

MALONE HARRIS

13C HAVLOCK ROAD, NGARUWAHIA



**FOUNDATION EXCAVATIONS CERTIFICATION FOR A
PROPOSED RELOCATABLE DWELLING**

REFERENCE: R9040-2A
DATE: 10 OCTOBER 2024

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1 INTRODUCTION

1.1 GENERAL

Foundation excavations have been recently constructed at 13C Havlock Road, Ngaruwahia, for a proposed relocatable dwelling. The foundation excavations have been certified by Ground Consulting Limited (GCL) at the client's request, Malone Harris.

This report includes a summary of the certification investigations undertaken.

1.2 PREVIOUS INVESTIGATIONS

GCL has undertaken a geotechnical assessment for the proposed development (report ref: R9040-1B, dated 27 May 2024). The recommendations and conclusions provided in the report have provided the basis for the recent certification works undertaken.

2 CERTIFICATION INVESTIGATIONS

The foundation excavation certification investigations undertaken as part of this assessment have consisted of the following:

- Review of the previous geotechnical report for the site.
- Site mapping and reconnaissance by an Engineering Geologist.
- Completion of a series of single-point shear vane tests with a Pilcon vane within the foundation excavations.
- Completion of a series of scala penetrometer tests at the base of the pile hole foundation excavations.

The investigations have been carried out per NZS3604:2011 and the Building Code. The investigation locations are shown in the "Site Notes" (Appendix A).

3 DESCRIPTION OF WORKS

3.1 GENERAL

Thirty eight pile hole footings have been excavated within the perimeter of the building footprint to support a suspended wooden floor. The pile hole footings are between 0.6 and 0.9m deep from the finished ground level.

4 CERTIFICATION TESTING

A series of single-point shear vane tests with a Pilcon vane and scala penetrometer tests have been undertaken within the foundation excavations. Shear vane tests were undertaken within the clayey soil and scala penetrometer tests were undertaken within the sandy soils. The shear strength testing undertaken within the foundation excavations provided an undrained shear strength between 62kPa and 187kPa.

The scala penetrometer tests undertaken within the base of the pile holes provided a blow count of between 1 and 9 per 100mm.

5 CONCLUSIONS AND RECOMMENDATIONS

5.1 GENERAL

- Pile foundation excavations constructed for a proposed relocatable dwelling on 13C Havlock Road, Ngaruwahia, are founded within competent ground, suitable for residential type construction.
- The pile foundation excavations should provide an unfactored ultimate bearing capacity of 200kPa for the proposed relocatable dwelling pile foundations. This report does not provide comment on other factors, including soil expansivity and surface water controls.

5.2 EARTHWORKS

We recommend the following constraints for the construction of permanent and long term site earthworks carried out in the vicinity of the proposed dwelling:

- All unretained cut batters should be graded at no steeper than 1(v) on 2(h) and be no higher than 1.5m (i.e., a maximum cut depth of 1.5m from existing ground level).
- Cut batters should be located at least the cut batter height from the dwelling and a property boundary.
- All unretained fill batters should be graded at no steeper than 1(v) on 3(h) and be no higher than 1.5m (i.e., a maximum fill depth of 1.5m from existing ground level).
- Fill batters should be located at least the fill batter height from the dwelling and a property boundary.
- Fill providing structural support to the dwelling should be placed in an engineered manner as inspected and certified by a suitably qualified person.
- All cut and fill batters should be topsoiled & grassed and weed matted & planted on completion.
- Earthworks which does not comply with the above recommendations should be assessed by a suitably qualified person and may require retention and stabilization with an engineered structure.

6 LIMITATIONS

6.1 GENERAL

Ground Consulting Ltd has undertaken this assessment per the brief as provided, based on the site development works undertaken to date. This report has been provided for the benefit of our client and for the authoritative council to rely on to process the consent for the specific project described herein. No liability is accepted by this firm or any of its directors, servants, or agents in respect of its use by any other person, and any other person who relies upon the information contained herein does so entirely at their own risk.

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The sub-surface conditions have been extrapolated between the certification investigations undertaken. Whilst care has been taken to provide sufficient sub-surface information following best practice, no guarantee can be given on the validity of the inference made, and it must be appreciated that actual conditions could vary from the assumed model.

6.2 FURTHER INVESTIGATIONS REQUIRED

This assessment has been undertaken for the proposed site development to date. Any changes, alterations, and additions made to the proposed development should be checked by a suitably qualified person and may require further investigation, analysis, and certification.

APPENDIX A: SITE NOTES AND INVESTIGATIONS



INVESTIGATION LOG

SPT01

Report Ref
R9040-2A-SIN01
Location Method (±2m)
MAP

Client: Malone Harris
Coordinates (NZTM2000):
Elevation:
Location: 13C Havlock Road, Ngaruwahia

Geology	Geological Interpretation <small>(refer to separate Geotechnical and Geological Information sheet for further information)</small>	Samples	Depth (m)	Legend	Vane Shear Strength				Values (kPa)	Scala Penetrometer <small>(Blows / 100mm)</small>							Groundwater		
					Vane No: Vane Size: 0mm					2	4	6	8	10	12	14		16	18
Tauranga Group	Underlying natural sandy soil. Testing at base of pile holes.		1							3	2	2	4						
	End of Investigation: 1m Target depth																		

Investigation Information

Depth: 1m Logged By: L.S. Start Date: 01/10/24
 Termination: Target depth Checked By: End Date: 01/10/24
 Machine Used: Test Pit Dimensions: Logged Date: 08/10/24

Investigation Type

- Hand Auger (50mm)
- Test Pit
- Scala Penetrometer

Water Legend

- ▼ Standing Water Level
- ← Out flow
- ▶ In flow

Log ref: R9040-2A-SIN01 SPT03



INVESTIGATION LOG

SPT03

Report Ref
R9040-2A-SIN01
Location Method (±2m)
MAP

Client: Malone Harris
Coordinates (NZTM2000):
Elevation:
Location: 13C Havlock Road, Ngaruwahia

Geology	Geological Interpretation (refer to separate Geotechnical and Geological Information sheet for further information)	Samples	Depth (m)	Legend	Vane Shear Strength				Values (kPa)	Scala Penetrometer (Blows / 100mm)							Groundwater			
					Vane No: Vane Size: 0mm					2	4	6	8	10	12	14		16	18	
Tauranga Group	Underlying natural sandy soil.																			
	End of Investigation: 1m Target depth		1																	

Investigation Information

Depth: 1m Logged By: L.S. Start Date: 01/10/24
 Termination: Target depth Checked By: End Date: 01/10/24
 Machine Used: Test Pit Dimensions: Logged Date: 08/10/24

- Investigation Type**
- Hand Auger (50mm)
 - Test Pit
 - Scala Penetrometer

- Water Legend**
- Standing Water Level
 - Out flow
 - In flow

Log ref: R9040-2A-SIN01 SPT03



INVESTIGATION LOG

SPT09

Report Ref
R9040-2A-SIN01
Location Method (±2m)
MAP

Client: Malone Harris
Coordinates (NZTM2000):
Elevation:
Location: 13C Havlock Road, Ngaruwahia

Geology	Geological Interpretation (refer to separate Geotechnical and Geological Information sheet for further information)	Samples	Depth (m)	Legend	Vane Shear Strength				Values (kPa)	Scala Penetrometer (Blows / 100mm)							Groundwater			
					Vane No: Vane Size: 0mm					2	4	6	8	10	12	14		16	18	
Tauranga Group	Underlying natural sandy soil.																			
	End of Investigation: 1.2m Target depth		1																	

Investigation Information

Depth: 1.2m Logged By: L.S. Start Date: 01/10/24
 Termination: Target depth Checked By: End Date: 01/10/24
 Machine Used: Test Pit Dimensions: Logged Date: 08/10/24

- Investigation Type**
- Hand Auger (50mm)
 - Test Pit
 - Scala Penetrometer

- Water Legend**
- Standing Water Level
 - Out flow
 - In flow

Log ref: R9040-2A-SIN01 SPT09

APPENDIX B: PRODUCER STATEMENT (PS4)

Producer Statement Construction Review (PS4) / Statement of Completion and Compliance

Issued by: Building Consent number:
(Construction Reviewer)

Company Name:

To: Hamilton City Council Hauraki District Council Matamata-Piako District Council Otorohanga District Council
 Thames-Coromandel District Council Waikato District Council Waipa District Council Waitomo District Council

Waikato Building Consent Group Reg. No.: Expiry Date: Other No. (specify):

Owner:

Project Address:

Lot: DP:

Description of Building Work:

Scope of work covered by statement:

System / Product used (if applicable):

I (Construction Reviewer's name):

have been engaged by (owner/developer/contractor):

To provide construction review services in respect of (tick applicable):
 The requirements of the Building Regulations 1992, Clause(s): (Please be specific e.g. E2.3.5)


Alternative Solution(s):

for the building work described by the drawings and specifications prepared by the design firm titled:

numbered: Copies attached

authorised amendment(s): Copies attached
(if applicable)

- I have sighted the Building Consent and read the Advisory Notes. I can confirm that the building works have been carried out in accordance with the requirements of the New Zealand Building Code, the Building Consent, the design drawings and specifications, and in accordance with the listed amendments (if any).
- I confirm that all work I have undertaken has been within the scope of my skills, knowledge, and experience.
- I have remained within the scope of works set for me by the *Waikato Building Consent Group Producer Statement Author register (if applicable).
- I understand that this Statement, if accepted, may be relied upon for the purpose of establishing compliance with the Building Code and the Building Consent.
- I am satisfied the building work complies with the requirements of the Building Consent and the New Zealand Building Code.

Signed by:  Name of Construction Reviewer:
(Construction Reviewer) (Print clearly)

Date: Address:

Ph: Mb: Fx: Email:

Qualifications / Experience:

*The Waikato Building Consent Group Producer Statement Author register is held by the Building Unit Hamilton City Council, Private Bag 3010, Hamilton 3240. Ph (07) 838 6699. For information on the Waikato Building Consent Group visit www.buildwaikato.co.nz.

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