

FORM 12

File Number RM160421

QUEENSTOWN LAKES DISTRICT COUNCIL

PUBLIC NOTIFICATION

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

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

Bayswater Trust

A description of the activity to which the application relates is:

Consent is sought to establish a 1000m² residential building platform and to undertake associated earthworks and landscaping.

The proposed platform will be located in the south eastern corner of the site and will be accessed from a partly formed legal road along the southern boundary. Design controls are proposed relating to the form and bulk of future buildings, and to limit the type of cladding materials and exterior colours that can be used.

It is proposed to raise the finished floor level under future residential buildings by at least 0.5m above existing ground level, as recommended by the applicant's engineer, to mitigate any potential risk associated with shallow surface water flooding from Precipice Creek in extreme rainfall events.

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

The subject site is located adjacent to the Glenorchy-Paradise Road, Glenorchy. The property is located on the Precipice Creek side of the Glenorchy-Paradise Road near the intersection with the Rees Valley Road. The subject site is legally described as Lot 2 Deposited Plan 306479, as contained within Certificate of Title 25360.

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;
- 33-35 Reece Crescent, Wanaka;
- 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:

<http://www.qldc.govt.nz/planning/resource-consents/notified-resource-consents-and-hearings/>

The Council planner processing this application on behalf of the Council is Katrina Ellis, who may be contacted by phone at 03 450 0351 or e-mail at katrina.ellis@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..

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 <http://qldc.govt.nz/>

Submissions close on: 13 July 2016

You must serve a copy of your submission on Bayswater Trust (the applicant), whose address for service is below, as soon as reasonably practicable after serving your submission on Council.

Bayswater Trust
C/- John Edmonds & Associates
Attention: Annemarie Robertson
Email: annemarie@jea.co.nz
Phone: (03) 450 0009
PO Box 95, Queenstown 9348

QUEENSTOWN LAKES DISTRICT COUNCIL



(signed by Jo Fyfe pursuant to a delegation given under
Section 34A of the Resource Management Act 1991)

Date of Notification: 15 June 2016

Address for Service for Consent Authority:

**Queenstown Lakes District Council
Private Bag 50072, Queenstown 9348
Gorge Road, Queenstown 9300**

**Phone
Email
Website**

**03 441 0499
rcsubmission@qldc.govt.nz
www.qldc.govt.nz**



APPLICATION FOR RESOURCE CONSENT

FORM 9: GENERAL APPLICATION



Under Section 88 of the Resource Management Act 1991 (Form 9)



APPLICANT // Must be a person **or** legal entity (limited liability company or trust). Full names of all trustees required.

OR:

Applicant's full name:

Company / Trust:

Contact Person / All trustee names:

Address:

Post code:

Email Address:

Phone Numbers: Day

Mobile:



CORRESPONDENCE DETAILS // If different than above – E.g. consultant, agent or architect

Name & Company:

Phone Numbers: Day

Mobile:

Email Address:



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.



INVOICING DETAILS // The invoices will be sent to this postal address

Attention:

Address:

Post code:



DETAILS OF SITE

Address / Location to which this application relates:

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

Owners / Occupiers of the Site: *If different from applicant above*

District Plan Zone(s):



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:



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)

Existing use certificate



BRIEF DESCRIPTION OF THE PROPOSAL

Consent is sought to:



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

➔ <http://www.mfe.govt.nz/laws/standards/contaminants-in-soil/>.

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 25m³ per 500m²). 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.

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://apps.linz.govt.nz/survey-titles/order-copy/>).
- 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** – see Appendix 3 – [Naming of Documents Guide](#)
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).

An initial fee for processing this application will be charged at the time of lodgement in accordance with QLDC's fee schedule. This initial fee must accompany your application for processing to commence. If the initial fee is insufficient to cover the actual and reasonable costs of work undertaken on the application you will be required to pay any additional amount 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.

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**.

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 Applicant is 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.





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

I confirm payment by:

Bank transfer to account **02 0948 0211515 00** reference **RM** and the first 5 letters of applicant name. (If paying from overseas swiftcode – BKNZNZ22)

Cheque payable to Queenstown Lakes District Council attached

Manual Payment at reception:

Amount Paid

(For required deposit fees refer to website for Resource Consent Charges)

Date of Payment

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 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 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 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

Firm/Company

Dated

***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;
- (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.

Information provided within the Form above

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.



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.

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



The Bayswater Trust

Residential Building Platform
at
Glenorchy – Paradise Road

Resource Consent Application

May 2016

John Edmonds
& Associates Ltd
PLANNING ■ ENVIRONMENT

APPLICATION FOR RESOURCE CONSENT UNDER SECTION 88 OF THE RESOURCE MANAGEMENT ACT Schedule 4 Clause 6 Matters

1. I attach in accordance with the fourth schedule of the Resource Management Act an assessment of the actual or potential effect on the environment of the activity.

2. The activity does not include the use of hazardous substances and installations.

3. The following mitigation measures are proposed (including safeguards and contingency plans where relevant) to be undertaken to help prevent or reduce the actual or potential effect:

Design controls and structural landscaping are proposed to mitigate the visual effects of a future dwelling on the proposed building platform. It is also proposed that floor levels will be raised above the surrounding ground to mitigate potential flooding risk to the platform.

4. I attach within the AEE an assessment of any persons affected by the activity and any consultation undertaken.

Potential effects on surrounding neighbours are discussed in the AEE.

5. 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.

No specific monitoring will be required.

6. 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).

Not relevant.

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

The information provided is in accordance with the information required in the Queenstown Lakes District Plan (QLDP).

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Appendix E Flood Hazard Assessment Report
Appendix F Servicing Report
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COMMON ABBREVIATIONS

- QLDC** Queenstown Lakes District Council
QLDP Queenstown Lakes District Plan
RMA Resource Management Act 1991
CFR Computer Freehold Register
NES National Environmental Standard for Assessing and Managing Contaminants in Soil to Protect Human Health

DOCUMENT STATUS

Version	Purpose of Document	Prepared By	Reviewer	Review Date
Draft A	Internal Draft	AR	BA	10/5/16
Draft B	Draft to Client	AR	RK/GT	11/5/16
FINAL	Lodgement	AR	-	

ASSESSMENT OF EFFECTS ON THE ENVIRONMENT

To:

Queenstown Lakes District Council – Planning & Development
PO Box 50072, Queenstown 9348
Attention: Manager, Resource Consents

Applicant:

The Bayswater Trust applies to establish a residential building platform and undertake associated earthworks and landscaping at Glenorchy – Paradise Road.

Address for Service:

John Edmonds & Associates
Attention: Annemarie Robertson
Email: annemarie@jea.co.nz
Phone: (03) 450 0009
PO Box 95, Queenstown 9348

Address for Invoicing:

Attention: René Kampman
Email: kampfman@queenstown.co.nz
Phone: 0274 422131
PO Box 1286, Queenstown 9348

1.0 INTRODUCTION

1.1 Overview

Consent is sought to establish a 1000m² residential building platform and to undertake associated earthworks and landscaping, on a site at Glenorchy – Paradise Road adjoining Precipice Creek and the Rees River. The proposed platform will be located in the south eastern corner of the site and will be accessed from a partly formed legal road along the southern boundary. Design controls are proposed relating to the form and bulk of future buildings, and to limit the type of cladding materials and exterior colours that can be used. It is proposed to raise the finished floor level under future residential buildings by at least 0.5m above existing ground level, as recommended by the applicant's engineer, to mitigate any potential risk associated with shallow surface water flooding from Precipice Creek in extreme rainfall events.

1.2 Consent History

The site was created under RM010560, which was granted in September 2001 to subdivide three sections held in two certificates of title at Rees Valley Road and Glenorchy – Paradise Road into two new lots. The purpose of the subdivision was to reconfigure the existing titles, which were held in the same ownership, to create one lot on the northern side of the Glenorchy – Queenstown Road (Lot 1 DP 306479, with an area of 42 ha) and one on lot on the southern side (Lot 2 DP 306479, with an area of 54 ha), which is the subject site. Refer to Figure 1 below. Neither of the lots contained any residential dwellings or building platforms at the time of subdivision, and both still do not.

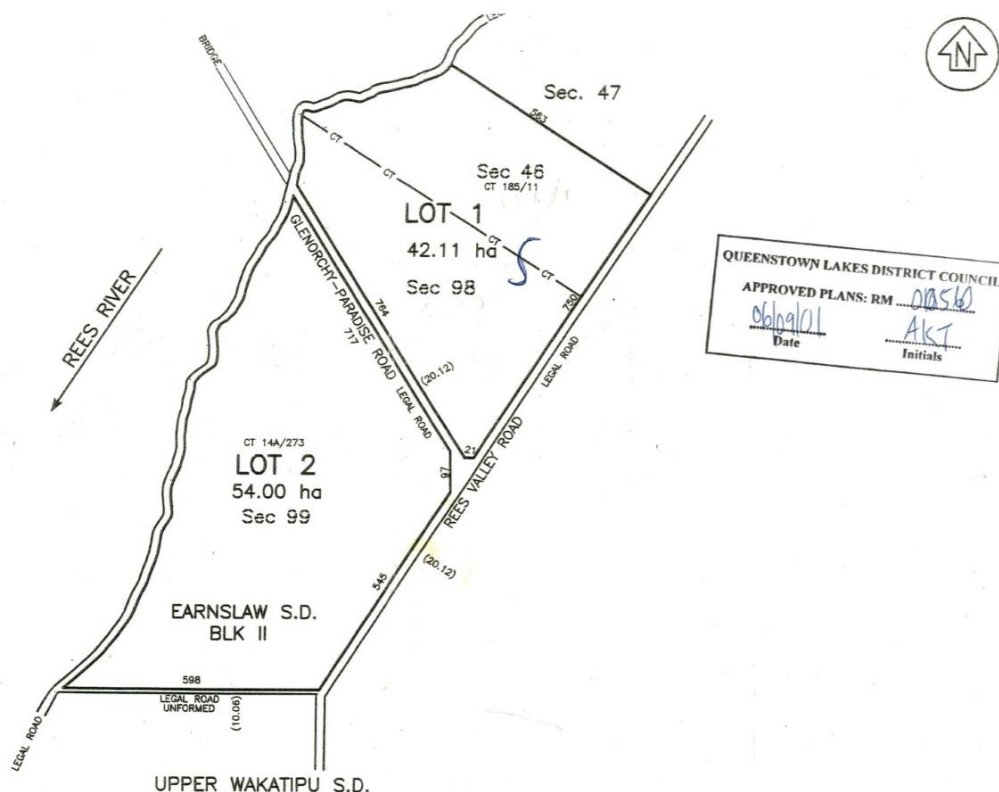


Figure 1: Approved Plan for RM010560

RM050811 was lodged in August 2005 to subdivide Lot 2 DP 306479 into two lots, each with a residential building platform. The application was publically notified, and attracted five submissions in opposition: from A & M Hasselman (Temple Peak Station), J Henderson, the Scott Family (Rees Valley Station), the Otago Regional Council and the Glenorchy Community Association. Written approvals were obtained from Paradise Park Ltd and Glenorchy Estates Ltd, both developers of the adjoining Rural Lifestyle Zone, and from IJ & EM Kirkland. Mr Kampman, a trustee of the Bayswater Trust, was at the time the owner of CivicCorp, the company contracted by the Queenstown Lakes District Council (QLDC) to undertake its regulatory functions, including the processing of resource consents. For mainly political reasons, the applicant decided to put the application on hold in 2005 instead of proceeding to a hearing. In February 2016, the applicant and JEA staff met with Jo Fyfe (QLDC Planning Team Leader) about reactivating RM050811 with an amended proposal that would create

only one building platform with no subdivision of the site. It was requested by QLDC that a new application be submitted, given the length of time that had passed since the original application was notified.

RM130073 was granted in March 2013 to establish and operate a seasonal gravel extraction, processing and stockpiling operation at the confluence of the Rees River and Precipice Creek, in the south western corner of the site. The applicant leases an area of the site to the gravel operator, Glenorchy Gravel Ltd, for this purpose. RM130073 expires in 2023. The operator also holds consent from the Otago Regional Council, expiring in 2023, for this activity.

1.3 Consultation

No consultation has been undertaken at this stage.

1.4 Notification

The applicant requests public notification of this application.

2.0 DESCRIPTION OF THE PROPOSAL

2.1 Site Description and Location

The site is located at Glenorchy – Paradise Road, and is legally described as Lot 2 DP 306479, held in Computer Freehold Register (CFR) 25360. A copy of the CFR is attached as Appendix A. Please refer to Figure 2 below for an aerial view of the site location.

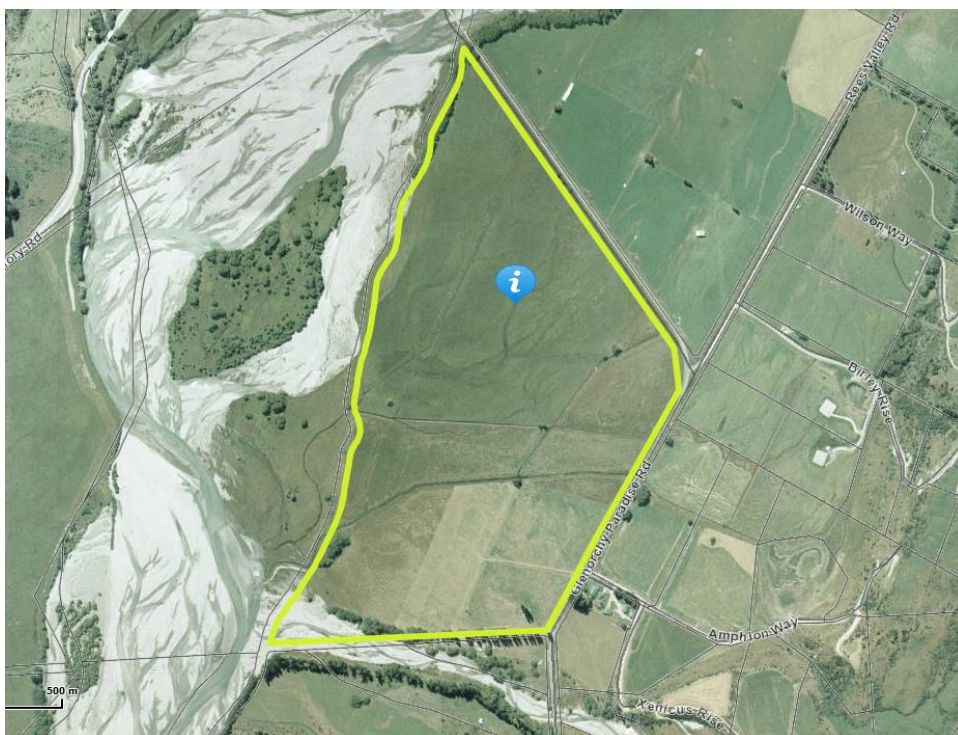


Figure 2: Aerial View of the Site (Source: QLDC GIS)

The proposed building platform is situated approximately 5.5km north of the Glenorchy township.

The site is zoned Rural General in the Queenstown Lakes District Plan (QLDP) and is considered to be classified as Outstanding Natural Landscape. The surrounding landscape is described in the applicant's Landscape Effects Assessment Report by Vivian + Espie, attached as Appendix D, as follows:

The landscape of which the site is a part is an ancient glacial valley that now contains the Rees River flowing down the eastern side of Mt Alfred, and the Dart River flowing down the western side. The valley floor is characterised by the braided river pattern of the Rees and flat, verdant pastoral land that abuts the steep slopes of the Humboldt Mountains on the west and the Richardson Mountains on the east. The valley floor contains undulations, small terraces and small roche moutonnee landforms (such as Camp Hill) that are resultant of the action of past glaciers.

The site is bordered by unformed or partly-formed legal road on the southern and western boundaries, and by the Glenorchy – Paradise Road on the eastern and northern boundaries. The confluence of Precipice Creek and the Rees River adjoins the south western corner of the site. Part of Precipice Creek, which generally flows to the south of the site, is located within the southern boundary. The Rees River lies to the west. A line of mature poplars grow along the southern boundary in the vicinity of the proposed platform. On the eastern side of the Glenorchy – Paradise Road, the land is zoned Rural Lifestyle and has been subdivided for residential purposes.

A number of surface drains cross the property. At times of high flood these drains shed surface water into the Rees River. They have existed for many years and are regularly maintained by the applicant.

2.2 Description of the Proposal

It is proposed to establish a residential building platform on the site. The platform will have a rectangular shape, and an area of 1000m². It will be located in the south eastern corner of the site, approximately 53m from the southern boundary. Please refer to the Survey Plan attached as Appendix B. The proposed platform will be located in the same position as the easternmost platform proposed in RM050811. No additional curtilage area is proposed; all domestic activities will be contained within the building platform.

A Landscape Effects Assessment Report was undertaken by Vivian + Espie in 2005 for the original application, which is attached as Appendix D. This is still relevant insofar as it relates to the effects of the proposed platform, although the overall effects described in the report will be reduced with the removal of the second platform and associated subdivision of the site from the proposal.

Structural landscaping will be undertaken in accordance with the proposed Landscape Masterplan, designed by Vivian + Espie, which is attached as Appendix C.

Access to the building platform will be from the partly formed, unnamed legal road adjoining the southern boundary. An indicative internal driveway alignment is shown on the Landscape Masterplan.

At the time a dwelling is constructed on the platform, the ground level under the building will be raised by 0.5m to protect it from potential shallow surface water flooding, as recommended by Hadley Consultants Ltd who have undertaken a Flood Hazard Assessment which is attached as Appendix E.

The following design controls that would apply to future buildings are offered as part of the application:

- The residential dwelling and any accessory buildings associated with the dwelling shall be located within the approved building platform.
- All domestic activities shall be contained within the approved building platform area.
- The finished floor level of the dwelling shall be raised at least 0.5m above existing ground level, to protect the dwelling from potential flooding (shallow sheet flow) caused by breakout from Precipice Creek. If fill is imported for this purpose it shall be compacted and certified in accordance with the appropriate standard.
- The height of any future buildings within the platform shall be restricted to 7m above existing ground level.
- Any future dwelling shall be designed to have the bulk and form of a traditional farm building, i.e. a homestead, woolshed or barn, and shall be constructed from cladding materials typically associated with that type of building.
- The main roof of any future dwelling shall have a pitched form, with a slope of at least 25 degrees.
- The colours of any roofing or other cladding materials shall be limited to recessive, natural tones.
- Cladding materials shall be limited to stacked stone, timber weatherboards, traditional corrugated iron, colorsteel or solid plaster, or a combination thereof.
- The land outside the building platform area shall continue to be managed by agricultural or horticultural means.
- The structural planting shall be planted and maintained in accordance with the Landscape Masterplan.
- The future driveway shall be constructed from gravel to a maximum width of 3.5m, with grass swales.
- Any fencing of the building platform area and driveway shall be in the form of a post and wire or post and rail type fence only.

It is anticipated that these design controls would be registered as a covenant on the CFR.

The building platform will be connected to the Paradise Park subdivision's water supply (subject to a suitable agreement being reached with the Paradise Park body corporate), or a new bore will be developed within the site.

An on-site wastewater system will be installed at the time a future dwelling is constructed to treat and dispose of domestic sewage. A site and soils assessment was undertaken by Boulder Consultants Ltd for RM050811 to

confirm the suitability of on-site wastewater disposal. This assessment is still relevant to the revised proposal and is attached as Appendix F.

Stormwater will also be disposed of to ground within the site. The stormwater disposal system will be designed at the time a future building is proposed and will be approved under the building consent.

3.0 DISTRICT PLAN REQUIREMENTS

3.1 District Plan Provisions

The site is zoned Rural General in the Queenstown Lakes District Plan (QLDP) and the purpose of the Rural General Zone is to:

“manage activities so they can be carried out in a way that:

- *protects and enhances nature conservation and landscape values;*
- *sustains the life supporting capacity of the soil and vegetation;*
- *maintains acceptable living and working conditions and amenity for residents of and visitors to the Zone; and*
- *ensures a wide range of outdoor recreational opportunities remain viable within the Zone.*

The zone is characterised by farming activities and a diversification of activities such as horticulture and viticulture. The zone includes the majority of the rural lands including alpine areas and national parks.”

3.2 Consents Required and Status of the Activity

A **discretionary activity** resource consent is required pursuant to Rule 5.3.3.3 i to establish a building platform, including any associated physical activities such as roading, landscaping or earthworks.

4.0 SECTION 104(1)(B) CONSIDERATIONS

104 Consideration of applications

(1) When considering an application for a resource consent and any submissions received, the consent authority must, subject to Part 2, have regard to—

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

(b) any relevant provisions of—

(i) a national environmental standard:

(ii) other regulations:

(iii) a national policy statement:

(iv) a New Zealand coastal 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.*

The objectives and policies of the QLDP and the Proposed District Plan, and the National Environmental Standard for Assessing and Managing Contaminants in Soil to Protect Human Health 2011 are assessed below. No other statutes are considered relevant to this application.

4.1 Objectives and Policies of the Operative District Plan

The relevant objectives and policies are contained within Part 4 (District-wide Issues) and Part 5 (Rural Areas) of the operative District Plan.

4.1.1 Part 4 Objectives and Policies

The site is located within an Outstanding Natural Landscape (District – Wide). Under 4.2.5, the objective relating to landscape and visual amenity values is:

Objective

Subdivision, use and development being undertaken in the district in a manner which avoids, remedies or mitigates adverse effects on landscape and visual amenity values.

The associated policies most relevant to this application are discussed below:

1. Future Development

- (a) To avoid, remedy or mitigate the adverse effects of development and/or subdivision in those areas of the District where the landscape and visual amenity values are vulnerable to degradation.*
- (b) To encourage development and/or subdivision to occur in those areas of the District with greater potential to absorb change without detracting from landscape and visual amenity values.*
- (c) To ensure subdivision and/or development harmonises with local topography and ecological systems and other nature conservation values as far as possible.*

It is considered that the pastoral valley floor is an area with the potential to absorb the type of development proposed. The proposed design controls will ensure that any future dwelling has the appearance of a traditional farming type building, which will not appear out of place in the surrounding pastoral landscape.

2. *Outstanding Natural Landscapes (District-Wide/Greater Wakatipu)*

- (a) *To maintain the openness of those outstanding natural landscapes and features which have an open character at present.*
- (b) *To avoid subdivision and development in those parts of the outstanding natural landscapes with little or no capacity to absorb change.*
- (c) *To allow limited subdivision and development in those areas with higher potential to absorb change.*
- (d) *To recognise and provide for the importance of protecting the naturalness and enhancing amenity values of views from public roads.*

The landscape in which the site is located includes the flat, open, farmed valley floor, which has already been modified by human activity, and the surrounding snow-capped, rugged mountains. The Landscape Effects Assessment states that a future dwelling on the platform will be a small visual interruption to the current open character of the site, but that the sense of openness felt by observers in the surrounding landscape will not be noticeably reduced. This is because views will not be enclosed, and the dwelling will be immediately backed by the line of existing poplars in views across the site from the north.

The development will be consistent with the pastoral character of the valley floor. The proposed design controls will ensure that any future dwelling has a traditional appearance, and it will be surrounded by an open expanse of paddock, so that it will be seen as a farmhouse or other type of farm building rather than a lifestyle dwelling. The Landscape Assessment concludes that the 'appreciation of the majestic, mountainous surrounding landscape will not be diminished' by the proposal.

A dwelling on the platform will be visible from the Glenorchy – Paradise Road. The greatest impact on views will be from the part of the road immediately adjacent to the platform. It is proposed to plant groups of trees to partly screen views of the platform from this location. These trees will replace the small cluster of poplars which can be seen on aerial photos to the south east of the platform but which have recently fallen. A dwelling will also be visible from the road further to the north, where, as noted above, it will be viewed against the backdrop of the existing poplars along the southern boundary, with an expansive area of open paddock in the foreground.

8. *Avoiding Cumulative Degradation*

In applying the policies above the Council's policy is:

- (a) *To ensure that the density of subdivision and development does not increase to a point where the benefits of further planting and building are outweighed by the adverse effect on landscape values of over domestication of the landscape.*
- (b) *To encourage comprehensive and sympathetic development of rural areas.*

The Landscape Assessment notes that the effects on the landscape values of the adjoining Rural Lifestyle Zone could be exacerbated by domestication in the Rural General Zone. However, in this instance, it is considered

that the potential cumulative effects can be avoided because of the specific location of the building platform, the proposed design controls and the large expanse of open paddock that will be retained. A future dwelling on the platform will be associated with the existing farming activity, and will be sympathetic to the character of the valley floor. The development will not compromise the ability to continue to use the remainder of the site for agricultural or horticultural activities.

9. Structures

To preserve the visual coherence of:

(a) outstanding natural landscapes and features and visual amenity landscapes by:

- *encouraging structures which are in harmony with the line and form of the landscape;*
- *avoiding, remedying or mitigating any adverse effects of structures on the skyline, ridges and prominent slopes and hilltops;*
- *encouraging the colour of buildings and structures to complement the dominant colours in the landscape;*
- *encouraging placement of structures in locations where they are in harmony with the landscape;*
- *promoting the use of local, natural materials in construction.*

The site is flat, so the proposed building platform will not affect any skylines, ridges, prominent slopes or hilltops. The platform has been proposed in the south eastern corner of the site so that it is close to the road and the line of existing poplars, where one might expect a traditional farmhouse to be located. Design controls will ensure that natural colours and materials are used for the exterior cladding of any future dwelling.

Part 4 also includes under 4.8.3 the following objective regarding natural hazards:

Objective 1

Avoid or mitigate loss of life, damage to assets or infrastructure, or disruption to the community of the District, from natural hazards.

The associated policies relevant to this proposal are:

- 1.4 *To ensure buildings and developments are constructed and located so as to avoid or mitigate the potential risk of damage to human life, property or other aspects of the environment.*
- 1.5 *To ensure that within the consent process any proposed developments have an adequate assessment completed to identify any natural hazards and the methods used to avoid or mitigate a hazard risk.*
- 1.7 *To avoid or mitigate the likelihood of destruction or damage to residential units and other buildings constructed or relocated into flood risk areas.*

The proposed building platform is located in an area that has been identified as being potentially susceptible to surface water flooding and seismic liquefaction. Engineers have been engaged to assess the risks associated with these natural hazards, and have recommended mitigation measures which can be incorporated into the

construction of a future dwelling on the platform to mitigate the risk of damage. Flooding at the site is likely to be in the form of shallow sheet flow, less than 100mm in depth, which does not pose a risk to human life.

4.1.2 Part 5 Objectives and Policies

Objective 1 - Character and Landscape Value

To protect the character and landscape value of the rural area by promoting sustainable management of natural and physical resources and the control of adverse effects caused through inappropriate activities.

The above objective and following policies seek to protect the character and landscape value of the rural area while avoiding adverse effects:

- 1.1 Consider fully the district wide landscape objectives and policies when considering subdivision, use and development in the Rural General Zone.*
- 1.2 Allow for the establishment of a range of activities, which utilise the soil resource of the rural area in a sustainable manner.*
- 1.3 Ensure land with potential value for rural productive activities is not compromised by the inappropriate location of other developments and buildings.*
- 1.4 Ensure activities not based on the rural resources of the area occur only where the character of the rural area will not be adversely impacted.*
- 1.5 Provide for a range of buildings allied to rural productive activity and worker accommodation.*
- 1.6 Avoid, remedy or mitigate adverse effects of development on the landscape values of the District.*
- 1.7 Preserve the visual coherence of the landscape by ensuring all structures are to be located in areas with the potential to absorb change.*
- 1.8 Avoid remedy or mitigate the adverse effects of the location of structures and water tanks on skylines, ridges, hills and prominent slopes.*

In regard to Policies 1.2 – 1.5, the site comprises pastoral land, which is an important resource. The proposal will allow the majority of the site to continue to be used for farming activities such as grazing, while providing on-site residential accommodation.

Policies 1.1 and 1.6 – 1.8 relate to landscape values and have been assessed in the previous section.

Objective 3 - Rural Amenity

Avoiding, remedying or mitigating adverse effects of activities on rural amenity.

The above objective and associated policies relate to avoiding, remedying or mitigating adverse effects on rural amenity and include a specific policy regarding the setback of buildings from property boundaries. Rural amenity is defined in the District Plan as including privacy, rural outlook, spaciousness, ease of access, clean air

and quietness (refer to the Explanation and Principal Reasons for Adoption, page 5 – 5). The site is of a sufficient size to enable the development of a residential dwelling with only a minor effect on these rural amenity values, including those appreciated by neighbouring properties.

4.2 Objectives and Policies of the Proposed District Plan

The QLDC's Proposed District Plan (PDP) was notified on 26 August 2015 and submissions closed on 23 October 2015, with further submissions closing on 18 December 2015. Rural hearings commence in May 2016. Limited weighting (if any) should be given to the proposed provisions at this stage.

Most relevant to this application are the provisions in proposed Part Two, Chapter 6 – Landscapes and Part Four, Chapter 21 – Rural Zone.

4.2.1 Proposed Chapter 6 Objectives and Policies

6.3.1 Objective - The District contains and values Outstanding Natural Features, Outstanding Natural Landscapes, and Rural Landscapes that require protection from inappropriate subdivision and development.

6.3.2 Objective - Avoid adverse cumulative effects on landscape character and amenity values caused by incremental subdivision and development.

6.3.4 Objective – Protect, maintain or enhance the District's Outstanding Natural Landscapes (ONL).

6.3.5 Objective - Ensure subdivision and development does not degrade landscape character and diminish visual amenity values of the Rural Landscapes (RLC).

These proposed objectives and the associated proposed policies are generally similar to the existing objectives, policies and assessment matters for the Rural General Zone in the operative plan. However, it is noted that proposed Policy 6.3.1.3 states that subdivision and development is inappropriate in almost all locations in the ONL, and that successful applications will be exceptional cases. Policy 6.3.4.2 recognises that large parts of the ONL include working farms and that viable farming involves activities that may modify the landscape, providing that the quality and character of the ONL are not affected. In this case, the applicant's Landscape Assessment concludes that a dwelling constructed in accordance with the proposed design controls in this location on the pastoral valley floor will not significantly detract from the impressive wider landscape that the site is a part of. The proposed construction of a single residential dwelling on this site will provide for the continuation of productive activities on the land, which is probably not large enough to otherwise be a viable farming unit.

4.2.2 Proposed Chapter 21 Objectives and Policies

21.2.1 Objective - Enable farming, permitted and established activities while protecting, maintaining and enhancing landscape, ecosystem services, nature conservation and rural amenity values.

The construction of a single residential dwelling in the proposed location will complement the existing farming activity at the site without adversely affecting ecosystem services or nature conservation values. Effects of the proposal on landscape and rural amenity values have been discussed above.

4.3 Resource Management (National Environmental Standard for Assessing and Managing Contaminants in Soil to Protect Human Health) Regulations 2011

The Resource Management (National Environmental Standard for Assessing and Managing Contaminants in Soil to Protect Human Health) Regulations 2011 (the NES) apply to proposals to change the use of a piece of land if the land is covered by the NES, i.e. if any activity or industry on the Hazardous Activities and Industries List (HAIL) is being undertaken, has been undertaken, or is more likely than not to have been undertaken on the piece of land.

The method outlined in Section 6(2) of the regulations has been used to determine whether or not the piece of land is covered by the NES. This involves a review of the information held about the site by the Queenstown Lake District Council (QLDC) and Otago Regional Council (ORC).

The QLDC property records have been reviewed for the piece of land this application relates to. There is no indication that any 'Hazardous Activities and Industries List' (HAIL) activities are occurring, or have occurred, on the land. Some old stockyards are located on the southern boundary of the site; however these are considered to be located sufficiently distant from the building platform and associated access and curtilage area that they are not contained within the same piece of land. Furthermore, there is no evidence (in the Council's records or otherwise) to indicate that any storage of agrichemicals has occurred in the vicinity of the stockyards. The site was once part of a larger farm, and the original farm buildings are located on a different title on the eastern side of the Glenorchy – Paradise Road.

The ORC has confirmed that its 'Database of Selected Landuses' does not include any record of activities with the potential to contaminate land associated with the site.

In summary, based on the information held by the QLDC and ORC, there is no indication that any activity or industry described in the HAIL is being undertaken on the site or may have been undertaken on the site in the past. The regulations therefore do not apply to this proposal.

5.0 ASSESSMENT OF ENVIRONMENTAL EFFECTS

5.1 Landscape and Visual Effects

The relevant assessment matters for Outstanding Natural Landscapes (District Wide) are outlined in Section 5.4.2.2(2) of the QLDP, and include a requirement to consider the following:

- (a) Potential of the landscape to absorb development*
- (b) Effects on openness of landscape*
- (c) Cumulative Effects on Landscape Values*
- (d) Positive Effects*

Please refer to the attached Landscape Effects Assessment, which assesses these criteria in detail, and is adopted for the purposes of this report.

In summary, the Landscape Effects Assessment considers that the proposal is in accordance with the provisions of the QLDLP for Outstanding Natural Landscapes. It finds that an appropriately designed dwelling constructed in the proposed location against the poplar shelter-belt backdrop will maintain the existing agricultural character of the valley floor, without detracting from the spectacular views of the surrounding mountains.

5.2 Services and Access

The proposed platform will be connected to power and phone reticulation. A letter from Aurora is attached as Appendix G. Chorus has also been contacted to request confirmation that the site can be connected to the telecommunications network. As no subdivision is proposed, Chorus has advised that it cannot comment on this proposal, and that the landowner should contact the relevant service provider (e.g. Spark, Vodafone etc) at the time a connection is required. Given that the site is not remote, and adjoins the subdivided Rural Lifestyle zone, it is not anticipated that there would be any issues in providing a telecommunications connection to the proposed platform.

Potable water will be provided either from the existing Paradise Park Ltd supply, which was developed to service the rural lifestyle subdivision across the Glenorchy – Paradise Road, or from a new bore within the site. Given the proximity of the site to both Precipice Creek and the Rees River, it is not anticipated that there would be any issues in developing a suitable bore.

Wastewater will be disposed of via an on-site system at the time a future dwelling is constructed. The suitability of the existing ground conditions for on-site disposal has been confirmed in the attached Servicing Report. A secondary treatment system has been recommended and the applicant volunteers that this be a condition of consent.

Access will be from the legal road along the southern boundary, so that a new vehicle crossing is not required onto the Glenorchy – Paradise Road. The road is formed to an adequate standard to service a residential dwelling. A driveway will be constructed to the platform at the time a dwelling is constructed, to fit with the specific dwelling design. The applicant has proposed a design control that will limit the driveway formation to gravel with grass swales, to be consistent with the rural environment.

In summary, the platform can be properly serviced in accordance with the council's standards, and there will be no adverse effects.

5.3 Neighbourhood Effects

The closest residential dwelling to the proposed platform is approximately 150m away at 618 Glenorchy – Paradise Road. This neighbouring property is located within the existing Rural Lifestyle Zone on the eastern side of the Glenorchy – Paradise Road, which has been subdivided for residential purposes. The closest dwelling in the Rural Zone is approximately 500m to the south. As discussed earlier in this AEE, rural amenity is defined in the QLDP as including privacy, rural outlook, spaciousness, ease of access, clean air and quietness. A dwelling on the proposed platform will not affect the privacy of any neighbours, their ease of access or air quality. There is sufficient distance to neighbouring properties such that noise associated with a dwelling is unlikely to have adverse effects beyond the site. The proposed development may affect the rural outlook enjoyed by some neighbours within the Rural Lifestyle Zone. However, it is considered that while the dwelling might be seen from neighbouring properties, it would not dominate their views. It is expected that they would continue to have a rural outlook, dominated by views of the surrounding mountains.

The proposed platform is located approximately 350m from the existing gravel extraction and processing operation on the site. At this distance, it is not considered that a residential dwelling would result in any reverse sensitivity issues (such as due to noise or dust) that might compromise the continuation of the gravel extraction activity.

5.4 Ecosystems

The proposal will not result in adverse effects to any ecosystems, plants, animals or disturbance of habitats. There is little evidence of any indigenous ecological systems within the site with the exception of *Juncus* (commonly known as rush) in wetter areas, well away from the building platform.

5.5 Natural and Physical Resources

The proposal will not affect any known cultural or heritage sites.

5.6 Discharge of Contaminants

The proposal will not result in any discharge of contaminants or unreasonable emission noise from the site.

5.7 Natural Hazards / Hazardous Substances

The proposal will not involve the use of any hazardous substances.

The site is located in an area identified on the QLDC hazards maps as being an alluvial fan, and susceptible to flooding and seismic liquefaction hazards. A Flood Hazard Assessment has been undertaken by Hadley Consultants Ltd, and a copy is attached as Appendix E. Geosolve has also been engaged to investigate the risk of liquefaction to the building platform.

The Flood Hazard Assessment concludes that temporary breakouts of floodwater could occur from the Precipice Creek channel in a large storm event. Such breakouts are most likely to occur upstream of the existing road bridge on the Glenorchy – Paradise Road. Because of the elevated northern road approach to the bridge the overflow route is likely to be along the eastern side of the road, not towards the proposed building platform. If the channel capacity were to be exceeded downstream of the bridge, then the partly formed road along the southern boundary is likely to act as a stopbank, protecting the building platform. However, if a breakout occurred close to the bridge, this could result in a shallow sheet flow (less than 100mm) towards the building platform. To mitigate against this potential risk of sheet flow, Hadley Consultants have recommended that the building platform be raised by 0.5m above the surrounding natural ground, with finished floor levels for any dwelling to be above this platform level. The applicant proposes that this requirement be included in the list of design controls for any future dwelling. This is considered to be a suitable and practical form of mitigation to address the potential hazard.

6.0 THE MATTERS IN PART 2 OF THE RESOURCE MANAGEMENT ACT 1991

Part 2 of the Resource Management Act 1991 details its purpose: to promote the sustainable management of natural and physical resources. This proposal will allow the applicant to provide for their economic and social wellbeing by enabling a residential dwelling to be constructed on the land. As outlined in Section 6, the protection of outstanding natural landscapes from inappropriate development is a matter of national importance which must be had regard to. For the reasons outlined in this AEE, the proposed development is considered to be appropriate in this location. In regard to the other matters in Section 7, the proposal will enable the efficient use of the land resource, while maintaining the existing amenity values of the surrounding rural environment.

7.0 SUMMARY

The Landscape Effects Assessment concludes that the proposal is in accordance with the provisions of the QLDP for Outstanding Natural Landscapes. It finds that an appropriately designed dwelling constructed in the proposed location will maintain the existing pastoral character of the valley floor, without detracting from the spectacular views of the surrounding mountains.

Services and access can be provided to the proposed building platform in accordance with the council's standards. The potential risk to a future dwelling associated with flooding of Precipice Creek in an extreme rainfall event can be mitigated by raising the platform and/or finished floor level 0.5m above the surrounding ground level.

Overall, the proposal has been found to be generally consistent with the relevant objectives and policies of the operative and proposed District Plans, as well as with Part 2 of the Resource Management Act.



**COMPUTER FREEHOLD REGISTER
UNDER LAND TRANSFER ACT 1952**



Search Copy


R. W. Muir
Registrar-General
of Land

Identifier 25360
Land Registration District Otago
Date Issued 01 May 2002

Prior References

OT14A/273

Estate Fee Simple
Area 53.9900 hectares more or less
Legal Description Lot 2 Deposited Plan 306479

Proprietors

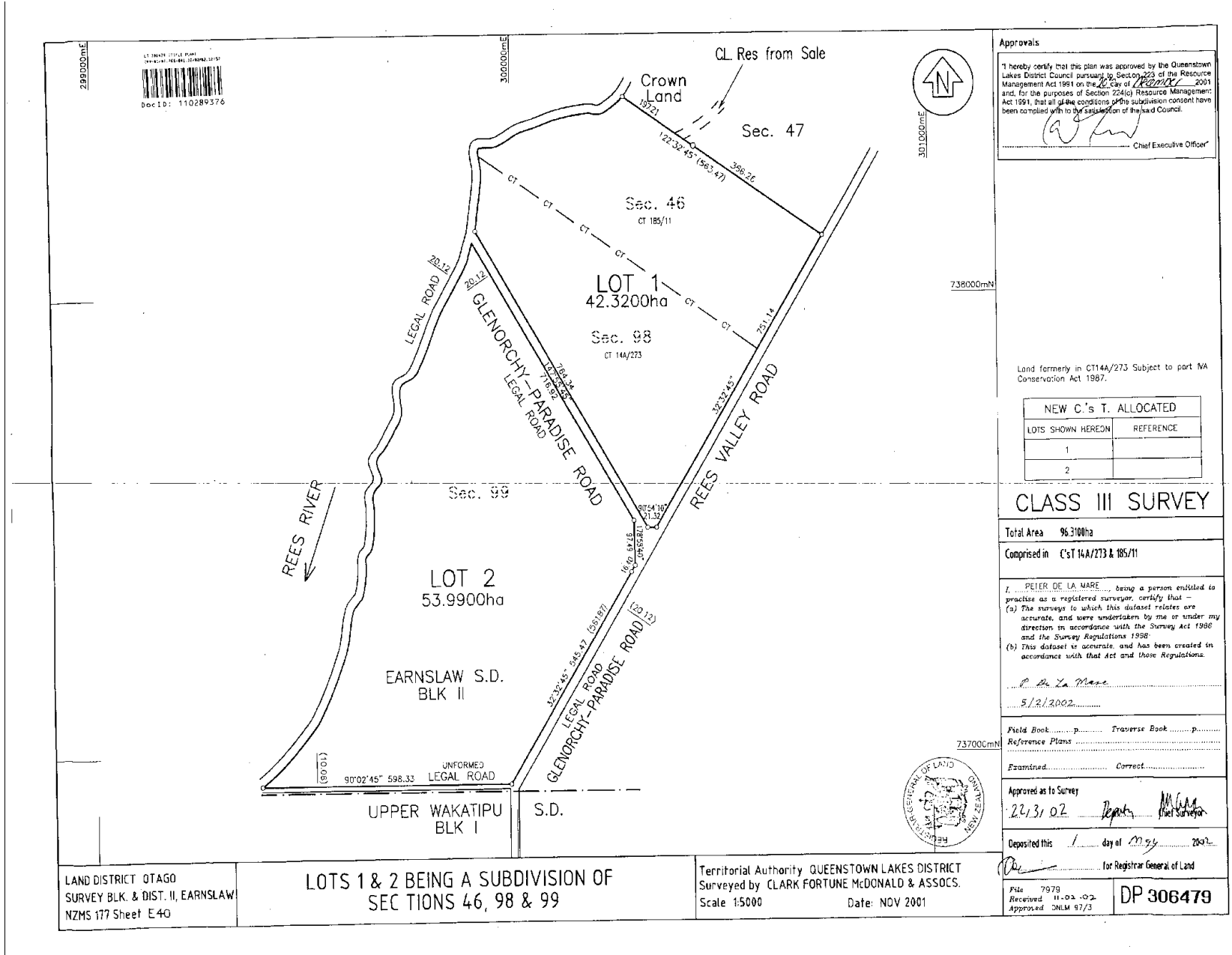
Rene Maria Antoine Johan Kampman and ROSS & DOWLING TRUSTEES (2007 NO.1) LIMITED

Interests

Subject to Part IV A Conservation Act 1987

Subject to Section 11 Crown Minerals Act 1991 - pursuant to Section 86 Crown Minerals Act 1991

339567 Electricity Agreement pursuant to Electricity Amendment Act 1948 - 21.4.1991 at 9.45 am



Approvals

I hereby certify that this plan was approved by the Queenstown Lakes District Council pursuant to Section 223 of the Resource Management Act 1991 on the 11th day of February 2001 and, for the purposes of Section 224(c) Resource Management Act 1991, that all of the conditions of the subrogation consent have been complied with to the satisfaction of the said Council.

[Signature]
Chief Executive Officer

Land formerly in CT144/273 Subject to part WA Conservation Act 1987.

NEW C's T. ALLOCATED	
LOTS SHOWN HEREON	REFERENCE
1	
2	

CLASS III SURVEY

Total Area 96.3100ha
Comprised in C's T 144/273 & 185/11

I, PETER DE LA MARE, being a person entitled to practise as a registered surveyor, certify that -
(a) The surveys to which this dataset relates are accurate, and were undertaken by me or under my direction in accordance with the Survey Act 1988 and the Survey Regulations 1988
(b) This dataset is accurate, and has been created in accordance with that Act and those Regulations.

P. De La Mare
5/2/2002

Field Book p Traverse Book p
Reference Plans
Examined Correct

Approved as to Survey
22/3/02 *[Signature]* *[Signature]*
Field Surveyor

Deposited this 1 day of May 2002
[Signature] for Registrar General of Land

File 7979
Received 11-02-02
Approved DNLM 97/3

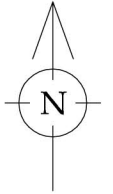
DP 306479

LAND DISTRICT OTAGO
SURVEY BLK. & DIST. II, EARNSLAW
NZMS 177 Sheet E 40

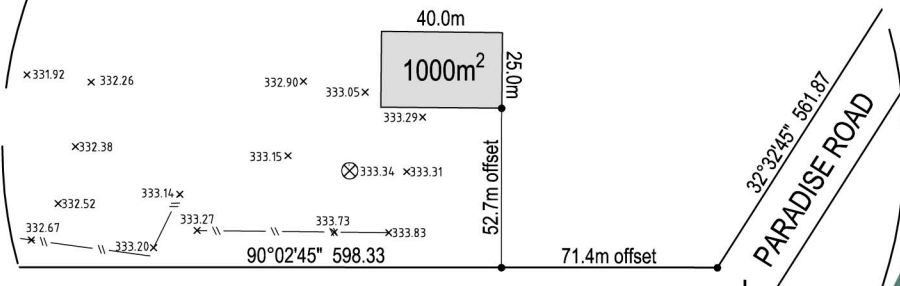
**LOTS 1 & 2 BEING A SUBDIVISION OF
SECTION 46, 98 & 99**

Territorial Authority QUEENSTOWN LAKES DISTRICT
Surveyed by CLARK FORTUNE McDONALD & ASSOCS.
Scale 1:5000 Date: NOV 2001





LOT 2
DP 306479
 CT 25360
 53.9900ha



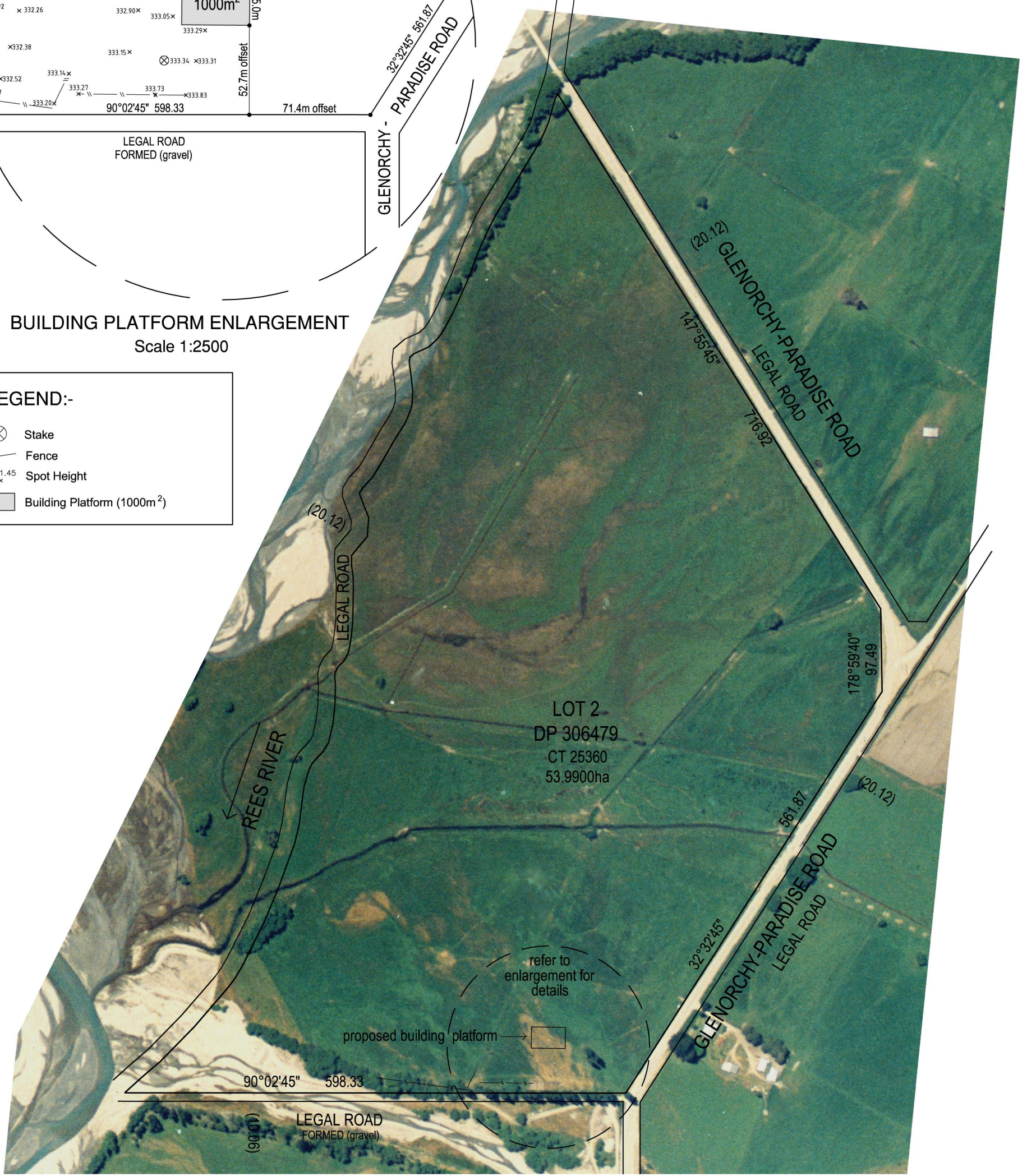
LEGAL ROAD
 FORMED (gravel)

GLENORCHY - PARADISE ROAD
 32°32'45" 561.87

BUILDING PLATFORM ENLARGEMENT
 Scale 1:2500

LEGEND:-

- ⊗ Stake
- - - Fence
- 331.45 Spot Height
- Building Platform (1000m²)



LOT 2
DP 306479
 CT 25360
 53.9900ha

NOTES:
 - Areas and dimensions subject to final survey.

If this plan is used as the basis for any sale and purchase agreement, then it is done so on the basis that the areas and dimensions are preliminary, and may vary upon completion of the final survey.

WARNING NOTE:
 This resource consent plan has been prepared for Bayswater Trust from field survey and existing records for the purpose of a proposed subdivision on the land. It is to be read in conjunction with our terms of engagement. It should not be used by the client company for any other purpose. The plan is not to be relied on by any other person for any purpose whatsoever.

DATE: 16 November 06 **Scale 1:5000** DRAWING & ISSUE No. 2260.3R.1A
 BY: Emily Dykes Original Plan A3









TITLE:
PROPOSED BUILDING PLATFORM PLAN
LOT 2 DP306479, GLENORCHY-PARADISE ROAD
for BAYSWATER TRUST

AURUM
 SURVEY CONSULTANTS LTD
 PO Box 1493
 Queenstown
 Ph 03 442 3466
 Fax 03 442 3469
 Email admin@ascl.co.nz

A person/company using Aurum Survey Consultants drawings and other data accepts the risk of:
 1. using the drawings and other data in electronic form without requesting and checking them for accuracy against the original hard copy versions;
 2. using the drawings or other data for any purpose not agreed to in writing by Aurum Survey Consultants.

REV.	DATE:	REVISION DETAILS:	BY:
A	16.11.06	Initial Issue	BAM

LEGEND

-  Property boundary.
-  Existing fence line.
-  Existing overhead power line.
-  Proposed building platform.
-  Proposed driveway.
-  Proposed lombardy poplars.
-  Proposed eucalyptus trees.
-  Proposed mix of deciduous trees including:
 - English oaks
 - Liquid amber
 - Pinus pinea
 - Alders
 - Elms

Lot 2
DP 306479
53.9900ha



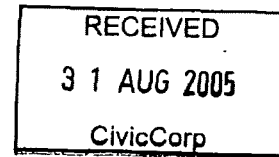
REF: 0078 - SLP2
DATE: 13.05.2016
SCALE: 1:2000 @ A3

Structural Landscape Plan Kampman - Glenorchy Paradise Road, Glenorchy

BAYWATERS TRUST SUBDIVISION PROPOSAL
LANDSCAPE EFFECTS ASSESSMENT REPORT

BEN ESPIE (LANDSCAPE ARCHITECT)

28/01/05



INTRODUCTION

1. This report discusses the landscape effects of a proposed subdivision of a 53.9 hectare allotment of land immediately adjacent to Glenorchy-Paradise Road (the site). It is proposed to subdivide the existing allotment into two new allotments and to place a 1000m² residential building platform on both of the new lots. The site is contained within the Rural General Zone.
2. Various restrictive conditions are volunteered in order to mitigate potential effects of the activities. It is proposed to maintain 95% (51.4 hectares) of the site as agricultural land. A structural landscape planting regime is proposed to soften the appearance of future residential activity. Restrictions are proposed on future dwellings on the residential building platforms to limit their height, colour and materials.
3. The landscape of which the site is a part is an ancient glacial valley that now contains the Rees River flowing down the eastern side of Mt Alfred, and the Dart River flowing down the western side. The valley floor is characterised by the braided river pattern of the Rees and flat, verdant pastoral land that abuts the steep slopes of the Humboldt Mountains on the west and the Richardson Mountains on the east. The valley floor contains undulations, small terraces and small roche moutonnee landforms (such as Camp Hill) that are resultant of the action of past glaciers.
4. The vicinity of the proposed activity is predominantly used for farming or related activities as are all of the flat valley floor lands to the north of Glenorchy township. Part of the stepped plateau land to the east of Glenorchy-Paradise Road is zoned Rural Lifestyle, which allows subdivision for residential purposes down to an average lot size of 2 hectares. This zone has not yet been developed to its capacity, in fact only a minimal amount of building has been done.

LANDSCAPE CATEGORISATION

5. The C180/99 Environment Court decision¹ did not categorise the landscapes of the Glenorchy area, however, in my opinion this rural land meets the classification of outstanding natural landscape (district wide) due to its composition that is typical of this landscape category as described in Part 4.2.4(2) of the Plan:

"The outstanding natural landscapes of the district are romantic landscapes – the mountains and lakes."

¹ Environment Court decision C180/99, *Wakatipu Environmental Society Incorporated vs. Q.L.D.C.*

6. The landscape in this area is typified by the open and flat pastoral river valleys of the Rees and the Dart that are flanked on either side by impressive snow capped mountain ranges that form part of the Mount Aspiring National Park. The rugged forms of these mountains that rise up from the more tamed and verdant pastoral valley floors are striking to visitors to the area and are undoubtedly romantic in nature. Although the farmed valley floors are not as natural or dramatic in appearance, they are an inseparable component of the broader landscape. They are too small and narrow to be considered complete landscapes in their own right. Although the valley floor feels tamed to some degree, the experience of being in this landscape is still one of rugged isolation, at the edge of human influence over the land.
7. The District Wide Policies for outstanding natural landscapes (district wide) are:
 - (a) *To maintain the openness of those outstanding natural landscapes and features which have an open character at present.*
 - (b) *To avoid subdivision and development in those parts of the outstanding natural landscapes with little or no capacity to absorb change.*
 - (c) *To allow limited subdivision and development in those areas with higher potential to absorb change.*
 - (d) *To recognise and provide for the importance of protecting the naturalness and enhancing amenity values of views from public places and public roads.²*

ASSESSMENT OF EFFECTS ON THE LANDSCAPE

8. Part 5.4.2.2 of the Plan lists the assessment matters with regard to outstanding natural landscapes (district wide) under the following headings:
 - (a) *Potential of the landscape to absorb development.*
 - (b) *Effects on openness of landscape.*
 - (c) *Cumulative effects on landscape values.*
 - (d) *Positive effects.*

POTENTIAL OF THE LANDSCAPE TO ABSORB DEVELOPMENT

9. Aspects of the proposed development that will potentially have visual effects on the landscape are future dwellings, associated driveways and parking areas, cars, clotheslines etc, lawns, garden and tree planting and the presence of people.
10. Parts of future dwellings (and associated curtilage) erected on the proposed residential building platforms will be visible from parts of Glenorchy-Paradise Road, from the extreme southern end of Rees Valley Road, from parts of the legal road that bounds the western edge of the site and from parts of the Rees River reserve.
11. Parts of future dwellings (and associated curtilage) will also be visible from neighbouring private land to the east of Glenorchy-Paradise Road. This land is zoned Rural Lifestyle and contains some dwellings, although it is yet to be developed to its capacity.
12. The extent of the visibility of the proposed development will be limited by topography, existing trees, proposed trees and by the restrictions on colours and materials of future dwellings. Once proposed tree planting begins to fill out in form and height (after approximately 5 years), I consider that proposed development will be difficult to see from Rees Valley Road, from the legal road that bounds the western edge of the site and from the Rees River reserve.

² Queenstown Lakes Partially Operative District Plan, Part 4.2.5(2).

13. Views of the site from the abovementioned vantage points are dominated by the mountainous natural landscape that surrounds the flats of the Rees valley. The verdant valley floor is a component of these views but it is not the dominant component. I believe that the level of visibility of the proposed development that will remain from parts of Glenorchy-Paradise Road and from the Rural Lifestyle Zone will not be sufficient to dominate these views or to detract from the views of the surrounding mountainous natural landscape. In these views two dwellings will be seen, backed by a mature row of poplars, with a large area of farmed paddock-land in front of them. Views of the dwellings will be filtered by tree planting that surrounds them and the colours of the dwellings will be such that they do not contrast with their setting.
14. The tree planting shown on the Landscape Masterplan is designed to mitigate the visual effects of future dwellings and also to mimic the vegetation patterns in the surrounding agricultural landscape. The exotic tree species are typical of a colonially settled farming landscape and areas of native shrub planting are proposed to follow the natural patterns of the old riverbed and to increase the naturalness of the site.
15. The new boundary line that separates the two proposed lots follows existing fence lines. Volunteered conditions of consent restrict all future fencing to post-and-wire only.
16. The ecology of the site is resultant from past agricultural management. As such, it contains little evidence of original indigenous ecological systems. There is, however, relatively dense scattered *Juncus* in the wetter parts of the site. The proposal will have no effect on the *Juncus* since no development is proposed in these wetter areas of the site. Significant sweeps of native shrub planting are proposed in the vicinity of the proposed residential building platforms. These sweeps are proposed to be comprised of species indigenous to this specific vicinity and hence with increase the natural character of the site. No species with the potential to spread undesirable wildings are proposed.

EFFECTS ON OPENNESS OF LANDSCAPE

17. The subject site is within a broadly visible expanse of open landscape when seen from the north, although the poplars in the site's southern boundary limit long views that would otherwise run further to the south. Similarly, the site is not visible from the south due to these poplars.
18. At a large scale, this part of the Rees River valley is contained by the steep mountain slopes around it. In a general sense, observers on this valley floor experience openness, although some parts of this valley floor are intermittently hidden by lines of shelter planting or by terraced landforms.
19. The proposed development is sited such that it will not be visible from the south. From the north development will be visible as discussed in paragraphs 10 to 12. The two proposed residential building platforms are immediately backed by a mature row of poplars. Two future dwellings, although recessively coloured, will appear as visual interruptions to the current open character of the paddocks of the parent lot. However, because these dwellings will be immediately backed by a mature line of shelter trees, I do not consider that the sense of openness that is currently appreciated by observers in the landscape will be noticeably reduced. Views will not be enclosed. The landscape will remain overwhelmingly open.

CUMULATIVE EFFECTS ON LANDSCAPE VALUES

20. There is very little existing domestic activity in the vicinity of the subject site that is not associated with a farming use of the land. This situation will change as the Rural Lifestyle Zone is developed in accordance with the provisions of the Plan. The extent of this area of Rural Lifestyle Zone can be seen on Planning Map 9.
21. The proposal will result in the introduction of two dwellings and associated curtilage in the Rural General Zone. These elements are not consistent with the natural character of the landscape; however, the finished development will be consistent with the colonial agricultural, or pastoral, character of the vicinity. Two dwellings in the proposed locations, built in accordance with the proposed design controls, surrounded by the existing expanses of paddock-land, will be congruent with the open, verdant, farmed character of the valley floor lands of the Rees Valley.
22. A roof pitch control on future dwellings has been volunteered to ensure that dwellings are designed around a traditional colonial New Zealand architectural form.
23. The existing level of domestication in this vicinity does not represent a threshold beyond which no further domestication is tolerable; however, given the existence of the Rural Lifestyle Zone, there is the potential that domestication in the Rural General Zone could further degrade the naturalness and rurality of this vicinity. The effect of creating the Rural Lifestyle Zone could potentially be exacerbated by dwellings in the Rural General Zone.
24. I consider that in this instance these potential cumulative effects will be avoided due to the specific location of the two proposed residential building platforms, the design controls on future dwellings and the extent of open paddock-land that will be preserved. Future dwellings on the edge of an expanse of paddocks, backed by a mature poplar shelter-belt, softened by tree planting, will appear as an integral and expected part of this sparsely-populated rural vicinity. I consider that the openness and rural character of the lands surrounding the Rural Lifestyle Zone will not be degraded by the proposed activity.

POSITIVE EFFECTS

25. The ecology and natural character of the site will be affected in a positive way by the proposed native shrub planting shown on the Landscape Masterplan. This planting is designed in naturalistic sweeps and will (in time) appear as remnant native vegetation. Biodiversity and habitat value of the site will be increased, albeit to a minor extent. It is proposed that this vegetation is fenced off from stock and protected in the future by a volunteered condition of consent.
26. A condition is volunteered to restrict the use of the entire site outside of the designated curtilage areas to agricultural or horticultural use only.

CONCLUSION

27. The site of the proposed subdivision is located in an outstanding natural landscape (district wide) and within the Rural General Zone.
28. The potential visibility of the proposed development (including two future dwellings) will be reduced by topography, existing trees, proposed trees and by the restrictions on colours and

materials of future dwellings. I believe that the level of visibility that will remain from parts of Glenorchy-Paradise Road and from the Rural Lifestyle Zone will not be sufficient to dominate views or to detract from the views of the surrounding mountainous natural landscape. Two dwellings on the edge of an expanse of paddocks, backed by a mature poplar shelter-belt, softened by tree planting, will appear as an integral and expected part of this sparsely-populated rural vicinity.

29. Two future dwellings will appear as minor visual interruptions to the current open character of the paddocks of the parent lot, however, views will not be enclosed. I do not consider that the sense of openness that is currently appreciated by observers in the landscape will be noticeably reduced.
30. The future effect that the Rural Lifestyle Zone will have on the landscape could potentially be exacerbated by locating dwellings in the Rural General Zone. I consider that in this instance these potential cumulative effects will be avoided due to the specific location of the two proposed residential building platforms, the design controls on future dwellings and the extent of open paddock-land that will be preserved.
31. The proposal will have positive effects on the landscape in that biodiversity and habitat value of the site will be increased to a minor extent by proposed sweeps of indigenous shrub planting.
32. In summary, I consider that the proposal is in accordance with the provisions of the Plan that relate to outstanding natural landscapes. This particular site offers the opportunity to site two appropriately designed dwellings against a shelter-belt backdrop in a way that preserves the open, agricultural character of the vicinity. The appreciation of the majestic, mountainous, surrounding landscape will not be diminished and the open, rural character of the farmed valley floor (that will be looked over by future dwellings in the Rural Lifestyle Zone) will not be degraded.

13 May 2016

Our Ref: 152825

By email:

kampman@southnet.co.nz

Dear René

**BAYSWATER TRUST PROPERTY - GLENORCHY-PARADISE ROAD
FLOOD HAZARD ASSESSMENT**

1.0 Introduction

Hadley Consultants Limited (HCL) have been engaged by René Kampman on behalf of Bayswaters Trust to undertake a flood hazard assessment associated with a proposed residential building platform that is proposed to be located on the Glenorchy-Paradise Road property.

Otago Regional Council (ORC) have previously raised concerns about potential flood hazards on the site. This assessment and report is to supplement and support a resource consent application made by others on behalf of Bayswaters Trust/René Kampman to establish a single residential building platform on the site.

Previous flood hazard assessments for adjacent subdivisions were performed in 2005 by David Hamilton and in 2004 by geologist Royden Thomson. Where possible we have reviewed this previous work and in particular note that this previous work details the existing flood protection works.

A Site Plan showing the location of the proposed building platform has been prepared by Aurum Survey Consultants Limited and a copy of this is included as Attachment 1. HCL have also prepared a plan showing key features of the site and surrounding location and this is included as Attachment 2 while a catchment plan is included as Attachment 3.

2.0 Site Description

The site is located on the western, downslope side of Glenorchy-Paradise Road immediately north of Precipice Creek and east of the Rees River. The legal description of the site is Lot 2, DP306479 and it has an area of approximately 54 hectares.

The site is generally flat with gentle fall (average slope approximately 2%) towards the northwest towards the Rees River and currently consists of well grassed paddocks. A man made drainage channel runs westward through the central portion of the site approximately 250 metres north of the proposed building platform.

The proposed building platform is located in the more elevated south eastern portion of the site approximately 120m west of the Glenorchy-Paradise Road and 65 metres north of the legal road which leads alongside the lower reaches of Precipice Creek, at the southern end of the property as shown on the plan included as Attachment 1.

3.0 Hydrological Assessment

As noted above the site is located adjacent to Precipice Creek and the Rees River. The southern portion of the site including the proposed building platform location is located on an alluvial fan that has been formed over time by material deposited by Precipice Creek. This portion of the site is listed in the QLDC hazard maps as Alluvial Fan –ORC – Fan Recently Active and Alluvial Fans – Regional Scale – Floodwater Dominated. The former classification was based on an assessment made by Geological & Nuclear Science (GNS) in 2008 while the later relates to an earlier assessment by GNS in 2007.

As a result of the above, and given the elevation of the area around the building platform above the level of the Rees River the potential flood hazard posed by Precipice Creek is the primary focus of this assessment.

Precipice Creek has a catchment area of approximately 18km² and an average slope of 19%. The upper reaches of the catchment are very steep and the channel is incised into steep, rocky mountainous terrain with significant areas of active erosion visible in aerial photos. The channel transitions to a more moderate gradient in the middle reaches before leaving the incised channel and reaching the more gently graded alluvial fan approximately 600 meters upstream of the Glenorchy-Paradise Road bridge. This continues for approximately 1300 meters to where it meets the Rees River.

Several methods were used to estimate the likely critical storm duration for the catchment. A 30min time of concentration was chosen using an average of four time of concentration methods that ranged from 10 to 30 minutes. The corresponding 100yr rainfall intensity obtained from HIRDS version 3 provided by NIWA was 40mm/hr, giving expected flows for Precipice Creek during a 100yr storm event in the order of 70m³/second near the bridge.

4.0 Site Observations

HCL has conducted an inspection of the site and surrounding area including the Precipice Creek channel upstream of the road bridge. Channel sections along Precipice Creek were measured in key locations along with the Glenorchy-Paradise Road bridge and other potential overland flow paths.

Upstream of the road bridge in the upper reaches of the alluvial fan Precipice Creek has a well-defined primary and secondary channel which has been created in part by a river training works consisting of a series of bunds and localised areas of rock armouring that were created as a part of flood mitigation works for the Paradise Park subdivision. These training works direct the channel towards the location of the road bridge and we understand they were constructed in approximately 2005.

Downstream of the bridge the creek flows westward in a well-defined primary channel although it is noted that the secondary channel is less well defined between the bridge and the Rees River confluence. This area of the channel contains what appears to be several bunds although it is unclear whether these were formed in an attempt to train the creek, remove debris from the primary channel or as a part of earthworks associated with gravel extraction. The access road which runs along the southern edge of the property, immediately between the site and Precipice Creek, was identified as being a natural stop bank and overflow channel for the lower reaches of Precipice Creek.

The raised level of the bridge and road approaches, particularly on the northern side of the bridge creates another, albeit non-intentional, barrier that can be expected to limit flooding of surrounding properties including the subject site. Due to the raised profile of the northern bridge approach a possible overflow flow path could form in the event of a blockage or channel breakout likely stay on the eastern side of the Glenorchy-Paradise Road until the vicinity of Amphion Way. This northern approach to the road bridge is therefore considered to provide significant protection to the proposed building platform.

5.0 Channel Capacity Assessment

Expected channel capacities immediately upstream of the bridge were calculated for the 100yr storm event using Manning's Equation based on measurements made on-site. The hydraulic capacity of the area under the bridge was also assessed and checked using culvert design tables and treating the bridge as a double-box culvert separated by the central bridge pier.

The estimated channel capacities of the creek channel and bridge were calculated to be excess of and sufficient to pass the expected 100yr storm flow event while maintaining a minimum of 0.5 meters freeboard.

6.0 Flood Hazard Assessment

Given the location of the proposed building platform within the Precipice Creek alluvial fan flood hazard in the vicinity of the proposed building platform cannot be categorically ruled out. However, given that a significant degree of works have already occurred on the upper reaches of the fan with the intention and/or effect of controlling or training the creek the natural tendencies of the creek to periodically migrate around the portion of the fan formation where the building platform is proposed have been severely curtailed.

Given the location of the road bridge and proximity of other existing residential dwellings and flood protection works it is assumed that the current channel location will be maintained long-term. However, it is accepted that temporary breakouts may occur as a result of large storm events particularly given the depositional potential that Precipice Creek likely has due to the active erosion in the upper catchment. As noted previously the most likely location of such a breakout is considered to be immediately upstream of the road bridge with flood flows tending northwards alongside the road to the region of Amphion Way. Flows from a breakout such as this are expected to avoid the area of the proposed building platform due to the elevated road approach leading up to the bridge.

In the case of channel capacity being exceeded downstream of the bridge, the access road acts as a natural stopbank and overflow channel, protecting the southern boundary of the property. Based on our assessment sufficient capacity exists within the primary and secondary channels downstream of the bridge although given the informal nature of the training works along this reach overtopping or breakout cannot be entirely ruled out. Such a breakout would need to occur in relatively close proximity to the bridge in order for flows to have the potential to head towards the vicinity of the proposed building platform. Even if this was to occur given the topography of this portion of the site any such flood flows would be expected to spread out laterally into a dispersed sheet flow of limited depth.

In order to mitigate against the potential risk of sheet flow in the vicinity of the proposed building platform and it is recommended that a raised building platform be constructed. Suitably designed and constructed raised building platforms with a minimum level of 0.5 metres above the natural ground level should be provided to mitigate any potential flood hazard to the proposed building platform. This could be achieved in conjunction with the construction of a ha-ha wall. All future dwellings should have floor levels above the level of the raised platform and with the exception of the area immediately around the dwelling owners should ensure that surrounding ground levels are not raised to ensure that flows can divert around the raised platform.

7.0 Conclusions & Recommendations

HCL have assessed the potential flood hazard for the establishment of a building platform on Lot 2, DP306479 Glenorchy-Paradise Road.

HCL have inspected the site and surrounds and based on the assessment detailed above consider the potential flood hazard to the proposed building platform to be sufficiently low due to a number of factors that include:

- A number of existing stop banks and river training measures upstream of the road bridge.
- Adequate capacity under the bridge along Glenorchy-Paradise Road, such that overtopping should not occur in a 100yr storm event.
- The northern approach to the bridge has been significantly raised and is anticipated to create an overflow route leading northward along the eastern shoulder of Glenorchy-Paradise Road, effectively diverting potential floodwaters around the area of the proposed building platform.
- Informal stop banks and an access road buffering the southern end of the property from overflow from Precipice Creek.
- A lack of defined flood channel leading to the property. Even in the case of half the 100yr storm flow overflowing onto the property it is anticipated that this would spread out as a sheet flow, the depth would still be less than 100mm.

In order to mitigate against the possibility of sheet flood flows HCL recommends that the proposed building platform should be raised a minimum of 0.5m above the surrounding ground and any habitable floor levels should be constructed above this platform level.

Furthermore, it is noted that the existing mitigation and control measures will be maintained with monitoring after storm events and repairs as needed.

8.0 Limitations

This report has been written for the particular brief to HCL from their client and no responsibility is accepted for the use of the report for any other purpose, or in any other context or by any third party without prior review and agreement.

In addition, this report contains information and recommendations based on information obtained by inspection, sampling or testing at specific times and locations with limited site coverage as outlined in this report. This report does not purport to completely describe all site characteristics and properties and it must be appreciated that the actual conditions encountered throughout the site may vary, particularly where ground conditions and continuity have been inferred between test locations. If conditions at the site are subsequently found to differ significantly from those described and/or anticipated in this report, HCL must be notified to advise and provide further interpretation.

Should you have any questions please contact the undersigned in the first instance.

Yours faithfully

Hadley Consultants Ltd

Nigel Lloyd

Senior Civil & Environmental Engineer

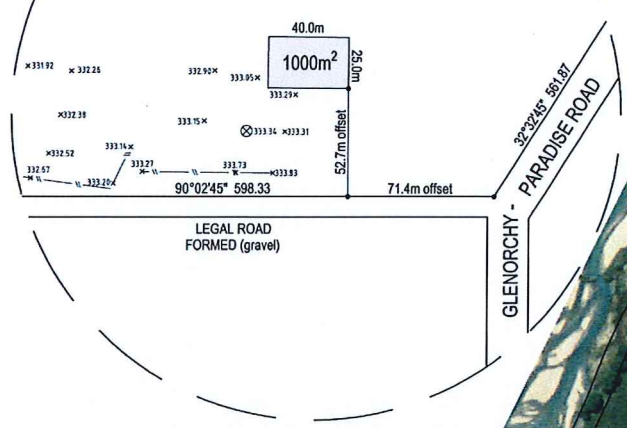
Attachment 1: Aurum Survey Consultants Limited Site Plan,

Attachment 2: Site Location Plan

Attachment 3: Catchment Plan



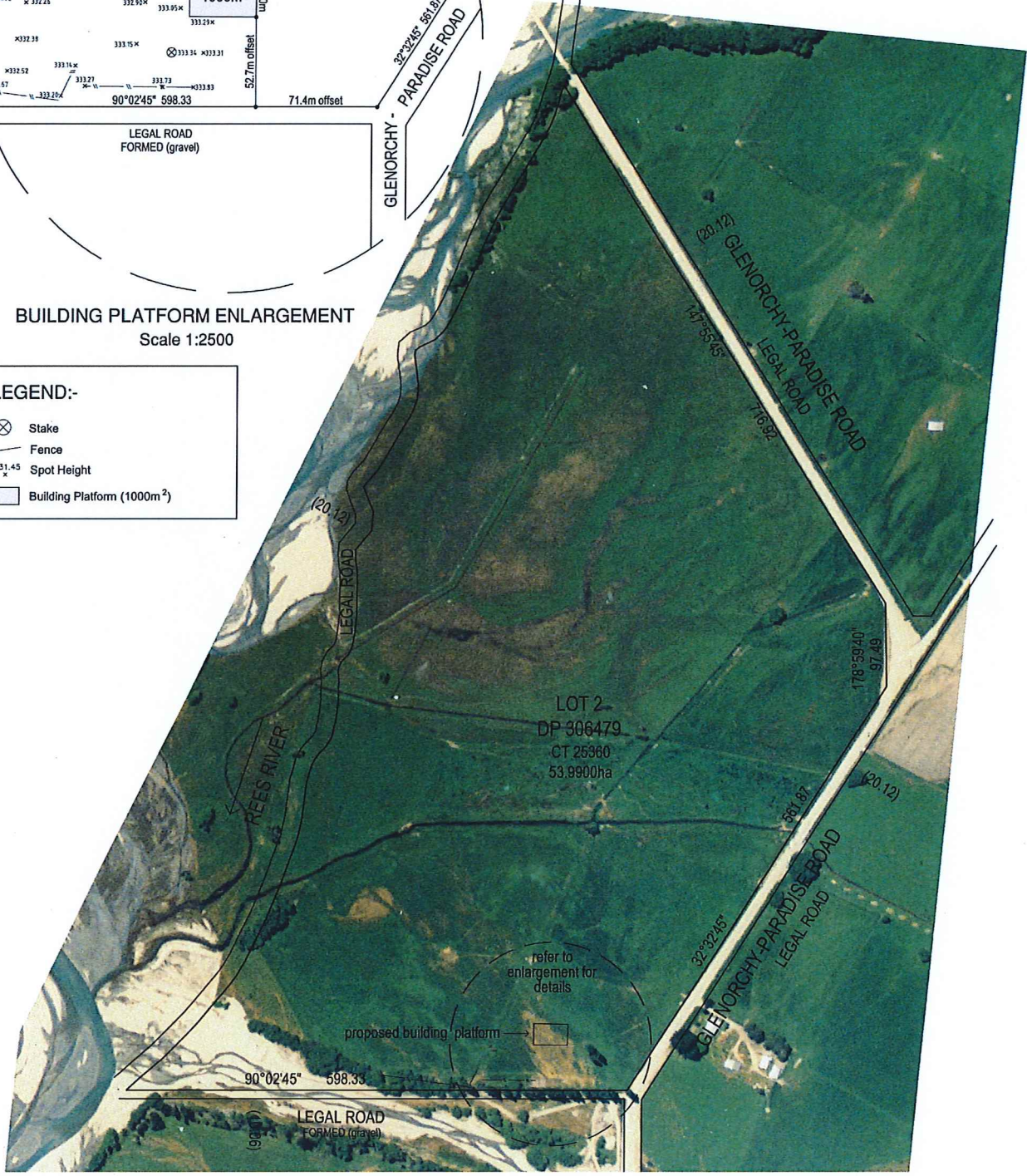
LOT 2
DP 306479
CT 25360
53.9900ha



BUILDING PLATFORM ENLARGEMENT
Scale 1:2500

LEGEND:-

- ⊗ Stake
- - - Fence
- 331.45 Spot Height
- Building Platform (1000m²)



NOTES:
- Areas and dimensions subject to final survey.

If this plan is used as the basis for any sale and purchase agreement, then it is done so on the basis that the areas and dimensions are preliminary, and may vary upon completion of the final survey.

A	16.11.06 Initial Issue	BAM
REV. DATE:	REVISION DETAILS:	BY:

WARNING NOTE:
This resource consent plan has been prepared for Bayswater Trust from field survey and existing records for the purpose of a proposed subdivision on the land. It is to be read in conjunction with our terms of engagement. It should not be used by the client company for any other purpose. The plan is not to be relied on by any other person for any purpose whatsoever.

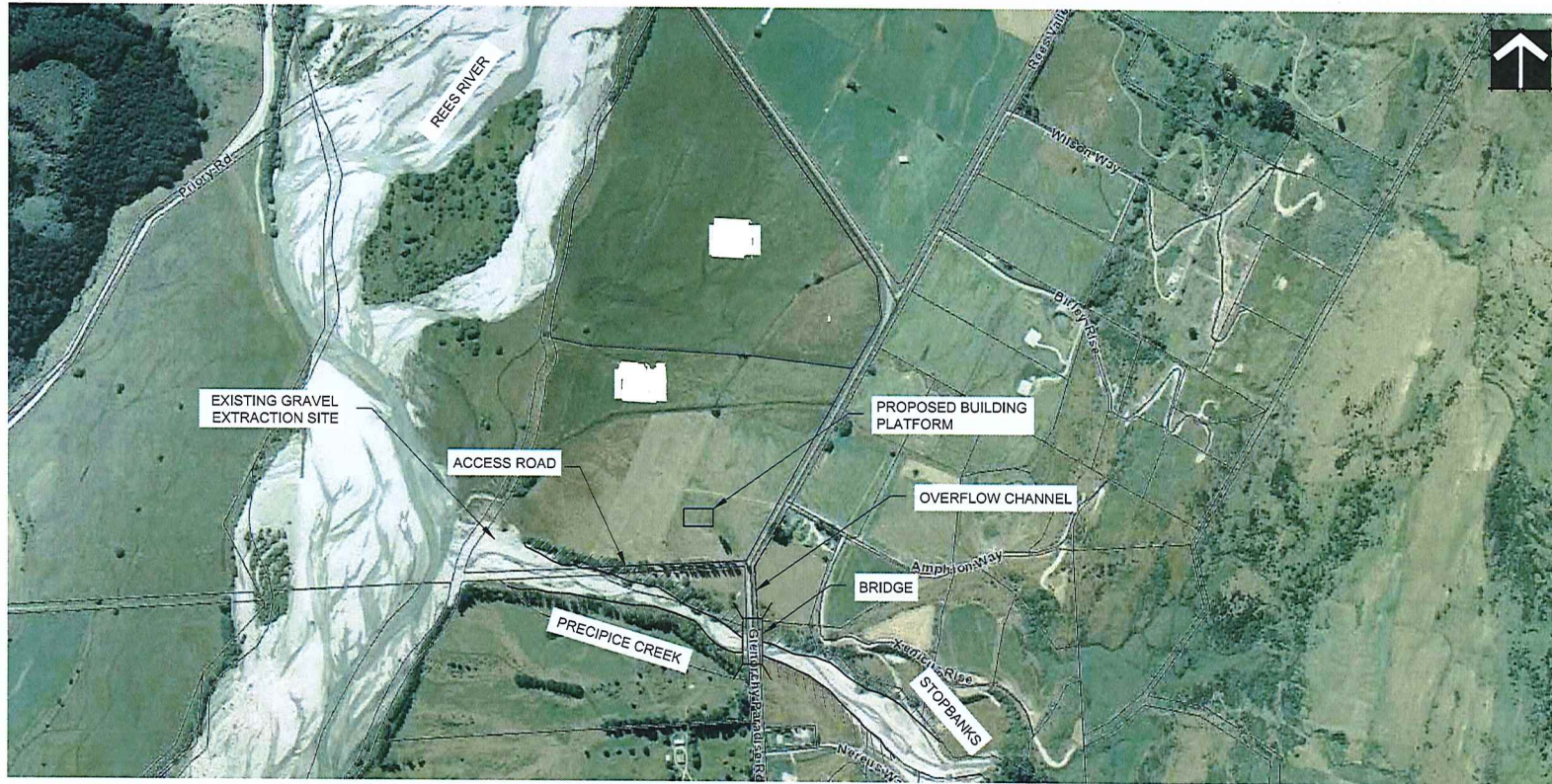
TITLE:
**PROPOSED BUILDING PLATFORM PLAN
LOT 2 DP306479, GLENORCHY-PARADISE ROAD
for BAYSWATER TRUST**

DATE: 16 November 06 Scale 1:5000 DRAWING & ISSUE No. 2260.3R.1A
BY: Emily Dykes Original Plan A3

AURUM
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ORIGINAL SIZE A3 DO NOT SCALE. REFER ALL DISCREPANCIES TO THE ENGINEER



Issue	Description	By	Date
A	Preliminary Issue	JC	23.10.15

Project:		GLENORCHY PARADISE ROAD FLOOD HAZARD ASSESSMENT	
Title:		SITE LOCATION CATCHMENT PLAN	

Client:		RENÉ KAMPMAN	
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Drawn:	Checked:	Scale:	Drawing Number:
MU	JC	1:1000 @ A3	Project: 152825

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Sheet:	Issue:	
S01	A	

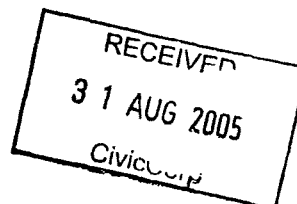


File Reference: 410005

BOULDER

16 June 2005

Baywaters Trust
c/- Carey Vivian
Vivian + Espie
PO Box 1559
QUEENSTOWN



Dear Sir

BAYWATERS TRUST – GLENORCHY - PARADISE ROAD SERVICING REPORT

This report addresses the servicing issues for a proposed subdivision of Lot 2 DP 306479 into two lots together with the provision of a building platform to be located on each lot.

1. INTRODUCTION

The site is located on the Glenorchy – Paradise Road opposite the Rees Valley Road intersection. The western boundary is a legal road adjacent to the Rees River and the southern boundary is a 10 metre wide legal road partly formed. Glenorchy – Paradise Road comprises the northern and eastern boundaries. Precipice Creek is located partly within the site and partly to the south of the 10 metre legal road.

The land is generally level but rises towards the southeast. The proposed building platforms are located on the higher land. The land is in grass and is grazed. Drainage ditches are located on the lower flatter land in the centre and northern parts of the site.

2. ACCESS

The site has frontage to the Glenorchy - Paradise Road along the northern and eastern boundaries. Glenorchy - Paradise Road is formed and sealed and maintained by the Queenstown Lakes District Council.

Access to the building platforms located on the lots is proposed from the 10 metre wide legal road that traverses the southern boundary of the site. This road intersects Glenorchy – Paradise Road at an angle in the road north of the Precipice Creek one lane bridge. This road is formed with a 3.00 metre wide carriageway within its

boundaries from the Glenorchy – Paradise Road to the proposed boundary between Lots 1 and 2 (A distance of approximately 200 metres). Figure 1 is taken from the edge of seal on the Glenorchy – Paradise Road looking west along the 10 metre wide legal road formation.



Figure 1

Site distances from the intersection are over 600 metres to the north and approximately 160 metres to the Precipice Creek Bridge to the south.

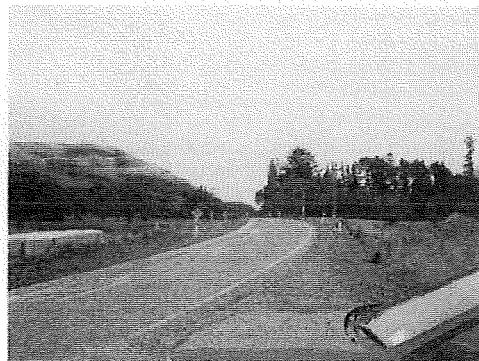


Figure 2

Figure 2 shows the site distances to the north (left photo) and to the south (right photo).

The existing formation within the 10 metre wide legal road is of an acceptable standard to serve the two building platforms proposed as part of this subdivision. This formation and intersection presently serve a gravel extraction operation with no apparent problems.

Access to both lots and building platforms will be constructed from the formation within the 10 metre wide legal road.

3. WATER

In accordance with the Queenstown Lakes District Council's standards each lot is to be supplied with a minimum of 1000 litres of potable water per day. It is proposed to either construct a new bore to serve this subdivision or alternatively connect to the water supply installed as part of the Paradise Park Limited subdivision that is presently being constructed on the eastern side of Glenorchy – Paradise Road opposite this subdivision.

The bore for the Paradise Park subdivision has been installed and is located adjacent to the eastern boundary of Glenorchy – Paradise Road approximately 150 metres north of Precipice Creek bridge. This bore will serve 17 lots and has an Otago Regional Council water permit (Consent Number 2004.373 Copy attached). The water from this bore has been tested and found to comply with the Drinking Water Standard for New Zealand 2000. It should be noted that initially the water failed with respect to e-coli but a subsequent test passed the test. The ORC water permit allows for the abstraction of water at the rate of 2 litres per second or 60 cubic metres per day. This is sufficient to serve the 17 lots within the Paradise Park subdivision together with the two lots in this subdivision.

It is anticipated that if a new bore were to be constructed for this subdivision that the quantity and quality of the water would be similar to that for the bore constructed for the Paradise Park subdivision. The bore would need to be located so as to have no effect of existing bores.

4. EFFLUENT DISPOSAL

There is no Council or community sewage system in this vicinity to which the proposed lots can connect. The total size of the underlying Lot 2 DP 306479 is 53.99 hectares and each of the new lots will be over 10 hectares in area.

Lot 2 DP 306479 is generally flat and rises to the southeast where both of the proposed building platforms are to be located.

The land is in grass and is used for grazing. There are no existing dwellings located on the site.

The soil profile was observed by digging test pits within the site and by observations within the site. The profile generally consists of 200 to 300 mm of topsoil overlying silty sands to 600 mm depth overlying sands and / or gravels to an undetermined depth. Within the remains of an old gravel fan located in proposed Lot 1 gravels are present to the surface. It is assumed that the base of any wastewater disposal bed will be located in the layer of silty sands or gravels at depths of 500 mm and greater.

The rainfall at the site is over 1000 mm per year and the evaporation rate would be high in summer but relatively low in winter. The land may be subject to drought conditions in summer and the ground could be subject to some freezing in winter. The depth to the static water level was not measured but in view of the local geology we estimate that the depth to ground water will be several metres below ground level. It is noted that the proposed building platforms are located approximately 8 metres above the Rees River bed.

There are no water bores contained within the site and no existing bores are located within 100 metres of the proposed building platforms.

Precipice Creek is located partly within the site and the Rees River is located to the west of the site. Any effluent disposal system would need to be located so as to not have any adverse effects on either of these two rivers.

No other sensitive receivers were identified on or adjacent to the site.

No sign of instability was observed within the site in the vicinity of proposed wastewater disposal fields.

The silty sand, sand and gravel soils are suitable for soil soakage and have been assessed as Category 1 (Rapidly drained) soils in terms of Table 4.2A1 of AS/NZS 1547:2000). A design loading rate of 20 mm per day should be used to design the on site disposal system. Secondary treatment of effluent is recommended in view of the rapidly drained soils.

In order to protect the groundwater and provide for effective long term system performance, any proposed on site waste water treatment and disposal system should treat effluent to a high standard prior to discharge to land.

Effluent can be satisfactorily disposed of on proposed lots within this subdivision by way of conventional septic tank, an outlet filter and disposal bed.

Finished ground levels around the disposal field should be designed so that stormwater is directed away from the disposal bed.

A reserve area of equal size to the disposal bed should be identified within the site.

The final selection of the on site system has not been undertaken at this time as this could depend on the future owner's preference.

The final selection and design of the on site effluent disposal system should be undertaken by a suitably qualified engineer and should be in accordance with AS / NZS 1547:2000 On Site Domestic Wastewater Management.

5. LIQUIFACTION

The Council's hazard register identifies that there may be a potential for liquefaction hazard under earthquake conditions. It is recommended that a consent notice condition be registered on the certificates of title for proposed Lots 1 and 2 that identifies that the sites as potentially affected by liquefaction and that all building foundations are to be designed by a suitably qualified and experienced engineer.

6. FLOODING

The Council's hazards register identifies that proposed Lots 1 and 2 are subject to flooding from rainfall. The rainfall hazard zones identified on the hazard register are indicative of land which is likely to be affected by flooding. It is not the flood zone for a 100 year flood, or for a specific flood event such as November 1999.

Anecdotal evidence from long term local residents indicates that the proposed building platform sites proposed for Lots 1 and 2 in this subdivision were not inundated by the last two major flood events in 1994 and November 1999. The stockyards on the site near to the proposed building platform within Lot 1 were constructed in 1963. There is no local knowledge that these yards have ever been inundated by floodwaters. There is evidence on the site, especially within proposed Lot 1 that the land was subject to flooding in historical time. This is evidenced by surface gravels towards the south-western corner of the land. The likelihood of flooding occurring in the same location again is minimised by the construction of the Glenorchy - Paradise Road which will divert any water upstream of the road towards the north and on the eastern side of the road. A stopbank has been constructed as part of the Paradise Park subdivision that should contain any such future flood.

Because any possible future flood is likely to consist of sheet flow over a large area it is recommended that stopbanks and / or raised building platforms be constructed as part of this subdivision. Suitably designed and constructed raised building platforms with a minimum level of 0.5 metres above the natural ground should mitigate any potential flood hazard to the building sites within proposed Lots 1 and 2.

Sections 5 and 6 SUPERSEDED

7. CONCLUSION

The proposed building platforms within Lots 1 and 2 are able to be satisfactorily serviced with water. Effluent and stormwater are able to be satisfactorily disposed of within each lot. Potential liquefaction can be mitigated by specific design of building foundations at the time that a building consent is applied for. Any possible inundation of the building platforms can be mitigated by the construction of stopbanks parallel to Precipice Creek and / or by construction of raised platforms.



John P Hesselring
Surveyor



Your Ref:
Our Ref:

4 May 2016

Ms Annemarie Robertson
John Edmonds & Associates Ltd
PO Box 95
QUEENSTOWN 9300

By email: annemarie.robertson@jea.co.nz

Dear Annemarie

**ELECTRICITY SUPPLY FOR DWELLING, GLENORCHY-PARADISED ROAD
PROPOSED DWELLING ON LOT 2 DP 306479**

Thank you for your email and accompanying plans dated 1 May 2016, outlining the above proposed development.

Aurora can make an electricity supply available for this development, subject to the following conditions:

- Supply confirmation is limited to a single phase 15kVA supply.
- Easements in gross, in favour of Aurora, must be granted over the placement of all new and existing Aurora plant associated with this development, unless installed in road reserve.
- Where the development involves further subdivision of a land parcel containing an existing serviced installation, the mains cables (overhead or underground) intended to supply each lot must be completely contained within the lot that it serves. In some cases this will require relocation of the cable serving the existing installation.
- All electrical installations must comply with Aurora's Network Connection Requirements and related standards & policies.
- The developer must comply with the Electricity Act, subordinate Regulations and associated Codes of Practice. Particular attention must be paid to the minimum distances between power lines and other structures defined in NZECP34:2011 "NZ Electrical Code of Practice for Electrical Safe Distances".
- No building shall be erected over any electricity easement without specific written authority from Delta's General Manager – Asset Management
- The developer is responsible for all resource consents and local authority approvals.
- The developer will be required to make capital contributions toward the costs of providing the power supply, in accordance with Aurora's Capital Contributions policy prevailing at the time the development, or each stage of development, proceeds.
- This approval will lapse within 12 months of the date of this letter, unless the developer enters into a formal supply agreement with Aurora for this development.

Aurora Energy Limited
10 Halsey Street • Dunedin • New Zealand
Email enquiries @auroraenergy.co.nz
Postal PO Box 1404
Phone 03-474-0322
Fax 03-477-5771



Please note that this letter is to confirm that a power supply can be made available and does not imply that a power supply is available now, or that Aurora will make power available at their cost.

Aurora's Network Connection Requirements and Capital Contributions policy are available from <http://www.auroraenergy.co.nz/>. Should you require further information or clarification please contact the undersigned.

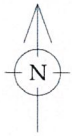
Yours sincerely



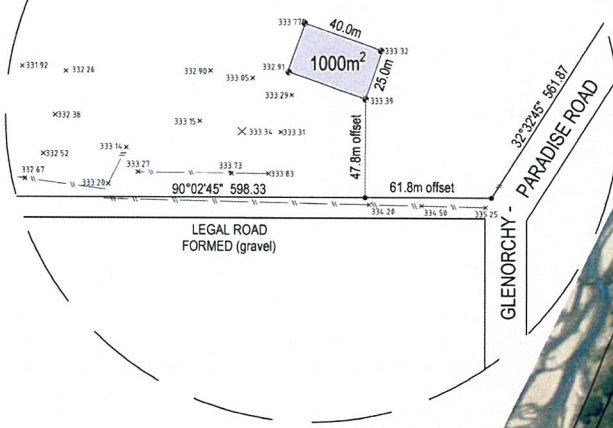
Alec Findlater
Commercial Manager (Delta)
For Aurora Energy Limited

DDI Phone	(03) 479 6695
Mobile	(027) 222 2169
Fax	(03) 477 5771
Email	alec.findlater@thinkdelta.co.nz





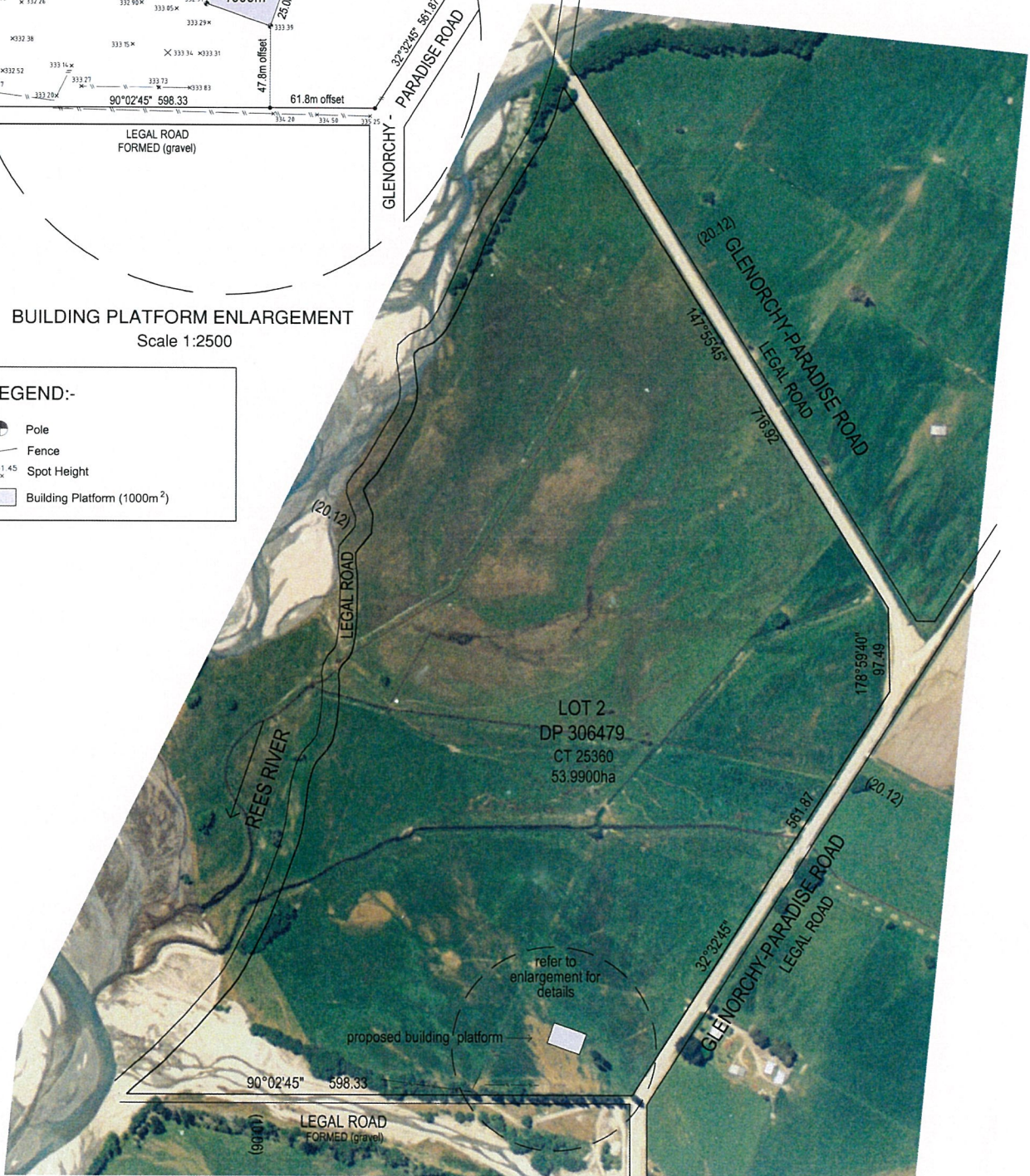
LOT 2
DP 306479
CT 25360
53.9900ha



BUILDING PLATFORM ENLARGEMENT
Scale 1:2500

LEGEND:-

- Pole
- Fence
- Spot Height
- Building Platform (1000m²)



NOTES:
- Areas and dimensions subject to final survey.

If this plan is used as the basis for any sale and purchase agreement, then it is done so on the basis that the areas and dimensions are preliminary, and may vary upon completion of the final survey.

REV.	DATE:	REVISION DETAILS:	BY:
B	28.04.16	Update platform position	RVB
A	16.11.06	Initial Issue	BAM

WARNING NOTE:
This resource consent plan has been prepared for Bayswater Trust from field survey and existing records for the purpose of a proposed subdivision on the land. It is to be read in conjunction with our terms of engagement. It should not be used by the client company for any other purpose. The plan is not to be relied on by any other person for any purpose whatsoever.

TITLE:
PROPOSED BUILDING PLATFORM PLAN
LOT 2 DP306479, GLENORCHY-PARADISE ROAD
for BAYSWATER TRUST

DATE: 28 April 2016 Scale 1:5000 DRAWING & ISSUE No. 2260.3R.1B
BY: R Baker Original Plan A3

AURUM SURVEY

PO Box 2493
Wakatipu 9349
Ph 03 442 3466
Fax 03 442 3469
Email admin@ascl.co.nz



Liquefaction Assessment Report

Lot 2 DP 306479,
Glenorchy-Paradise Road

Report prepared for:
Bayswater Trust

Report prepared by:
GeoSolve Ltd

Distribution:
Bayswater Trust
GeoSolve Limited (File)

June 2016
GeoSolve Ref: 160246



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1 Introduction

1.1 General

This report presents the results of a geotechnical investigation undertaken by GeoSolve Ltd for Lot 2 DP 306479 located on the Glenorchy-Paradise Road, Glenorchy.



Photograph 1 – Showing the proposed building platform.

This report was commissioned by Bayswater Trust and has been completed in accordance with GeoSolve Ltd's proposal dated 15 April 2016.

The purpose of this geotechnical investigation and report is to assess the liquefaction susceptibility of the site and to supplement a consent application for the establishment of a single building platform.

1.2 Development

We understand that it is proposed to establish a single residential building platform on the site. Preliminary plans showing the extents of the proposed building platform have been provided by Aurum Survey Consultants Ltd and indicate a building platform area of approximately 20x40m (1000m²). No indication of the dwellings construction type has been provided, however, it is likely to comprise a light weight timber dwelling.

We understand that a separate report which assesses the flooding and alluvial fan hazard to the proposed development has been completed by Hadley Consultants Ltd dated 4 February 2016. In summary, the report recommends that the building platform be raised a minimum of 0.5m above the surrounding ground level to raise it above any sheet flows which may occur across the surrounding paddock in the event of flooding from Precipice Creek.

2 Site Description

2.1 General

The site is situated on farmland to the north of the Glenorchy Township on Glenorchy-Paradise Road. The location of the site is shown on Figure 1 below.

The site is vacant of any structures and we understand that it has only been used within recent history by the farm for agricultural purposes such as stock grazing. Photograph 1, shows the building platform and surrounding landform.

The Rees River is located approximately 550 m to the west and is at an elevation approximately 20 m lower than the site. Additionally, Precipice Creek, is located approximately 180 m to the south.

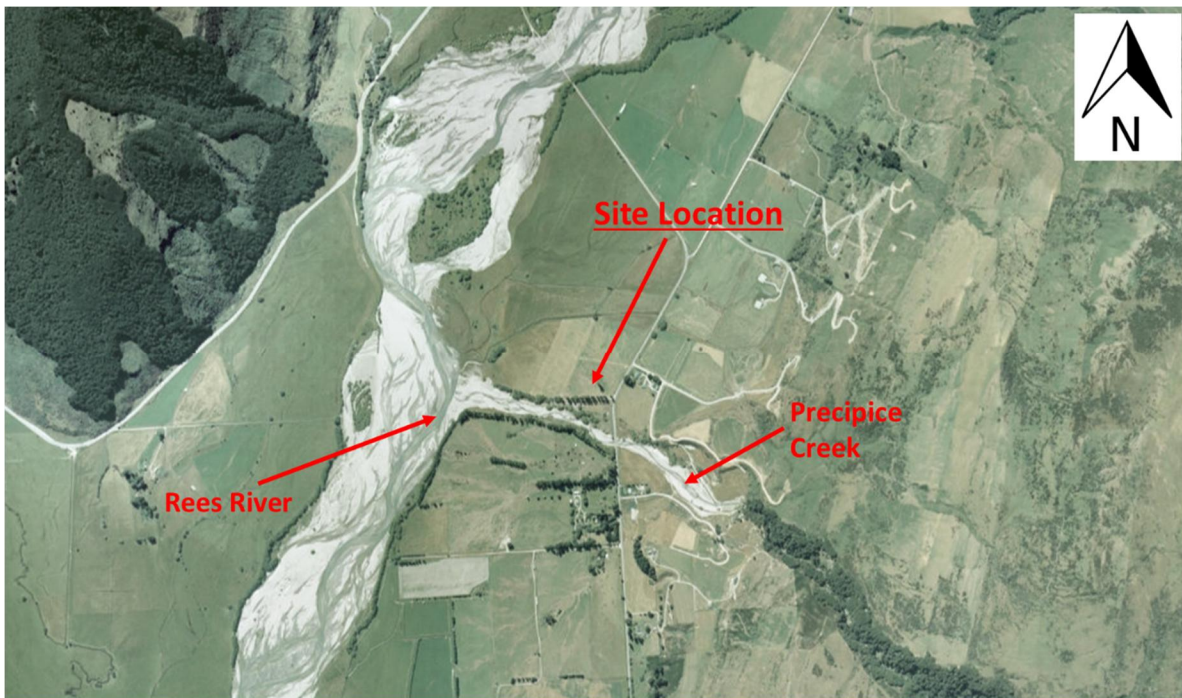


Figure 1. Site location (Source: <http://maps.qldc.govt.nz/qldcviewer/>).

2.2 Topography and Surface Drainage

The site is located on an area of land which forms part of the Precipice Creek alluvial fan at the base of the Richardson Mountains which are situated approximately 400m to the east.

The ground surface within the proposed building platform and across the wider area gently falls at angles of $<5^\circ$ westwards towards the Rees River.

The site is considered to be free draining with no significant man-made drainage features within the immediate area of the proposed building platform. However, it should be noted that an east-west orientated drainage channel is situated 250m to the north of the building platform.

3 Geotechnical Investigations

The following geotechnical site investigations have been completed for the purpose of this report:

- 4 test pit excavations (TP1-4) to a maximum depth of 4.2 m below ground level (bgl) to prepare detailed geological logs of the soil stratigraphy;

- 4 Heavy-Duty Dynamic Cone Penetrometer tests (HDCP1-4) to a maximum depth of 15 m bgl to assess the relative density of the sub-soils;
- Installation of 2 standpipe piezometers within HDCP test holes 1 and 4 to monitor groundwater levels across the site;
- Review of available Otago Regional Council (ORC) well and borehole data.

Test pit and HDCP locations and logs are contained in Appendices A and B respectively.

3.1 Subsurface Conditions

3.2 Geological Setting

The site is located in the Wakatipu basin, a feature formed predominantly by glacial advances. Published references indicate the last glacial event occurred in the region between 10,000 and 20,000 years ago. Glaciations have left deposits of glacial till, glacial outwash and lake sediment overlying ice scoured schist bedrock. Recent alluvial fan deposits are present in low lying areas of the basin, particularly around the lake shore and Rees River valley. The subject property is located on one of these recent alluvial fans formed by deposition from the nearby Precipice Creek.

Active fault traces were not observed at the site or in the immediate vicinity. However, significant seismic risk exists in this region from potentially strong ground shaking, likely to be associated with a rupture of the Alpine Fault, located along the West Coast of the South Island. There is a high probability that an earthquake with an expected magnitude of over 7.5 will occur along the Alpine Fault within the next 50 years.

3.3 Stratigraphy

The soil stratigraphy generally comprises topsoil overlying fan alluvium with a veneer of floodplain deposits overlying these soils over the northern extents of the building platform as identified in TP1 and TP2.

The Floodplain deposits extend to a depth of 0.4 to 0.5m across the northern half of the building platform and generally comprise a grey, very loose to loose, silty SAND to gravelly SAND.

The Topsoil is up to 0.2m thick and comprises a dark brown, soft, organic SILT. This unit was buried beneath the floodplain deposits in across the northern half of the building platform (TP1 and TP2).

Fan alluvium was observed in all test pits to underlie the topsoil and buried topsoil and extended to the termination depth of the test pits at a maximum depth of 4.2 m bgl. The fan alluvium generally comprises brown/grey, interbedded sequences of sandy GRAVEL with trace to some cobbles, sandy GRAVEL, gravelly SAND, silty SAND, sandy SILT and SILT. The strength of the fan alluvium varies from very loose to medium dense and soft to very stiff depending upon the soil type.

Materials at depth, beneath the excavation level of the test pits, have not been directly observed, however, HDCP results indicate interbedded layers of silt, sand and gravel to the termination depth of the HDCP. A bore log contained on the Otago Regional Council (ORC) database for a water well (Well - E40/0102) located approximately 160 m to the south east on the eastern side of Glenorchy-Paradise Road indicates a mixture of silty sand and sandy gravel materials to a depth of 22 m bgl. It is expected that the depth to rock in this region is many 10's of metres in depth.

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

3.4 Groundwater

No groundwater inflow or seepages were observed in any of the test pit excavations.

Water level readings taken from standpipe piezometers installed within HDCP test holes 1 and 4 indicate the groundwater table lies at a depth of 4.8 and 5.3 m respectively. The groundwater level is expected to fluctuate following periods of prolonged rainfall as the groundwater level within the alluvial fan is recharged from the catchment.

4 Liquefaction Analysis

4.1 Design Earthquakes

In accordance with NZS1170 – Structural Design Actions¹, the following two earthquake scenarios were considered based on a building with Importance Level 2 and a 50 year design life.

These scenarios represent the following design performance requirements:

- Serviceability Limit State (SLS) – to avoid damage that would prevent the structure from being used as originally intended without repair, and,
- Ultimate Limit State (ULS) – to avoid collapse of the structural system.

In terms of NZS 1170, Class D sub-soil conditions (Deep Soils) are considered to underlie the site.

The methods presented within the NZTA Bridge Manual (2014)² have been adopted for deriving the site peak ground accelerations (PGA) as they use unweighted seismic hazard factors and corresponding (effective) earthquake magnitudes that are better suited used in the assessment of liquefaction.

Table 1 below provides a summary of the annual exceedance probability, effective magnitude and PGA adopted for each seismic case analysed in the liquefaction assessment.

Table 1 – Annual exceedance probability, effective earthquake magnitude and peak horizontal ground accelerations for each seismic case.

Seismic Case	Annual Exceedance Probability (AEP)	Effective Magnitude	Peak Horizontal Ground Acceleration (g)
Serviceability Limit State (SLS) design earthquake	1/25	6.0	0.10
Ultimate Limit State (ULS) design earthquake	1/500	6.4	0.40

4.2 Liquefaction Summary

A liquefaction assessment has been carried out so that geotechnical recommendations can be made for foundation design.

The results of the liquefaction analyses indicate the following:

- No liquefaction under SLS seismic loading;
- Significant liquefaction of interbedded layers below groundwater level under ULS seismic loading;

¹NZS1170-5 (2004) Structural Design Actions, Part 5: Earthquake Actions – New Zealand.

² NZTA Bridge Manual, Third Addition, Amendment 2, Effective from May 2016 (Manual Number SP/M/022).

A summary of the factors considered to assess the consequences of the predicted liquefaction is presented in Table 2 below.

Table 2 – Summary of factors considered to assess the consequences of the predicted liquefaction

Crust thickness	The minimum crust thicknesses (CT) at the site is governed by the water table depth which varies from 4.8-5.3m bgl. This indicates there is a low to moderate risk that disruption of the surface of the site (e.g. sand boil formation) will occur following a ULS seismic event.
LSN	Under ULS loading LSN is 26-33. This indicates moderate expression of liquefaction with sand boils and some structural damage, to moderate to severe expression of liquefaction, with settlements possibly causing structural damage.
Free field settlements	Under ULS loading, we estimate that approximately 200-260mm of free-field settlements will occur.
Lateral Spreading	Under ULS loading it is unlikely that lateral spreading will occur owing to the distance to Precipice Creek and the lack of a free face at the site.

A detailed discussion of the process of liquefaction and the various considerations summarised in Table 2 above can be found in Appendix C. Additionally, Appendix B also contains the full liquefaction analysis results from the HDCP tests.

5 Engineering Considerations

5.1 General

The recommendations and opinions contained in this report are based upon ground investigation data obtained at discrete locations and historical information held on the GeoSolve database. The nature and continuity of subsoil conditions away from the investigation locations is inferred and cannot be guaranteed.

5.2 Site Preparation

The presence of all floodplain deposits, topsoil, buried topsoil layers and any other unsuitables should be removed from the beneath the building platform in accordance with the recommendations of NZS 4431:1989.

All fill that is utilised beneath the building platform and foundations should be placed and compacted in accordance with the recommendations of NZS 4431:1989 and certification provided to that effect.

We understand that there are nearby river-run gravels that could be used as engineered fill on site. Boulders and cobbles over 75 mm in size will need to be screened from the engineered fill source. Further details in regards to the fill certification process can be provided on request and/or closer to the time of construction.

5.3 Foundations

The foundations of any building to be constructed at the site will need to consider the effects of liquefaction as discussed in section 4 of this report.

In consideration of the sites susceptibility to liquefaction, the two most cost effective foundation options for the site are considered to be either:

- a) The design and construction of a TC2 rib-raft foundation which is capable of spanning over a 4m soft spot and cantilevering over a 2m edge under ULS conditions, or alternatively;
- b) The construction of a dense geogrid reinforced gravel raft beneath the structure so that standard shallow footings or a standard rib-raft can be adopted. The gravel raft should be a minimum of 0.8m thick and should incorporate two layers of geogrid, one at the base of the excavation, and one at +200mm from the base. The gravel raft should extend outside the building area by a minimum of 1m.

As the site must be raised a minimum of 0.5m above the current ground level owing to flooding risk, and on the north side of the building up to approximately 0.7m of unsuitable soils must be excavated from beneath the building platform, it would most likely be more economical to undertake foundation option b.

We understand that rib-raft foundations have a minimum ultimate geotechnical bearing capacity requirement of 200kPa. The required certified gravel fill which will be placed beneath the building is expected to provide a minimum ultimate geotechnical bearing capacities of 300kPa.

5.4 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.

The site is Class D (Deep soil site) in accordance with NZS 1170.5:2004 seismic provisions.

6 Neighbouring Structures/Hazards

Earthquake: The design of any dwelling on the site should consider the effects of seismicity in accordance with NZS1170.5:2004 seismic provisions and/or NZS3604:2011, and in addition any requirements or recommendations discussed in this report.

Flooding and Alluvial Fan: The flooding and alluvial fan hazard has been addressed by separate reporting completed by Hadley Consultants Ltd dated 4 February 2016.

Distances to adjoining structures (Noise and Vibration): The site is situated on a rural block with no nearby neighbouring buildings. No adverse geotechnical implications apply for neighbouring properties during construction of the dwelling.

Aquifers: No aquifer resource will be adversely affected by the development.

Erosion and Sediment Control: The site presents very low risk to generate silt runoff and this would naturally drain downslope.

Effective systems for erosion control are runoff diversion drains and contour drains, while for sediment control, options are earth bunds, silt fences, hay bales, vegetation buffer strips and sediment ponds. Only the least amount of subsoil should be exposed at any stage and surfacing established as soon as practical.

Details for implementation are given in Appendix B within the following link

<http://ecan.govt.nz/publications/General/FullErosionandSedimentControlGuideline.pdf>

Dust: Regular dampening of soil materials with sprinklers should be effective if required.

7 Conclusions

General

- The purpose of this report is to assess the liquefaction susceptibility of the site and to supplement a consent application for the establishment of a single residential building platform.

Stratigraphy

- The subsurface materials observed during site investigations typically comprised surficial topsoil, floodplain deposits and buried topsoil overlying alluvial Fan deposits.

Groundwater

- Based on groundwater level readings taken from the two standpipe piezometers installed within HDCP1 and HPCP4 the water table lies at a depth of between 4.8 and 5.3 m bgl.

Liquefaction

- No liquefaction under SLS seismic loading;
- Significant liquefaction of interbedded layers below groundwater level under ULS seismic loading;
- Further details can be found in section 5.2.

Foundations

- The foundations of the any dwelling constructed at the site will need to consider the effects of liquefaction, as discussed in section 4 of this report. In consideration of these effects, the two most cost effective foundation options for the site are considered to be either:
 - The design and construction of a TC2 rib-raft foundation which is capable of spanning over a 4m soft spot and cantilevering over a 2m edge under ULS conditions, or alternatively;
 - The construction of a dense geogrid reinforced gravel raft beneath the structure so that standard shallow footings or a standard rib-raft can be adopted. The gravel raft should be a minimum of 0.8m thick and should incorporate two layers of geogrid, one at the base of the excavation, and one at +200mm from the base. The gravel raft should extend outside the building area by a minimum of 1m.
- Further details can be found in section 5.2 and 5.3.

Site Subsoil Category

- The site is Class D (Deep soil site) in accordance with NZS 1170.5:2004 seismic provisions.

Neighbouring Structures/Hazards

- Earthquake: The design of any dwelling on the site should consider the effects of seismicity in accordance with NZS1170.5:2004 seismic provisions and/or NZS3604:2011, and in addition, any requirements or recommendations discussed in this report.
- Flooding/Alluvial Fan Hazard: The flooding and alluvial fan hazard has been addressed by separate reporting completed by Hadley Consultants Ltd dated 4 February 2016.
- No other significant hazards have been identified, however, further details are provide in section 6.

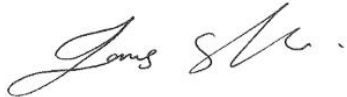
8 Applicability

This report has been prepared for the benefit of Bayswater Trust with respect to the particular brief given to us and it may not be relied upon in other contexts or for any other purpose without our prior review and agreement.

It is important that we be contacted if there is any variation in subsoil conditions from those described in this report.

Report prepared by:

Reviewed for GeoSolve Ltd by:



.....

.....

James Stewart

Paul Faulkner

Geologist

Senior Engineering Geologist

Authorised for Issue by:





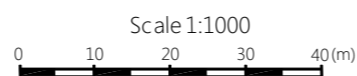
Colin Macdiarmid

Senior Geotechnical Engineer

Appendix A: Site Plan



- Key
-  = Test Pit
 -  = Heavy Dynamic Cone Penetrometer Test (HDCP)



DRAWN	GXS	04/16
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APPROVED		
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PDF		
SCALE: (AT A3 SIZE)		
1:1000		
PROJECT No.		
160246		

BAYSWATER TRUST
 Geotechnical Assessment
 Lot 2 DP3063479, Glenorchy- Paradise Road
 Site Investigation Plan

FIG No. Appendix A - Figure 1

REV. 0

Appendix B: Investigation Data-Test Pit Logs



GeoSolve Ltd EXCAVATION LOG

EXCAVATION NUMBER:
TP 1

PROJECT: Lot 2 DP3063479 Glenorchy-Paradise Rd		Job Number: 160246	
LOCATION: See Site Plan		Inclination: Vertical	Direction:
EASTING: mE	EQUIPMENT: 6T excavator	OPERATOR: Ritchie	
NORTHING: mN	INFOMAP NO.	COMPANY: Reid Contracting	
ELEVATION: m	DIMENSIONS:	HOLE STARTED: 20-Apr-16	
METHOD:	EXCAV. DATUM:	HOLE FINISHED: 20-Apr-16	

	SCALA PENETRATION	GROUNDWATER / SEEPAGE	DEPTH (m)	GRAPHIC LOG	SOIL / ROCK CLASSIFICATION, PLASTICITY OR PARTICLE SIZE CHARACTERISTICS, COLOUR, WEATHERING, SECONDARY AND MINOR COMPONENTS	WATER CONTENT	GEOLOGICAL
			0.4		Grey, silty SAND. Sand is fine. Uniformly graded. Very loose to loose. Massive.	Moist	FLOODPLAIN DEPOSIT
			0.6		Brown, organic SILT with a trace of gravel and rootlets. Gravel is fine. Soft to firm. Massive.	Moist	BURIED TOPSOIL
	NO SEEPAGE		4.0		Brown grey, sandy GRAVEL with some cobbles. Sand is fine to coarse. Gravel is fine to coarse, subrounded. Well graded. Very loose to loose. Rarely medium dense. Bedded.	Moist	FAN ALLUVIUM

Total Depth = 4 m

COMMENT: Test pit walls stood well during excavation - no slumping.	Logged By: JAS
	Checked Date:
	Sheet: 1 of 1



GeoSolve Ltd EXCAVATION LOG

EXCAVATION NUMBER:
TP 2

PROJECT: Lot 2 DP3063479 Glenorchy-Paradise Rd		Job Number: 160246	
LOCATION: See Site Plan		Inclination: Vertical	Direction:
EASTING: mE	EQUIPMENT: 6T excavator	OPERATOR: Ritchie	
NORTHING: mN	INFOMAP NO.	COMPANY: Reid Contracting	
ELEVATION: m	DIMENSIONS:	HOLE STARTED: 20-Apr-16	
METHOD:	EXCAV. DATUM:	HOLE FINISHED: 20-Apr-16	

SCALA PENETRATION	GROUNDWATER / SEEPAGE	DEPTH (m)	GRAPHIC LOG	SOIL / ROCK CLASSIFICATION, PLASTICITY OR PARTICLE SIZE CHARACTERISTICS, COLOUR, WEATHERING, SECONDARY AND MINOR COMPONENTS	WATER CONTENT	GEOLOGICAL
		0.5		Grey, silty SAND and gravelly SAND. Sand is fine to coarse. Gravel is fine to medium. Poorly graded. Very loose to loose. Bedded.	Moist	FLOODPLAIN DEPOSIT
		0.7		Brown, organic SILT with a trace of gravel and rootlets. Gravel is fine. Soft.	Moist	BURIED TOPSOIL
	NO SEEPAGE	4.0		Brown grey, sandy GRAVEL with a trace of cobbles. Sand is fine to coarse. Gravel is fine to coarse, subrounded. Well graded. Loose. Medium dense from 1.1m. Bedded.	Moist	FAN ALLUVIUM

Total Depth = 4 m

COMMENT: Some slumping of test pit walls below 0.7m.	Logged By: JAS
	Checked Date:
	Sheet: 1 of 1



GeoSolve Ltd EXCAVATION LOG

EXCAVATION NUMBER:
TP 3

PROJECT: Lot 2 DP3063479 Glenorchy-Paradise Rd		Job Number: 160246	
LOCATION: See Site Plan		Inclination: Vertical	Direction:
EASTING: mE	EQUIPMENT: 6T excavator	OPERATOR: Ritchie	
NORTHING: mN	INFOMAP NO.	COMPANY: Reid Contracting	
ELEVATION: m	DIMENSIONS:	HOLE STARTED: 20-Apr-16	
METHOD:	EXCAV. DATUM:	HOLE FINISHED: 20-Apr-16	

	SCALA PENETRATION	GROUNDWATER / SEEPAGE	DEPTH (m)	GRAPHIC LOG	SOIL / ROCK CLASSIFICATION, PLASTICITY OR PARTICLE SIZE CHARACTERISTICS, COLOUR, WEATHERING, SECONDARY AND MINOR COMPONENTS	WATER CONTENT	GEOLOGICAL
			0.1		Dark brown, organic SILT with some gravel and rootlets. Gravel is fine to coarse. Soft.	Moist	TOPSOIL
			1.1		Grey, sandy GRAVEL. Sand is fine to coarse. Gravel is fine to coarse, subrounded. Well graded. Loose to medium dense. Very loose from 1.0m. Bedded.	Moist	FAN ALLUVIUM
			1.4		Brown grey, sandy SILT with a trace of roots. Sand is fine. Non-plastic. Weakly dilatant. Uniformly graded. Soft to firm. Massive.	Moist	FAN ALLUVIUM
			2.9		Grey, sandy GRAVEL. Sand is fine to coarse. Gravel is fine to coarse, subrounded. Well graded. Loose to medium dense. Bedded.	Moist	FAN ALLUVIUM
			3.8		Grey, sandy SILT and SILT. Sand is fine. Non-plastic. Weakly dilatant. Uniformly graded. Soft to firm. Massive.	Moist	FAN ALLUVIUM

Total Depth = 3.8 m

COMMENT: Test pit walls stood well during excavation - no slumping.	Logged By: JAS
	Checked Date:
	Sheet: 1 of 1



GeoSolve Ltd EXCAVATION LOG

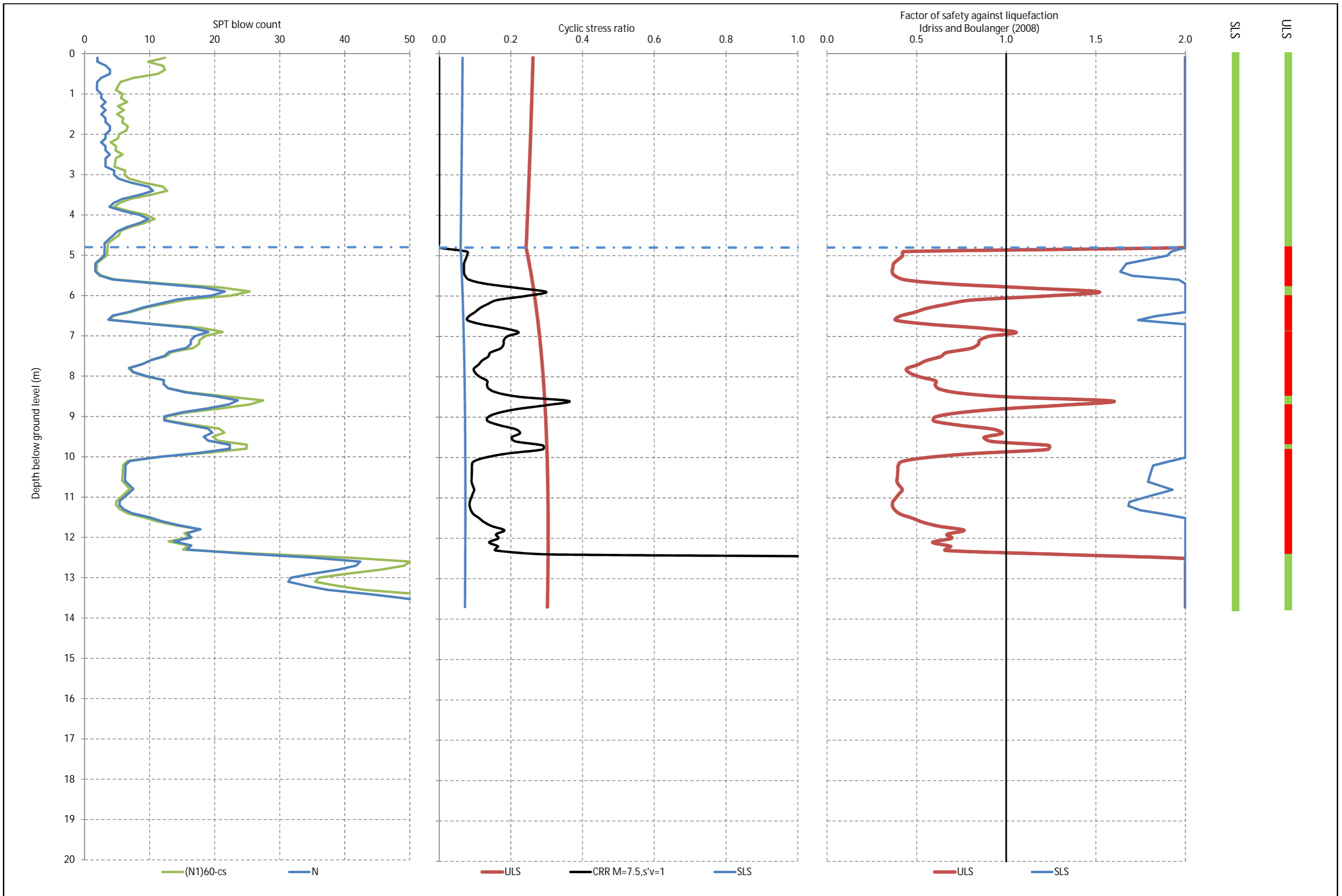
EXCAVATION NUMBER:
TP 4

PROJECT: Lot 2 DP3063479 Glenorchy-Paradise Rd		Job Number: 160246	
LOCATION: See Site Plan		Inclination: Vertical	Direction:
EASTING: mE	EQUIPMENT: 6T excavator	OPERATOR: Ritchie	
NORTHING: mN	INFOMAP NO.	COMPANY: Reid Contracting	
ELEVATION: m	DIMENSIONS:	HOLE STARTED: 20-Apr-16	
METHOD:	EXCAV. DATUM:	HOLE FINISHED: 20-Apr-16	

	SCALA PENETRATION	GROUNDWATER / SEEPAGE	DEPTH (m)	GRAPHIC LOG	SOIL / ROCK CLASSIFICATION, PLASTICITY OR PARTICLE SIZE CHARACTERISTICS, COLOUR, WEATHERING, SECONDARY AND MINOR COMPONENTS	WATER CONTENT	GEOLOGICAL
			0.2		Dark brown, organic SILT with minor gravel and rootlets. Gravel is fine to coarse. Firm to stiff.	Moist	TOPSOIL
			1.1		Grey, sandy GRAVEL with a trace of tree roots. Sand is fine to coarse. Gravel is fine to coarse, subrounded. Well graded. Loose to medium dense. Bedded.	Moist	FAN ALLUVIUM
			2.2		Brown grey, sandy SILT with minor gravel and silty SAND. Sand is fine. Gravel is fine to medium. Poorly graded. Silt: Soft to firm. Stiff to very stiff from 1.9m. Sand: Very loose to loose. Medium dense from 1.9m. Massive.	Moist	FAN ALLUVIUM
			2.6		Grey, gravelly SAND. Sand is fine to coarse. Gravel is fine to coarse. Poorly graded. Medium dense. Bedded.	Moist	FAN ALLUVIUM
			4.2		Grey, interbedded silty SAND, sandy SILT and gravelly SAND. Sand is fine. Gravel is fine to coarse. Poorly graded. Silt: Stiff to very stiff. Sand: Loose to medium dense. Bedded.	Moist	FAN ALLUVIUM

Total Depth = 4.2 m

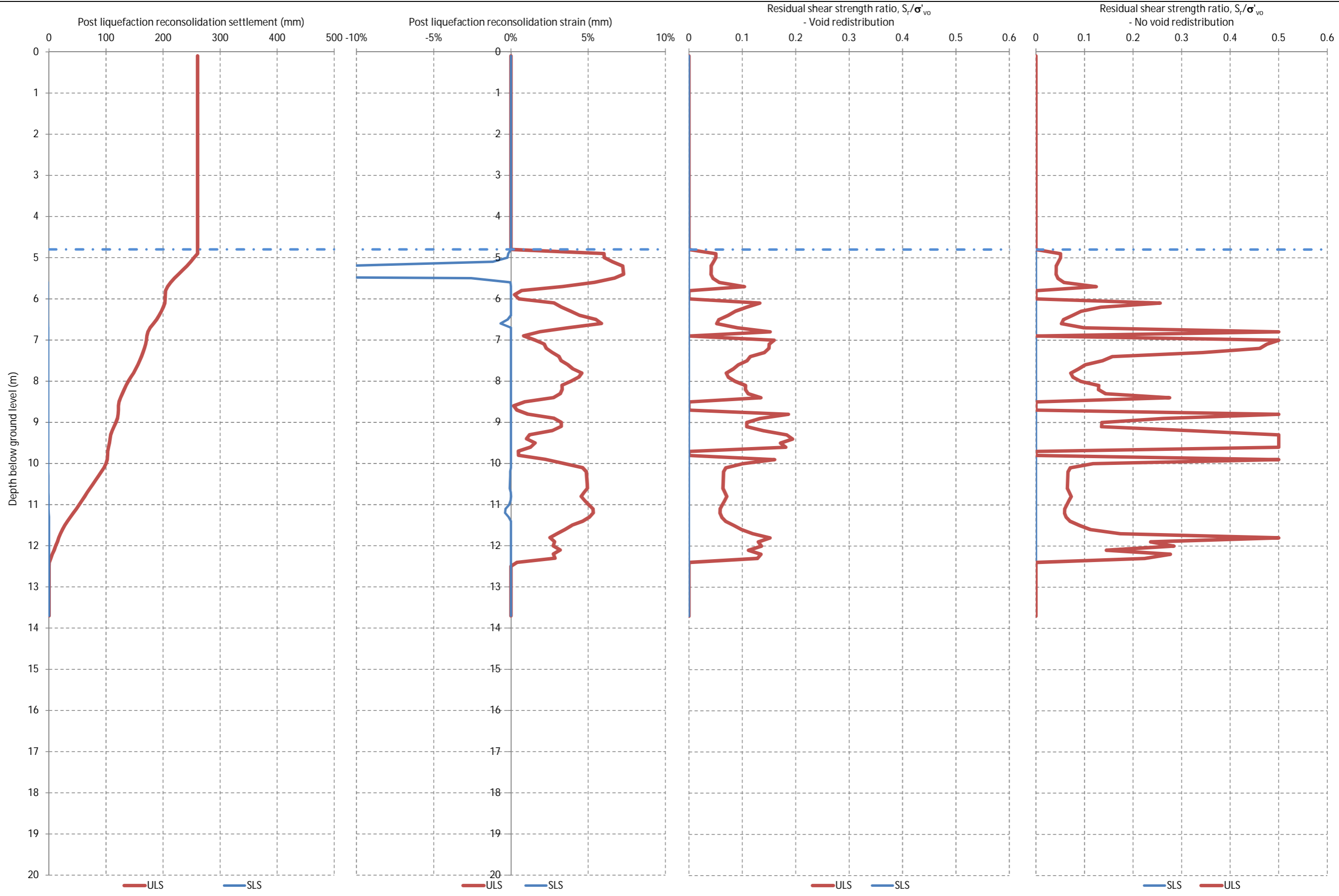
COMMENT: Test pit walls stood well during excavation - no slumping.	Logged By: JAS
	Checked Date:
	Sheet: 1 of 1



CLIENT Bayswater Trust
 PROJECT Glenorchy Paradise Road
 DESCRIPTION Liquefaction assessment from HDCP results

LOCATION HDCP1
 JOB NUMBER 160246

DATE 26/04/2016
 LOGGED BY J A Stewart
 ANALYSED BY J A Stewart
 CHECKED BY BPM



CLIENT
PROJECT
DESCRIPTION

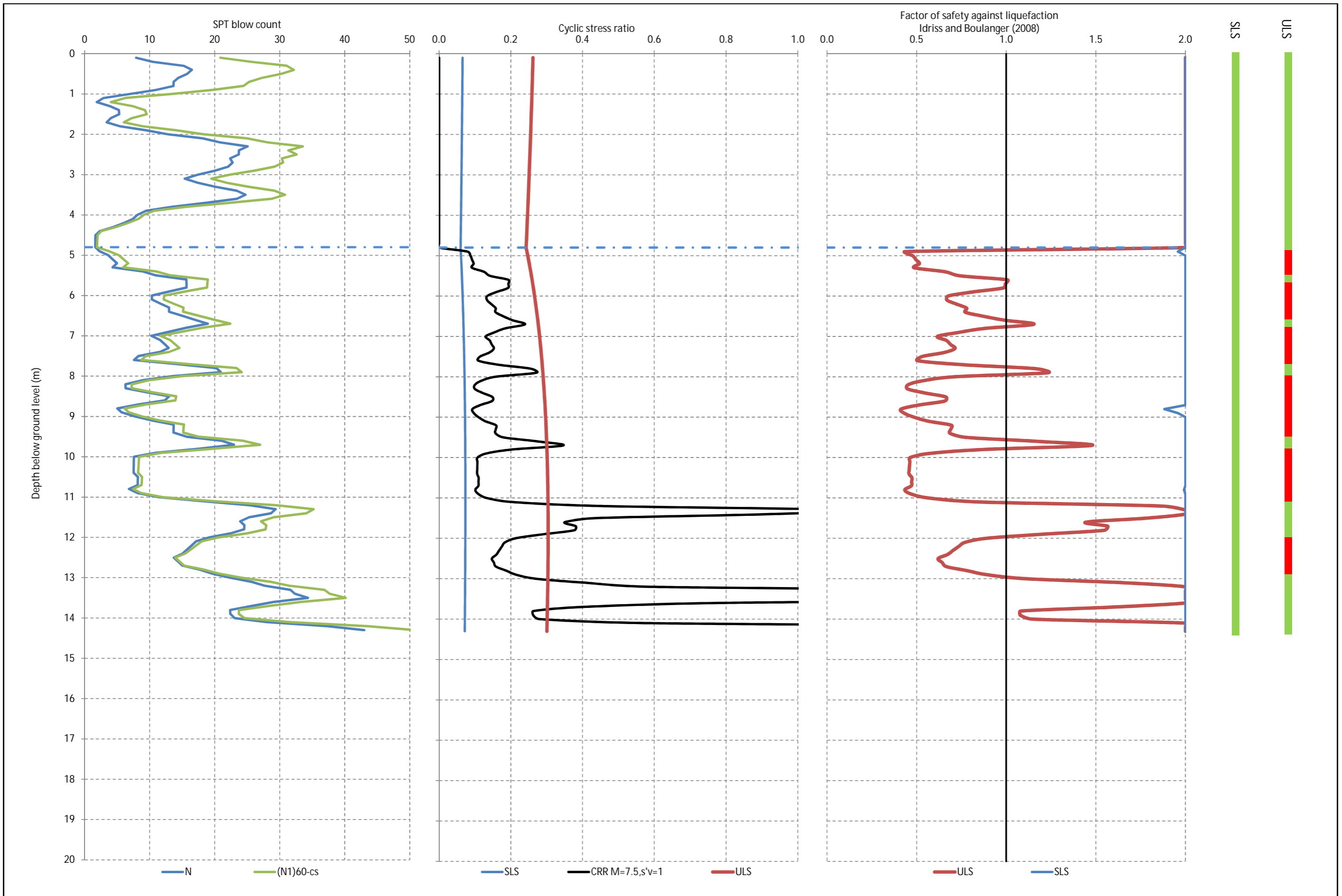
Bayswater Trust
Glenorchy Paradise Road
Liquefaction assessment from HDCP results

LOCATION
JOB NUMBER

HDCP1
160246

DATE
LOGGED BY
ANALYSED BY
CHECKED BY

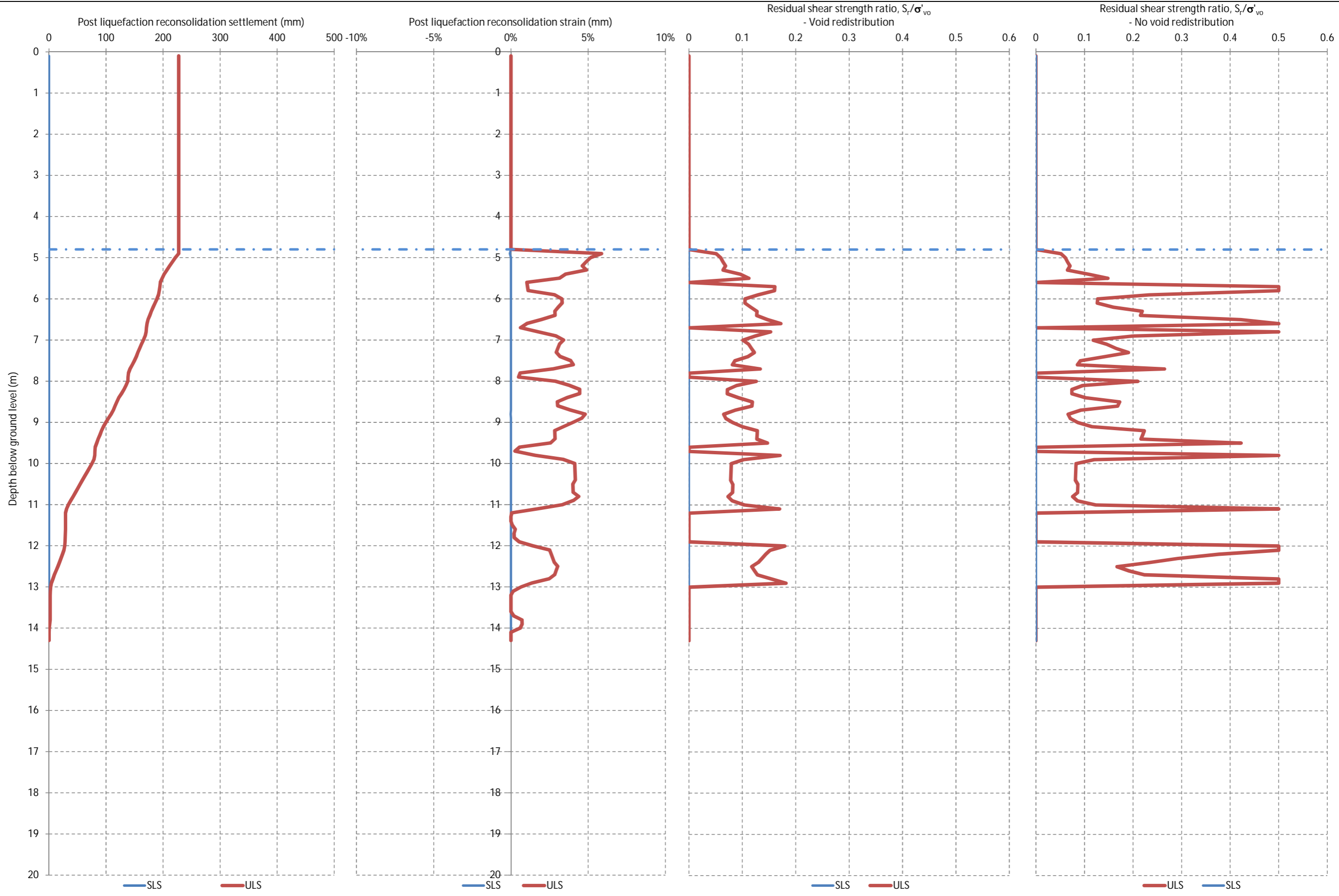
26/04/2016
J A Stewart
J A Stewart
BPM



CLIENT Bayswater Trust
 PROJECT Glenorchy Paradise Road
 DESCRIPTION Liquefaction assessment from HDCP results

LOCATION HDCP2
 JOB NUMBER 160246

DATE 26/04/2016
 LOGGED BY J A Stewart
 ANALYSED BY J A Stewart
 CHECKED BY BPM

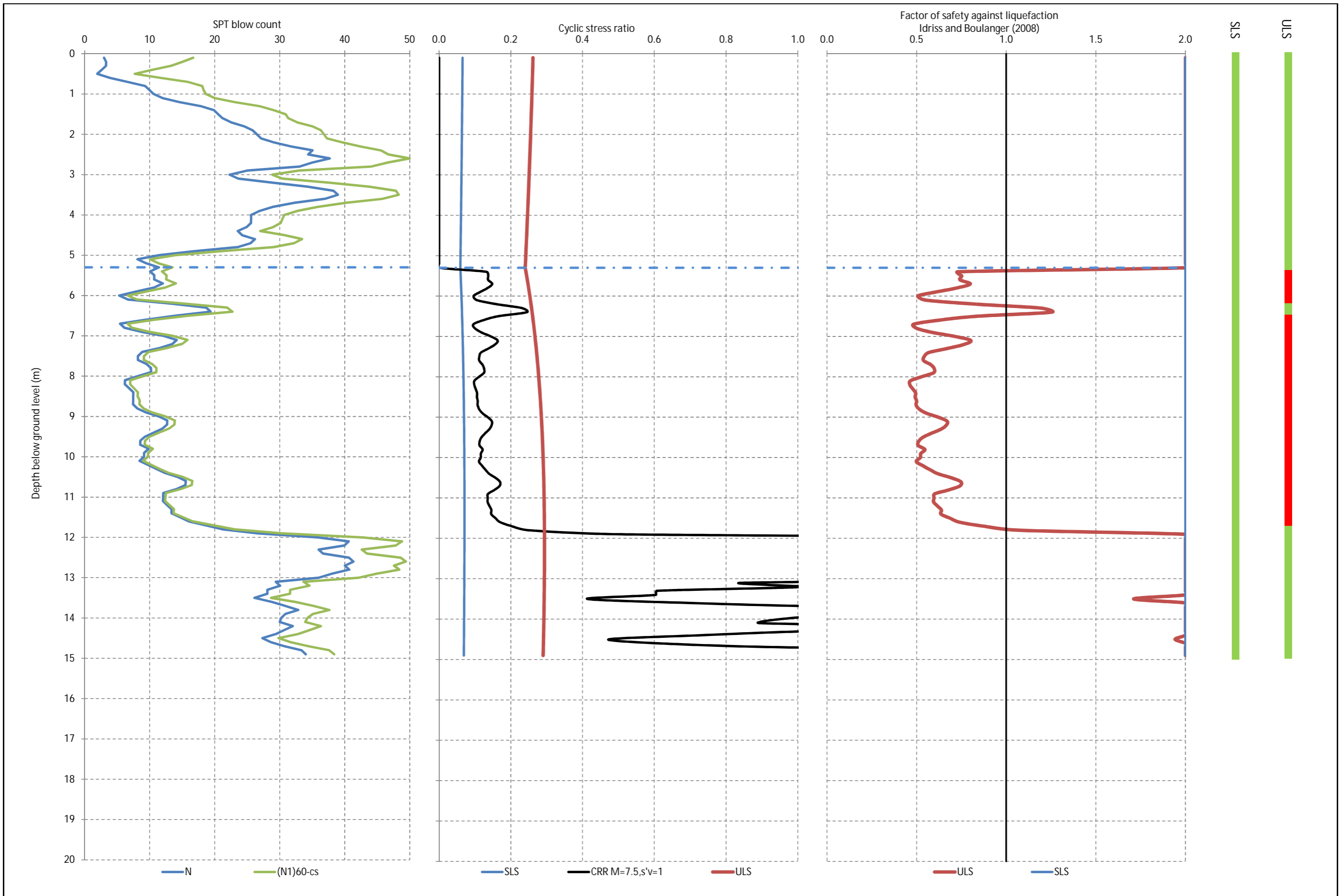


CLIENT
PROJECT
DESCRIPTION

Bayswater Trust
Glenorchy Paradise Road
Liquefaction assessment from HDCP results

LOCATION
JOB NUMBER
HDCP2
160246

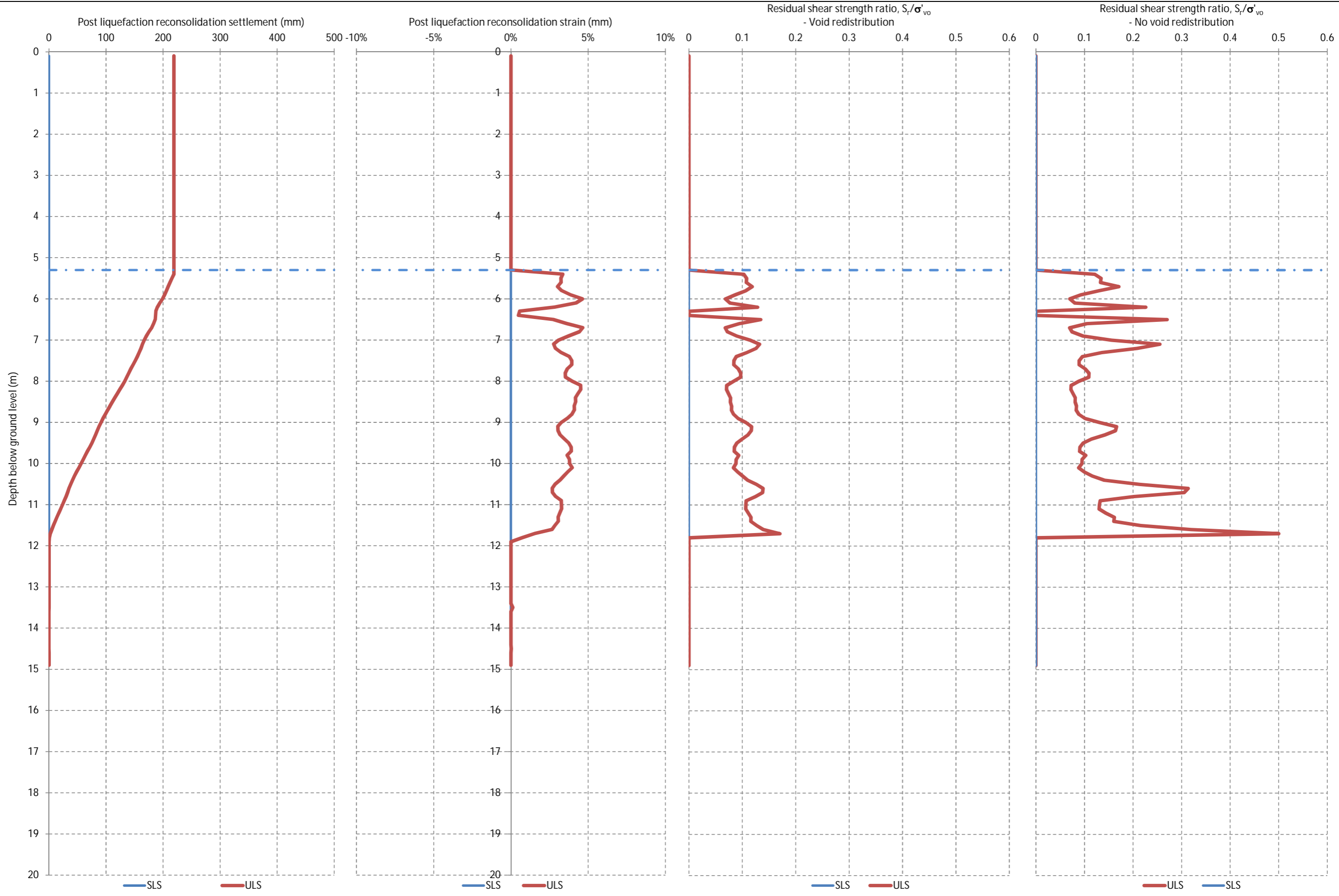
DATE
LOGGED BY
ANALYSED BY
CHECKED BY
26/04/2016
J A Stewart
J A Stewart
BPM



CLIENT Bayswater Trust
 PROJECT Glenorchy Paradise Road
 DESCRIPTION Liquefaction assessment from HDCP results

LOCATION HDCP3
 JOB NUMBER 160246

DATE 26/04/2016
 LOGGED BY J A Stewart
 ANALYSED BY J A Stewart
 CHECKED BY BPM



CLIENT
PROJECT
DESCRIPTION

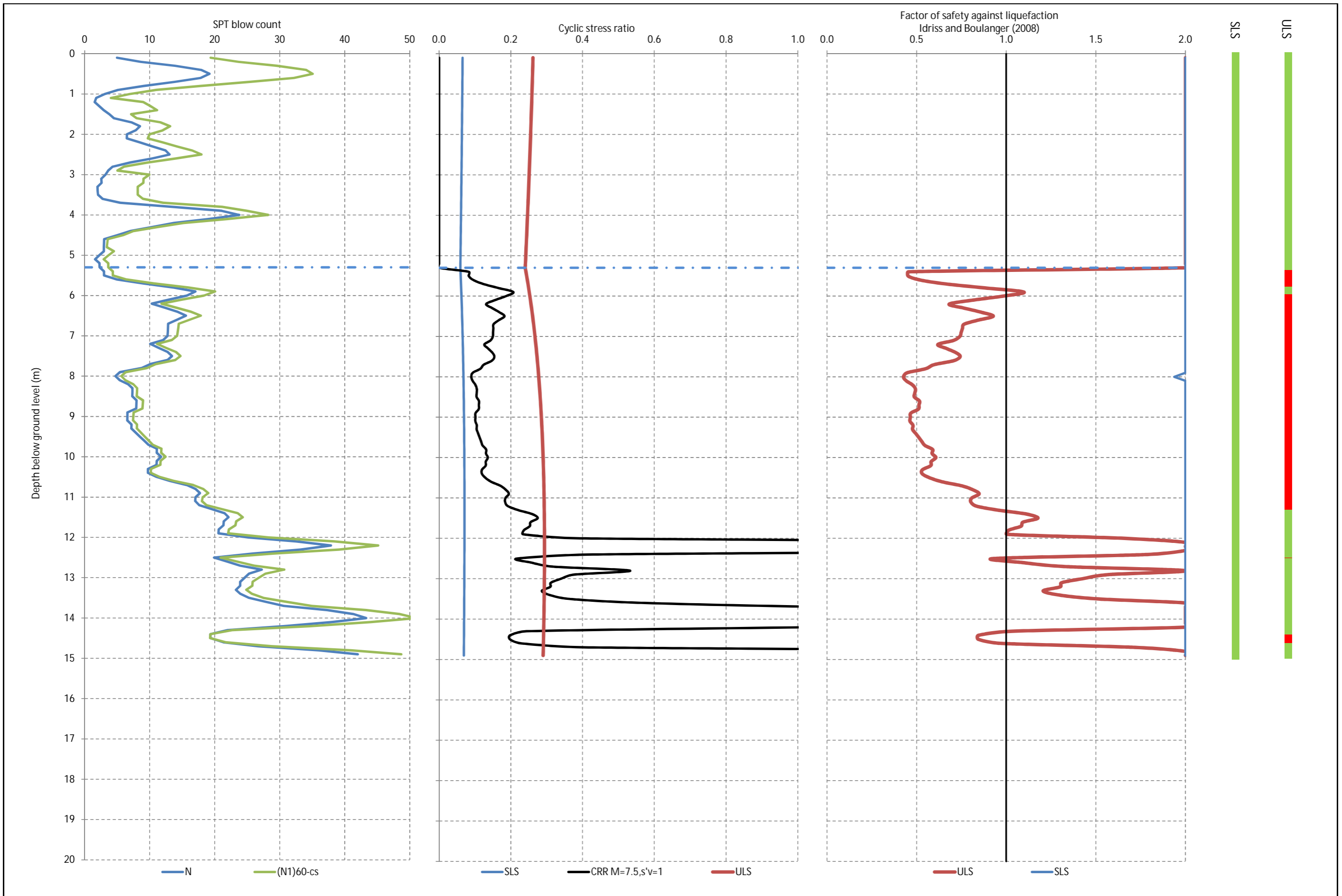
Bayswater Trust
Glenorchy Paradise Road
Liquefaction assessment from HDCP results

LOCATION
JOB NUMBER

HDCP3
160246

DATE
LOGGED BY
ANALYSED BY
CHECKED BY

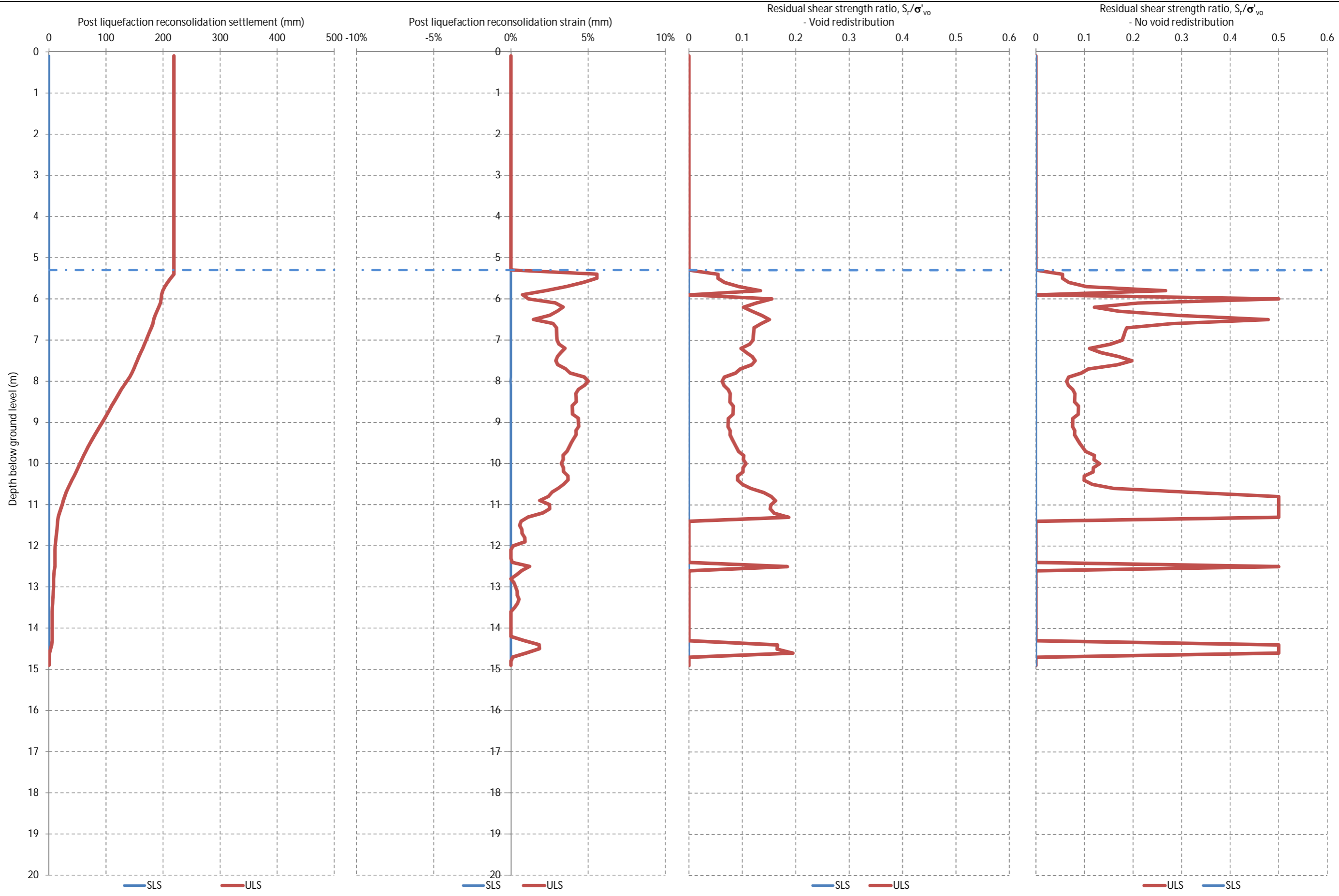
26/04/2016
J A Stewart
J A Stewart
BPM



CLIENT Bayswater Trust
 PROJECT Glenorchy Paradise Road
 DESCRIPTION Liquefaction assessment from HDCP results

LOCATION HDCP4
 JOB NUMBER 160246

DATE 26/04/2016
 LOGGED BY J A Stewart
 ANALYSED BY J A Stewart
 CHECKED BY BPM



CLIENT
PROJECT
DESCRIPTION

Bayswater Trust
Glenorchy Paradise Road
Liquefaction assessment from HDCP results

LOCATION
JOB NUMBER

HDCP4
160246

DATE
LOGGED BY
ANALYSED BY
CHECKED BY

26/04/2016
J A Stewart
J A Stewart
BPM

Appendix C: Liquefaction Assessment

Appendix C - Liquefaction Assessment

General

Liquefaction occurs when susceptible, saturated soils attempt to move to a denser state under cyclic shearing. In this report, liquefaction is defined as when pore pressures rise to reach the overburden stress. When this occurs, the following effects can happen at flat sites:

- loss of strength;
- ejection of material under pressure to the ground surface; and
- post-liquefaction volumetric densification as the materials reconsolidate.

In addition, sloping sites or sites with a 'free face' may experience lateral spreading or movement.

Liquefaction Susceptibility

Soils susceptible to liquefaction have the following characteristics:

- Saturated. Below the ground water level;
- Have "sand like" behaviour¹; and
- Are in loose or medium dense condition.

Soils which are susceptible to liquefaction require a certain level of earthquake shaking (trigger) to cause them to liquefy. Denser soils require more intense and/or longer duration of shaking (higher trigger) than less dense soil.

HDCP Analysis

Analyses were performed to evaluate the liquefaction potential of the loose to medium dense sands and non-plastic silts interpreted from the HDCP data, utilising the methods recommended by Idriss & Boulanger². This method uses information obtained from soil logging and in-situ testing, such as soil type, fines content, layer thicknesses, and blow count.

In order to use heavy duty DCP results in the above analysis, they first need to be corrected to give equivalent standard penetration test (SPT) "N" values. This procedure uses the energy per blow from a HDCP blow and compares it to the energy per blow from a standard SPT hammer. A correction is also made to take account of rod friction in the HDCP results using the torque measurements taken during the test.

As no samples are recovered with the HDCP, it has been assumed that all soils below the termination depth of the test pits are of a composition that is potentially liquefiable.

Assessment of Consequences of Liquefaction

The following can be assessed to estimate the consequences of liquefaction at this site:

- Crust thickness.
- Liquefaction severity index.
- Free field settlements.
- Lateral spread.

² Idriss, I.M. & Boulanger, R.W. (2008). Soil liquefaction during earthquakes, *MNO-12, Earthquake Engineering Research Institute, 242p*

Crust Thickness

The non-liquefiable upper layer of soils (crust) provides some protection against ground surface damage as a result of liquefaction. The thicker the crust, the less ground surface damage is expected with significant protection provided by thicknesses of more than 5m.

Empirical correlations have been developed by Ishihara⁵ to quantify the thickness of non-liquefiable crust required to prevent the formation of sand boils resulting from the liquefaction of underlying soil layers. These correlations indicate that for a given thickness of liquefiable soil, as the peak ground acceleration increases a greater thickness of non-liquefiable soil is required to prevent liquefaction damage from manifesting on the surface.

Liquefaction Severity Number

Liquefaction severity number (LSN) is a single value which can be calculated from a liquefaction assessment considering the thickness density and depth of liquefiable layers and the intensity of earthquake shaking. Based on observations of ground surface damage in Christchurch an indicative correlation has been developed between ground surface damage from liquefaction and LSN as described below.

As the LSN increases, so does the risk of severe effects on the land and structure. In general, the following surface effects are considered likely at sites with various LSN values.

Table 2 - Liquefaction Severity Number

LSN	Effects
0 – 10	Little to no expression of liquefaction, minor effects
10 – 20	Minor expression of liquefaction, some sand boils
20 – 30	Moderate expression of liquefaction, with sand boils and some structural damage
30 – 40	Moderate to severe expression of liquefaction, settlement can cause structural damage
40 – 50	Major expression of liquefaction, undulations and damage to ground surface, severe total and differential settlement of structures
>50	Severe damage, extensive evidence of liquefaction at surface, severe total and differential settlements affecting structures, damage to services.

Free Field Settlements

The reconsolidation settlement of the liquefiable layers identified was computed using the methodology recommended by Idriss & Boulanger (2008). This describes the settlement of ground not occupied by a building, occurring due to dissipation of excess pore water pressure generated during earthquake shaking.

A component of building settlement may also occur due to yield of the liquefied founding soils. This component of settlement is very difficult to predict and depends on the interaction of the building and the soil it is founded on.

⁵ Ishihara, K. (1985). "Stability of natural deposits during earthquakes," Theme lecture, Proc. 11th Int. Conf. On Soil Mechanics and Foundation Engineering, San Francisco, 2, 321-376pp.

Lateral Spreading

Lateral spreading is a term applied to tracts of land that experience lateral displacement as a result of liquefaction of a layer below the surface. It is often observed near river banks, estuaries or on gentle slopes. Displacements can range from a few centimetres to a metre or more, and lateral spreading is often one of the more damaging effects of liquefaction.

The risk of lateral spreading at a site is dependent on:

- The presence and height of a free face. Generally, the "free face" associated with the lateral spreading is a riverbank or old river or stream channel. The free face height is the difference between the level of the ground surface adjacent to the riverbank and the riverbed;
- The thickness of liquefiable soil layers;
- The properties of the liquefied soil such as the grain size and fines content;
- The earthquake characteristics such as the peak ground acceleration, magnitude and distance from the earthquake source.

Mishka Banhidi

From: Katrina Ellis
Sent: Wednesday, 8 June 2016 10:43 AM
To: 'Annemarie.Robertson'
Subject: RE: RM160421 BAYSWATER TRUST - s92 FIR for liquefaction report

Thanks

-----Original Message-----

From: Annemarie.Robertson [<mailto:Annemarie.Robertson@jea.co.nz>]
Sent: Wednesday, 8 June 2016 10:32 AM
To: Katrina Ellis
Subject: RE: RM160421 BAYSWATER TRUST - s92 FIR for liquefaction report

Hi Katrina,
Yes, the names on the CT are the trustees of the Bayswater Trust (trusts have trustees, not directors).
Cheers,
Annemarie

From: Katrina Ellis [Katrina.Ellis@qldc.govt.nz]
Sent: Wednesday, 8 June 2016 9:46 a.m.
To: Annemarie.Robertson
Subject: RE: RM160421 BAYSWATER TRUST - s92 FIR for liquefaction report

Hi Annemarie

Sorry was on leave yesterday. Back today, so feel free to give me a call.

One quick question – is the applicant “Bayswater Trust” or the names on the CT, being Rene Maria Antoine Johan Kampman and ROSS & DOWLING TRUSTEES (2007 NO.1) LIMITED? Assuming it’s Bayswater, can you please confirm if Rene and the Ross & Dowling Trustees are Directors of Bayswater and therefore their approval is implied.

Cheers,
Katrina

From: Annemarie.Robertson [<mailto:Annemarie.Robertson@jea.co.nz>]
Sent: Tuesday, 7 June 2016 9:54 AM
To: Katrina Ellis
Subject: Re: RM160421 BAYSWATER TRUST - s92 FIR for liquefaction report

Hi Katrina,

I spoke to Gesolve this morning and stressed that we need the report by tomorrow afternoon to ensure that notification isn't further delayed. They ended up having to drop everything to deal with a landslide situation after all the rain a couple of weeks ago, which is why the report has taken longer than we thought.

I also left a bit of a garbled message for you last week about the neighbour's application - would still like to have a chat about that when you have a minute. I will try to call early this afternoon as I understand you are in a meeting this morning.

Cheers,

Annemarie

From: Katrina Ellis <Katrina.Ellis@qldc.govt.nz<mailto:Katrina.Ellis@qldc.govt.nz>>
Sent: Tuesday, 31 May 2016 4:49:20 p.m.
To: Annemarie.Robertson
Subject: RM160421 BAYSWATER TRUST - s92 FIR for liquefaction report

Hi Annemarie

RESOURCE CONSENT APPLICATION RM160421 BAYSWATER TRUST

REQUEST FOR FURTHER INFORMATION

To enable a full assessment of your application and to better understand the proposal and its potential effects on the environment, further information is requested under Section 92(1) of the Resource Management Act 1991 (RMA).

Requested Information

The following additional information is requested:

- Please supply liquefaction hazard assessment report from qualified geotechnical professional in regard to proposed building platform.

This is required prior to us publically notifying the application.

Kind regards,
Katrina

Katrina Ellis | Senior Planner | Planning & Development Queenstown Lakes District Council
DD: +64 3 450 0351 | P: +64 3 441 0499
E: katrina.ellis@qldc.govt.nz<mailto:katrina.ellis@qldc.govt.nz>

[<cid:image003.png@01CE7410.855BAE80>]<<http://www.qldc.govt.nz/>>