



ENGEO Limited
124 Montreal Street, Sydenham
Christchurch, 8023

Project Number 031246.000.001

**Preliminary Geotechnical Assessment -
Pegasus West Development**

8 Mapleham Drive, Pegasus

Submitted to:
Wolfbrook Property Group Limited
10 Show Place
Addington
Christchurch

Executive Summary

1. This geotechnical assessment has been prepared to support a referral application under the Fast-track Approvals Act 2024 for the proposed redevelopment of land at 8 Mapleham Drive, Pegasus as a new residential subdivision.
2. The assessment is based on a high-level desktop review of available information, including previous geotechnical reporting, geological and natural hazards mapping, New Zealand Geotechnical Database records, and selected subsurface investigation data from the wider Pegasus / Mapleham area.
3. Reviewed information indicates highly variable subsurface conditions, including surficial topsoil and fill, interbedded clay, silt, sand, and gravel, and deeper Riccarton Gravel. The depth and extent of intermediate dense sand and gravel is a current uncertainty in the conceptual ground model.
4. The main geotechnical considerations identified for the proposed development are liquefaction, lateral spreading adjacent to existing ponds, consolidation settlement under new filling and structure loads, and soft or loose surficial soils or non-engineered fill.
5. Preliminary liquefaction screening indicates the site generally has low to medium liquefaction vulnerability and is broadly consistent with TC1 / TC2-type performance (not considering potential for lateral spreading, i.e. away from pond edges).
6. Lateral spreading may be possible near pond edges. The likelihood and potential magnitude of movement will need to be confirmed through future site-specific investigation and assessment.
7. Preliminary settlement screening indicates that consolidation settlement may be a hazard in localised areas, particularly where soft clayey or organic soils coincide with proposed earthworks filling or structural loads.
8. The identified geotechnical risks are considered manageable through established planning and engineering measures, which may include development setbacks, robust foundations, shallow or localised ground improvement, settlement monitoring, preloading, and remediation of unsuitable surficial soils during bulk earthworks.
9. At a strategic level, the site is considered geotechnically suitable for the proposed development, provided further site-specific investigation, assessment, and design are completed during later consenting and development stages.

ENGEO Document Control:

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1 Introduction

This geotechnical assessment has been prepared to support a referral application under the Fast-track Approvals Act 2024. It provides a high-level review of the site conditions and identifies key geotechnical constraints that may influence the proposed development, based on available information.

This assessment is not a detailed investigation or full assessment of geotechnical constraints. It focuses on identifying potential hazards, outlining the likely nature and significance of associated effects, and confirming whether these issues appear capable of resolution through established engineering and planning approaches. The intent is to consider geotechnical constraints at a strategic level. Further investigation and design will be needed at later stages to confirm and refine these findings.

Neil Charters' (the primary author of this report) qualifications are appended (Appendix 1).

2 Site Description

The site comprises a former golf course on the edge of Pegasus Township (Drawing 1). The 18-hole course is generally flat to gently undulating associated with fairways, greens, and landscaping. Artificial lakes, ponds, wetlands, and drainage features are present across the site and form part of the wider irrigation and stormwater management network. The adjoining Mapleham residential development comprises residential properties, roads, and associated infrastructure located adjacent to the fairways and greens of the former golf course.

The project is a master-planned residential development with a neighbourhood scale commercial / community node and associated infrastructure, provided as a contiguous extension to the Pegasus, Ravenswood and Woodend urban area.

The project will include the following:

- i. Staged subdivision and development to enable up to 1,000 residential allotments / dwellings across a range of residential densities and to cater for a range of typologies.
- ii. Development of a commercial / community node that enables provision of day-to-day needs such as retail, service, healthcare, education, recreation and / or related activities for the community, with specific uses determined through community and market needs.
- iii. Associated three waters infrastructure; including an integrated stormwater management system and open space network featuring neighbourhood parks and green links.
- iv. Minor alterations to Pegasus Boulevard to provide for the access requirements of the development including intersection improvements and a new road access.
- v. Associated earthworks, servicing, landscaping and related works to be implemented in stages.
- vi. Areas of land set aside to recognise and provide for cultural and archaeological values including retention of archaeological site M35/440 (pā site) which is registered as a wāhi tapu on the New Zealand Heritage List/ Rāragi Kōrero.

3 Desktop Review

3.1 Site History and Previous Reporting

The site is within Pegasus, a master-planned coastal development built in the mid-2000s on land that was previously predominantly rural. A series of geotechnical investigations were performed for Pegasus Town and the Mapleham Development by URS and Beca during the various stages of the Township's development and construction.

Earthworks completion reporting for the Mapleham Development¹ indicates that works typically comprised up to approximately 2 m of excavation within the golf course and lake areas, and 1 m to 2 m of fill placement within the Mapleham residential lots. Excavated material from the pond areas was reused as fill within the residential areas.

In 2010 and 2011 the Canterbury region experienced several large earthquakes. The highest ground motions at the site occurred in the magnitude 7.1 September 2010 Earthquake, where the site likely experienced PGAs on the order of 0.15 g². URS completed a post-earthquake inspection of the area following the event and state "Post-earthquake inspections of the whole site area have found no evidence for earthquake-induced ground damage such as liquefaction, cracking or lateral spread affecting any of the lots or infrastructure within any of the residential stages or the Mapleham area. Minor liquefaction has been observed in the adjacent wetlands [east of Pegasus Township]."³

In 2012, ENGEO (formerly Geoscience) prepared area wide liquefaction assessment reports for the Mapleham Development⁴. These reports concluded that the majority of the residential lots were consistent with Technical Category 2 (TC2).

3.2 Geology and Geohazards Mapping

Mapped geology and geohazards (from Waimakariri District Council's Natural Hazards GIS viewer) are outlined in Table 1.

¹ Three reports by Beca Ltd (2008). Mapleham Stage 1, Mapleham Stage 2 and 4, Mapleham Stage 3 and 5 – Earthworks Completion Reports

² Bradley Seismic Ltd (2012). Conditional Peak Ground Accelerations (PGA) developed for conventional liquefaction assessments.

³ URS (2010). Pegasus Town Post-earthquake Inspections.

⁴ Geoscience Consulting (2012). Assessment of DBH Residential TC2 Criteria for Seismic Settlement and Lateral Spreading within Stages M1, M4, and M6 of the Mapleham Development., Geoscience Consulting (2012). Assessment of DBH Residential TC2 Criteria for Seismic Settlement and Lateral Spreading within Stages M2, M3, and M5 of the Mapleham Development.

Table 1: Mapped Geology and Natural Hazards

Item / Hazard	Mapped Area Description	Further Assessment?
Geology	The site has been regionally mapped by GNS to be underlain by dominantly alluvial sand and silt overbank deposits of the Springston Formation.	NA
Fault Rupture	Outside mapped fault awareness and fault avoidance zones	Low risk, no further assessment
Liquefaction	Within an area where liquefaction damage is possible and geotechnical input is needed.	Further assessment provided in Section 5.1.
Flooding	Some lower-lying areas of the site are mapped within low to high flood hazard areas	Further assessment provided in the Flow Consulting report
Coastal Erosion	The site is a significant distance from mapped forecast shorelines and adjacent shoreline is forecast to advance, not recede.	Low risk, no further assessment

3.3 Reviewed Subsurface Investigations

Several subsurface investigations in the site vicinity were reviewed. These investigations included test pits, machine boreholes, and Cone Penetration Tests (CPTs), and were sourced from the ENGEO 2012 Mapleham assessments and the New Zealand Geotechnical Database (NZGD). Reviewed investigation locations are shown in Drawing 2.

4 Ground Conditions and Conceptual Ground Model

4.1 Ground Conditions

The wider Pegasus Township is located within a coastal depositional environment underlain by dunes, estuary deposits, and river deposits. Based on the mapping and investigations reviewed, the upper 10 m of the soil profile is highly variable with interbedded layers of clay, silt, sand, gravel, and organic deposits. In general, these layers are relatively thin and discontinuous which is typical of the fluvial depositional environment, where cross bedding, inclined beds and channels are more prevalent than continuous horizontal soil beds.

The conceptual ground model developed from the reviewed investigations is summarised in Table 2. The following conditions are anticipated:

- Surficial deposits (topsoil, non-engineered and engineered fill, Unit 1) are likely to be encountered in the upper few hundred millimetres to metre with the possibility of localised deeper areas of fill.
- Across most of the site, surficial deposits will likely be underlain by interbedded clay-silt mixtures (Unit 2a) and sand-silt mixtures (Unit 2b) to between around 5 and 8 m depth.

- It is expected that across portions of the site, dense sand and gravel (Unit 2c) with occasional interbedded lenses of looser deposits, dominates the soil profile between 5 to 8 m depth and 16 m depth. However, there is significant variability in the depth and extent of Unit 2c. In some areas this is a relatively thick layer encountered within the upper 3 to 4 m while in investigations west of the site, Unit 2c was only encountered in thin layers or not encountered at all. This variability in the intermediate dense gravel is a current uncertainty and is discussed further below Table 2.
- The Riccarton unit (Unit 3) likely extends below around 16 m depth to a considerable depth.

Table 2: Conceptual Ground Model Summary

ID	Geologic Unit		Typical Depth Encountered and Distribution	Description	Geotechnical Considerations
1	Surficial Deposits		Upper metre, presence and depth highly variable	Topsoil, and fill (non-engineered and engineered).	Potentially Compressible / Low Bearing Capacity
2a	Springston Formation	Silt-Clay	Typically present in multiple layers within the upper 5-8 m, but extending up to 16 m west of the site, variable distribution interbedded with Unit 2b	Typically soft to stiff with inferred low to moderate plasticity. Occasionally containing organic layers.	Potentially Compressible
2b		Sand and Sand-Silt Mixtures	Typically present in multiple layers within the upper 5-8 m, but extending up to 16 m west of the site, variable distribution interbedded with Unit 2a	Typically loose to medium dense sand, and sand-silt mixtures	Potentially liquefiable below the groundwater table
2c		Intermediate Dense Sand and Gravel	The top of this unit was typically encountered at 5 to 8 m depth, but some investigations to the west of the site did not encounter the unit. The unit often extends down to Unit 3. In some areas this unit is encountered in the upper 3 m. Areas where this unit was encountered more shallowly or deeper than average are shown in Drawing 3. Many reviewed investigations terminated on or within this layer.	Typically, dense sand and sand-gravel mixtures, with occasional lenses of units 2a and 2b.	NA
3a	Riccarton	Fine-grained confining layer	Laterally extensive unit in the region, which typically comprises a 0.5 m to 2.0 m thick fine grained unit (3a) overlying gravel (3b) that extends tens of metres to depth. Very few investigations extended to the Riccarton unit, which was encountered at ~16 m depth.	Interbedded silts, clays and organics of variable thickness overlying the Riccarton Gravels.	Potentially compressible but owing to the depth, low risk of causing damaging differential settlement at the surface.
3b		Dense gravel		Dense to very dense alluvial sandy gravel.	NA

This variability in the depth and extent of Unit 2c is a current uncertainty in the ground model, as thicker deposits of Unit 2a and 2b (where Unit 2c is thinner) represent higher likelihood of liquefaction and consolidation settlement. To illustrate and communicate the variability three typical ground condition profiles are defined:

- Ground Conditions 1: Clay, Silt and Sand in upper 5 to 8 m
- Ground Conditions 2: Shallow dense Sand and Gravel
- Ground Conditions 3: Clay, Silt and Sand in upper 10 to 15m

Areas of investigations which encountered each type of ground condition are shown in Drawing 3, and typical soil profiles for each condition are shown in Figure 1 below. The areas shown in Drawing 3 encircle investigations where these conditions are encountered and are not sufficient to properly delineate areas of each general ground profile. However, these areas do provide an indication of what type of ground conditions may be present for various portions of the site. Additionally, there is a large degree of variability of profile within each area.

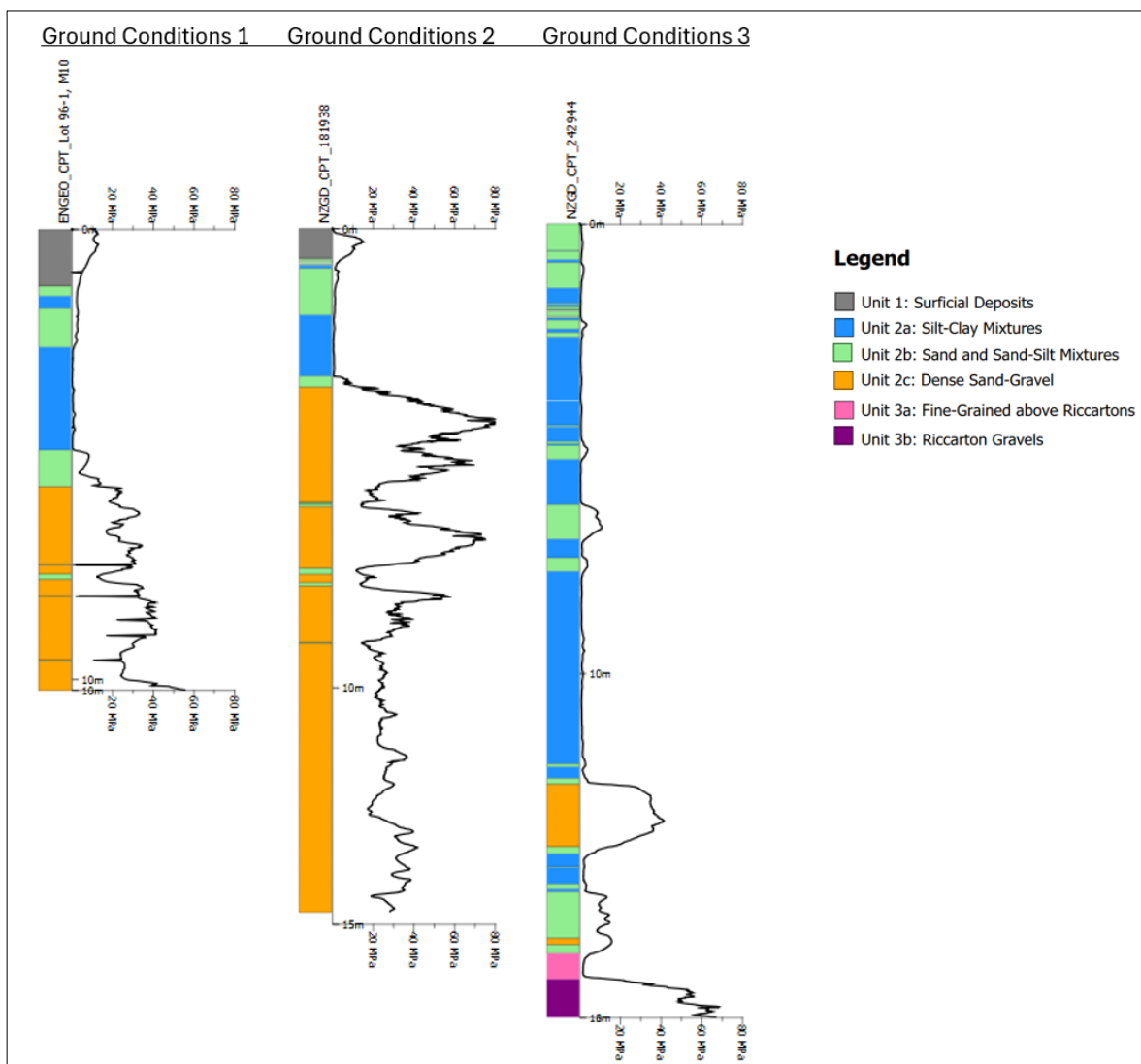


Figure 1: Illustrative CPT Tip Resistance Trace and inferred Ground Profile within Each Ground Conditions Area

4.2 Groundwater Conditions

Limited available groundwater depth information has been collated to estimate groundwater elevation across the site as shown in Drawing 4. This data indicates the groundwater table elevation is typically around 3 to 5 m RL (NZVD) across the site and increases from east to west, consistent with regional hydraulic gradients. This is associated with groundwater table depths typically around 2.5 to 4.5 metres bgl. This depth likely varies seasonally, but the range of variation is unknown at present due to lack of data. There may be areas of locally perched groundwater above the depths indicated owing to the cohesive nature of some deposits.

Review of past reporting⁵, indicates that ponds at the former golf course are lined to prevent seepage into the surrounding ground. As such these are likely hydraulically disconnected from the shallow groundwater table, and water levels within the ponds and lakes are likely not representative of the groundwater levels.

4.3 Assumptions and Uncertainties

Owing to the high-level nature of this desktop review, there are uncertainties that need to be addressed through additional investigation and analysis at further development stages. This should occur through the substantive consent application. Key items include:

- The high variability in the ground conditions, and lack of data within the site means there is high uncertainty in ground conditions particularly at the boundaries between ground condition areas. Of particular importance is:
 - The variability in depth and extent of the dense sandy gravel Unit 2c.
 - The presence and extent of organic deposits. Some CPTs indicate the presence of sensitive fine-grained soils which can be representative of organic soils, but these types of soils can be difficult to identify in CPT data.
- There is limited groundwater depth information. As a key variable in understanding liquefaction susceptibility, additional investigations will be required at further development stages.

The level of uncertainty in the conceptual ground model as outlined above is typical at this preliminary stage and will be reduced through site-specific subsurface investigations during the substantive resource consent and building consent stages.

5 Geohazards Initial Assessment

Based on the reviewed information and conceptual ground model, the main geotechnical considerations for the project include the potential for/risk of:

- Liquefaction and lateral spreading;
- Static settlement under new fill and structure loads; and

⁵ Geoscience Consulting (2012). Assessment of DBH Residential TC2 Criteria for Seismic Settlement and Lateral Spreading within Stages M1, M4, and M6 of the Mapleham Development.

- The presence of soft / loose surficial soils or fill with low bearing capacity.

A preliminary assessment of these hazards has been undertaken to provide an initial indication of risk in accordance with the RMA (Section 106) and the National Policy Statement on Natural Hazards 2025 (NPS).

5.1 Liquefaction

Liquefaction was assessed using the available CPT data and results compared against multiple liquefaction performance criteria as outlined in Table 3, and across a range of earthquake shaking intensity as illustrated in Figure 2.

The vast majority of CPTs indicate Low to Medium liquefaction vulnerability⁶ and deformations consistent with Technical Category 1 and 2 (TC1, TC2). A very small number of investigations (four of the 110 locations with depths greater than 2 m) indicated higher liquefaction susceptibility against one of the three criteria (i.e. TC3 or High liquefaction vulnerability).

Figure 2 illustrates that liquefaction is typically triggered between around a 50 yr and 150 yr return period earthquake, and in general, surface expression of liquefaction is expected to be minor to moderate once liquefaction is triggered.

These analysis results are relatively consistent with the observed performance following the September 2010 earthquake. This event produced shaking that was likely around a 50 year return period earthquake at the site and no evidence of liquefaction or lateral spreading was observed in the Mapleham area.

Table 3: Initial Screening of Liquefaction Performance

Liquefaction Performance Criteria	Typical Category	Typical Mitigation Approaches for the category
MBIE Technical Category	TC1 / TC2	These levels of liquefaction vulnerability are typically addressed through adopting robust foundations (i.e. waffle slabs) and / or shallow ground improvement (i.e. gravel rafts).
MfE (2017) Liquefaction Vulnerability Categories	Low / Medium	

⁶ Ministry for the Environment (2017). Planning and engineering guidance for potentially liquefaction-prone land.

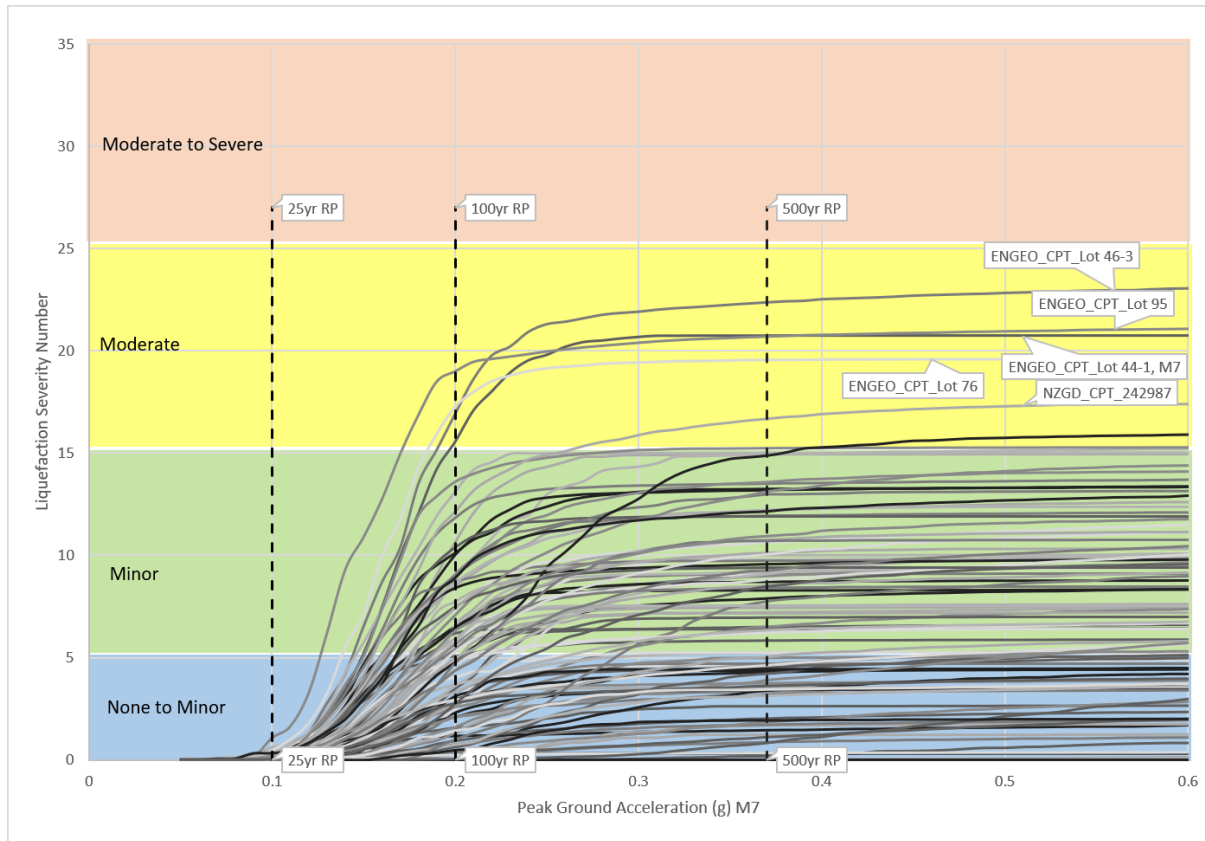


Figure 2: Calculated Liquefaction Performance over a range of shaking intensity

5.2 Lateral Spreading

Lateral spreading is the lateral movement of ground toward a free face such as a stream channel or lake edge or of gently sloping ground caused by liquefaction-induced loss of soil strength during earthquake shaking. In addition to causing ground cracking, it can increase susceptibility to other forms of liquefaction damage (differential settlement, sand boil formation etc.).

There is potential lateral spreading for portions of the site adjacent to the ponds where they remain. The likelihood and degree and extent of spreading will require additional on-site investigation and analysis to assess. Investigations to support lateral spread assessment should focus on defining the continuity of potentially liquefiable layers, groundwater table depth and depth and topography of the ponds.

A range of mitigation measures are available to address lateral spreading risk including utilising development setbacks from banks or channels, utilising robust foundations capable of tolerating lateral movement, and employing ground improvement along bank and channel edges. The appropriate measure depends on the degree of movement anticipated and the structures and infrastructure at risk and should be assessed as part of the substantive application.

5.3 Static Settlement

Relatively soft clayey and possibly organic soils were encountered in variable thicknesses in many of the reviewed investigations. These soils are susceptible to consolidation settlement over time under new loading from earthworks fill or structure loads. An initial screening of consolidation potential has been completed using the CPT data and an assumed load of 50 kPa (representing around 2.0 to 2.5 m of fill placement). A handful of investigations (~15% of the 124 CPTs assessed) indicated static settlement greater than 50 mm. These investigations were spread across the site in Ground Conditions 1 and 3 areas with a concentration in the west, providing an initial indication that static settlement is a potential hazard in localised areas.

Typical mitigation approaches include (1) monitoring settlement under new fill loading and holding construction of infrastructure and structures until most of the settlement under the fill is complete, or (2) preloading with additional soil fill (typically one to two metres) and allowing settlement to occur before removing preload and constructing foundations and infrastructure.

5.4 Soft / Loose Surficial Soil and Lake Filling

Owing to the past use of the site as a golf course, there are likely areas of soft and loose locally reworked soil and non-engineered fill. It is common to encounter these types of deposits on previously developed land, and they are typically remediated through rework and compaction or removal of the upper soils during bulk development earthworks.

In addition, the indicative masterplan for the proposed development shows filling of some of the constructed ponds. The lake areas will likely require over excavation of the pond lining and soft surficial sediments prior to filling with compacted engineered fill.

6 Preliminary Geotechnical Risk Assessment

For new subdivision and development, the Resource Management Act 1991 (RMA) requires an assessment under s106/s106A and to identify natural hazards posing a "significant risk" to the development. The National Policy Statement on Natural Hazards (2025) provides a framework to assess and classify that risk (albeit using different risk terminology). I understand these provisions would be of relevance to a substantive application for resource consent under the FTAA process.

Based on our desktop review and initial screening assessments, we have preliminarily assessed the identified relevant geotechnical hazards within the NPS framework as summarised in Table 4 and illustrated in Figure 3. This assessment along with the proposed mitigations will need to be refined at further consenting and development stages following additional site-specific investigation.

Table 4: Initial NPS Risk Classification

Hazard	Initial Risk Classification	Mitigation Options	Resulting Risk Classification
Liquefaction	Low - Medium	Robust, rigid foundations Shallow ground improvement	Low
Lateral Spreading	Low - Medium	Development set-back zones Robust, rigid foundations Deep ground improvement along bank	Low
Consolidation Settlement	Medium-High	Construction Hold Period following Bulk Earthworks Filling Preloading	Low

Notes

1. A low risk classification is achievable provided a mitigation approach commensurate with the intensity of the hazard as determined based on an appropriate level of site-specific investigation and analysis.
2. The assessed lateral spreading risk is based on the existing lakes and ponds.
3. The initial risk classification range for liquefaction and lateral spreading reflects the differing risk categories when considering a range of return periods for seismic shaking and the uncertainty due to the lack of onsite investigations.
4. The initial risk classification for consolidation settlement assumes some filling will occur as part of development earthworks and the range reflects both the uncertainty in whether this filling occurs in locations with thick soft soil, and the uncertainty on the potential effects of settlement on the development.

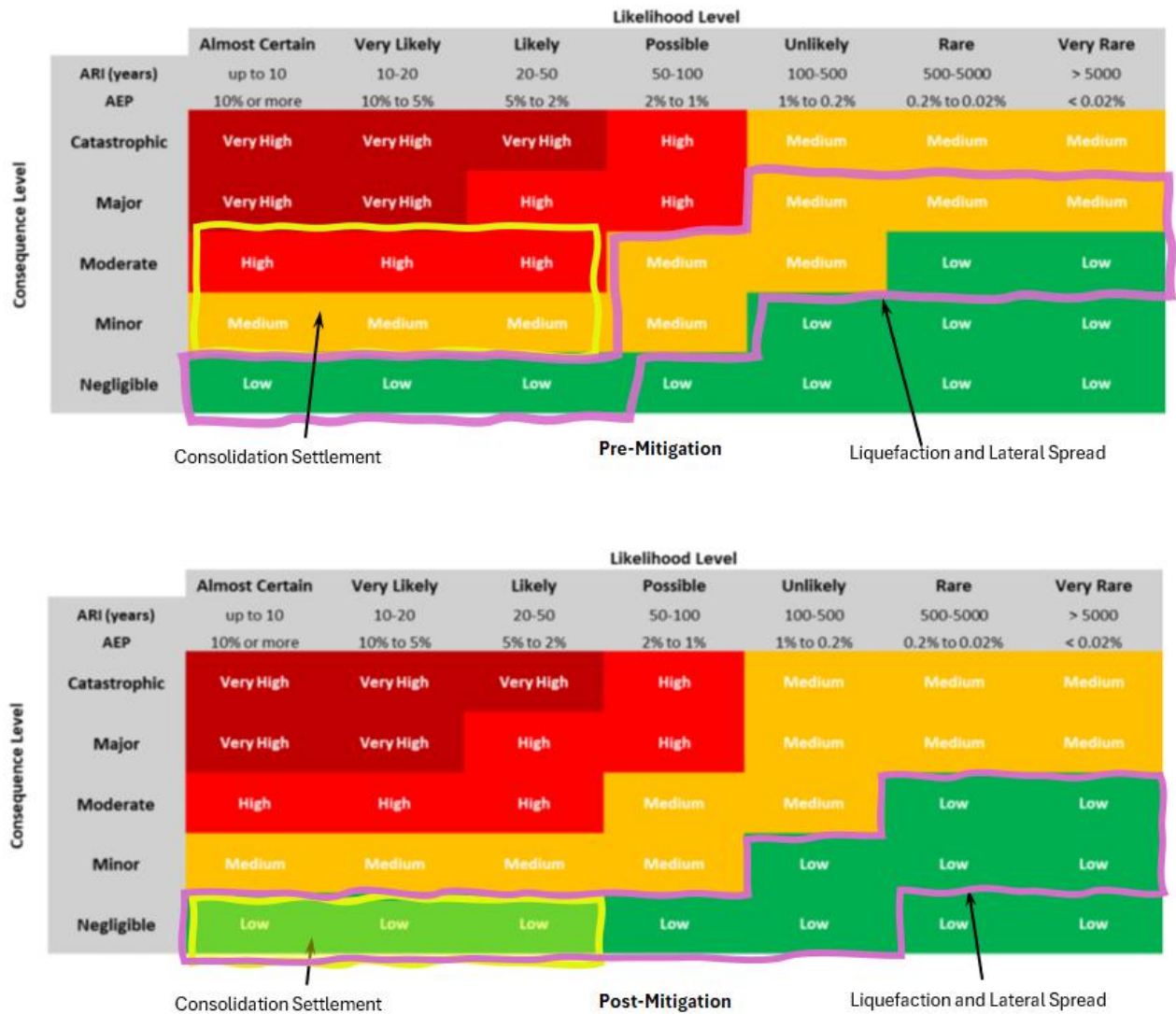


Figure 3: Preliminary Geotechnical Risk Classification (NPS-NH, 2025 framework)

7 Conclusion

Based on the assessment outlined in this report, the site is geotechnically suitable for the proposed development at a strategic level and risks are capable of being managed through established and relatively standard planning and engineering approaches.

Site specific investigation and analysis is required to further define the identified geotechnical hazards and determine / design the appropriate mitigation measures to address the risks posed.

8 Limitations

- i. We have prepared this report in accordance with the brief as provided. This report has been prepared for the use of our client, Wolfbrook Property Group Limited, their professional advisers, Minister for Infrastructure and other invited commenters / participants that are involved in the consideration of a referral application under the Fast-track Approvals Act (2024), and the relevant Local Authorities in relation to the specified project brief described in this report. No liability is accepted for the use of any part of the report for any other purpose or by any other person or entity.
- ii. The recommendations in this report are based on the ground conditions indicated from published sources, site assessments and subsurface investigations described in this report based on accepted normal methods of site investigations. Only a limited amount of information has been collected to meet the specific financial and technical requirements of the client's brief and this report does not purport to completely describe all the site characteristics and properties. The nature and continuity of the ground between test locations has been inferred using experience and judgement and it should be appreciated that actual conditions could vary from the assumed model.
- iii. Subsurface conditions relevant to construction works should be assessed by contractors who can make their own interpretation of the factual data provided. They should perform any additional tests as necessary for their own purposes.
- iv. This Limitation should be read in conjunction with the Engineering NZ / ACENZ Standard Terms of Engagement.
- v. This report is not to be reproduced either wholly or in part without our prior written permission.

We trust that this information meets your current requirements.

Report prepared by



Naomi Norris

Senior Geotechnical Engineer

Report reviewed by

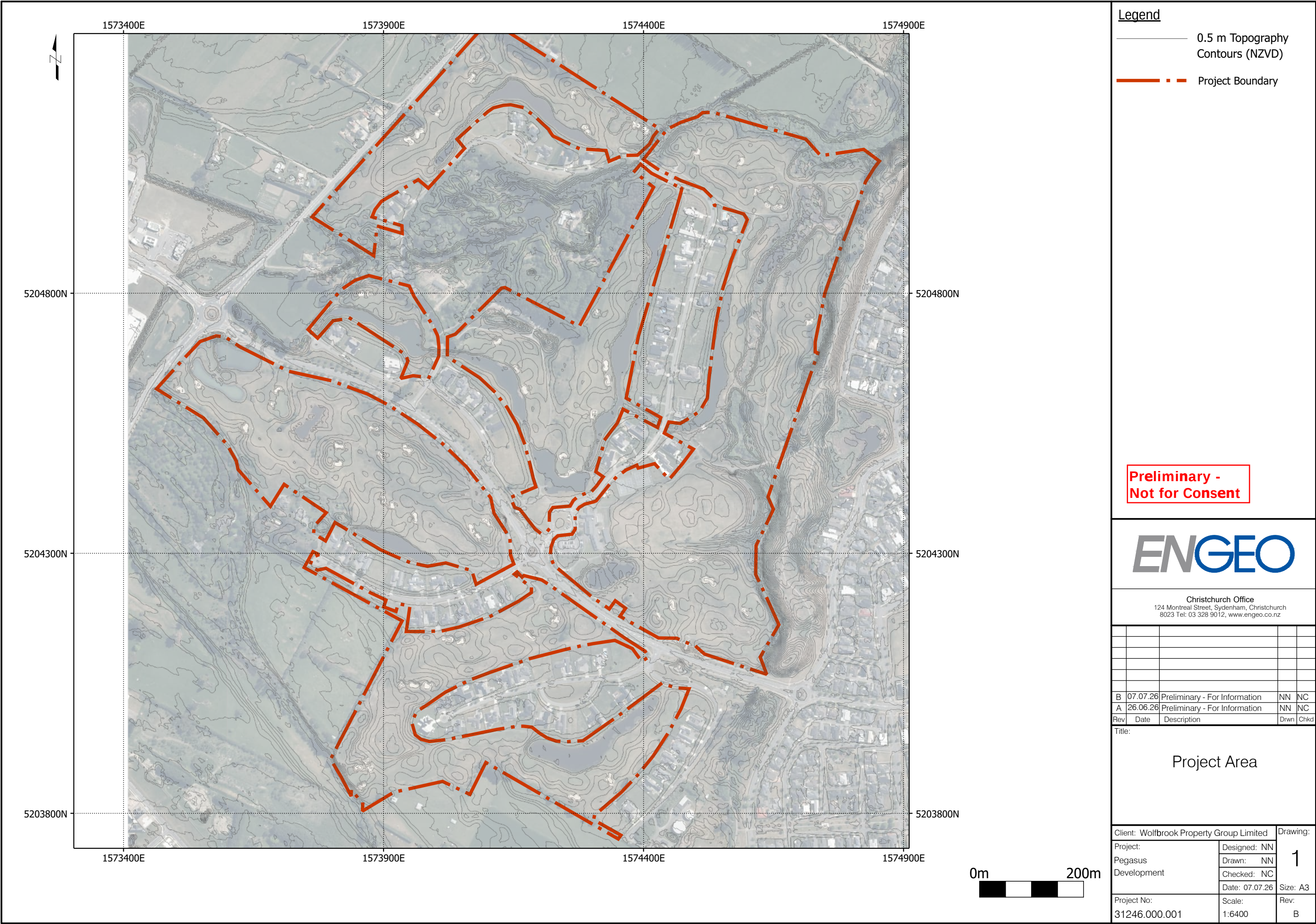


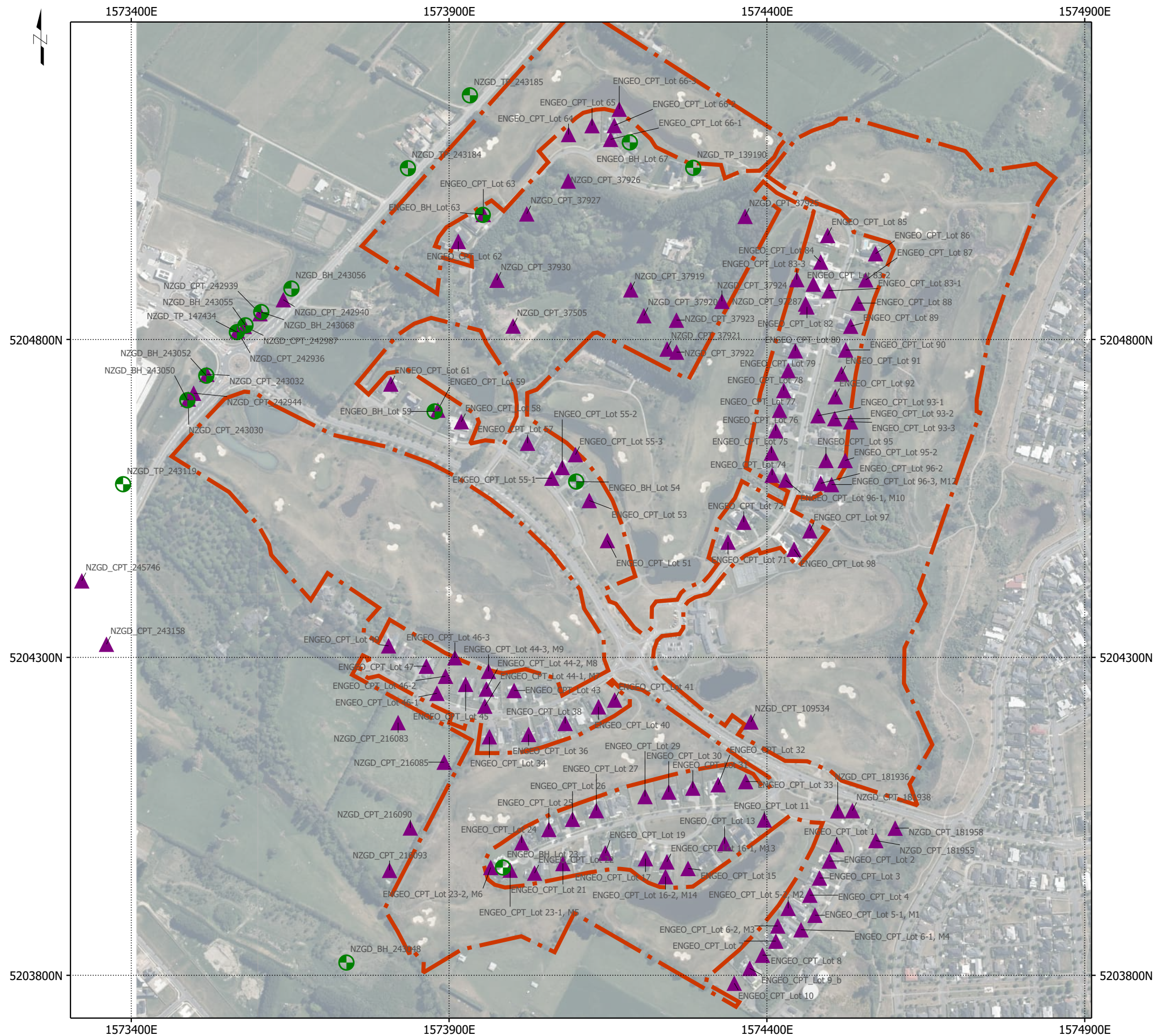
Neil Charters, CMEngNZ (CPEng)

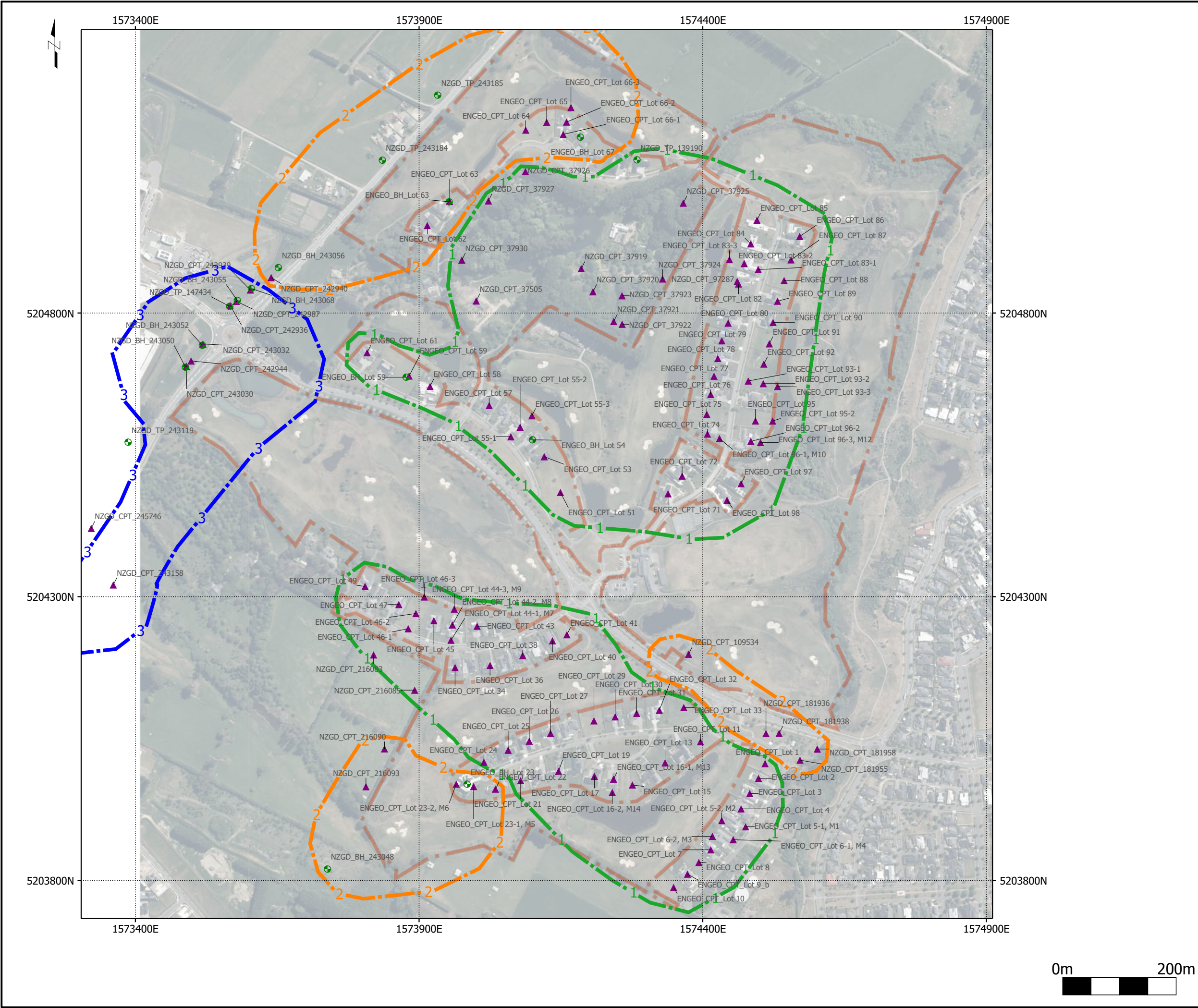
Principal Geotechnical Engineer



Drawings

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Legend

1

Ground Conditions 1:
Clay, Silt and Sand in
upper 5 to 8 m

2

Ground Conditions 2:
Shallow dense Sand and
Gravel

3Ground Conditions 3:
Clay, Silt and Sand in
upper 10 to 15m

Project Boundary

Note

The Ground Conditions Areas encircle the investigations where these conditions were encountered.

The portions of the site outside of the defined Ground Conditions Areas are expected to fall within one of the three defined conditions but due to lack of investigation there is high uncertainty in which ground condition category applies.

Additionally, there is a large degree of variability of profile within each area.

Preliminary -
Not for Consent

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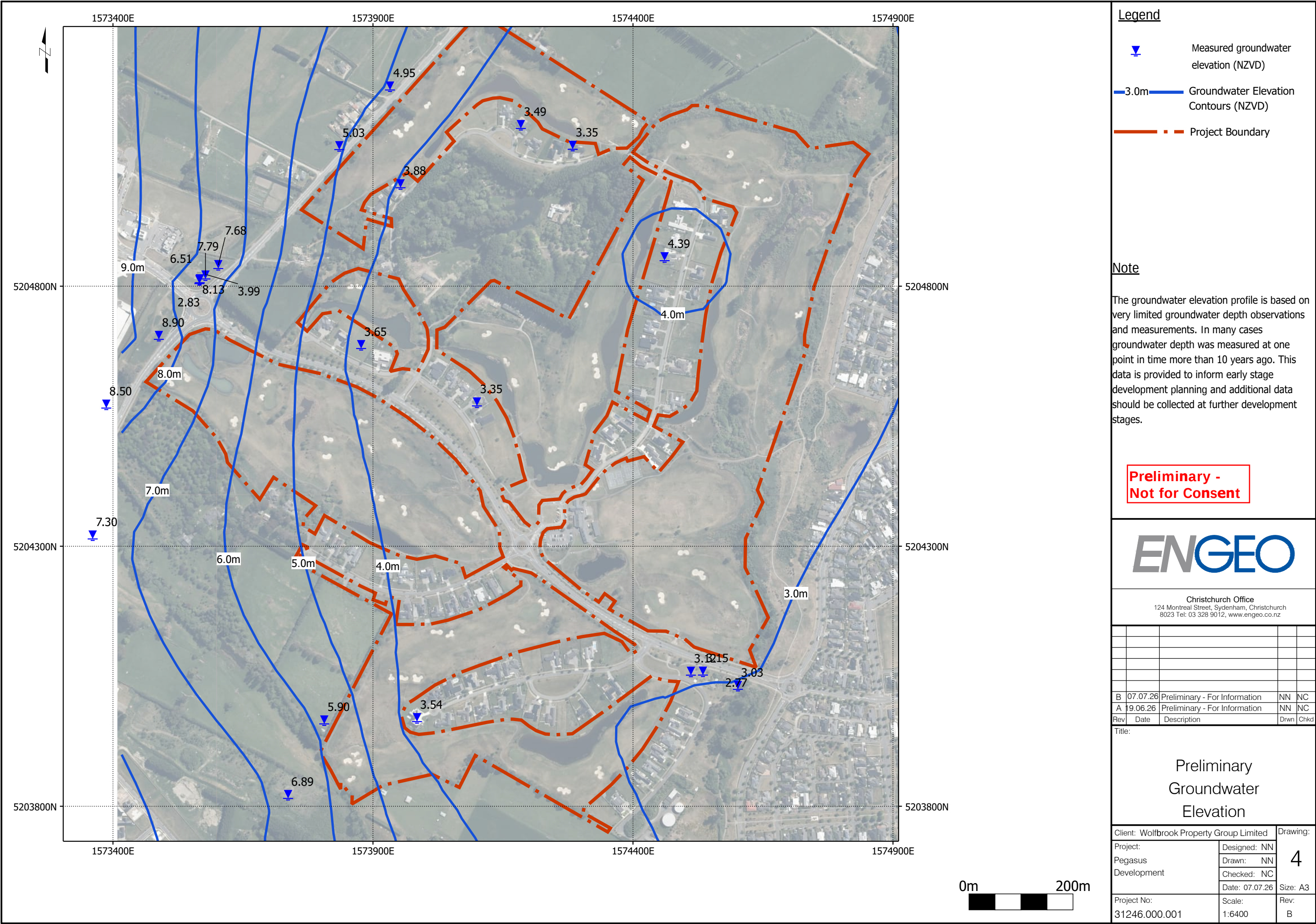
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B	07.07.26	Preliminary - For Information	NN	NC	
A	26.06.26	Preliminary - For Information	NN	NC	
Rev	Date	Description	Drwn	Chkd	

Title:

Preliminary
Ground
Conditions Plan

Client: Wolfbrook Property Group Limited		Drawing:
Project: Pegasus Development	Designed: NN	3
	Drawn: NN	
	Checked: NC	
	Date: 07.07.26	
Project No: 31246.000.001	Scale: 1:6400	Size: A3 Rev: B





Appendix 1: Neil Charters Qualifications



Neil Charters Qualifications Statement

My name is Neil James Charters. I am a Principal Geotechnical Engineer at ENGEO. I have the following qualifications and experience relevant to the provided geotechnical report:

- a) I have a Master of Engineering (Dist.), Geotechnical Engineering, from the University of Canterbury, and Bachelors in Science (Hons), Engineering Geology, University of Canterbury and University of Otago.
- b) I am a CPEng Chartered Professional Engineer (Number 1006195) and a member of the New Zealand Geotechnical Society.
- c) I have more than 20 years' experience working with ENGEO and other geotechnical firms. My work has had a particular focus on:
 - i) Deep Foundations;
 - ii) Earth Retaining Structures;
 - iii) Foundation Design;
 - iv) Geologic Hazard Evaluation;
 - v) Landslide Investigations and Repairs;
 - vi) Liquefaction Analyses; and
 - vii) Slope Stability.

A full resume can be provided on request.

Appendix 2:

Liquefaction Assessment Results Summary

Liquefaction Analysis Results

Engineer: NN
Date: 23.06.26
Project Number: 31246
GWT Depth: 3m - as conservative mid-range value
Liquefaction Triggering Procedure: Boulanger and Idriss 2014
Volumetric Settlement: Zhang et. al. 2002, reported in cm
Probability of Liquefaction Curve: 16%
lc cutoff: 2.6
Surface Expression of Liquefaction: Liquefaction Severity Number (LSN)
Seismic Demand Parameters: TS1170.5:2025 for Pegasus utilising the default site class owing to limited onsite information. Selected M7 (M varies over return periods from 6.5 for 25yr to 7.1 for 2500yr)

Method based on the following:
Boulanger, R.W. and Idriss, I.M. (2014). "CPT and SPT based liquefaction triggering procedures". Department of Civil & Environmental Engineering, College of Engineering, University of California at Davis. April 2014.

Zhang, G., Robertson, P. K., & Brachman, R. (2002). Estimating Liquefaction Induced Ground Settlements from the CPT. 39, 1168-1180.

		Liquefaction Analysis Results													Performance Categories			
		ULS - 1 in 500 yr Return Period			SLS - 1 in 25 yr Return Period			ILS 1 - 1 in 100 yr Return Period			ILS 2 - 1 in 150 yr Return Period			MBIE Technical Category (TC)		MFE Planning Guidance Category - ILS is 1 in 100 yr RP		
CPT ID	Inv Depth	LSN	Expression of Liq. from LSN	Vert. Settlement cm	LSN	Expression of Liq. from LSN	Vert. Settlement cm	LSN	Expression of Liq. from LSN	Vert. Settlement cm	LSN	Expression of Liq. from LSN	Vert. Settlement cm	MBIE Technical Category (TC)	TC on basis of LSN	ULS Performance	ILS Performance	Planning Guidance Category
ENGE0_CPT_Lot 8	9.00	7	Little to none	4.2	0	Little to none	0.2	6	Little to none	3.7	6	Little to none	4.0	TC2	TC1	None to Minor	None to Minor	Medium
ENGE0_CPT_Lot 9	3.44	0	Little to none	0.0	0	Little to none	0.0	0	Little to none	0.0	0	Little to none	0.0	TC1	TC1	None to Minor	None to Minor	Low
ENGE0_CPT_Lot 10	8.26	4	Little to none	2.0	0	Little to none	0.0	3	Little to none	1.4	3	Little to none	1.8	TC1	TC1	None to Minor	None to Minor	Low
ENGE0_CPT_Lot 1	5.74	1	Little to none	0.7	0	Little to none	0.0	1	Little to none	0.5	1	Little to none	0.6	TC1	TC1	None to Minor	None to Minor	Low
ENGE0_CPT_Lot 13	6.16	7	Little to none	3.1	0	Little to none	0.1	4	Little to none	2.0	6	Little to none	2.6	TC2	TC1	None to Minor	None to Minor	Medium
ENGE0_CPT_Lot 15	6.30	9	Little to none	4.0	0	Little to none	0.0	6	Little to none	2.7	8	Little to none	3.5	TC2	TC1	None to Minor	None to Minor	Medium
ENGE0_CPT_Lot 17	8.46	6	Little to none	4.1	0	Little to none	0.2	5	Little to none	3.6	5	Little to none	3.8	TC2	TC1	None to Minor	None to Minor	Medium
ENGE0_CPT_Lot 2	5.34	3	Little to none	1.4	0	Little to none	0.0	1	Little to none	0.5	2	Little to none	0.9	TC1	TC1	None to Minor	None to Minor	Low
ENGE0_CPT_Lot 21	11.78	8	Little to none	5.2	0	Little to none	0.2	7	Little to none	4.4	8	Little to none	5.0	TC2	TC1	None to Minor	None to Minor	Medium
ENGE0_CPT_Lot 22	2.68	0	Little to none	0.0	0	Little to none	0.0	0	Little to none	0.0	0	Little to none	0.0	TC1	TC1	None to Minor	None to Minor	Low
ENGE0_CPT_Lot 24	8.40	15	Minor	7.3	0	Little to none	0.1	11	Minor	5.3	14	Minor	6.7	TC2	TC1/TC2	None to Minor	None to Minor	Medium
ENGE0_CPT_Lot 25	9.80	13	Minor	8.6	0	Little to none	0.1	12	Minor	7.5	13	Minor	8.2	TC2	TC1/TC2	None to Minor	None to Minor	Medium
ENGE0_CPT_Lot 26	7.34	6	Little to none	3.3	0	Little to none	0.1	6	Little to none	3.2	6	Little to none	3.3	TC2	TC1	None to Minor	None to Minor	Medium
ENGE0_CPT_Lot 27	2.06	0	Little to none	0.0	0	Little to none	0.0	0	Little to none	0.0	0	Little to none	0.0	TC1	TC1	None to Minor	None to Minor	Low
ENGE0_CPT_Lot 29	6.34	7	Little to none	2.6	0	Little to none	0.0	3	Little to none	1.1	4	Little to none	1.6	TC2	TC1	None to Minor	None to Minor	Medium
ENGE0_CPT_Lot 3	5.16	3	Little to none	1.5	0	Little to none	0.0	2	Little to none	1.0	3	Little to none	1.3	TC1	TC1	None to Minor	None to Minor	Low
ENGE0_CPT_Lot 30	5.16	5	Little to none	1.6	0	Little to none	0.0	3	Little to none	1.1	4	Little to none	1.4	TC1	TC1	None to Minor	None to Minor	Low
ENGE0_CPT_Lot 31	6.02	10	Little to none	4.0	0	Little to none	0.0	7	Little to none	2.7	9	Little to none	3.6	TC2	TC1	None to Minor	None to Minor	Medium
ENGE0_CPT_Lot 32	4.72	5	Little to none	1.8	0	Little to none	0.0	3	Little to none	1.0	4	Little to none	1.5	TC1	TC1	None to Minor	None to Minor	Low
ENGE0_CPT_Lot 33	4.72	7	Little to none	2.7	0	Little to none	0.0	3	Little to none	1.4	5	Little to none	2.1	TC2	TC1	None to Minor	None to Minor	Medium
ENGE0_CPT_Lot 4	7.30	8	Little to none	4.2	0	Little to none	0.0	5	Little to none	2.4	6	Little to none	3.2	TC2	TC1	None to Minor	None to Minor	Medium
ENGE0_CPT_Lot 43	5.10	9	Little to none	3.4	0	Little to none	0.0	2	Little to none	0.9	5	Little to none	1.8	TC2	TC1	None to Minor	None to Minor	Medium
ENGE0_CPT_Lot 45	3.28	2	Little to none	0.5	0	Little to none	0.0	0	Little to none	0.1	0	Little to none	0.2	TC1	TC1	None to Minor	None to Minor	Low
ENGE0_CPT_Lot 46-3	10.12	22	Moderate	11.5	0	Little to none	0.1	17	Minor	8.8	20	Moderate	10.2	TC3	TC2	Minor to Moderate	Minor to Moderate	High
ENGE0_CPT_Lot 46-2	4.40	0	Little to none	0.1	0	Little to none	0.0	0	Little to none	0.0	0	Little to none	0.0	TC1	TC1	None to Minor	None to Minor	Low
ENGE0_CPT_Lot 46-1	11.18	15	Minor	6.4	0	Little to none	0.1	9	Little to none	4.2	12	Minor	5.2	TC2	TC1/TC2	None to Minor	None to Minor	Medium
ENGE0_CPT_Lot 47	2.64	0	Little to none	0.0	0	Little to none	0.0	0	Little to none	0.0	0	Little to none	0.0	TC1	TC1	None to Minor	None to Minor	Low
ENGE0_CPT_Lot 49	3.9	0	Little to none	0.1	0	Little to none	0.0	0	Little to none	0.1	0	Little to none	0.1	TC1	TC1	None to Minor	None to Minor	Low
ENGE0_CPT_Lot 51	3.4	0	Little to none	0.0	0	Little to none	0.0	0	Little to none	0.0	0	Little to none	0.0	TC1	TC1	None to Minor	None to Minor	Low
ENGE0_CPT_Lot 53	2.82	0	Little to none	0.0	0	Little to none	0.0	0	Little to none	0.0	0	Little to none	0.0	TC1	TC1	None to Minor	None to Minor	Low
ENGE0_CPT_Lot 55-2	2.78	0	Little to none	0.0	0	Little to none	0.0	0	Little to none	0.0	0	Little to none	0.0	TC1	TC1	None to Minor	None to Minor	Low
ENGE0_CPT_Lot 55-1	2.98	0	Little to none	0.0	0	Little to none	0.0	0	Little to none	0.0	0	Little to none	0.0	TC1	TC1	None to Minor	None to Minor	Low
ENGE0_CPT_Lot 57	2.56	0	Little to none	0.0	0	Little to none	0.0	0	Little to none	0.0	0	Little to none	0.0	TC1	TC1	None to Minor	None to Minor	Low
ENGE0_CPT_Lot 7	11.92	13	Minor	7.3	0	Little to none	0.1	10	Minor	5.6	12	Minor	6.7	TC2	TC1/TC2	None to Minor	None to Minor	Medium
ENGE0_CPT_Lot 77	6.62	10	Little to none	3.9	0	Little to none	0.0	6	Little to none	2.4	7	Little to none	3.0	TC2	TC1	None to Minor	None to Minor	Medium

Liquefaction Analysis Results

Engineer: NN
Date: 23.06.26
Project Number: 31246
GWT Depth: 3m - as conservative mid-range value
Liquefaction Triggering Procedure: Boulanger and Idriss 2014
Volumetric Settlement: Zhang et. al. 2002, reported in cm
Probability of Liquefaction Curve: 16%
lc cutoff: 2.6
Surface Expression of Liquefaction: Liquefaction Severity Number (LSN)
Seismic Demand Parameters: TS1170.5:2025 for Pegasus utilising the default site class owing to limited onsite information. Selected M7 (M varies over return periods from 6.5 for 25yr to 7.1 for 2500yr)

Method based on the following:
Boulanger, R.W. and Idriss, I.M. (2014). "CPT and SPT based liquefaction triggering procedures". Department of Civil & Environmental Engineering, College of Engineering, University of California at Davis. April 2014.

Zhang, G., Robertson, P. K., & Brachman, R. (2002). Estimating Liquefaction Induced Ground Settlements from the CPT. 39, 1168-1180.

Liquefaction Analysis Results															Performance Categories			
		ULS - 1 in 500 yr Return Period			SLS - 1 in 25 yr Return Period			ILS 1 - 1 in 100 yr Return Period			ILS 2 - 1 in 150 yr Return Period			MBIE Technical Category (TC)		MfE Planning Guidance Category - ILS is 1 in 100 yr RP		
CPT ID	Inv Depth	LSN	Expression of Liq. from LSN	Vert. Settlement cm	LSN	Expression of Liq. from LSN	Vert. Settlement cm	LSN	Expression of Liq. from LSN	Vert. Settlement cm	LSN	Expression of Liq. from LSN	Vert. Settlement cm	MBIE Technical Category (TC)	TC on basis of LSN	ULS Performance	ILS Performance	Planning Guidance Category
ENGEO_CPT_Lot 78	9.36	12	Minor	6.0	0	Little to none	0.3	9	Little to none	4.4	10	Minor	5.1	TC2	TC1/TC2	None to Minor	None to Minor	Medium
ENGEO_CPT_Lot 79	7.70	12	Minor	5.3	0	Little to none	0.1	9	Little to none	4.1	11	Minor	4.9	TC2	TC1/TC2	None to Minor	None to Minor	Medium
ENGEO_CPT_Lot 82	7.90	10	Minor	4.0	0	Little to none	0.1	7	Little to none	2.8	8	Little to none	3.4	TC2	TC1/TC2	None to Minor	None to Minor	Medium
ENGEO_CPT_Lot 83-2	7.24	9	Little to none	3.8	0	Little to none	0.1	6	Little to none	2.4	7	Little to none	3.0	TC2	TC1	None to Minor	None to Minor	Medium
ENGEO_CPT_Lot 83-3	7.14	13	Minor	5.9	0	Little to none	0.1	10	Minor	4.8	12	Minor	5.4	TC2	TC1/TC2	None to Minor	None to Minor	Medium
ENGEO_CPT_Lot 83-1	7.74	6	Little to none	3.2	0	Little to none	0.0	5	Little to none	2.3	5	Little to none	2.7	TC2	TC1	None to Minor	None to Minor	Medium
ENGEO_CPT_Lot 84	10.28	8	Little to none	3.8	0	Little to none	0.0	6	Little to none	3.1	7	Little to none	3.6	TC2	TC1	None to Minor	None to Minor	Medium
ENGEO_CPT_Lot 85	7.58	10	Little to none	5.4	0	Little to none	0.1	9	Little to none	5.1	9	Little to none	5.3	TC2	TC1	None to Minor	None to Minor	Medium
ENGEO_CPT_Lot 86	7.76	3	Little to none	1.1	0	Little to none	0.1	2	Little to none	0.8	2	Little to none	0.9	TC1	TC1	None to Minor	None to Minor	Low
ENGEO_CPT_Lot 87	9.22	5	Little to none	2.6	0	Little to none	0.4	4	Little to none	1.9	4	Little to none	2.2	TC2	TC1	None to Minor	None to Minor	Medium
ENGEO_CPT_Lot 88	6.72	5	Little to none	1.9	0	Little to none	0.0	3	Little to none	1.1	3	Little to none	1.3	TC1	TC1	None to Minor	None to Minor	Low
ENGEO_CPT_Lot 89	6.18	4	Little to none	1.6	0	Little to none	0.0	2	Little to none	0.9	3	Little to none	1.1	TC1	TC1	None to Minor	None to Minor	Low
ENGEO_CPT_Lot 90	7.10	5	Little to none	2.4	0	Little to none	0.0	4	Little to none	1.9	5	Little to none	2.2	TC1	TC1	None to Minor	None to Minor	Medium
ENGEO_CPT_Lot 91	7.66	7	Little to none	2.9	0	Little to none	0.1	5	Little to none	2.1	6	Little to none	2.7	TC2	TC1	None to Minor	None to Minor	Medium
ENGEO_CPT_Lot 5-1, M1	7.20	3	Little to none	1.8	0	Little to none	0.0	2	Little to none	1.1	2	Little to none	1.3	TC1	TC1	None to Minor	None to Minor	Low
ENGEO_CPT_Lot 96-1, M10	10.24	5	Little to none	2.4	0	Little to none	0.2	3	Little to none	1.7	4	Little to none	2.0	TC1	TC1	None to Minor	None to Minor	Low
ENGEO_CPT_Lot 96-3, M12	8.00	9	Little to none	4.6	0	Little to none	0.2	4	Little to none	1.9	6	Little to none	2.8	TC2	TC1	None to Minor	None to Minor	Medium
ENGEO_CPT_Lot 5-2, M2	7.40	5	Little to none	2.3	0	Little to none	0.0	2	Little to none	0.8	3	Little to none	1.3	TC1	TC1	None to Minor	None to Minor	Low
ENGEO_CPT_Lot 6-2, M3	9.24	4	Little to none	2.7	0	Little to none	0.1	3	Little to none	1.8	3	Little to none	2.1	TC2	TC1	None to Minor	None to Minor	Low
ENGEO_CPT_Lot 6-1, M4	8.84	11	Minor	5.4	0	Little to none	0.3	7	Little to none	4.0	9	Little to none	4.7	TC2	TC1/TC2	None to Minor	None to Minor	Medium
ENGEO_CPT_Lot 23-1, M5	3.72	1	Little to none	0.4	0	Little to none	0.0	0	Little to none	0.1	0	Little to none	0.1	TC1	TC1	None to Minor	None to Minor	Low
ENGEO_CPT_Lot 23-2, M6	3.36	0	Little to none	0.0	0	Little to none	0.0	0	Little to none	0.0	0	Little to none	0.0	TC1	TC1	None to Minor	None to Minor	Low
ENGEO_CPT_Lot 44-1, M7	10.96	21	Moderate	11.0	0	Little to none	0.1	16	Minor	8.9	19	Minor	10.4	TC3	TC2	Minor to Moderate	Minor to Moderate	High
ENGEO_CPT_Lot 34	3.76	3	Little to none	1.1	0	Little to none	0.0	1	Little to none	0.2	1	Little to none	0.4	TC1	TC1	None to Minor	None to Minor	Low
ENGEO_CPT_Lot 41	5.34	4	Little to none	1.3	0	Little to none	0.0	3	Little to none	1.0	3	Little to none	1.3	TC1	TC1	None to Minor	None to Minor	Low
ENGEO_CPT_Lot 59	3.86	4	Little to none	1.5	0	Little to none	0.0	1	Little to none	0.2	2	Little to none	0.5	TC1	TC1	None to Minor	None to Minor	Low
ENGEO_CPT_Lot 66-3	2.36	0	Little to none	0.0	0	Little to none	0.0	0	Little to none	0.0	0	Little to none	0.0	TC1	TC1	None to Minor	None to Minor	Low
ENGEO_CPT_Lot 72	6.87	14	Minor	6.5	0	Little to none	0.0	9	Little to none	4.6	11	Minor	5.4	TC2	TC1/TC2	None to Minor	None to Minor	Medium
ENGEO_CPT_Lot 74	6.27	10	Little to none	3.8	0	Little to none	0.0	8	Little to none	3.3	9	Little to none	3.6	TC2	TC1	None to Minor	None to Minor	Medium
ENGEO_CPT_Lot 76	8.63	20	Minor	8.4	0	Little to none	0.3	17	Minor	7.5	19	Minor	8.1	TC2	TC1/TC2	Minor to Moderate	Minor to Moderate	High
ENGEO_CPT_Lot 92	6.42	7	Little to none	2.9	0	Little to none	0.0	5	Little to none	2.2	7	Little to none	2.7	TC2	TC1	None to Minor	None to Minor	Medium
ENGEO_CPT_Lot 93-3	5.14	2	Little to none	0.8	0	Little to none	0.0	1	Little to none	0.4	1	Little to none	0.5	TC1	TC1	None to Minor	None to Minor	Low
ENGEO_CPT_Lot 93-2	6.88	12	Minor	5.0	0	Little to none	0.0	10	Minor	4.4	12	Minor	4.9	TC2	TC1/TC2	None to Minor	None to Minor	Medium
ENGEO_CPT_Lot 93-1	7.12	9	Little to none	3.5	0	Little to none	0.0	8	Little to none	2.9	9	Little to none	3.3	TC2	TC1	None to Minor	None to Minor	Medium
ENGEO_CPT_Lot 95	7.08	21	Moderate	9.6	0	Little to none	0.6	19	Minor	8.8	20	Minor	9.1	TC2	TC2	Minor to Moderate	Minor to Moderate	High
ENGEO_CPT_Lot 95-2	5.53	4	Little to none	1.7	0	Little to none	0.0	3	Little to none	1.2	4	Little to none	1.5	TC1	TC1	None to Minor	None to Minor	Low
ENGEO_CPT_Lot 96-2	7.65	5	Little to none	2.4	0	Little to none	0.0	3	Little to none	1.6	3	Little to none	1.8	TC1	TC1	None to Minor	None to Minor	Low
ENGEO_CPT_Lot 97	8.46	10	Minor	4.6	0	Little to none	0.0	6	Little to none	2.8	8	Little to none	3.7	TC2	TC1/TC2	None to Minor	None to Minor	Medium

Liquefaction Analysis Results

Engineer: NN
 Date: 23.06.26
 Project Number: 31246
 GWT Depth: 3m - as conservative mid-range value
 Liquefaction Triggering Procedure: Boulanger and Idriss 2014
 Volumetric Settlement: Zhang et. al. 2002, reported in cm
 Probability of Liquefaction Curve: 16%
 Ic cutoff: 2.6
 Surface Expression of Liquefaction: Liquefaction Severity Number (LSN)
 Seismic Demand Parameters: TS1170.5:2025 for Pegasus utilising the default site class owing to limited onsite information. Selected M7 (M varies over return periods from 6.5 for 25yr to 7.1 for 2500yr)

Method based on the following:
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		Liquefaction Analysis Results												Performance Categories					
		ULS - 1 in 500 yr Return Period			SLS - 1 in 25 yr Return Period			ILS 1 - 1 in 100 yr Return Period			ILS 2 - 1 in 150 yr Return Period			MBIE Technical Category (TC)		MfE Planning Guidance Category - ILS is 1 in 100 yr RP			
CPT ID	Inv Depth	LSN	Expression of Liq. from LSN	Vert. Settlement cm	LSN	Expression of Liq. from LSN	Vert. Settlement cm	LSN	Expression of Liq. from LSN	Vert. Settlement cm	LSN	Expression of Liq. from LSN	Vert. Settlement cm	MBIE Technical Category (TC)	TC on basis of LSN	ULS Performance	ILS Performance	Planning Guidance Category	
ENGEO_CPT_Lot 98	11.78	13	Minor	6.3	0	Little to none	0.0	9	Little to none	4.6	11	Minor	5.3	TC2	TC1/TC2	None to Minor	None to Minor	Medium	
ENGEO_CPT_Lot 71	3.94	2	Little to none	0.7	0	Little to none	0.0	1	Little to none	0.3	1	Little to none	0.5	TC1	TC1	None to Minor	None to Minor	Low	
ENGEO_CPT_Lot 9_b	10.88	15	Minor	6.8	0	Little to none	0.2	13	Minor	6.1	15	Minor	6.8	TC2	TC1/TC2	Minor to Moderate	None to Minor	Medium	
ENGEO_CPT_Lot 75	6.36	15	Minor	6.1	0	Little to none	0.1	14	Minor	5.4	14	Minor	5.8	TC2	TC1/TC2	Minor to Moderate	None to Minor	Medium	
ENGEO_CPT_Lot 16-1, M13	7.28	9	Little to none	4.3	0	Little to none	0.0	6	Little to none	3.4	8	Little to none	3.9	TC2	TC1	None to Minor	None to Minor	Medium	
ENGEO_CPT_Lot 16-2, M14	7.26	9	Little to none	4.5	0	Little to none	0.1	6	Little to none	3.1	7	Little to none	3.7	TC2	TC1	None to Minor	None to Minor	Medium	
NZGD_CPT_109534	10.00	0	Little to none	0.0	0	Little to none	0.0	0	Little to none	0.0	0	Little to none	0.0	TC1	TC1	None to Minor	None to Minor	Low	
NZGD_CPT_181936	9.52	1	Little to none	0.3	0	Little to none	0.0	0	Little to none	0.1	0	Little to none	0.2	TC1	TC1	None to Minor	None to Minor	Low	
NZGD_CPT_181938	15.16	1	Little to none	0.6	0	Little to none	0.0	0	Little to none	0.1	0	Little to none	0.2	TC1	TC1	None to Minor	None to Minor	Low	
NZGD_CPT_181955	6.25	3	Little to none	1.2	0	Little to none	0.0	1	Little to none	0.3	2	Little to none	0.5	TC1	TC1	None to Minor	None to Minor	Low	
NZGD_CPT_181958	12.40	2	Little to none	0.7	0	Little to none	0.0	0	Little to none	0.1	1	Little to none	0.3	TC1	TC1	None to Minor	None to Minor	Low	
NZGD_CPT_182278	3.31	0	Little to none	0.0	0	Little to none	0.0	0	Little to none	0.0	0	Little to none	0.0	TC1	TC1	None to Minor	None to Minor	Low	
NZGD_CPT_216083	8.95	0	Little to none	0.2	0	Little to none	0.0	0	Little to none	0.1	0	Little to none	0.1	TC1	TC1	None to Minor	None to Minor	Low	
NZGD_CPT_216085	9.06	5	Little to none	1.9	0	Little to none	0.0	1	Little to none	0.5	2	Little to none	0.9	TC1	TC1	None to Minor	None to Minor	Medium	
NZGD_CPT_216090	8.66	8	Little to none	2.8	0	Little to none	0.0	1	Little to none	0.4	2	Little to none	0.7	TC2	TC1	None to Minor	None to Minor	Medium	
NZGD_CPT_216093	9.11	1	Little to none	0.5	0	Little to none	0.0	0	Little to none	0.0	0	Little to none	0.0	TC1	TC1	None to Minor	None to Minor	Low	
NZGD_CPT_242936	12.53	12	Minor	7.1	0	Little to none	0.1	9	Little to none	5.3	10	Minor	6.1	TC2	TC1/TC2	None to Minor	None to Minor	Medium	
NZGD_CPT_242939	12.78	13	Minor	7.2	0	Little to none	0.0	7	Little to none	4.2	9	Little to none	5.3	TC2	TC1/TC2	None to Minor	None to Minor	Medium	
NZGD_CPT_242940	3.36	2	Little to none	0.6	0	Little to none	0.0	1	Little to none	0.2	1	Little to none	0.3	TC1	TC1	None to Minor	None to Minor	Low	
NZGD_CPT_242944	17.66	6	Little to none	3.8	0	Little to none	0.0	5	Little to none	2.9	5	Little to none	3.2	TC2	TC1	None to Minor	None to Minor	Medium	
NZGD_CPT_242987	12.74	17	Minor	8.7	0	Little to none	0.1	12	Minor	6.6	14	Minor	7.5	TC2	TC1/TC2	Minor to Moderate	None to Minor	Medium	
NZGD_CPT_243030	12.55	8	Little to none	4.9	0	Little to none	0.1	5	Little to none	3.3	7	Little to none	4.2	TC2	TC1	None to Minor	None to Minor	Medium	
NZGD_CPT_243032	12.94	9	Little to none	6.1	0	Little to none	0.0	7	Little to none	4.8	9	Little to none	5.5	TC2	TC1	None to Minor	None to Minor	Medium	
NZGD_CPT_243158	17.10	8	Little to none	4.3	0	Little to none	0.0	6	Little to none	3.6	7	Little to none	4.2	TC2	TC1	None to Minor	None to Minor	Medium	
NZGD_CPT_245746	10.14	4	Little to none	3.0	0	Little to none	0.0	2	Little to none	1.8	3	Little to none	2.1	TC2	TC1	None to Minor	None to Minor	Low	
NZGD_CPT_37505	12.18	15	Minor	7.1	0	Little to none	0.3	5	Little to none	2.6	7	Little to none	3.7	TC2	TC1/TC2	None to Minor	None to Minor	Medium	
NZGD_CPT_37919	7.54	10	Minor	4.4	0	Little to none	0.2	5	Little to none	2.3	7	Little to none	3.0	TC2	TC1/TC2	None to Minor	None to Minor	Medium	
NZGD_CPT_37921	8.60	11	Minor	5.6	0	Little to none	0.1	7	Little to none	3.9	9	Little to none	4.5	TC2	TC1/TC2	None to Minor	None to Minor	Medium	
NZGD_CPT_37922	5.86	11	Minor	4.2	0	Little to none	0.0	5	Little to none	2.0	7	Little to none	2.9	TC2	TC1/TC2	None to Minor	None to Minor	Medium	
NZGD_CPT_97287	9.64	4	Little to none	1.8	0	Little to none	0.0	3	Little to none	1.3	3	Little to none	1.5	TC1	TC1	None to Minor	None to Minor	Low	
NZGD_CPT_37920	11.16	6	Little to none	3.2	0	Little to none	0.3	3	Little to none	1.8	4	Little to none	2.3	TC2	TC1	None to Minor	None to Minor	Medium	
NZGD_CPT_37923	11.20	11	Minor	5.7	0	Little to none	0.1	6	Little to none	3.3	8	Little to none	4.1	TC2	TC1/TC2	None to Minor	None to Minor	Medium	
NZGD_CPT_37924	9.12	12	Minor	5.8	0	Little to none	0.2	9	Little to none	4.2	11	Minor	5.0	TC2	TC1/TC2	None to Minor	None to Minor	Medium	
NZGD_CPT_37925	6.68	3	Little to none	1.2	0	Little to none	0.0	1	Little to none	0.5	2	Little to none	0.7	TC1	TC1	None to Minor	None to Minor	Low	
NZGD_CPT_37926	6.22	9	Little to none	4.0	0	Little to none	0.0	5	Little to none	2.5	6	Little to none	3.1	TC2	TC1	None to Minor	None to Minor	Medium	
NZGD_CPT_37927	9.16	9	Little to none	4.9	0	Little to none	0.0	4	Little to none	2.6	6	Little to none	3.4	TC2	TC1	None to Minor	None to Minor	Medium	
NZGD_CPT_37930	5.16	8	Little to none	3.3	0	Little to none	0.0	3	Little to none	1.1	5	Little to none	1.9	TC2	TC1	None to Minor	None to Minor	Medium	