

SHALLOW INVESTIGATION LOG

TP2B_1103

Client: **New Zealand Transport Agency**
 Project: **Northland Corridor, Alternative to Brynderwyn Hills**
 Location: **4245 State Highway 1, Waipu**
 Contractor: **Wharehine Construction Ltd**

Co-ordinates: 1727809.56mE, 6011264.12mN
 Elevation: 32.68m
 Plant: 16T Excavator
 Date: 24/09/2025
 Logged by: K.Rozmus
 Reviewed by: A. George

GEO CODE	MATERIAL DESCRIPTION (See Classification & Symbology sheet for details)	SAMPLES	DEPTH (m)	GRAPHIC LOG	SCALA PENETROMETER (Blows / mm)										VANE SHEAR STRENGTH (kPa) Vane:				Peak Residual	WATER
					2	4	6	8	10	12	14	16	18	50	100	150	200			
TS	CLAY, dark brown. Firm, wet, highly plastic. Contains rootlets. [TOPSOIL].																			
RR	Silty CLAY, dark tan brown. Very stiff, moist, highly plastic [RESIDUALLY TO COMPLETELY WEATHERED RUARANGI FORMATION].		1															81 52		
																		163 82		
																		119 71		
	CLAY, reddish banded light grey. Stiff, moist, highly plastic. Light grey bands 5-10 mm.	B	2															80 30		
	SILT with some clay, brownish orange. Very stiff, moist, low plasticity.		3															119 59		
			4																	
RW	Highly weathered, dark grey with orangish brown, SILTSTONE, very weak, breaks down to angular gravel while handling [HIGHLY TO MODERATELY WEATHERED RUARANGI FORMATION]. End Of Hole: 5.00m	B	5																	
			6																	
			7																	

PHOTO(S)



REMARKS

- Coordinates captured using a Trimble R12i Receiver and TSC5 Controller, with a horizontal accuracy +/- 30mm and vertical accuracy +/- 75mm.
- Hand-held shear vanes from 0 to 1.50m bgl completed within pit using extension rods. Shear vanes below 1.50m bgl, completed within excavator bucket sample.
- Shear Vane number: 2183
- Shear Vane correction: 1.482
- Shear vane values are corrected
- Minor water inflow at rock/soil interface @4.6m
- Test pit terminated at 5.0m.
- Test pit backfilled with arisings upon completion.

WATER

-  Standing Water Level
-  Out flow
-  In flow

INVESTIGATION TYPE

- ☐ Hand Auger
- ☒ Test Pit

SHALLOW INVESTIGATION LOG

TP2B_1104

Client: **New Zealand Transport Agency**
Project: **Northland Corridor, Alternative to Brynderwyn Hills**
Location: **4245 State Highway 1, Waipu**
Contractor: **Wharehine Construction Ltd**

Co-ordinates: 1727881.99mE, 6010825.34mN
Elevation: 60.12m
Plant: 16T Excavator
Date: 25/09/2025
Logged by: K.Rozmus
Reviewed by: A. George

GEO CODE	MATERIAL DESCRIPTION (See Classification & Symbolology sheet for details)	SAMPLES	DEPTH (m)	GRAPHIC LOG	SCALA PENETROMETER (Blows / mm)	VANE SHEAR STRENGTH (kPa) Vane:	Peak Residual	WATER
TS	CLAY, dark brown. Very stiff, wet, highly plastic. Contains rootlets. [TOPSOIL].							
OC	CLAY with some silt, brown. Very stiff, moist, highly plastic [COLLUVIUM (UNDIFFERENTIATED)].							
RR	SILT with minor clay brownish orange, with some light grey. Very stiff, dry, low plasticity [RESIDUALLY TO COMPLETELY WEATHERED RUARANGI FORMATION].		1				178 63	Groundwater Not Encountered
							163 52	
							163 22	
			2				UTP -	
RW	Highly weathered, dark grey with orangish brown, SILTSTONE, very weak, breaks down to angular gravel while handling [HIGHLY TO MODERATELY WEATHERED RUARANGI FORMATION]. 4.20m: Highly FeO stained relict joints, rustic orange.	B	3					
			4					
			5					
			6					
	End Of Hole: 4.80m		7					

PHOTO(S)



REMARKS

- Coordinates captured using a Trimble R12i Receiver and TSC5 Controller, with a horizontal accuracy +/- 30mm and vertical accuracy +/- 71mm.
- Hand-held shear vanes from 0 to 1.50m bgl completed within pit using extension rods. Shear vanes below 1.50m bgl, completed within excavator bucket sample.
- Shear Vane number: 2183
- Shear Vane correction: 1.482
- Shear vane values are corrected
- Test pit terminated at 4.8m.
- Test pit backfilled with arisings upon completion.

WATER

- ▼ Standing Water Level
- ▷ Out flow
- ◁ In flow

INVESTIGATION TYPE

- ☐ Hand Auger
- ☒ Test Pit

SHALLOW INVESTIGATION LOG

TP2B_1107

Client: **New Zealand Transport Agency**
Project: **Northland Corridor, Alternative to Brynderwyn Hills**
Location: **2941 State Highway 1, Kaiwaka**
Contractor: **Wharehine Construction Ltd**

Co-ordinates: 1727653.91mE, 6006055.57mN
Elevation: 133.98m
Plant: 16T Excavator
Date: 23/09/2025
Logged by: K.Rozmus
Reviewed by: A. George

GEO CODE		MATERIAL DESCRIPTION (See Classification & Symbology sheet for details)	SAMPLES	DEPTH (m)	GRAPHIC LOG	SCALA PENETROMETER (Blows / mm)										VANE SHEAR STRENGTH (kPa) Vane:				WATER	
TS		CLAY; dark brown. Soft, moist, high plasticity; minor rootlets. [TOPSOIL].																			
NAS		CLAY; brown with light brown. Very stiff, moist, high plasticity; minor rootlets; [NORTHLAND ALLOCHTHON SOILS (RESIDUAL/CW)].																			
		Clayey SILT; brownish orange. Stiff, moist, low plasticity; FeO staining.	B	1																	
		SILT, with some clay; light blueish grey. Very stiff, moist, low plasticity. Slightly calcareous.		2																	
				3																	
				4																	
			B	5																	
		End Of Hole: 5.00m																			
				6																	
				7																	

PHOTO(S)



REMARKS

- Coordinates captured using a Trimble R12i Receiver and TSC5 Controller, with a horizontal accuracy +/- 25mm and vertical accuracy +/- 50mm.
- Hand-held shear vanes from 0 to 1.50m bgl completed within pit using extension rods.
- Shear Vane number: 2183
- Shear Vane correction: 1.482
- Shear vane values are corrected
- Test pit terminated at 5.0m.
- Test pit backfilled with arisings upon completion.

WATER

- ☒ Standing Water Level
- ☐ Out flow
- ☐ In flow

INVESTIGATION TYPE

- ☐ Hand Auger
- ☒ Test Pit

SHALLOW INVESTIGATION LOG

TP2B_1108

Client: **New Zealand Transport Agency**
Project: **Northland Corridor, Alternative to Brynderwyn Hills**
Location: **67 Brynderwyn, Rd, Brynderwyn.**
Contractor: **Wharehine Construction Ltd**

Co-ordinates: 1727759.04mE, 6005351.59mN
Elevation: 124.97m
Plant: 16T Excavator
Date: 22/09/2025
Logged by: K.Rozmus
Reviewed by: A. George

GEO CODE	MATERIAL DESCRIPTION (See Classification & Symbology sheet for details)	SAMPLES	DEPTH (m)	GRAPHIC LOG	SCALA PENETROMETER (Blows / mm)	VANE SHEAR STRENGTH (kPa)					WATER																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																													
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TS	CLAY; dark brown. Soft, moist, high plasticity; minor rootlets. [TOPSOIL].																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																							

PHOTO(S)



REMARKS

- Coordinates captured using a Trimble R12i Receiver and TSC5 Controller, with a horizontal accuracy +/- 24mm and vertical accuracy +/- 50mm.
- Hand-held shear vanes from 0 to 1.50m bgl completed within pit using extension rods.
- Shear Vane number: 2183
- Shear Vane correction: 1.482
- Shear vane values are corrected
- Test pit terminated at 1.8m.
- Test pit backfilled with arisings upon completion.

WATER

- ☐ Standing Water Level
- ☐ Out flow
- ☐ In flow

INVESTIGATION TYPE

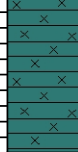
- ☐ Hand Auger
- ☒ Test Pit

SHALLOW INVESTIGATION LOG

TP2B_1110

Client: **New Zealand Transport Agency**
Project: **Northland Corridor, Alternative to Brynderwyn Hills**
Location: **37 State Highway 1, Kaiwaka.**
Contractor: **Wharehine Construction Ltd**

Co-ordinates: 1727466.08mE, 6004684.19mN
Elevation: 44.52m
Plant: 16T Excavator
Date: 22/09/2025
Logged by: K.Rozmus
Reviewed by: A. George

GEO CODE	MATERIAL DESCRIPTION (See Classification & Symbology sheet for details)	SAMPLES	DEPTH (m)	GRAPHIC LOG	SCALA PENETROMETER (Blows / mm)	VANE SHEAR STRENGTH (kPa) Vane:				WATER
TS	CLAY; brown. Soft, wet, high plasticity. [TOPSOIL].				2 4 6 8 10 12 14 16 18	50	100	150	200	Peak Residual
FS	Gravelly SILT; light greyish brown . Firm, moist, low plasticity; gravel, fine to medium, subrounded to subangular; slightly weathered siltstone [FILL (UNDIFFERENTIATED)].									
NAS	CLAY, with minor silt; brownish purple. Stiff to very stiff, moist, high plasticity [NORTHLAND ALLOCHTHON SOILS (RESIDUAL/CW)].		1							104 7
	0.40m: Blueish light grey.									
	0.90m: Brownish orange. Stiff.									
	Clayey SILT; light blue with some light grey. Stiff, moist, high plasticity; relict joints and rock fabric.									52 15
		B	2							59 15
		B								
	End Of Hole: 2.50m		3							
			4							
			5							
			6							
			7							

PHOTO(S)



REMARKS

- Coordinates captured using a Trimble R12i Receiver and TSC5 Controller, with a horizontal accuracy +/- 25mm and vertical accuracy +/- 63mm.
- Hand-held shear vanes from 0 to 1.50m bgl completed within pit using extension rods.
- Shear Vane number: 2183
- Shear Vane correction: 1.482
- Shear vane values are corrected
- Test pit terminated at 2.5m, due to side wall collapse.
- Test pit backfilled with arisings upon completion.

WATER

- ☒ Standing Water Level
- ☐ Out flow
- ☐ In flow

INVESTIGATION TYPE

- ☐ Hand Auger
- ☒ Test Pit

SHALLOW INVESTIGATION LOG

TP2B_1113

Client: **New Zealand Transport Agency**
Project: **Northland Corridor, Alternative to Brynderwyn Hills**
Location: **Waipu Track, State Highway 1, Brynderwyn**
Contractor: **Wharehine Construction Ltd**

Co-ordinates: 1727541.13mE, 6008023.02mN
Elevation: 260.59m
Plant: 14T Excavator
Date: 18/09/2025
Logged by: K. Rozmus
Reviewed by: A. George

GEO CODE	MATERIAL DESCRIPTION (See Classification & Symbology sheet for details)	SAMPLES	DEPTH (m)	GRAPHIC LOG	SCALA PENETROMETER (Blows / mm)	VANE SHEAR STRENGTH (kPa) Vane:				Peak Residual	WATER	
F	Clayey SILT with minor sand, dark brown, Soft, moist, highly plastic; sand, fine to medium, Contains some rootlets. [TOPSOIL].			TS								
	Clayey SILT, reddish brown, mottled orange, with light grey. Firm, moist, highly plastic [FILL (UNDIFFERENTIATED)].	B	1								45	-
			2								52	-
	2.50m - 3.50m: 2x tree logs, 2000x 300 mm, slightly decomposed on surface.		3								52	-
WPR	Clayey SILT, reddish brown with light grey. Firm moist, highly plastic. Preserved relict joints, highly FeO stained, jointed are cemented [RESIDUALLY TO COMPLETELY WEATHERED GREYWACKE].	B	4								52	15
	End Of Hole: 4.50m		5									
			6									
			7									

PHOTO(S)



REMARKS

- Coordinates captured using a Trimble R12i Receiver and TSC5 Controller, with a horizontal accuracy +/- 36mm and vertical accuracy +/- 75mm.
- Hand-held shear vanes from 0 to 1.50m bgl completed within pit using extension rods. Shear vanes below 1.50m bgl, completed within excavator bucket sample.
- Shear Vane number: 2183
- Shear Vane correction: 1.482
- Shear vane values are corrected
- Test pit terminated at 4.5m
- Test pit backfilled with arisings upon completion.

WATER

- ☐ Standing Water Level
- ☐ Out flow
- ☐ In flow

INVESTIGATION TYPE

- ☐ Hand Auger
- ☒ Test Pit

SHALLOW INVESTIGATION LOG

TP2B_1114

Client: **New Zealand Transport Agency**
Project: **Northland Corridor, Alternative to Brynderwyn Hills**
Location: **Waipu Track, State Highway 1, Brynderwyn**
Contractor: **Wharehine Construction Ltd**

Co-ordinates: 1727480.83mE, 6008784.21mN
Elevation: 189.19m
Plant: 14T Excavator
Date: 17/09/2025
Logged by: K.Rozmus
Reviewed by: A. George

GEO CODE	MATERIAL DESCRIPTION (See Classification & Symbology sheet for details)	SAMPLES	DEPTH (m)	GRAPHIC LOG	SCALA PENETROMETER (Blows / mm)	VANE SHEAR STRENGTH (kPa) Vane:	Peak Residual	WATER
F	Silty GRAVEL with some silt and sand, greyish brown. Dense, dry, angular, slightly weathered greywacke gravel, sand; fine to coarse. Contains minor rootlets [FILL (UNDIFFERENTIATED)].							
OC	Clayey SILT, brownish orange. Very stiff, dry, low plasticity. Contains pockets of grey, hard, silt, very brittle [COLLUVIUM (UNDIFFERENTIATED)]. 0.30m - 2.20m: Highly weathered relict joint @45 degrees, highly FeO stained. Width of joint weathering is ~150 mm.	B	1				207 52	
		B	2				148 5	
WPH	Highly weathered, brownish orange SILTSTONE, very weak. Contains pockets of reddish pink highly weathered siltstone [HIGHLY WEATHERED GREYWACKE]. End Of Hole: 2.70m	B	3				UTP -	
			4					
			5					
			6					
			7					

PHOTO(S)



REMARKS

- Coordinates captured using a Trimble R12i Receiver and TSC5 Controller, with a horizontal accuracy +/- 43mm and vertical accuracy +/- 81mm.
- Hand-held shear vanes from 0 to 1.50m bgl completed within pit using extension rods.
- Shear Vane number: 2183
- Shear Vane correction: 1.482
- Shear vane values are corrected
- Test pit terminated at 2.7m, due to excavator capability.
- Test pit backfilled with arisings upon completion.

WATER

- ☐ Standing Water Level
- ☐ Out flow
- ☐ In flow

INVESTIGATION TYPE

- ☐ Hand Auger
- ☒ Test Pit

SHALLOW INVESTIGATION LOG

TP2B_1119

Client: **New Zealand Transport Agency**
Project: **Northland Corridor, Alternative to Brynderwyn Hills**
Location: **4245 State Highway 1, Waipu**
Contractor: **Wharehine Construction Ltd**

Co-ordinates: 1728013.69mE, 6010108.50mN
Elevation: 96.76m
Plant: 16T Excavator
Date: 25/09/2025
Logged by: K.Rozmus
Reviewed by: M.Leggett

GEO CODE	MATERIAL DESCRIPTION (See Classification & Symbology sheet for details)	SAMPLES	DEPTH (m)	GRAPHIC LOG	SCALA PENETROMETER (Blows / mm)											VANE SHEAR STRENGTH (kPa)				WATER
					2	4	6	8	10	12	14	16	18	Vane:		Peak Residual				
TS	Silty CLAY, dark brown. Firm, moist, highly plastic. Contains minor rootlets [TOPSOIL].																			
OC	CLAY with some silt yellow/ brown with some light grey. Stiff, moist, highly plastic [COLLUVIUM (UNDIFFERENTIATED)].																			
			1																	
RR	Clayey SILT, with some sand; orangey brown with mottled light grey. Stiff, moist, highly plastic [RESIDUALLY TO COMPLETELY WEATHERED RUARANGI FORMATION].																			
		B	2																	
	Clayey SILT, with some sand; orangey brown with mottled light grey with some red. Firm, moist, highly plastic. Sub-horizontal banding of light grey with reddish brown.		3																	
		B	4																	
	Sandy SILT, with minor clay; light grey. Firm, moist, low plasticity.		5																	
	End Of Hole: 4.90m																			
			6																	
			7																	

PHOTO(S)



REMARKS

- Coordinates captured using a Trimble R12i Receiver and TSC5 Controller, with a horizontal accuracy +/- 30mm and vertical accuracy +/- 65mm.
- Hand-held shear vanes from 0 to 1.50m bgl completed within pit using extension rods. Shear vanes below 1.50m bgl, completed within excavator bucket sample.
- Shear Vane number: 2183
- Shear Vane correction: 1.482
- Shear vane values are corrected
- Test pit terminated at 5.1m
- Test pit backfilled with arisings upon completion.

WATER

- ☒ Standing Water Level
- ☐ Out flow
- ☐ In flow

INVESTIGATION TYPE

- ☐ Hand Auger
- ☒ Test Pit

SHALLOW INVESTIGATION LOG

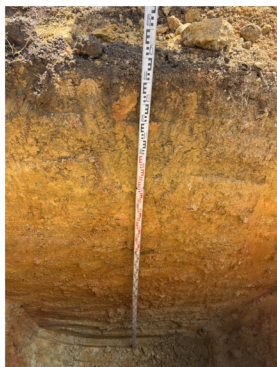
TP2B_1120

Client: **New Zealand Transport Agency**
Project: **Northland Corridor, Alternative to Brynderwyn Hills**
Location: **4245 State Highway 1, Waipu**
Contractor: **Wharehine Construction Ltd**

Co-ordinates: 1728026.22mE, 6010346.29mN
Elevation: 69.15m
Plant: 16T Excavator
Date: 25/09/2025
Logged by: K.Rozmus
Reviewed by: M.Leggett

GEO CODE	MATERIAL DESCRIPTION (See Classification & Symbology sheet for details)	SAMPLES	DEPTH (m)	GRAPHIC LOG	SCALA PENETROMETER (Blows / mm)	VANE SHEAR STRENGTH (kPa) Vane:				Peak Residual	WATER
TS	Silty CLAY, dark brown. Firm, moist, highly plastic. Contains minor rootlets [TOPSOIL].				2 4 6 8 10 12 14 16 18	50 100 150 200					
QC	CLAY with some silt yellow/ brown with some light grey. Stiff, moist, highly plastic [COLLUVIUM (UNDIFFERENTIATED)].		1							96 41	Groundwater Not Encountered
										71 47	
	Clayey SILT, with some sand; orangey brown with mottled light grey with some red. Stiff, moist, highly plastic. Sub-horizontal banding of light grey with reddish brown.		2							77 33	
										96 27	
	B	3									
	Sandy SILT, with minor clay; light grey. Stiff, moist, slightly plastic.		4								
		B	5								
	End Of Hole: 5.00m										
			6								
			7								

PHOTO(S)



REMARKS

- Coordinates captured using a Trimble R12i Receiver and TSC5 Controller, with a horizontal accuracy +/- 24mm and vertical accuracy +/- 64mm.
- Hand-held shear vanes from 0 to 2.0 bgl completed within pit using extension rods. Shear vanes below 2.0m bgl, completed within excavator bucket sample.
- Shear Vane number: 2183
- Shear Vane correction: 1.482
- Shear vane values are corrected
- Test pit terminated at 5.0m
- Test pit backfilled with arisings upon completion.

WATER

- ▼ Standing Water Level
▷ Out flow
◁ In flow

INVESTIGATION TYPE

- ☐ Hand Auger
☒ Test Pit

SHALLOW INVESTIGATION LOG

TP2B_1121

Client: **New Zealand Transport Agency**
Project: **Northland Corridor, Alternative to Brynderwyn Hills**
Location: **Waipu Track, State Highway 1, Brynderwyn**
Contractor: **Wharehine Construction Ltd**

Co-ordinates: 1727595.15mE, 6008976.66mN
Elevation: 170.47m
Plant: 14T Excavator
Date: 15/09/2025
Logged by: K.Rozmus
Reviewed by: M.Leggett

GEO CODE	MATERIAL DESCRIPTION (See Classification & Symbology sheet for details)	SAMPLES	DEPTH (m)	GRAPHIC LOG	SCALA PENETROMETER (Blows / mm)	VANE SHEAR STRENGTH (kPa)				WATER	
						Vane: Peak Residual					
WPR	Clayey SILT, brown. Stiff, dry, low plasticity. Contains minor rootlets. [TOPSOIL].										
	CLAY with some sandy silt, brownish orange, with some mottled pink with light grey. Very stiff, moist, low plasticity. Contains relict jointing, joints highly oxidized with rustic orange staining [RESIDUALLY TO COMPLETELY WEATHERED GREYWACKE].	B									133 15
			1								126 15
			2								126 15
		B									
			3								
			4								
			5								
			6								
			7								
		End Of Hole: 3.30m									

PHOTO(S)



REMARKS

- Coordinates captured using a Trimble R12i Receiver and TSC5 Controller, with a horizontal accuracy +/- 36mm and vertical accuracy +/- 71mm.
- Hand-held shear vanes from 0 to 1.50m bgl completed within pit using extension rods.
- Shear Vane number: 2183
- Shear Vane correction: 1.482
- Shear vane values are corrected
- Test pit terminated at 3.3m, due to excavator capability.
- Test pit backfilled with arisings upon completion.

WATER

- ▼ Standing Water Level
▷ Out flow
◁ In flow

INVESTIGATION TYPE

- ☐ Hand Auger
☒ Test Pit

SHALLOW INVESTIGATION LOG

TP2B_1124

Client: **New Zealand Transport Agency**
Project: **Northland Corridor, Alternative to Brynderwyn Hills**
Location: **3971 State Highway 1, Waipu**
Contractor: **Wharehine Construction Ltd**

Co-ordinates: 1727738.17mE, 6015248.73mN
Elevation: 12.41m
Plant: 16T Excavator
Date: 25/09/2025
Logged by: K.Rozmus
Reviewed by: M.Leggett

GEO CODE	MATERIAL DESCRIPTION (See Classification & Symbolology sheet for details)	SAMPLES	DEPTH (m)	GRAPHIC LOG	SCALA PENETROMETER (Blows / mm)	VANE SHEAR STRENGTH (kPa) Vane: Peak Residual	WATER
TS	Clay, dark brown. Firm, wet, highly plastic. Contains minor rootlets. [TOP SOIL].			TS TS TS			
F	CLAY, light brown and some light grey. Very stiff, moist, highly plastic. Contains minor rootlets [FILL (UNDIFFERENTIATED)].						
	CLAY, tan brown. Stiff, moist, highly plastic.	B					
	1.50m: Becoming stiff.	1					
TA	CLAY, greyish light blue. Stiff, moist highly plastic. Contains minor organics (5-20 x 100mm) [RECENT (HOLOCENE) ALLUVIUM].		2				
	3.00m: Becoming firm.	B	3				
	4.00m: Becoming stiff.		4				
	End Of Hole: 4.70m		5				
			6				
			7				

PHOTO(S)



REMARKS

- Coordinates captured using a Trimble R12i Receiver and TSC5 Controller, with a horizontal accuracy +/- 30mm and vertical accuracy +/- 78mm.
- Hand-held shear vanes from 0 to 1.50 bgl completed within pit using extension rods. Shear vanes below 1.50m bgl, completed within excavator bucket sample.
- Shear Vane number: 2183
- Shear Vane correction: 1.482
- Shear vane values are corrected
- Test pit terminated at 4.7m
- Test pit backfilled with arisings upon completion.

WATER

- ▼ Standing Water Level
▷ Out flow
◁ In flow

INVESTIGATION TYPE

- ☐ Hand Auger
☒ Test Pit

SHALLOW INVESTIGATION LOG

TP2B_1125_N

Client: **New Zealand Transport Agency**
Project: **Northland Corridor, Alternative to Brynderwyn Hills**
Location: **2941 State Highway 1, Kaiwaka**
Contractor: **Wharehine Construction Ltd**

Co-ordinates: 1727623.16mE, 6006421.22mN
Elevation: 111.4m
Plant: 16T Excavator
Date: 23/09/2025
Logged by: K.Rozmus
Reviewed by: M.Leggett

GEO CODE	MATERIAL DESCRIPTION (See Classification & Symbology sheet for details)	SAMPLES	DEPTH (m)	GRAPHIC LOG	SCALA PENETROMETER (Blows / mm)										VANE SHEAR STRENGTH (kPa) Vane:				Peak Residual	WATER
TS	CLAY with some minor silt, brown. Soft, wet, highly plastic. Contains minor rootlets. [TOPSOIL].				2	4	6	8	10	12	14	16	18	50	100	50	200			
QC	CLAY, medium brown. Firm, moist, highly plastic [COLLUVIUM (UNDIFFERENTIATED)].																			
	CLAY, brownish light grey. Very firm, moist, highly plastic. Contains minor organics, tree trunk.		1																	
TA	Silty GRAVEL with minor clay; light blueish grey. Loosely packed; subangular to subrounded, slightly weathered [RECENT (HOLOCENE) ALLUVIUM].		2																	
	Sandy GRAVEL with minor cobbles and silt; light blueish grey. Loosely packed; bedding, subhorizontal/imbricated, subangular to subrounded, slightly weathered greywacke gravel; sand, fine to coarse.		3																	
	End Of Hole: 3.30m																			
			4																	
			5																	
			6																	
			7																	

4

PHOTO(S)



REMARKS

- Coordinates captured using a Trimble R12i Receiver and TSC5 Controller, with a horizontal accuracy +/- 29mm and vertical accuracy +/- 69mm.
- Hand-held shear vanes from 0 to 1.50m bgl completed within pit using extension rods. Shear vanes below 1.50m bgl, completed within excavator bucket sample.
- Shear Vane number: 2183
- Shear Vane correction: 1.482
- Shear vane values are corrected
- Minor water inflow, 0.5L/s within Alluvium/fan deposits @2.5m.
- Test pit terminated at 3.3m
- Test pit backfilled with arisings upon completion.
- This log should be read in conjunction with TP2B_1125_S, as they form a complete set.

WATER

- ▼ Standing Water Level
▷ Out flow
◁ In flow

INVESTIGATION TYPE

- ☐ Hand Auger
☒ Test Pit

SHALLOW INVESTIGATION LOG

TP2B_1125_S

Client: **New Zealand Transport Agency**
Project: **Northland Corridor, Alternative to Brynderwyn Hills**
Location: **2941 State Highway 1, Kaiwaka**
Contractor: **Wharehine Construction Ltd**

Co-ordinates: 1727623.16mE, 6006421.22mN
Elevation: 111.4m
Plant: 16T Excavator
Date: 23/09/2025
Logged by: K.Rozmus
Reviewed by: M.Leggus

GEO CODE	MATERIAL DESCRIPTION (See Classification & Symbology sheet for details)	SAMPLES	DEPTH (m)	GRAPHIC LOG	SCALA PENETROMETER (Blows / mm)	VANE SHEAR STRENGTH (kPa) Vane:	Peak Residual	WATER
TS	CLAY with some minor silt, brown. Soft, wet, highly plastic. Contains minor rootlets. [TOPSOIL].							
QC	CLAY, medium brown. Firm, moist, highly plastic [COLLUVIUM (UNDIFFERENTIATED)].							
	CLAY, brownish light grey. Very firm, moist, highly plastic. Contains minor organics, tree trunk.	B	1				148 37	Groundwater Not Encountered
	1.00m - 1.20m: Slightly decomposed tree trunk (700 x 350 mm), dark brown/black.						163 30	
NAS	CLAY, orangey brown, with green/blue hue. Firm, moist, highly plastic [NORTHLAND ALLOCHTHON SOILS (RESIDUAL/CW)].	B	2				37 7	
NA L	Moderately weathered sheared calcareous, blueish grey SILTSTONE, weak. Moderately rippable by excavator [NORTHLAND ALLOCHTHON CALCAREOUS SEQUENCE (SW/UW)]. End Of Hole: 2.50m		3				UTP -	
			4					
			5					
			6					
			7					

PHOTO(S)



REMARKS

- Coordinates captured using a Trimble R12i Receiver and TSC5 Controller, with a horizontal accuracy +/- 29mm and vertical accuracy +/- 69mm.
- Hand-held shear vanes from 0 to 1.50m bgl completed within pit using extension rods. Shear vanes below 1.50m bgl, completed within excavator bucket sample.
- Shear Vane number: 2183
- Shear Vane correction: 1.482
- Shear vane values are corrected
- Test pit terminated at 2.5m
- Test pit backfilled with arisings upon completion.
- This log should be read in conjunction with TP2B_1125_N, as they form a complete set.

WATER

- ▼ Standing Water Level
▷ Out flow
◁ In flow

INVESTIGATION TYPE

- ☐ Hand Auger
☒ Test Pit

SHALLOW INVESTIGATION LOG

TP2B_1128

Client: **New Zealand Transport Agency**
Project: **Northland Corridor, Alternative to Brynderwyn Hills**
Location: **2395E SH1, Brynderwyn.**
Contractor: **Wharehine Limited**

Co-ordinates: 1728523.32mE, 6002012.30mN
Elevation: 71.93m
Plant: 14T Excavator
Date: 15/12/2025
Logged by: D. Baker
Reviewed by: M. Leggett

GEO CODE	MATERIAL DESCRIPTION (See Classification & Symbolology sheet for details)	SAMPLES	DEPTH (m)	GRAPHIC LOG	SCALA PENETROMETER (Blows / mm)	VANE SHEAR STRENGTH (kPa) Vane: AUK1558	WATER
TS	SILT; brown. Firm, moist to dry, low plasticity. [TOPSOIL].						
QC	CLAY, with trace sand; light brown and light grey. Very stiff, moist; sand, fine [COLLUVIUM (UNDIFFERENTIATED)]. 0.40m: Becoming stiff.	B					
NAS	CLAY, with trace sand; brown, grey and dark brown with bluish grey. Stiff, moist; sand, fine; MnO staining [NORTHLAND ALLOCHTHON SOILS (RESIDUAL/CW)].	B	1				
		B	2				
		B	3				
	Silty CLAY, bluish grey with brown and grey, high plasticity. Moist, stiff. Completely weathered, MUDSTONE. Extremely weak, sheared.	B	4				
	End Of Hole: 4.00m						
			5				
			6				
			7				

PHOTO(S)



REMARKS

- Coordinates captured using a Trimble R12i Receiver and TSC5 Controller, with a horizontal accuracy +/- 30mm and vertical accuracy +/- 90mm.
- Hand-held shear vanes from 0 to 1.5m bgl completed within pit using extension rods. Shear vanes below 1.5m bgl, completed within excavator bucket sample.
- Shear Vane number: 1558
- Shear Vane correction: 1.485
- Shear vane values are corrected
- Test pit terminated at 4.0m, due to wall collapse.
- Test pit backfilled with arisings upon completion.

WATER

- ☐ Standing Water Level
- ☐ Out flow
- ☐ In flow

INVESTIGATION TYPE

- ☐ Hand Auger
- ☒ Test Pit

SHALLOW INVESTIGATION LOG

TP2B_1129

Client: **New Zealand Transport Agency**
Project: **Northland Corridor, Alternative to Brynderwyn Hills**
Location: **2395E SH1, Brynderwyn.**
Contractor: **Wharehine Limited**

Co-ordinates: 1728592.17mE, 6001874.15mN
Elevation: 64.91m
Plant: 14T Excavator
Date: 15/12/2025
Logged by: D. Baker
Reviewed by: M. Leggett

GEO CODE	MATERIAL DESCRIPTION (See Classification & Symbolology sheet for details)	SAMPLES	DEPTH (m)	GRAPHIC LOG	SCALA PENETROMETER (Blows / mm)		VANE SHEAR STRENGTH (kPa) Vane: AUK1558		WATER
					2	4	50	Peak Residual	
TS	SILT; brown. Firm, moist to dry, low plasticity. [TOPSOIL].			TS				208+	
NAS	CLAY; light grey mottled light orangish brown. Hard, moist to dry, high plasticity [NORTHLAND ALLOCHTHON SOILS (RESIDUAL/CW)]. 0.50m: Very stiff. 1.30m: Becoming stiff, moist. 3.00m: With minor sand. Very stiff; sand, fine; MnO staining. 4.00m: With bluish grey. Firm. CLAY, with minor sand; bluish grey, green, grey and brown intermixed. Soft, wet, high plasticity; sand, fine to medium; carbonaceous fragments (1%) up to 40 mm .	B						166	
			1					89	
								27	
			2					59	
								27	
			3					131	
								36	
			4					137	
								33	
			4					45	
								22	
		B						15	
	End Of Hole: 4.80m		5					6	
			6						
			7						

PHOTO(S)



REMARKS

- Coordinates captured using a Trimble R12i Receiver and TSC5 Controller, with a horizontal accuracy +/- 20mm and vertical accuracy +/- 70mm.
- Hand-held shear vanes from 0 to 1.5m bgl completed within pit using extension rods. Shear vanes below 2.0m bgl, completed within excavator bucket sample.
- Shear Vane number: 1558
- Shear Vane correction: 1.485
- Shear vane values are corrected
- Test pit terminated at 4.8m.
- Test pit backfilled with arisings upon completion.

WATER

- ▼ Standing Water Level
▷ Out flow
◁ In flow

INVESTIGATION TYPE

- ☐ Hand Auger
☒ Test Pit

SHALLOW INVESTIGATION LOG

TP2B_1130

Client: **New Zealand Transport Agency**
Project: **Northland Corridor, Alternative to Brynderwyn Hills**
Location: **2471 State Highway 1, Brynderwyn**
Contractor: **Wharehine Construction Ltd**

Co-ordinates: 1729171.70mE, 6001794.34mN
Elevation: 45.54m
Plant: 16T Excavator
Date: 01/10/2025
Logged by: D. Baker
Reviewed by: A. George

GEO CODE	MATERIAL DESCRIPTION (See Classification & Symbolology sheet for details)	SAMPLES	DEPTH (m)	GRAPHIC LOG	SCALA PENETROMETER (Blows / mm)										VANE SHEAR STRENGTH (kPa) Vane: AUK506				WATER
					2	4	6	8	10	12	14	16	18	50	100	150	200	Peak Residual	
F	Gravelly CLAY, with minor sand, with trace boulders; brown and grey with pale grey mottles. Soft to firm, moist, high plasticity; gravel, fine to coarse, subrounded to subangular, highly weathered, very weak - moderately strong, sandstone, siltstone, limestone; sand, fine to coarse; boulders, up to 300mm; trace wood and logs up to 600mm long [FILL (UNDIFFERENTIATED)].	B	1															63 20	↙
	CLAY, with minor sand, with trace gravel; grey and light brown. Stiff, moist; sand, fine to coarse; gravel, medium to coarse, subrounded, highly weathered, very weak to weak, siltstone. 0.80m: Firm. 1.00m: Grey, sandy CLAY pocket 500 mm in size on south wall of test pit.																	49 18	
TA	1.50m: Grey, light brown and brown.	B	2															33 13	↙
	Silty CLAY, with minor sand; grey. Very soft, saturated, low plasticity; sand, fine; trace organic fragments, swampy odour [RECENT (HOLOCENE) ALLUVIUM].																	3 2	
	End Of Hole: 3.00m		3															7 2	
			4															5 3	
			5																
			6																
			7																

PHOTO(S)



REMARKS

1. Shear Vane number : 506
2. Shear Vane correction: 1.626
3. Shear vane values are corrected.
4. Test pit terminated at 3.0m due to wall collapse.
5. Test pit backfilled with arisings upon completion.
6. Coordinates captured using a Trimble R12i Receiver and TSC5 Controller, with a horizontal accuracy +/- 85mm and vertical accuracy +/- 107mm.

WATER

- ▼ Standing Water Level
- ▷ Out flow
- ↔ In flow

INVESTIGATION TYPE

- ☐ Hand Auger
- ☒ Test Pit