

DATE January 24, 2014**REFERENCE No.** 1314260010-061-TM-Rev0-1000**TO** Brad Thompson
PWGCS**CC** Dave Colbourne**FROM** Jared Beloin and David Caughill**EMAIL** jbeloin@golder.com;
dcaughill@golder.com**FIELD INVESTIGATION FOR PASTE PRODUCTION PLANNING AT GIANT MINE, YELLOWKNIFE,
NORTHWEST TERRITORIES – OCTOBER 2013**

Public Works and Government Services Canada (PWGSC) requested Golder Associates Ltd. (Golder) to undertake a field investigation program to provide information to support future paste production at the Giant Mine Site, NWT. This technical memorandum was prepared to provide a factual field investigation record of the activities undertaken and observations recorded during the field program. The paste evaluation and testing component of this field program is provided under separate cover.

The reader is referred to the Study Limitations section which follows the text and forms an integral part of this technical memorandum.

1.0 INTRODUCTION

Golder completed a field investigation program between October 19, 2013 and October 31, 2013 to provide information on the upper portion of the tailings within the South and Central Ponds. The program included observations on consistency and composition of the tailings and collection of samples, to be used for laboratory testing to evaluate the suitability of the tailings to produce paste. This program, combined with previous investigation programs is intended to provide information to support the planning and design of paste production programs in 2014 and 2015. The overall objective is to use paste produced with the tailings as underground backfill in key stopes at the Giant Mine Site. It is expected that tailings from upper portions of the South Pond, the Central Pond and possibly the North Pond will be used to supply tailings for paste production in 2014 and 2015.

Field supervision of the test pitting program was provided by an Engineer-in-Training from Golder Associates who located the test pits in the field, supervised and logged their excavation. Field support was provided by members of Golder's Paste Group.

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2.0 FIELD PROGRAM

A total of 26 test pits were excavated on the South Pond and a total 23 test pits were excavated on the Central Pond between October 19 and 30, 2013. Due to ongoing paste production, the test pitting program was carried out when equipment was available, primarily from October 19 to 23, 2013 then finished on October 29 and 30, 2013. The test pits were excavated by track mounted excavators supplied and operated by RTL Construction (RTL). Test pits excavated from October 19, to October 23, 2013 were excavated with a Komatsu PC400 LC excavator. Test pits excavated on October 29 and 30, 2013 were excavated with a Deere 270D LC.

The test pit locations are shown in Figure 1. The depths of the test pits ranged from 2.0 m to 6.5 m. The target depth for the test pits was generally 4.0 m or deeper. Some test pits encountered native ground/rock, permafrost or soft conditions which limited the depth to less than 4.0 m. Golder field representatives located the test pits in the field, observed and logged their excavation, and directed their backfilling. Observations made during excavation of the test pits included soil visual description, ground water conditions and sloughing conditions. Samples were collected from selected test pits for subsequent laboratory testing.

The visual description of the tailings was determined based on field assessment techniques which were limited to visual inspection and handling with gloved hands.

In general the tailings encountered during the current investigation in the South and Central Ponds can be classified as silty sand, sandy silt or clayey silt, as described below:

- silty sand, fine grained, grey to brown, no cementation, non-cohesive, dry to moist, very loose to loose. This unit often contains lenses of blocky/friable sandy silt up to about 0.5 m thick.
- sandy silt, various shades of brown and grey 1 to 10 mm thick interlamination, very weakly cemented, blocky/friable, dry to moist, soft. This unit often contained lenses of silty sand up to about 0.5 m thick.
- clayey silt, low plasticity, some sand to sandy, light grey to brown, cohesive, wet of plastic limit, very soft. This unit retained its water (no seepage/free water observed at time of excavation).

With few variations the material encountered during this investigation can be classified in one of these three categories. For the purposes of this investigation the classification took into consideration the behavior of the material from the standpoint of paste production. The material described as silty sand is generally loose material that crumbles easily with light finger pressure. The material described as sandy silt is generally blocky or friable and requires moderate to strong finger pressure to crumble. The material described as clayey silt is plastic in nature and can be moulded or squeezed rather than crumbled with light to moderate finger pressure.

Observations during the 2013 paste production activities were that each type of material required different processing in order to be used for paste production (using Reimer trucks in this case). Silty sand was generally suitable to be used as excavated, except to possibly screen for debris within the tailings. Sandy silt required screening or mechanical conditioning, to break up the lumps in the tailings. Without conditioning, the tailings tended to cause blockages in the paste production (mixing process) operation. Clayey silt material, due to the plasticity, would need to be blended with coarser material, in order to not cause blockages in the paste piping system.

All test pits were backfilled immediately after completion with selected material left in small piles from select test pits, in order to collect samples for paste production testing at a later date.

Based on field observations made during tailings excavation at the north end of the South Pond for the 2013 paste production trial, it should be noted that water conditions in the tailings can change due to the excavation activity itself. For example repeated passes by heavy equipment made over the same spot can have a “pumping” effect, apparently bringing water closer to the surface than it was during the initial investigation.

2.1 South Pond Test Pits

The approximate locations of the test pits excavated in South Pond are shown in Figure 1. Data and observations pertaining to these test pits are provided in Table 1 and in the Record of Test Pit sheets (Attachment 1). The observations below only apply to the upper portions of the ponds, to the depth of the test pits.

In general coarser material (silty sand) was observed near the former discharge points along the west and south edges of the pond. Finer grained material (clayey silt) was observed in greater quantities closer to the center and along the eastern edge of the pond. More clayey silt was encountered and the surface of the pond became softer towards the open water in the bay in the north east corner of the pond. Test pits SP-TP-38 and SP-TP-41 represent the limit of approach for the excavator during the field program, moving closer to the north east bay was considered unsafe as the track mounted excavator began sinking into the ground.

Moisture conditions in South Pond typically varied from dry to moist at shallower depths to moist at deeper depths in the coarser material. Generally wetter conditions were noted in the finer grained material in the center and eastern edges of the pond, though no seepage or free water was observed at the time of excavation. Test pits SP-TP-50, SP-TP-51 and SP-TP-52 in the center of the pond near the paste trial area showed wetter conditions than most others. It is suspected that this may be due to the heavy equipment traffic from the paste trial pumping the water up.

Sloughing off the side walls of the test pits was noted in many of the test pits containing clayey silt. Notably while excavating test pit SP-TP-41 the test pit collapsed at a depth of 3.0 m.

2.2 Central Pond Test Pits

The approximate locations of the test pits excavated in Central Pond are shown in Figure 1. Data and observations pertaining to these test pits are provided in Table 1 and in the Record of Test Pit sheets (Attachment 1). The observations below only apply to the upper portions of the ponds, to the depth of the test pits.

In general the material in Central Pond was observed to be coarser than that in South Pond at the depths excavated to during this investigation, with most of the material consisting of dry to moist silty sand to sandy silt. Wetter clayey silt material was observed starting at depths ranging from 1.75 to 2.5 m in test pits CP-TP-09, CP-TP-10, CP-TP-11, CP-TP-12 and CP-TP-14 located along the south and south east edges of the pond. Coarser material was observed in the central and northern parts of the pond. Clayey silt was also observed in test pits CP-TP-18, CP-TP-20 and CP-TP-23 starting at depths ranging from 3.75 to 4.0 m.

Moisture conditions observed in Central Pond were typically drier than those observed in South Pond at the depths excavated to in the current test pit program. No seepage was observed in any of the test pits.

Frozen tailings (suspected permafrost) were encountered within the tailings in test pits CP-TP-21 and CP-TP-22 at depths of 3.5 m and 3.0 m respectively. The frozen material contained ice lenses 1 to 2 mm thick. The excavators were unable to dig through the frozen layers.

Table 1: Central and South Pond Test Pit Summary October 2013

Location	Test Pit ID	Depth (m)	Sand Content (%)	Silt Content (%)	Clay Content (%)	Visual Description/Comments/Notes
Central Pond	CP-TP-09	0-1.25				Silty Sand
		1.25-2.5	23	70	7	Sandy Silt
		2.5-4.5				Clayey Silt. Sloughing in Clayey Silt
	CP-TP-10	0-1.25				Silty Sand
		1.25-1.75				Sandy Silt
		1.75-4.5	4	87	9	Clayey Silt. Sloughing in Clayey Silt.
	CP-TP-11	0-1.0				Silty Sand
		1.0-4.0	28	66	6	Sandy Silt (moist to wet). Sloughing in sandy Silt layer, rock (suspected bedrock) at 4.0 m.
	CP-TP-12	0-3.5				Sandy Silt (dry to moist. Clayey Silt lens from 2.0 to 2.5 m.
	CP-TP-13	0-2.0				Sandy Silt
		2.0-5.0				Silty Sand. Clayey Silt lens from 4.0 to 4.5 m.
	CP-TP-14	0-2.5	42	54	4	Sandy Silt
		2.5-4.5	2	89	9	Clayey Silt
	CP-TP-15	0-4.0	64	33	3	Silty Sand, containing lenses/laminations of blocky and clayey material
		4.0-5.5				Sandy Silt
	CP-TP-16	0-4.5	48	48	4	Silty Sand
	CP-TP-17	0-1.0				Sandy Silt
		1.0-4.5				Silty Sand. Dry to moist, containing wet clayey lenses at 3.0 m.
	CP-TP-18	0-3.75	32	63	5	Sandy Silt
		3.75-5.0				Clayey Silt
	CP-TP-19	0-4.0				Sand and Silt, laminated
		4.0-4.5	35	61	4	Sandy Silt
	CP-TP-20	0-4.0				Sandy Silt with sand lenses. Clayey lenses at 2.5 m.
		4.0-4.5	12	81	7	Clayey Silt. Sloughing off side walls observed.
	CP-TP-21	0-3.75				Silty Sand to Sandy Silt. Frozen from 3.5 to 3.75 m. Unable to excavate through the frozen tailings.
	CP-TP-22	0-4.0				Sandy Silt. Frozen, containing ice with 1 to 2 mm ice lenses from 3.0 to 4.0 m. Unable to excavate further.
CP-TP-23	0-4.0				Sandy Silt	
	4.0-5.0				Clayey Silt. Sloughing off side walls observed.	
CP-TP-24	0-2.5				Sandy Silt. Rock below 2.5 m. Topsoil and tree roots encountered from 2.25 to 2.5 m.	
CP-TP-25	0-3.5				Silty Sand with Silt lenses. Rock below 3.5 m. Soft clayey lenses at 2.25 m.	
CP-TP-26	0-2.25				Sandy Silt	
	2.25-3.0	12	80	8	Clayey Silt. Rock (suspected bedrock) below 3.0 m. Roots encountered from 2.5 to 3.0 m.	

Location	Test Pit ID	Depth (m)	Sand Content (%)	Silt Content (%)	Clay Content (%)	Visual Description/Comments/Notes
	CP-TP-27	0-4.25				Silty Sand. Containing Sandy Silt lenses up to 0.5 m thick. Clayey Silt lenses below 3.5 m.
	CP-TP-28	0-5.0				Silty Sand. Containing Sandy Silt lenses up to 0.5 m thick. Clayey Silt lens from 3.0 to 3.5 m.
	CP-TP-29	0-2.0				Silty Sand containing Sandy Silt lenses.
		2.0-5.0				Sandy Silt. Clayey Silt lenses from 2.5 to 5.0 m.
	CP-TP-30	0-1.0				Silt and Sand
		1.0-4.0				Silty Sand
		4.0-5.5				Sandy Silt. Clayey Silt lenses from 4.0 to 5.5 m.
	CP-TP-31	0-5.0				Silty Sand
		5.0-6.5				Sandy Silt. Wet Clayey Silt lenses at 4.75 m.
	South Pond	SP-TP-26	0-0.75			
0.75-2.75						Silty Sand
2.75-3.75						Clayey Silt
3.75-4.25						Silty Sand
SP-TP-27		0-1.5	24	70	6	Sandy Silt
		1.5-4.0				Silty Sand
SP-TP-28		0-1.0				Sandy Silt
		1.0-4.0				Silty Sand containing Sandy Silt lenses
SP-TP-29		0-0.5				Sandy Silt
		0.5-3.75				Silty Sand. Clayey Silt lens from 1.75 to 2.5 m
		3.75-4.0				Clayey Silt
SP-TP-30		0-4.0				Silty Sand. Sandy Silt lenses from 2.5 to 4.0 m.
SP-TP-31		0-2.0				Sandy Silt to Silty Sand. Rock (suspected bedrock) below 2.0 m.
SP-TP-32		0-4.0				Silty Sand. Moist to wet silt lenses from 3.5 to 4.0 m.
SP-TP-33		0-1.25				Sandy Silt
		1.25-2.25				Clayey Silt
		2.25-4.0				Silty Sand
SP-TP-34		0-3.0				Sandy Silt. Wet Clayey Silt lens at 1.75 m
		3.0-4.0				Clayey Silt.
SP-TP-35		0-1.25	38	57	5	Sandy Silt
		1.25-2.0				Silty Sand
		2.0-4.0				Clayey Silt
SP-TP-36		0-3.0				Silty Sand
		3.0-4.0	0	90	10	Clayey Silt
SP-TP-37		0-0.75				Silty Sand
		0.75-4.0				Clayey Silt
SP-TP-38		0-2.5				Sandy Silt to Silty Sand containing Clayey Silt lenses.
		2.5-4.0	0	88	12	Clayey Silt. Sloughing off side walls noted.
SP-TP-39		0-2.25				Sandy Silt to Silty Sand
		2.25-3.75				Clayey Silt. Rock (suspected bedrock) below 3.75 m. Roots and topsoil encountered from 3.5 to 3.75 m

Location	Test Pit ID	Depth (m)	Sand Content (%)	Silt Content (%)	Clay Content (%)	Visual Description/Comments/Notes
	SP-TP-40	0-0.5				Sandy Silt
		0.5-3.0				Clayey Silt. Rock (suspected bedrock) below 3.0 m.
	SP-TP-41	0-3.0	0	89	11	Clayey Silt. Possible Silty Clay from 2.0 to 3.0 m. Side walls collapsed.
	SP-TP-44	0-2.75				Silty Sand. Rock (suspected bedrock) below 2.75 m. Tree roots and boulders encountered from 2.5 to 2.75 m.
	SP-TP-45	0-1.0				Sandy Silt
		1.0-3.0				Silty Sand. Rock below 3.0 m (suspected bedrock). A PVC pipe was encountered in this test pit.
	SP-TP-46	0-1.75				Silty Sand containing Sandy Silt lenses.
		1.75-2.75				Clayey Silt. Sloughing noted in Clayey Silt layer.
		2.75-4.0				Silty Sand
	SP-TP-47	0-1.0				Clayey Silt
		1.0-2.0				Sandy Silt
		2.0-4.0				Silty Sand
	SP-TP-48	0-0.5				Clayey Silt
		0.5-3.0				Silty Sand containing Sandy Silt lenses. Rock below 3.0 m (suspected bedrock).
	SP-TP-49	0-3.5				Silty Sand containing Sandy Silt lenses
		3.5-4.25				Sandy Silt
	SP-TP-50	0-2.0				Sandy Silt containing Silty Sand.
		2.0-4.0				Silty Sand containing Sandy Silt lenses. Moist to wet from 0 to 4.0 m.
	SP-TP-51	0-1.0				Sandy Silt
		1.0-3.25				Silty Sand containing Sandy Silt
		3.25-4.0				Sandy Silt containing some clay. Moist to wet from 1.5 to 4.0 m
	SP-TP-52	0-3.5	10	83	7	Sandy Silt. Clayey lenses from 1.5 to 3.5 m. Moist to wet from 0 to 3.5 m.
		3.5-4.0				Silty Sand. Moist from 3.5 to 4.0m.
	SP-TP-53	0-1.25				Sandy Silt
		1.25-2.5				Silty Sand
		2.5-4.0				Clayey Silt

3.0 CLOSURE

We trust that the information provided in this technical memorandum meets your present needs. Should you have any questions or require additional information, please feel free to contact the undersigned.

GOLDER ASSOCIATES LTD.

ORIGINAL SIGNED

Jared Beloin, EIT
Geotechnical Engineer-in-Training

JJB/DC/rs/km/ja

Attachments: Figure 1
Attachment 1: Record of Test Pits

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ORIGINAL SIGNED AND SEALED

Dave Caughill, M.Sc., P.Eng.
Associate, Senior Geotechnical Engineer

ATTACHMENT 1
Record of Test Pits

DATA ENTRY: JJB

PROJECT No.: 13-1426-0010
 LOCATION: See Location Plan

RECORD OF TEST PIT: CP-TP-09

EXCAVATION DATE: October 29, 2013

SHEET 1 OF 1
 DATUM:

DEPTH SCALE METRES	EXCAVATION METHOD	SOIL PROFILE		SAMPLES		DYNAMIC PENETRATION RESISTANCE, BLOWS/0.3m				HYDRAULIC CONDUCTIVITY, k, cm/s				ADDITIONAL LAB. TESTING	PIEZOMETER OR STANDPIPE INSTALLATION		
		DESCRIPTION	STRATA PLOT	ELEV. DEPTH (m)	NUMBER	TYPE	BLOWS/0.3m	SHEAR STRENGTH Cu, kPa				WATER CONTENT PERCENT					
								20		40		60				80	
0		Ground Surface (SM) SAND, fine grained, silty, containing silt lenses/laminations, light brown, dry to moist.	[Pattern]	0.00													
1		(ML) SILT, sandy, laminated grey and brown, dry to moist.	[Pattern]	1.25													
2	Deere 270D LC RTL Construction	(ML) CLAYEY SILT, some sand, containing sandy lenses, grey, moist to wet, very soft.	[Pattern]	2.50													
3																	
4																	
5		End of TEST PIT. NOTES: 1) Test Pit backfilled on completion. 2) No seeping water observed during excavation. 3) Sloughing observed off side walls during excavation.		4.50													
6																	
7																	

TESTPIT_13-1426-0010 TEST PIT RECORDS 13.JAN2014.GPJ_GLDR_CAN.GDT_01/23/14



DATA ENTRY: JJB

PROJECT No.: 13-1426-0010
 LOCATION: See Location Plan

RECORD OF TEST PIT: CP-TP-10

EXCAVATION DATE: October 29, 2013

SHEET 1 OF 1
 DATUM:

DEPTH SCALE METRES	EXCAVATION METHOD	SOIL PROFILE		SAMPLES		DYNAMIC PENETRATION RESISTANCE, BLOWS/0.3m				HYDRAULIC CONDUCTIVITY, k, cm/s				ADDITIONAL LAB. TESTING	PIEZOMETER OR STANDPIPE INSTALLATION		
		DESCRIPTION	STRATA PLOT	ELEV. DEPTH (m)	NUMBER	TYPE	BLOWS/0.3m	SHEAR STRENGTH Cu, kPa				WATER CONTENT PERCENT					
								20		40		60				80	
0		Ground Surface (SM) SAND, fine grained, silty, containing silt lenses/laminations, light brown, dry to moist.	[Pattern]	0.00													
1		(ML) SILT, sandy, laminated grey and brown, dry to moist.	[Pattern]	1.25													
2	Deere 270D LC RTL Construction	(ML) CLAYEY SILT, some sand to sandy, containing sand lenses, laminated, moist to wet, very soft to soft.	[Pattern]	1.75													
3			[Pattern]														
4			[Pattern]														
5		End of TEST PIT. NOTES: 1) Test Pit backfilled on completion. 2) No seeping water observed during excavation. 3) Sloughing observed off side walls during excavation.	[Pattern]	4.50													
6			[Pattern]														
7			[Pattern]														

TESTPIT_13-1426-0010 TEST PIT RECORDS 13.JAN2014.GPJ_GLDR_CAN.GDT_01/23/14



DATA ENTRY: JJB

PROJECT No.: 13-1426-0010

RECORD OF TEST PIT: CP-TP-11

SHEET 1 OF 1

LOCATION: See Location Plan

EXCAVATION DATE: October 29, 2013

DATUM:

DEPTH SCALE METRES	EXCAVATION METHOD	SOIL PROFILE		SAMPLES		DYNAMIC PENETRATION RESISTANCE, BLOWS/0.3m				HYDRAULIC CONDUCTIVITY, k, cm/s				ADDITIONAL LAB. TESTING	PIEZOMETER OR STANDPIPE INSTALLATION		
		DESCRIPTION	STRATA PLOT	ELEV. DEPTH (m)	NUMBER	TYPE	BLOWS/0.3m	SHEAR STRENGTH Cu, kPa				WATER CONTENT PERCENT					
								20		40		60				80	
0	Deere 270D LC RTL Construction	Ground Surface (SM) SAND, fine grained, silty, brown to grey, dry, loose to compact.		0.00													
1		(ML) SILT, sandy, some clay, containing clayey lenses, containing sandy lenses, dark to light grey, moist to wet.		1.00													
2																	
3																	
4		End of TEST PIT.		4.00													
5		NOTES: 1) Suspected bedrock at 4.0 m. 2) Test Pit backfilled on completion. 3) No seeping water observed during excavation. 4) Sloughing observed off side walls during excavation.															
6																	
7																	

TESTPIT_13-1426-0010 TEST PIT RECORDS 13.JAN2014.GPJ_GLDR_CAN.GDT_01/23/14

DEPTH SCALE

1 : 35



LOGGED: JJB

CHECKED: DC

DATA ENTRY: JJB

PROJECT No.: 13-1426-0010
 LOCATION: See Location Plan

RECORD OF TEST PIT: CP-TP-12

EXCAVATION DATE: October 20, 2013

SHEET 1 OF 1
 DATUM:

DEPTH SCALE METRES	EXCAVATION METHOD	SOIL PROFILE		SAMPLES		DYNAMIC PENETRATION RESISTANCE, BLOWS/0.3m				HYDRAULIC CONDUCTIVITY, k, cm/s				ADDITIONAL LAB. TESTING	PIEZOMETER OR STANDPIPE INSTALLATION		
		DESCRIPTION	STRATA PLOT	ELEV. DEPTH (m)	NUMBER	TYPE	BLOWS/0.3m	SHEAR STRENGTH Cu, kPa				WATER CONTENT PERCENT					
								20 40 60 80		nat V. + rem V. ⊕ ⊙		10 ⁻⁶ 10 ⁻⁵ 10 ⁻⁴ 10 ⁻³				Wp ----- W ----- WI	
0		Ground Surface (ML) SILT, sandy, laminated light grey and brown, blocky, dry to moist.		0.00													
2	Komatsu PC400 LC Excavator RTL Construction	... 0.5 m thick clayey silt lens															
3																	
4		End of TEST PIT.		3.50													
4		NOTES: 1) Test Pit backfilled on completion. 2) No seeping water observed during excavation. 3) No sloughing observed during excavation.															
5																	
6																	
7																	

TESTPIT_13-1426-0010 TEST PIT RECORDS 13.JAN2014.GPJ_GLDR_CAN.GDT_01/23/14



DATA ENTRY: JJB

PROJECT No.: 13-1426-0010
 LOCATION: See Location Plan

RECORD OF TEST PIT: CP-TP-13

EXCAVATION DATE: October 20, 2013

SHEET 1 OF 1
 DATUM:

DEPTH SCALE METRES	EXCAVATION METHOD	SOIL PROFILE		SAMPLES		DYNAMIC PENETRATION RESISTANCE, BLOWS/0.3m				HYDRAULIC CONDUCTIVITY, k, cm/s				ADDITIONAL LAB. TESTING	PIEZOMETER OR STANDPIPE INSTALLATION		
		DESCRIPTION	STRATA PLOT	ELEV. DEPTH (m)	NUMBER	TYPE	BLOWS/0.3m	SHEAR STRENGTH Cu, kPa				WATER CONTENT PERCENT					
								20		40		60				80	
0	Komatsu PC400 LC Excavator RTL Construction	Ground Surface (ML) SILT, sandy, laminated light grey and brown, blocky, dry to moist.		0.00													
2		(SM) SAND, fine grained, silty, light grey, containing silt lenses, dry to moist.		2.00													
4		(ML) CLAYEY SILT, grey, moist to wet.		4.00													
4.5		(SM) SAND, fine grained, silty, light grey, containing silt lenses, moist.		4.50													
5		End of TEST PIT.		5.00													
6	NOTES: 1) Test Pit backfilled on completion. 2) No seeping water observed during excavation. 3) No sloughing observed during excavation.																
7																	

TESTPIT_13-1426-0010 TEST PIT RECORDS 13.JAN2014.GPJ_GLDR_CAN.GDT_01/23/14



DATA ENTRY: JJB

PROJECT No.: 13-1426-0010
 LOCATION: See Location Plan

RECORD OF TEST PIT: CP-TP-14

EXCAVATION DATE: October 29, 2013

SHEET 1 OF 1
 DATUM:

DEPTH SCALE METRES	EXCAVATION METHOD	SOIL PROFILE		SAMPLES		DYNAMIC PENETRATION RESISTANCE, BLOWS/0.3m				HYDRAULIC CONDUCTIVITY, k, cm/s				ADDITIONAL LAB. TESTING	PIEZOMETER OR STANDPIPE INSTALLATION		
		DESCRIPTION	STRATA PLOT	ELEV. DEPTH (m)	NUMBER	TYPE	BLOWS/0.3m	SHEAR STRENGTH Cu, kPa				WATER CONTENT PERCENT					
								20		40		60				80	
0		Ground Surface (ML) SILT, sandy, containing sand lenses, greyish brown, dry to moist	0.00														
1																	
2	Deere 270D LC RTL Construction	... clayey lenses															
3		(ML) CLAYEY SILT, sandy, containing sand lenses, moist to wet, very soft to soft.	2.50														
4																	
5		End of TEST PIT. NOTES: 1) Test Pit backfilled on completion. 2) No seeping water observed during excavation. 3) No sloughing observed during excavation.	4.50														
6																	
7																	

TESTPIT 13-1426-0010 TEST PIT RECORDS 13.JAN2014.GPJ_GLDR_CAN.GDT 01/23/14



DATA ENTRY: JJB

PROJECT No.: 13-1426-0010

RECORD OF TEST PIT: CP-TP-15

SHEET 1 OF 1

LOCATION: See Location Plan

EXCAVATION DATE: October 23, 2013

DATUM:

DEPTH SCALE METRES	EXCAVATION METHOD	SOIL PROFILE		SAMPLES		DYNAMIC PENETRATION RESISTANCE, BLOWS/0.3m				HYDRAULIC CONDUCTIVITY, k, cm/s				ADDITIONAL LAB. TESTING	PIEZOMETER OR STANDPIPE INSTALLATION		
		DESCRIPTION	STRATA PLOT	ELEV. DEPTH (m)	NUMBER	TYPE	BLOWS/0.3m	SHEAR STRENGTH Cu, kPa				WATER CONTENT PERCENT					
								20 40 60 80		nat V. + rem V. ⊕ U - ⊙		10 ⁻⁶ 10 ⁻⁵ 10 ⁻⁴ 10 ⁻³				Wp I — W — WI	
0		Ground Surface (SM) SAND, fine grained, silty, containing silt lenses/laminations and clayey laminations, moist.	[Strata Plot]	0.00													
1																	
2																	
3	Komatsu PC400 LC Excavator RTL Construction																
4		(ML) SILT, sandy, grey, some clay, moist to wet	[Strata Plot]	4.00													
5																	
6		End of TEST PIT. NOTES: 1) Test Pit backfilled on completion. 2) No seeping water observed during excavation. 3) No sloughing observed during excavation.		5.50													
7																	

TESTPIT_13-1426-0010 TEST PIT RECORDS 13.JAN2014.GPJ_GLDR_CAN.GDT_01/23/14

DEPTH SCALE

1 : 35



LOGGED: JJB

CHECKED: DC

DATA ENTRY: JJB

PROJECT No.: 13-1426-0010
 LOCATION: See Location Plan

RECORD OF TEST PIT: CP-TP-16

EXCAVATION DATE: October 23, 2013

SHEET 1 OF 1
 DATUM:

DEPTH SCALE METRES	EXCAVATION METHOD	SOIL PROFILE		SAMPLES		DYNAMIC PENETRATION RESISTANCE, BLOWS/0.3m				HYDRAULIC CONDUCTIVITY, k, cm/s				ADDITIONAL LAB. TESTING	PIEZOMETER OR STANDPIPE INSTALLATION
		DESCRIPTION	STRATA PLOT	ELEV. DEPTH (m)	NUMBER	TYPE	BLOWS/0.3m	SHEAR STRENGTH Cu, kPa		WATER CONTENT PERCENT					
								nat V. +	rem V. ⊕	Q - ●	U - ○	Wp	W		
0		Ground Surface (SM) SAND, fine grained, silty, light brown, dry to moist.	0.00												
1															
2	Komatsu PC400 LC Excavator RTL Construction														
3															
4															
5		End of TEST PIT. NOTES: 1) Test Pit backfilled on completion. 2) No seeping water observed during excavation. 3) No sloughing observed during excavation.	4.50												
6															
7															

TESTPIT_13-1426-0010 TEST PIT RECORDS 13.JAN2014.GPJ_GLDR_CAN.GDT_01/23/14



DATA ENTRY: JJB

PROJECT No.: 13-1426-0010
 LOCATION: See Location Plan

RECORD OF TEST PIT: CP-TP-17

EXCAVATION DATE: October 23, 2013

SHEET 1 OF 1
 DATUM:

DEPTH SCALE METRES	EXCAVATION METHOD	SOIL PROFILE		SAMPLES		DYNAMIC PENETRATION RESISTANCE, BLOWS/0.3m				HYDRAULIC CONDUCTIVITY, k, cm/s				ADDITIONAL LAB. TESTING	PIEZOMETER OR STANDPIPE INSTALLATION
		DESCRIPTION	STRATA PLOT	ELEV. DEPTH (m)	NUMBER	TYPE	BLOWS/0.3m	SHEAR STRENGTH Cu, kPa		WATER CONTENT PERCENT		WATER CONTENT PERCENT			
								20	40	60	80	nat V. +	rem V. ⊕		
0	Komatsu PC400 LC Excavator RTL Construction	Ground Surface		0.00											
		(ML) SILT, some sand to sandy, laminated brown and grey, containing sand lenses, dry to moist.													
1		(SM) SAND, fine grained, silty, containing silt lenses, light brown, dry to moist, loose to compact.		1.00											
2															
3		... wet clayey lenses													
4															
5		End of TEST PIT.		4.50											
		NOTES: 1) Test Pit backfilled on completion. 2) No seeping water observed during excavation. 3) No sloughing observed during excavation.													
6															
7															

TESTPIT_13-1426-0010 TEST PIT RECORDS 13.JAN2014.GPJ_GLDR_CAN.GDT_01/23/14



DATA ENTRY: JJB

PROJECT No.: 13-1426-0010
 LOCATION: See Location Plan

RECORD OF TEST PIT: CP-TP-18

EXCAVATION DATE: October 29, 2013

SHEET 1 OF 1
 DATUM:

DEPTH SCALE METRES	EXCAVATION METHOD	SOIL PROFILE		SAMPLES		DYNAMIC PENETRATION RESISTANCE, BLOWS/0.3m				HYDRAULIC CONDUCTIVITY, k, cm/s				ADDITIONAL LAB. TESTING	PIEZOMETER OR STANDPIPE INSTALLATION
		DESCRIPTION	STRATA PLOT	ELEV. DEPTH (m)	NUMBER	TYPE	BLOWS/0.3m	SHEAR STRENGTH Cu, kPa		WATER CONTENT PERCENT					
								20	40	60	80	10 ⁻⁶	10 ⁻⁵		
0		Ground Surface (SM) SAND, fine grained, silty, grey to brown, dry to moist, loose to compact.	0.00												
1															
2															
3	Deere 270D LC RTL Construction														
4		(ML) CLAYEY SILT, sandy, containing sand lenses, moist to wet, very soft to soft.	3.75												
5		End of TEST PIT.	5.00												
6		NOTES: 1) Test Pit backfilled on completion. 2) No seeping water observed during excavation. 3) No sloughing observed during excavation.													
7															

TESTPIT_13-1426-0010 TEST PIT RECORDS 13.JAN2014.GPJ_GLDR_CAN.GDT_01/23/14



DATA ENTRY: JJB

PROJECT No.: 13-1426-0010
 LOCATION: See Location Plan

RECORD OF TEST PIT: CP-TP-19

EXCAVATION DATE: October 23, 2013

SHEET 1 OF 1
 DATUM:

DEPTH SCALE METRES	EXCAVATION METHOD	SOIL PROFILE		SAMPLES		DYNAMIC PENETRATION RESISTANCE, BLOWS/0.3m				HYDRAULIC CONDUCTIVITY, k, cm/s				ADDITIONAL LAB. TESTING	PIEZOMETER OR STANDPIPE INSTALLATION		
		DESCRIPTION	STRATA PLOT	ELEV. DEPTH (m)	NUMBER	TYPE	BLOWS/0.3m	SHEAR STRENGTH Cu, kPa				WATER CONTENT PERCENT					
								20		40		60				80	
0	Komatsu PC400 LC Excavator RTL Construction	Ground Surface (ML) SILT, sandy, laminated brown and grey, dry, loose to compact.		0.00													
1																	
2																	
3																	
4		(ML) SILT, sandy, clayey, grey, moist to wet, soft to firm.		4.00													
5		End of TEST PIT.		4.50													
6		NOTES: 1) Test Pit backfilled on completion. 2) No seeping water observed during excavation. 3) No sloughing observed during excavation.															
7																	

TESTPIT 13-1426-0010 TEST PIT RECORDS 13.JAN2014.GPJ_GLDR_CAN.GDT 01/23/14



DATA ENTRY: JJB

PROJECT No.: 13-1426-0010
 LOCATION: See Location Plan

RECORD OF TEST PIT: CP-TP-20

EXCAVATION DATE: October 23, 2013

SHEET 1 OF 1
 DATUM:

DEPTH SCALE METRES	EXCAVATION METHOD	SOIL PROFILE		SAMPLES		DYNAMIC PENETRATION RESISTANCE, BLOWS/0.3m				HYDRAULIC CONDUCTIVITY, k, cm/s				ADDITIONAL LAB. TESTING	PIEZOMETER OR STANDPIPE INSTALLATION		
		DESCRIPTION	STRATA PLOT	ELEV. DEPTH (m)	NUMBER	TYPE	BLOWS/0.3m	SHEAR STRENGTH Cu, kPa				WATER CONTENT PERCENT					
								20		40		60				80	
0		Ground Surface (ML) SILT, sandy, light grey to brown, containing sand lenses, dry to moist, soft/loose.		0.00													
1																	
2	Komatsu PC400 LC Excavator RTL Construction	... clayey lenses															
3																	
4		(ML) CLAYEY SILT, some sand, grey, moist to wet, very soft to soft.		4.00													
5		End of TEST PIT. NOTES: 1) Test pit backfilled on completion. 2) No seeping water observed during excavation. 3) Sloughing observed off side walls of test pit during excavation.		4.50													
6																	
7																	

TESTPIT 13-1426-0010 TEST PIT RECORDS 13.JAN2014.GPJ_GLDR_CAN.GDT 01/23/14



DATA ENTRY: JJB

PROJECT No.: 13-1426-0010
 LOCATION: See Location Plan

RECORD OF TEST PIT: CP-TP-21

EXCAVATION DATE: October 23, 2013

SHEET 1 OF 1
 DATUM:

DEPTH SCALE METRES	EXCAVATION METHOD	SOIL PROFILE		SAMPLES		DYNAMIC PENETRATION RESISTANCE, BLOWS/0.3m				HYDRAULIC CONDUCTIVITY, k, cm/s				ADDITIONAL LAB. TESTING	PIEZOMETER OR STANDPIPE INSTALLATION		
		DESCRIPTION	STRATA PLOT	ELEV. DEPTH (m)	NUMBER	TYPE	BLOWS/0.3m	SHEAR STRENGTH Cu, kPa				WATER CONTENT PERCENT					
								20 40 60 80 nat V. + Q - ● rem V. ⊕ U - ○				10 ⁻⁶ 10 ⁻⁵ 10 ⁻⁴ 10 ⁻³ Wp ----- W ----- WI					
0	Komatsu PC400 LC Excavator RTL Construction	Ground Surface (SM/ML) SAND and SILT, fine grained, containing sand lenses, laminated brown and light grey, loose/soft, dry to moist.	0.00														
3.50		(ML) SILT, sandy, light brown, laminated, platy, dry, hard. (suspected permafrost)															
3.75		End of TEST PIT.															
4		NOTES: 1) Refusal due to suspected permafrost. 2) Test pit backfilled on completion. 3) No seeping water observed during excavation. 4) No sloughing observed during excavation.															
5																	
6																	
7																	

TESTPIT_13-1426-0010 TEST PIT RECORDS 13.JAN2014.GPJ_GLDR_CAN.GDT_01/23/14



DATA ENTRY: JJB

PROJECT No.: 13-1426-0010

RECORD OF TEST PIT: CP-TP-22

SHEET 1 OF 1

LOCATION: See Location Plan

EXCAVATION DATE: October 30, 2013

DATUM:

DEPTH SCALE METRES	EXCAVATION METHOD	SOIL PROFILE		SAMPLES		DYNAMIC PENETRATION RESISTANCE, BLOWS/0.3m				HYDRAULIC CONDUCTIVITY, k, cm/s				ADDITIONAL LAB. TESTING	PIEZOMETER OR STANDPIPE INSTALLATION		
		DESCRIPTION	STRATA PLOT	ELEV. DEPTH (m)	NUMBER	TYPE	BLOWS/0.3m	SHEAR STRENGTH Cu, kPa				WATER CONTENT PERCENT					
								20 40 60 80		nat V. + Q - rem V. ⊕ U - ⊙		10 ⁻⁶ 10 ⁻⁵ 10 ⁻⁴ 10 ⁻³				Wp ----- W ----- WI	
0		Ground Surface (ML) SILT, sandy, laminated grey and brown, blocky/friable, dry to moist.		0.00													
1																	
2	Deere 270D LC RTL Construction	... sandy/clayey lenses															
3		... suspected permafrost below about 3.0 m.															
4		End of TEST PIT.		4.00													
5		NOTES: 1) Refusal due to suspected permafrost. 2) Test pit backfilled on completion. 3) No seeping water observed during excavation. 4) No sloughing observed during excavation.															
6																	
7																	

TESTPIT_13-1426-0010 TEST PIT RECORDS 13.JAN2014.GPJ_GLDR_CAN.GDT_01/23/14

DEPTH SCALE

1 : 35



LOGGED: JJB

CHECKED: DC

DATA ENTRY: JJB

PROJECT No.: 13-1426-0010

RECORD OF TEST PIT: CP-TP-23

SHEET 1 OF 1

LOCATION: See Location Plan

EXCAVATION DATE: October 30, 2013

DATUM:

DEPTH SCALE METRES	EXCAVATION METHOD	SOIL PROFILE		SAMPLES		DYNAMIC PENETRATION RESISTANCE, BLOWS/0.3m				HYDRAULIC CONDUCTIVITY, k, cm/s				ADDITIONAL LAB. TESTING	PIEZOMETER OR STANDPIPE INSTALLATION		
		DESCRIPTION	STRATA PLOT	ELEV. DEPTH (m)	NUMBER	TYPE	BLOWS/0.3m	SHEAR STRENGTH Cu, kPa				WATER CONTENT PERCENT					
								20		40		60				80	
0		Ground Surface (ML) SILT, sandy, blocky, laminated brown and grey, dry to moist, soft to firm.		0.00													
1																	
2																	
3	Deere 270D LC RTL Construction	... clayey silt lenses															
4		(ML) CLAYEY SILT, some sand to sandy, dark brown to grey, moist to wet, very soft to soft.		4.00													
5		End of TEST PIT.		5.00													
6		NOTES: 1) Test pit backfilled on completion. 2) No seeping water observed during excavation. 3) Sloughing observed off side walls of test pit during excavation.															
7																	

TESTPIT_13-1426-0010 TEST PIT RECORDS 13.JAN2014.GPJ_GLDR_CAN.GDT_01/23/14

DEPTH SCALE

1 : 35



LOGGED: JJB

CHECKED: DC

DATA ENTRY: JJB

PROJECT No.: 13-1426-0010

RECORD OF TEST PIT: CP-TP-24

SHEET 1 OF 1

LOCATION: See Location Plan

EXCAVATION DATE: October 30, 2013

DATUM:

DEPTH SCALE METRES	EXCAVATION METHOD	SOIL PROFILE		SAMPLES			DYNAMIC PENETRATION RESISTANCE, BLOWS/0.3m				HYDRAULIC CONDUCTIVITY, k, cm/s				ADDITIONAL LAB. TESTING	PIEZOMETER OR STANDPIPE INSTALLATION	
		DESCRIPTION	STRATA PLOT	ELEV. DEPTH (m)	NUMBER	TYPE	BLOWS/0.3m	SHEAR STRENGTH Cu, kPa				WATER CONTENT PERCENT					
								20		40		60		80			10 ⁻⁶
0	Deere 270D LC RTL Construction	Ground Surface (ML) SILT, sandy, containing clayey lenses, containing sand lenses laminated grey and brown, dry to moist.	0.00				20	40	60	80							
2		... Topsoil encountered															
3		End of TEST PIT.	2.50														
3		NOTES: 1) Refusal due to suspected bedrock. 2) Test pit backfilled on completion. 3) No seeping water observed during excavation. 4) No sloughing observed during excavation.															
4																	
5																	
6																	
7																	

TESTPIT_13-1426-0010 TEST PIT RECORDS 13.JAN2014.GPJ_GLDR_CAN.GDT_01/23/14

DEPTH SCALE

1 : 35



LOGGED: JJB

CHECKED: DC

DATA ENTRY: JJB

PROJECT No.: 13-1426-0010
 LOCATION: See Location Plan

RECORD OF TEST PIT: CP-TP-25

EXCAVATION DATE: October 30, 2013

SHEET 1 OF 1
 DATUM:

DEPTH SCALE METRES	EXCAVATION METHOD	SOIL PROFILE		SAMPLES		DYNAMIC PENETRATION RESISTANCE, BLOWS/0.3m				HYDRAULIC CONDUCTIVITY, k, cm/s				ADDITIONAL LAB. TESTING	PIEZOMETER OR STANDPIPE INSTALLATION		
		DESCRIPTION	STRATA PLOT	ELEV. DEPTH (m)	NUMBER	TYPE	BLOWS/0.3m	SHEAR STRENGTH Cu, kPa				WATER CONTENT PERCENT					
								20		40		60				80	
0	Deere 270D LC RTL Construction	Ground Surface (SM) SAND, silty, containing silt lenses, laminated grey and brown, friable, dry, loose to compact.	0.00														
2		... soft clayey silt lens															
3																	
4		End of TEST PIT.	3.50														
5		NOTES: 1) Refusal due to suspected bedrock. 2) Test pit backfilled on completion. 3) No seeping water observed during excavation. 4) No sloughing observed during excavation.															
6																	
7																	

TESTPIT_13-1426-0010 TEST PIT RECORDS 13.JAN2014.GPJ_GLDR_CAN.GDT_01/23/14



DATA ENTRY: JJB

PROJECT No.: 13-1426-0010
 LOCATION: See Location Plan

RECORD OF TEST PIT: CP-TP-26

EXCAVATION DATE: October 30, 2013

SHEET 1 OF 1
 DATUM:

DEPTH SCALE METRES	EXCAVATION METHOD	SOIL PROFILE		SAMPLES		DYNAMIC PENETRATION RESISTANCE, BLOWS/0.3m				HYDRAULIC CONDUCTIVITY, k, cm/s				ADDITIONAL LAB. TESTING	PIEZOMETER OR STANDPIPE INSTALLATION		
		DESCRIPTION	STRATA PLOT	ELEV. DEPTH (m)	NUMBER	TYPE	BLOWS/0.3m	SHEAR STRENGTH Cu, kPa				WATER CONTENT PERCENT					
								20 40 60 80 nat V. + Q - ● rem V. ⊕ U - ○				10 ⁻⁶ 10 ⁻⁵ 10 ⁻⁴ 10 ⁻³ Wp I — W — WI					
0	Deere 270D LC RTL Construction	Ground Surface	0.00														
1		(ML) SILT, sandy, laminated brown and grey, friable, dry to moist.															
2		(ML) CLAYEY SILT, sandy, grey, moist to wet, very soft to soft. ... topsoil encountered	2.25														
3		End of TEST PIT.	3.00														
4		NOTES: 1) Refusal due to suspected bedrock. 2) Test pit backfilled on completion. 3) No seeping water observed during excavation. 4) No sloughing observed during excavation.															
5																	
6																	
7																	

TESTPIT_13-1426-0010 TEST PIT RECORDS 13.JAN2014.GPJ_GLDR_CAN.GDT_01/23/14



DATA ENTRY: JJB

PROJECT No.: 13-1426-0010
 LOCATION: See Location Plan

RECORD OF TEST PIT: CP-TP-27

EXCAVATION DATE: October 30, 2013

SHEET 1 OF 1
 DATUM:

DEPTH SCALE METRES	EXCAVATION METHOD	SOIL PROFILE			SAMPLES		DYNAMIC PENETRATION RESISTANCE, BLOWS/0.3m				HYDRAULIC CONDUCTIVITY, k, cm/s				ADDITIONAL LAB. TESTING	PIEZOMETER OR STANDPIPE INSTALLATION	
		DESCRIPTION	STRATA PLOT	ELEV. DEPTH (m)	NUMBER	TYPE	BLOWS/0.3m	SHEAR STRENGTH Cu, kPa				WATER CONTENT PERCENT					
								20		40		60		80			10 ⁻⁶
0		Ground Surface (SM) SAND, fine grained, silty, contains friable silt lenses, dry to moist, loose to compact.		0.00													
1																	
2	Deere 270D LC RTL Construction																
3																	
4		... clayey silt lenses															
5		End of TEST PIT.		4.25													
6		NOTES: 1) Test Pit backfilled on completion. 2) No seeping water observed during excavation. 3) No sloughing observed during excavation.															
7																	

TESTPIT 13-1426-0010 TEST PIT RECORDS 13.JAN2014.GPJ_GLDR_CAN.GDT 01/23/14



DATA ENTRY: JJB

PROJECT No.: 13-1426-0010

RECORD OF TEST PIT: CP-TP-28

SHEET 1 OF 1

LOCATION: See Location Plan

EXCAVATION DATE: October 30, 2013

DATUM:

DEPTH SCALE METRES	EXCAVATION METHOD	SOIL PROFILE		SAMPLES		DYNAMIC PENETRATION RESISTANCE, BLOWS/0.3m				HYDRAULIC CONDUCTIVITY, k, cm/s				ADDITIONAL LAB. TESTING	PIEZOMETER OR STANDPIPE INSTALLATION		
		DESCRIPTION	STRATA PLOT	ELEV. DEPTH (m)	NUMBER	TYPE	BLOWS/0.3m	SHEAR STRENGTH Cu, kPa				WATER CONTENT PERCENT					
								20		40		60				80	
0		Ground Surface (SM) SAND, fine grained, silty, containing blocky laminated silt lenses, light grey to brown, dry to moist.		0.00													
1																	
2																	
3	Deere 270D LC RTL Construction	... 0.5 m thick clayey silt lens															
4																	
5		End of TEST PIT.		5.00													
6		NOTES: 1) Test Pit backfilled on completion. 2) No seeping water observed during excavation. 3) No sloughing observed during excavation.															
7																	

TESTPIT_13-1426-0010 TEST PIT RECORDS 13.JAN2014.GPJ_GLDR_CAN.GDT_01/23/14

DEPTH SCALE

1 : 35



LOGGED: JJB

CHECKED: DC

DATA ENTRY: JJB

PROJECT No.: 13-1426-0010

RECORD OF TEST PIT: CP-TP-29

SHEET 1 OF 1

LOCATION: See Location Plan

EXCAVATION DATE: October 30, 2013

DATUM:

DEPTH SCALE METRES	EXCAVATION METHOD	SOIL PROFILE			SAMPLES		DYNAMIC PENETRATION RESISTANCE, BLOWS/0.3m				HYDRAULIC CONDUCTIVITY, k, cm/s				ADDITIONAL LAB. TESTING	PIEZOMETER OR STANDPIPE INSTALLATION	
		DESCRIPTION	STRATA PLOT	ELEV. DEPTH (m)	NUMBER	TYPE	BLOWS/0.3m	SHEAR STRENGTH Cu, kPa				WATER CONTENT PERCENT					
								20		40		60		80			10 ⁻⁶
0	Deere 270D LC RTL Construction	Ground Surface (SM) SAND, fine grained, silty, containing blocky silt lenses, light grey to brown, dry to moist.			0.00												
2		(ML) SILT, sandy, some clay, containing clayey lenses, containing sandy lenses, light brown to grey, moist with wet lenses.			2.00												
5		End of TEST PIT.			5.00												
6		NOTES: 1) Test Pit backfilled on completion. 2) No seeping water observed during excavation. 3) No sloughing observed during excavation.															
7																	

TESTPIT_13-1426-0010 TEST PIT RECORDS 13.JAN2014.GPJ_GLDR_CAN.GDT_01/23/14

DEPTH SCALE

1 : 35



LOGGED: JJB

CHECKED: DC

DATA ENTRY: JJB

PROJECT No.: 13-1426-0010
 LOCATION: See Location Plan

RECORD OF TEST PIT: CP-TP-30

EXCAVATION DATE: October 23, 2013

SHEET 1 OF 1
 DATUM:

DEPTH SCALE METRES	EXCAVATION METHOD	SOIL PROFILE		SAMPLES		DYNAMIC PENETRATION RESISTANCE, BLOWS/0.3m				HYDRAULIC CONDUCTIVITY, k, cm/s				ADDITIONAL LAB. TESTING	PIEZOMETER OR STANDPIPE INSTALLATION
		DESCRIPTION	STRATA PLOT	ELEV. DEPTH (m)	NUMBER	TYPE	BLOWS/0.3m	SHEAR STRENGTH Cu, kPa		WATER CONTENT PERCENT					
								20	40	60	80	10 ⁻⁶	10 ⁻⁵		
0		Ground Surface (ML/SM) SILT and SAND, light brown and grey, laminations, dry.	[Strata Plot]	0.00											
1		(SM) SAND, silty, fine grained, light brown to grey, dry to moist	[Strata Plot]	1.00											
2			[Strata Plot]												
3	Komatsu PC400 LC Excavator RTL Construction		[Strata Plot]												
4		(ML/SM) Sandy SILT and silty SAND interlayers, containing clayey silt lenses.	[Strata Plot]	4.00											
5			[Strata Plot]												
6		End of TEST PIT.	[Strata Plot]	5.50											
7		NOTES: 1) Test Pit backfilled on completion. 2) No seeping water observed during excavation. 3) No sloughing observed during excavation.	[Strata Plot]												

TESTPIT 13-1426-0010 TEST PIT RECORDS 13.JAN2014.GPJ_GLDR_CAN.GDT 01/23/14



DATA ENTRY: JJB

PROJECT No.: 13-1426-0010

RECORD OF TEST PIT: CP-TP-31

SHEET 1 OF 2

LOCATION: See Location Plan

EXCAVATION DATE: October 23, 2013

DATUM:

DEPTH SCALE METRES	EXCAVATION METHOD	SOIL PROFILE		SAMPLES		DYNAMIC PENETRATION RESISTANCE, BLOWS/0.3m				HYDRAULIC CONDUCTIVITY, k, cm/s				ADDITIONAL LAB. TESTING	PIEZOMETER OR STANDPIPE INSTALLATION		
		DESCRIPTION	STRATA PLOT	ELEV. DEPTH (m)	NUMBER	TYPE	BLOWS/0.3m	SHEAR STRENGTH Cu, kPa				WATER CONTENT PERCENT					
								20		40		60				80	
0		Ground Surface (SM) SAND, silty, fine grained, containing blocky silt layers and clayey silt lenses, dry to moist.	0.00														
1																	
2																	
3	Komatsu PC400 LC Excavator RTL Construction																
4																	
5		... wet clayey silt lenses															
5		(ML) SILT, sandy, light grey to brown, moist.	5.00														
6																	
7		End of TEST PIT.	6.50														
		NOTES: 1) Test Pit backfilled on completion.															
		CONTINUED NEXT PAGE															

TESTPIT 13-1426-0010 TEST PIT RECORDS 13.JAN2014.GPJ_GLDR_CAN.GDT 01/23/14

DEPTH SCALE

1 : 35



LOGGED: JJB

CHECKED: DC

DATA ENTRY: JJB

PROJECT No.: 13-1426-0010
 LOCATION: See Location Plan

RECORD OF TEST PIT: CP-TP-31

EXCAVATION DATE: October 23, 2013

SHEET 2 OF 2
 DATUM:

DEPTH SCALE METRES	EXCAVATION METHOD	SOIL PROFILE			SAMPLES		DYNAMIC PENETRATION RESISTANCE, BLOWS/0.3m				HYDRAULIC CONDUCTIVITY, k, cm/s				ADDITIONAL LAB. TESTING	PIEZOMETER OR STANDPIPE INSTALLATION	
		DESCRIPTION	STRATA PLOT	ELEV. DEPTH (m)	NUMBER	TYPE	BLOWS/0.3m	SHEAR STRENGTH Cu, kPa				WATER CONTENT PERCENT					
								20		40		60		80			10 ⁻⁶
7		2) No seeping water observed during excavation. 3) No sloughing observed during excavation.															
8																	
9																	
10																	
11																	
12																	
13																	
14																	

TESTPIT_13-1426-0010 TEST PIT RECORDS 13.JAN2014.GPJ_GLDR_CAN.GDT_01/23/14

DEPTH SCALE
 1 : 35



LOGGED: JJB
 CHECKED: DC

DATA ENTRY: JJB

PROJECT No.: 13-1426-0010

RECORD OF TEST PIT: SP-TP-26

SHEET 1 OF 1

LOCATION: See Location Plan

EXCAVATION DATE: October 19, 2013

DATUM:

DEPTH SCALE METRES	EXCAVATION METHOD	SOIL PROFILE		SAMPLES		DYNAMIC PENETRATION RESISTANCE, BLOWS/0.3m				HYDRAULIC CONDUCTIVITY, k, cm/s				ADDITIONAL LAB. TESTING	PIEZOMETER OR STANDPIPE INSTALLATION		
		DESCRIPTION	STRATA PLOT	ELEV. DEPTH (m)	NUMBER	TYPE	BLOWS/0.3m	SHEAR STRENGTH Cu, kPa				WATER CONTENT PERCENT					
								20 40 60 80 nat V. + Q - ● rem V. ⊕ U - ○				10 ⁻⁶ 10 ⁻⁵ 10 ⁻⁴ 10 ⁻³ Wp ----- W ----- WI 10 20 30 40					
0		Ground Surface (SM/ML) Sandy SILT to silty SAND, laminated brown and grey, dry to moist.		0.00													
1		(SM) SAND, silty, containing wet clayey silt lenses, light grey, dry to moist, loose to compact.		0.75													
2	Komatsu PC400 LC Excavator RTL Construction																
3		(ML) CLAYEY SILT, light brown to grey, w>PL, very soft to soft.		2.75													
4		(SM) SAND, fine grained, silty, light grey, moist.		3.75													
4		End of TEST PIT.		4.00													
5		NOTES: 1) Test Pit backfilled on completion. 2) No seeping water observed during excavation. 3) No sloughing observed during excavation.															
6																	
7																	

TESTPIT_13-1426-0010 TEST PIT RECORDS 13.JAN2014.GPJ_GLDR_CAN.GDT_01/23/14

DEPTH SCALE

1 : 35



LOGGED: JJB

CHECKED: DC

DATA ENTRY: JJB

PROJECT No.: 13-1426-0010

RECORD OF TEST PIT: SP-TP-27

SHEET 1 OF 1

LOCATION: See Location Plan

EXCAVATION DATE: October 19, 2013

DATUM:

DEPTH SCALE METRES	EXCAVATION METHOD	SOIL PROFILE		SAMPLES		DYNAMIC PENETRATION RESISTANCE, BLOWS/0.3m				HYDRAULIC CONDUCTIVITY, k, cm/s				ADDITIONAL LAB. TESTING	PIEZOMETER OR STANDPIPE INSTALLATION
		DESCRIPTION	STRATA PLOT	ELEV. DEPTH (m)	NUMBER	TYPE	BLOWS/0.3m	SHEAR STRENGTH Cu, kPa		WATER CONTENT PERCENT					
								20	40	10 ⁻⁶	10 ⁻⁵	10 ⁻⁴	10 ⁻³		
0	Komatsu PC400 LC Excavator RTL Construction	Ground Surface (ML) SILT, sandy, containing clayey laminations, laminated brown and grey, dry.	0.00												
2		(SM) SAND, fine grained, silty, light to dark grey, dry to moist.	1.50												
4		End of TEST PIT.	4.00												
5		NOTES: 1) Test Pit backfilled on completion. 2) No seeping water observed during excavation. 3) No sloughing observed during excavation.													
6															
7															

TESTPIT_13-1426-0010 TEST PIT RECORDS 13.JAN2014.GPJ_GLDR_CAN.GDT_01/23/14

DEPTH SCALE

1 : 35



LOGGED: JJB

CHECKED: DC

DATA ENTRY: JJB

PROJECT No.: 13-1426-0010
 LOCATION: See Location Plan

RECORD OF TEST PIT: SP-TP-28

EXCAVATION DATE: October 19, 2013

SHEET 1 OF 1
 DATUM:

DEPTH SCALE METRES	EXCAVATION METHOD	SOIL PROFILE		SAMPLES		DYNAMIC PENETRATION RESISTANCE, BLOWS/0.3m				HYDRAULIC CONDUCTIVITY, k, cm/s				ADDITIONAL LAB. TESTING	PIEZOMETER OR STANDPIPE INSTALLATION		
		DESCRIPTION	STRATA PLOT	ELEV. DEPTH (m)	NUMBER	TYPE	BLOWS/0.3m	SHEAR STRENGTH Cu, kPa				WATER CONTENT PERCENT					
								20		40		60				80	
0		Ground Surface (ML) SILT, sandy, some clay, laminated brown and grey, dry to moist.		0.00													
1		(SM) SAND, fine grained, silty, containing silt lenses, light grey, dry to moist.		1.00													
2	Komatsu PC400 LC Excavator RTL Construction	... fewer silt lenses															
3																	
4		End of TEST PIT.		4.00													
5		NOTES: 1) Test Pit backfilled on completion. 2) No seeping water observed during excavation. 3) No sloughing observed during excavation.															
6																	
7																	

TESTPIT_13-1426-0010 TEST PIT RECORDS 13.JAN2014.GPJ_GLDR_CAN.GDT_01/23/14



DATA ENTRY: JJB

PROJECT No.: 13-1426-0010

RECORD OF TEST PIT: SP-TP-29

SHEET 1 OF 1

LOCATION: See Location Plan

EXCAVATION DATE: October 19, 2013

DATUM:

DEPTH SCALE METRES	EXCAVATION METHOD	SOIL PROFILE		SAMPLES		DYNAMIC PENETRATION RESISTANCE, BLOWS/0.3m				HYDRAULIC CONDUCTIVITY, k, cm/s				ADDITIONAL LAB. TESTING	PIEZOMETER OR STANDPIPE INSTALLATION		
		DESCRIPTION	STRATA PLOT	ELEV. DEPTH (m)	NUMBER	TYPE	BLOWS/0.3m	SHEAR STRENGTH Cu, kPa				WATER CONTENT PERCENT					
								20 40 60 80 nat V. + Q - ● rem V. ⊕ U - ○				10 ⁻⁶ 10 ⁻⁵ 10 ⁻⁴ 10 ⁻³ Wp ----- W ----- WI 10 20 30 40					
0	Komatsu PC400 LC Excavator RTL Construction	Ground Surface		0.00													
		(ML) SILT, sandy, laminated light brown and grey, dry.															
1		(SM) SAND, fine grained, silty, light grey, dry to moist.			0.50												
		... silt lenses															
2		(ML) CLAYEY SILT, laminated brown and grey, moist to wet, very soft to soft, sand laminations.			1.75												
3	(SM) SAND, fine grained, silty, light grey, dry to moist.			2.50													
4	(ML) CLAYEY SILT, laminated brown and grey, moist to wet, very soft to soft, sand laminations.			3.75													
4	End of TEST PIT.			4.00													
5	NOTES: 1) Test Pit backfilled on completion. 2) No seeping water observed during excavation. 3) No sloughing observed during excavation. 4) Boulders/cobbles on surface.																
6																	
7																	

TESTPIT_13-1426-0010 TEST PIT RECORDS 13.JAN2014.GPJ_GLDR_CAN.GDT_01/23/14

DEPTH SCALE

1 : 35



LOGGED: JJB

CHECKED: DC

DATA ENTRY: JJB

PROJECT No.: 13-1426-0010

RECORD OF TEST PIT: SP-TP-30

SHEET 1 OF 1

LOCATION: See Location Plan

EXCAVATION DATE: October 20, 2013

DATUM:

DEPTH SCALE METRES	EXCAVATION METHOD	SOIL PROFILE		SAMPLES		DYNAMIC PENETRATION RESISTANCE, BLOWS/0.3m				HYDRAULIC CONDUCTIVITY, k, cm/s				ADDITIONAL LAB. TESTING	PIEZOMETER OR STANDPIPE INSTALLATION
		DESCRIPTION	STRATA PLOT	ELEV. DEPTH (m)	NUMBER	TYPE	BLOWS/0.3m	SHEAR STRENGTH Cu, kPa		WATER CONTENT PERCENT					
								20	40	10 ⁻⁶	10 ⁻⁵	10 ⁻⁴	10 ⁻³		
0		Ground Surface SAND, fine grained, silty, light brown to grey, dry, loose to compact.	0.00												
1															
2	Komatsu PC400 LC Excavator RTL Construction	... dry, friable sandy silt lenses													
3		... dry, black, friable sandy silt lenses													
4		End of TEST PIT.	4.00												
5		NOTES: 1) Test Pit backfilled on completion. 2) No seeping water observed during excavation. 3) No sloughing observed during excavation.													
6															
7															

TESTPIT_13-1426-0010 TEST PIT RECORDS 13.JAN2014.GPJ_GLDR_CAN.GDT_01/23/14

DEPTH SCALE

1 : 35



LOGGED: JJB

CHECKED: DC

DATA ENTRY: JJB

PROJECT No.: 13-1426-0010

RECORD OF TEST PIT: SP-TP-31

SHEET 1 OF 1

LOCATION: See Location Plan

EXCAVATION DATE: October 20, 2013

DATUM:

DEPTH SCALE METRES	EXCAVATION METHOD	SOIL PROFILE		SAMPLES		DYNAMIC PENETRATION RESISTANCE, BLOWS/0.3m				HYDRAULIC CONDUCTIVITY, k, cm/s				ADDITIONAL LAB. TESTING	PIEZOMETER OR STANDPIPE INSTALLATION
		DESCRIPTION	STRATA PLOT	ELEV. DEPTH (m)	NUMBER	TYPE	BLOWS/0.3m	SHEAR STRENGTH Cu, kPa		WATER CONTENT PERCENT					
								20	40	10 ⁻⁶	10 ⁻⁵	10 ⁻⁴	10 ⁻³		
0	Komatsu PC400 LC Excavator RTL Construction	Ground Surface (ML/SM) Sandy SILT to Silty SAND, laminated grey and brown, dry to moist.	0.00												
1		... boulders encountered													
2		End of TEST PIT.	2.00												
3		NOTES: 1) Refusal due to suspected bedrock. 2) Test Pit backfilled on completion. 3) No seeping water observed during excavation. 4) No sloughing observed during excavation.													
4															
5															
6															
7															

TESTPIT_13-1426-0010 TEST PIT RECORDS 13.JAN2014.GPJ_GLDR_CAN.GDT_01/23/14

DEPTH SCALE

1 : 35



LOGGED: JJB

CHECKED: DC

DATA ENTRY: JJB

PROJECT No.: 13-1426-0010
 LOCATION: See Location Plan

RECORD OF TEST PIT: SP-TP-32

EXCAVATION DATE: October 20, 2013

SHEET 1 OF 1
 DATUM:

DEPTH SCALE METRES	EXCAVATION METHOD	SOIL PROFILE			SAMPLES		DYNAMIC PENETRATION RESISTANCE, BLOWS/0.3m				HYDRAULIC CONDUCTIVITY, k, cm/s				ADDITIONAL LAB. TESTING	PIEZOMETER OR STANDPIPE INSTALLATION	
		DESCRIPTION	STRATA PLOT	ELEV. DEPTH (m)	NUMBER	TYPE	BLOWS/0.3m	SHEAR STRENGTH Cu, kPa				WATER CONTENT PERCENT					
								20		40		60		80			10 ⁻⁶
0		Ground Surface (SM) SAND, fine grained, silty, containing silt laminations, light grey, dry to moist.	[Symbol]	0.00													
1																	
2	Komatsu PC400 LC Excavator RTL Construction																
3		... moist to wet silt lenses															
4		End of TEST PIT.		4.00													
5		NOTES: 1) Test Pit backfilled on completion. 2) No seeping water observed during excavation. 3) No sloughing observed during excavation.															
6																	
7																	

TESTPIT_13-1426-0010 TEST PIT RECORDS 13.JAN2014.GPJ_GLDR_CAN.GDT_01/23/14



DATA ENTRY: JJB

PROJECT No.: 13-1426-0010

RECORD OF TEST PIT: SP-TP-33

SHEET 1 OF 1

LOCATION: See Location Plan

EXCAVATION DATE: October 20, 2013

DATUM:

DEPTH SCALE METRES	EXCAVATION METHOD	SOIL PROFILE		SAMPLES		DYNAMIC PENETRATION RESISTANCE, BLOWS/0.3m				HYDRAULIC CONDUCTIVITY, k, cm/s				ADDITIONAL LAB. TESTING	PIEZOMETER OR STANDPIPE INSTALLATION		
		DESCRIPTION	STRATA PLOT	ELEV. DEPTH (m)	NUMBER	TYPE	BLOWS/0.3m	SHEAR STRENGTH Cu, kPa				WATER CONTENT PERCENT					
								20 40 60 80 nat V. + Q - ● rem V. ⊕ U - ○				10 ⁻⁶ 10 ⁻⁵ 10 ⁻⁴ 10 ⁻³ Wp ----- W ----- WI 10 20 30 40					
0	Komatsu PC400 LC Excavator RTL Construction	Ground Surface	(ML) SILT, sandy, containing clayey silt and sand inter-laminations, laminated brown and light grey, dry to moist.	0.00													
1		(ML) CLAYEY SILT, brown, wet, very soft to soft.	1.25														
2		(SM) SAND, fine grained, silty, contains wet silt lenses, laminated, dry to moist.	2.25														
3																	
4		End of TEST PIT.		4.00													
5		NOTES: 1) Test Pit backfilled on completion. 2) No seeping water observed during excavation. 3) No sloughing observed during excavation.															
6																	
7																	

TESTPIT_13-1426-0010 TEST PIT RECORDS 13.JAN2014.GPJ_GLDR_CAN.GDT_01/23/14

DEPTH SCALE

1 : 35



LOGGED: JJB

CHECKED: DC

DATA ENTRY: JJB

PROJECT No.: 13-1426-0010

RECORD OF TEST PIT: SP-TP-34

SHEET 1 OF 1

LOCATION: See Location Plan

EXCAVATION DATE: October 22, 2013

DATUM:

DEPTH SCALE METRES	EXCAVATION METHOD	SOIL PROFILE		SAMPLES		DYNAMIC PENETRATION RESISTANCE, BLOWS/0.3m				HYDRAULIC CONDUCTIVITY, k, cm/s				ADDITIONAL LAB. TESTING	PIEZOMETER OR STANDPIPE INSTALLATION		
		DESCRIPTION	STRATA PLOT	ELEV. DEPTH (m)	NUMBER	TYPE	BLOWS/0.3m	SHEAR STRENGTH Cu, kPa				WATER CONTENT PERCENT					
								20		40		60				80	
0		Ground Surface (ML) SILT, sandy, containing sand lenses, light grey, dry to moist.		0.00													
1		... wet clayey silt lens															
2	Komatsu PC400 LC Excavator RTL Construction																
3		(ML) CLAYEY SILT, light grey, wet, very soft to soft.		3.00													
4		End of TEST PIT.		4.00													
5		NOTES: 1) Test Pit backfilled on completion. 2) No seeping water observed during excavation. 3) No sloughing observed during excavation.															
6																	
7																	

TESTPIT_13-1426-0010 TEST PIT RECORDS 13.JAN2014.GPJ_GLDR_CAN.GDT_01/23/14

DEPTH SCALE

1 : 35



LOGGED: JJB

CHECKED: DC

DATA ENTRY: JJB

PROJECT No.: 13-1426-0010

RECORD OF TEST PIT: SP-TP-35

SHEET 1 OF 1

LOCATION: See Location Plan

EXCAVATION DATE: October 20, 2013

DATUM:

DEPTH SCALE METRES	EXCAVATION METHOD	SOIL PROFILE		SAMPLES		DYNAMIC PENETRATION RESISTANCE, BLOWS/0.3m				HYDRAULIC CONDUCTIVITY, k, cm/s				ADDITIONAL LAB. TESTING	PIEZOMETER OR STANDPIPE INSTALLATION		
		DESCRIPTION	STRATA PLOT	ELEV. DEPTH (m)	NUMBER	TYPE	BLOWS/0.3m	SHEAR STRENGTH				WATER CONTENT PERCENT					
								Cu, kPa		nat V. + rem V. ⊕		Q - U - ⊙				Wp	
0	Komatsu PC400 LC Excavator RTL Construction	Ground Surface		0.00													
1		(ML) SILT, sandy, containing clayey laminations, blocky, laminated light and dark brown, yellow staining, dry to moist.															
1.25		... sand interlayers															
2		(SM) SAND, silty, light grey, dry.		1.25													
2		(ML) CLAYEY SILT, light to dark grey, moist to wet, very soft to soft.		2.00													
4		End of TEST PIT.		4.00													
5		NOTES: 1) Test Pit backfilled on completion. 2) No seeping water observed during excavation. 3) No sloughing observed during excavation.															
6																	
7																	

TESTPIT_13-1426-0010 TEST PIT RECORDS 13.JAN2014.GPJ_GLDR_CAN.GDT_01/23/14

DEPTH SCALE

1 : 35



LOGGED: JJB

CHECKED: DC

DATA ENTRY: JJB

PROJECT No.: 13-1426-0010

RECORD OF TEST PIT: SP-TP-36

SHEET 1 OF 1

LOCATION: See Location Plan

EXCAVATION DATE: October 20, 2013

DATUM:

DEPTH SCALE METRES	EXCAVATION METHOD	SOIL PROFILE		SAMPLES		DYNAMIC PENETRATION RESISTANCE, BLOWS/0.3m				HYDRAULIC CONDUCTIVITY, k, cm/s				ADDITIONAL LAB. TESTING	PIEZOMETER OR STANDPIPE INSTALLATION
		DESCRIPTION	STRATA PLOT	ELEV. DEPTH (m)	NUMBER	TYPE	BLOWS/0.3m	SHEAR STRENGTH Cu, kPa		WATER CONTENT PERCENT					
								20	40	10 ⁻⁶	10 ⁻⁵	10 ⁻⁴	10 ⁻³		
0		Ground Surface (SM) SAND, fine grained, silty, containing laminated sandy silt lenses, light brown to grey, dry to moist	0.00												
1															
2	Komatsu PC400 LC Excavator RTL Construction														
3		(ML) CLAYEY SILT, laminated brown and grey, wet, very soft to soft.	3.00												
4		End of TEST PIT.	4.00												
5		NOTES: 1) Test Pit backfilled on completion. 2) No seeping water observed during excavation. 3) No sloughing observed during excavation.													
6															
7															

TESTPIT_13-1426-0010 TEST PIT RECORDS 13.JAN2014.GPJ_GLDR_CAN.GDT_01/23/14

DEPTH SCALE

1 : 35



LOGGED: JJB

CHECKED: DC

DATA ENTRY: JJB

PROJECT No.: 13-1426-0010
 LOCATION: See Location Plan

RECORD OF TEST PIT: SP-TP-37

EXCAVATION DATE: October 20, 2013

SHEET 1 OF 1
 DATUM:

DEPTH SCALE METRES	EXCAVATION METHOD	SOIL PROFILE		SAMPLES		DYNAMIC PENETRATION RESISTANCE, BLOWS/0.3m				HYDRAULIC CONDUCTIVITY, k, cm/s				ADDITIONAL LAB. TESTING	PIEZOMETER OR STANDPIPE INSTALLATION		
		DESCRIPTION	STRATA PLOT	ELEV. DEPTH (m)	NUMBER	TYPE	BLOWS/0.3m	SHEAR STRENGTH Cu, kPa				WATER CONTENT PERCENT					
								20		40		60				80	
0		Ground Surface (SM) SAND, silty, light grey, dry to moist.	[Pattern]	0.00													
1		(ML) CLAYEY SILT, containing sandy silt and silty sand lenses, laminated brown and grey with yellow staining, moist to wet, very soft to soft.	[Pattern]	0.75													
2	Komatsu PC400 LC Excavator RTL Construction		[Pattern]														
3			[Pattern]														
4		End of TEST PIT.	[Pattern]	4.00													
5		NOTES: 1) Test Pit backfilled on completion. 2) No seeping water observed during excavation. 3) No sloughing recorded during excavation.															
6																	
7																	

TESTPIT 13-1426-0010 TEST PIT RECORDS 13.JAN2014.GPJ_GLDR_CAN.GDT 01/23/14



DATA ENTRY: JJB

PROJECT No.: 13-1426-0010
 LOCATION: See Location Plan

RECORD OF TEST PIT: SP-TP-38

EXCAVATION DATE: October 23, 2013

SHEET 1 OF 1
 DATUM:

DEPTH SCALE METRES	EXCAVATION METHOD	SOIL PROFILE		SAMPLES		DYNAMIC PENETRATION RESISTANCE, BLOWS/0.3m				HYDRAULIC CONDUCTIVITY, k, cm/s				ADDITIONAL LAB. TESTING	PIEZOMETER OR STANDPIPE INSTALLATION
		DESCRIPTION	STRATA PLOT	ELEV. DEPTH (m)	NUMBER	TYPE	BLOWS/0.3m	SHEAR STRENGTH Cu, kPa		WATER CONTENT PERCENT					
								20	40	60	80	10 ⁻⁶	10 ⁻⁵		
0	Komatsu PC400 LC Excavator RTL Construction	Ground Surface (SM/ML) Sandy SILT to silty SAND, containing clayey silt lenses, light grey, dry to moist.	0.00												
2.50		(ML) CLAYEY SILT, containing sand lenses, light grey, moist to wet, very soft to soft.													
4		End of TEST PIT.	4.00												
5		NOTES: 1) Test Pit backfilled on completion. 2) No seeping water observed during excavation. 3) Sloughing observed off side walls of excavation during excavation.													
6															
7															

TESTPIT_13-1426-0010 TEST PIT RECORDS 13.JAN2014.GPJ_GLDR_CAN.GDT_01/23/14



DATA ENTRY: JJB

PROJECT No.: 13-1426-0010
 LOCATION: See Location Plan

RECORD OF TEST PIT: SP-TP-39

EXCAVATION DATE: October 20, 2013

SHEET 1 OF 1
 DATUM:

DEPTH SCALE METRES	EXCAVATION METHOD	SOIL PROFILE		SAMPLES		DYNAMIC PENETRATION RESISTANCE, BLOWS/0.3m				HYDRAULIC CONDUCTIVITY, k, cm/s				ADDITIONAL LAB. TESTING	PIEZOMETER OR STANDPIPE INSTALLATION		
		DESCRIPTION	STRATA PLOT	ELEV. DEPTH (m)	NUMBER	TYPE	BLOWS/0.3m	SHEAR STRENGTH Cu, kPa				WATER CONTENT PERCENT					
								20		40		60				80	
0	Komatsu PC400 LC Excavator RTL Construction	Ground Surface (ML) SILT, sandy, clayey laminations, dry to moist.		0.00													
1		(SM) SAND, silty, fine grained, grey to brown, loose to compact.		0.50													
2		SILT/SAND inter-layers/laminations, light brown to grey, soft/loose, moist.		1.25													
3		(ML) CLAYEY SILT, grey, black silt lenses, wet, very soft to soft.		2.25													
4		... encountered boulders, topsoil, roots															
5	End of TEST PIT.		3.75														
6	NOTES: 1) Refusal due to suspected bedrock. 2) Test Pit backfilled on completion. 3) No seeping water observed during excavation. 4) Sloughing observed off side walls during excavation.																
7																	

TESTPIT_13-1426-0010 TEST PIT RECORDS 13.JAN2014.GPJ_GLDR_CAN.GDT_01/23/14



DATA ENTRY: JJB

PROJECT No.: 13-1426-0010
 LOCATION: See Location Plan

RECORD OF TEST PIT: SP-TP-40

EXCAVATION DATE: October 20, 2013

SHEET 1 OF 1
 DATUM:

DEPTH SCALE METRES	EXCAVATION METHOD	SOIL PROFILE		SAMPLES		DYNAMIC PENETRATION RESISTANCE, BLOWS/0.3m				HYDRAULIC CONDUCTIVITY, k, cm/s				ADDITIONAL LAB. TESTING	PIEZOMETER OR STANDPIPE INSTALLATION		
		DESCRIPTION	STRATA PLOT	ELEV. DEPTH (m)	NUMBER	TYPE	BLOWS/0.3m	SHEAR STRENGTH Cu, kPa				WATER CONTENT PERCENT					
								20		40		60				80	
0	Komatsu PC400 LC Excavator RTL Construction	Ground Surface (ML) SILT, sandy, laminated grey and brown, dry to moist.		0.00													
0.50		(ML) CLAYEY SILT, laminated light grey and brown, very soft to soft.		0.50													
1		... brown															
2																	
3		... encountered boulders, topsoil															
3		End of TEST PIT.		3.00													
4		NOTES: 1) Refusal due to suspected bedrock. 2) Test Pit backfilled on completion. 3) No seeping water observed during excavation. 4) Sloughing observed off side walls during excavation.															
5																	
6																	
7																	

TESTPIT_13-1426-0010 TEST PIT RECORDS 13.JAN2014.GPJ_GLDR_CAN.GDT_01/23/14



DATA ENTRY: JJB

PROJECT No.: 13-1426-0010
 LOCATION: See Location Plan

RECORD OF TEST PIT: SP-TP-41

EXCAVATION DATE: October 20, 2013

SHEET 1 OF 1
 DATUM:

DEPTH SCALE METRES	EXCAVATION METHOD	SOIL PROFILE		SAMPLES		DYNAMIC PENETRATION RESISTANCE, BLOWS/0.3m				HYDRAULIC CONDUCTIVITY, k, cm/s				ADDITIONAL LAB. TESTING	PIEZOMETER OR STANDPIPE INSTALLATION
		DESCRIPTION	STRATA PLOT	ELEV. DEPTH (m)	NUMBER	TYPE	BLOWS/0.3m	SHEAR STRENGTH Cu, kPa		WATER CONTENT PERCENT					
								20	40	60	80	10 ⁻⁶	10 ⁻⁵		
0	Komatsu PC400 LC Excavator RTL Construction	Ground Surface (ML) CLAYEY SILT, containing sand lenses, laminated brown and grey, very soft to soft.		0.00											
2		(ML/MH) SILTY CLAY to CLAYEY SILT, brown, w>PL, very soft to soft.		2.00											
3		End of TEST PIT.		3.00											
4		NOTES: 1) Excavation side walls collapsed at 3.0 m. 2) Test Pit backfilled on completion. 3) No seeping water observed during excavation.													
5															
6															
7															

TESTPIT_13-1426-0010 TEST PIT RECORDS 13.JAN2014.GPJ_GLDR_CAN.GDT_01/23/14



DATA ENTRY: JJB

PROJECT No.: 13-1426-0010
 LOCATION: See Location Plan

RECORD OF TEST PIT: SP-TP-44

EXCAVATION DATE: October 19, 2013

SHEET 1 OF 1
 DATUM:

DEPTH SCALE METRES	EXCAVATION METHOD	SOIL PROFILE			SAMPLES			DYNAMIC PENETRATION RESISTANCE, BLOWS/0.3m				HYDRAULIC CONDUCTIVITY, k, cm/s				ADDITIONAL LAB. TESTING	PIEZOMETER OR STANDPIPE INSTALLATION
		DESCRIPTION	STRATA PLOT	ELEV. DEPTH (m)	NUMBER	TYPE	BLOWS/0.3m	SHEAR STRENGTH Cu, kPa				WATER CONTENT PERCENT					
								20		40		60		80			
0	Komatsu PC400 LC Excavator RTL Construction	Ground Surface (SM) SAND, fine grained, silty, light grey to brown, moist.	0.00				20	40	60	80	10	20	30	40			
1		... dark grey silt lenses															
2		... encountered boulders, tree roots															
3		End of TEST PIT.	2.75														
4		NOTES: 1) Refusal due to suspected bedrock. 2) Test Pit backfilled on completion. 3) No seeping water observed during excavation. 4) No sloughing observed during excavation.															
5																	
6																	
7																	

TESTPIT_13-1426-0010 TEST PIT RECORDS 13.JAN2014.GPJ_GLDR_CAN.GDT_01/23/14



DATA ENTRY: JJB

PROJECT No.: 13-1426-0010
 LOCATION: See Location Plan

RECORD OF TEST PIT: SP-TP-45

EXCAVATION DATE: October 19, 2013

SHEET 1 OF 1
 DATUM:

DEPTH SCALE METRES	EXCAVATION METHOD	SOIL PROFILE		SAMPLES			DYNAMIC PENETRATION RESISTANCE, BLOWS/0.3m				HYDRAULIC CONDUCTIVITY, k, cm/s				ADDITIONAL LAB. TESTING	PIEZOMETER OR STANDPIPE INSTALLATION	
		DESCRIPTION	STRATA PLOT	ELEV. DEPTH (m)	NUMBER	TYPE	BLOWS/0.3m	SHEAR STRENGTH Cu, kPa				WATER CONTENT PERCENT					
								20		40		60		80			10 ⁻⁶
0	Komatsu PC400 LC Excavator RTL Construction	Ground Surface (ML) SILT, sandy, laminated brown and grey, dry to moist, wet clayey lenses.	0.00				20	40	60	80	10	20	30	40			
1		(SM) SAND, fine grained, silty, containing friable/blocky silt lenses and clayey silt lenses, light brown, moist.	1.00														
2																	
3		End of TEST PIT.	2.75														
4		NOTES: 1) Refusal due to suspected bedrock. 2) Test Pit backfilled on completion. 3) No seeping water observed during excavation. 4) No sloughing observed during excavation.															
5																	
6																	
7																	

TESTPIT_13-1426-0010 TEST PIT RECORDS 13.JAN2014.GPJ_GLDR_CAN.GDT_01/23/14



DATA ENTRY: JJB

PROJECT No.: 13-1426-0010
 LOCATION: See Location Plan

RECORD OF TEST PIT: SP-TP-46

EXCAVATION DATE: October 19, 2013

SHEET 1 OF 1
 DATUM:

DEPTH SCALE METRES	EXCAVATION METHOD	SOIL PROFILE		SAMPLES		DYNAMIC PENETRATION RESISTANCE, BLOWS/0.3m				HYDRAULIC CONDUCTIVITY, k, cm/s				ADDITIONAL LAB. TESTING	PIEZOMETER OR STANDPIPE INSTALLATION		
		DESCRIPTION	STRATA PLOT	ELEV. DEPTH (m)	NUMBER	TYPE	BLOWS/0.3m	SHEAR STRENGTH Cu, kPa				WATER CONTENT PERCENT					
								20		40		60				80	
0	Komatsu PC400 LC Excavator RTL Construction	Ground Surface	(SM) SAND, fine grained, silty, containing friable/blocky silt lenses, light grey to brown, dry to moist.	0.00													
2		(ML) CLAYEY SILT, laminated light grey and brown, wet, soft to very soft.	1.75														
3		(SM) SAND, fine grained, silty, containing friable/blocky silt lenses, light grey to brown, dry to moist.	2.75														
4	End of TEST PIT.		4.00														
5	NOTES: 1) Test Pit backfilled on completion. 2) No seeping water observed during excavation. 3) Sloughing observed in clayey silt layer during excavation.																
6																	
7																	

TESTPIT_13-1426-0010 TEST PIT RECORDS 13.JAN2014.GPJ_GLDR_CAN.GDT_01/23/14



DATA ENTRY: JJB

PROJECT No.: 13-1426-0010
 LOCATION: See Location Plan

RECORD OF TEST PIT: SP-TP-47

EXCAVATION DATE: October 19, 2013

SHEET 1 OF 1
 DATUM:

DEPTH SCALE METRES	EXCAVATION METHOD	SOIL PROFILE		SAMPLES		DYNAMIC PENETRATION RESISTANCE, BLOWS/0.3m				HYDRAULIC CONDUCTIVITY, k, cm/s				ADDITIONAL LAB. TESTING	PIEZOMETER OR STANDPIPE INSTALLATION		
		DESCRIPTION	STRATA PLOT	ELEV. DEPTH (m)	NUMBER	TYPE	BLOWS/0.3m	SHEAR STRENGTH Cu, kPa				WATER CONTENT PERCENT					
								20		40		60				80	
0	Komatsu PC400 LC Excavator RTL Construction	Ground Surface		0.00													
1		(ML) CLAYEY SILT, laminated reddish brown and grey, moist to wet, very soft to soft.															
2		(ML) SILT, sandy, laminated light grey and brown, moist.		1.00													
3		(SM) SAND, fine grained, silty, containing blocky/friable silt lenses, dry to moist.		2.00													
4		End of TEST PIT.		4.00													
5		NOTES:															
6		1) Test Pit backfilled on completion.															
7		2) No seeping water observed during excavation.															
		3) No sloughing observed during excavation.															

TESTPIT 13-1426-0010 TEST PIT RECORDS 13.JAN2014.GPJ_GLDR_CAN.GDT 01/23/14



DATA ENTRY: JJB

PROJECT No.: 13-1426-0010

RECORD OF TEST PIT: SP-TP-48

SHEET 1 OF 1

LOCATION: See Location Plan

EXCAVATION DATE: October 19, 2013

DATUM:

DEPTH SCALE METRES	EXCAVATION METHOD	SOIL PROFILE		SAMPLES		DYNAMIC PENETRATION RESISTANCE, BLOWS/0.3m				HYDRAULIC CONDUCTIVITY, k, cm/s				ADDITIONAL LAB. TESTING	PIEZOMETER OR STANDPIPE INSTALLATION
		DESCRIPTION	STRATA PLOT	ELEV. DEPTH (m)	NUMBER	TYPE	BLOWS/0.3m	SHEAR STRENGTH Cu, kPa		WATER CONTENT PERCENT					
								20	40	60	80	10 ⁻⁶	10 ⁻⁵		
0	Komatsu PC400 LC Excavator RTL Construction	Ground Surface	0.00												
		(ML) CLAYEY SILT, laminated reddish brown and grey, moist to wet, very soft to soft.	0.50												
1		(SM) SAND, silty, containing silt lenses, moist, loose to compact.													
2		... wet, black clayey silt lenses													
3		End of TEST PIT.	3.00												
4		NOTES: 1) Refusal due to suspected bedrock. 2) Test Pit backfilled on completion. 3) No seeping water observed during excavation. 4) No sloughing observed during excavation.													
5															
6															
7															

TESTPIT_13-1426-0010 TEST PIT RECORDS 13.JAN2014.GPJ_GLDR_CAN.GDT_01/23/14

DEPTH SCALE

1 : 35



LOGGED: JJB

CHECKED: DC

DATA ENTRY: JJB

PROJECT No.: 13-1426-0010

RECORD OF TEST PIT: SP-TP-49

SHEET 1 OF 1

LOCATION: See Location Plan

EXCAVATION DATE: October 19, 2013

DATUM:

DEPTH SCALE METRES	EXCAVATION METHOD	SOIL PROFILE		SAMPLES		DYNAMIC PENETRATION RESISTANCE, BLOWS/0.3m				HYDRAULIC CONDUCTIVITY, k, cm/s				ADDITIONAL LAB. TESTING	PIEZOMETER OR STANDPIPE INSTALLATION		
		DESCRIPTION	STRATA PLOT	ELEV. DEPTH (m)	NUMBER	TYPE	BLOWS/0.3m	SHEAR STRENGTH Cu, kPa				WATER CONTENT PERCENT					
								20 40 60 80 nat V. + Q - ● rem V. ⊕ U - ○				10 ⁻⁶ 10 ⁻⁵ 10 ⁻⁴ 10 ⁻³ Wp ----- W ----- WI					
0	Komatsu PC400 LC Excavator RTL Construction	Ground Surface (SM) SAND, fine grained, silty, containing suspected silt lenses, brown to grey, moist, loose to compact.	0.00														
1																	
2																	
3																	
4		(ML) SILT, sandy, laminated grey and brown, wet.	3.50														
5		End of TEST PIT.	4.25														
6		NOTES: 1) Test Pit backfilled on completion. 2) No seeping water observed during excavation. 3) No sloughing observed during excavation.															
7																	

TESTPIT_13-1426-0010 TEST PIT RECORDS 13.JAN2014.GPJ_GLDR_CAN.GDT_01/23/14

DEPTH SCALE

1 : 35



LOGGED: JJB

CHECKED: DC

DATA ENTRY: JJB

PROJECT No.: 13-1426-0010

RECORD OF TEST PIT: SP-TP-50

SHEET 1 OF 1

LOCATION: See Location Plan

EXCAVATION DATE: October 19, 2013

DATUM:

DEPTH SCALE METRES	EXCAVATION METHOD	SOIL PROFILE		SAMPLES		DYNAMIC PENETRATION RESISTANCE, BLOWS/0.3m				HYDRAULIC CONDUCTIVITY, k, cm/s				ADDITIONAL LAB. TESTING	PIEZOMETER OR STANDPIPE INSTALLATION		
		DESCRIPTION	STRATA PLOT	ELEV. DEPTH (m)	NUMBER	TYPE	BLOWS/0.3m	SHEAR STRENGTH Cu, kPa				WATER CONTENT PERCENT					
								20 40 60 80 nat V. + Q - ● rem V. ⊕ U - ○				10 ⁻⁶ 10 ⁻⁵ 10 ⁻⁴ 10 ⁻³ Wp ----- W ----- WI					
0	Komatsu PC400 LC Excavator RTL Construction	Ground Surface (ML) SILT, sandy, containing sand lenses, grey to brown, moist to wet.		0.00													
1		... yellow staining															
2		(SM) SAND, silty, containing silt lenses, light brown, moist to wet.		2.00													
3		(ML) SILT, sandy, light grey, moist to wet.		3.50													
4	End of TEST PIT.		4.00														
5	NOTES: 1) Test Pit backfilled on completion. 2) No seeping water observed during excavation. 3) No sloughing observed during excavation.																
6																	
7																	

TESTPIT_13-1426-0010 TEST PIT RECORDS 13.JAN2014.GPJ_GLDR_CAN.GDT_01/23/14

DEPTH SCALE

1 : 35



LOGGED: JJB

CHECKED: DC

DATA ENTRY: JJB

PROJECT No.: 13-1426-0010

RECORD OF TEST PIT: SP-TP-51

SHEET 1 OF 1

LOCATION: See Location Plan

EXCAVATION DATE: October 19, 2013

DATUM:

DEPTH SCALE METRES	EXCAVATION METHOD	SOIL PROFILE		SAMPLES		DYNAMIC PENETRATION RESISTANCE, BLOWS/0.3m				HYDRAULIC CONDUCTIVITY, k, cm/s				ADDITIONAL LAB. TESTING	PIEZOMETER OR STANDPIPE INSTALLATION		
		DESCRIPTION	STRATA PLOT	ELEV. DEPTH (m)	NUMBER	TYPE	BLOWS/0.3m	SHEAR STRENGTH Cu, kPa				WATER CONTENT PERCENT					
								20		40		60				80	
0		Ground Surface (ML) SILT, sandy, laminated brown and grey, dry to moist.		0.00													
1		(SM) SAND, fine grained, silty, containing silt lenses, grey, moist, loose to compact		1.00													
2	Komatsu PC400 LC Excavator RTL Construction																
3		(ML) SILT, sandy, some clay, grey, moist to wet.		3.25													
4		End of TEST PIT.		4.00													
5		NOTES: 1) Test Pit backfilled on completion. 2) No seeping water observed during excavation. 3) No sloughing observed during excavation.															
6																	
7																	

TESTPIT_13-1426-0010 TEST PIT RECORDS 13.JAN2014.GPJ_GLDR_CAN.GDT_01/23/14

DEPTH SCALE

1 : 35



LOGGED: JJB

CHECKED: DC

DATA ENTRY: JJB

PROJECT No.: 13-1426-0010
 LOCATION: See Location Plan

RECORD OF TEST PIT: SP-TP-52

EXCAVATION DATE: October 19, 2013

SHEET 1 OF 1
 DATUM:

DEPTH SCALE METRES	EXCAVATION METHOD	SOIL PROFILE		SAMPLES		DYNAMIC PENETRATION RESISTANCE, BLOWS/0.3m				HYDRAULIC CONDUCTIVITY, k, cm/s				ADDITIONAL LAB. TESTING	PIEZOMETER OR STANDPIPE INSTALLATION		
		DESCRIPTION	STRATA PLOT	ELEV. DEPTH (m)	NUMBER	TYPE	BLOWS/0.3m	SHEAR STRENGTH Cu, kPa				WATER CONTENT PERCENT					
								20		40		60				80	
0	Komatsu PC400 LC Excavator RTL Construction	Ground Surface		0.00													
1		(ML) SILT, laminated light brown and grey, moist to wet.															
2		(ML) SILT, sandy, some clay, containing clayey silt lenses, laminated light and dark grey, moist to wet, soft to firm.		1.50													
3		(SM) SAND, fine grained, silty, grey, moist.		3.50													
4		End of TEST PIT.		4.00													
5		NOTES: 1) Test Pit backfilled on completion. 2) No seeping water observed during excavation. 3) No sloughing observed during excavation.															
6																	
7																	

TESTPIT_13-1426-0010 TEST PIT RECORDS 13.JAN2014.GPJ_GLDR_CAN.GDT_01/23/14



DATA ENTRY: JJB

PROJECT No.: 13-1426-0010
 LOCATION: See Location Plan

RECORD OF TEST PIT: SP-TP-53

EXCAVATION DATE: October 20, 2013

SHEET 1 OF 1
 DATUM:

DEPTH SCALE METRES	EXCAVATION METHOD	SOIL PROFILE		SAMPLES		DYNAMIC PENETRATION RESISTANCE, BLOWS/0.3m				HYDRAULIC CONDUCTIVITY, k, cm/s				ADDITIONAL LAB. TESTING	PIEZOMETER OR STANDPIPE INSTALLATION		
		DESCRIPTION	STRATA PLOT	ELEV. DEPTH (m)	NUMBER	TYPE	BLOWS/0.3m	SHEAR STRENGTH Cu, kPa				WATER CONTENT PERCENT					
								20		40		60				80	
0	Komatsu PC400 LC Excavator RTL Construction	Ground Surface (ML) SILT, sandy, laminated light brown and grey, blocky, dry.		0.00													
1		(SM) SAND, fine grained, silty, containing silt lenses, dry to moist.		1.25													
2		(ML) CLAYEY SILT, mottled light brown and grey with yellow staining, moist to wet, very soft to soft.		2.50													
3																	
4		End of TEST PIT.		4.00													
5		NOTES: 1) Test Pit backfilled on completion. 2) No seeping water observed during excavation. 3) No sloughing observed during excavation.															
6																	
7																	

TESTPIT_13-1426-0010 TEST PIT RECORDS 13.JAN2014.GPJ_GLDR_CAN.GDT_01/23/14

