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Project Number 29048.001.001

Geotechnical Investigation

190 and 192 Hamptons Road, Prebbleton,
Christchurch

Submitted to:
Urban Estates Limited
181 High Street
City Centre
Christchurch 8144

Executive Summary

ENGEO was requested by Urban Estates Limited to undertake a geotechnical investigation of the property at 190 Hamptons Road to support a subdivision consent application. Key findings of our investigation are summarised in the table below.

Item	Finding	Reference
Site classification	The site is classified as “Rural and Unmapped” by MBIE.	8.1
Geology	Subsurface geology encountered consisted of up to 0.35 m of surficial topsoil, underlain by natural silt with some sand before transitioning into gravel which extends to depths of at least 36 m.	6
Groundwater	Groundwater was not encountered in our investigation and is inferred to be at depths between 5 to 10 m.	4.8
Geohazards	The main geohazard is considered to be a potential 1 in 200-year flood event from the Selwyn River, with inundation of up to 0.5 to 1.0 m predicted on the northern part of the site.	7
Technical Category Performance	Based on our assessment of the ground conditions at the site, we consider the site to have a performance equivalent to that of a TC1 site where “Future land damage from liquefaction is unlikely, and ground settlements from liquefaction effects are expected to be within normally accepted tolerances”.	7.3
Foundations	Applicable foundations for this site include NZS3604:2011 (as modified by B1/AS1) Type A and B foundation options.	8.2
Geotechnical Bearing Capacity	We recommend adopting a static geotechnical ultimate bearing capacity of 300 kPa (based on a minimum 0.4 m embedment depth) for shallow foundations founding on natural silt, sand or gravel below the topsoil (encountered from approximately 0.1 m to 0.35 m depth).	8.3
CBR	For pavement design, a California Bearing Ratio (CBR) value of 3.5% is recommended for preliminary design on natural soils below topsoil.	8.4
RMA Section 106 Assessment	This assessment, in line with Section 106 of the Resource Management Act, concludes that the proposed development is unlikely to cause material damage if proper engineering practices are followed and therefore the site is deemed suitable for subdivision.	7

Based on our assessment, we consider that the site is geotechnically suitable to support the proposed residential subdivision development.

The above is not intended to exhaustively characterise the findings of our investigation. Accordingly, this report must be read and understood in full.

ENGEO Document Control:

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1 Introduction

ENGEO Ltd was requested by Urban Estates Limited to undertake a Geotechnical Investigation at 190 and 192 Hamptons Road, Prebbleton, (herein referred to as ‘the site’, shown in Figure 1). This work has been carried out in accordance with our signed agreement dated 20 August 2025. The purpose of the assessment was to support a subdivision consent application for the proposed development at 190 and 192 Hamptons Road, Prebbleton.

Our scope of works included:

- Review of published geotechnical and geological information relevant to the site.
- Shallow subsurface testing, consisting of 14 hand auger boreholes to a maximum depth of 3 m, or practical refusal, with associated Scala penetrometer and shear vane tests for strength characteristics.
- A qualitative assessment of the liquefaction potential for the site based on our site investigations and published literature.
- Geotechnical assessment including:
 - Conceptual foundation recommendations for typical timber framed residential dwellings.
 - Seismic Subsoil category.
 - Assessment of likely geohazards as required by Section 106 of the RMA.
 - General geotechnical recommendations related to the proposed development.
 - Provision of a Statement of Professional Opinion on the Suitability of Land for Subdivision.

2 Site Description

The site comprises a roughly 3.1 Ha area of land within the property at 190 Hamptons Road and a portion in the northern end of 192 Hamptons Road. These properties have the legal descriptions: Lot 2 DP 24822 Blk I Halswell Sd Blk Xiii Christchurch Sd and Lot 1 DP 24822 respectively. The site is located on a relatively flat area in Prebbleton, Christchurch.

The majority of the site is currently agricultural land mostly used for grazing. The site is bordered by Hamptons Road to the southwest, agricultural land to the northwest and northeast, and a recent subdivision development to the southeast. A residential dwelling and associated sheds are located in the southern area of the site.

Figure 1: Site Plan



Site Boundary shown in red

Aerial photo sourced from Nearmap

3 Proposed Development

The proposed development for the site is a residential subdivision with approximately 49 residential lots, right of ways providing access to the residential lots, a proposed utility reserve area and several roads providing access to future subdivision stages. The proposed subdivision plan produced by Davie Lovell-Smith (ref: Drawing E21448, dated July 2025) is shown in Figure 2.

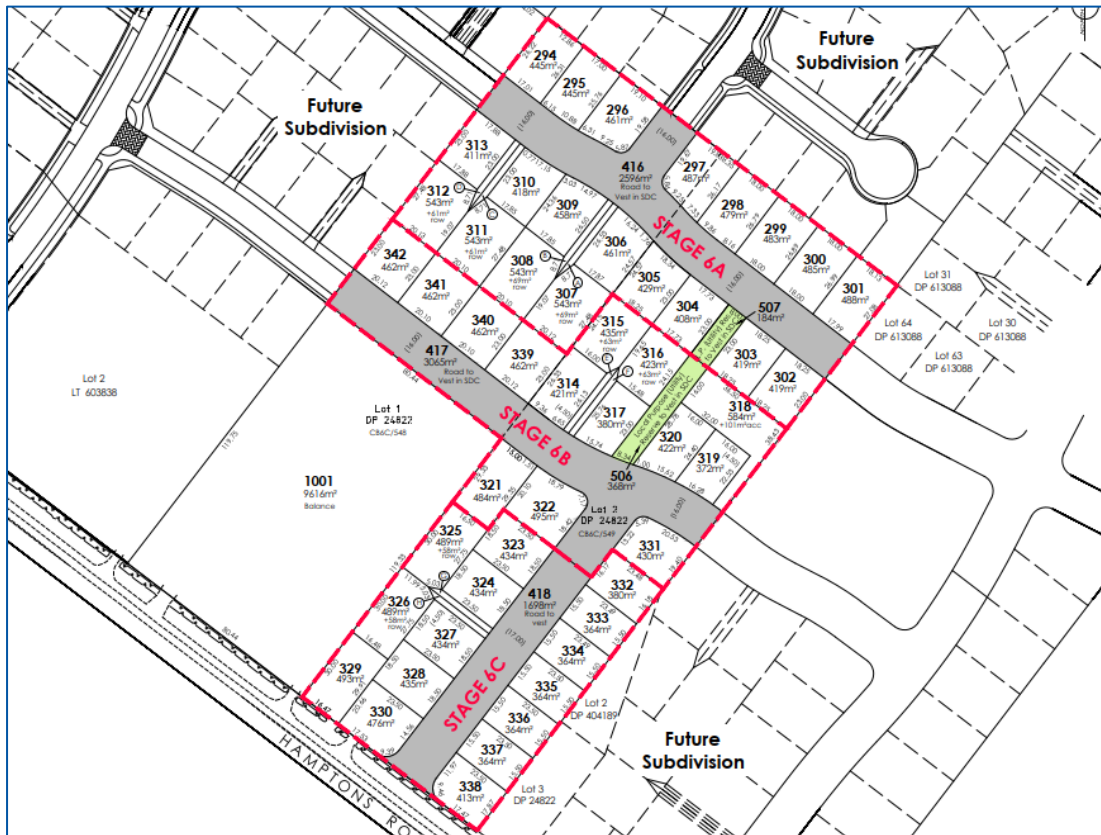
Figure 2: Proposed Subdivision Plan

Image sourced from Davie Lovell-Smith plan set (Ref: Drawing E21448, dated July 2025).

4 Desktop Study

4.1 Previous Work

ENGEO had previously completed a geotechnical investigation supporting the plan change from general rural zone to a general residential zone for the properties at 174 – 250 Hamptons Road and 735 Shands Road, Prebbleton, of which the site at 190 and 192 Hamptons Road is a part of. This investigation consisted of approximately 0.3 tests per hectare; however, additional testing is required to support a Subdivision Consent Application.

In accordance with Section 16.3 MBIE Canterbury Residential Technical Guidance we have allowed for approximately 0.25 investigations per lot as we consider that the ground conditions across the site are likely to be relatively consistent. Furthermore, based on published literature we expect the groundwater levels at the site to be between 5 m and 8 m depth, we have therefore only scoped shallow investigations.

ENGEO have also previously completed a geotechnical investigation for subdivision consent for the property at 174 Hamptons Road immediately east of the site.

4.2 Geology and Geomorphology

The site has been regionally mapped by GNS (Forsyth et al., 2008) as being underlain by grey to brown alluvium, comprising silty subangular gravel and sands (Q1a).

Broadly linear features trending northwest-southeast were identified in several historic and recent aerial photographs and are interpreted to be paleo-channels (presumably related large flood events).

4.3 Seismicity

There are no known or mapped faults in the immediate area of the site, however, it is located between two recently discovered fault systems, the Greendale Fault and the Port Hills Fault, the ruptures of which initiated the Canterbury Earthquake Sequence (CES). The Greendale Fault has been mapped approximately 11 km west of the site and trends roughly east-west with a surface rupture of approximately 28 km (GNS, 2015), while the Port Hills Fault remains unmapped as the fault did not rupture the surface.

4.4 Liquefaction

We have reviewed liquefaction susceptibility mapping held on Canterbury Maps for the Prebbleton area around the site. The following observations were made:

- The MBIE technical category for the site is mapped as rural/unmapped. An area approximately 500 m southwest of the site is mapped as TC2.
- The site is mapped as being in an area requiring liquefaction assessment based on data from Environment Canterbury's Natural Hazards Research Platform Liquefaction study.
- The majority of the site is mapped as being within a zone of low liquefaction potential by the Selwyn liquefaction susceptibility mapping based on a 2012 Environment Canterbury liquefaction hazard assessment. The northeast corner of the site is mapped as being within a zone of moderate liquefaction potential.
- An area approximately 100 m west of the site is mapped by GNS as potentially scruffy vegetation or sand boils. The level of certainty for this feature is noted as uncertain.
- An area of observed liquefaction following the Canterbury 2010 earthquake is mapped by GNS approximately 500 m south of the site.

4.5 Historical Aerial Photography Review

We have reviewed historic aerial photographs dating back to 1940. It appears that land use at the site has included general rural farming activities with no significant ground modifications identified in the available photographs.

The dwelling on the south end of the site is visible from the 1970 to 1974 photograph. Tree plantings are visible in the north end of the site in the 1980 to 1984 photograph; current aerial imagery shows more tree planting in the northwest end of the site.

4.6 Flooding

The site is outside of any defined flood zones in the Selwyn District Council (SDC) Operative District Plan. The closest flood zone is the Lower Plains Flood Area which is approximately 4 km southeast of the site towards the Port Hills.

The Selwyn District Council have carried out computer-based flood modelling to predict the extent and depth of flooding that could happen during a one-in-200-year and a one-in-500-year flood. Based on this modelling, the water depth through the site may be up to 1 m deep in the paleo channel feature discussed in Section 4.2 (Figure 3) during a 500-year flood event

Figure 3: Selwyn District Council Flooding Map (500-year flood event)



Figure Notes

1. Site boundary shown in red
2. Aerial images sources from Canterbury Maps

4.7 Environment Canterbury Boreholes

We have reviewed deep ECan borehole logs located on the site (or close to the site boundary, as shown in Table 1).

The logs for the wells located on the site, or close to the site boundary (Wells M36/5284, BX23/1546, M36/8265, BX23/1451 and M36/3109 indicate the underlying soil comprises up to 0.5 m of topsoil further underlain by gravels which extend to the bottom of the drill holes (18 m to 36 m depth). One well (M36/3109) shows a 3 m thick band of peat at 7 m depth. The groundwater levels recorded in these wells are between approximately 7 m and 9 m below ground level. The details for the wells are provided in Appendix 3 (including available drill logs).

Table 1: Environment Canterbury Well Bores Summary

Well ID	Location	Material Description	Groundwater Level
M36/5284	Located centrally within the site	Topsoil underlain by sandy and claybound gravels to 29.8 m depth	Water level recorded at 8.7 m depth at time of drilling
M36/8265	100 m north of the site	Topsoil underlain by sandy gravels to 36 m depth	Water level recorded at 6.98 m depth at time of drilling
BX23/1546	10 m southwest of site	Topsoil underlain by gravelly clay to 19 m depth and further underlain by sandy gravel to 30 m depth	Water level recorded at 8.6 m depth at time of drilling
BX23/1451	100 m west of site	Topsoil underlain by gravelly clay to 19 m depth and further underlain by sandy gravel to 30 m depth	Water level recorded at 6.8 m depth at time of drilling
M36/3109	100 m southeast of site	Topsoil underlain by gravels to 7 m depth, 3 m of peat are then further underlain by gravels to 18 m depth	Water level recorded at 9.0 m depth at time of drilling

4.8 Groundwater

We have reviewed the well information from ECan used in various published groundwater models and groundwater contour maps available on Canterbury Maps. Published regional mapping of groundwater shows the site is located approximately halfway between the 15 m and 20 m groundwater elevation contours (which represent the height of the water table in metres above sea level). The site itself is located at an elevation of approximately 23 m across the site, which suggests the depth of the groundwater surface below the site is approximately 5 m depth (Figure 4).

Regional depth to groundwater contours available on Canterbury Maps indicate that groundwater beneath the site is approximately 7.0 m below ground level.

Figure 4: ECan Regional Piezometric Elevation Contours



Figure Notes

1. Site boundary shown in red
2. Aerial images sources from Canterbury Maps

5 Site Investigation

ENGEO visited the site on 12 September 2025 and completed geotechnical field reconnaissance and shallow hand auger investigations to assess the geotechnical characteristics of the site.

5.1 Field Reconnaissance

During our reconnaissance, our observations (additional to the above site descriptions) included:

- Recent site clearing to remove trees from the property had been partially completed at the time of our visit.
- The site is generally flat with several farm sheds along the east boundary of the site.
- A small amount of standing water was noted in the centre of the site.
- Established tree plantings were present in the north end of the site.

- A soil bund was observed in the west end of the site in which material appeared to have been burned.
- Signs of surface drainage which may be related to the paleochannels identified in the aerial photo review were observed in the centre of the site. A fall in the land to the north was noticed from the hand auger locations of HA08 and HA14 (which were located within the location of an inferred paleochannel) towards the area of standing water.

Figure 5: Site Photos



Photo 1: Site Access off Hamptons Road



Photo 2: Sheds on east end of site



Photo 3: Standing water in centre of site.



Photo 4: Generally flat ground in west end of site

5.2 Hand Auger Investigation

ENGEO completed 14 hand auger boreholes (HA01 through HA14) on 12 September 2025. ENGEO logged material recovered from the hand augers and completed dynamic cone penetrometer (Scala) and shear vane tests on the soils encountered.

The hand augers were excavated to depths between 0.3 m and 1.5 m. Given the relatively flat site, all test locations were undertaken from a generally similar elevation (23 m RL). Scala testing generally met refusal on inferred dense gravel between 0.1 m and 1.5 m depth.

Groundwater was not observed in the hand auger investigations.

Logs of the hand augers are presented in Appendix 2 and were written in accordance with the New Zealand Geotechnical Society field classification guidelines (NZGS, 2005).

6 Engineering Geological Model

Based on our desktop study, review of previous investigations completed around the site, and our geotechnical investigation, our interpretation of the underlying geology at the site is presented in Table 2.

The alluvium layers identified are broadly consistent with published mapping described in Section 4.2. Based on nearby ECan Well bore logs as seen in Appendix 3, the gravel layers continue (with some interbedded clay bound gravel layers) to at least 36 m depth (and likely a much greater depth) below ground level.

Although not encountered in our investigations, we anticipate that there is a potential for undocumented fill material to be present in isolated locations such as around the bund in the west end of the site, beneath existing site structures and where accessways are located.

Topsoil was recorded in HA12 extending to 0.35 m depth which was slightly deeper than the surrounding tests. This test was located approximately within the stream channel identified in the historical photo review and the deeper topsoil in this location may be the result of infill of the stream channel. Both HA08 and HA14 were located within the same stream channel. HA08 met refusal on gravel beneath topsoil at 0.35 m depth while HA14 (which was completed near HA08) encountered silts and sands beneath the topsoil layer to a depth of 1.4 m before refusing on inferred gravel. The change in soil units in this location may be connected to stream channel processes in this part of the site.

Generally, gravel was encountered at shallow depths across the southern half of the site (0.2 m to 0.45 m below ground level) and greater depths in the northern half of the site (0.5 m to 1.5 m below ground level).

Groundwater was not encountered in our hand augers at the time of our investigation, and this is consistent with the ECan wells discussed our desktop study.

Table 2: Summary of the Subsurface Conditions Across the Site

Unit	Description	Top of Unit (m)	Thickness Range (m)	Consistency / Density
Topsoil	Silt with trace rootlets	0.0	0.1 to 3.5	Not Applicable
Alluvium	Silt with minor to trace sand	0.1 to 0.35	0.1 to 1.15	Firm to Hard
Alluvium	Sand	1.0*	0.4*	Medium Dense to Dense
Alluvium	Sandy Gravel	0.1 to 1.5	> **36	Medium dense to dense***

* Unit only encountered on one investigation location (HA14)

** Inferred from nearby ECan Wells

*** Inferred from the refusal of Scala penetrometer probes on this material

7 RMA Section 106 Natural Hazards Assessment

Section 106 of the Resource Management Act requires a combined assessment of the likelihood of the hazards, the material damage (consequence) of the hazards, and whether the proposed use of the land would accelerate or worsen the hazard.

Potential natural hazards at the site assessed in accordance with Section 106 of the Resource Management Act 1991 are presented in the table and Sections 6.1 to 6.5 below.

7.1 Earthquake Ground Shaking

The site was subjected to a magnitude 6.0 earthquake with equivalent peak ground accelerations of 0.5 to 0.6 g (Canterbury Maps, 2025) during the September 2010 earthquake. We are not aware of any surface expression of liquefaction or damage to the existing structures on site as a result of this event. Although this risk has a geotechnical element, we consider that this risk has been addressed in NZS1170.5, and so long as the building design complies with this standard, the risk of building damage due to ground shaking would be acceptably low.

7.2 Flooding

We have not quantitatively assessed the risk of inundation from flooding as these assessments lie outside our scope for this geotechnical investigation. As mentioned in Section 3.6, the flood mapping by Selwyn's flooding and coastal hazards (Selwyn District Council, 2025) indicates that during a 1 in 200-year storm event, inundation of up to 1.0 m above ground level may occur, although it is mapped as being predominantly less than 0.2 m deep across much of the site. The risk of flooding on the site should be assessed by others.

7.3 Settlement

Liquefaction induced settlements from seismic events are not predicted to occur in soils at the site based on their composition (silt and sandy gravel) and depth to groundwater greater than 5 m.

The site is therefore considered to have a performance to that of a TC1 site where *“Future land damage from liquefaction is unlikely, and ground settlements from liquefaction effects are expected to be within normally accepted tolerances”*.

Soft or potentially compressible soils were not encountered in the geotechnical investigations. Therefore, we consider there to be a low to negligible risk of static settlement associated with a residential development at the site.

7.4 Lateral Spreading

Given that the soils at the site are not considered to be prone to liquefaction during future seismic events, lateral spreading is not anticipated. Additionally, the generally flat terrain of the site further reduces the likelihood of lateral spreading impacting the development. Therefore, the risk of lateral spread affecting the project is considered negligible.

7.5 Summary

We conclude that the risk to existing and future buildings from natural hazards will be acceptably low once the proposed mitigation measures described in this report have been completed (see Table 3 for a summary). We also consider that future development will not accelerate, worsen, or result in material damage to the land, so long as the recommendations in this report are followed.

On this basis, we consider the site is suitable for a subdivision consent to support a range of future developments.

The proposed mitigation measures are detailed in the following sections.

Table 3: Natural Hazards Risk

Hazard	Event	Proposed mitigation measure(s)	Risk once mitigation has been implemented	Are future works (including mitigation) likely to accelerate or worsen the hazard?
Fault rupture through the site during earthquake	Building collapse or major damage; major damage to other infrastructure	None required	Low	No
Liquefaction	Ground settlement causing damage to buildings	None required	Low	No
	Lateral Spreading causing damage to Buildings	None required	Low	No
Settlement	Settlement of buildings under normal conditions	Removal of any soft or compressible material encountered during foundation earthworks (including in the paleo channels identified in the aerial photos review on the west end of the site).	Low	No
Erosion	Erosion of site soils	Implement erosion and sediment controls during construction.	Low	No

Note: Flooding has not been included in Table 3 as flooding assessments are not part of the scope of this geotechnical assessment.

8 Conclusions and Recommendations

Based on our assessment of the site, we consider that it is geotechnically suitable to support the proposed development which we understand to consist of typical lightweight timber framed residential dwellings, subject to the considerations outlined in the following sections.

8.1 Site Soil Classification

For the purposes of structural design, a site soil classification of ‘*Class D – Deep or Soft Soil Site*’ as per NZS 1170.5:2004 (Standards New Zealand, 2004) is considered appropriate for the site. This is based on soil strength of the materials to the base of the investigations and our understanding of the geological setting.

8.2 Applicable Foundation Types

Based on our assessment of ground conditions at the site, we consider the site to have a “TC1-like” performance, and therefore foundations compliant with NZS 3604 (as modified by B1/AS1) can be used provided they are founded beneath topsoil (encountered to depths of 0.1 to 0.35 m bgl) into the medium dense sand, firm to hard silt or medium dense to dense sandy gravel. This includes Types A and B Shallow pile / foundation wall system or tied concrete slabs.

8.3 Static Bearing Capacity

For preliminary building designs we recommend adopting a static geotechnical ultimate bearing capacity of 300 kPa (assuming a minimum embedment depth of 400 mm) for foundations founding on natural soil (typically silt) below the topsoil (at approximately 0.1 – 0.35 m depth).

The ultimate bearing capacity provided should be multiplied by the following capacity reduction factors:

- All ULS load combinations (including earthquakes) 0.5
- Serviceability Limit State cases 0.33

The bearing capacity provided in this section is indicative only and should be confirmed during detailed design once foundation options have been selected.

8.4 Pavement Subgrade CBR

Based on our Scala testing near the locations to our test hand augers, it is anticipated the underlying natural soil subgrade may be suitable for standard road design and utility trenches. For the Scala testing in the upper 1 m of the site surface, the penetration resistance was typically 2 to 10 blows per 100 mm penetration.

An inferred preliminary California Bearing Ratio (CBR) design value of approximately 3.5% (AUSTROADS, 2004) may be adopted for preliminary design on the natural soils below topsoil. Please note that these CBR values are preliminary only. Specific *in situ* and / or laboratory testing of the exposed subgrade is recommended following earthworks and prior to finalising pavement designs, including the use of *in situ* Scala penetrometer testing on subgrade soils. Where localised uncontrolled fill or soft unsuitable material is encountered, it will be necessary to remove this fill and replace it with engineered fill. Additional subgrade improvement requirements may be necessary to achieve council requirements. This may include undercut and replacements, and / or the use of triaxial geogrid.

8.5 Earthworks Recommendations

We recommend that all earthworks be undertaken in accordance with NZS 4431:2022.

All topsoil (to an estimated depth of 0.1 to 0.35 m across the site based on investigations) must be stripped from beneath proposed building footprints and paved surfaces. If any soft or unsuitable material is encountered during site stripping (i.e. associated with paleochannels) this may require undercutting and backfilling with engineered hardfill.

ENGEO should be given the opportunity to assess the exposed subgrade to evaluate that it is consistent with what was assumed in this report (medium dense sand, firm to hard silt or medium dense to dense sandy gravel), and that all topsoil / unsuitable material has been sufficiently removed.

If filling is required, fill may comprise clean natural (site won) sandy gravel, sand or silty soils, or clean imported soils and / or granular fill (AP65 or similar approved). Fill should be placed in horizontal loose layers not exceeding 200 mm in thickness, moisture conditioned as necessary, and compacted to achieve a minimum of 95% standard compaction or 92% of vibrating hammer compaction as per NZS 4402:1988 – Test 4.1.1 or Test 4.1.3 (Standards New Zealand, 1986).

8.6 Pre-Existing Fill

Following site clearance, a geotechnical professional should evaluate the stripped subgrade across the site and determine the extent and nature of any pre-existing unsuitable fill exposed and determine if any fill material is present, and if so, is suitable for use or advise if undercutting and replacement with engineered fill is required.

8.7 Tree Removal

Where trees are to be removed within an area of future development it is important that all tree stumps and large roots (greater than 20 mm in diameter) are completely removed. Where large areas are to be cleared of vegetation, an effective approach would be to undercut the affected area to remove the large root systems and replace it with engineered fill to design levels as required.

8.8 Demolition of Existing Buildings

It is essential that all foundations and building debris from demolition of the existing building (if this is proposed) are completely removed from within the extent of earthworks.

Where foundations are removed below final ground level, they will need to be backfilled with approved hardfill (e.g. GAP65 or similar approved product) compacted in maximum 200 mm thick layers to ensure a consistent subgrade.

Any existing unsuitable fill uncovered by site clearing work should be inspected by a qualified geotechnical professional to confirm its suitability to remain on-site. A provisional allowance should be included in the construction scope for undercut and removal of existing fill associated with the existing structures and landscaping.

8.9 Stormwater and Wastewater

During construction, measures should be undertaken to control and treat stormwater runoff, with silt and erosion controls complying with local authority guidelines for erosion and sediment control. The control of surface drainage shall be undertaken early in the work to limit the introduction of water in the earthworks area. Both cut and fill areas shall be sloped adequately to prevent ponding of stormwater and temporary drainage may be necessary.

Stormwater from paved areas shall be taken in a piped system and disposed of into an approved stormwater system.

9 Future Works

As the proposed development plans (i.e. building type and locations) were not available at the time of preparing this report, we recommend that the final development plans be reviewed by ENGEO prior to building consent application to check that the recommendations and findings of this report have been interpreted as intended.

10 Safety in Design

Safety in Design aims to identify, address, and minimise or eliminate health and safety risks where it is reasonably practicable to do so. Given the relatively level site and the shallow excavations required, the key safety considerations during design and construction will likely relate to temporary cuts (if applicable), the contractor's construction methodology, and how the public interface with the site is managed. ENGEO can provide safety in design advice as part of the detailed design stages once the remediation strategy and foundation / earthworks requirements have been identified.

11 Sustainability

We encourage you to consider sustainability when assessing the options available for your project. Where suitable for the project, we recommend prioritising the use of sustainable building materials (such as timber in favour of concrete or steel), locally sourced (materials readily available to Contractors as opposed to materials requiring import), and installed in an environmentally friendly way (e.g., reduced carbon emissions and minimal contamination). If you would like to discuss these options further, ENGEO staff are available to offer suggestions.

12 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, Urban Estates Limited, their professional advisers and the relevant Territorial Authorities in relation to the specified project brief described in this report. No liability is accepted for the use of any part of the report for any other purpose or by any other person or entity.
- ii. The recommendations in this report are based on the ground conditions indicated from published sources, site assessments and subsurface investigations described in this report based on accepted normal methods of site investigations. Only a limited amount of information has been collected to meet the specific financial and technical requirements of the client's brief and this report does not purport to completely describe all the site characteristics and properties. The nature and continuity of the ground between test locations has been inferred using experience and judgement and it should be appreciated that actual conditions could vary from the assumed model.
- iii. Subsurface conditions relevant to construction works should be assessed by contractors who can make their own interpretation of the factual data provided. They should perform any additional tests as necessary for their own purposes.
- iv. This Limitation should be read in conjunction with the 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. Please do not hesitate to contact the undersigned on (03) 328 9012 if you require any further information.

Report prepared by



Trent Williamson

Geotechnical Engineer

Report reviewed by



Richard Justice, CMEngNZ (PEngGeol)

Principal Engineering Geologist

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APPENDIX 1: Geotechnical Investigation Plan



- Legend**
- ECan Wells
 - Hand Augers
 - Site Boundary
 - Inferred Paleochannels



ENGEO

Produced by **Datanest.earth**

Title: Geotechnical Investigation Plan		
Client: Urban Estates		Size: A4
Project: 190 Hamptons Road	Drawn: TW	Figure No.: 1
Date: 07-08-2025	Checked: JC	
Proj No: 29048.001.001	Scale: 1:2500	Version: Final



APPENDIX 2: Hand Auger Logs



Client : Urban Estates
Client Ref. : 29048.001.001
Date : 12-09-2025
Hole Depth : 0.45 m
Hole Diameter : 50 mm

Shear Vane No : 2022
 Logged By : DD
 Reviewed By : CN
 Latitude : -43.5890286
 Longitude : 172.4973853

[illegible]

NA = Not Assessed, TS = Topsoil, and A = Alluvium

GEOTECH HAND AUGER 2019.12.18 - GINT TEMPLATE (1).GPJ NZ DATA TEMPLATE 2.GDT 30/9/25



LOG OF AUGER HA02

190 Hamptons Road
Prebbleton

Client : Urban Estates
Client Ref. : 29048.001.001
Date : 12-09-2025
Hole Depth : 0.3 m
Hole Diameter : 50 mm

Shear Vane No : 2022
Logged By : DD
Reviewed By : CN
Latitude : -43.5886645
Longitude : 172.4967003

Depth (m BGL)	Material	USCS Symbol	DESCRIPTION	Graphic Symbol	Elevation (mRL)	Water Level	Moisture Cond.	Consistency/ Density Index	Shear Vane Undrained Shear Strength (kPa) Peak/Remolded	Scala Penetrometer					
										Blows per 100mm					
										2	4	6	8	10	12
	TOPSOIL	ML	[TOPSOIL] SILT with minor sand and trace rootlets; dark brown. Low plasticity; sand is fine.		23		M	NA							
0.5			End of Hole Depth: 0.3 m Termination Condition: Practical refusal												
1.0															
1.5															

Hand auger met practical refusal at 0.3 m depth on inferred gravel.
Scala Penetrometer met practical refusal at 0.3 m depth.
Standing groundwater was not encountered.
Location by hand held GPS, coordinates in WGS84, Vertical datum in NZVD2016.

NA = Not Assessed, TS = Topsoil, and A = Alluvium



LOG OF AUGER HA03

190 Hamptons Road
Prebbleton

Client : Urban Estates
Client Ref. : 29048.001.001
Date : 12-09-2025
Hole Depth : 0.3 m
Hole Diameter : 50 mm

Shear Vane No : 2022
Logged By : DD
Reviewed By : CN
Latitude : -43.5882392
Longitude : 172.4971657

Depth (m BGL)	Material	USCS Symbol	DESCRIPTION	Graphic Symbol	Elevation (mRL)	Water Level	Moisture Cond.	Consistency/ Density Index	Shear Vane Undrained Shear Strength (kPa) Peak/Remolded	Scala Penetrometer					
										Blows per 100mm					
										2	4	6	8	10	12
	TOPSOIL	ML	[TOPSOIL] SILT with minor sand and trace rootlets; dark brown. Low plasticity; sand is fine.		23		M	NA							
0.5			End of Hole Depth: 0.3 m Termination Condition: Practical refusal												
1.0															
1.5															

Hand auger met practical refusal at 0.3 m depth on inferred gravel.
Scala Penetrometer met practical refusal at 0.3 m depth.
Standing groundwater was not encountered.
Location by hand held GPS, coordinates in WGS84, Vertical datum in NZVD2016.

NA = Not Assessed, TS = Topsoil, and A = Alluvium



LOG OF AUGER HA04

190 Hamptons Road
Prebbleton

Client : Urban Estates
Client Ref. : 29048.001.001
Date : 12-09-2025
Hole Depth : 0.2 m
Hole Diameter : 50 mm

Shear Vane No : 2022
Logged By : DD
Reviewed By : CN
Latitude : -43.588344
Longitude : 172.4979474

Depth (m BGL)	Material	USCS Symbol	DESCRIPTION	Graphic Symbol	Elevation (mRL)	Water Level	Moisture Cond.	Consistency/ Density Index	Shear Vane Undrained Shear Strength (kPa) Peak/Remolded	Scala Penetrometer					
										Blows per 100mm					
										2	4	6	8	10	12
	TS	ML	[TOPSOIL] SILT with minor sand and trace rootlets; dark brown. Low plasticity; sand is fine.					NA							
	A	ML	SILT with minor sand; brown. Low plasticity; sand is fine.				M	F							
0.5			End of Hole Depth: 0.2 m Termination Condition: Practical refusal												
1.0															
1.5															

Hand auger met practical refusal at 0.2 m depth on inferred gravel.
Scala Penetrometer met practical refusal at 0.4 m depth.
Standing groundwater was not encountered.
Location by hand held GPS, coordinates in WGS84, Vertical datum in NZVD2016.

NA = Not Assessed, TS = Topsoil, and A = Alluvium



LOG OF AUGER HA05

190 Hamptons Road
Prebbleton

Client : Urban Estates
Client Ref. : 29048.001.001
Date : 12-09-2025
Hole Depth : 0.3 m
Hole Diameter : 50 mm

Shear Vane No : 2022
Logged By : DD
Reviewed By : CN
Latitude : -43.5878803
Longitude : 172.497536

Depth (m BGL)	Material	USCS Symbol	DESCRIPTION	Graphic Symbol	Elevation (mRL)	Water Level	Moisture Cond.	Consistency/ Density Index	Shear Vane Undrained Shear Strength (kPa) Peak/Remolded	Scala Penetrometer					
										Blows per 100mm					
										2	4	6	8	10	12
	TOPSOIL	ML	[TOPSOIL] SILT with minor sand and trace rootlets; dark brown. Low plasticity; sand is fine.		-23		M	NA							
0.5			End of Hole Depth: 0.3 m Termination Condition: Practical refusal												
1.0															
1.5															

Hand auger met practical refusal at 0.3 m depth on inferred gravel.
Scala Penetrometer met practical refusal at 0.5 m depth.
Standing groundwater was not encountered.
Location by hand held GPS, coordinates in WGS84, Vertical datum in NZVD2016.

NA = Not Assessed, TS = Topsoil, and A = Alluvium



LOG OF AUGER HA06

190 Hamptons Road
Prebbleton

Client : Urban Estates
Client Ref. : 29048.001.001
Date : 12-09-2025
Hole Depth : 0.4 m
Hole Diameter : 50 mm

Shear Vane No : 2022
Logged By : DD
Reviewed By : CN
Latitude : -43.5874249
Longitude : 172.4968382

Depth (m BGL)	Material	USCS Symbol	DESCRIPTION	Graphic Symbol	Elevation (mRL)	Water Level	Moisture Cond.	Consistency/ Density Index	Shear Vane Undrained Shear Strength (kPa) Peak/Remolded	Scala Penetrometer					
										Blows per 100mm					
										2	4	6	8	10	12
	TOPSOIL	ML	[TOPSOIL] SILT with minor sand and trace rootlets; dark brown. Low plasticity; sand is fine.					NA							
	ALLUVIUM	ML	SILT with minor sand; brown. Low plasticity; sand is fine.				M	St-VSt							
0.5			End of Hole Depth: 0.4 m Termination Condition: Practical refusal												
1.0															
1.5															

Hand auger met practical refusal at 0.4 m depth on inferred gravel.
Scala Penetrometer met practical refusal at 0.6 m depth.
Standing groundwater was not encountered.
Location by hand held GPS, coordinates in WGS84, Vertical datum in NZVD2016.

NA = Not Assessed, TS = Topsoil, and A = Alluvium



LOG OF AUGER HA07

190 Hamptons Road
Prebbleton

Client : Urban Estates
Client Ref. : 29048.001.001
Date : 12-09-2025
Hole Depth : 0.6 m
Hole Diameter : 50 mm

Shear Vane No : 2022
Logged By : DD
Reviewed By : CN
Latitude : -43.5866935
Longitude : 172.4976263

Depth (m BGL)	Material	USCS Symbol	DESCRIPTION	Graphic Symbol	Elevation (mRL)	Water Level	Moisture Cond.	Consistency/ Density Index	Shear Vane Undrained Shear Strength (kPa) Peak/Remolded	Scala Penetrometer																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																			
										Blows per 100mm																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																			
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0.5	TOPSOIL	ML	[TOPSOIL] SILT with trace sand and trace rootlets; dark brown. Low plasticity; sand is fine.		-23			NA	UTP																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																				

Hand auger met practical refusal at 0.6 m depth on inferred gravel.
Scala Penetrometer met practical refusal at 0.5 m depth.
Standing groundwater was not encountered.
Location by hand held GPS, coordinates in WGS84, Vertical datum in NZVD2016.

NA = Not Assessed, TS = Topsoil, and A = Alluvium



LOG OF AUGER HA08

190 Hamptons Road
Prebbleton

Client : Urban Estates
Client Ref. : 29048.001.001
Date : 12-09-2025
Hole Depth : 0.35 m
Hole Diameter : 50 mm

Shear Vane No : 1379
Logged By : CW
Reviewed By : CN
Latitude : -43.5879024
Longitude : 172.4980679

Depth (m BGL)	Material	USCS Symbol	DESCRIPTION	Graphic Symbol	Elevation (mRL)	Water Level	Moisture Cond.	Consistency/ Density Index	Shear Vane Undrained Shear Strength (kPa) Peak/Remolded	Scala Penetrometer					
										Blows per 100mm					
										2	4	6	8	10	12
	TOPSOIL	ML	[TOPSOIL] SILT with minor sand and trace rootlets; dark brown. Low plasticity; sand is fine.		23		M	NA							
	A	GW	Sandy fine to coarse GRAVEL; brown. Well graded; sand is fine to coarse; gravel is subrounded to rounded, Greywacke. End of Hole Depth: 0.35 m Termination Condition: Practical refusal					D							
0.5															
1.0															
1.5															

Hand auger met practical refusal at 0.35 m depth on inferred gravel.
Scala Penetrometer met practical refusal at 0.4 m depth.
Standing groundwater was not encountered.
Location by hand held GPS, coordinates in WGS84, Vertical datum in NZVD2016.

NA = Not Assessed, TS = Topsoil, and A = Alluvium



LOG OF AUGER HA09

190 Hamptons Road
Prebbleton

Client : Urban Estates
Client Ref. : 29048.001.001
Date : 12-09-2025
Hole Depth : 1.2 m
Hole Diameter : 50 mm

Shear Vane No : 1379
Logged By : CW
Reviewed By : CN
Latitude : -43.5875665
Longitude : 172.4988884

Depth (m BGL)	Material	USCS Symbol	DESCRIPTION	Graphic Symbol	Elevation (mRL)	Water Level	Moisture Cond.	Consistency/ Density Index	Shear Vane Undrained Shear Strength (kPa) Peak/Remolded	Scala Penetrometer					
										Blows per 100mm					
										2	4	6	8	10	12
	TOPSOIL	ML	[TOPSOIL] SILT with minor sand and trace rootlets; brown. Low plasticity; sand is fine to medium.					NA							
0.5	ALLUVIUM	ML	SILT with minor sand; light brown with orange mottles. Low plasticity; sand is fine to medium.				M		216+						
1.0			1.0 m - With some sand.		22			H	216+						
1.5			End of Hole Depth: 1.2 m Termination Condition: Practical refusal												>>

Hand auger met practical refusal at 1.2 m depth on inferred gravel.
Scala Penetrometer met practical refusal at 1.2 m depth.
Standing groundwater was not encountered.
Location by hand held GPS, coordinates in WGS84, Vertical datum in NZVD2016.

NA = Not Assessed, TS = Topsoil, and A = Alluvium

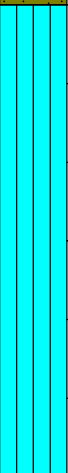


LOG OF AUGER HA10

190 Hamptons Road
Prebbleton

Client : Urban Estates
Client Ref. : 29048.001.001
Date : 12-09-2025
Hole Depth : 0.9 m
Hole Diameter : 50 mm

Shear Vane No : 1379
Logged By : CW
Reviewed By : CN
Latitude : -43.5872268
Longitude : 172.4982572

Depth (m BGL)	Material	USCS Symbol	DESCRIPTION	Graphic Symbol	Elevation (mRL)	Water Level	Moisture Cond.	Consistency/ Density Index	Shear Vane Undrained Shear Strength (kPa) Peak/Remolded	Scala Penetrometer					
										Blows per 100mm					
										2	4	6	8	10	12
	TOPSOIL	ML	[TOPSOIL] SILT with minor sand and trace rootlets; brown. Low plasticity; sand is fine to medium.		23			NA							
0.5	ALLUVIUM	ML	SILT with minor sand; light brown with orange mottles. Low plasticity; sand is fine to medium				M		141/49						
			0.8 m - Trace gravel encountered.					VSt							
1.0			End of Hole Depth: 0.9 m Termination Condition: Practical refusal												
1.5															

Hand auger met practical refusal at 0.9 m depth on inferred gravel.
Scala Penetrometer met practical refusal at 0.8 m depth.
Standing groundwater was not encountered.
Location by hand held GPS, coordinates in WGS84, Vertical datum in NZVD2016.

NA = Not Assessed, TS = Topsoil, and A = Alluvium

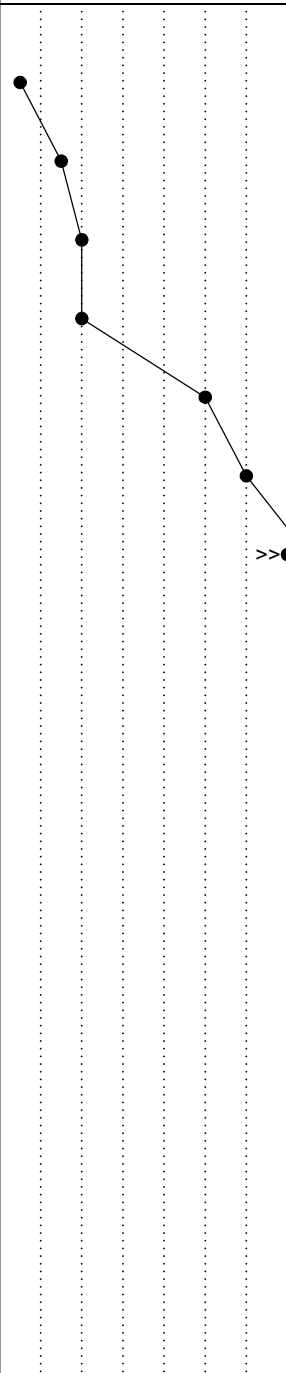


LOG OF AUGER HA11

190 Hamptons Road
Prebbleton

Client : Urban Estates
Client Ref. : 29048.001.001
Date : 12-09-2025
Hole Depth : 0.5 m
Hole Diameter : 50 mm

Shear Vane No : 1379
Logged By : CW
Reviewed By : CN
Latitude : -43.5869463
Longitude : 172.4982566

Depth (m BGL)	Material	USCS Symbol	DESCRIPTION	Graphic Symbol	Elevation (mRL)	Water Level	Moisture Cond.	Consistency/ Density Index	Shear Vane Undrained Shear Strength (kPa) Peak/Remolded	Scala Penetrometer					
										Blows per 100mm					
										2	4	6	8	10	12
0.5	TOPSOIL	ML	[TOPSOIL] SILT with minor sand and trace rootlets; brown. Low plasticity; sand is fine to medium.		23		M	NA	UTP						
	ALLUVIUM	ML	SILT with minor sand; light brown with orange mottles. Low plasticity; sand is fine to medium. 0.45 m - Trace gravel encountered					St-VSt							
			End of Hole Depth: 0.5 m Termination Condition: Practical refusal												
1.0															
1.5															

Hand auger met practical refusal at 0.5 m depth on inferred gravel.
Scala Penetrometer met practical refusal at 0.7 m depth.
Standing groundwater was not encountered.
Location by hand held GPS, coordinates in WGS84, Vertical datum in NZVD2016.

NA = Not Assessed, TS = Topsoil, and A = Alluvium



LOG OF AUGER HA12

190 Hamptons Road
Prebbleton

Client : Urban Estates
Client Ref. : 29048.001.001
Date : 12-09-2025
Hole Depth : 1.5 m
Hole Diameter : 50 mm

Shear Vane No : 2022
Logged By : DD
Reviewed By : CN
Latitude : -43.587318
Longitude : 172.4971925

Depth (m BGL)	Material	USCS Symbol	DESCRIPTION	Graphic Symbol	Elevation (mRL)	Water Level	Moisture Cond.	Consistency/ Density Index	Shear Vane Undrained Shear Strength (kPa) Peak/Remolded	Scala Penetrometer					
										Blows per 100mm					
										2	4	6	8	10	12
0.5	TOPSOIL	ML	[TOPSOIL] SILT with minor sand and trace rootlets; dark brown. Low plasticity; sand is fine.					NA							
	ALLUVIUM	ML	SILT with minor sand; brown. Low plasticity; sand is fine. 0.9 m - Becomes brown with orange mottles.					M H							
1.5			End of Hole Depth: 1.5 m Termination Condition: Practical refusal							226+					>>

Hand auger met practical refusal at 1.5 m depth on inferred gravel.
Scala Penetrometer met practical refusal at 1.5 m depth.
Standing groundwater was not encountered.
Location by hand held GPS, coordinates in WGS84, Vertical datum in NZVD2016.

NA = Not Assessed, TS = Topsoil, and A = Alluvium



LOG OF AUGER HA13

190 Hamptons Road
Prebbleton

Client : Urban Estates
Client Ref. : 29048.001.001
Date : 12-09-2025
Hole Depth : 0.3 m
Hole Diameter : 50 mm

Shear Vane No : 2022
Logged By : DD
Reviewed By : CN
Latitude : -43.5876422
Longitude : 172.4971566

Depth (m BGL)	Material	USCS Symbol	DESCRIPTION	Graphic Symbol	Elevation (mRL)	Water Level	Moisture Cond.	Consistency/ Density Index	Shear Vane Undrained Shear Strength (kPa) Peak/Remolded	Scala Penetrometer					
										Blows per 100mm					
										2	4	6	8	10	12
	TOPSOIL	ML	[TOPSOIL] SILT with minor sand and trace rootlets; dark brown. Low plasticity; sand is fine.				M	NA							
0.5			End of Hole Depth: 0.3 m Termination Condition: Practical refusal												
1.0															
1.5															

Hand auger met practical refusal at 0.3 m depth on inferred gravel.
Scala Penetrometer met practical refusal at 0.4 m depth.
Standing groundwater was not encountered.
Location by hand held GPS, coordinates in WGS84, Vertical datum in NZVD2016.

NA = Not Assessed, TS = Topsoil, and A = Alluvium



LOG OF AUGER HA14

190 Hamptons Road
Prebbleton

Client : Urban Estates
Client Ref. : 29048.001.001
Date : 12-09-2025
Hole Depth : 1.4 m
Hole Diameter : 50 mm

Shear Vane No : 2022
Logged By : DD
Reviewed By : CN
Latitude : -43.5878097
Longitude : 172.4980679

Depth (m BGL)	Material	USCS Symbol	DESCRIPTION	Graphic Symbol	Elevation (mRL)	Water Level	Moisture Cond.	Consistency/ Density Index	Shear Vane Undrained Shear Strength (kPa) Peak/Remolded	Scala Penetrometer					
										Blows per 100mm					
										2	4	6	8	10	12
	TOPSOIL	ML	[TOPSOIL] SILT with minor sand and trace rootlets; dark brown. Low plasticity; sand is fine.					NA							
0.5	ALLUVIUM	ML	SILT with trace sand; brown with orange mottles. Low plasticity; sand is fine.				M	VSt	170/57						
1.0		SP	Silty fine to medium SAND; brown with orange mottles. Poorly graded.		22			MD							
1.5			End of Hole Depth: 1.4 m Termination Condition: Practical refusal												>>

Hand auger met practical refusal at 1.4 m depth on inferred gravel.
Scala Penetrometer met practical refusal at 1.4 m depth.
Standing groundwater was not encountered.
Location by hand held GPS, coordinates in WGS84, Vertical datum in NZVD2016.

NA = Not Assessed, TS = Topsoil, and A = Alluvium



APPENDIX 3:

ECan Boreholes

Borelog for well BX23/1451

Grid Reference (NZTM): 1559300 mE, 5173777 mN

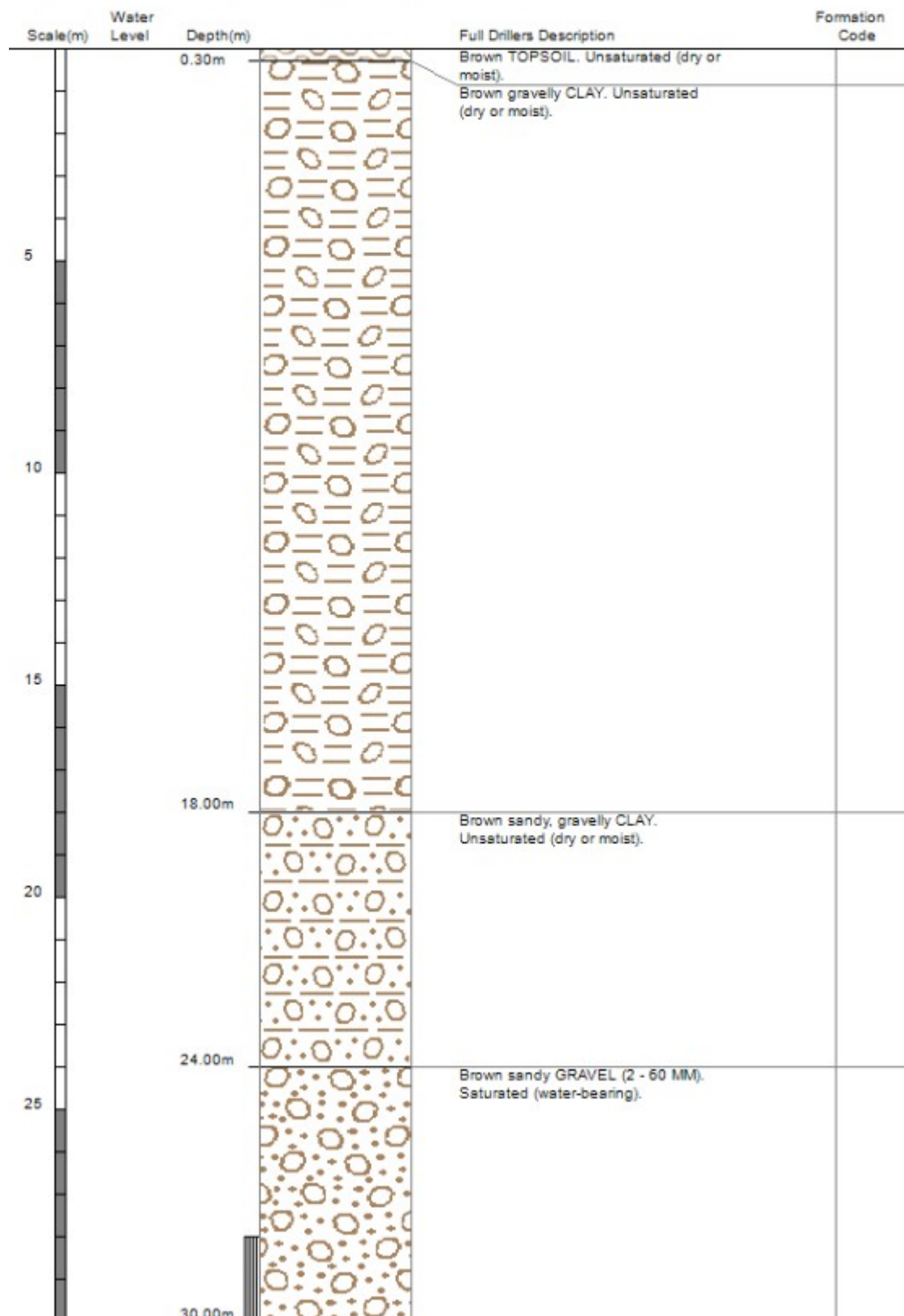
Location Accuracy: 50 - 300m

Ground Level Altitude: m +MSD Accuracy:

Driller: Daly Water Wells Ltd

Drill Method: Rotary Rig

Borelog Depth: 30.0 m Drill Date: 12-Oct-2023



Borelog for well BX23/1546

Grid Reference (NZTM): 1559385 mE, 5173804 mN

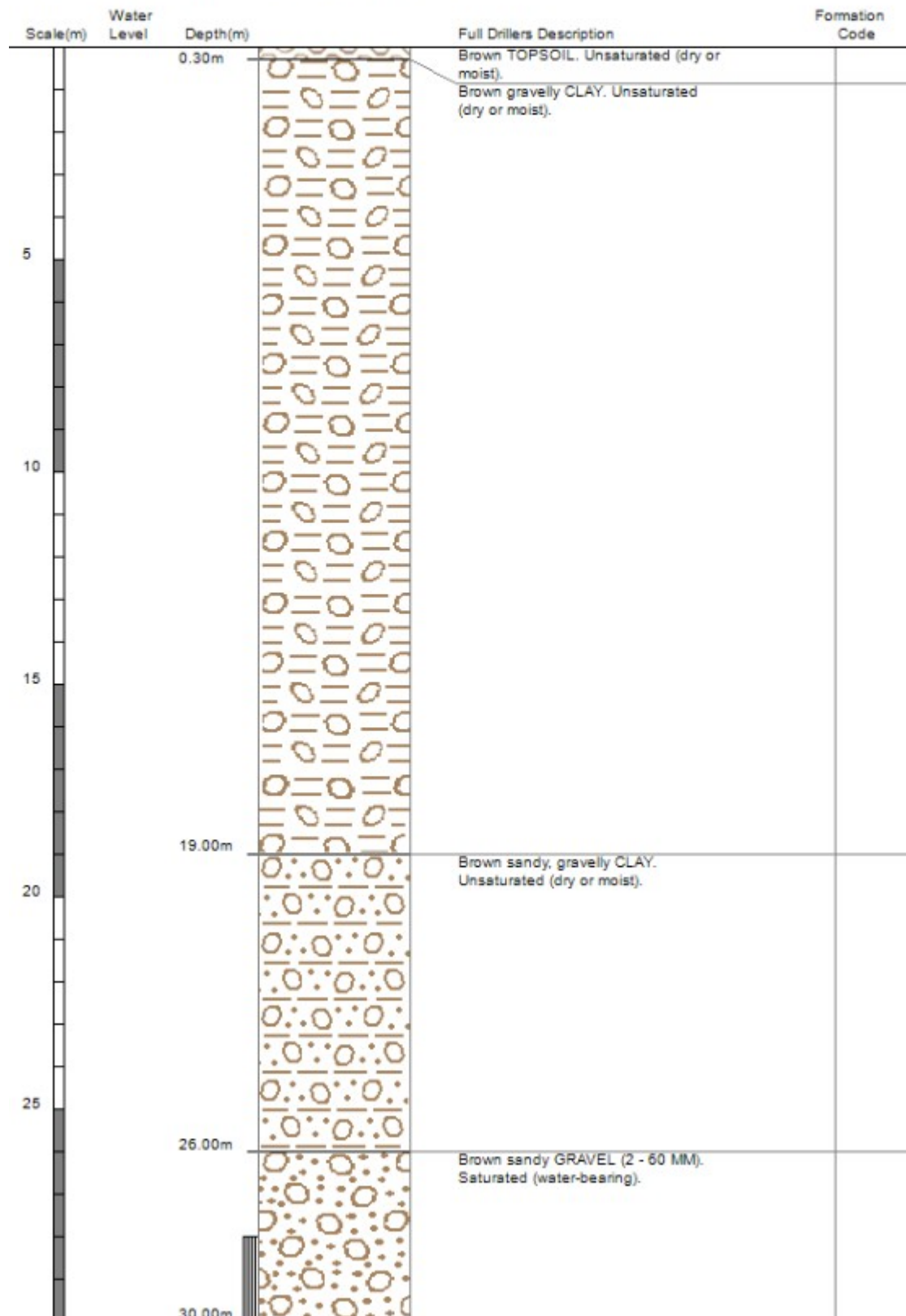
Location Accuracy: 50 - 300m

Ground Level Altitude: m +MSD Accuracy:

Driller: Daly Water Wells Ltd

Drill Method: Rotary Rig

Borelog Depth: 30.0 m Drill Date: 20-Mar-2024



Borelog for well M36/5284

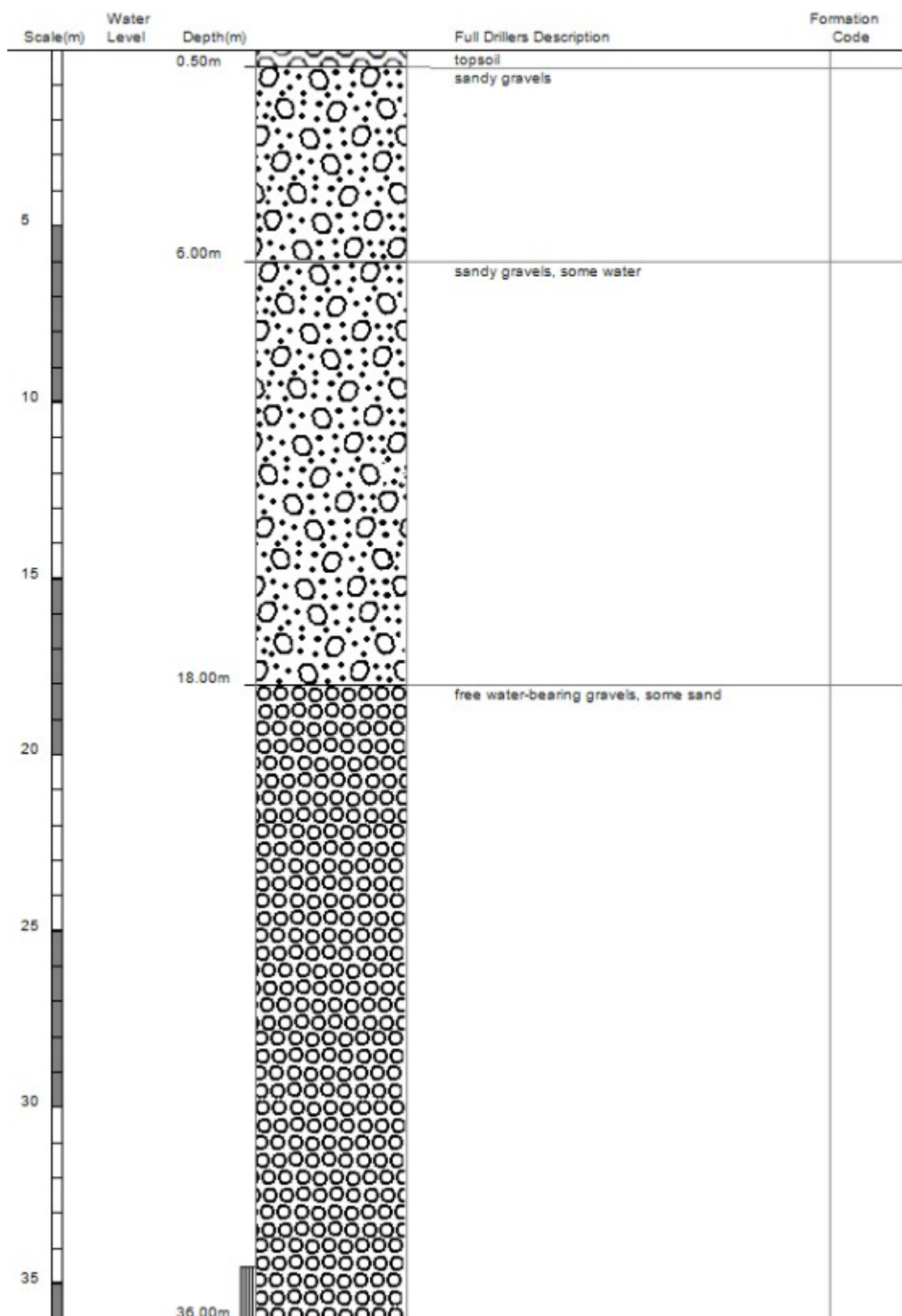
Grid Reference (NZTM): 1559424 mE, 5173810 mN
 Location Accuracy: 50 - 300m
 Ground Level Altitude: 23.8 m +MSD Accuracy: < 2.5 m
 Driller: McMillan Drilling Ltd
 Drill Method: Rotary Rig
 Borelog Depth: 29.8 m Drill Date: 15-Apr-1997



Scale(m)	Water Level	Depth(m)	Full Drillers Description	Formation Code
		0.20m	Earth	SP
			Gray sandy gravel	SP
5		4.09m	Moist Gray sandy gravel	SP
		8.39m		
		8.50m	Dark Brown clay	SP
10			Sandy claybound gravel	RI
		10.10m	Moist sandy claybound gravel	RI
		11.60m	Water-bearing sandy gravel with clay	RI
		12.30m	Moist sandy claybound gravel	RI
15		15.20m	Water-bearing lightly stained sandy gravel with clay	RI
20				
25		24.60m	Water-bearing sandy gravel with clay	RI
		28.00m	Water-bearing Brown stained sandy gravel with clay	RI
		29.79m		

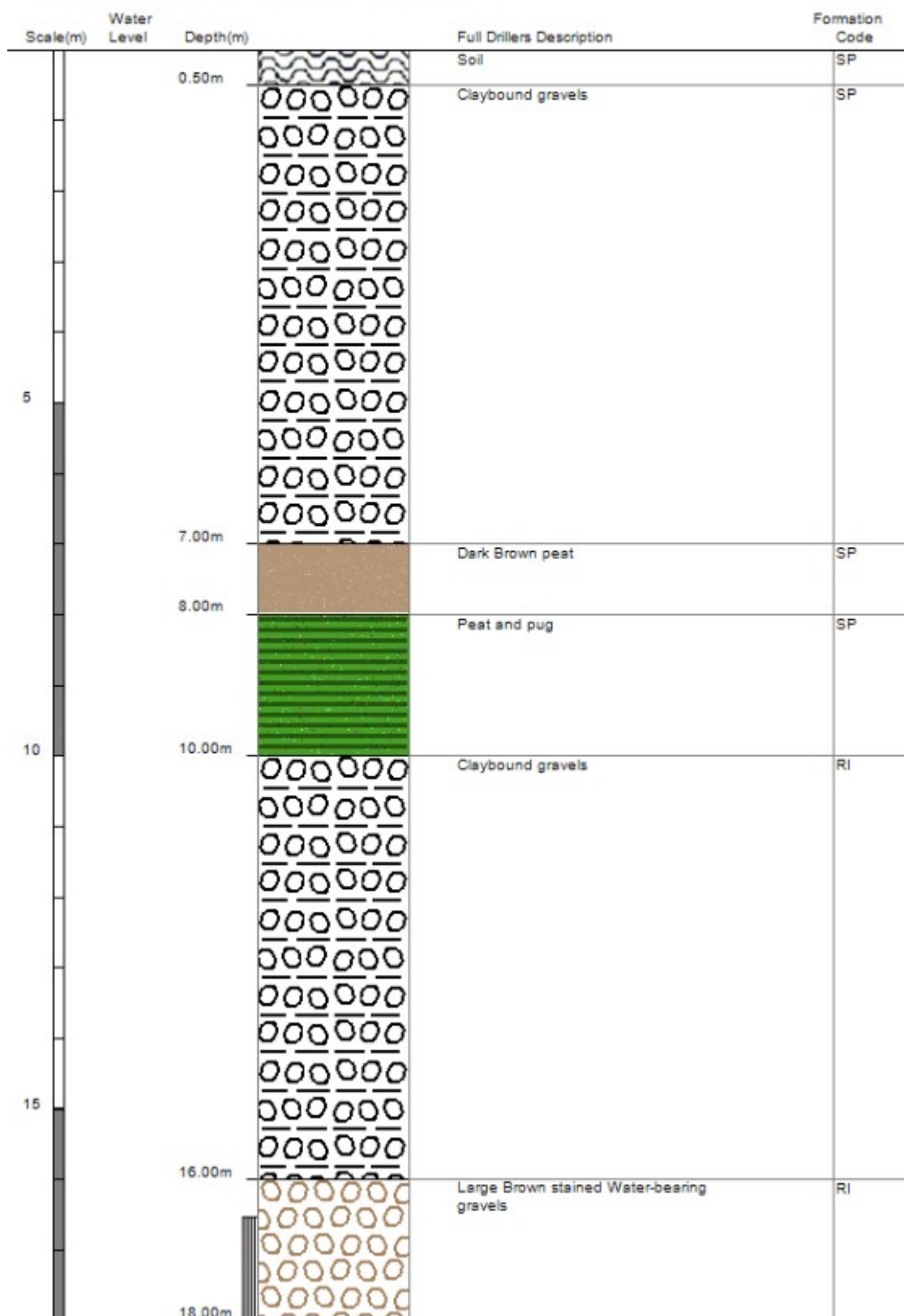
Borelog for well M36/8265

Grid Reference (NZTM): 1559572 mE, 5173954 mN
Location Accuracy: 10 - 50m
Ground Level Altitude: 23.3 m +MSD Accuracy: < 2.5 m
Driller: East Coast Drilling
Drill Method: Rotary Rig
Borelog Depth: 36.0 m Drill Date: 31-Aug-2006



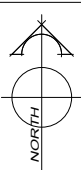
Borelog for well M36/3109

Grid Reference (NZTM): 1559504 mE, 5173590 mN
 Location Accuracy: 50 - 300m
 Ground Level Altitude: 23.1 m +MSD Accuracy: < 2.5 m
 Driller: McMillan Drilling Ltd
 Drill Method: Unknown
 Borelog Depth: 18.0 m Drill Date: 29-Jan-1986





APPENDIX 4: Subdivision Plans



AMENDMENTS :		
AMENDMENT	DATE	DESCRIPTION

NOTES :

- Areas and dimensions are subject to final survey and deposit of plans.
- Service easements to be created as required.
- This plan has been prepared for discussion purposes only. No liability is accepted if the plan is used for any other purpose.
- This plan has been prepared for the use of our client and no liability is accepted in relation to any other parties.
- Any measurements taken from information which is not dimensioned on the electronic copy are at the risk of the recipient.
- This plan is subject to the granting of subdivision and/or resource consents and should be treated as a proposal until such time as the necessary consents have been granted by the relevant authorities.
- Origin of Levels BMUG 28 RL 44.433 Jones Road Templeton
Level Datum : Mean Sea Level Lyttelton Vertical Datum 1937
- Contours shown are from LINZ Lidar Data at 0.20m Contour Intervals and in terms of LINZ Vertical Datum 2016.
- All sites to be limited to 1 dwelling by Consent Notice.

Total Area : 4.0468ha
Comprised in: RT's CB6C/548 & CB6C/549



DAVIE LOVELL-SMITH
PLANNING SURVEYING ENGINEERING

116 Wrights Road P O Box 679 Christchurch 8140. New Zealand
Telephone: 03 379-0793 Website: www.dls.co.nz E-mail: office@dls.co.nz

JOB TITLE:

**Hamptons Road
Prebbleton
Stage 0**

SHEET TITLE:

**Proposed Subdivision of
Lots 1 & 2 DP 24822**

DRAWING STATUS

Proposed Subdivision

SCALE: 1:1250@A3 DATE: July 2025

CAD FILE : J:\21448\SUBCON\E21448 190 Hamptons Stage 0 Subcon.dwg	REVISION :
DRAWING No: E21448	SHEET No: 1 OF 1

R1

APPENDIX 5: SOPO

Statement of Professional Opinion on the Suitability of Land for Subdivision

(Appendix I to the Infrastructure Design Standard)

Issued by: *ENGEO Ltd*
(Geotechnical engineering firm or suitably qualified Geoprofessional)

To: *Selwyn District Council*
(Territorial authority)

To be supplied to: *Urban Estates Limited*
(Owner/Developer)

In respect of: *Application for Subdivision*
(Description of proposed infrastructure/land development)

At: *190 & 192 Hamptons Road, Prebbleton*
(Address)

I (Geoprofessional) *Richard Justice* on behalf of (Geotechnical engineering firm) *ENGEO Ltd*

hereby confirm:

1. I am a suitably qualified and experienced Geoprofessional employed by *ENGEO Ltd* and the geotechnical firm named above was retained by the owner/developer as the Geoprofessional on the above proposed development.
2. The geotechnical assessment report, dated *03.10.2025* has been carried out in accordance with the Ministry of Building, Innovation and Employment *Part D - Guidelines for geotechnical investigation and assessment of subdivisions in the Canterbury region* and the Christchurch City Council *Infrastructure Design Standard – Part 4: Geotechnical requirements* and includes:
 - (i) Details of and the results of the site investigations.
 - (ii) A liquefaction and lateral spread assessment.
 - (iii) An assessment of rockfall and slippage, including hazards resulting from seismic activity.
 - (iv) An assessment of the slope stability and ground bearing capacity confirming the location and appropriateness of building sites.
 - (v) Recommendations proposing measures to avoid, remedy or mitigate any potential hazards on the land subject to the application, in accordance with the provisions of Section 106 of the Resource Management Act 1991.
3. In my professional opinion, not to be construed as a guarantee, I consider that Council is justified in granting consent incorporating the following conditions:

All recommendations made in our Geotechnical Investigation Report have been followed including recommendations for the reduction of geotechnical ultimate bearing capacity

4. This professional opinion is furnished to the territorial authority and the owner/developer for their purposes alone, on the express condition that it will not be relied upon by any other person and does not remove the necessity for the normal inspection of foundation conditions at the time of erection of any building. It is limited to those items referred to in clause 2 only.
5. This certificate shall be read in conjunction with the geotechnical report referred to in clause 2 above, and shall not be copied or reproduced except in conjunction with the full geotechnical completion report.

6. Liability under this statement accrues to the geotechnical firm only and no liability shall accrue to the individual completing this statement.
7. The geotechnical engineering firm issuing this statement holds a current policy of professional indemnity insurance of no less than \$ 200,000

(Minimum amount of insurance shall be commensurate with the current amounts recommended by IPENZ, ACENZ, NZTA, INGENIUM.)



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(Signature of Engineering Geologist, for and on behalf of ENGEO Ltd)

Date: 03.10.2025

Qualifications and experience:

Richard Justice, CMEngNZ (PEngGeol)
Principal Engineering Geologist

This form is to accompany Form 9 – Resource Management Act 1991 (Application for a Resource Consent (Subdivision))