APPLICATION AS NOTIFIED

I Farrant & the Estate of MC Farrant

(RM220111)

Submissions Close 4th July 2022

FORM 12

File Number RM220111

QUEENSTOWN LAKES DISTRICT COUNCIL

PUBLIC NOTIFICATION

Notification of an application for a Resource Consent under Section 95A of the Resource Management Act 1991.

The Queenstown Lakes District Council has received an application for a resource consent from:

I Farrant & the Estate of MC Farrant

What is proposed:

Resource consent is sought to subdivide Lot 2 of RM210780 (currently held as Lot 1 DP 27661 (OT18D/262) into four allotments; three for residential purposes and one for legal access into proposed Lots 1 and 2 and undertake associated earthworks and landscaping.

The proposal also seeks to identify a building platform on each residential allotment; two new building platforms on proposed Lot 1 and 2, and one building platform around an existing residential unit on proposed Lot 3.

To summarise:

- Proposed Lot 1 measures 9.14 hectares and contains a building platform of 1000m².
- Proposed Lot 2 measures 9.10 hectares and contains a building platform of 1000m².
- Proposed Lot 3 measures 17.40 hectares and contains a building platform of 920m² around the existing residential unit.
- Proposed Lot 4 measures 0.63 hectares and will be utilised as a legal right of way to proposed Lots 1 and 2.

Staging of the subdivision is proposed.

The location in respect of which this application relates is situated at:

372 Wanaka-Luggate Highway, Wanaka
Lot 1 DP 27661 held in Record of Title OT18D/262
(Lot 2 of RM210780)

The application includes an assessment of environmental effects. This file can also be viewed at our public computers at these Council offices:

- **74 Shotover Street, Queenstown;**
- **Gorge Road, Queenstown;**
- **and 47 Ardmore Street, Wanaka during normal office hours (8.30am to 5.00pm).**

Alternatively, you can view them on our website when the submission period commences:

https://www.qldc.govt.nz/services/resource-consents/notified-resource-consents#public-rc or via our edocs website using RM220111 as the reference https://edocs.qldc.govt.nz/Account/Login

The Council planner processing this application on behalf of the Council is Sarah Gathercole, who may be contacted by phone at 03 441 0465 or email at sarah.gathercole@qldc.govt.nz

Any person may make a submission on the application, but a person who is a trade competitor of the applicant may do so only if that person is directly affected by an effect of the activity to which the application relates that –

a) adversely affects the environment; and
b) does not relate to trade competition or the effects of trade competition.

If you wish to make a submission on this application, you may do so by sending a written submission to the consent authority no later than:

Monday 4th July 2022

The submission must be dated, signed by you and must include the following information:

a) Your name and postal address and phone number/fax number.
b) Details of the application in respect of which you are making the submission including location.
c) Whether you support or oppose the application.
d) Your submission, with reasons.
e) The decision you wish the consent authority to make.
f) Whether you wish to be heard in support of your submission.

You may make a submission by sending a written or electronic submission to Council (details below). The submission should be in the format of Form 13. Copies of this form are available Council website:

https://www.qldc.govt.nz/services/resource-consents/application-forms-and-fees#other_forms

You must serve a copy of your submission to the applicant (I Farrant & the Estate of MC Farrant) as soon as reasonably practicable after serving your submission to Council. The applicant's contact details are:

I Farrant & the Estate of MC Farrant
C/- Blair Devlin
blair@vivianespie.co.nz
Vivian and Espie Ltd
PO Box 2514, Wakatipu, Queenstown 9349

QUEENSTOWN LAKES DISTRICT COUNCIL

_____

(Signed by Andrew Woodford, Senior Planner pursuant to a delegation given under Section 34A of the Resource Management Act 1991)

Date of Notification: 2nd June 2022

Address for Service for Consent Authority:

Queenstown Lakes District Council	**Phone**	**03 441 0499**
Private Bag 50072, Queenstown 9348	**Email**	**rcsubmission@qldc.govt.nz**
Gorge Road, Queenstown 9300	**Website**	**www.qldc.govt.nz**

APPLICATION FOR RESOURCE CONSENT OR
FAST TRACK RESOURCE CONSENT

FORM 9: GENERAL APPLICATION

QUEENSTOWN LAKES DISTRICT COUNCIL

Under Section 87AAC, 88 & 145 of the Resource Management Act 1991 (Form 9)

PLEASE COMPLETE ALL MANDATORY FIELDS* OF THIS FORM.

This form provides contact information and details of your application. If your form does not provide the required information it will be returned to you to complete. Until we receive a completed form and payment of the initial fee, your application may not be accepted for processing.

APPLICANT //

- Must be a person or legal entity (limited liability company or trust).
- Full names of all trustees required.
- The applicant name(s) will be the consent holder(s) responsible for the consent and any associated costs.

*Applicant's Full Name / Company / Trust: (Name Decision is to be issued in) Ian Ferguson Farrant and the Estate of MC Farrant

All trustee names (if applicable):

*Contact name for company or trust: Rachel Farrant

*Postal Address: PO Box 10-340 Wellington

*Contact details supplied must be for the applicant and not for an agent acting on their behalf and must include a valid postal address

*Post code: 6143

*Email Address: rachel.farrant@bdo.co.nz

*Phone Numbers: Day 04 495 8164

Mobile: 021 472 585

*The Applicant is:

- [x] Owner
- [ ] Prospective Purchaser (of the site to which the application relates)
- [x] Occupier
- [ ] Lessee
- Other - Please Specify:

[x] Our preferred methods of corresponding with you are by email and phone.
The decision will be sent to the Correspondence Details by email unless requested otherwise.

CORRESPONDENCE DETAILS // If you are acting on behalf of the applicant e.g. agent, consultant or architect please fill in your details in this section.

*Name & Company: Blair Devlin, Vivian and Espie Ltd

*Phone Numbers: Day 03 441 4189

Mobile: 021 222 6393

*Email Address: blair@vivianespie.co.nz

*Postal Address: PO Box 2514, Wakatipu, Queenstown

*Postcode: 9349

INVOICING DETAILS //

Invoices will be made out to the applicant but can be sent to another party if paying on the applicant's behalf.
For more information regarding payment please refer to the Fees Information section of this form.

*Please select a preference for who should receive any invoices and how they would like to receive them.

- Applicant: [x]
- Agent: [ ]
- Other - Please specify:
- Email: [ ]
- Post: [ ]

*Attention: As per applicant

*Postal Address:

*Please provide an email AND full postal address.

*Post code:

*Email:

OWNER DETAILS // Please supply owner details for the subject site/property if not already indicated above

Owner Name: Ian Ferguson Farrant as to a 1/2 share Rachel Helen Farrant and Louise Elizabeth Farrant as to a 1/2 share

Owner Address: C/- applicant

If the property has recently changed ownership please indicate on what date (approximately) AND the names of the previous owners:

Date: N/A

Names:

DEVELOPMENT CONTRIBUTIONS INVOICING DETAILS //

If it is assessed that your consent requires development contributions any invoices and correspondence relating to these will be sent via email. Invoices will be sent to the email address provided above unless an alternative address is provided below. Invoices will be made out to the applicant/owner but can be sent to another party if paying on the applicant's behalf.

*Please select a preference for who should receive any invoices.

Details are the same as for invoicing ☑

Applicant: ☐ Landowner: ☐ Other, please specify:

*Attention:

*Email:

Click here for further information and our estimate request form

DETAILS OF SITE // Legal description field must list legal descriptions for all sites pertaining to the application. Any fields stating 'refer AEE' will result in return of the form to be fully completed.

*Address / Location to which this application relates:

372 Wanaka-Luggate Highway, Wanaka

*Legal Description: Can be found on the Computer Freehold Register or Rates Notice – e.g Lot x DPxxx (or valuation number)

Currently Lot 1 DP 27661 held in Record of Title OT18D/262;

Lot 2 of RM210780 (a boundary adjustment subdivision) currently being given effect to.

District Plan Zone(s): Rural General (ODP) / Rural (PDP)

SITE VISIT REQUIREMENTS // Should a Council officer need to undertake a site visit please answer the questions below

Is there a gate or security system restricting access by council?	YES ☐	NO ☑
Is there a dog on the property?	YES ☐	NO ☑
Are there any other hazards or entry restrictions that council staff need to be aware of? If 'yes' please provide information below	YES ☑	NO ☐

Please contact the agent to arrange a site visit.

PRE-APPLICATION MEETING OR URBAN DESIGN PANEL

Have you had a pre-application meeting with QLDC or attended the urban design panel regarding this proposal?

☑ Yes ☐ No ☐ Copy of minutes attached

If 'yes', provide the reference number and/or name of staff member involved: PA200115

CONSENT(S) APPLIED FOR // * Identify all consents sought

☑ Land use consent

☑ Subdivision consent

☐ Change/cancellation of consent or consent notice conditions

☐ Certificate of compliance

☐ Extension of lapse period of consent (time extension) s125

☐ Existing use certificate

QUALIFIED FAST-TRACK APPLICATION UNDER SECTION 87AAC

☐ Controlled Activity

☐ Deemed Permitted Boundary Activity

If your consent qualifies as a fast-track application under section 87AAC, tick here to opt out of the fast track process ☐

BRIEF DESCRIPTION OF THE PROPOSAL //

*Please complete this section, any form stating 'refer AEE' will be returned to be completed with a description of the proposal

*Consent is sought to:

Subdivide the subject site into four allotments in two stages. Proposed Lot 1 measures 9.14 ha and includes a new 1000m2 building platform. Proposed Lot 2 measures 9.10 ha and includes a new 1000m2 building platform. Proposed Lot 3 contains the existing residential unit and measures 17.4 ha. A 920m2 building platform is proposed around the existing residence. Proposed Lot 4 is an access lot. The proposal includes associated access, earthworks, infrastructure and landscaping.

APPLICATION NOTIFICATION

Are you requesting public notification for the application?

☑ Yes ☐ No

Please note there is an additional fee payable for notification. Please refer to Fees schedule

OTHER CONSENTS

Is consent required under a National Environmental Standard (NES)?

■ NES for Assessing and Managing Contaminants in Soil to Protect Human Health 2012

An applicant is required to address the NES in regard to past use of the land which could contaminate soil to a level that poses a risk to human health. Information regarding the NES is available on the website https://environment.govt.nz/publications/national-environmental-standard-for-assessing-and-managing-contaminants-in-soil-to-protect-human-health-information-for-landowners-and-developers/

You can address the NES in your application AEE OR by selecting ONE of the following:

☐ This application does not involve subdivision (excluding production land), change of use or removal of (part of) a fuel storage system. Any earthworks will meet section 8(3) of the NES (including volume not exceeding 25m^3 per 500m^2). Therefore the NES does not apply.

☐ I have undertaken a comprehensive review of District and Regional Council records and I have found no record suggesting an activity on the HAIL has taken place on the piece of land which is subject to this application.
NOTE: depending on the scale and nature of your proposal you may be required to provide details of the records reviewed and the details found.

OTHER CONSENTS // CONTINUED

☑ I have included a Preliminary Site Investigation undertaken by a suitably qualified person.

☐ An activity listed on the HAIL has more likely than not taken place on the piece of land which is subject to this application. I have addressed the NES requirements in the Assessment of Environmental Effects.

- Any other National Environmental Standard

☐ Yes ☑ N/A

Are any additional consent(s) required that have been applied for separately?

- Otago Regional Council

Consents required from the Regional Council (note if have/have not been applied for):

☑ Yes ☐ N/A

INFORMATION REQUIRED TO BE SUBMITTED //

Attach to this form any information required (see below & appendices 1-2).

To be accepted for processing, your application should include the following:

☑ Computer Freehold Register for the property (no more than 3 months old) and copies of any consent notices and covenants
(Can be obtained from Land Information NZ at https://www.linz.govt.nz/).

☑ A plan or map showing the locality of the site, topographical features, buildings etc.

☑ A site plan at a convenient scale.

☑ Written approval of every person who may be adversely affected by the granting of consent (s95E).

☑ An Assessment of Effects (AEE).
An AEE is a written document outlining how the potential effects of the activity have been considered along with any other relevant matters, for example if a consent notice is proposed to be changed. Address the relevant provisions of the District Plan and affected parties including who has or has not provided written approval. See Appendix 1 for more detail.

☑ We prefer to receive applications electronically – please see Appendix 5 – Naming of Documents Guide for how documents should be named. Please ensure documents are scanned at a minimum resolution of 300 dpi. Each document should be no greater than 10mb

PRIVACY INFORMATION

The information you have provided on this form is required so that your application can be processed under the Resource Management Act 1991 and may also be used in statistics collected and provided to the Ministry for the Environment and Queenstown Lakes District Council. The information will be stored on a public register and may be made available to the public on request or on the company's or the Council's websites.

FEES INFORMATION

Section 36 of the Resource Management Act 1991 deals with administrative charges and allows a local authority to levy charges that relate to, but are not limited to, carrying out its functions in relation to receiving, processing and granting of resource consents (including certificates of compliance and existing use certificates).

Invoiced sums are payable by the 20th of the month after the work was undertaken. If unpaid, the processing of an application, provision of a service, or performance of a function will be suspended until the sum is paid. You may also be required to make an additional payment, or bring the account up to date, prior to milestones such as notification, setting a hearing date or releasing the decision. In particular, all charges related to processing of a resource consent application are payable prior to issuing of the decision. Payment is due on the 20th of the month or prior to the issue date – whichever is earlier.

FEES INFORMATION // CONTINUED

If your application is notified or requires a hearing you will be requested to pay a notification deposit and/or a hearing deposit. An applicant may not offset any invoiced processing charges against such payments.

Section 357B of the Resource Management Act provides a right of objection in respect of additional charges. An objection must be in writing and must be lodged within 15 working days of notification of the decision.

LIABILITY FOR PAYMENT – Please note that by signing and lodging this application form you are acknowledging that the details in the invoicing section are responsible for payment of invoices and in addition will be liable to pay all costs and expenses of debt recovery and/or legal costs incurred by QLDC related to the enforcement of any debt.

MONITORING FEES – Please also note that if this application is approved you will be required to meet the costs of monitoring any conditions applying to the consent, pursuant to Section 35 of the Resource Management Act 1991.

DEVELOPMENT CONTRIBUTIONS – Your development, if granted, may also incur development contributions under the Local Government Act 2002. You will be liable for payment of any such contributions.

A list of Consent Charges is available on the on the Resource Consent Application Forms section of the QLDC website. If you are unsure of the amount to pay, please call 03 441 0499 and ask to speak to our duty planner.

Please ensure to reference any banking payments correctly. Incorrectly referenced payments may cause delays to the processing of your application whilst payment is identified.

If the initial fee charged is insufficient to cover the actual and reasonable costs of work undertaken on the application you will be required to pay any additional amounts and will be invoiced monthly as work on the application continues. Please note that if the Applicant has outstanding fees owing to Council in respect of other applications, Council may choose to apply the initial fee to any outstanding balances in which case the initial fee for processing this application may be deemed not to have been paid.

PAYMENT // An initial fee must be paid prior to or at the time of the application and proof of payment submitted.

Please reference your payments as follows:

Applications yet to be submitted: RM followed by first 5 letters of applicant name e.g RMJONES

Applications already submitted: Please use the RM# reference that has been assigned to your application, this will have been emailed to yourself or your agent.

Please note processing will not begin until payment is received (or identified if incorrectly referenced).

I confirm payment by:

- [x] Bank transfer to account 02 0948 0002000 00 (If paying from overseas swiftcode is – BKNZNZ22)
- [ ] Invoice for initial fee requested and payment to follow
- [ ] Manual Payment (can only be accepted once application has been lodged and acknowledgement email received with your unique RM reference number)

*Reference RMFARRA

*Amount Paid: Landuse and Subdivision Resource Consent fees - please select from drop down list below

$3200 - Other subdivision (e.g. Rural Residential, Rural Lifestyle)

(For required initial fees refer to website for Resource Consent Charges or spoke to the Duty Planner by phoning 03 441 0499)

*Date of Payment 2/25/22

Invoices are available on request

APPLICATION & DECLARATION

The Council relies on the information contained in this application being complete and accurate. The Applicant must take all reasonable steps to ensure that it is complete and accurate and accepts responsibility for information in this application being so.

If lodging this application as the Applicant:

I/we hereby represent and warrant that I am/we are aware of all of my/our obligations arising under this application including, in particular but without limitation, my/our obligation to pay all fees and administrative charges (including debt recovery and legal expenses) payable under this application as referred to within the Fees Information section.

OR:

If lodging this application as agent of the Applicant:

I/we hereby represent and warrant that I am/we are authorised to act as agent of the Applicant in respect of the completion and lodging of this application and that the Applicant / Agent whose details are in the invoicing section is aware of all of his/her/its obligations arising under this application including, in particular but without limitation, his/her/its obligation to pay all fees and administrative charges (including debt recovery and legal expenses) payable under this application as referred to within the Fees Information section.

☑ I hereby apply for the resource consent(s) for the Proposal described above and I certify that, to the best of my knowledge and belief, the information given in this application is complete and accurate.

PLEASE TICK

Signed (by or as authorised agent of the Applicant) **	
Full name of person lodging this form	Blair Jeffrey Devlin
Firm/Company Vivian and Espie Ltd	Dated 24-02-22

**If this form is being completed on-line you will not be able, or required, to sign this form and the on-line lodgement will be treated as confirmation of your acknowledgement and acceptance of the above responsibilities and liabilities and that you have made the above representations, warranties and certification.

Section 2 of the District Plan provides additional information on the information that should be submitted with a land use or subdivision consent.

The RMA (Fourth Schedule to the Act) requires the following:

1 INFORMATION MUST BE SPECIFIED IN SUFFICIENT DETAIL

- Any information required by this schedule, including an assessment under clause 2(1)(f) or (g), must be specified in sufficient detail to satisfy the purpose for which it is required.

2 INFORMATION REQUIRED IN ALL APPLICATIONS

- (1) An application for a resource consent for an activity (the activity) must include the following:
    - (a) a description of the activity:
    - (b) a description of the site at which the activity is to occur:
    - (c) the full name and address of each owner or occupier of the site:
    - (d) a description of any other activities that are part of the proposal to which the application relates:
    - (e) a description of any other resource consents required for the proposal to which the application relates:

Information provided within the Form above

    - (f) an assessment of the activity against the matters set out in Part 2:
    - (g) an assessment of the activity against any relevant provisions of a document referred to in section 104(1)(b).

(2) The assessment under subclause (1)(g) must include an assessment of the activity against—

    - (a) any relevant objectives, policies, or rules in a document; and
    - (b) any relevant requirements, conditions, or permissions in any rules in a document; and
    - (c) any other relevant requirements in a document (for example, in a national environmental standard or other regulations).

(3) An application must also include an assessment of the activity's effects on the environment that—

    - (a) includes the information required by clause 6; and
    - (b) addresses the matters specified in clause 7; and
    - (c) includes such detail as corresponds with the scale and significance of the effects that the activity may have on the environment.

Include in an attached Assessment of Effects (see Clauses 6 & 7 below)

ADDITIONAL INFORMATION REQUIRED IN SOME APPLICATIONS

- An application must also include any of the following that apply:
    - (a) if any permitted activity is part of the proposal to which the application relates, a description of the permitted activity that demonstrates that it complies with the requirements, conditions, and permissions for the permitted activity (so that a resource consent is not required for that activity under section 87A(1)):
    - (b) if the application is affected by section 124 or 165ZH(1)(c) (which relate to existing resource consents), an assessment of the value of the investment of the existing consent holder (for the purposes of section 104(2A)):

ASSESSMENT OF ENVIRONMENTAL EFFECTS

Clause 6: Information required in assessment of environmental effects

- (1) An assessment of the activity's effects on the environment must include the following information:
    - (a) if it is likely that the activity will result in any significant adverse effect on the environment, a description of any possible alternative locations or methods for undertaking the activity:
    - (b) an assessment of the actual or potential effect on the environment of the activity:
    - (c) if the activity includes the use of hazardous substances and installations, an assessment of any risks to the environment that are likely to arise from such use:
    - (d) if the activity includes the discharge of any contaminant, a description of—
        - (i) the nature of the discharge and the sensitivity of the receiving environment to adverse effects; and
        - (ii) any possible alternative methods of discharge, including discharge into any other receiving environment:
    - (e) a description of the mitigation measures (including safeguards and contingency plans where relevant) to be undertaken to help prevent or reduce the actual or potential effect:
    - (f) identification of the persons affected by the activity, any consultation undertaken, and any response to the views of any person consulted:
    - (g) if the scale and significance of the activity's effects are such that monitoring is required, a description of how and by whom the effects will be monitored if the activity is approved:
    - (h) if the activity will, or is likely to, have adverse effects that are more than minor on the exercise of a protected customary right, a description of possible alternative locations or methods for the exercise of the activity (unless written approval for the activity is given by the protected customary rights group).

(2) A requirement to include information in the assessment of environmental effects is subject to the provisions of any policy statement or plan.

(3) To avoid doubt, subclause (1)(f) obliges an applicant to report as to the persons identified as being affected by the proposal, but does not—

- (a) oblige the applicant to consult any person; or
- (b) create any ground for expecting that the applicant will consult any person.

CLAUSE 7: MATTERS THAT MUST BE ADDRESSED BY ASSESSMENT OF ENVIRONMENTAL EFFECTS

- (1) An assessment of the activity's effects on the environment must address the following matters:
    - (a) any effect on those in the neighbourhood and, where relevant, the wider community, including any social, economic, or cultural effects:
    - (b) any physical effect on the locality, including any landscape and visual effects:
    - (c) any effect on ecosystems, including effects on plants or animals and any physical disturbance of habitats in the vicinity:
    - (d) any effect on natural and physical resources having aesthetic, recreational, scientific, historical, spiritual, or cultural value, or other special value, for present or future generations:
    - (e) any discharge of contaminants into the environment, including any unreasonable emission of noise, and options for the treatment and disposal of contaminants:
    - (f) any risk to the neighbourhood, the wider community, or the environment through natural hazards or the use of hazardous substances or hazardous installations.

(2) The requirement to address a matter in the assessment of environmental effects is subject to the provisions of any policy statement or plan.

A2 APPENDIX 2 // Information requirements for subdivision

UNDER THE FOURTH SCHEDULE TO THE ACT:

- An application for a subdivision consent must also include information that adequately defines the following:
    - (a) the position of all new boundaries:
    - (b) the areas of all new allotments, unless the subdivision involves a cross lease, company lease, or unit plan:
    - (c) the locations and areas of new reserves to be created, including any esplanade reserves and esplanade strips:
    - (d) the locations and areas of any existing esplanade reserves, esplanade strips, and access strips:
    - (e) the locations and areas of any part of the bed of a river or lake to be vested in a territorial authority under section 237A:
    - (f) the locations and areas of any land within the coastal marine area (which is to become part of the common marine and coastal area under section 237A):
    - (g) the locations and areas of land to be set aside as new roads.

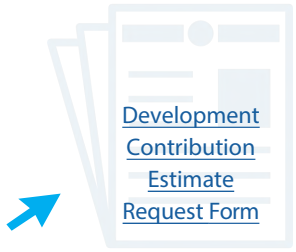
A3 APPENDIX 3 // Development Contributions

Will your resource consent result in a Development Contribution and what is it?

- A Development Contribution can be triggered by the granting of a resource consent and is a financial charge levied on new developments. It is assessed and collected under the Local Government Act 2002. It is intended to ensure that any party, who creates additional demand on Council infrastructure, contributes to the extra cost that they impose on the community. These contributions are related to the provision of the following council services:
    - Water supply
    - Wastewater supply
    - Stormwater supply
    - Reserves, Reserve Improvements and Community Facilities
    - Transportation (also known as Roading)

Click here for more information on development contributions and their charges

OR Submit an Estimate request *please note administration charges will apply



A4 APPENDIX 4 // Fast - Track Application

Please note that some land use consents can be dealt with as fast track land use consent. This term applies to resource consents where they require a controlled activity and no other activity. A 10 day processing time applies to a fast track consent.

If the consent authority determines that the activity is a deemed permitted boundary activity under section 87BA of the Act, written approval cannot be withdrawn if this process is followed instead.

A fast-track application may cease to be a fast-track application under section 87AAC(2) of the Act.

A5 APPENDIX 5 // Naming of documents guide

While it is not essential that your documents are named the following, it would be helpful if you could title your documents for us. You may have documents that do not fit these names; therefore below is a guide of some of the documents we receive for resource consents. Please use a generic name indicating the type of document.

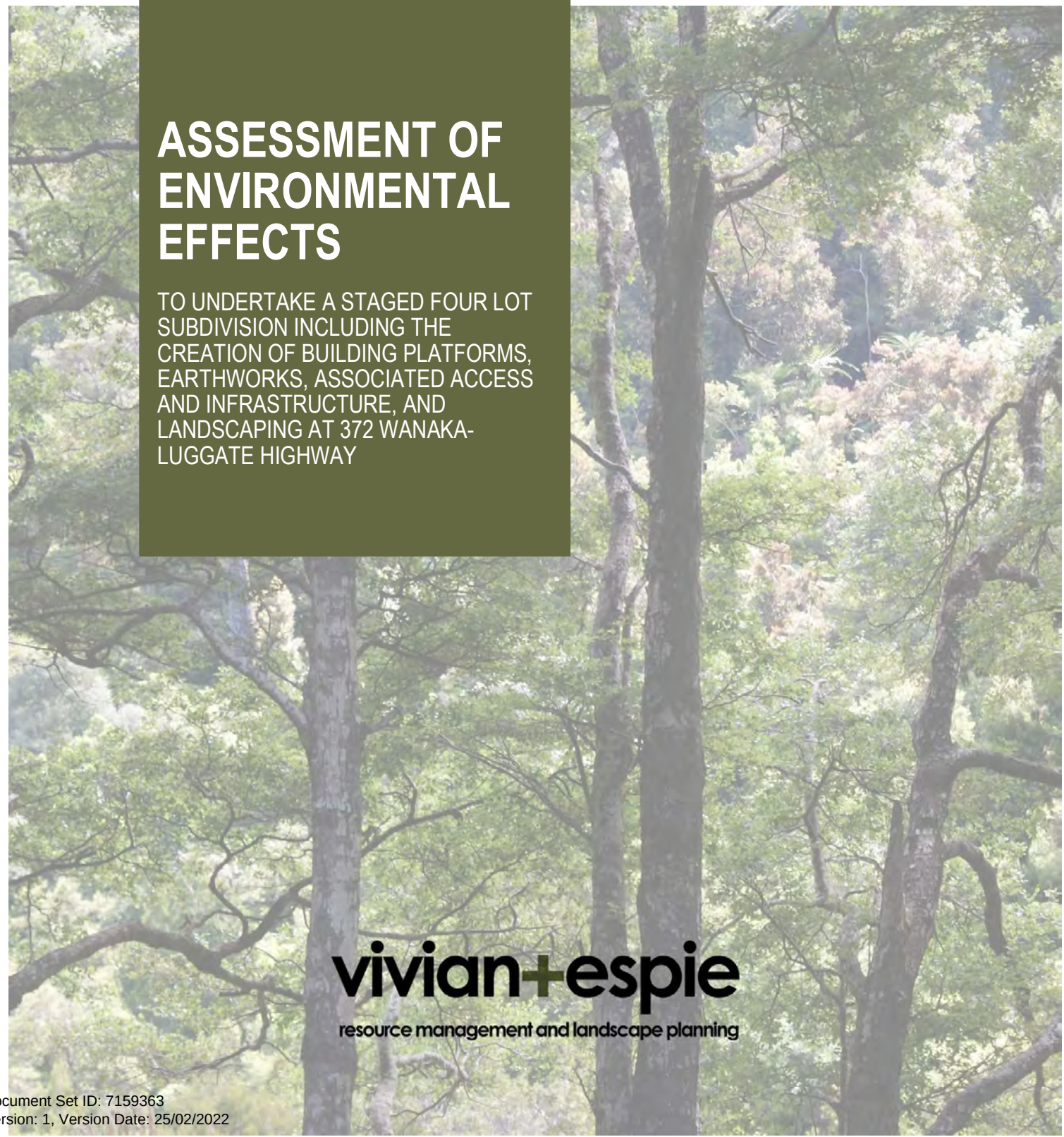
- Application Form 9
- Assessment of Environmental Effects (AEE)
- Computer Register (CFR)
- Covenants & Consent Notice
- Affected Party Approval/s
- Landscape Report
- Ecological Report
- Engineering Report
- Geotechnical Report
- Wastewater Assessment
- Traffic Report
- Waste Event Form
- Urban Design Report

vivian+espie
resource management and landscape planning

PREPARED FOR IAN FERGUSON FARRANT
AND THE ESTATE OF MC FARRANT
24 FEBRUARY 2022
J1556

ASSESSMENT OF ENVIRONMENTAL EFFECTS

TO UNDERTAKE A STAGED FOUR LOT SUBDIVISION INCLUDING THE CREATION OF BUILDING PLATFORMS, EARTHWORKS, ASSOCIATED ACCESS AND INFRASTRUCTURE, AND LANDSCAPING AT 372 WANAKA-LUGGATE HIGHWAY



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resource management and landscape planning

Contents

Quality assurance

Prepared by	Gabriela Glory	Planner/Landscape Technician	8 February 2022
Reviewed by	Blair Devlin	Senior Planner/Director	24 February 2022

1. Key Information

Address	372 Wanaka-Luggate Highway, Wanaka
Legal Description	Currently Lot 1 DP 27661 held in Record of Title OT18D/262; Lot 2 of RM210780 (a boundary adjustment subdivision) currently being given effect to.
Site Area	Currently 40.46 hectares Lot 2 of RM210780 measures 8.7ha
Owners	Ian Ferguson Farrant as to a 1/2 share Rachel Helen Farrant and Louise Elizabeth Farrant as to a 1/2 share
Occupiers	The residential unit is currently vacant.
Applicant	Ian Ferguson Farrant and the Estate of MC Farrant
Operative District Plan Zoning	Rural General Zone
Designations & Special Provisions	None
Proposed District Plan Zoning	Rural Zone
Designations & Special Provisions	• Rural Character Landscape - Activity Area 1: Cardrona River/Mt Barker Road • Aurora Distribution Line
Proposed Activity	Subdivide the subject site into four allotments: • Proposed Lot 1 measures 9.14 hectares and includes a new building platform measuring 1000m^2 • Proposed Lot 2 measures 9.10 hectares and includes a new building platform measuring 1000m^2 • Proposed Lot 3 contains the existing residential unit and measures 17.4 hectares. A 920m^2 building platform is proposed around the existing residence. • Proposed Lot 4 is an access lot that connects to Morris Road. The access lot is to be held in two undivided ½ shares by the owners of Lots 1 and 2 via an amalgamation condition The proposal includes associated access, earthworks, infrastructure and landscaping. Staging of the subdivision is proposed in two stages, so that title for Lot 3 (containing the existing residence) may issue before Lots 1 and 2. • Stage 1 – Lot 3 • Stage 2 – Lots 1, 2 and 4 The plan of subdivision is appended as Attachment **[C]**.
Consents Required	<u>Operative District Plan</u> • Rule 15.2.3.3(vi) all subdivision and location of residential building platforms shall be a **discretionary activity**. • Rule 15.2.21 earthworks associated with any subdivision of land in any zone other than the special zones are a

	controlled activity with control reserved to the matters set out in Rule 22.3.2.2(a)(i) -(ix) in Section 22, these being: (i) The nature and scale of the earthworks (ii) Environmental protection measures (iii) Remedial works and revegetation (iv) The effects on landscape and visual amenity values (v) The effects on land stability and flooding (vi) The effects on water bodies (vii) The effects on cultural and archaeological sites (viii) Noise. (ix) The effects of earthworks on the natural character of wetlands, lakes and rivers and their margins (x) The location of trails and viewing platforms. (xi) The size of viewing platforms and boardwalks. Relevant rules under the PDP are no longer under appeal, therefore the relevant rules under the ODP can be treated as inoperative under s86F of the RMA 1991. <u>Proposed District Plan</u> • Rule 21.4.10 – the identification of a building platform not less than 70m^2 and not greater than 1000m^2 shall be a **discretionary** activity. • Rule 27.5.6 – for subdivision in the Rural Zone shall be a **discretionary** activity. • Rule 25.4.2 for earthworks which exceed the maximum total volume of 1000m^3 in the Rural Zone shall be a **restricted discretionary** activity. • Rule 25.5.11.2 for earthworks which exceed 10,000m^2 where the slope is less than 10º shall be a **restricted discretionary** activity. Overall, the proposal is for a **discretionary** activity under the PDP
Written Approvals and Consultation	Pre-application meeting reference PA200115. Affected party approvals: • Zeestraten Property – 60 Morris Road (Lot 2 DP 447731) • Wallace Property – 24 Black Peak Road (Lot 3 DP 447731) • Fulton and Horne Property – 31 Black Peak Road (Lot 2 DP 321421) • Timu Property – 89 Black Peak Road (Lot 2 DP 385106) • Carlisle Trustees Limited – Lot 1 DP 385106 Consultation has also been undertaken with Aurora Energy Ltd regarding the power line son the site.
Other consents/permits	Otago Regional Council consent for the residential earthworks will be required.

2. Introduction

This report is submitted as part of the application by Ian Ferguson Farrant and the Estate of MC Farrant ("the Applicant") for resource consent from Queenstown-Lakes District Council (QLDC or "Council") associated with the staged subdivision and development of land at 372 Wanaka-Luggate Highway, Wanaka. The completed Form 9 is appended as Attachment **[A]** and the Record of Title is appended as Attachment **[B]**. Proposed plans including plan of subdivision and earthworks are appended as Attachment **[C]**. The purpose of this report is to provide sufficient information to enable a full understanding of the proposal and any effects that the proposal may have on the environment. In preparing this assessment, specialist advice has been relied on and is appended to this report as Attachments **[D]-[F]**. Written approvals have also been sought by adjoining neighbours appended as Attachment **[H]**.

3. Existing Environment

3.1 Subject site

The site is a 40.46-hectare site located at 372 Wanaka-Luggate Highway legally described as Lot 1 DP 27661 held in Record of Title OT18D/262. The site is an irregular shaped site located to the south of the Wanaka-Luggate Highway (SH6), between Morris Road on the west and the Cardrona River (Orau) to the east. A single residential unit (being the Farrant family dwelling) and associated accessory and farm buildings are clustered on the north-east portion of the site. The remainder of the site is currently being utilised for low intensity grazing and pasture, and is partitioned into various paddocks with deer fencing.

Figure 1: Subject site (outlined in blue) and surrounds

Two large and relatively flat terraces form the site, with the southern boundary approximately 9m more elevated than the northern boundary (Figure 2). At the time of lodging this application there is an existing shelterbelt of mature Poplar trees located on the embankment which bisects the site running from the southwest corner of the site to the north east corner. Due to the age and reliability of these trees, removal of the poplars on proposed Lot 1 is scheduled to occur in March 2022. A small number of trees will remain within proposed Lot 2.

Figure 2: Subject site with elevations indicating the embankment and the two flat terraces

Irrigation races are apparent on the site. The race network terminates on the property and there are no other downstream users beyond the site. An irrigation pond located on the north east corner of proposed Lot 1. The raised border dykes are readily apparent on the site however this border-dyke system has not been operational for many years. Overhead high voltage lines and other power lines which cross the property in the southern section, running west to east in orientation.

Photographs of the site location are shown below in Figure 3.

Figure 3: (L) Existing Entrance to proposed Lot 3 from SH6 and (R) View over Proposed Lot 2 from SW corner

3.2 Surrounding environment

The surrounding environment is agricultural and rural residential in nature, with the Lavender Farm (a commercial recreation activity) located at the corner of Morris Road abutting the site towards the east, State Highway 6 runs along the northern boundary of the subject site and Cardrona River located 220m west of the subject site.

The location of the subject site, relative to the airport and Wanaka Town centre, and the presence of SH6 connecting Wanaka to Luggate, Cromwell and beyond, means that this part of the Upper Clutha Basin is generally relatively modified and occupied compared to other parts of the basin.

3.3 Site history

The following resource consents have been identified through Council's eDocs system, and are considered relevant to this application:

- Resource consent RM960516 was issued on 9 January 1997 to erect a dwelling on the subject site. This consent has been given effect to. The proposal seeks to identify a building platform around the existing dwelling which is relevant to this resource consent application.
- Resource consent RM990468 was issued on 2 September 1999 to undertake a boundary adjustment on the subject site. This consent has been given effect to.
- Resource consent RM040836 was issued on 28 October 2004 to construct a haybarn/shed containing storage and workers facilities on the site. This consent has been given effect to, and the shed and farm buildings remain located on the site.
- Resource consent RM210780 was issued on 24 September 2021 to undertake a boundary adjustment on the subject site which created Lot 1 DP 567770. The boundary adjustment is shown below and is currently being completed. Titles are expected by mid 2022. Lot 2 of this decision comprises the application site.

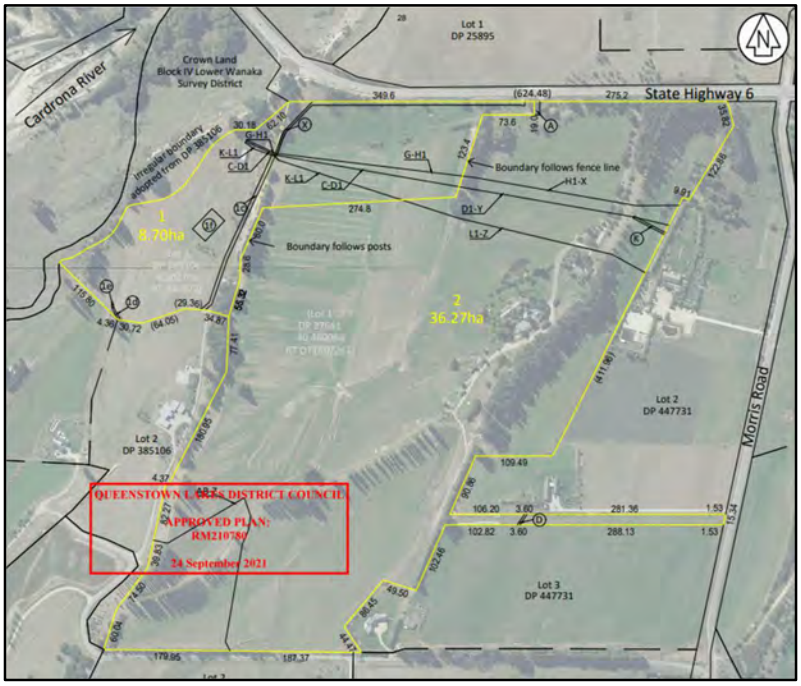


Figure 4: Plan of boundary adjustment approved by RM210780.

No other resource consents are found on the Council's edocs system.

3.4 Covenants and consent notices

There are several covenants and consent notices listed on the Record of Title relevant to the subject site, with the majority being private easement instruments indicated on the title plan. The private land covenants are not considered to be directly relevant to the proposal, but can be provided to QLDC on request. Instrument 5136378.3 relates to the existing vehicle crossing located on State Highway 6 and is appended as Attachment **[B1]** specifies the location of the crossing point and notes the State Highway is a limited access road. The proposed building platforms are not accessed off State Highway 6.

4. The Proposal

4.1 Subdivision

Resource consent is sought to subdivide Lot 2 of RM210780 (currently held as Lot 1 DP 27661 (OT18D/262) into four allotments; three for residential purposes and one for legal access into proposed Lots 1 and 2. The proposal also seeks to identify a building platform on each residential allotment; two new building platforms on proposed Lot 1 and 2, and one building platform around an existing residential unit on proposed Lot 3. To summarise:

- Proposed Lot 1 measures 9.07 hectares and contains a building platform of 1000m^2.
- Proposed Lot 2 measures 9.17 hectares and contains a building platform of 1000m^2.
- Proposed Lot 3 measures 17.40 hectares and contains a building platform of 902m^2 around the existing residential unit.
- Proposed Lot 4 measures 0.63 hectares and will be utilised as a legal right of way to proposed Lots 1 and 2.

The purpose of the application is to enable two additional allotments to be located on the site, and create a right to build on each allotment. Plans of the proposed subdivision are shown in Attachment **[C]** and Figure 5 below:

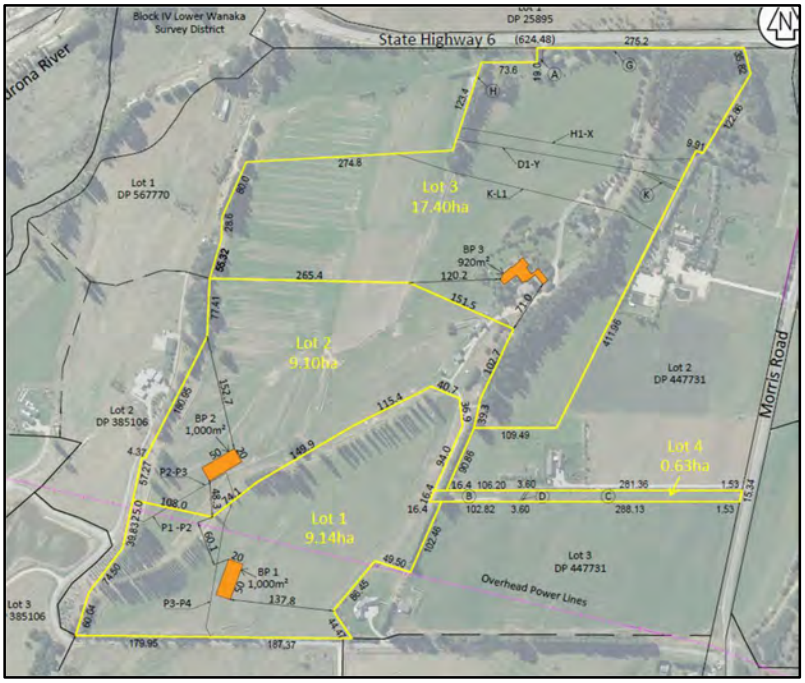


Figure 5: Proposed plan of subdivision and location of proposed building platforms

Staging of the subdivision is proposed in two stages, so that title for Lot 3 (containing the existing serviced residence) may issue before Lots 1 and 2.

- Stage 1 – Lot 3
- Stage 2 – Lots 1, 2 and 4.

4.2 Landscaping

Proposed Lots 1 and 2 are to be landscaped in accordance with the landscape plan and planting schedule provided as Attachment **[E]**. With regard to Lot 1, the proposed earthworks (mounding) and high native planting will mitigate effects of privacy and outlook onto the residential dwelling of adjoining Lot 3 DP 447731 (who have provided affected party approval). The existing shelter belt of eucalypts and cypress along the northern side of Black Peak Road is proposed to be retained. Low native planting is to be planted along the embankment which separates proposed Lot 1 and Lot 2. Proposed Lot 2 proposes mounding and a mixture of low and high native planting to mitigate effects of privacy and outlook from the residential dwelling of adjoining Lot 2 DP 385106. Curtilage areas have been identified for proposed Lots 1 and 2, to ensure that the effects of domestication can be contained within these areas, and that the remainder of the lot can be retained as open space for rural activities.

4.3 Access

Vehicular access to proposed Lot 3 (existing dwelling) off the State Highway is existing and formed to a good standard. No upgrading is required. This was accepted by Waka Kotahi New Zealand Transport Agency (WKNZTA) as part of their affected party approval for RM210780.

There is an existing grass farm track access which links Morris Road to the subject site located in between Lots 3 DP 447731 and Lot 2 DP 447731. It is proposed to utilise this existing vehicle access, and establish shared access lot to be held in two undivided half shares by the owners of proposed Lots 1 and 2 via an amalgamation condition, as indicated as proposed Lot 4 on the plan of subdivision **Attachment [C].** The proposed access will be 2.5m wide, with passing bays every 100m as per requirements of an E1 road for access to lifestyle or clustered housing for up to six dwellings[1], and will be formed and stabilised. An Infrastructure Report prepared by Southern Land Development Consultants has been provided with the application **Attachment [E],** and Earthworks Management Plan prepared by Enviroscope appended as **Attachment [F].** The vehicle crossing will be formed and constructed in accordance with QLDC standards. A condition of consent is volunteered for the formation of the vehicle crossing to Council standards for proposed Lot 4.

4.4 Water Supply

The site has an existing bore that services the existing residential unit for domestic use, stock water and irrigation. According to Otago Regional Council's (ORCs) GIS records, the bore is located 40m deep and located on the eastern side of the barn. The bore draws water from the East Wanaka Basin Cardrona Gravel aquifer. Two options have been considered regarding water supply:

a) A single communal bore to service all three sites; or
b) Provide a bore supply for each allotment individually

Figure 6: Map indicating existing features on the site, with boundary adjustment as per RM210780 abstracted from the Infrastructure Report [Attachment E]

[1] Table 3.3 – Road Design Standards QLDC LDSCOP 2020

The Infrastructure Report prepared by Southern Land Development Consultants, is appended as Attachment **[F]**. It notes that as Water Services Bill 2020 proposes to increase the range of duties, obligations and new reporting requirements for small to medium sized rural water suppliers, it is preferred that each allotment has a dedicated water supply bore for domestic, stock and irrigation use, for easier management for future owners and occupiers.

The water supply for the development will be provided for by establishing new water sources to the new allotments (proposed Lots 1 and 2). The existing water supply for the existing house on proposed Lot 3 will remain unchanged.

The location of the bores will need to be appropriately coordinated with proposed on-site wastewater disposal to ensure that a minimum clearance of 50m is achieved. A consent condition is volunteered to ensure this matter can be achieved and correlates with the location of the on-site wastewater disposal system.

The East Cardrona Gravel Aquifer has capacity to service two additional allotments. New bores will be identified at the time a building is proposed on the platform and the location of on-site wastewater disposal has been determined. This will involve the installation of a new bore pump and pipe reticulation to the allotments.

4.4 Wastewater Treatment and Disposal

There is no community or Council wastewater scheme near the subject site. However, the soils on site have sufficient capacity to facilitate the disposal of effluent via sub soakage methods, with treatment provided prior to discharge.

The existing dwelling on proposed Lot 3 is currently being serviced via a septic tank and effluent to land wastewater disposal system. This system remains unchanged. Proposed Lots 1 and 2 are also proposed to be serviced with on-site wastewater treatment systems.

The site-specific detailed design of the on-site wastewater disposal system and an Effluent Disposal Area (EDA) will need to be designed based on occupancy rate specific for each new allotment. A voluntary condition is proposed at the time a dwelling is proposed on Lots 1 and 2, to ensure that the detailed design of the on-site wastewater disposal system and the location of the EDA is submitted to Council's building department for approval prior to obtaining building consent.

The proposed on-site wastewater disposal system and location EDA will determine the location of bores for each allotment as discussed in Section 5.3 of this report.

4.5 Stormwater Treatment and Disposal

The subject site is not currently serviced by QLDC infrastructure. Stormwater runoff from existing dwellings and farm sheds on Lot 3 is discharged directly to the ground through localised soak pits. Overall, no specific stormwater treatment devices are considered necessary due to the flat topography of the site, and the runoff is unlikely to contain high levels of contaminants such as heavy metals or hydrocarbon. On-site stormwater will be shown at the time of building consent with specifically designed soak pits. Stormwater runoff will be collected through roadside drainage swales to receive and dispose runoff from the access. As the topography of the site

is flat, the runoff will be dispersed and infiltrated along grassed areas. Full details of stormwater disposal can be found in the Infrastructure Report contained as Attachment **[F]**.

4.6 Other Infrastructure Works and Connections

Power and telecommunications reticulation has been confirmed as feasible by Aurora Energy Limited (power) and Chorus (telecommunications). A copy of their correspondence can be found in Appendix D of the Infrastructure Report Attachment **[F]**.

4.7 Earthworks and Sediment Control

The plan of earthworks is included in Attachment **[C]**. All earthworks will be carried out in accordance with the Earthworks Management Plan prepared by Enviroscope appended as Attachment **[F]**. The earthworks will include a topsoil site scrape, landscape mounding and to create flat buildable areas for the building platforms, summarised as follows:

- Total volume of 52,700m^3 for earthworks including site scrape
- Total cut volumes of 21,000m^3 measuring a maximum of 3m in depth
- Total fill volume of 16,800m^3 measuring a maximum of 3m in height
- Volume of site scrape will be 14,900m^3
- Topsoil site scrape over an area of 49,700m^2, the topsoil strip depth measures approximately 0.3m.

Consent from the Otago Regional Council is also required for residential earthworks, and is in the process of being lodged.

4.8 Design Controls

Volunteered consent conditions and a small number of design controls are included in Attachment **[I]**. Height limits are proposed as follows:

- Lot 1 – 5.5m above the existing ground level (RL 316.25) which is being lowered as part of the application. This will allow a building height of up to 6m (following 0 - 0.5m of excavation in that location).
- Lot 2 – 5.5m above the existing ground level (which is not being altered as part of the subdivision)
- Lot 3 – a height limit of 7.5m is proposed for the platform around the existing dwelling. This height matches the height of the existing dwelling.

As Rule 21.7.2 of the PDP already requires that roof colour has a Light Reflectance Value (LRV) of less than 20%, and walls have a LRV of less than 30%, these controls on colours and materials do not need to be duplicated through consent notice conditions. In addition, Rule 21.7.3 limits the ground floor of any building to 500m^2. Given existing PDP rules for the Rural zone, no additional design controls are necessary.

5. Matters Requiring Consent

5.1 National Environmental Standards

As the proposed development includes subdivision, earthworks and a change of use of parts of the application site, the applicant has elected to comply with the provisions of the NES by undertaking an assessment of the most up to date information about the site and surrounding area that Council holds. In addition, the applicant has undertaken an assessment of any information available from Otago Regional Council.

According to the PSI report submitted with the application prepared by Insight Engineering Ltd **Attachment [F]**, there are five records of contaminated land on the subject site. However, the report notes that although contaminants were found, it is noted that the location of these contaminated areas are not within proximity of proposed building platforms. The report notes that the potential impacts of the activities are not considered likely to pose a significant risk to human health under the proposed subdivision and future use scenarios due to the physical separation of the proposed building platforms and impacted areas. Lack of exposure pathways means that future residents are unlikely to come into regular contact with sufficient quantities of the chemicals to result in significant health impacts.

The Application therefore does not require consent under the Resource Management (National Environmental Standard for Assessing and Managing Contaminants in Soil to Protect Human Health) Regulations 2011 ("NES - Contamination") as the requirements of Rule 8(4) has been met. This report is contained within **Attachment [F]**.

5.3 Operative District Plan

The subject site is zoned Rural General under the Operative District Plan (ODP):

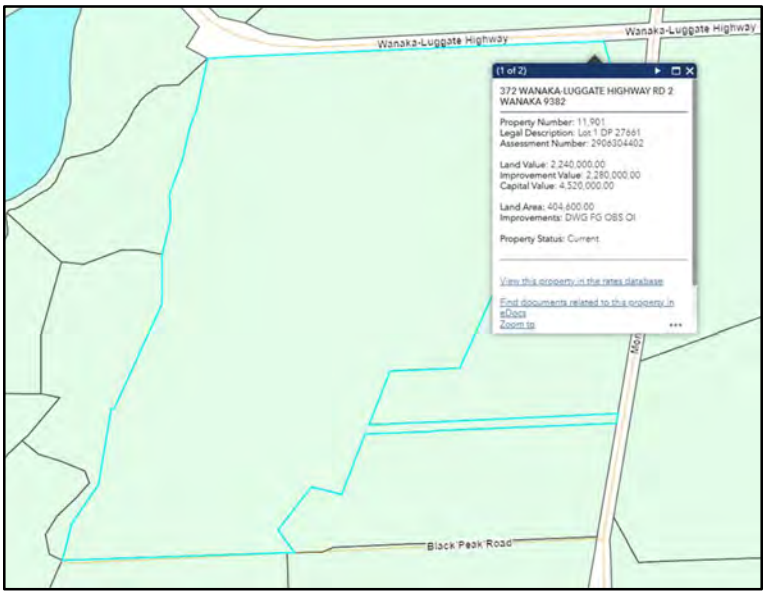


Figure 7: Subject site zoned Rural General under the ODP

The proposal requires consent under the following rules:

- A **discretionary** activity consent pursuant to Rule 15.2.3.3(vi) for all subdivision and location of residential building platforms. It is proposed to subdivide and identify three building platforms on each proposed allotment (one around an existing residential unit).
- A **controlled** activity consent pursuant to Rule 15.2.21 for earthworks associated with any subdivision of land in any zone other than the special zones are a controlled activity with control reserved to the matters set out in Rule 22.3.2.2(a)(i) -(ix) in Section 22, these being:

  (i) The nature and scale of the earthworks

  (ii) Environmental protection measures

  (iii) Remedial works and revegetation

  (iv) The effects on landscape and visual amenity values

  (v) The effects on land stability and flooding

  (vi) The effects on water bodies

  (vii) The effects on cultural and archaeological sites

  (viii) Noise.

  (ix) The effects of earthworks on the natural character of wetlands, lakes and rivers and their margins

  (x) The location of trails and viewing platforms.

  (xi) The size of viewing platforms and boardwalks.

The equivalent Proposed District Plan (PDP) to the rules listed above (specifically Rural Building Platforms 21.4.10, Rural Subdivision 27.5.6 and Earthworks associated with a subdivision 27.4.2.1) are no longer under

appeal, therefore the relevant rules in the ODP must be treated as inoperative pursuant to Section 86F of the RMA.

The zoning of the site itself is not under appeal.

Overall, the proposal is a **permitted** activity under the ODP.

5.4 Proposed District Plan (Stage 3 – Decisions Version)

The subject site was zoned Rural Zone (Rural Character Landscape) and Priority Area 1: Cardrona River/Mt Barker Road under Stage 1 of the PDP review as shown in the image below:

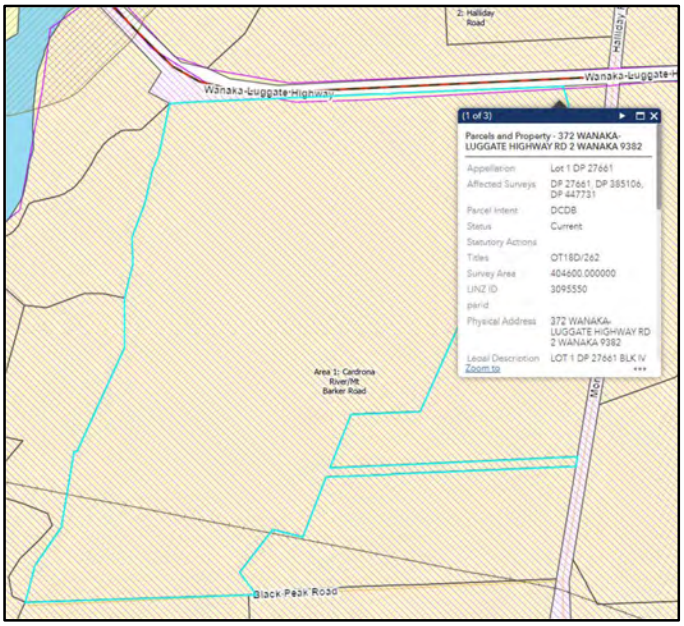


Figure 8: Subject site zoned Rural RCL under the PDP

The proposal requires consent under the PDP for the following matters.

Chapter 21: Rural Zone

- A **discretionary** activity pursuant to Rule 21.4.10 for the identification of a building platform not less than 70m^2 and not greater than 1000m^2 in the Rural Zone. It is proposed to identify one building platform on each allotment, totalling to three building platforms identified as part of this application.

Chapter 25: Earthworks

- A **restricted discretionary** activity pursuant to Rule 25.4.2 for earthworks which exceed the maximum total volume of 1000m^3 in the Rural Zone. It is proposed to conduct 37,800m^3 of earthworks.

- A **restricted discretionary** activity pursuant to Rule 25.5.11.2 for earthworks which exceed 10,000m^2 where the slope is less than 10º. It is proposed to conduct earthworks over a total area of 49,700m^2.

Chapter 27: Subdivision and Development

- A **discretionary** activity pursuant to Rule 27.5.6 for subdivision in the Rural Zone. It is proposed to subdivide Lot 1 DP 27661 into three allotments for residential purposes and one allotment for shared access to proposed Lots 1 and 2.

NB: Proposed Lot 4 (access lot) does not require a building platform as it is not created for the purposes of containing residential activity (Rule 27.7.28).

5.5 Overall activity status

Overall, the proposal is a **permitted activity** under the Operative District Plan and a **discretionary activity** under the Proposed District Plan.

5.6 Scope of Application

This application is for all matters requiring resource consent rather than for the specific list of consent matters / non-compliances identified by the author. If the Council is of the view that resource consent is required for alternative or additional matters to those identified in this AEE, it has the discretion to grant consent to those matters as well as or in lieu of those identified in this AEE. If the Council is of the view that the activity status of any of the matters requiring consent is different to that described in this AEE, or that some or all of the matters requiring consent should be bundled or unbundled in a way that results in a different outcome to that expressed in this AEE, the Council has the ability under Section 104(5) of the Resource Management Act 1991 ("Act") to process the application regardless of the type of activity that the application was expressed to be for.

6. Statutory Considerations

Council's decision on the proposal must give effect to the purpose and principles of the Act, as set out in Part 2 of the Act, and have regard to the relevant matters in sections 104 to 108 of the Act.

6.1 Resource Management Act – Part 2

The purpose of the Act, set out in Section 5, is to promote the sustainable management of natural and physical resources. This is defined as:

> *"managing the use, development, and protection of natural and physical resources in a way, or at a rate, which enables people and communities to provide for their social, economic, and cultural wellbeing and for their health and safety while—*

(a) *Sustaining the potential of natural and physical resources (excluding minerals) to meet the reasonably foreseeable needs of future generations; and*

(b) *Safeguarding the life-supporting capacity of air, water, soil, and ecosystems; and*

(c) *Avoiding, remedying, or mitigating any adverse effects of activities on the environment."*

The proposed subdivision will provide for the social and economic wellbeing of the current applicant and any future owners by enabling the construction of two additional building platforms, whilst ensuring that the subdivision is not inappropriate relative to the surrounding context and rural environment. The lot sizes proposed means that the property can be utilised for residential activity and be used for low intensity rural activities in a similar nature to the existing use. By enabling two additional building platforms, it will also enable two additional housing units to the district. The proposed subdivision and associated earthworks will be managed appropriately through erosion and sediment controls, and will be conducted in accordance with the approved EMP, therefore ensuring that any potential for adverse effects can avoided, mitigated or remedied.

The broader principles of the Act are set out in sections 6 to 8 of the Act. Section 6 identifies a number of matters of national importance. These matters include (relevantly):

(b) the protection of outstanding natural features and landscapes from inappropriate subdivision, use, and development.

(h) the management of significant risks from natural hazards

The site itself is classified as a Rural Character Landscape (RCL) under the Proposed District Plan. The locations of the proposed building platforms will be mitigated by landscaping and naturally finished earthworks to ensure that adverse visual effects from adjoining lots and roads are less than minor. The proposal maintains a significant lot size for each allotment, in which future owners can utilise the property for residential activity and for low intensity farming. The proposed subdivision is also consistent with the surrounding environment, being agricultural and rural residential in nature.

Section 7 sets out a number of "other matters" to which the Council is required to have regard to.

These matters include (relevantly):

(b) *The efficient use and development of natural and physical resources:*

(c) *The maintenance and enhancement of amenity values:*

(f) *Maintenance and enhancement of the quality of the environment:*

(g) *Any finite characteristics of natural and physical resources:*

The proposed subdivision and building platforms enable the applicant to develop the site in a manner that will increase the feasibility of continuing low intensity farming, whilst allowing for housing for future generations. The earthworks proposed will be undertaken in accordance with appropriate EMP to ensure that any potential adverse effects can be avoided, remedied or mitigated. Furthermore, proposed landscaping and mounding will ensure that the amenity values of the Rural Character Area are maintained and any potential for adverse effects, particularly on neighbours are mitigated appropriately.

Section 8 requires Council to take into account the principles of the Treaty of Waitangi. There are no matters identified that affect the principles of the Treaty of Waitangi, in addition, the property has not been identified as being within an area of Wahi Tupuna or site of significance to Iwi.

Overall, the proposed subdivision is consistent with the purpose and principles of the Resource Management Act 1991.

6.2 Section 104 – Matters for Assessment

Of relevance to this application, Section 104(1) of the Act requires the Council to have regard to the following matters, subject to Part 2 of the Act:

(a) *any actual and potential effects on the environment of allowing the activity; and*

(b) *any relevant provisions of –*

(i) a national environmental standard:

(iii) a national policy statement:

(v) a regional policy statement or proposed regional policy statement:

(vi) a plan or proposed plan; and

(c) *any other matter the consent authority considers relevant and reasonably necessary to determine the application.*

Section 104(2) of the Act states that, in considering the effects on the environment of allowing an activity, a consent authority may disregard an adverse effect if a national environmental standard or the plan permits an activity with that effect.

Section 104(3) states that a consent authority must not have regard to trade competition or the effects of trade competition, or any effect on a person who has given written approval to the application.

An assessment of the effects of the proposal on the environment is provided in section 7 of this report. Assessments against the relevant statutory documents are provided in section 9 below.

6.3 Section 104B – Discretionary Activities

Under Section 104B of the Act, a consent authority processing an application for a discretionary activity may grant or refuse the application and can impose conditions under section 108.

An assessment of the effects of the proposal on the environment is provided in section 7 of this AEE while an assessment against the relevant objectives and policies of the relevant plans is provided in section 9 of this AEE.

7. Assessment of Environmental Effects

The assessment matters listed in Chapter 21 Rural (21.21.2) have been used as a basis for this assessment. The assessment has been derived from Policies 3.3.32 (Strategic Directions), 6.3.10 and 6.3.19 - 6.3.29 (Landscape Character).

7.1 The Permitted Baseline Approach

As noted above, Section 104(2) of the Act states that, in considering the effects of allowing an activity, a consent authority may disregard an adverse effect if the plan permits an activity with that effect. In the Rural General zones, all new buildings require resource consent. However, the following matters are permitted and can be undertaken without resource consent:

- planting of indigenous and exotic trees / vegetation, which can have a domesticating effect.
- earthworks up to 1000m^3, provided the work does not involve a road track or access way with a cut or batter greater than 1m vertically which is not laid back steeper than 65 degrees, and does not exceed a maximum fill height of 2m, or exceeds 20m^3 within 7m of a water body, and employs environmental protection measures.
- a forestry woodlot not exceeding 0.4 hectares in non-wildings species.
- A building less than 5m^2 and less than 2m in height.
- fences up to 2m in height, except for within 10m of a road boundary

7.2 Written Approval

Under section 104(3)(a)(ii), the consent authority must not when considering an application have regard to any effect on a person who has given written approval to the application.

Affected party approvals have been sought from the following persons, and is appended as **Attachment [H]**:

Figure 9: Map of written approvals

Name	Address
Cornelia Geertruida Maria Zeestraten Johannes Franciscus Maria Zeestraten Independent Trustees (Canterbury) Limited	60 Morris Road – Lot 2 DP 447731
Linda Margaret Wallace Richard Stephen Wallace SM Trustees (2014) Limited	24 Black Peak Road – Lot 3 DP 447731
James Fulton and Brenda Jayne Horne	31 Black Peak Road – Lot 2 DP 321421
Hugh Dalrymple Simmers John Kahukura Raymond Timu Katherine Mary Timu	89 Black Peak Road – Lot 2 DP 385106
Carlisle Trustees Limited	Lot 1 DP 385106

7.3 Subdivision design, location and size of building platforms, and density of development

The shape and boundary locations of proposed Lots 1 and 2 has been designed through a landscape led design approach to largely align with the natural terraces and existing fence lines evident on the site. Proposed Lot 3 contains the existing residential dwelling and is effectively a balance allotment with the two nine hectare lots being allocated to family members of the applicant. It is noted that there are no minimum lot areas for land zoned Rural. However, the proposed allotments remain substantial in size being 9.07 ha as the smallest allotment created for residential purposes, therefore enabling the potential for rural activities on these lots and retaining the sense of rural character and openness.

The proposed building platforms are located towards the western boundary of the site and clustered to ensure that the change in density does not compromise landscape values and maintains a sense of spaciousness across the site. The proposed locations of the building platforms are the most appropriate due to the underlying landscape and as such has been considered through this process whereby the landscape has the ability to absorb change.

Each allotment (except for Lot 4 for access) will be used for residential activity within the platform and curtilage area with plenty of space outside the curtilage area for rural activities. The building platforms proposed measure 1000m^2 for proposed Lots 1 and 2, and a building platform measuring 920m^2 around the existing residential unit located on Proposed Lot 3. The subdivision and platforms are subject to the volunteered consent notice conditions in Attachment **[I]**.

The proposed collective built form on proposed Lots 1 and 2 will utilise a common accessway, indicated as Lot 4 on the Plan of subdivision (**Attachment [C]**). This will ensure that domestication effects through the creation of multiple accesses to the site is minimised, and enables the efficient subdivision design.

7.4 Transport / Access effects

Access is proposed to the two future lots (proposed Lot 1 and 2) from Morris Road, via an access lot which will be held in two undivided half shares by the owners of proposed Lots 1 and 2 via an amalgamation condition, indicated

as proposed Lot 4 on the plan of subdivision **Attachment [C].** The proposed access is via an existing leg-in that was clearly created as an access point, and has a gate as shown in the image below. The access will need to be upgraded to QLDC standards as part of the subdivision. It is considered that the proposed access will not have any additional impact on the landscape character of the area.

Figure 10: Existing access and gate to Morris Road, from proposed Lot 4

Lot 3 of the subdivision will continue to be accessed via the existing vehicle crossing accessed from State Highway 6. No upgrading of this access is required. No additional traffic will utilise this access as part of the subdivision and Waka Kotahi are therefore not considered to be affected by the proposal.

There are no capacity issues on Morris Road which is lightly trafficked. Traffic generation by the proposed activity (approximately 16 vehicle movements per day) will remain within the capacity of the adjacent road network, including the State Highway 6 network.

The upgraded vehicle accesses servicing Lots 1 and 2 will avoid any adverse effects on the Council's roading infrastructure. The traffic generated by the proposal can be accommodated by the surrounding road network without generating adverse effects.

7.5 Infrastructure Effects

A full infrastructure assessment report has been prepared by Southern Land Development Consultants, and is appended as **Attachment [E]**. At a high level, the site can be serviced with the infrastructure necessary for the two additional residential allotments. The findings have been summarised in the sections below.

7.5.1 Potable Water

The site currently serviced by an existing bore, which is being utilised for domestic use, stock water and irrigation. Water for this bore is sourced from the East Cardrona Gravel Aquifer. This will be sufficient for the two additional allotments created as part of this application. The infrastructure report notes that the existing water supply is suitable for drinking purposes. The Otago Regional Council (ORC) records indicate that the bore is approximately

40m deep and located on the eastern side of the existing barn, all bores surrounding the site are shown below on Figure 9:

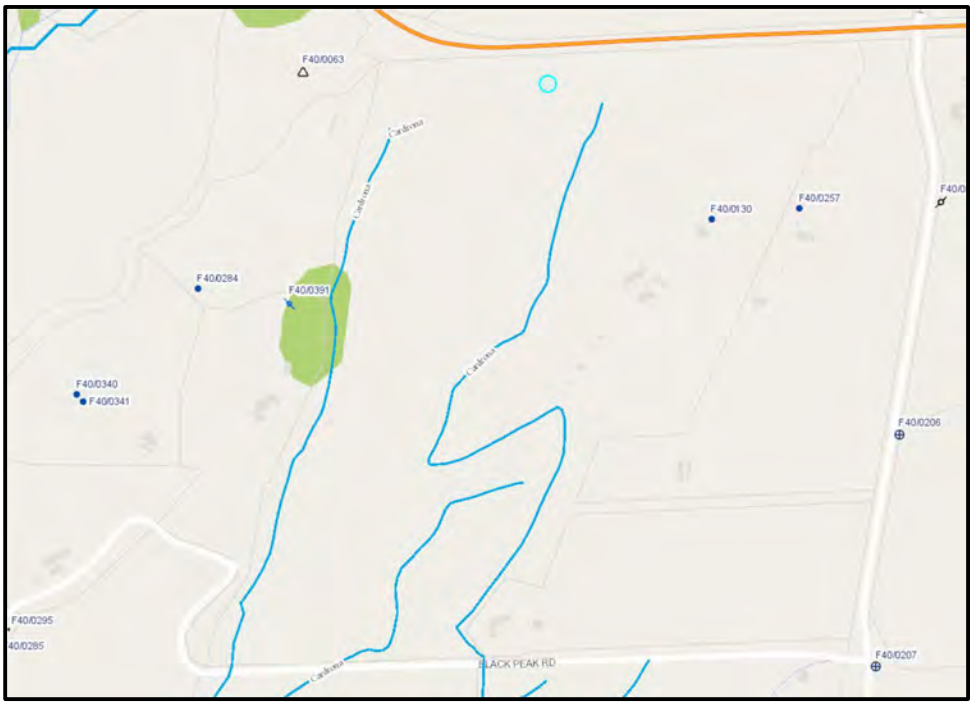


Figure 12: ORC map indicating existing bores and irrigation water races.

Two options have been considered regarding potable water to service proposed Lots 1 and 2:

Option 1: Propose a single bore to service all three sites (communal bore)

Option 2: Provide a bore supply for each lot individually

The preferred option is for each residential lot to have a dedicated water supply bore for domestic, stock and irrigation use. This is due to the recent Water Services Bill 2020 which increased the range of duties, obligations and new reporting requirements for small to medium sized rural water suppliers. Therefore, having an individual dedicated water supply bore will result in easier management and reporting. The location of the proposed water supply bores will need to be appropriately coordinated with the proposed on-site wastewater disposal, to ensure that a minimum clearance of 50m is achieved. As the on-site wastewater disposal treatment also needs to be appropriately coordinated based on the location of the future dwelling on the building platform, the location of the water supply bore has not been confirmed. A consent condition is volunteered in this regard.

7.5.2 Stormwater disposal

The site is not able to be serviced by any existing QLDC stormwater infrastructure. Stormwater runoff from the existing dwelling and farm sheds are discharged directly to the ground through localised soak pits. The infrastructure report notes that no specific stormwater treatment devices are necessary as the runoff is unlikely to

contain high levels of contaminants such as heavy metals or hydrocarbon. Access arrangements and the dwellings on the proposed platforms are unlikely to alter the existing runoff patterns. Roadside drainage swales and grassed areas will be used to provide soakage and to convey stormwater flows from the proposed accesses for the proposed building platforms on Lots 1 and 2.

With regard to stormwater from the dwellings, this will primarily reticulate roof runoff to water supply tanks. Hard surfacing associated with the future building platforms will need to be directed to a specifically constructed soakage gallery to dispose of runoff.

A site investigation undertaken by Geotago, appended within Appendix E of **Attachment [D],** has confirmed the soils are suitable for stormwater disposal by soakage to ground. The report confirms that stormwater runoff from building platforms can be managed through Low Impact Design (LID) with soakage to the ground via localised soak pits. It is noted that LID is a preferred option of stormwater disposal by QLDC standards. The report recommends that any soak pits are specifically designed to achieve LID as per QLDC standards. A consent notice is volunteered to be imposed to cover this off.

The effects of on-site stormwater drainage can be suitably managed in accordance with the Infrastructure Report contained as **Attachment [E]**, as such the adverse effects regarding stormwater disposal will be less than minor.

7.5.3 Wastewater disposal

The site is not able to be serviced by existing QLDC wastewater infrastructure, and the Infrastructure Report **Attachment [E]** also notes that there is not a reticulated gravity network available in the area. The existing dwelling on Lot 3 is currently being serviced via an on-site wastewater system (RM960516). It is also proposed to manage wastewater via an on-site disposal system for the future dwellings on proposed Lots 1 and 2. It is noted that the platform locations mean that any system will comply with Regional Water Plan Rule 12.A.1.4 including the requirement it be at least 50m from any surface water body being the Cardrona River.

The proposed wastewater infrastructure as recommended in the Geotago Report, will comprise of the following:

- A packaged plant home aeration type system with disposal of treated effluent to a sand-based discharge control bed.
- Indicative effluent disposal area (EDA) for Lots 1 and 2 that comply with minimum QLDC, ORC and AS/NZS1547 setback requirements.
- Site/dwelling specific detailed design for the on-site wastewater disposal system is required and the indicative EDA for Lots 1 and 2 is recommended to be checked during the building consenting process. A condition of consent is volunteered in this regard.

The Infrastructure report **Attachment [E]** concludes that the soils on the site have sufficient capacity to facilitate the disposal of effluent to land via sub-soil soakage methods. The presence of sensitive receivers in the wider vicinity (being groundwater and the Cardrona River) requires that the effluent receive treatment prior to discharge.

A condition of consent is volunteered for the matters above, and the effects of the onsite wastewater disposal can be managed through treatment so that no adverse effects on the environment will arise.

7.5.4 Firefighting water supply

At the time that the new dwellings are established, a new tank or tanks near or on the building platform will be provided to ensure that there is a firefighting reserve. There should be a minimum of 45,000 litres maintained at all times as a static firefighting reserve. In addition, vehicular access to the tank is to be maintained at all times and a hardstand area constructed adjacent to the tank to allow a fire appliance to park and pump from the tank. The ongoing requirements for the firefighting water supply can be addressed using a consent notice to ensure the requirement of rule 21.7.5 of the PDP (Stage 1 decisions version) are met. A consent notice condition is volunteered in this regard to ensure that no adverse effects will arise as a static firefighting reserve will be provided once dwellings are constructed on site.

7.5.5 Effects on irrigation scheme

Th irrigation rights are not held by a company, but by a syndicate of individual land owners (Syndicate 3291). The ORC water take consent is reference number RC99478. The subject site is the very last property at the end of the water race. Earthworks will not affect any other user of the irrigation scheme. The applicant has advised that no discussion is required with the other syndicate members.

7.5.6 Effects on power lines

The PDP planning maps show an Aurora distribution line crossing the site. Both platforms are located well away from the lines (approximately 35m for the Lot 1 platform and 48m for the Lot 2 platform) and meet the requirements of the New Zealand Electrical Code of Practice for Electrical Safe Distances 2001 (NZECP34:2001). The applicant has consulted with Aurora regarding the proposed subdivision and they have not expressed any concerns with the proposal.

7.6 Landscape and visual effects assessment

A landscape and visual effects assessment has been prepared and appended as **Attachment [G].** The landscape report meets the requirements of section 6.3 of the PDP regarding managing activities in RCL landscapes. It describes the existing landscape quality and character using physical, associative and perceptual dimensions. The site is located within the Priority Area 1: Cardrona River/ Mt Barker RCL.

7.6.1 Effects on landscape quality and character (adjacent ONL/F)

The site is not adjacent to an Outstanding Natural Feature or Landscape. The closest ONL/F to the site is Mount Iron which is approximately 1.4km from the closest location of the proposed building platform. The landscape report confirms that the location of the proposed platforms relative to Mt Iron is separated by topography and the proposal will not result in adverse effects on the Mt Iron ONF.

7.6.2 Effects on landscape quality and character (RCL)

The site is located within the Area 1: Cardrona River/Mt Barker Road RCL, identified within Chapter 3 Strategic Directions and the GIS web mapping application. Rural character areas are characterised by spaciousness, privacy and low frequency of visibility of residential dwellings and domestication. Earthworks and planting are proposed to minimise any adverse visual effects of domestication on the landscape.

The site exhibits characteristics of a pastoral landscape and surrounding lots average approximately seven hectares. The proposed lot sizes will be larger than what has previously been approved, with the smallest lot measuring 9.07 hectares. The landscape report confirms that this part of the Rural Upper Clutha Basin is relatively modified and occupied compared to other parts of the RCL, due to the presence of SH6, rural living properties and the location of the airport and Wanaka Town Centre. The rolling terrace-and-escarpment landforms mean that views are variable in length and truncated by landform and shelterbelts.

The landscape report confirms that the proposal will intensify rural living activity within the landscape, however the proposed building platforms will be very well setback from any public land or roads, and will spatially tie in with the rural living lots that are accessed from Black Peak Road. Building Platforms are clustered to one part of the site, which is well removed from public places, domestication will be contained within the curtilage area, and the remainder of the site will retain the large rural block to maintain the sense of openness and spaciousness. As such, it is considered that the resultant land use pattern will preserve the attributes and values of the existing landscape, and as such the proposal is considered to not result in adverse effects that are more than minor.

7.6.3 Effects on visual amenity

It is noted that adjoining neighbours have provided written approval as detailed in section 7.2 of this AEE, as such the effects on these neighbours has not been assessed. The landscape report **Attachment [G]** provides a plan of the context of the site, on which relevant viewpoints have been identified.

Morris Road

The landscape report confirms that a northbound user of Morris Road gains some views to the north-western area of the subject site, as they descend a slope towards the Black Peak Road intersection. However, it is noted that no changes are proposed to this north-western corner. With regard to the proposed activities, the landscape report confirms that amenity values that are enjoyed by users of Morris Road will not be affected by proposal, and views of the building platforms and curtilage areas will not be gained.

Black Peak Road

Regarding Black Peak Road, existing vegetation comprising of a dense belt of eucalypts and cypress which line the most part of the northern side of Black Peak Road, is proposed to be retained. The landscape report confirms that proposed building platform for Lot 1 can be viewed within a 130m stretch of Black Peak Road to the east of the existing shelterbelt. Black Peak Road is a private road which serves a number of rural living lots. It is noted that several landowners residing on Black Peak Road has given their written approval to the proposal. It is

considered that the stretch of Black Peak Road in which Lot 1 is visible is short and is passed quickly by residents at Black Peak Road.

It is proposed to conduct earthworks on Lot 1, to create a curved mound measuring 3m above the existing ground level. High native shrub/tree planting is proposed outside of this mounding with additional stands of deciduous amenity trees, which will bring a positive effect. This is illustrated in the Structural Landscape Plan appended as **Attachment [G]**. Whilst there will be effects with regard to the earthworks to create the mound (discussed in section 7.8.4 of this AEE), and through the incremental maturing of the proposed planting, these effects are temporary and the green and open-space form of aesthetic will be restored in the medium to long term. In addition, dense and varied native vegetation will characterise the northern edge of Black Peak Road. As such, it is considered that the adverse effects on the users of Black Peak Road once mitigation is complete will be less than minor.

State Highway 6

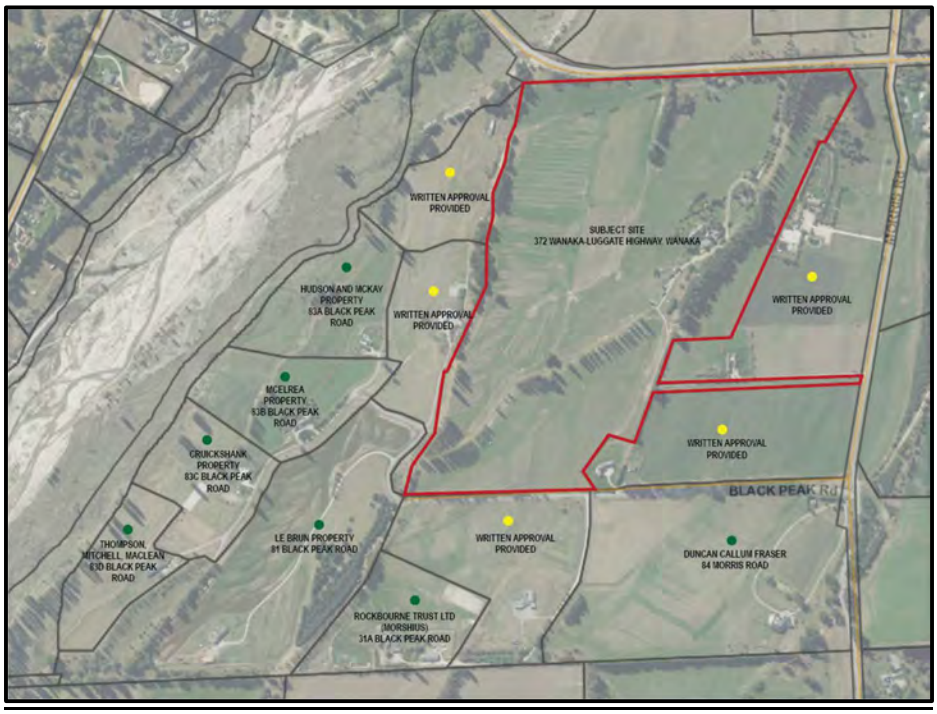
With regard to State Highway 6, long views onto the proposed building platform on Lot 2 are visible along a 100m stretch of road. It is noted that users travelling on State Highway 6 will be travelling at high speeds (80kmph-100kmph) and orientated in a forward direction, as such the views will be peripheral and difficult to notice in the relatively distant mid-ground. It is proposed to plant amenity trees to the north of the building platform on Lot 2. The landscape report confirms that the proposal will have no material effect on the visual amenity of users of SH6.

Users of the Cardrona River Corridor

The Cardrona River is located approximately 220m from the subject site at its closest point. The landscape report confirms that observer on the river is at a lower elevation that the subject site and will have little ability to view the proposed development. Parts of the river corridor may be more elevated and may gain some views of proposed Lots 1 and 2 amongst the views of other dwellings served by Black Peak Road. It is proposed to plant additional vegetation which will provide considerable screening, particularly in the summer months when the poplars located on the Cardrona River edge (refer Photograph C on Attachment **[G]**) are in leaf. The landscape report confirms that whilst the two dwellings will cumulatively add to the influence of human occupation, the two dwellings will be significantly less noticeable than the existing dwellings found on Black Peak Road. As such, it is considered that the visual amenity effects on users of Cardrona River will be less than minor.

Effects on neighbours

It is noted that several neighbours have provided written approval (section 7.2 of this report) and as such effects on these neighbours has not been assessed. The effects on the occupiers of the neighbouring properties marked with a green dot have been assessed as part of the landscape report.



These properties can look towards the southern edge of the subject site, which is significantly vegetated with the existing eucalypt and cypress tree shelterbelt. The proposal also includes mounding and additional planting to further screen the proposed platforms from these neighbours and mitigate effects. Mounding will appear natural through its curved in form, variable profile and will be planted by native vegetation. The landscape report confirms that the adverse effects of visual amenity on these properties will be less than minor.

Summary of landscape and visual effects

Overall, the landscape report confirms that two instances of rural living and human occupation, including new planting and naturally shaped mounding will appear and effects on views and visual amenity may be experienced only in the southwestern corner of the site. It confirms that minimal visibility will be noticeable from public places. Some visibility is parent to upper parts of a future dwelling on each proposed platform from the westerly locations, however, will be mitigated through planting and mounding. It is also noted that properties to the west of the subject site orient away from the site, and any affected views are considered secondary. As such, it is considered that the proposal does not result in adverse effects that are more than minor with regard to visual amenity.

7.7 Earthworks effects

All earthworks will be conducted in accordance with the comprehensive Environmental Management Plan (EMP) and Erosion and Sediment Control Plan (ESCP), appended as **Attachment [F]** and ESCP contained as Appendix 1 of the EMP. The area of earthworks proposed means the proposal will fall into the 'high' environmental risk categorised under the QLDC Guidelines for Environmental Management. The proposed works are anticipated to be completed within 3 months, therefore decreasing any adverse effects with regard to visual amenity values and nuisance. Earthworks will be conducted in stages to ensure the appropriate and effective management.

7.7.1 Nature and scale of earthworks

It is proposed to conduct a total of 52,700m^3 of earthworks, over an area of approximately 49,000m^2. The majority of earthworks will be conducted on the upper terrace being the location of proposed Lot 1. Earthworks comprise of topsoil site scrape to enable buildable areas for the building platforms, mounding for visual amenity mitigation measures and the upgrading of the existing farm track access. The intent of the earthworks is to locate the future built form on proposed Lot 1 at a lower elevation that the existing residential unit found on the adjoining allotment (Lot 3 DP 447731). This ensures that any adverse effects in relation to visual amenity from this adjoining Lot can be appropriately avoided and mitigated.

7.7.2 Environmental protection measures

An Environmental Management Plan (EMP) has been prepared by EnviroScope, whereby all earthworks will be conducted in accordance with this EMP. The measures and operational requirements are described within the EMP appended as **Attachment [G]**. Regular inspections and monitoring are proposed to be undertaken to ensure that the environmental management of the site can prevent any potential adverse effects with regard to the earthwork activity. Inspections are outlined in section 3 of the EMP appended as **Attachment [G]**.

All earthwork environmental protection measures are specifically designed in accordance with the GD05 standards. To summarise, the following measures are proposed on the site:

- Clean water diversions – provided by the existing border dyke which creates a natural clean water diversion between areas of earthworks
- Dirty water diversions – naturally fall into soakage zones
- Rock check dams – to reduce velocity of water within diversion channels and to capture some coarse sediment
- Standard silt fence – utilised in situations where exposed small catchment areas cannot be effectively captured by other controls. Will be utilised within proximity of existing water races and landscape mounds.
- Sediment soakage zones – the existing border dykes provides very large retention zones where overland flows naturally, and direct overland flows centrally where it can be contained and permeate through the subsoil. The EMP confirms that the soil sub surface characteristics have high ground permeability and can be effectively utilised for soakage.
- Temporary stockpile – located centrally and sheltered from the prevailing northerly wind. Temporary stockpiles will be a maximum height of 2m.
- All protection measures will be constructed in accordance with the GD05 standards.

Significant weather events will be forecasted and observed prior to works commencing daily, and all works will cease in sufficient time to ensure that erosion and sediment control devices will continue its function effectively during storm events.

7.7.3 Remedial works and revegetation

The ESC devices will remain in place until stabilisation of the site can be achieved. The EMP defines stabilisation as vegetative cover reaching 80% coverage across the site. The proposal will result in the earth worked areas; including mounding, being finished in a natural contour. The works will also be permanently stabilised, as they will either be used as driveways for vehicle access, or will be replanted in grass and planting as part to the mounding mitigation.

7.7.4 Effects on landscape and visual amenity values

The natural terraced landform has been utilised in the subdivision and earthworks design process, to ensure that the sense of spaciousness and the visual amenity values of the RCL can be maintained.

The earthworks are proposed to be conducted within 3 months, with additional time for remedial and revegetation works. The proposed timeframe of earthworks will ensure that any adverse effects of earthworks with regard to visual amenity is minimised. Re-grassing and planting of native vegetation on the mounding is proposed to rehabilitate and revegetate the earthworks. The planting and mounding will also mitigate any potential adverse effects with regard to visual amenity.

Overall, subject to works being conducted in accordance with the EMP, the actual and potential effects from earthworks can be managed to avoid adverse effects on the environment.

7.7.5 Effects on land stability, soil erosion and flooding

The proposed building platforms will be located on level topography and the geotechnical report in **Attachment [D]** confirms that the existing ground conditions can provide a safe and stable building platform and is remote from slopes which are prone to instability. The report concludes that there is a low to negligible risk of failure over the lifetime of the dwelling with regard to land stability.

In addition, the report notes that the soil density, river deposits and loess material overall do not comply with NZS3604 Good Ground. However, it is anticipated that engineered fill be placed in accordance with NZS4431 to achieve 300kPA geotechnical Ultimate Bearing Capacity. A condition of consent is volunteered in this regard.

No effects are anticipated in this regard as the site is not identified in Council's hazards register as land with a risk of instability, erosion or flooding.

7.7.6 Effects on water bodies

The eroded gullies down from the Cardrona River are not located in immediate proximity of the works area (620m from the closest point of earthwork area). There are no permanent water bodies located on the site or adjoining the earthwork area. A standard silt fence will be utilised within close proximity of existing water races/border dykes. It is noted that these border dykes are controlled manually and are not a consistently flowing channel.

The EMP also details that any waters discharging the site boundaries must meet the following criteria:

Parameter:	Discharge Criteria:
Total Suspended solids	< 50 mg/L Total Suspended Solids
Turbidity	< 100 NTU[3]
Clarity	No conspicuous change in the colour or visual clarity.
pH[4]	6.5 – 8.5
Hydrocarbons or tannins	No visible trace
Waste	No waste or litter visible

Measures will be deployed to ensure that earthworks will not result in adverse effects on water quality, as detailed in section 6.3 of the EMP. As such no adverse effects on water bodies are anticipated to result subject to adherence to the EMP.

7.7.7 Effects on sensitive receptors

Noise and vibration

Due to the rural nature of the area, the neighbouring properties are not in immediate proximity to the earthwork areas, that they will not be adversely affected by noise or vibration. Several surrounding neighbours have provided written approval for these works to be undertaken, appended as **Attachment [H]** and discussed in section 7.2 of this AEE. To further mitigate noise and nuisance effects, the hours of construction will comply with the New Zealand standards *NZS 6803:1999 Acoustics – Construction Noise* and the noise limits specified under Rule 36.5.13 of the QLDC PDP. The rules and standards allow for significant noise between the hours of 7:30am – 6:00pm Monday – Saturday. No works are to be undertaken on Sunday or Public Holidays. This is further discussed in section 8.3 of the EMP appended with this application.

Adverse effects with regard to vibration is not anticipated to occur. A complaints procedure has also been established as part of the EMP. The earthworks will be conducted in accordance with the EMP prepared by Enviroscope, and the effects of noise will be managed appropriately through conditioned hours of operation for construction works.

Dust

Earthworks also have the potential to impact sensitive receptors through the generation of dust. In this case, the EMP notes that whilst there are some surrounding established residential properties, these receptors are not in immediate proximity to the area of works. Full detail of management measures can be found in section 5.4 of the EMP. To summarise, the following measures will be deployed to ensure dust generation onsite is minimised:

- Stage works to minimise soil exposure timeframes
- Revegetate disturbed areas progressively throughout construction and following completion all earthworked areas will be sown with grass, landscaped as per Structural Landscape Plan or stabilised by erosion matting
- Dust suppression using recycled water (from sediment retention devices), by water trucks or other methods

- Works will cease in the event of high winds until favourable conditions return
- Erect dust fences
- Only designated access points and haul routes will be used, and site access to be constructed in accordance with GD05
- A speed limit of 20km/hr
- Rumble grids and/or wheel washes to be provided at exits to reduce tracking of soil onto external roads
- Temporary stockpile – located centrally and sheltered from the prevailing northerly wind. Temporary stockpiles will be a maximum height of 2m
- Long standing stockpiles (greater than 6 weeks) shall be seeded or mulched to provide wind and erosion protection

As such, no adverse effects are anticipated to result subject to adherence to the EMP.

7.7.8 Effects on cultural and archaeological sites

The site has not been identified as a site of significance to iwi (wahi tupuna), or a site with cultural, heritage or archaeological significance. If an item of significance is found during earthwork activities, all works will be undertaken in accordance with the obligation of the *Heritage New Zealand Pouhere Taonga Act, 2014* and in accordance with the Heritage New Zealand Archaeological Discovery Protocol. As such, effects on cultural or archaeological sites are not relevant to this application.

7.7.9 Effects of earthworks on the natural character of wetlands, lakes and rivers and their margins

No wetlands, lakes and rivers are within proximity of the proposed subdivision and development. The closest waterbody; being Cardrona River, is located 620m away from the site boundary. Therefore, no adverse effects are anticipated in this regard.

7.8 Construction Effects

7.8.1 Construction Traffic, Access, Parking and Noise

There will be construction noise effects arising from the required earthworks, and when a future residential dwelling is constructed within the two building platforms. Given the distance to the nearest residential units, and subject to standard conditions managing construction noise including controls on construction hours, actual and potential noise effects are not significant.

Furthermore, all persons in proximity to the property has provided their written approval, and no persons beyond the immediate neighbours will be adversely affected by construction noise.

The existing farm track access will be utilised for the purpose of vehicle access to the site. A large grade aggregate >50mm is recommended to be installed at the site access point to reduce the tracking of sediments onto Morris Road, specifically during construction works.

7.9 Natural Hazard Effects

The site of the two proposed building platforms on Lots 1 and 2 are not identified in Council's online hazard mapping as being subject to natural hazards. A geotechnical report has been prepared by Geotago as Appendix E of Attachment **[E]** confirms that existing ground composition within the vicinity of the proposed building platforms on Lots 1 and 2 consists of a thin layer of topsoil, underlain by 300-700mm of loess, overlying free draining coarse river gravels. River deposits found on the site meet the criteria of NZS3604 Good Ground and such will provide a geotechnical Ultimate Bearing Capacity of 300kPA, however it is noted that the loess material does not comply with the standard. It is anticipated that engineered fill will be placed in accordance with NZS4431 which will achieve 300kPA, and as such will be able to support building platforms.

A condition of consent is volunteered in this regard. As such, no adverse effects from natural hazards are anticipated.

7.10 Tangata Whenua, biodiversity and geological values

The subject site has not been identified as a site of significance to iwi, and in the event that earthworks uncover any items of significance, all works will be undertaken in accordance with the obligation of the *Heritage New Zealand Pouhere Taonga Act, 2014* and in accordance with the Heritage New Zealand Archaeological Discovery Protocol.

There are no biodiversity or geological values of significance.

As such, no adverse effects regarding Tangata Whenua values, geological or geomorphological features is anticipated as a result of the proposed subdivision and development.

7.11 Cumulative Effects

A cumulative effect is an effect which arises over time or in combination with other effects. A cumulative effect is not the same as a potential effect. The Court of Appeal has held that:

> *A cumulative effect is concerned with things that will occur rather than with something which may occur, that being the connotation of a potential effect.*[2]

A cumulative effect will arise from the proposal because of subdivision for two additional allotments, however the *adverse* cumulative effect of an additional two building platforms and associated curtilage areas in this landscape will not be significant. Extensive mitigation is proposed to ensure that proposed building platforms are mitigated from the views of surrounding public places and neighbours. The wider area comprises lot sizes averaging at approximately 7 hectares. The proposed subdivision and building platforms will not further degrade the landscape

[2] Dye v Auckland Regional Council [2002] 1 NZLR 337 (CA)

quality, character and visual amenity values of the surrounding area. A sense of spaciousness and openness is maintained by ensuring that a viewshaft is maintained across the entire site.

7.12 Reverse Sensitivity effects

There are no known activities in the vicinity that cause objectionable effects that could be complained about by future occupiers of the building platforms. The proposed activity (additional building platforms) with large areas of open space for rural activities are compatible with the nature of the surrounding activities.

7.13 Staging effects

The requested staging will allow title for Lot 3 (containing the fully serviced existing residential unit) to issue before Lots 1, 2 and 4, which require more significant works to complete access, services and mitigatory earthworks. No adverse effects are anticipated as a result of the staging.

7.14 Positive Effects

The proposed development will have the following positive effects:

- Enabling the applicant to provide for their social and economic well-being through selling proposed Lots 1 and 2 which are being allocated to family members.
- Enabling the applicant to continue to use the land as their primary residential allotment which can also be utilised for rural activities on a site that is, in total, too small to be an economically viable standalone agricultural unit, and ensure the upkeep of the land.
- A small increase to the volume of housing stock available in the Queenstown Lakes district.
- Planting of indigenous vegetation on the site as per Structural Landscape Plan.
- Provides for lot sizes which are decent in size for low intensity farming which maintains the landscape character of the surrounding areas.

8. Notification Assessment

Public notification is volunteered by the applicant.

9. Policy Framework

9.1 Operative Regional Policy Statement (1998)

Section 104(1)(b)(v) requires a consent authority to have regard to any regional policy statement or proposed regional policy statement. The Operative Regional Policy Statement 1998 (ORPS) has now been revoked[3].

9.2 Proposed Otago Regional Policy Statement (2021)

The ORC notified its Proposed Regional Policy Statement ("PRPS") on 26 June 2021 and the submissions period closed on 3 September 2021. This policy statement has yet to progress through the submission and hearing process, and as such less weight can be given to this RPS.

The proposed RPS expands on the purpose of the RMA and prioritises environmental, health and safety and social, economic and cultural well-being needs into order. IM-P2 – Decision priorities lists the priorities as the following:

IM-P2 – Decision priorities

Unless expressly stated otherwise, all decision making under this RPS shall:

(1) Firstly, secure the long-term life-supporting capacity and mauri of the natural environment,

(2) Secondly, promote the health needs of people, and

(3) Thirdly, safeguard the ability of people and communities to provide for their social, economic, and cultural well-being, now and in the future.

The proposal has taken into account these priorities, by ensuring that all works will not compromise or degrade the life-supporting capacity and mauri of the natural environment. By enabling this proposal, the proposal will result in a benefit with regard to social, economic and cultural well-being of people.

Objectives and policies MW-O1, P1 and P2 relates to the principles of Te Tiriti O Waitangi and Treaty Obligations. It is noted that the site is not located within a site of significance to Iwi or identified as Wahi Tupuna in the GIS web mapping application. The Landscape Report notes that the Cardrona and Clutha River corridors were important in relation to pre-colonial travel through the district. The proposal seeks to ensure that views from public places are minimised as much as possible and an assessment of effects on the environment, as it relates to views from the river corridors has been assessed and discussed in Section 7.6 of this report. Policy LF-WAI-P3, LF-VM-O2, LF-LS-O12, LF-LS-P16, LF–LS–P21 relates to the Integrated Management/Ki Uta Ki

[3] Otago Regional Policy Statements: https://www.orc.govt.nz/plans-policies-reports/regional-plans-and-policies/otago-regional-policy-statements

Tai and the vision for Clutha Mata-au FMU, which seeks to manage the use of freshwater and land in accordance with tikaka and kawa using an integrated approach, and to ensure that land uses contribute to achieving environmental outcomes for freshwater. All works proposed has taken into consideration the risks that may result, especially to surrounding waterbodies and recognises the interconnectedness between the mountains, land and water. The proposal has been thoroughly considered and will not compromise or degrade the health of the surrounding water bodies, and seeks to minimise soil erosion and any risk associated with sedimentation in waterbodies. The proposal ensures that earthworks are managed appropriately by conducting earthworks in stages, and as such aligned with LF-LS-P17 and LF-LS-P18. Whilst the stormwater and wastewater services on the subject site are yet to be determined (and condition volunteered in this regard), the storm and waste water services will be designed appropriately and operated in accordance with best practice standards aligned with LF-FW-P15. This will ensure that storm and waste water services will not degrade the health of waterbodies including sources of drinking water surrounding the site. The proposal seeks to locate two additional residential building platforms for residential activities on the subject site, however will ensure that the remainder of the site is retained as open space for rural activities. This is aligned with LF-LS-O11 which seeks to ensure that Otago's soil resources are safeguarded. The subdivided land is considered to be large enough to enable rural activities such low-intensity farming or equine related activity on site.

9.3 Partially Operative Regional Policy Statement (March 2021)

Of the key themes identified in the PORPS, Chapter 1 (Resource Management in Otago is Integrated), Chapter 3 (Otago has high quality natural resources and ecosystems), and Chapter 4 (Communities in Otago are resilient, safe and healthy) are relevant to the proposal. Noting that the PORPS is high level, and given effect to through the PDP, brief comments in respect of the provisions and the proposed development are set out below:

Objective 1.1 seeks to ensure that resources are used sustainably and promotes economic, social and cultural wellbeing for its people and communities. The proposed subdivision provides for the economic and social wellbeing of the applicant and any future owners, by enabling the creation of two additional building platforms suitable for housing needs whilst maintaining rural character.

Policy 3.1.3 as it relates to water allocation and use, seeks to manage the allocation and use of freshwater. The East Cardrona Gravel Aquifer has capacity to service additional residential dwellings. It is proposed to establish two additional building platforms with private bores to service each allotment.

Policy 3.1.7(a)(iv) as it relates to soil values, seeks to maintain or enhance soil function as a buffer or filter for contaminants resulting from human activities. Soils are anticipated to be utilised for the disposal of effluent to land via sub-soil soakage methods. Proposed wastewater system will ensure that effluent is treated prior to the disposal to land.

Policy 3.2.4(c) seeks to protect, enhance or restore outstanding natural features and landscapes by avoiding, remedying or mitigating adverse effects. The site is not located within an ONL or ONF.

Objective 4.1 relates to natural hazards and to ensure that potential risk to people and properties are minimised. The subject site has been identified with low liquefaction risk in Council's GIS. The proposal is not likely to exacerbate any hazard event, the impact on people and properties with regard to hazards is low.

Policy 5.3.1(e) seeks to minimise the subdivision of productive rural land into smaller lots that may result in a loss of its productive capacity. It is proposed to subdivide into four allotments, three for residential purposes and one for the purpose of access. The three allotments for residential purposes remain substantial in size so that low intensity farming can still operate.

9.4 Operative District Plan

The Council must have regard to the relevant objectives, policies and assessment criteria of the ODP. At a high level, it is also considered that less weight should be given to the ODP objectives and policies now that the PDP provisions are well advanced and have past the 'decisions on submissions' stage. This approach has been accepted by QLDC Commissioners in RM190656 (in relation to the Wakatipu Basin Rural Amenity zone). As no rules are triggered under the ODP, there are no rules breached to apply these objectives and policies to. Nevertheless, a brief assessment follows.

9.4.1 District-wide Objectives and Policies

Nature Conservation Values

The site is currently predominantly used for pastoral activities and is not high in ecological value. Where planting is proposed it is primarily in indigenous species. The applicant and future landowners will continue to suppress weed species. The site is not identified in the PDP as having significant indigenous vegetation. Adverse effects on natural character are very limited, and additional planting will be predominantly in indigenous species suitable for area, therefore improving the overall ecological character and landscape amenity on the site. As such it is considered that the proposal is consistent with the objectives and policies relevant to nature conservation values, identified in ODP.

Policy 1: Future Development, Policy 4: Visual Amenity Landscapes, Policy 17: Land Use

The development is to occur within a section of terraces which is not highly visible from public places and is an area that has potential to absorb change without detracting from landscape and amenity values. The Landscape Assessment supports this and notes that a sense of openness felt by observers in the surrounding landscape will not be noticeably reduced as views will not be enclosed. The future built form will be screened by landscaped mounding and native vegetation. Effects with regard to visual amenity can be suitably mitigated through the Structural Landscape Plan. The planting proposed through the Structural Landscape Plan will enhance natural character and mitigate visual amenity effects as viewed from Black Peak Road and from adjoining dwellings. The proposal achieves these policies as adverse effects have been avoided, remedied and mitigated, and the new building platform will not be highly visible from adjoining roads or neighbouring properties. The landscaping proposed will enhance the natural character through planting of indigenous species and avoidance of additional

linear tree planting. The proposal achieves this policy as adverse effects have been avoided, remedied and mitigated, and the new building platforms and future built form will not be highly visible from public places. With regard to Policy 1 (a) –(c), the proposal avoids, remedies and mitigates the effects of the development on the landscape and visual amenity values of the district which are vulnerable to degradation in this location. This part of the district has some potential to absorb change without detracting from landscape and visual amenity values, and the proposal does not exceed that ability.

Policy 8: Avoiding Cumulative Degradation

Cumulative effects of the proposal have been extensively considered in the landscape assessment report (Attachment **[G]**). The density of development proposed (two additional building platforms, and one around an existing dwelling) will not increase to a point where the benefits of further planting and building are outweighed by the adverse effects on landscape values from over domestication. The proposal will achieve the policy as it avoids, remedies and mitigate the effects of the development on the landscape and visual amenity values of the district.

9.4.2 Rural General Zone Policies

Policy 1.1 requires the consideration of the district wide landscape objectives and policies. This assessment has been conducted above. The creation of two additional building platforms, and associated subdivision, is large enough to accommodate low intensity rural activities. This is consistent with the rural character of the area, and recognises the value of rural productive activities and associated landscape values of the area.

The building platforms and associated landscaping and earthworks have been comprehensively designed to avoid, remedy and mitigate the potential for adverse visual and landscape effects. The landscape assessment report has been completed which notes the proposal involves introducing human elements and activity, however the effects have been avoided, remedied and mitigated as required by the policy.

The two additional platforms have been carefully located in areas with the potential to absorb change. The platform on proposed Lot 1 is lowered into the landscape via earthworks allowing the future dwelling to be nestled into the landscape and not stand out. The visual coherence of the landscape will be preserved by landscape mounding, restricted building height and planting. The future platform on Lot 1 will not break a skyline, and ridgelines, hills and prominent slopes are not adversely affected. Any potential adverse effects which may arise from the construction of the building platforms and potential effects resulting from the future dwelling on Proposed Lots 1 and 2 have been avoided and mitigated through landscaped mounding and planting.

Overall, the proposed activity is consistent with the objectives and policies of the ODP Rural General Zone.

9.4.3 Subdivision and Development Objectives and Policies

The objectives of the Subdivision and Development chapter of relevance relate to servicing (Objectives 1 and 2). As discussed within the AEE, it is considered that the proposed subdivision can be appropriately serviced by water, wastewater, stormwater and energy telecommunications subject to conditions of consent in which specific designs and locations will need to be considered prior to the construction of the future dwellings. Various reports confirm

that the site has the capacity and capability to provide for these infrastructure services. The existing farm track will be utilised for access to the proposed Lots 1 and 2 as a shared access lot, which will minimise the number of accesses to the site.

9.5 Proposed District Plan (Consolidated Decisions Version)

9.5.1 Strategic Direction Objectives and Policies (Chapter 3)

Strategic objective 3.2.5.5 relates to RCLs and requires adverse effects on landscape character and visual amenity values from subdivision, use or development are anticipated and effectively managed, through policies and rules, so that landscape character is maintained, and visual amenity values are maintained or enhanced. The proposal has anticipated and effectively managed the adverse effects on landscape character and visual amenity values. Landscape character and visual amenity values will be maintained by the proposal.

Strategic policies 3.3.39 to 3.3.45, sets out the consideration of landscape character and visual amenity values with regard to landscape capacity. These matters have been fully addressed in the landscape assessment report in Attachment **[G]**.

The proposal includes proposed planting consisting of native vegetation, which will assist in wilding spread being avoided, consistent with policies 3.2.4 and 3.2.4.2 relating to the protection of natural environments and ecosystems, and the prevention of spread of exotic vegetation. The proposal achieves this strategic objective in that the development will not compromise the distinctive landscape of the Cardrona River / Mt Barker Road RCL. The development is nestled into the landscape with planting and mounding as mitigation measures, to ensure that the dominance of the landscape will remain, and therefore not contrary to Objective 3.2.5 (retention of the districts distinctive landscapes).

With regard to the platforms on proposed Lot 1 and 2, the proposal will achieve strategic objectives 3.2.5.5-3.2.5.7 in that the RCL will be protected from adverse effects, as the location of the additional two residential building platforms are within the capacity to absorb change. Furthermore, the landscape assessment provides confirmation the platform on proposed Lots 1 and 2 will be "minimally noticeable from public places" through landscaping and mounding, and "at most, effects in terms of views will be of a very low degree" (para. 51, Attachment **[G]**).

The proposal will not affect existing farming activities. Adjacent properties are not extensively farmed. The proposed subdivision still allows for a large portion of the allotment to be open and used for rural activities.

The landscape assessment report confirms that the Cardrona River/Mt Barker Road RCL has the capacity to absorb the change and the proposal will not materially degrade the landscape character and visual amenity values. As such, it is considered that the proposal is consistent with the objectives and policies of the PDP Strategic Directions chapter.

9.5.2 Landscapes – Rural Character (Chapter 6)

Policies 6.3.4.1, 6.3.4.4, 6.3.4.5, 6.3.4.6 and 6.3.4.8 are most relevant to the subject site being within the Rural Zone and the Rural Character Landscape and priority area. To summarise, the landscape provisions seek to ensure that landscape character is maintained and visual amenity values maintained or enhanced, incremental changes are considered, landscape character and visual amenity values are identified, development that is highly visible from public places or that forms a foreground to an ONL view should not be allowed to have adverse effects, and open landscape character should be maintained where it currently exists.

The proposal will not affect existing farming activities as the site and adjacent properties are not extensively farmed and will continue to be maintained as part of those adjoining residential properties, or in the case of the Lavender farm, a commercial recreation activity. The density of the proposed subdivision still allows for a large portion of the allotment to continue to be open and used for rural activities, and is of a density which is still appropriate for rural character. This is aligned with Objective 6.3.2 and Policies 6.3.2.1, 6.3.2.4 which seek to avoid urban development and subdivision to urban densities and to enable the continuation and contribution of low-intensity pastoral farming in the Rural Zones.

No indigenous vegetation is proposed to be cleared by this proposal. The landscaping proposed not only mitigate adverse effects on visual amenity, it also improves biodiversity through the regeneration of indigenous planting on proposed mounding and within curtilage areas. The proposed landscaping is compatible to the surrounding rural environment, will not compromise the landscape values of the Cardrona River/Mt Barker Road RCL and as such consistent with Policy 6.3.2.6 – 6.3.2.8.

The landscape assessment report confirms that there is a cumulative effect for two additional rural living type developments on the subject site. However, given that the proposed location of building platforms in an area able to absorb development, the proposal will not adversely affect the landscape character and wider landscape area context, aligned with Policies 6.3.4.3 - 6.3.4.5 and 6.3.4.10. The landscape report confirms that the proposal will not be prevalent or conspicuous, and as such the character will be maintained and not be degraded.

As such, it is considered that the proposal is consistent with the objectives and policies of Chapter 6 Rural Character.

9.5.3 Rural Zone Objectives and Policies (Chapter 21)

Objective 21.2.1 relates to a range of land uses which are enabled while protecting, maintaining and enhancing landscape, ecosystem services, nature conservation and rural amenity values. The landscape report confirms that although the proposal will intensify the presence of rural living in the area, the proposal will not result in the degradation of Rural Landscape character and amenity.

The proposal is sufficiently setback from road and internal boundaries, consistent with Policy 21.2.1.3, and the potential adverse effects on visual amenity and outlook from neighbouring properties are mitigated through landscape mounding, the existing shelterbelt adjoining Black Peak Road, and planting adjoining the mound. The

proposed platforms are also aggregated together on one part of the site, domestication contained within a specified curtilage area, and a shared access is utilised. The proposal is not considered to adversely affect the landscape character of the RCL and is compatible with the surrounding established residential activities, consistent with Objective 21.2.4 and Policy 21.2.4.2. A consent notice condition has been volunteered to ensure that adequate water for firefighting is provided at the time a dwelling is constructed on the building platforms, giving certainty that the proposal will be consistent with policy 21.2.1.9. As such, it is considered that the proposal is consistent with the objectives and policies of Chapter 21 Rural.

9.5.4 Subdivision and Development (Chapter 27)

The size and design of the subdivision creates an environment which enables residential activity within the defined curtilage area, and the allotments measure 9.1 hectares at a minimum, which is sufficient space for low intensity rural activities. The existing farm track will be utilised for access onto proposed Lots 1 and 2, therefore not creating any additional physical visual effects in this regard. All required services can be provided to the two additional platforms. As such, it is considered that the proposal is consistent with the objectives and policies of Chapter 27 Subdivision and Development.

9.6 Weighting of the Proposed and Operative Plans

A weighting exercise is only necessary where there is a difference between the ODP and PDP in respect of anticipated outcomes, which in turn lead to a differing outcome on the resource consent application under the decision-making framework. It is concluded that no difference in those provisions arises between the ODP and PDP. The proposal is acceptable relative to the relevant provisions of both the PDP and ODP. Accordingly, the Council does not need to undertake a weighting exercise.

10. Other Matters

Section 104(1)(c) of the Act permits Council to have regard to “any other matter the consent authority considers relevant and reasonably necessary to determine the application”. No other matters are considered relevant to this proposal.

11. Consultation

A pre-application meeting has held with QLDC however this related to a more extensive subdivision. The pre-application meeting notes are appended as Attachment **[A2].**

The applicant has consulted with and sought affected party approval from the immediately adjoining properties. Affected party approvals have been obtained and appended as Attachment **[H]**.

No other public consultation has not been undertaken for this application.

12. Conclusion

In considering whether to approve the application, the Council is required to have regard to any relevant provisions of any national policy statements, national environmental standards, regional policy statements, regional plans and district plans, "subject to Part 2". The Council is also required to have regard to the effects of the proposal on the environment. The proposed development will achieve the purpose of sustainable management under s 5 of the Act, including by reference to the other principles in Part 2 of the Act by:

- Enabling the Applicant to provide for their economic and social well-being through the development of two additional lots and two additional building platforms on a site, where low intensity rural activities can be conducted on the site, while at the same time;
- Avoiding, remedying and mitigating the adverse environmental effects of the proposal, specifically the landscape, visual amenity and rural character effects through design controls, earthworks and landscaping; and
- Enhancing the natural character of the site through the planting of native vegetation on the land.

The extensive mitigation provided including earthworks (mounding) and landscaping means that the proposed development will maintain and enhance amenity values in terms of section 7(c) and maintain and enhance the quality of the environment of this part of rural Wanaka (s.7(f)).

Attachments

Attachment [A1]: Form 9

Attachment [A2]: PA200115 - Pre-application meeting notes

Attachment [B]: Record of Title OT18D/262

Attachment [B1]: Consent Notice 5136378.3 (Transit New Zealand Act 1989)

Attachment [C]: Plans – proposed subdivision, earthworks and structural landscaping

Attachment [D]: Preliminary Environmental Site Investigation Report – Insight Engineering

Attachment [E]: Infrastructure report – Southern Land (including Geotechnical Report – Geotago.

Attachment [F]: Landscape and Visual Impact Assessment – Vivian+Espie

Attachment [G]: Earthworks Management Plan and Erosion and Sediment Control Plan – Enviroscope

Attachment [H1]-[H5]: Written Approvals

Attachment [I]: Volunteered Consent Conditions

From: Sarah Gathercole
Sent: Mon, 5 Oct 2020 12:07:36 +1300
To: 'Alice Burnett'
Subject: PA200115 – L Farrant - Pre-application meeting notes

Hi Alice,

Please see the below brief notes following our pre-application meeting:

Pre-application meeting	
Council Ref	PA200115
Date	5 October 2020
Attendees	For the applicant: • Alice Burnett, Planner, Davie Lovell-Smith Ltd • Andy Hall, Civil Engineer/Director, Davie Lovell-Smith Ltd • Louise Farrant, applicant • Simon Towns, applicant For Council: • Sarah Gathercole, Senior Planner, Resource Consents • Lyn Overton, Senior Land development Engineer, Resource Consents
Proposal	Seeking to subdivide property into 2 and 4ha blocks. Access to Lots 1 and 2 via the existing entrance to main property off State Highway. Access to Lots 4 and 5 via access from Morris Road. Proposed Lot 2 will be transferred to the neighbouring property via a boundary adjustment (which is why there is no platform proposed) and Lot 3 will likely be retained for some form of rural production purposes. Proposed Lot 3 contains existing farm buildings and a residential unit (but no building platform is proposed around the existing residential unit).
Site	372 State Highway 6, Luggate, Wanaka (Lot 1 Deposited Plan 27661)
Zoning	Operative District Plan (ODP): Rural General Proposed District Plan (PDP): Rural
Matters Discussed	<u>Engineering matters:</u> • The applicants have a share in the water race (and there is likely an agreement on the Record of Title relating to this), however this water would only be required for irrigation purposes. • There is currently one bore on the subject site and the applicant proposes to install additional bores through the Otago Regional Council for water for domestic purposes to service the proposed lots. • The site is shown as within LIC1 on the Council's Hazard Register Maps - may be prone to liquefaction in a seismic event. It is recommended that a Geotechnical report be provided with the application and this can also be addressed through the Site and Soils Assessment.

- Written approval from NZTA will be required. The applicant has already started discussions.

Planning matters:

- The Council is currently part way through a District Plan review. The proposal will require resource consent under the provisions of the ODP and PDP, although where a PDP rule has not been appealed we can treat is as operative under s.86F of the RMA.

- The most relevant sections of the ODP will likely be Sections 4, 5, 14 and 22 (if earthworks are proposed) https://www.qldc.govt.nz/your-council/district-plan/operative-district-plan

- The most relevant chapters of the PDP will likely be Chapters 3, 6, 21, 25 (if earthworks are proposed) and 28 https://www.qldc.govt.nz/your-council/district-plan/proposed-district-plan/appeals#annotated-appeals

- There is no minimum lot size specified for the zone, however the Rural General (ODP) and Rural (PDP) subdivision assessment matters and objectives and policies focus on maintaining visual amenity, character and rural productivity. Given the number of lots and the lot sizes proposed there is potential for the application to be publicly notified. As discussed, you may wish to lodge the application on a publicly notified basis to save time and money at the s.95 stage (in this case the Council would not need to assess the proposal for the purposes of notification). There is potential for the application to be refused if rural amenity and character can not be maintained. As discussed, some of this assessment will be dependent on the Landscape Assessment and Council's peer review.

- You may like to have a look at the process for other surrounding subdivisions which you can find on the Council's eDocs system https://edocs.qldc.govt.nz/Account/Login

- Any existing vegetation relied on for visual/landscape mitigation purposes will need to be on the subject site and if there are wilding species the Council is unlikely to want these to be protected in perpetuity (they may require gradual replacement with non-wilding species).

- If not proposing a residential building platform on every lot created for the purposes of containing residential activity it will be a Non-Complying activity under Rule 27.7.11 of the PDP. Therefore it may be beneficial to include a building platform on all lots (if being used for residential activity).

- National Environmental Standard for Assessing and Managing Contaminants in Soil to Protect Human Health – A PSI will be provided to address any HAIL activities.

- As discussed, it would be beneficial to obtain and provide the written approval of the adjacent neighbours with the application so that adverse effects on those persons can be disregarded https://www.qldc.govt.nz/media/gdff3mmy/qldc-affected-persons-approval-form-8a-oct2017.pdf

- Water race – the applicant advised that it does not meet the definition of river in the RMA (and the proposed lots are not less than 4ha) and therefore no considerations in relation to esplanade reserves/strips under s.230 RMA.

Please note that this pre-application feedback is based on the information provided by the applicant and the knowledge of the site at the time of the pre-application meeting. It is not a full and comprehensive assessment of the proposal, which will be undertaken after resource consent is submitted.

Please let me know if you think anything should be added / amended in these notes.

Happy to discuss further if you have any other questions..

Thanks

Kind regards,

Sarah Gathercole | Senior Planner | Planning & Development
Queenstown Lakes District Council
P: +64 3 441 0465
E: sarah.gathercole@qldc.govt.nz

QUEENSTOWN LAKES DISTRICT COUNCIL

RECORD OF TITLE
UNDER LAND TRANSFER ACT 2017
FREEHOLD

Search Copy

R.W. Muir
Registrar-General
of Land

Identifier **OT18D/262**

Land Registration District **Otago**

Date Issued 13 December 1999

Prior References

OT16B/180 OT16B/181

Estate Fee Simple

Area 40.4600 hectares more or less

Legal Description Lot 1 Deposited Plan 27661

Registered Owners

Ian Ferguson Farrant as to a 1/2 share

Rachel Helen Farrant and Louise Elizabeth Farrant as to a 1/2 share

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Interests

Subject to Part IV A Conservation Act 1987

Subject to Section 11 Crown Minerals Act 1991

872236.1 Easement Certificate specifying the following easements - 14.12.1994 at 11.26 am

Type	Servient Tenement	Easement Area	Dominant Tenement	Statutory Restriction
Convey water	Lot 5 Deposited Plan 24202 - CT OT16B/183	S-U-W-AC DP 24202	Lot 1 Deposited Plan 27661 - herein	Section 243 (a) Resource Management Act 1991
Convey water	Lot 5 Deposited Plan 24202 - CT OT16B/183	Y-Z DP 24202	Lot 1 Deposited Plan 27661 - herein	Section 243 (a) Resource Management Act 1991
Convey water	Lot 5 Deposited Plan 24202 - CT OT16B/183	R-S-T DP 24202	Lot 1 Deposited Plan 27661 - herein	Section 243 (a) Resource Management Act 1991
Convey water	Lot 5 Deposited Plan 24202 - CT OT16B/183	BA-BB-BC DP 24202	Lot 1 Deposited Plan 27661 - herein	Section 243 (a) Resource Management Act 1991
Convey water	Lot 1 Deposited Plan 27661 - herein	l-w DP 27661	Lot 1 Deposited Plan 24202 - CT OT16B/179	Section 243 (a) Resource Management Act 1991
Convey electricity	Lot 1 Deposited Plan 27661 - herein	d-v DP 27661	Lot 1 Deposited Plan 24202 - CT OT16B/179	Section 243 (a) Resource Management Act 1991
Convey electricity	Lot 1 Deposited Plan 27661 - herein	d-v DP 27661	Lot 2-3 Deposited Plan 27661 - CT OT18D/263	Section 243 (a) Resource Management Act 1991
Convey electricity	Lot 1 Deposited Plan 27661 - herein	d-v DP 27661	Lot 4 Deposited Plan 24202 - CT OT16B/182	Section 243 (a) Resource Management Act 1991
Convey electricity	Lot 1 Deposited Plan 27661 - herein	d-v DP 27661	Lot 5 Deposited Plan 24202 - CT OT16B/183	Section 243 (a) Resource Management Act 1991
Convey electricity	Lot 1 Deposited Plan 27661 - herein	d-v DP 27661	Lot 1 Deposited Plan 24165 - CT OT16A/1197	Section 243 (a) Resource Management Act 1991

Convey electricity	Lot 1 Deposited Plan 27661 - herein	d-v DP 27661	Lot 2 Deposited Plan 24165 - CT OT16A/1198	Section 243 (a) Resource Management Act 1991
Convey water	Lot 1 Deposited Plan 27661 - herein	h-u DP 27661	Lot 1 Deposited Plan 24202 - CT OT16B/179	Section 243 (a) Resource Management Act 1991
Convey water	Lot 3 Deposited Plan 27661 - CT OT18D/263	y-r DP 27661	Lot 1 Deposited Plan 27661 - herein	Section 243 (a) Resource Management Act 1991
Convey water	Lot 1 Deposited Plan 27661 - herein	h-u DP 27661	Lot 2-3 Deposited Plan 27661 - CT OT18D/263	Section 243 (a) Resource Management Act 1991
Convey water	Lot 1 Deposited Plan 27661 - herein	h-u DP 27661	Lot 4 Deposited Plan 24202 - CT OT16B/182	Section 243 (a) Resource Management Act 1991
Convey water	Lot 1 Deposited Plan 27661 - herein	h-u DP 27661	Lot 5 Deposited Plan 24202 - CT OT16B/183	Section 243 (a) Resource Management Act 1991
Convey water	Lot 1 Deposited Plan 27661 - herein	l-w DP 27661	Lot 1 Deposited Plan 24165 - CT OT16A/1197	Section 243 (a) Resource Management Act 1991
Convey water	Lot 1 Deposited Plan 27661 - herein	l-w DP 27661	Lot 2 Deposited Plan 24165 - CT OT16A/1198	Section 243 (a) Resource Management Act 1991
Convey water	Lot 1 Deposited Plan 27661 - herein	z-ab DP 27661	Lot 4 Deposited Plan 24202 - CT OT16B/182	Section 243 (a) Resource Management Act 1991
Convey electricity	Lot 4 Deposited Plan 24202 - CT OT16B/182	C-D DP 24202	Lot 1 Deposited Plan 27661 - herein	Section 243 (a) Resource Management Act 1991
Convey electricity	Lot 2 Deposited Plan 27661 - CT OT18D/263	v-f DP 27661	Lot 1 Deposited Plan 27661 - herein	Section 243 (a) Resource Management Act 1991
Convey water	Lot 4 Deposited Plan 24202 - CT OT16B/182	G-H DP 24202	Lot 1 Deposited Plan 27661 - herein	Section 243 (a) Resource Management Act 1991
Convey water	Lot 4 Deposited Plan 24202 - CT OT16B/182	AC-AD-AE-AF-AH DP 24202	Lot 1 Deposited Plan 27661 - herein	Section 243 (a) Resource Management Act 1991
Convey water	Lot 4 Deposited Plan 24202 - CT OT16B/182	AG-AF DP 24202	Lot 1 Deposited Plan 27661 - herein	Section 243 (a) Resource Management Act 1991
Convey water	Lot 2 Deposited Plan 27661 - CT OT18D/263	n-x DP 27661	Lot 1 Deposited Plan 27661 - herein	Section 243 (a) Resource Management Act 1991
Convey water	Lot 2 Deposited Plan 27661 - CT OT18D/263	u-j DP 27661	Lot 1 Deposited Plan 27661 - herein	Section 243 (a) Resource Management Act 1991
Convey water	Lot 5 Deposited Plan 24202 - CT OT16B/183	BB-BI DP 24202	Lot 1 Deposited Plan 27661 - herein	Section 243 (a) Resource Management Act 1991
Right of way	Lot 1 Deposited Plan 27661 - herein	A DP 27661	Lot 4 Deposited Plan 24202 - CT OT16B/182	Section 243 (a) Resource Management Act 1991
Convey telecommunications	Lot 1 Deposited Plan 27661 - herein	A DP 27661	Lot 4 Deposited Plan 24202 - CT OT16B/182	Section 243 (a) Resource Management Act 1991
Convey water	Lot 5 Deposited Plan 24202 - CT OT16B/183	BC-BE-BG DP 24202	Lot 1 Deposited Plan 27661 - herein	Section 243 (a) Resource Management Act 1991

5041484.1 Gazette Notice (2001/1044) declaring adjoining road (S.H. No 6) to be limited access road - 11.5.2001 at 9:31 am

5136378.3 Notice pursuant to Section 91 Transit New Zealand Act 1989 - 11.1.2002 at 11:39 am

Land Covenant in Easement Instrument 5734753.9 - 19.9.2003 at 9:00 am

7526149.5 Surrender of the right of way and right to convey telecommunications over part herein marked A on DP 27661 specified in Easement Certificate 872236.1 - 3.9.2007 at 9:00 am

Land Covenant in Easement Instrument 7526149.6 - 3.9.2007 at 9:00 am

Subject to a right (in gross) to convey telecommunications and computer media over part marked X, X1, X3 on DP 385106 in favour of Telecom New Zealand Limited created by Easement Instrument 7526149.9 - 3.9.2007 at 9:00 am

The easements created by Easement Instrument 7526149.9 are subject to Section 243 (a) Resource Management Act 1991

Subject to a right (in gross) to convey electricity over parts marked D & K and a right (in gross) to transform electricity over part marked D all on DP 447731 in favour of Aurora Energy Limited created by Easement Instrument 8938433.3 - 1.2.2012 at 11:59 am

The easements created by Easement Instrument 8938433.3 are subject to Section 243 (a) Resource Management Act 1991

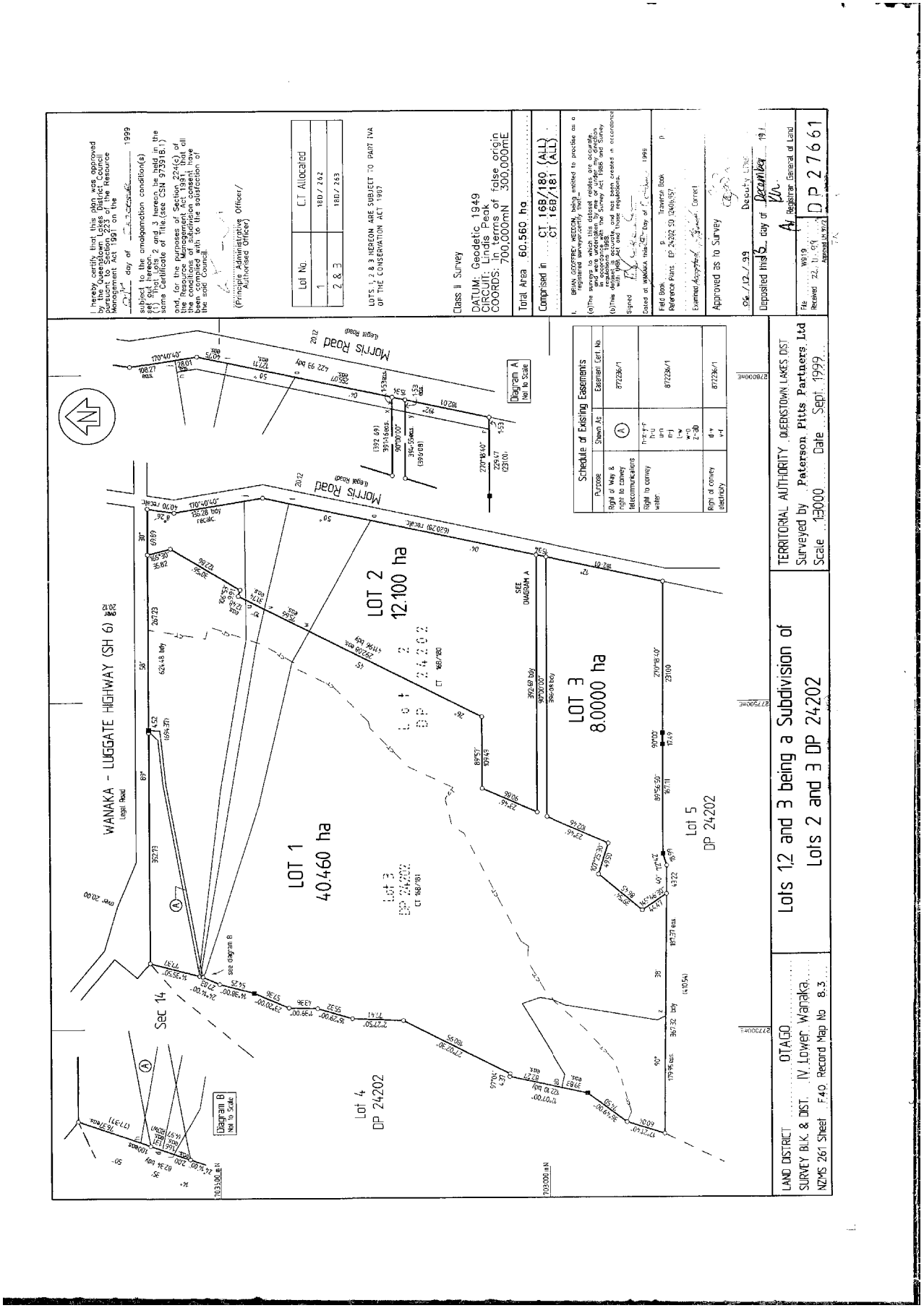
Subject to a right (in gross) to convey telecommunications and computer media over part marked D on DP 447731 in favour of Chorus New Zealand Limited created by Easement Instrument 8938433.4 - 1.2.2012 at 11:59 am

The easements created by Easement Instrument 8938433.4 are subject to Section 243 (a) Resource Management Act 1991

Subject to a right to convey water over part marked D on DP 447731 created by Easement Instrument 8938433.5 - 1.2.2012 at 11:59 am

The easements created by Easement Instrument 8938433.5 are subject to Section 243 (a) Resource Management Act 1991

12195341.1 Certificate pursuant to Section 417 Resource Management Act 1991 to Catherine Anne Walker, Ian Ferguson Farrant, Louise Elizabeth Farrant and Rachel Louise Farrant and to Martin Ross Dippie, Frances Mary Dippie and HGW Trustees Limited and to Christopher John Royds and to Hawkesbury Estates Limited and to Duncan Fraser and to Cardona Valley Farms Limited - 10.9.2021 at 10:08 am



NOTICE BY TRANSIT NEW ZEALAND AUTHORISING A CROSSING PLACE TO AND FROM A LIMITED ACCESS ROAD UNDER SECTIONS 90 AND 91 TRANSIT NEW ZEALAND ACT 1989

State Highway No:	6
Declared section of Limited Access Road:	Mt Iron to SH 8A declared a limited access road in NZ Gazette dated 03/05/2001 at page 1044
Description of the parcel(s) of land to which this Notice refers (described in this Notice as "the Property"):	Lot 1, DP 27661 18D/262

SPECIFICATION OF LOCATION OF CROSSING PLACE(S)

1 Pursuant to sections 90 and 91 of the Transit New Zealand Act 1989, this Notice records that at the crossing place(s) numbered **32** on Plan Number LA/13/006/893/A/01-08, vehicles may proceed to and from the Limited Access Road and from and to the property. A copy of the plan is available for inspection at the Transit New Zealand (Transit) Regional Office at Dunedin.

2 The crossing place(s) shall be located on the road frontage 270 metres from the preceding boundary.

Dated this 9 th day of January 2002

SIGNED for and on behalf of
TRANSIT NEW ZEALAND

.....

M D O'CAIN
Regional Manager - Dunedin
(acting pursuant to delegated authority)

ADVICE NOTES

(a) At the time of issue of this notice, the crossing place(s) is used as private.

(b) If the crossing place(s) was in existence at the time of the declaration of the State highway as a Limited Access Road, this notice does not confirm the acceptability of its safety or standard of design and construction for its current use. If the owner has any concerns in this regard, he/she should contact Transit.

(c) Transit has standards for the design and construction of crossing places to State highways, and requires the owner to adopt those standards when making any changes to the use, location or design of the crossing place(s).

(d) A separate written permission from the Regional Manager in accordance with section 51 of the Transit New Zealand Act 1989, is required before any work may be done on the State highway, other than routine maintenance which is to be done by the owner of the Property. This notice does not constitute that written permission.

(e) Transit wishes to emphasise that section 91 of the Transit New Zealand Act 1989 gives Transit the power to cancel the right to use a crossing place(s). This will only be exercised after the owner has been given the opportunity to discuss the matter with Transit. In summary, Transit's cancellation powers will apply in the following situations:

(i) when there is a change to the legal description of the Property; or

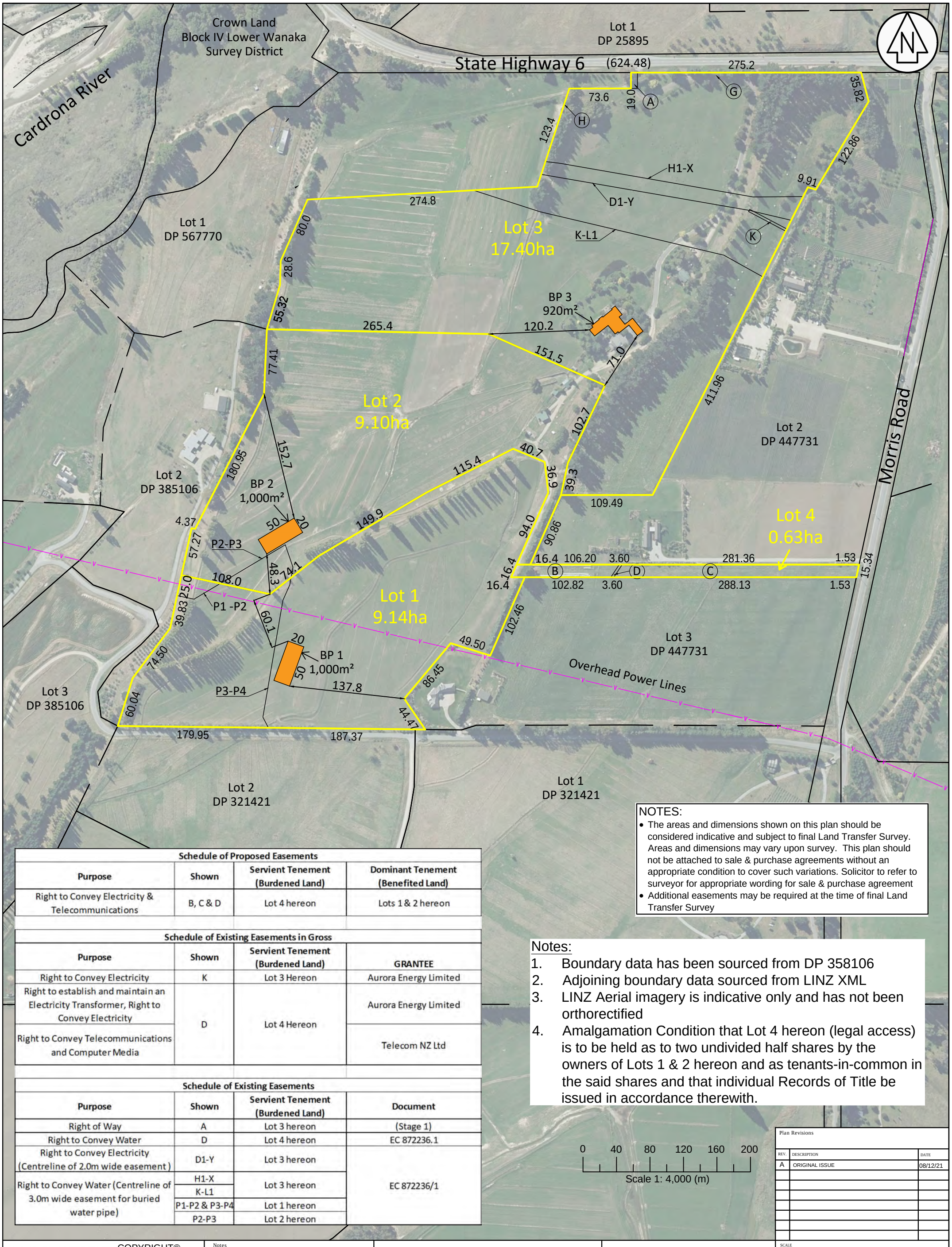
(ii) when there is a change in the location of the crossing place(s); or

(iii) when another crossing place(s) is authorised; or

(iv) where access to the Property is available from another road.

11·39 11 JAN 02 5136378.3
PARTICULARS ENTERED IN REGISTER
LAND REGISTRY OTAGO
FOR REGISTRAR-GENERAL OF LAND

REGISTRAR-GENERAL OF LAND NEW ZEALAND



NOTES:

- The areas and dimensions shown on this plan should be considered indicative and subject to final Land Transfer Survey. Areas and dimensions may vary upon survey. This plan should not be attached to sale & purchase agreements without an appropriate condition to cover such variations. Solicitor to refer to surveyor for appropriate wording for sale & purchase agreement
- Additional easements may be required at the time of final Land Transfer Survey

Schedule of Proposed Easements

Purpose	Shown	Servient Tenement (Burdened Land)	Dominant Tenement (Benefited Land)
Right to Convey Electricity & Telecommunications	B, C & D	Lot 4 hereon	Lots 1 & 2 hereon

Schedule of Existing Easements in Gross

Purpose	Shown	Servient Tenement (Burdened Land)	GRANTEE
Right to Convey Electricity	K	Lot 3 Hereon	Aurora Energy Limited
Right to establish and maintain an Electricity Transformer, Right to Convey Electricity	D	Lot 4 Hereon	Aurora Energy Limited
Right to Convey Telecommunications and Computer Media			Telecom NZ Ltd

Schedule of Existing Easements

Purpose	Shown	Servient Tenement (Burdened Land)	Document
Right of Way	A	Lot 3 hereon	(Stage 1)
Right to Convey Water	D	Lot 4 hereon	EC 872236.1
Right to Convey Electricity (Centreline of 2.0m wide easement)	D1-Y	Lot 3 hereon	EC 872236/1
Right to Convey Water (Centreline of 3.0m wide easement for buried water pipe)	H1-X	Lot 3 hereon	
	K-L1		
	P1-P2 & P3-P4	Lot 1 hereon	
	P2-P3	Lot 2 hereon	

Notes:

1. Boundary data has been sourced from DP 358106
2. Adjoining boundary data sourced from LINZ XML
3. LINZ Aerial imagery is indicative only and has not been orthorectified
4. Amalgamation Condition that Lot 4 hereon (legal access) is to be held as to two undivided half shares by the owners of Lots 1 & 2 hereon and as tenants-in-common in the said shares and that individual Records of Title be issued in accordance therewith.

0 40 80 120 160 200

Scale 1: 4,000 (m)

Plan Revisions

REV.	DESCRIPTION	DATE
A	ORIGINAL ISSUE	08/12/21

CAD and Production by
SOUTHERN LAND
DEVELOPMENT CONSULTANTS
Level 2 Brownston House, 21 Brownston St., Wanaka Ph: (03) 443 5577
Email: contact@southernland.co.nz www.southernland.co.nz

Notes

Warning

This Plan has been prepared for the purpose of a resource consent application only. It is not a precise survey plan. As areas and dimensions are likely to vary upon survey it should not be attached to sale & purchase agreements without an appropriate condition to cover such variations.

Any person using Southern Land drawings and other data accepts the risk of:

- using the drawings and other data in electronic form without requesting and checking them for accuracy against the original hard copy versions or with Southern Land directly;
- ensuring the information is the most recent issue.

Prepared for

Resource Consent

Drawing Title

Lots 1 to 4 Being a Proposed Subdivision of Lot 2 DP 567770

372 Wanaka-Luggate Highway, Wanaka

APPLICANT	Ian Ferguson Farrant and the Estate of MC Farrant
COMPRISED IN	RT 1018645
TERRITORIAL AUTHORITY	Queenstown Lakes District Council
LAND DISTRICT	Otago
TOTAL AREA	36.27 ha
DATE	24/08/21

SCALE	1:4,000 @ A3
DATUM & LEVEL	Lindis Peak 2000

REVISION	DRAWING REFERENCE	Sheet
A	Y4039_S2	1 OF 1

SURVEYED	DATE	CHECKED	DATE
		SA	08/12/21
DRAWN	DATE	APPROVED	DATE
SP	08/12/21	VW	08/12/21

SOUTHERN LAND
DEVELOPMENT CONSULTANTS

REVISION	DESCRIPTION	DATE
A	Resource Consent	07/12/2021

Level 2 Brownston House, 21 Brownston St., Wanaka, Ph: (03) 443 5577, Email: contact@southernland.co.nz, www.southernland.co.nz

Engineering Drawings
Terrace Design Earthworks
Design Contours

PREPARED FOR
Ian Ferguson Farrant
372 Wanaka-Luggate Highway
Wanaka

SURVEYED	DESIGNED	DRAWN	CHECKED	APPROVED	DATE
-	RC	RC	VW	VW	07/12/2021

SCALE: 1:1500 @ A3

DATUM & LEVEL: Lindis Peak 2000
LEVEL IN TERMS OF Dunedin Vertical Datum 1958
ORIGIN: #_DPXXX RL=XXX.XXm

DRAWING REFERENCE: Y4039
REVISION: A
SHEET: E201

Y4039 Point Clouds Tue Dec 7 08:01:26 2021

SOUTHERN LAND
DEVELOPMENT CONSULTANTS

REVISION	DESCRIPTION	DATE
A	Resource Consent	07/12/2021

Level 2 Brownston House, 21 Brownston St., Wanaka, Ph: (03) 443 5577, Email: contact@southernland.co.nz, www.southernland.co.nz

Engineering Drawings
Terrace Design Earthworks
Cut to Fill Depths

PREPARED FOR
Ian Ferguson Farrant
372 Wanaka-Luggate Highway
Wanaka

SURVEYED	DESIGNED	DRAWN	CHECKED	APPROVED	DATE
-	RC	RC	VW	VW	07/12/2021

SCALE: 1:1500 @ A3
DATUM & LEVEL: Lindis Peak 2000
LEVEL IN TERMS OF Dunedin Vertical Datum 1958
ORIGIN: #_DPXXX RL=XXX.XXm
DRAWING REFERENCE: Y4039
REVISION: A
SHEET: E202

Y4039 Point Clouds Tue Dec 7 08:31:16 2021

LEGEND

- Building Platform
- Curtilage Area
- Outline of Proposed Mounding Areas
- Existing Vegetation to be Retained
- Proposed Amenity Trees
- Proposed High Native Planting (refer to plant schedule)
- Proposed Low Native Planting (refer to plant schedule)

Existing vegetation to be retained:
1 - Poplar.
2 - Area of orchard trees. Large pine may be removed.
3 - Dense belt of eucalyptus and leyand cypress.

Proposed amenity trees:
To be a mix of Alder, Oak, Ash etc. to be 10L pot size minimum.

PLANT SCHEDULE

High species mix

Common Name	Botanical Name	Min Size	Spacings
South Island Kowhai	Sophora microphylla	1.5L	1.5m
Fragrant tree daisy	Olearia fragrantissima	1.5L	1.5m
Mingimingi	Coprosoma propinqua	1.5L	1.5m
Korokio	Corokia cotoneaster	1.5L	1.5m
Kohuhu / Black Matipo	Pittosporum tenuifolium	1.5L	1.5m
Tarata / Lemonwood	Pittosporum eugenioides	1.5L	1.5m

Low species mix

Common Name	Botanical Name	Min size	Spacings
Dwarf Toe Toe	Chionochloa flavicans	1.0L	1.5m
Mountain Flax	Phormium cookianum	1.0L	1.5m
Small-leaved Pohuehue	Muehlenbeckia complexa	1.0L	1.5m
Boxwood Hebe	Hebe odora	1.0L	1.5m
Koromiko / Hebe	Hebe salicifolia	1.0L	1.5m
Needle-leaved Mountain Coprosma	Coprosma rugosa	1.0L	1.5m
Red tussock	Chionochloa rubra	1.0L	1.5m

General Notes:
If any plant dies or becomes diseased, it shall be replaced with a specimen of a similar species within the next planting season. Appropriate pest protection shall be applied to areas of new planting such as a plastic guard or sheath.
At the time of planting, all grass cover within 0.5m if a new plant location shall be sprayed with a suitable weed spray to remove grass competition. Appropriate mulching shall be placed around all new plants. Twice yearly, all invasive weed species shall be removed from within 0.5 metres if all new plants. All new plants will be automatically irrigated with sprinklers or drippers for the first three years following planting.

REF: 1556.01 SLP
DATE: 13.12.21
SCALE: 1:2000 @ A3

Structural Landscape Plan

IAN FERGUSON FARRANT AND THE ESTATE OF MC FARRANT

vivian+espie
resource management and landscape planning
vivian+espie Limited Resource Management and Landscape Planning
PO Box 2514
Physical Address 1/211B Glenda Drive Frankton, Queenstown
Tel +64 3 441 4189 **Fax** +64 3 441 4190 **Web** www.vivianespie.co.nz

1 November 2021

Ian Farrant c/- Blair Devlin
Vivian + Espie Limited
PO Box 2514
Queenstown 9349

Re. Preliminary Environmental Site Investigation at 372 Wanaka-Luggate Highway, Wanaka

Our Reference: 21031

1 Introduction

Blair Devlin of Vivian + Espie Ltd, on behalf of Ian Farrant, requested that JKCM Ltd, trading as Insight Engineering (IE), undertake a preliminary environmental site investigation (PSI) of 372 Wanaka-Luggate Highway, Wanaka (herein referred to as "the site") as outlined in our Short Form Agreement (reference P21031, fully executed on 12 May 2021).

Figure 1 (under Appendix 1) indicates the location of the site, which we understand is proposed to be subdivided and two additional building platforms created. The proposed subdivision plans are provided in Appendix 2.

The purpose of this PSI was to assess the suitability of the site for suitability of the site for subdivision including residential building platforms, as required by the Resource Management (*National Environmental Standard for Assessing and Managing Contaminants in Soil to Protect Human Health*) Regulations[1] (herein referred to as the NES). This investigation was undertaken in general accordance with the Ministry for the Environment (MfE) *Contaminated Land Management Guidelines No. 1: Reporting on Contaminated Sites in New Zealand* [2].

2 Objectives of the Investigation

The objective was to determine if potentially contaminating historical activities pose an unacceptable risk to human health during and post site development.

2.1 Approach

IE completed the following scope of work to satisfy the investigation objectives:

2.1.1 Review of Site Information

Several sources were contacted for information relating to the sites past and present uses and to identify any other environmental issues which may be on record. This consisted of:

- Undertaking a site walkover to describe current site conditions and assess whether any visual or olfactory evidence of contamination is present at the site;

- Interviewing the current site owner, to obtain information relating to potentially contaminating activities that may have been undertaken at the site;
- Review of publicly available data describing the local geology and hydrogeology;
- Review of the Otago Regional Council Hazardous Activities, Industries and Bore Search database in terms of any property specific records of hazardous activities or industries that are held in their database of potentially contaminated sites;
- Reviewing the Queenstown Lakes District Council online property files to determine whether any records of contamination, or potentially contaminating activities, at the site are held in their database; and
- Reviewing publicly available historical aerial photographs and maps of the site and surrounding area;

3 Site Description

Site information is summarised in Table 1.

Table 1: Site Information

Location	372 Wanaka-Luggate Highway, Wanaka
Legal Description	Lot 1 DP 27661
Property Ownership	Ian Ferguson Farrant and the Estate of MC Farrant
Current Site Use	Rural residential and Agricultural (pastural grazing)
Proposed Site Use	Rural residential
Property Area	362,700 m^2 (36.27 ha)
Territorial Authorities	Queenstown Lakes District Council (QLDC) Otago Regional Council (ORC)
Zoning	Rural

The site setting is summarised in Table 2.

Table 2: Site Setting

Topography	The majority of the site is relatively flat. A terrace, with lower land on the western side and elevated land on the eastern side, is located in the eastern portion of the site. The western portion of the site slopes gently towards the north with minor localised undulations.
Local Setting	The site is located approximately 700 m east of the outskirts of Wanaka. The site is surrounded by agricultural / lifestyle block properties with low density residential dwellings in all directions.

Table 2:	Site Setting (cont.)
Nearest Surface Water & Use	The Cardrona River, used for recreational purposes and as a source of water for hydro-power generation as well as private irrigation schemes, is located approximately 220 m towards the west. The Cardrona River flows towards the north east where it joins the Clutha River / *Mata Au* near Albert Town. Lake Wanaka, used for recreational purposes and as a source of water for hydro-power generation as well as private irrigation schemes, is located approximately 3.6 km towards the west.
Geology	The GNS New Zealand Geology Webmap[3] indicates that the site is located within the "Late Pleistocene river deposits" geological unit of the Hawea Formation described as '*Unweathered to slightly weathered, well sorted, sandy gravel forming large outwash terraces in Clutha catchment*'. The surface material observed over the majority of the site during the walkover is broadly described as light brown sandy gravel.
Hydrogeology	According to a report completed by ORC[4], the site is located within the unconfined Wanaka-Cardrona Aquifer. Groundwater is considered likely to flow generally towards the Cardrona River, west of the site.
Groundwater Abstractions [5]	The following current or historical groundwater abstraction consents were issued for properties located at, or within 250 m of, the site: • Consent number 2005.222.V1 was issued in 2005 for Ian Ferguson Farrant to take and use groundwater for the purpose of pasture irrigation and single domestic supply until 1 November 2030. The location of the consent is recorded on the site, approximately 400 metres west of the turnoff of Morris Road, Wanaka. • Consent number 2003.315.V1 was issued in 2005 for Fiona Dawn Turner to take and use groundwater for the purpose of irrigating grapevines, providing stock water, and providing domestic water for two dwellings for a fixed term expiring 1 June 2028. The location of the consent is recorded as 100 metres south-east of the State Highway 6 bridge, Cardrona River. • Consent number RM14.165.01 was issued in 2016 for Joannes Franciscus Maria Zeestraten, Cornelia Geertruida Maria Zeestraten, Independent Trustees (Canterbury) Limited as trustees of the Zeestraten Trust to take and use groundwater from the Wanaka- Cardrona aquifer for the purpose of irrigation for a term expiring 11 April 2051. The location of the consent is recorded as approximately 300 metres south west of the intersection of Morris Road and Wanaka-Luggate Highway.

Table 2: Site Setting (cont.)

Groundwater Abstractions (cont.) [5]	• Consent number RM16.359.02 was issued in 2017 for Kenneth Llewellyn Roberts and Jaqueline Maree Roberts to take and use ground water for the purpose of irrigation for a term expiring 1 May 2030. The location of the consent is recorded as south east of the intersection of the Wanaka-Luggate Highway (SH6), Morris Road and Halliday Road.
Discharge Consents [5]	There are no discharge consents issued for properties located at, or within 250 m of the site.

3.1 Current Site Conditions

Claude Midgley of IE completed a site walkover inspection on 13 May 2021. Observations made at that time are summarised in Table 3 and photographs are presented in Appendix 3.

Table 3: Current Site Conditions

Site description	The majority of the site consists of fenced paddocks. A complex of buildings is located to the north east of the centre of the site. The main buildings include a dwelling with a garage, as well as a separate barn with garaging and a living area above. Sheds, lean-to barns, a livestock yard, two shipping containers, a vegetable garden, compost bays, a wood store and a green waste burning area are located south of the main dwelling. Additional livestock yards are located near to the north western corner of the site.
Visible signs of contamination	Several indicators of contamination were evident within the site boundaries: • Spilled or leaked fuel was present beneath an above ground fuel tank, south of the main dwelling; • A pesticides storage shed with a floor drain displaying chemical stains was located south of the main dwelling; • Small stockpiles of treated timber posts were located near to the north eastern corner of the site.
Surface water appearance	No surface water was present on the site during our visit.
Current surrounding land use	Mixed agricultural and low density rural residential land is located towards the north, west and south. Agricultural land (a lavender farm) is located toward the east.
Local sensitive environments	The Cardrona River and the surrounding riparian zone, located west of the site, is considered a sensitive environment.
Visible signs of plant stress	Apart from a small area of bare ground surrounding a drum used to burn waste paper, no visible signs of plant stress were noted.

3.2 Interview with Site Owner

Ian Farrant (*pers. comm.*) provided the following information:

- Mr Farrant purchased the property in 1994.

- The majority of the property has been used as grazing for deer and cattle. Top dressing fertiliser is applied to the agricultural land each season.
- Fuel is stored in above ground tanks, near to the tractor shed south of the main dwelling.
- Hazardous chemicals are stored in a purpose-built shed with a built-in interceptor tank beneath the concrete floor.
- Only green waste has been burned in the area south of the hazardous goods shed. Plastic and domestic waste is taken off site for disposal.
- An offal pit was located in the north eastern corner of the site. This has been covered with soil imported from a property on Lismore Street in Wanaka town centre (behind the ANZ bank). The property has been untouched since the 1860s.
- Additional fill from the site on Lismore Street was used to construct an earth bund to serve as a noise barrier along the northern property boundary.
- No rabbit poison has been used at the site, but a few people shoot rabbits periodically.

3.3 ORC Property Database

IE reviewed the ORC Hazardous Activities, Industries and Bore Search database[6] on 20 May 2021. The search confirmed that property is not currently on the ORC database, however the absence of information does not necessarily mean that no contamination impacts are present at the property.

The nearest contaminated site (HAIL.01280.01) is recorded approximately 430 m south west of the site. That site is listed as an unverified Hazardous Activities and Industries List[7] (HAIL) site for the use of persistent pesticides and a livestock dip or spray race.

3.4 QLDC Property File

The property file[8] contained documents relating to the subdivision consent application that resulted in a boundary adjustment, building consent applications and approvals for the existing dwelling, garden shed, hay barn/garage, an exterior toilet and alterations to the existing dwelling.

Apart from the presence of a septic tank for disposal of sewage to ground, the files did not contain information relating to potentially contaminating activities at the site and no known preliminary or detailed site investigations could be found on the property file.

3.5 Review of Historical Aerial Photographs and Maps

Photographs in the Crown Collection[9] and Google Earth[10], as well as topomaps on the MapsPast[11] website, have been reviewed to obtain information on the past uses of the site. Aerial photographs taken between 1956 and 2021, as well as maps created between 1939 and 2019, have been reviewed. Table 4 summarises the features visible in each image.

Table 4: Historical Aerial Photographs

1939 [11]	The site is part of a larger block that stretches between Morris Road in the east and the Cardrona Rover in the west. The property is labelled with '13' and '186,3,16'. No other significant features are visible on the map.
1949 [11]	There are no significant changes compared with the 1939 map.

Table 4 (cont.): Historical Aerial Photographs

1956 [9]	The site is undeveloped and appears to be used for agricultural (grazing or feed crop) purposes. Linear features resembling water races or field drains are visible in the north east, centre, north and south west of the site. A stand of mature trees is visible near to the north eastern corner of the site. A shelter belt is visible east of the centre of the site. . A potential pond area is visible approximately 40 m south west of the shelter belt.
1956 [9] (cont.)	Another stand of mature trees is visible in the south western corner of the site and two rows of newly planted trees extend towards the north and north east of that area. In the surrounding land, a few small buildings are visible on the north eastern side of Morris Road and the bridge crossing the Cardrona River appears to be under construction in the area north west of the site. There are no other significant features at the site or in the surrounding area.
1958 [9]	No significant changes are apparent in the surrounding area.
1964 [9]	Only the northern half of the site is covered by this image. No significant changes are apparent at the site or in the surrounding area.
1966 [9]	No significant changes are apparent in the surrounding area.
1968 [9]	The north eastern and southern portions of the site are not covered by this image. No significant changes are apparent in the surrounding area.
1969 [11]	A water race is marked on the site with a blue line. The Cardrona River is labelled west of the site. No other significant features are visible on the map.
1974 [9]	With the exception of the eastern edge of the site, which is an elevated area at the top of a terrace, a series of border dykes have been established across the site. No other significant changes are apparent at the site or in the surrounding area.
1976 [9]	Only the northern half of the site is covered by this image. Apart from border dykes being established in the eastern portion of the site, so significant changes are apparent at the site or in the surrounding area.
1979 [11]	Apart from a sub station being marked along Morris Road, east of the site, and a powerline being marked as crossing the site along a roughly east / west axis, there are no significant features at the site or in the surrounding area.
1982 [9]	No significant changes are apparent at the site or in the surrounding area.
1983 [9]	No significant changes are apparent at the site or in the surrounding area.
1984 [9]	No significant changes are apparent at the site or in the surrounding area.
1989 [11]	There are no significant changes compared with the 1979 map.
1999 [11]	Apart from the water race being extended across additional portions of the property, there are no significant changes compared with the 1989 map.
2003 [9]	The site has been developed with new buildings towards the east of the centre of the property. A track extends to the buildings from Wanaka-Luggate Highway. A few new trees have been planted near to the north eastern corner of the site. A shelter belt has been established north of the centre of the property. Trees have been removed from the south western corner of the property. No other significant changes are apparent at the site or in the surrounding area.
2005 [10]	No significant changes are apparent at the site or in the surrounding area.
2009 [11]	There are no significant changes compared with the 1999 map.

Table 4 (cont.): Historical Aerial Photographs

2011 [10]	The site remains unchanged. Two new buildings have been constructed on a neighbouring property near to the western property boundary. No other significant changes are apparent at the site or in the surrounding land.
2012 [10]	Apart from two new buildings being constructed on the neighbouring property towards the east, no other significant changes are apparent at the site or in the surrounding land.
2015 to 2021 [10]	Two new buildings are constructed east and south east of the site. A formal garden becomes established around the buildings towards the east of the site. No other significant changes are apparent at the site or in the surrounding land.
2019[11]	Apart from Black Peak Road being established between Morris Road and the site, there are no significant changes compared with the 1999 map.

3.6 Summary of Identified Hazardous Activities and Industries

The following activities noted on the MfE HAIL[7] have been identified during review of the site history:

Category A1 - Agrichemicals including commercial premises used by spray contractors for filling, storing or washing out tanks for agrichemical application.

> This category is represented by the application of top dressing fertiliser on an annual basis. The infrequent application of fertilisers is considered highly unlikely to result in significant risks to human health.

Category A11 - Pest control including the premises of commercial pest control operators or any authorities that carry out pest control where bulk storage or preparation of pesticide occurs, including preparation of poisoned baits or filling or washing of tanks for pesticide application.

> This category is represented by the storage and preparation of pesticides in the pesticide storage shed. The shed is labelled and locked, which indicates that the risks to human health are low.

Category A17 - Storage tanks or drums for fuel, chemicals or liquid waste.

> This category is represented by the above ground fuel storage tank which displayed evidence of spills on the ground beneath the tank. The area of impact is considered to be very limited and is therefore unlikely to pose a significant risk to human health.

Category A18 - Wood treatment or preservation including the commercial use of anti-sapstain chemicals during milling, or bulk storage of treated timber outside.

> This category is represented by the storage of treated timber posts near to the sheds, as well as near to the north eastern corner of the property. The limited areas where timber treatment chemicals could have been deposited to ground suggests that the risks to human health from these sources is low.

Category G3 – Landfill sites.

> This category is represented by the disposal of animal carcasses in an offal pit near to the north eastern corner of the property. The risk to human health from this activity is considered to be low, given the imported fill used to fill in the pit is unlikely to contain chemical contaminants.

According to Regulation 5 of the NES, the Regulations apply if a HAIL activity has been undertaken, or currently is being undertaken on the property.

4 Conceptual Site Model

A contamination conceptual site model, presented in Table 5, consists of three primary components to allow the potential for risk to be determined. These are:

- Source of contamination;
- Pathway to allow the contamination to mobilise; and
- Sensitive receptors which may be impacted by the contamination.

Table 5: Conceptual Site Model

Source	Pathway	Receptor
Heavy metals Petroleum Hydrocarbons Pesticides	Inhalation of dust Dermal absorption (direct contact) Ingestion of soil and / or produce grown in the soil	Maintenance / Excavation workers Site construction workers Future residents Future commercial workers
Acceptable risk to human health?	Earthworks associated with land development, as well as future rural residential use Acceptable: The potential risks to human health are not considered significant due to the limited sources. The physical separation of the proposed building platforms and the impacted areas, as well as the established use of the impacted areas for property management purposes (equipment storage) instead of food production indicates that critical exposure pathways such as ingestion of produce grown in impacted soil is highly unlikely.	

5 Conclusions

Information obtained as part of this investigation (refer to Section 3) indicates that the site has been used as pastoral grazing for cattle and deer. The current owner developed the property by building a dwelling, cottage and ancillary buildings to store farm equipment and agrichemicals between 1998 and 2007.

Evidence of five HAIL activities was found, but the potential impacts from the activities are not considered likely to pose a significant risk to human health under the proposed subdivision and future use scenarios. This is due to the physical separation of the proposed building platforms and the impacted areas, which are considered highly unlikely to be used for purposes that could result in long-term exposure of the future residents to the contaminants. For example, the agrichemical and pesticide storage shed is kept locked and is constructed on an interceptor tank. Although hazardous chemicals are present, the lack of an exposure pathway means that future residents are unlikely to come into regular contact with sufficient quantities of the chemicals to result in significant health impacts. Similarly, a small area of petroleum hydrocarbon impacted soil beneath an above ground fuel storage tank, or a small area where treated timber has been stored on the ground are not considered likely to be used on a regular basis for purposes that would result in significant health impacts, such as growing vegetables that make up 25% of the residents diet.

Given the small areas of impacted soil, it is also possible to excavate and dispose of the material without the requirement for a remediation action plan as the total volume is considered to be within the Permitted Activity criteria specified in NES Regulation 8(3)(d).

Based on the current contamination status of the site, given the potential sources identified, it is considered highly unlikely that there will be a risk to human health if the site is subdivided, then developed and used for rural residential purposes even if the impacted soil is not disposed of off-site.

6 Recommendations

It is recommended that the proposed subdivision, development and use of the land for rural residential purposes be allowed as a Permitted Activity under the NES[1], because the requirements of Rule 8(4) have been met.

If the Territorial Authority insist on the small areas of surface impact (beneath the fuel storage tank and beneath a stack of treated timber) being remediated, the activity can be undertaken as a Permitted Activity.

If any material showing signs of potential contamination (visual or olfactory indicators such as chemical odours or abnormal stains) is unearthed during the site development, work should stop immediately and a suitably qualified environmental practitioner should be engaged to assess the risk to human health prior to recommencing earthworks.

7 References

1. Ministry for the Environment 2012: Users' Guide National Environmental Standard for Assessing and Managing Contaminants in Soil to Protect Human Health
2. Ministry for the Environment 2011: Contaminated Land Management Guidelines No.1: Reporting on Contaminated Sites in New Zealand
3. GNS Webmap Institute of Geological and Nuclear Sciences 2013: 1:250,000 Geology. Viewed at: http://data.gns.cri.nz/geology/
4. Otago Regional Council 2011: Integrated Water Resource Management for the Cardrona River.
5. Otago Regional Council 2017: Otago Regional Council Resource Consent Database. Viewed at: http://data.orc.govt.nz/
6. Otago Regional Council 2020: Mapping Resource Hazardous Activities, Industries and Bores Search. Viewed at: https://maps.orc.govt.nz/portal/apps/MapSeries/index.html?appid=052ba04547d74dc4bf070e8d97fd6819
7. Ministry for the Environment 2011: Ministry for the Environment Hazardous Activities and Industries List.
8. Queenstown Lakes District Council 2021: eDocs Portal. Viewed at: http://edocs.qldc.govt.nz/
9. Local Government Geospatial Alliance 2017: Retrolens - Historical Image Resource Project. Viewed at: http://retrolens.nz
10. Google Earth v7.3.4.8248. Wanaka, Central Otago, New Zealand. -44.703286 ° lon, 169.181524° lat, Eye alt 1.82 km. DigitalGlobe 2021. http://www.earth.google.com. [November 2021]
11. Mapspast 2017: Current and Historical Topographic Maps (Topomaps) of New Zealand. Viewed at: http://www.mapspast.org.nz/

8 Limitations

i. We have prepared this report in accordance with the brief as provided. This report has been prepared for the use of our clients, Ian Ferguson Farrant, his professional advisers and the relevant Territorial Authorities in relation to the specified project brief described in this report. No liability is accepted for the use of any part of the report for any other purpose or by any other person or entity.

ii. The recommendations in this report are based on the ground conditions indicated from published sources, site assessments and subsurface investigations described in this report based on accepted normal methods of site investigations. Only a limited amount of information has been collected to meet the specific financial and technical requirements of the client's brief and this report does not purport to completely describe all the site characteristics and properties. The nature and continuity of the ground between test locations has been inferred using experience and judgement and it should be appreciated that actual conditions could vary from the assumed model.

iii. Subsurface conditions relevant to construction works should be assessed by contractors who can make their own interpretation of the factual data provided. They should perform any additional tests as necessary for their own purposes.

iv. This Limitation should be read in conjunction with the IPENZ/ACENZ Standard Terms of Engagement.

v. This report is not to be reproduced either wholly or in part without our prior written permission.

We trust that this information meets your current requirements. Please do not hesitate to contact the undersigned on 021 556 549 if you require any further information. The author is a Certified Environmental Practitioners (CEnvP) under the Environment Institute of Australia and New Zealand (EIANZ) accreditation system.

Report prepared by

Claude Midgley, CEnvP

Associate Environmental Scientist

APPENDIX 1

Figures

Description	Site Location	**Figure Number**	1
Project	Preliminary Site Investigation 372 Wanaka-Luggate Highway, Wanaka	**Date**	Nov-21
Client	Ian Ferguson Farrant	**Drawn by**	CM
Project Number	21031	**Approved by**	JK

APPENDIX 2

Proposed Subdivision Plan

Y4039_M1
SHEET 1 OF 1

DRAFT

H1-X
D1-Y
K-L1

Lot 1
DP 567770

Lot 3
17.40ha

274.8
80.0
28.6
55.32
265.4
151.5
77.41
123

BP 3
920m²

Lot 2
9.10ha

Lot 2
DP 385106

180.95
152.6
BP 2
1,000m²
4.37
75.8
50
20
57.27
P2-P3
149.9
74.1
115.4
40.7
36.9
39.3
102.7
109.49
94.0
90.86
16.4
106.20
3.60
102.82
B
D
108.0
25.0
P1 -P2
39.83
99.9
74.50
50
20
60.04
116.4
BP 1
1,000m²
P3-P4
179.95
187.37
Lot 1
9.14ha
102.46
49.50
Lot 3
DP 447731
Overhead Power Lines
86.45
44.47

Lot 2
DP 321421

Lot 1
DP 321421

0 20 40 60 80 100
Scale 1:2500 (m)

LEGEND
- Stake
- Warratah
- Site boundary
- Road Boundary
- Adjoining boundary

Notes:
1. Boundary data has been sourced from DP 358106
2. Adjoining boundary data sourced from LINZ XML
3. LINZ Aerial imagery is indicative only and has not been orthorectified

REVISION	DESCRIPTION	DATE
A	ORIGINAL ISSUE	XX/XX/XX

SOUTHERN LAND
DEVELOPMENT CONSULTANTS

Proposed Boundary and Building Platform Setout Lot 1 & 2
372 Wanaka-Luggate Highway, Wanaka

PREPARED FOR
Ian Ferguson Farrant and the Estate of MC Farrant

SCALE
1:2,500 @ A3

DATUM & LEVEL
Lindis Peak 2000

Level 2 Brownston House, 21 Brownston St., Wanaka, Ph: (03) 443 5577, Email: contact@southernland.co.nz, www.southernland.co.nz

CSNZ THE CONSULTING SURVEYORS OF NEW ZEALAND
A DIVISION OF THE NEW ZEALAND INSTITUTE OF SURVEYORS

SURVEYED	DATE	CHECKED	DATE
SP	24/09/21	X.X.	XX/XX/XX
DRAWN	DATE	APPROVED	DATE
SP	24/09/21	V.W.	XX/XX/XX

DRAWING REFERENCE: Y4039_M1
REVISION: A

APPENDIX 3

Site Photographs

Photo 1: Above ground fuel storage tank and hydrocarbon stains beneath it

Photo 2: Workshop portion of a barn with fuel storage containers

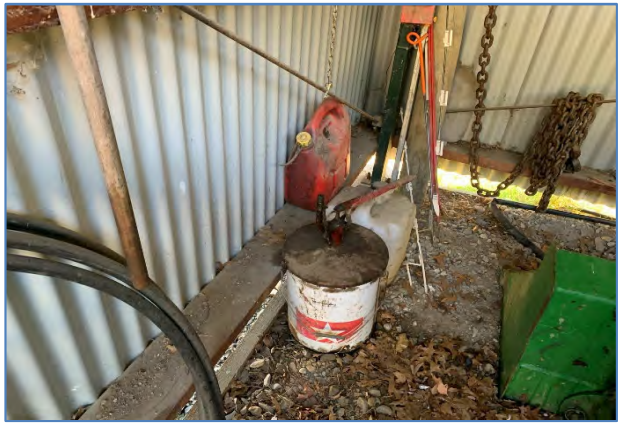


Photo 3: Grease and fuel stored in a barn

Photo 4: Equipment stored in a barn

Photo 5: Stacked treated timber adjacent to a barn

Photo 6: Waste incineration drum near to the barns

Description	Site Photographs	**Photos**	1 to 6
Project	Preliminary Site Investigation 372 Wanaka-Luggate Highway, Wanaka	**Date Taken**	13/05/21
Client	Ian Ferguson Farrant	**Taken by**	CM
Project Number	21031	**Approved by**	JK

Photo 7: Hazardous goods shed

Photo 8: Chemical stains and drain inlet on the concrete floor of the hazardous goods shed

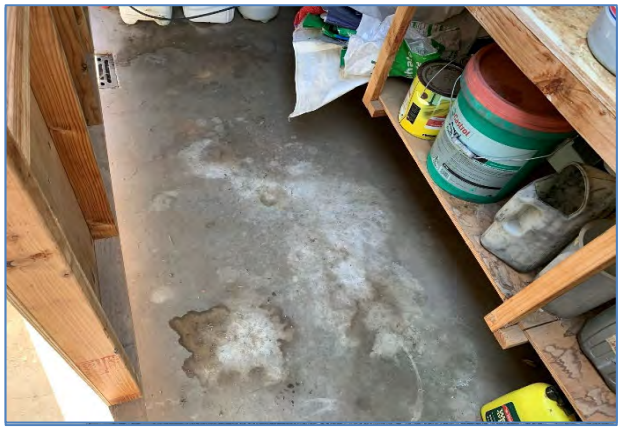


Photo 9: Chemical stains on the concrete floor of the hazardous goods shed

Photo 10: Agrichemicals and pesticides stored in the hazardous goods shed

Photo 11: Stacked treated timber in the north eastern corner of the site

Photo 12: Stacked treated timber in the north eastern corner of the site

Description	Site Photographs	**Photos**	7 to 12
Project	Preliminary Site Investigation 372 Wanaka-Luggate Highway, Wanaka	**Date Taken**	13/05/21
Client	Ian Ferguson Farrant	**Taken by**	CM
Project Number	21031	**Approved by**	JK

SOUTHERN LAND
DEVELOPMENT CONSULTANTS

Level 2, Brownston House
21 Brownston Street
Wanaka 9305
Ph: (03) 443 5577
Email: contact@southernland.co.nz

Ian Farrant and the Estate of MC Farrant
C/- Blair Devlin
Vivian Espie
1/211B Glenda Drive
Queenstown 9300
New Zealand

19 October 2021 Job Ref: Y4039

Dear Blair,

372 Wanaka-Luggate Highway (Lot 2 DP 567770) Subdivision Infrastructure Report

1. Introduction

1.1. General

Southern Land Ltd has been engaged by Ian Ferguson Farrant and the Estate of MC Farrant to undertake an assessment of the existing infrastructure in the vicinity of 372 Wanaka-Luggate Highway, Lot 2 DP567770 (the site) to support a resource consent application for subdividing the property into four new lots (three residential lots and one access lot).

The site is currently legally described as Lot 1 DP27661 but a resource consent (RM210780) for a boundary adjustment with the adjacent property Lot 1 DP 385106 was granted on 24th September 2021. Once the boundary adjustment has been completed, the site will be legally described as Lot 2 DP 567770. This report has been prepared on the post boundary adjustment of the site.

This report assesses the potential service demands of the proposed three lot residential subdivision development and identifies any constraints regarding existing infrastructure. Our assessment is based on the requirements of Queenstown Lakes District Council (QLDC) as set out in QLDC's Land Development and Subdivision Code of Practice 2020 (QLDC LDSCOP).

1.2. The Site

The site is approximately 36.27ha in size and is located on the southern side of the Wanaka-Luggate Highway (SH6), between Morris Road and the Cardrona River. Refer to **Figure 1** below.

The site is comprised of two large and relatively flat terraces separated by a 3-6m high bank running along the tree line from the southwest corner to northeast corner of the site. The lower and upper terraces are approximately 310 and 315m above mean sea level.

There is an existing dwelling and several outhouse buildings and farm sheds located in the northeast section of the property that is accessed from the Wanaka-Luggate Highway. The remaining areas of the site are divided into paddocks with deer fencing and irrigation races. There is an irrigation pond located on the eastern boundary of the upper terrace.

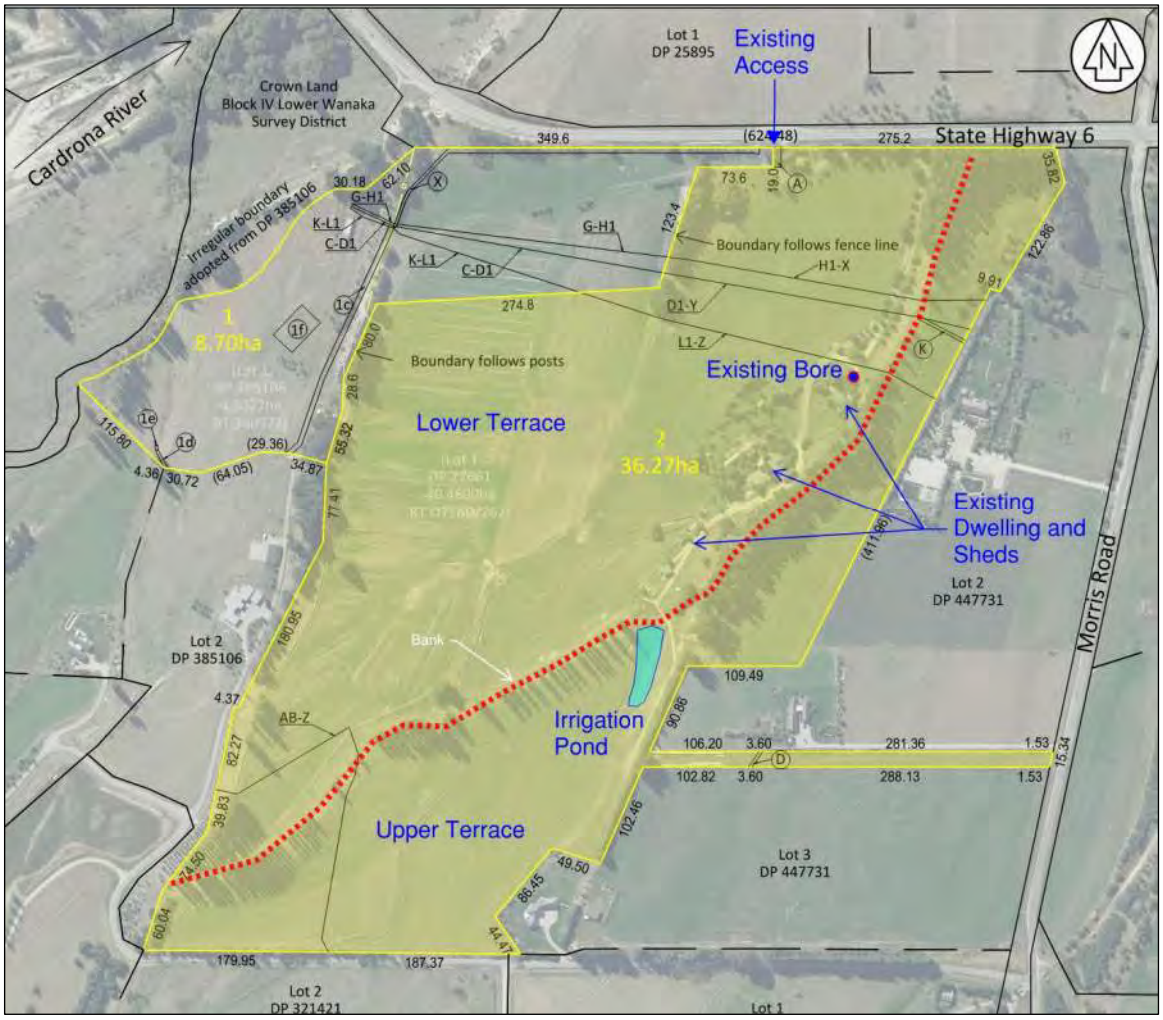


Figure 1 - Site Location (Lot 2 DP567770 Shown – Post RM210780 boundary adjustment)

1.3. Proposed Development

The proposed development involves subdivision of the site (Lot 2 DP567770) in four new lots as follows. Refer to **Appendix A** for the proposed Scheme Plan.

- Lot 1 – new residential lot and building platform
- Lot 2 – new residential lot and building platform
- Lot 3 – new residential lot containing the existing dwelling and farm sheds
- Lot 4 – lot for access from Morris Road for proposed Lots 1 and 2.

2. Earthworks

Earthworks will be required for the following:

- Construction of a new shared accessway on Lot 4 to service Lots 1 and 2.
- Trenching to install new power, telecom, water and wastewater services.
- Nominal earthworks to form building platforms.

2.1.1. Accessway Construction

Topsoil stripping will be required over an area of approximately 1600m^2 for the accessway on Lot 4 and will results in a volume of approximately 320m^3 to be stockpiled and reused on site. Construction of the accessway on Lot 4 will result in approximately 640m^3 of additional cut following topsoil stripping. It is anticipated that all excavated material will be reused on site as landscape mounding or similar.

2.1.2. Service Trenching

As this stage the location of the proposed water supply bores and the wastewater disposal system has not been confirmed. It is therefore difficult to provide trenching distances and any associated earthworks, however it can be assumed service trenching volumes will be insignificant compared to construction of the accessway.

2.1.3. Building Platforms

Due to the relative flatness of the site, only nominal and minor earthworks will be required to prepare the building platforms. It is proposed that this is carried out at the time construction of any dwellings.

3. Roading and Access

3.1. Existing Infrastructure

The site is currently serviced via an existing sealed accessway from Wanaka-Luggate Highway (SH6). This access will be retained by proposed Lot 3 and will continue to service the existing dwelling.

3.2. Proposed Infrastructure

A new shared unsealed accessway is proposed on Lot 4 to service proposed residential Lots 1 and 2 from Morris Road. The accessway will be 2.5m wide (movement lane) with passing bays every 100m as per the requirements of an E1 Road for access to lifestyle or clustered housing for up to six dwellings (Table 3.3 – Road Design Standards, QLDC LDSCOP 2020)

The road crossing on Morris Road will be formed and constructed in accordance with QLDC Standard Construction Drawing B5-20 – Private Rural Access (QLDC LDSCOP 2020). Refer to **Figure 2** for the existing road frontage of the proposed crossing.

Figure 2: Lot 4 Road Frontage (looking west from Morris Road)

The geotechnical assessment undertaken by Geotago (**Appendix E**) included three test pits along Lot 4 and Scala penetrometer testing to determine the equivalent CBR values for the proposed accessway. All of the test pits encountered a nominal layer of sandy silts below the topsoil and sandy gravels from approximately 400-600mm. The upper silt layer was found to have a CBR value of 7 and the sandy gravel layer a CBR value of 10, which meets the minimum standard for private accessways as per QLDC Standard Construction Drawing B5-20 – Private Rural Access (QLDC LDSCOP 2020).

4. Stormwater

4.1. Existing Infrastructure

The site is not serviced by any existing QLDC stormwater Infrastructure. It is assumed that stormwater runoff from the existing dwelling and farm sheds on Lot 3 is discharged directly to ground via localised soak pits. Refer to **Appendix B** for the existing services plans.

4.2. Proposed Infrastructure

QLDC's preferred method of stormwater control is a low impact design (LID) solution that aims to minimise environmental impacts by:

- Reducing peak flow discharges by flow attenuation,
- Eliminating or reducing discharge by infiltration or soakage
- Improving water quality through filtration,
- Installing detention devices for beneficial reuse.

The site investigation undertaken by Geotago (**Appendix E**) found that the existing ground composition within the vicinity of the proposed building platforms on Lots 1 and 2 to consist of a thin layer topsoil, underlain by 300-700mm of loess, overlying free draining coarse river gravels which would provide an unfactored soakage rate well in excess of 1000mm/hr.

On that basis it is confirmed that stormwater runoff from building platforms can be managed in keeping with QLDC's preference of LID with soakage to ground via localised soak pits. As noted by Geotago's report, it is imperative that any soak pits are specifically designed to discharge to the free draining river gravels, with the overlying loess layer appropriately accounted for.

Stormwater runoff from the proposed accessway(s) is anticipated to be managed via overland flow dispersal and infiltration on the adjacent grassed areas/paddocks. The accessway should be appropriately shaped to drain runoff to grass areas. Where required, localised swales or ground contouring can be used to direct runoff to suitable grassed areas.

4.3. Runoff Water Quality

Stormwater runoff from the development is expected to be from low contaminant generating hardstand and roof areas on the lots, and the private accessway. Traffic movement for a private accessway of this nature is anticipated to be low and therefore specific stormwater treatment is not deemed necessary as stormwater runoff is unlikely to contain high levels of contaminants such as heavy metals or hydrocarbons.

Although we are not recommending any specific stormwater treatment devices, it is worth noting that some natural treatment will inevitably be achieved as runoff from the accessway disperses and infiltrates along grass areas.

4.4. Surface Water and Overland Flow

The site consists of two large relatively flat terraces covered in grass paddocks that generally fall northwest in the direction of the Cardona River. The paddocks are dissected by a series of old water races which are fed by an irrigation pond on the eastern boundary of the property.

Due to the flat topography and the lack of any significant gullies or natural water courses, surface water will typically sheet flow from the site and percolate to ground along the way. The site is not prone to flooding and there are no large upstream catchments entering the site.

5. Wastewater

5.1. Existing infrastructure

The site is not serviced by any existing QLDC wastewater infrastructure and there isn't a reticulated gravity network available in the area. There is however a large diameter 560mm PE rising main that runs past the site along the Wanaka-Luggate Highway which conveys wastewater flows the Wanaka township via the Albert Town pumpstation to Project Pure wastewater treatment plant. Refer to **Appendix A** for the existing services plans.

According to the resource consent documents for the existing dwelling (RM 960516) available on QLDC's eDocs, the existing dwelling is serviced via a septic tank and effluent to land wastewater disposal system.

5.2. Proposed Infrastructure

As with the existing dwelling on proposed Lot 3, new dwellings on Lots 1 and 2 are proposed to be serviced via on-site wastewater disposal systems. Geotago's site investigation (**Appendix E**) confirms that the underlying free draining gravels are suitable for a wastewater land discharge system. Geotago has recommended a packaged plant home aeration type system with disposal of treated effluent to a sand-based discharge control bed. It is recommended that a site/dwelling specific detailed design of the on-site wastewater disposal system is undertaken during the building consent process.

Geotago's report also identified indicative effluent disposal areas (EDA) for Lots 1 and 3 that comply with minimum QLDC, ORC and AS/NZS1547 setback requirements. It is recommended that these locations are rechecked during the building consent process to ensure compliance. At this stage the precise locations of any additional water bores have yet to be determined.

6. Water Supply

6.1. Existing Infrastructure

The site is not serviced by any existing QLDC water infrastructure and there isn't a reticulated water network available in the area. There is an existing bore on site that services the existing lot for domestic use, stock water and irrigation. According to ORC's GIS records the bore is about 40m deep and located on the eastern side of the barn as per **Figure 3** below.

There is also a bore on the adjacent lot to the west that services seven properties, and a bore on the lot to the east that services three properties. Refer to **Appendix B** for existing services plans. All of the existing bores draw water from the East Wanaka Basin Cardona Gravel aquifer.

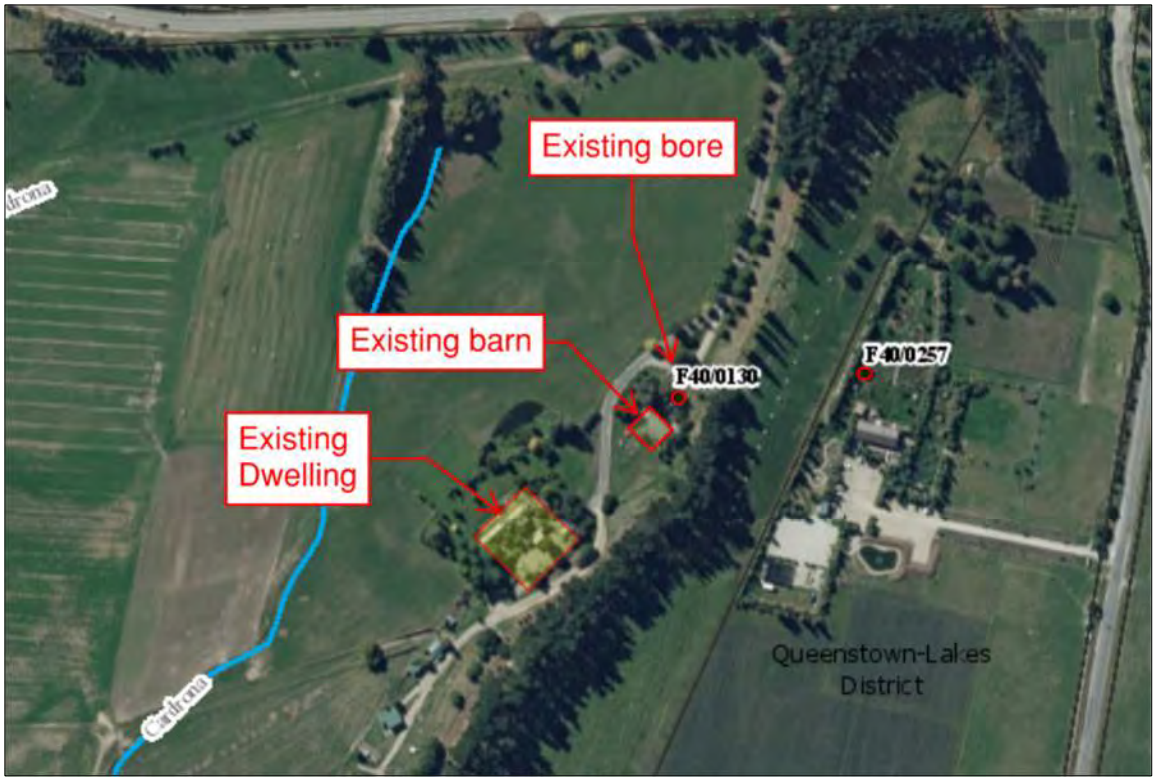


Figure 3 Existing Bore Location (F40/0130)

6.2. Proposed Infrastructure

Two options were considered for water supply of the proposed development; supply all three residential lots (Lots 1, 2 and 3) from a single communal bore, or provide a bore supply for each individual lot.

New legislation anticipated to be adopted in the near future such as the Water Services Bill 2020 currently being considered by the Health select committee indicates that it is likely that small to medium sized rural water suppliers will become subject to an increasing range of duties, obligations and new reporting requirements.

With this in mind and considering the rural nature of the development and the small number of properties to be serviced, a communal bore supply is likely to be cost prohibitive due to long trench lengths and water treatment requirements.

The preferred option is therefore for each residential lot to have a dedicated supply bore for the purposes of domestic, stock and irrigation use. The existing bore will continue to service Lot 3, and Lots 1 and 2 will have new bores drilled. The location of the new bores will need to be appropriately coordinated with the proposed on-site wastewater disposal systems to ensure that a minimum clearance of 50m is achieved.

6.3. Water Quality

A water sample was taken from the existing bore supply on Lot 3 and analysed in terms the of water quality requirements and guidelines as set out in *Drinking Water Standards for New Zealand 2005 (Revised 2018).* All parameters tested met the guidelines indicating that the water supply is suitable for drinking purposes. Refer to **Appendix D** for testing results from Hill Laboratories.

As the supply source of the new bores will be the same as the existing bore (East Wanaka Basin Cardona Gravel aquifer), it is inferred that the water quality from the new supply will also be suitable for dirking purposes.

7. Power and Telecommunications

7.1. Existing Infrastructure

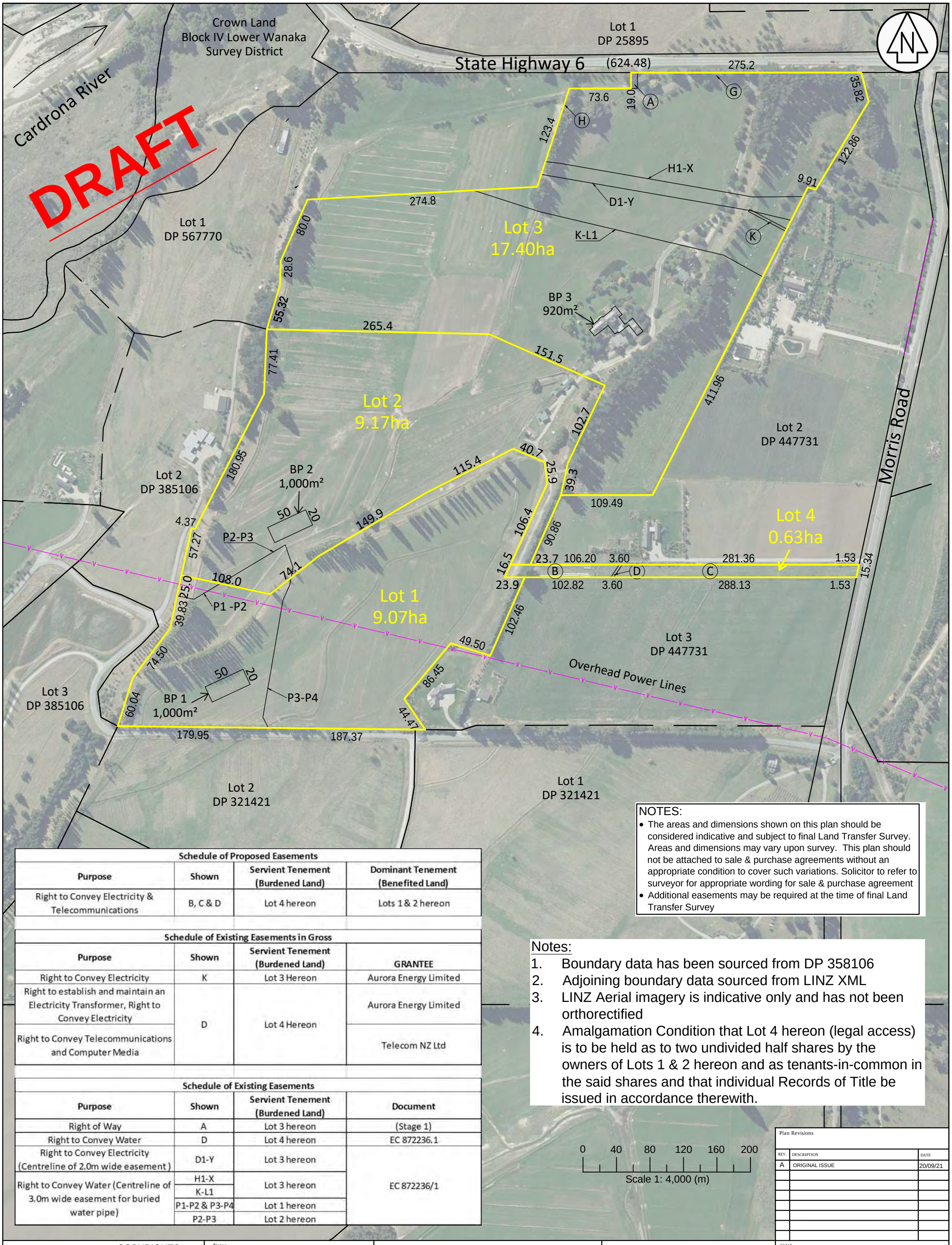
The development can be serviced with both power (Aurora Energy) and telecommunications (Chorus) supply. Please refer to **Appendix D** for availability of services letter from Aurora and email from Chorus.

Yours sincerely
Southern Land

Louis Ferreira
Senior Civil Engineer
BE (Hons) - Civil

APPENDIX A

Scheme Plan



NOTES:

- The areas and dimensions shown on this plan should be considered indicative and subject to final Land Transfer Survey. Areas and dimensions may vary upon survey. This plan should not be attached to sale & purchase agreements without an appropriate condition to cover such variations. Solicitor to refer to surveyor for appropriate wording for sale & purchase agreement
- Additional easements may be required at the time of final Land Transfer Survey

Schedule of Proposed Easements

Purpose	Shown	Servient Tenement (Burdened Land)	Dominant Tenement (Benefited Land)
Right to Convey Electricity & Telecommunications	B, C & D	Lot 4 hereon	Lots 1 & 2 hereon

Schedule of Existing Easements in Gross

Purpose	Shown	Servient Tenement (Burdened Land)	GRANTEE
Right to Convey Electricity	K	Lot 3 Hereon	Aurora Energy Limited
Right to establish and maintain an Electricity Transformer, Right to Convey Electricity	D	Lot 4 Hereon	Aurora Energy Limited
Right to Convey Telecommunications and Computer Media			Telecom NZ Ltd

Schedule of Existing Easements

Purpose	Shown	Servient Tenement (Burdened Land)	Document
Right of Way	A	Lot 3 hereon	(Stage 1)
Right to Convey Water	D	Lot 4 hereon	EC 872236.1
Right to Convey Electricity (Centreline of 2.0m wide easement)	D1-Y	Lot 3 hereon	EC 872236/1
Right to Convey Water (Centreline of 3.0m wide easement for buried water pipe)	H1-X	Lot 3 hereon	
	K-L1		
	P1-P2 & P3-P4	Lot 1 hereon	
	P2-P3	Lot 2 hereon	

Notes:

1. Boundary data has been sourced from DP 358106
2. Adjoining boundary data sourced from LINZ XML
3. LINZ Aerial imagery is indicative only and has not been orthorectified
4. Amalgamation Condition that Lot 4 hereon (legal access) is to be held as to two undivided half shares by the owners of Lots 1 & 2 hereon and as tenants-in-common in the said shares and that individual Records of Title be issued in accordance therewith.

Plan Revisions

REV.	DESCRIPTION	DATE
A	ORIGINAL ISSUE	20/09/21

CAD and Production by
SOUTHERN LAND
DEVELOPMENT CONSULTANTS
Level 2 Brownston House, 21 Brownston St., Wanaka Ph: (03) 443 5577
Email: contact@southernland.co.nz www.southernland.co.nz

Notes

Warning

This Plan has been prepared for the purpose of a resource consent application only. It is not a precise survey plan. As areas and dimensions are likely to vary upon survey it should not be attached to sale & purchase agreements without an appropriate condition to cover such variations.

Any person using Southern Land drawings and other data accepts the risk of:

- using the drawings and other data in electronic form without requesting and checking them for accuracy against the original hard copy versions or with Southern Land directly;
- ensuring the information is the most recent issue.

Prepared for

Resource Consent

Drawing Title

Lots 1 to 4 Being a Proposed Subdivision of Lot 2 DP 567770

372 Wanaka-Luggate Highway, Wanaka

APPLICANT	Ian Ferguson Farrant and the Estate of MC Farrant
COMPRISED IN	RT 1018645
TERRITORIAL AUTHORITY	Queenstown Lakes District Council
LAND DISTRICT	Otago
TOTAL AREA	36.27 ha
DATE	24/08/21

SCALE	1:4,000 @ A3
DATUM & LEVEL	Lindis Peak 2000

REVISION	DRAWING REFERENCE	Sheet
A	Y4039_S2	1 OF 1

SURVEYED	DATE	CHECKED	DATE
		SA	20/09/21

DRAWN	DATE	APPROVED	DATE
SP	20/09/21	VW	2009/21

APPENDIX B

Existing Infrastructure Plans (QLDC and ORC GIS)

QLDC Services Map

QUEENSTOWN LAKES DISTRICT COUNCIL

0 0.23 0.45 0.9 km

Scale: 1:4,514

Map Date: 14/10/2021

N

ORC Water Features Map

October 14, 2021

1:4,514

0 0.05 0.1 0.2 mi

0 0.07 0.15 0.3 km

WaterRace

GISInternal.GISADMIN.SCI_NamedWaterways

- 1 – 3
- > 3 – 4
- > 4 – 5
- > 5 – 6
- > 6 – 7
- > 7 – 8

Aquifer Test

- <Null>
- Constant
- Injection
- Multiple
- Recovery
- Step drawdown
- Step drawdown + constant
- Variable

Bores

- <Null>
- <Null>
- Commercial
- Community Supply
- Community supply
- Dairy Shed
- Dewatering
- Disused
- Domestic
- Domestic supply
- Domestic – 2 Houses
- Garden
- Groundwater Investigation
- Industrial
- Investigation

Document Set ID: 7158426
Version: 1, Version Date: 24/02/2022

APPENDIX C

Water Quality Testing Results

Hill Laboratories
TRIED, TESTED AND TRUSTED

R J Hill Laboratories Limited
28 Duke Street Frankton 3204
Private Bag 3205
Hamilton 3240 New Zealand

T 0508 HILL LAB (44 555 22)
T +64 7 858 2000
E mail@hill-labs.co.nz
W www.hill-laboratories.com

Certificate of Analysis

Client:	Southern Land Limited	**Lab No:**	2714161	DWAPv1
Contact:	V Wilson	**Date Received:**	24-Sep-2021	
	C/- Southern Land Limited	**Date Reported:**	01-Oct-2021	
	PO Box 713	**Quote No:**		
	Wanaka 9343	**Order No:**		
		Client Reference:	Farrant	
		Submitted By:	V Wilson	

Sample Type: Aqueous

		Sample Name:	Farrant Bore 23-Sep-2021 11:30 am	Guideline Value	Maximum Acceptable Values (MAV)
		Lab Number:	2714161.1		
Routine Water + E.coli profile Kit					
Escherichia coli	MPN / 100mL		< 1 #1	-	< 1
Routine Water Profile					
Turbidity	NTU		0.07	< 2.5	-
pH	pH Units		7.5	7.0 - 8.5	-
Total Alkalinity	g/m³ as $CaCO_3$		43	-	-
Free Carbon Dioxide	g/m³ at 25°C		2.6	-	-
Total Hardness	g/m³ as $CaCO_3$		46	< 200	-
Electrical Conductivity (EC)	mS/m		10.5	-	-
Electrical Conductivity (EC)	µS/cm		105	-	-
Approx Total Dissolved Salts	g/m³		71	< 1000	-
Total Arsenic	g/m³		< 0.0011	-	0.01
Total Boron	g/m³		< 0.0053	-	1.4
Total Calcium	g/m³		15.5	-	-
Total Copper	g/m³		0.0045	< 1	2
Total Iron	g/m³		< 0.021	< 0.2	-
Total Lead	g/m³		0.00035	-	0.01
Total Magnesium	g/m³		1.85	-	-
Total Manganese	g/m³		< 0.00053	< 0.04 (Staining) < 0.10 (Taste)	0.4
Total Potassium	g/m³		1.17	-	-
Total Sodium	g/m³		2.5	< 200	-
Total Zinc	g/m³		0.0067	< 1.5	-
Chloride	g/m³		0.8	< 250	-
Nitrate-N	g/m³		0.79	-	11.3
Sulphate	g/m³		4.2	< 250	-

Note: The Guideline Values and Maximum Acceptable Values (MAV) are taken from the publication 'Drinking-water Standards for New Zealand 2005 (Revised 2018)', Ministry of Health. Copies of this publication are available from https://www.health.govt.nz/publication/drinking-water-standards-new-zealand-2005-revised-2018

The Maximum Acceptable Values (MAVs) have been defined by the Ministry of Health for parameters of health significance and should not be exceeded. The Guideline Values are the limits for aesthetic determinands that, if exceeded, may render the water unattractive to consumers.

Note that the units g/m³ are the same as mg/L and ppm.

Analyst's Comments

#1 Please interpret this result with caution as the sample was > 10 °C on receipt at the lab. The sample temperature is recommended by the laboratory's reference methods to be less than 10 °C on receipt at the laboratory (but not frozen). However, it is acknowledged that samples that are transported quickly to the laboratory after sampling, may not have been cooled to this temperature.

Routine Water Assessment for Sample No 2714161.1 - Farrant Bore 23-Sep-2021 11:30

pH/Alkalinity and Corrosiveness Assessment
The pH of a water sample is a measure of its acidity or basicity. Waters with a low pH can be corrosive and those with a high pH can promote scale formation in pipes and hot water cylinders.
The guideline level for pH in drinking water is 7.0-8.5. Below this range the water will be corrosive and may cause problems with disinfection if such treatment is used.

The alkalinity of a water is a measure of its acid neutralising capacity and is usually related to the concentration of carbonate, bicarbonate and hydroxide. Low alkalinities (25 g/m^3) promote corrosion and high alkalinities can cause problems with scale formation in metal pipes and tanks.

The pH of this water is within the NZ Drinking Water Guidelines, the ideal range being 7.0 to 8.0.
With the pH and alkalinity levels found, it is unlikely this water will be corrosive towards metal piping and fixtures.

Hardness/Total Dissolved Salts Assessment
The water contains a very low amount of dissolved solids and would be regarded as being soft.

Nitrate Assessment
Nitrate-nitrogen at elevated levels is considered undesirable in natural waters as this element can cause a health disorder called methaemaglobinaemia. Very young infants (less than six months old) are especially vulnerable. The Drinking-water Standards for New Zealand 2005 (Revised 2018) suggests a maximum permissible level of 11.3 g/m^3 as Nitrate-nitrogen (50 g/m^3 as Nitrate).

Nitrate-nitrogen was detected in this water but at such a low level to not be of concern.

Boron Assessment
Boron may be present in natural waters and if present at high concentrations can be toxic to plants.
Boron was not detected in this water.

Metals Assessment
Iron and manganese are two problem elements that commonly occur in natural waters. These elements may cause unsightly stains and produce a brown/black precipitate. Iron is not toxic but manganese, at concentrations above 0.5 g/m^3, may adversely affect health. At concentrations below this it may cause stains on clothing and sanitary ware.

Neither element was detected in this water, which is a pleasing feature.
Treatment to remove iron and/or manganese should not be necessary.

Bacteriological Tests
The NZ Drinking Water Standards state that there should be no Escherichia coli (E coli) in water used for human consumption. The presence of these organisms would indicate that other pathogens of faecal origin may be present. Results obtained for Total Coliforms are only significant if the sample has not also been tested for E coli.

Escherichia coli was not detected in this sample.

Final Assessment
All parameters tested for meet the guidelines laid down in the publication 'Drinking-water Standards for New Zealand 2005 (Revised 2018)' published by the Ministry of Health for water which is suitable for drinking purposes.

Summary of Methods

The following table(s) gives a brief description of the methods used to conduct the analyses for this job. The detection limits given below are those attainable in a relatively simple matrix. Detection limits may be higher for individual samples should insufficient sample be available, or if the matrix requires that dilutions be performed during analysis. A detection limit range indicates the lowest and highest detection limits in the associated suite of analytes. A full listing of compounds and detection limits are available from the laboratory upon request. Unless otherwise indicated, analyses were performed at Hill Laboratories, 28 Duke Street, Frankton, Hamilton 3204.

Sample Type: Aqueous

Test	Method Description	Default Detection Limit	Sample No
Routine Water Profile		-	1
Filtration, Unpreserved	Sample filtration through 0.45µm membrane filter. Performed at Hill Laboratories - Chemistry; 101c Waterloo Road, Christchurch.	-	1
Total Digestion	Nitric acid digestion. APHA 3030 E (modified) 23rd ed. 2017.	-	1
Turbidity	Analysis using a Hach 2100 Turbidity meter. Analysed at Hill Laboratories - Chemistry; 101c Waterloo Road, Christchurch. APHA 2130 B 23rd ed. 2017 (modified).	0.05 NTU	1
pH	pH meter. Analysed at Hill Laboratories - Chemistry; 101c Waterloo Road, Christchurch. APHA 4500-H^+ B 23rd ed. 2017. Note: It is not possible to achieve the APHA Maximum Storage Recommendation for this test (15 min) when samples are analysed upon receipt at the laboratory, and not in the field. Samples and Standards are analysed at an equivalent laboratory temperature (typically 18 to 22 °C). Temperature compensation is used.	0.1 pH Units	1
Total Alkalinity	Titration to pH 4.5 (M-alkalinity), autotitrator. Analysed at Hill Laboratories - Chemistry; 101c Waterloo Road, Christchurch. APHA 2320 B (modified for Alkalinity <20) 23rd ed. 2017.	1.0 g/m^3 as $CaCO_3$	1
Free Carbon Dioxide	Calculation: from alkalinity and pH, valid where TDS is not >500 mg/L and alkalinity is almost entirely due to hydroxides, carbonates or bicarbonates. APHA 4500-CO_2 D 23rd ed. 2017.	1.0 g/m^3 at 25°C	1
Total Hardness	Calculation from Calcium and Magnesium. APHA 2340 B 23rd ed. 2017.	1.0 g/m^3 as $CaCO_3$	1
Electrical Conductivity (EC)	Conductivity meter, 25°C. Analysed at Hill Laboratories - Chemistry; 101c Waterloo Road, Christchurch. APHA 2510 B 23rd ed. 2017.	0.1 mS/m	1
Electrical Conductivity (EC)	Conductivity meter, 25°C. APHA 2510 B 23rd ed. 2017.	1 µS/cm	1
Approx Total Dissolved Salts	Calculation: from Electrical Conductivity.	2 g/m^3	1
Total Arsenic	Nitric acid digestion, ICP-MS, trace level. APHA 3125 B 23rd ed. 2017 / US EPA 200.8.	0.0011 g/m^3	1
Total Boron	Nitric acid digestion, ICP-MS, trace level. APHA 3125 B 23rd ed. 2017.	0.0053 g/m^3	1
Total Calcium	Nitric acid digestion, ICP-MS, trace level. APHA 3125 B 23rd ed. 2017.	0.053 g/m^3	1
Total Copper	Nitric acid digestion, ICP-MS, trace level. APHA 3125 B 23rd ed. 2017 / US EPA 200.8.	0.00053 g/m^3	1
Total Iron	Nitric acid digestion, ICP-MS, trace level. APHA 3125 B 23rd ed. 2017.	0.021 g/m^3	1
Total Lead	Nitric acid digestion, ICP-MS, trace level. APHA 3125 B 23rd ed. 2017 / US EPA 200.8.	0.00011 g/m^3	1
Total Magnesium	Nitric acid digestion, ICP-MS, trace level. APHA 3125 B 23rd ed. 2017.	0.021 g/m^3	1
Total Manganese	Nitric acid digestion, ICP-MS, trace level. APHA 3125 B 23rd ed. 2017 / US EPA 200.8.	0.00053 g/m^3	1
Total Potassium	Nitric acid digestion, ICP-MS, trace level. APHA 3125 B 23rd ed. 2017.	0.053 g/m^3	1
Total Sodium	Nitric acid digestion, ICP-MS, trace level. APHA 3125 B 23rd ed. 2017.	0.021 g/m^3	1
Total Zinc	Nitric acid digestion, ICP-MS, trace level. APHA 3125 B 23rd ed. 2017 / US EPA 200.8.	0.0011 g/m^3	1
Chloride	Filtered sample from Christchurch. Ion Chromatography. APHA 4110 B (modified) 23rd ed. 2017.	0.5 g/m^3	1
Nitrate-N	Filtered sample from Christchurch. Ion Chromatography. APHA 4110 B (modified) 23rd ed. 2017.	0.05 g/m^3	1
Sulphate	Filtered sample from Christchurch. Ion Chromatography. APHA 4110 B (modified) 23rd ed. 2017.	0.5 g/m^3	1
Escherichia coli	MPN count using Colilert (Incubated at 35°C for 24 hours) and 97 wells. Analysed at Hill Laboratories - Microbiology; 101c Waterloo Road, Hornby, Christchurch. APHA 9223 B 23rd ed. 2017.	1 MPN / 100mL	1

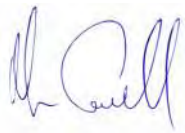
Document Set ID: 7158426
Version: 1, Version Date: 24/02/2022

These samples were collected by yourselves (or your agent) and analysed as received at the laboratory.

Testing was completed between 24-Sep-2021 and 01-Oct-2021. For completion dates of individual analyses please contact the laboratory.

Samples are held at the laboratory after reporting for a length of time based on the stability of the samples and analytes being tested (considering any preservation used), and the storage space available. Once the storage period is completed, the samples are discarded unless otherwise agreed with the customer. Extended storage times may incur additional charges.

This certificate of analysis must not be reproduced, except in full, without the written consent of the signatory.



Martin Cowell - BSc
Client Services Manager - Environmental

APPENDIX D

Utility Supply (Power and Comms) Confirmation Letters

Subject: RE: Chorus Confirmation | WNK67591 | WNK: 372 Wanaka-Luggate Highway, Wanaka, 3 Lots (1-3)

From: Chorus Property Developments <develop@chorus.co.nz>
Sent: Friday, September 17, 2021 9:13:08 AM
To: Matt Schuck <matt@southernland.co.nz>
Subject: Chorus Confirmation | WNK67591 | WNK: 372 Wanaka-Luggate Highway, Wanaka, 3 Lots (1-3)

Hello Matt,

Thank you for providing an indication of your development plans in this area. I can confirm that we have infrastructure in the general land area that you are proposing to develop. Chorus will be able to extend our network to provide connection availability. However, please note that this undertaking would of course be subject to Chorus understanding the final total property connections that we would be providing, roll-out of property releases/dates and what investment may or may not be required from yourselves and Chorus to deliver the infrastructure to and throughout the site in as seamless and practical way as possible.

Please note:

- Chorus New Zealand Ltd can offer a fixed line connection to this development that is under a broadband connection speed of 5Mbps, therefore this will only likely provide a telephony voice solution. This will be stipulated on the sign off letter you receive from Chorus New Zealand Ltd

The cost involved would be a minimum of our current standard fee of $1600 per lot excluding GST. This cost can only be finalised at the time that you are ready to proceed.

Chorus is happy to work with you on this project as the network infrastructure provider of choice. What this ultimately means is that the end customers (business and home owners) will have their choice of any retail service providers to take their end use services from once we work with you to provide the physical infrastructure.

Please reapply with a detailed site plan when you are ready to proceed.

Kind regards,

Boa Zhao
Property Development Coordinator
T 0800 782 386 (Option 1)
E develop@chorus.co.nz

PO Box 9405
Hamilton
www.chorus.co.nz

CHORUS
Please consider the environment before printing this email

AURORA ENERGY LIMITED
PO Box 5140, Dunedin 9058
PH 0800 22 00 05
WEB www.auroraenergy.co.nz

19 October 2021

Louis Ferreira
Southern Land

Sent via email only: louis@southernland.co.nz

Dear Louis,

ELECTRICITY SUPPLY AVAILABILITY FOR A PROPOSED THREE LOT SUBDIVISION.
372 WANAKA LUGGATE HIGHWAY, WANAKA. LOT 1 DP 27661.

Thank you for your inquiry outlining the above proposed development.

Subject to technical, legal and commercial requirements, Aurora Energy can make a Point of Supply[1] (PoS) available for this development.

Disclaimer

This letter confirms that a PoS can be made available. This letter does not imply that a PoS is available now, or that Aurora Energy will make a PoS available at its cost.

Next Steps

To arrange an electricity connection to the Aurora Energy network, a connection application will be required. General and technical requirements for electricity connections are contained in Aurora Energy's Network Connection Standard. Connection application forms and the Network Connection Standard are available from www.auroraenergy.co.nz.

Yours sincerely

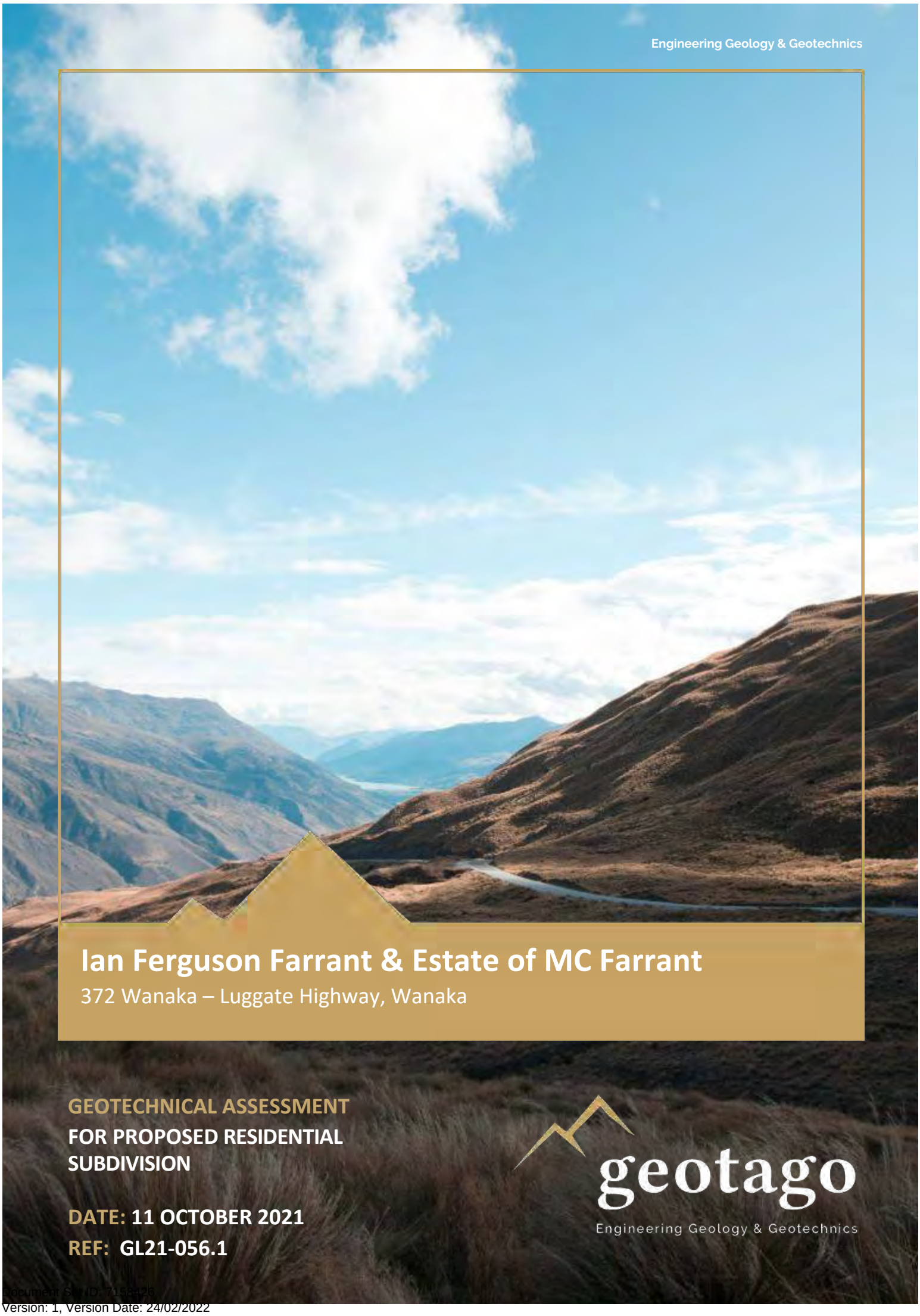
Niel Frear

CUSTOMER INITIATED WORKS MANAGER

[1] Point of Supply is defined in section 2(3) of the Electricity Act 1993.

APPENDIX E

Geotechnical Assessment Report



Ian Ferguson Farrant & Estate of MC Farrant

372 Wanaka – Luggate Highway, Wanaka

GEOTECHNICAL ASSESSMENT

FOR PROPOSED RESIDENTIAL SUBDIVISION

DATE: 11 OCTOBER 2021

REF: GL21-056.1

geotago

Engineering Geology & Geotechnics

Report Quality Control

Report prepared by: Geotago Ltd
36 Glencoe Road
Arrowtown
9371

Document Control

Report Title	Geotechnical Assessment for Proposed Residential Subdivision
Project Number	21-056
Document Reference	GL21-056.1
Client	Ian Ferguson Farrant and the Estate of MC Farrant

Rev	Date	Revision Status	Author
A	11 Oct 2021	Issued to Client	Peter Forrest

Approval

Reviewer	Title	Date Signed
Peter Forrest BSc PhD FGS CMEngNZ (PEngGeol)	Director Principal Engineering Geologist	11 Oct 2021

Signature of reviewer

Executive Summary

Scope of Work		Geotago Ltd has been engaged to conduct a geotechnical investigation of the ground conditions at 372 Wanaka-Luggate Highway and make appropriate assessment for resource consent for foundations, earthworks, stormwater, and wastewater disposal in context of the proposed residential subdivision.
Current Site Status		The rural site has been used for pasture and deer farming, with the area divided into paddocks with deer fencing, irrigation races, an irrigation pond and buried irrigation channels. There is the existing main dwelling in the northern section of the property and a borehole for domestic and irrigation purposes.
Development Proposals		The proposed four lot subdivision creating two new building platforms for Lots 1 and 2, the existing dwelling under Lot 3 and Lot 4 being developed as the access driveway off Morris Road for Lots 1 and 2. Lots 1 and 2 will require on-site stormwater and wastewater management systems.
Site Details	Location	Lot 2 DP567770, 372 Wanaka-Luggate Highway, Wanaka.
	History	Open pasture and deer farming, with no history or previous development other than the construction of the main dwelling in the late 1990s.
Ground Conditions	Published Geology	Late Pleistocene outwash (river) deposits, comprising unweathered to slightly weathered, well sorted, sandy gravel forming large outwash terraces in Clutha catchment..
	Previous Investigations	None.
	Site Geology	The site is underlain by a thin mantle of loess (sandy silt) overlying the river deposits of sandy gravels, cobbles and occasional small boulders. Topsoil is approximately 300mm thick. The sandy gravels are free draining.
	Hydrogeology	Depressed groundwater across the site at >20m depth.
	Environmental Condition	No environmental hazards are expected.
Natural Hazards	Liquefaction	Site investigations have proven dense soils and a depressed groundwater therefore not prone to liquefaction. ORC Domain A.
	Alluvial landforms	Nothing to influence the site. Lot 1 is situated on a higher terrace at 315m AOD compared to Lot 2 on a lower terrace at 310m AOD.
	Seismic characteristics	Seismic Soil Class D considered appropriate. No active faults in proximity but design should be cognisant of NZS1170.5.
Geotechnical Considerations	Slope Stability	No stability issues.
	Building Platform	Nominal earthworks required to form building platforms. The sites are effectively level and will require no batters or retaining structures.
	Foundations	The river deposits provide NZS3604 'Good Ground' which will deliver an ultimate bearing capacity of 300kPa for traditional shallow foundations or waffle slab-on-ground solutions. Alternatively the loess materials can be mobilised for specific engineered design (SED) with a reduced ultimate bearing capacity of 200kPa.
	Earthworks	Standard conditions apply to align with QLDC Code of Practice. Site won material is suitable for reuse subject to appropriate screening.
Stormwater Disposal	Ground conditions are free draining within the river gravels. This will promote stormwater disposal to ground via use of soakage pits. Specific design will be required for building consent.	
Wastewater Disposal	The river gravels present as Category 2 Soils. A package plant home aeration type system capable of the disposal of secondary treated effluent according to AS/NZS1547 standards via discharge control beds is considered an appropriate method of effluent disposal.	

Statement of Suitability

The site investigations and subsequent assessment of the property at 372 Wanaka-Luggate Highway has demonstrated that the site is suitable for the proposed residential subdivision comprising rural lifestyle development. In particular:

- The geological ground conditions are safe and stable to support the proposed building platforms.
- There are no natural hazards that pose a risk to the site development. The site is not prone to liquefaction, flooding, alluvial processes or slope instability.
- There are no geotechnical constraints to prevent standard earthworks and foundation design within the general guidance of NZS3604.
- The site soils are conducive to stormwater management via soak pits into the free draining river deposits.
- The site soils are Class 2 and can accommodate secondary treated effluent disposal via discharge control beds.

Limitations

Geotago Ltd has undertaken this assessment in accordance with the brief as provided, based on the site and location as shown on Drawings 001 to 005. This report has been provided for the benefit of our client, and for the authoritative council to rely on for the purpose of processing the consent for the specific project described herein. No liability is accepted by this firm or any of its directors, servants or agents, in respect of its use by any other person, and any other person who relies upon information contained herein does so entirely at their own risk.

Table of Contents

Drawings

Appendices

1 Introduction

1.1 Project Brief

Geotago Ltd has been commissioned by the client Ian Ferguson Farrant and the Estate of MC Farrant to carry out a geotechnical assessment for the purposes of gaining resource consent for the proposed residential subdivision of 372 Wanaka-Luggate Highway, Wanaka, with the formation of two new building platforms and access road.

This report will form part of the documentation submitted to Queenstown Lakes District Council (QLDC) in support of the submission. This report includes a summary of the investigations undertaken in order to provide pertinent information on the following:

- Site Details
- Ground and groundwater conditions
- Natural hazards
- Building platform Stability
- Geotechnical considerations for foundations, retention and earthworks
- On-site stormwater assessment
- On-site wastewater assessment

The site location is presented in Drawing 001.

1.2 Proposed Development

The proposed development comprises the forming of Lots 1 to 4 being a proposed subdivision of Lot 2 DP 567770. Lots 1 and 2 will be formed in the south west corner of the wider property and include the formation of two new building platforms. Lot 3 will maintain the current dwelling and Lot 4 will be a shared access driveway between Lots 1 & 2, connecting them to Morris Road in the east. Lot 4 is coincidental with a paper road alignment.

The draft scheme plan for the subdivision is presented in Appendix A.

2 Site Information

2.1 Site Description

The site is located on the southern side of SH6, Wanaka-Luggate Highway, situated between Morris Road in the east and the Cardrona River to the west. The property is irregular in shape, with its northern boundary formed by the highway and Black Peak Road forming the most part of the western boundary and the entire southern boundary. The eastern boundary is formed with the adjacent residential property.

The boundaries and the adjacent properties are clearly shown on the draft Scheme Plan in Appendix A. The area is designated as rural under the current proposed district plan.

The newly formed lots 1 and 2 will be approximately 9.1ha in size and each contain a new building platform measuring some 1000m^2. Lot 1 will occupy the southern section of the property, lot 2 the central section and Lot 3 the northern section and contain the existing and established dwelling.

Lot 4 will connect Lots 1 & 2 with Morris Road to the east. The access road will be the realisation of an existing paper road corridor.

The site has been recently used for deer farming and pasture and is currently partitioned off into various paddocks with robust deer fencing. The surrounding properties are all similar large lifestyle blocks and small farms.

The main access to the site is currently directly off the state highway in the north of the property.

2.2 Topography

The site is laid over a single river terrace riser associated with the Cardrona River that forms a lower and upper terrace. The terrace is more pronounced in the southern half of the site, running approximately south west to north east through the central section of the property. The proposed boundary between Lots 1 & 2 will be coincidental with the terrace bank.

Lot 1 is situated on the upper terrace and is effectively flat level ground, with no particular aspect. It is at a topographical height of 315m AOD.

Lot 2, on the southern terrace does have a secondary topographical break of slope of approximately 1m height difference, running south-southwest to north-northeast and bisects the north eastern corner of the building platform. It manifests as a very diffuse slope. It has amore discernible aspect with a slight downward slope to the northwest and the Cardrona River valley. The building platform is at a topographical height of 310m AOD.

The main features of the wider property are shown on Drawing 002.

2.3 Surface Water and Drainage

A single surface water feature in the form of an irrigation pond is situated in the north east corner of Lot1, which is fed by and feeds to irrigation races.

Irrigation channels are also evident, comprising parallel gravel trenches below the topsoil, but slightly proud of the general ground surface.

There are no natural water courses on the property. Surface water from the project site will drain off the land via sheet flow with a general northwest tendency, although given the generally level nature of the site, most surface water will drain straight to ground.

2.4 Site History and Aerial Photography

Aerial photographs available from the Google Earth Images, Retrolens.nz and the QLDC mapping data set dating from 1954 to 2021 were studied to observe the site over time and assess the geomorphological setting.

The site has remained open paddock and farmland for the duration, with the current and existing dwelling being built by the current landowners in 1996/7. There are discernible geomorphological changes to the features described previously in this report.

2.5 Services and Utilities

Overhead power cables cross the property, in the southern section, in a general east to west orientation. They will pass through the newly formed Lot 1.

The new lots will require on-site stormwater and wastewater management systems.

2.6 Previous Site Investigations

The QLDC EDocs facility has been reviewed but no geotechnical investigations or reporting was identified for the property or neighbouring properties.

The New Zealand Geotechnical Database (NZGD) has been reviewed for geotechnical investigation data within the vicinity of the project site. No data is available for this location.

3 Site Investigation Details

3.1 Site Assessment

Geotago Ltd completed an engineering geological assessment of the subject property on 5 October 2021, which included a general site walkover and subsurface investigations. The geotechnical investigation comprised nine test pits advanced to a maximum depth of 3.0m or were terminated once the geology was established. Scala penetrometer tests were twinned with the test pits associated with the two building platforms and with the three pavement pits.

The investigations were located in the vicinity of the two proposed building platforms, potential effluent disposal areas for each lot and along the proposed access driveway. The relative positions of the investigation locations are shown on Drawings 003 (Lot 1), 004 (Lot 2) and 005 (Lot 5).

3.2 Investigation Logging

Soils recovered from the test pits have been logged and are presented in Appendix B. Logging of the soil encountered has been undertaken in accordance with NZ Geotechnical Society Guidelines for the Field Classification and Description of Soil and Rock for Engineering Purposes.

The Scala penetrometer results have been plotted on logs as presented in Appendix B. Determination of the soil density as tested by the Scalas has been undertaken in accordance with NZ Geotechnical Society Guidelines for the Field Classification and Description of Soil and Rock for Engineering Purposes, Table 2.8.

4 Subsurface Conditions

4.1 Geological Setting

The Geological Map of New Zealand, Sheet 18 (Wakatipu), at a scale of 1:250,000 maps the site as being underlain by Late Pleistocene outwash (river) deposits, comprising unweathered to slightly weathered, well sorted, sandy gravel forming large outwash terraces in Clutha catchment.

4.2 Ground Conditions & Stratigraphy

Apart from the thin layer of surficial topsoil, the site is underlain by loess overlying the river deposits of sandy gravels, cobbles and occasional small boulder. The geology was reasonably consistent across the site, with the loess deposits being at their thickest in the vicinity of Lot 1. Lot 2, to the north east of the building platform recorded a sand associated with the river terrace not seen in any of the other test pits. This horizon extended from below the loess at 0.7m to 1.5m.

Full details of the observed subsurface stratigraphy can be found within the test pit logs contained in Appendix A.

A summary of the sub-surface conditions identified in the investigations undertaken is presented below in order of depth from the ground surface. The sub-surface conditions have been extrapolated between the investigations undertaken and other available information.

4.2.1 Topsoil

Topsoil comprises organic sandy SILT, brown, with roots to depths of approximately 0.3 m.

4.2.2 Loess

The loess deposits were thicker below Lot 1 building platform, extending to 1m and comprising a loosely to tightly packed fine sandy silt. The building platform of Lot 2 recorded loess to depths of approximately 0.5 to 0.7m.

Scala penetrometer testing recorded values of between 1 and 4 blows per 100mm of penetration, although generally <2 blows on average.

4.2.3 River Deposits

TP201 recorded a fine SAND with minor silt below the loess, extending to a depth of 1.5m below ground level. This sand is associated with the slightly raised terrace within Lot 2. Scala penetrometer testing recorded values generally greater than 4 blows per 100mm of penetration.

All other test pits recorded the river deposits to comprise sandy GRAVEL with cobbles and occasional small boulders or sandy GRAVEL and COBBLES. The Scala penetrometer failed to penetrate the courses soil horizons, with effective refusal being met within the upper 100mm of the material.

The coarse river deposits are free draining.

4.3 Groundwater

Groundwater was not encountered in any of the test pits. Given the relatively elevated site position compared to nearby surrounding surface water bodies (Cardrona River), the groundwater is anticipated to be relatively deep, such that it will not interfere with earthworks or foundations.

This is consistent with the borehole information available from the ORC borehole database. Borehole F40/0130 drilled for the benefit of the main dwelling on site records water depth at 26.5m below ground level.

5 Natural Hazards

5.1 General

The Otago Regional Council Natural Hazards Portal has been reviewed for the purposes of identifying potential natural hazards that may impact the site. The information from the database is used together with our observations from the site investigation to inform the discussion below.

5.2 Alluvial Fan

The site is not underlain by any form of alluvial fan or alluvial landform. This is concordant with the observations of the test pits, whereby loess soils overlay outwash river deposits.

5.3 Flooding

The site is not prone to flooding.

5.4 Liquefaction

The project site is classified as Domain A. This classification suggests that the ground is predominantly underlain by rock or firm sediments, with a low to zero liquefaction potential. This is aligned with our site investigation data identifying free draining gravels and the fact that the borehole on site draws from the Cardrona gravel aquifer, which extends at least 40m. The groundwater is also depressed at >25m depth.

5.5 Slope Stability

Although the wider property does have the terrace slope of some 5m height, the slope angle is approximately 20 degrees and shows no instability. The building platforms are on level ground and not in proximity to any slope. The hazard database does not zone the site for any form of landslide feature.

5.6 Seismic

The soil classification for the site is Class D, relating to deep and or soft soils. Based on the investigations undertaken, this is considered an appropriate classification.

No active faults were mapped in the field, however, the active Cardrona-Hawea fault shown on the published Qm 18 is approximately 700m northwest from the property's western boundary and the Grandview Fault some 11km to the east. There is a significant seismic risk to the Wanaka region when the rupture of the alpine fault system occurs; recent probability predictions estimate a magnitude 7.5 or greater is highly likely within the next 45 years. Significant ground shaking is expected from this type of event.

6 Geological Ground Model & Residual Risk

6.1 Ground Model

The geological ground model for the site is based on the collated information presented in this report including the desk top information, intrusive investigation and our interpretation. The ground model is summarised as:

- The wider property is presently undeveloped and does not appear to have been significantly modified in any form with farming being the main land use.
- The two building platforms are located level topography which does not display any slope instability features. In addition, the site is remote from steeper slopes and/or slopes prone to the development of slope instability features.
- The site is underlain by competent ground conditions consisting of loess overlying coarse river deposits to depth. Topsoil mantles the loess to a depth of 300mm.
- The building platforms have no surface water features. Given the site's topography surface water will flow to the west via sheet flow, or soak straight to ground.
- Ground water was not encountered in any of the test pits. ORC borehole information indicates that the water table is at least 25m below ground level.
- Groundwater is susceptible to seasonal variations and it is feasible that groundwater levels may rise, or seepage rates increase, over those observed following a period of prolonged rainfall and during the winter months, but not to the extent that it would interfere with foundations.
- The site is not located in the vicinity of an active fault zone but should be considered as seismically active in line with the wider Otago region.
- The site is not considered be risk of liquefaction due the free draining, coarse sediments, and depressed groundwater levels in the vicinity of the building platforms.

6.2 Geotechnical Risk and Limitations

Geotechnical investigation and their interpretation are subject to limitations and inherent risk due to the spatial distribution of the investigation points relative to the property/site area and the residual uncertainties of the ground conditions that remains uninvestigated. Therefore the following should be noted:

- Ground conditions can vary between investigations undertaken and there is always some natural variability in ground conditions both laterally and vertically, particularly with recent deposits.
- Small-scale ground anomalies, particularly associated with human disturbance such as demolished buildings, buried services and landscaping works can often be missed by the investigations.
- Ground strength can change with variations in natural water/moisture content, soil type and ground loading. As such, our interpretation and assessments are cognisant that ground conditions may differ to those reported at the time of this investigation due to periods of wet weather and/or during the winter months.
- The impact of climate change and its influence on ground conditions from a geotechnical perspective is an area being currently researched. However, based on our current understanding effects will include changes in groundwater regimes, soil saturation and surface water characteristics all of which may have a future effect on any current site development.

7 Geotechnical Considerations

7.1 General

Based on our ground model developed for the site, we are of the opinion that the site is generally suitable for the proposed residential subdivision comprising two storey lightweight residential structures.

Earthworks and drainage should be undertaken in accordance with NZS4404 Land Development and Subdivision Engineering , QLDC Land Development and Subdivision Code of Practice for and NZS4431 Code of Practice for Earth Fill for Residential Development .

When considering conventional light timber framed dwellings, developments should be in accordance with NZS3604, however provisions should be made for AS2870 expansive site class.

Other relevant Codes and Standards include but not restricted to:

- NZS 1170:2004: 'Structural design actions'.
- New Zealand Building Code: Clause B1
- District and Regional Plan provisions on residential development.

Specific comments and recommendations are provided in the sections below.

7.2 Site Preparation

The building platform will need little in terms of site preparation based on their generally level nature. Some cut is likely to create the 25m wide by 40m and 20m x 50m long platforms.

7.3 Batter Slopes

Given the level nature of both building platforms, it is very unlikely that any batter slopes will be created during the platform development or earthworks. Where a platform is subject to cut and fill, any batter slopes will be less than 1m in height and can be formed at slopes of less than 1V:3H.

7.4 Engineered Fill Slopes

In the unlikely event that any unretained engineered fill slopes are required, they should be formed at 2H:1V (or flatter) providing they are well drained and compacted to the appropriate specification based on NZS4431. If steeper grades are required, the fill will require geogrid reinforcement to form slopes up to 45° but subject to specific engineering design from a chartered professional engineer.

7.5 Construction Monitoring And Certification

Any earthworks undertaken should be in general accordance of Queenstown Lakes District Council's Land Development and Subdivision Code of Practice (incorporating NZS4404) and NZS4431.

Of particular importance are the inspection and certification of the following:

- Subgrade inspection.
- Suitability of site won material for reuse as engineered fill.
- Performance of temporary cut batters.
- Foundation inspections.
- Fill >600mm depth or built as a slope >2H:1V.

7.6 Services

We recommend that all underground services are backfilled with adequately compacted backfill to minimise the risk of significant trench consolidation and settlement.

Trench excavations should be shored or battered appropriately in accordance with the OSH/DOL Approved Code of Practice for Safety in Excavations and Shafts for Foundations (April 2000).

The contractor is expected to employ the appropriate plant and machinery to undertake the excavation and retaining wall construction.

7.7 Slope Stability

The proposed building platforms are located on level topography which is underlain by competent ground conditions and is remote from steeper slopes and/or slopes prone to the development of slope instability features.

The level topography and underlying competent ground conditions in the vicinity of the proposed building platforms should provide safe and stable ground with respect to slope stability conditions.

A safe and stable building platform is defined as having a low to negligible risk of failure over the lifetime of the dwelling and is assessed as a factor of safety where a quantitative slope stability assessment is undertaken. Given the lack of sloping ground in the vicinity of the site, we consider that a qualitative assessment of slope stability (as provided above) is acceptable for defining risk for this site and that a more rigorous quantitative analysis is not required.

7.8 Bearing Capacity & Settlement

The bearing capacity of the two building platform areas has been determined from our interpretation of the engineering description of the soil conditions, observations from the test pits on the soil behaviour and relative density measurements based on the site-specific testing undertaken. The values presented take into consideration natural variability of ground strength likely between investigations undertaken and potential strength reduction associated with saturated soil conditions.

On this basis, the river deposits meet the criteria of NZS3604 Good Ground and as such will provide a geotechnical Ultimate Bearing Capacity of 300 kPa.

The loess material returned low Scala penetrometer results and as such do not comply with NZS3604 Good Ground. A reduced ultimate bearing capacity of 200kPa is expected of these soils

It is anticipated that engineered fill placed in accordance with NZS4431 will achieve 300kPa geotechnical Ultimate Bearing Capacity in accordance with NZS3604 section 3 testing requirements.

Settlement is expected to be within limits set by NZS3604:2011 for the above allowable bearing capacity stresses.

7.9 Soil Expansivity

There is no specific engineered foundation design required to resist shrink/swell associated with the non-expansive soils encountered on site.

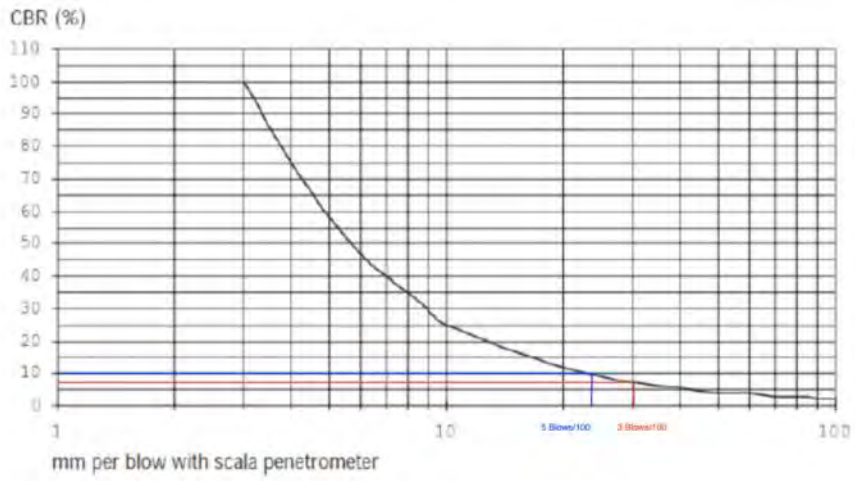
7.10 Site Subsoil Category

For detailed design purposes it is recommended the magnitude of seismic acceleration be estimated in accordance with the recommendations provided in NZS 1170.5:2004 assuming Class D subsoil conditions exists across the site.

7.11 Pavement Design

The three test pits in Lot 4 all encountered a nominal layer of sandy silts below the top soil and sandy gravels from approximately 400-600mm. Scala penetrometer testing was completed in order to assess the CBR values for the proposed access driveway. The figure below (taken from QLDC's subdivision Code of Practice) provides the equivalent CBR value for the average Scala results for the silt material and the coarser sandy gravels below.

Figure 1.3 Scala penetrometer estimation of CBR



The softer silts in the upper 400mm returned an equivalent CBR value of 7, which is the minimum required for subdivision roading. The coarser gravels provide a slightly increased CBR value of 10.

8 Stormwater Management

8.1 General

Stormwater disposal should be in compliance with the operative District & Regional Plans, the Building Code and recognised New Zealand standards and guidelines. In summary this requires the following:

- Hydrogeological neutrality should be provided within receiving environments (such as overland flow paths, streams and reticulated stormwater systems) with the addition of impervious surfaces. In addition, the disposal of stormwater should not provide a nuisance to neighbouring properties and public infrastructure.
- Stormwater should be managed in such a way as to avoid slope erosion, earthworks batters, retaining walls, building structures and effluent disposal areas.
- Stormwater should be managed in such a way as to have no significant effect on overall slope stability conditions.
- Stormwater should be directed to a public reticulated stormwater system where possible.
- Site development should be mindful of existing surface water features including overland flow paths and appropriate remedial measures should be provided where required.

In particular, we note the following documents pertinent to stormwater management for the proposed development:

- New Zealand Building Code, Clause E1 "Surface Water": E1/VM1.
- New Zealand Water Environment Research Foundation (NZWERF): "On-site Stormwater Management Guideline".

8.2 Site Suitability for Stormwater Disposal

The site investigation has demonstrated that both building platforms are generally underlain by loess over coarse free draining river deposits. This can be seen from the site photographs presented in Appendix D. The upper loess (and where present the fine sand horizon above the gravels) will not provide good drainage.

Whilst no soakage testing was undertaken, given the coarse nature and free draining properties of the gravels at depth, such material would provide an unfactored soakage rate well in excess of 1000mm/hr. On this basis, any stormwater management can be achieved with soakage to ground via a specifically designed soak pit.

It will be imperative that the any soak pit design accounts for the upper loess horizon and is based on its basal area being within the free draining gravels.

9 Wastewater Management

9.1 General

At this stage of resource consent application, there are no specific house plans from which a detailed investigation and design for a wastewater management system can be designed. However, based

on the site investigation information gained, a site and soil evaluation can be completed in order to demonstrate that the site is capable of wastewater disposal to ground through an appropriate land application system.

It should be noted that a detailed design based on occupancy rate will be required for Building Consent.

9.2 Site & Soil Evaluation

The proposed new lot areas will be approximately 9ha in size with suitable areas for a land application system at appropriate distances from the building platforms. As described previously, the lots are effectively level and underlain by natural soils.

During the winter months the area is subject to frost, snow and potential ground freezing.

Based on the soil profiles observed in the test pits, the loess soils should be bypassed and any land discharge system designed for the underlying free draining gravels. As such the soils can be categorised as Class 2 in accordance with AS/NZS 1547:2012 Table L1. This reflects the relatively high permeability anticipated in the sandy gravels and cobbles.

A QLDC Wastewater Disposal Site and Soil Assessment Form has been completed and is presented in Appendix C.

9.3 Potential Wastewater System

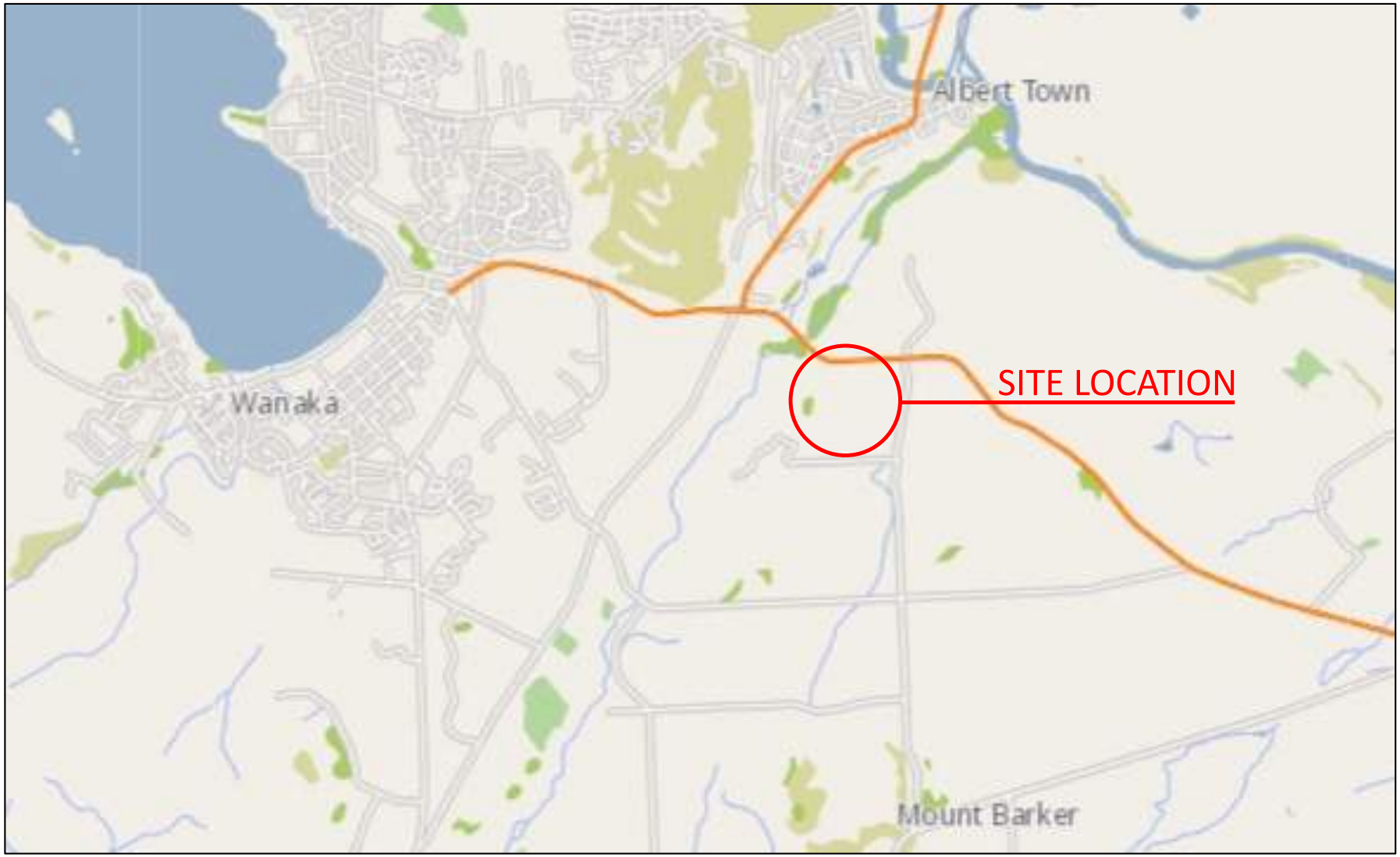
A package plant home aeration type system is considered suitable for the site. The package plant system should consist of the disposal of secondary treated effluent according to AS/NZS1547 standards via a discharge control bed. This method is considered suitable due to the need to attenuate the percolation of the effluent through the sand media before reaching the free draing gravels.

This type of system and application is considered suitable for the site due to the flexibility provided with system placement, the secondary treatment of effluent and its suitability to be used areas of high soakage (Class 2) soil conditions.

Suitable locations for the package plant system is shown for each Lot on Drawings 003 and 004. Whilst the actual EDA in terms of area is not shown (due to no specific design) the general areas identified easily comply with the following set-backs in accordance with QLDC and ORC plans and policies and AS/NZS1547.

- 1.5m from a property boundary
- 3.0m from a dwelling
- 50m from a water bore
- 50m from an open water course
- 3.0m from an embankment or cutting
- 0.9m groundwater clearance

Drawings



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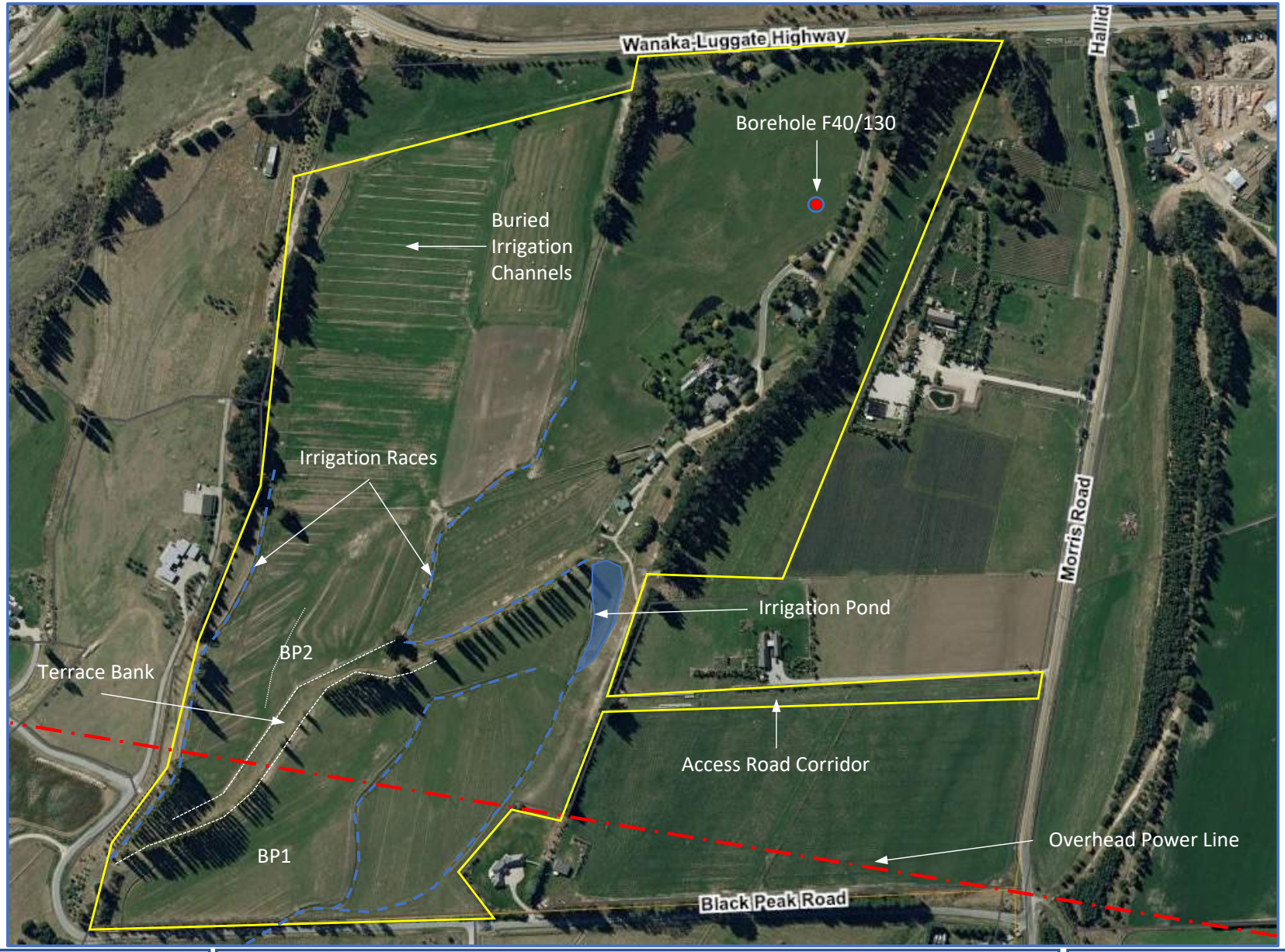
IAN FERGUSON FARRANT & THE ESTATE OF MC FARRANT

372 WANAKA-LUGGATE HIGHWAY

SITE LOCATION PLAN

SCALE: NOT TO SCALE

REF:	DATE:
GL21-056.1 DRW001	8 October 2021



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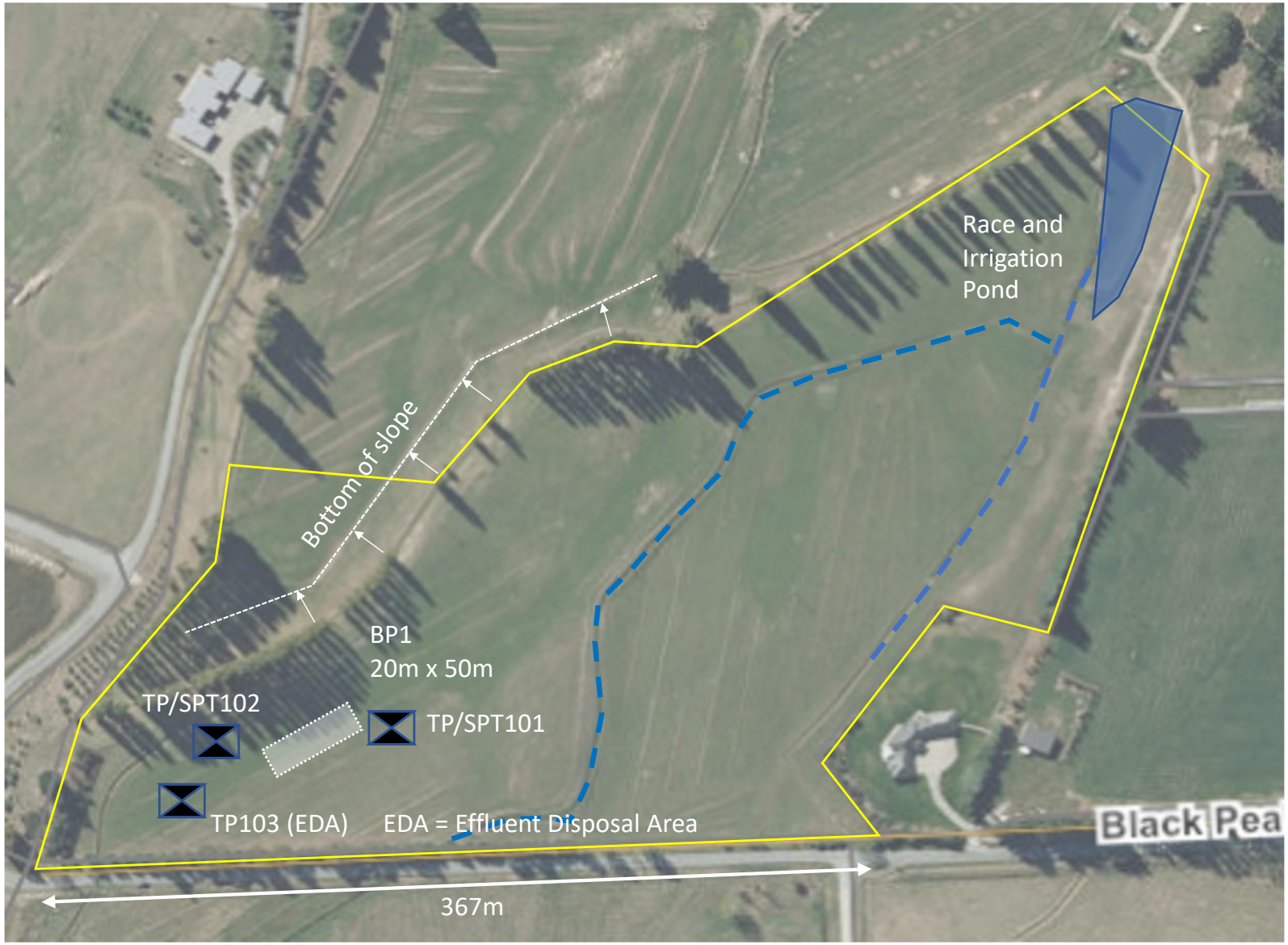
372 WANAKA-LUGGATE HIGHWAY

SITE FEATURES PLAN

SCALE: Not to Scale

REF: 21-056.1 DRW002

DATE: 8 October 2021



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372 WANAKA-LUGGATE HIGHWAY

SITE INVESTIGATION PLAN FOR LOT 1

SCALE: 1:2800 Approx

0m 100m

REF: 21-056.1 DRW003

DATE: 8 October 2021

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372 WANAKA-LUGGATE HIGHWAY

SITE LOCATION PLAN FOR LOT 2

SCALE: 1:2,300 Approx

0m 100m

REF:	DATE:
21-056.1 DRW004	8 October 2021

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372 WANAKA-LUGGATE HIGHWAY

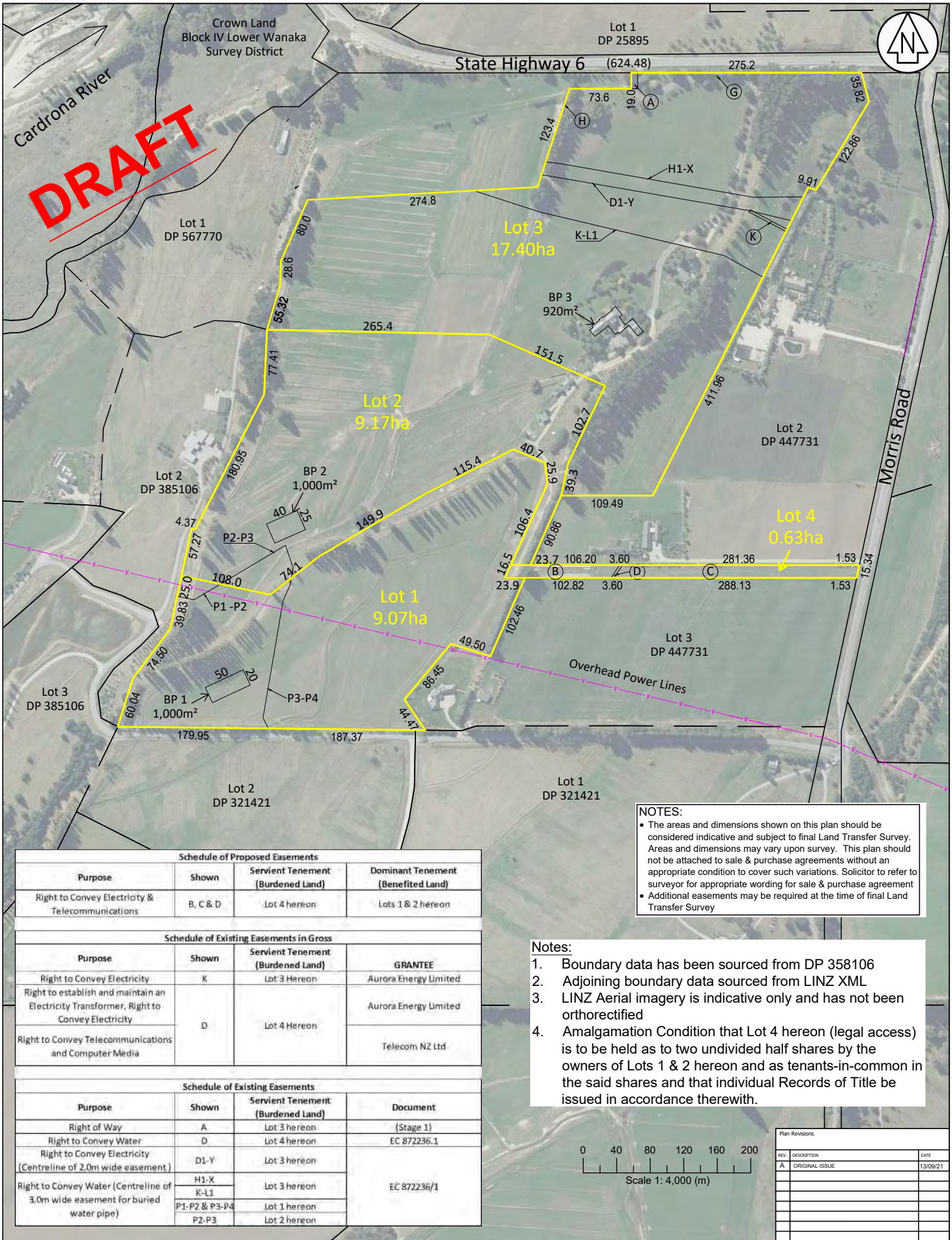
SITE LOCATION PLAN FOR LOT 4 (ACCESS ROAD)

SCALE: 1:2,500 Approx

0m 100m

REF:	DATE:
21-056.1 DRW002	8 October 2021

Appendix A – Scheme Plan



NOTES:
- The areas and dimensions shown on this plan should be considered indicative and subject to final Land Transfer Survey. Areas and dimensions may vary upon survey. This plan should not be attached to sale & purchase agreements without an appropriate condition to cover such variations. Solicitor to refer to surveyor for appropriate wording for sale & purchase agreement
- Additional easements may be required at the time of final Land Transfer Survey

Schedule of Proposed Easements

Purpose	Shown	Servient Tenement (Burdened Land)	Dominant Tenement (Benefited Land)
Right to Convey Electricity & Telecommunications	B, C & D	Lot 4 hereon	Lots 1 & 2 hereon

Schedule of Existing Easements in Gross

Purpose	Shown	Servient Tenement (Burdened Land)	GRANTEE
Right to Convey Electricity	K	Lot 3 Hereon	Aurora Energy Limited
Right to establish and maintain an Electricity Transformer, Right to Convey Electricity	D	Lot 4 Hereon	Aurora Energy Limited
Right to Convey Telecommunications and Computer Media			Telecom NZ Ltd

Schedule of Existing Easements

Purpose	Shown	Servient Tenement (Burdened Land)	Document
Right of Way	A	Lot 3 hereon	(Stage 1)
Right to Convey Water	D	Lot 4 hereon	EC 872236.1
Right to Convey Electricity (Centreline of 2.0m wide easement)	D1-Y	Lot 3 hereon	EC 872236/1
Right to Convey Water (Centreline of 3.0m wide easement for buried water pipe)	H1-X	Lot 3 hereon	
	K-L1		
	P1-P2 & P3-P4	Lot 1 hereon	
	P2-P3	Lot 2 hereon	

Notes:
1. Boundary data has been sourced from DP 358106
2. Adjoining boundary data sourced from LINZ XML
3. LINZ Aerial imagery is indicative only and has not been orthorectified
4. Amalgamation Condition that Lot 4 hereon (legal access) is to be held as to two undivided half shares by the owners of Lots 1 & 2 hereon and as tenants-in-common in the said shares and that individual Records of Title be issued in accordance therewith.

0 40 80 120 160 200
Scale 1: 4,000 (m)

Plan Revisions

REV.	DESCRIPTION	DATE
A	ORIGINAL ISSUE	13/09/21

CSNZ THE CONSULTING SURVEYORS OF NEW ZEALAND
A DIVISION OF THE NEW ZEALAND INSTITUTE OF SURVEYORS

CAD and Production by
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DEVELOPMENT CONSULTANTS
Level 2 Brownston House, 21 Brownston St., Wanaka Ph: (03) 443 5577
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Notes

Warning
This Plan has been prepared for the purpose of a resource consent application only. It is not a precise survey plan. As areas and dimensions are likely to vary upon survey it should not be attached to sale & purchase agreements without an appropriate condition to cover such variations.

Any person using Southern Land drawings and other data accepts the risk of:
- using the drawings and other data in electronic form without requesting and checking them for accuracy against the original hard copy versions or with Southern Land directly;
- ensuring the information is the most recent issue.

Prepared for
Resource Consent

Drawing Title
Lots 1 to 4 Being a Proposed Subdivision of Lot 2 DP 567770

372 Wanaka-Luggate Highway, Wanaka

APPLICANT	Ian Ferguson Farrant and the Estate of MC Farrant
COMPRISED IN	RT 1018645
TERRITORIAL AUTHORITY	Queenstown Lakes District Council
LAND DISTRICT	Otago
TOTAL AREA	36.27 ha
DATE	24/08/21

SCALE	1:4,000 @ A3
DATUM & LEVEL	Lindis Peak 2000
REVISION	A
DRAWING REFERENCE	Y4039_S2
Sheet	1 OF 1
SURVEYED	SA 13/09/21
DRAWN	SP 13/09/21
CHECKED	VW 13/09/21
APPROVED	

Appendix B – Engineering Logs

Test Pit Log

Project:	372 Wanaka-Luggate Highway	Project Number:	GL21-056
Site Location:	Wanaka	Client:	Farrant
Test Pit Number:	TP101		Sheet 1 of 1

Depth (m)	Water Level	Geological Unit	Sample	Soil Rock Description	Legend	Depth
		Topsoil		Sandy SILT with roots and rootlets, brown. Dry.		
0.5		Loess		Sandy SILT, with occasional rootlets, brown, mottled reddish brown. Loose to tightly packed, damp. Sand fine grained.		0.5
1.0		River Deposits		Sandy GRAVELS & COBBLES and occasional boulder, light grey. Loosely packed, dry. Sand medium coarse. Gravels fine to coarse subangular to subrounded. Cobbles subangular to subrounded. Boulders small, sub rounded.		1.0
1.5						1.5
2.0				End of Pit		2.0
2.5						2.5
3.0						
3.5						3.0

Date Excavated: 5 October 2021	Equipment: 5.5T tracked excavator with 600mm smooth bucket
Logged By: PF	Contractor: Diverse Works Ltd

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Notes:

Notes:

Depth (mm)	Blows (no.)
100	1
200	1
300	
400	1
500	2
600	1
700	1
800	2
900	7
1000	10
1100	
1200	
1300	
1400	
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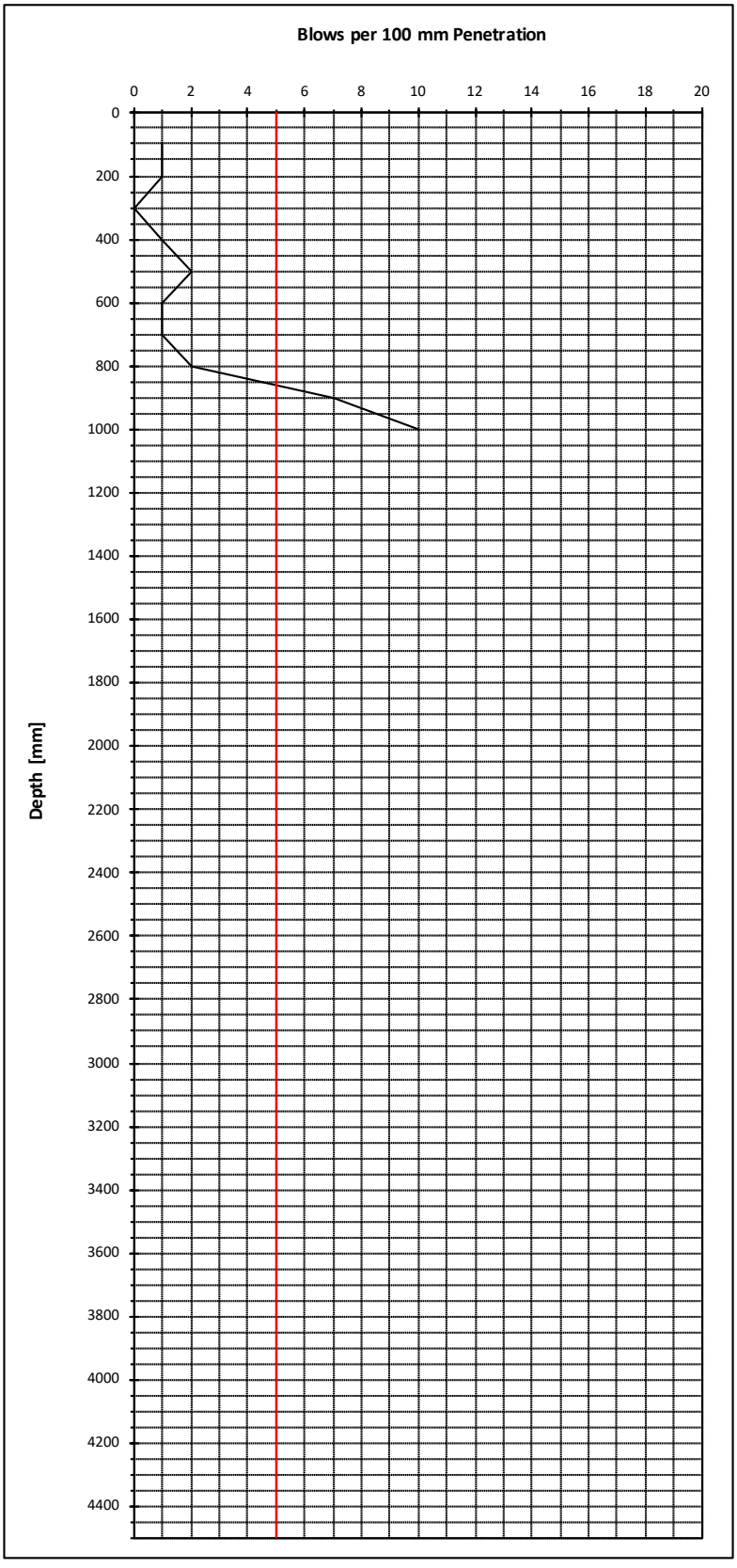

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Test 6.5.2

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Client: **Farrant**		SCALA PROBE	
Location: **372 Wanaka-Luggate Highway**		No: **SPT101**	**A4**
Tester: **Peter Forrest**	Date: **5 Oct 2021**	Job Number: **GL21-056**	Rev: **1**

Test Pit Log

Project:	372 Wanaka-Luggate Highway	Project Number:	GL21-056
Site Location:	Wanaka	Client:	Farrant
Test Pit Number:	TP102		Sheet 1 of 1

Depth (m)	Water Level	Geological Unit	Sample	Soil Rock Description	Legend	Depth
		Topsoil		Sandy SILT with roots and rootlets, brown. Dry.		
0.5		Loess		Sandy SILT, with occasional rootlets, brown, mottled reddish brown. Loose to tightly packed, dry. Sand fine grained.		0.5
1.0						1.0
1.5		River Deposits		Sandy GRAVEL with occasional cobble and very minor silt, greyish brown. Loose to tightly packed, damp. Gravels fine to coarse subangular to angular. Sand coarse.		1.5
2.0				End of Pit		2.0
2.5						2.5
3.0						
3.5						3.0

Date Excavated: 5 October 2021	Equipment: 5.5T tracked excavator with 600mm smooth bucket
Logged By: PF	Contractor: Diverse Works Ltd

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Notes:

Notes:

Depth (mm)	Blows (no.)
100	1
200	1
300	1
400	1
500	1
600	1
700	1
800	1
900	3
1000	6
1100	10
1200	
1300	
1400	
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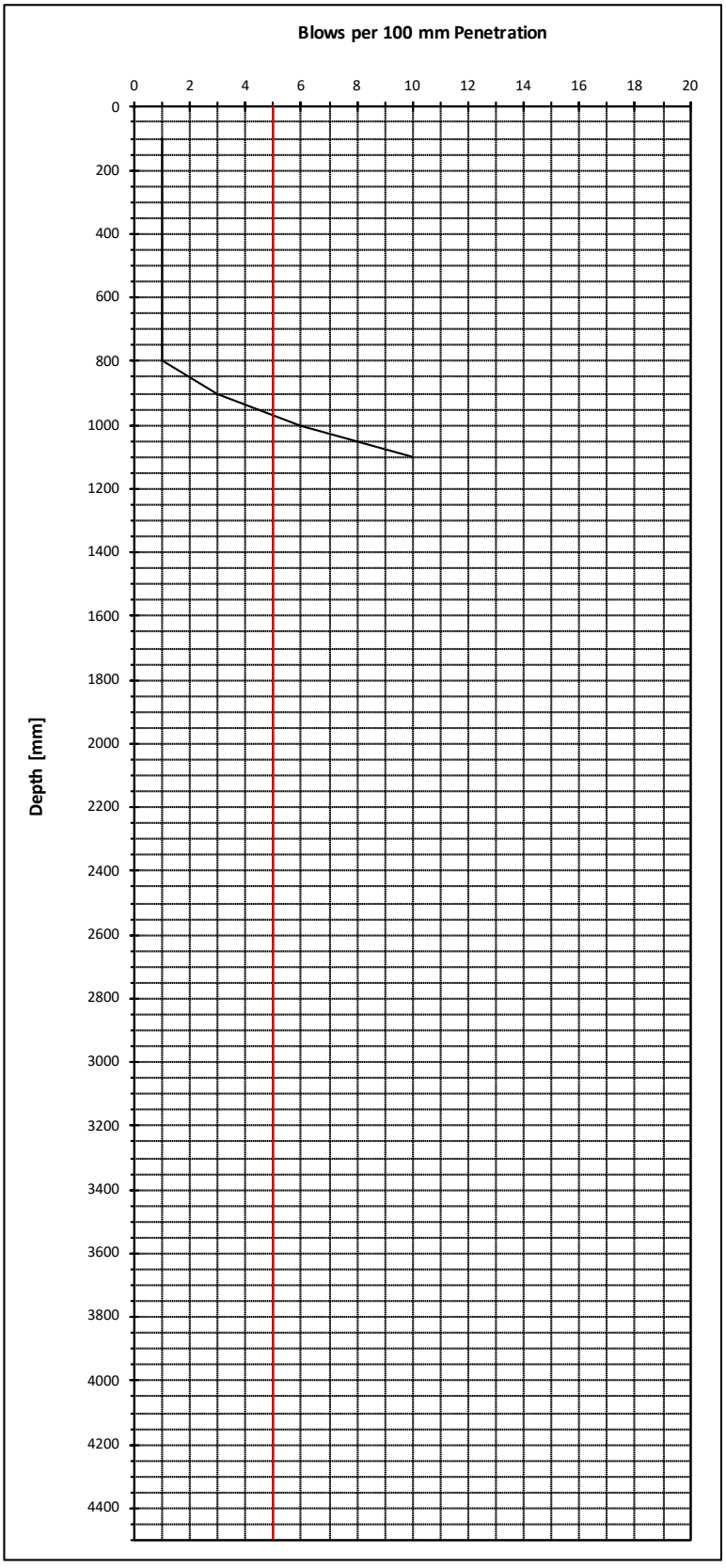

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Client: Farrant		SCALA PROBE	
Location: 372 Wanaka-Luggate Highway		No: SPT102	A4
Tester: Peter Forrest	Date: 5/10/21	Job Number: GL21-056	Rev: 1

Test Pit Log

Project:	372 Wanaka-Luggate Highway	Project Number:	GL21-056
Site Location:	Wanaka	Client:	Farrant
Test Pit Number:	TP103		Sheet 1 of 1

Depth (m)	Water Level	Geological Unit	Sample	Soil Rock Description	Legend	Depth
		Topsoil		Sandy SILT with roots and rootlets, brown. Dry.		
0.5		Loess		Sandy SILT, with occasional rootlets, brown, mottled reddish brown. Loose to tightly packed, dry. Sand fine grained.		0.5
1.0		River Deposits		Sandy GRAVEL with occasional cobble and very minor silt, greyish brown. Loose to tightly packed, damp. Gravels fine to coarse subangular to angular. Sand coarse.		1.0
1.5				End of Pit		1.5
2.0						2.0
2.5						2.5
3.0						
3.5						3.0

Date Excavated: 5 October 2021	Equipment: 5.5T tracked excavator with 600mm smooth bucket
Logged By: PF	Contractor: Diverse Works Ltd

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Notes:

Test Pit Log

Project:	372 Wanaka-Luggate Highway	Project Number:	GL21-056
Site Location:	Wanaka	Client:	Farrant
Test Pit Number:	TP201		Sheet 1 of 1

Depth (m)	Water Level	Geological Unit	Sample	Soil Rock Description	Legend	Depth
		Topsoil		Sandy SILT with roots and rootlets, brown. Dry.		
0.5		Loess		Sandy SILT, with occasional rootlets, brown, mottled reddish brown. Loose to tightly packed, dry. Sand fine grained.		0.5
1.0		River Deposits		SAND with minor silt, greenish brown. Loose to tightly packed. Sand fine grained.		1.0
1.5				SAND, light greenish grey. Loosely packed. Sand fine grained.		1.5
2.0				Sandy GRAVELS & COBBLES, light grey. Loosely packed, dry. Gravels fine to coarse subangular to subrounded. Cobbles subangular to subrounded. Sand medium coarse.		2.0
2.5						2.5
3.0						
3.5				End of Pit - Stable		3.0

Date Excavated: 5 October 2021	Equipment: 5.5T tracked excavator with 600mm smooth bucket
Logged By: PF	Contractor: Diverse Works Ltd

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Notes:

Notes:

Depth (mm)	Blows (no.)
100	1
200	1
300	2
400	2
500	3
600	4
700	4
800	2
900	2
1000	3
1100	6
1200	5
1300	6
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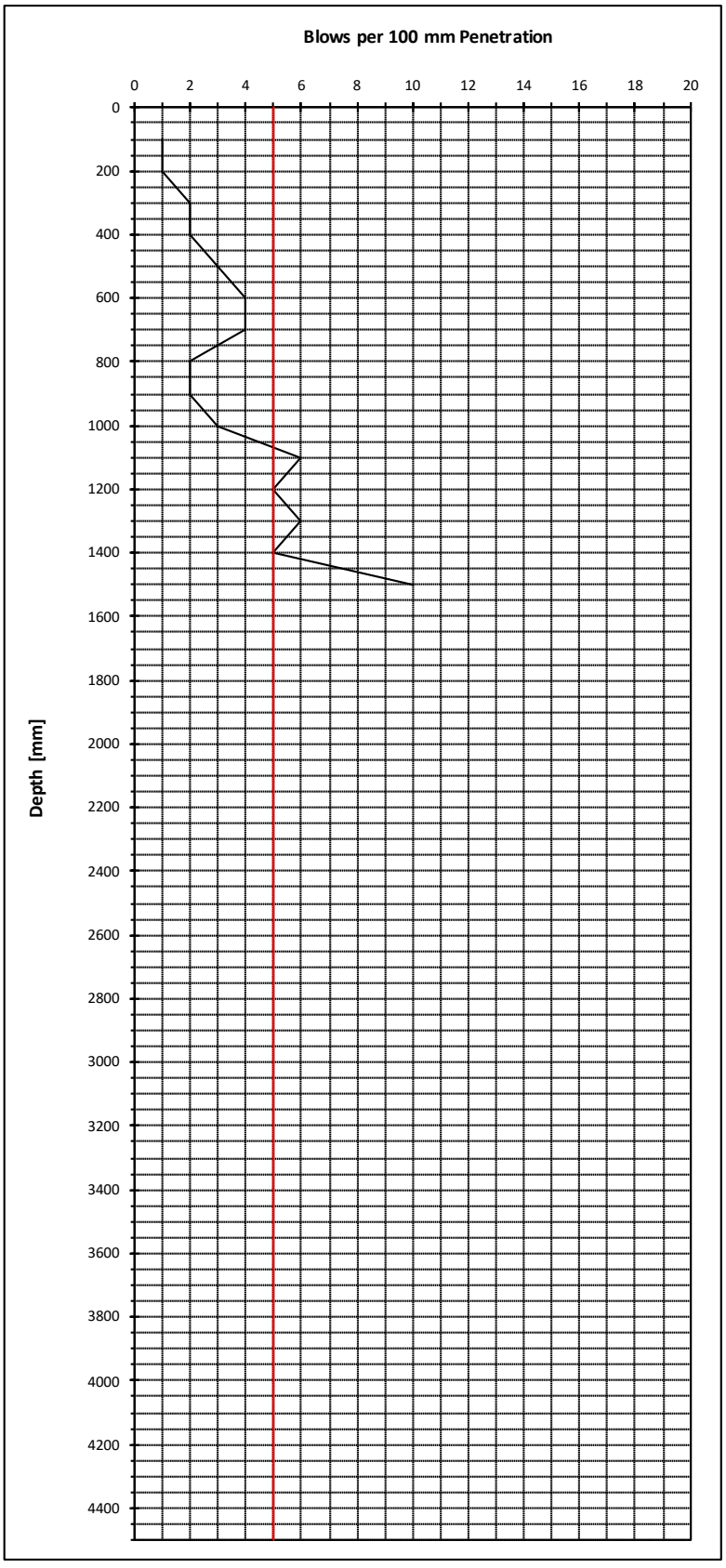

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Test 6.5.2

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Client: **Farrant**		SCALA PROBE	
Location: **372 Wanaka-Luggate Highway**		No: **SPT201**	**A4**
Tester: **Peter Forrest**	Date: **5/10/21**	Job Number: **GL21-056**	Rev: **1**

Test Pit Log

Project:	372 Wanaka-Luggate Highway	Project Number:	GL21-056
Site Location:	Wanaka	Client:	Farrant
Test Pit Number:	TP202		Sheet 1 of 1

Depth (m)	Water Level	Geological Unit	Sample	Soil Rock Description	Legend	Depth
		Topsoil		Sandy SILT with roots and rootlets, brown. Dry.		
0.5		Loess		Sandy SILT, with occasional rootlets, brown, mottled reddish brown. Loose to tightly packed, dry. Sand fine grained.		0.5
1.0		River Deposits		Sandy GRAVELS & COBBLES, light grey. Loosely packed, dry. Gravels fine to coarse subangular to subrounded. Cobbles subangular to subrounded. Sand medium coarse.		1.0
1.5						1.5
2.0				End of Pit - Sides collapsing		2.0
2.5						2.5
3.0						3.0
3.5						

Date Excavated: 5 October 2021	Equipment: 5.5T tracked excavator with 600mm smooth bucket
Logged By: PF	Contractor: Diverse Works Ltd

Geotago Ltd
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Queenstown 9371
New Zealand

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W: www.geotago.nz

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Notes:

Notes:

Depth (mm)	Blows (no.)
100	1
200	1
300	1
400	7
500	
600	
700	
800	
900	
1000	
1100	
1200	
1300	
1400	
1500	
1600	
1700	
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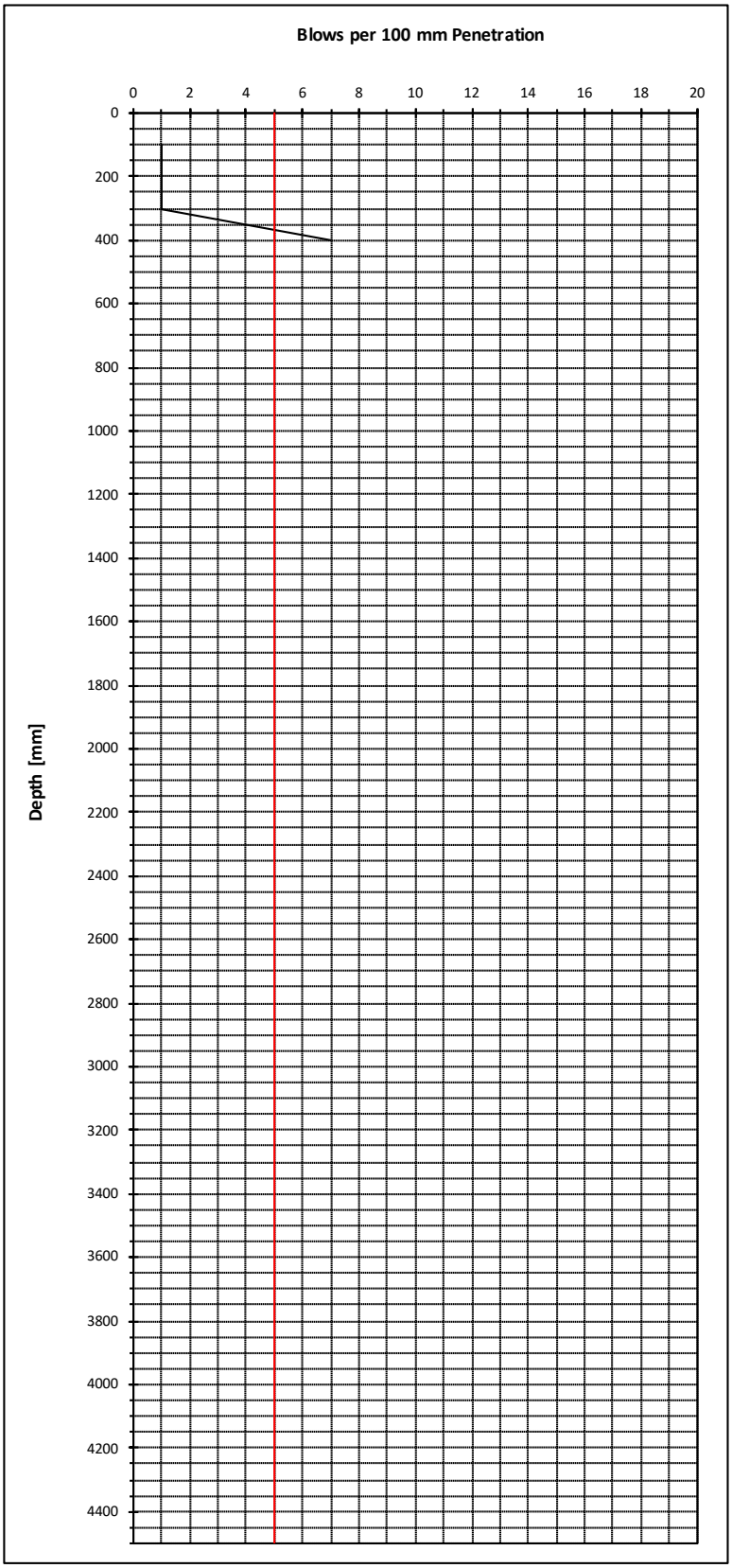

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Client: **Farrant**	SCALA PROBE		
Location: **372 Wanaka-Luggate Highway**	No: **SPT202**		A4
Tester: **Peter Forrest**	Date: **5 Oct 2021**	Job Number: **GL21-056**	Rev: **1**

Test Pit Log

Project:	372 Wanaka-Luggate Highway	Project Number:	GL21-056
Site Location:	Wanaka	Client:	Farrant
Test Pit Number:	TP203		Sheet 1 of 1

Depth (m)	Water Level	Geological Unit	Sample	Soil Rock Description	Legend	Depth
		Topsoil		Sandy SILT with roots and rootlets, brown. Dry.		
0.5		Loess		Sandy SILT, with occasional rootlets, brown, mottled reddish brown. Loose to tightly packed, dry. Sand fine grained.		0.5
1.0		River Deposits		Sandy GRAVELS & COBBLES, light grey. Loosely packed, dry. Gravels fine to coarse subangular to subrounded. Cobbles subangular to subrounded. Sand medium coarse.		1.0
1.5				End of Pit		1.5
2.0						2.0
2.5						2.5
3.0						
3.5						3.0

Date Excavated: 5 October 2021	Equipment: 5.5T tracked excavator with 600mm smooth bucket
Logged By: PF	Contractor: Diverse Works Ltd

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Notes: EDA test pit

Test Pit Log

Project:	372 Wanaka-Luggate Highway	Project Number:	GL21-056
Site Location:	Wanaka	Client:	Farrant
Test Pit Number:	TP R1		Sheet 1 of 1

Depth (m)	Water Level	Geological Unit	Sample	Soil Rock Description	Legend	Depth
		Topsoil		Sandy SILT with roots and rootlets, brown. Dry.		
0.5		Loess		Sandy SILT, with occasional rootlets, brown, mottled reddish brown. Loose to tightly packed, dry. Sand fine grained.		0.5
		River Deposits		Sandy GRAVEL with occasional cobble and very minor silt, greyish brown. Loose to tightly packed, damp. Gravels fine to coarse subangular to angular. Sand coarse.		
1.0				End of Pit		1.0
1.5						1.5
2.0						2.0
2.5						2.5
3.0						
3.5						3.0

Date Excavated: 5 October 2021	Equipment: 5.5T tracked excavator with 600mm smooth bucket
Logged By: PF	Contractor: Diverse Works Ltd

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Notes:

Notes:

Depth (mm)	Blows (no.)
100	1
200	2
300	2
400	5
500	8
600	8
700	
800	
900	
1000	
1100	
1200	
1300	
1400	
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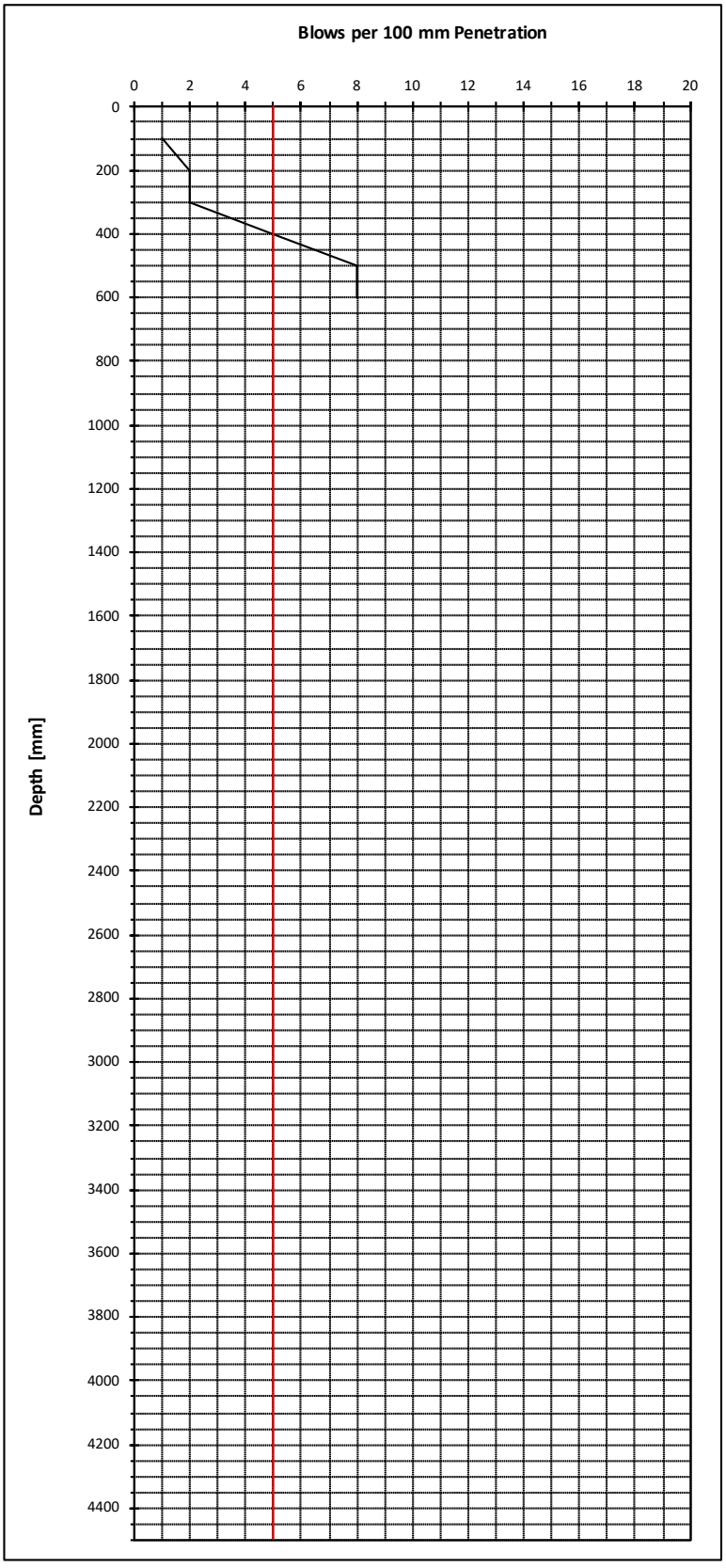

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Client: **Farrant**		SCALA PROBE	
Location: **372 Wanaka-Luggate Highway**		No: **SPT R1**	**A4**
Tester: **Peter Forrest**	Date: **5/10/21**	Job Number: **GL21-056**	Rev: **1**

Test Pit Log

Project:	372 Wanaka-Luggate Highway	Project Number:	GL21-056
Site Location:	Wanaka	Client:	Farrant
Test Pit Number:	TP R2		Sheet 1 of 1

Depth (m)	Water Level	Geological Unit	Sample	Soil Rock Description	Legend	Depth
		Topsoil		Sandy SILT with roots and rootlets, brown. Dry.		
		Loess		Sandy SILT, with occasional rootlets, brown, mottled reddish brown. Loose to tightly packed, dry. Sand fine grained.		
0.5		River Deposits		Sandy GRAVEL with occasional cobble and very minor silt, greyish brown. Loose to tightly packed, damp. Gravels fine to coarse subangular to angular. Sand coarse.		0.5
1.0				End of Pit		1.0
1.5						1.5
2.0						2.0
2.5						2.5
3.0						3.0
3.5						

Date Excavated: 5 October 2021	Equipment: 5.5T tracked excavator with 600mm smooth bucket
Logged By: PF	Contractor: Diverse Works Ltd

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Notes:

Notes:

Depth (mm)	Blows (no.)
100	2
200	2
300	2
400	2
500	6
600	6
700	
800	
900	
1000	
1100	
1200	
1300	
1400	
1500	
1600	
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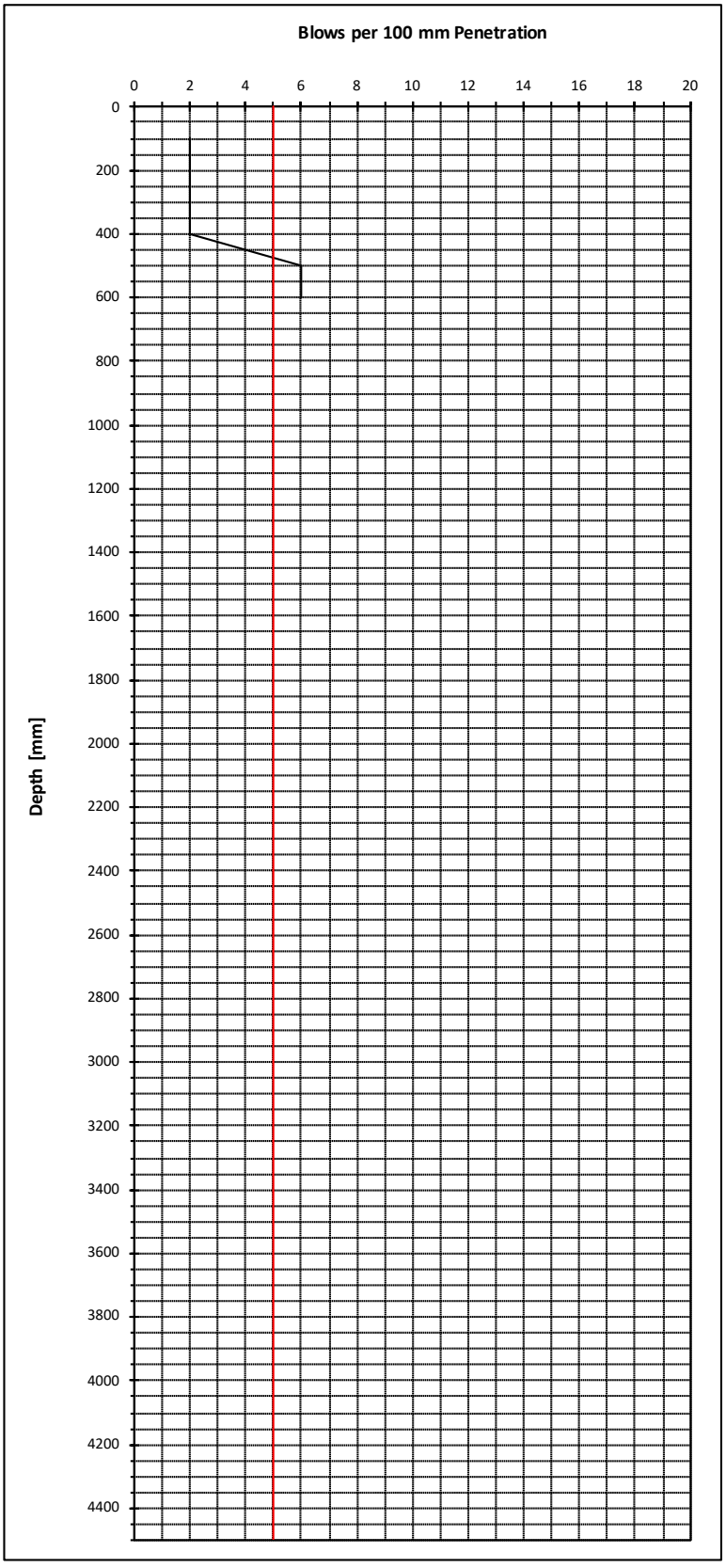

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Client: Farrant		SCALA PROBE	
Location: 372 Wanaka-Luggate Highway		No: SPT R2	A4
Tester: Peter Forrest	Date: 5/10/21	Job Number: GL21-056	Rev: 1

Test Pit Log

Project:	372 Wanaka-Luggate Highway	Project Number:	GL21-056
Site Location:	Wanaka	Client:	Farrant
Test Pit Number:	TP R3		Sheet 1 of 1

Depth (m)	Water Level	Geological Unit	Sample	Soil Rock Description	Legend	Depth
		Topsoil		Sandy SILT with roots and rootlets, brown. Dry.		
		Loess		Sandy SILT, with occasional rootlets, brown, mottled reddish brown. Loose to tightly packed, dry. Sand fine grained.		
0.5		River Deposits		Sandy GRAVEL with occasional cobble and very minor silt, greyish brown. Loose to tightly packed, damp. Gravels fine to coarse subangular to angular. Sand coarse.		0.5
1.0				End of Pit		1.0
1.5						1.5
2.0						2.0
2.5						2.5
3.0						3.0
3.5						

Date Excavated: 5 October 2021	Equipment: 5.5T tracked excavator with 600mm smooth bucket
Logged By: PF	Contractor: Diverse Works Ltd

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Notes:

Notes:

Depth (mm)	Blows (no.)
100	3
200	3
300	4
400	2
500	2
600	8
700	
800	
900	
1000	
1100	
1200	
1300	
1400	
1500	
1600	
1700	
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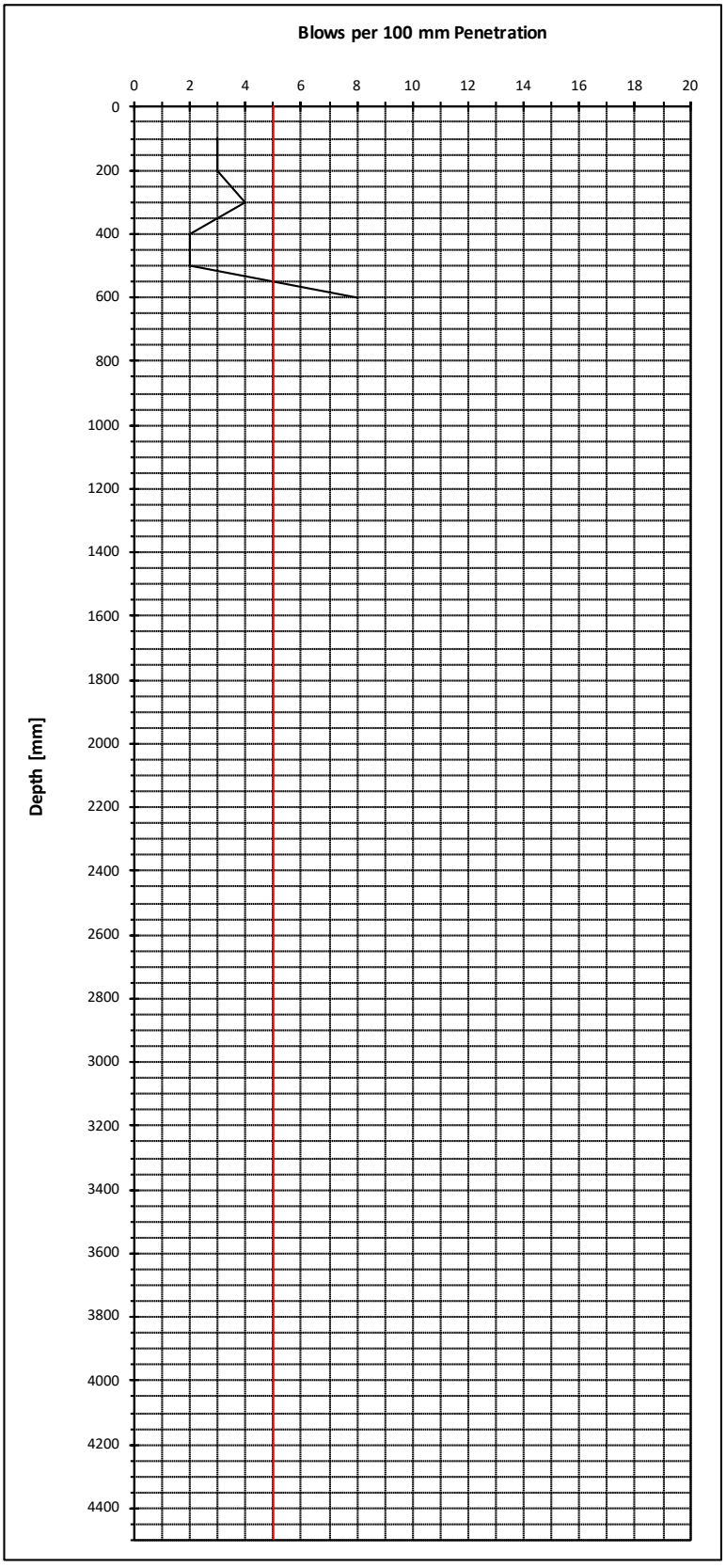

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Client: **Farrant**		SCALA PROBE	
Location: **372 Wanaka-Luggate Highway**		No: **SPT R3**	**A4**
Tester: **Peter Forrest**	Date: **5/10/21**	Job Number: **GL21-056**	Rev: **1**

Appendix C – Site & Soil Assessment

Onsite Wastewater Disposal Site & Soils Assessment

Use for Subdivision or Land Use Resource Consent

The design standard for waste water treatment and effluent disposal systems is AS/NZS 1547:2012. All references in this form relate to this standard.

Applications should provide sufficient information to demonstrate that all lots will be capable of accommodating an on-site system.

Site Description

Property Owner: Ian Ferguson Farrant and the Estate of MC Farrant

Location Address: 371 Wanaka - Luggate Highway, Wanaka

Legal Description (eg Lot3 DP1234) : Lot 2 DP 567770

List any existing consents related to waste disposal on the site: Historical consent associated with the main dwelling RM960516 and BC961097

General description of development / source of waste water: Residential lifestyle blocks - two building platforms

The number and size of the lots being created: 3 Residential lots of >9ha each. One lot is existing dwelling

Site Assessment (refer to Tables R1 & R2 for setback distances to site features)

Land use: Rural lifestyle and pasture

Topography: Level (Slope <5 degrees)

Slope angle:

Aspect: Open aspect with a slight tendency to the west

Vegetation cover: Grass/pasture

Areas of potential ponding: None

Ephemeral streams: None

Drainage patterns and overland paths: None

Flood potential (show with return period on site plan):

Distance to nearest water body: 600m

Water bores with 50m (reference ORC Maps): F41/0130 >500m to the north east.

Other Site Features: Irrigation pond and associated races but all >100m for potential EDAs

Slope stability assessment details – summarise any areas unsuitable for waste water irrigation. (Attach report if applicable): No stability issues on site

(Highest potential) Depth to ground water:

Summer >25m

Winter >25m

Information Source ORC Borehole database

What is the potential for waste water to short circuit through permeable soils to surface and / or ground water? No

Soil Investigation (Appendix C)

Field investigation date: 5 October 2021

Number of test pit bores (C3.5.4): 3 per lot, total of six for WW assessment

Soil investigation addendum to be attached that includes a plan showing test pit or bore location, log results and photos of the site profile.

If fill material was encountered during the soil investigation state how this will impact on the waste water system: No fill encountered on site

Average depth of topsoil: 300mm

Indicative permeability (Appendix G) : >3.0 m/d (Table L1)

Percolation test method (refer to B6 for applicability) : (attach report if applicable)

Soil Category *(Table 5.1)*	Soil Texture *(Appendix E)*	Drainage	Tick One
1	Gravel and sands	Rapid	
2	Sandy loams	Free	X
3	Loams	Good	
4	Clay loams	Moderate	
5	Light clays	Moderate to slow	
6	Medium to heavy clays	Slow	

Reasons for placing in stated category: Soil logging of six test pits. Potential infiltration of fine sand and silt form the overlying loess may impeded flow

Loading rate, DLR (Table L1): 50

Explanation for proposed loading rate:

Use of secondary treated effluent within massive structured sandy loams

Recommendations from site and soils assessment

Specify any design constraints
Specify any areas unsuitable for location of the disposal field
Specify any unsuitable treatment and/or disposal systems
Propose suitable mitigation to enable successful effluent treatment

Use of secondary treated effluent

Use discharge control bed or trenches

Soil catagory based ont he underlying sandy gravels below loess and fine sands.

Attachments Checklist

	Copy of existing consents
X	Soil investigation addendum
X	To scale site plan, the following must be included on the plan: Buildings Boundaries Retaining Walls Embankments Water bodies Flood potential Other septic tanks / treatment systems Water bores Existing and proposed trees and shrubs Direction of ground water flow North arrow

Note that an Otago Regional Council (ORC) consent may also be required to discharge domestic waste water to land if any of the following apply:

- Daily discharge volume exceeds 2,000 litres per day
- Discharge will occur in a groundwater protection zone
- Discharge will occur within 50 metres of a surface water body (natural or manmade)
- Discharge will occur within 50 metres of an existing bore/well
- Discharge will result in a direct discharge into a drain/water ace/ground water
- Discharge may runoff onto another persons' property

If any of these apply then we recommend that you correspond with the ORC;

Otago Regional Council
"The Station" (upstairs)
Cnr. Camp and Shotover Streets
P O Box 958
Queenstown 9300

Tel: 03 442 5681

I believe to the best of my knowledge that the information provided in this assessment is true and complete. I have the necessary experience and qualifications as defined in Section 3.3 AS/NZS 1547:2012 to undertake this assessment in accordance with the requirements of AS/NZS 1547:2012:

Company:	Geotago Ltd
Email:	pete@geotago.nz
Phone number:	0272 699 736
Name:	Dr Peter Forrest
Signature:	
Date:	8 October 2021

Appendix D – Site Photographs

Test Pit 101 - Pit 	Test Pit 101 - Arisings 
Test Pit 102 – Pit 	Test Pit 102 - Arisings 
Test Pit 103 - EDA 	Test Pit 103 - Arisings 

Test Pit 201 - Pit 	Test Pit 201 - Arisings 
Test Pit 202 - Pit 	Test Pit 202 - Arisings 
Test Pit 203 – EDA 	Test Pit 203 - Arisings 

Test Pit R1– Pit (Pavement Pit)

Test Pit R2– Pit (Pavement Pit)

Test Pit R3– Pit (Pavement Pit)

Environmental Management Plan (Revision A)

372 Wanaka Luggate Highway

Document Control

Title:	**372 Wanaka Luggate Highway - Environmental Management Plan**
Client:	**Ian Ferguson Farrant**
Our Reference:	**21073**
Prepared by:	**Tom Grandiek (CEnvP) (BAppSc)**  
Reviewed by:	**Quinn McIntyre (MSc CEnvP)**  

Revision Register

Rev:	Rev Date:	Rev Details:	Prepared by:
A	20/12/2021	For client	TG

Table of Contents

Appendices

Disclaimer

Enviroscope has exercised due skill, care and attention in preparing this EMP on the basis of their understanding of the subject site through their own site visits as well as information provided by the client and its consultants. Enviroscope has no control over the physical actions, detailed design, equipment, services and methodology's undertaken by the client or other third parties tasked with implementing Enviroscope's instructions or recommendations. Enviroscope does not accept any responsibility for any environmental incidents or other defects of control measures if there is any departure or variance from the measures detailed in this EMP and any supporting documentation.

Emergency Contacts

Please contact the Environmental Representative prior to making contact with the following emergency contact list. Contact made with any of the following should be undertaken with due consultation of the Environmental Representative or Project Manager.

Element:	Emergency Contact:	Details:
Pollution incident	Otago Regional Council (ORC) Spill Hotline	0800 800 033
Environmental Complaint	Environmental Representative	TBC
Discovery of contaminated land	Environmental Representative	
Unexpected heritage finds	Environmental Representative	
Discovery of human remains	New Zealand Police	111
Fire including bushfire	Fire and Emergency New Zealand (FENZ)	111
Public utilities	Queenstown Lakes District Council	03 441 0499
Internal contacts	Project Manager	TBC
Internal contacts	Site Engineer	TBC
Internal contacts	Environmental Consultant	Tom Grandiek (Enviroscope) 0272633113

1.0 INTRODUCTION

1.1 Environmental Management Plan

On behalf of Ian Ferguson Farrant, Enviroscope has prepared this Environmental Management Plan (EMP) to outline the mitigation measures to manage the environmental effects associated with the earthworks relating to the formation of two building platforms and upgrading of an existing farm track.

This EMP will demonstrate how best practice construction environmental management will be undertaken throughout the continuing project as well as provide technical guidance to the contractors working onsite.

This EMP is prepared according to the *QLDC Guidelines for Environmental Management Plans*, *June 2019* (The Guidelines). This project is considered to have a 'High' environmental risk level as per the risk-categories outlined in The Guidelines and has been prepared on that basis.

The EMP is intended to be effective and practical. It provides a commitment to conforming to applicable environmental legislation (i.e. the *Resource Management Act, 1991* and relevant National Environmental Standards), regional and district planning documents and associated guidelines and standards along with continual improvement in environmental performance. It details how environmental safeguards outlined within relevant consents and specialist reports will be addressed. The principal purpose of the EMP is to be a reference manual for construction personnel, which contains mitigation measures to be implemented to manage the potential ongoing environmental effects of the construction works.

The Project requires that the Project Team continues to implement and develop the EMP requirements as defined in this document throughout the construction phase. This will ensure continual improvement and will account for:

- Changes to the construction program
- Improvements/changes to environmental management techniques
- Objectives and target review

1.2 Site Overview

The site is located on the southern side of the Wanaka Luggate Highway and north of Black Peak Road Wanaka. The site is part of existing farmland sitting on a raised terrace above the Cardrona River to the west of the property. The site is very flat in nature and the lower lying paddocks are segmented by raised border dykes/water races which are a common feature across this area of farmland. The border dykes are controlled manually and are only periodically activated to irrigate surrounding farmland in the area.

The border dykes are set at contour above the paddocks being developed and provide separation between paddocks on the property. These provide natural diversions between the proposed building platforms.

Soils in this area are traditionally classic river alluvial deposits formed by the Cardona River. Manaaki Whenua NZ Soils reports that soils in this zone are considered a high to moderately permeable classification made up of a moderately silt based loam with a high to moderate stone content.

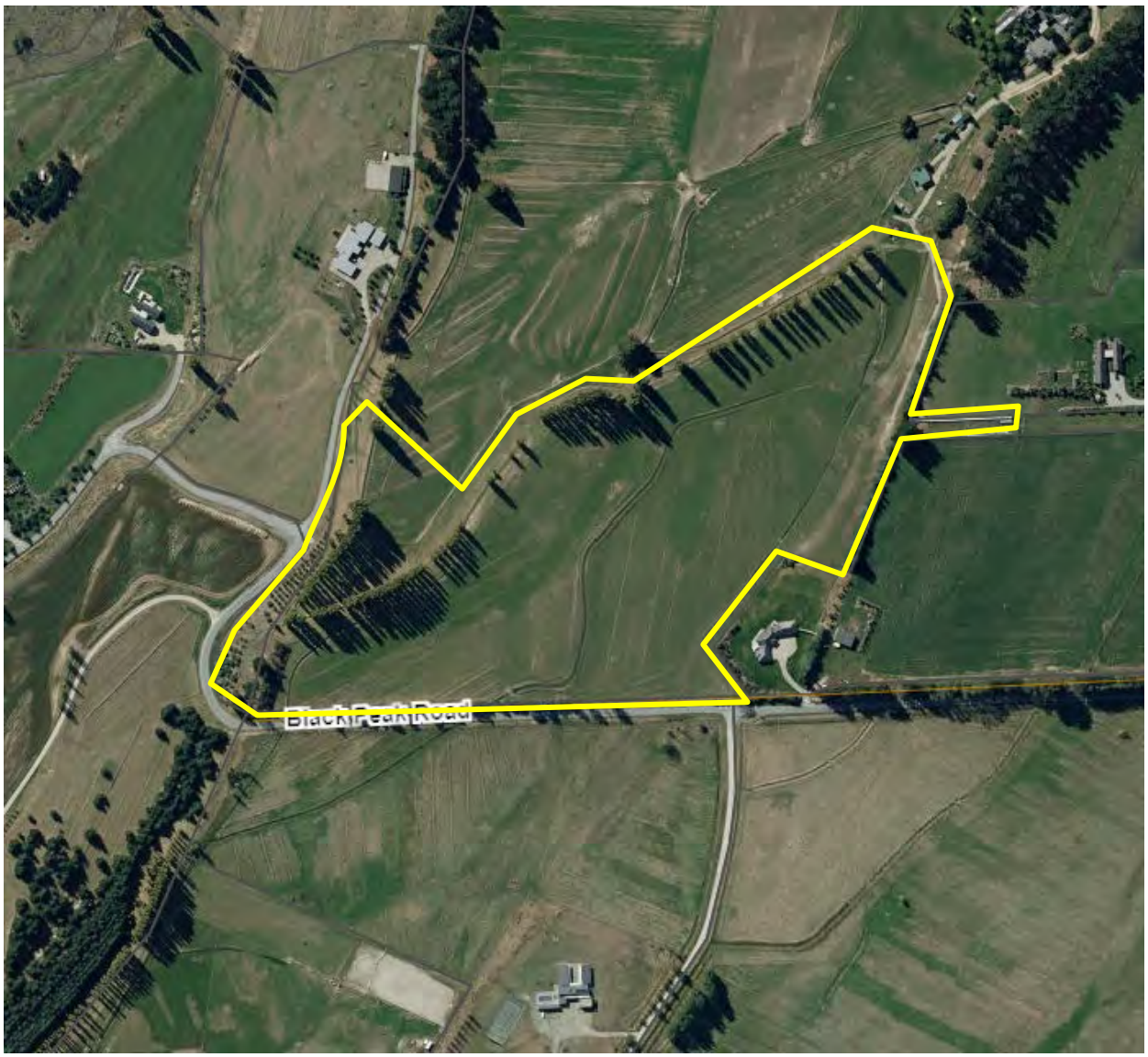


Figure 1: Approximate location of works site

1.3 Project overview

The project is anticipated to be completed within 3 months. The scope for construction works generally involves:

- Establishing Erosion and Sediment Controls
- Upgrade existing farm track access
- Undertake cut to fill earthworks to form building platforms and landscape mounds. Over an area of approximately 49,700 m^2
- Stabilise exposed areas
- Landscaping

1.4 Scope of the EMP

The EMP applies to all Project activities during the construction phase including access road earthworks, servicing, services and landscaping. The aim is to reduce the environmental effects of the Project's construction activities on the environment and sensitive receptors, whilst maintaining a high standard of environmental performance ensuring compliance with the approved resource consent conditions and The Guidelines.

The EMP includes as a minimum the following:

- Identification of significant aspects and environmental risks.
- Strategies to manage environmental aspects and risks.
- Includes all mitigation measures committed to in the relevant Resource Consents and the Guidelines.
- Including a series of 'environmental operating procedures' for each environmental element according to The Guidelines.
- Provides for contingency planning.
- Provides a framework for impact monitoring, reporting, review and improvement.
- Defines roles and responsibilities.
- Includes procedures for investigating and resolving environmental non-conformances and initiating corrective and preventative actions.
- Evolves as mitigation measures are refined and site inspection results improve (driving continuous improvement).

1.5 EMP Updates

To drive continual improvement of environmental management on the Project, the EMP will be regularly reviewed through ongoing monitoring of the site to ensure the document remains fit for purpose.

Changes to the EMP may be implemented as a result of the following:

- Significant changes to the construction methodology.
- To respond to improvements identified as a result of an Environmental Incident, management failure or corrective action.
- Where directed by QLDC's or ORC's Monitoring and Enforcement teams.

All updates to the EMP shall be managed through document control procedures as recorded on page one of the EMP and shall be submitted to QLDC and or ORC for acceptance at RCMonitoring@qldc.govt.nz & compliance@orc.govt.nz

1.6 Suitably Qualified and Experienced Professional

This EMP has been prepared by Tom Grandiek of Enviroscope Limited. Tom is a certified Environmental practitioner (CEnvP) and has a Bachelor of Applied Sciences degree, majoring in Environmental Management. He spent five years working in compliance in local government with a particular focus on RMA and Environmental improvement within the QLDC district. Tom has extensive experience in the preparation and monitoring of 'Medium and High Risk' sites according to QLDC Guidelines for Environmental Management Plans ('The Guidelines'). Tom has undertaken IECA Erosion and Sediment Control Best Practice Training.

2.0 CONSTRUCTION METHODOLOGY

2.1 Sequencing of Works

Construction will be undertaken according to the following steps which will ensure that the Project is constructed as efficiently as possible whilst achieving the environmental objectives outlined in this EMP. The staging order has been selected to ensure the earthworks undertaken onsite do not cause any sediment-laden water to leave the site through the natural overland flow channels.

This methodology will need to be read in conjunction with the Erosion and Sediment Control Plan (ESCP) attached as **Appendix 1** and the erosion and sediment control device detail outlined in Section 4 of this EMP.

Preliminary works, (prior to as-built confirmation)

Step 1- Utilise existing stabilised farm track for construction vehicle access. A stabilised entranceway with a larger formed aggregate will be required to be constructed between the site and the access. Refer to section **4.3.11** for design detail.

Step 2 - Establish site laydown and compound area.

Step 3 – Ensure Border Dykes/clean water diversions are clear of debris and allow the unimpeded flow of clean water through the works area.

Step 4 – Ensure border dykes are shut off during construction and are unable to flood the works zone.

Step 5 – Make sure there are no low points or sag points within the soakage zones that could enter border dykes.

Stage 1 – Earthworks

Step 6 – When undertaking earthworks, plan to complete works during settled weather period. Care is to be undertaken around existing border dykes.

Step 7 – Undertake cut to fill earthworks for the stage 1 area. Ensure when completing cut, that its shaped back into the middle of the paddock to promote overland flow into the centre of the stage to soak via ground infiltration. Staging is important to minimise excessive soil exposure and dust erosion during the dry summer period. Progressively stabilize exposed areas upon completion.

Step 8 – When undertaking cut to fill to form landscape mounds, ensure the mound is shaped and capped during construction to reduce potential wind-borne erosion.

Stage 2 – Bulk Earthworks

Step 9 – Dewater existing pond if water is present. Discharge to ground in soakage area C. When dewatering utilise submersible pump to skim the surface of the pond.

Step 10 – Undertake cut to fill earthworks. Ensure when completing cut, that its shaped back into the middle of the paddock to promote overland flow into the centre of the stage to soak via ground infiltration.

Step 11 - Staging is important to minimise excessive soil exposure and dust erosion during the dry summer period. Progressively stabilize exposed areas upon completion.

Stage 3 - Upgrade existing farm track

Step 12 – Form Road sub grade surface.

Step 13 - Lay aggregate and compact road surface once desired levels are reached.

Step 14 – Install any services required and seal access if required.

Stage 4 – Landscaping and revegetation

Step 15 - Revegetate any exposed surfaces. Complete any required landscaping.

Decommissioning

Step 16 - Decommission Erosion and Sediment Controls once 80% stabilization rate has been obtained. This should be completed in conjunction with your SQEP.

2.2 Hours of Operation

Hours of construction operation are to comply with New Zealand Noise standards. NZS 6803:1999 *Acoustics – Construction noise* allows for the production of significant noise between the hours of 7.30am to 6.00pm during weekdays. The standard also contains provisions relating to:

- the measurement of noise from construction, maintenance, and demolition work
- the assessment of such noise to determine whether action is required to control those noise emissions.

No works are to be undertaken on Sunday or Public Holidays; however this does not preclude any emergency works or works required for incident investigation or response. More information in relation the noise standards can be found in the noise section of this EMP.

3.0 EMP IMPLEMENTATION

3.1 Environmental Roles and Responsibilities

Individual environmental responsibilities for the Project are detailed below:

Role:	Environmental Responsibilities:
Project Manager TBC	The Project Manager has responsibility for the effective implementation of the EMP and has overall responsibility for the environmental performance of the project. The Project Manager is primarily responsible for: • Ensuring adequate resources are in place to implement the EMP. • Ensuring that project objectives and targets are achieved in accordance with the relevant EMP. • Ensuring Project Managers, Supervisors, Employees and Sub-Contractors operate within the guidelines of the EMP. • Ensuring that an EMP is prepared and that environmental standard, processes and procedures meet relevant resource consent conditions. • Overseeing the successful implementation, monitoring and review of the EMP. • Providing reporting of environmental incidents to the QLDC and other periodic environmental reports to QLDC as required by The Guidelines. • Ensuring that inspections and audits are carried out in accordance with the relevant EMP. • Restrict or stop any activity on the Project that has the potential to or has caused environmental effects. • Delegate authority of the above responsibilities.
Site Supervisor TBC	• The Site Supervisors are accountable to the Project Manager and responsible for: • Ensuring they understand and comply with EMP. • Ensuring that site employees and sub-contractors are working in compliance with environmental requirements and work activities are not impacting the environment. • Coordinating the implementation of the EMP. • Identifying resources required for the implementation of the EMP. • Coordinating actions in emergency situations/rapid stabilisation of site and allocating appropriate resource for these activities. • Restrict or stop any activity on the Project that has the potential to or has caused environmental effects. • Ensuring that adequate instructions and information is provided to Operators which relate to environmental risks onsite.

Environmental Representative TBC	The Environmental Representative is accountable to the Project Manager and supports the Project Manager and Site Supervisor in the day-to-day implementation of the EMP. This is a key environmental role for the Project and includes the following responsibilities: *Coordinate the Implementation of the EMP* • Ensure installation of environmental controls as per the EMP. • Undertake environmental site inspections of the project including end-of-day inspections of controls. • Oversee the maintenance and improvement of defective environmental controls. • Undertake Environmental Incident reporting. *Communication* • Keep project leadership informed of environmental performance of the project. • Inform staff of procedures and constraints applicable to managing specific environmental issues. • May be responsible for providing environmental inductions to all staff and sub-contractors. *Complaints and Incidents* • Assist the project leadership in attending to Environmental Incidents and Complaints. *Familiarity* The Environmental Representative will be familiar with: • Environmental aspects of the project. • Environmental Management Plan. • Best practice erosion and sediment control from: - *Guidance Document 2016/005: Erosion and Sediment Control Guide for Land Disturbing Activities in the Auckland Region (GD05);* and/or, - Similar Regional Council guidelines from throughout New Zealand based on GD05 or internationally recognised best practice.
Environmental Consultant (SQEP) Tom Grandiek	The Environmental Consultant will oversee the environmental management of the site and provide technical environmental management advice as and when required. The Environmental Consultant will deliver the Site Environmental Induction to core staff and check the erosion and sediment controls around the dwelling site to ensure they have been correctly installed and provide QLDC with As-built confirmation of this. The Environmental Consultant will undertake monthly monitoring of the site in accordance with The Guidelines to ensure that the EMP continues to provide adequate environmental management for the Project. The Environmental Consultant will also prepare and submit Monthly Environmental Reports to QLDC.

All staff	All Project staff have responsibility for their own environmental performance and the impact they have on Project environmental performance. In particular, all staff are required to: • Undertake all activities in accordance with the requirements of the EMP. • Ensure they are aware of the contact person related to environmental matters. • Report to the Site Supervisor or Environmental Representative, any activity that has the potential to or has resulted in an Environmental Incident.
Subcontractors	The Project has a responsibility to ensure that all persons involved with the Project, including Subcontractors/Suppliers/Consultants and their employees shall comply with relevant environmental requirements. All subcontractor personnel are considered equivalent to staff personnel. This includes all aspects of environmental management and control; their responsibilities will mirror that of staff. All subcontractors and their employees shall participate in the Site Environmental Induction prior to commencing works.

3.2 Site Environmental Induction

All staff and subcontractors will attend a Site Environmental Induction to ensure they are aware of their environmental responsibilities. This will involve an induction session for all regular site staff prior to ground-disturbing activities with subcontractors to be inducted as they come onto the Project prior to undertaking work.

The Site Environmental Induction will include the following (document attached as **Appendix 3**):

- Basic roles and responsibilities for environmental management.
- Specific locations within the site of environmental significance or risks, including Sensitive Environmental Receptors.
- Scope and conditions of resource consents applicable to the works.
- The limit of clearing and earthworks for each Stage of works.
- Environmental management measures stipulated in the EMP.
- Procedures of notifying of potential Environmental Incidents.
- Procedures for managing storm events (wind and rain).

The induction will be delivered to core staff by the Environmental Consultant and then from that point on for sub-contractors and new staff by the Environmental Representative (see section 3.1). This will ensure that core staff are appropriately familiar with the environmental management approach for the site and will also provide the Environmental Representative with an example of how to deliver inductions from that point on.

The Project will maintain a register of all persons inducted and the register is attached as **Appendix 4**.

3.3 Environmental Inspections

Regular environmental inspections will be undertaken of the site to confirm that the environmental management of the site is capable of preventing environmental effects of the construction activity. Details of the specific environmental inspections to be undertaken by the Environmental Representative are outlined in the following table:

Environmental Inspection:	Timing:	Purpose:
Weekly Inspection	Every 7 days	A comprehensive environmental inspection of the site to verify that: • The management measures prescribed in the EMP for all environmental elements are present, functional, and adequate. • Identify any activities that may cause an environmental incident or actual or potential environmental effects. • Identify maintenance requirements for implemented management measures. All weekly inspections will be recorded on the Weekly Site Inspection proforma (attached as **Appendix 5**).
End-of-Day Inspection	End of each working day	A quick walkover of the site to ensure that: • Erosion and sediment controls are present, functional, and adequate. • Identify any activities that may cause an environmental incident or actual or potential environmental effects. This inspection will inform any improvement work required for the following day unless an issue is identified that presents risk of a potential environmental incident occurring overnight. This would warrant immediate remediation. Observations and remediation measures taken will be recorded in a daily job diary.
Pre-Event Inspection	Prior to Significant Rain Event[1]	To ensure that: • Erosion and sediment controls are present, functional, and adequate to perform in the upcoming event based upon the forecast accumulation of rainfall. This inspection will inform any preventative work required prior to the event and may also result in escalation of the Rapid Response Procedure (see section 4.3.14)

[1] For the purposes of this EMP a significant rain event is defined as any rain event that is capable of generating overland flow.

		Any observations and preventative measures taken will be recorded in a daily job diary.
Post-Event Inspection	Immediately following a Significant Rain Event	Any observations and corrective actions will be recorded in a daily job diary.
Monthly SQEP Inspections	Undertaken the last week of each month during construction	Ensure EMP and associated documents are fit for purpose and relevant. Update plans as required.

3.4 Monthly Monitoring by SQEP

The site will be monitored by SQEP/Environmental Consultant to ensure that the EMP is being implemented such that potential or actual environmental effects are appropriately managed. This monitoring will identify any unforeseen issues that may be arising and will advise on alternative environmental solutions that will result in more effective environmental management. Where these situations arise, the SQEP will update the EMP accordingly and submit to QLDC for acceptance. Any updates will be managed through document control. As the Environmental Consultant who is also a SQEP will be working with close supervision of the site, no independent environmental audits are considered necessary.

3.5 Monthly Environmental Reporting

The project will complete and submit exception reporting to QLDC in the form of a monthly environmental report within 5 working days of the end of each month.

The monthly environmental report will include the following information:

- Updates to the EMP and the Erosion and Sediment Control Plan [ESCP] made during the month.
- Number of weekly and pre and post-rain event site inspections completed, and summary of corrective actions undertaken.
- Summary of monitoring observations by SQEP and where any corrective actions were advised and whether they have been completed.
- Positive environmental outcomes achieved and opportunities.

This reporting will be completed and submitted to Council by the Environmental Consultant.

3.6 Environmental Incident Management

3.6.1 Environmental Incident Response

Environmental incidents shall be responded to immediately as the Project team becomes aware of them. This will involve:

- Immediate cessation of the activity that caused the incident.
- Investigation into the cause of the incident.
- Contact Environmental Consultant for advice where site staff are unsure of how to correct the issue.
- Formulation of a solution to bring the incident under control or remediate any environmental damage.
- Implement any remediation works.

3.6.2 Notification of Environmental Incidents

The Project Manager shall notify QLDC and/or ORC of the details of any Environmental Incident within 12 hours of becoming aware of the incident. This will be through a phone call to Council Monitoring staff.

3.6.3 Environmental Incident Reporting

The Project Manager shall provide an Environmental Incident Report within 10 working days of the incident occurring. The Incident Report proforma is attached as **Appendix 6**

3.7 Records and Registers

The following records will be collated onsite and shall be available to QLDC on request within 24 hours of a request being made by a QLDC official. These records will include the following:

- Environmental Induction attendance register.
- Environmental Incident reports and associated corrective actions undertaken.
- Complaints register and associated corrective actions undertaken.
- Daily diary entries (including pre-start inspection observations).
- Post-Rain event inspection observations and corrective actions.
- Weekly Site Inspection checklists.
- Monitoring results (e.g., water quality).
- EMP Non-conformance register (based on weekly inspection results or otherwise identified) and associated corrective actions taken.

All records will be kept in an organised central location and will be managed by the Project Manager. All records will be uploaded or amended by the Environmental Representative as inspections, monitoring, corrective actions, etc. are completed.

3.8 Complaints Procedure

Ian Ferguson Farrant aims to conduct their business activities in a professional manner with minimal to no impact on others not directly involved with the works being undertaken.

In the event that a complaint is lodged directly or indirectly, the complaint is to be recorded and an investigation is to be carried out. Upon notification the Project Manager is to be informed of the complaint. A response shall be provided to the complainant, acknowledging receipt of the complaint and outlined proposed controls that are to be implemented. At the completion of the investigation, all corrective actions are to be closed out and a follow up of the original complaint is to be conducted to ensure the actions implemented have been effective.

Any complaint when investigated was found to be warranted shall be recorded as an environmental incident and shall be managed in accordance with the procedure outlined in section 3.6 above.

All complaints will be recorded on the Complaints Register (proforma attached as **Appendix 7**).

3.9 EMP Non-Conformance and Corrective Actions

Any EMP non-conformances found during site inspections, various monitoring or as a result of incidents or complaints shall be recorded in the EMP Non-Conformance Register. This will detail when corrective actions are due by, how they were to be carried out and the date when they were closed out. The EMP Non-Conformance Register is attached as **Appendix 8**.

This measure is to ensure that no issues slip through the gaps or escalate into much larger issues. It will also provide a clear record of evidence that can be used to defend any potential complaint or formal enforcement action.

4.0 EROSION AND SEDIMENT CONTROL MEASURES

Construction related activities exacerbate soil erosion rates significantly. This is because disturbed soils are more easily detached from the ground surface via wind, rain or water action. Consequently, if best practice controls are not established to mitigate this increase in erosion, significant adverse environmental effects may occur in the receiving environment.

4.1 Performance Criteria

1. To avoid the discharge of any sediment-laden water (defined as over 50mg/L TSS or 100 NTU turbidity) across the boundary of the site.
2. The discharge of sediment does not result in any of the following effects in receiving waters, after reasonable mixing:

    - The production of conspicuous oil or grease films,

scums or foams, or floatable or suspended materials; or

    - Any conspicuous change in the colour or visual clarity;

or

    - Any emission of objectionable odour; or
    - The rendering of fresh water unsuitable for consumption by farm animals; or
    - Any significant adverse effects on aquatic life.

3. To avoid the discharge of dust plumes beyond the site boundaries.

4.2 Erosion Risk and Design Event

The likelihood that an earthworks project could have significant adverse effects on the receiving environment is dependent on the following aspects:

- How long soil is exposed (duration of the works).
- The maximum exposed area of the works at any one time.
- The use good site management practices.
- The use and maintenance of effective erosion and sediment controls.
- The slope and geology of the site (erodibility and sediment pathways).
- The location of the site and proximity of the receiving environments.
- The chance of a storm occurring during the works which causes erosion and sediment transport off site.

The project team has direct control over the first four points and can use good onsite practice and a risk-based approach to the design of erosion and sediment controls to minimise the influence of the slope, geology, and the occurrence of storm events.

Storm events are the primary cause of erosion and sediment transport off site. Short duration works may be lucky enough to be completed during a dry spell resulting in minimal opportunity for sediment pollution, however storms of any size can happen at any time and even short duration works undertaken in the drier summer months may experience a large storm event resulting in significant off-site discharges.

The longer the duration of the works the greater the chance of a specific sized storm event occurring during the time that soils are exposed and vulnerable to erosion.

These factors have been taken into account and a design event has been selected following the method in **Appendix 2.**

For the purposes of this EMP and ESCP, a 2 - hour, 10 % Annual Exceedance Probability (AEP) design event (or 10-year Annual Return Interval) has been selected, given that:

1. Duration of earthworks is 6 months
2. Soils are only low to moderately erodible or dispersive
3. Some areas of the site have a moderate slope
4. There are two nearby waterways
5. Clear flow paths exist on site to direct and manage any overland flows

4.3 Management Measures

4.3.1 Erosion and Sediment Control Principles

Erosion and sediment control ('ESC') devices shall be installed, maintained and decommissioned in accordance with the following principles:

a) Erosion and sediment controls are integrated with construction planning
b) A 'treatment train' approach so that the sediment retention devices operate as efficiently and effectively as possible
c) Separation of 'clean' and 'dirty water' with clean water to be diverted around the site to minimise the volume of dirty water needing management onsite
d) The extent and duration of soil exposure is minimised
e) Soil erosion is minimised as far as reasonable and practical
f) Controls are maintained in proper working order at all times
g) The site is monitored, and ESC practices adjusted to maintain the required performance standard
h) Avoidance of sediment discharge off site
i) Progressively stabilise and revegetate disturbed or completed areas.

4.3.2 Objectives of the ESCP

This ESCP is based upon the following key objectives to be achieved during the life of the construction program:

- The avoidance of sediment-laden water across the boundaries of the site.

- A treatment train approach will be employed to ensure the sediment retention devices can function as efficiently as possible during the construction-phase. Key among this is the separation of clean and dirty water and secondary devices to reduce stormwater and sediment loading to the primary sediment retention devices.

4.3.3 Guidance on Erosion and Sediment Control Devices

The effective control of surface water will be achieved through the utilisation of carefully selected ESC devices to achieve a certain purpose. These guidelines to the devices employed on this project should be read in conjunction with the ESCP attached as **Appendix 1** of this document.

Erosion and sediment control measures will be installed in general accordance with *Guidance Document 2016/005: Erosion and Sediment Control Guide for Land Disturbing Activities in the Auckland Region* (GD05) and *Best Practice Erosion & Sediment Control* by the International Erosion Control Association (IECA) Australasia Chapter, 2008.

4.3.4 Clean water diversion channels

Clean water diversion bunds are to be installed above exposed earthworks areas where clean water generating catchments exist. The existing border dykes create natural clean water barriers between the earthworks zones. Due to the depressed earthworks areas being cut lower, there is no upslope earthworks catchments contributing to these areas and the requirement for traditional clean water diversions is not considered necessary.

An example of the existing border dyke is shown in **figure 4** for reference. If during construction its determined that additional clean water diversions are required, these are to be constructed in accordance with **figure 3**.

Figure 2: Lined clean water diversion bund on slope (Source: Enviroscope)

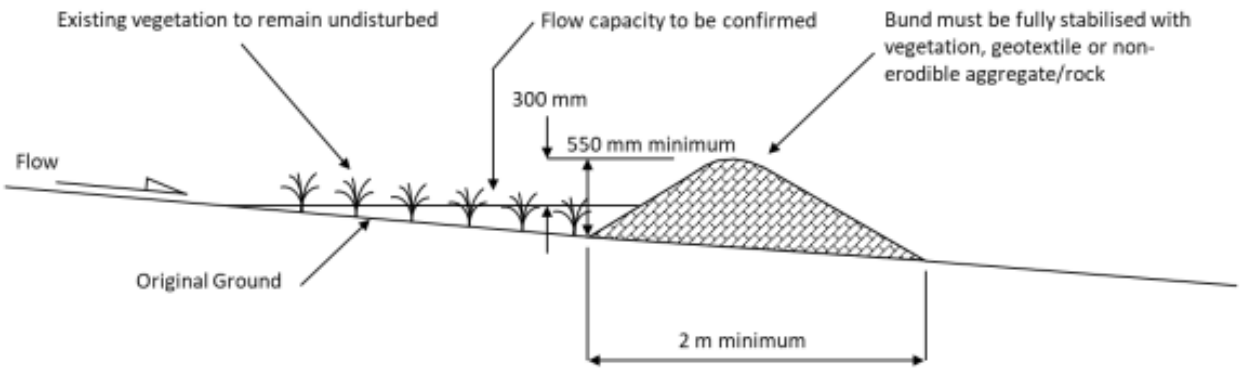


Figure 3: Clean Water Diversion Bund (Source: GD05)

Figure 4: Example of raised Border Dyke clean water diversion channel on site (Source: Enviroscope)

4.3.5 Dirty water diversion channels

As the proposed earthworks excavate already concave areas, and overland flows naturally fall into the soakage zones, and traditional dirty water diversion channels are not considered necessary to collect and transport dirty water. Dirty water diversion channels can be installed adaptively if considered necessary during construction and will be designed by the SQEP in accordance with GD05 standards.

Dirty water diversion channels should be constructed in accordance with **Figure 5:**

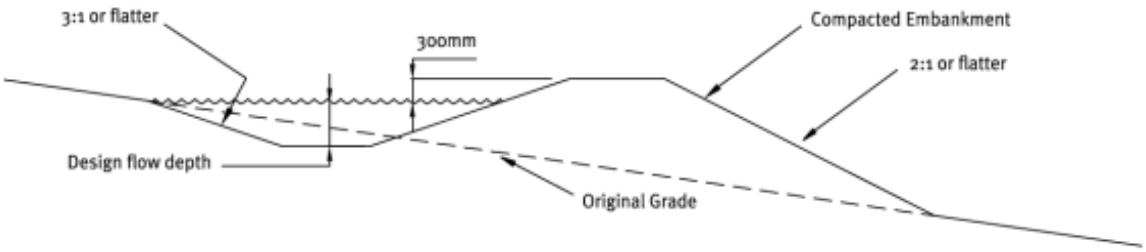


Figure 5: Cross section of dirty water diversion channel (Source: GD05)

4.3.6 Check dams

Rock check dams will be deployed primarily to reduce velocity of water within diversion channels. They will also act to capture some coarse sediment. On downslope channel sections, check dam should be placed as per **Figure 8**, as per the respective slope incline. Check dams will be designed in accordance with **Figure 6** and **Figure 7** (complete guidelines on pages 50-54 of GD05):

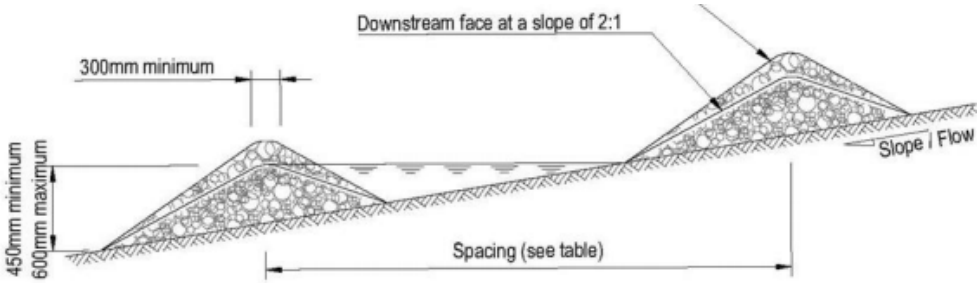


Figure 6: Rock check dam elevation (Source: GD05)

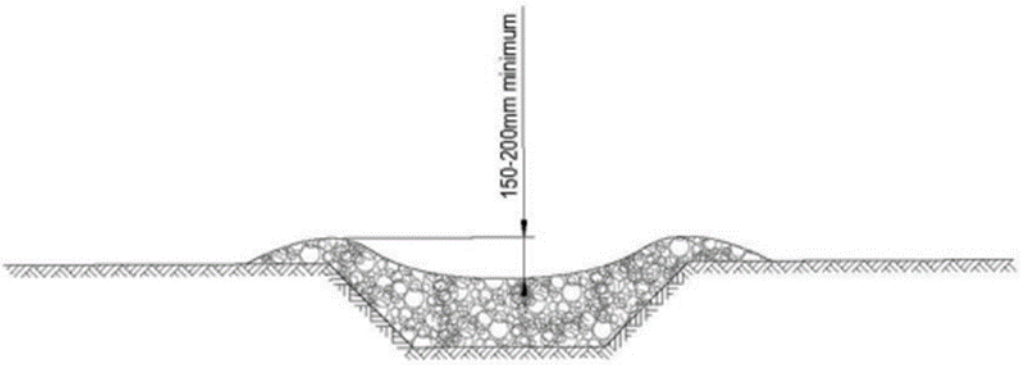


Figure 7: Rock check dam cross sections (Source: GD05)

Slope of site (%)	Spacing (m) between dams with a 450 mm centre height	Spacing (m) between dams with a 600 mm centre height
Less than 2%	24	30
2 - 4%	12	15
4 - 7%	8	11
7 - 10%	5	6
>10%	Unsuitable - use stabilised channel or specific engineered design	Unsuitable - use stabilised channel or specific engineered design

Figure 8: Rock check dam spacing Source: GD05)

4.3.7 Temporary culvert

Temporary culverts are not anticipated to be required for this project at this time. If required these can be adaptively incorporated into future revisions off this plan and designed and installed in accordance with GD05 standards. Where water is discharging onto exposed or bare ground (including into sumps), geofabric and rock will need to be placed at the outlet to prevent scour from the higher velocity water exiting the culvert as per **Figure 9** below.

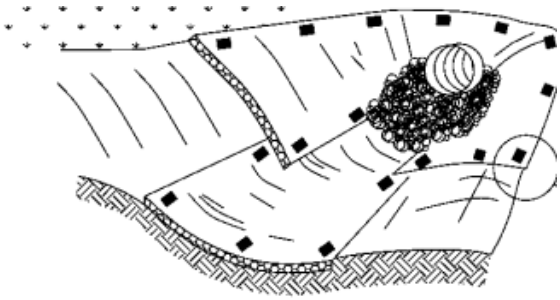


Figure 9: Temporary culvert schematic (Source: GD05)

4.3.8 Standard silt fence

Silt fences will be utilised in situations where exposed small catchment areas cannot be effectively captured and serviced by other tertiary controls. For earthworks within close proximity of existing water races and the landscape mounds that fall outside of the soakage zones, silt fences will be installed downslope to capture any overland flows. Refer to **Appendix 1** for indicative locations.

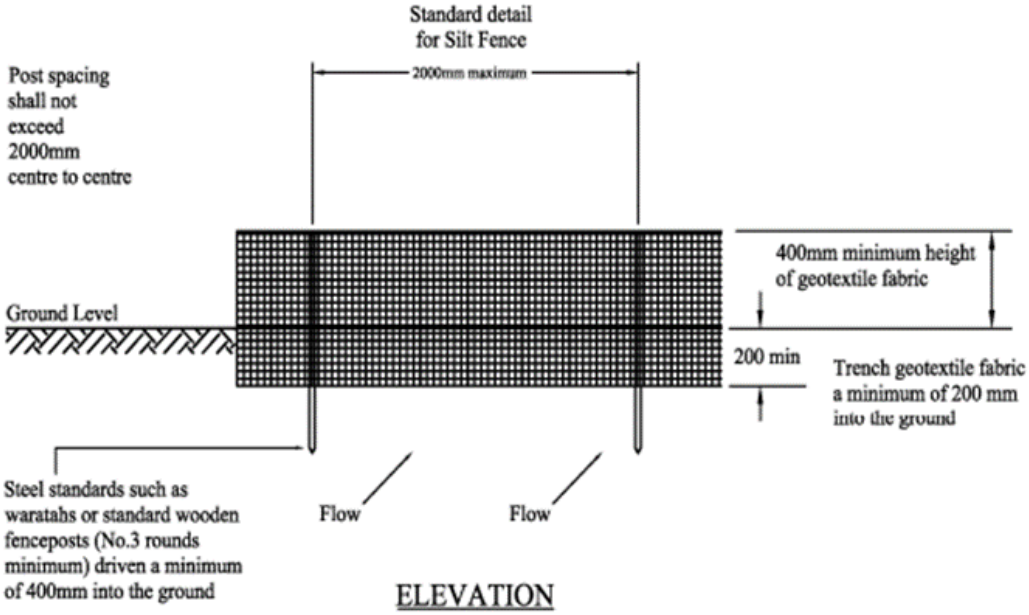


Figure 10: Standard silt fence elevation (Source: GD05)

4.3.9 Sediment Soakage Zones

Due to the existing topography of the site and the proposed earthworks the sections of cut for this development are already sitting in flat depressions and will be excavated further to form the building platforms and surrounding areas. These paddocks being developed, have previously been shaped to be serviced by raised border dikes that flood the flat inverted paddocks for irrigation. This provides very large retention zones, where overland flows naturally and through the earthworks directs overland flows centrally where is can be contained and permeate through the subsoil. Due to the soil sub surface characteristics observed along the Cardrona River delta, high ground permeability as previously discussed can be utilised effectively for this project. As such, traditional sediment controls prescribed by GD05 are not required, nor practical for this project. **Table 1** outlines the available capacity and containment and soakage zones for the respective cut areas. These zones are demonstrated in **Appendix 1 – ESCP 002**.

Table 1 – Sediment Soakage Zone Capacity

Soakage Area	Approximate Catchment Area (m2)	Sediment Soakage Zone Provided (m3)	Total volume with soakage (m3)	Catchment volume generated – Design Storm Event [2]	Comments
A	4800	1,440	Not required	960	- Assumes no ground infiltration. Once know ground infiltration rates can be applied. - Dimensions of soakage zone at ground level A x D = V 2400m2 x 0.6m D
B	17,500	6,300	Not required	3,500	- Assumes no ground infiltration. Once know ground infiltration rates can be applied. - Dimensions of soakage zone 10,500m2 x 0.6 D
C	18,000	6,480	Not required	3,600	- Assumes no ground infiltration. Once know ground infiltration rates can be applied - Dimensions of soakage zone 10,800m2 x 0.6 D

[2] Catchment runoff has been calculated utilising the volumetric runoff equation provided in IECA Book two Appendix A. V=(Cv.R.A)/1000

4.3.10 Temporary stockpiles

An indicative stockpile location has been identified in **Appendix 1**. This is located centrally and sheltered from the predominant northerly wind direction in order to reduce possible wind-borne erosion effects on surrounding receptors. Any temporary stockpiles will be a maximum height of 2m to mitigate wind effects and to preserve the quality of the topsoil as future planting media for revegetation. If the stockpile is to be left insitu for a period of 12 weeks or more, it shall be seeded with grass or erosion control matting to provide erosion and dust protection.

A clean water diversion bund can be installed upslope of the stockpile to direct runoff in a controlled manner around the stockpile if located on slope or a nearby watercourse. A silt fence will be installed on the downslope of the stockpile. Stockpiles will be constructed as per **Figure 11:**

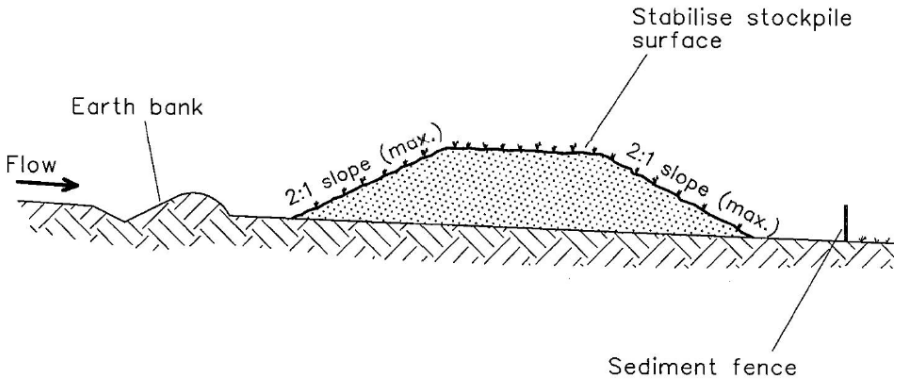


Figure 11: Stockpile detail (Source: GD05)

4.3.11 Site access

The site is accessed from an existing graveled farm track. This existing access extends approximately 150 metres from Morris Road into the site. A large grade aggregate >50mm should be installed at the site access point to reduce tracking of sediments onto Morris Road. This is indicated on the ESCP attached as **Appendix 1**.

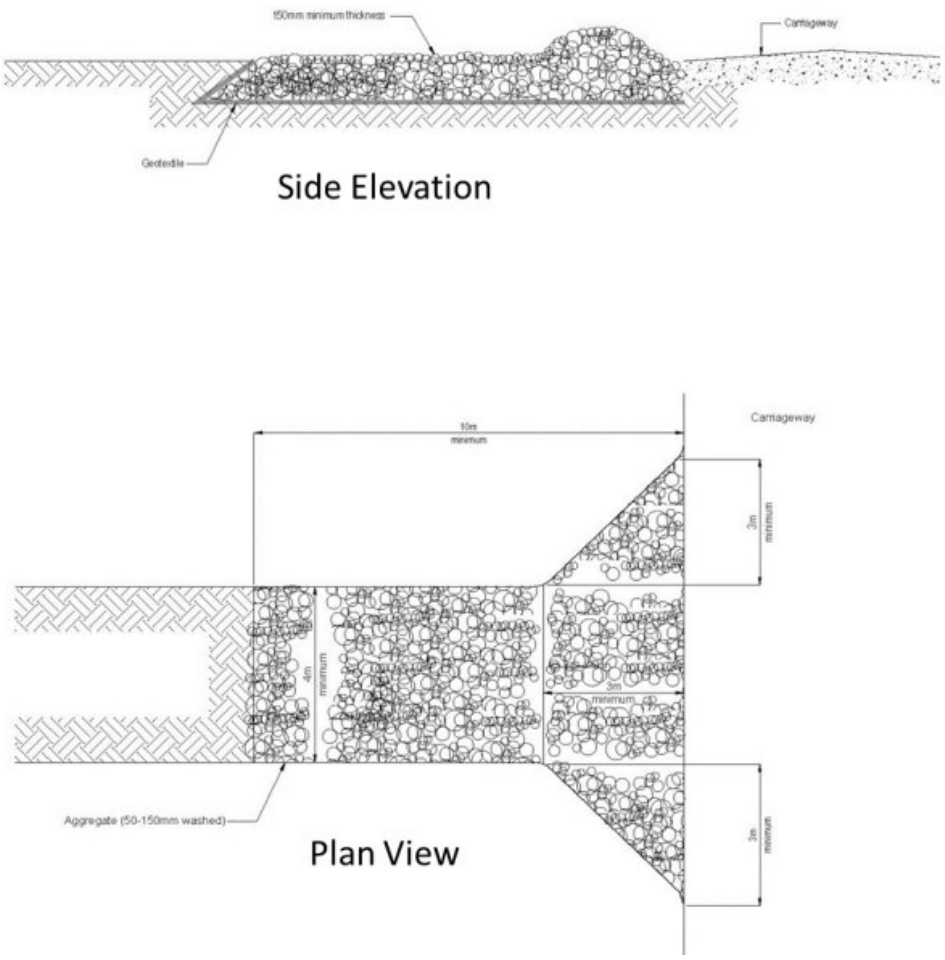


Figure 12: Stabilised entrance (GD05)

4.3.12 As-built verification

Once the ESC devices and treatment train has been constructed, as-built documentation will be signed off to verify that the controls have been installed in accordance with the approved ESCP. This will be undertaken by the SQEP.

4.3.13 Maintenance of Erosion and Sediment Control Devices

Ongoing maintenance of the site shall be undertaken according to the ESCP as follows:

- Clean out sediment of all ESC devices (e.g. clean out drop out pits, check dams and sediment pond) as soon as 20% capacity has been reached and prior to any forecast storm event.
- Regular clean out of sediment from the silt fences and dirty water diversion channels to maintain

operational functioning capacity (as soon as weather permits following rain event).

- Any mucked-out sediment will be stockpiled dried and reused as planting media for revegetation.
- Brush down sediment stains on silt fencing material.

Spare erosion and sediment control products will be stored onsite at all times including but not limited to:

- Geofabric material (at least one roll)
- Silt fencing (remainder of roll)
- Waratahs (x10)
- Spare high tensile wire
- Silt fence clips (x50)
- Novacoil pipe (at least 30m)
- Novacoil pipe coupling or tape
- Floc sock

4.3.14 Rapid Response Procedure for Significant Rain Events

The Site Supervisor will ensure that forecast weather is observed and understood at all times. If a significant storm is forecast, all works will cease in sufficient time for site staff to inspect ESC devices and undertake any maintenance or upgrading necessary to stabilise the site. Observations will continue through the storm event to ensure the functioning of ESC devices, in particular the function and capacity of the SRP, diversion bunds and channels, rock check dams and the silt fences.

4.3.15 Decommissioning and Removal

Erosion and sediment control devices will remain in place until 'stabilisation' of the site has been achieved. This is defined as vegetative cover (i.e. grass) reaching 80% coverage across the site (refer to **Figure 13** below). This will be undertaken in consultation with the SQEP during monthly inspections.

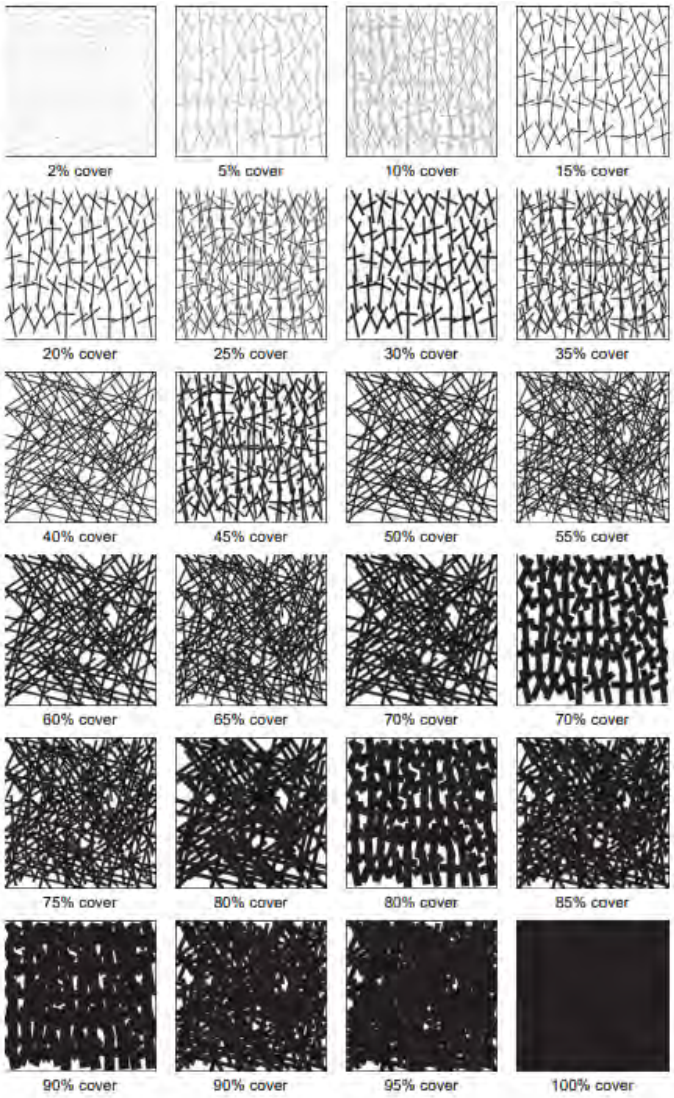


Figure 13: Visual Cover Estimation (Source Catchments & Creeks Pty Ltd)

It is noted that some controls such as clean water diversion bunds will need to be removed (or spread out carefully) which will result in exposed soil. Any soils exposed as part of this process will need to be stabilised with either grass, mulch or other biodegradable erosion matting.

4.4 Inspections and Monitoring

There are several types of inspections/monitoring to be undertaken throughout the construction project to ensure that the Project understands the site's level of exposure at critical times:

- **Daily inspections** of ESC devices to ensure all devices are installed correctly, fully functional, provide for at least 80% capacity and identification for any new erosion opening onsite that was not anticipated by the ESCP or the ESCP is not adequately controlling the issue. This will be undertaken immediately prior to the end of each working day on days that have involved any disturbance of earth or to overland flow paths.

- **Pre-storm event inspections** to ensure the same outcomes as the daily inspections and inform the rapid response procedure.
- **Storm event monitoring** to ensure the ESC devices continue to function correctly and inform any necessary emergency responses. Much of this monitoring will focus on the functioning and capacity of the sediment retention devices and also check that no errant stormwater is crossing the boundary of the site. Stormwater inlets along the downstream roading network are to be monitored during the event.
- **Post-storm event inspections** to ensure the same outcomes as the daily inspections, specifically to identify any necessary maintenance work or new controls.
- **Weekly Environmental Inspections** by the Environmental Representative will ensure that the site is functioning in accordance with the ESCP.
- **Monthly Environmental Inspections** from the SQEP will ensure that the ESCP and on site controls is still fit for purpose and being undertaken in accordance with the Guidelines.

4.5 Contingency Measures

The following contingency measures shall be deployed as required.

Issue:	Contingency Measure:
Abatement notice issued by QLDC or ORC due to sediment run-off offsite or at-risk erosion and sediment control measures prevent onsite	Contact the Environmental Consultant (SQEP) immediately. Meet the requirements of the abatement notice by stabilising the site in accordance with the latest ESCP or an updated ESCP (where required) within the time stated by the abatement notice. The notice will state the maximum penalty which will be applied should the conditions of the notice not be met within the specified time period.
Sediment-laden stormwater runs across the boundary of the site	Undertake measures to stop the flow immediately. Ensure controls are installed according to the ESCP. Contact the Environmental Consultant (SQEP) who will initiate the incident response.
Controls do not appear to be working as intended in the EMP/ESCP	Contact Environmental Consultant (SQEP) to inspect and request revision to ESCP.
The site is found to be inappropriately exposed prior to an oncoming storm even	All works are to cease and effort shall be moved to checking erosion and sediment control stabilisation through the Rapid Response Procedure outlined above at section 4.3.14.
Sediment Retention devices near capacity and more rain is forecast	Add flocculant in accordance with SQEP direction and when clarity levels are reached begin skimming off clean water with a floating submersible pump.

4.6 Erosion and Sediment Control Incident

An erosion or sediment control incident is considered to have occurred where:

- Water quality monitoring finds that sediment-laden stormwater crosses the boundary greater than 50 mg/L TSS or 100 NTU, Turbidity.

- The discharge of sediment does not result in any of the following effects in receiving waters, after reasonable mixing:

  - The production of conspicuous oil or grease films,

scums or foams, or floatable or suspended materials; or

  - Any conspicuous change in the colour or visual clarity;

or

  - Any emission of objectionable odour; or
  - The rendering of fresh water unsuitable for consumption by farm animals; or

  Any significant adverse effects on aquatic life.

- Dust plumes from the works area exit the site boundaries and cause adverse effects on surrounding environment.

The incident procedures outlined at section 3.6 shall be followed:

5.0 DUST MANAGEMENT

Dust from construction activities, vehicle movements and/or stockpiles can contribute to sediment runoff as well as creating a nuisance to the public, neighboring properties, adjoining roads and service infrastructure and fauna.

5.1 Performance Requirements

- The project must ensure that reasonable and practical measures are taken to avoid dust moving across the boundaries of the site at all times.

5.2 Dust-generating Activities

There are a range of activities that will produce dust onsite including:

- General disturbance of soil (particularly during drier months)
- Inappropriate staging that does not seek to minimise the extent of disturbance
- Vehicle movements along haul roads
- Stockpiling of topsoil
- Inadequate or slow revegetation procedures

The key risks associated with dust will be during road access earthworks.

5.3 Sensitive Receptors and Prevailing Winds

Key sensitive receptors to protect from the effects of dust include surrounding established residential properties. Being in a rural setting there are no nearby sensitive receivers that would likely be impacted by dust. While there are established residential dwellings nearby, they are not in immediate proximity of the works area.

The proposed works areas are sheltered from predominant wind directions with large established shelter belts surrounding the property. This is discussed further in the vegetation management section of this EMP.

5.4 Management Measures

The following measures will be deployed to ensure dust generation onsite is minimised:

No:	Actions Required:	When:
Work Staging and Construction Programming		
1.	Stage works to minimise soil exposure timeframes.	At all times
2.	Revegetate disturbed areas progressively throughout construction.	At all times

3.	Dust suppression of disturbed work areas and stockpiles will be achieved primarily using recycled water (from sediment retention devices) by water trucks or other methods (e.g. k-lines) approved by the Site Supervisor.	As required
4.	If dust activities cannot be controlled due to high winds, works will need to cease until favourable conditions return (unfavourable conditions are generally once there is potential for dust to cross the boundaries of the site).	As required
5.	Erect dust fences where dust causing activities take place in close proximity to sensitive receptors (complaint-based adaptive measure).	As required
Haulage		
6.	Only designated access points and haul routes are to be used.	At all times
7.	A speed limit will be posted as 20/km/hr, unless deemed otherwise by the Site Supervisor.	At all times
8.	To avoid spillage risks, trucks will not be overloaded.	At all times
9.	All trucks must have tail gates up and swept or cleaned prior to entering external roads.	At all times
10.	Site access to be constructed in accordance with GD05 (detail at section 4.3.12).	At all times
11.	All site access and surrounding roads to be swept clean regularly.	At all times
12.	Rumble grids and/or wheel washes will be provided at exits where required to reduce tracking of soil onto external roads. This is an adaptive measure and will only be utilised if and when the need arises.	As required
Stockpiles		
13.	Stockpile heights are to be minimised as much as possible (<3m) unless they are covered (e.g. a grassed, erosion blanket, chemical sealant, temporary cover crop or mulched).	At all times
14.	Long-standing stockpiles (greater than 6 weeks) shall be seeded or mulched to provide both wind and erosion protection.	At all times
Stabilisation and revegetation		
15.	Following completion, all earthworked areas will be sown out with grass, landscaped or otherwise stabilised by grass, erosion matting or similar.	At all times

5.5 Monitoring

Site staff will maintain continual vigilance for any increases in wind to ensure measures are deployed prior to dust crossing site boundaries. Also, the Weekly Environmental Inspections and the Monthly SQEP Environmental Inspections will ensure that the management measures described above are sufficient and performing effectively.

5.6 Contingency Measures

The following contingency measures shall be adopted if required:

Issue:	Contingency Measure:
Abatement notice issued by QLDC or ORC due to excessive dust emissions	Meet the requirements of the abatement notice by stopping dust-generating activity or reducing the dust generated within the time stated by the abatement notice. The notice will state the maximum penalty which will be applied should the conditions of the notice not be met within the specified time period. Contact the Environmental Consultant (SQEP) immediately.
Excessive dust creation from excavation and/or clearing works	• Increase frequency of water truck spraying or increase irrigation. • Deploy hose spraying of excavation areas and activities including bucket movement from excavation to truck. • Do not excavate during high winds, particularly if wind direction is likely to impact sensitive receivers.
Excessive dust creation from hauling operations	• Spray haul road with water truck or use soil stabilisation chemical (e.g. tackifers or binders). • Reduce truck speeds. • Cover loads causing dust impacts. • Clean dirty road surfaces • Install shakedown devices (rumble grids) at entry and exit points. Cover or water truck loads. • Temporary sealing.
Excessive dust creation from stockpiles	• Spray stockpiles with water / water trucks. • Hydro-mulch / seed or stabilise stockpiles, cover stockpiles with plastic / geofabric where appropriate. • Locate stockpiles away from sensitive receptors.

5.7 Environmental Incident

A dust incident is considered to have occurred where:

- any cloud of dust crosses the boundary into sensitive receptors or,
- a justified complaint is received regarding dust emissions across the boundary of the site and on investigation is considered to be warranted.

The incident procedures outlined at section 3.6 shall be followed.

6.0 WATER QUALITY MANAGEMENT

Surface waterbodies (rivers, streams, lakes and wetlands) provide important habitat for many species of plants, fish, birds and animals, some of which are endemic and/or threatened. Some surface waterbodies are recognised as Statutory Acknowledgement Areas in the Ngāi Tahu Claims Settlement Act 1998, and many also provide opportunities for recreational activities.

To protect these values, water quality must be safeguarded, and the natural flow of the watercourse maintained to the greatest possible extent. Where flow must be reduced or diverted, mitigation is required to ensure the values of the watercourse are not degraded.

6.1 Water Quality Risk

The Cardrona River lies is approximately 620 metres away in a direct line to the east of the site. It's noted that the site is intersected by existing water dykes utilised for farm irrigation purposes. These are controlled manually and used periodically for irrigation purposes but are not consistently flowing channels.

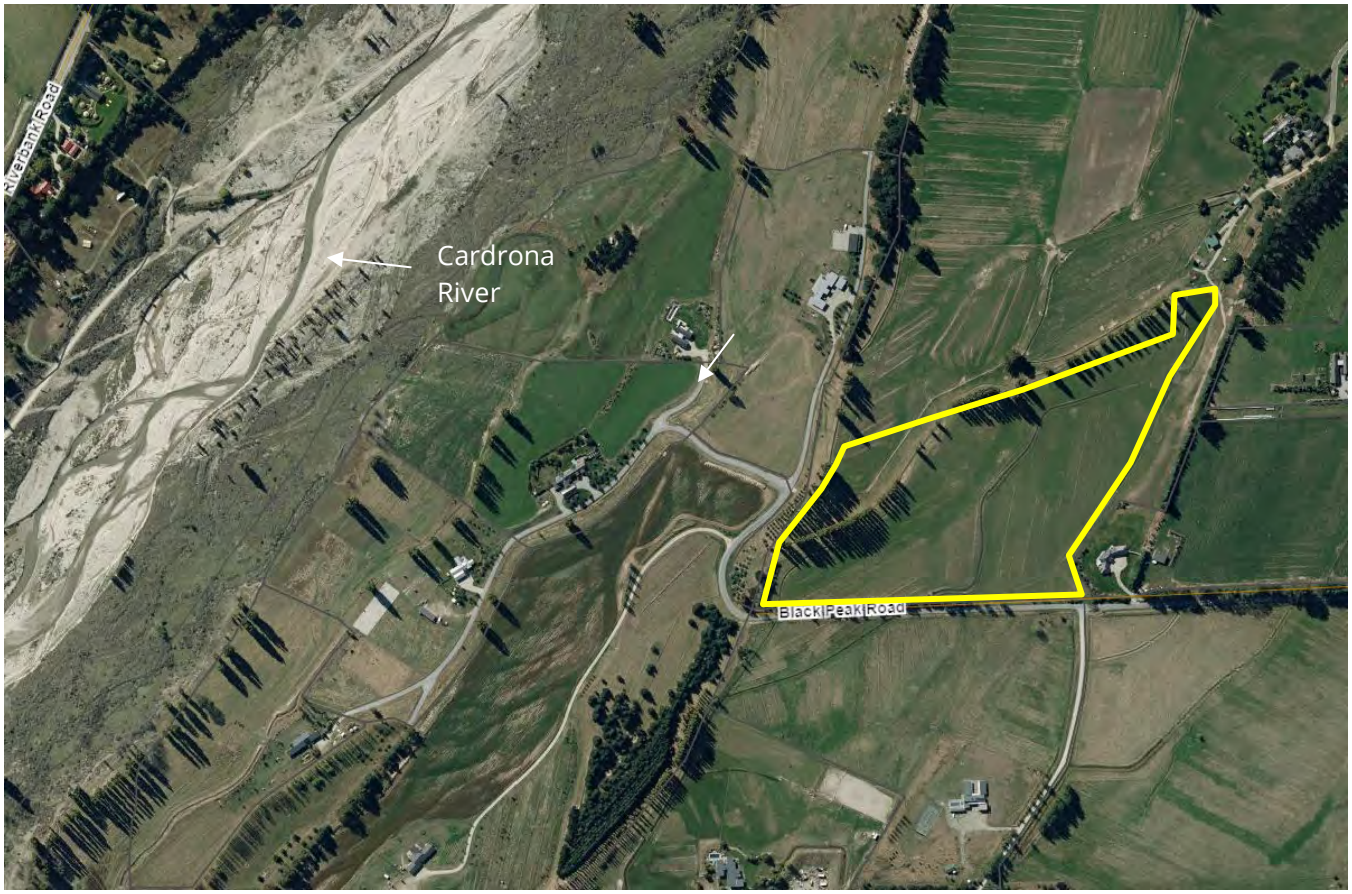


Figure 14: Nearby Waterways (Source: QLDC GIS)

6.2 Performance Criteria

Waters released from the site will meet conditions of relevant resource consents issued by QLDC and or ORC. As a baseline the following standards should be adhered to.

The discharge of sediment does not result in any of the following effects in receiving waters, after reasonable mixing:

- The production of conspicuous oil or grease films,

scums or foams, or floatable or suspended materials; or

- Any conspicuous change in the colour or visual clarity;

or

- Any emission of objectionable odour; or
- The rendering of fresh water unsuitable for consumption by farm animals; or
- Any significant adverse effects on aquatic life.

Any waters discharging the site boundaries must meet the following criteria:

Parameter:	Discharge Criteria:
Total Suspended solids	< 50 mg/L Total Suspended Solids
Turbidity	< 100 NTU[3]
Clarity	No conspicuous change in the colour or visual clarity.
pH[4]	6.5 – 8.5
Hydrocarbons or tannins	No visible trace
Waste	No waste or litter visible

[3] Rather than measure Total Suspended Solids through the laboratory which causes delays in getting information back to site, turbidity will be expressed as Nephelometric Turbidity (NTU) which provides an instant onsite reading through the use of a nephelometer.

[4] pH to be tested only where flocculants have been added.

6.3 Management Measures

The following measures will be deployed to ensure the protection of water quality:

No:	Actions Required:	When:
General		
1.	Sedimentation and erosion controls will be implemented and maintained in accordance with the Erosion and Sediment Control section.	At all times
2.	Refueling, servicing and storage of petrochemicals will be in accordance with the relevant procedures in the Fuels and Chemicals section.	At all times
3.	Pits located away from waterways will be provided for wash down of concrete truck chutes or mixers near relevant construction areas. The Supervisor/ Project Engineer with assistance from the Environmental Manager are responsible for ensuring that pits are available, and drivers instructed regarding the location and required procedures.	At all times
4.	All plant and equipment on site will be inspected prior to starting and then daily to ensure they are of an acceptable standard i.e. no oil or fuel leaks. The Environmental Representative will periodically audit the compliance with plant check procedures, ensuring actions are addressed in timeframes allocated.	At all times
5.	Stockpiling of any organic, erodible or hazardous material on site is not to be placed within 30m of a watercourse/major drainage line. A sediment fence will be installed on the down-slope toe of all stockpiles at risk of being eroded (sealed, seeded, covered stockpiles do not require sediment fence to be installed). Any stockpiles containing silts and clays will be covered during the wet season and significant rain events.	At all times
Recycled Water Use		
6.	Recycled water will only be used during non-contact activities such as compaction.	At all times
Use of flocculants (chemical treatment for sediment control)		
7.	***If required*** all flocculant use will be undertaken as follows: • 'Environmentally-friendly' products selected. • Flocculants are stored, dosed and monitored according to best practice erosion and sediment controls. • Removal of sludge shall be in accordance with manufacturer's advice/instructions. • Any use of flocculation and observations shall be recorded in the daily job diary.	At all times

6.4 Stormwater reuse

To conserve water onsite, stormwater that has been captured and treated within the sediment retention devices will be utilised for dust suppression purposes where possible.

6.5 Water Quality Monitoring Program

To define the scope, this Water Quality Monitoring Program focuses on discharges of any liquid, soluble or material that passes across the boundary of the site.

Water Quality Monitoring Program – Woolshed Trust	
Sampling Scope:	
Objective:	To monitor water quality of all stormwater discharged (both controlled or uncontrolled) from site to confirm whether or not the discharge meets the water quality criteria referred to in section 6.2 above.
Spatial boundaries:	This monitoring program is designed to monitor the accumulated discharge of all water that enters the site from rain or overland flow.
Frequency:	At the time water flows cross the boundary of the site. Where a Significant Rain Event occurs through the night, monitoring shall be undertaken the following morning. Weekly Environmental Inspections will also undertake visual monitoring of sediment retention devices and waterbodies within the site.
Sampling Design:	
Water Quality Criteria:	The parameters of turbidity, gross pollutants (waste/litter), tannins and oils and petrochemicals.
Sampling Locations:	At boundaries of the site where any water is flowing.
Sampling Method:	**Turbidity** (NTU) –nephelometer **Visual Clarity** – Clarity tube or Seechi Disk **pH** - water quality meter (with pH probe) or pH strips - only if flocculant is used. **Gross pollutants** – visual observations (is there any litter present?) **Tannins** – visual observations (is there any unusual yellowing or darkening of waters?)

	Oils/Petrochemicals – visual observations (is there any oily film[5] on surface or smell?)
Quality Control:	Any water quality meter will be calibrated according to manufacturer instructions. All observations will be recorded and analysed.
Recording:	
Recording Results:	All results will be recorded and kept onsite (proforma attached as **Appendix 9**).
Actions:	
Non-conformances:	Any exceedances observed in monitoring data will be reported to the Project Manager who will ensure that the matter is investigated, and corrective actions are implemented immediately.

6.6 Contingency Measures

The following contingency measures shall be adopted if required:

Issue:	Contingency Measure:
Exceedance of water quality criteria	Should the occurrence constitute exceedance of the water quality criteria: • Contact the Environmental Consultant (SQEP) immediately. • Work in the area will cease or be modified to remove further risk of contamination. • The Project Manager, ORC and QLDC, will be verbally notified pending more detailed analysis and written confirmation. • An Environmental Incident will be raised, and a detailed investigation commenced by the Environmental Consultant (SQEP) to determine the cause of the problem and necessary remedial measures to prevent its recurrence. • When determined, remedial measures will be implemented and the Incident closed out by the Environmental Consultant (SQEP), with a copy of an Environmental Incident report to the Project Manager, ORC and QLDC.

[5] Note that some bacteria produce a naturally occurring film on the surface. The way to tell the difference between hydrocarbons is that the bacteria films breaks apart on the water surface in blocky and angular shapes whereas hydrocarbon film separates as globules.

	Note: Monitoring will be increased to a daily basis until water quality parameters return to acceptable levels or as otherwise directed by QLDC or ORC.

6.7 Environmental Incidents

A water quality incident is considered to have occurred where:

- Any discharge of turbidity more than 50mg/L TSS and or 100 NTU across the boundary of the site as overland flow.
- The discharge of sediment does not result in any of the following effects in receiving waters, after reasonable mixing:

  - The production of conspicuous oil or grease films,

scums or foams, or floatable or suspended materials; or

  - Any conspicuous change in the colour or visual clarity;

or

  - Any emission of objectionable odour; or
  - The rendering of fresh water unsuitable for consumption by farm animals; or

  Any significant adverse effects on aquatic life.

The incident procedures outlined at section 3.6 shall be followed.

7.0 HISTORIC HERITAGE MANAGEMENT

The loss or damage of historic heritage artefacts could be caused by construction activities. The damage or loss of artefacts can lead to:

- Loss of historical items and information.
- Loss of archaeological information which may be important to iwi.
- Loss of evidence of past occupation of an area.

A search of Council's database indicates there are no known items of cultural or heritage significance on the site.

7.1 Performance Criteria

1. The protection of historic heritage artefacts and places in accordance with the *Heritage New Zealand Pouhere Taonga Act*, 2014.

2. Strict adherence to Heritage New Zealand's Archaeological Discovery Protocol (attached as **Appendix 10**) in the case of unexpected finds.

7.2 Management Measures

As discussed above, a search of Council's database indicates there are no known items of historic heritage significance on the site. However, an item of significance could still be unexpectedly found during ground-disturbing activities. All works on this Project will be undertaken in accordance with the obligations of the *Heritage New Zealand Pouhere Taonga Act*, 2014 (HNZPTA).

7.2.1 Accidental Finds

If any unknown artifacts are uncovered, the Project will work to Heritage New Zealand's Archaeological Discovery Protocol (attached as **Appendix 10**).

This will be undertaken with consultation of the Project Archaeologist.

7.3 Monitoring

Daily inspections shall include a visual assessment of the site to ensure that no new significant artefacts have been encountered. However, it is important that Operators remain vigilant for such encounters as they occur.

8.0 NOISE MANAGEMENT

Noise generated during construction has the potential to impact noise sensitive receivers by reducing comfort and impeding communication.

8.1 Activities with Potential to Generate Noise

Potential noise effects may be generated by the following:

- Excavation and earth moving plant
- Excavators
- Bulldozers or site scrappers
- Reversing beepers
- Light vehicles
- Ancillary plant and equipment

8.2 Identification of Sensitive Receptors

Sensitive receptors include surrounding residential dwellings. Due to the rural zoning, dwellings are not in immediate proximity. As such it is considered that based on the standard construction equipment and hours of operation to be observed, the risk of noise issues on sensitive receptors is low to moderate.

8.3 Performance Criteria

1. Construction activities shall meet relevant noise limits specified under Rule 36.5.13 of the Queenstown Lakes Proposed District Plan. This rule requires Construction sound at any point within the site must comply with the limits specified in Tables 2 and 3 of *NZS 6803:1999 Acoustics - Construction Noise*, when measured and assessed in accordance with that standard (see table below).

Time of Week:	Time period:	Duration of works at location:					
		Less than 14 days		Less than 20 weeks		More than 20 weeks	
		$L_{Aeq(t)}$	L_{AFmax}	$L_{Aeq(t)}$	L_{AFmax}	$L_{Aeq(t)}$	L_{AFmax}
Noise limits in residential areas							
Weekdays	0630 - 0730	65 dB	75 dB	60 dB	75 dB	55 dB	75 dB
	0730 - 1800	80 dB	95 dB	75 dB	90 dB	70 dB	85 dB
	1800 - 2000	75 dB	90 dB	70 dB	85 dB	65 dB	80 dB
	2000 - 0630	45 dB	75 dB	45 dB	75 dB	45 dB	75 dB
Saturdays	0630 - 0730	45 dB	75 dB	45 dB	75 dB	45 dB	75 dB

	0730 - 1800	80 dB	95 dB	75 dB	90 dB	70 dB	85 dB
	1800 - 2000	45 dB	75 dB	45 dB	75 dB	45 dB	75 dB
	2000 - 0630	45 dB	75 dB	45 dB	75 dB	45 dB	75 dB
Sundays and Public Holidays	0630 - 0730	45 dB	75 dB	45 dB	75 dB	45 dB	75 dB
	0730 - 1800	55 dB	85 dB	55 dB	85 dB	55 dB	85 dB
	1800 - 2000	45 dB	75 dB	45 dB	75 dB	45 dB	75 dB
	2000 - 0630	45 dB	75 dB	45 dB	75 dB	45 dB	75 dB
Noise limits in commercial or industrial areas							
	0730 - 1800	80 dB	-	75 dB	-	70 dB	-
	1800 - 0730	85 dB	-	80 dB	-	75 dB	-

8.4 Management Measures

The following measures will be deployed to ensure noise associated with the Project is appropriately mitigated:

No:	Actions Required:	When:
General		
1.	Surrounding residents or sensitive receptors will be notified prior to commencing any particularly noisy activities.	As required
2.	Procedures will be implemented to meet specific criteria for any sensitive locations or times identified through stakeholder and/or community liaison. No specific criteria have currently been identified.	As required
Plant, Equipment and Site Facilities		
3.	Fixed or stationary plant, equipment or activities (including compressors and generators) will be located as far as practical from residences or noise sensitive areas. If the noise source is directional, equipment will be orientated to minimise propagation in critical directions.	At all times
4.	Where possible, noisy plant will be enclosed or effectively screened to reduce the amount of noise reaching receivers. Screening methods between the noise sources and noise receivers may include: • Position of site offices	At all times

	• Storing building material • Using stockpiles of soil or natural topography • Temporary noise barriers.	
5.	Where reasonably practicable, noisy plant, equipment or process will be substituted with lower noise generating alternatives.	As required
6.	The Site Supervisor will ensure that a regular inspection, maintenance checklist and servicing of all plant and equipment is implemented to ensure plant is running optimally in accordance with process procedures. Maintenance activities can include replacement of engine covers, repair of defective silencing equipment, tightening of rattling components, and repair of leakages in compressed air lines.	At all times
7.	Plant and equipment to be used on the site will be fitted where appropriate with noise control/attenuation devices (for example high efficiency mufflers) and maintained and operated in accordance with manufacturer's specifications to minimise noise emissions. Modification of noisy equipment will be considered, e.g. silencers, stiffening panels. Enclose noisy equipment as much as possible, depending on the nature of the equipment, access and ventilation requirements.	At all times
8.	Revving of engines in mobile or stationary machines will be limited. Equipment used intermittently such as dozers, excavators, trucks etc, will be shut down between uses or throttled down to a minimum. All plant and vehicles will be turned off when not in use and if safe to do so.	At all times
9.	The use of horns, bells, hooters, or other audible signals on mobile equipment will be limited, and two-way communication will be used. No loud hailers will be used.	At all times

8.5 Contingency Measures

The following contingency measures shall be adopted if required.

Issue:	Contingency Measure:
Noise complaint received from public.	Manage the complaint in accordance with the Environmental Complaints procedure at section 3.6.

8.6 Noise Complaints

If any complaints are received, the Environmental Consultant (SQEP) will be notified and will assist site staff to make necessary amendments to the EMP and deploy further management controls (at this point the EMP would be updated).

9.0 VIBRATION MANAGEMENT

Vibration generated during construction has the potential to impact vibration sensitive receivers by reducing comfort and causing cosmetic damage to structures and damage to household possessions.

9.1 Activities with Potential to Generate Vibration

Potential vibration effects may be generated by the following:

- Compaction equipment

9.2 Identification of Sensitive Receptors

Sensitive receptors include surrounding residential dwellings. Due to the rural zoning, dwellings are not in immediate proximity. As such it is considered that based on the standard construction equipment to be deployed, the risk of vibration issues on sensitive receptors is low to moderate.

9.3 Performance Criteria

1. Construction activities shall meet relevant vibration limits specified under Rule 36.5.10 of the Queenstown Lakes Proposed District Plan. This rule requires vibration from any activity must not exceed the guideline values given in *DIN 4150-3:1999 Effects of vibration on structures* on any structures or buildings on any other site.

Types of Structures:	Vibration Thresholds for Structural Damage, PPV (mm/s)				
	Short Term				Long-Term
	At Foundation			Uppermost Floor	Uppermost Floor
	0 to 10 HZ:	10 to 50 Hz:	50 to 100 HZ:	All Frequencies:	All Frequencies:
Commercial/ industrial:	20	20 to 40	40 to 50	40	10
Residential:	5	5 to 15	15 to 20	15	5
Sensitive/ Historic:	3	3 to 8	8 to 10	8	2.5

Note: When a range of velocities is given, the limit increases linearly over the frequency range.

9.4 Management Measures

The following measures will be deployed to ensure noise associated with the Project is appropriately mitigated:

No:	Actions Required:	When:
General		
1.	Procedures will be implemented to meet specific criteria for any sensitive locations or times identified through stakeholder and/or community liaison.	As required

9.5 Monitoring

Weekly Environmental Inspections and Monthly SQEP Environmental Inspections shall include a visual assessment of the site to determine the effectiveness of vibration management controls.

9.6 Contingency Measures

The following contingency measures shall be adopted if required.

Issue:	Contingency Measure:
Abatement notice issued by QLDC due to complaints about excessive vibration	Meet the requirements of the abatement notice by stopping the vibration or reducing the vibration within the time stated by the abatement notice. The notice will state the maximum penalty which will be applied should the conditions of the notice not be met within the specified time period. Contact the Environmental Consultant (SQEP) immediately.
Vibration complaint received from public	Manage the complaint in accordance with the Environmental Complaints procedure at section 3.6.
Performance requirement criteria (i.e. *DIN 4150-3:1999 Effects of vibration on structures)* are exceeded	The Environmental Consultant (SQEP), in consultation with the Environmental Representative and Site Supervisor, will investigate and implement actions to reduce vibration levels to below criteria levels. These could include: • Conduct vibration generating activities within normal operating hours or hours agreed with the sensitive receptors; • Replace vibratory equipment with less vibration-inducing alternatives; • Limit vibratory activities (i.e. duration or location) The Environmental Consultant (SEP) will record what actions were taken to investigate the complaint, document the outcome of those actions in their site diary and advise the Project Manager.

Ongoing vibration or issues bringing vibration under control	In situations where ongoing complaints are received and despite the site staff's best intentions the noise cannot be consistently kept within the performance requirement criteria, an acoustic specialist will be engaged to assist. This will be at the discretion of the Environmental Consultant (SQEP) and the Project Manager.

9.7 Vibration Incidents

A vibration incident is considered to have occurred where:

- A complaint is received regarding vibration emissions and on investigation is considered to be warranted where it exceeds performance requirements.
- New damage is found (and proven) to have occurred on any structures or buildings including nearby Council pavement or service infrastructure.

The environmental incident procedures outlined at section 3.4 shall be followed.

10.0 VEGETATION MANAGEMENT

The site is dominated by established pasture utilised for grazing. Established shelter belts border the site and separate the paddocks internally.

Figure 15: Predominant Vegetation cover of the site (Source: Enviroscope)

10.1 Performance Criteria

Avoid the spread of pest or noxious plant and or weed species.

10.2 Limit of Clearing

Other than what is required for the ESCP there is no limit of clearing.

10.3 Management Measures

The following measures will be deployed to avoid the spread of noxious weeds:

No:	Actions Required:	When:
Noxious weeds		
1.	Treating infestations prior to disturbance of the natural surface	Prior to clearing and during construction
2.	Weed free topsoil will be retained for reuse in site rehabilitation	At all times
3.	Mulch stockpiles shall be separated from drainage lines and water bodies to avoid transportation of weed seeds during rain events. In addition: • Any mulch will not be stockpiled and will be immediately spread over the site. In the event that mulch does need to be stockpiled this will be restricted to 2.5m high to reduce leachate release and risk of fire. The EMP will also be updated to indicate locations of any long-term stockpiles (i.e. longer than 2 weeks). • When air temperature exceeds 30°C, they shall be no higher than 1.5m and monitored regularly for excess leachate and heat.	At all times
4.	All vehicles, plant and equipment working in infested areas shall be inspected for weeds and cleaned prior to demobilisation.	As required

10.4 Monitoring

Weekly Environmental Inspections and Monthly SQEP Environmental Inspections shall include a visual assessment of the site to determine the effectiveness of vegetation management controls.

11.0 CHEMICALS AND FUELS MANAGEMENT

By their very nature hazardous substances can be extremely dangerous to both human health and the environment. Used incorrectly they can cause catastrophic accidents, such as fires and explosions, and serious harm to people who are exposed to them.

Specific controls are required to help manage the risks associated with using, handling, or storing hazardous substances in the workplace and to protect the health and safety of workers and the environment. All hazardous substances stored on site, particularly overnight, pose a risk as (unintentional) discharges can have significant impacts on humans and the environment. Security is an important consideration in addition to appropriate bund capacity.

The following chemicals and fuels will be stored onsite:

Product:	Maximum Quantity:	Storage Location:
Diesel	2000L	Job trucks/ site container (lockable)
Unleaded	100L	Job trucks/ site container (lockable)
Oil	10L	Job trucks/ site container (lockable)
Lubricant (WD40 or similar)	2.1kg (6 cans)	Job trucks/ site container (lockable)
Grease	5L	Job trucks/ site container (lockable)
Spot marking paint	2L	Job trucks/ site container (lockable)

Chemicals and fuels will be stored in appropriate containers within a lockable ventilated shipping container (or similar).

11.1 Performance Criteria

1. Chemicals and fuels are stored and used so not to cause contamination of works areas and surrounding environment.

2. All spills are cleaned up immediately and the contaminated soils/waters disposed of appropriately.

11.2 Management Measures

The following measures will be deployed to ensure chemical and fuels associated with the Project is appropriately mitigated:

No	Actions Required:	When:
Storage and Use		
1.	Except for diesel, minimum quantities of hazardous substances will be stored as necessary on site.	At all times
2.	The Safety Manager will maintain an inventory of all Safety Data Sheets (SDS) and corresponding hazardous substances stored. Copies of all SDS will be made readily available to all employees.	At all times
3.	Each SDS will be risk assessed in accordance with the activities and conditions that the substance will be utilised. Control measures and precautions will be identified and briefed to the applicable Operators along with details of storage, handling, spill response and safe disposal.	At all times
4.	Transport, use and storage of hazardous materials on the project will be in accordance with the requirements documented on the relevant SDS and Relevant Legislation. The Safety Manager will be informed of any additional hazardous substance and SDS provided, assessed and requirements briefed to the applicable Operators.	At all times
5.	Hazardous materials to be stored securely so as to avoid tampering. Secure storage may consist of location inside a lockable building or compound or lockable valves.	At all times
6.	All hazardous substances will be stored in appropriate areas, with bunding, signage and other controls adequate for the type and size of storage. For any drums and packages: • Store a minimum of 25m away from major drainage lines. • Store in bunded pallets on a hardstand area. • All drums, packages to be labelled (content and manufacturer).	At all times
7.	Significant storage areas will be covered and bunded in accordance with relevant New Zealand Standards.	At all times
8.	All materials will be stored in containers suitable for the substance stored. Containers will be labelled accurately to the contents: product and manufacturer. Compatibility of substances to be stored together also needs to be confirmed by Safety Manager prior to storage.	At all times

<table>
<tr><td>9.</td><td>The Environmental Representative will be notified when spill equipment has been used. The Environmental Representative will arrange for equipment to be replaced as soon as possible, and a minimum supply kept on site. The ordering of spill equipment will be from the Project approved supplier.</td><td>As necessary</td></tr>
<tr><td>10.</td><td>Water remaining within any containment bund after rain will preferably be left to evaporate. Should the quantity be significant enough to require removal, the following procedure will be used:
If no noticeable hydrocarbon contamination (i.e. film) release to stormwater through a series of oil absorbent booms or mats.
Otherwise, it will be:
Pumped into a suitable receptacle and stored in a bunded area as nominated by the Environmental Representative for later collection and disposal.
If contamination is detected, water will be removed by a licensed liquid waste removal contractor.</td><td>At all times</td></tr>
<tr><td>11.</td><td>Appropriate spill kits (both hydrocarbon and chemical) will be available at:
Locations where liquid hazardous materials are stored.
Locations where refuelling and equipment maintenance taking place.
Each worksite, the site office and within all Supervisors vehicles.
Suitable quantity of spill response material to be available at oil/fuel storage locations.
The following materials will be stored in the storage container within the main laydown area:<table><tr><th>Spill Kit Material Type:</th><th>Quantity:</th><th>Location:</th></tr><tr><td>240L Oil and Hydrocarbon Spill Kit</td><td>1</td><td>Main laydown area</td></tr><tr><td>240L Chemical Spill Kit</td><td>1</td><td>Main laydown area</td></tr></table>The supplier of the spill response equipment shall provide a guideline for the usage of the kits.</td><td>At all times</td></tr>
<tr><td>12.</td><td>Wash down of plant and equipment will be performed only in designated areas and wash water will not enter a waterway.

All concrete washing to be undertaken in the dedicated concrete washing pit which shall be lined with plastic. All water shall be left to evaporate, and material removed to a licensed waste facility once full and dry.</td><td>At all times</td></tr>
</table>

Vehicle and Plant Servicing and Refuelling		
13.	All vehicle and plant servicing, other than emergency repairs, is to be undertaken offsite.	At all times
14.	All equipment will undergo maintenance in accordance with service requirements. Any leaks from equipment will be fixed before equipment can be used on site.	At all times
15.	Should minor servicing of plant be required within a worksite (i.e. break down), spill, drop pans or a designated bunded area capable of trapping any oil or fuel spillage will be used. In field servicing cannot commence unless the appropriate spill kits are available at the servicing point.	At all times
16.	Refuelling procedure must be within the refuelling bay (location TBC) constructed of concrete draining to a sump (refer **Figure 16** below): • Ensure that the refuelling area is located on hardstand at least 25m away from watercourses and drainage lines. • Ensure that spill kit is on hand and contains all necessary items in the correct quantity. • Place nozzle in tank and commence filling (do not commence filling until nozzle is placed in tank) • Monitor filling and stop before tank overflows. • In the event of a spill, refer to the Incident Response Plan and use spill response kit immediately. Report to Environmental Representative who may need to contact the Environmental Consultant (SQEP).	At all times

	 **Figure 16:** Example of designated refueling bay.	
Washdown		
17.	Wash down of plant and equipment will be performed only in designated areas and wash water will not enter a waterway. All concrete washing to be undertaken in the designated concrete wash-out pit which consists of a plastic-lined bunded pit (similar to **Figure 17** below). The bund is to be constructed with fill or straw bales. Any water shall be left to evaporate and cured concrete to be disposed of from site within the plastic sheet to a licensed facility.  **Figure 17:** Example of designated concrete wash out pit.	During concrete pour

Spill Control, Containment and Clean Up		
18.	Disposal of remediation / clean up material will be to a licensed waste disposal facility. Materials will be transported by a licensed transporter.	At all times
19.	Minor oil and grease spills will be cleaned up immediately (where safety permits) by project personnel as directed by the Environmental Representative and/or Supervisor.	At all times
20.	Disposal of used oil and oily waste material (rags, oil filters, etc) from plant will be recycled or disposed at licensed facilities.	At all times
21.	Any ground contaminated through spillage of more than 5 litres, or less if in a sensitive location, will be excavated and removed, or remediated through approved means, as advised by the Environmental Consultant (SQEP).	At all times
22.	For significant spills (generally over 50 Litres), response will be actioned by a contractually approved licensed contractor, area barricaded and signage erected before remediation.	At all times
23.	Used absorbent material will be placed in polythene bags and disposed of at licensed facilities.	At all times
24.	Post Construction On completion of all construction of works and before hand-over, the site will be cleared of all potentially contaminated soils and waters, caused from the storage of hazardous substances.	Post Construction

11.3 Monitoring

Weekly Environmental Inspections and Monthly SQEP Environmental Inspections shall include a visual assessment of the site to determine the effectiveness of chemicals and fuels management controls.

11.4 Contingency Measures

The following contingency measures shall be adopted if required.

Issue:	Contingency Measure:
Inappropriate Storage	• Upgrade facility. • Clean-up of storage area. • Notify / train staff.

Issue:	Contingency Measure:
Inappropriate handling/transport	• Notify / train staff through toolbox meetings on the appropriate handling and transport techniques / methods.
Inadequate clean up materials	• Order more materials. • Investigate types of chemicals on site and consult a supplier for appropriate equipment. • Develop or revise spill material monitoring / ordering system
Inappropriate disposal	• Provide appropriate disposal facilities/service providers. • Notify / train staff.
Inaccurate or insufficient records	• Update records, advise staff. • Monitor through Inspections/Audits.
Chemical or fuel spill	• Isolate source and intercept/contain contaminated material. • Divert clean water around site. • Clean-up oil / chemical with absorbent booms and pads, organic absorbent and bacteria. • Remove contaminated material to a suitable contained location for remediation / disposal (Require any necessary approvals /permits from ORC). • Notify ORC. • Notify staff of contaminated area and notify Environmental Manager. • Document spill on the Environment Incident Investigation report. • Refer to the Incident Response section.

11.4.1 Spill Response Procedure

In the event of any spill, the following procedure must be followed:

Immediately

- Assess safety of all personnel.
- Assess risk of explosion.
- Turn off the discharge valve or isolate the source of leakage or spill.
- Stop operating machinery.
- Take whatever immediate actions are required to contain the spill and prevent it spreading or discharging into stormwater drains or natural waterways (including diverting any water around the spill site).
- Notify Site Supervisor.
- Locate nearest spill kit.
- On water; place boom around the spill and any downstream discharge pipes to prevent contamination

from spreading. Place absorbent mats over the spill area.

- On land; place absorbent mats on the spill and build temporary earth bunds if necessary.
- If it is necessary to call in external assistance to a spill, call the local provider of spill equipment or the Regional Council spill response unit.

Clean-up

- Use spill kit to soak up spill.
- Site Supervisor to notify Environmental Consultant in event of significant spill.
- Used spill material is to be collected in heavy duty plastic bags and disposed of in an environmentally responsible manner (usually to landfill or hazardous waste collection facility).
- Appropriate training in the use of spill kits is to be provided for key personnel.
- Notify Otago Regional Council as appropriate in accordance with the Environmental Incident procedure.
- If necessary, contact a waste disposal contractor to remove spill residue to an authorised disposal facility.

Follow-up

- Contaminated ground is to be examined by the Environmental Representative (and Environmental Consultant for significant spill), and remedial action implemented if required.

11.5 Chemicals and Fuels Incidents

A chemicals and fuels incident is considered to have occurred where:

- A spill more than 5 litres has occurred.
- A situation is discovered where a spill of more than 5 litres would likely have occurred before it happens where the management measures above have not been followed.

The environmental incident procedures outlined at section 3.6 shall be followed.

12.0 WASTE MANAGEMENT

Waste from construction activities can contribute to environmental effects as well as creating a nuisance to the public, neighbouring properties, and flora and fauna. There are a range of activities that generate waste including:

- Initial site clearing: miscellaneous dumped rubbish.
- Concrete and steel.
- Miscellaneous structures such as culverts, poles, cables, barriers.
- Organic material, such as timber, excess soil and spoil.
- Paper and domestic wastes, plastics, glass and aluminium.
- Timber and other organic materials.
- Inert solids, e.g. soil, concrete and bitumen.
- Liquid concrete washout.
- Scrap steel from the erection of steel structures.
- Oils, fuel, grease, chemicals and oily rags and spare parts from plant, equipment and vehicle servicing.
- Spillage waste-contaminated spoil/material.
- Paint wash residual.

Measures to minimise waste production, appropriately manage waste generated within the project area, and consider the future repurposing of used products are therefore key considerations throughout project delivery.

12.1 Identification of Sensitive Receptors

Key sensitive receptors to protect from the effects of waste include personnel working within the Project (waste also presents a health and safety hazard) neighbours as well as pedestrians, motorists and cyclists on surrounding roads.

12.2 Performance Criteria

1. Non-recyclable waste generation is minimised, and the site and surrounding area are kept free from waste at all times.
2. Waste management on site will ensure wastes are stored safely and in an organised manner until recycling, reuse, or disposal.
3. Where possible, materials will be reused on site or made available for reuse for another purpose or project off-site.

12.3 Management Measures

The following measures will be deployed to ensure waste management associated with the Project is appropriately mitigated:

No:	Actions Required:	When:
Waste Management Hierarchy		
1.	The Project is committed to the Waste Management Hierarchy philosophy which will be implemented onsite throughout the life of the Project, as illustrated below.  **Figure 17:** The Waste Hierarchy Specific wastes shall be managed in accordance with the methods outlined in 12.3.1.	At all times
2.	Throughout construction, measures will be implemented to ensure the site is maintained in a safe, clean and tidy state.	At all times
3.	The Supervisor will arrange for the provision of correctly signed bins or skips for collection and storage of all wastes. Segregation of wastes will be: General, Hazardous and Recyclables, with preferably facilities for Inert and Active.	At all times
4.	Wastes on site will be suitably contained and prevented from escaping off site. The waste is to be contained so it doesn't contaminate soil, surface or ground water, create unpleasant odours or attract vermin. Where possible covered lockable skips will be used, as this assists in the management of wastes and prevents illegal waste disposal.	At all times

5.	Liquid and hazardous wastes will be stored in a controlled bunded area as far away as practicable from major drainage lines/watercourses.	At all times
6.	Any material dropped in or adjacent to open drains will be recovered immediately after it occurs. Waste storage is not permitted in or near drainage paths.	At all times
Disposal		
7.	The burning of waste is strictly prohibited.	At all times
8.	No wastes will be disposed of on site.	At all times
9.	Wastes will be removed from site regularly and at completion of works	At all times

12.3.1 Waste streams and management methods

Waste type:	Location generated:	Disposal route:	Method:
Concrete, brick, ceramics	On site	Recycle	Crushed and recycled as fill on project where there is sufficient volume. Salvaged for recycling where possible. Send to salvage yard.
Cables	On site	Recycle	Salvaged for recycling where possible.
Topsoil	On site	Reuse or Dispose	Temporary stockpiling, used as landscaping material, sold as landscaping material.
Sand / gravel / usable soils	On site	Re-use	Cut to fill maximised to generate sand to be used as fill. Surplus material to be stockpiled for sale.
Unused Asphalt	On site	Recycle	Solidified asphalt crushed and recycled as fill on site, or recycled back into the manufacturing process.
Concrete from on site pours (kerb & channel, guardrail posts)	On site	Dispose	Washout in dedicated washout bay. Send to landfill or crushed and used in uncertified fills.
Grout	On site	Dispose	Send to landfill or crushed and used in uncertified fills.
Waste Oil	On site	Recycle	Send to recycling centre.

Waste packaging – paper/card, hard/soft plastics	On site	Recycle	Segregate at source send to recycling centre.
Waste absorbents, rags and PPE	On site	Dispose	Send to landfill.
General mixed waste	On site	Dispose	Send to landfill.
Paper and cardboard	On site	Recycle	Segregate at source send to recycling centre.
Glass	On site	Recycle	Segregate at source send to recycling centre.
Metals	On site	Recycle	Segregate at source send to recycling centre.
Plastics	On site	Recycle	Segregate at source send to recycling centre.
Food waste	On site	Dispose	Send to landfill.
Printer cartridges	On site	Recycle	Segregate at source send to recycling centre.
Batteries	On site	Recycle	Segregate at source send to recycling centre.

12.4 Monitoring

Site staff will be briefed on waste processes prior to works commencing and shall maintain continual vigilance for excess waste around the site and following appropriate disposal procedures.

Weekly Environmental Inspections and Monthly SQEP Environmental Inspections shall include a visual assessment of the site to determine the effectiveness of waste management controls.

12.5 Contingency Measures

The following contingency measures shall be adopted if required.

Issue:	Contingency Measure:
Waste not segregated	• Check to see if facilities are adequate. • Notify and train staff. • Erect signage, providing clarity to workers.
Inadequate collection of waste	• Arrange for collection by approved licensed contractor. • Re-estimate wastes. • Recycle if possible.
Not recycled	• Arrange for collection by approved licensed contractor. • Notify and train staff.
Incorrectly stockpiled	• Stockpile correctly, and notify / train staff.

Issue:	Contingency Measure:
Waste items accumulating/stockpiled	• Provide bins, enclosures if available. • Remove offsite ASAP.
Incorrect disposal	• Check disposal facilities, transporters, etc. • Notify / train staff. • Report to regulatory authorities as required.
Contamination of the site	• Assess degree and extent of contamination. • Prevent access to the area: barricade and sign. • Cover contamination if possible from rain, etc. • Notify project manager immediately to ensure regulatory obligations can be fulfilled and remediation can be completed.

12.6 Waste Incidents

A waste incident is considered to have occurred where:

- Waste is not contained within the project area during construction or,
- A complaint is received regarding inappropriate management of waste and on investigation is considered to be warranted.

The environmental incident procedures outlined at section 3.6 shall be followed.

APPENDIX 1 Erosion and Sediment Control Plan Drawing

Legend:

	Stabilised access
	Clean water overland flow
	Dirty water overland flow
	Decommissioned border dyke
	Laydown Area
	Earthworks Stages
	Silt Fence

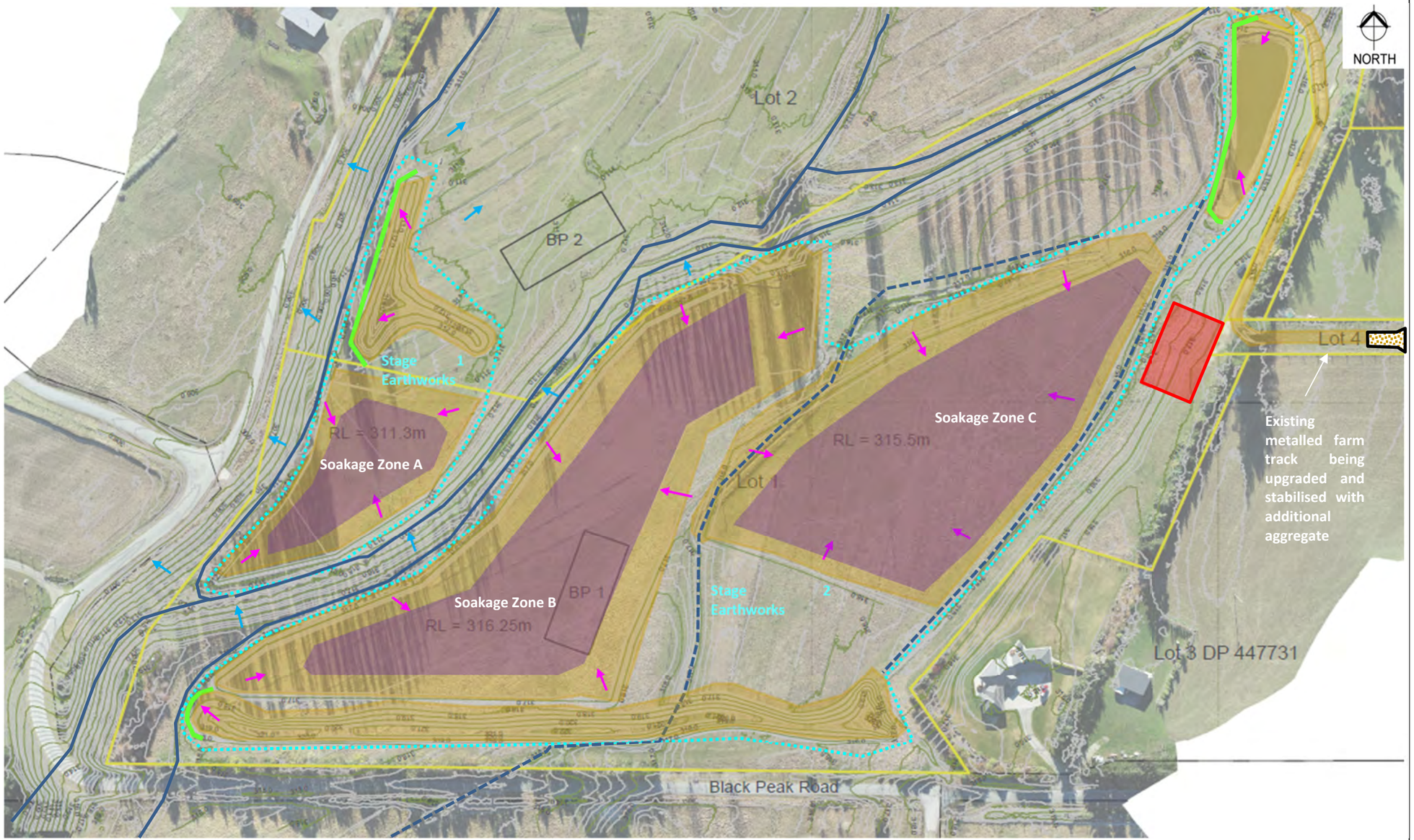
Notes:

General

1. This plan is to be read in conjunction with the Environmental Management Plan document prepared by Enviroscope.
2. All locations of erosion and sediment control (ESC) devices are indicative and exact placement to be confirmed onsite.
3. ESC devices to be installed and maintained in accordance with Auckland Council's 'Erosion and Sediment Control Guide for Land Disturbing Activities in the Auckland Region (GD05) and manufacturer's instructions where relevant.
4. ESCP sheet 002 provides additional detail for Erosion & Sediment Controls
5. All devices are to be inspected daily and pre and post-rain event to ensure they are fully functional.

enviroscope

Project: 372 Wanaka Luggate Highway		**Date:**	**Drawing No.**	**Revision:**
Description: Erosion and Sediment Control Plan Drawing		20/12/2021	ECSP - 001	**A**
Drawn:	**Approved:**			
TG	QM			



Legend:

	Stabilised access
	Clean water overland flow
	Dirty water overland flow
	Decommissioned Border Dyke
	Border Dyke
	Dirty Water Contour Drains
	Ponding/Soakage Zones
	Laydown Area
	Earthworks Stages
	Silt Fence
	Exposed Earthworks

Notes:

General

1. This plan is to be read in conjunction with the Environmental Management Plan document prepared by Enviroscope.
2. All locations of erosion and sediment control (ESC) devices are indicative and exact placement to be confirmed onsite.
3. ESC devices to be installed and maintained in accordance with Auckland Council's 'Erosion and Sediment Control Guide for Land Disturbing Activities in the Auckland Region (GD05) and manufacturer's instructions where relevant.
4. Soakage areas and storage capacity provided in Table 1 of EMP.
5. All devices are to be inspected daily and pre and post-rain event to ensure they are fully functional.

enviroscope

Project: 372 Wanaka Luggate Highway		**Date:**	**Drawing No.**	**Revision:**
Description: Erosion and Sediment Control Plan Drawing		20/12/2021	ECSP - 002	**A**
Drawn:	**Approved:**			
TG	QM			

APPENDIX 2 Erosion Risk and Design

Erosion risk to Receiving Environment and Selection of Design Storm Event

Most earthworks projects take between six and 12 months to complete. Longer projects are usually split into distinct stages of less than 12 months.

The probability (P, in percent) that a specific flood occurring during any time period can be calculated using the following equation:

$$P = 1 - [1 - (1 / T)]^n$$

Where: '**T**' = return period of a given storm threshold (e.g. 2-yr, 5-yr, 20-yr) and
'**n**' = duration of the works in years (MfE 2010)

Table 1: Flooding risk based on duration of works and storm event return period.

Duration of Works		3mths	6mths	9mths	12mths	18mths	2yrs	3yrs	4yrs	5yrs	10yrs
AEP	ARI										
0.500	2	15.9	29.3	40.5	50.0	64.6	75.0	87.5	93.8	96.9	99.9
0.200	5	5.40	10.6	15.4	20.0	28.4	36.0	48.8	59.0	67.2	89.3
0.100	10	2.6	5.1	7.6	10.0	14.6	19.0	27.1	34.4	41.0	65.1
0.066	15	1.7	3.4	5.0	6.7	9.8	12.9	18.7	24.1	29.2	49.8
0.050	20	1.3	2.5	3.8	5.0	7.4	9.8	14.3	18.5	22.6	40.1
0.033	30	0.8	1.7	2.5	3.3	5.0	6.6	9.7	12.7	15.6	28.8
0.025	40	0.6	1.3	1.9	2.5	3.7	4.9	7.3	9.6	11.9	22.4
0.020	50	0.5	1.0	1.5	2.0	3.0	4.0	5.9	7.8	9.6	18.3
0.017	60	0.4	0.8	1.3	1.7	2.5	3.3	4.9	6.5	8.1	15.5
0.014	70	0.4	0.7	1.1	1.4	2.1	2.8	4.2	5.6	6.9	13.4
0.012	80	0.3	0.6	0.9	1.2	1.9	2.5	3.7	4.9	6.1	11.8
0.011	90	0.3	0.6	0.8	1.1	1.7	2.2	3.3	4.4	5.4	10.6
0.010	100	0.3	0.5	0.8	1.0	1.5	2.0	3.0	3.9	4.9	7.6

The frequency of storm events (i.e. AEP, ARI or return period) within the typical work duration timeframes has been identified to meet the desired levels of risk. These are summarised in **Table 2**.

Table 2: Flood frequencies for typical land disturbance durations and desired levels of risk.

Duration	3 months	6 months	12 months
Risk			
2.5% (1 in 40)	10 yr ARI	20 yr ARI	40 yr ARI
5% (1 in 10)	5 yr ARI	10 yr ARI	20 yr ARI
10% (1 in 10)	2 yr ARI	50 yr ARI	10 yr ARI

These storm sizes represent the design storms required to achieve the desired level of protection for the different receiving environments and their duration that soil is exposed. For storms that exceed these levels, it is expected that specifically designed controls will be overwhelmed, and it is likely that there will be significant discharge of sediment from sites to the receiving environment. This is an unavoidable residual risk.

Put another way, the above Risk profiles provide for 97.5%, 95% or 90% level of protection of the receiving environments depending on their sensitivity to sedimentation (refer to **Table 3**). These provide for 'acceptable' levels of risk for the different receiving environments.

The receiving environments, desired risk levels and design storms are summarised in **Table 3**. This table and risk approach is used in the design methodology for erosion and sediment controls requiring specific design outlined in Section 4 of the EMP.

Category	Receiving environment type	Potential for adverse effects from erosion and sedimentation	Desired design risk (chance of event occurring while soil is exposed)		Site disturbance duration (duration of soil exposure until stabilised again)				
					Up to 2wks	Up to 1mth	Up to 3mths	Up to 6mths	Up to 1yr
			%	Chance	Storm frequency (Average Return Interval) to design for (6-hr duration):				
A	Water Conservation Order Areas	Highest	<2.5%	1 in 40	2 yr	5 yr	10 yr	20 yr	40 yr
A	Spring fed streams	Highest	<2.5%	1 in 40	2 yr	5 yr	10 yr	20 yr	40 yr
A	Natural wetlands (including tarns)	Highest	<2.5%	1 in 40	2 yr	5 yr	10 yr	20 yr	40 yr
B	Lakes	High	<5%	1 in 20	85% of 2 yr	2 yr	5 yr	10 yr	20 yr
B	Streams and Rivers	High	<5%	1 in 20	85% of 2 yr	2 yr	5 yr	10 yr	20 yr
C	Artificial wetlands (created by stormwater attenuation)	Low	<10%	1 in 10	85% of 2 yr	85% of 2 yr	2 yr	5 yr	10 yr
C	Land	Low	<10%	1 in 10	85% of 2 yr	85% of 2 yr	2 yr	5 yr	10 yr

APPENDIX 3 Environmental Site Induction Handout

1. Key Roles and Responsibilities for Environmental Management

Role	Environmental Responsibilities
Site Supervisor	• Ensures staff and sub-contractors are working in compliance with environmental requirements and work activities are not impacting the environment. • Coordinating the implementation of the EMP. • Identifying resources required for the implementation of the EMP. • Coordinating actions in emergency situations/rapid stabilisation of site and allocating appropriate resource for these activities. • Restrict or stop any activity on the Project that has the potential to or has caused environmental effects. • Ensuring that adequate instructions and information is provided to Operators which relate to environmental risks onsite.
Environmental Representative	• Coordinate the implementation of the EMP ensuring all environmental controls are in place as per the EMP. • Undertake Environmental inspections including end-of-day inspections of controls and ensure the maintenance and improvement of these controls. • Maintain communication and provide leadership to ensure all staff and subcontractors are aware of environmental requirements. • Ensure all contractors and sub-contractors are appropriately inducted when coming onto site. • Assist the project leadership in managing and investigating Environmental complaints. • Familiar with the environmental aspects of the project and how they are managed onsite regarding the EMP and the Erosion and sediment controls present. • Aware of the appropriate guidelines found in GDO5 and the local Council requirements.
Environmental Consultant	• Oversee the environmental management onsite and provide technical knowledge. • Monthly monitoring onsite to ensure all the EMP continues to provide adequate environmental management for the project. • Undertake Environmental reporting. • Deliver site environmental inductions to key staff. • Prepare and submit monthly reporting to Council.

2. Key Environmental Locations

Environmentally sensitive areas: Existing surrounding residential properties are not located within the immediate vicinity of the works zone, however earthworks will create noise emissions that need to be managed in accordance with this EMP to mitigate potential adverse noise effects.

Environmentally sensitive receptors: There are existing raised border dykes that intersect the site. These are raised above the works area and are to be maintained as clean water diversions throughout construction.

3. Key Resource Consent Conditions

TBC - RM

The site **EMP provides direction** for how this is to be achieved.

4. Limits of Clearing and Importance of Staging

The staging and sequencing of works is a key component to ensure that environmental effects of construction are appropriately managed. It is imperative that the sequencing outlined in section 2.1 of the EMP is followed so that the site is stabilised in the most efficient manner.

All staff should be familiar with this sequence. Any potential changes to that sequence need to be approved by the Site Supervisor which will be discussed first with the Environmental Consultant.

5. Key Environmental Management Measures in EMP

Erosion and Sediment Control (section 4 of EMP):

- Direction provided in **Erosion and Sediment Control Plan** (ESCP) in Appendix 1 of EMP.
- **Separation of clean and dirty water** is the most important principle to ensure that the contributing catchment of dirty water that needs to be treated is as small as possible.
- **Progressive stabilisation (revegetation) of disturbed areas** will ensure that the extent and duration of exposed soil is minimised. **Keep it covered!**
- All controls to be checked immediately before storm events to ensure they are in good-working order.
- Erosion and sediment control devices to remain in place until site is stabilised (defined as 80% vegetative cover).

Any works that disturb the controls outlined on the ESCP must be reinstated before moving to the next task.

Dust Management (Section 5 of EMP):

- Dust suppression should occur on any exposed soil on unsealed roads, this can be done using the water caught in the retention basin.
- **Avoid all unnecessary vegetation clearing** that exposes soil and work should be conducted in stages as this can increase the impact from dust in the event of strong winds.
- **During high wind** events and dust suppression is becoming difficult **works must cease** until more favourable weather conditions.
- **Constant vigilance** should be maintained onsite to ensure that dust is appropriately managed and weekly monitoring should be completed to ensure that management measures are effective.

Water Quality Management (section 6 of EMP):

- Any water caught in the sediment devices to be re-used in dust suppression where possible and if required.
- Any observations of dirty water running offsite to be reported directly to the Site Supervisor.

Historic Heritage Management (section 7 of EMP):

- If any artefacts are found works must stop within 20 meters of the discovery and the site manager notified immediately.
- The site manager must then secure the area and notify the Heritage New Zealand Regional Archaeologist, who will advise when works can begin again.

Noise and Vibration Management (Section 8 and 9 of EMP):

- Noise producing works only be undertaken during the hours of **0800-1730** from Monday-Saturday and no works to be completed on Sundays or public holidays.
- Particularly noisy work should be completed during the **middle of the day** during business hours.
- **Noise dampening** should occur when possible.
- Daily and weekly site inspections should be undertaken by the Environmental Representative to ensure the strategies in place are effective.

Vegetation Management (Section 10 of EMP):

- Avoid the spread of noxious weeds onsite or to other sites.
- Maintain areas of vegetation where possible to provide additional stabilisation of ground.

Chemicals and Fuel Management (Section 11 of EMP):

- Maximum quantities of chemicals and fuels to be stored onsite can be found within **section 11** of the EMP.
- Refuelling and maintenance of vehicles should be completed only at the laydown area which is located at the top of the site.
- All staff should be familiar with the location of spill kits which can be found within the **EMP.**
- If a spill occurs the Project Manage must be notified and the area controlled until the site can be made safe.

- Daily and weekly site inspections must occur to ensure effectiveness of controls in place.

Waste Management (Section 12 of EMP):

- The site should be **litter free** with no litter to cross the boundary of the site or enter any waterbodies.
- Waste receptacles must be **well labelled** and **appropriately sized.**
- Waste must be removed from the site regularly to ensure receptacles do not become overly full and the Project Manager should be notified when receptacles are reaching capacity.
- Visual monitoring onsite should occur daily and weekly to ensure controls are working effectively.

6. Environmental Incidents

The procedure for managing environmental incidents is outlined in section 3.6 of the EMP, however these can be summarised as follows:

- **Environmental incidents** must be reported as soon as they occur, and the Project team must respond immediately to mitigate further environmental impacts.
- Investigation into the cause of the incident should be completed and a solution should be constructed to remediate the Environmental damage.
- The Project Manager must then notify the **QLDC and/or the ORC of the details of the incident within 12 hours** of being made aware of the incident.

7. Rapid Response for Storm Events

The procedure for rapid response to storm events is outlined in section 4.2.6 of the EMP, however these can be summarised as follows:

- The Site Supervisor will observe and understand the **weather forecast** throughout the project to ensure appropriate preparation onsite.
- If a **significant storm** event is forecast all works should stop within an appropriate amount of time to inspect ESC devices and undertake any maintenance or site stabilisation required.
- The pump should be refuelled and checked to ensure it is working and ready for deployment if needed.
- During the storm event the site should be monitored to sure the functioning of the ESC devices and maintained if required.

When storms are forecast it is crucial that tools are downed in time for the rapid response procedure to be implemented. This will help avoid environmental incidents, potential enforcement action and site shutdown.

APPENDIX 4 Environmental Site Induction Register

Site Environmental Induction Register

372 Wanaka Luggate Highway

Name:	Organisation:	Date Inducted:	Induction delivered by:	Signature:

APPENDIX 5 Weekly Environmental Site Inspection Proforma

Weekly Environmental Inspection	
372 Wanaka Luggate Highway	Resource Consent:

Date:	
Site Environmental Representative:	
Site Supervisor:	
Weather Description:	

Item	Response ✓ ✗			Comments: Any observations and list any corrective actions or improvements required	Timeframe: When actions are to be completed (immediate, 24 hours etc)
	NA	C	NC		
General					
Is a hard copy of the EMP available onsite? Provide details on the location					
Have any environmental incidents occurred during the week? If so, provide details					
Are 'no-go zones' clearly marked?					

Water Quality					
Is there visual evidence of sediment from the construction site entering waterways/drainage lines?					
Are daily visual inspections of waterways being conducted and recorded by the site supervisor?					
Erosion and Sediment Control					
Has the extent of exposed soil minimized and is the staging sequence outlined in the EMP being followed?					
Are completed areas being progressively stabilized?					
Is there any evidence that new erosion has opened up?					
Are E&S controls installed as per the ESCP and are in good order with minimal sediment build up?					
Are stockpiles and any storage areas located at least 30m away					

from waterways/drainage lines?					
Have stockpiles been stabilised to prevent erosion from both wet/windy conditions?					
Is contaminated or sediment laden water being discharged into waterways prior to testing?					
Is any mud being tracked onto surrounding roads?					
Cultural Heritage					
Have any finds of cultural significance been found throughout the week?					
Have exclusion zones been identified and clearly marked?					
Noise and Vibration					
Have any complaints been received during the week?					
Has noise or vibration monitoring been conducted					

onsite as a result of a complaint? If yes provide details.					
Have works been staged near residents to minimise impacts?					
Dust					
Have any complaints been received during the week?					
Are stockpiles compacted or covered to minimise dust?					
At time of inspection, were loads on spoil trucks covered upon entry and exiting the site?					
Is there any evidence of dust observed indicating that measures are not adequate?					
Have exposed areas been stabilised with Polymers?					
Are there additional areas that require stabilising?					

Is there appropriate water supply on site to fill water carts?					
Are there adverse conditions that may produce excessive dust? E.g high winds?					
Contaminated Land					
Have construction activities uncovered any contaminated material or spoil? If yes, provide details of type of material found and action taken.					
Vegetation					
Where relevant, have 'exclusion zones' been clearly marked to ensure they are visible to site personnel?					
Has any unnecessary clearing of vegetation occurred during the week?					
Is cleared vegetation mulched and stockpiled for reuse?					
Have weeds been identified and treated/removed prior to stripping?					
Chemicals and Fuels					

Are chemicals and fuels stored in accordance with the EMP?					
Are the storage areas placed away from waterways and drainage lines?					
Is refueling of vehicles occurring at least 30 m away from waterways/drainage lines?					
Are materials safety data sheets located within the area where materials are stored?					
Is there an adequate supply of spill kits onsite? Have any used materials been replaced?					
Are spill kits clearly labelled?					
Are spill kits stored where chemicals/fuels/oils located?					
Have any spills occurred during the week? If so, provide details.					

Note: Actions resulting from this inspection must be forwarded to the Site Supervisor.

Additional Comments:
Name and Signatures of inspections attendees:

APPENDIX 6 Environmental Incident Report Proforma

Project Address: 372 Wanaka Luggate Highway	**QLDC/ORC Consent Number (if applicable):**
Brief Project Description:	

Instructions

Complete this form for all environmental incident that cause contaminants (including sediment) or environmental nuisance to leave the site. Be succinct, stick to known facts and do not make assumptions. Once completed submit to the Regulatory team at Queenstown Lakes District Council at RCMonitoring@qldc.govt.nz. Call the Regulatory team immediately on 03 441 0499 for any serious or ongoing incidents that cannot be brought under immediate control.

Date and Time	Date: XX/XX/XXX Time: XX:XX hours
Description? Provide a brief and factual description of what happened during the incident, include relevant details such as: - The activity being undertaken when the incident occurred - The estimated distance to nearest waterway (include stormwater and dry courses) - The estimated distance to the nearest sensitive receiver Sketches/diagrams/photos may be referenced and appended to this report to aid in the description of the incident.	
Exact Location of the incident? Include address, landmarks, features, nearest stree, etc. Maps and plans can be attached.	
Quantity or volume of material escaped or causing incident? (provide and estimate quantity)	
Who identified the incident?	Contractor ☐ Council ☐ Community ☐ Other ☐

What immediate actions/control measures were taken to rectify or contain the incident?
What initial corrective action will be taken to prevent similar incidents recurring in the near future?

Has the Otago Regional Council been notified? Yes ☐ No ☐ Will be notified ☐

Approvals:

Environmental Representative/person making report:	
Name……	Signature……
Organisation……	Date……
Mobile phone number……	
Site Supervisor:	
Name……	Signature……
Organisation……	Date……
Mobile phone number……	

APPENDIX 7 Environmental Complaints Register

Environmental Complaints Register

372 Wanaka Luggate Highway

Complaint Number	Date and Time Received	Complainant details (Name, address, phone number)	Details of Complaint	Investigation and Findings	Complainant Responded to and Outcome?	Close out Date

APPENDIX 8 EMP Non-Conformance Register

EMP Non-Conformance Register

372 Wanaka Luggate Highway

Ref Number	Date Observed	Found via (e.g. inspection, monitoring, complaint?)	Details of Non-conformance	Corrective Actions	Updated by	Close out Date

APPENDIX 9 Water Quality Monitoring Results Proforma

Water Quality Monitoring Results				
372 Wanaka Luggate Highway				
Date:		**Monitoring Trigger:**		
	Location 1:	**Location 2:**	**Location 3:**	**Location 4:**
Location Description:				
Insitu/Lab Results:				
Turbidity/TSS				
pH				
Visible Observations:				
Hydrocarbons				
Tannins				
Waste/Litter				
Description of any Non-conformance and actions required:				

APPENDIX 10 Archaeological Discovery Protocol

HERITAGE NEW ZEALAND
POUHERE TAONGA

Heritage New Zealand Pouhere Taonga Archaeological Discovery Protocol

Under the Heritage New Zealand Pouhere Taonga Act (2014) an archaeological site is defined as any place in New Zealand that was associated with human activity that occurred before 1900 and provides or may provide, through investigation by archaeological methods, evidence relating to the history of New Zealand. For pre-contact Maori sites this evidence may be in the form of bones, shells, charcoal, stones etc. In later sites of European/Chinese origin, artefacts such as bottle glass, crockery etc. may be found, or evidence of old foundations, wells, drains or similar structures. Burials/koiwi tangata may be found from any historic period.

In the event that an unidentified archaeological site is located during works, the following applies;

1. Work shall cease immediately at that place and within 20m around the site.

2. The contractor must shut down all machinery, secure the area, and advise the Site Manager.

3. The Site Manager shall secure the site and notify the Heritage New Zealand Regional Archaeologist. Further assessment by an archaeologist may be required.

4 If the site is of Maori origin, the Site Manager shall notify the Heritage New Zealand Regional Archaeologist and the appropriate iwi groups or kaitiaki representative of the discovery and ensure site access to enable appropriate cultural procedures and tikanga to be undertaken, as long as all statutory requirements under legislation are met (*Heritage New Zealand Pouhere Taonga Act*, *Protected Objects Act*).

5. If human remains (koiwi tangata) are uncovered the Site Manager shall advise the Heritage New Zealand Regional Archaeologist, NZ Police and the appropriate iwi groups or kaitiaki representative and the above process under 4 shall apply. Remains are not to be moved until such time as iwi and Heritage New Zealand have responded.

6. Works affecting the archaeological site and any human remains (koiwi tangata) shall not resume until Heritage New Zealand gives written approval for work to continue. Further assessment by an archaeologist may be required.

7. Where iwi so request, any information recorded as the result of the find such as a description of location and content, is to be provided for their records.

8. Heritage New Zealand will determine if an archaeological authority under the *Heritage New Zealand Pouhere Taonga Act* 2014 is required for works to continue.

It is an offence under S87 of the *Heritage New Zealand Pouhere Taonga Act 2014* to modify or destroy an archaeological site without an authority from Heritage New Zealand irrespective of

whether the works are permitted or a consent has been issued under the Resource Management Act.

Heritage New Zealand Regional archaeologist contact details:

Dr Matthew Schmidt
Regional Archaeologist Otago/Southland
Heritage New Zealand
PO Box 5467
Dunedin
Ph. +64 3 470 2364, mobile 027 240 8715
Fax. +64 3 4773893
mschmidt@heritage.org.nz

PREPARED FOR I FARRANT AND THE ESTATE OF M C FARRANT
15 FEBRUARY 2022
J1556

LANDSCAPE AND VISUAL EFFECTS ASSESSMENT

PROPOSAL TO SUBDIVIDE A RURAL PROPERTY AND IDENTIFY TWO BUILDING PLATFORMS AT STATE HIGHWAY 6, WANAKA.

vivian+espie
resource management and landscape planning

INTRODUCTION & DESCRIPTION OF THE PROPOSAL

1 This report has been prepared to accompany a resource consent application on behalf of I Farrant and the estate of M C Farrant. This report identifies and quantifies the landscape and visual effects likely to arise from the subdivision of the subject site and the identification of two building platforms. The site is approximately 40ha in area, is legally described as Lot 1 DP 27661 and is located on the southern side of State Highway 6 (SH6), between the Cardrona River and Morris Road.

2 The full details of the proposed activities are set out in the resource consent application. I set out the following summary points that are relevant to landscape considerations:

- The northern half of the site is to become proposed Lot 3 of 21ha. This lot is comprised of farmed paddocks and is to contain the existing farm homestead and associated accessory buildings. It has an established accessway off SH6.

- Proposed Lots 1 and 2 are approximately 9.3ha each and are also comprised of flat terraced farmed paddocks. A new building platform is proposed on each of these lots. These lots are accessed via an existing leg-in from Morris Road.

- Structural landscaping is proposed as per the Structural Landscape Plan that is attached as Appendix 2 to this report.

METHODOLOGY

3 The methodology for this assessment has been guided by:

- The Te Tangi A Te Manu, Aotearoa New Zealand Landscape Assessment Guidelines[1].
- The New Zealand Institute of Landscape Architects "Landscape Assessment and Sustainable Management" Practice Note[2].
- The landscape assessment guidance of the Quality Planning Resource[3].
- The landscape-related provisions of the QLDC PDP (Decisions version)[4].

[1] Te Tangi A Te Manu, Aotearoa New Zealand Landscape Assessment Guidelines, April 2021, New Zealand Institute of Landscape Architecture
[2] New Zealand Institute of Landscape Architects Education Foundation; 2010; Best Practice Note 10.1 'Landscape Assessment and Sustainable Management'.
[3] http://www.qualityplanning.org.nz/node/805
[4] Most relevantly, decisions [2019] NZEnvC 160, [2019] NZEnvC 205, [2019] NZEnvC 206 and [2021] NZEnvC 60.

4 When describing effects, I will use the hierarchy of adjectives given in the top row of the table below. The bottom row shows how the adjectives that I use can be related to specific wording within the RMA[5].

very low	low	low-mod	moderate	mod-high	high	very high

less than minor	minor	more than minor	significant

EXISTING LANDSCAPE

Physical *(collective natural and built components and processes)*

5 The site sits on flat but stepped river terrace land to the immediate east of the Cardrona River, on SH6 between Wanaka and Wanaka Airport (5km to the east). The part of SH6 that adjoins the site provides the primary vehicle link between Wanaka and the airport, and also onwards to Luggate and Cromwell.

6 Currently, low density lifestyle-block activity coupled with farmed pasture extends between Wanaka Airport and Albert Town / Wanaka. The site is separated from Albert Town / Wanaka by the corridor of the Cardrona River. Additionally, a collection of rural living properties sits immediately west of the site, on lower terrace land, that adjoins the Cardrona River itself. These rural living properties are accessed by Black Peak Road (that runs east-west, to the immediate south of the site) and are approximately 5ha in area each. The relative location of the airport and the town, and the presence of SH6 connecting Wanaka to Luggate, Cromwell and beyond, mean that this part of the rural Upper Clutha Basin is generally relatively modified and occupied compared to other parts.

7 The site itself is comprised of flat terraced landform, generally rising in elevation from the river corridor to the west towards the Morris Road in the east. Many lines and stands of mature exotic trees bisect and occupy the site, particularly in its northeastern quarter. This part of the site also accommodates the large existing homestead dwelling and its garden, as well as the barn building to its north that also accommodates a residential flat.

8 Outside of the garden area, the remainder of the site takes the form of open paddocks. An operational water race runs roughly north-south through the site and the paddocks of the site have been irrigated via border-dyke in the past, although this has not been operational for many years. Overall, the site has a verdant, improved rural character associated with open space and agricultural management.

[5] Ibid, paragraphs 6.21 and 6.36 to 6.40.

9 Outside of the site itself, similar physical attributes are reflected over the area that extends between Wanaka Airport to the east and the Cardrona River in the west. Rolling terrace-and-escarpment landform, resultant of past glaciations and alluvial processes, has been managed by farming for many decades (with its associated trappings of buildings, fences, shelterbelts and paddocks) but in more recent years it has accommodated increasing rural living land use.

Associative *(intangible aspects that influence how places are perceived)*

10 I have no specific knowledge of Tangata Whenua associations with this landscape, although I understand that the Cardrona and Clutha River corridors were important in relation to pre-colonial travel through the district. In terms of colonial history, I am unaware of any identified heritage aspects, other than the fact that the land has long been part of farming operations. The historic Halliday Homestead building sits approximately 800m to the north of the subject site.

Perceptual *(both sensory experience and interpretation)*

11 The area between the airport and the Cardrona River is experienced by the public very largely via SH6 but also via other public areas such as Morris Road and the Cardrona River corridor. Rolling and terraced topography means that views are variable in length, often being truncated by landform or shelterbelts.

12 The rolling terrace-and-escarpment landform comprises of till left by retreating glaciations and subsequent alluvial action. The formative processes that have led to this landform are not as legible to an average observer as they might be in the more geomorphologically dramatic or dynamic parts of the district. I consider that an average observer would simply perceive this area as rolling farm land but may recognise terraces associated with the Cardrona River.

13 While the land of the relevant area is relatively tamed and managed, it is not without scenic and aesthetic quality. In sensory terms, it takes the form of green, relatively open pastureland (albeit punctuated by shelterbelts, buildings and other aspects of occupation and rural living) on valley-floor topography that forms the foreground and mid-ground to distant mountain backdrops. The rolling and terraced topography means that changing light and atmospheric conditions throughout the day and year (along with seasonally changing agricultural patterns) can bring aesthetic interest and variety. When visually experienced in conjunction with distant mountain peaks and ranges, I consider that most observers would consider the area between the Wanaka Airport and Albert Town / Wanaka to be a pleasant rural landscape on the outskirts of Wanaka but not one that imparts the drama and memorability of the district's wild and mountainous landscapes.

RELEVANT STATUTORY CONTEXT

14 The site is within the Rural Zone of the PDP and within the Rural Character Landscape (**RCL**) that takes in the large valley floor area of the Clutha Basin.

15 Part 2 of the PDP (Strategy – Chapters 3 to 6) is now final pursuant to Environment Court Decision [2021] NZEnvC 155 (Decision 2.12). Environment Court decisions have not yet been issued regarding Part 4 of the PDP (Rural Environment). However, no appeals seek to change the Rural Zoning of the area of the subject site. I therefore understand that considerable weight can be placed on the PDP provisions.

16 The most relevant provisions from Chapter 3 of the PDP are:

STRATEGIC OBJECTIVES

3.2.1.8 Diversification of land use in rural areas beyond traditional activities, including farming is enabled provided that:

…

b. the landscape character of Rural Character Landscapes is maintained and their visual amenity values are maintained or enhanced;

3.2.5.5 Within Rural Character Landscapes, adverse effects on landscape character and visual amenity values from subdivision or development are anticipated and effectively managed, through policies and rules, so that:

a) landscape character is maintained; and

b) visual amenity values are maintained or enhanced.

3.2.5.7 In Rural Character Landscapes of the Upper Clutha Basin:

a) Priority Areas of Rural Zoned Rural Character Landscapes are identified; and

b) associated landscape character and visual amenity values are identified.

STRATEGIC POLICIES

3.3.33 For Rural Character landscapes, identify landscape character to be maintained, and visual amenity values to be maintained or enhanced and related landscape capacity:

a) for Priority Areas of the Upper Clutha Basin, in Schedule 21.23, in accordance with the values identification framework in SP3.3.39 – 3.3.41 and otherwise through the landscape assessment methodology in SP3.3.45 and through best practice landscape assessment methodology; and

c) *through associated District Plan rules setting measurable spatial or other limits, and related assessment matters, as to cumulative subdivision and development including as to location, quantity, density and design.*

17 The subject site is within a Priority Area of the Upper Clutha Basin that takes in all the land between SH6 in the north and Mount Barker Road in the south[6]. The Chapter 3 provisions direct that the landscape character, visual amenity values and the related landscape capacity of each Priority Area[7] shall be identified and set out in a Schedule in the PDP (Schedule 21.23). This assessment and identification work has not yet been done, however, Strategic Policies 3.3.39 to 3.3.45 set out how such assessment and identification work is to be done. The consideration of the landscape character and visual amenity values and related landscape capacity of the subject area is relevant in relation to Strategic Objective 3.2.5.5, which is set out above.

18 The most relevant provisions from Chapter 6 are:

6.3.4.1 Recognise that subdivision and development is unsuitable in many locations in Rural Character Landscapes and successful applications will need to be, on balance, consistent with the objectives and policies of the Plan.

6.3.4.4 Have particular regard to the potential adverse effects on landscape character and visual amenity values where further subdivision and development would constitute sprawl along roads.

6.3.4.5 Ensure incremental changes from subdivision and development do not degrade landscape quality or character, or important views as a result of activities associated with mitigation of the visual effects of proposed development such as screen planting, mounding and earthworks.

6.3.4.6 Avoid adverse effects on visual amenity from subdivision, use and development that:

a) is highly visible from public places and other places which are frequented by members of the public generally (except any trail as defined in this Plan); or

b) forms the foreground for an Outstanding Natural Landscape or Outstanding Natural Feature when viewed from public roads.

6.3.4.8 In the upper Clutha Basin, have regard to the adverse effects from subdivision and development on the open landscape character where it is open at present.

[6] ENV-2018-331-000019, Joint Statement arising from expert landscape conferencing in relation to the Upper Clutha priority area mapping, Topic 2: Rural Landscapes, 29 October 2020.

[7] Policy 3.3.44, as per the above Environment Court Decision, makes it clear that Priority Areas are prioritised in terms of scheduling, not in terms of their landscape merit, sensitivity or importance.

19 In summary in relation to the PDP, the relevant area is within the Rural Zone and is part of a RCL (and part of a Priority Area). The relevant provisions direct that:

- Landscape character is maintained and visual amenity values are maintained or enhanced;
- The relevant landscape character and visual amenity values should be identified through best practice landscape assessment methodology;
- Development that is highly visible from public places or that forms a foreground to an ONL view should not be allowed to have adverse effects;
- Open landscape character should be maintained where it currently exists.

ASSESSMENT OF LANDSCAPE AND VISUAL EFFECTS

20 In light of the above description of the existing landscape and the statutory provisions, the relevant potential issues raised by the proposed subdivision and building platforms are related to existing landscape character and visual amenity values and the potential degradation of these by additional rural living land use and its associated activities.

VISUAL CATCHMENT AND VIEWING AUDIENCES

21 Appendix 3 to this report is a plan of the context of the site on which relevant viewpoints are identified and Appendix 4 to this report contains photographs from these viewpoints. Some neighbours have given written approval to the proposal as indicated on Appendix 3. No alterations or new activities are proposed in the northern half of the site. Therefore, relevant viewing audiences in relation to the proposed activities are:

- Users of part of Morris Road;
- Users of part of Black Peak Road (a private road);
- Users of State Highway 6 (SH6);
- Users of part of the Cardrona River corridor;
- Some close neighbours to the west of proposed Lots 1 and 2 (Timu, Hudson, McElrea, Cruikshank);
- Some close neighbours to the south and southwest of proposed Lots 1 and 2 (Fraser, Morshius, Horne, Le Brun and MacLean).
- Some close neighbours to the east of proposed Lots 1 and 2 (Zeestraten, Wallace).

VISUAL EFFECTS ASSESSMENT

22 Visual effects are *"effects on landscape values as experienced in views. They are a technique to help understand landscape effects. They are a subset of landscape effects. … … A proposal that is in keeping with the landscape*

values, for example, may have no adverse visual effects even if the proposal is a notable change to the view. Conversely, a proposal that is completely out of place with landscape values may have adverse effects even if only occupying a portion of the view"[8].

23 Appendix 1 of this report gives comments in relation to the relevant PDP assessment matters, some of which relate to effects on views and visual amenity. In this section of my report, I set out my overall findings in relation to views and visual amenity.

Morris Road

24 With reference to Appendix 3, Morris Road runs north-south and Black Peak Road adjoins it at right angles to the southeast of the subject site. A northbound user of Morris Road gains some views to the northwest that include part of the subject site as they descend a slope towards the Black Peak Road intersection. Such a road user is at least 700m from the closest part of the subject site.

25 The parts of the subject site that will contain new activity (i.e. the building platforms and curtilage areas of proposed Lots 1 and 2) cannot be seen in these views. The amenity values that are enjoyed by these road users will not be affected by the proposal.

Black Peak Road

26 Black Peak Road is a private Road that serves a number of rural living lots that sit between the subject site and the Cardrona River. The southern boundary of proposed Lot 1 adjoins Black Peak Road. A number of the landowners that have access to Black Peak Road have given written approval to the proposal.

27 With reference to the proposed Structural Landscape Plan, a dense belt of eucalypts and cypress line much of the northern side of Black Peak Road. This belt is on the subject site and is proposed to be retained as part of the application. A 130m long stretch of Black Peak Road to the east of this belt allows views into the subject site. Photograph A of Appendix 4 illustrates these views; the building platform for Lot 1 is in this line-of-sight.

28 The proposal involves significant earthworks in the area of Lot 1, part of which will create a curved mound, the top of which will be 3m above existing ground level. The Structural Landscape Plan shows that a 750m^2 sweep of high native shrub/tree planting will sit on the outside of this mounding with some additional stands of deciduous amenity trees. I understand that the mounding and planting would be done prior to titles (and therefore building platforms) being created. Therefore, the visual effects as experienced from the relevant

[8] Te Tangi A Te Manu, Aotearoa New Zealand Landscape Assessment Guidelines, April 2021, New Zealand Institute of Landscape Architecture, paragraph 6.25 and 6.27.

stretch of Black Peak Road will be the creation and finishing of the mound by way of earthworks, the grassing of the mound and the planting of the trees and shrubs, and then the incremental maturing of this planting such that it will hide the mound and the site overall.

29 The relevant stretch of Black Peak Road is short and is passed relatively quickly by its private users. The period of earthworks itself will create disturbance and visual detraction from existing landscape qualities. Once the mound is re-grassed and other planting is installed, a green and open-space form of aesthetic will be restored and in the medium to long term, dense and varied native vegetation will characterise this northern edge of Black Peak Road. In this sense, it will match the stretch of this road that continues to the west.

30 I consider that any adverse effects on a user of Black Peak Road will be of a low degree at most and will be temporary.

State Highway 6

31 The stretch of SH6 from which views to the proposed activities can potentially be gained is highlighted on Appendix 3 and illustrated by Photograph B. From a 100m long stretch, long views are available through scattered roadside trees to the area of the proposed Lot 2 building platform, however, these views and peripheral and difficult. Proposed amenity tree planting to the north of the Lot 2 platform will visually sit on the far side of a large area of open pasture, with a future building beyond these trees. This stretch of highway is at the transition where the cutting that descends/ascends to the Cardrona River reaches the flats adjacent to Halliday Road. A future Lot 2 dwelling will be particularly difficult to notice in the relatively distant mid-ground. I consider that the proposal will have no material effect on the visual amenity of a highway user.

Users of the Cardrona River corridor

32 The Cardrona River to the west of the subject site sits within a relatively broad corridor of public land. Between the subject site and the river, topography steps down in a series of terraces. An observer on the public land that is close to the river itself, is lower in elevation than the subject site and has little ability to see into it. From some locations on the western edge of the public river corridor, observers may be more elevated and hence gain some views that include the subject site. These are illustrated by Photograph C of Appendix 4. The various dwellings that are served by Black Peak Road can be seen as mid-ground elements on the far side of the river. Layers of poplars in front of these dwellings filter views.

33 It is possible that parts of future dwellings within proposed Lots 1 and 2 would be visible in these views. Proposed vegetation on the site and existing vegetation west of the site will provide considerable screening, particularly in summer months with the poplars in leaf. Two dwellings would cumulatively add to the influence of human occupation in these views but the two dwellings would be significantly less noticeable than existing dwellings.

34 I consider that the degree to which the current proposal will adversely affect the visual amenity of a viewer in these locations is very low.

Close neighbours to the west of proposed Lots 1 and 2

35 With reference to Appendix 3, the Timu, Hudson, McElrea and Cruikshank properties lie to the west of the subject site. All these properties are accessed from Black Peak Road. The owners of the Timu property (which is the closest to the subject site) have given written approval to the application. I have not visited any private properties to examine the visual effects of the proposal.

36 The Hudson, McElrea and Cruikshank properties are close to the Cardrona River and are somewhat separated from the subject site. The dwellings of these properties are oriented to the north and west, towards dominant views and sun. They are relatively vegetated on their eastern sides. For observers on the eastern side of these dwellings that look east to the subject site, it appears that the upper parts of built form on the two proposed building platforms may be visible. Mounding on proposed Lot 2 will significantly (or entirely) screen the Lot 2 platform and proposed planting will reinforce this. The Lot 1 building platform is more set back and therefore screening by landform may mean all built form is invisible. Again, proposed vegetation will assist in this regard.

37 Observers on the Hudson, McElrea and Cruikshank properties already have nearby rural dwellings in their views, although their views to the northeast are unobstructed. The subject site is effectively behind these properties and not in the direction of primary views. The actual degree of visibility of future residential activity enabled by the application is likely to be slight at most. I consider that, at most, the visual amenity of these properties will be affected to a low degree.

Close neighbours to the south and southwest of proposed Lots 1 and 2

38 With reference to Appendix 3, the Fraser, Morshius, Horne, Le Brun and MacLean properties lie to the west of the subject site. Again, all these properties are accessed from Black Peak Road. The owners of the Horne property have given written approval to the application.

39 These properties are on the southern side of Black Peak Road. The dwellings of these properties are situated towards the southern edge of the properties to gain long views across open land. The dwellings are oriented to the north and west. They are able to look towards the southern edge of the subject site, which is significantly vegetated, particularly by the eucalypt and cypress shelterbelt.

40 It appears that there will be no visibility to the proposed building platforms from these properties. Any slight visibility that may have been evident from the northernmost parts of these properties will be screened by proposed mounding and existing and proposed vegetation adjacent to Black Peak Road. I consider that there will be no material effect on occupiers of these properties.

Close neighbours to the east of proposed Lots 1 and 2

41 The Zeestraten and Wallace properties sit to the east of the subject site. In terms of views, the Wallace property is the neighbouring property that is potentially most affected by the proposal. The owners of both of these neighbouring properties have given written approval to the application.

Summary regarding effects on views and visual amenity

42 Only the southwestern corner of the subject site will change in a way that could potentially lead to effects on views and visual amenity. Ultimately two instances of rural living will appear, along with areas of new vegetation and altered contours including areas of mounding.

43 These changes to the landscape will be minimally noticeable from public places. Some visibility is available from SH6, Morris Road and the corridor of the Cardrona River, but not to any degree that will materially affect visual amenity.

44 In terms of private views, there is visual access to the location of the proposed activities from Black Peak Road and some properties that are accessed from it. Mounding and vegetation will mean that from southerly locations, rural living activity will not be seen. The site will change, but in a relatively soft and vegetated way such that additional human occupation is not evident. In views from westerly locations, there may be some visibility to upper parts of future dwellings on the two proposed building platforms, however, visibility will be reduced by proposed mounding and vegetation. Private properties to the west of the subject site have dwellings oriented away from the site such that any affected views are secondary ones. The amenity that is enjoyed from these properties will be adversely affected to a degree that can best be described as low at most.

LANDSCAPE EFFECTS ASSESSMENT

45 "*A landscape effect is a consequence of changes in a landscape's physical attributes on that landscape's values. Change is not an effect: landscapes change constantly. It is the implications of change on landscape values that is relevant. To assess effects, it is therefore necessary to first identify the landscape's 'values' – and the attributes on which such values depend*" [9] .

46 Again, Appendix 1 of this report gives comments in relation to the relevant PDP assessment matters, which are relevant to the consideration of landscape effects. In this section of my report, I set out my overall findings in relation to landscape effects.

[9] Ibid, paragraphs 6.1 and 6.2.

47 A description of the relevant existing landscape character and values is set out above in paragraphs 5 to 13. In simple terms, the site is part of the broad, relatively flat rolling and terraced landscape that adjoins Wanaka town and Wanaka airport. Low density lifestyle-block activity coupled with farmed pasture is the dominant land use. Green, relatively open pastureland characterises this landscape (albeit punctuated by shelterbelts, buildings and other aspects of occupation and rural living). It reads as a pleasant rural landscape on the outskirts of Wanaka.

48 The proposal will intensify rural living activity within the landscape. The new rural living activity will be very well setback from any public land or roads and will spatially tie in with the rural living lots that are accessed from Black Peak Road. The remainder of the site will remain as a large rural block. The rural living activity will also be spatially constrained by the proposed curtilage areas, meaning that only a specific part of the site is subject to any real change. As has been set out above, the alterations to the landscape that the proposal will bring will be visually inconspicuous.

49 In an overall sense, the landscape effect of the proposal will be to expand the collection of rural living lots centred on Black Peak Road. While intensifying rural living activity, the resultant land use pattern will essentially preserve the attributes and values of the existing landscape. I consider that the character of this landscape will not be degraded in any material way.

CONCLUSIONS

50 The proposal will result in two additional instances of rural living in the Morris Road / Black Peak Road vicinity. Curtilage areas and specific building height restrictions are proposed, as are areas of earthworks and planning.

51 In relation to views and visual amenity, the new elements in the landscape will be minimally noticeable from public places. Some particularly slight visibility is available from SH6, Morris Road and the corridor of the Cardrona River. At most, effects in terms of views will be of a very low degree. There is visual access to the location of the proposed activities from a part of Black Peak Road (a private road) and some private properties that are accessed from it. Mounding and vegetation will be visible and some upper parts of future built form may be seen from some particular parts of some neighbouring properties. However, visibility will be reduced by proposed mounding and vegetation and will not be in any primary views from neighbouring properties. The amenity that is enjoyed from these properties will be adversely affected to a low degree at most.

52 In terms of overall landscape character and values, the proposal will intensify rural living activity in the Black landscape. The clustered location of the two proposed building platforms in one part of the subject site will spatially combine with existing rural living around Black Peak Road, while keeping the bulk of the subject

site in its current farming management such that it will continue to be an integral part of an RCL landscape. Landscape values will not be degraded.

Ben Espie

vivian+espie

15 February 2022

APPENDIX 1: EVALUATION AGAINST RELEVANT STATUTORY CONTEXT		
QUEENSTOWN LAKES PROPOSED DISTRICT PLAN ASSESSMENT MATTERS RELATING TO ACTIVITIES IN A RURAL CHARACTER LANDSCAPE		
HEADING	**ASSESSMENT MATTERS**	**ASSESSED AFFECTS**
21.21.2.1	Existing vegetation that: a. was either planted after, or, self seeded and less than 1 metre in height at 28 September 2002; and, b. obstructs or substantially interferes with views of the proposed development from roads or other public places, shall not be considered: i. as beneficial under any of the following assessment matters unless the Council considers the vegetation (or some of it) is appropriate for the location in the context of the proposed development; and ii. as part of the permitted baseline	No existing vegetation planted since 2008 that obstructs views from public roads is considered beneficial in terms of mitigation.
21.21.2.2 **Effects on landscape quality and character**	The following shall be taken into account:	
	a. where the site is adjacent to an Outstanding Natural Feature or Landscape, whether and the extent to which the proposed development will adversely affect the quality and character of the adjacent Outstanding Natural Feature or Landscape;	The site is not adjacent to a ONF or ONL. The closest ONL or ONF to the site is Mount Iron, which is approximately 1.4km from the closest of the proposed building platforms and is considerably separated by topography. The proposal will have no effect on Mount Iron.
	b. whether and the extent to which the scale and nature of the proposed development will degrade the quality and character of the surrounding Rural Character Landscape;	The surrounding landscape is made up of the terraces and flats of the RCL that extends between Wanaka and the airport. An observer's experience of the terraces and flats is of paddocks, productive land uses, areas of enclosed mature vegetation and instances of rural living land use. In contrast, the mountainous landforms which sit beyond the basin floor landscape offer a high degree of naturalness as a backdrop. The nature of the proposed development is rural living. The scale of the proposed development is relatively small; two building platforms, clustered in one part of the site which is well removed from public places.

		In terms of the quality and character of this landscape, I consider that there will be no significant degradation.
	c. whether the design and any landscaping would be compatible with or would enhance the quality and character of the Rural Character Landscape	The proposed design will level out landform in the area of proposed Lot 1 and remove a defunct stretch of water race, while creating an area of curved mounding. Planting design will create sweeps of native vegetation framing the curtilage areas. Overall, this treatment will not degrade landscape character and will bring a (relatively slight) positive effect.
21.21.2.3 **Effects on visual amenity**	Whether the development will result in a loss of the visual amenity of the Rural Character Landscape, having regard to whether and the extent to which:	
	a. the visual prominence of the proposed development from any public places will reduce the visual amenity of the Rural Character Landscape. In the case of proposed development which is visible from unformed legal roads, regard shall be had to the frequency and intensity of the present use and, the practicalities and likelihood of potential use of these unformed legal roads as access;	Views and visibility of the proposed new elements in the landscape as discussed in detail in the body of this report. Visibility from public places will be very limited, with the northern banks of the Cardrona River corridor offering the only significant visibility. From here, some parts of buildings may be visible behind other more obvious rural living development. The proposed activities certainly will not be prominent.
	b. the proposed development is likely to be visually prominent such that it detracts from private views;	Again, private views are discussed in the body of this report. There is some visibility into the development area from Black Peak Road and earthworks will be plainly seen when they are in progress. Ultimately, an area of grassed mound will be seen. Which will then be incrementally screened as native vegetation grows. From some private land to the west of the subject site, there may be some visibility to the upper parts of future dwellings. This visibility will not be prominent and will be in secondary views only. Any detraction from current amenity will be of a low degree at most.
	c. any screening or other mitigation by any proposed method such as earthworks and/or new planting will detract from or obstruct views of the Rural Character Landscape from both public and private locations;	Planting and earthworks are proposed to partially screen and soften views towards the development. The mounding is of a curved, variable profile and will itself be screened by native vegetation. From no viewpoint will this landscaping obstruct significant views.
	d. the proposed development is enclosed by any confining elements of topography and/or vegetation and the ability of these elements to reduce visibility from public and private locations;	The location of the proposed new elements within the subject site (i.e. the two instances of rural living) is particularly inconspicuous. It is away from public places and is separated from the surrounding landscape by way of terraced landforms.
	e. any proposed roads, boundaries and associated planting, lighting, earthworks and landscaping will reduce visual amenity,	Only internal gravel driveways will result from the proposal and these will not be seen from outside the site. The proposed new boundaries will be fenced using post-and-wire or post-

	with particular regard to elements which are inconsistent with the existing natural topography and patterns;	and-rail and again, this will not be seen from outside the site itself. No additional road or boundaries are proposed as part of this proposal.
	f. boundaries follow, wherever reasonably possible and practicable, the natural lines of the landscape or landscape units.	New boundaries will partially follow existing fence lines and the landform lines of terrace edges.
21.21.2.4 **Design and density of development**	In considering the appropriateness of the design and density of the proposed development, whether and to what extent:	
	a. opportunity has been taken to aggregate built development to utilise common access ways including roads, pedestrian linkages, services and open space (i.e. open space held in one title whether jointly or otherwise);	The two proposed instances of rural living are aggregated together in one part of the site such that they will use one access.
	b. there is merit in clustering the proposed building(s) or building platform(s) having regard to the overall density and intensity of the proposed development and whether this would exceed the ability of the landscape to absorb change;	The clustered location of the two proposed building platforms in one part of the site will spatially (although not visually) combine with the rural living area of Black Peak Road, while keeping the bulk of the subject site in its current state. This will assist in integrating the new development into the current landscape character.
	c. development, including access, is located within the parts of the site where they will be least visible from public and private locations;	The southwestern corner of the subject site is most removed from public places. The terraced topography allows development to be located so as to be minimally visible from neighbouring private land.
	d. development, including access, is located in the parts of the site where they will have the least impact on landscape character.	As above, the location of the proposed development (building platforms and curtilage areas) is on the periphery of the site, allowing a smaller bite to be taken out of the existing farming land use, thereby minimising effects on landscape character.
21.21.2.5 **Tangata Whenua, biodiversity and geological values:**	a. whether and to what extent the proposed development will degrade Tangata Whenua values including Töpuni or nohoanga, indigenous biodiversity, geological or geomorphological values or features and, the positive effects any proposed or existing protection or regeneration of these values or features will have.	I have no knowledge of Tangata Whenua cultural and spiritual values or other heritage values associated with the site.
21.21.2.6	Taking into account whether and to what extent any existing, consented or permitted development (including unimplemented but existing resource consent or zoning) has degraded landscape quality, character, and visual amenity values. The Council shall be satisfied;	

Cumulative effects of development on the landscape:		
	a. the proposed development will not further degrade landscape quality, character and visual amenity values, with particular regard to situations that would result in a loss of valued quality, character and openness due to the prevalence of residential or non-farming activity within the Rural Landscape.	No relevant unimplemented consented development exists in the vicinity. The emergence of the Black Peak Road rural living area since 2005 has changed the landscape character of this vicinity from an agricultural character to one in which rural living is a significant aspect. The two new proposed building platforms will be an addition to this and will intensify rural living's influence. However, due to the various factors set out in this report, the addition that the proposal will bring will not be prevalent or conspicuous. Character will not be degraded.
	b. where in the case resource consent may be granted to the proposed development but it represents a threshold to which the landscape could absorb any further development, whether any further cumulative adverse effects would be avoided by way of imposing a covenant, consent notice or other legal instrument that maintains open space.	No covenants, consent notices or other legal instruments are proposed. Any potential developments in the future will be subject to resource consent processes.
QUEENSTOWN LAKES PROPOSED DISTRICT PLAN ASSESSMENT MATTERS 21.21.3 OTHER FACTORS AND POSITIVE EFFECTS, APPLICABLE IN ALL THE LANDSCAPE CATEGORIES (ONF, ONL AND RCL)		
HEADING	**ASSESSMENT MATTERS**	**ASSESSED AFFECTS**
21.21.3.1	In the case of a proposed residential activity or specific development, whether a specific building design, rather than nominating a building platform, helps demonstrate whether the proposed development is appropriate	Specific building designs are not included in the application but particular allowable building heights are proposed in relation to each building platform and these are lower than the PDP's standards. Other PDP standard are applicable to the external appearance of buildings. In this situation, I do not consider that specific dwelling designs would assist in the consideration of landscape issues.
21.21.3.2	Other than where the proposed development is a subdivision and/or residential activity, whether the proposed development, including any buildings and the activity itself, are consistent with rural activities or the rural resource and would maintain or enhance the quality and character of the landscape.	The proposed activity is a subdivision.
21.21.3.3	In considering whether there are any positive effects in relation to the proposed development, or remedying or mitigating the continuing adverse effects of past subdivision or development, the Council shall take the following matters into account:	

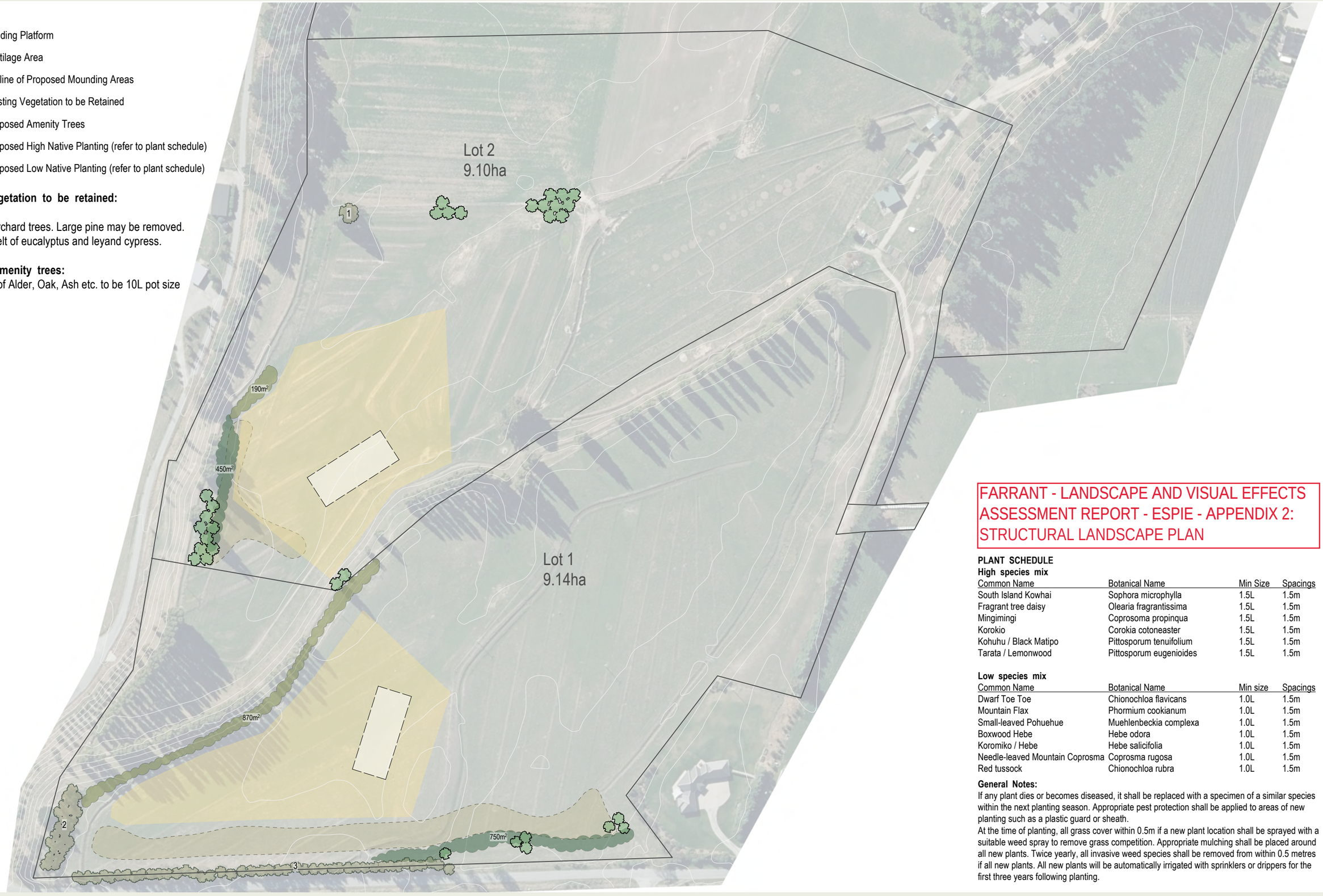
	a. whether the proposed subdivision or development provides an opportunity to protect the landscape from further development and may include open space covenants or esplanade reserves;	No open space covenants or esplanade reserves are proposed. The area of the site that sits outside the identified curtilage areas will remain in its current state and subject to the provisions of the PDP.
	b. whether the proposed subdivision or development would enhance the character of the landscape, or protects and enhances indigenous biodiversity values, in particular the habitat of any threatened species, or land environment identified as chronically or acutely threatened on the Land Environments New Zealand (LENZ) threatened environment status;	The proposed development would enhance native biodiversity values in some particular parts of the site where vegetation is proposed.
	c. any positive effects including environmental compensation, easements for public access such as walking, cycling or bridleways or access to lakes, rivers or conservation areas;	No compensation is proposed.
	d. any opportunities to retire marginal farming land and revert it to indigenous vegetation;	The two proposed 9ha lots will continue to be managed by farming means. Only the curtilage areas will be retired. The relevant farmland is not marginal.
	e. where adverse effects cannot be avoided, mitigated or remedied, the merits of any compensation;	Adverse effects are to be avoided, mitigated and remedied, as has been discussed.
	f. whether the proposed development assists in retaining the land use in low intensity farming where that activity maintains the valued landscape character.	The development will enable ongoing low intensity farming over the site, which has created the current valued landscape character within this RCL.

LEGEND

- Building Platform
- Curtilage Area
- Outline of Proposed Mounding Areas
- Existing Vegetation to be Retained
- Proposed Amenity Trees
- Proposed High Native Planting (refer to plant schedule)
- Proposed Low Native Planting (refer to plant schedule)

Existing vegetation to be retained:
1 - Poplar.
2 - Area of orchard trees. Large pine may be removed.
3 - Dense belt of eucalyptus and leyand cypress.

Proposed amenity trees:
To be a mix of Alder, Oak, Ash etc. to be 10L pot size minimum.



FARRANT - LANDSCAPE AND VISUAL EFFECTS ASSESSMENT REPORT - ESPIE - APPENDIX 2: STRUCTURAL LANDSCAPE PLAN

PLANT SCHEDULE

High species mix

Common Name	Botanical Name	Min Size	Spacings
South Island Kowhai	Sophora microphylla	1.5L	1.5m
Fragrant tree daisy	Olearia fragrantissima	1.5L	1.5m
Mingimingi	Coprosoma propinqua	1.5L	1.5m
Korokio	Corokia cotoneaster	1.5L	1.5m
Kohuhu / Black Matipo	Pittosporum tenuifolium	1.5L	1.5m
Tarata / Lemonwood	Pittosporum eugenioides	1.5L	1.5m

Low species mix

Common Name	Botanical Name	Min size	Spacings
Dwarf Toe Toe	Chionochloa flavicans	1.0L	1.5m
Mountain Flax	Phormium cookianum	1.0L	1.5m
Small-leaved Pohuehue	Muehlenbeckia complexa	1.0L	1.5m
Boxwood Hebe	Hebe odora	1.0L	1.5m
Koromiko / Hebe	Hebe salicifolia	1.0L	1.5m
Needle-leaved Mountain Coprosma	Coprosma rugosa	1.0L	1.5m
Red tussock	Chionochloa rubra	1.0L	1.5m

General Notes:
If any plant dies or becomes diseased, it shall be replaced with a specimen of a similar species within the next planting season. Appropriate pest protection shall be applied to areas of new planting such as a plastic guard or sheath.
At the time of planting, all grass cover within 0.5m if a new plant location shall be sprayed with a suitable weed spray to remove grass competition. Appropriate mulching shall be placed around all new plants. Twice yearly, all invasive weed species shall be removed from within 0.5 metres if all new plants. All new plants will be automatically irrigated with sprinklers or drippers for the first three years following planting.

REF: 1556.01 SLP
DATE: 13.12.21
SCALE: 1:2000 @ A3

Structural Landscape Plan

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LEGEND

Site

Viewpoints

XXX Neighbours who have privided APA

XXX Neighbours who have not provided APA

SH6

B

CARLISLE

MORRIS ROAD

HUDSON

TIMU

ZEESTRATEN

C

CARDRONA RIVER

MCELREA

WALLACE

CRUIKSHANK

A

BLACK PEAK ROAD

LE BRUN

HORNE

MACLEAN

FRASER

MORSHIUS

FARRANT - LANDSCAPE AND VISUAL EFFECTS ASSESSMENT REPORT - ESPIE - APPENDIX 3: CONTEXT AND VIEWPOINT MAP

REF: 1556.02 SLP
DATE: 02.02.22
SCALE: 1:7500 @ A3

Context and Viewpoint Map

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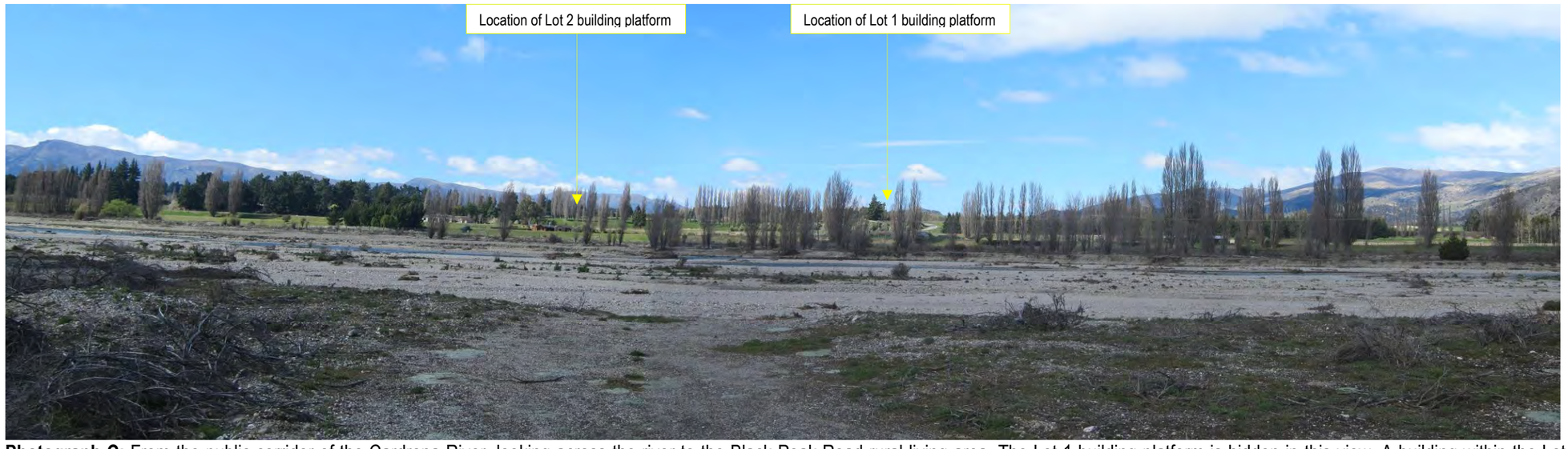
Photograph A: From Black Peak Road (a private road) looking over the subject site. Profile poles depicting the proposed Lot 1 building platform are highlighted in yellow. In the foreground part of the subject site, beyond the stock fence, curved earth mounding that rises to a 3m height will screen the profile poles in this view. A band of varied, dense native shrubs and trees will incrementally grow to screen the mound.

Photograph B: From the verge of SH6 looking overlooking the site. Building profile poles on Lot 2 could be seen with binoculars from this point. Amenity tree planting is proposed between the viewer and the platform.

FARRANT – LANDSCAPE AND VISUAL EFFECTS ASSESSMENT REPORT – ESPIE - APPENDIX 4: PHOTOGRAPHS

All photographs were taken in September / October 2021 with a fixed focal length of 50mm. Photographs are intended to illustrate points made in my evidence. If this sheet is printed at A3 size, the photographs are not at full size so as to replicate the full-scale field of view as taken in by the human eye.



Photograph C: From the public corridor of the Cardrona River, looking across the river to the Black Peak Road rural living area. The Lot 1 building platform is hidden in this view. A building within the Lot 2 building platform is likely to be visible in part, behind the Hudson dwelling. Proposed vegetation in front of the Lot 2 building platform will provide partial screening.