08 December 2025

Attention:

Karl Anderson | Senior Planner - Resource Consents South
By email: mkarl.anderson@aucklandcouncil.govt.nz

Dear Karl

Resource consent application – Further information request

Application number(s): BUN60440759 (LUC60440790, LUC60445125 & DIS60440791) Applicant: Scarbro Environmental Ltd Address: 362 Jones Road, Drury Proposed activity(s): To establish and operate a managed fill activity for the deposition of approximately 790,000m^3 of fill.

This letter is a response to the further information dated 09 September 2025. Response prepared by Hodgson Planning Consultants and Fraser Thomas Ltd.

Planning / General

1(c) Provide an assessment of effects with regard to the following in terms of the Hays Creek Dam and water supply catchment:

- Sections 104(G) and 105 of the RMA;
- NES:DW (2007);
- ~~NES:F (2020);~~ NPSFM (2020)
- Chapters B3, B7, D3, D7, E1 and E13 of the AUP(OP);
- Watercare's obligation to provide clean and safe potable water to the public, and
- An assessment of the proposed waste acceptance criteria for the managed fill activity against the maximum acceptable values contained in Tables 1-4 of the Water Services (Drinking Water Standards for New Zealand) Regulations 2022

Section 104(G) of the RMA

Section 104G of the RMA prescribes that when considering an application for a resource consent, the consent authority must have regard to—

a) the actual or potential effect of the proposed activity on the source of a drinking water supply that is registered under section 55 of the Water Services Act 2021; and

b) any risks that the proposed activity may pose to the source of a drinking water supply that are identified in a source water risk management plan prepared in accordance with the requirements of the Water Services Act 2021.

A. Background

Hays Creek Dam forms part of the Auckland Drinking Water supply, which is registered with the Water Services Authority (Taumata Arowai). The Auckland Drinking Water Supply ID is AUC003. View a Drinking Water Supply · Hinekōrako

As described in the WSL Source Water Risk Management Plan (SWRMP), this plan has been produced by Watercare as part of a Drinking Water Safety Plan (DWSP). The SWRMP structure references the Catchment Risk Assessments (CRA) and Water Supply Risk Tables that relate to catchment risks. Relevant to the *Hays Creek Dam is the Hūnua Ranges Water Supply Catchment Risk Assessment Prepared for Watercare Services Ltd* prepared by Tonkin & Taylor Ltd Date June 2024 Job Number 1016281.6000 V2.

The T&T Hunua Ranges Water Supply Catchment Risk Assessment (2024) (T&T 2024) identifies water quality risks affecting the Hays Creek Dam in relation to Source Water Risk Management Areas:

- SWRMA1 for lakes relates to the lake and its bed within a 500m radius of the intake, extending 5m, into land from the lake edge.
- SWRMA2 for lakes, this comprises the whole lake and 8hr travel time within tributaries with a 100m buffer strip. T&T assumed a river water velocity of 1m/s as no flow monitoring data was available for this catchment. This ensures that all reaches within the tributaries to the dams are included in the SWRMA2 extent.
- SWRMA3 – this comprises the entire surface catchment upstream of a point 100m downstream of the intake.

These different RMAs are shown in Figure 5.1 of the T&T report, a snip of which is included below.

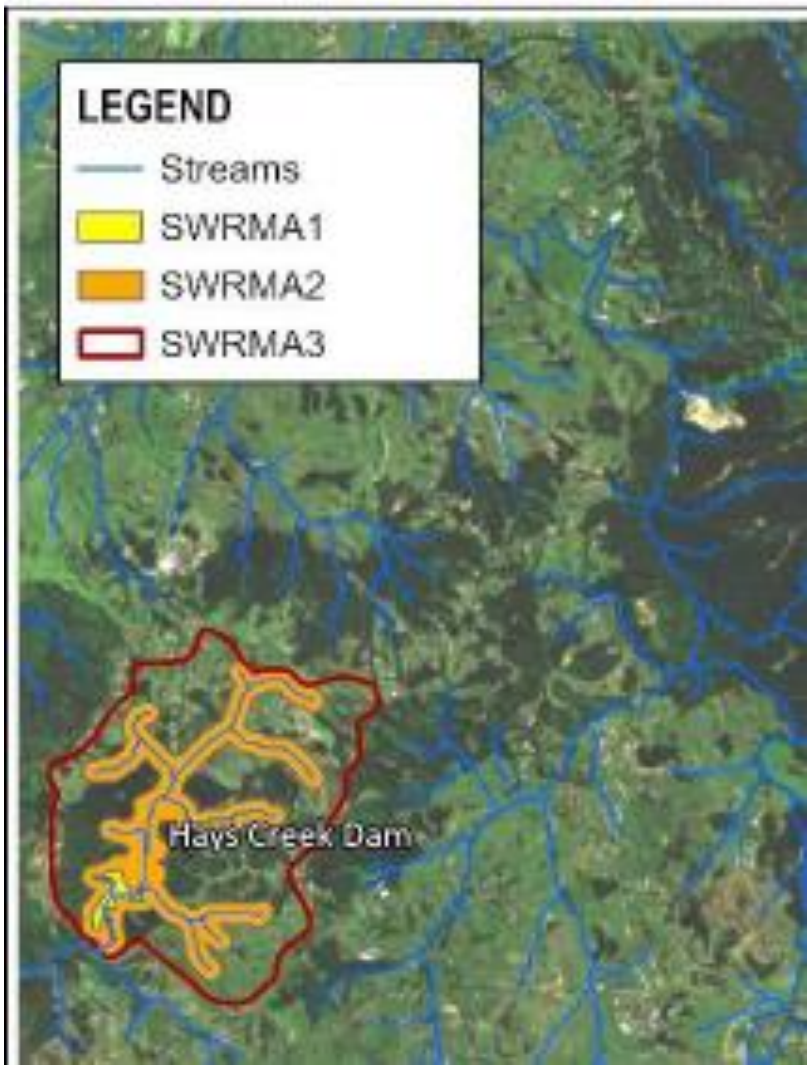


Figure 1: SWRMA Areas for Hays Creek Dam (from T&T, 2024, Figure 5.1)

These extents have been imported into AutoCAD and plotted on FTL drawing 33250/500. Review of this drawing shows that the SWRMA2 areas do not extend into the site and only the Northern Fill area is located within the dam catchment. It appears the SWRMA2 extents may be based on the extent of permanent streams, noting that Boffa Miskell identified both streams within the northern fill catchment as being intermittent. This also seems logical as intermittent streams are not subject to permanent flows and hence the velocity criteria of 1m/s used to define the SWRMA2 extent would not apply to intermittent stream reaches.

The T&T report identifies the following water quality risks in the Hays Creek dam catchment:

Table 1: Water Quality Risks in Hays Creek Catchment (T&T, 2024)

Theme	SWRMA	Potential contaminant	Contamination Pathway	Unmitigated risk	Comments
Waste	1 and 2	Human or animal waste: bacteria and viruses	Indirect: surface runoff in SWRMA 1 and 2.	Class 5	Sheep grazing on dam face downstream of intake On-site wastewater disposal systems (septic tanks) Wild animals present (possum, pigs, waterfowl) E.coli, cryptosporidium and giardia have been detected in raw water
	1 and 2	Human or animal waste: protozoa	Indirect: Surface runoff in SWRMA 1 and 2	Class 5	
Other	1 and 2	Fire: changes to raw water determinands during and after the fire event.	Indirect: Surface runoff in SWRMA 1 and 2	Class 3	Fire risk to raw water quality managed in Watercare Fire Management Plan and return to service sampling protocol.
	1 and 2	Accident or spill of chemicals in catchment	Indirect: Surface runoff in SWRMA 1 and 2 Direct: spill in SWRMA1	Class 3	Vehicle accident or fire on public roads or farm/ forestry access roads crossing the catchment. • Farm waste via burning or burial. • Fuel storage and use of equipment on private property or forestry blocks. • Spill or contamination during boat operation/ equipment refuelling. • Small quantities of cooling and lubricating oils for

					electronic compressor. • Occasional use of emergency diesel powered generators. • Intentional acts of damage as reservoir is accessible by the public. • HAIL Site borders SWRMA3.
Biological	1	Gold clam	Direct:potential to be located in SWRMA1	Class 3	Clams can reproduce rapidly and form large populations that can block water infrastructure and enter WTP intakes, pipes, and water tanks.

Note: Risk classifications are sourced from Watercare's Enterprise Risk Management Framework; not Taumata Arowai's DWQAR classification for source water protozoal treatment requirements.

T&T (2024) advises that the total Hays Creek catchment area is 670ha, of which 72% is privately owned. 51% of the catchment is classified as exotic grassland, 25% as exotic forest and 9% as native forest (Landcare Research Land Cover database Version 5). Farming, horticulture and plantation forestry form part of the land use in this catchment, while all residential properties are expected to have their own on-site wastewater treatment and disposal systems.

The Northern Fill site is located at the southern end of the Hays Creek catchment and makes up 1.3% of the Hays Creek catchment area, while the shortest flowpath from the Fill area to the Hays Creek dam lake is approximately 1.3km. The Southern Fill site discharges stormwater via a different route, which bypasses the Hays Creek dam. This is shown on FTL drawing 33250/501 and in Figure 2 below.

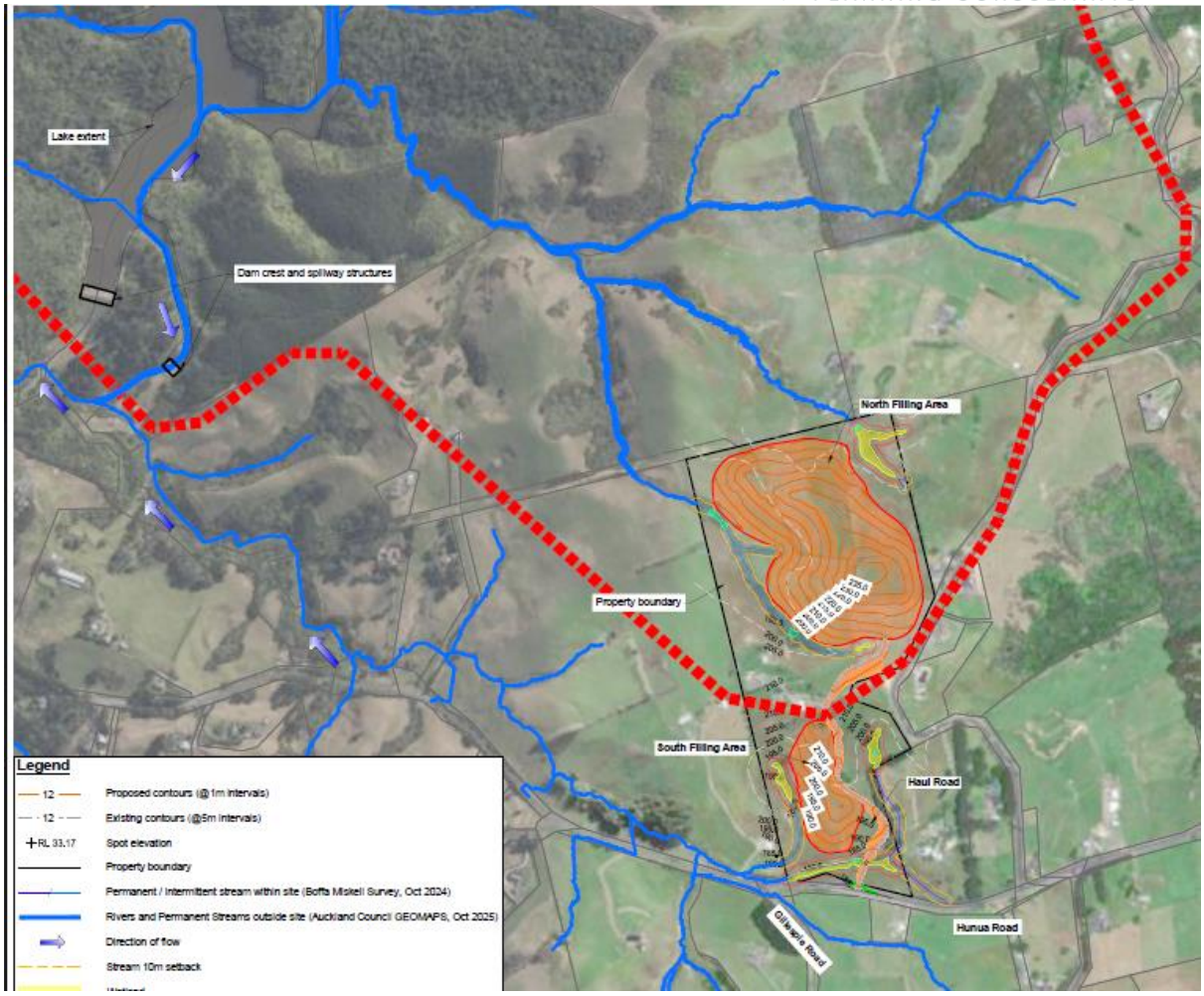


Figure 2: Stormwater Flowpath Routes from Fill Site (from FTL drawing 33250/501)

B. Potential Contamination of Public Water Supply

In their submission, Watercare raises three specific matters of concern that they consider are not addressed in the consent application:

- Effect of discharges from underfill strip drains proposed beneath the fill areas.
- Actual and/or potential contamination effects of runoff from the portion of the proposed haul road that is within the Hays Creek dam catchment.
- The risk to the water supply catchment from contaminants is wider than those considered in the application. It notes that runoff will carry sediment and contaminants into drains and streams, while contaminants from the fill may also migrate through the soil and shallow groundwater via interflow, which can carry pollutants downslope towards the dam, especially in areas with fractured geology or underlying faults that facilitate subsurface movement. They further note that the proposed Fill site is underlain by a fault, which whilst not active presents a potential pathway for the migration of contaminants from the fill activity.

Each of these issues is responded to below.

B1. Underfill Drains

Issue: *The actual and/or potential contamination effects of discharges from the underfill strip drains proposed beneath the fill areas that will discharge to the existing gully network;*

Response:

The primary purpose of the groundwater underfill drains is to reduce pore water pressures in soils under the fill to assist with managing fill stability rather than to capture all groundwater – i.e. they are intended to manage seasonal increases in groundwater levels into the fill from natural ground below the fill. Any such groundwater is expected to have minimum contact with the overlying fill material and hence to be "clean". However, some groundwater percolating downwards through the fill material will also be picked up by the underfill drains.

The original design allowed for the underdrains to discharge to the perimeter drainage system for conveyance to the SRPs, but this was changed during the initial S92 process based on Council feedback, with all underdrains discharging directly to existing gullies, bypassing the SRPs. Based on Watercare's comments it is now proposed to adopt a conservative approach and revert to the original design. This means that all underfill drainage will be treated in the SRPs.

The revised FMP sets out the proposed surface sampling regime. This focuses on sampling from the SRP discharges and at the site discharge points. Underfill drain sampling is not proposed as part of routine sampling, for reasons explained further below and also because practically, these drains typically contain no or very low flows and hence represent a negligible proportion of the SRP inflows.

If there are any SRP and/or site discharge trigger level exceedances, the sampling methodology allows for tracing potential sources, including checking the underfill drains at that time. This is considered a more practical and appropriate sampling regime.

Hence, the effects of underfill drain discharges from the Managed Fill on the Hays Creek catchment are considered likely to be less than minor for the following reasons:

- the nature of the fill material (refer section B3.2)
- the proposed GD05 compliant erosion and sediment control practices, including SRPs with chemical treatment that underfill drain runoff will be directed to and treated in;
- flows from the underfill drains are likely to be very low and contain negligible to low contaminant levels;
- the small proportion the Northern Fill area makes up of the Hays Creek catchment, and
- the reasonable distance from the site to the Hays Creek dam lake.

B2. Haul road discharges

Issue: *The actual and/or potential contamination effects of runoff from the proposed haul road which will cross an existing overland flow path within the site that conveys runoff to a gully and stream that ultimately discharges to the Hays Creek Dam.*

Response:

The extent of the haul road of concern is approximately 180m x 6.2m wide. To address Watercare's concerns, it is proposed to construct a clean water diversion drain on the uphill side to divert runoff from crossing the road, and grade the road with a single crossfall to the downhill side. Runoff from the road will be collected in a table drain and then treated in a swale further downhill, with the treated runoff being discharged to the gully (Stream 3) within the northern catchment. These details are shown on FTL drawings 33250/190 and 202.

It is also proposed to install a proprietary wheelwash, that recycles water, with estimated water losses of 25L/vehicle. Any lost water will be collected in the same table drain and conveyed to the same swale for treatment. These details are shown on FTL drawing 33250/190.

Stormwater monitoring is also proposed of stormwater discharges from the site at the boundary. If any elevated contaminant concentrations are recorded exceeding site trigger levels (ANZECC 80% freshwater species protection criteria), then the source of these contaminants will be traced, including checking the access road as a potential source.

These measures should collectively ensure that haul road stormwater runoff discharges are appropriately managed so that effects on the Hays Creek catchment water quality are negligible. Furthermore, the potential effects of haul road runoff are considered less than from a farm race, which is a permitted activity and subject to E11/E12 of the AUP(OP).

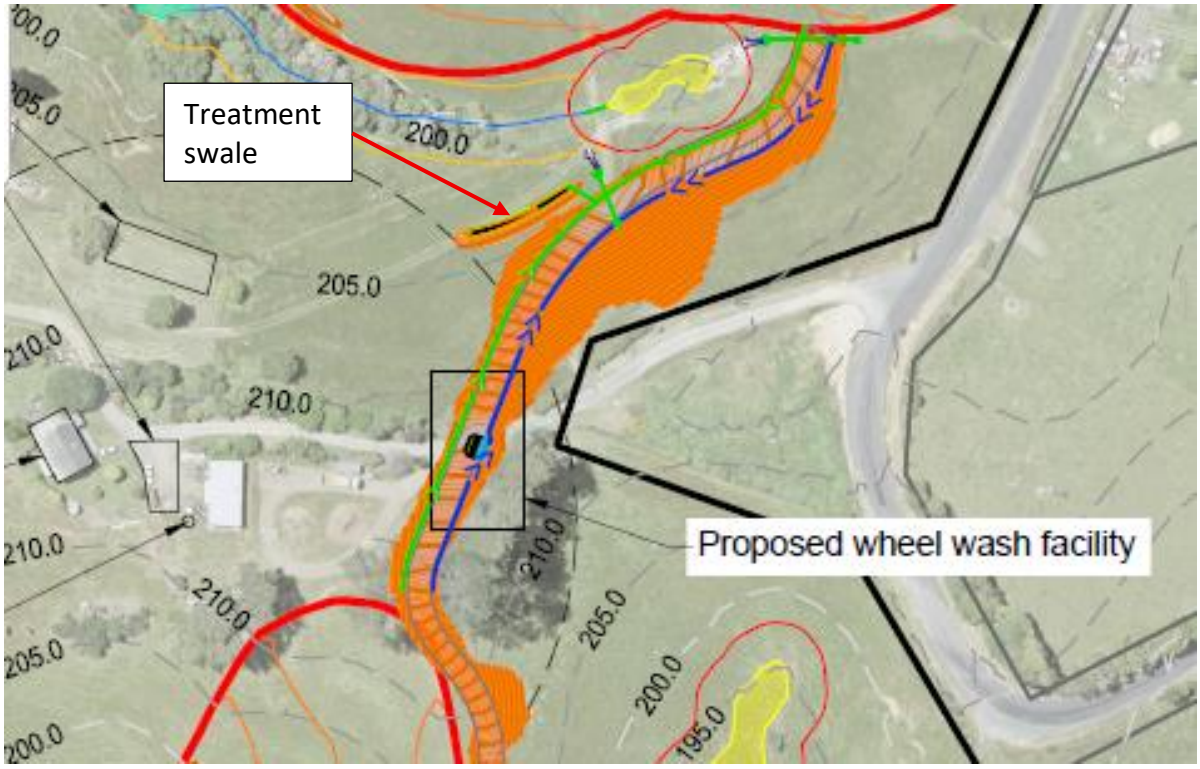


Figure 3: Haul Road Stormwater Treatment Swale and Wheel wash facility (from FTL drawing 33250/190)

B3. Wider Contaminants Issue

Issue: *The risk to the Water Supply Catchment from contaminants is wider than those considered in the application.*

Response:

Of the contaminants listed by T&T in their water supply risk assessment for the Hays Creek catchment, the only one that applies to the proposed Fill is the "accident or spill of chemicals in the catchment". This only applies to PAC, the proposed chemical flocculant to assist with silt/sediment removal. The Chemical Treatment Management Plan will form part of the site's Fill Management Plan and will set

out requirements for the safe storage of flocculant chemicals and procedures for dealing with any chemical spills. Adherence to the requirements set out in this Plan will ensure that the potential effects of any spills are managed and mitigated to avoid and minimise any associated potential environmental effects.

Other contaminants considered relevant to comment on include:

- Potential use of Organic Floc;
- Silt/Sediment, heavy metals and low level organics;
- PFAS

B3.1 Organic Floc

The reference to organic flocculants was made in the application primarily based on experience from other consent applications for earthworks projects that some stakeholders (e.g. mana whenua) encourage the use of alternative flocculants. This is specifically referred to in Section F2.1.7 of GD05. It is no longer proposed to consider organic floc, but instead to use PAC, which is a commonly used water treatment chemical.

B3.2 Silt/sediment, heavy metals and low level organics

The proposed Fill Waste Acceptable Criteria (WAC) come from the WasteMINZ Technical Guidelines for the Disposal to Land for Class 5 Clean Fills. The WasteMINZ Guidelines state the following:

- WAC for Class 5 Clean Fills are based on total concentrations.
- Materials placed within a Class 5 Clean Fill are effectively inert and the regional soil background levels for trace elements should be adopted as the basis for acceptance of materials for these sites.
- The presence of synthetic organic compounds, which are not naturally occurring and result from anthropogenic sources, are common in natural soils. These synthetic organic compounds can be present at detectable concentrations that do not present a risk to the receiving environment or influence the potential future land use. WAC should therefore provide for the presence of these compounds up to concentrations where there is negligible potential for significant adverse effects as a result of direct contact with the waste or fill material or groundwater in contact with the waste or fill material.
- WAC for anthropogenic synthetic organic compounds should only be provided for the most common of these compounds. More persistent, potentially toxic or mobile synthetic organic compounds should not be accepted at Class 5 Clean Fills. WAC are therefore recommended only for the following synthetic organic compounds: TPH (total petroleum hydrocarbons), BTEX (benzene toluene ethylbenzene and xylene), PAH (polycyclic aromatic hydrocarbons); and pesticides (DDT).
- Waste or fill material containing detectable organic constituents not included in the above list should not be accepted at Class 5 Clean Fills.

Auckland Council has accepted the WasteMINZ Class 5 Clean Fill waste acceptance criteria as being applicable to clean fills in the region, based on advice received by email from them in relation to this application on 12 March 2025:

> *"The AUP(OP) definition of 'Cleanfill material' has commonly been interpreted to mean that the concentrations of contaminants (manufactured chemicals) within such material must be below the laboratory detection limit. However, the Waste Acceptance Criteria for 'Cleanfill' (Class 5*

Fill) in the recently-updated version of Technical Guidelines for Disposal to Land (Revision 3.1), WasteMINZ (2023) allow for trace concentrations of a limited range of synthetic organic compounds at Class 5 Fill facilities, acknowledging that urban soils are likely impacted by anthropogenic sources.

As per those guidelines "*the presence of synthetic organic compounds, which are not naturally occurring and result from anthropogenic sources, are common in natural soils. These synthetic organic compounds can be present at detectable concentrations that do not present a risk to the receiving environment or influence the potential future land use. WAC should therefore provide for the presence of these compounds up to concentrations where there is negligible potential for significant adverse effects as a result of direct contact with the waste or fill material or groundwater in contact with the waste or fill material*". Those updated guidelines have been endorsed by the Ministry for the Environment (in accordance with the Ministry for the Environment's website "*The updates were developed by a reference group, including members of the WasteMINZ Disposal to Land sector group steering committee, industry experts, and Ministry for the Environment staff*").

Therefore, under the 'Cleanfill material' definition, set out in the AUP(OP), we accept the presence of selected synthetic organic compounds in fill up to those levels specified in Table H-2 Class 5 WAC for Organic Elements in the Technical Guidelines for Disposal to Land (Revision 3.1), WasteMINZ (2023)."

The facility is located in an area with non-volcanic soils, but fill material will come from various parts of Auckland and hence may include volcanic soils, which may contain higher background levels of heavy metals. Hence, it is considered a pragmatic decision to allow for the Fill facility to accept fill with heavy metals within the higher volcanic background range, as this is unlikely to result in any adverse human health or environmental effects. This is the only reason why the proposed Fill is classified as a Managed Fill rather than a Clean Fill. This results in higher WAC being adopted for five elements only, as shown below:

Table 2: Five Elements with Proposed WAC above Clean Fill WAC

Contaminant	Non-volcanic Background	Volcanic Background	WasteMINZ Class 3 Managed Fill
Boron	45	260	Not stated
Chromium	55	125	150
Copper	45	90	280
Nickel	35	320	320
Zinc	180	1160	1200

The corresponding WasteMINZ Class 3 managed fill WAC are also tabulated above. The WasteMINZ Class 3 criteria are based on the adopted WAC protecting groundwater drinking water (based on the New Zealand Drinking Water Standard, NZDWS (revised 2018)[1] x 20 DAF) and aquatic environment

[1] The NZDWS has since been updated again in 2022, but the relevant numbers used by WasteMINZ in their Class 3 WAC assessment are unchanged.

protection pathways (based on Australian and New Zealand Environment and Conservation Council (ANZECC) 95% freshwater protection criteria x 100 DAF).

In the WasteMINZ Class 3 WAC derivation, a DAF (dilution and attenuation factor) of 20 has been adopted as representative of the dilution of leaching porewater that will occur as the porewater/leachate travels to the groundwater abstraction point at the down-gradient boundary of the site. This is based on a USEPA (1996) weight of evidence finding that this value is conservative for a range of site conditions. A further DAF of 5, given a total DAF of 100, is assumed to be the minimum that would occur in groundwater discharging to a freshwater receiving environment, to account for dilution within a small stream.

For inorganic compounds, the WAC was estimated from the porewater concentration using a large dataset of SPLP (synthetic precipitation leaching procedure) results. The datasets ranged from in excess of 1200 data points to about 300 datapoints, the larger datasets being for the more commonly encountered contaminants (e.g., arsenic and lead) and consisted of up to ten years of data from the two laboratories in New Zealand which perform the bulk of this work. While SPLP testing is not performed as commonly as TCLP (toxicity characteristic leaching procedure), the data are considered the most representative available in New Zealand for the leachability of the metals and metalloids for which WAC were required.

In the cases of nickel and zinc, for which the datasets showed low leachability, the WAC values were chosen to be approximately the same as higher than typical background concentrations found in some geological conditions. This is to allow disposal to Class 3 Managed Fill from sites that could have such background concentrations.

The proposed Jones Rd Fill WAC for the five contaminants listed are all equal to (nickel) or less than (chromium, copper, zinc) corresponding WasteMINZ Class 3 WAC, noting that the Class 3 WAC do not include a target for boron. Hence, it can be expected that accepting fill material with contaminants within these WAC should not have any impact on groundwater drinking water or aquatic species.

Overall, it is considered that the proposed Fill WAC will ensure there is low risk of any contaminants in received soils posing a risk to surface and groundwater quality, as summarised below:

- All but 5 of the proposed Fill WAC comply with Auckland Council Clean Fill WAC, as advised by them in March 2025, based on their adoption of the WasteMINZ Class 5 Clean Fill standards as being acceptable as Clean Fill WAC.
- The remaining five WAC (boron, chromium, copper, nickel and zinc) relate to background volcanic soils concentrations for the Auckland region, rather than non-volcanic background values, recognising that the Jones Rd Fill would potentially be receiving soils from both volcanic and non-volcanic areas across Auckland.
- These WAC are all within corresponding WAC for Class 3 Managed Fills. These WAC have been determined based on protecting groundwater drinking water (based on DWSNZ) and aquatic species (based on ANZECC 95% freshwater species protection).
- Hence, it is considered that the proposed Fill WAC will not adversely affect any ground or surface water downgradient of the site that is used as drinking water, nor any aquatic species in surface waters.

Further to this, rainfall on operational areas will have a relatively short contact time with the deposited fill material and will primarily pick up silt and sediment material, potentially including some contaminants in particulate form (e.g. heavy metals), subject to their leachability which is expected to

be low. All runoff from operational areas will be collected and conveyed to sediment retention ponds (SRPs), where chemical flocculants will be added, based on bench testing, to promote the removal of suspended solids and other contaminants. The Universal Soil Loss Equation that is often used to estimate sediment losses from earthworks activities and is referred to in GD05 (section B1.4.1) advises applying a 95% sediment removal efficiency when chemical flocculation is used.

All sediment pond discharges will be to overland flow for passage through the proposed 10m width riparian planting, which will act as a further filtration barrier prior to the treated water entering any streams.

Furthermore, sediment pond discharges will be checked regularly for pH and clarity, with contingency measures implemented if the pH varies by more than ±1 pH unit or the clarity is less than 100mm. Hence, it is expected that almost all suspended solids, including associated contaminants, will be removed from the stormwater runoff prior to discharge off-site. The removed silt/sediment is deposited in the SRPs and will be periodically removed from them, thus eliminating the potential for this silt/sediment to be discharged to the receiving environment.

Further regular stormwater quality sampling is proposed as a check on this, as described in the updated FMP.

B3.3 PFAS (Poly- and perfluoroalkyl substances)

PFAS are widely used, long lasting chemicals, the components of which break down very slowly over time. The chemicals, which have been manufactured since the 1930s, are used in products such as non-stick pans, water-repellent fabrics, fast food wrappers, stain-resistant fabric coatings, cleaning products, cosmetics, paints and other household items including carpets and furniture. Because of their widespread use and their persistence in the environment, many PFAS are found in the blood of people and animals all over the world and are present at low levels in a variety of food products and in the environment. PFAS are found in water, air, fish, and soil at locations across the country and world. Scientific studies have shown that exposure to some PFAS in the environment may be linked to harmful health effects in humans and animals.

Despite not producing PFAS on a large scale, New Zealand still faces environmental risks from these chemicals due to their presence in imported products like electronics, textiles, and metal plating materials. Everyday items such as non-stick cookware, stain-resistant carpets, water-repellent clothing, and food packaging are contributors to PFAS pollution. During use and washing, these chemicals can leach into wastewater systems, eventually making their way into natural ecosystems. Additionally, PFAS-containing waste often ends up in landfills, while wastewater treatment plants struggle to remove these persistent substances. As a result, treated effluent and sludge may still harbour significant PFAS levels, potentially contaminating waterways or agricultural land when used as fertiliser (Chemistry Institute of New Zealand).

In New Zealand, PFAS contamination sources include firefighting foams, industrial discharge, landfills and wastewater treatment, and imported consumer products. PFAS have been detected in New Zealand soils, particularly at sites with historical use of firefighting foams like airports and military bases. Major contamination has been identified at places like Ohakea and Woodbourne airbases, where elevated levels of these chemicals are present in both soil and groundwater.

PFAS has also been found at low levels in Wastewater Treatment Plants in New Zealand (Lenka, Kah and Padhye (J.Hazardous.Materials Vol428, 15 April 2022, 128257 "*Occurrence and Fate of Poly- and*

Perfluroalkyl substances (PFAS) in Urban Waters in New Zealand". Associate-Professor, Dr Melanie Kah, one of the authors of this study, has advised that her Team have wanted to analyse background levels in "normal" Auckland soils on several occasions, but it is difficult to find funding for this. All the data she is aware of have been generated with a particular PFAS source in mind (e.g airbases), and thus likely exceed "normal" background levels (person communication, email to S Finnigan, 28/9/2025).

Watercare completed PFAS sampling across all its water treatment plants (WTPs) in Auckland in 2018, which found PFAS to be below detection levels in all WTPs except Onehunga. Monthly monitoring results since March 2018 showed that treated water from the Onehunga WTP exceeded the maximum allowable value of 0.07ug/L for Sum (PFHxS + PFOS) on at least two occasions. On the 9th of June 2022 Taumata Arowai introduced a new maximum acceptable value (MAV) for PFAS in drinking water supplies in New Zealand which came into effect from 14th November 2022. As the existing treatment technology employed at the Onehunga WTP does not remove PFAS, Watercare decided to take the Onehunga WTP out of service as a precautionary measure in late 2022. Long term options/requirements include possibly providing additional treatment, with the most effective technologies currently identified being GAC adsorption, ion exchange, nanofiltration and reverse osmosis. (Watercare Memorandum: Implications of New PFAS Limit on Onehunga Water Supply, 29 September 2022).

Watercare also uses its Waikato Water Treatment Plant to supply water to Auckland, but the primary contamination concern in the Waikato River is arsenic, not PFAS.

T&T (2024) advise that the Papakura WTP (TP04070) provides treated drinking water from the Hays Creek dam to a population of approximately 48,500 people. The WTP was commissioned in August 2023. Prior to this, the source was offline after the old plant was decommissioned in 2005. Treatment includes coagulation, flocculation, sedimentation, membrane filtration, advanced oxidation, UV disinfection, 2nd stage filtration (BAC), and chlorination. Protozoal treatment is as per T3 Protozoal Rules for Membrane Filtration (up to 4-Log) and T3 Protozoal Rules for Second Stage Filtration (0.5-Log). An additional 3 Log treatment is available via T3 Protozoal Rules for Ultraviolet Light Disinfection8. Bacterial treatment is as per T3 Bacterial Rules for Water Disinfected with Chlorine.

It is important to note that the proposed Fill facility is not a Landfill and will only accept fill and soil materials that comply with its WAC. It will not accept any products that contain PFAS. Hence, the focus on minimising the potential for PFAS to be present in fill material brought to the site is to ensure strict compliance with the Fill WAC, as set out in the FMP and repeated below for clarity:

Cleanfill material is defined as "virgin excavated natural materials" (VENM) such as clay, soil and rock that are free of:

- Combustible, putrescible, degradable or leachable components;
- Hazardous substances or materials (such as municipal solid waste) likely to create leachate by means of biological breakdown;
- Products or materials derived from hazardous waste treatment, stabilisation or disposal practices;
- Materials such as medical and veterinary waste, asbestos, or radioactive substances that may present a risk to human health if excavated;
- Contaminated soil and other contaminated materials, and
- Liquid waste.

It can also accept:

- Maximum incidental inert manufactured materials (e.g. concrete, brick, tiles) of no more than 5% by volume per load; and

- Maximum incidental or attached biodegradable materials (e.g. vegetation) of no more than 2% by volume per load; and
- Maximum contaminant concentrations consistent with local/regional background soil concentrations; and.
- Some common organic contaminants at low levels.

In this case, it is proposed to add further requirements relating to materials that will not be accepted at the Fill facility to reduce the potential for PFAs materials to inadvertently be deposited on-site, namely:

- No materials from airports, military/air force sites and fire stations.
- No materials from sites that has been subject to fires, particularly where firefighting foams may have been used.
- No materials from the locations of on-site wastewater treatment and disposal fields.

No testing of stormwater discharges from the Fill site for PFAS is proposed.

B4. Contaminant Migration Pathways

B4.1 Issue: Migration of Contaminants in Fill as Shallow Groundwater (Interflow) to Dam

All fill materials accepted at the site must comply with the Site's WAC, which are stricter than the WasteMINZ Class 3 Landfill (Managed Fill) WAC. As explained above under Item B3, the Class 3 WAC have been carefully chosen to avoid potential negative impacts on groundwater and drinking water supplies. Contaminant leachability from the Fill is expected to be low and not to result in significant contaminant concentrations in any interflow that is produced from the Fill. Furthermore, only the Northern Fill area is located within the Hays Creek Dam catchment, the amount of interflow produced is expected to be small compared with surface runoff, and the Dam itself is approximately 1.3km from the site. For these reasons, the potential migration of contaminants in fill as shallow groundwater to the Hays Creek Dam is considered to be negligible.

B4.2 Issue: Potential Contaminant Migration Pathway via Inactive Fault

In assessing the query with respect to the proximity of the Hunua Fault to the site location at 362 Jones Road, Drury, reference has been made to the Fraser Thomas Ltd, Geotechnical Investigation Report, dated October 2024 for the subject site, the GNS Science geological map; 12b, Geology of the Pukekohe area, scale 1:50,000, dated 2023, and Google Earth Pro software.

As discussed in Section 3.0 of the October 2024 report, the geological map indicates, as shown in Figure 4 below, that the Hunua Fault is located approximately 200m to the east of the subject site. It is therefore noted that, with reference to the plan provided in the Watercare submission, the Hunua Fault location is incorrectly annotated on the plan.

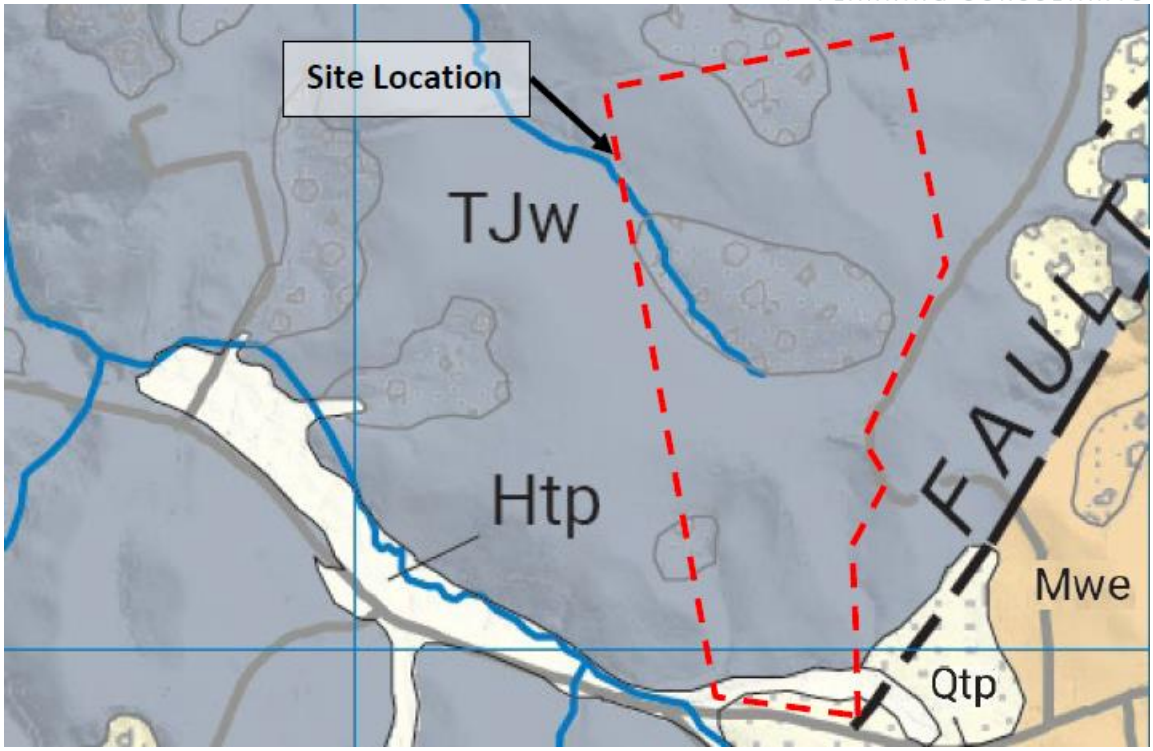


Figure 4: Excerpt from geology map showing site location with reference to Hunua Fault

It is reiterated that, as outlined in the FTL October 2024 geotechnical report, given the north-east trending Hunua Fault is mapped outside the development area, and is generally considered to be inactive (as shown in Figure 5), the Hunua Fault is unlikely to require additional consideration.

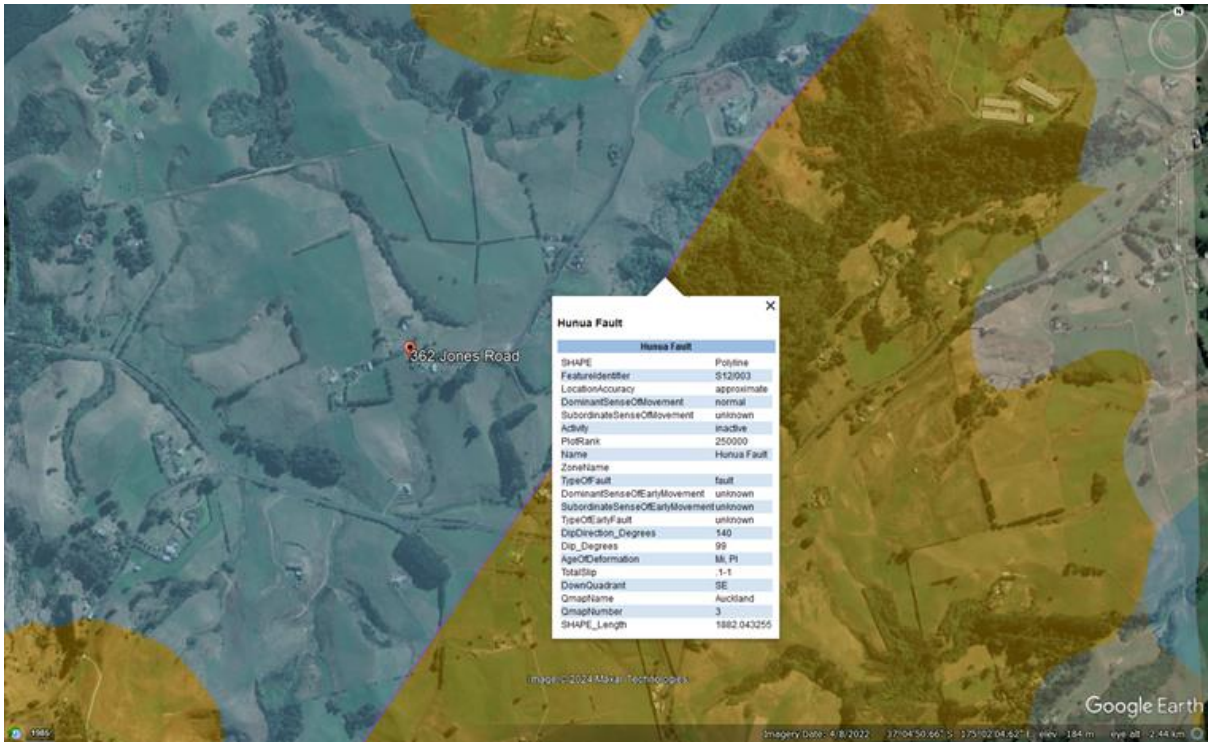


Figure 5: Excerpt from Google Earth Pro showing site location with reference to Hunua Fault location and description

It is further noted that the PDP (2025) report "Proposed Sutton Block Expansion Groundwater & Surface Water Effects Assessment" refers to the Hunua Fault having been inactive for at least the last 0.5 million years.

B5. Residual Flocculant Discharges

The FMP allows for following GD05 recommended practices to minimise potential negative human health and environmental effects. This includes ensuring that the pH should not be changed by more than ±1 and should not fall outside the range of 5.5-8.5.

Soluble aluminium would also be tested for to check for residual aluminium levels in discharges from the sediment retention ponds if PAC is used as a flocculant. A trigger level for aluminium would be set based on ANZECC guidelines for the protection of 80% of freshwater aquatic species. This is considered an appropriate threshold for checking impacts on downstream water quality. If the pH or soluble aluminium trigger levels are exceeded, appropriate contingency measures will be implemented as set out in the updated FMP, including stopping site discharges until contaminant concentrations reduce to within trigger levels. These practices should ensure that the effect of these chemicals used in chemical treatment of site stormwater discharges will be less than minor.

It is further noted that PAC is commonly used as a coagulant in water purification and hence is likely used at the Papakura Water Treatment Plant which treats water from the Hays Dam.

B6. Waste Acceptance and Monitoring

Watercare's primary concern here is that the risk that contaminated materials could be accepted by a managed fill activity located within a catchment that provides public water supply should be avoided, not mitigated or remedied.

The FMP sets out a range of practices that comply with current best practice in New Zealand comprising pre-acceptance checks and testing, random load checks and sampling and verification sampling to avoid in appropriate materials being deposited in the proposed Fill facility.

The proposed WAC comply with WasteMINZ Class 3 (Managed Fill) WAC, which are based on not causing potential human health and environmental effects on drinking water supplies and groundwater.

Further controls are proposed on not accepting fill materials from any of the following sites to minimise the potential for PFAS materials to inadvertently be deposited on-site, namely:

- No materials from airports, military/air force sites and fire stations.
- No materials from sites that has been subject to fires, particularly where fire fighting foams may have been used.
- No materials from the locations of on-site wastewater treatment and disposal fields.

In addition, in response to Watercare's submission, it is now proposed to regularly test SRP discharges and off-site stormwater discharges for elevated contaminant levels, to further avoid contaminant migration off-site towards the dam.

Collectively, these measures represent a robust system for avoiding contaminants being brought to the site, with this being checked by stormwater monitoring, along with appropriate mitigation and remedial measures to be implemented if any issues are found.

As stated in T&T (2024), 72% of the 670ha Hays Creek catchment area is privately owned, with 51% of the catchment classified as exotic grassland, 25% as exotic forest and 9% as native forest. Farming, horticulture and plantation forestry form part of the land use in this catchment, while all residential properties are expected to have their own on-site wastewater treatment and disposal systems. The Northern Fill makes up 1.3% of the Hays Creek catchment area and is considered likely to have less of an effect on the Dam water than other permitted activities in this catchment (e.g. regular clearing of plantation forestry, on-site wastewater disposal fields).

B7. Changes in Catchment Hydrology

Watercare have raised concerns about changes in catchment hydrology, including the physical alteration of landforms caused by the managed fill operation that may disrupt natural surface and subsurface flows. This could reduce the volume of water reaching the dam, particularly during dry periods, and affect the reliability of the water supply. Additionally, the compaction of soils and creation of impervious surfaces may change groundwater recharge, affecting the hydrological balance of the catchment. They have raised concerns about the effects on other users in the High Use Streams Management Area Overlay, within which the Managed Fill is located and note that there is a risk of contamination of aquifers that contribute to the dam.

The attached FTL drawing 33250/305 compares the pre and post cleanfill natural catchment areas (both on-site and upgradient off-site). For the two northern catchments, pre and post development areas are within 1-2% of each other, which is not expected to result in any changes to catchment hydrology or groundwater recharge within the site itself.

This also means there will be negligible effects on other users in the High Use Streams Management Area Overlay. Surface water takes within 1km of the site are summarised in section 2.6.3 of the FTL Engineering report. There were only two surface water takes, with both being located in different surface water catchments further east of the fill site (111 Garvie Rd, 1933 Hunua Rd).

Furthermore, surface runoff exiting the site to the north flows through two private properties (1500 Hays Creek Rd and 210 Jones Rd before entering the Hays Creek dam area. A Council database search within 2km of the site found no records of any surface water takes on these properties.

The catchment changes shown on FTL drawing 33250/305 are internal to the site and there is no change to the Dam catchment, as the north-western and north-eastern streams combine within 560m of the site's northern boundary, well before the dam itself (1.3km away).

Review of the geotechnical logs included in the FTL geotechnical report submitted with the consent application shows that the topsoil depth across the site varies from 0.10-0.35m with an average of 0.19m. The Applicant is proposing to respread a minimum of 200mm of topsoil on completed fill areas, slightly better than existing.

The geotechnical report refers to the Waipapa Group residual soils that underly the proposed Fill areas as comprising silty clays, clays and clayey silts with variable sand and gravel content. In-situ undrained shear strength values measured in the residual soils ranged between approximately 55kPa and greater than 200kPa, corresponding to a stiff to hard consistency. In general, the measured shear strengths were greater than 100 kPa, corresponding to a very stiff consistency.

The proposed Fill involves stripping the existing topsoil and placing additional fill material on top of this and then replacing stripped topsoil to return the site to agricultural land use. The proposed fill specification has adopted a lower compaction standard than for residential subdivision, namely an

average undrained shear strength of not less than 80 kPa and any one-test site value of not less than 50 kPa, and average air voids of not more than 12% and no one value over 14%.

FTL geotechnical engineering advice is that the underlying natural soils are already sufficiently "hard", that they are unlikely to undergo any significant consolidation settlement, due to the surcharge load from the overlying additional fill materials.

Collectively, this means that soil compaction is not expected to be significant, nor to change existing groundwater flow patterns and recharge.

Furthermore, the only new "impervious" surfaces being created are the access haul roads. These comprise the main access road of 3,271m^2 length and temporary access roads of 1,263-8,270m^2. These will be constructed from hardfill and will make up a total of 4,534-11,541m^2 (1.8-4.6%) of the site. These areas will be similar to farm gravel access tracks. They will result in a small increase in surface runoff from these areas compared with the existing situation, but again, this is not expected to affect surface flows or groundwater recharge. Appropriate measures can be incorporated into the Fill design to mitigate these effects, by for example, incorporating subsoil drains and check dams into the haul road swale, that will allow for some of the captured road runoff to infiltrate into the underlying soils and/or be temporarily stored in the swale, promoting infiltration into the ground.

B8. Risk of Aquifer Contamination

Watercare's final statement in this section of their submission indicates there is a risk of contamination of aquifers that contribute to the dam.

As explained in Section B3.2, the proposed Fill WAC will ensure there is low risk of any contaminants in received soils posing a risk to surface and groundwater quality, based on the adopted criteria complying with the Auckland Council Clean Fill WAC, except for five parameters (boron, chromium, copper, nickel and zinc) where the adopted WAC relate to background volcanic soils concentrations for the Auckland region. These five WAC are all within corresponding WAC for Class 3 Managed Fills, which have been determined based on protecting groundwater drinking water (based on DWSNZ) and aquatic species (based on ANZECC 95% freshwater species protection). Hence, it is considered that the proposed Fill WAC will not adversely affect any ground or surface water downgradient of the site that is used as drinking water, nor any aquatic species in surface waters.

This demonstrates that the principal control of potential contamination of groundwater relates to the WAC for the managed fill. Soils to be placed with the fill are inert and at regional background levels for trace metals and synthetic compounds, as explained in the preceding paragraph.

There are two main groundwater aquifer systems in the area – shallow and deep.

The shallow aquifer generally represents perched groundwater and discharges to local streams. The risk of contamination of the shallow aquifer has already been discussed in section B4 of this response and is considered to be low, while stream quality monitoring is proposed to check this, with contingency measures put in place to address any issue that may arise.

Limited information on groundwater bores in the area indicates that the groundwater in the deeper aquifer is at about RL160m (equivalent to depths of 30m to 60m) from PDP (2025). At the site, additional protection of deeper groundwater is provided by:

i. Sorption within the clay and silt rich residual soils present on-site.

ii. Attenuation within 30m to 60m thickness of variably saturated ground above the regional groundwater table.
iii. Low permeability conditions associated with greywacke bedrock.

On the basis of the above, the risk of groundwater contamination of the deep aquifer, which likely discharges to the dam based on the regional groundwater catchment divide, is considered unlikely.

B9. Dust

Watercare are also concerned that dust generated during fill operations can carry fine particulate matter and contaminants, which may be deposited on water surfaces, whilst noting that Hays Creek dam is some distance from the site. This dust risk is considered below in relation to the dam surface and the wider catchment.

1. Dust risk direct to dam surface

The potential for dust migration to reach the dam is considered to be highly unlikely based on the FMP requirements around dust management and for the following additional reasons:

- The most significant prevailing wind directions in the Auckland region are from the north-east and south-west (NIWA, The Climate and Weather of Auckland, 2nd edition), both of which would direct any airborne dust from the subject site away from the Hays Creek Dam.
- The Hays Creek dam is approximately 1.3km from the site in a north-westerly direction from the site's northern boundary with intervening and variable topography and vegetation.

2. Dust risk to catchment

Dust controls have been proposed, with respective conditions offered, as follows:

- Minimising the extent of the exposed area at any one time.
- Limiting traffic to established haul 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, where practical.
- Consolidating and sealing off loose surface material.
- Progressive mulching and grass establishment, as works are completed in different areas.
- Use of a water cart to dampen exposed areas.

These dust control measures are typical for managed fill facilities and are robust and consistent with best practice guidance (provided in the Ministry for the Environment Good Practice Guide for Assessing and Managing Dust 2016).

Collectively, this comprehensive dust management toolbox included in the FMP should ensure that dust emissions from the site are avoided as much as possible, and then mitigated if any do occur.

If dust from the Fill facility was to settle on the ground, this would be in the immediate vicinity and any associated contaminants would likely be picked up by the proposed stormwater discharge monitoring. If the dust was to settle outside the site, then the potential for it to reach the Hays Creek dam is

considered unlikely. The associated dust would likely be similar or less than that generated from a ploughed paddock and or cleared forest block.

B.10 Post Closure of the Managed Fill Activity

1. Residual contaminants
2. Erosion and stability risk - sediment
3. Long term monitoring and potential remediation

As each Fill section is completed, it will be covered with 200mm of topsoil, using topsoil harvested from the site pre-filling. Geotech logs indicate there should approximately be enough topsoil on-site to achieve this depth. Only topsoil that complies with the WasteMINZ Class 5 cleanfill material would be imported to make up any deficit (**estimated as maximum 5% of required volume based on existing average topsoil depth of 190mm**). Hence, the topsoil composition on the site post-filling is expected to be the same as the existing situation.

The Fill profile has been designed to have a maximum gradient of 1V:3H which is less steep than a lot of the other pastoral land within the Hays Creek dam catchment. Hence, the Fill site post-filling is considered to pose a relatively low risk of scour/erosion.

The riparian planting along the streams running through the site will further protect stream water quality from the effects of any silt/sediment discharges that may occur from the site.

The Applicant is willing to offer the following condition applicable to post-filling to address Watercare's concerns:

- Continue surface water monitoring post-closure until three consecutive rounds spanning summer and winter conditions all comply with adopted trigger levels.

Section 105 of the RMA

Section 105 of the RMA prescribes that if an application is for a discharge permit or coastal permit to do something that would contravene section 15 or section 15B, the consent authority must, in addition to the matters in section 104(1), have regard to:

a) the nature of the discharge and the sensitivity of the receiving environment to adverse effects; and
b) the applicant's reasons for the proposed choice; and
c) any possible alternative methods of discharge, including discharge into any other receiving environment.

The nature of the discharge and the sensitivity of the receiving environment to adverse effects

1. The nature of the discharges are consistent with those anticipated from clean and managed fills in Auckland and the description provided in E13.1 of the Auckland Unitary Plan:

   Cleanfills involve the deposit of natural materials such as clay, gravel, sand, soil and rock which have been excavated for areas of land which do not contain contaminants at levels greater than background concentrations, and which have no adverse effects on the environment. Managed fills involve the deposit of cleanfill material, contaminated clay, soil, rock and other inert materials that may have contaminants that exceed background concentrations.

2. In this case, the Managed Fill classification only arises because the Applicant wishes to be able to accept volcanic soils from other parts of Auckland that contain metalloid/heavy metal contaminants within volcanic background levels. As discussed under item B3.2, this only applies to five elements, with the proposed WAC for these elements being well within WasteMINZ Class 3 Managed Fill WAC. Accepting such soils is considered to have less than minor effects on surface water and groundwater quality, as explained under items B1, B3.2, B4 and B8.

3. The receiving environment is Streams 1 and 2 for the Southern fill area and Streams 3 and 4 for the Northern Fill area. The wider receiving environment for the Northern Fill area is the catchment of the Hays Creek Dam. The assessment set out in items B2, B3.2 and B6 of this response demonstrates that as the Hays Creek dam environment is perceived to have a greater sensitivity, management of the proposed Fill has been adapted accordingly, by for example allowing for regular stormwater quality discharge monitoring, treatment of haul road runoff, etc.

The applicant's reasons for the proposed choice

As above, E13.1 describes the nature of discharges associated with clean and managed fills in Auckland. E13.2. then sets out two Objectives [rp]

1. *Cleanfills, managed fills and landfills are sited, designed and operated so that adverse effects on the environment, are avoided, remedied or mitigated.*
2. *Human health is protected from the adverse effects of operational or closed cleanfills, managed fills and landfills*

The applicant's proposal achieves these objectives, noting that the Applicant has been actively searching for cleanfill sites for eight years, and the site selection has been through a rigorous multi-layer assessment process.

Possible alternative methods of discharge, including discharge into any other receiving environment.

1. Alternative methods of discharge that have been considered include:
   (a) Trying to direct as much runoff that may potentially contain contaminants to the southern catchment. This applies to the Southern Fill area, associated haul road and wheel wash area.
   (b) Treating haul road runoff and any water losses from the wheel wash facility, using a dedicated swale in the northern catchment prior to discharge to overland flow and then to Stream 3.
   (c) Discharging treated stormwater from the SRPs to overland flow through riparian planting areas.

   All of these measures have been incorporated into the proposal in response to Watercare's concerns.

   Pumping treated runoff from the northern SRPs to the southern catchment was considered but ruled out primarily because this was considered likely to have a more significant effect on existing hydrology than the Fill operation itself, as pumping would reduce flows discharged to the Hays Creek catchment.

2. The proposal is unable to discharge into another receiving environment and is to be considered on its merits in the catchment proposed.

Resource Management (National Environmental Standards for Sources of Human Drinking Water) Regulations 2007 | NES:DW (2007)

Regulation 7 of the NES:DW (2007) requires that a regional council must not grant a water permit or discharge permit for an activity that will occur upstream of an abstraction point where the drinking water concerned meets the health quality criteria if the activity is likely to—

a) introduce or increase the concentration of any determinands in the drinking water, so that, after existing treatment, it no longer meets the health quality criteria; or

b) introduce or increase the concentration of any aesthetic determinands in the drinking water so that, after existing treatment, it contains aesthetic determinands at values exceeding the guideline values.

- *aesthetic determinand means an aesthetic determinand described in table A2.1 in Appendix 2 of the Drinking-water Standard*
- *determinand means a determinand described in table 2.1, 2.2, 2.3, or 2.4 of the Drinking-water Standard*

It is considered highly unlikely that the proposed Fill activity will introduce or increase the concentrations of any human health and aesthetic determinands so that after existing treatment, they no longer meet the relevant criteria for the following reasons:

- The risk of surface water contamination is considered less than minor as explained in Items B3.2 and B7.
- The risk of groundwater contamination is considered less than minor, as explained in Items B1, B3.2, B4 and B8.
- Only the northern fill area is located within the Hays Creek catchment and it makes up a small portion (1.3%) of the total catchment.
- The Papakura WTP has been upgraded recently and provides a high level of treatment (refer section 3.3).

National Policy Statement for Freshwater Management NPS:FM (2020)

The NPS-FM 2020 applies to all freshwater (including groundwater) and, to the extent they are affected by freshwater, to receiving environments

This National Policy Statement is relevant to the proposal and has one objective which states:

> *The objective of this National Policy Statement is to ensure that natural and physical resources are managed in a way that prioritises:*
> *(a) first, the health and well-being of water bodies and freshwater ecosystems*
> *(b) second, the health needs of people (such as drinking water)*
> *(c) third, the ability of people and communities to provide for their social, economic, and cultural well-being, now and in the future.*

The objective is an elevation and strengthening in freshwater management of the fundamental concept and hierarchy of obligations in Te Mana o te Wai. Te Mana o te Wai moved from a concept under the previous national policy statement (NPS-FM 2017) to be "considered and recognised", to a concept to be "given effect to" when managing freshwater (NPS-FM 2020).

The NPS-FM 2020 describes the concept of Te Mana o te Wai at [1.3] as:

> *Te Mana o te Wai is a concept that refers to the fundamental importance of water and recognises that protecting the health of freshwater protects the health and well-being of the wider environment. It protects the mauri of the wai. Te Mana o te Wai is about restoring and preserving the balance between the water, the wider environment, and the community.*

The policies of the NPS-FM 2020 are process policies that will be given effect to as the NPS-FM 2020 is implemented. This includes that when identifying values and setting environmental outcomes as objectives a regional council must apply the compulsory values Appendix 1A to every FMU, and in every case consider whether the other values listed in Appendix 1B apply. This includes:

Appendix 1B – Other values that must be considered
2 Drinking Water Supply

The FMU or part of the FMU can meet people's drinking water needs. Water quality and quantity is sufficient for water to be taken and used for drinking water supply.

Matters affecting the suitability of water for drinking include:

a) *physical, chemical, and microbiological contamination (for example, bacteria and cyanotoxins, viruses, protozoa and other pathogens)*
b) *any other contaminants identified in drinking water standards issued under the Health Act 1956 or any other legislation*
c) *the effects of contamination on drinking water treatment processes and the safety of drinking water, and its aesthetic value (that is, appearance, taste, and smell).*

We understand that in May 2024, Auckland Council decided to delay the notification of a freshwater plan change until after the NPS-FM has been reviewed as per the government's freshwater reforms.

Notwithstanding this, the objective remains relevant to this proposal and progress must be made towards it, as are National Resource Management (National Environmental Standards for Freshwater) Regulations 2020 that are part of the toolbox to achieve the objective.

The application and supporting information have demonstrated that the activity does not conflict with the policies included within the NPS on Freshwater Management and is consistent with the fundamental concept of Te Mana o te Wai.

Those matters that might affect the *suitability of water for drinking have been considered.*

The activity will not result in physical, chemical, and microbiological contamination (for example, bacteria and cyanotoxins, viruses, protozoa and other pathogens)

Other contaminants identified in drinking water standards issued under the Health Act 1956 or any other legislation have also been considered relative to the filling activity and it is not considered that these are a risk to the suitability of water for drinking.

The effects of contamination on drinking water treatment processes and the safety of drinking water, and its aesthetic value (that is, appearance, taste, and smell) have also been addressed. The activity will not affect drinking water treatment processes the safety of drinking water, and its aesthetic value.

Chapters B3, B7, D3, D7, E1 and E13 of the AUP(OP)

B3	INFRASTRUCTURE, TRANSPORT AND ENERGY	
B3.2	Infrastructure	
B3.2.1	Objectives	The proposal will not compromise the resilience, efficiency and effectiveness of the Hays Creek Dam and water supply catchment. The activity has no effect on the functional and operational needs of infrastructure. Public health, safety and the well-being of people and communities are not at risk. The activity places no legal pressure to restrict or modify the existing Watercare infrastructure or activity. There are no resulting additional compliance or mitigation costs for Watercare.
	(1) Infrastructure is resilient, efficient and effective. (2) The benefits of infrastructure are recognised, including: (d) providing for public health, safety and the well-being of people and communities; (4) The functional and operational needs of infrastructure are recognised. (6) Infrastructure is protected from reverse sensitivity effects caused by incompatible subdivision, use and development.	
B3.2.2	Policies	There are no resulting planning conflicts between enabling the fill and protecting the infrastructure. The activity is not an incompatible use of land in the catchment.
	Provision of infrastructure (1) Enable the efficient development, operation, maintenance and upgrading of infrastructure. *Reverse sensitivity* (4) Avoid where practicable, or otherwise remedy or mitigate, adverse effects of subdivision, use and development on infrastructure. (5) Ensure subdivision, use and development do not occur in a location or form that constrains the development, operation, maintenance and upgrading of existing and planned infrastructure	

B7	NATURAL RESOURCES	
B7.3	Freshwater Systems	
B7.3.1	Objectives	

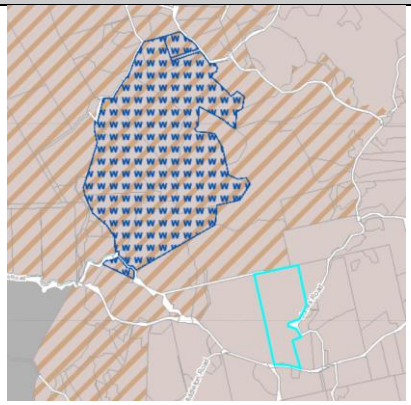
	(3) The adverse effects of changes in land use on freshwater are avoided, remedied or mitigated.	The site provides opportunities to improve ecological values through actions such as excluding livestock from watercourses and wetlands and increasing native plant cover. No loss of freshwater systems will occur. Works within streams and wetlands will be avoided with the exception of the removal of an existing culvert to enhance a stream and wetland feature. Hydrological functions of wetlands can be maintained through direction of surface flows to maintain wet soils supporting adapted communities of plants and animals. Fill management and stormwater systems are designed to maintain flows into natural watercourses and wetlands, to the extent practicable.
B7.3.2	Policies	
	Integrated management of land use and freshwater systems (1) Integrate the management of subdivision, use and development and freshwater systems by undertaking all of the following: (a) ensuring water supply, stormwater and wastewater infrastructure is adequately provided for in areas of new growth or intensification; (c) controlling the use of land and discharges to minimise the adverse effects of runoff on freshwater systems and progressively reduce existing adverse effects where those systems or water are degraded; and (d) avoiding development where it will significantly increase adverse effects on freshwater systems, unless these adverse effects can be adequately mitigated.	
B7.4	Coastal water, freshwater and geothermal water	
B7.4.1	Objectives	The relevant objectives and policies are achieved with water quality maintained to acceptable levels and flooding risk will not be exacerbated from the subject site. Consultation with Mana Whenua with Statutory Acknowledgement status on the area of activity has ensured values, mātauranga and tikanga associated with freshwater are recognised and provided for. Proposed avoidance and mitigation measures for contaminants and hydrology from the above response include: • Stringent waste acceptance procedures. • Waste acceptance criteria within WasteMINZ Class 3 Managed Fill WAC. • Extensive erosion and sediment controls, including sediment retention ponds with flocculation, which should remove ~95% of silt/sediment. • Treatment of haul road runoff in a dedicated swale within northern catchment.
	(2) The quality of freshwater and coastal water is maintained where it is excellent or good and progressively improved over time where it is degraded. (4) The adverse effects of point and non-point discharges, in particular stormwater runoff and wastewater discharges, on coastal waters, freshwater and geothermal water are minimised and existing adverse effects are progressively reduced. (5) The adverse effects from changes in or intensification of land use on coastal water and freshwater quality are avoided, remedied or mitigated. (6) Mana Whenua values, mātauranga and tikanga associated with coastal water, freshwater and geothermal water are recognised and provided for, including their traditional and cultural uses and values.	
B7.4.2	Policies	
	Water quality	

	(7) Manage the discharges of contaminants into water from subdivision, use and development to avoid where practicable, and otherwise minimise, all of the following: (a) significant bacterial contamination of freshwater and coastal water; (b) adverse effects on the quality of freshwater and coastal water; (c) adverse effects from contaminants, including nutrients generated on or applied to land, and the potential for these to enter freshwater and coastal water from both point and non-point sources; (d) adverse effects on Mana Whenua values associated with coastal water, freshwater and geothermal water, including wāhi tapu, wāhi taonga and mahinga kai; and (e) adverse effects on the water quality of catchments and aquifers that provide water for domestic and municipal supply. *Sediment runoff* (8) Minimise the loss of sediment from subdivision, use and development, and manage the discharge of sediment into freshwater and coastal water, by: (a) promoting the use of soil conservation and management measures to retain soil and sediment on land; and (b) requiring land disturbing activities to use industry best practice and standards appropriate to the nature and scale of the land disturbing activity and the sensitivity of the receiving environment. *Stormwater management* (9) Manage stormwater by all of the following: (a) requiring subdivision, use and development to: (i) minimise the generation and discharge of contaminants; and	• Use of a proprietary wheel wash facility, with water recycle and low estimated water losses (25L/vehicle), with any lost water collected and treated in the same swale. • Minor changes in contributing catchments to different streams, avoiding potential hydrology effects. • No expected changes in groundwater flow patterns and recharge. • Stormwater discharge sampling and mitigation/contingency measures if any trigger level exceedances. • Extensive riparian planting, along stream edges and around wetlands within site. • Replacement of existing culvert on Stream 1, with bridge, benefitting this stream and associated wetland. • Cessation of cattle grazing (normally 30 animals) during filling activity (30 head) and any associated fertiliser application and chemical weed control.

	(ii) minimise adverse effects on freshwater and coastal water and the capacity of the stormwater network; [new text to be inserted] (b) adopting the best practicable option for every stormwater diversion and discharge; and (c) controlling the diversion and discharge of stormwater outside of areas serviced by a public stormwater network.	

D3	HIGH USE STREAM MANAGEMENT AREAS OVERLAY	
D3.2	Objectives	The activity does not conflict with Objective 1 nor Policies 1-3 noting that no water is proposed to be drawn from a stream for this activity and measures are proposed to avoid reducing the assimilative capacity of streams from discharges associated with the activity. Apart from the Watercare dam take, there are no other known users of surface waters within 2km of the site within the same catchment. Our hydrological assessment indicates that there should be little, if any, change in stream hydrology for the streams within the Hays Creek dam catchment (refer item B7). The streams and wetlands within the site will have enhanced amenity, through the proposed riparian planting and replacement of the existing culvert on Stream 1 with a bridge. Consultation with Mana Whenua with Statutory Acknowledgement status on the area of activity has ensured values, mātauranga and tikanga associated with freshwater are recognised and provided for. Proposed avoidance and mitigation measures for contaminants and hydrology from the above response include: • Stringent waste acceptance procedures. • Waste acceptance criteria within WasteMINZ Class 3 Managed Fill WAC.
	(1) Water continues to be available from high-use streams within limits while safeguarding the life-supporting capacity and amenity values of the stream.	
D3.3	Policies	
	(1) Manage streams within the following catchments and sub-catchments as part of the High-use Stream Management Areas Overlay: (g) Hays Creek in the Papakura area; and (2) Require the take or use water from an area in the High-use Stream Management Areas Overlay to: (a) ensure that other water takes can continue to operate (b) maintain in-stream ecological values; (c) maintain Mana Whenua values; and (d) maintain the stream's amenity values. (3) Avoid as far as practicable and otherwise remedy or mitigate adverse effects on other uses of the stream and, in particular, avoid reducing the stream's assimilative capacity as far as practicable from proposals to discharge contaminants into high-use streams (or into or onto land where the contaminants may percolate into high-use streams).	

		• Extensive erosion and sediment controls, including sediment retention ponds with flocculation, which should remove ~95% of silt/sediment. • Treatment of haul road runoff in a dedicated swale within northern catchment. • Use of a proprietary wheel wash facility, with water recycle and low estimated water losses (25L/vehicle), with any lost water collected and treated in the same swale. • Minor changes in contributing catchments to different streams, avoiding potential hydrology effects. • No expected changes in groundwater flow patterns and recharge. • Stormwater discharge sampling and mitigation/contingency measures if any trigger level exceedances. • Extensive riparian planting, along stream edges and around wetlands within site. • Replacement of existing culvert on Stream 1, with bridge, benefitting this stream and associated wetland. • Cessation of cattle grazing (normally 30 animals) during filling activity (30 head) and any associated fertiliser application and chemical weed control.

D7	WATER SUPPLY MANAGEMENT AREAS OVERLAY	
D7.2	Objectives	
	(1) Municipal water supply infrastructure is able to operate and develop in water supply management areas. (2) Natural character, ecological, heritage, recreational and amenity values of water supply management areas are protected while the functional or operational needs of municipal water supply infrastructure are met.	
D7.3	Policies	
	(1) Enable the operation, use, maintenance, repair, upgrading and development of structures and activities for the storage, distribution and treatment of municipal water supply in water supply management areas.	The proposal will not compromise Watercare's ability to operate and develop in the identified water supply management areas.

	(2) Land use and other activities are managed to avoid adverse effects on the quality and quantity of freshwater in the catchment used for municipal water supply purposes as far as practicable. (3) Avoid, remedy or mitigate adverse effects of structures, equipment or works and any discharges of water from dams, pipelines or other water treatment infrastructure on the natural character, ecological, heritage, recreational and amenity values in water supply management areas. (4) Provide for infrastructure in, on, under or over water supply management areas only where there is a functional or operational need to be in that location or traverse the area and there is no practicable alternative.	The land use is outside of the catchment defined by the overlay.

E1	WATER QUALITY AND INTEGRATED MANAGEMENT	
E1.2	Objectives	An engineered solution has been proposed to achieve the outcome of stabilising the land, avoiding sediment activation and improving water quality in this area. The site provides opportunities to improve ecological values and freshwater quality through actions such as excluding livestock from watercourses and wetlands and increasing native plant cover through riparian enhancement. Best management practices are to be established for the discharges. The application and supporting information have demonstrated that the activity does not conflict with the objective or policies included within the NPS on Freshwater Management and is consistent with the fundamental concept of Te Mana o te Wai.
	(1) Freshwater and sediment quality is maintained where it is excellent or good and progressively improved over time in degraded areas. (2) The mauri of freshwater is maintained or progressively improved over time to enable traditional and cultural use of this resource by Mana Whenua.	
E1.3	Policies	
	Freshwater quality and ecosystem health interim guidelines (1) Manage discharges, until such time as objectives and limits are established in accordance with Policy E1.3(7), having regard to: (a) the National Policy Statement for Freshwater Management National Bottom Lines; (b) the Macroinvertebrate Community Index as a guideline for freshwater ecosystem health associated with different land uses within catchments in accordance with Policy E1.3(2); or (c) other indicators of water quality and ecosystem health. (2) Manage discharges, subdivision, use, and development that affect freshwater systems to: (a) maintain or enhance water quality, flows, stream channels and their margins and other freshwater values, where the current condition is above National Policy	

	Statement for Freshwater Management National Bottom Lines and the relevant Macroinvertebrate Community Index guideline in Table E1.3.1 below; or (b) enhance water quality, flows, stream channels and their margins and other freshwater values where the current condition is below national bottom lines or the relevant Macroinvertebrate Community Index guideline in Table E1.3.1 below…. (3) Require freshwater systems to be enhanced unless existing intensive land use and development has irreversibly modified them such that it practicably precludes enhancement. *National Policy Statement on Freshwater Management The National Policy Statement on Freshwater Management requires that Policies E1.3(4) to (7) below are included in the Plan.* (4) (When considering any application for a discharge, the Council must have regard to the following matters: (a) the extent to which the discharge would avoid contamination that will have an adverse effect on the life-supporting capacity of freshwater including on any ecosystem associated with freshwater; and (b) the extent to which it is feasible and dependable that any more than a minor adverse effect on freshwater, and on any ecosystem associated with freshwater, resulting from the discharge would be avoided. (5) When considering any application for a discharge the Council must have regard to the following matters: (a) the extent to which the discharge would avoid contamination that will have an adverse effect on the health of people and communities as affected by their secondary contact with fresh water; and (b) the extent to which it is feasible and dependable that any more than minor adverse effect on the health of people and communities as affected by their secondary contact with fresh water resulting from the discharge would be avoided. (6) Policies E1.3(4) and (5) apply to the following discharges (including a diffuse discharge by any person or animal): (a) new discharge; or (b) a change or increase in any discharge of any contaminant into freshwater, or onto or into land in circumstances that may result in that contaminant (or, as a result of any natural process from the discharge of that	

	contaminant, any other contaminant) entering freshwater. *Other discharges* (26) public health and amenity; and ecosystem health and functioning. Prevent or minimise the adverse effects from construction, maintenance, investigation and other activities on the quality of freshwater and coastal water by: (a) adopting best management practices and establishing minimum standards for the discharges; or (b) where Policy E1.3(26)(a) is not practicable, have regard to the following: (i) the nature, volume and concentration of the contaminants in the discharge; (ii) the sensitivity of the receiving environment to the contaminants in the discharge; (iii) other practicable options for the discharge, including reuse or discharge to the trade sewer; and (iv) practicable measures to reduce contaminant concentrations prior to discharge or otherwise mitigate adverse effects.	

E13	CLEANFILLS, MANAGED FILLS AND LANDFILLS	
E13.2	Objectives	The objectives and policies seek to ensure that managed fills are sited, designed and operated in a way that does not adversely affect the environment, whilst protecting human health. The applicant proposes to appropriately manage the activity with all deposited material adhering to defined criteria for managed fill with acceptance criteria set out in the application documents and site management plan. The implementation of onsite sediment and erosion control measures including inspection, maintenance and site restoration requirements and stormwater discharge monitoring should ensure that the potential negative environmental effects
	1. Cleanfills, managed fills and landfills are sited, designed and operated so that adverse effects on the environment, are avoided, remedied or mitigated. 2. Human health is protected from the adverse effects of operational or closed cleanfills, managed fills and landfill.	
E13.3	Policies	
	1. Avoid significant adverse effects and remedy or mitigate other adverse effects of cleanfills, managed fills and landfills on lakes, rivers, streams, wetlands, groundwater and the coastal marine area. 2. Require cleanfills, managed fills and landfills to be sited, and where appropriate, designed and constructed, to avoid the risk of land instability. 3. Require cleanfills, managed fills and landfills to be designed and operated in accordance with relevant industry best practice.	

	5. Manage closed managed fills and landfills (including the closure of) to: a) protect the integrity of the site including the containment of contaminants; and b) require aftercare that is appropriate to the nature and requirements of the site including the type of material that was deposited during its operative period.	associated with filling are avoided or mitigated so that adverse effects on downstream water quality will be avoided. The geotechnical report identifies that the proposed filling will support the steep sides. The land will have engineered stability and the fill will be designed and operated in accordance with specific engineering recommendations. Human health will be protected through management procedures and deposition methodology and measures will be in place to manage discharges to avoid adverse effects. Upon completion of the filling activity the land will be returned to rural production.
E13.4	Activity Table	
(A5)	Restricted Discretionary Activity Discharges from managed fills that do not comply with Standard E13.6.2.2.	The managed fill does comply with the E13.6.2.2 standards, subject to the 12/3/25 advice from Auckland Council that they have adopted the WasteMINZ Class 5 Clean Fill waste acceptance criteria as being applicable to clean fills in the region, which allows for low level organics organic compounds to be included as cleanfill, and thus comply with the stricter managed fill standards.
E13.6	Standards	
E13.6.2.2	Discharges from managed fills	
	1. The concentrations of contaminants must not exceed the permitted activity levels specified in E30 Contaminated land. 2. Managed fills must not be sited or operated on land with a high risk of instability. 3. A site investigation report and site management plan must be provided to the Council and site	Concentrations of contaminants do not exceed the permitted activity levels specified in E30 Contaminated land, subject to the 12/3/25 advice from Auckland Council that they have adopted the WasteMINZ Class 5 Clean Fill waste acceptance criteria as being applicable to

	operation records must be available for inspection by the Council.	clean fills in the region, which allows for low level organics organic compounds to be included as cleanfill, and thus comply with the stricter managed fill standards.. The geotechnical report identifies that the proposed filling will support the steep sides. The land will have engineered stability, and the fill designed and operated in accordance with specific engineering recommendations. Site investigation reports and site management plan provided with application.
E13.8	Assessment – Restricted Discretionary Activities	
E13.8.1	Matters of Discretion	Techniques are proposed to avoid where possible and mitigate where necessary, sediment contamination entering waterbodies. The implementation of onsite sediment and erosion control measures including inspection, maintenance and site restoration requirements should ensure that the potential negative environmental effects associated with filling are avoided or mitigated so effects on downstream water quality will be less than minor. The filling operations will be conducted in stages as described in the engineering design report. The site preparation, placement of fill, slope stability and compaction of fill material is described in the geotechnical investigation report and will be regularly inspected to certify compliance with the design criteria by a registered professional engineer.
	The Council will reserve its discretion to all of the following matters when assessing a restricted discretionary resource consent application: (2) discharges from managed fills that do not comply with Standard E13.6.2.2: (a) the adequacy of the site investigation report including: (i) appropriateness of site; (ii) discharge and contaminant limits; and (iii) risk assessment. (b) the adequacy of the site management plan including: (i) the operation of the site; (ii) the placement and compaction of managed fill material; (iii) managed fill acceptance criteria; (iv) daily operating procedures; (v) environmental controls and monitoring; (vi) hazard and unexpected discharge response procedures; (vii) reporting requirements; (viii) management for disposal of non-complying material; and (ix) conditioning of wet material.	

	(c) the adequacy of the proposed site operating record including: (i) load inspection records; (ii) monitoring, testing or sampling documentation; (iii) training procedures; and (iv) record of non-complying material disposal. (d) the requirement for and conditions of a financial bond; (e) the timing and nature of resource consent conditions reviews; and (f) the design and construction of the managed fill.	The erosion and sediment controls will be in accordance with the Auckland Council technical publication GD05. These site-specific measures are described in both the engineering design report and the Geotechnical investigation report. FTL Ltd have provided site management recommendations and it is their opinion that implementation of the measures in this plan, including operation, inspection, maintenance and record keeping requirements, will ensure that the Managed Fill Facility will be operated in accordance with industry best practice and that all practicable steps have been taken to avoid or mitigate actual and potential adverse effects associated with a managed fill facility. The proposed site is located within an area that is currently used for pastoral grazing. Streams drain the land and provide degraded wetland and intermittent stream habitat of poor quality. Riparian/Wetland planting is proposed to accompany the activity and restore or enhance the natural values of the land post filling. In this circumstance it is considered that discharges from the proposed managed fill will avoid, remedy or mitigate any adverse effects from actual and potential discharges from the site. The site investigation reports and site management plan
E13.8.2	Assessment Criteria	
	The Council will consider the relevant assessment criteria below for restricted discretionary activities: (2) discharges from managed fills that do not comply with Standard E13.6.2.2: (a) the extent to which the proposal will avoid, remedy or mitigate any adverse effects from actual and potential discharges from the managed fill. (b) the extent to which the site investigation report and site management plan include measures to avoid, remedy or mitigate known or potential adverse effects including: (i) preventative measures prior to establishment, operation or discharge; (ii) site management, including how the importation of material to the site will be controlled; (iii) protection of lakes, rivers, streams, wetlands, groundwater and the coastal marine area; and (iv) aftercare of the managed fill.	

		include measures to avoid, remedy or mitigate known or potential adverse effects. Significant adverse effects on water are avoided.

Assessment of the proposed waste acceptance criteria for the managed fill activity against the maximum acceptable values contained in Tables 1-4 of the Water Services (Drinking Water Standards for New Zealand) Regulations 2022

It is not appropriate to directly compare proposed Fill WAC with the Water Services DWSNZ Regulations 2022, as the Fill WAC are in terms of total concentrations of contaminants in soil in mg/kg, while the DWSNZ regulations refer to the maximum acceptable values of contaminants in water in mg/L.

This issue is responded to in full under item B3.2 of this response.