site is noted. However, additional sampling is recommended to further characterise soils on site that require off-site disposal, given that sampling during the PSI/DSI was not undertaken at a density to characterise soils to a disposal requirements level, and given that soil sampling locations within the proposed disturbance areas was not possible during the PSI/DSI.

4 Management Procedures

This section sets out general management procedures and requirements relating to managing contamination on site.

It is recommended that implementation of this CSMP is contractually enforced throughout the duration of the site construction works.

- All personnel involved in the site construction works are to be familiar with this CSMP and ensure that the requirements of this CSMP are being followed for all earthworks within the site.
- A copy of this CSMP is to remain available onsite so that reference can be made to it when undertaking any site works.
- The CSMP is intended to assist the site Contractor in meeting their legal obligations related to potentially contaminated soils with respect to health, safety, and the environment. It is not intended to cover the general site safety procedures required for typical excavation and construction activities at the site. The CSMP is not intended to relieve the Contractor of their legal responsibilities.
- Excavation, demolition, and construction activities at the site may be subject to other controls/rules/policies under the relevant district and regional plans, including but not limited to, the Resource Management (National Environmental Standard for Assessing and Managing Contaminants in Soil to Protect Human Health) Regulations 2011. Any conditions imposed by the regulatory authorities must be adhered to, as outlined in the consent. It is expected that this CSMP will be incorporated into any permit process involving excavation/disturbance work at the site to ensure the risks associated with contaminated soils are managed appropriately.
- Overall responsibility for the implementation of this CSMP shall be held by PoAL. However, the specific requirements and provisions of the management plan will be under the control of the site Contractor (if not PoAL).

5 Site Management

5.1 Pre-Development Site Set-Up

A site meeting shall be held and attended by the Client, the Contractor, and any other personnel involved with the earthworks (e.g., sub-contractors, if any) to discuss the risk of potentially contaminated soils and to agree on site procedures for handling potentially contaminated soils.

Prior to soil disturbance works commencing, the Contractor shall establish controls including, but not limited to:

- Access to the earthworks areas shall be restricted to authorised personnel; this shall be achieved via security fencing and be maintained as secure at all times. Access to these areas will be granted/allowed following appropriate site induction procedures.
- Signage detailing site works information, health and safety requirements, and site reporting requirements shall be in place.
- Health and safety facilities including first aid points.
- Dust control systems.
- Stormwater (surface runoff) diversion and collection systems.

At the start of each day a 'tool-box' talk should be held by those involved in the works which will cover the works proposed for the day and the specific components of the Construction Management Plan (CMP), refer to **Section 5.2.1,** that need to be adhered to.

Procedures relating to the management of dust, stormwater, sediment and stockpiling are detailed in the sections below and shall be implemented by the Contractor. All procedures shall comply with the relevant Council bylaws and conditions of any applicable resource consents.

Landfill acceptance of any excavated materials to be disposed offsite shall be obtained prior to works commencing. Section 6.1.5.2. outlines offsite disposal procedures in detail.

5.2 Organisational Roles and Responsibilities

The following contact details shall be updated prior to works commencing:

Role	Responsibility
Consent holder: PoAL Project Manager: Email: Number:	• Responsible for overseeing approval and implementation of this CSMP.
Lead Contractor: Contact Name: Email: Number:	• The construction manager of the lead contractor shall be responsible for works compliance with requirements of the CSMP and other relevant plans/documentation. • Inform Auckland Council, as required, relating to contamination incidents and discoveries.
Site Supervisor: Contact Name: Email: Number:	• The site supervisor must read, understand, and implement the CSMP on site and manage site workers compliance with this management plan. • The site supervisor shall ensure all workers are inducted, wear appropriate personal protective equipment, and follow basic hygiene procedures and be aware of the symptoms of contamination toxicity and health risks. • The site supervisor shall monitor for signs of contamination (using an excavation spotter if deemed necessary) and manage the implementation of control measures and safety precautions.

Role	Responsibility
	• Verbally report to the construction manager regarding incidents relating to presence of contamination.
Contaminated Land Specialist (SQEP): Contact Name: Phil Ware Email: [redacted] Number: [redacted]	• The Contaminated Land Specialist registered as a suitably qualified and experienced practitioner (SQEP) shall be responsible for provision of ground contamination advice during the works and completion reporting on conclusion of the works, if required. • In the event of an accidental soil contamination discovery, the SQEP may specify additional PPE requirements, which are to be adopted as directed (these may include, but not be limited, to items such as coveralls and half face respirators).

5.2.1 Contractor Health and Safety Documentation

This CSMP focuses specifically on the handling and management of potentially contaminated soil. This report does not replace the need for any Contractor's CMP. However, it is expected that this CSMP would be referred to in any CMP.

The CMP should identify the appropriate personal protective equipment (PPE) and behaviours to reduce any potential risk from contaminated soils.

5.2.2 Contractor Training

Prior to the commencement of excavation works, the contractor and all personnel involved with soil disturbance works should be trained to identify signs of unexpected contamination (refer to **Section 7** for identification indicators), including asbestos awareness training. This training will include the correct procedures to be taken when suspected ACM or other unexpected contamination is encountered, minimum requirements for personal protective equipment (PPE), and any required decontamination procedures.

6 Contaminated Soils Management

Earthworks are being undertaken to facilitate the development of the project. The following sections outline controls for the disturbance of soil across the site (both the BN and FN areas). Based on the findings of the DSI, disturbance across the BN area shall be undertaken as 'unlicensed asbestos works' in line with the GAMAS and the ACOP.

Section 6.1 outlines the standard earthworks procedures for both the BN and FN areas while section 6.2 has **additional** procedures relating to asbestos management for the works to be undertaken as unlicensed asbestos work **in the BN area**. These unlicensed asbestos works aim to mitigate the risk to human health due to the asbestos found in one soil sample collected from the vicinity of the BN area. Given asbestos is heterogeneous in soil, these management procedures are considered appropriate for the earthworks. Should further disposal testing indicate less or more stringent procedures are warranted then this plan should be amended accordingly.

6.1 General Earthworks Site Management

6.1.1 Health and Safety

6.1.1.1 Induction

All contractors or subcontractors who will be exposed to soil when undertaking their work shall be inducted onsite and the induction shall include familiarisation with this CSMP. Records of induction shall be maintained.

6.1.1.2 Personal Protective Equipment (PPE)

Workers may be exposed to contaminants via the accidental inhalation, ingestion, or skin contact with contaminated soil. The following PPE should be available to site workers at all times, and is recommended to be worn by workers who are likely to come in direct contact with soil as part of the proposed works, or if dust is generated:

- All staff physically involved in works likely to result in hand contact with soil should wear gloves.
- Wear a P2 dust mask if conditions generate dust.
- Minimise hand to mouth contact.
- Wash hands and face prior to eating, drinking, smoking or vaping.
- Eating, drinking, smoking, and vaping should be limited to a 'clean' area (i.e. breakroom). No eating, drinking, smoking or vaping is to be undertaken within the excavation area.
- Wash any skin abrasions immediately and treat to prevent infections.

In the event of an accidental soil contamination discovery, the SQEP may specify additional PPE requirements, which are to be adopted as directed (these may include, but not be limited, to items such as coveralls and half face respirators).

6.1.1.3 Personal Hygiene

Handwashing facilities will be available to wash hands before eating, smoking and the end of the workday. Smoking shall only occur in a designated area outside of the work area where excavation is occurring.

Following any further intrusive investigation and the relevant revisions to this CSMP, the Contractor should review the updated health and safety procedures and relay relevant changes to site workers.

6.1.2 Stormwater Management and Erosion and Sediment Control

Erosion and sediment controls, as appropriate to the works, shall be installed by the Contractor prior to earthworks/excavations commencing and shall be designed for the treatment of surface water runoff in

accordance with Auckland Council Guideline Document 05 (GD05) '*Erosion and Sediment Control Guide for Land Disturbing Activities in the Auckland Region*'.

Stormwater runoff should be preferentially maintained onsite and allowed to infiltrate wherever possible to reduce the volume of water and material discharged.

Cesspit protection measures such as filter socks and sandbags should be used to trap any sediment from collected runoff. Any sediment captured through these controls should be treated the same as soil in line with the procedures in this CSMP.

6.1.3 Dust Control Procedures

Standard good practice for dust controls shall be implemented by the Contractor, as determined in conjunction with the Engineer. Good practice dust control measures include but are not limited to:

- Timing of works and consideration of the prevalent wind direction during works planning.
- Dampening any exposed soils during dry and windy conditions through use of a water truck or portable water sprayers.
- Covering any stockpiles.
- Reduction of vehicle speeds on site.
- Minimising drop heights from loaders.

The contractor may refer to the MfE *Good Practice Guide for Assessing and Managing Dust (2016)* for further guidance on dust control procedures.

6.1.4 Groundwater Management Procedures

Groundwater levels were measured at two locations during soil sampling at 0.5m bgl in the FN site area and 2.6m bgl at one location in the BN site area. Additionally, groundwater levels during groundwater sampling from the two piezometers were 2.89 and 4.59m bgl in the FN site area and the BN site area, respectively.

If groundwater is encountered during the excavation works, the Contractor shall:

- Contain groundwater within the excavation and not allow it to discharge across the site surface.
- If dewatering is required, the pumped groundwater discharge shall be diverted into a retention tank. The groundwater may be disposed to stormwater only if laboratory testing of water indicates it is appropriate to do so and this has been agreed with the Council (or separate resource consents obtained if required). Sampling must be undertaken under the guidance of a suitably qualified environmental practitioner.
- If laboratory analysis identifies contaminants above limits for discharge to stormwater, groundwater may be discharged to reticulated wastewater system subject to approval from Watercare.
- The SQEP shall determine the appropriate analyte suite to inform disposal based on the contaminants of concern identified by the PSI/DSI.

6.1.5 Soil Excavation/Disturbance Procedures

For any soils excavated as part of the development, the Contractor shall ensure that records are kept of all excavations and soil movements on-site. These shall include the location and dimensions of the excavation, the ground conditions, the soil movement on site, and whether any waste materials, unusual staining, and/or odour were observed.

If waste materials, unusual staining, odour, or other potential indicators of soil contamination are encountered during excavations, the contractor shall refer to the unexpected contamination discovery protocols detailed in **Section 7** below and contact the SQEP for next steps.

6.1.5.1 Stockpile Procedure

Procedures for stockpiling of material for the BN area is outlined in **section 6.2.5**. Where stockpiles are required in the FN area, they shall be maintained at a low level (no more than 3m in height). Stockpiles shall not be placed in an area where runoff cannot be controlled. Stockpiles shall be managed by the Contractor as follows:

- Where adverse weather is forecast (including windy conditions), the stockpiled material shall be covered by a suitable material (such as polythene) to:
  - Prevent the ingress of rainwater into the material and therefore minimise the potential for generation of leachate or sediment in stormwater.
  - Prevent wind-blown distribution of soils or dust.
- If the covering of stockpiles is not feasible or practical, these should instead be tamped down to stabilise to stockpile surface and surrounded by erosion and sediment controls (i.e. silt fencing, filter socks, or similar) to minimise the generation of sediment laden stormwater.

6.1.5.2 Off-Site Disposal

Earthwork and soil disturbance volumes have not been finalised at the time of writing this CSMP. If surplus material requires off-site disposal as part of the development works, soil is unlikely to be considered cleanfill due to the identification contaminants of concern above the published soil background concentrations and potential for asbestos presence. Therefore, surplus material would likely require disposal as managed fill or contaminated fill at an appropriate licensed facility, unless further soil sampling indicates otherwise.

Given that asbestos was detected in one soil sample collected from the vicinity of BN area during the PSI/DSI, the potential for asbestos presence across the BN area is noted. However, additional sampling is recommended to further characterise soils on site that require off-site disposal, given that sampling during the PSI/DSI was not undertaken at a density to characterise soils to a disposal requirements level, and given that soil sampling locations within the proposed disturbance areas was not possible during the PSI/DSI.

Confirmation and approval from an appropriately consented receiving facility should be obtained by the Contractor prior to material leaving the site. The Contractor must retain copies of all disposal receipts/documentation and provide these to the Project Manager within five days of receipt.

Any excavation, handling, and off-site removal of the material required shall be managed by the Contractor as follows:

- Materials requiring excavation for disposal to a licensed landfill shall be excavated and loaded directly into truck and/or trailer units where possible (limiting stockpiling), subject to acceptance by the receiving facility.
- All trucks shall be covered before leaving site, to safely contain all materials during transport.
- The Contractor shall maintain a register of soil movements and records such as location of excavation, disposal location, quantity of material and off-site weighbridge documents.

6.1.5.3 Imported Materials

Any material imported to site for the purposes of filling shall be cleanfill, unless otherwise permitted by resource consent conditions. Records must be provided by the Contractor to demonstrate that any imported material is obtained from a quarry or other appropriate source.

Material shall not be imported from any site that is, or would be considered, a Hazardous Activities and Industries List (HAIL) site (MfE, 2021), unless sampled under the guidance of a SQEP that it is suitable for the intended land use and is acceptable to PoAL.

6.2 Unlicensed Asbestos Works

This CSMP captures management procedures for earthworks where asbestos contamination/potential contamination is present in **soils** only. Management procedures for risks related to demolition of buildings, structures, under/overground infrastructure (for example existing pipes) containing asbestos, and/or ACM are not detailed within this CSMP.

Soil disturbance **across the BN area** is required to be undertaken as **unlicensed asbestos works** in line with the GAMAS and the ACOP.

Contractors involved in earthworks classed as 'unlicensed asbestos works' do not need to be WorkSafe licenced asbestos removalists, but they must show a level of competency in the general handling and management of asbestos, including knowledge of the hazards associated with exposure to asbestos (refer to **Section 5.2.2** for Contractor Training).

A summary of methods and controls for unlicensed asbestos work is provided in Table 1. The following sections outline general controls for the disturbance of soil on site which fall within the 'unlicensed asbestos works' scenario under the GAMAS.

Table 1 Summary of Management and Control Requirements for Unlicensed Asbestos Works

Control	Requirement
Supervision	By a suitably experienced competent person, as per the requirements of regulation 41(3) of the Asbestos Regulations.
Asbestos removal control plan	Not required.
WorkSafe notification	Not required.
Clearance Certificate	Not required.
PPE	No asbestos specific PPE is required; however, it should be available to site workers in the event of unexpected discovery (See **Section 6.2.8** for PPE)
Dust/asbestos fibre suppression	Dust suppression via the addition of water at localised points should be undertaken during dry conditions.
Air monitoring	Not required (see **Section 6.2.77)**
Transportation	Trucks should be covered. Truck lining / soil wrapping is dependent on the receiving facility.
Decontamination	Excavation equipment to be visually inspected by a competent person before it leaves site. Decontamination area required for personal leaving the site including disposable PPE collection and foot wash.

6.2.1 Site Induction

In addition to the general contractor training and induction process, all personnel undertaking works on site should undergo a specific induction to explain the controls and procedures associated with asbestos related works as outlined in this section.

6.2.2 Exclusion Zone

Whilst earthworks are being undertaken, signs and barriers must be erected around the area of works to warn of the danger and to prevent unauthorised entry. An exclusion zone should be set up with barriers and signage placed a minimum of 5 m from the works area where practicable. All barriers and warning signs shall remain in place until all earthworks have been completed. The extent of control areas will be set with the objective of preventing unacceptable exposures to personnel working outside of the exclusion zone.

6.2.3 Excavation of Asbestos Contaminated Soil and Transport

The following general methodology shall be used as a guide for undertaking asbestos containing soil removal and shall be put in place by the contractor during the earthworks at the site.

In summary:

- Access to the area must be restricted prior to commencement of excavation works.
- Personnel operating machinery involved in excavations, stockpiling and transferral of fill must adhere to requirements within this plan.
- Any personnel handling the potentially asbestos containing soil or material must have the appropriate training and experience for handling asbestos materials and of the required decontamination procedures.
- Trucks must be covered before leaving site as a minimum. If required by the facility, trucks may require a 200μm thick plastic liner for off-site disposal (Contractor to confirm disposal site requirements).
- Disposal of the material must be to an appropriately consented waste facility.
- At completion of unlicensed asbestos works, a visual inspection will be undertaken by a competent person and validation soil samples (if required) of the remaining soil at the excavation extents will be undertaken under the supervision of the SQEP.

6.2.4 Dust and Fibre Suppression

In addition to the dust control procedures outlined in Section 6.1.3**,** and given the potential for asbestos noted, the following procedures can be adopted for site works:

- If soils are dry, apply water by sprinkler before starting works. The site shall be regularly damped down to reduce dust generation. This should prevent visible dust emissions beyond the remediation area.
- Surfactants and polymers can be implemented across the site soils to further reduce dust generation if required.
- Keep windows / doors on excavators and trucks closed when in the remediation area.

If wind is generating dust, operations shall cease, and any stockpiled material covered until conditions are once again favourable.

6.2.5 Stockpiling of Material

Stockpiling of soil should be avoided where possible given the potential for asbestos presence. Where soil stockpiles are required:

- Stockpiles shall be sited within an area away from the main working area to minimise potential contact by site workers.
- Stockpiled materials shall be placed on suitable material (e.g., polythene sheet) to prevent contaminants cross contaminating clean soils; and
- The stockpiled material shall be covered by a suitable material (such as polythene) to prevent the ingress of rainwater into the material and therefore minimise the potential for generation of leachate or sediment in stormwater.

6.2.6 Off-Site Disposal of Asbestos Containing Soils

Given that asbestos was detected in one soil sample collected from the vicinity of BN area during the PSI/DSI, the potential for asbestos presence across the BN area is noted. However, additional sampling is recommended to further characterise soils on site that require off-site disposal, given that sampling during the PSI/DSI was not undertaken at a density to characterise soils to a disposal requirements level, and given that soil sampling locations within the proposed disturbance areas was not possible during the PSI/DSI.

In addition to procedures outlined in section 6.1.5.2, the receiving facility should be contacted prior to asbestos contaminated soil being removed from site to confirm the following:

- Acceptance of the potential asbestos containing soil material.
- Truck lining requirements.

Trucks will need to be covered prior to transport ACM soils at a minimum. Soil testing results from the DSI will likely be required by the receiving facility.

6.2.7 Control Air Monitoring

Control air monitoring is not a requirement within the guidelines for 'unlicensed asbestos works', however it can be determined to be required at the discretion of the SQEP.

Factors that may lead to the requirement of control air monitoring include:

- In the event of an unexpected discovery of contamination, or soil testing showing elevated asbestos levels
- If there is uncertainty about whether the airborne contamination standard for asbestos is likely to be exceeded.
- If there is evidence (for example, dust deposits outside the work area) that control measures are not adequate or have deteriorated.
- When there has been an uncontrolled disturbance of asbestos.

Note the demolition of any structures, infrastructure or any other asbestos containing materials may require specific control air monitoring which is not covered by this CSMP.

6.2.8 Asbestos PPE

No asbestos specific PPE is required for unlicensed asbestos works if airborne asbestos is considered unlikely to exceed trace levels (0.01 f/ml). Due to the soil testing results, and additional implementation of dust suppression measures, airborne asbestos is considered unlikely to exceed trace levels in air.

Asbestos specific PPE should be available to site workers if any change of site is observed such as (but not limited to) an unexpected discovery of contamination, or soil testing showing elevated asbestos levels.

Additional PPE can include, but not be limited to:

- Boot covers.
- Disposable coveralls, rated Type 5, Category 3.
- Protective gloves for any personnel handling ACM or soil potentially containing ACM.
- Safety glasses.
- Appropriate particulate filter disposal respirators (minimum P2 rating) that is selected in accordance with AS/NZS 1715, use and maintenance of respiratory protective equipment.

6.2.9 Decontamination of Personnel

For personnel exiting an unlicensed asbestos works area, the following decontamination procedures are required:

- Wash footwear in a two-stage foot wash to remove all visible mud and soil
- Wash hands and face before eating, drinking, or smoking.
- Place disposable PPE that has been used (overalls, P2 masks, gloves, boot covers) in clearly marked bags (double bagged and sealed per the GAMAS and ACOP) for disposable to a facility licensed to accept it.

7 Unexpected Discovery Protocols

The procedures outlined below provide the Contractor with protocols to identify potential contamination if suspected contaminated soils or hazardous materials are discovered during the excavation works. These protocols will enable the appropriate action to avoid exposure of contaminants to site workers or the dispersion of contaminants into the surrounding environment.

Contamination indicators or hazardous materials may include but are not limited to the following:

- Unusual odours.
- Discoloured or stained water seeps and soils.
- Petroleum hydrocarbon contaminated soil and/or free product.
- Liquid waste, putrescible waste, household refuse, building rubble, and any material that normally would be sent to a licensed landfill.
- Suspected Asbestos Containing Material (ACM).
- Intact or broken drums and containers.

During the earthworks on site, the Contractor shall actively monitor for the conditions/materials specified above.

In the event that one of these is identified, the Contractor should take the following actions:

- Stop all earthworks within a 20m radius of the area where the suspected material/emission/discharge has been recorded.
- Immediately notify the site supervisor.
- Cordon off the area as practicable with a suitable barrier.
- Work shall not resume or commence within a 20m radius of the area unless authorised by a SQEP.

The site supervisor shall contact the PoAL Project Manager who will consult with the SQEP and advise on the appropriate course of action. The SQEP shall:

- Notify the regulatory authorities (Auckland Council), that contamination has been discovered and contingency action is being implemented.
- Characterise the contamination by collecting samples for chemical laboratory analysis.
- If appropriate, advise the Contractor to excavate the suspected contaminated material and stockpile or place in a covered container to allow works to continue with minimum delay.
- If stockpiling/containerising is inappropriate, advise construction work to proceed to an area clear of contamination indicators until material testing, as necessary, defines the material characteristics.
- When the material characteristics have been established, advise the site supervisor as to whether the materials may remain on site or what remedial measures are required to manage this material on-site, or the options available to disposal of this material off-site.
- Instruct relevant staff so that all appropriate information such as location and quantity of material and off-site weighbridge dockets are recorded.

8 Site Closure Reporting

Following completion of soil disturbance activity onsite, the site contractor (or nominated SQEP) shall prepare a Site Closure Report (SCR) summarising the works completed. The SCR will include, but not be limited to:

- Summary of earthworks completed;
- Records of any soil removed from site, or imported to site;
- Results of any additional intrusive investigation or laboratory analysis undertaken;
- Any accidental soil contamination discoveries
- Any complaints, incidents, or other.

The SCR is to be provided to the client, who is to submit this to Auckland Council as required to satisfy any resource consent conditions.

9 Limitations

This report has been prepared by Beca Ltd (Beca) solely for the proposed Fergusson North and Bledisloe North Wharf extensions on behalf of Port of Auckland (PoAL) (Client). Beca has been requested by the Client to provide a Contaminated Soils Management Plan. This report is prepared solely for the purpose of managing contaminated soils during earthworks associated with the redevelopment works at the Fergusson North and Bledisloe North Wharf extensions areas located at PoAL (Scope). The contents of this report may not be used by the Client for any purpose other than in accordance with the stated Scope.

This CSMP was based on the findings of a Preliminary and Detailed Site Investigation (PSI/DSI) previously prepared for PoAL. The PSI/DSI was prepared based on the design at the time. Should the design differ, then further investigation may be required and this CSMP will need to be updated accordingly.

This report is confidential and is prepared solely for the Client. Beca accepts no liability to any other person for their use of or reliance on this report, and any such use or reliance will be solely at their own risk.

This report contains information obtained by inspection, sampling, testing or other means of investigation. Unless specifically stated otherwise in this report, Beca has relied on the accuracy, completeness, currency, and sufficiency of all information provided to it by, or on behalf of, the Client or any third party, including the information listed above, and has not independently verified the information provided. Beca accepts no responsibility for errors or omissions in, or the currency or sufficiency of, the information provided. Publicly available records are frequently inaccurate or incomplete.

The contents of this report are based upon our understanding and interpretation of current legislation and guidelines (“Standards”) as consulting professionals and should not be construed as legal opinions or advice. Unless special arrangements are made, this report will not be updated to take account of subsequent changes to any such Standards.

This report should be read in full, having regard to all stated assumptions, limitations, and disclaimers.