planscapes (nz) ltd.
Surveying and Resource Management

Tasman District Council

Application for Resource Consent

Under Section 88 of the Resource Management Act 1991

To: Resource Consents Administration
Tasman District Council
Private Bag 4
Richmond

1. *Applicant:*
CJ Industries Limited

2. *Proposal:*
To authorise the discharge of contaminants (cleanfill) to land.

3. *Location:*
134 Peach Island Road, Motueka (refer Figures 1 and 2 of the application).

4. *Legal Description:*
Lot 2 DP 2357 comprised in RT NL77/73 and Lot 2 DP 432236 comprised in RT 524970. Copies of these titles are contained in Annexure B.

5. *Owner / Occupier:*
The underlying freehold titles (RT 524970 and RT NL77/73) are owned by Timothy Corrie-Johnston. C J Industries Limited has entered into an agreement with Mr Corrie-Johnston to undertake gravel extraction at the property.

6. *Resource Consents:*
Consent is sought for a permit to discharge contaminants to land. This consent is sought in addition to land use consents for quarrying and associated activities already applied for by the Applicant.

7. *Assessment of Effects on the Environment:*
An assessment of actual or potential effects on the environment (AEE) of the proposed activities, prepared in accordance with section 88 and Schedule 4 of the Resource Management Act 1991, is enclosed with the application (refer Annexure A).

8. *Other Information:*
Information required by the Tasman Resource Management Plan (TRMP), and that necessary in understanding the proposal, is enclosed and includes:

- Assessment of effects on the environment – Annexure A;

- Records of title – Annexure B;
- Hydrogeology Report, prepared by Pattle Delamore Partners Ltd – Annexure C;
- Groundwater and Cleanfill Management Strategy, prepared by Pattle Delamore Partners Ltd – Annexure D.
- Schedule 36D of the TRMP – Annexure E.

9. *Application Fee:*
The Applicant intends to make an electronic payment of Council's fee deposit; please issue an invoice for online payment.

C J Industries Limited.
By Their Authorised Agents
PLANSCAPES (NZ) LTD

per:.....
(Hayden Taylor)

Date: 15 July 2022

Address for Service of the Applicant:
C J Industries Limited.
c/- Planscapes (NZ) Ltd
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NELSON

Telephone Number:	(03) 539 0281
Contact Person:	Hayden Taylor
Email:	hayden@planscapes.co.nz

ANNEXURE A

Assessment of Effects on the Environment

Introduction and Background

C J Industries Limited ('the Applicant') seeks resource consent from the Tasman District Council ('the consent authority' or 'Council') to authorise the discharge of contaminants, being cleanfill, to land ('the proposal') at 134 Peach Island Road, Motueka ('the application site').

The application site is zoned Rural 1, is within Land Disturbance Area 1, and is partially subject to a Flood Hazard. The proposed discharge is a discretionary activity under Rule 36.1.5.2 of the Tasman Resource Management Plan (TRMP).

The Applicant has already lodged an application with Council for land use consent for quarrying (extraction of alluvial aggregates) activities, backfilling of excavation areas with imported cleanfill, and land rehabilitation activities at the subject site. Consent has also sought for land use activities associated with this activity, being the planting of vegetation and temporary stockpiling of soil in berm land, formation of access within legal road and display of signage. The application is referenced by Council as RM200488 and RM200489. The application has been publicly notified and submissions have been received. The applicant has also lodged primary evidence in support of the application with Council.

The proposal involves using cleanfill materials that are pre-screened offsite then brought to the site for placement into areas that have been quarried for aggregates, prior to reinstatement of subsoil and topsoil to return the land to a similar state to that which existed prior to quarrying. On advice from experts advising the Applicant, it has been determined that the cleanfill materials are a contaminant as defined in the RMA. On this basis it has been determined that a further resource consent (for discharge of contaminants to land) is required. This application seeks this additional consent. It is expected that Council will process this discharge application to bring it up to the same process stage as the land use consents already applied for. This will enable the land use and discharge applications to be heard together.

The following assessment has been prepared in accordance with Section 88(2) and Schedule 4 of the Resource Management Act ('RMA'). Clause 1 in Schedule 4 of the RMA states that the information required by the schedule, including any assessment under clause 2(1)(f) or (g), must be specified in sufficient detail to satisfy the purpose for which it is required. This assessment must also take into

account the limitations imposed under Section 104B of the RMA in the determination of any application for a discretionary activity.

Application Site

The application site is located at 134 Peach Island Road, Motueka (refer Figures 1 and 2 below); valuation number 1933075400.

Figure 1: *Locality diagram, showing application site relative to Motueka*

Figure 2: *Application site and environs*

The 13.4894 hectare property is owned by Timothy George Corrie-Johnston (who is part of the extended CJ Industry family) and is legally described as Lot 2 DP 2357 comprised in RT NL77/73 and Lot 2 DP 432236 comprised in RT 524970. Copies of these titles are included as Annexure B.

The application site contains a house and sheds and is accessed from Peach Island Road through the use of a Right of Way (ROW) (refer Figure 3 below). The application site is flat (refer Figure 4 below), positioned within Quaternary river gravels (refer Figure 5 below), and is currently in pasture for grazing dry stock. The formed portion of Peach Island Road terminates at the ROW entrance to the application site, but the road reserve continues south, transecting the property as a paper road (refer Figure 6 below).

Figure 3: *House, sheds and ROW at application site*

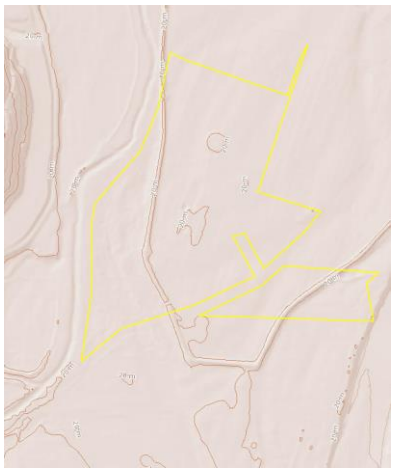

Figure 4: *Topographic relief of application site*

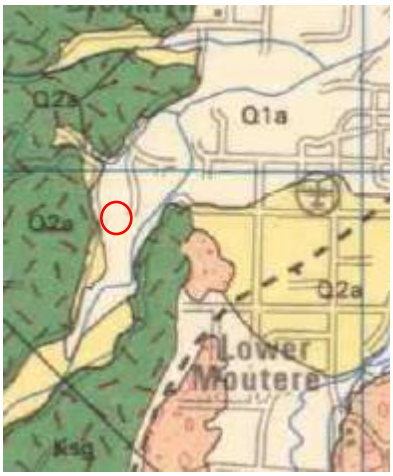

Figure 5: *GNS Q-Map of application site within Holocene (1-14 thousand years old) well sorted gravel forming modern flood plains and young fan gravels*

Figure 6: *Paper road positioning (orange) relative to the application site*

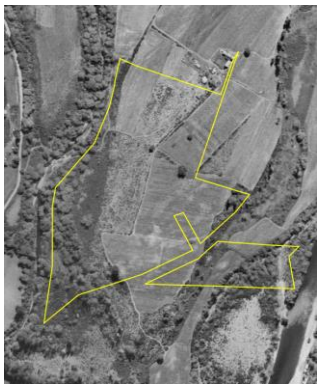

Figure 7: *Aerial photograph of application site from 1940-1949*

Figure 8: *Aerial photograph of application site from 1980-1989*

Historic aerial photographs of the application site identify that the property was used for a mixture of pasture and potentially tobacco in the 1940's, and pasture only in the 1980's, so it's considered unlikely that this area would be at risk from contaminated soils (refer Figures 7 and 8 above). The application site is not identified in Council records as containing Hazardous Activities and Industries List ('HAIL') land.

The Motueka River flows along the application site's eastern boundary, and an unnamed third-order stream flows along its western boundary (refer Figure 9 below). The unnamed stream flows in the same location that the main Motueka River channel used to flow before the 'great flood' of 1877. This area is now referred to as the 'Peach Island overflow channel' due to the fact that the Motueka River flows in this direction in large flood events (refer Figure 10 below). A Council maintained stop bank transects the application site and runs parallel to both the true right bank of the Peach Island overflow channel and the true left bank of the Motueka River (refer Figure 11 below). The stop bank was built in the 1950's and was designed to hold a 1-in-50-year flood with a 600mm freeboard.

Figure 9: *Topographic map of application site with river/stream locations*

Figure 10: *Photo of Peach Island overflow channel (downstream of application site) in flood*

Figure 11: *Stop bank location within application site*

The application site is identified as being subject to a flooding hazard, and areas outside of the stop bank protection are subject to flooding when the Motueka River rises above a 1-in-20 year flow event.

Of specific relevance to consideration of the discharge of contaminants to land is the hydrogeological setting of the application site, particularly in relation to ground water. This has been detailed in the Hydrogeology Report prepared by Pattle Delamore Partners ('PDP') at Annexure C.

Cultural Heritage

Te Tau Ihu Statutory Acknowledgements are a type of cultural redress included in the Te Tau Ihu Treaty Settlements, and they afford legal recognition to the particular cultural, spiritual, historical and traditional associations the eight iwi of Te Tau Ihu have with an identified area. As a consent authority, Council must have regard to any Statutory Acknowledgement when determining whether relevant Iwi may be adversely affected by a resource consent proposal. The application site is within the Motueka, Motupiko, and their tributaries Statutory Acknowledgement Areas ('SAA'), which are recognised under the 'Ngāti Kōata, Ngāti Rārua, Ngāti Tama ki Te Tau Ihu, and Te Ātiawa o Te Waka-a-Māui Claims Settlement Act 2014', the 'Ngati Toa Rangatira Claims Settlement Act 2014', and the 'Ngāti Apa ki te Rā Tō, Ngāti Kuia, and Rangitāne o Wairau Claims Settlement Act 2014'. Consideration is given to this in the assessment below.

Motueka and its surrounds has experienced extensive historic Māori occupation and use, and there are many cultural heritage sites within this area as a result, however, there are no known cultural heritage sites on the application site. The closest known site, N27/150 – Cemetery with headstones/graves dating from 1868 – 1920, is approximately 270m south west of the application site at the closest point, and the next closest sites are approximately 1.2km south west of the application site – N27/203-205 (Pa site with terraces). Consideration is given to cultural heritage sites in the assessment below.

Proposed Activity

Clause 2(1)(a) of Schedule 4 requires a description of the proposed activities subject to this application.

Clause 3 of Schedule 4 requires that if any permitted activity is part of the proposal to which the application relates, the application must include a description of the permitted activity that demonstrates that it complies with the requirements, conditions and permissions for a permitted activity for which resource consent is not required under section 87A(1) of the RMA. In this case, there are no relevant permitted activity rules for the discharge of contaminants to land.

Activities covered by exiting land use consent applications

For the purpose of context, the following summary of the land use activities that have already been applied for is provided:

> *Gravel Extraction and Site Rehabilitation*
> *The Applicant proposes to undertake gravel extraction on the application site in three stages, within an area of approximately 73,500m^2, and over a 15 year period (refer Figure 1 below). Stages 2 and/ or 3 will be undertaken first, with Stage 1 works only commencing once mitigation planting has adequately established. No processing or crushing of gravel will occur on site. Hours of operation will be limited to 7am to 5pm Monday to Friday. No heavy machinery shall be operated on site earlier than 7.30am. No operations shall occur on Saturdays, Sundays, public holidays, or between 20 December and 10 January the following year (Christmas holiday period).*

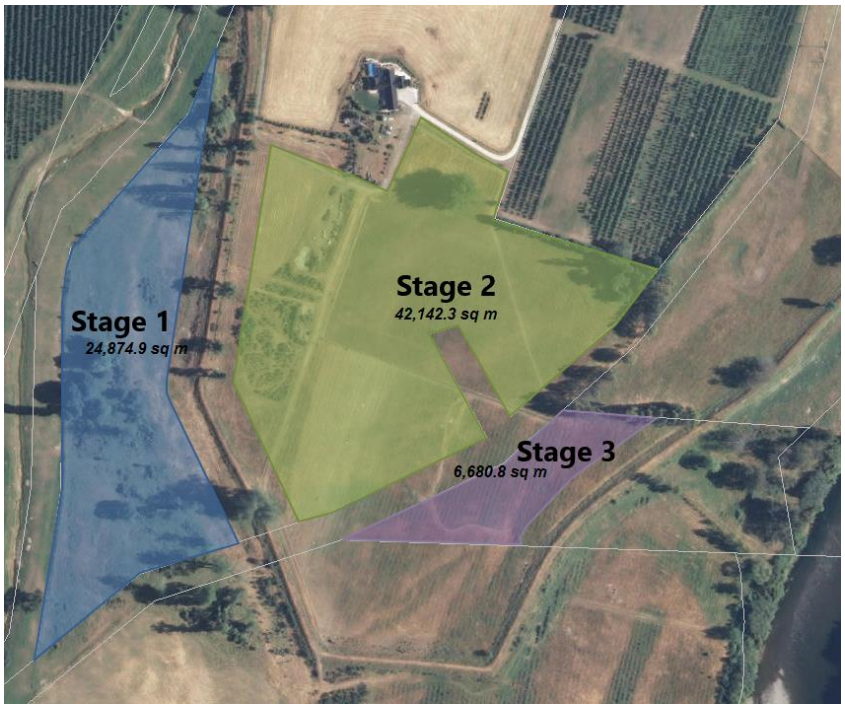

***Figure 1**: Proposed extraction area and staging*

CJ Industries has undertaken test pit excavation to evaluate the depth of gravel below the surface at different points across the application site, including the thickness of over burden. On average the gravel surface is around 0.5 to 1m below ground level. No excavation will occur below the groundwater level at the time of excavation, with generally 1m of unexcavated gravel being retained between the floor of the excavation pit and actual groundwater level. Excavation below the 1m freeboard is permitted provide that at least 0.3m freeboard is provided to groundwater level, and the excavation area is backfilled to a level 1m above groundwater level on the same day. Real-time monitoring of groundwater levels and telemetry systems in excavation equipment will be utilised to manage this.

No excavation will occur within 20m of stop banks, on the Motueka River side of the stop bank within Lot 2 DP 2357, nor within the land surrounding the dwelling and sheds. Any excavation which approaches property boundaries will have a 1:1.3 - 1:1.7 batter of material (differing gradients relate to upper and lower mantles) which will remain unexcavated. Any concentrated stormwater flows will also be diverted away from cut faces. Excavations near the application site's boundaries will be overseen by a Geoprofessional to ensure these requirements are met and any land stability issues are avoided.

Topsoil and subsoil will be removed from the extraction area and, unless being reused for reinstatement the same day, will be stockpiled separately in an area behind the stop bank and 1m below ground level to reduce noise and visual effects. The soil stockpiles will not exceed 3m in height. Aggregates will then be extracted using an excavator and then carted from the excavation area using 30-ton dump trucks. The material will be stockpiled separately from soil in the general stockpile area. The base of this stockpile will also be 1m below ground level, and the maximum height of this stockpile for its base will be 4m (so 3m above existing ground level). As the truck returns to the extraction site from the stockpile, it will bring fill with it to be used for reinstatement of the extraction site. Cleanfill will replace extracted material so that

by the end of each day the pit size will be no greater than 1600m^2. I.e., 20x80m, though shape may vary from time to time. In this way the extraction site will move daily.

Backfilling will be undertaken at every practicable opportunity even when no new excavation is occurring. No excavated piece of ground will remain open for longer than 6 months on completion of excavation from any individual hole. This allows for the potential pausing of operations due to lack of demand. Generally, backfilling and reinstatement will take place within one month of excavation, and this shorter period will be adhered to for any excavations undertaken adjacent to the 20m stopbank setback and adjacent to property boundaries. Fill material will be clean and substantially inorganic, and will meet the WasteMINZ definition of 'cleanfill'. The top 1m of fill (below the original ground surface level) will comprise stockpiled subsoil and topsoil, with no less than 300mm topsoil.

The ground will be reinstated to the original levels as far as practicable and the finished ground levels will not result in the obstruction or deflection of flood flows. Pre-start survey and mapping of ground contours and a prosed finished level contour plan will be prepared. Rehabilitation planting and fertilisation of reinstated land will take place.

All excavation, storage, reinstatement and rehabilitation works will be undertaken in accordance with the Soil Management Plan prepared by Land Systems.

For the Stage 1 area which is outside the Motueka River stop banks, gravel will be extracted progressively in an upstream direction starting at the downstream end of the property, and all excavation will occur in strips aligned parallel to the general direction of flood flow. At any one time no more than 1,600m^2 will be exposed. No material will be stored on the river side of the stop banks. Modelling of flood flows on the basis of this extraction methodology has been undertaken.

All works will be undertaken in accordance with a Noise Management Plan, a Dust Management and monitoring Plan, a Groundwater and Cleanfill Management Plan and a Soil Management Plan. These will be prepared for Council certification prior to commencement of works and will be generally in accordance with the draft management plans already prepared.

Cultural monitoring and involvement of a Matakite is volunteered as a condition of consent for any topsoil stripping activities. Additionally, Accidental Discovery Protocols will be adhered to at all times.

Transport and Access

Extracted gravel will be transferred from the on-site stockpile to truck and trailer units by a front-end loader. The truck and trailer units will travel to and from the site to CJ Industries' processing plant at 34 Hau Road, Motueka. No processing or screening of materials will occur on the application site. It is proposed that the truck and trailer units will travel south along the Peach Island paper road, then via a section of marginal strip before entering Motueka River West Bank Road via the established access which services 493 Motueka River West Bank Road. From here they will continue south until they are able to cross the Motueka River at the closest bridge at Alexander Bluff. This route has been chosen so as to avoid travelling across the busy Motueka River bridge on State Highway 60 as well as through Brooklyn and Motueka Township. Vehicles travelling on Motueka Valley West Bank Road will restrict their speed to 60km/h.

Up to 15 trucks will enter/exit the site each day. Trucks will return with back fill material as often as possible, in order to keep traffic down.

The existing paper road and marginal strip are currently in pasture and will be formed into a sealed road to meet TRMP requirements (for access, not as formed public road,). The access will be sealed to at least 3.5m width, with localised widening on corners as necessary, and with gravel shoulders. The access will be adequately maintained by the Applicant for the duration of the activity, then removed unless requested to do otherwise at that time by Council.

The existing site access to 493 Motueka River West Bank Road will be upgraded to a suitable standard to accommodate the proposed heavy vehicle movements, including some tree removals and bank realignment to ensure adequate visibility is achieved.

The proposed access crosses the Peach Island overflow channel via a vehicle bridge before reaching the Motueka River West Bank Road. The appropriateness of this bridge will be assessed by a suitably qualified engineer and any necessary upgrades will be undertaken prior to access establishment or use under this proposal. Any upgrade can be completed as a permitted activity.

All vehicles on site will adhere to a speed limit of 15km/h when not on sealed surfaces, and will also be limited to a speed of 60km/hr on Motueka River West Bank Road as noted.

Signage

More than one on-site sign is likely to be required in order to aid in workplace health and safety. There will not be any customers to the site so no advertising or property identification signage will be established, and any signage will be limited to traffic management and health and safety signage to the extent necessary in number and size. Additionally, in order to improve safety associated with the proposed Motueka River West Bank Road vehicle crossing, temporary signage within the road reserve is proposed.

Amenity Planting

In order to limit visual effects from the proposed works, visual mitigation planting is proposed around the periphery of the works area, and along the western side of the proposed access. The planting is detailed in a Mitigation Planting Plan and associated Maintenance and Establishment Plan prepared by Canopy. Restoration planting is also proposed to the Stage 1 area following completion of works within that stage, as detailed in the Canopy Stage 1 River Terrace Restoration Plan. This is for the purposes of ecological and visual amenity betterment. Final plans will be prepared following grant of consent for Council certification.

Stormwater Management

Removal of vegetation and exposure of topsoil or subsurface layers will potentially expose surfaces to erosion and sediment runoff during rain. Stockpiles of topsoil will be designed to avoid the sedimentation of waterways or contamination of groundwater. Temporary sediment traps will be dug and positioned in appropriate places as a mitigation measure to capture sediments suspended in water. Any internal access roads created for the proposal will be designed so that any sediment laden runoff will be directed to bunded sedimentation traps and not to water bodies. No permanent fixtures such as drainpipes or culverts are proposed to be installed. These measures will be detailed in a Stormwater Management Plan.

The gravel extraction zone will be set back at least 20m from permanently flowing water bodies and the proposal describes progressive stripping of topsoil and removal of underlying gravel so as to avoid disturbance of the permanent water table. In this way any temporary suspension of sediment will settle out as the water drains through the excavation base and into the water table.

Noise
Noise expected from the proposal (in the form of truck movements, excavation noise and loading noise; no crushing or processing is proposed for this application) has been assessed by of Hegley Acoustic Consultants and is deemed to be able to meet the TRMP daytime noise level requirements of L_{eq} 55dBA. Hegley Acoustic Consultants have also prepared a Noise Management Plan which details noise mitigation measures proposed. Additionally, the use of sound-reducing deck liners in truck beds is volunteered as a condition of consent. '

Proposed discharge of contaminants

The backfill material proposed to be used by the Applicant at the application site is, as identified above, to be restricted to cleanfill material as defined under the WasteMINZ document Technical Guidelines for Disposal to Land (2018). The acceptable materials are detailed in Table 2 of the Groundwater and Clean Fill Management Plan ('GMP') contained at Annexure D.

The fill material will only comprise natural material sourced from both on site and off site and includes uncontaminated soil, clay rock and gravel.

Fill material sourced off site must not be from a HAIL site and will only be accepted if total soil contaminant concentrations in the imported fill are not above soil background concentrations specific to the Tasman region as provided in the Landcare Research report "Background concentrations of trace elements and options for the managing of soil quality in the Tasman and Nelson Districts" (Cavanagh, 2015).

The fill material sourced both on site and off site may include some incidental biodegradable organic matter, but this will not exceed 2% by volume per load of fill and exclude soils with high organic content (i.e. peat, loam, topsoil etc.).

On the basis of these constraints, and as will be addressed in further detail below, the backfill material will not contain materials likely to adversely affect land or groundwater quality. However, as it may *'…change the physical, chemical, or biological condition of the land or air onto or into which it is discharged'* on account of not being material sourced on the site itself, it is considered to be a contaminant as defined in the RMA.

Key to ensuring the quality of the cleanfill used on site will be control over the receipt, inspection, and testing of material prior to it being discharged on site. Also of importance is the manner in which it is deposited on the application site, in particular through avoiding working in exposed groundwater, and management of any risks of accidental spills associated with machinery. These matters are proposed to be managed through the preparation of and adherence to the GMP. A draft of this has been prepared by PDP and this is contained at Annexure D. A condition is volunteered requiring a final GMP to be submitted to Council for certification prior to the commencement of cleanfill discharge activities. The key elements addressed in the GMP are:

- Clean fill materials authorised

- Proposed clean fill management system
    - Receipt
    - Inspection and testing of imported clean fill
    - Placement of imported clean fill
- Groundwater level monitoring and excavation controls
- Response and mitigation to a spill
- Groundwater quality monitoring
- Response to issues arising from groundwater quality monitoring

The purpose of the GMP is to ensure that the application site will be managed to comply with consent conditions related to the quarrying activities and discharge of contaminants to land, specifically in respect achieving groundwater quality outcomes. The relevant performance indicators to ensure that the quarrying activities are managed to achieve are:

- Ensuring that excavations do not expose groundwater in excavations.
- Ensuring that all backfill material is strictly managed to ensure it meets the definition of 'clean fill' under WasteMINZ guidelines.
- Minimise any change to the physical and chemical properties of groundwater as result of the land use and discharge activities associated with quarry activities (as defined by the trigger levels in Table 2).
- Ensuring that under no circumstances that the land use and discharge activities associated with quarry activities result in groundwater quality exceeding the acceptable values in the Drinking Water Standards for New Zealand.

Control over the quality of this fill will enable the proposed activity to meet the requirements of a Class 5 Landfill under the WasteMINZ Guidelines, being the only class of landfill that the guidelines allow to be sited over aquifers used for drinking-water purposes, as is the case for this site.

A consent term of 17 years is sought through this application. This term is sought to allow for discharge to land to occur over 15 years (being the same term sought for the land use consents for quarrying), plus two years of continued groundwater quality monitoring following the cessation of backfill activities.

The Pattle Delamore Partners Hydrogeology report

Mr Ryan Nicol of PDP has prepared a Hydrogeology Report for the application site. This is included at Annexure C to this application. This details the hydrogeological setting of the application site, and assesses the effects of the proposed quarrying activities and associated discharge of backfill on the application site on the receiving groundwater environment. Those parts of the he executive summary of this report relevant to discharges are as follows:

> *'CJ Industries Ltd are seeking resource consent to establish an aggregate quarry at Peach Island. This will involve the extraction of aggregate material from excavation pits at the site and backfilling of the pits with uncontaminated, clean fill material sourced from both on and off site.*

A shallow, unconfined alluvial aquifer system, that is predominantly recharged by flow losses from the Motueka River provides a source of clean groundwater for irrigation and domestic supply purposes to a number of properties at Peach Island. The shallow aquifer also underlies the proposed location of the Quarry site and therefore the main risk from the proposed quarry on the groundwater resources at Peach Island is potential for adverse effects on groundwater quality.

The key areas of concern that may impact groundwater quality from the proposed quarry activities are:

- *Exposure of groundwater within open pit excavations.*
- *Inundation of contaminated fill material in backfilled pits, mobilising contaminants within the aquifer.*

Backfill material will be placed within excavations, some of which will be inundated by groundwater at times of high groundwater levels. Therefore, strict controls on the type and quality of the fill material will be implemented to avoid placement of contaminated material. This will include only using hardfill natural materials (i.e. silt, clay, sand, gravel, rock) from on site and also off site from areas that are uncontaminated.

An overarching groundwater and clean fill management plan provides details for implementing the controls to reduce the risk of adverse groundwater quality changes in the Peach Island aquifer. This document includes the controls described above as well as groundwater level and quality monitoring to continually assess effects of the quarry activities on downgradient water quality.

Provided that the Applicant operates the proposed quarry as outlined in the groundwater and clean fill management plan, the overall effect of the quarrying activities on the groundwater resources at Peach Island are expected to be less than minor.'

Tasman Resource Management Plan (TRMP)

Zoning and Area Overlays

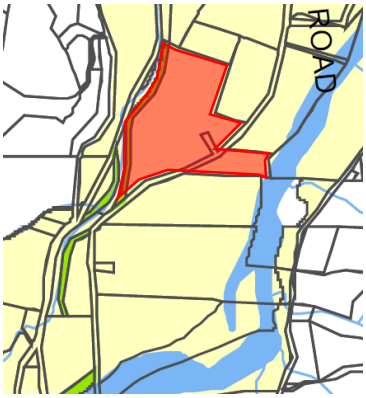

Figure 20: *TDC Planning Map 18, showing application site within the Rural 1 Zone*

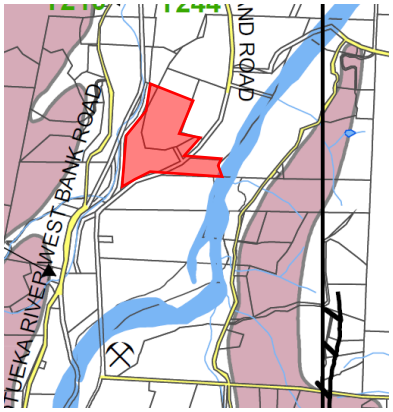

Figure 21: *TDC Planning Map 18, showing application site within LDA1*

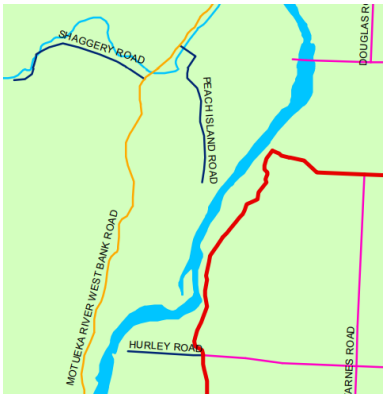

Figure 22: *TDC Planning Map 166, showing roading hierarchy surrounding application site*

The application site is zoned Rural 1, is within Land Disturbance Area 1 and, where on berm land outside of the Motueka River stop banks (Stage 1), is subject to a flood hazard.

Applicable TRMP Rules

Chapter 36 - Applicable Rules for Contaminant Discharges

This section deals with discharge of contaminants to land, air and water. Section 36.1 addresses discharges to land.

The discharge of contaminants (cleanfill) to land is not an activity addressed in Rules contained at Sections 36.1.2 Permitted Activities, 36.1.3 Controlled Activities, 36.1.4 Restricted Discretionary Activities or 36.1.6 Non-Complying Activities.

Section 36.1.5 Discretionary Activities includes Rule 36.1.5.2 (Discharges to Land (Other). This rule states that:

> *'Except as specified by rule 36.1.6.1* [Non-Complying Activities]*, any discharge to land that does not comply with the conditions of rules 36.1.2.1 to 36.1.2.11 or rule 36.1.3.1 is a discretionary activity.'*

The proposed discharge to land is a discretionary activity under Rule 36.1.5.2 of the TRMP.

Resource Consents Required

The Applicant seeks consent to a discharge of contaminants to land as a discretionary activity under Rule 36.1.5.2 of the TRMP.

Section 104B of the Resource Management Act

In determination of a discretionary activity, Section 104B of the RMA states that:

> *After considering an application for a resource consent for a discretionary activity or non-complying activity, a consent authority—*

(a) may grant or refuse the application; and

(b) if it grants the application, may impose conditions under section 108.

Policy Framework in the Relevant Policy Documents

Tasman Resource Management Plan

Relevant TRMP provisions relating to groundwater quality and contaminants are contained at Chapters 5 and 33.

The Chapter 5 provisions are primarily focused on preserving amenity values and the qualities of natural and physical resources (Objective 5.1.2[1]). Specific policies of relevance to water quality issues seek protection of ground and surface water quality and avoidance of discharge of contaminants beyond site boundaries (policies 5.1.3.2[2] and 5.1.3.11[3]), and appropriate management of contamination risks (policy 5.1.3.9[4]). Implementation of the proposed site management measures detailed in the GMP will enable consistency with these provisions to be achieved.

Objective 5.5.2[5] is also relevant in relation to hazardous substances. Policies 5.5.3.4[6] ,5.5.3.5[7] and 5.5.3.6[8] deal with avoidance of discharge of hazardous substances to ground or surface water, and adopting land management practices that avoid potential to create future contaminated sites. These provisions are effectively replicated by Objective 33.2.3[9] and supporting policy 33.2.3.2[10] in relation to discharges.

Additionally, based on the above measures the assessment criteria for discharges given at Schedule 36D of the TRMP (both general criteria and those specific to discharges to land) are considered to be met by the proposal. These provisions are included at Annexure E for reference. On the basis of advice provided by Mr Nicol, there are considered to be no adverse effects of the discharge to land of clean fill that cannot be avoided, remedied or mitigated, there is no reason to impose financial contributions to manage or compensate for adverse effects associated with the discharge.

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[1] 5.1.2 - Avoidance, remedying or mitigation of adverse effects from the use of land on the use and enjoyment of other land and on the qualities of natural and physical resources

[2] 5.1.3.2 To protect the quality of groundwater and surface water from the adverse effects of urban development and rural activities

[3] 5.1.3.11 To avoid, remedy, or mitigate the likelihood and adverse effects of the discharge of any contaminant beyond the property on which it is generated, stored, or used

[4] 5.1.3.9 To avoid, remedy, or mitigate effects of:…(c) contaminant discharges; …beyond the boundaries of the site generating the effect

[5] 5.5.2 Reduction of risks to public health and safety, property and the environment, arising from fire and hazardous substances.

[6] 5.5.3.4 To avoid any escape or discharge to surface water or groundwater, or drift to other property, of any hazardous substance, from within the site where it is used.

[7] 5.5.3.5 To require adoption of land management practices that avoid the potential for creating future contaminated sites

[8] 5.5.3.6 To require the preparation of a contingency plan to avoid, remedy or mitigate any adverse effects of an emergency discharge or accidental spill of hazardous substances

[9] 33.2.3 The avoidance, remediation or mitigation of the adverse effects resulting from emergency discharges or accidental spills

[10] 33.2.3.2 To ensure that land use and discharge activities are carried out, having regard to contingency planning measures appropriate to the nature and scale of any discharge and risk to the environment for any accidental discharge of any contaminant that may result in connection with the activity.

Tasman Regional Policy Statement

The TRMP and its objectives and policies have been developed so as to be consistent with the objectives and policies in the Tasman Regional Policy Statement (TRPS). The proposal will not undermine the policy direction of the TRPS.

Water Conservation (Motueka River) Order 2004

Section 217(2) of the RMA states that

> *'Where a water conservation order is operative, the relevant consent authority—*
>
> > *(a) shall not grant a water permit, coastal permit, or discharge permit if the grant of that permit would be contrary to any restriction or prohibition or any other provision of the order:*
> >
> > *(b) shall not grant a water permit, a coastal permit, or a discharge permit to discharge water or contaminants into water, unless the grant of any such permit or the combined effect of the grant of any such permit and of existing water permits and discharge permits and existing lawful discharges into the water or taking, use, damming, or diversion of the water is such that the provisions of the water conservation order can remain without change or variation:*
> >
> > *(c) shall, in granting any water permit, coastal permit, or discharge permit to discharge water or contaminants into water, impose such conditions as are necessary to ensure that the provisions of the water conservation order are maintained.'*

The Motueka River WCO is applicable to this proposal. The part of the river that is adjacent to the application site is listed in Schedule 2 of the WCO. Relevant to discharges is Clause 11 of the WCO[11]

[11] Restrictions on alteration of water quality
(1)No resource consent may be granted or rule included in a regional plan permitting a discharge into any of the waters identified in Schedule 2 at any time, or into any of the waters identified in Schedule 3 during the months of May to October inclusive, if, after allowing for reasonable mixing of the discharge with the receiving waters, the discharge would—
(a)alter the concentration of suspended solids or turbidity in the receiving waters by more than 1 mg/1 or 1 NTU where the ambient concentration of suspended solids or turbidity is less than or equal to 10 mg/1 or 10 NTU respectively; or
(b)alter the ambient concentration of suspended solids or turbidity in the receiving waters by more than 10 mg/l or 10 NTU where the concentration of suspended solids or turbidity is more than 10 mg/1 or 10 NTU respectively; or
(c)alter the visual clarity of the waters by more than 20%; or
(d)alter the natural temperature of the receiving waters—
(i)by more than 3°C; or
(ii)by increasing the water temperature to more than 20°C.
(2)No resource consent may be granted or rule included in a regional plan permitting the discharge into any of the waters identified in Schedule 2 at any time, or into any of the waters identified in Schedule 3 during the months of May to October inclusive, unless, after allowing for reasonable mixing of the discharge with the receiving waters,—
(a)any change in the acidity or alkalinity in the receiving waters, as measured by the pH and attributable to that discharge, either—
(i)maintains the pH within the range of 6 to 9 units; or
(ii)allows the pH to change by no more than 0.5 units when the natural pH lies outside the range of 6 to 9 units; and

This includes a direction that no resource consent shall be granted that permitting a discharge into any of the waters identified in Schedule 2 at any time would result in a specified set of physical, biological and chemical changes to the waters. Given that the proposal does not include any discharge into the Schedule 2 waters (only to land located some distance from these waters) the WCO does not create any impediment to granting of consent for the proposed discharge. Notwithstanding this, the advice of Mr Nicol is that the proposed discharge will not create any adverse effects on groundwater quality. This being the case, it can be safely concluded that the proposal will also not indirectly impact on the physical, biological and chemical properties of the Motueka River as detailed in Clause 11 of the WCO.

For completeness, I also note that the granting of consent for the proposed discharge is not constrained by any other sections of the WCO. Specifically, Clauses 8 and 10 aren't applicable as these relate to damming of waters (river extent) and maintenance of fish passage. Clause 9 relates to alterations of river flows and form. The proposed discharge will not affect the river extent or other physical characteristics (9(a)), deposition of sediment in the river (9(b)),or the the flow of the river including in a flood sense (9(c)).

National Policy Statement for Freshwater Management 2020

The proposed discharge to land will occur near freshwater bodies, so the NPSFM is relevant to this proposal. The fundamental concept underlying the NPS:FM is Te Mana o te Wai. This 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 overarching objective of the NPSFM 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.

Key policies of relevance to this proposal are:

(b)there would be no undesirable biological growths attributable to the discharge including (but not limited to)—
(i)bacterial or fungal slime growths that are visible to the naked eye; or
(ii)seasonal maximum covers of streams or river beds by—
(A)periphyton as filamentous growth or mats (longer than 20 mm) exceeding 30%; or
(B)biomass exceeding 120 mg of chlorophylla per square metre; or
(C)35 g ash-free dry weight per square metre of exposed surface area; and
(c)aquatic organisms are not rendered unsuitable for human consumption through the accumulation of excessive concentrations of contaminants; and
(d)the water is not made unsuitable for recreation by the presence of contaminants, or the median bacterial level of 5 samples or more taken over a period of 30 days does not exceed 126 E coli per 100 ml.
(3)No resource consent may be granted or rule included in a regional plan permitting a discharge into any of the waters identified in Schedule 2 or Schedule 3 if, after allowing for reasonable mixing of the discharge with the receiving waters, the discharge would reduce the concentration of dissolved oxygen below 80% of saturation.
(4)For the purposes of subclause (3), if the natural concentration is less than 80% of saturation, the natural level must be maintained or increased.

- Policy 1: Freshwater is managed in a way that gives effect to Te Mana o te Wai.
- Policy 2: Tangata whenua are actively involved in freshwater management (including decision-making processes), and Māori freshwater values are identified and provided for.
- Policy 3: Freshwater is managed in an integrated way that considers the effects of the use and development of land on a whole-of-catchment basis, including the effects on receiving environments.
- Policy 8: The significant values of outstanding water bodies are protected.
- Policy 15: Communities are enabled to provide for their social, economic, and cultural well-being in a way that is consistent with this National Policy Statement

On the basis of the specific methodologies proposed in the GMP to avoid effects on groundwater resources, and advice from Mr Nicol with regard to the likely effects of the proposed discharge of clean fill on groundwater quality, the proposed activities are considered to be consistent with the NPSFM, including preservation of Te Mana o te Wai and the protection of drinking water resources. Whilst it is not possible to comment regarding Māori freshwater values without the assistance of tangata whenua, given that adverse physical effects on water quality will be avoided, if there is alignment between Māori freshwater values and the physical, chemical and biological characteristics of water then adequate information appears to be available for a conclusion to be drawn that these values will also be maintained. This position may be reviewed should further information become available from tangata whenua.

Actual or Potential Effects on the Environment

Section 88(2)(a) of the RMA states that any application for resource consent must be accompanied by an assessment of effects on the environment prepared as required by Schedule 4 of the Act. Clause 2(3)(c) of Schedule 4 requires the AEE in such detail as corresponds with the scale and significance of the effects on the environment that may arise with the proposed activity.

Use of the words “effect”, “environment” and “amenity values” in this assessment of effects on the environment should be interpreted as follows, in accordance with Sections 2 and 3 of the RMA:

> “Effect” ... includes-
> (a) Any positive or adverse effect; and
> (b) Any temporary or permanent effect; and
> (c) Any past, present, or future effect; and
> (d) Any cumulative effect which arises over time or in combination with other effects- regardless of scale, intensity, duration, or frequency of the effects, and also includes-
> (e) Any potential effect of high probability; and
> (f) Any potential effect of low probability which has a high potential impact.
>
> “Environment” includes –
> (a) Ecosystems and their constituent parts, including people and communities; and
> (b) Any natural and physical resources; and
> (c) Amenity values; and
> (d) The social, economic, aesthetic and cultural conditions which affect the matters stated in paragraphs (a) to (c) of this definition or which are affected by those matters.
>
> “Amenity values” means those natural or physical qualities and characteristics of an area that contribute to people’s appreciation of its pleasantness, aesthetic coherence, and cultural and recreational attributes.

This assessment must be guided by Section 104B of the RMA in relation to the specialist reports prepared in support of this application, and the volunteered conditions of consent, both of which form part of the AEE.

Effects not considered in this application

Effects associated with the land use consents have been assessed in the previous application lodged with Council in relation to the proposed Quarry. Many of these are not relevant to the proposed discharge activity and will not be addressed further in this application. These include amenity effects (including visual and landscape effects, noise and dust), effects on land productivity, traffic effects, surface water quality, ecological effects, land stability effects and effects on flood risk. The potential effects that could result from cleanfill discharge activities are associated with water quality and any associated effects on cultural values.

Groundwater Effects

The effects of the proposed discharge of clean fill material on groundwater are addressed in the Hydrogeology report prepared by Mr Nicol.

The potential risks to groundwater quality are those associated with exposure of groundwater in open excavations which might create a contamination pathway, and through groundwater inundation of backfill material that might result in the mobilization of contaminants into the groundwater. The latter is most relevant to this application. Any adverse effects could impact on down-gradient groundwater users, and down-gradient waterways. Mr Nicol explains:

> *"The existing strata at the site has been deposited via natural geological processes. Removal of natural material during excavation and backfilling of excavations with fill material will change the physical structure of the strata that the groundwater occurs in. Some of the clean fill material will be sourced from off site and therefore would be expected to contain material that has a different geology and chemistry compared to the existing strata. This has the potential to result in some level of change in groundwater chemistry, particularly if the fill material becomes inundated by groundwater."*
>
> *"Provided that the Applicant follows the requirements for acceptance of clean fill material at the Quarry site described above, any changes in groundwater chemistry from inundation of fill material would most likely be subtle differences in the concentrations of common cations and anions that would not be noticeable to people who use the aquifer for drinking-water supply purposes. Therefore, the effects of the backfilling of excavation pits with clean fill material that may be become inundated at times of high groundwater levels is expected to be less than minor."*

Mr Nicol considers that adverse effects will be avoided or mitigated through the implementation of a GMP a draft of which is included at Annexure D. Preparation of a final GMP and adherence to this is volunteered as a condition of consent. The GMP addresses the methodology for extraction of aggregates whilst avoiding excavation below groundwater levels (including real-time groundwater monitoring, alerts, and use of telemetry in excavating machinery), controls over the nature of fill materials that may be used (including quality control, monitoring and reporting requirements), emergency spill and vehicle refueling controls and, out of an abundance of caution, ongoing groundwater quality monitoring, reporting and response requirements to demonstrate that these measures have been effective. Volunteered conditions of consent detail the environmental outcomes that preparation of and adherence to the GMP must achieve in respect of these matters.

Mr Nicol concludes that adherence to the GMP will ensure that the that the overall effect of the quarrying activities on the groundwater quality at Peach Island is less than minor. Relying on Mr Nicol's expert advice in relation to the technical aspects of his assessment of effects, it is considered that the GMP provides a robust framework for management of the proposed activities to ensure that the environmental outcomes specified in the GMP are achieved. These outcomes are:

In achieving these outcomes, the proposal will result in adverse effects on the environment that are less than minor.

Cultural Effects

It is acknowledged that any activity that has the potential to create effects on groundwater quality also has the potential to result in adverse effects on cultural values associated with the land and water, including on the Mauri of the land. This is a matter that was raised by Wakatū Incorporation, Ngāti Rārua and Te Ātiawa in submissions on the land use consents application for the proposed qarry. These submissions identified that the preparation of a Cultural Impact Assessment ('CIA') is required to fully assess these effects on cultural values. The Applicant has been endeavouring to facilitate the preparation of a CIA but, to date, this has not occurred. As a consequence of not having the benefit of a CIA at the time of writing, it is acknowledged that it is not possible to provide conclusive comments in relation to cultural effects of the proposal. To the extent possible, these will be addressed below in relation to matters relevant to an assessment of these effects.

Although it is not possible to draw conclusions on the effects of the activity on the Mauri of the land in the absence of a CIA, it is relevant to note that expert evidence confirms that the proposed fill material, whilst technically considered a contaminant, will not result in adverse effects in terms of land or groundwater contamination. To the extent that a parallel can be drawn between effects of the proposal on the physical, biological and chemical properties of the groundwater resource and any cultural values held in respect of this resource, it is considered that such effects are adequately managed by the application to be considered to be no more than minor.

Conclusion

It is considered that the proposal will have minor or less than minor adverse effect on the environment, in particular on the quality of groundwater resources on the site and in the surrounding environment. I am satisfied that the application as it now stands (including volunteered conditions of consent and the implementation of a final GMP) sufficiently addresses matters relevant to cultural values to enable a conclusion to be drawn that these effects will be appropriately managed. In the event of a CIA being made available, which is still being pursued by the Applicant, I will review this conclusion in light of the findings of the assessment.

Sections 105 and 107 of the Resource Management Act

Sections 105 and 107 of the RMA are relevant in relation to the proposed discharge of a contaminant (cleanfill) to land.

Section 105 contains additional matters that the consent authority must have regard to if the application is for a discharge permit:

- the nature of the discharge and the sensitivity of the receiving environment;
- the Applicant's reasons for the proposed choice; and

- any possible alternative methods of discharge.

Section 107 refers to specific circumstances in which a consent authority shall not grant a discharge permit, where for example after reasonable mixing the contaminants are likely to give rise to conspicuous change in the colour or visual clarity of water, objectionable odour or significant adverse effects on aquatic life.

The advice of Mr Nicol confirms that the clean fill proposed to be used on site, although technically considered a contaminant under the definition provide in the RMA, will not result in degradation of groundwater quality. His conclusions take into account the level of sensitivity of the receiving environment to receiving such contaminants.

There is no suggestion in the advice of Mr Nicol that the effects identified in Section 107 may occur. Any performance requirements and controls over the quality of the clean fill to be used, the recording and reporting of this and, out of an abundance of caution, groundwater quality monitoring to demonstrate that no adverse effects on groundwater quality will result from the discharge are addressed through volunteered conditions of consent. There is no practicable alternative to discharging clean fill to the site, whilst also restoring the ground levels on the site to existing levels to achieve land productivity objectives and to avoid creating pathways for other contaminants to enter groundwater.

Part 2 of the Resource Management Act

Taking into account the expert advice of Mr Nicol with regard to the management of activities on the application site to maintain the quality of groundwater resources, I consider that the proposal will achieve the overall purpose of the Act, being to promote the sustainable management of natural and physical resources. In particular, by carrying out the proposed activities in accordance with the GMP and proposed conditions of consent, the life-supporting capacity of air, water, soil and ecosystems will be sustained, and adverse effects of the activities on the environment will be avoided, remedied or mitigated.

The proposal raises a matter of national importance, being; the relationship of Māori and their culture and traditions with their ancestral lands, water, sites, waahi tāpu and other taonga, and the preservation of the natural character of rivers and their margins.

The proposal also raises relevant other matters for consideration. These include kaitiakatanga and the ethic of stewardship; intrinsic values of ecosystems; and maintenance and enhancement of the quality of the environment. Consideration of the principles of the Treaty of Waitangi is also relevant.

Based on the nature of fill materials proposed, and with adherence to the GMP there assurance that adverse effects on groundwater quality will be avoided. Taking into account the expert advice of Mr Nicol in respect of this matter, it is evident that the proposal will maintain the quality of the environment.

Māori freshwater values and Te Māna o te Wai have been considered and, to the extent possible I am satisfied that the application as it now stands (including volunteered conditions of consent and the implementation of the GMP) sufficiently addresses these matters to enable the conclusion to be reached that these values will be maintained. Continued efforts toward further consultation with tangata whenua have been made. The role of mana whenua iwi as kaitiaki of the Motueka River and its environs is recognized, and is reflected in volunteered conditions of consent.

As detailed above, I consider that the proposed activities have been appropriately designed and will be appropriately managed to achieve consistency with Part 2 of the RMA.

Section 95 of the Resource Management Act

The Applicant requests that Council publicly notifies this application and expects that notice will be served on those parties that the preceding land use consent application was served on. Although the proposal is assessed to result in adverse effects that are, at worst, minor, it is understood that there are matters of process relating to the land use consents application under consideration that may be a relevant special circumstance warranting notification. In the interests of efficiency, the Applicant requests that public notification of the application take place as soon as possible.

Volunteered conditions of consent

The following conditions of consent are volunteered:

General

1. The consent holder shall ensure that all works are carried out in general accordance with:

   (a) the application documents received by the Council on XX

   Where there is any apparent conflict between the application and consent conditions, the consent conditions shall prevail.

2. The consent holder shall ensure all persons undertaking activities authorised by this resource consent are made aware of the conditions of the consent and ensure compliance with those conditions. A copy of the consent documents shall be kept available on site and shall be produced without unreasonable delay upon request from a servant or agent of the Council.

Lapse and expiry

3. Pursuant to section 125 of the Act, this consent shall lapse 5 years after the date of issue of the consent unless either the consent is given effect to, or the Council has granted extensions pursuant to section 125(1A)(b) of the Act.

4. This consent shall expire 17 years after the date it commences.

5. The discharge of cleanfill to land shall cease no later than 15 years after the date this consent commences.

Prior to the work

6. The Consent Holder shall engage a Matakite (someone who can visualise and feel the mauri of early occupants of the site and locate kōiwi). No excavation shall be undertaken

until the Matakite has walked the site, and the Consent Holder shall follow all recommendations made by the Matakite as a result of what is found on site, provided that such recommendations do not frustrate this resource consent.

7. The Council's Team Leader - Monitoring & Enforcement shall be notified in writing:

   (a) A minimum of 10 working days prior to commencement of discharge to land; and

   (b) Prior to the recommencement of work where works have been discontinued for more than one month.

   Notification shall include:

   (a) The proposed start date for the period of work; and

   (b) The name and contact details of the following persons:

      (i) A representative nominated by the consent holder who shall be the Council's principal contact person in regard to matters relating to this resource consent; and

      (ii) The Site Manager (if not the consent holder's representative).

   Should either of the above persons change during the term of this resource consent, the consent holder shall provide the new name and contact details, in writing, to the Council's Team Leader - Monitoring & Compliance within five working days.

Submission of plans

8. The consent holder shall, at least 10 working days prior to the commencement of works, prepare and submit a Groundwater and Clean Fill Management Plan (GMP) prepared in accordance with condition 10 to the Council's Team Leader - Monitoring & Enforcement for certification. No works shall be undertaken until this management plan has been certified by the Council's Team Leader - Monitoring & Enforcement, unless condition 9 is invoked.

9. The following shall apply in respect of condition 8:

   (a) the consent holder may commence the activities in accordance with the submitted plans 15 working days after their submission, unless the Council advises the consent holder in writing that it refuses to certify them on the grounds that it fails to meet the requirements of the condition and gives reasons for its decision; and

   (b) should the Council refuse to certify the plan, the consent holder shall submit a revised plan to the Council for certification. Clause (a) shall apply to any resubmitted plan.

10. The GMP required by condition 8 shall demonstrate the best practicable option to ensure that discharge of cleanfill to land is managed to avoid adverse effects on groundwater, to:

- Ensure that excavations do not expose groundwater in excavations (condition 15).
- Ensure that all backfill material is strictly managed to ensure it meets the definition of 'clean fill' under WasteMINZ guidelines (conditions 18-20).
- Ensure that under no circumstances that the land use and discharge activities associated with quarry activities result in groundwater quality exceeding the acceptable values in the Drinking Water Standards for New Zealand.

The GMP shall be in general accordance with the draft GMP prepared by Pattle Delamore Partners dated June 2022 and shall address, as a minimum:

(a) Acceptable clean fill materials

(b) Proposed clean fill management system

(c) Groundwater level monitoring and excavation controls

(d) Response and mitigation to a spill

(e) Groundwater quality monitoring

(f) Results of background water quality monitoring required by condition 40

(g) Response to issues arising from groundwater quality monitoring

(h) Complaints

(i) Reporting requirements

Groundwater monitoring to establish background levels

11. The consent holder shall establish one dedicated bore upstream and two downstream of the works for groundwater quality monitoring purposes. These shall be installed in accordance with the recommendation contained in the GMP.

Advice note

The appropriate bore locations shall be confirmed by the Council's Senior Resource Scientist – Water to account for groundwater flow direction in the area.

12. A minimum of two groundwater samples, at least 3 months apart, shall be taken prior to commencement of any works to establish background levels. The samples shall be analysed by a suitably qualified and experienced person for:

- Measurements of depth to water (where possible) prior to purging.
- pH (field and laboratory measurement).
- Electrical Conductivity (field and laboratory measurement).

- Water temperature (field measurement).
- Calcium.
- Magnesium.
- Hardness.
- Alkalinity.
- *E. coli*.
- Dissolved Aluminium.
- Dissolved Arsenic.
- Dissolved Cadmium.
- Dissolved Chromium.
- Dissolved Copper.
- Dissolved Lead.
- Dissolved Nickel.
- Dissolved Manganese.
- Dissolved Iron.
- Sodium.
- Sulphate.
- Chloride.
- BTEX compounds.
- Total Petroleum Hydrocarbons.

All testing equipment must be calibrated and verified as accurate prior to testing by a suitably qualified and experienced person. All testing shall be at the full expense of the consent holder. Sampling results shall be submitted to Council's Team Leader - Monitoring & Enforcement prior to the commencement of any works.

Site meeting

13. The consent holder shall arrange for a site meeting between the consent holder's representative and the Council's assigned monitoring officer, which shall be held on site prior to any works commencing. No works shall commence until the Council's assigned monitoring officer has completed the site meeting.

Environmental standards

14. Quarrying activities, including the discharge of cleanfill to land and any accidental spills on the site shall not result in any existing water supply bore within a 1 km buffer zone downgradient of the quarry to breach the maximum acceptable values or guideline values in the Drinking-water Standards 2005 (revised 2018).

Excavation

15. All excavation shall be undertaken in accordance with the GCFMS to ensure that excavations do not occur below a level 0.3m above actual ground water level at the time of excavation. Where excavations are undertaken below a level 1.0m above groundwater level, they shall only be undertaken in dry weather conditions, and shall be backfilled to a level not less than 1.0m above groundwater level by the end of the same working day.

Backfilling

16. During the course of excavations, backfilling shall be undertaken as soon as practicable. Any excavated area in a particular location shall not remain open for longer than 6 months.

17. Backfilling shall be undertaken in accordance with the certified GMP.

18. Only material that meets the definition of cleanfill under the WasteMINZ document 'Technical Guidelines for Disposal to Land (2018)' shall be imported to the site for backfill. There shall be no disposal of sawdust, large trees, stumps, refuse, cans, bottles, plastics, timber, household rubbish, or liquid waste. Fill material shall only be imported to the site if total soil contaminant concentrations are below regional soil background concentration limits, as specified in "Background concentrations of trace elements and options for the managing of soil quality in the Tasman and Nelson Districts" - Landcare Research (2015).

19. Organic material imported to the site shall not exceed 2% by volume per load and is limited to incidental organic matter associated with the excavation of inert natural materials. For the avoidance of doubt this does not apply to topsoil retained on site for reinstatement.

20. Any backfill material sourced from offsite shall only be brought to the site by the Consent Holder and/or its contractors, and shall be pre-screened for compliance with these cleanfill requirements before being brought to site..

21. A record shall be kept of all cleanfill used as backfill. be in accordance with the requirements specified in the GMP. This record shall be kept available on site, and shall be produced without unreasonable delay upon request from a servant or agent of the Council.

Groundwater monitoring

22. The monitoring bores required by condition 11 shall be sampled every three months following the commencement of any works in accordance with the GCFMS. The samples shall be analysed by a suitably qualified and experienced person for all of parameters detailed at condition 12.

> All testing equipment must be calibrated and verified as accurate prior to testing by a suitably qualified and experienced person. All testing shall be at the full expense of the consent holder. Sampling results shall be submitted to the Council's Team

Leader - Monitoring & Enforcement within 10 working days of the results being obtained.

23. Procedures to respond to any issues arising from the groundwater monitoring shall be in accordance with the requirements detailed in the GMP.

Reporting & monitoring

24. Monitoring and reporting in relation to dust management, and soil reinstatement and rehabilitation shall be undertaken in accordance with the requirements of the certified GMP.

RECORD OF TITLE
UNDER LAND TRANSFER ACT 2017
FREEHOLD

Search Copy

R.W. Muir
Registrar-General
of Land

Identifier	**NL77/73**
Land Registration District	**Nelson**
Date Issued	17 January 1936

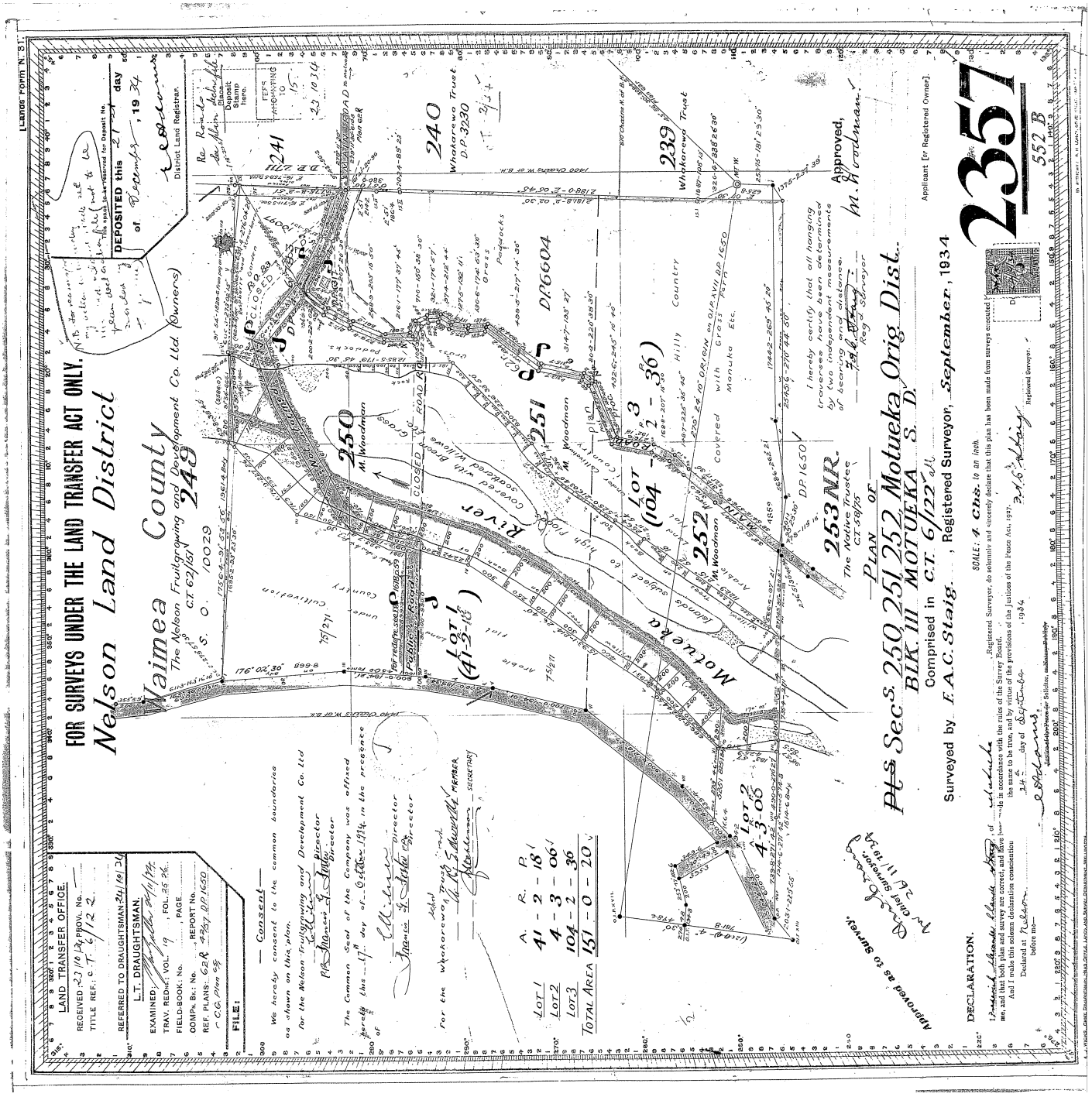
Prior References
NL76/126

Estate	Fee Simple
Area	1.9374 hectares more or less
Legal Description	Lot 2 Deposited Plan 2357

Registered Owners
Timothy George Corrie-Johnston as to a 1/2 share
Katie Margaret Silcock as to a 1/2 share

Interests
12201810.3 Mortgage to ANZ Bank New Zealand Limited - 30.7.2021 at 5:04 pm

Identifier **NL77/73**



RECORD OF TITLE
UNDER LAND TRANSFER ACT 2017
FREEHOLD

Search Copy

R.W. Muir
Registrar-General
of Land

Identifier	**524970**
Land Registration District	**Nelson**
Date Issued	18 October 2010

Prior References
NL6C/588 NL6C/589

Estate	Fee Simple
Area	11.5520 hectares more or less
Legal Description	Lot 2 Deposited Plan 432236

Registered Owners
Timothy George Corrie-Johnston as to a 1/2 share
Katie Margaret Silcock as to a 1/2 share

Interests

Appurtenant to part formerly Part Section 251A Motueka Original District is a right of way created by Transfer 323118.1 - 7.12.1992 at 9:50 am

Subject to a right to convey water, right to transmit electricity and/or other signals, impulses or electronic data over part marked E on DP 432236 created by Transfer 5497200.3 - 24.2.2003 at 9:00 am

Appurtenant hereto is a right to emit noise from hail cannons and other farming activities/equipment, odour from farming activities and drift from agricultural and horticultural sprays and a right to convey telecommunications and computer media created by Easement Instrument 8609694.3 - 18.10.2010 at 9:07 am

The easements created by Easement Instrument 8609694.3 are subject to Section 243 (a) Resource Management Act 1991

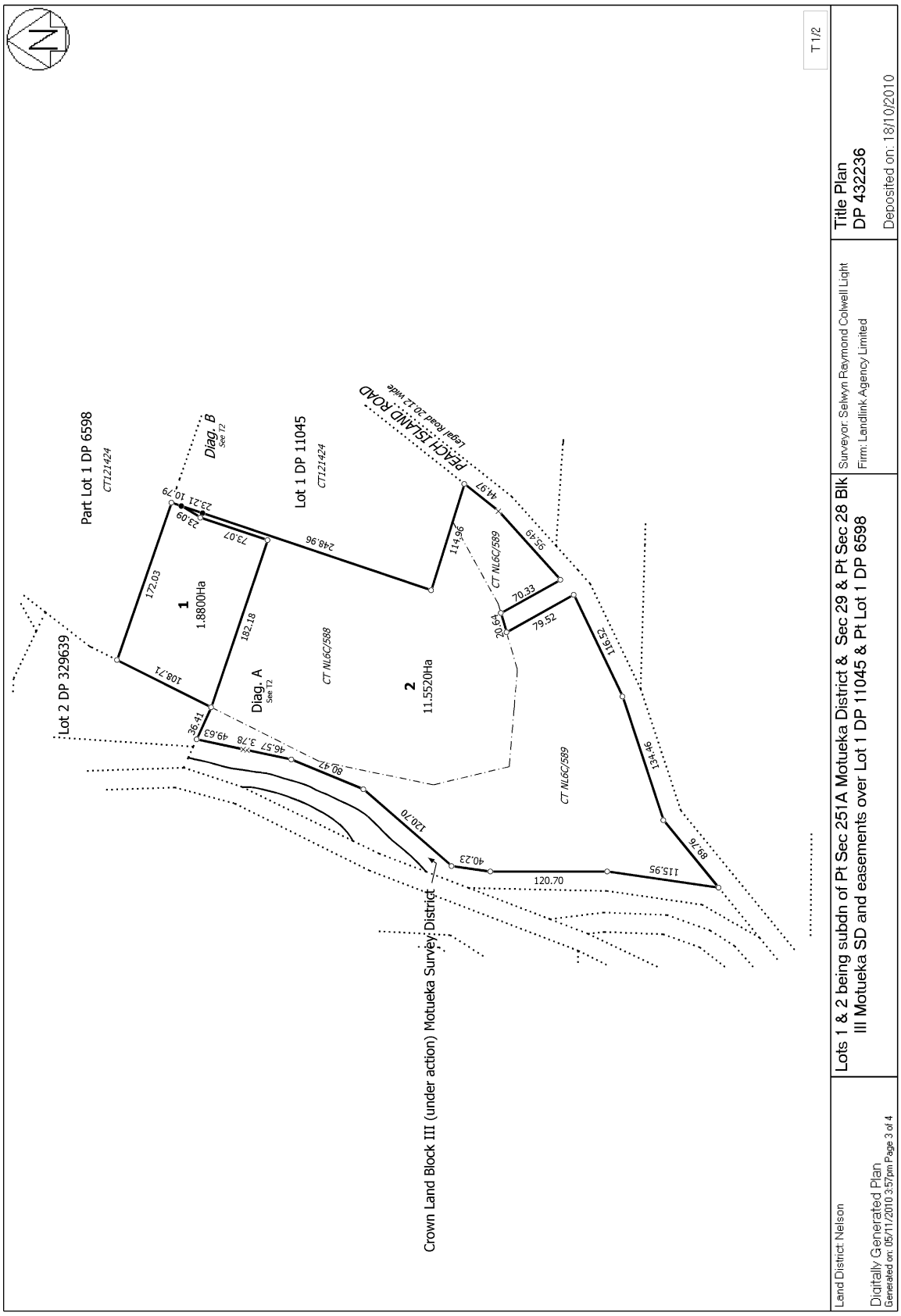
8609694.4 Consent Notice pursuant to Section 221 Resource Management Act 1991 - 18.10.2010 at 9:07 am

9029327.1 Notification that a building consent issued pursuant to Section 72 Building Act 2004 identifies Inundation as a natural hazard - - 3.4.2012 at 7:00 am

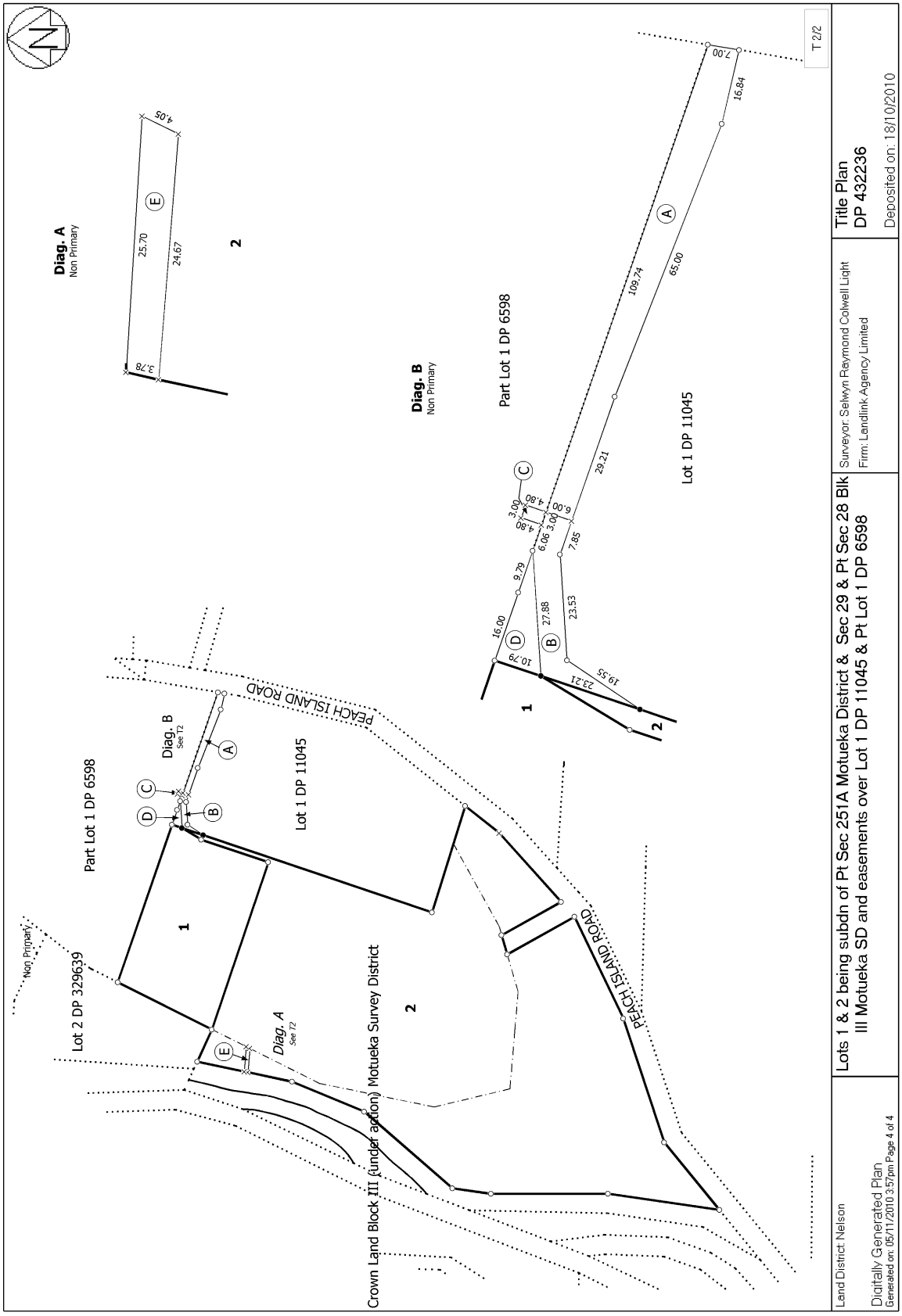
12201810.3 Mortgage to ANZ Bank New Zealand Limited - 30.7.2021 at 5:04 pm

12327125.1 Notification that a building consent issued pursuant to Section 72 Building Act 2004 identifies Inundation as natural hazard - 8.12.2021 at 7:00 am

Identifier **524970**



Identifier **524970**



For Annexure C - see separate file.

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source document protection.

Peach Island Proposed Quarry: Groundwater and Clean Fill Management Plan

D
R
A
F
T

Prepared for

CJ Industries

14 July 2022

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Auckland Tauranga **Hamilton** Wellington
Christchurch Invercargill

Quality Control Sheet

TITLE	Peach Island Proposed Quarry: Groundwater and Clean Fill Management Plan
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1.0 Introduction and purpose

This report sets out the measures and procedures to manage the excavation of gravel aggregate by CJ industries (the "quarry operator") at their proposed Peach Island quarry site (the "Quarry site") and backfilling of the excavations with clean fill material, as authorised by consent RMXXXXXX.

Exposed groundwater within open excavations is susceptible to contamination. To reduce the risk of contamination, it is important that the gravel extraction pit does not become inundated with groundwater. This will be managed by maintaining at least 1 m of material between base of the working gravel extraction pit and the highest measured groundwater level at the time of the excavation. However, deeper excavations to no less than 0.3 m above groundwater level can occur as long as these deeper excavations are backfilled on the same day as extraction. This means that during periods of low groundwater levels, the pit floor will be at a deeper elevation than during periods of high groundwater levels although a separation of 1 m will always be maintained to avoid exposing groundwater within the pit. All excavations to depths between 1 m and 0.3 m above groundwater level will only occur during dry weather conditions.

Given that the excavation depths will vary depending on groundwater level conditions at the quarry site, it is expected that material used to back fill areas of the quarry excavated during periods of low groundwater levels will become inundated by groundwater during periods of high groundwater levels. Therefore, it is important that suitable controls are placed on the material being used to back fill the excavation pits to avoid contamination of shallow groundwater. Furthermore, procedures and mitigation measures are also required to reduce the risk of accidental discharges within the excavation pit (i.e., spills, etc.) as well as mitigation measures that will be implemented should any changes in groundwater quality occur as a result of the quarrying activities.

2.0 Consent compliance and key performance indicators

The overall purpose of the groundwater and clean fill management plan is to ensure that the Quarry site will be managed to comply with consent conditions related to the quarrying activities and discharge of contaminants to land, specifically in respect achieving groundwater quality outcomes. The relevant performance indicators to ensure that the site activities are managed are:

- Ensuring that excavations do not expose groundwater in excavations.
- Ensuring that all backfill material is strictly managed to ensure it meets the definition of 'clean fill' under WasteMINZ guidelines.

- Minimise any change to the physical and chemical properties of groundwater as result of the land use and discharge activities associated with quarry activities (as defined by the trigger levels in Table 2).
- Ensuring that under no circumstances that the land use and discharge activities associated with quarry activities result in groundwater quality exceeding the acceptable values in the Drinking Water Standards for New Zealand.

The following sections of this report detail the procedures and mitigation measures to achieve these outcomes.

3.0 Clean fill materials

The WasteMINZ document Technical Guidelines for Disposal to Land (2018) (WasteMINZ) define differing Classes of landfill and the technical constraints (i.e., hydrogeology, hydrology, ecology, etc.) on the Class of landfill considered acceptable for a particular location. The key hydrogeological technical constraint for the siting of different Classes of landfill is whether the underlying aquifer system beneath the proposed landfill is used for drinking-water purposes. Only Class 5 landfills are allowed to be sited over aquifers used for drinking-water purposes. Therefore, since the shallow groundwater aquifer system in the Peach Island area is used for drinking-water supply purposes, the proposed Peach Island Quarry is therefore defined as a Class 5 landfill.

WasteMINZ provides guidance on material that should be used to backfill a Class 5 landfill. To meet the requirements of the WasteMINZ guidelines and to provide protection of shallow groundwater resources in the area, only the following classes of material will be acceptable for placement at the Quarry site (Table 1).

Table 1: Summary of acceptable clean fill material

Material	Discussion
Natural materials sourced onsite.	• Uncontaminated soil, clay, rock and gravel. • Quarry overburden comprising sand, clay and other soils (but specifically excluding peats, loams, topsoils and other soils with high organic content). • Other inert natural materials arising from quarry operations provided that the volume of biodegradable matter (i.e., vegetative matter)

Table 1: Summary of acceptable clean fill material

Material	Discussion
	in any material buried shall not exceed 2% by volume per load and is limited to incidental organic matter associated with the excavation of the inert natural materials.
Natural materials sourced offsite	Uncontaminated, natural materials arising from construction/excavation operations at uncontaminated sites and other quarry operations but specifically excluding any material sourced from any site listed on the Tasman District Council Hazardous Activities and Industries List (HAIL) register (as defined by the Ministry for the Environment) that is known to have been occurring before the date the clean fill material is received. This includes the following materials: ⁘ Rock, stone, gravels, soils, and other inorganic inert natural. ⁘ Overburden/construction/excavation material comprising sand, clay and other soils (but specifically excluding peats, loams, topsoils and other soils with high organic content). ⁘ Other inert natural materials provided that the volume of biodegradable matter (i.e., vegetative matter) in any material buried shall not exceed 2% by volume per load and is limited to incidental organic matter associated with the excavation of the inert natural materials. Imported fill material will only be accepted if total soil contaminant concentrations are below regional soil background concentration limits.

All other materials of any description will be considered as unacceptable for placement unless written permission is obtained from the Regulatory and Compliance Manager at the Tasman District Council. Any permission shall not create a precedent, shall be made on a case-by-case basis and shall be restricted to the site of origin.

Furthermore, any material, that is understood to comply with the Table 1 definition, but displays visual or olfactory evidence of contamination, will either be set aside for chemical testing or rejected.

4.0 Proposed clean fill management system

Any excavation below the depth of the highest groundwater level shall occur when there is sufficient backfill material that is available to rapidly backfill the excavation up to the highest groundwater level prior to a rise in groundwater levels occurring. This is an important requirement to ensure that groundwater is not exposed in the quarry floor.

4.1 Receipt

All imported material received that is to be used for clean fill at the Quarry site shall be documented. This record keeping shall include:

- The date of receipt of the clean fill.
- The name of the CJ Industries staff member that delivered the clean fill to the site.
- The source of the clean fill.
- A description of the clean fill.
- The approximate quantity of the clean fill.
- Any documentation supplied to support the definitions of 'clean fill' (laboratory reports or similar).
- The name, signature, and staff designation of the person that accepted the fill on behalf of the quarry site.

CJ Industries will be the only organisation that delivers and places backfill into the Peach Island Quarry and that clean fill will meet the acceptance criteria specified in Section 3.0. This imported fill will be inspected and graded off site before delivered to the Peach Island Quarry solely by CJ Industries, except during civil emergencies when grading and inspection may occur on site.

Fill material provided by an external contractor will not be accepted by CJ Industries unless the acceptance criteria provided in Section 3.0 is met, the information listed above is provided and the contractor has signed a formal agreement confirming that the deposited clean fill will meet the acceptance criteria specified above. In these circumstances, the material will still be placed in the pit by CJ Industries.

4.2 Inspection and testing of imported clean fill

The following procedures will be followed when material arrives at the quarry site:

1) Any imported clean fill requiring independent environmental investigation undertaken or supervised by a suitably qualified and experienced practitioner and laboratory test, as specified in Section 3.0, will require the documentation from that independent investigation be provided to the quarry operator and will only be allowed on site if the information confirms it is acceptable.

2) All imported clean fill that is visibly wet, has the appearance of mud, or that does not readily break apart due to the presence of moisture will be laid aside and not inspected until dry.

3) Any clean fill material displaying any visual or olfactory evidence of contamination (i.e. manmade hardfill, visible staining, odours, etc) will either be set aside for chemical testing or rejected.

4) Imported clean fill that has previously been subjected to chemical analysis prior to transport to the site and found to comply with the relevant criteria in Section 3.0 will be released for placement.

5) Random chemical testing will be carried out on imported clean fill from 1 truck in every 50 truckloads of fill as per the test requirements for material as specified in Section 3.0.

4.3 Placement of imported clean fill

6) A working excavation pit depth of no less than 1 m above groundwater level will be maintained.

7) Deeper excavations to no less than 0.3 m above groundwater level at the time of the excavation during dry conditions can be undertaken but must be backfilled with clean fill material on the same day as extraction.

8) All excavations to depths between 1 m and 0.3 m above groundwater level shall occur during dry weather conditions.

5.0 Groundwater level monitoring and excavation controls

In addition to ensuring all fill placed in the excavation pits is clean and uncontaminated, a key concern of the quarry operations at the Quarry site is exposure of groundwater within the excavation pit prior to being backfilled with clean fill material. To reduce the risk of groundwater contamination, excavation of gravel aggregate at the Quarry site will not occur within groundwater or result in the exposure of groundwater at the surface (i.e., groundwater exposed in the bottom of the gravel extraction pit). Therefore, groundwater level monitoring

combined with surveying of pit excavations will be continuously monitored to avoid exposure of groundwater in any excavation(s). To achieve this, the following controls will be implemented:

Groundwater Level Monitoring

9) Groundwater levels shall be monitored in two dedicated upgradient monitoring bores located at the southern extent of the site and two dedicated downgradient monitoring bores located at the northern extent of the site.

10) All groundwater level measurements:

    a. Shall be measured to a local common relative level to the nearest 3 mm accuracy (i.e., Nelson vertical datum 1955 or similar).

    b. Shall be recorded via a temper-proof electronic recording device such as a data logger(s) that shall record groundwater levels taken every 15 minutes.

11) The groundwater level recording device:

    c. Shall be connected to a telemetry system that collects and stores all of the data continuously with an independent network provider. No data shall be deliberately changed or deleted.

    d. Shall be accessible to Tasman District Council at all times for inspection and/or data retrieval.

12) All groundwater level measurement data will be used to inform daily excavation depths (outlined in item 14)).

Excavation Controls

13) Commencement of quarrying shall occur at locations at the greatest upgradient distance from any water supply bores, as far as can practicably be achieved.

14) All onsite machinery used for excavation of pit(s) shall be equipped with onboard GPS and elevation systems capable of determining the elevation of the digging implement (i.e., excavator bucket).

15) The onboard GPS and elevation systems shall record elevation measurements to a local common relative level (as per item 10)a).

16) Excavations shall be maintained at a working depth of 1 m above the highest groundwater level measured in the onsite monitoring bores as described in items 10) and 11) on the same day as the active excavation of pit(s).

17) Deeper excavations to no less than 0.3 m above groundwater level at the time of the excavation can occur but must be backfilled with clean fill material on the same day as extraction.

18) During pit excavation, should the difference between the highest groundwater level at the quarry and the depth the excavation be less than 0.3 m, a warning system will notify the machinery operator and the Quarry operator.

19) Should groundwater levels be observed to increase while excavation is ongoing at the quarry and/or significant weather changes are forecast that could result in rapid increases in groundwater levels, suitable clean fill material should be placed as soon as practicably to back fill the excavated pit to ensure at least 1 m of material between the highest groundwater level and the base of the excavated pit is retained.

20) If any groundwater emerges into the excavation pit(s) all excavation activities will cease. All machinery will be moved away from the area of exposed water and no machinery will operate in exposed groundwater. Placement of natural strata (i.e., uncontaminated gravels, sands or silts) can occur to fill in the exposed water if required.

21) The Quarry operator will notify their consent compliance monitoring officer at Tasman District Council if groundwater enters the excavation pit area.

22) The following activities will not occur in any excavation pits at the quarry:

    a. no storage of fuel or hazardous substances.
    b. no refuelling activities.
    c. no parking of unattended vehicles or machinery.

23) No excavations shall occur within 20 m of flowing, open waterways.

6.0 Response and mitigation to a spill

24) Staff operating in the excavation pit area(s) will be trained in the appropriate way to respond to a spill. A spill kit will be available in the excavation pit area(s).

25) In the event of a spill of machinery oil or fuel from excavation machinery, all works shall cease and measures will be taken to limit the extent of the spill and any contaminated strata or spill response material will be excavated and removed from the site to be disposed of at an appropriate disposal facility (subject to approval of the disposal facility).

26) If any spill greater than 20 litres occurs, the site operator will immediately notify the Tasman District Council Pollution Incident contact number.

7.0 Groundwater quality monitoring

The following monitoring of groundwater will be undertaken in relation to the excavation of pits:

27) Collection of groundwater samples from at least one dedicated monitoring bore located upgradient at the southern extent of the quarry areas (representative of background water quality) and at least two dedicated bores located downgradient of the quarry site near the northern extent of the quarry.

28) The monitoring bores shall allow groundwater samples to be collected across the full the range of groundwater level fluctuations.

29) The monitoring bores shall be made accessible to the Tasman District Council at all times for the purpose of groundwater sampling.

30) Groundwater samples from the dedicated monitoring bores listed in 27) will be collected at three monthly intervals. At least two samples will be collected prior to the commencement of quarrying activities and sampling will continue until two years after quarrying and backfilling activities cease.

31) All samples shall be taken by a suitably qualified and experienced person using methods described in the NEMS document "Water Quality – Part 1 of 4: Sampling. Measuring, Processing and Archiving of discrete Groundwater Quality Data" (2019). All samples for dissolved metal analysis must be filtered through a 0.45-micron filter onsite before being placed into an acid preserved sampling bottle.

    All samples must analysed for the contaminants listed in Table 2 by an accredited laboratory.

    The water quality monitoring results shall be provided to the Tasman District Council: Attention – Monitoring and Compliance within one month of them being received.

Table 2: Water quality parameters and trigger concentrations

Parameter	Trigger concentration	Note
Depth to water level	-	Measured prior to purging (where possible)
pH	<7.0 or >8.5	field and laboratory measurement
Electrical Conductivity	-	field and laboratory measurement
Water temperature	-	field measurement
Calcium	-	
Magnesium	-	
Hardness	200 g/m³	Calcium + magnesium
Alkalinity	100 g/m³	As CaCO3
E. coli	1 MPN/100ml	NZDWS MAV
Ammoniacal-N	1.2 g/m³	
Nitrate-N	5.65 g/m³ (annual average) 11.3 g/m³ (maximum)	
Dissolved Aluminium	0.1 g/m³	
Dissolved Arsenic	0.005 g/m³	
Dissolved Cadmium	0.002 g/m³	
Dissolved Chromium	0.025 g/m³	
Dissolved Copper	1 g/m³	
Dissolved Lead	0.005 g/m³	
Dissolved Nickel	0.04 g/m³	
Dissolved Manganese	0.04 g/m³	
Dissolved Iron	0.3 g/m³	
Sodium	200 g/m³	
Sulphate	250 g/m³	
Chloride	250 g/m³	
BTEX compounds	Any detectable presence	

Table 2: Water quality parameters and trigger concentrations		
Parameter	**Trigger concentration**	**Note**
Total Petroleum Hydrocarbons	Any detection >0.1 g/m³	
NOTE: Trigger values are the guideline values for aesthetic determinands or 50% of maximum acceptable values in the Water Services (Drinking Water Standards for New Zealand) Regulations 2022 which take effect on 14 November 2022.		

The trigger levels provided in Table 2 can be amended subject to written approval from Tasman District Council.

7.1 Response to issues arising from groundwater quality monitoring

32) An exceedance of the trigger levels will be deemed to have occurred if:

a. The concentration of a contaminant in at least one of the downgradient bores exceeds the trigger levels in Table 2 and the concentration of the same contaminant in the upgradient bore is below the Table 2 trigger levels; or

b. The concentration of a contaminant in the upgradient bore exceeds the trigger levels in Table 2 and the concentration of the same contaminant in at least one of the downgradient bores is greater than concentration in the upgradient bore and is greater than 20% of the Table 2 trigger levels.

33) If there is an exceedance in a downgradient bore as determined by 32), the consent holder shall as soon as practicable and within 72 hours of receiving that result:

a. Obtain a second sample of groundwater from the bore(s) in which the exceedance was identified in accordance with 27).

b. (b) Obtain a sample of groundwater from the upgradient bore specified in 27).

c. (c) Analyse these samples in accordance with 31).

34) If the results of analysis of the second groundwater samples carried out in accordance with 33) show that none of the concentrations of contaminants analysed exceed the trigger concentrations in Table 2 determined by 32), the consent holder shall continue to sample groundwater in accordance with 30).

35) If the results of analysis of the second groundwater samples carried out in accordance with Condition 33) show an exceedance of the trigger concentrations in Table 2 as determined by 32), the Consent Holder shall:

a. Notify the Tasman District Council – Monitoring and Compliance.

b. Undertake an investigation into the potential cause(s) of the exceedance, which may include undertaking additional monitoring beyond the routine sampling.

c. Implement necessary measures to reduce the concentration of the contaminant in groundwater. Such measures may include:

   i. cessation of activities that may have caused the exceedance.

   ii. removal of the contaminant source(s).

   iii. stabilisation or capping of the contaminant source(s).

   iv. revision of groundwater and clean fill management procedures and updating it accordingly.

36) Any material removed in accordance with 35)c)(ii) shall be disposed of at a facility authorised to receive such material, and the Consent Holder shall provide the Council, Attention: Regional Leader – Monitoring and Compliance, with written confirmation of such disposal within 10 working days.

7.2 Downgradient water supply bores

37) Groundwater samples shall also be collected from up to three downgradient water supply bores within 500 m of the quarry, subject to approval of the bore owner and the land owner.

38) Prior to the use of any of the water supply bores for groundwater monitoring, a bore condition survey should be carried out to identify any existing potential sources of contamination related to the condition of the bore head or its proximity to localised sources of contamination.

39) The Consent Holder shall monitor the drinking water quality of the water supply bores in 37) at the same time as the dedicated monitoring bores in 27). If the monitoring shows that the drinking water quality in the water supply bores in 37) does not comply with the New Zealand Drinking Water Standards (NZDWS) and the non-compliance is proven to be associated with quarrying activities, then the consent holder shall, with agreement of the bore owner and the land owner, provide an alternative drinking water supply to a similar standard as existed prior to commencement of this consent.

7.3 Water quality complaints

40) The quarry operator shall also maintain a complaints register and investigate any complaint of bad taste, odour or illness reported in downgradient bores used for water supply purposes within 500 m of the quarry. These complaints shall be investigated and recorded, including:

a. The location where the complaint was experienced.

b. The date and time when the complaint was experienced.

c. A description of the excavating and filling activities that were being undertaken prior to the complaint being experienced.

d. The most likely cause of the complaint.

e. Any corrective actions undertaken by the consent holder to avoid, remedy, or mitigate any contribution the quarrying activities are likely to have made to the situation that caused the complaint.

A complaint to a quarry shall be investigated jointly depending on the quarry area affected. This record shall be provided to the Manager, RMA Compliance and Enforcement, Tasman District Council following any investigation into a complaint.

8.0 Reporting

41) An annual monitoring report will be prepared for the period of 1 July to 30 June to the Tasman District Council: Attention – Monitoring and Compliance, by 30 September each year. The annual monitoring report shall include but not be limited to:

a. Results of groundwater quality monitoring as required by 27) to 39) and include:

i. A discussion of any groundwater quality trends.

ii. Any exceedances of the Table 2 contaminant trigger concentrations.

iii. Any mitigation actions taken in response to the exceedances.

iv. A description of how effective any mitigation actions were in addressing the exceedances.

v. A description of the drinking water quality results from bores used for domestic supply/irrigation purposes located downgradient of the quarry.

b. Groundwater level data including:

i. A copy of the telemetered groundwater level data measured at the site.

ii. A copy of the excavation elevation data.

9.0 References

Ministry of Health (MoH). 2018. Drinking-water Standards for New Zealand 2005 (Revised 2018). Wellington: Ministry of Health.

National Environmental Monitoring Standards (NEMS). 2019. Water Quality – Part 1 of 4: Sampling, Measuring, Processing and Archiving of Discrete Groundwater Data. Version 1.0.0. March 2019

Taumata Arowai. 2022. Water Services (Drinking Water Standards for New Zealand) Regulations 2022. June 2022. Taking effect on 14 November 2022.

Waste Management Institute New Zealand (WasteMINZ). 2018. Technical Guidelines for Disposal to Land. April 2018.

Annexure E Schedule 36D TRMP provisions

General Assessment Criteria: (a) The extent to which reasonable measures have been taken to minimise the quantity of contaminants in the discharge.
(b) Quantitative specifications contained in any relevant national or international standards or guidelines.
(c) The scale, location and potential adverse effects of the activity.
(d) The likely duration of the activity.
(e) Methods to contain, remedy or treat the discharge.
(f) Supervision or management of the operation.
(g) The level of treatment provided by, and the adequacy of, the proposed discharge collection, treatment and disposal system.
(h) The concentrations and loadings of contaminants in the discharge.
(i) The nature and sensitivity of the receiving environment and the likely effects of the proposed discharge either by itself or in combination with existing discharges.
(j) The mitigation measures and safeguards incorporated into the design of the various components of the proposed effluent or stormwater collection, treatment and disposal system.
(k) The adequacy of the Assessment of Environmental Effects.
(l) Any assessment of alternatives, whether or not the proposed treatment and disposal system is the best practicable option and the degree of compliance with relevant industry codes of practice.
(m) Any management plan (where required) for the operation and management of the proposed discharge, including any waste treatment and disposal systems or pesticide discharge spray plans.
(n) Any proposed monitoring programme to monitor the effects of the discharge.
(o) The duration of the consent (Section 123 of the Act) and the timing of reviews of conditions and purpose of reviews (Section 128).
(p) Bonds, and covenants in respect of the performance of conditions, and administrative charges (Section 108).
Additional Assessment Criteria for Discharges to Land:
(a) The area of land to be used for the discharge, including setbacks and buffer zones.
(b) The potential effects of the discharge on any ecosystem, habitat, or plant or animal life.
(c) The potential effects of the discharge on water quality, including effects of any water quality standards specified in any relevant water classification or water conservation order.
(d) The nature of the land to be used for the discharge, including rock type, soil type, permeability and drainage characteristics, and depth to groundwater.
[1] General Assessment Criteria for Determining the Level of any Financial Contribution
(a) The extent to which any financial contribution may be used to manage or compensate for any adverse effect of the discharge that is not otherwise avoided, remedied or mitigated by or under any condition of the resource consent to discharge.
(b) The need for a direct relationship between the size and significance of any adverse effect of the discharge, and the level of any financial contribution.