

Waihi North Project: Contamination Site Management Plan

Site ID:	OGNZL Waihi Water Treatment Plant and Processing Plant.
Revision/ Date:	Revision 2, 29 January 2026

Overview:

OGNZL is proposing works at the Waihi Water Treatment Plant (WTP) and Processing Plant to enable upgrades to the water treatment facilities, construction of a new roadway and car park (Figure 1). At both areas, ponds used for water treatment will be required to be filled and minor earthworks are required. The proposed pond filling will involve excavation and disposal of the existing pond sediment and infilling with cleanfill material.

This version (Revision 2) has been updated to reflect specialist review on behalf of Hauraki District Council, and consent condition numbering (Fast Track Approvals number FTAA-2504-1046) as granted on 18 December 2025.

This SMP meets the requirements of Condition C5 (all parts), requiring submission of a Contamination Site Management Plan to Hauraki District Council for certification, at least 30 days prior to works commencing.

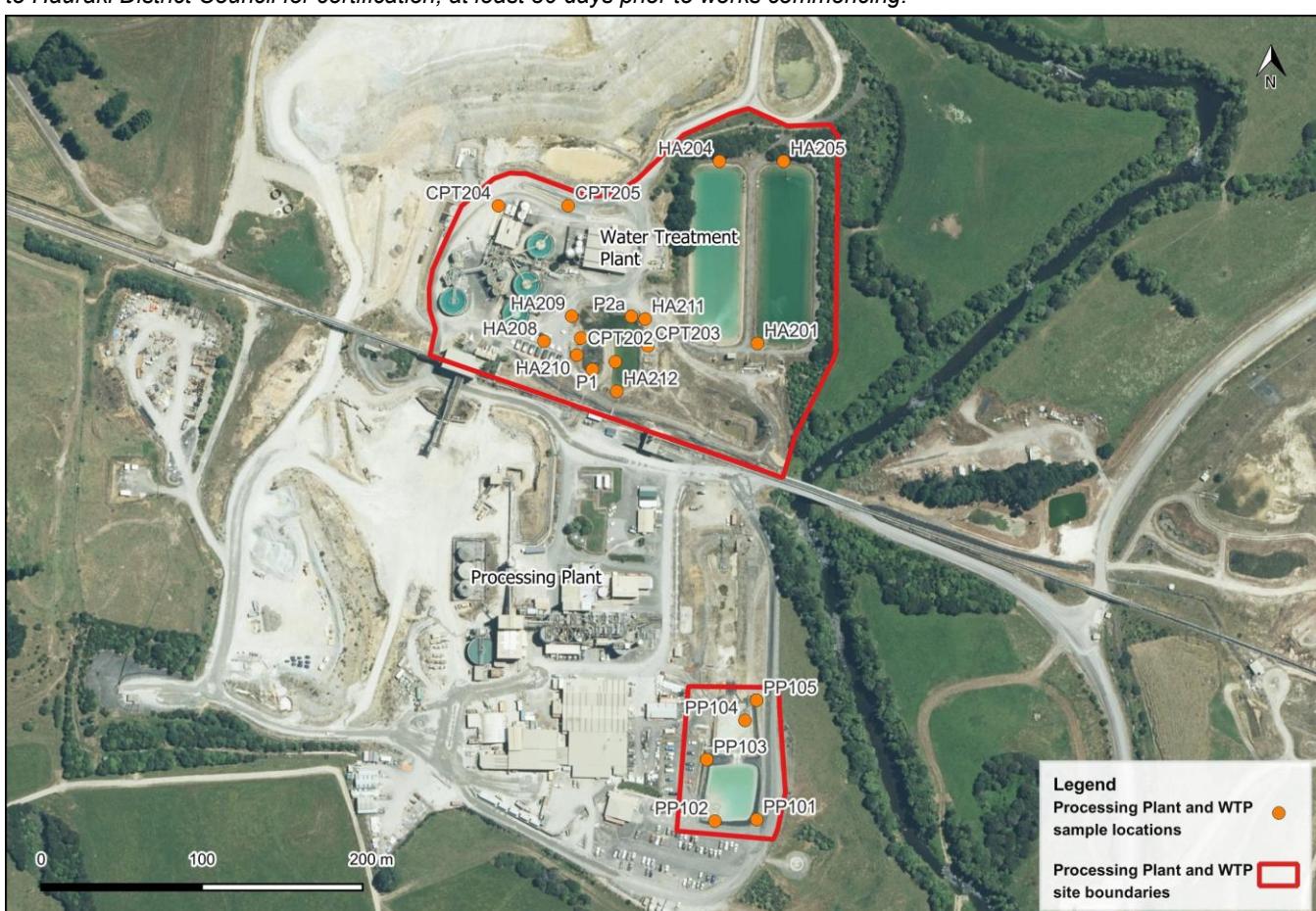


Figure 1. Processing Plant and WTP site locations. Site boundaries in red and sample locations in orange (image source: LINZ, 2024).

Contamination setting	<p>Preliminary and Detailed Site Investigations for the proposed upgrades to the WTP and Processing Plant were prepared by WWLA on 15 May and 19 May 2025 respectively¹. The key findings were:</p> <ul style="list-style-type: none"> The PSI/ DSI identified HAIL Activities associated with the WTP (Activities A17 – fuel storage, B2 – electrical transformer, E7 – general mining activities, G6 – wastewater treatment and I – accidental release of contaminants) and Processing Plant (Activities E7 and I). Soil sampling showed that low levels of metals were present in soils, exceeding predicted background concentrations but not presenting a risk to human health or the environment. The slightly
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¹ WWLA, 19 May 2025. Waihi Processing Plant Carpark, Preliminary and Detailed Site Investigation (Ground Contamination). Prepared for OGNZL, Ref. WWLA1484, Rev 1.

WWLA, 15 May 2025. Waihi Water Treatment Plant Upgrades, Preliminary and Detailed Site Investigation (Ground Contamination). Prepared for OGNZL, Ref. WWLA1484, Rev 1.

	<p>elevated metals concentrations are likely naturally occurring and can be attributed to the volcanic nature of the local geology and mine overburden.</p> <ul style="list-style-type: none"> The testing results confirmed that the WTP/ pond operation activities had not resulted in contamination of the soils around the ponds or the pond sediments. <p>Following sediment removal from the belt wash pond at the WTP, additional sampling was undertaken and confirmed that no contamination is present at the base of the pond².</p> <p>Laboratory results are summarised in the attached tables.</p>
Applicability and responsibility	<p>This SMP reflects the above data and provides controls and procedures specific to the WTP upgrade and Processing Plant carpark works in the context of the contamination identified.</p> <p><i>This SMP applies to the two areas outlined red in Figure 1; works outside of these areas require further sampling to confirm the controls required.</i></p> <ul style="list-style-type: none"> This SMP is required to be submitted to Hauraki District Council for their records prior to works commencing. This reflects proposed conditions 90-92 of the consent sought under the Fast Track process for the Waihi North Project. OGNZL will be responsible for overseeing the implementation of this SMP Checklist, although the primary day-to-day responsibility will sit with the lead contractor <i>[insert contractor name]</i>. Where input is required by a SQEP (i.e. WWLA), it is highlighted below.
Rationale for controls	<ul style="list-style-type: none"> No contaminants were identified exceeding the applicable human health or environmental criteria; therefore, no contamination related risks have been identified during or post the proposed works. No contamination related controls apply to the works, however if soil disposal is required, soils must be disposed to an appropriate facility (Tailings Storage Facility if approved, otherwise to a Class 3 Managed or Class 4 Controlled Fill).

Soil Management Procedures

SMP induction by (SQEP):.....	Date:
Actioned by (Contractor's Site Manager):.....	Date:

Section	Description	Check
1. Site Establishment	<ul style="list-style-type: none"> Establish general earthworks controls for bulk earthworks and the relevant erosion and sediment control plan ("ESCP") prepared for the works and also the WRC <i>Erosion and Sediment Control Guidelines for Soil Disturbing Activities (January 2009, updated 2014)</i>. Arrange disposal permits before any soil leaves the site (whether internally to tailings storage facilities ("TSFs") or to a non-OGNZL site). If in doubt about disposal requirements contact the SQEP. Induct any new workers or subcontractors to the requirements of the SMP as works progress. The initial induction shall be led by the SQEP (in person or online), i.e. WWLA (subsequent inductions may be by the Site Manager) and shall cover: <ul style="list-style-type: none"> Spoil management to minimise discharges to the environment. Material disposal constraints and reuse opportunities. Procedures for responding to unexpected contamination. 	<input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/>
2. General Earthworks Requirements	<ul style="list-style-type: none"> Maintain the approved erosion, sediment, and surface water controls until an erosion-free surface is reinstated. The focus should be on containment of sediment-laden runoff, and clean-water diversion, to minimise runoff potential. The Site Manager shall undertake daily inspections to ensure compliance with the ESCP procedures and controls. 	<input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/>

² WWLA, 26 November 2025. Water Treatment Plant, Waihi – Soil Validation Belt Wash Pond. For OGNZL, Ref. WWLA1484, Rev 1.

Section	Description	Check
	<ul style="list-style-type: none"> The following dust management practices shall be implemented in accordance with the <i>Good Practice Guide for Assessing and Managing Dust, Ministry for the Environment (2016)</i>: <ul style="list-style-type: none"> Avoidance of work in windy conditions if ground conditions are dry. Water can be used lightly as a dust suppressant. Use of gravel on entrance ways and haul roads. Ensuring stockpiles are covered when not being worked, and trucks transporting soil have covers. Filter fabric may be used on site fencing to further reduce dust if necessary. Keep records of disposal volumes and destinations for inclusion in the works completion report ("WCR") or site validation report ("SVR"). Imported material: Ensure any materials imported from offsite are directly sourced from a quarry or have been classified as clean. These must be verified by the SQEP as being either quarry-sourced or cleanfill as defined by the Ministry for the Environment before being imported to site. No water is to discharge to surrounding sites without prior testing, and if necessary, approval by WRC. Water may discharge to ground within the works area or to the Water Treatment Plant ("WTP") if practical. Contact the SQEP to undertake testing if necessary. 	<input type="checkbox"/>
3. Health and Safety Requirements	<ul style="list-style-type: none"> There should be a focus on good hygiene practices – washing hands before eating/drinking, avoiding eating/drinking in works areas and brushing down boots before entering vehicles and site sheds. No specific contamination-related practices are required. 	<input type="checkbox"/>
4. Unexpected Contamination Response	<ul style="list-style-type: none"> Liaise with the SQEP should any unexpected contamination be identified and implement mitigation measures advised by the SQEP. Signs of soil contamination may include: <ul style="list-style-type: none"> Odorous materials (i.e. hydrocarbons, solvent odour). Discoloured soil (green, black, blue). Asbestos cement board fragments. Refuse, putrescible or demolition materials. If unexpected contamination is encountered, or a discharge occurs, the following steps must be taken by the Contractor: <ul style="list-style-type: none"> Cease works in the immediate vicinity of the suspected contamination and tape or cone off. Notify the project manager/client representative and the SQEP. Implement any additional contaminated land-related health and safety procedures and PPE if deemed necessary by the SQEP. Update the Hazard Board to direct site workers should continued exclusion of the area be required. Implement and maintain any additional controls required by the SQEP to manage contamination. If asbestos is identified, requirements of the Health and Safety at Work (Asbestos) Regulations 2016 must be followed. The SQEP shall provide direction and if required, a licensed asbestos contractor engaged. Notify HDC and WRC via the SQEP within 24 hours of implementing any contamination mitigation measures. 	<input type="checkbox"/>

Section	Description	Check
5. Contamination examples	 Odours/sheen such as hydrocarbons or solvents.  Asbestos fibres and/or building products.	
	 Discoloured soil such as black, blue or green staining, or any staining that appears out of the ordinary.  Underground structures such as fuel tanks/drums, or other buried waste.	
	 Fill materials.  Fill materials.	
6. Post Works <i>(Provide to SQEP</i> to prepare works completion/ site validation report)	<ul style="list-style-type: none"> • Weighbridge summary of all materials disposed from and introduced to site (including soil and water). • Details of any health and safety or environmental incidents related to contaminated land (if any). • Details of mitigation measures implemented (if any). • Details of visits by Council representatives. 	<input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/>

Attached:

Soil data for offsite disposal

Table A1. Soil Laboratory Testing Results, OCGNZL Water Treatment Plant, Waihi



Sample information	Sample Location	NESCS Commercial/ Industrial/ Outdoor worker ¹	Eco-SGV ²	WRC background ⁵	Predicted background ³	HA201	HA204	HA205	HA208	HA209			HA210	HA211			HA212	CPT202	CPT204	CPT205	P1	P2a	P2b
						0.0-0.2	1.4-1.5	0.6-0.7	0.0-0.15	0.5-0.6	1.2-1.3	0.0-0.2	0.0-0.1	1.0-1.1	0.0-0.2	0.5-0.6	0.0-0.2	0.0-0.2	0.0-0.2	-	-	-	
						23/04/2025	23/04/2025	23/04/2025	22/04/2025	22/04/2025	22/04/2025	23/04/2025	23/04/2025	23/04/2025	22/04/2025	22/04/2025	22/04/2025	23/04/2025	23/04/2025	23/04/2025	23/04/2025	23/04/2025	23/04/2025
	Material type	Topsoil	Natural Clayey Silt	Hardfill	Fill Clayey Silt	Fill Clayey Silt	Fill Clayey Silt	Fill Clayey Silt	Hardfill	Fill Clayey Silt	Fill Clayey Silt	Hardfill	Fill Clayey Silt	Fill Clayey Silt	Fill Clayey Silt	Fill Silty Clay	Hardfill	Hardfill	Sediment	Sediment	Sediment	Sediment	
Metals	Arsenic	70	147.2	6.8	13.2	6.7	5.4	6.2	4.6	2.3	1.1	32.2	18.1	17.3	21.2	29.2	12	11	42.6	12.9	13.5		
	Cadmium	1,300	40.1	0.22	0.5	0.26	0.14	0.16	0.1	0.13	0.19	0.13	0.19	0.11	0.096	0.12	0.11	0.22	0.25	0.12	0.073		
	Chromium	6,300	652.7	30	51.7	21	31.6	29.2	21.6	43.3	50.9	35.9	25.6	31.1	45.3	36.9	29.2	27.5	47.5	20.1	32		
	Copper	>10,000	614.5	25	62.2	19.8	12.6	18.1	23.2	21.9	22.1	119	36.7	23.6	26.5	44.1	67.7	35.6	76	31.1	34.5		
	Lead	3,300	3,059.2	20	37.2	16.1	15.6	18.4	15.9	15.8	15.9	38.3	18	22.8	31	45.9	17.1	9.03	137	22	27.4		
	Nickel	6,000 ⁴	-	7.6	36.0	10.1	10.3	9.83	35.9	45.1	45.3	35.3	34.6	23.4	20.2	24.3	35	49.1	34.1	14.6	17.1		
	Zinc	400,000 ⁴	507.6	53	185	70.9	58.2	60.7	51.1	68.2	77	104	80.7	72	71.3	97.4	82.6	57.4	270	108	146		
	Total Cyanide	1500 ⁴	-	-	-	<0.30	-	-	<0.2	<0.30	-	-	<0.2	-	<0.30	<0.30	-	-	<0.40	-	<0.40		
PAH	1-Methylnaphthalene	-	-	-	-	<0.010	-	<0.010	<0.010	<0.010	-	<0.010	<0.010	-	<0.010	<0.010	<0.010	<0.010	<0.010	-	<0.010		
	2-Methylnaphthalene	-	-	-	-	<0.010	-	<0.010	<0.010	<0.010	-	<0.010	<0.010	-	<0.010	<0.010	<0.010	<0.010	<0.010	-	<0.010		
	Acenaphthene	-	-	-	-	<0.010	-	<0.010	<0.010	<0.010	-	<0.010	<0.010	-	<0.010	<0.010	<0.010	<0.010	<0.010	-	<0.010		
	Acenaphthylene	-	-	-	-	<0.010	-	<0.010	<0.010	<0.010	-	<0.010	<0.010	-	<0.010	<0.010	<0.010	<0.010	<0.010	-	<0.010		
	Anthracene	-	-	-	-	<0.010	-	<0.010	<0.010	<0.010	-	<0.010	<0.010	-	<0.010	<0.010	<0.010	<0.010	<0.010	-	<0.010		
	Benz[a]anthracene	Refer BaP PEF	-	-	-	<0.020	-	<0.020	<0.020	<0.020	-	<0.020	<0.020	-	<0.020	<0.020	<0.020	<0.020	<0.020	-	<0.020		
	Benz[a]pyrene	Refer BaP PEF	47	-	-	<0.010	-	<0.010	<0.010	<0.010	-	<0.010	<0.010	-	<0.010	<0.010	<0.010	<0.010	<0.010	-	<0.010		
	Benz[b&i]fluoranthene	Refer BaP PEF	-	-	-	<0.020	-	<0.020	<0.020	<0.020	-	<0.020	<0.020	-	<0.020	<0.020	<0.020	<0.020	<0.020	-	<0.020		
	Benzof.h.perylene	-	-	-	-	<0.020	-	<0.020	<0.020	<0.020	-	<0.020	<0.020	-	<0.020	<0.020	<0.020	<0.020	<0.020	-	<0.020		
	Benzof.kfluoranthene	Refer BaP PEF	-	-	-	<0.010	-	<0.010	<0.010	<0.010	-	<0.010	<0.010	-	<0.010	<0.010	<0.010	<0.010	<0.010	-	<0.010		
	Chrysene	Refer BaP PEF	-	-	-	<0.010	-	<0.010	<0.010	<0.010	0.011	-	<0.010	<0.010	-	<0.010	<0.010	<0.010	<0.010	<0.010	-	<0.010	
	Dibenz.a,anthracene	Refer BaP PEF	-	-	-	<0.010	-	<0.010	<0.010	<0.010	-	<0.010	<0.010	-	<0.010	<0.010	<0.010	<0.010	<0.010	-	<0.010		
	Fluoranthene	Refer BaP PEF	190	-	-	<0.020	-	<0.020	<0.020	<0.020	0.029	-	<0.020	<0.020	-	<0.020	<0.020	<0.020	<0.020	<0.020	-	<0.020	
	Fluorene	-	-	-	-	<0.010	-	<0.010	<0.010	<0.010	-	<0.010	<0.010	-	<0.010	<0.010	<0.010	<0.010	<0.010	-	<0.010		
	Indeno(1,2,3-cd)pyrene	Refer BaP PEF	-	-	-	<0.010	-	<0.010	<0.010	<0.010	-	<0.010	<0.010	-	<0.010	<0.010	<0.010	<0.010	<0.010	-	<0.010		
	Naphthalene	230 ⁵	0.047 ⁵	-	-	<0.010	-	<0.010	<0.010	<0.010	-	<0.010	<0.010	-	<0.010	<0.010	<0.010	<0.010	<0.010	-	<0.010		
	Phenanthrene	-	-	-	-	<0.010	-	<0.010	<0.010	<0.010	-	<0.010	<0.010	-	<0.010	<0.010	<0.010	<0.010	<0.010	-	<0.010		
	Pyrene	NA ⁵	1.3 ⁵	-	-	<0.020	-	<0.020	<0.020	0.024	-	<0.020	<0.020	-	<0.020	<0.020	<0.020	<0.020	<0.020	-	<0.020		
	Benz[a]pyrene TEQ (LOR)	35	-	-	-	<0.03	-	<0.03	<0.03	<0.03	-	<0.03	<0.03	-	<0.03	<0.03	<0.03	<0.03	<0.03	-	<0.03		
VOC	ALL VOC	-	-	-	-	<LR	-	-	-	-	<LR	-	-	-	<LR	-	-	<LR	-	-	<LR		

Notes:

All values are presented in mg/kg except where noted (asbestos).

<LR indicates concentration below the laboratory limit of reporting.

Grey values are below expected background values, black values exceed background (Manaki Whenua Landcare Research).

1. M, 2011. Methodology for Deriving Standards for Contaminants in Soil to Protect Human Health (unless otherwise stated). Soil Contamination Standard - Commercial/Industrial land use.

2. Manaki Whenua Landcare Research, 2019. Updated Derivation of Soil Guideline Values for the Protection of Ecological Receptors (Eco-SGVs): Technical document. Added concentration limits using EC30 and site predicted background used. Typical soils, aged contaminants.

3. Manaki Whenua Landcare Research, 2019. Soil Contaminants of Selected Trace Elements and Organic Contaminants in New Zealand. Values for Andesite

4. National Environment Protection Council (Australia) - National Environment Protection Measure (Assessment of Site Contamination). Health Investigation Levels - Commercial/Industrial land use (HIL D)

5. MIE, 1999. Guidelines for Assessing and Managing Petroleum Hydrocarbon Contaminated Sites in New Zealand. Tier 1 Soil acceptance criteria, silty clay, contamination <1 m depth, commercial/industrial use. 5b: Protection of Groundwater Quality, groundwater at 2 m.

6. Waikato Regional Council. Natural background concentrations in the Waikato Region.

Table A2. Soil Laboratory Testing Results, OCGNZL Processing Plant, Waihi

Sample information	Sample Location	NESCS Commercial/Industrial/	Eco-SGV ²	WRC background ⁶	Predicted background ³	PP101	PP103	PP105	PP102	PP104
						0.0-0.2	0.3-0.4	0.5-0.6	-	-
	Depth (m bgl)	23/04/2025	23/04/2025	23/04/2025	23/04/2025	Clayey Silt Fill	Clayey Silt Fill	Clayey Silt Fill	Sediment	Sediment
	Date	Material type	Outdoor worker ¹							
Metals	Arsenic	70	147.2	6.8	13.2	60.1	26.4	9.5	41.2	57.5
	Cadmium	1,300	40.1	0.22	0.5	0.07	0.2	0.19	0.32	0.741
	Chromium	6,300	652.7	30	51.7	21.6	31.7	14.3	47.5	64.8
	Copper	>10,000	614.5	25	62.2	21.3	68.8	16.7	51.7	84.7
	Lead	3,300	3059.2	20	37.2	13.7	35.8	25.8	72.9	235
	Nickel	6,000 ⁴	-	7.6	36.0	20.7	22	6.3	37.1	45
	Zinc	400,000 ⁴	507.6	53	185.0	50.1	106	83.5	205	492
Cyanide	Total Cyanide	1500 ⁴	-	-	-	<0.30	<0.30	-	<0.30	<0.40
PAH	1-Methylnaphthalene	-	-	-	-	-	<0.010	<0.010	<0.010	<0.010
	2-Methylnaphthalene	-	-	-	-	-	<0.010	<0.010	<0.010	<0.010
	Acenaphthene	-	-	-	-	-	<0.010	<0.010	<0.010	<0.010
	Acenaphthylene	-	-	-	-	-	<0.010	<0.010	<0.010	<0.010
	Anthracene	-	-	-	-	-	<0.010	<0.010	<0.010	<0.010
	Benz[a]anthracene	Refer BaP LOR	-	-	-	-	<0.020	<0.020	<0.020	<0.020
	Benz[a]pyrene	Refer BaP LOR	47	-	-	-	<0.010	<0.010	<0.010	<0.010
	Benz[b&[j]] fluoranthene	Refer BaP LOR	-	-	-	-	<0.020	<0.020	<0.020	<0.020
	Benz[g,h,i]perylene	-	-	-	-	-	<0.020	<0.020	<0.020	<0.020
	Benz[k]fluoranthene	Refer BaP LOR	-	-	-	-	<0.010	<0.010	<0.010	<0.010
	Chrysene	Refer BaP LOR	-	-	-	-	<0.010	<0.010	<0.010	<0.010
	Dibenz(a,h)anthracene	Refer BaP LOR	-	-	-	-	<0.010	<0.010	<0.010	<0.010
	Fluoranthene	Refer BaP LOR	190	-	-	-	<0.020	<0.020	<0.020	<0.020
	Fluorene	-	-	-	-	-	<0.010	<0.010	<0.010	<0.010
	Indeno(1,2,3-cd)pyrene	Refer BaP LOR	-	-	-	-	<0.010	<0.010	<0.010	<0.010
	Naphthalene	230 ⁵	0.047 ⁵	-	-	-	<0.010	<0.010	<0.010	<0.010
	Phenanthrene	-	-	-	-	-	<0.010	<0.010	<0.010	<0.010
	Pyrene	NA ⁵	1.3 ⁵	-	-	-	<0.020	<0.020	0.032	0.094
VOC	ALL VOC	-	-	-	-	-	<LR	-	-	<LR

Notes:

All values are presented in mg/kg except where noted.

<LR indicates concentration below the laboratory limit of reporting.

Grey values are below expected background values, black values exceed background

1. MIE, 2011. Methodology for Deriving Standards for Contaminants in Soil to Protect Human Health (unless otherwise stated). Soil Contamination Standard - Commercial/industrial land use.

2. Manaaki Whenua Landcare Research, 2019. Updated Development of Soil Guideline Values for the Protection of Ecological Receptors (Eco-SGVs): Technical document. Added concentration limits using EC30 and site predicted background used. Typical soils, aged contaminants.

 3. Manaaki Whenua Landcare Research, 2015. *Background Soil Concentrations of Selected Trace Elements and Organic Contaminants in New Zealand*. Values for Andesite

4. National Environment Protection Council [Australia] - National Environment Protection Measure (Assessment of Site Contamination). Health Investigation Levels - Commercial/industrial land use (HIL D)

5. MIE, 1999. Guidelines for Assessing and Managing Petroleum Hydrocarbon Contaminated Sites in New Zealand. Tier 1 Soil acceptance criteria, silty clay, contamination <1 m depth, commercial/industrial use. 5b: Protection of Groundwater Quality, groundwater at 2 m.

6. Waikato Regional Council. Natural background concentrations in the Waikato Region.