YUKON ENGINEERING SERVICES LTD. YUKON ZINC CORP.

GEOTECHNICAL EVALUATION WOLVERINE LAKE MINE ACCESS ROAD km 189.5 ROBERT CAMPBELL HIGHWAY YUKON

EBA File: 1200197

August 2006



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1.0 INTRODUCTION

EBA Engineering Consultants Ltd. (EBA) was retained to conduct a geotechnical evaluation of the proposed access road to the Yukon Zinc mining property at Wolverine Lake, Yukon. The work was requested by Yukon Engineering Services Ltd. (YES) of Whitehorse on behalf of Yukon Zinc Corp (YZC). The objective of the evaluation is to provide geotechnical recommendations for the construction of the access road.

The scope of work for this project was presented in a proposal and budget prepared by EBA and submitted to Robert Harvey, P.Eng. of YES in June 2006.

2.0 SCOPE OF WORK

The main tasks of the study included a review of background reports, geology, and previous terrain mapping; a hand-excavated testpit program between km 0 to km 5 to field-check terrain and soil conditions, and an excavator supported testpitting program from km 5 to km 24. The scope of work for this project consisted of the following:

- Review area geology, previous terrain mapping and air photo interpretation to examine and reassess previous mapping, slope stability and potential borrow sources
- Conduct a field program to evaluate terrain and shallow soil conditions from km 0 to km 5 using hand testpits. There is presently no access to this section of the proposed route.
- Conduct a field program to evaluate soil conditions and collect samples for laboratory testing from km 5 to km 24 using an excavator provided by YZC to dig testpits.
- Conduct geotechnical laboratory testing on soil samples collected. Tests include moisture determination on all samples and grain size analysis on select samples.
- Prepare base maps to locate all testpit locations
- Prepare interim reports and a final report to present a description of the work completed, including the results of all evaluation work, testpit logs, laboratory analysis results and geotechnical recommendations for road construction.

3.0 PROJECT BACKGROUND

The study area includes 24 km of a proposed access road that starts at km 189.5 on the Robert Campbell Highway (Yukon Highway 4) and is initially aligned south and southwest, following the valley of Light Creek past the divide at km 8 and across Bunker Creek at km 10. The alignment follows Chip Creek to km 19, where it turns northwest to eventually cross the Hawkowl Creek tributary of Money Creek, maintaining a northwest bearing to Wolverine Lake. The access road route is covered on NTS map sheets 105H/5 and 105G/8.

Part of the access road, from about km 24.5 to the Wolverine Lake Mine Site and camp at approximately km 27.5 and km 28.5 respectively, is developed as an access road to the airstrip and was not evaluated as part of this study.



4.0 METHODOLOGY

Geology and previous terrain mapping were reviewed and air photo interpretation was carried out to aid in the design of the field program. Available air photographs were of small scale, which precluded detailed terrain mapping and limited the interpretation of expected soil conditions.

Terrain field checking and hand testpitting was carried out on June 26 and June 27, 2006 using a motorhome provided by YES as a field camp based at km 190 on the Robert Campbell Highway. An excavator-supported testpitting program, based at the Wolverine Mine Site camp, was carried out from July 10 to July 13, 2006. Seventy-six testpits were excavated at about 300 m intervals and soil samples were taken within the testpits at depth intervals of 1 m and/or at changes in stratigraphy.

Moisture and grain size analysis was carried out at EBA's Whitehorse geotechnical laboratory on samples recovered during the excavator-supported test-pitting program. The results of testpit logs and lab analysis are compiled on ESEbase logs and used to provide recommendations for construction.

5.0 RESULTS AND DISCUSSION

Subsurface conditions

Seventy-six excavator testpits (km 5 to km 24) and 19 hand testpits (km 0 to km 5) were located along the road alignment to define its subsurface soil profile. Much of the alignment is underlain by shallow bedrock. A hard metavolcanic unit underlies km 0 to km 2 with a few outcrops forming low relief ridges. A veneer of peat-rich organics and/or gravelly sand colluvium typically overlies the bedrock in this section. Shallow bedrock, a soft fissile phyllite, was intersected throughout the latter half of the proposed alignment from km 14 to km 24. Surficial materials in this section were mostly colluvium with sections of till and pockets of fluvial gravels. Soil textures were variable and are described in the detailed logs of each testpit log (appended).

Near km 0 of the Wolverine Lake Access Road, at the Robert Campbell Highway, terraces of glaciofluvial gravel and sand are common and may provide convenient sources of granular fill. At km 0, however, bedrock is exposed on the shallow cutslope of the highway (Station 26JD24, Figure 1). Shallow bedrock conditions appear to continue to about km 2 of the proposed access road. Except where narrow, east-west trending outcrops occur, a thin veneer of gravelly sand colluvium or a thin, frozen organic veneer at sidehill meadow bog areas typically overlies bedrock in this area.

From about km 2.0 through km 3.2, including the crossings of Pitch Creek (km 2.90) and Light Creek (km 3.03), the terrain appears to be underlain by glaciofluvial sand and gravel. Alluvium (sand, some silt, some gravel) was observed at a low relief terrace on the west side of Light Creek (Station 26JD18, Figure 1).

Soil textures and conditions on the proposed road alignment are summarized on Table 1.

In some sections the reliability of the geotechnical testing is insufficient to provide reliable evaluation of subsurface conditions. Testpit depths were less than 0.5 m at km 0 to km 0.5 and excavator testpits are recommended to provide deeper access from km 2 to km 5. Many excavator testpits were less than 0.5 m deep because the excavator provided was insufficient to penetrate frozen or dense soils.



Permafrost

The project area is within the zone of discontinuous permafrost. The active zone of seasonally thawed soil is estimated to be 0.5 to 2.0 m in undisturbed soils. Excess ice was present in a minority of samples and moisture contents are typically low (< 10%), although some localized high-ice content areas were observed and should be expected, usually near the base of the active layer (and typically on north-facing slopes with thick organic soil cover).

At eight of the 19 hand testpits and 25 of the 76 excavator testpits, frozen soil conditions were encountered. Depth to frozen ground ranged from about 0.3 m to 2.0 m. Frozen soil conditions were associated with thick organic cover, most of which are characterized as open, shallow gradient sideslope bog areas with black spruce/moss/larch vegetation. Testpitting with heavy equipment to depths greater than 0.5 m is required to characterize the ice content of these frozen soils—the excavator supplied for this program was not capable of these excavation requirements.

Permafrost conditions from about km 7 to km 14 may require thick fill (minimum 1500 mm) in localized sections to minimize the potential for permafrost degradation. Recommendations for construction in permafrost sections are provided in Section 7 and summarized in Table 7.1.

6.0 BORROW SOURCES

Nine potential borrow sources were selected for evaluation, including 3 primary sites and 6 secondary sites. Primary 1 at about km 0.5 and Secondary 1 at km 1 presently have no access for equipment and were not tested. However, granular glaciofluvial terraces of sand and gravel were identified at the Robert Campbell Highway near the access road. Further assessment and regulatory permitting would be required prior to acquiring borrow material from these sources.

Secondary 2 and Secondary 3 sites at km 3 also have no access for equipment. However, hand testpits indicated good quality gravelly sand granular material at glaciofluvial terraces at the confluence of Light Creek and Pitch Creek. Air photo interpretation of the terrain indicates that the features hosting this material appear to cover about 15 ha and may be at least 4 m thick. However, only a fraction of the deposit may be exploitable, as the deposit is incised by both Pitch Creek and Light Creek and riparian protection zones will be required.

Testpits on the road alignment at a potential borrow source at km 5 (Secondary 4) indicate soils with favourable textures. Testpits up to 3.5 m deep intersected sandy gravels and gravelly sand with trace to some silt. Testpit TP03 intersected 0.6 m of poorly graded fine sand between 1.2 of sandy gravel and > 1.7 m of gravelly sand (some silt).

Favourable coarse textured soil was intersected from km 14.4 to km 18.4; however, shallow bedrock in this section may limit quantities. The maximum proven soil depth was 2.5 m.

Testpits to evaluate the potential for favourable granular borrow are recommended at Primary 2 (km 11) and Primary 3 (km 24).

Borrow source target locations are shown on YES Figure 3 following EBA Figures 1-7.



7.0 RECOMMENDATIONS

Road Design and Construction

General recommendations for construction of the road include placement of uniform 300 mm granular fill in areas of shallow bedrock and unfrozen soils. Embankments of fill slopes should be constructed with slopes of 2:1. In primarily granular areas, the imported fill may be eliminated, but adequate ditches for road drainage must be provided.

In areas of frozen soil (permafrost), a uniform minimum fill of 1500 mm, including a cap of 300 mm granular fill, is recommended. Ground should be prepared by hand-clearing the vegetation at the site. Non-woven heavy highway-grade geotextile will be overlain on undisturbed ground over cut vegetation on an area equivalent to the footprint of the access road. Overlap of geotextile segments will be 1 m. Assuming a road surface width of 4.5 m, the average width of the access road footprint is approximately 10.5 m.

Twelve sections with unique ground conditions and accompanying recommendations for construction are described in Table 7.1 (following page). The ground conditions characterized are extrapolated from test pit results at typical spacing of about 300 m. During road construction, actual ground conditions may differ from that described. The recommendations in Table 7 are intended as a guide for those sections with the conditions in the accompanying description. If conditions encountered during construction are different from that described, EBA should be consulted to provide suitable recommendations.

After stripping, the subgrade must be compacted to at least 98% Standard Proctor maximum dry density (ASTM D698). All imported fill must be compacted in maximum lift thickness of 300 mm, with each lift compacted to at least 98% Standard Proctor maximum dry density (ASTM D698).

Site Grading, Surface Conditions, Groundwater and Drainage

Permafrost and shallow bedrock presents a barrier to vertical percolation of groundwater. In most sections, much of the run-off is transported downslope as shallow groundwater "sheet" drainage (e.g., km 0 to km 2, km 7 to km 22.5 and km 23.5 to km 24). In these areas, collecting drainage in ditches and concentrating drainage flow to culverts can be problematic where culvert outflows scour sensitive slopes (e.g., fine-textured soil, permafrost). In these sections, care should be taken to place culverts at all existing watercourses, with emphasis on small ephemeral or intermittent watercourses that may not be immediately visible to the untrained eye. Where culverts are required between natural watercourses, they should be placed at the ground surface and outflows should be armoured with rip rap to disperse energy during high flow periods. Construction of sub-grade with a permeable course of large boulders is preferred on wet slopes where natural watercourses have not developed.



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Table 7.1SITE DESCRIPTION and CONSTRUCTION PRESCRIPTION

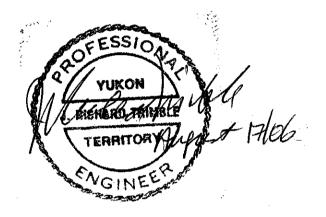
KP	TESTPITS	DESCRIPTION	RECOMMENDATIONS for CONSTRUCTION
0 - 2.0	JD1 to JD6	Peat organic veneer and/or colluvium overlying competent bedrock (rock not confirmed at JD6)	strip organic layer and stockpile for future rehabilitation; minimum 300 mm granular fill; good granular borrow material available at glaciofluvial terraces observed at Robert Campbell Highway.
2.0 - 2.5	JD7 and JD23	Peat organic veneer overlying fluvial gravel and sand – permafrost	hand cut trees and leave ground vegetation undisturbed; cover with heavy highway grade geotextile with minimum 1500 mm fill, including 300 mm granular cap; borrow material available at glaciofluvial terraces observed at Robert Campbell Highway.
2.5 - 4	JD22 to JD14	Fluvial gravel and sand; unfrozen at shallow depths;	strip organic layer and stockpile for future rehabilitation; good granular borrow material in this area, but access limited by streams;
4.0 - 4.7	JD13 and JD11	Gravelly sand colluvium overlying till; unfrozen;	strip organic layer and stockpile for future rehabilitation; cap with minimum 300 mm granular fill; build embankments at a slope of 2:1; good borrow material at km 5;
4.7 - 4.9	JD8	Gravelly silty sand colluvium [overlying till?]; permafrost	hand cut trees and leave ground vegetation undisturbed; cover with unwoven heavy highway grade geotextile with minimum 1500 mm granular fill; use 1 m overlap with adjacent geotextile lengths.
4.9 - 7.1	JD9; TP01 to TP09	Mainly sand and gravel, trace to some silt; some sections of sandy silt with some gravel; unfrozen [frozen soil at 0.4m, TP04 assumed to be within seasonally active zone]; km 6.2 and 6.4: depth to bedrock 1.5 m and 1.8 m, but deeper in other sections (> 3.5 m at km 5.2 and 6.9).	strip organic layer and stockpile for future rehabilitation; minimum 300 mm granular fill over bedrock and silty till with embankments at a slope of 2:1; good borrow material at km 5;
7.1 – 9.9	TP10 to TP 20	Variable texture: fine to coarse grained; permafrost.	hand cut trees and leave ground vegetation undisturbed; cover with unwoven heavy highway grade geotextile with minimum 1500 mm granular fill, build embankments at a slope of 2:1;
9.9 – 13.9	TP21 TO TP35	Permafrost is encountered at depth (1.6 to 2.8 m) [frozen soil at 0.3 m in TP31 is assumed to be due to seasonal frozen conditions]; some sections have moderate gradient (27-49%) sideslopes;	fill construction is preferred in this section; however, cut and fill may be acceptable depending upon specific foundation conditions encountered during construction (field decision);
13.9 - 19.7	TP36 to TP57	Variable texture: mostly sandy silty gravel to gravelly sandy silt; some sections of gravelly silty sand; bedrock was intersected at depths of 1.5 m to 2.5 m; unfrozen.	strip organic layer, stockpile for future rehabilitation; minimum 300 mm granular fill with embankments at slope of 2:1
19.7 - 22.5	TP58 to TP70	Variable texture: sandy silty gravel to gravelly silty sand; some sections of gravelly sandy silt; shallow, soft, fissile bedrock; unfrozen.	strip organic layer, stockpile for future rehabilitation; minimum 300 mm granular fill with embankments at slope of 2:1;
22.5 - 23.5	TP71 to TP73	Variable texture; silty sand, sandy gravel, sandy silt; unfrozen; bedrock not intersected; pit depth ranged from 2.5 m to 4.0 m;	strip organic layer, stockpile for future rehabilitation; minimum 300 mm granular fill with embankments at slope of 2:1;
23.5 - 23.9	TP74 to TP76	Variable texture: sandy silty gravel to gravelly silty sand; some sections of gravelly sandy silt; shallow, soft, fissile bedrock [phyllite]; unfrozen.	strip organic layer, stockpile for future rehabilitation; minimum 300 mm granular fill with embankments at slope of 2:1;

8.0 CLOSURE

Conclusions and recommendations presented herein are based on observations of land-surface and shallow soil conditions, current understanding of slope processes and the review of previous geology and terrain mapping. This report has been prepared for use by Yukon Engineering Services and Yukon Zinc Corp., which includes distribution as required for purposes for which this investigation was commissioned. This evaluation has been carried out in accordance with generally accepted engineering and geoscience practice, and engineering/geoscience judgement has been applied in developing the recommendations in this report. The report incorporates and is subject to the General Conditions attached as Appendix A.

Respectfully submitted, EBA Engineering Consultants Ltd.

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J. Richard Trimble. P.Eng., Project Director, Yukon Region direct line: (867) 668-2071, ext. 22 e-mail: <u>rtrimble@eba.ca</u>

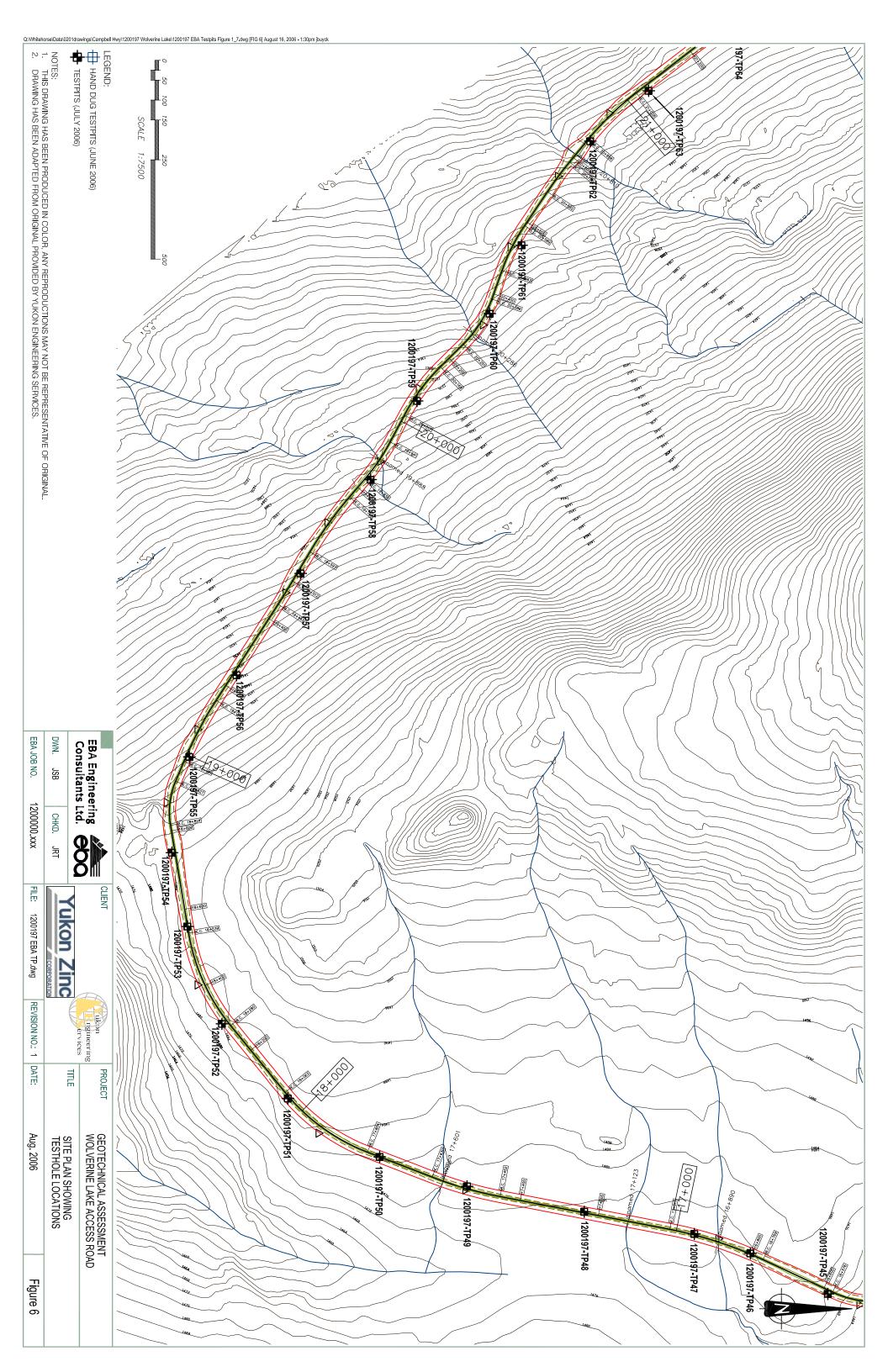
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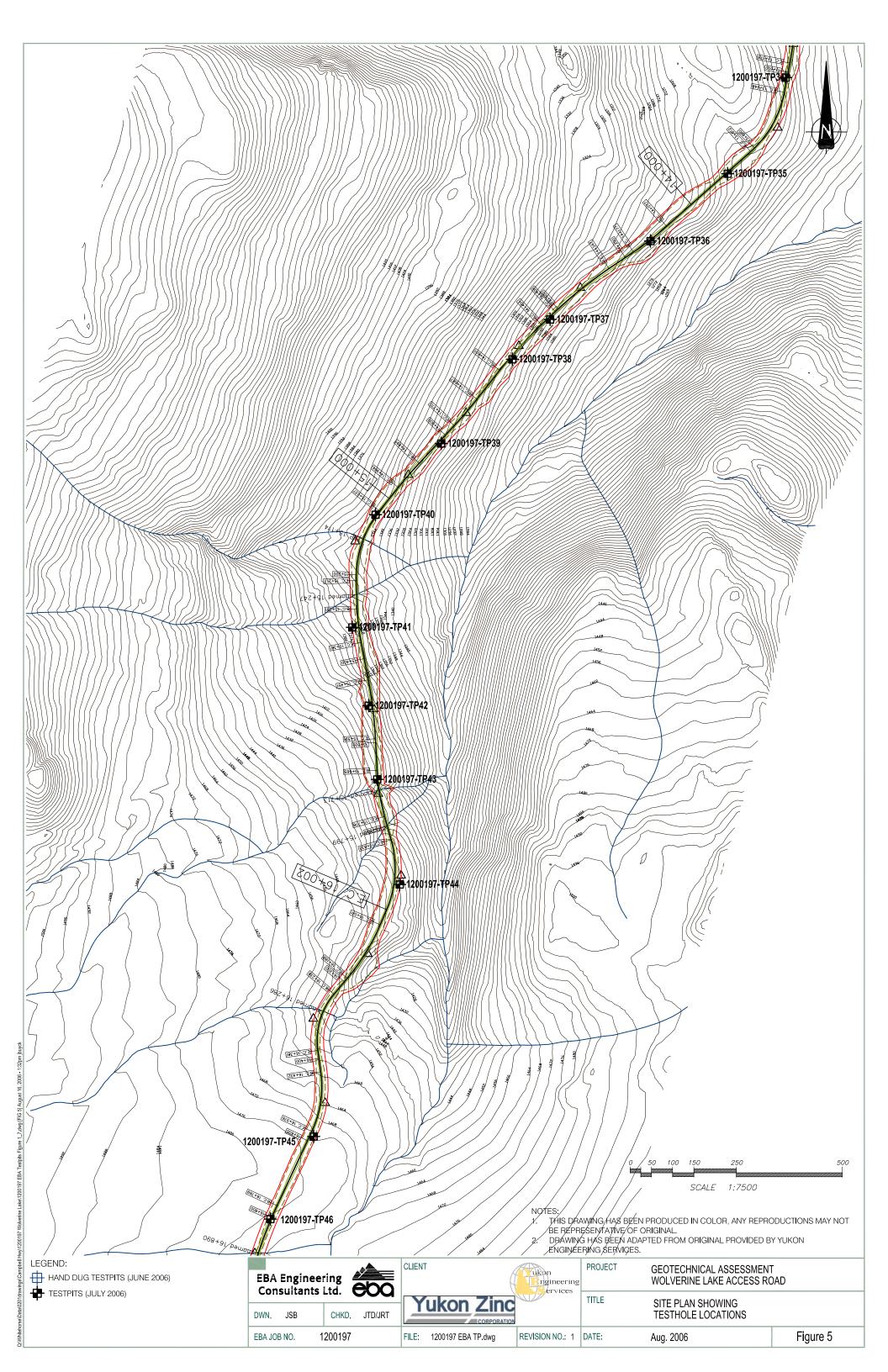
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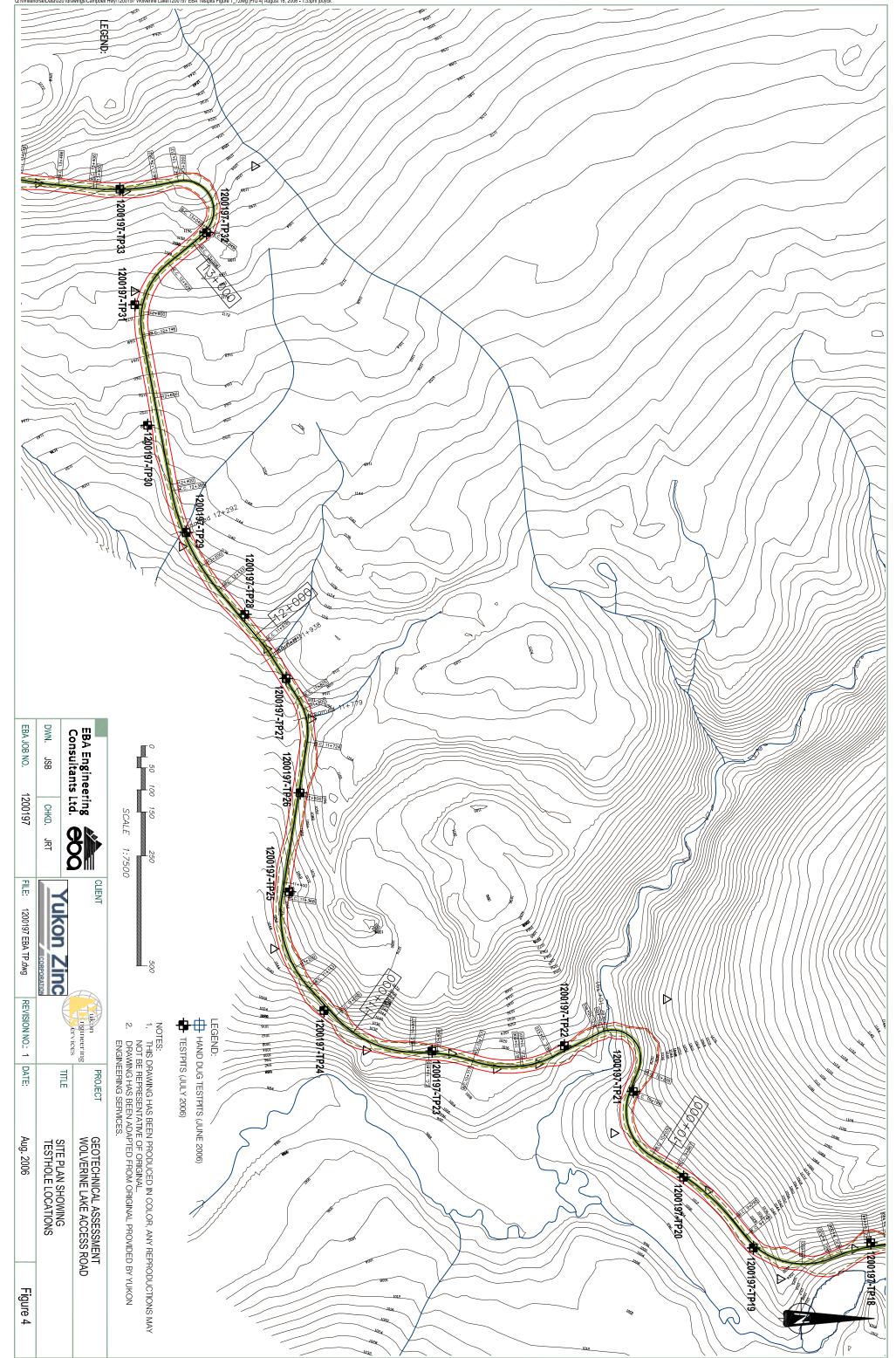


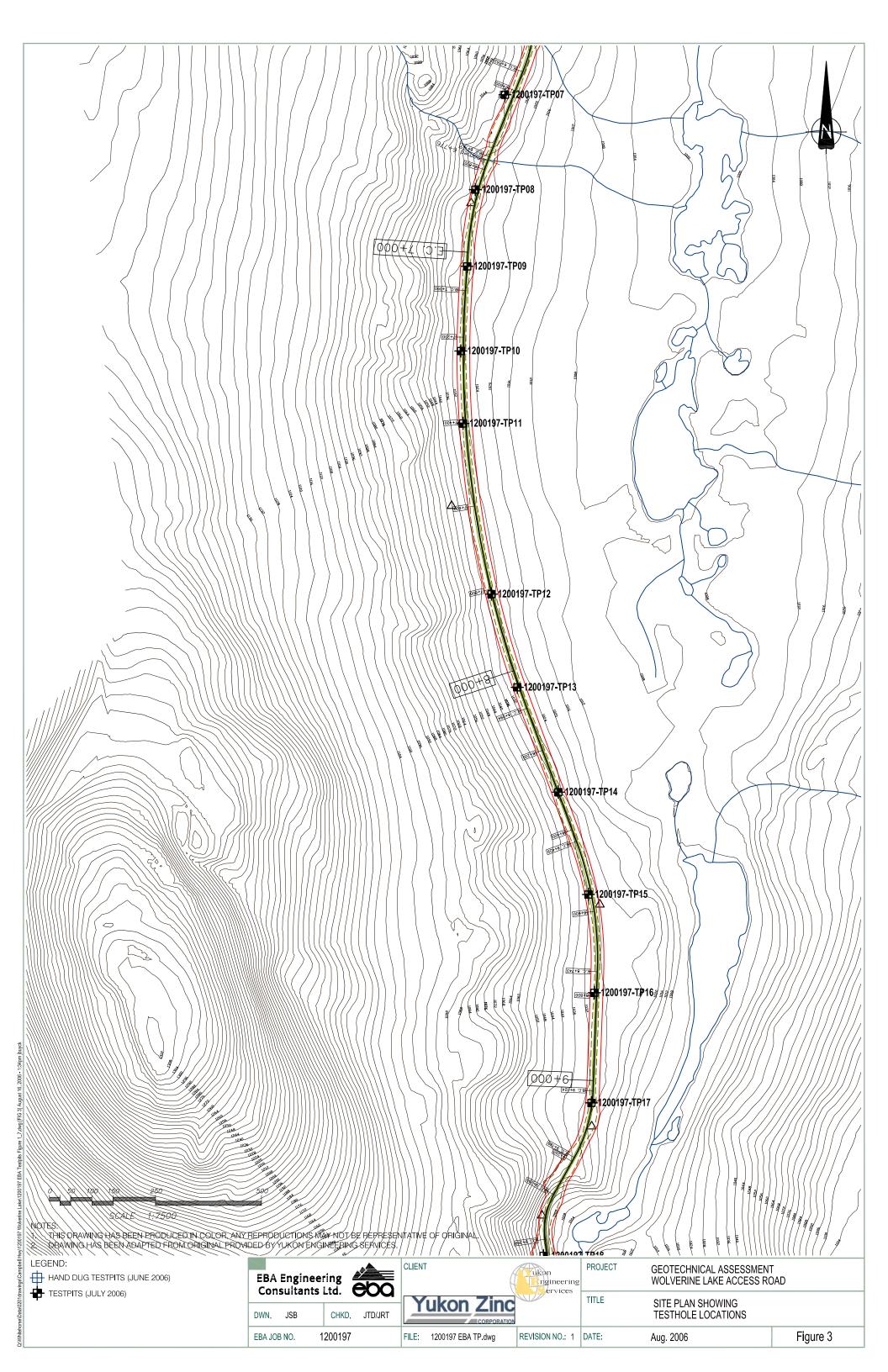
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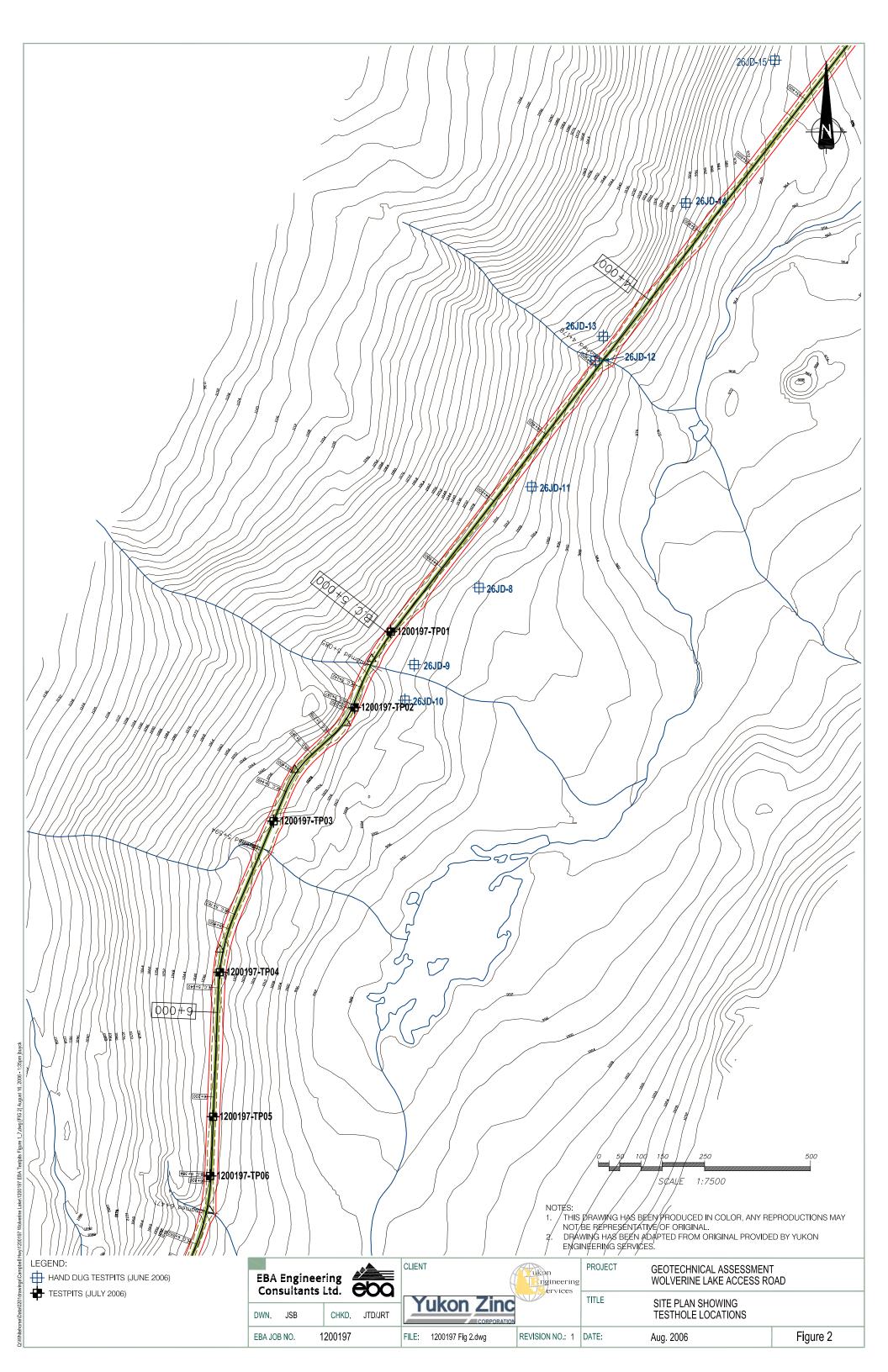


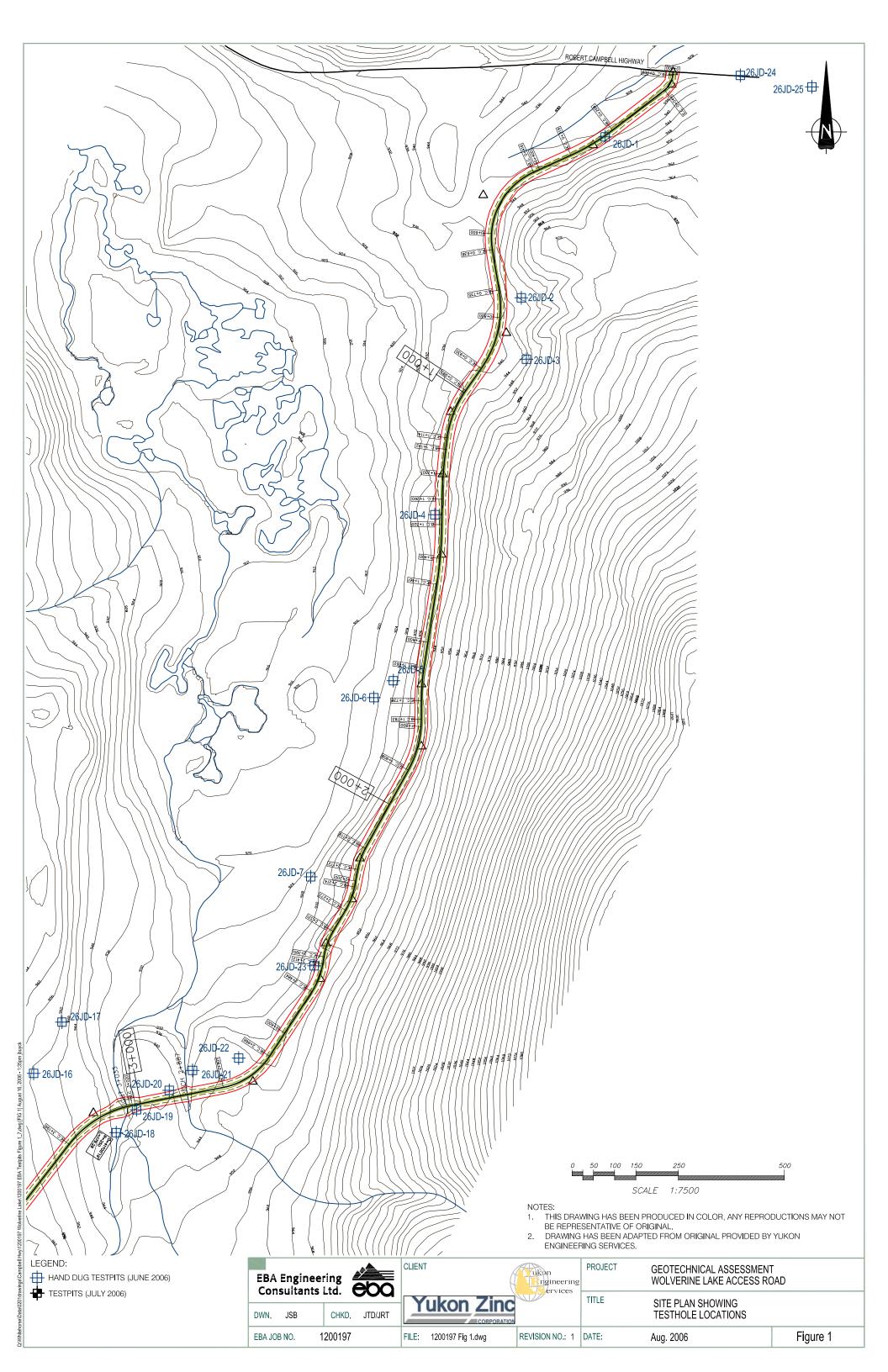


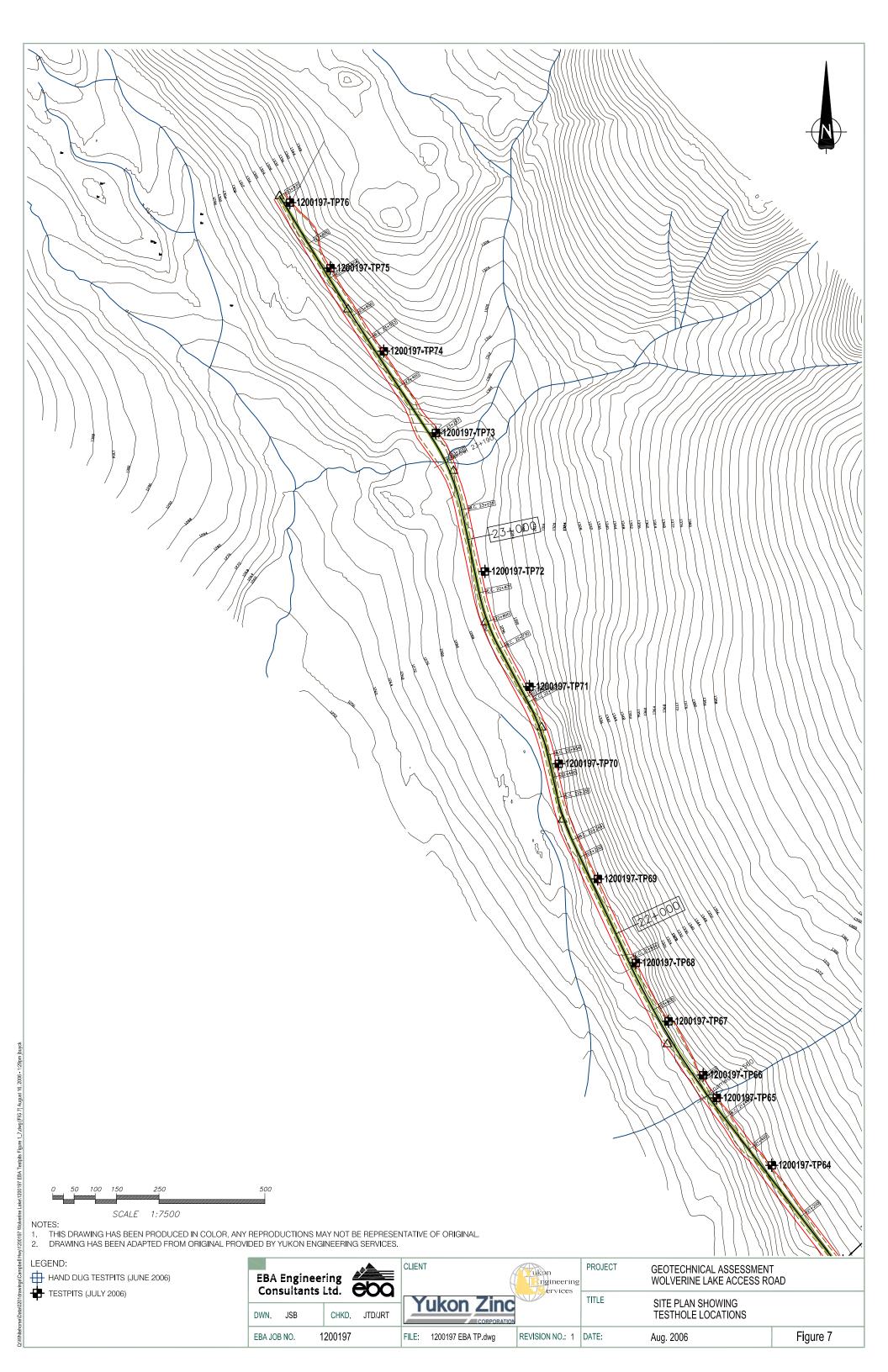


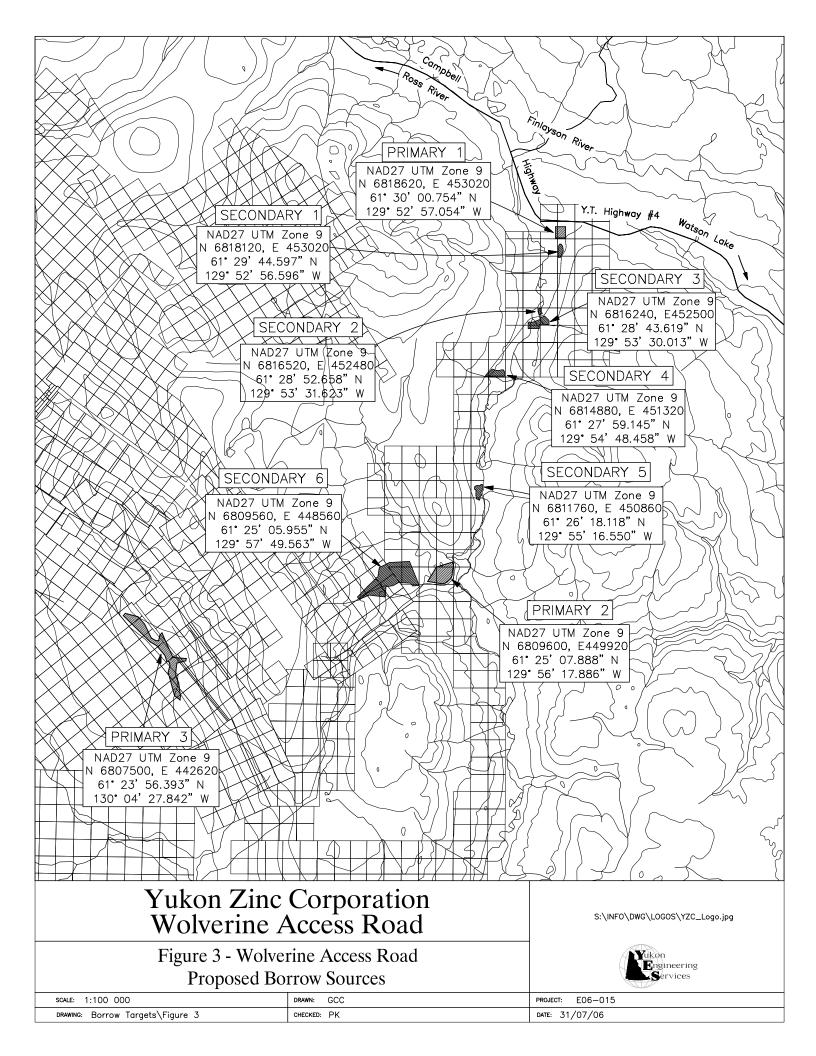






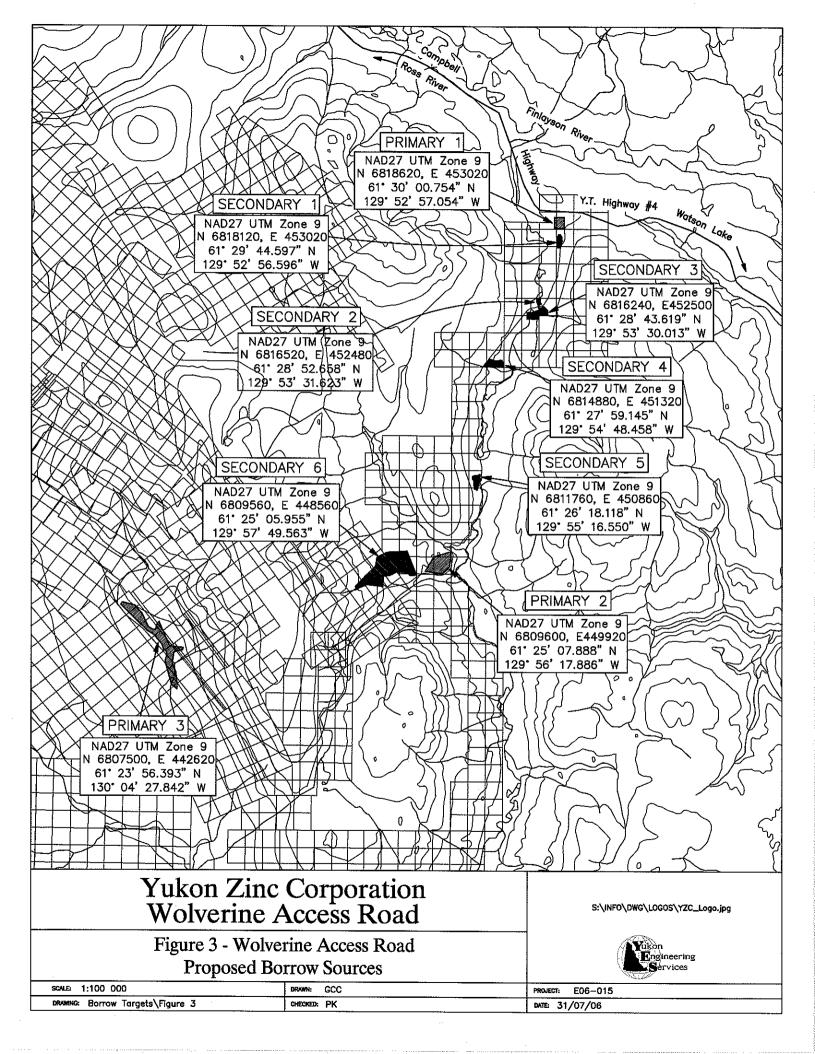






TESTPIT LOGS





TESTPIT LOGS

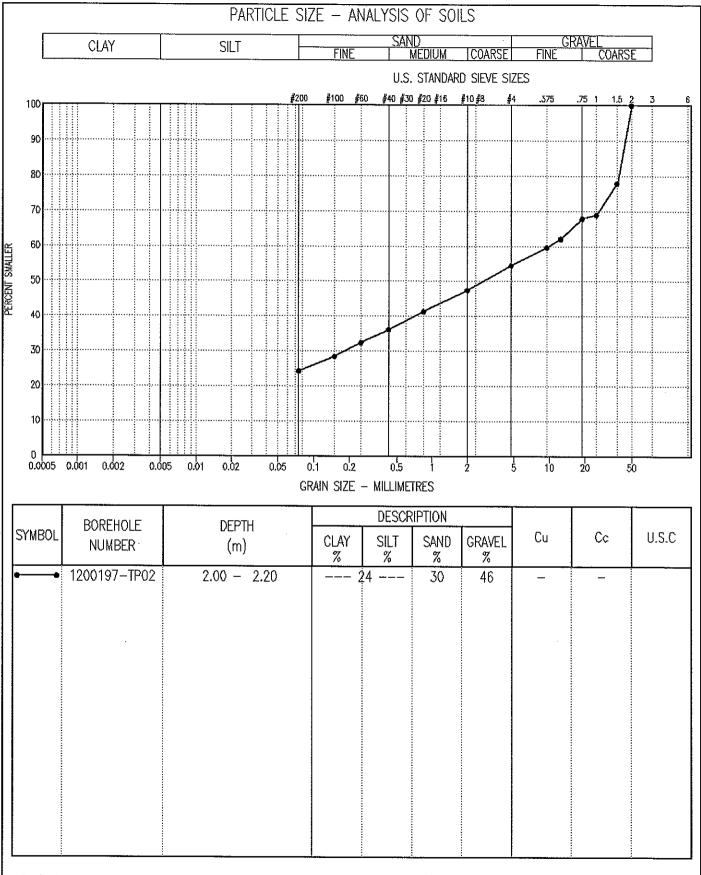
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Data presented hereon is for the sole use of the stipulated client. EBA is not responsible, nor can be held liable, for use made of this report by any other party, with or without the knowledge of EBA Tested in accordance with ASTM D422 unless otherwise noted. The testing services reported herein have been performed by an EBA technician to recognized industry standards, unless otherwise noted. No other warranty is made. These data do not include or represent any interpretation or opinion of specification compliance or material suitability. Should engineering interpretation be required, EBA will provide it upon written request.



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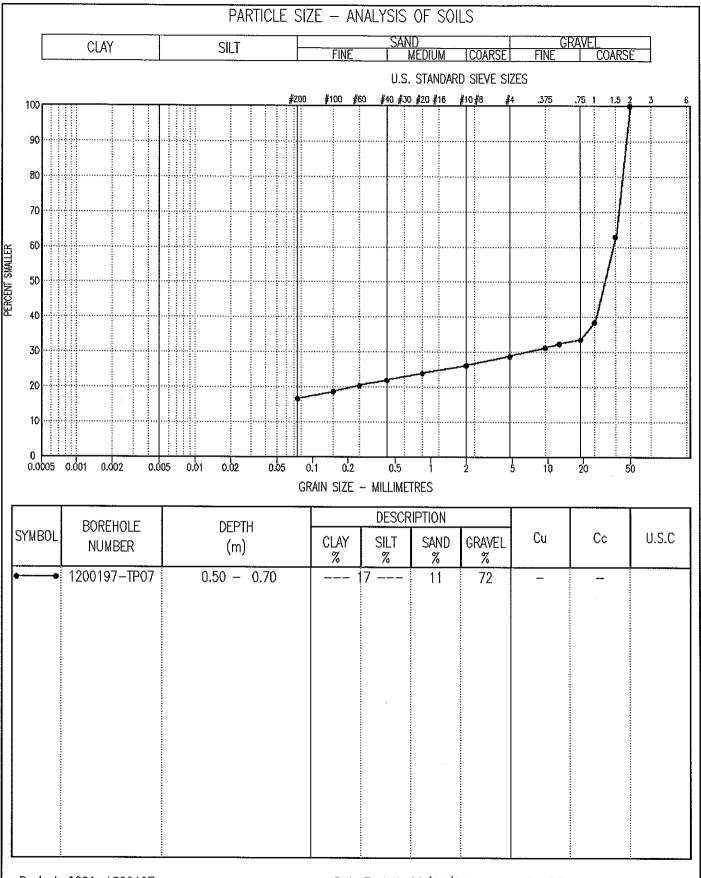
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Depth(m) dws	SAMPLE TYPE F		-	GRA	SAMBOL B		y ⊠standard pen. SOIL		75 mm SPOON []] GROUND]crrel ba		PER 20	40	60 Ent San	FINES ▲ 80 10 ■ 80	Depth(ft)
Dept	SAMPL	RUN	Sp		SOILS	DESC	RIPTION		DESCRIPT	ION	PLA	STIC		M.C.	LIQVID	Dept
0.0						ORGANIC ROOT MAT -	- silty		UNFROZEN			10	20	30	40	<u> </u>
-						SILT (TILL) — sandy,										
-						BEDROCK — highly w fractured, fine to particles, saturat	eathered, highly coarse angular									- Louis Loui
- 1.0 - ¥ - -							petent with depth									ليتنايينا 4.≶
						END OF TESTPIT 1.5	m (REFUSAL)									6.0
																1.1.1.1.1.1.1.1.1.1.1.1.1.1.1.1.1.1.1.
_ 3.0 _ _ _																10.0 11.10
 4.0																
												2	TIAL	D-023		14.0
	E]	BA	En	.gin	eei	ring Consulta			d by: JSB VED by: JRT			VPLE VPLE		UEPI	H: 1.5 m	
						<u>ehorse, Yukon</u>					1				Page	1 of 1

-4.0 EBA Engineering Consultants Ltd. LOGGED BY: JSB COMPLETION DEPTH: 1.8 m REVIEWED BY: JRT COMPLETE: 06/07/11	Geotecl				<u> </u>	1		CLIENT: Yukon Engine			TE	ST PI	r No	: 1	2001	197-1	TP06
SAMPLE TYPE DRB SWFLE Interest of the sector of the secto	~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~		~		load				~~		PF	SONEC	t nc): 120(0197		
End End <td></td> <td>DN:</td> <td></td> <td></td> <td></td> <td></td>													DN:				
EEA Engineering Consultants Ltd. Locord Pr. SB Comparison EEA Engineering Consultants Ltd. Locord Pr. SB Comparison	SAMPLI	ΕŢ	YPE		GRA	B SAN	IPLE NO RECOVER	y 🛛 🛛 Standard Fen.		75 mm SPOON	CRREL B/						
0.0 ORGANIC ROOT MAT UNFROZEN 0.0 SILT (TIL) - sandy, gravelly, well graded sand, fire to medium grained subangular gravel, compact, damp, light brownish grey - gravel content increases with depth 0.0 -1.0 BEDROCK (PHYLLITE) - highly weathered, coarse angular particles, grey -2.0 -2.0 BEDROCK (PHYLLITE) - highly weathered, coarse angular particles, grey -4.0 -2.0 END OF TESTPIT 1.8 m (REFUSAL) -4.0 -3.0 END OF TESTPIT 1.8 m (REFUSAL) -4.0 -4.0 Mitcharse, Ynixon -1.0	Depth(m)	SAMPLE IYPE	RUN NO	SPT(N)	nsc	SOIL SYMBOL						PLAS	20	40 ERCENT 40 M.C	60 SAND I 60	80 80 LIQUID	Depth(ft)
Graded sand, fine to medium grained subarquier gravel, compact, domp, light brownish grey - gravel content increases with depth BEDROCK (PHYLLITE) - highly weathered, course angular particles, grey END OF TESTPIT 1.8 m (REFUSAL) -2.0 -3.0 EBA Engineering Consultants Ltd. Whitehorse, Yukon COMPLETE 06/07/11 EDBA Engineering Consultants Ltd. Whitehorse, Yukon Complete 06/07/11 EDBA Engineering Consultants Ltd. Whitehorse, Yukon EDBA Engineering Consultants Ltd. EDBA Engineering Consultants Ltd.	0.0						ORGANIC ROOT MAT			UNFROZEN				20	30	40	<u> </u>
-4.0 -4.0 EBA Engineering Consultants Ltd. Whitehorse, Yukon Whitehorse, Yukon Hereita Complete: 06/07/11 EDGED BY: JSB COMPLETE: 06/07/11 Prove 1 of 1 Prove 1 Prove 1 of 1 Prove	- - - - - - - - - - -	.0 SILT (TILL) - sandy, gravelly, well graded sand, fine to medium grained subangular gravel, compact, damp, light brownish grey - gravel content increases with depth .0 BEDROCK (PHYLLITE) - highly weathered, coarse angular particles, grey .0 END OF TESTPIT 1.8 m (REFUSAL)								UNFROZÈN							1.0 6.0
EDA Engineering Consultants Ltd. REVIEWED BY: JRT COMPLETE: 06/07/11 Whitehorse, Yukon Poge 1 of 1																	
EDA Engineering Consultants Ltd. REVIEWED BY: JRT COMPLETE: 06/07/11 Whitehorse, Yukon Poge 1 of 1	T	סק	Å	٢'n	ain	 ^ ^ ^	ting Concult	onta Itd				COM	PLET	ion de	PTH:	1.8 m	F
Whitehorse, Yukon Page 1 of 1	1	D٦	A	СIJ	~		<u> </u>	ants Ltd.									
			644.1	100.0	•••	Whi	<u>ehorse, Yukon</u>										1 of 1

				igatior	า		CLIENT: Yukon Enginee	ering S	ervices	TE	est pit	NO:	12	0019	97–T	P07
Ргорс	sec	Acc	ess R	bad			EXCAVATOR: 320 C TR	ACKED	EXCAVATOR	P	ROJECT	NO:	1200	197		
Wolve	rine	: Lak	e, YT				UTM ZONE: 8 N68133	351 E4	50560	EI	EVATIO	N:				
SAMP	ĽΕ	TYPE		GRA	ib san	MPLE 🛛 NO RECOVER	y 🛛 Standard Pen.		75 mm SPOON	CRREL B	ARREL					
Depth(m)	SAMPLE TYPE	RUN NO	SPT(N)	nsc	SOIL SYMBOL		SOIL CRIPTION		GROUNI DESCRIF		▲ P 2 2 PLAST	0 ■ PE 0	RCENT S	0 8 AND∎ 0 8	S▲ 10 10 11QUID 	Depth(ft)
0.0						ORGANIC ROOT MAT			UNFROZEN		1	0	20 3	0 4	0	- 0,0
						GRAVEL (TILL) - silty	/, sandy, coarse el, compact, damp, gr	ey	UNFRUZEN							
- - - - 1.0						– some gravel b	elow 1.0 m									
											ŧ					4.0
- 2.0						– difficult to exc	cavate below 2.0 m									8.0
_ _ 3.0 ~ _ _						END OF TESTPIT 2.7 – becomes very	m (REFUSAL) compact at 2.7 m									10.0
- - - - 4.0																12.0
-								المممح							7	14.0
	E	BA	En	lgin	ee	ring Consult	ants Ltd.		D BY: JSB VED BY: JRT)N DEP : 0670		/ m	
EBA Engineering Consultants Ltd. Whitehorse, Yukon Whitehorse, Yukon Keviewed BY: JRT COMPLETION DEPTH: 2. Reviewed BY: JRT Reviewed BY: JRT Re											Dage	1 of 1				

EBA Engineering



Project: 0201-1200197

Date Tested: 06/08/04

BY: PF

Data presented herean is for the sole use of the stipulated client. EBA is not responsible, nor can be held liable, for use made of this report by any other party, with ar without the knowledge of EBA Tested in accordance with ASTM D422 unless otherwise noted. The testing services reported herein have been performed by an EBA technician to recognized industry standards, unless otherwise noted. No other warranty is made. These data do not include or represent any interpretation or opinion of specification compliance or material suitability. Should engineering interpretation be required, EBA will provide it upon written request.

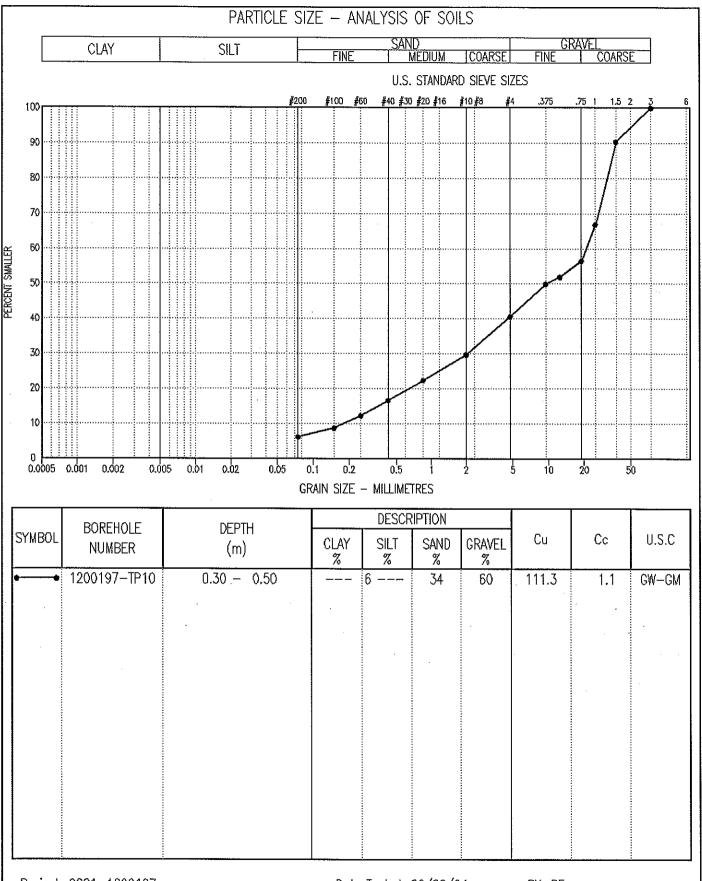


Geotechnical Investigation	CLIENT: Yukon Engineering	Services	TEST PIT NO: 1200197-TP08
Proposed Access Road	EXCAVATOR: 320 C TRACK		PROJECT NO: 1200197
Wolverine Lake, YT	UTM ZONE: 8 N6813127	E450490	ELEVATION:
SAMPLE TYPE GRAB SAM	APLE 🖉 NO RECOVERY 🖾 STANDARD PEN. 🗧	75 mm SPOON	BARREL
Depth(m) SAMPLE TYPE RUN NO SPT(N) USC SOIL SYMBOL	SOIL DESCRIPTION	GROUND ICE DESCRIPTION	▲ PERCENT SILT OR FINES ▲ 20 40 60 80 ■ PERCENT SAND ■ 20 40 60 80 PLASTIC M.C. LIQUID ↓ ↓ ↓ 10 20 30 40
0.0	ORGANIC ROOT MAT	UNFROZEN	10 20 30 40
	ORGANIC ROOT MAT GRAVEL (FLUMAL) - sandy, trace to some silt, well graded subrounded gravel, coarse sand, compact, dry, reddish brown - colour changes to light grey around 1.8 m - major sloughing below 2.5 m - trace to no silt below 1.8 m END OF TESTPIT 3.5 m - slough below 3.5 m	UNFROZEN	• • 0.0 • • • 0.0 • • • 0.0 • • • 0.0 • • • • • 0.0 • • • • • • • • • • • • • • • • • • •
- 4.0 	×		
EBA Engineer	ring Consultants Ltd.	GED BY: JSB	COMPLETION DEPTH: 3.5 m
		iewed by: Jrt	COMPLETE: 06/07/11
Whit 06/08/16 11:51AM (YUKONPD4)	ehorse, Yukon		Page 1 of 1

Geote					1		CLIENT: Yukon Engine	ering Se	ervices	۲	est p	IT N	0:	120()197–	TP09
Propo				load			EXCAVATOR: 320 C TR	RACKED	EXCAVATOR	F	PROJE	CT N	0: 12	00197	7	
Wolver							UTM ZONE: 8 N6812	946 E4	50471	E	ELEVAT	ION:				
SAMP	LE	TYPE		GRA	B SAN	IPLE NO RECOVER	Y Standard pen.	7	'5 mm SPOON		BARREL					
Depth(m)	SAMPLE TYPE	RUN NO	SPT(N)	nsc	SOIL SYMBOL		SOIL CRIPTION		GROUN DESCRI			20 20 STIC	40 PERCE 40 k	ILT OR 1 60 NT SANE 60 1.C.	80) = 80 LIQVID 	Depth(ft)
0.0						ORGANIC ROOT MAT			FROZEN			10	20	30	40	- 0.0
						0.4 m GRAVEL — sandy and	angular gravel below I silty, well graded el, compact, damp, m (REFUSAL)		FROZEN							2.0 1.1.1.1.1.1.1.1.1.1.1.1.1.1.1.1.1.1.1.
- 4.0 - - -																14.0
	٦Ţ	R۸	En	ain	יםם	ing Consult	anta Itd) by: JSB						2.5 m	
	لانت	UH	ыH	-		ring Consult	ants Ltu.		ed by: Jrt					6/07/		
L				ļ	∦hit	<u>ehorse, Yukon</u>								· · ·		1 of 1

Geote	chn	ical	nvest	igatior	1		CLIENT: Yukon Engine	ering Services	TE	ST I	PIT I	10:	12	0019	7-T	P10
Propo				lood			EXCAVATOR: 320 C TR						12001	97		
Wolver							UTM ZONE: 8 N6812			EVA		:				
SAMP	LL. T	I YPE	-	GRA	b san	IPLE NO RECOVER	y Standard Pen.	75 mm SPOON	CRREL B					R FINES	<u>.</u>	
											20	4	06	Ó 80		
h(m	Г- щ	NO	SPT(N)	nsc	SYMBOL		SOIL	GROUND K	CE		20	PER 4	CENT S 0 6	ANU∎ 08	0	h H
Depth(m)	SAMPLE TYPE	RUN NO	SP	1 D	soil s	DESC	RIPTION	DESCRIPTIO	M	PL	ASTIC		M.C.	L	.IQVID	Depth(ft)
	S.				S				214		 10	20 30		0 40		
0.0						ORGANIC ROOT MAT		UNFROZEN						<u>U</u> 41	<u>.</u>	E 0.0
-						SILT — sandy, fine g	rained, blackish grey									E
F						GRAVEL AND SAND -	(COLLUVIAL) - trace									Ē
~						silt, well graded	subrounded gravel,	IFROZEN		▲	۲					Ē
ŀ						coarse sand, cor	npact, moist, dark	Nbe, Vc, 5-10%								E E 2.0
F						brownish grey END OF TESTPIT 0.5	m (REFUSAL)									
Ľ			:				、									Ē
- 1.0																
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06/08/16	11:514	M (YUKO	INP04}	1	Whit	<u>ehorse, Yukon</u>								P	ade .	1 of 1

EBA Engineering



Project: 0201-1200197

Date Tested: 06/08/04

BY: PF

Data presented hereon is for the sole use of the stipulated client. EBA is not responsible, nor can be held liable, for use made of this report by any other party, with or without the knowledge of EBA Tested in accordance with ASTM D422 unless otherwise noted. The testing services reported herein have been performed by an EBA technician to recognized industry standards, unless otherwise noted. No other warranty is made. These data do not include or represent any interpretation or opinion of specification compliance or material suitability. Should engineering interpretation be required, EBA will provide it upon written request.



				igatior	1		CLIENT: Yukon Engineering Services					TEST PIT NO: 1200197-TP11							
Propo				oad			EXCAVATOR: 320 C TR			PR	PROJECT NO: 1200197								
Wolve							UTM ZONE: 8 N68125	575 E4	50461	EL	EVAT	rioi	۷:						
SAMP	LE	TYPE		GRA	B SAN	IPLE 🛛 NO RECOVER	y 🛛 🛛 standard pen.		75 mm SPOON	L BA	rrei	L							
Depth(m)	SAMPLE TYPE	RUN NO	SPT(N)	nsc	SOIL SYMBOL		SOIL RIPTION		GROUND ICE DESCRIPTION			20 20 ASTI	■ PEI	40 RCENT 40 M.C	60 SAND 60	80 Liquid ————————————————————————————————————	Depth(ft)		
0.0		-				ORGANIC ROOT MAT			UNFROZEN			10		20	30	40	- 0.0		
ŀ						SILT – sandy, fine g	rained, blackish arev		ONINOZEN										
						GRAVEL (TILL) – san	dy, some silt, well ded gravel, coarse own		FROZEN Vx, 20-30%						•		ساسیا 2.0		
- - - 1.0																	- دا يديا ي		
-																	4.0		
- - - 2.0																	1 1 6.0		
- - - -																	1 1 1 1 1 1 8.0		
- - 3.0 -																	10,0		
																	12.0		
- 4.0 - - -								1.000								0 -			
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						tehorse, Yukon						wiri		: 00/	(VI/		1 of 1		
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ŀ	Proposed Access Road							EXCAVATOR: 320 C TF	PR	PROJECT NO: 1200197										
1	Nolvei	rine	Lake	e, YT				UTM ZONE: 8 N6812	245 E4	50509	ELE	VATIO	N:							
5	SAMP	LE .	TYPE		GRA	B SAN	IPLE NO RECOVER	Y STANDARD PEN.		75 mm SPOON	· · ·									
	Depth(m)	SAMPLE TYPE	RUN NO	SPT(N)	nsc	SOIL SYMBOL		SOIL RIPTION		GROUND ICE DESCRIPTION		▲ PERCENT SILT OR FINE 20 40 60 E ■ PERCENT SAND ■ 20 40 60 E PLASTIC M.C.				Depth(ft)				
┢	0.0						ORGANIC ROOT MAT			UNFROZEN		1(	) 20	30	40	E 0.0				
	<b>.</b>						SILT — sandy, fine gr GRAVEL (TILL) — sand subrounded grave mottled brown	dy, silty, well graded el, coarse sand,		FROZEN Vc, 10–15%			•			سانیں بابین				
							END OF TESTPIT 0.3	m (Refusal)												
-	- 1.0																			
	- 2.0																			
	-															L				
	- 3.0																			
	- 4.0																			
-									1.000			0015				14.0				
		Eł	3A	En	<u>gin</u>	eei	ring Consulta	ants Ltd.		d by: JSB /Ed by: JRT				<u>  DEPT</u> 06/07	H: 0.3 m					
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Geote				-	1		CLIENT: Yukon Engineering Services						TEST PIT NO: 1200197-TP13							
Propo				bod			EXCAVATOR: 320 C TRA	ACKED	PROJECT NO: 1200197											
Wolver							UTM ZONE: 8 N68119	52 E4	50589		ELE	VATIO	N:							
SAMP	LE	TYPE		GRA	b sav	IPLE 🗌 NO RECOVER	y 🛛 🖾 standard pen.	İ	75 mm SPOON	CRREL	Baf	REL								
Depth(m) SAMPLE TYPE RUN NO SPT(N) USC SOLL SYMBOL							SOIL						▲ PERCENT SILT OR FINES ▲ 20 40 60 80 ■ PERCENT SAND ■							
Depth(m)	PLE T	N N	SPT(N	usc	- SYMBOL		RIPTION		GROUND ICE		E 20						Depth(ft)			
t	SAN				SOIL	JUGU	ANT HON		DESCRI	PTION		10 20 3				LIQUID ( 40	ă			
0.0						ORGANIC ROOT MAT			UNFROZEN								E 0.0			
-						SILT - sandy, fine g	rained. blockish grey			~~	_									
-						GRAVEL - sandy, tra	ce to some silt, graded gravel, coarse	ŗ	FROZEN								E			
-						sand	gradea gratei, course		Vc, 30—40%								Εl			
						END OF TESTPIT 0.3	m (REFUSAL)									·····	·- È			
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						ehorse. Yukon		KEVIEV	VED BY: JRT	•••		COM	-let	<u>E: 0</u>	o/07/		1 of 1			
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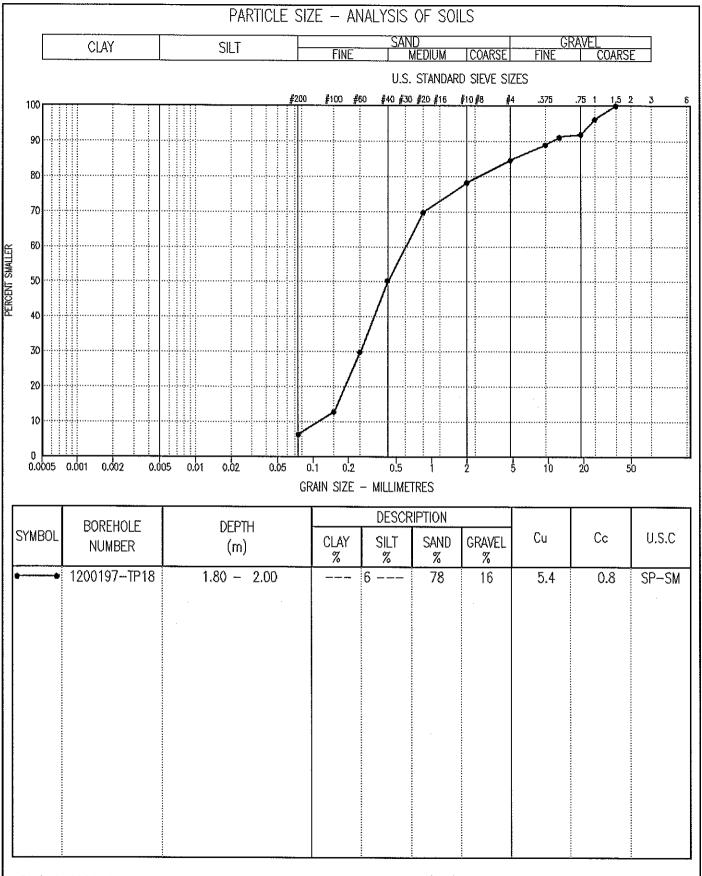
Geote	chn	tical I	Invest	igatior	1		CLIENT: Yukon Engi	neering S	ervices		TEST	PIT I	10:	120	00197	/-TI	P14
Propo				oad			EXCAVATOR: 320 C				PRQJ	ECT	NO:	12001			
Wolve							UTM ZONE: 8 N68				ELEVA		:				
SAMP	LE	TYPE	<u> </u>	GRA	18 SAN	APLE NO RECOVER	y Standard Pe	EN. 7	'5 mm SPOON								
	H				Ы							20	4	0 60	r Fines / 80	<b>A</b> .	
E		2	E	ပ္ပ	SYMBOL	, k	SOIL		GROUN	ID ICE		20	EPER 4	CENT SA 0 60	ND 🔳 ) 80		E
Depth(m)	SAMPLE TYPE	RUN NO	SPT(N)	nsc	L N	ראין	RIPTION				PI	ASTIC		M.C.		QUD	Depth(ft)
	SAI				SOIL				DESCR	IFTION		<b> </b>		·····		4	
0.0	+				-	ORGANIC ROOT MAT			UNFROZEN			10	2	0 30	) 40		E 0.0
Ľ		Í				GRAVEL (TILL) – san	dy, silty, subrounde	d			-						
-						well graded grave	el, coarse sand,		FROZEN Vc, 15-20%								
F						moist, grey END OF TESTPIT 0.3	m (REFLISAL)	/	10, 10 ZU/6								E
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Geote				· .	)		CLIENT: Yukon Engine			TEST						TP15
Ргоро				load			EXCAVATOR: 320 C TR						: 120	0197		
Wolver							UTM ZONE: 8 N6811			ELEV/		N:				
SAMPI		IYPE		GRA	B SAN	APLE NO RECOVER	y 🛛 Standard pen.	75 mm SPOON		BARR				<u> </u>		
	Щ										▲ P 24	ercei 0	NT SIL 40	.t or f 60	INES ▲ 80	
Depth(m)	SAMPLE TYPE	RUN NO	Î		SYMBOL		SOIL	GROUN	D ICF		0	PE	RCEN	60 T Sand		<b>⊣</b> ≆
pth	Щ	Ę	SPT(N)	usc	∑			anoon	DICE	_			40	60	80	Depth(ft)
B	AMF	Ω.	S		SOIL	I DESU	RIPTION	DESCRI	PTION	P	LAST	IC	M.9	C.	LIQUI	ة ا ^م
	S				$ ^{\circ}$						1	0	20	30	40	
0.0						ORGANIC ROOT MAT		UNFROZEN					20			= 0.
_						SILT – sandy, fine gi	rained, medium grey									Ę
						<ul> <li>becomes grav</li> </ul>	velly below 0.2 m	 FROZEN		-				<b>F</b>		Ē
						END OF TESTPIT 0.3	m (REFUSAL)	Vx, Vr, 10–15	3%							Ē
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	ЦŢ	ЪÄ	ĿП	~		ring Consult	ants Ltd.	REVIEWED BY: JRT						/07/		, 
				1	₩hi	<u>tehorse, Yukon</u>								. /		1 of

Geotec				-	1		CLIENT: Yukon Enginee	ring Services	TE	IST I	PIT	N0:	1	200	197–T	P16
Propos				bad			EXCAVATOR: 320 C TRA	CKED EXCAVATOR	PF	ROJE	CT	NO:	120(	0197		
Wolveri							UTM ZONE: 8 N68112	31 E450771	EL	EVA	TION	١: ١				
SAMPL	<u>E</u>	TYPE		GRA	b sai	IPLE 🛛 NO RECOVER	y 🛛 Standard pen.	75 mm SPOON	EL B#							
Depth(m)	SAMPLE TYPE	RUN NO	SPT(N)	nsc	SOIL SYMBOL		SOIL RIPTION	GROUND ICE DESCRIPTION			20 1 20 Astii		40 RCENT 40 M.C.	60 SAND 60	80 Liquid 	Depth(ft)
0.0	_					ORGANIC ROOT MAT	····	UNFROZEN			10		20	30	40	- 0.0
- -							rained, compac, very rk brown v 0.2 m m (REFUSAL)						•			
- - - 1.0																2.0
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- - - 2.0 -	2.0															6.0 6.0
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				igatior	1		CLIENT: Yukon Enginee			TES	t pi	T N	0:	12	0019	97–1	P17
Ргоро				oad			EXCAVATOR: 320 C TR	ACKED	EXCAVATOR	PRC	JEC	TN	0: 1	2001	97		
Wolver							UTM ZONE: 8 N68109	971 E4	50764	 ELE	VATI	ON:					
SAMP	LE	TYPE	•	GRA	B SAM	IPLE NO RECOVER	y Standard Pen.		75 mm SPOON	BAR	REL						*
Depth(m)	SAMPLE TYPE	RUN NO	SPT(N)	nsc	SOIL SYMBOL		SOIL CRIPTION		GROUNI DESCRIF		PLA:	20 20	40 PERC 40	ENT S# 60 M.C.	) 8 ND∎ ) 8	Q	Depth(ft)
0.0						ORGANIC ROOT MAT			UNFROZEN					<u>- J.</u>	<u>} 4</u>		= 0.0
						grained subround damp, medium g	sand, fine to medium ded gravel, compact, grey velly below 0.3 m		 FROZEN Vx, Vr, 10-159	 _ •		•					
- - - - -																	
- - 																	6.0
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-										-							
- - - - -																	ruhundunuhunuhunuhu
	FI	34	En	gin	<u>وم</u>	ring Consult	ants Ltd		D BY: JSB					DEP		.6 m	
	ц						unto Dtu.	REVIEW	/ED BY: JRT	 	CON	PLE	TE: (	)6/07			
06/08/16 1	1:524	M (YUKO	NP04}		¶ NI	<u>ehorse, Yukon</u>										Jage	<u>1 of 1</u>

				igatio	1		CLIENT: Yukon Engine			TE	ST P	T N(	):	120	0197.	-TP18
Propo				load			EXCAVATOR: 320 C T	RACKED	EXCAVATOR	PF	ROJEC	t N	D: 1	20019		
Wolve							UTM ZONE: 8 N681(		50651	EL	evati	ON:				
SAMP	LE	TYPE		GR/	B SAN	IPLE 🛛 NO RECOVER	y 🛛 Standard pen		75 mm SPOON	EL B/	RREL					
Depth(m)	SAMPLE TYPE	RUN NO	SPT(N)	nsc	SOIL SYMBOL		SOIL RIPTION		GROUND ICE DESCRIPTION			20 ∎1 20	40 PERCE 40	60 Ent sai		ath(ft)
	<u> </u>				<u> </u>						ŀ	10	20	30	40	-
0.0 - - -	-					ORGANIC ROOT MAT SAND - some gravel graded, subangul sand, wet, comp	, trace of silt, well lar gravel, coarse act, medium grey		UNFROZEN  FROZEN Nf, Vs, 5-10%							2.0
- - - - - -						- becomes aray	elly around 1.5 m									4.0
- 2.0						END OF TESTPIT 2.0					<b>A</b>		•		P	6.0
- - - - - - - - - - -																8.0 
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	<u>ות</u>		<b>D</b>					LOGGE	D BY: JSB			<u> </u>	FINN		l:2 m	<u>F</u>
	Εl	ВÄ	Ľп			ring Consult	ants Ltd.		VED BY: JRT					$\frac{DEFII}{6/07}$		
06/08/16			1007.41	1	Whit	<u>ehorse, Yukon</u>							0	-, -, -,		e 1 of 1



Project: 0201-1200197

Date Tested: 06/08/04

BY: PF

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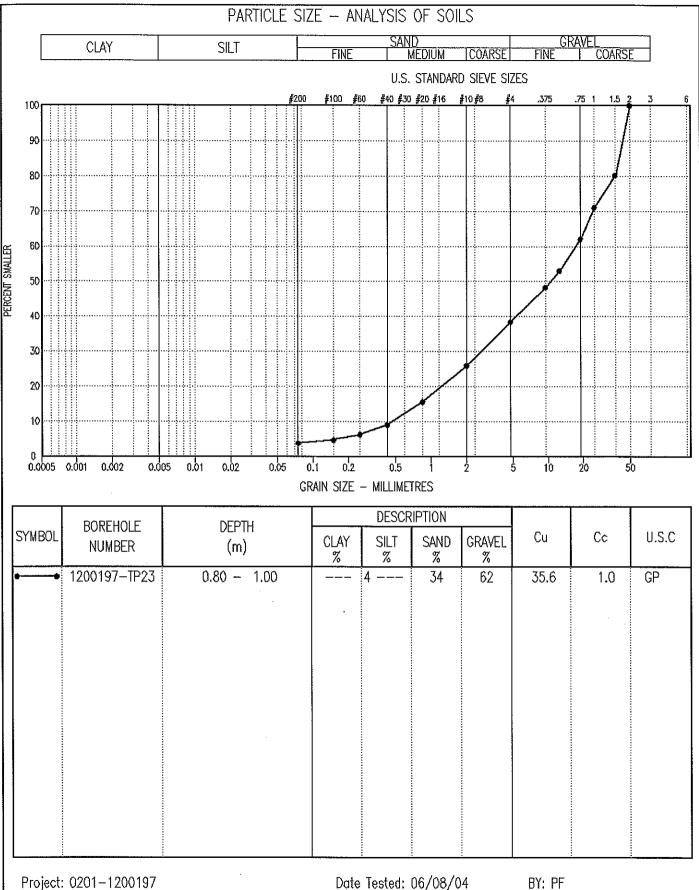
				igatior	1		CLIENT: Yukon Engine			TES	st pi	T NO	):	1200	197-	rp19
Propo				bod			EXCAVATOR: 320 C TR			PR	DJEC	TN	D: 12	00197		
Wolver							UTM ZONE: 8 N6810				VATI	ON:				
SAMP	LE .	TYPE		GRA	B SAN	MPLE NO RECOVER	y Standard Pen.		75 mm SPOON ☐☐CRREI	l bai						
Depth(m)	SAMPLE TYPE	RUN NO	SPT(N)	nsc	SOIL SYMBOL		SOIL CRIPTION		GROUND ICE DESCRIPTION		PLAS	20 10 20 STIC	40 PERCEN 40 M	LT OR F 60 IT SAND 60 .C.	80 80 LIQVID	Depth(ft)
0.0			. <u></u>			ORGANIC ROOT MAT	· •••••		UNFROZEN			10	20	30	40	E 0.0
						compact, mediur — becomes coar	grained gravel, moist, n grey ser grained, gravel ntent around 0.5 m		UNFROZEN FROZEN Nbn, Vs, 1015%							10.0 1 1.0 1 1
- - 4.0 - -																
<b> </b>	די דיד		<b>D</b>				£ T L 3	LOGGE	D BY: JSB		COM	PLF	TION	DEPTH	: 1.3 m	<u> </u>
	El	ВΆ	ĽŊ	<u> </u>		ring Consult	ants Ltd.		/ED BY: JRT					5/07/		
06/08/16				٦	Whi	tehorse, Yukon										1 of 1

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SMUPLE TYPE       IPAR SWITE       IPAR SOURCE       STANDARD PDN       IPS 75 mm SPOW       III CREEL BASEL         Image: Standard Provided Standard Provided Standard Provided Standard Provided Standard Provided Standard Provided Standard Provided Standard Provided Standard Provided Standard Provided Standard Provided Standard Provided Standard Provided Standard Provided Standard Provided Standard Provided Standard Provided Standard Provided Standard Provided Standard Provided Standard Provided Standard Provided Standard Provided Standard Provided Standard Provided Standard Provided Standard Provided Standard Provided Standard Provided Standard Provided Standard Provided Standard Provided Standard Provided Standard Provided Standard Provided Standard Provided Standard Provided Standard Provided Standard Provided Standard Provided Standard Provided Standard Provided Standard Provided Standard Provided Standard Provided Standard Provided Standard Provided Standard Provided Standard Provided Standard Provided Standard Provided Standard Provided Standard Provided Standard Provided Standard Provided Standard Provided Standard Provided Standard Provided Standard Provided Standard Provided Standard Provided Standard Provided Standard Provided Standard Provided Standard Provided Standard Provided Standard Provided Standard Provided Standard Provided Standard Provided Standard Provided Standard Provided Standard Provided Standard Provided Standard Provided Standard Provided Standard Provided Standard Provided Standard Provided Standard Provided Standard Provided Standard Provided Standard Provided Standard Provided Standard Provided Standard Provided Standard Provided Standard Provided Standard Provided Standard Provided Standard Provided Standard Provided Standard Provided Standard Provided Standard Provided Standard Provided Standard Provided Standard Provided Standard Provided Standard Provided Standard Provided St	<u> </u>	*****			load			EXCAVATOR: 320 C TRA	ACKED	EXCAVATOR	P	Rojec	CT N	0: 12	20019	7	
Image: Solution of the second state of the second state of the second state of the second state of the second state of the second state of the second state of the second state of the second state of the second state of the second state of the second state of the second state of the second state of the second state of the second state of the second state of the second state of the second state of the second state of the second state of the second state of the second state of the second state of the second state of the second state of the second state of the second state of the second state of the second state of the second state of the second state of the second state of the second state of the second state of the second state of the second state of the second state of the second state of the second state of the second state of the second state of the second state of the second state of the second state of the second state of the second state of the second state of the second state of the second state of the second state of the second state of the second state of the second state of the second state of the second state of the second state of the second state of the second state of the second state of the second state of the second state of the second state of the second state of the second state of the second state of the second state of the second state of the second state of the second state of the second state of the second state of the second state of the second state of the second state of the second state of the second state of the second state of the second state of the second state of the second state of the second state of the second state of the second state of the second state of the second state of the second state of the second state of the second state of the second state of the second state of the second state of the second state of the second state of the second state of the second state of the second state of the second state of the second state of the second state	1								84 E4	50502	E	LEVAT	ION:				
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00         ORGANIC ROOT MAT         UNFROZEN         10         20         30         40         0.0           SULT (TILL) - sundy, trace of growel, well graded sound, fire to medium growel aubonguker grovel, compact, molat medium grey - grave block 0.2 m, well graded, suborgured         -         -         -         -         -         -         -         -         -         -         -         -         -         -         -         -         -         -         -         -         -         -         -         -         -         -         -         -         -         -         -         -         -         -         -         -         -         -         -         -         -         -         -         -         -         -         -         -         -         -         -         -         -         -         -         -         -         -         -         -         -         -         -         -         -         -         -         -         -         -         -         -         -         -         -         -         -         -         -         -         -         -         -         -         -         -         -<	Depth(m)	AMPLE TYPE	run no	SPT(N)	nsc	OIL SYMBOL							20 20	40 PERCE 40	60 NT SANI 60	80 ) ■ 80	Depth(ft)
0.0       ORGANIC ROOT MAT         SUF (TRLL) = sundy, trace of grovel, well graded sound, fine to maxium grained subongular grovel, compact, most, medium gravel below 0.2 m, well graded, subcunded       FROZEN         - 10       END OF TESTERT 0.3 m (REFUSAL)       FROZEN         - 20       - 40       - 40         - 5.0       - 5.0       - 5.0         - 5.0       - 5.0       - 5.0         - 5.0       - 5.0       - 5.0         - 5.0       - 5.0       - 5.0         - 5.0       - 5.0       - 5.0         - 5.0       - 5.0       - 5.0         - 5.0       - 5.0       - 5.0         - 5.0       - 5.0       - 5.0         - 5.0       - 5.0       - 5.0         - 5.0       - 5.0       - 5.0         - 5.0       - 5.0       - 5.0         - 5.0       - 5.0       - 5.0         - 5.0       - 5.0       - 5.0         - 5.0       - 5.0       - 5.0         - 5.0       - 5.0       - 5.0         - 5.0       - 5.0       - 5.0         - 5.0       - 5.0       - 5.0         - 5.0       - 5.0       - 5.0         - 5.0       - 5.0       - 5.0		St				No.				220011		ŀ	10	20	● 30	40	
	0.0 - -						SILT (TILL) — sandy, graded sand, fin subangular grave	e to medium grained	1								
EBA Engineering Consultants Ltd.	-						<ul> <li>gravel below C</li> <li>subrounded</li> </ul>	-									2.0
EBA Engineering Consultants Ltd.	- 1.0 - - -																
-3.0 -3.0 -3.0 -4.0 -4.0 EBA Engineering Consultants Ltd. LOCGED BY: JSB COMPLETION DEPTH: 0.3 m REVIEWED BY: JRT COMPLETE: 06/07/11																	
EBA Engineering Consultants Ltd. LOGGED BY: JSB COMPLETION DEPTH: 0.3 m REVIEWED BY: JRT COMPLETE: 06/07/11																	8.0
EBA Engineering Consultants Ltd.	- - 3.0 -																
EBA Engineering Consultants Ltd. LOGGED BY: JSB COMPLETION DEPTH: 0.3 m REVIEWED BY: JRT COMPLETE: 06/07/11	-																
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EDA Engineering consultants Ltd. REVIEWED BY: JRT COMPLETE: 06/07/11	ļ								1.000								Ē
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Geotechi			-	)		CLIENT: Yukon Engine	ering S	Services		TES	ST P	IT N	0:	12	2001	97
Propose			boc			EXCAVATOR: 320 C TR	ACKED	EXCAVATOR		PR	OJE(	CT N	10: 1	200	197	
Wolverine						UTM ZONE: 8 N6810	070 E4	450307		ELI	EVAT	ION:				
SAMPLE	TYPE		GRA	b sam	IPLE NO RECOVER	( 🛛 Standard Pen.		75 mm SPOON		L BA	RREL					
л(m) - ТҮРЕ	NO	(N)	20	SYMBOL	Ç	SOIL		GROUN	id ice		<b>^</b>	20	40	) e Cent s	SAND 🛛	80
Depth(m) SAMPLE TYPE	RUN NO	SPT(N)	nsc	soil s'	DESC	RIPTION		DESCR			PLA	STIC		M.C.		ΠC
				Ů								10	20	<u>ງີ</u> :	30	40
0.0 - - - -					ORGANIC ROOT MAT SILT (TILL) — gravelly medium grained, well graded sand	subrounded gravel,		UNFROZEN				*				
- - — 1.0																
-					— gravel conten becomes coarser — some silt belov	around 1.2 m						********************				
-											•					
- - 2.0 -					END OF TESTPIT 2.0 - some slough b			-								
- -																
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3.0 																
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  4.0																
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 יקד		<u> </u>	nin		ing Concult	nta Ita	LOGGE	ED BY: JSB				VPLE	ADITE	( DEI	PTH: ;	2 1
_ L	DA	БЦ			ring Consulta ehorse, Yukon	ants Ltu.		WED BY: JRT							07/11	

Geotec				-	1		CLIENT: Yukon Engineer					st pi					-TP22
Propos				boo			EXCAVATOR: 320 C TRA							): 12	20019	17	
Wolveri							UTM ZONE: 8 N68099					VATI	ON:				
SAMPL	.E	TYPE		GRA	B SAN	IPLE 🛛 NO RECOVER	Y 🛛 STANDARD PEN.	7	5 mm SPOON	[]]]CRREL	BAF						
Depth(m)	SAMPLE TYPE	run no	SPT(N)	nsc	IL SYMBOL		SOIL CRIPTION		GROUN				20 ■ F 20	40 PERCE 40	ILT OR 60 NT SAN 60 A.C.		oth(ft)
	SA				SOIL				DESCRI	FIIUN		F	10	20	<b>e</b> 30	40	
0.0						ORGANIC ROOT MAT			UNFROZEN								E 0.0
						SAND (TILL) — silty, sand, fine to me subangular grave grey — some silt arou	dium grained el, compact, damp,										
- - - -		r					ser gravel around 1.0	m									- 2.0
-						– becomes silty, 1.0 m	, some gravel around						•				
-						END OF TESTPIT 1.7	m (REFUSAL)						•				
- 2.0 - - -																	8.0
- 3.0 - - -																	E 10.0
- - - - 4.0																	
- - -							· · · · · · · · · · · · · · · · · · ·										14.0
	E]	BA	En	lgin	iee	ring Consult			d by: JSB /Ed by: JRT						DEPTI 16/07	H: 1.7	m
		-				tehorse, Yukon		NEVIEN	ואני סו: או			ןיטטוע 	ir LE		io/V/	h	ge 1 of 1
06/08/16 1	1:53/	w (Yuk	ONPO4}			Longino, runvil		I				L					<u>97 I VI I</u>

Geote				*	1		CLIENT: Yukon Enginee	ring Se	ervices	TES	ST PIT 1	VO:	1200	197-T	P23
Ргоро	sed	Acc	ess R	lood			EXCAVATOR: 320 C TRA	ACKED	EXCAVATOR	PR	OJECT I	NO: 12	00197	, ^^	
Wolver							UTM ZONE: 8 N68096	612 E4	50215	ELI	EVATION	:			
SAMP	LE	TYPE		GR4	B SAN	IPLE 🛛 NO RECOVER	y 🛛 Standard Pen,	7	75 mm SPOON	L BA	RREL				
Depth(m)	SAMPLE TYPE	RUN NO	SPT(N)	nsc	SOIL SYMBOL		SOIL RIPTION		GROUND ICE DESCRIPTION		20 20 PLASTIC	40 II PERCE 40	ILT OR F 60 NT SAND 60 I.C.	80 80 LIQVID	Depth(ft)
0.0						ORGANIC ROOT MAT	·		UNFROZEN		10	20	30	40	- 0.0
0.0 - 0.0 						medium to coars greyish brown — coarser gravel to 1.0 m — becomes clear — coarser gravel	subrounded gravel, e sand, compact, dam s and cobbles from 0. her with depth s below 2.0 m s to light grey around silt below 2.0 m	np, .1	UNFROZEN FROZEN Nbn, Vs trace						14.0 14.0 14.0 14.0
F															E
	ान हा	٦٨	ሆ'n	ain	 	sing Conquit.	onta Ita	LOGGEI	D BY: JSB		COMPL	etion	DEPTH:	2.5 m	<u>+</u>
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				1	₩hit	<u>ehorse, Yukon</u>							t	Page	1 of 1



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BY: PF

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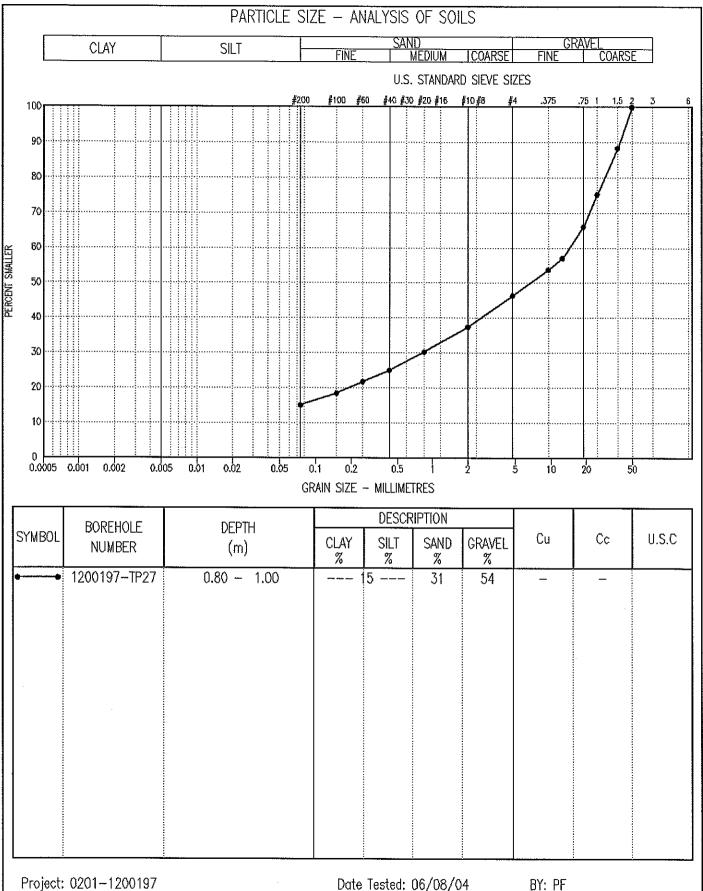


				igatio	1		CLIENT: Yukon Engine	ering S	ervices	TE	est pit	NO:	1200	197-T	P24
Propo				load			EXCAVATOR: 320 C TR				ROJECT		200197		
Wolve							UTM ZONE: 8 N6809				EVATION	1:			
SAMP	'LE	TYPE	_	GRA	ib san	IPLENO RECOVER	Y 🛛 🕅 STANDARD PEN.		75 mm SPOON	REL B/					
Depth(m)	SAMPLE TYPE	RUN NO	SPT(N)	nsc	SOIL SYMBOL		SOIL RIPTION		GROUND IC DESCRIPTIO		20 20 PLASTIC	PERCE 40 C N	60 NT SAND 60 I.C.	80 80 LIQVID	Depth(ft)
0.0					<u> </u>	ORGANIC ROOT MAT			UNFROZEN		10	20	30	40	- 0.0
- - - -						SAND (COLLUVIUM) - medium to coars	e sand, well graded I, compact, damp,				•				2.0
- - 1.0 - -						— coarser grave	el below 1.2 m								12 12 12 12 12 12 12 12 12 12 12 12 12 1
- - - - - - - -							gravelly, trace of sand, fine to medium ar gravel, compact,	1							
									FROZEN						8.0 8.1
- 3.0						END OF TESTPIT 3.0	m (REFUSAL)		Vr, Vx, 5-10%						10.0 المربية (10.0 مرايين) - 10.0 مرايين
- - - - 4.0															12.0
	<b>1</b>	•					1 1 7	I OGGF	d by: JSB		СОМРІ	ETION	DEDITH:	<u>3 m</u>	
	Еł	ЗA	Ľп			ring Consult	ants Ltd.		/ED BY: JRT			ETE: 0			
06/08/16	11-544	M MINIKI	NP/143	. 1	Whit	<u>ehorse, Yukon</u>	· · · · · · · · · · · · · · · · · · ·						· · · · · ·	Page	1 of 1

Proposed Access Road       DCAWIOR       PROJECT AD: 120137         Webserbeit Liny, YT       UNK ZONE: 8 N850287 E448633       ELEVATION         SMIPLE TYTP:       DRIE SAMPLE       Zone SAMPLE       Zone SAMPLE       Zone SAMPLE       Rescue Series         SMIPLE TYTP:       DRIE SAMPLE       Zone SAMPLE       Zone SAMPLE       Zone SAMPLE       Zone SAMPLE       Zone SAMPLE       Provide Same         SMIPLE TYTP:       DRIE SAMPLE       Zone SAMPLE       Zone SAMPLE       Zone SAMPLE       Zone SAMPLE       Zone SAMPLE       Zone SAMPLE       Zone SAMPLE       Zone SAMPLE       Zone SAMPLE       Zone SAMPLE       Zone SAMPLE       Zone SAMPLE       Zone SAMPLE       Zone SAMPLE       Zone SAMPLE       Zone SAMPLE       Zone SAMPLE       Zone SAMPLE       Zone SAMPLE       Zone SAMPLE       Zone SAMPLE       Zone SAMPLE       Zone SAMPLE       Zone SAMPLE       Zone SAMPLE       Zone SAMPLE       Zone SAMPLE       Zone SAMPLE       Zone SAMPLE       Zone SAMPLE       Zone SAMPLE       Zone SAMPLE       Zone SAMPLE       Zone SAMPLE       Zone SAMPLE       Zone SAMPLE SAMPLE       Zone SAMPLE SAMPLE SAMPLE SAMPLE SAMPLE SAMPLE SAMPLE SAMPLE SAMPLE SAMPLE SAMPLE SAMPLE SAMPLE SAMPLE SAMPLE SAMPLE SAMPLE SAMPLE SAMPLE SAMPLE SAMPLE SAMPLE SAMPLE SAMPLE SAMPLE SAMPLE SAMPLE SAMPLE SAMPLE SAMPLE SAMPLE SAMPLE SAMPLE SAMPLE SAMPLE SAMPLE SAMPLE SAMPLE SAMPLE SAMPLE SAMPLE SAMPLE SAMPLE SAMPLE SAMPLE SAMPLE	Geotechnical Invest	tigation	CLIENT: Yukon Engineering :	Services	TEST PIT NO: 1200197-TP2	25
SMPLE TYPE       IDEM EXAMPLE       IDE RECORDER       IDEM EXAMPLE       I	Proposed Access R	Road	EXCAVATOR: 320 C TRACKED	) EXCAVATOR		
Image: Second State State State State State State State State State State State State State State State State State State State State State State State State State State State State State State State State State State State State State State State State State State State State State State State State State State State State State State State State State State State State State State State State State State State State State State State State State State State State State State State State State State State State State State State State State State State State State State State State State State State State State State State State State State State State State State State State State State State State State State State State State State State State State State State State State State State State State State State State State State State State State State State State State State State State State State State State State State State State State State State State State State State State State State State State State State State State State State State State State State State State State State State State State State State State State State State State State State State State State State State State State State State State State State State State State State State State State State State State State State State State State State State State State State State State State State State State State State State State State State State State State State State State State State State State State State State State State State State State State State State State State State State State State State State State State State State State State State State State State State State State State State State State State State State State State State State State State State State State State State State State State State State State State State State State State State State State State State State State State State State State State State State State State State State State State State State State State Sta	Wolverine Lake, YT		UTM ZONE: 8 N6809287 E	449853	ELEVATION:	
Image: Solution of the second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second seco	SAMPLE TYPE	grab sample 🛛 No recover	ry 🛛 Standard pen. 🗖	75 mm SPOON	L BARREL	
00       00       00       00       00       00       00       00       00       00       00       00       00       00       00       00       00       00       00       00       00       00       00       00       00       00       00       00       00       00       00       00       00       00       00       00       00       00       00       00       00       00       00       00       00       00       00       00       00       00       00       00       00       00       00       00       00       00       00       00       00       00       00       00       00       00       00       00       00       00       00       00       00       00       00       00       00       00       00       00       00       00       00       00       00       00       00       00       00       00       00       00       00       00       00       00       00       00       00       00       00       00       00       00       00       00       00       00       00       00       00       00 <td< td=""><td></td><td>DESC</td><td>SOIL</td><td>GROUND ICE</td><td>▲ PERCENT SILT OR FINES ▲ 20 40 60 80</td><td>Depth(ft)</td></td<>		DESC	SOIL	GROUND ICE	▲ PERCENT SILT OR FINES ▲ 20 40 60 80	Depth(ft)
00       ORGANIC ROOT MAT       UNFROZEN       00         SAND - gravely, trace of sit, will graded sond and ongular gravel, compact, moist, reddist brown       -2.0       -2.0         -1.0       - some gravel below 0.8 m - colour changes to medium grey eround 0.8 m       -2.0       -2.0         SAND (TILL) - sity, gravely, trace of clay, well graded sond, fine to medium grained suborgular gravel, compact, domp, grey       -6.0       -6.0         -2.0       END OF TESTPIT 2.2 m (REFUSAL)       -6.0       -6.0         -3.0       END OF TESTPIT 2.2 m (REFUSAL)       -6.0       -6.0         -4.0       END Argumenting Consultants Ltd.       U0000 BP; JSB       COMPLETE: 06/07/11         Whitehorse, Tukon       REVEYED BY; JRT       COMPLETE: 06/07/11       -7.0	St					
SAND - growely, troce of sit, well gronde stand and angular growel, compact, moist, reddish brown       2.0         - some growel below 0.8 m - calour changes to medium grey cround 0.8 m       -         SAND (TILL) - sity, growilly, trace of cloy, well groded sand, fire to medium grained subangular grovel, compact, domp, grey       -         END OF TESTPIT 2.2 m (REFUSAL)       •         END OF TESTPIT 2.2 m (REFUSAL)       •         END OF TESTPIT 2.2 m (REFUSAL)       •         Solution       •         Solution       •         Solution       •         Solution       •         Solution       •         END OF TESTPIT 2.2 m (REFUSAL)       •         Solution       • <td>0.0</td> <td>ORGANIC ROOT MAT</td> <td></td> <td>UNFROZEN</td> <td></td> <td>0.0</td>	0.0	ORGANIC ROOT MAT		UNFROZEN		0.0
-4.0     -4.0     -4.0     -4.0     -4.0     -4.0     -4.0     -4.0     -4.0     -4.0     -4.0     -4.0     -4.0     -4.0     -4.0     -4.0     -4.0     -4.0     -4.0     -4.0     -4.0     -4.0     -4.0     -4.0     -4.0     -4.0     -4.0     -4.0     -4.0     -4.0     -4.0     -4.0     -4.0     -4.0     -4.0     -4.0     -4.0     -4.0     -4.0     -4.0     -4.0     -4.0     -4.0     -4.0     -4.0     -4.0     -4.0     -4.0     -4.0     -4.0     -4.0     -4.0     -4.0     -4.0     -4.0     -4.0     -4.0     -4.0     -4.0     -4.0     -4.0     -4.0     -4.0     -4.0     -4.0     -4.0     -4.0     -4.0     -4.0     -4.0     -4.0     -4.0     -4.0     -4.0     -4.0     -4.0     -4.0     -4.0     -4.0     -4.0     -4.0     -4.0     -4.0     -4.0     -4.0     -4.0     -4.0     -4.0     -4.0     -4.0     -4.0     -4.0     -4.0     -4.0     -4.0     -4.0     -4.0     -4.0     -4.0     -4.0     -4.0     -4.0     -4.0     -4.0     -4.0     -4.0     -4.0     -4.0     -4.0     -4.0     -4.0     -4.0     -4.0		SAND - gravelly, tra- graded sand and compact, moist, - some gravel b - colour change 0.8 m SAND (TILL) - silty, clay, well graded grained subangu damp, grey	d angular gravel, reddish brown pelow 0.8 m is to medium grey around gravelly, trace of I sand, fine to medium lar gravel, compact,	UNFROZEN		2.0 4.0 6.0
EBA Engineering Consultants Ltd. Whitehorse, Yukon  LOGGED BY: JSB  COMPLETION DEPTH: 2.2 m  REVIEWED BY: JRT  COMPLETE: 06/07/11  Page 1 of 1						- 12.0
EDA Engmeering consultants Ltd.     REVIEWED BY: JRT     COMPLETE: 06/07/11       Whitehorse, Yukon     Page 1 of 1						- 14.(
Whitehorse, Yukon Page 1 of 1	EBA Er	gineering Consult				
Whitehorse, Yukon Page 1 of 1		• •	REVIE	wed by: JRT		
	06/08/16 11:53444 (YUKONPO4)	whitehorse, Yukon	·····		Page 1 c	of <b>1</b>

Proposed Access Rood       EXCAVATOR: 320 C TRACKED EXCAVATOR       PROJECT NO: 1200197         Wolverine Loke, YT       UTN ZONE: 8 N6809312 E449628       LEUX/TION:         SAMPLE TYPE       GRAB SAMPLE       NO RECOVERY       STANDARD PEN.       75 mm SPOON       III ORREL BARRI.         Image: Sample Type       GRAB SAMPLE       NO RECOVERY       STANDARD PEN.       75 mm SPOON       III ORREL BARRI.         Image: Sample Type       GRAB SAMPLE       NO RECOVERY       SOIL       GROUND ICE       APERCONT SNOT         Image: Sample Type         Image: Sample Type       Image: Sample Type       Image: Sample Type       Image: Sample Type       Image: Sample Type         Image: Sample Type       Image: Sample Type       Image: Sample Type       Image: Sample Type       Image: Sample Type       Image: Sample Type         Image: Sample Type       Image: Sample Type       Image: Sample Type       Image: Sample Type       Image: Sample Type       Image: Sample Type       Image: Sample Type       Image: Sample Type         Image: Sample Type       Image: Sample Type       Image: Sample Type       Image: Sample Type       Image: Sample Type       Image: Sample Type       Image: Sample Type       Image: Sample Type
SAMPLE TYPE       GRAB SAMPLE       NO RECOVERY       STANDARD PEN       75 mm SPOON       CREL BAREL         Image: Comparison of the compact of the compact of the compact of the compact of the compact of the compact of the compact of the compact of the compact of the compact of the compact of the compact of the compact of the compact of the compact of the compact of the compact of the compact of the compact of the compact of the compact of the compact of the compact of the compact of the compact of the compact of the compact of the compact of the compact of the compact of the compact of the compact of the compact of the compact of the compact of the compact of the compact of the compact of the compact of the compact of the compact of the compact of the compact of the compact of the compact of the compact of the compact of the compact of the compact of the compact of the compact of the compact of the compact of the compact of the compact of the compact of the compact of the compact of the compact of the compact of the compact of the compact of the compact of the compact of the compact of the compact of the compact of the compact of the compact of the compact of the compact of the compact of the compact of the compact of the compact of the compact of the compact of the compact of the compact of the compact of the compact of the compact of the compact of the compact of the compact of the compact of the compact of the compact of the compact of the compact of the compact of the compact of the compact of the compact of the compact of the compact of the compact of the compact of the compact of the compact of the compact of the compact of the compact of the compact of the compact of the compact of the compact of the compact of the compact of the compact of the compact of the compact of the compact of the compact of the compact of the compact of the compact of the compact of the compact of the compact of the compact o
Image: Second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second
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0.0       00 CRGANIC ROOT MAT       UNFROZEN       0.0         SILT - sondy, fine grained, compact, moist, dark brown       SAND - gravely, trace to some silt, well graded sand, fine to medium grained gravel, compact, moist, reddish brown       0.0         -1.0       - gravel content increases becoming coarser below 1.5 m       - gravel content increases becoming coarser below 1.5 m       - GRZEN
ORGANIC ROOT MAT     UNFRÖZEN     SILT - sandy, fine grained, compact,     moist, dark brown     SAND - gravelly, trace to some silt, well     graded sand, fine to medium grained     gravel, compact, moist, reddish brown     - 1.0     - 1.0     - gravel content increases becoming     coarser below 1.5 m     FROZEN     FROZEN     FROZEN     Nbn, Vs trace     - 8.0
The second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second se
SAND - gravelly, trace to some silt, well graded sand, fine to medium grained gravel, compact, moist, reddish brown - 1.0 - 1.0 
FROZEN Nbn. Vs trace
FROZEN Nbp. Vs trace
- 1.0 - 1.0 - gravel content increases becoming coarser below 1.5 m - 2.0 - 2.0 - 8.0 - ROZEN Nbn. Vs trace
- gravel content increases becoming coarser below 1.5 m - 2.0
- gravel content increases becoming coarser below 1.5 m - 2.0
- gravel content increases becoming coarser below 1.5 m - 2.0
- gravel content increases becoming coarser below 1.5 m - 2.0 - 2.0 
- gravel content increases becoming coarser below 1.5 m - 2.0 - 2.0 Gravel content increases becoming coarser below 1.5 m 
- 2.0 - 2.0 
- 2.0 - 2.0 
- 2.0 - 2.0 
- 2.0 - 2.0 - FROZEN Nbn. Vs trace
- 2.0 - FROZEN Nbn. Vs trace
FROZEN Non. Vs trace
FROZEN Non. Vs trace
END OF TESTPIT 2.5 m (REFUSAL)
EBA Engineering Consultants Ltd. LOGGED BY: JSB COMPLETION DEPTH: 2.5 m REVIEWED BY: JRT COMPLETE: 06/07/11
Whitehorse, Yukon Page 1 of 1

Proposed Access Food         DCANTOR:         STANCE FLANCE         PROJUNT RO         PROJUCT NO. 120197           SMPPLE TYPE         OXE SWIPE         IMIX 2001:         SIMULAD FOL         To an arrow III CREAMER SLIPSTICM         DESCRIPTION           SMPLE TYPE         OXE SWIPE         IMIX 2001:         SIMULAD FOL         To an arrow III CREAMER SLIPSTICM         PARSON SWOP SWOP         Imix 2001:           SMPLE TYPE         OXE SWIPE         IMIX 2001:	Geotechn					a,	CLIENT: Yukon Enginee			TES	st pit	NO:	12	2001	97-T	P <u>27</u>
SMMPLE TYPE         DR40 SWPLE         MORECORER         STANDARD PPL         P35 mm SPON         Description         PROPERTING NOT WITH A MORECORER         PROPERTING NOT WITH A MORECORE OF MORECORER         PROPERTING NOT WITH A MORECORE OF MORECORER         PROPERTING NOT WITH A MORECORE OF MORECORE OF MORECORE OF MORECORE OF MORECORE OF MORECORE OF MORECORE OF MORECORE OF MORECORE OF MORECORE OF MORECORE OF MORECORE OF MORECORE OF MORECORE OF MORECORE OF MORECORE OF MORECORE OF MORECORE OF MORECORE OF MORECORE				oad						<u>ا</u>			1200	197		
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200       ORCANIC ROOT MAT       UNFROZEN       001         SULT - sandy, trace of fine gravel       GRWEL (TIL) - sandy, some sit, trace of clay, well graded sand, subronded gravel, light gray       - coare gravels and cobiles       -20         - 10       - coare gravels and cobiles       - coare gravels and cobiles       -20         - 10       - trace to some sit below 2.0 m       - trace to some sit below 2.0 m       - e.0         - 20       - trace to some sit below 2.0 m       - trace to some sit below 2.0 m       - e.0         - 20       - trace to some sit below 2.0 m       - e.0       - e.0         - 10       - trace to some sit below 2.0 m       - e.0       - e.0         - 10       - trace to some sit below 2.0 m       - e.0       - e.0         - 10       - trace to some sit below 2.0 m       - e.0       - e.0         - 10       - trace to some sit below 2.0 m       - e.0       - e.0         - 10.0       - e.0       - e.0       - e.0       - e.0         - 10.0       - e.0       - e.0       - e.0       - e.0         - 10.0       - e.0       - e.0       - e.0       - e.0         - 10.0       - e.0       - e.0       - e.0       - e.0         - 10.0       - e.0       - e.0       - e.0 </td <td>Depth(m) SAMPLE TYPE</td> <td>RUN NO</td> <td>SPT(N)</td> <td>nsc</td> <td>SOIL SYMBOL</td> <td></td> <td></td> <td></td> <td></td> <td></td> <td>2</td> <td>10 ■ PE 10 ПС</td> <td>40 ( RCENT : 40 ( M.C.</td> <td>60 Sand II</td> <td>80 80</td> <td>Depth(ft)</td>	Depth(m) SAMPLE TYPE	RUN NO	SPT(N)	nsc	SOIL SYMBOL						2	10 ■ PE 10 ПС	40 ( RCENT : 40 ( M.C.	60 Sand II	80 80	Depth(ft)
SULT - sandy. trace of fine gravel     Sult - sandy. trace of fine gravel       GRAVEL (TiLL) - sandy, some silt, brace of clay, well graded sand, subrounded gravel, light gray     - coarse gravels and cobbles       - to a gravel, light gray     - coarse gravels and cobbles       - trace to some silt below 2.0 m     - trace to some silt below 2.0 m       - trace to some silt below 2.0 m     - trace to some silt below 2.0 m       - trace to some silt below 2.0 m     - trace to some silt below 2.0 m       - trace to some silt below 2.0 m     - trace to some silt below 2.0 m       - trace to some silt below 2.0 m     - trace to some silt below 2.0 m       - trace to some silt below 2.0 m     - trace to some silt below 2.0 m       - trace to some silt below 2.0 m     - trace to some silt below 2.0 m       - trace to some silt below 2.0 m     - trace to some silt below 2.0 m       - trace to some silt below 2.0 m     - trace to some silt below 2.0 m       - trace to some silt below 2.0 m     - trace to some silt below 2.0 m       - trace to some silt below 2.0 m     - trace to some silt below 2.0 m       - trace to some silt below 2.0 m     - trace to some silt below 2.0 m       - trace to some silt below 2.0 m     - trace to some silt below 2.0 m       - trace to some silt below 2.0 m     - trace to some silt below 2.0 m       - trace to some silt below 2.0 m     - trace to some silt below 2.0 m       - trace to some silt below 2.0 m     - tr	0.0					ORCANIC POOT MAT					1	0	20	30	40	- 00
EBA Engineering Consultants Ltd.						SILT — sandy, trace (	-		UNFRUZEN							
- trace to some sit below 2.0 m - trace to some sit below 2.0 m FROZEN Vc, Vr, trace - trace to some sit below 2.0 m - trace trace to some sit below 2.0 m - trace to some sit below 2.0 m - trace to some sit below 2.0 m - trace to some sit below 2.0 m - trace to some sit below 2.0 m - trace to some sit below 2.0 m - trace to some sit below 2.0 m - trace to some sit below 2.0 m - trace to some sit below 2.0 m - trace to some sit below 2.0 m - trace to some sit below 2.0 m - trace to some sit below 2.0 m - trace to some sit below 2.0 m - tr	-					clay, well graded gravel, light grey — coarse gravels	sand, subrounded and cobbles	F								2.0
EBA Engineering Consultants Ltd.																4.0
END OF TESTPIT 2.4 m (REFUSAL) -3.0 -4.0 EBA Engineering Consultants Ltd. EBA Engineering Consultants Ltd. LCCCED BY: JSB REVIEWED BY: JSB COMPLETION DEPTH: 2.4 m REVIEWED BY: JSB COMPLETION DEPTH: 2.4 m REVIEWED BY: JSB COMPLETION DEPTH: 2.4 m	- - - - 2.0					— trace to some	silt below 2.0 m									6.0
EBA Engineering Consultants Ltd.  LOGGED BY: JSB  COMPLETION DEPTH: 2.4 m  REVIEWED BY: JRT  COMPLETE: 06/07/11											•					- Lucul 8.0
EBA Engineering Consultants Ltd.	- - - 3.0 - - -															10.0 10.0
EBA Engineering Consultants Ltd. LOGGED BY: JSB COMPLETION DEPTH: 2.4 m REVIEWED BY: JRT COMPLETE: 06/07/11																12.0
EDA Engineering Consultants Ltd. Reviewed BY: JRT COMPLETE: 06/07/11	- - -															14.0
	E E	BA	En	gin	eei	ring Consulta	ants Ltd.									
								REVIE			ICOM 	-itit	: 06/(	0771		1 of 1



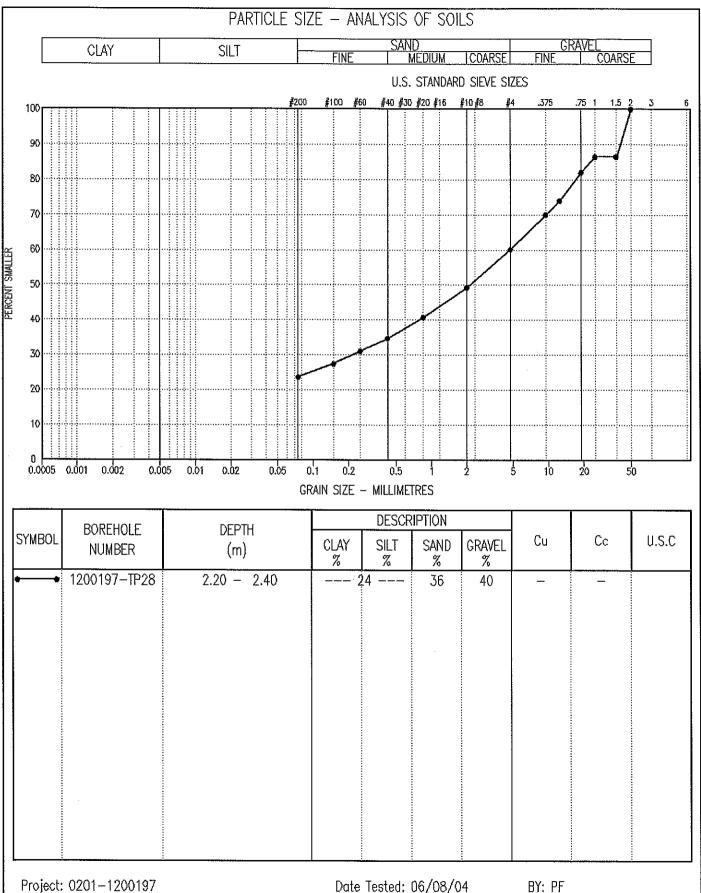
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Date Tested: 06/08/04

BY: PF



Geote				-	1		CLIENT: Yukon Enginee			test	PIT	NO:		120	0197-	-TP28
Propo				oad			EXCAVATOR: 320 C TR			PROJ	ECT	NO	: 12	0019	7	
Wolve							UTM ZONE: 8 N6809	186 E4	49222	 elev,	ATIC	N:				
SAMP	LE	TYPE		GR∕	ib san	MPLE NO RECOVER	ry 🛛 🛛 Standard pen.		75 mm SPOON	BARR						
Depth(m)	SAMPLE TYPE	RUN NO	SPT(N)	nsc	SOIL SYMBOL		SOIL CRIPTION		GROUN DESCRI		2	0 ■ Pf 0	40 ERCEN 40	LT OR 60 NT SAN 60 .C.	FINES ▲ 80 10 ■ 80 LIQU	Depth(ft)
	S.				S						+ 1	0	20	<b>3</b> 0	[ 40	
0.0 - - - - - - - - - - - - -						medium grained compact, damp,	ded sand, fine to subangular gravels, light greyish brown t increases with depth below 0.4 m		UNFROZEN FROZEN Vc, 5-10%	-		0	20	30		0.0 2.0 4.0 6.0 10.0
- - - - - - - - - - - - - - - - - - -																
	F	R۵	En	gin	ρρ	ring Consult	ants Itd		ED BY: JSB						1: 2,4	n
	لت	υų	ЦIJ	~		0	unto Ltu.	REVIE	WED BY: JRT	 C	:OMF	PLET	E: 08	ŝ/07,		
06/08/16	11:53/	M (YUK)	)NP04}		WNI	<u>tehorse, Yukon</u>									Pag	e 1 of 1
		-	-													



Date Tested: 06/08/04

BY: PF

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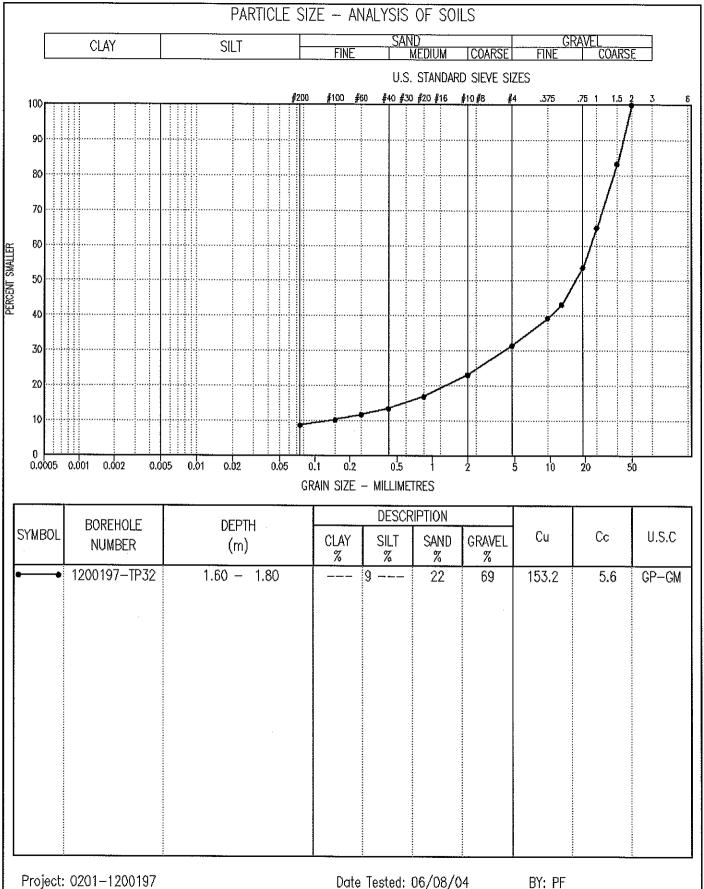


Geotech		_	-	n		CLIENT: Yukon Enginee	ing Services	Т	est pi	t no	:	1200	197-T	P29
Propose	ed A	cess	Road			EXCAVATOR: 320 C TRA	CKED EXCAVATOR	P	ROJEC	T NC	): 12(	00197		
Wolverin			-			UTM ZONE: 8 N68090	53 E449036	۱E.	LEVATI	ON:				
SAMPLE	E TY	ЪЕ	GR	ab san	VPLE 🛛 NO RECOVER	y 🛛 🕅 Standard Pen.	75 mm SPOON	CRREL E	BARREL					
Depth(m)	DAMPLE ITE	SPT(N)	usc ,	SOIL SYMBOL	DESC	SOIL CRIPTION		ND ICE RIPTION	PLAS	20 P 20 STIC	40 ERCEN 40 M.º	·	80 80 LIQUID	Depth(ft)
4	+	_								10	20	30	40	
					angular sand an moist, light grey	is and cobbles below	UNFROZEN FROZEN Vc, Vr trace					30		0.0 2.0 6.0 10.0 10.0 10.0
- - - - -														14.0
╞──┴			I						1001	101			<u> </u>	<u></u>
I F	ΞB	A E	ngir	iee	ring Consult	ants Ltd.	LOGGED BY: JSB					DEPTH:		
			-0				REVIEWED BY: JRT			17LE	L: UC	6/07/		1 . # +
L				WIII	<u>tehorse, Yukon</u>								Page	1011

EBA Engineering Consultants Ltd. Whitehorse, Yukon	Geotechnical Investigation	CLIENT: Yukon Engineering S		TEST PIT NO: 1200197TP30		
SMPLE TYPE       Image: Severe severe severe severe severe severe severe severe severe severe severe severe severe severe severe severe severe severe severe severe severe severe severe severe severe severe severe severe severe severe severe severe severe severe severe severe severe severe severe severe severe severe severe severe severe severe severe severe severe severe severe severe severe severe severe severe severe severe severe severe severe severe severe severe severe severe severe severe severe severe severe severe severe severe severe severe severe severe severe severe severe severe severe severe severe severe severe severe severe severe severe severe severe severe severe severe severe severe severe severe severe severe severe severe severe severe severe severe severe severe severe severe severe severe severe severe severe severe severe severe severe severe severe severe severe severe severe severe severe severe severe severe severe severe severe severe severe severe severe severe severe severe severe severe severe severe severe severe severe severe severe severe severe severe severe severe severe severe severe severe severe severe severe severe severe severe severe severe severe severe severe severe severe severe severe severe severe severe severe severe severe severe severe severe severe severe severe severe severe severe severe severe severe severe severe severe severe severe severe severe severe severe severe severe severe severe severe severe severe severe severe severe severe severe severe severe severe severe severe severe severe severe severe severe severe severe severe severe severe severe severe severe severe severe severe severe severe severe severe severe severe severe severe severe severe severe severe severe severe severe severe severe severe severe severe severe severe severe severe severe severe severe severe severe severe severe severe severe severe severe severe severe severe severe severe severe severe severe severe severe severe severe severe s				PROJECT NO: 1200197		
EEBA Engineering Consultants Ltd.       Image: Consultants Ltd.       Image: Consultants Ltd.       Image: Consultants Ltd.       Image: Consultants Ltd.       Image: Consultants Ltd.       Image: Consultants Ltd.       Image: Consultants Ltd.       Image: Consultants Ltd.       Image: Consultants Ltd.       Image: Consultants Ltd.       Image: Consultants Ltd.       Image: Consultants Ltd.       Image: Consultants Ltd.       Image: Consultants Ltd.       Image: Consultants Ltd.       Image: Consultants Ltd.       Image: Consultants Ltd.       Image: Consultants Ltd.       Image: Consultants Ltd.       Image: Consultants Ltd.       Image: Consultants Ltd.       Image: Consultants Ltd.       Image: Consultants Ltd.       Image: Consultants Ltd.       Image: Consultants Ltd.       Image: Consultants Ltd.       Image: Consultants Ltd.       Image: Consultants Ltd.       Image: Consultants Ltd.       Image: Consultants Ltd.       Image: Consultants Ltd.       Image: Consultants Ltd.       Image: Consultants Ltd.       Image: Consultants Ltd.       Image: Consultants Ltd.       Image: Consultants Ltd.       Image: Consultants Ltd.       Image: Consultants Ltd.       Image: Consultants Ltd.       Image: Consultants Ltd.       Image: Consultants Ltd.       Image: Consultants Ltd.       Image: Consultants Ltd.       Image: Consultants Ltd.       Image: Consultants Ltd.       Image: Consultants Ltd.       Image: Consultants Ltd.       Image: Consultants Ltd.       Image: Consultants Ltd.       Image: Consultants Ltd.       Image: Consultan			48792	ELEVATION:		
EEBA Engineering Consultants Ltd.         Image: Source of the source of the source of the source of the source of the source of the source of the source of the source of the source of the source of the source of the source of the source of the source of the source of the source of the source of the source of the source of the source of the source of the source of the source of the source of the source of the source of the source of the source of the source of the source of the source of the source of the source of the source of the source of the source of the source of the source of the source of the source of the source of the source of the source of the source of the source of the source of the source of the source of the source of the source of the source of the source of the source of the source of the source of the source of the source of the source of the source of the source of the source of the source of the source of the source of the source of the source of the source of the source of the source of the source of the source of the source of the source of the source of the source of the source of the source of the source of the source of the source of the source of the source of the source of the source of the source of the source of the source of the source of the source of the source of the source of the source of the source of the source of the source of the source of the source of the source of the source of the source of the source of the source of the source of the source of the source of the source of the source of the source of the source of the source of the source of the source of the source of the source of the source of the source of the source of the source of the source of the source of the source of the source of the source of the source of the source of the source of the source of the source of the source of the source of the source of the source of the source of the source of the source of the source of the source of the source of the source of the sourc	SAMPLE TYPE <b>GRAB</b> SAMPLE IN RECOVER	y 🛛 Standard pen. 📃	75 mm SPOON			
00       ORGANIC ROOT MAT       UNFROZEN       00         SAND (TILL) - sity, trace of ckoy, growth, correct, drm, coorse orgular sond and growth, drik grey       -20         -10       - coorser growth, some cabbles belox       -40         -20       - colour changes to greyish brown around 1.2 m       -600         -20       END OF TESTPIT 2.0 m (REFUSAL)       FROZEN         -30       END OF TESTPIT 2.0 m (REFUSAL)       -700         -40       -700       -700         -40       -700       -700         -40       -700       -700         -40       -700       -700         -40       -700       -700         -40       -700       -700         -40       -700       -700         -40       -700       -700         -40       -700       -700         -40       -700       -700         -40       -700       -700         -40       -700       -700         -40       -700       -700         -40       -700       -700         -40       -700       -700         -40       -700       -700         -40       -700       -700 <t< td=""><td>Depth(m) RUN NO USC SOIL SYMBOL</td><td></td><td></td><td>20 40 60 80 ■ PERCENT SAND ■ 20 40 60 80 PLASTIC M.C. LIQUID 1</td></t<>	Depth(m) RUN NO USC SOIL SYMBOL			20 40 60 80 ■ PERCENT SAND ■ 20 40 60 80 PLASTIC M.C. LIQUID 1		
Image: Severity of the severity of the severity of the severity of the severity of the severity of the severity of the severity of the severity of the severity of the severity of the severity of the severity of the severity of the severity of the severity of the severity of the severity of the severity of the severity of the severity of the severity of the severity of the severity of the severity of the severity of the severity of the severity of the severity of the severity of the severity of the severity of the severity of the severity of the severity of the severity of the severity of the severity of the severity of the severity of the severity of the severity of the severity of the severity of the severity of the severity of the severity of the severity of the severity of the severity of the severity of the severity of the severity of the severity of the severity of the severity of the severity of the severity of the severity of the severity of the severity of the severity of the severity of the severity of the severity of the severity of the severity of the severity of the severity of the severity of the severity of the severity of the severity of the severity of the severity of the severity of the severity of the severity of the severity of the severity of the severity of the severity of the severity of the severity of the severity of the severity of the severity of the severity of the severity of the severity of the severity of the severity of the severity of the severity of the severity of the severity of the severity of the severity of the severity of the severity of the severity of the severity of the severity of the severity of the severity of the severity of the severity of the severity of the severity of the severity of the severity of the severity of the severity of the severity of the severity of the severity of the severity of the severity of the severity of the severity of the severity of the severity of the severity of the severity of the severity of the severity			LINFROZEN	PROJECT NO: 1200197 ELEVATION: L BARREL A PERCENT SILT OR FINES A 20 40 60 80 PLASTIC M.C. LIQUID 10 20 30 40 0.00 		
EDA Engineering Consultants Ltd. REVIEWED BY: JRT COMPLETE: 06/07/11 Whitehorse Yukon Page 1 of 1	SAND (TILL) – silty, gravelly, compact angular sand and - coarser gravel 1.2 m - colaur change around 1.2 m - 3.0 - 3.0	t, damp, coarse d gravel, dark grey l, some cobbles below s to greyish brown	FROZEN			
EDA Engineering Consultants Ltd. REVIEWED BY: JRT COMPLETE: 06/07/11 Whitehorse Yukon Page 1 of 1			ED BY: JSB	COMPLETION DEPTH: 2 m		
Whitehorse Yukon Page 1 of 1						
	Whitehorse, Yukon 06/08/16 11:544M (YUKONPD4)		1991 - M			

Proposed Access Rood         ECANTOR: 320 C TRACKED EXAMINE         PROLECT NO: 130(197           SAMPLE TYPE         Sode SWFLE         UN RECORD CFK         STANDARD FEL         ELDATOR:         PLOADER         ELDATOR:         PROCESS CRIPTION           SAMPLE TYPE         Sode SWFLE         SOIL         CROUND ICE         PROCESS CRIPTION         PROCESS CRIPAND FEL SCRIPTION         PROCESS CRIPTION	Geotechnical Investigation	CLIENT: Yukon Engineering S	Services	TEST PIT NO: 120	0197-TP31
SMPLE TIPE       IDARE SWIPLE       IDO RECOVERY       STATUMENT PEN       IDO RECOVERY       STATUMENT PEN       IDO RECOVERY       IDO RECOVERY <td< td=""><td>Proposed Access Road</td><td>EXCAVATOR: 320 C TRACKED</td><td>) EXCAVATOR</td><td>PROJECT NO: 120019</td><td>7</td></td<>	Proposed Access Road	EXCAVATOR: 320 C TRACKED	) EXCAVATOR	PROJECT NO: 120019	7
Image: Section of the section of the section of the section of the section of the section of the section of the section of the section of the section of the section of the section of the section of the section of the section of the section of the section of the section of the section of the section of the section of the section of the section of the section of the section of the section of the section of the section of the section of the section of the section of the section of the section of the section of the section of the section of the section of the section of the section of the section of the section of the section of the section of the section of the section of the section of the section of the section of the section of the section of the section of the section of the section of the section of the section of the section of the section of the section of the section of the section of the section of the section of the section of the section of the section of the section of the section of the section of the section of the section of the section of the section of the section of the section of the section of the section of the section of the section of the section of the section of the section of the section of the section of the section of the section of the section of the section of the section of the section of the section of the section of the section of the section of the section of the section of the section of the section of the section of the section of the section of the section of the section of the section of the section of the section of the section of the section of the section of the section of the section of the section of the section of the section of the section of the section of the section of the section of the section of the section of the section of the section of the section of the section of the section of the section of the section of the section of the section of the section of the section of the section of the section of the section of the section of th			448518	ELEVATION:	
EBA Engineering Consultants Ltd.       Coore Dry 388	SAMPLE TYPE <b>GRAB</b> SAMPLE NO RECO	very 🛛 Standard pen.	75 mm SPOON		
COUNT       UNFROZEN       COUNTROZEN         SAND (TILL) – sity, growely, troce of idsy, well groded sand and angular movel, compact, domp, medium grey       FROZEN       -20         Tub       END OF TESTPTI 0.3 m       FROZEN       -20         Tub       END OF TESTPTI 0.3 m       -20         Tub       FROZEN       -20         Tub       -20	Depth(m) SAMPLE TYPE RUN NO SPT(N) USC SOLL SYMBOL			20 40 60 ■ PERCENT SAN 20 40 60 PLASTIC M.C.	Depth(ft)
SAND (TILL) - sity, growelly, trace of cloy, well groded sand and angular growel, compact, damp, medium grey END OF TESTENT 0.3 m -10 -10 -10 -10 -10 -10 -10 -10 -10 -10		Τ		10 20 30	40
EBA Engineering Consultants Ltd. LOGGED BY: JSB COMPLETION DEPTH: 0.3 m REVIEWED BY: JRT COMPLETE: 06/07/11	SAND (TILL) - sili clay, well gra- gravel, compo END OF TESTPIT (	y, gravelly, trace of led sand and anaular	FROZEN		4.0
EDA Engineering consultants Ltd. REVIEWED BY: JRT COMPLETE: 06/07/11					12.0 
	EBA Engineering Consu				

Geote	chni	cal	Invest	igatior	1		CLIENT: Yukon Engineer	ring S	ervices	T	EST PIT	NO:	120	0197-1	P32
Propo	sed	Acc	ess R	load			EXCAVATOR: 320 C TRA			P	ROJECT	NO:	120019		
Wolve						1	UTM ZONE: 8 N68090	99 E4	48354	E	LEVATIC	)N:			
SAMP	LE	TYPE		GRA	b sai	IPLE NO RECOVERY	Standard pen.		75 mm SPOON	CRREL E	ARREL				
Depth(m)	SAMPLE TYPE	RUN NO	SPT(N)	nsc	SYMBOL		OIL		GROUN	id ice	2	0 4	f Silt or 10 60 ICENT SAN 10 60	80	Depth(ft)
Dep	SAMP	R	2		SOIL	DESCI	RIPTION		DESCRI	PTION	PLAST H		M.C.	Liquid 	Dep
0.0					<u> </u>	ORGANIC ROOT MAT			UNFROZEN		1	0 2	0 30	40	E 0.0
- - - - - - - -						moist, compact, g	or sand and gravel,	ì							1. 1. 1. 1. 1. 1. 1. 1. 1. 1. 1. 1. 1. 1
															4.0 1000-1000-1000-1000-1000-1000-1000-10
- 2.0 						END OF TESTPIT 1.8 m	n (REFUSAL)		FROZEN Vx, Vr trace		•				6.0
- - - -															
3.0   															— 10.0 — 10.0
- - - 4_0 -															12.0 12.0
-															
	<u>ו</u> ק	2 A	ሆኯ	ain	 	ing Conquilto	ntaIta	LOGGE	D BY: JSB		COMF	<u>: :</u> Pletio	n depti-	l: 1.8 m	<u>_}_</u>
	ائا	JA	ЦЦ			ring Consulta			VED BY: JRT				06/07/	/11	
06/08/16	11:544	A (YUKO	)NPO4)		whit	ehorse, Yukon		<u> </u>						Page	1 of 1



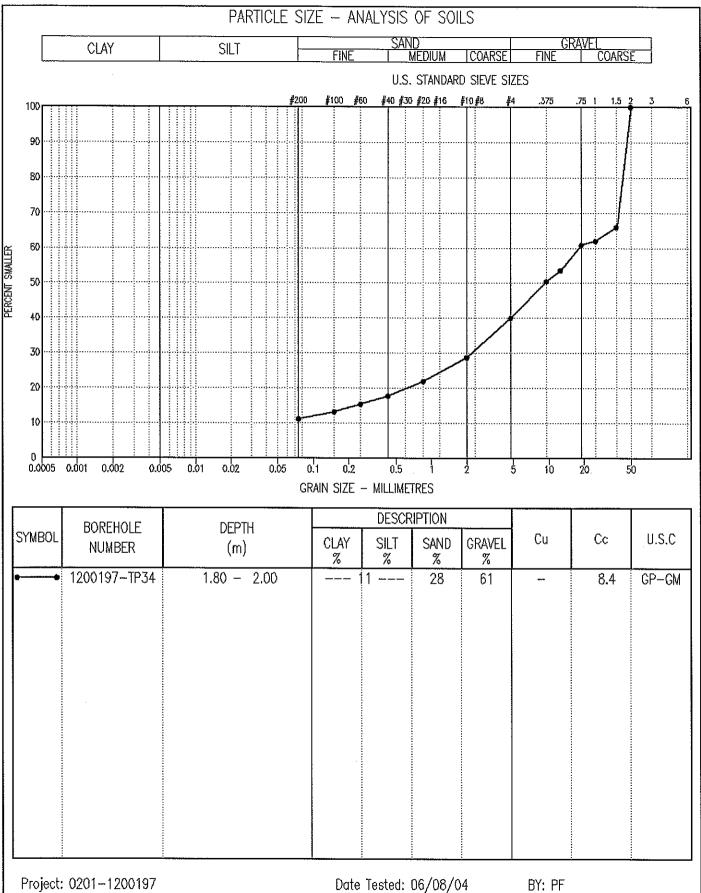
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BY: PF



Geotechnical Inv				CLIENT: Yukon Enginee	ering S	ervices	TE	ST PIT N	0:	1200	)197-T	P33
Proposed Acces				EXCAVATOR: 320 C TR			PF	ROJECT N	10: 12	00197	7	
Wolverine Lake,				UTM ZONE: 8 N68089				EVATION:				
SAMPLE TYPE	GRA	3 SAM	PLENO RECOVER	y Standard pen.		75 mm SPOON	EL BA					
Depth(m) SAMPLE TYPE RUN NO	SPI(N) USC	SYMBOL	( N	SOIL		GROUND ICE		20	40	LT OR 1 60 NT SANE 60	80	Depth(ft)
Dept SAMPL RUN	U SP	s oil	DESC	CRIPTION		DESCRIPTION		PLASTIC		I.C.	LIQUID	Dept
0.0			ORCANIC ROOT MAT					10	20	30	40	- 00
			ORCANIC ROOT MAT SILT - sandy, fine g compact, reddist SAND (TILL) - silty, clay, coarse san subangular, com - coarser anguk below 1.2 m	rained, moist, h brown gravelly, trace of d and gravel, pact, moist, grey ar gravels and cobbles silt below 1.5 m (a-volcanic) — fairly quality	<u> </u>	UNFROZEN FROZEN Vx, Vr trace		10 •	20	30		10.0 10.0 10.0 10.0 10.0 10.0
- 4.0 												
				LT_L_]	LOGGE	D BY: JSB			TION	DEPTH	<u>: : :</u> :2 m	╘──┤
EBA I	ungin	eer	ring Consult	ants Ltd.		VED BY: JRT		COMPLI				
			<u>ehorse, Yukon</u>							-1 = 1	Page	1 of 1
06/08/16 11:54AM (YUKONP	04)										- 9.*	<u> </u>

				igatior	<u>)</u>			Yukon Engined				st pit			)197–T	P34
Propo				load		·····		TOR: 320 C TR			_			120019	7	
Wolve SAMP				004				NE: 8 N6808				evatio	N:			
Depth(m)	SAMPLE TYPE	Ţ		USC USC	SYMBOL 8	( 	SOIL	STANDARD PEN.		75 mm SPOON CRRI GROUND ICE	EL BA	▲ P 2	0 4 ■ PER	FSILTOR 0 60 CENTSANI 0 60	80	Depth(ft)
De	SAMF	R	S		SolL	DESC	'RIP'I	lion		DESCRIPTION		PLAST	10	M.C.	LIQUID	Dep
0.0				- <u>.</u>	<u> </u>	ORGANIC ROOT MAT	· .	<del></del>		UNFROZEN			0 2	0 30	40	- 0.0
- - - - - - - - - - - - -						GRAVEL — sandy, cou angular gravel an moist, grey — coarser gravel 0.8 m — less sand with — some silt belo	nd sand, Is and ca ı depth	compact, obbles belaw	ê.							4.0
						END OF TESTPIT 2.0	m			FROZEN Vx, Vr trace						8.0 8.0
- - - - - - - - - - - - - - - - - - -																14.0
	<u>ויק</u>	D A	 די~		<u> </u>	sing Canali		11.1	LOGGE	L D BY: JSB				in depti		<u>+</u>
	Ŀ.	DΑ	сn			ring Consult	ants	LLU.		WED BY: JRT				06/07		
06/08/15	03:53	<u>PM (YUKO</u>	NPO4)		Whit	<u>ehorse, Yukon</u>										1 of 1



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Geote				-	1		CLIENT: Yukon Enginee		T	iest pit n	0: 1200	)197-T	P35
Ргоро		*******		oad			EXCAVATOR: 320 C TR				0: 1200197	7	
Wolver						·	UTM ZONE: 8 N68084			ELEVATION:			
SAMP	LE	TYPE		GRA	B SAN	IPLE 🛛 NO RECOVER	y 🛛 Standard pen.	75 mm S₽00N					
Depth(m)	SAMPLE TYPE	RUN NO	SPT(N)	nsc	SOIL SYMBOL		SOIL RIPTION		JND ICE RIPTION	20	CENT SILT OR F 40 60 PERCENT SANE 40 60 M.C.	80	Depth(ft)
0.0						ORGANIC ROOT MAT				10	20 30	40	- 0.0
- - - - - - - - - - - - - - -						SILT — sandy, fine g medium brown SAND (TILL) — grave clay, well graded		UNFROZEN					
- - - -						BEDROCK — sand an weathered and fr	d silt infilled, highly ractured, fair quality						
- - - 2.0 -						END OF TESTPIT 1.8	m (REFUSAL)	FROZEN Vc, Vr trace	3				1 6.0
- - - - - -													8.0 1.1.1.1.1.1.1.1.1.1.1.1.1.1.1.1.1.1.1
-													10.0 10.0
- - - 4.0 - - -													14.0
	יק	R۸	Fn	ain	<u>،</u> مص	ring Consult	ants Itd	Logged by: JSB			TION DEPTH		<u> </u>
	ЦЦ	υA	للظ	~		0	ants Ltu.	Reviewed by: JRT		COMPLE	ETE: 06/07/		
06708/16	11:54/	M MUK	NPO4}		<u>Whi</u>	<u>tehorse, Yukon</u>						Page	1 of 1

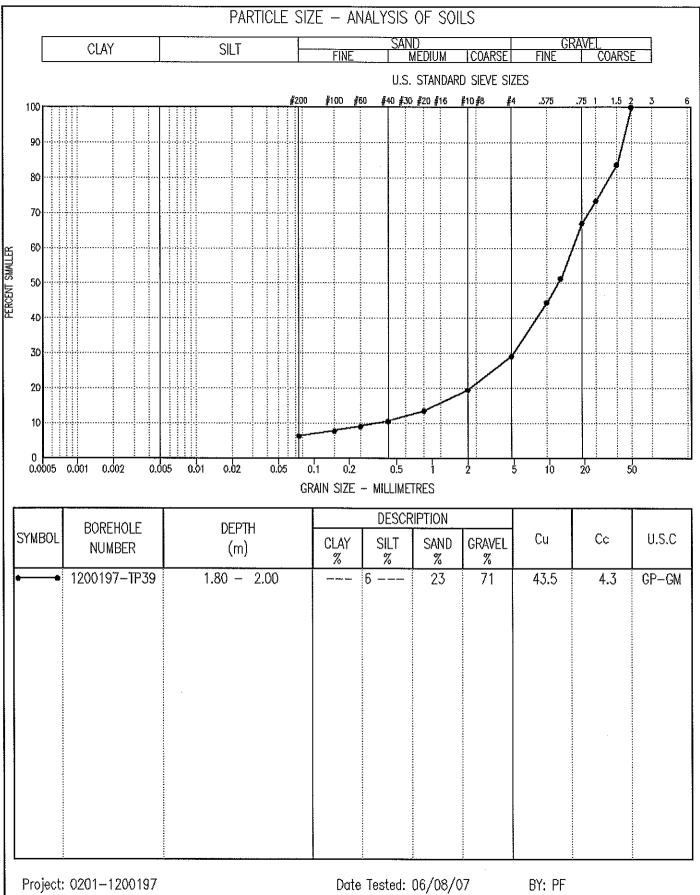
Geote				•	١		CLIENT: Yukon Enginee	ering S	ervices		TEST PI	T NO:		1200	197-T	P36
Propo				baq		·····	EXCAVATOR: 320C TRA	CKED	EXCAVATOR		PROJEC	T NO	: 120	0197		
Wolver							UTM ZONE: 8 N6808				ELEVATI	ON:				
SAMP	LE	TYPE		GRA	B SAN	IPLE 🛛 NO RECOVER	y Standard pen.		75 mm SPOON							
Depth(m)	SAMPLE TYPE	RUN NO	SPT(N)	usc	SYMBOL		SOIL		GROUND	ICE		20	40	T OR F 60 SAND 60	NES ▲ 80 ■ 80	Depth(ft)
Dep	SAMP	R	L.S.	_	SOIL	DESC	RIPTION		DESCRIPI	TION	PLAS H		M.(		LIQUID	Dep
0.0						ORGANIC ROOT MAT			UNFROZEN			10	20	30	40	E 0.0
E						SILT — sandy, fine gi	ained, compact,									È
Ľ						moist, dark brow	n									Ē
-						BEDROCK (PHYLLITE)	- sand and silt,									Ē
-						infilled, angular, highly fractured	weamerea ana					-				Ē
-							ig throughout testpit									2.0
-							• • •				۲					
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1.0		ļ				larao osbaloo	with come header									Ē
-						sized angular roc	with some boulder & below 1.0 m									Ē
-						bibba angalar rbe										F 4.0
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L																,E
-						END OF TESTPIT 1.5	ពា									Εl
-						- sloughing										F
F																E- 6.0
- 2.0																
- 2.0																
-																Ē
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	E	BA	En	gin	ee	ring Consult	ants Ltd.		⊡ BY: JSB ∦ED BY: JRT						1.5 m	
		. 2				tehorse, Yukon		IVENE				TLEI	L: UD	/07/		<u>1 of 1</u>
06/08/16	11-577		ONDERAS												- 7	

eotechnical Inv		1	-	CLIENT: Yukon Enginee	ring S	ervices		TEST PIT	NO:	120	00197-	-TP37
roposed Access				EXCAVATOR: 320C TRAC	CKED	EXCAVATOR		PROJECT	NO:	12001	97	
lolverine Lake, '				UTM ZONE: 8 N68080	66 E4	47667		ELEVATIO	N:			
AMPLE TYPE	GR4	18 SAM	IPLE 🛛 NO RECOVER	( 🛛 🛛 STANDARD PEN.		75 mm SPOON	CRREL					
Depth(m) <u>SAMPLE TYPE</u> RUN NO		SOIL SYMBOL		SOIL RIPTION		GROUN DESCRII		2 2 PLAST	0 4 ■ PER 0 4	10 67 ICENT SA 10 60 M.C.	ND ■ > 80 ⊔QL	oth(ft)
0.0			ORGANIC ROOT MAT			LINEROZEN		1	<u>)</u> 2	0 30	) 40	- 0.0
0.0 1.0 2.0 3.0			moist, grey — angular cobble 0.4 m	l gravel, compact, s and boulders below increases below 0.8 r	n	UNFROZEN						
	1 .					D BY: JSB	<u>.</u>				H: 1.8	
EBA E	ingin	eei	ring Consult			WED BY: JRT				06/0		11
	~		ehorse, Yukon		IVE A IE	ואריום חייאע		UVWI:		<u>vo/0</u> .		e 1 of 1

Geotechnical Investigation												EST PIT NO: 1200197-TP38							
Proposed Access Road													ROJECT NO: 1200197						
Wolve							UTM ZONE: 8 N68079	72 E447578			EVATI	ION:							
SAMP	LE	TYPE		GR4	ib sai	IPLE NO RECOVER	y 🛛 Standard pen.	75 mm 5	≫DOON ∭CRF	el Ba									
Depth(m)	SAMPLE TYPE	RUN NO	SPT(N)	nsc	SOIL SYMBOL		SOIL CRIPTION		ROUND ICE		PLAS	20 ■1 20	40 PERCEN 40	LT OR F 60 VT SAND 60 .C.	80	Depth(ft)			
												10	20	30	40				
0.0 - - -						ORGANIC ROOT MAT GRAVEL (TILL) - san grained angular compact, damp, some silt belo	gravel and sand, light greyish brown	UNFRO	ZEN										
- - - 							ser grained with cobble	es				•••							
																- 4.0 			
- - 2.0 - -						— becomes silty — less gravel be					•••••	•				Lut Lut Lut Lut Lut Lut Lut L			
- - - -						END OF TESTPIT 2.5 some sloughin													
																10.0 10.0			
 - - 4.0																12.0 1			
- - -															2	14.0			
1	E]	BA	En	gin	ee	ring Consult		Logged by: J Reviewed by:							2.5 m				
1		_		<u> </u>		tehorse, Yukon		IVEAIEMED RI;	171			wr∠L	IE: Ot	6/07/	12 Page	1 of 1			
06/08/16	11:544	W M K	INPID4)			STOLOS, LOWAL					1				i uye				

Geotechnical Investigation							CLIENT: Yukon Engineering Services				test pit no: 1200197-TP39							
Proposed Access Road													ROJECT NO: 1200197					
Wolverine Lake, YT UTM ZONE: 8 N6807										EVATION:								
SAMP	LE 1	IYPE		GRA	b sak	IPLE 🖉 NO RECOVERY 🛛 STANDARD PEN.		75 mm SPOON CRREI	BA									
Depth(m)	SAMPLE TYPE	RUN NO	SPT(N)	nsc	SOIL SYMBOL	SOIL DESCRIPTION		GROUND ICE DESCRIPTION		20 Plastic	40 6 ERCENT 9 40 6 M.C.	60 8 GAND∎ 60 8 L	0 0 1QUID 1	Depth(ft)				
0.0						ORGANIC ROOT MAT		UNFROZEN			20 2	50 4	0	<u> </u>				
0.0 - - - - - - - - - - - - - - - - - -						ORGANIC ROOT MAT GRAVEL (FLUVIAL) sandy, some silt, well graded subrounded, subangular gravel and sand, compact, moist, light reddish grey - some cobbles throughout - trace of silt below 1.0 m END OF TESTPIT 2.5 m - some sloughing throughout		UNFROZEN				<u>30</u> 4		12.0				
- - 																		
				L	1			D RV. ISP				<u> </u>	<u> </u>	<u>r</u>				
	EI	BA	En	lgin	ee			D BY: JSB NED BY: JRT		COMPLET COMPLET			o m					
				<u> </u>			- 4 15.4	ALD DI. 91/1		DOM/LET	L. V0/1		Daaa	1 AF 1				
06/08/16	Whitehorse, Yukon Page 1 of 1																	

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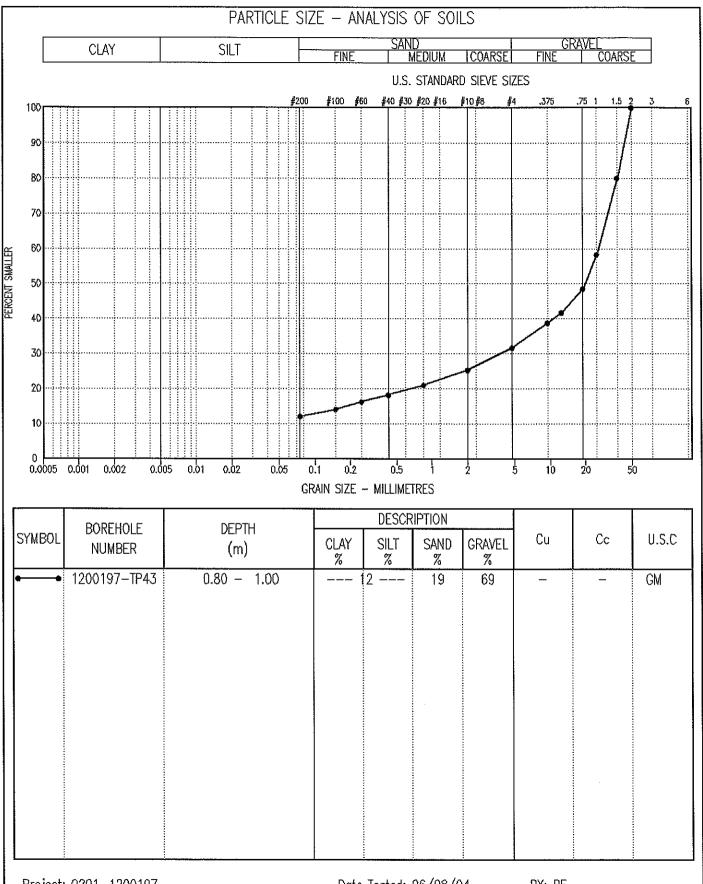


							CLIENT: Yukon Engineering Services TEST PIT NO: 1200197-						197–T	P40
Proposed Access Road							EXCAVATOR: 320C TR	TRACKED EXCAVATOR PROJECT NO: 1200197						
Wolve							UTM ZONE: 8 N6807	605 E4	47255	EL	EVATION:			
SAMP	LE	TYPE		GRA	B SAN	IPLE 🛛 NO RECOVER	y 🛛 Standard pen.		75 mm SPOON	EL BA	RREL			
Depth(m)	SAMPLE TYPE	RUN NO	SPT(N)	nsc	SOIL SYMBOL		SOIL RIPTION		GROUND ICE DESCRIPTION		20	CENT SILT OR F 40 60 PERCENT SAND 40 60 M.C.	80	Depth(ft)
0.0			<b>.</b>			ORGANIC ROOT MAT	<del>,,</del> ,	••••	UNFROZEN		10	20 30	40	- 0,0
						SILT — sandy, trace medium grey GRAVEL — sandy, sor	ne silt, well graded nd sand, compact,		UNINGELI		•			2.0
- - - -							,							49 49
- - - - - - - - -						END OF TESTPIT 2.0	m				•			6.0
						— sloughing thro	ughout		- - - -					8.0
- - - -														10.0 10.0
- - - 														12.0 12.0
- - -				•					D BY: JSB				2 -	14.0
	E]	BA	En	gin	ee	ring Consult	ants Ltd.		d by: JSB WED BY: JRT			tion depth: Te: 06/07/		
05/08/16	14.55	W 00 9/		1	Whi	<u>ehorse, Yukon</u>							Page	1 of 1

Geote	Geotechnical Investigation			CLIENT: Yukon Engineer	CLIENT: Yukon Engineering Services				TEST PIT NO: 1200197-TP41				
Proposed Access Road			EXCAVATOR: 320C TRAC	EXCAVATOR: 320C TRACKED EXCAVATOR				PROJECT NO: 1200197					
			UTM ZONE: 8 N68073	39 E4	47200	ELEVATION:							
SAMP	LE	TYPE		GRA	B SAN	IPLE 🛛 NO RECOVERY 🖂 STANDARD PEN.		′5 mm SPOON ∭CRREL					
Depth(m)	SAMPLE TYPE	RUN NO	SPT(N)	usc	SOIL SYMBOL	SOIL DESCRIPTION		GROUND ICE	▲ PERCENT SILT 20 40 ■ PERCENT 20 40 PLASTIC M.C	60 80 SAND ■ 60 80	Depth(ft)		
	SAN				SOI	DEDUMI HON		DESCRIPTION	·····•				
0.0	$\left  \right $					ORGANIC ROOT MAT		UNFROZEN	10 20	30 40	- 0.0		
						GRAVEL — sandy, trace of silt, coarse grained, angular gravel and sand, compact, dry, grey — cobbles throughout			•				
 - 1.0											2.0		
-						— becomes gravelly below 1.5 m					4.0		
- - 						BEDROCK — highly fractured, angular, fair quality, medium grey					6.0		
- - - -						- becomes competent with depth END OF TESTPIT 2.5 m (REFUSAL)					8.0		
- 											10.0		
- - - - -											12.0		
- - - -											14.0		
	EI	BA	En	gin	eei			D BY: JSB /ED BY: JRT	COMPLETION DE				
	_		_			ehorse, Yukon	NEVIEV	יבט 11, טולן	COMPLETE: 06/	07/12 Page 1	Lof 1		
AC (80 /68	14 564				ITTTI	onoroo, runon				ruye I			

EBA Engineering Consultants Ltd. Whitehorse, Yukon EBA Engineering Consultants Ltd. EBA Engineering Consultants Ltd. Poge L of LOGGED BY: JSB REVIEWED BY: JRT COMPLETE: 06/07/12 Poge L of L	Geotechnical Investigation	CLIENT: Yukon Engineering Servic	
SMAPLE MYPE       ■ paie SWAPLE       NO RECORD NO.       ■ 75 mm SPOOL       □ constant Second       ■ constant Second       ■ constant Second       ■ constant Second       ■ constant Second       ■ constant Second       ■ constant Second       ■ constant Second       ■ constant Second       ■ constant Second       ■ constant Second       ■ constant Second       ■ constant Second       ■ constant Second       ■ constant Second       ■ constant Second       ■ constant Second       ■ constant Second       ■ constant Second       ■ constant Second       ■ constant Second       ■ constant Second       ■ constant Second       ■ constant Second       ■ constant Second       ■ constant Second       ■ constant Second       ■ constant Second       ■ constant Second       ■ constant Second       ■ constant Second       ■ constant Second       ■ constant Second       ■ constant Second       ■ constant Second       ■ constant Second       ■ constant Second       ■ constant Second       ■ constant Second       ■ constant Second       ■ constant Second       ■ constant Second       ■ constant Second       ■ constant Second       ■ constant Second       ■ constant Second       ■ constant Second       ■ constant Second       ■ constant Second       ■ constant Second       ■ constant Second       ■ constant Second       ■ constant Second       ■ constant Second       ■ constant Second       ■ constant Second       = constont Second       = constant Second </td <td>- Marcal</td> <td></td> <td></td>	- Marcal		
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EEBA Engineering Consultants Ltd.       Loge Private       Couple Private       Couple Private       Couple Private       Couple Private       Couple Private       Couple Private       Couple Private       Couple Private       Couple Private       Couple Private       Couple Private       Couple Private       Couple Private       Couple Private       Couple Private       Couple Private       Couple Private       Couple Private       Couple Private       Couple Private       Couple Private       Couple Private       Couple Private       Couple Private       Couple Private       Couple Private       Couple Private       Couple Private       Couple Private       Couple Private       Couple Private       Couple Private       Couple Private       Couple Private       Couple Private       Couple Private       Couple Private       Couple Private       Couple Private       Couple Private       Couple Private       Couple Private       Couple Private       Couple Private       Couple Private       Couple Private       Couple Private       Couple Private       Couple Private       Couple Private       Couple Private       Couple Private       Couple Private       Couple Private       Couple Private       Couple Private       Private       Private       Private       Private       Private       Private       Private       Private       Private       Privat       Private       Privat	SAMPLE TYPE GRAB SAMPLE	) RECOVERY STANDARD PEN. 75 m	
0.0       ORSANC ROOT MAT. GRAVEL - some sond, some silt, coorne grained angular gravel and sand, compoct, maisk, brownish gray       0.0       0.0         - cobles and boulders throughout - trace of silt below 0.5 m - no samples obtained due to coarseness of material       - 2.0       - 2.0         - 1.0       END OF TESTPHT 1.5 m (REFUSAL)       - 6.0         - 2.0       END OF TESTPHT 1.5 m (REFUSAL)       - 6.0         - 3.0       END OF TESTPHT 1.5 m (REFUSAL)       - 6.0         - 4.0       - 7.0       - 7.0         - 4.0       - 7.0       - 7.0         - 4.0       - 7.0       - 7.0         - 4.0       - 7.0       - 7.0         - 4.0       - 7.0       - 7.0         - 4.0       - 7.0       - 7.0         - 4.0       - 7.0       - 7.0         - 4.0       - 7.0       - 7.0         - 4.0       - 7.0       - 7.0         - 4.0       - 7.0       - 7.0         - 4.0       - 7.0       - 7.0         - 4.0       - 7.0       - 7.0         - 4.0       - 7.0       - 7.0         - 4.0       - 7.0       - 7.0         - 7.0       - 7.0       - 7.0         - 7.0       - 7.0       - 7.0    <	Depth(m) SAMPLE TYPE RUN NO SPT(N) USC SOIL SYMBOL		20     40     60     80       GROUND ICE     20     40     60     80       20     40     60     80     1       DESCRIPTION     PLASTIC     M.C.     LIQUID
EBA Engineering Consultants Ltd.		OT MAT UNF	
EBA Engineering Consultants Ltd. Whitehorse, Yukon EBA Engineering Consultants Ltd. EBA EngineE EngineE EngineE EngineE EngineE EnginE EnginE EnginE EnginE EnginE EnginE EnginE EnginE EnginE EnginE EnginE EnginE EnginE EnginE EnginE EnginE EnginE EnginE EnginE EnginE EnginE EnginE EnginE EnginE EnginE EnginE EnginE EnginE EnginE EnginE Engi	GRAVEL - se grained compact - cabble - trace - no sa coarsend - 2.0 - 2.0	ome sand, some silt, coarse angular gravel and sand, , moist, brownish grey es and boulders throughout of silt below 0.5 m mples obtained due to ess of material	ROZEN
EDA Engineering Consultants Ltu.     REVIEWED BY: JRT     COMPLETE: 06/07/12       Whitehorse, Yukon			
EDA Engineering Consultants Ltu.     REVIEWED BY: JRT     COMPLETE: 06/07/12       Whitehorse, Yukon	EDA Engine gina Ca	noultanta Ita LOGGED B	Y: JSB COMPLETION DEPTH: 1.5 m
Whitehorse, Yukon Page 1 of 1		ISUITAILS LLU. REVIEWED	
	Whitehorse, Y	ukon	

Proposed Access Road       EXCANIOR: 320C TRACKED EXXAVIOR       PROJECT ND: 1200197         Weiverine Lote, YT       UTM ZONE: 8 N8806900 E447259       LENATION:         SAWLE TYPE       DR08 SWPLE       [N0 RECOVER: SINUAND PEN]       [T7 mm SPON]       [T0 RECLEMENT:         SAWLE TYPE       DR08 SWPLE       [N0 RECOVER: SINUAND PEN]       [T7 mm SPON]       [T0 RECLEMENT:         SAWLE TYPE       DR08 SWPLE       [N0 RECOVER: SINUAND PEN]       [T7 mm SPON]       [T0 RECLEMENT:         Saveta       SOIL       DESCRIPTION       DESCRIPTION       [T0 RECLEMENT:       [T0 RECLEMENT:         100       Site Site Site Site Site Site Site Site	Geote	chn	ical	nvest	igatior	1	· · · · · · · · · · · · · · · · · · ·	CLIENT: Yukon Engineerin	g Services		TE	ST PIT I	NO:	1200	)197-T	P43
SMMPLE IMPE         Import SWMPLE         Import Record         SMMPLE IMPE         Import Record         Import Recor					oad				-		PR	OJECT	NO: 12			
Image: Solution of the set of the set of the set of the set of the set of the set of the set of the set of the set of the set of the set of the set of the set of the set of the set of the set of the set of the set of the set of the set of the set of the set of the set of the set of the set of the set of the set of the set of the set of the set of the set of the set of the set of the set of the set of the set of the set of the set of the set of the set of the set of the set of the set of the set of the set of the set of the set of the set of the set of the set of the set of the set of the set of the set of the set of the set of the set of the set of the set of the set of the set of the set of the set of the set of the set of the set of the set of the set of the set of the set of the set of the set of the set of the set of the set of the set of the set of the set of the set of the set of the set of the set of the set of the set of the set of the set of the set of the set of the set of the set of the set of the set of the set of the set of the set of the set of the set of the set of the set of the set of the set of the set of the set of the set of the set of the set of the set of the set of the set of the set of the set of the set of the set of the set of the set of the set of the set of the set of the set of the set of the set of the set of the set of the set of the set of the set of the set of the set of the set of the set of the set of the set of the set of the set of the set of the set of the set of the set of the set of the set of the set of the set of the set of the set of the set of the set of the set of the set of the set of the set of the set of the set of the set of the set of the set of the set of the set of the set of the set of the set of the set of the set of the set of the set of the set of the set of the set of the set of the set of the set of the set of the set of the set of the set of the set of the set of the set of the set of the set of the set of the set of the s									E447259		EL	EVATION	:			
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00       ORGANIC ROY MAT GRAVEL - some sont, trace of sit, coarse groined angular gravel on sond, compact, damp, reddish grey       047         - 10       - cobbles throughout gravel       - cobbles throughout gravel         - cobbles throughout g	Depth(m)	SAMPLE TYPE	RUN NO	SPT(N)	nsc	SOIL SYMBOL						20 20	40 ∎ PERCEI 40	60 NT SANE 60	80 ■ 80	Depth(ft)
CRAVEL - some somit, trace of sitl, coarse grained angular gravel and sond, compact, damp, redshid gravel       -         - cobbles throughout gravel       -         - becomes finer grained below 0.8 m       -         - colour changes to gray below 0.8 m       -         - colour changes to gray below 0.8 m       -         - colour changes to gray below 0.8 m       -         - colour changes to gray below 0.8 m       -         - colour changes to gray below 0.8 m       -         - colour changes to gray below 0.8 m       -         - colour changes to gray below 0.8 m       -         - colour changes to gray below 0.8 m       -         - colour changes to gray below 0.8 m       -         - colour changes to gray below 0.8 m       -         - colour changes to gray below 0.8 m       -         - colour changes to gray below 0.8 m       -         - colour changes to gray below 0.8 m       -         - colour changes to gray below 0.8 m       -         - colour changes to gray below 0.8 m       -         - colour changes to gray below 0.8 m       -         - colour changes to gray below 0.8 m       -         - colour changes to gray below 0.8 m       -         - colour changes to gray below 0.8 m       -         - colour changes to	0.0					ļ						10	20	30	40	- 0.0
EBA Engineering Consultants Ltd.	- - - - - - - -						GRAVEL — some san grained angular compact, damp, — cobbles throu — becomes finer	gravel and sand, reddish grey ghout gravel - grained below 0.8 m								
EBA Engineering Consultants Ltd.							END OF TESTPIT 2.2	m (REFUSAL)								يتبايينا يعتبأيين
EBA Engineering Consultants Ltd. Whitehorse, Yukon Whitehorse, Yukon EBA Engineering Consultants Ltd. EBA  - - - 															<u>10.0</u> 10.0	
EDA Engineering consultants Ltd. REVIEWED BY: JRT COMPLETE: 06/07/12	- - - - - - -				-	-										12.0 12.0 14.0 14.0
Whitehorse Yukon Page 1 of 1		E	BA	En	gin	eei	ring Consult									
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	06/08/16	11:55/	m (Yuko	INP84}			,,					1				1



Project: 0201-1200197

Date Tested: 06/08/04

BY: PF

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Tested in accordance with ASTM D422 unless otherwise noted. The testing services reported herein have been performed by an EBA technician to recognized industry standards, unless otherwise noted. No other warranty is made. These data do not include or represent any interpretation or opinion of specification compliance or material suitability. Should engineering interpretation be required, EBA will provide it upon written request.

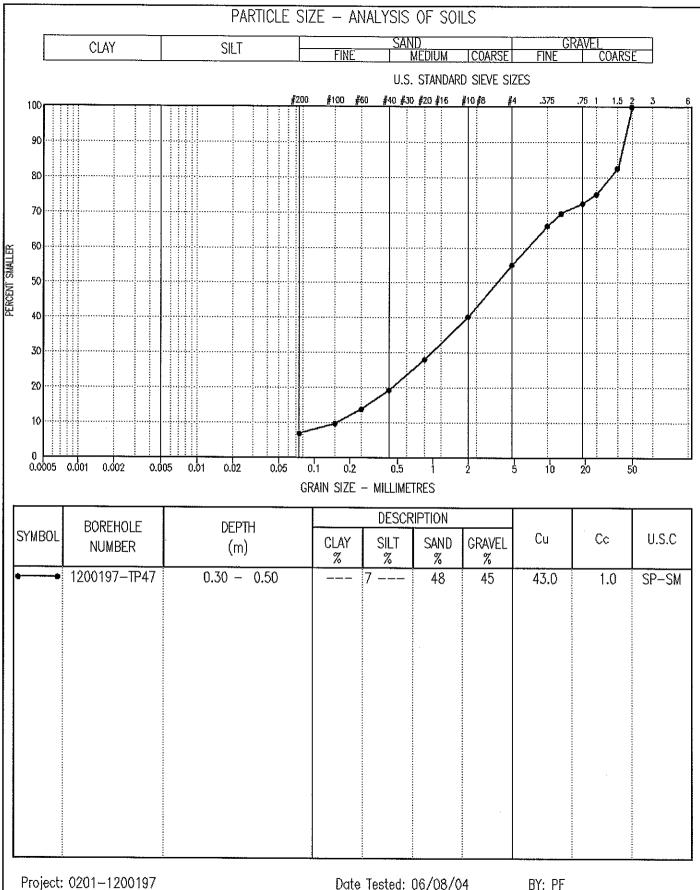


Geoteo	hni	ical I	nvest	igatior	1		CLIENT: Yukon Enginee	ring S	ervices	TE	st pi	T NO:	1	200	197-	TP44
Propos				oad			EXCAVATOR: 320C TRA			PR	OJEC	T NO:	120	0197		
Wolver							UTM ZONE: 8 N68067	'31 E4	47312	EL	evati	ON:				
SAMPI	Ē	TYPE		GRA	B SAN	IPLE 🛛 NO RECOVER	Y 🛛 🖾 Standard Pen.		75 mm SPOON	el ba						
Depth(m)	SAMPLE TYPE	RUN NO	SPT(N)	nsc	SOIL SYMBOL		SOIL CRIPTION		GROUND ICE DESCRIPTION		PLA:	20 ■ PE 20 STIC	40 RCENT 40 M.C	60 SAND 60	80 QVII 	Depth(ft)
0.0						ORGANIC ROOT MAT			UNFROZEN			10	20	30	40	Ĕ 0.0
0.0 - - - - - - - - - - - - - - - - - -						GRAVEL (FLUVIAL) - coarse grained c sand, compact, i - cobbles and s below 0.5 m END OF TESTPIT 1.1	ingular gravel and moist, greyish brown ome boulders present m excavated by operator		UNFROZEN							
																Lucul 14.0
<b> </b>	<u> </u>			L	1	• ~ •		0000	L ED BY: JSB					грти.	1.1 m	<u> </u>
	F;]	ВA	En	ıgin	lee	ring Consult	ants Ltd.		WED BY: JRT				E: 06,			1
						tehorse, Yukon					100	1				e 1 of 1
06/08/16	11:55/	4M (YUK	DNPO4}			and a well a second										

Geotechni				1		CLIENT: Yukon Engineer	*		TE	st pi	r no	: 1	200	197-T	P45
Proposed			oad			EXCAVATOR: 320C TRAC						: 120(	)197		
Wolverine						UTM ZONE: 8 N68061				EVATI	ON:				
SAMPLE	TYPE		GRA	B SAN	IPLE NO RECOVER	en. 🛛 Standard pen.	75	mm SPOON	RREL BA			<u> </u>			
Depth(m) SAMPLE TYPE	run no	SPT(N)	nsc	SOIL SYMBOL		SOIL CRIPTION		GROUND IC DESCRIPTIC		PLAS	20 ■ PI 20 TIC	ERCENT 40 M.C.	60 SAND 1 60	80 80 LIQVID	Depth(ft)
0.0					ORGANIC ROOT MAT		10	NFROZEN			10	20	30	40	- 0.0
					SAND — silty, fine to BEDROCK — sand ar fractured, weath — becomes more	nd silt infilled, highly	n								
- 					END OF TESTPIT 1.0 no samples of coarseness	m (REFUSAL) btained due to materia									1.0 4.0
- 2.0															1
															1
- 															10.0 10.0
- - - - 4.0															12.0 1. 1. 1. 1. 1. 1. 1. 1. 1. 1. 1. 1. 1.
- - - -			•				LOGGED	RX- ISB		100M	פן בד	ion de	<u>ріп</u> .	1 m	14.0
I EI	Β¥	Ľп	.gin	eeı	ring Consult	ants Ltd. 🛛		d by: JRT				E: 06/			<u></u>
06/08/16 11:554					<u>ehorse, Yukon</u>					2.5.0		/		****	1 of 1

	estigatio	n	CLIENT: Yukon Engineering		TEST PIT NO:	1200197-T	P46
Proposed Acces			EXCAVATOR: 320C TRACKED		PROJECT NO:	1200197	
Wolverine Lake,			UTM ZONE: 8 N6805942 E		ELEVATION:		
Depth(m) SAMPLE TYPE RUN NO RUN NO		SOIL SYMBOL B	aple 🖉 no recovery 🖾 standard pen. 🧮 SOIL DESCRIPTION	GROUND ICE	A PERCEN 20 A ■ PEI 20 A PLASTIC	T SILT OR FINES ▲ 40 60 80 CCENT SAND ■ 40 60 80 M.C. LIQUID 10 20 30 40	
0.0			ORGANIC ROOT MAT	UNFROZEN	<u> </u>		E 0
- 1.0			<ul> <li>GRAVEL - sandy, trace of silt, coarse grained, compact, moist, dark brown         <ul> <li>angular cobbles with some boulder below 0.5 m</li> <li>calour changes to medium grey 0.5 m</li> </ul> </li> <li>IBEDROCK - competent         <ul> <li>END OF TESTPIT 1.2 m (REFUSAL)</li> </ul> </li> </ul>				لبتنابيت أيتنابن والتنابين ويتقابين
- - - 2.0 - 							بىلىيىدا يويى قىيبى بىلىيىد لىييدا
- - - 3.0 - -							يتليب أيتبابينا يتنابد
							بابتندليتير لابتنا يتنازن
			ring Consultants Ltd.	ED BY: JSB		)N DEPTH: 1.2 m	
	$n\alpha n$	100		EWED BY: JRT	COMPLETE		

Geotechnical Investi		CLIENT: Yukon Engineerir	ng Services	TEST PIT NO: 1200197-TP4
Proposed Access Ro	bod	EXCAVATOR: 320C TRACK		PROJECT NO: 1200197
Wolverine Lake, YT		UTM ZONE: 8 N680580	1 E446958	ELEVATION:
SAMPLE TYPE	grab sample	NO RECOVERY STANDARD PEN.	75 mm SPOON	
Depth(m) SAMPLE TYPE RUN NO SPT(N)	USC USC	SOIL DESCRIPTION	GROUND ICE DESCRIPTION	▲ PERCENT SILT OR FINES ▲ 20 40 60 80 ■ PERCENT SAND ■ 20 40 60 80 PLASTIC M.C. LIQUID
-0.0		ANIC ROOT MAT	UNFROZEN	10 20 30 40
- - - - - - - - - - - - - - - - - - -	SANI	D AND GRAVEL - trace silt, coarse angular gravel, well graded sand, compact, moist, dark brown D - some silt, fine to medium grained, loose to compact, very wet, grey - becomes silt, some sand, fine		
- 2.0	END	grained around 1.2 m – water encountered, passibly from <u>upper gravels</u> OF TESTPIT 1.5 m – sloughing throughout		
- - - - - - - - - - - - - - - - - - -				
- - 				
-	gineering		DGGED BY: JSB	COMPLETION DEPTH: 1.5 m
	8111 C C I III	rse, Yukon	EVIEWED BY: JRT	COMPLETE: 06/07/12 Page 1 <



Data presented hereon is for the sole use of the stipulated client. EBA is not responsible, nor can be held liable, for use made of this report by any other party, with or without the knowledge of EBA

Date Tested: 06/08/04

BY: PF

Tested in accordance with ASTM D422 unless otherwise noted. The testing services reported herein have been performed by an EBA technician to recognized industry standards, unless otherwise noted. No other warranty is mode. These data do not include or represent any interpretation or opinion of specification compliance or material suitability. Should engineering interpretation be required, EBA will provide it upon written request.



				igatio	1		CLIENT: Yukon Engi				TEST	PIT N	10:	120	0197-1	P48
Propo				load			EXCAVATOR: 320C							20019	7	
Wolve							UTM ZONE: 8 N68					ATION				
SAMF	Ϋ́E	TYPE		GRA	B SAM	APLE NO RECOVER	Y STANDARD P	IN.	75 mm SPOON	CRREL	BARR				•••	
Depth(m)	SAMPLE TYPE	RUN NO	SPT(N)	nsc	SOIL SYMBOL		SOIL CRIPTION		GROUN DESCRI		P	20 20 LASTIC	40 I PERCE 40	60 Ent San 60 M.C.	80 UQUID 1	Depth(ft)
0.0		<b> </b>										10	20	30	40	- 0.0
- - - - - - - - - - - - - - - - - - -						ORGANIC ROOT MAT GRAVEL (FLUVIAL) – silt, coarse angu damp, dark brow – cobbles throu	llar gravel, compact m		UNFROZEN		•					1.0.0 1.0.0 1.0.0 1.0.0 1.0.0 1.0.0 1.0.0 1.0.0 1.0.0 1.0.0 1.0.0 1.0.0 1.0.0 1.0.0 1.0.0 1.0.0 1.0.0 1.0.0 1.0.0 1.0.0 1.0.0 1.0.0 1.0.0 1.0.0 1.0.0 1.0.0 1.0.0 1.0.0 1.0.0 1.0.0 1.0.0 1.0.0 1.0.0 1.0.0 1.0.0 1.0.0 1.0.0 1.0.0 1.0.0 1.0.0 1.0.0 1.0.0 1.0.0 1.0.0 1.0.0 1.0.0 1.0.0 1.0.0 1.0.0 1.0.0 1.0.0 1.0.0 1.0.0 1.0.0 1.0.0 1.0.0 1.0.0 1.0.0 1.0.0 1.0.0 1.0.0 1.0.0 1.0.0 1.0.0 1.0.0 1.0.0 1.0.0 1.0.0 1.0.0 1.0.0 1.0.0 1.0.0 1.0.0 1.0.0 1.0.0 1.0.0 1.0.0 1.0.0 1.0.0 1.0.0 1.0.0 1.0.0 1.0.0 1.0.0 1.0.0 1.0.0 1.0.0 1.0.0 1.0.0 1.0.0 1.0.0 1.0.0 1.0.0 1.0.0 1.0.0 1.0.0 1.0.0 1.0.0 1.0.0 1.0.0 1.0.0 1.0.0 1.0.0 1.0.0 1.0.0 1.0.0 1.0.0 1.0.0 1.0.0 1.0.0 1.0.0 1.0.0 1.0.0 1.0.0 1.0.0 1.0.0 1.0.0 1.0.0 1.0.0 1.0.0 1.0.0 1.0.0 1.0.0 1.0.0 1.0.0 1.0.0 1.0.0 1.0.0 1.0.0 1.0.0 1.0.0 1.0.0 1.0.0 1.0.0 1.0.0 1.0.0 1.0.0 1.0.0 1.0.0 1.0.0 1.0.0 1.0.0 1.0.0 1.0.0 1.0.0 1.0.0 1.0.0 1.0.0 1.0.0 1.0.0 1.0.0 1.0.0 1.0.0 1.0.0 1.0.0 1.0.0 1.0.0 1.0.0 1.0.0 1.0.0 1.0.0 1.0.0 1.0.0 1.0.0 1.0.0 1.0.0 1.0.0 1.0.0 1.0.0 1.0.0 1.0.0 1.0.0 1.0.0 1.0.0 1.0.0 1.0.0 1.0.0 1.0.0 1.0.0 1.0.0 1.0.0 1.0.0 1.0.0 1.0.0 1.0.0 1.0.0 1.0.0 1.0.0 1.0.0 1.0.0 1.0.0 1.0.0 1.0.0 1.0.0 1.0.0 1.0.0 1.0.0 1.0.0 1.0.0 1.0.0 1.0.0 1.0.0 1.0.0 1.0.0 1.0.0 1.0.0 1.0.0 1.0.0 1.0.0 1.0.0 1.0.0 1.0.0 1.0.0 1.0.0 1.0.0 1.0.0 1.0.0 1.0.0 1.0.0 1.0.0 1.0.0 1.0.0 1.0.0 1.0.0 1.0.0 1.0.0 1.0.0 1.0.0 1.0.0 1.0.0 1.0.0 1.0.0 1.0.0 1.0.0 1.0.0 1.0.0 1.0.0 1.0.0 1.0.0 1.0.0 1.0.0 1.0.0 1.0.0 1.0.0 1.0.0 1.0.0 1.0.0 1.0.0 1.0.0 1.0.0 1.0.0 1.0.0 1.0.0 1.0.0 1.0.0 1.0.0 1.0.0 1.0.0 1.0.0 1.0.0 1.0.0 1.0.0 1.0.0 1.0.0 1.0.0 1.0.0 1.0.0 1.0.0 1.0.0 1.0.0 1.0.0 1.0.0 1.0.0 1.0.0 1.0.0 1.0.0 1.0.0 1.0.0 1.0.0 1.0.0 1.0.0 1.0.0 1.0.0 1.0.0 1.0.0 1.0.0 1.0.0 1.0.0 1.0.0 1.0.0 1.0.0 1.0.0 1.
- - - - - - - - - - -						SAND (TILL) — silty, sand, fine to me subangular grave medium grey END OF TESTPIT 2.0	dium grained, el, compact, damp,					•				6.0 8.0
- - - - - -																
- - - - - - -																12.0 12.0
	F	RA	Fn	ain	<u>م</u> م.	ring Consult	ants Itd		ED BY: JSB					DEPTI		
	ப்	DA	للظ				ants Ltu.	REVIE	WED BY: JRT					06/07/	/12	
06/08/16	11:58	AM (YUK	DNP04}		Wh1	tehorse, Yukon	· · · · · · · · · · · · · · · · · · ·								Page	<u>1 of 1</u>
·		-	·			· · ·										

Geote	chni	ical I	nvest	igatior	)		CLIENT: Yukon Engineering	j Services	TE	st pit no	: 1200	197–T	P49
Propo				oad			EXCAVATOR: 320C TRACKE		PR	OJECT N	): 1200197		
Wolver							UTM ZONE: 8 N6805229	E446838	EL	EVATION:			
SAMP	LE .	TYPE		GRA	B SAN	IPLE 🗌 NO RECOVER	y 🛛 Standard pen, 🛛 🗧	75 mm SPOON	rel ba				
Depth(m)	SAMPLE TYPE	run no	SPT(N)	nsc	SOIL SYMBOL		SOIL RIPTION	GROUND ICE DESCRIPTION		20	ENT SILT OR F 40 60 ÆRCENT SANE 40 60 M.C.	80	Depth(ft)
0.0						ORGANIC ROOT MAT				10	20 30	40	- 0.0
-						URGANIC ROUT MAT		UNFROZEN					Ē
-						compact, moist, - cobbles from	ravel, coarse sand, grey						2.0
- 1.0 - - - -													4.0
- - 2.0				· .						•			- 1 6.0
-						END OF TESTPIT 2.2	m						8.0
- 3.0													
- - - 4.0 - -						·							12.0
-	ليل درج		E	L	-			 GGED BY: JSB			i i Fion Depth	: 2,2 m	<u>F</u>
	Ľ	ЗA	ĽŊ			ring Consult		VIEWED BY: JRT			TE: 06/07/		
06/08/16					Whit	<u>lehorse, Yukon</u>					·	Page	1 of 1

Proposed Access Road         ECCARIOR         ERCARTOR         PROJECT No. 1200197           SMPLE TYPE         IDARE SWEPTE         UN RECOVERY         IDARE SWEPTE					igatio	ר ריייייי		CLIENT: Yukon Enginee	ering S	ervices	1	EST	PIT	NO	):	120	0197	-TF	·50
SMAPLE TYPE       3940 SWALE       In RECOVERY       Image: Standard Pick					load										): 12	0019	7		
Image: Solution of the second of the second of the second of the second of the second of the second of the second of the second of the second of the second of the second of the second of the second of the second of the second of the second of the second of the second of the second of the second of the second of the second of the second of the second of the second of the second of the second of the second of the second of the second of the second of the second of the second of the second of the second of the second of the second of the second of the second of the second of the second of the second of the second of the second of the second of the second of the second of the second of the second of the second of the second of the second of the second of the second of the second of the second of the second of the second of the second of the second of the second of the second of the second of the second of the second of the second of the second of the second of the second of the second of the second of the second of the second of the second of the second of the second of the second of the second of the second of the second of the second of the second of the second of the second of the second of the second of the second of the second of the second of the second of the second of the second of the second of the second of the second of the second of the second of the second of the second of the second of the second of the second of the second of the second of the second of the second of the second of the second of the second of the second of the second of the second of the second of the second of the second of the second of the second of the second of the second of the second of the second of the second of the second of the second of the second of the second of the second of the second of the second of the second of the second of the second of the second of the second of the second of the second of the second of the second of the second of the second of the second of the second of the seco														)N:					
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20       30       Comparison       PLASTIC       M.C.       ULUE       20       00       00       00       00       00       00       00       00       00       00       00       00       00       00       00       00       00       00       00       00       00       00       00       00       00       00       00       00       00       00       00       00       00       00       00       00       00       00       00       00       00       00       00       00       00       00       00       00       00       00       00       00       00       00       00       00       00       00       00       00       00       00       00       00       00       00       00       00       00       00       00       00       00       00       00       00       00       00       00       00       00       00       00       00       00       00       00       00       00       00       00       00       00       00       00       00       00       00       00       00       00       00       00       00		Ш				5								0	40	60	80		
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00     ORGANIC ROOT MAT     UNFROZEN     00       SAND (TILL) - sity, trace of fine grouel, fine grained, compost, most, light grey     - becomes gravely, subrounded, well graded around 0.4 m     -       - 10     - onguiar cobles and some boulders below 0.4 m     -     -       - 10     - MEDROCK - competent END OF TESTPIT 1.3 m (REFUSAL)     -       - 20     -     -     -       - 20     -     -     -       - 10     -     -     -       - 10     -     -     -       - 10     -     -     -       - 10     -     -     -       - 10     -     -     -       - 20     -     -     -       - 20     -     -     -       - 20     -     -     -       - 20     -     -     -       - 20     -     -     -       - 20     -     -     -       - 20     -     -     -       - 20     -     -     -       - 20     -     -     -       - 20     -     -     -       - 20     -     -     -       - 20     -     -     -       - 40 <td< td=""><td>apth</td><td>E</td><td>S</td><td>SPT(</td><td>SU</td><td>5</td><td></td><td>יסוסייסו</td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td>pth</td></td<>	apth	E	S	SPT(	SU	5		יסוסייסו											pth
C0       ORGANIC ROOT MAT       UNFROZEN       00         SAND (TILL) - sity, trace of fine growsl, fine grined, compact, most, light gry       -       -         SAND (TILL) - sity, trace of fine growsl, fine grined, compact, most, light gry       -       -         - becomes gravelly, subrounded, well growd or and 0.4 m       -       -         - 10       EBD OF TESTPIT 1.3 m (REFUSAL)       -       -         - 20       -       -       -       -         - 20       -       -       -       -         - 20       -       -       -       -         - 20       -       -       -       -         - 20       -       -       -       -         - 40       -       -       -       -         - 20       -       -       -       -         - 40       -       -       -       -         - 40       -       -       -       -         - 40       -       -       -       -         - 40       -       -       -       -         - 40       -       -       -       -         - 40       -       -       -       -	Ā	SAIV				Soli	ם חפסר	, RIFTION		DESCRI	PTION		FDIGI H			v. •	ш	- טונ	ă
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	_						fine grained, con	npact, moist, light											-
EBA Engineering Consultants Ltd.	F							ally oubsounded wall											-
- 1.0     - angulor cobbles and some boulders     below 0.4 m     - 1.0     - 1.0     - 1.0     - 1.0     - 1.0     - 1.0     - 1.0     - 1.0     - 1.0     - 1.0     - 1.0     - 1.0     - 1.0     - 1.0     - 1.0     - 1.0     - 1.0     - 1.0     - 1.0     - 1.0     - 1.0     - 1.0     - 1.0     - 1.0     - 1.0     - 1.0     - 1.0     - 1.0     - 1.0     - 1.0     - 1.0     - 1.0     - 1.0     - 1.0     - 1.0     - 1.0     - 1.0     - 1.0     - 1.0     - 1.0     - 1.0     - 1.0     - 1.0     - 1.0     - 1.0     - 1.0     - 1.0     - 1.0     - 1.0     - 1.0     - 1.0     - 1.0     - 1.0     - 1.0     - 1.0     - 1.0     - 1.0     - 1.0     - 1.0     - 1.0     - 1.0     - 1.0     - 1.0     - 1.0     - 1.0     - 1.0     - 1.0     - 1.0     - 1.0     - 1.0     - 1.0     - 1.0     - 1.0     - 1.0     - 1.0     - 1.0     - 1.0     - 1.0     - 1.0     - 1.0     - 1.0     - 1.0     - 1.0     - 1.0     - 1.0     - 1.0     - 1.0     - 1.0     - 1.0     - 1.0     - 1.0     - 1.0     - 1.0     - 1.0     - 1.0     - 1.0     - 1.0     - 1.0     - 1.0     - 1.0     - 1.0     - 1.0     - 1.0     - 1.0     - 1.0     - 1.0     - 1.0     - 1.0     - 1.0     - 1.0     - 1.0     - 1.0     - 1.0     - 1.0     - 1.0     - 1.0     - 1.0     - 1.0     - 1.0     - 1.0     - 1.0     - 1.0     - 1.0     - 1.0     - 1.0     - 1.0     - 1.0     - 1.0     - 1.0     - 1.0     - 1.0     - 1.0     - 1.0     - 1.0     - 1.0     - 1.0     - 1.0     - 1.0     - 1.0     - 1.0     - 1.0     - 1.0     - 1.0     - 1.0     - 1.0     - 1.0     - 1.0     - 1.0     - 1.0     - 1.0     - 1.0     - 1.0     - 1.0     - 1.0     - 1.0     - 1.0     - 1.0     - 1.0     - 1.0     - 1.0     - 1.0     - 1.0     - 1.0     - 1.0     - 1.0     - 1.0     - 1.0     - 1.0     - 1.0     - 1.0     - 1.0     - 1.0     - 1.0     - 1.0     - 1.0     - 1.0     - 1.0     - 1.0     - 1.0     - 1.0     - 1.0     - 1.0     - 1.0     - 1.0     - 1.0     - 1.0     - 1.0     - 1.0     - 1.0     - 1.0     - 1.0     - 1.0     - 1.0     - 1.0     - 1.0     - 1.0     - 1.0     - 1.0	-						araded around 0	eny, subrounded, wen .4 m											- 2.0
EBA Engineering Consultants Ltd. LOSED BY: JSB COMPLETION DEPTH: 1.5 m. Whitehorse, Yukon Whitehorse, Yukon Depth: 1.5 m. Whitehorse, Yukon Depth: 1.5 m. Whitehorse, Yukon Depth: 1.5 m. Dependent EDD OF TESTPIT 1.3 m (REFUSAL) EDD OF TESTPIT 1.3 m	<b>-</b>						– angular cobble												-
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EDA Engineering consultants Ltu.     REVIEWED BY: JRT     COMPLETE: 06/07/12       Whitehorse Yukon	<u> </u>				<u> </u>		· ~ -·	······································						<u>ו</u> זו די	1011	יינוש	1, 1 7		-
Whitehorse Yukon Page 1 of 1		ĘĮ	ВA	En	~		0	ants Ltd.										111	<del></del>
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Geote	chn	ical	nvest	igatior	)	ve dissioner af the	CLIENT: Yukon Enginee	ring S	ervices	TES	st pi	r nc	);	1200	)197–	TP51
Ргоро				bad			EXCAVATOR: 320C TRAC	CKED	EXCAVATOR	PR	OJEC	t NC	): 12	0019	7	
Wolve							UTM ZONE: 8 N68047				EVATI	ON:				
SAMP	LE	TYPE		GR4	B SAN	IPLE 🛛 NO RECOVER	y 🛛 Standard Pen.		75 mm SPOON	L BA						
Depth(m)	APLE TYPE	RUN NO	SPT(N)	usc	L SYMBOL		SOIL RIPTION		GROUND ICE			20 ■ F 20	40 TERCEN 40	LT OR 60 IT SANI 60 .C.	FINES ▲ 80 3 ■ 80 LIQUII	Depth(ft)
	SAN				SOIL		AMI HON		DESCRIPTION		⊢	10	20	<b>3</b> 0		
0.0						ORGANIC ROOT MAT			UNFROZEN					<u>av</u>	40	E 0.0
						BEDROCK (PHYLLITE) weathered, sand brown — water encount — becomes com END OF TESTPIT 0.8	and silt infilled, ered at 0.6 m petent with depth	<u>.</u>								
- 1.0 - - - -																4.9 بالمرتبية 1994
- - 				- - - - - -												6.0
				- - - -												8.0 
- - 3.0 -																
- - - -																
-							·	1000								14.0
	E]	BA	En	lgin	ee	ring Consult	ants Ltd. 🛛		ED BY: JSB WED BY: JRT					DEPIF 6/07/	l: 0.8 m /12	1
						tehorse, Yukon		IVE VIE	מבט טו. טואו			11° Kulu	. U	107		1 of 1

				igatior	1		CLIENT: Yukon Enginee	ring S	bervices	TES	st pi	T NC	):	120	0197-T	P52
Ргоро				load			EXCAVATOR: 320C TRA						D: 12	20019	7	
Wolve							UTM ZONE: 8 N68048				evati	ON:				
SAMP	LE	TYPE		GRA	B SAM	IPLE NO RECOVER	y 🛛 🛛 Standard pen.		75 mm SPOON	l ba						
Depth(m)	SAMPLE TYPE	RUN NO	SPT(N)	nsc	SOIL SYMBOL		SOIL RIPTION		GROUND ICE DESCRIPTION			20 ■ F 20	40 PERCE 40	LT OR 60 NT SAN 60 1.C.	FINES A BO D E 80 LIQUID	Depth(ft)
0.0	Ľ					ADAMIA DOAT HAT					'	10	20	30	40	- 0.0
- ~~						ORGANIC ROOT MAT			UNFROZEN							
-						GRAVEL (TILL) — sanı clay, coarse angı compact, damp,	ular gravel and sand,				•					
- - -						angular, compact	e to medium grained, t, moist, grey					•				
						end of testpit 1.0	m (REFUSAL)									
- - - 2.0		- - - - - -														6.0
-																1
- 3.0 - - -																بر 10.0 10.0 میں ایرین ایر
- - - -		-														
- -																14.0
	E]	BA	En	gin	ee	ring Consult	ants Ltd.		ED BY: JSB WED BY: JRT					DEPTH 6/07/	1:1 m /12	
L						tehorse, Yukon			ייבט טו. טוגו			8° LE		u/ V/ /		1 of 1

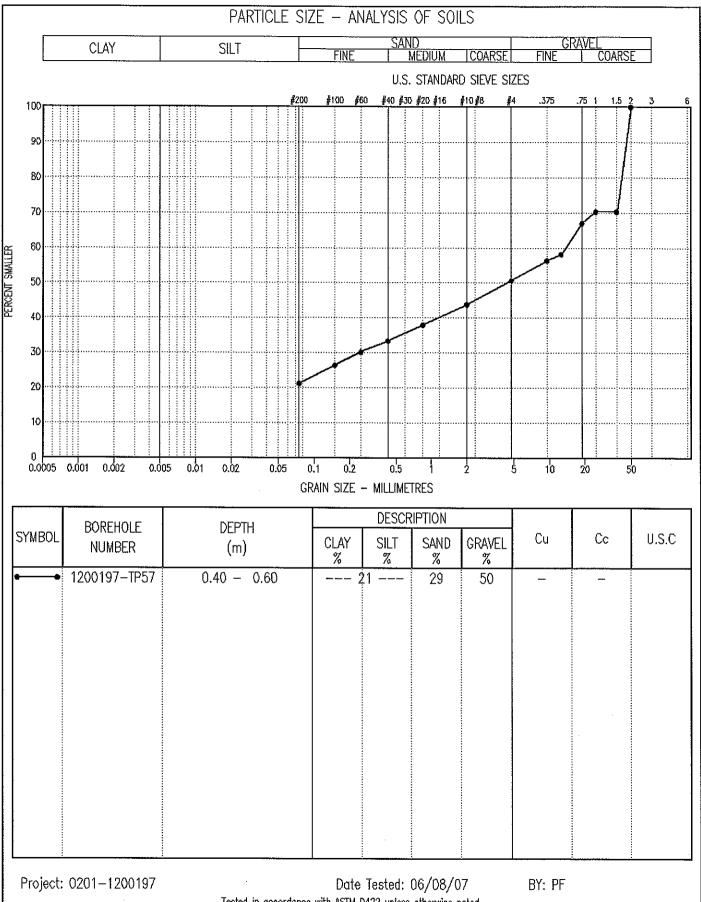
	CLIENT: Yukon Engineering S	Services	TEST PIT NO:	1200197-TF	² 53
roposed Access Road	EXCAVATOR: 320C TRACKED		PROJECT NO: 12	200197	
olverine Lake, YT	UTM ZONE: 8 N6804525 E4	1	ELEVATION:		
물 베닐 튼! 안! 중!	SOIL	75 mm SPOON CRREL	▲ PERCENT S 20 40 ■ PERCE 20 40	ALT OR FINES ▲ 60 80 NT SAND ■ 60 80	Depth(ft)
	RIPTION	DESCRIPTION	PLASTIC N H 10 20	1.C. LIQUID ● 1 30 40	Dep
0.0 ORGANIC ROOT MAT	····	UNFROZEN		30 40	0.0
BEDROCK — sand and fractured, slightly — large boulder s <u>encountered</u> END OF TESTPIT 0.5	v weathered sized pieces				2.0
1.0					4.0
2.0					6.0
					8.0
3.0					10.0
4.0					12.0 11.0
					14.0
		ED BY: JSB	COMPLETION	DEPTH: 0.5 m	4 <del></del>
EBA Engineering Consult		WED BY: JRT	COMPLETE: (		

				igatior	1		CLIENT: Yukon Engin				TES	r pit	NO:	1	2001	97-1	TP54
Ргоро				boo			EXCAVATOR: 320C TF							120(	0197		
Wolver							UTM ZONE: 8 N680				ELE		)N:				
SAMP	LE 1	IYPE		GRA	B SAN	APLE 🛛 NO RECOVER	ay Standard Pen	L 🔤 7	75 mm SPOON		. Bar						
	Ы											▲ F 2	0	4Q	f or Fin 60	80	
Depth(m)	Σ	RUN NO	(N	C	SYMBOL		SOIL		GROUN	ID ICE			■ PE	rcent	SAND	80	7€
pth	비	N	SPT(N)	nsc	_S_						٣			<u>чч</u> М.С			Depth(ft)
å	SAM	8	01		SOIL	L DFOC	CRIPTION		DESCR	IPTION		PLAST —I		м.с — ө		LIQVID 	Ϊő
0.0						ADALLIA DOAT MUT							0	20	30	40	- 0.0
0.0						ORGANIC ROOT MAT SILT — sandy, fine g	rained compact		UNFROZEN								E
						moist, dark brow		ſ									E
						BEDROCK - sand ar	nd silt infilled,	/									Ē
						∖fractured, weath END OF TESTPIT 0.4	ered	/									Ē
•						END OF TESTPIT 0.4	m (REFUSAL)										E. ".
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- 1.0											.						փ
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	H'H	ЗA	En	.gin	ee	ring Consult	ants Ltd.		VED BY: JRT						<u></u> /07/1		
	191					tehorse, Yukon		- procencen							' U / / I	Ĺ	

Geote					ì		CLIENT: Yukon Engineer	ing Serv	rices	TES	T PIT	NO:	12	2001	97-T	P55
Ргоро				bad			EXCAVATOR: 320C TRAC	KED EXC	CAVATOR	PR(	DJECT	NO:	1200	197		
Wolver							UTM ZONE: 8 N68045.	30 E445			VATIO	N:				
SAMP	LE T	TYPE		GRA	8 SAM	IPLE 🛛 NO RECOVER	y 🛛 Standard pen.	75	mm SPOON	BAF						
Depth(m)	SAMPLE TYPE	RUN NO	SPT(N)	nsc	SOIL SYMBOL		SOIL CRIPTION		GROUND ICE DESCRIPTION		▲ P 2 2 PLAST	0 ■PE 0	rcent s	So Sand <b>II</b> So	80	Depth(ft)
0.0			···-				······································				1	0	20 3	30	40	<u> </u>
-							reddish brown dy, silty, trace of ular gravel and sand,	Uiv	NFROZEN							
- - - 						compact, damp, <u>\BEDROCK - fracture</u> END OF TESTPIT 0.8	d, competent									2.0
- - - -																4.9
- - - - - 2.0																6.0
-																8.0
- - 3.0																10.0
- - -																
- - - - 4.0																12.0
-																14.0
	ΕI	BA	En	.gin	eei	ring Consult		LOGGED I REVIEWED	by: J2r ) by: Jrt				)n def : 06/0			
						<u>ehorse, Yukon</u>	4 •••				0.0161				Page	1 of 1
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Geote	chn	ical	nvest	igatior	1		CLIENT: Yukon Engineer	ing S	ervices	TES	ST PI	T N	D:	120	0197-	TP56
Propo				bad			EXCAVATOR: 320C TRAC	KED	EXCAVATOR	PR	OJEC	ΤN	0: 12	0019	7	
Wolve							UTM ZONE: 8 N68046	49 E4	45551	EL	EVAT	ON:				
SAMP	LE	TYPE		GRA	ib san	IPLE 🛛 NO RECOVER	y 🛛 🛛 Standard Pen.		75 mm SPOON	L BA	RREL					
Depth(m)	SAMPLE TYPE	RUN NO	SPT(N)	nsc	SYMBOL		SOIL		GROUND ICE			20 20 20	40 PERCE 40	60 NT SAN 60	80	Depth(ft)
De l	SAM	R	0		SolL	DESU	RIPTION		DESCRIPTION		PLA: F			l.C. ✿───	LIQU. 	
0.0	+					ORGANIC ROOT MAT			UNFROZEN			10	20	30	40	E 0.0
						GRAVEL (PHYLLITE) - coarse angular g compact, moist,	- some sand, some silt ravel and sand, grey	.,				•				1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1
- - - - -						SAND (TILL) — gravel clay, coarse ang <u>medium gravel, c</u> END OF TESTPIT 1.2	ular sand and fine to				•	•				
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- 3.0																
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<u> </u>	<u>י</u> קד זיקד	D A	 ה~		<u> </u>	hing Carall	onta Ita I	LOGGE	L D BY: JSB			<u>:</u> (PLF		DEPTH	l: 1.2 n	<u>F</u>
	Ľ	DΆ	ĿП			ring Consult			VED BY: JRT	<u> </u>				6/07/		
06/08/16					Whi	<u>tehorse, Yukon</u>										e 1 of 1

Joberhal Lufe, YI     UTM ZONE: 8 N8804810 E445225     ELEVATION:       SIMPLE TIPE     GR0B SWIPLE     IND RECOVER     STANDARD PRN. ☐75 mm SPOON     []]COREL RUGEL       SIMPLE TIPE     GR0B SWIPLE     IND RECOVER     SOIL     GR0UND ICE       DESCRIPTION     DESCRIPTION     DESCRIPTION     IND RECOVERSION (INC. UNDUCE)       000 00 00 00     00     00     00       000 00 00     00     GROUND ICE     DESCRIPTION       000 00 00     00     00     00       000 00 00     00     GROUND ICE     DESCRIPTION       000 00 00     00     00     00       000 00     00     00     00       000 00 00     00     00     00       000 00 00     00     00     00       000 00 00     00     00     00       000 00 00     00     00     00       000 00 00     00     00     00       000 00 00     00     00     00       000 00 00     00     00     00       000 00 00     00     00     00       000 00     00     00     00       000 00     00     00     00       000 00     00     00     00       000 00	Wolverine Lake, YT     UTM ZONE: 8 N6804810 E445285     ELEVATION:       SAMPLE TYPE     GRAB SAMPLE     No RECOVERY     Statubardo PEN.     To min SPOON     CREL BARREL       SAMPLE     SOIL     GROUND ICE     A 90 60 80 80       BESCRIPTION     DESCRIPTION     DESCRIPTION       00     GRAVEL (TILL) - sandy, silly, trace of clay, coorse ongular gravel and sand, compact, moist, gray     - cobbles and some boulders throughout testpit       -1.0     BEDROCK - competent END OF TESTPIT 1.2 m (REFUSAL)     Image: Competent END of TESTPIT 1.2 m (REFUSAL)	Geotechnical Inves	atigation		CLIENT: Yukon Engineering	Services	TE	ST PIT N	10:	12001	197-T	P57
SAMPLE TYPE       ISPRE SAMPLE       Improved in the second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second secon	SAMPLE TYPE       ☐R02 RECOVERY       STANDARD PEN.       ☐73 mm SPOON       ☐CREEL BARKEL         Image: Second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second secon	Proposed Access	Road		EXCAVATOR: 320C TRACKED	) Excavator	PR	OJECT N				
Image: Second Second Second Second Second Second Second Second Second Second Second Second Second Second Second Second Second Second Second Second Second Second Second Second Second Second Second Second Second Second Second Second Second Second Second Second Second Second Second Second Second Second Second Second Second Second Second Second Second Second Second Second Second Second Second Second Second Second Second Second Second Second Second Second Second Second Second Second Second Second Second Second Second Second Second Second Second Second Second Second Second Second Second Second Second Second Second Second Second Second Second Second Second Second Second Second Second Second Second Second Second Second Second Second Second Second Second Second Second Second Second Second Second Second Second Second Second Second Second Second Second Second Second Second Second Second Second Second Second Second Second Second Second Second Second Second Second Second Second Second Second Second Second Second Second Second Second Second Second Second Second Second Second Second Second Second Second Second Second Second Second Second Second Second Second Second Second Second Second Second Second Second Second Second Second Second Second Second Second Second Second Second Second Second Second Second Second Second Second Second Second Second Second Second Second Second Second Second Second Second Second Second Second Second Second Second Second Second Second Second Second Second Second Second Second Second Second Second Second Second Second Second Second Second Second Second Second Second Second Second Second Second Second Second Second Second Second Second Second Second Second Second Second Second Second Second Second Second Second Second Second Second Second Second Second Second Second Second Second Second Second Second Second Second Second Second Second Second Second Second Second Second Second Second Second Second Second Second Second Second Second Second Second Second Second Second Second Second Second	Image: Second state in the second state in the second state in the second state in the second state in the second state in the second state in the second state in the second state in the second state in the second state in the second state in the second state in the second state in the second state in the second state in the second state in the second state in the second state in the second state in the second state in the second state in the second state in the second state in the second state in the second state in the second state in the second state in the second state in the second state in the second state in the second state in the second state in the second state in the second state in the second state in the second state in the second state in the second state in the second state in the second state in the second state in the second state in the second state in the second state in the second state in the second state in the second state in the second state in the second state in the second state in the second state in the second state in the second state in the second state in the second state in the second state in the second state in the second state in the second state in the second state in the second state in the second state in the second state in the second state in the second state in the second state in the second state in the second state in the second state in the second state in the second state in the second state in the second state in the second state in the second state in the second state in the second state in the second state in the second state in the second state in the second state in the second state in the second state in the second state in the second state in the second state in the second state in the second state in the second state in the second state in the second state in the second state in the second state in the second state in the second state in the second state in the second state in the second state in the second state in the second state in the se	Wolverine Lake, Yi	Ī		UTM ZONE: 8 N6804810	E445295	EL	EVATION:				
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00     00 20 30 40       GRANIC ROOT MAT     UNFROZEN       GRAVEL (TILL) - sondy, silly, trace of clay, coarse ongular gravel and sond, compact, moist, grey - cobbles and some boulders throughout testpit	0.0       ORGANIC ROOT MAT       UNFROZEN       0       0       0       0       0       0       0       0       0       0       0       0       0       0       0       0       0       0       0       0       0       0       0       0       0       0       0       0       0       0       0       0       0       0       0       0       0       0       0       0       0       0       0       0       0       0       0       0       0       0       0       0       0       0       0       0       0       0       0       0       0       0       0       0       0       0       0       0       0       0       0       0       0       0       0       0       0       0       0       0       0       0       0       0       0       0       0       0       0       0       0       0       0       0       0       0       0       0       0       0       0       0       0       0       0       0       0       0       0       0       0       0       0       0       0<	Depth(m) MPLE TYPE RUN NO SPT(N)						20 20	40 PERCEN 40	60 T SAND I 60	80 80	Donth(ft)
-2.0 -3.0 -3.0 -4.0 -5.0 -5.0 -5.0 -5.0 -5.0 -5.0 -5.0 -5	000 ORGANIC ROOT MAT GRAVEL (TILL) - sandy, sity, trace of clay, coorse engular gravel and sand, compact, moist, grey - cobbles and some boulders throughout testpit -1.0 BEDROCK - competent END OF TESTPIT 1.2 m (REFUSAL) -2.0 -3.0	TS	8			BIBOINI HON			20	30	40	-
-to -to -to -to -to -to -to -to	- compact, moist, grey - compacts and some boulders throughout testpit - 1.0 BEDROCK - competent END OF TESTPIT 1.2 m (REFUSAL) - 2.0 - 3.0	0.0		ORGANIC ROOT MAT	<u> </u>	UNFROZEN					40	Ē
-20 -20 -20 -30 -30 -40 -50 -50 -50 -50 -50 -50 -50 -5	-20	-		clay, coarse ang compact, moist, - cobbles and s	ular gravel and sand, grey							يتبيه المتعدية المتعدية الم
-2.0 -2.0 -3.0 -4.0 END OF TESTPIT 1.2 m (REFUSAL)	-20 END OF TESTPIT 1.2 m (REFUSAL)	- 1.0										لسطيب
-30 -30 -40 EBA Engineering Consultants Ltd				BEDROCK compete END OF TESTPIT 1.2	ent m (REFUSAL)	כ						ليسلسله
-30 -30 -40 EBA Engineering Consultants Ltd												للاستليب
-3.0 -3.0 -4.0 EBA Engineering Consultants Itd		- 2.0										<u>مىرا يەنبايىد</u>
-40 -40 EBA Engineering Consultants Ltd LOGGED BY: JSB COMPLETION DEPTH: 1.2 m		- - -										لتقييليتينات
-40 -40 EBA Engineering Consultants Ltd LOGGED BY: JSB COMPLETION DEPTH: 1.2 m		-										
EBA Engineering Consultants Itd LOGGED BY: JSB COMPLETION DEPTH: 1.2 m		-										يىلىيىيا يىيىلىن
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	TED & Enderson Concernent II I I I I I I I I I I I I COGED BY JSB COMPLETION DEPTH-12 m			······································		GFD BY: JSB		COMPI	ETION I	<u>. : :</u> DFPTH-	<u>12 m</u>	E
		ERA E	nginee	rıng Consult								
Whitehorse, Yukon Page 1					REV	EWED BI: JKI		COMPL	EIE O	5/0//1		



Data presented hereon is for the sole use of the stipulated client. EBA is not responsible, nor can be held liable, for use made of this report by any other party, with or without the knowledge of EBA

Tested in accordance with ASTM D422 unless otherwise noted.

The testing services reported herein have been performed by an EBA technician to recognized industry standards, unless otherwise noted. No other warranty is made. These data do not include or represent any interpretation or opinion of specification compliance or material suitability. Should engineering interpretation be required, EBA will provide it upon written request.



				igation	1		CLIENT: Yukon Engir				test pit			197-T	P58
Propo				oad			EXCAVATOR: 320C T				PROJECT		200197	1	
Wolver					<u> </u>		UTM ZONE: 8 N680				ELEVATIO	N:			
SAMP	<u>נ</u> צ 	ITPE		GRA	ib san 1	APLENO RECOVE	ry 🛛 Standard Pei	N. 8	75 mm SPOON			FROFNT	SILT OR F		T
Depth(m)	SAMPLE TYPE	RUN NO	SPT(N)	nsc	SYMBOL		SOIL		GROUN	ND ICE	20	) 40	) 60 Cent Sand	80 80 80	Depth(ft)
Dep	SAMPL	RUI	SР	∩ ∩	SOILS	DES	CRIPTION		DESCR	IPTION	PLAST		M.C.	LIQUID	Dept
0.0						ORGANIC ROOT MAT			UNFROZEN		1	3 20	> 30	40	E 0.0
						SILT — sandy, fine ( moist, grey									ليتناعد
						flat, angular, ek	ed, highly fractured,				•				
· 1.0						<u>– competent at</u> END OF TESTPIT 0.5	0.5 m m (REFUSAL)		:						ىلىدىندلىرىنىڭ بايدىندلىرىن
															مىلىمىرلىمىر
- 2.0															
2.0															يت المريدية المريدية
- 3.0	-														Lundra, 10
															يستريس
- 4.0															تدا. بالالالالية 14
	EF	 3A	En	gin	eei	ring Consult	ants Ltd.		D BY: JSB				I DEPTH:		
		N (YUKO		~		ehorse, Yukon			VED BY: JRT				06/07/:	12 Page	 1 ດf

Geotechnical Investigati		CLIENT: Yukon Engineering		TEST PIT NO: 1200197-TP5
Proposed Access Road	······································	EXCAVATOR: 320C TRACKE		PROJECT NO: 1200197
Wolverine Lake, YT		UTM ZONE: 8 N6805103	a mana	ELEVATION:
SAMPLE TYPE 📕 🖉 G	RAB SAMPLE 🛛 NO RECOVE	ry 🛛 Standard pen. 🗧	75 mm SPOON	
Depth(m) SAMPLE TYPE RUN NO SPT(N) IISC	2 6	SOIL CRIPTION	GROUND ICE DESCRIPTION	▲ PERCENT SILT OR FINES ▲ 20 40 60 80 ■ PERCENT SAND ■ 20 40 60 80 PLASTIC M.C. LIQUID
0.0	ORGANIC ROOT MAT		UNFROZEN	
	SILT — sandy, fine dark brown GRAVEL — sandy, sa angular, compa	ome silt, coarse grained,		
- 1.0				
- 2.0	END OF TESTPIT 2.0	) m		
-				
- 3.0				
EBA Engi	neering Consul		GED BY: JSB	COMPLETION DEPTH: 2 m
	<u>Whitehorse</u> , Yukon	REV	IEWED BY: JRT	COMPLETE: 06/07/12

				igatio	1		CLIENT: Yukon Enginee			T	iest p	'IT N	D:	1200	)197–1	TP60
Propo				bool			EXCAVATOR: 320C TRAC						0: 12	200197	7	
Wolver							UTM ZONE: 8 N68052			1	ELEVAT					
SAMP	LE	TYPE		GRA	B SAN	IPLE NO RECOVER	Y 🛛 Standard pen.	7	5 mm SPOON							
Depth(m)	SAMPLE TYPE	RUN NO	SPT(N)	nsc	SOIL SYMBOL		SOIL RIPTION		GROUNI DESCRIF			20 20 .STIC	40 PERCE 40	ILT OR I 60 NT SANE 60 I.C. ♥	80 ) ■ 80 LIQVID	Depth(ft)
0.0	+	<u> </u>				ORGANIC ROOT MAT			JNFROZEN			10	20	30	40	E 0.0
-						SILT (TILL) — sandy, trace of clay, we to medium grain compact, moist,	Il graded sand, fine ed angular gravel, dark grey					•••••				
- 1.0 - -						<ul> <li>becomes less</li> <li>BEDROCK (PHYLLITE)</li> <li>highly fractured</li> </ul>	sand and gravel — poor quality,				•					
- - - - -						END OF TESTPIT 1.5	m (REFUSAL)									
																8.0
- 3.0																
- - - - 4.0																12.0
-																14.0
	EI	BA	En	gin	eei	ring Consult	ants Ltd.		) BY: JSB						: 1.5 m	
						tehorse, Yukon		REVIEW	ed by: Jrt	<u></u>		MPLE	112 Q	6/07/		1 of 1
06/08/16	11:57A	M (YUKI	NPO4)		1111	LUIUI DE, IUMUII		I							ruge	1 of 1

Proposed Access Road         EXCAVATOR: 320C TRACKED EXCAVATOR           Wolverine Lake, YT         UTM ZONE: 8 N6805366 E444469	PROJECT NO: 1200197 ELEVATION:
Wolverine Lake, YT UTM ZONE: 8 N6805366 E444469	ELEVATION:
SAMPLE TYPE GRAB SAMPLE NO RECOVERY STANDARD PEN. 75 mm SPOON	
Image: Solution of the second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second seco	▲ PERCENT SILT OR FINES ▲ 20 40 60 80 ■ PERCENT SAND ■ 20 40 60 80 PLASTIC M.C. LIQUED
0.0 ORGANIC ROOT MAT UNFROZEN	
SAND (TILL) — silty, gravelly, trace of clay, well graded sand, fine to medium grained, subangular gravel, compact, moist, grey	
BEDROCK (PHYLLITE) — poor quality, highly weathered, soft, flat, elongated particles	
- some cobble sized more competent pieces below 1.0 m	<b>6</b>
	6.0
	8.0
	- 14.0
EBA Engineering Consultants Ltd.	COMPLETION DEPTH: 1.8 m
Whitehorse, Yukon	COMPLETE: 06/07/12 Page 1 of 1

- 30 - 30 - 4.0 EBA Engineering Consultants Ltd. LOGGED BY: JSB COMPLETION DEPTH: 1.6 m COMPLETION DEPTH: 1.6 m	Geote				•	1		CLIENT: Yukon Engineering		TES	t pit i	NO:	120(	)197-T	P62
SMPLE TYPE       IDENSE SAMPLE       IDENSECTION	<u> </u>				oad					-			20019	7	
Image: Solution of the solution of the solution of the solution of the solution of the solution of the solution of the solution of the solution of the solution of the solution of the solution of the solution of the solution of the solution of the solution of the solution of the solution of the solution of the solution of the solution of the solution of the solution of the solution of the solution of the solution of the solution of the solution of the solution of the solution of the solution of the solution of the solution of the solution of the solution of the solution of the solution of the solution of the solution of the solution of the solution of the solution of the solution of the solution of the solution of the solution of the solution of the solution of the solution of the solution of the solution of the solution of the solution of the solution of the solution of the solution of the solution of the solution of the solution of the solution of the solution of the solution of the solution of the solution of the solution of the solution of the solution of the solution of the solution of the solution of the solution of the solution of the solution of the solution of the solution of the solution of the solution of the solution of the solution of the solution of the solution of the solution of the solution of the solution of the solution of the solution of the solution of the solution of the solution of the solution of the solution of the solution of the solution of the solution of the solution of the solution of the solution of the solution of the solution of the solution of the solution of the solution of the solution of the solution of the solution of the solution of the solution of the solution of the solution of the solution of the solution of the solution of the solution of the solution of the solution of the solution of the solution of the solution of the solution of the solution of the solution of the solution of the solution of the solution of the solution of the solution												:			
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00         0 RGANIC ROOT MAT         UNFROZEN         10 20 30 40         0.0           SULT - sandy, some gravel         BEDROCK (PHYLUTE) - poor quolity, soft, highly fractured, greyish black         •         1         -         -         -         -         -         -         -         -         -         -         -         -         -         -         -         -         -         -         -         -         -         -         -         -         -         -         -         -         -         -         -         -         -         -         -         -         -         -         -         -         -         -         -         -         -         -         -         -         -         -         -         -         -         -         -         -         -         -         -         -         -         -         -         -         -         -         -         -         -         -         -         -         -         -         -         -         -         -         -         -         -         -         -         -         -         -         -         -         -         -	pth(m)	OLE TYPE	ON NC	PT(N)	nsc	SYMBOL					20 20	40 ■ PERC 40	60 Ent San 60	80 3∎ 80	pth(ft)
00         0 RGANIC ROOT MAT         UNFROZEN         10 20 30 40         0.0           SULT - sandy, some gravel         BEDROCK (PHYLUTE) - poor quolity, soft, highly fractured, greyish black         •         1         -         -         -         -         -         -         -         -         -         -         -         -         -         -         -         -         -         -         -         -         -         -         -         -         -         -         -         -         -         -         -         -         -         -         -         -         -         -         -         -         -         -         -         -         -         -         -         -         -         -         -         -         -         -         -         -         -         -         -         -         -         -         -         -         -         -         -         -         -         -         -         -         -         -         -         -         -         -         -         -         -         -         -         -         -         -         -         -         -         -	De	SAME	쩐	S		SOL	DESU	RIPTION	DESCRIPTION		PLASTIC	;	M.C.		De
SUCCENT     SUCCENT     SUCCENT     SUCCENT     SUCCENT     SUCCENT     SUCCENT     SUCCENT     SUCCENT     SUCCENT     SUCCENT     SUCCENT     SUCCENT     SUCCENT     SUCCENT     SUCCENT     SUCCENT     SUCCENT     SUCCENT     SUCCENT     SUCCENT     SUCCENT     SUCCENT     SUCCENT     SUCCENT     SUCCENT     SUCCENT     SUCCENT     SUCCENT     SUCCENT     SUCCENT     SUCCENT     SUCCENT     SUCCENT     SUCCENT     SUCCENT     SUCCENT     SUCCENT     SUCCENT     SUCCENT     SUCCENT     SUCCENT     SUCCENT     SUCCENT     SUCCENT     SUCCENT     SUCCENT     SUCCENT     SUCCENT     SUCCENT     SUCCENT     SUCCENT     SUCCENT     SUCCENT     SUCCENT     SUCCENT     SUCCENT     SUCCENT     SUCCENT     SUCCENT     SUCCENT     SUCCENT     SUCCENT     SUCCENT     SUCCENT     SUCCENT     SUCCENT     SUCCENT     SUCCENT     SUCCENT     SUCCENT     SUCCENT     SUCCENT     SUCCENT     SUCCENT     SUCCENT     SUCCENT     SUCCENT     SUCCENT     SUCCENT     SUCCENT     SUCCENT     SUCCENT     SUCCENT     SUCCENT     SUCCENT     SUCCENT     SUCCENT     SUCCENT     SUCCENT     SUCCENT     SUCCENT     SUCCENT     SUCCENT     SUCCENT     SUCCENT     SUCCENT		Ľ				<u>,</u> ,	ADAMIA DAAT WAT				<u>10</u>	20		40	
BEDROCK (PHYLITE) - poor quality, soft, highly fractured, greyish block - some coarser and cobble sized pieces below 1.0 m - more competent with depth END OF TESTPIT 1.6 m (REFUSAL) -2.0 -3.0 -3.0 -4.0 EBA Engineering Consultants Ltd. LOCED BY, JSB COMPLETION DEPH: 1.5 m	- 0.0						URGANIC ROUT MAT		UNFRUZEN						
<ul> <li>highly fractured, greyish black</li> <li>- some coarser and cabble sized places</li> <li>below 1.0 m</li> <li>- more competent with depth</li> <li>END OF TESTPIT 1.6 m (REFUSAL)</li> <li>END OF TESTPIT 1.6 m (REFUSAL)</li> <li>- 30</li> <li>- 30</li> <li>- 40</li> <li>EBA Engineering Consultants Ltd.</li> <li>END OF THE STORE COMPLETION DEPTH: 1.6 m</li> </ul>	-						SILT – sandy, some	gravel							
- some correr and cobble sized pieces below 1.0 m - more competent with depth     - 4.0     - 2.0     - 2.0     - 2.0     - 2.0     - 3.0     - 3.0     - 3.0     - 4.0     - 4.0     - 4.0     - 4.0     - 4.0     - 4.0     - 4.0     - 4.0     - 4.0     - 4.0     - 4.0     - 4.0     - 4.0     - 4.0     - 4.0     - 4.0     - 4.0     - 4.0     - 4.0     - 4.0     - 4.0     - 4.0     - 4.0     - 4.0     - 4.0     - 4.0     - 4.0     - 4.0     - 4.0     - 4.0     - 4.0     - 4.0     - 4.0     - 4.0     - 4.0     - 4.0     - 4.0     - 4.0     - 4.0     - 4.0     - 4.0     - 4.0     - 4.0     - 4.0     - 4.0     - 4.0     - 4.0     - 4.0     - 4.0     - 4.0     - 4.0     - 4.0     - 4.0     - 4.0     - 4.0     - 4.0     - 4.0     - 4.0     - 4.0     - 4.0     - 4.0     - 4.0     - 4.0     - 4.0     - 4.0     - 4.0     - 4.0     - 4.0     - 4.0     - 4.0     - 4.0     - 4.0     - 4.0     - 4.0     - 4.0     - 4.0     - 4.0     - 4.0     - 4.0     - 4.0     - 4.0     - 4.0     - 4.0     - 4.0     - 4.0     - 4.0     - 4.0     - 4.0     - 4.0     - 4.0     - 4.0     - 4.0     - 4.0     - 4.0     - 4.0     - 4.0     - 4.0     - 4.0     - 4.0     - 4.0     - 4.0     - 4.0     - 4.0     - 4.0     - 4.0     - 4.0     - 4.0     - 4.0     - 4.0     - 4.0     - 4.0     - 4.0     - 4.0     - 4.0     - 4.0     - 4.0     - 4.0     - 4.0     - 4.0     - 4.0     - 4.0     - 4.0     - 4.0     - 4.0     - 4.0     - 4.0     - 4.0     - 4.0     - 4.0     - 4.0     - 4.0     - 4.0     - 4.0     - 4.0     - 4.0     - 4.0     - 4.0     - 4.0     - 4.0     - 4.0     - 4.0     - 4.0     - 4.0     - 4.0     - 4.0     - 4.0     - 4.0     - 4.0     - 4.0     - 4.0     - 4.0     - 4.0     - 4.0     - 4.0     - 4.0     - 4.0     - 4.0     - 4.0     - 4.0     - 4.0     - 4.0     - 4.0     - 4.0     - 4.0     - 4.0     - 4.0     - 4.0     - 4.0     - 4.0     - 4.0     - 4.0     - 4.0     - 4.0     - 4.0     - 4.0     - 4.0     - 4.0     - 4.0     - 4.0     - 4.0     - 4.0     - 4.0     - 4.0     - 4.0     - 4.0     - 4.0     - 4.0     - 4.0	- -						BEDROCK (PHYLLITE) highly fractured,	— poor quality, soft, greyish black			•				2.0
END OF TESTPIT 1.6 m (REFUSAL)  -20 -20 -20 -20 -20 -20 -20 -20 -20 -2	- - 1.0					:	– some coarser	and cobble sized pieces							ليتنعد
E-20 20 	- -						below 1.0 m				•				4.0
EBA Engineering Consultants Ltd.							END OF TESTPIT 1.6	m (REFUSAL)							
- 30 - 30 - 4.0 EBA Engineering Consultants Ltd. LOGGED BY: JSB COMPLETION DEPTH: 1.6 m COMPLETION DEPTH: 1.6 m	2.0 - -					:									ي ابتينا ويتقايد
EBA Engineering Consultants Ltd.															1. 8.0
EBA Engineering Consultants Ltd. LOGGED BY: JSB COMPLETION DEPTH: 1.6 m COMPLETION DEPTH: 1.6 m COMPLETE: 06/07/12	- 3.0														لد برا 10.0
EBA Engineering Consultants Ltd. LOGGED BY: JSB COMPLETION DEPTH: 1.6 m COMPLETION DEPTH: 1.6 m COMPLETE: 06/07/12	-														
EBA Engineering Consultants Ltd. LOGGED BY: JSB COMPLETION DEPTH: 1.6 m COMPLETION DEPTH: 1.6 m REVIEWED BY: JRT COMPLETE: 06/07/12	-  -  -														12.0
EDA Engineering Consultants Etu. REVIEWED BY: JRT COMPLETE: 06/07/12	- 4.0 - -														14.0
EDA Engineering Consultants Etu. REVIEWED BY: JRT COMPLETE: 06/07/12	<u> </u>				•				L ED BY: JSB					+ 1 6 m	E.
		Ę,	ВĄ	Ľп	igin	ee	rıng Consult								
Whitehorse, Yukon Page 1 of 1							<u>tehorse, Yukon</u>								1 of 1

				igatio	1		CLIENT: Yukon Engined	ering So	ervices	TES	st pit	NO:	1200	)1971	P63
Propo				load			EXCAVATOR: 320C TRA			PR	oject	NO:	1200197	7	
Wolver					<del></del>		UTM ZONE: 8 N6805				EVATIC	N:			
SAMP	LE	TYPE		GR/	ib san	IPLE NO RECOVER	y 🛛 Standard pen.		75 mm SPOON CRRE	l Ba					
Depth(m)	SAMPLE TYPE	RUN NO	SPT(N)	nsc	SOIL SYMBOL		SOIL RIPTION		GROUND ICE DESCRIPTION		2 2 PLAST	0 4 ■ PER 0 4	CENT SAND 0 60 M.C.	80 80 EIQUID	Depth(ft)
0.0						ORGANIC ROOT MAT		,	UNFROZEN		1	0 2	0 30	40	E 0.0
-						SILT AND SAND - gro	avelly								
- - - - - - - - - - - - - - -						BEDROCK (PHYLLITE) infilled, good quo fractured, moist – cobble, some <u>– competent at</u> END OF TESTPIT 1.2	ılity, highly grey baulders belaw 0.8 m	[			••••				1
- - - - - - - - - - -															1
- - - -															E. 8.0
- 3.0															10.0
- - - - 4.0															12.0
															14.0
	E]	BA	En	gin	ee	ring Consult	ants Ltd.		d by: JSB Ved by: JRT				N DEPTH 06/07/		
						tehorse, Yukon			10 DI. JAI				00/0//		1 of 1
06/08/16	11:57A	m (Yuki	)NPD4}		الشغير	amatorido, rumon		-h			1			1 490	

1				igatio	1		CLIENT: Yukon Engineer			TE	EST	PIT	NO		120	)019	)7`	TP64
Propo				load			EXCAVATOR: 320C TRAC			P	Roji	ECT	NO	: 12	001	97		
Wolve							UTM ZONE: 8 N68059	12 E44	43912	E	LEVA	TIO	N:					
SAMP	LE	TYPE		GR4	B SAN	IPLE 🛛 NO RECOVER	y 🛛 Standard Pen.	7	5 mm SPOON	CRREL B								
Depth(m)	SAMPLE TYPE	RUN NO	SPT(N)	nsc	SOIL SYMBOL		SOIL RIPTION		GROUNI DESCRIF			2 2 LAST	0 ■P 0 10	40 ERCEI 40 N	ILT OF 60 NT SA 60 I.C.	8 ND ■ 8	0 0 1 1	Depth(ft)
0.0						ORGANIC ROOT MAT			UNFROZEN			1	0	20	30	4	0	E 0.0
-						SAND (TILL) — silty, o clay, well graded medium grained compact, moist,	sand, fine to angular gravel,					•						<u>in a standar a standar a standar a standar a standar a standar a standar a standar a standar a standar a standar</u>
-						– some cobble p	present below 0.8 m											
1.0  -  -						BEDROCK (PHYLLITE) fractured, silt inf	— good quality, high illed, grey											
	\ competer ENDO OF TESTP						1.2 m - m (REFUSAL)	/										
- 2.0 	0																	- 6.0
- - -																		8.0
-																		
3.0   					-													
-																		
4.0 																		
	El	BA	En	øin	eei	ring Consult			) BY: JSB						DEPT		4 m	
	ار ابساد		ل الد قديد			tehorse, Yukon		KEVIEW	'ED BY: JRT		C	JMF	4ET	년 0	6/07		7	1 .6 4
06/08/16	14.004	u 64.84			<u>88 TTT (</u>	LEHOUSE, IUKOII	·										~age	1 of 1

Geotechnical Investigation	CLIENT: Yukon Engineering S		TEST PIT NO:	120019	97-TP65
Proposed Access Road	EXCAVATOR: 320C TRACKED		PROJECT NO:	1200197	
Wolverine Lake, YT	UTM ZONE: 8 N6806071 E4		ELEVATION:		
SAMPLE TYPE <b>M</b> GRAB SAMPLE NO RECOVER	ry 🛛 Standard pen. 📃	75 mm SPOON			
[ 윤 [비ːː] [ 윤 ] [ 윤 ]	SOIL CRIPTION	GROUND ICE DESCRIPTION	20 ■ PE 20 PLASTIC	RCENT SAND 40 60 8 M.C.	BO
0.0 ORGANIC ROOT MAT		UNFROZEN			
SAND (TILL) - silty, clay, well graded medium grained compact, moist, - cobbles below 	l sand, fine to angular gravel, grey 0.6 m				2.0
					6.0
- 4.0 					- 12.0
FBA Engineering Concult	anta Ita LOGGE	D BY: JSB		ON DEPTH: 1	
EBA Engineering Consult	ants ilu. REVIE	WED BY: JRT		: 06/07/12	
Whitehorse, Yukon 05/08/16 1158444 (YUKONPD4)					Page 1 of 1

Geotech				1		CLIENT: Yukon Enginee			TES	st pit no: 12001	97-TI	P66
Propose			bood			EXCAVATOR: 320C TRAC	CKED E	XCAVATOR	PR	QJECT NO: 1200197		
Wolverin			<u></u>			UTM ZONE: 8 N68061	125 E4			EVATION:		
SAMPLE	e typ	E	GRA	B SAN	IPLE 🛛 NO RECOVER	y 🛛 Standard pen.	7	5 mm SPOON	l ba	RREL		
Depth(m) SAMDIE TYDE	RUN NO	SPT(N)	nsc	SOIL SYMBOL		SOIL RIPTION		GROUND ICE DESCRIPTION		PERCENT SAND 20 40 60 PLASTIC M.C.	80 80 LIQVID	Depth(ft)
0.0	+	-		<u> </u>	ORGANIC ROOT MAT					10 20 30	40	- 0.0
					ORGANIC ROOT MAT SAND (TILL) – silty, o clay, well graded angular gravel – very competer 1.8 m END OF TESTPIT 2.0	sand, coarse it, hard digging below		UNFROZEN				2.0 4.0 6.0 10.0 10.0
4.0   												
	TRA	$\mathbf{F}_{\mathbf{n}}$	ain	ימם	ring Consult	anta Itd		d by: JSB		COMPLETION DEPTH: :		
¹	ЪDА	1, 1, 1				ants Ltu.	REVIEW	/ED BY: JRT		COMPLETE: 06/07/12	2	
				Whi	<u>tehorse, Yukon</u>						Page	1 of 1

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Geotechnic	cal li	nvest	igatior	)		CLIENT: Yukon Engineer	ing Services	TE	st pi	T NO:	120	00197-T	P67
Proposed /	Acce	ess R	oad		72	EXCAVATOR: 320C TRAC	KED EXCAVATOR	. PR	OJEC	T NO:	: 12001	97	
Wolverine						UTM ZONE: 8 N68062	52 E443668	EL	evati	ON:			
SAMPLE T	YPÉ		GRA	b san	IPLE NO RECOVER	y 🛛 Standard pen.	75 mm SPOON	CRREL BA	RREL				
Depth(m) SAMPLE TYPE	RUN NO	SPT(N)	nsc	SOIL SYMBOL		SOIL RIPTION	GROUND DESCRIP			20 ■ PE 20	NT SILT OI 40 60 ERCENT SA 40 60 M.C.	9 80 ND 🔳	Depth(ft)
										10	20 30	40	
					0.6 m — finer grained g	dark brown e boulders from 0.2 to gravels below 0.6 m s to reddish brown - poor quality, flat, angular <u>petent at 2.5 m</u> m				•		) 40	8.0
- 3,0		:											E E 10.0
- - - - - - - - - - - - - - - - - - -													12.0 12.0 14.0 14.0
I EE	3A	En	gin	ee	ring Consult		Logged by: JSB Reviewed by: Jrt				on dep E: 06/0.	TH: 2.5 m	
			<u> </u>		tehorse, Yukon				UUN I	IFEEL	L, VO/V.		1 of 1
L				11 111	CHURDE, IUNUI							Fuye	

Geote	chn	ical l	nvest	igatior	1		CLIENT: Yukon Engineerii	ng Si	ervices	TE	st pit i	10:	1200	)197–T	P68
Propo				ood			EXCAVATOR: 320C TRACK	(ED E	EXCAVATOR	PR	OJECT	NO: 12	200197	7	
Wolver							UTM ZONE: 8 N680639	0 E4	43591	EL	EVATION	;			
SAMP	LE	TYPE		GRA	b san	IPLE 🛛 NO RECOVER	y 🛛 Standard Pen.		75 mm SPOON	il ba					
Depth(m)	SAMPLE TYPE	RUN NO	SPT(N)	usc	SOIL SYMBOL		SOIL RIPTION		GROUND ICE DESCRIPTION	-	20	40 PERCE 40	ILT OR F 60 NT SANE 60 A.C.	80	Depth(ft)
	Ŝ				5						10	20	<b>•</b> 30	40	
0.0						ORGANIC ROOT MAT	· · · · · · · · · · · · · · · · · · ·		UNFROZEN						- 0.0
						SAND (RESIDUUM) — angular, moist, c — mottled reddis	silty, trace of gravel, ompact, reddish brown h brown, grey				•				
- - - - 1.0							comes fine grained								
						with depth below	1.0 m								4.0
- - 2.0															- 1 6.0
- - - -						END OF TESTPIT 2.5 — sloughing	m	- <u>-</u> .			•				1.1.1.1.8.0
- - 3.0 - -															r l
- - - - -															
-								0000	0.0% 105			FT12			14.0
	E	BA	En	lgin	.ee:	ring Consult			id by: JSB Ved by: JRT				DEPTH )6/07/	l: 2.5 m	
				~		t <u>ehorse, Yukon</u>							,0,07	Page	1 of 1

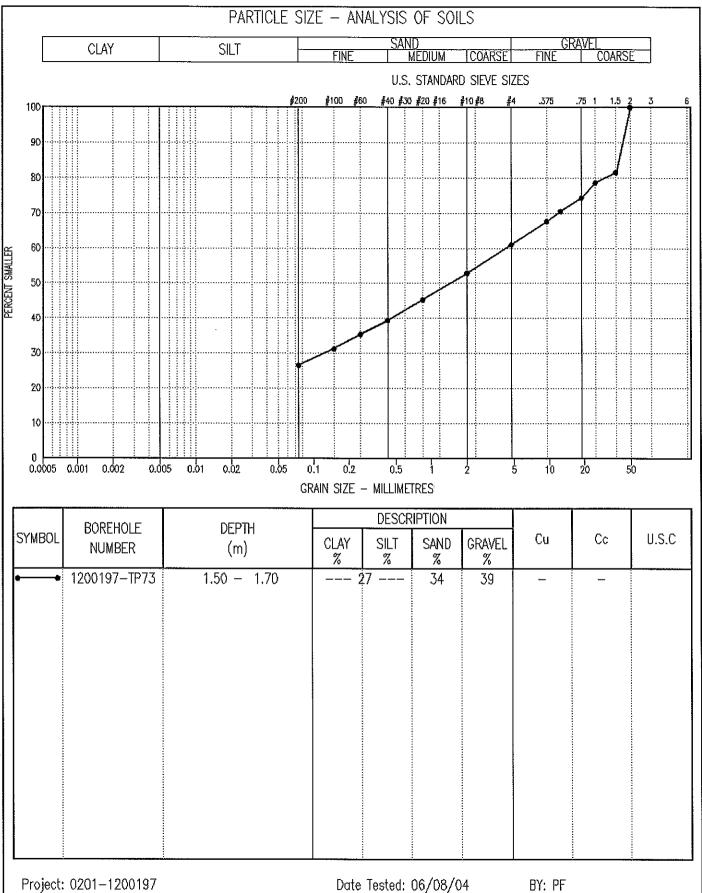
Geote	chni	ical I	nvest	igatior	1		CLIENT: Yukon Engineerin	g Services	TE	ST PIT	N0:	12	2001	97-TI	P69
Propo		····		bbo			EXCAVATOR: 320C TRACK	ED EXCAVATOR	PF	ROJEC	F NO:	1200	197		
Wolver							UTM ZONE: 8 N6806588	E443501	EL	EVATIO	DN:				
SAMP	LE .	TYPE		GRA	b sav	IPLE NO RECOVER	( 🛛 Standard pen. 🛛	75 mm SPOON	CRREL BA						
Depth(m)	SAMPLE TYPE	RUN NO	SPT(N)	nsc	SOIL SYMBOL		SOIL RIPTION	GROUNI DESCRIF		2	20 ■ PE 20	RCENT S	XO Sand III	80	Depth(ft)
0.0						ORGANIC ROOT MAT					0	20 3	80	40	- 0.0
						- colour changes below 0.6 m BEDROCK (PHYLLITE)	gravel, compact, boulders below 0.2 m s to blackish grey - poor quality, actured, soft, dark betent with depth	UNFROZEN				20 3	50		0.0 2.0 4.0 6.0 10.0
~ 4.0  -															14.0
	मा	RA	En	gin	<u>ее</u> і	ring Consulta		GGED BY: JSB				on def			
	لانت	011		~		<b>***</b>		VIEWED BY: JRT		COM	PLETE	: 06/0	7/13		
06/08/16 1	1:584	M (YUK)	NP04}			<u>ehorse, Yukon</u>				_				Page	1 of 1

				igatior	L		CLIENT: Yukon Engineer	-		TES	st pi	I N(	):	120	0197-T	P70
Propo				oad			EXCAVATOR: 320C TRAC					~~~	D: 12	20019	7	
Wolver				_			UTM ZONE: 8 N68068	60 E4			EVATI	ON:				
SAMP	LE	TYPE		GRA	8 SAN	IPLE NO RECOVER	ry 🛛 Standard Pen.	7	5 mm SPOON CRRE	l bai						
Depth(m)	SAMPLE TYPE	RUN NO	SPT(N)	nsc	SOIL SYMBOL		SOIL CRIPTION		GROUND ICE DESCRIPTION			20 ■ 1 20	40 PERCE 40	SILT OR 60 INT SAN 60 M.C.	FINES ▲ 80 D ■ 80 LiQUID	Depth(ft)
0.0	_					ORGANIC ROOT MAT						10	20	30	40	- 0.0
- - - -						GRAVEL — sandy, sili	nd sand, compact, prown		 Frozen			•				2.0
- - 1.0 - - -							sand and gravel, grey		rkozen Nbn, Vs, 15–20%							4,9
 - - - - - - - -								•								1.1.1.1.1.1.1.1.1.1.1.1.1.1.1.1.1.1.1.
- - - - - - 3.0																8.0 111111111111111111111111111111111111
4.0																
-	E	BA	En			ring Consult			d by: JSB /ed by: JRT					DEPTI )6/07,	H: 0.8 m	14.0
06/08/16						<u>tehorse, Yukon -</u>							· `			1 of 1

Seotechnical Investigation	าก	CLIENT: Yukon Engineering S	Services	TEST PIT N	0: 12001	97-TP7	71
Proposed Access Road		EXCAVATOR: 320C TRACKED		PROJECT N	0: 1200197		
Volverine Lake, YT		UTM ZONE: 8 N6807042 E		ELEVATION:			
SAMPLE TYPE	XAB SAMPLE 🛛 NO RECOVEI	ry 🛛 Standard pen. 📃	75 mm SPOON				
Depth(m) SAMPLE TYPE RUN NO SPT(N) USC		SOIL CRIPTION	GROUND ICE DESCRIPTION	20	Percent Sand 🖿	80	Depth(ft)
0.0	ORGANIC ROOT MAT		UNFROZEN	10	20 30	40	0.0
	SAND (RESIDUUM) - coarse grained o gravel, compact	silty, some gravel, angular sand and , moist, light grey ayer of silt throughout	-	•			- - - 2.(
- 1.0	— colour change below 1.0 m	es to reddish brown					- 4.(
- 2.0	gravel below 1.8 — silt content ir	vel becomes softer finer 1 m acreases with depth es to mottled grey,			•		- 6.(
- 3.0							- 8. - - - 1( -
- 4. 🖉							- - 12 - - - 14
 EBA Engir	leering Consult Whitehorse, Yukon		ED BY: JSB WED BY: JRT		TION DEPTH: 4		, 

Geotechnical			)	······	CLIENT: Yukon Engineerin		TE	st pit	NO:	12	2001	97-T	P72
Proposed Ace		oad			EXCAVATOR: 320C TRACK		-	OJECT		1200	197		
Wolverine La				<b></b>	UTM ZONE: 8 N6807314			EVATIC	N:				
SAMPLE TYP	E	GRA	b san	IPLE 🖉 NO RECOVER	y 🛛 standard pen.	75 mm SPOON	el ba		ובסארי				
Depth(m) SAMPLE TYPE RUN NO	SPT(N)	usc	SOIL SYMBOL		SOIL CRIPTION	GROUND ICE DESCRIPTION		2	0 ■ PE 0	RCENT S	60 Sand II	80	Depth(ft)
SAI			SO			DEDCIVILITION		⊢ ⊢	<u></u>		70	40	
0.0				ORGANIC ROOT MAT		UNFROZEN			0	20	30	40	E 0.0
-				SAND (TILL) silty, grained, moist, c	gravelly, fine compact, dark grey								يبتايينا
								٠					2.0
- 1.0													
				— gravel content coarser belaw 1.	; increases and becomes 2 m								۳ 4.0 ۲
								\$					6.0
- 2.0				— trace of grave — very compact, beyond 2.0 m	el below 2.0 m difficult to excavte								لبيب اعتبابي
				END OF TESTPIT 2.8					•				
- 3.0					III (KERUSAL)								10.0
													12.0 12.0
4.0  													       
$\left  - \right $													Ē
EBA	En	gin	661	ring Consult		DGGED BY; JSB						2.8 m	
		~		tehorse, Yukon		EVIEWED BY: JRT		COM	PLETE	: 06/	07/1		1 of 1
06/08/16 11:584M (1U	KONPEA}		<u>17 LLL</u>	CHOISE, IUKOII								гиде	1 of 1

Geotec	hni	cal I	nvest	igatior	1		CLIENT: Yukon Engineering	Services	TES	ST PIT NO:	1200	197-T	P73
Propos				bad			EXCAVATOR: 320C TRACKE		PR	OJECT NO:	1200197	1	
Wolveri							UTM ZONE: 8 N6807641		ELE	EVATION:			
SAMPL	<u>E</u>	TYPE		GRA	ib san	IPLE 🛛 NO RECOVER	y 🛛 🖾 standarð þen. 🗧	75 mm SPOON	el ba				
Depth(m)	SAMPLE TYPE	RUN NO	SPT(N)	nsc	SOIL SYMBOL		SOIL RIPTION	GROUND ICE DESCRIPTION		20	NT SILT OR F 40 60 RCENT SANE 40 60 M.C.	80	Depth(ft)
0.0	_					ORGANIC ROOT MAT		UNFROZEN		10	20 30	40	= 0.0
						sand, loose, dam — becomes silty — colour change 0.5 m	ounded gravel and ip, reddish brown below 0.5 m s to medium grey around e of silt below 2.0 m below 2.0 m	UNFROZEN					1. 10.0 8.0 1. 10.0
-  -													- 14.0 
	<u>ו</u> זיק	) ¥ (	 ₽~			$\mu$	onta ILa ILOO	 GED BY: JSB		COMPLET	<u> </u>	: 2.5 m	<u> </u>
	Ľİ	ЗA	ĽŊ	-		ring Consult		EWED BY: JRT			: 06/07/	13	
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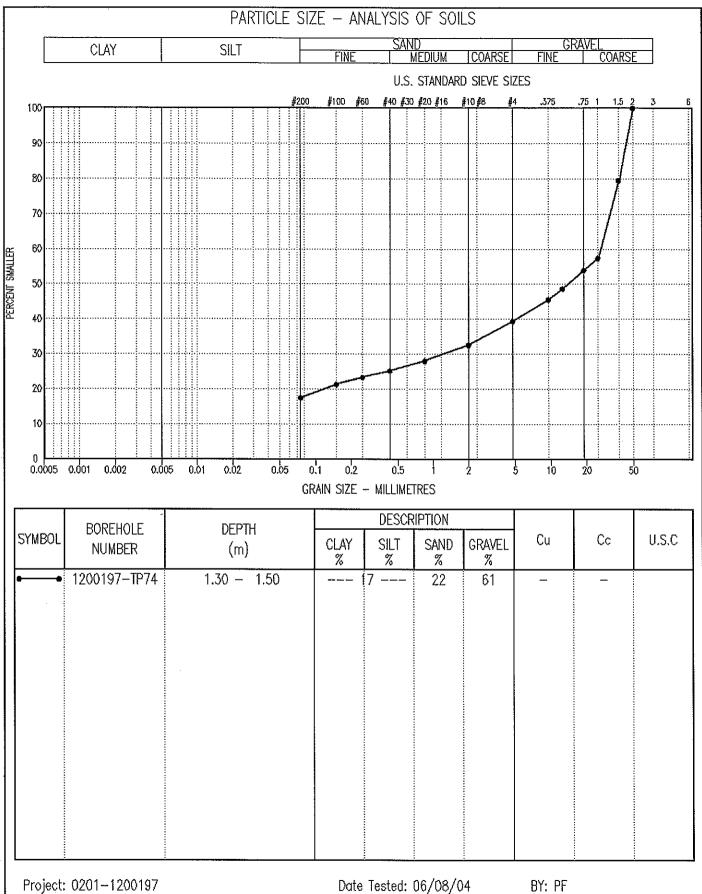


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Geote				-	1		CLIENT: Yukon Engineer	ring Se	rvices	TE	est pit	NO:	12	2001	97–T	P74
Propo		*****		bbo			EXCAVATOR: 320C TRAC			PI	ROJECT	NO:	1200	197		
Wolver							UTM ZONE: 8 N680783	34 E44			LEVATION	<b>{</b> :				
SAMP	LE	TYPE		GRA	B SAN	APLE NO RECOVER	y 🛛 Standard pen.	<u> </u>	5 mm SPOON	CRREL B			. <u></u>			
Depth(m)	SAMPLE TYPE	RUN NO	SPT(N)	nsc	SOIL SYMBOL		SOIL CRIPTION		GROUNI DESCRIF		20	) 4 ■ PER ) 4	RCENT S	30	80	Depth(ft)
	ļ.,					ODOANIO DOOT NUT					10	2	20 2	50	40	
0.0 - - - - - - - - - - - - - - - - - -							gravel and sand, brown ome boulders througho e of silt around 1.0 m ent		UNFROZEN				0 2	50		1.0.0 1.0.0 1.0.0 1.0.0 1.0.0 1.0.0 1.0.0 1.0.0
- - - - - - - - -																12.0 12.0 12.0 1.1 1.1 1.1 1.1 1.1 1.1 1.1 1
	<u>।</u> स्त	D A	<u>۔۔</u> ۔۔تا		<u> </u>			LOGGEI	D BY: JSB		COMP	LETIC	)N DEI	PTH:	1.8 m	- <b>I</b>
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						tehorse, Yukon							/	<u> </u>		1 of 1
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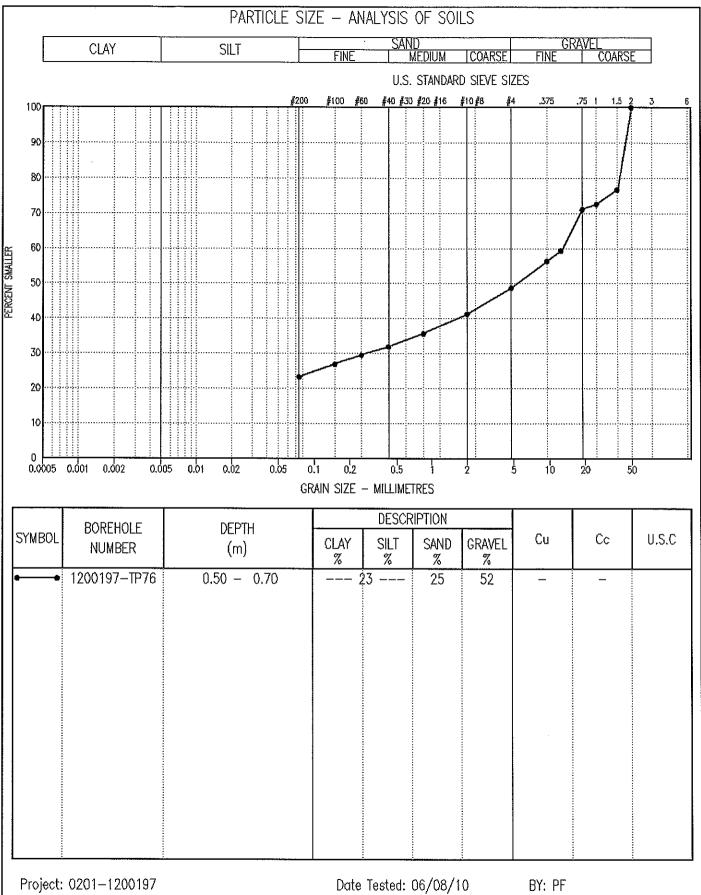
Tested in accordance with ASTM D422 unless otherwise noted. The testing services reported herein have been performed by an EBA technician to recognized industry standards, unless otherwise noted. No other warranty is made. These data do not include or represent any interpretation or opinion of specification compliance or material suitability. Should engineering interpretation be required, EBA will provide it upon written request.



Geote				<u> </u>	1		CLIENT: Yukon Enginee	-		TE	IST PI	t no	: 1	2001	197-T	P75
Propo				bool			EXCAVATOR: 320C TRA			_			: 1200	0197		
Wolve							UTM ZONE: 8 N68078				EVATIO	ON:				
SAMP	'LE '	TYPE		GRA	B SAN	IPLE NO RECOVER	y Standard Pen.		75 mm SPOON CICRI	rel B/					150	
E (E	TYPE	NO	(N		SYMBOL	( N	SOIL		GROUND ICE			20	ERCENT	60	80	E (E)
Depth(m)	SAMPLE TYPE	RUN NO	SPT(N)	nsc	SOIL SY		CRIPTION		DESCRIPTION		PLAS		M.C.		LIQUID	Depth(ft)
0.0	S					ORGANIC ROOT MAT			UNFROZEN			10	20	30	40	- 0.0
-																
- - 						GRAVEL — sandy, silt angular gravel, w compact, moist, — cobbles and b	ell graded sand,									
- - - 1.0																بيايين
-																4.0
-						END OF TESTPIT 1.4	m (REFUSAL)									التتبية بينيا
~ - 2.0																6.0 1
-																
																L 8.0
- 3.0 																E 
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  -  -																12.0
- 4.0 -																
- 								1								E 14.0
	E	BA	En	lgin	ee	ring Consult	ants Ltd.		ED BY: JSB WED BY: JRT						1.4 m	
06/08/15						tehorse, Yukon	<b></b>		ייבט סוג טוגו				E: 06/	0//1		1 of 1

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Geote				·	۱ 		CLIENT: Yukon Enginee		TE	est pi	t no:	12	2001	97-T	P76
Ргоро				oad			EXCAVATOR: 320C TRAC	contra-	Pf	ROJEC	T NO:	1200	197		
Wolver							UTM ZONE: 8 N68081	86 E442777	EL	LEVATI	ON:				
SAMP	LE	TYPE		GRA	B SAN	IPLE NO RECOVER	y 🛛 Standard Pen.	75 mm SPOON	RREL B						
Depth(m)	SAMPLE TYPE	RUN NO	SPT(N)	nsc	SOIL SYMBOL		SOIL RIPTION	GROUND IC DESCRIPTIC		PLAS F	20	RCENT 9 40 0 M.C.	30   5AND <b>  </b> 30	30 30 LIQVID —1	Depth(ft)
0.0						ORGANIC ROOT MAT		UNFROZEN			10	20 :	<u>30</u>	40	- 0.0
- 2.0						GRAVEL — sandy, silt and sand, anguk grey	y, well graded gravel Jr, compact, moist, oulders throughout m (REFUSAL)								6.0 10.0 10.0 10.0
- - - - - - - - - - - - - - - - - - -						ning Compute		LOGGED BY: JSB			PLET	ON DEI	<u>эщ: 1</u>	.2 m	12.0 14.0 14.0
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L						tehorse, Yukon								Page	1 of 1
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#### RECONNAISSANCE ASSESSMENT, km 0 to km 5

Wolverine Lake Mine Access Road Yukon Zinc Corp. - Yukon Engineering Services

STATION	EASTING	NORTHING	ASPECT	UPSLOPE GRADIENT	DOWNSLOP E GRADIENT	STATE	ICE	PRINCIPAL COMPONENT	COMP	CIPAL ONENT FIERS	USC SYMBOL	MATERIAL ORIGIN	TERRAIN SYMBOL	PIT DEPTH (m)	
26JD-1	453428	6818645	NNW	26	22	unfrozen	-	SAND	gravelly	trace silt	GM-GP	<u>colluvium</u> bedrock	Cv/Ra		about 0.5m weathered ro common;uniform slope; d
26JD-2	453230	6818265	SW	25	22	unfrozen	-	SAND	gravelly	trace silt	GM-GP	<u>colluvium</u> bedrock	Cx/R		about 0.5m weathered ro bedrock outcrops of narro meta-volcanics(?); hardn
26JD-3	453242	6818120	w	15	10	frozen below 0.33m	Nbn	GRAVEL	sandy		GP	<u>colluvium</u> bedrock	pOv/Rj		shallow, sidehill bog with area of 60m wide swale;
26JD-4	453026	6817753	w	18	0	frozen below 0.30m	Vs-20	SAND	some silt	trace gravel	SM	<u>colluvium</u> bedrock	pOv/gzsCv R		sidehill bog; uniform slop crystals up to 12mm; per
26JD-5	452928	6817361	W	10	10	Stream Cros	sing						pOv/C?/R?		channel width: 0.35m; de
26JD-6	452882	6817321	w	12	10	frozen below 0.28m	Nbn	SAND	some silt		SM	<u>colluvium</u> bedrock	pOv/Cv/R		shallow, sidehill bog with sidehill bog area; uniform
26JD-7	452733	6816898	w	18	20	frozen below 0.28m	Nf	SAND	gravelly		GW	glaciofluvial	pOv/FGt		shallow sidehill boggy are
27JD-8	451269	6814955	110° SE	20	14	frozen below 0.28m	Nbn	SAND	silty	some gravel	GM	till or colluvium	gzsCb		talus slope?
27JD-9	451094	6814689	103° E	10	. 8	unfrozen	-	SAND	gravelly	silty	GM	till or colluvium	[Mx]Cv		some sub-rounded clasts clasts); moist slope; talus
27JD-10	451116	6814773		10	10	Stream Cros	sing								variable width and depth;
27JD-11	451393	6815193	105° E	13	12	unfrozen	-	SAND	gravelly	trace silt	GM-GP	till or colluvium	gsCb		trace rounded gravel (till)
27JD-12	451543	6815491	E	20	14	Stream Cros	sing								channel width: 0.8m; dep
27JD-13	451562	6815548	130° SE	20	24	unfrozen	-	SAND	gravelly	some silt	GM	till or colluvium	gsCb//Mx		some sub-rounded clasts
27JD-14	451757	6815863	130° SE	30	35	unfrozen	-	SAND	gravelly		GW	till or colluvium	gsCb		dry slope; talus? Slope
	451757	6815843				Stream Cros	sing								located 20m south of 27J
27JD-15	451967	6816200	115° SE	20	12	frozen below 0.30m	Nbn	SAND	silty	organics	-	till or colluvium + organics	pOx/C		shallow sidehill bog area layer.
27JD-16	452079	6816434	E	12	0	Stream Crossing									channel width: 0.60m; de wetland at this location.
27JD-17	452146	6816555	E	6	15	frozen below 0.32m	Nbn	-	-	-	-	organic	pOv/[C]	0.59	"refusal" in frozen organio included a discontinuous
27JD-18	452274	6816294	0	5	0	unfrozen	-	SAND	some silt	some gravel	GM	alluvium	zgsAp	0.40	
27JD-19	452322	6816348				Stream Cro Light Cre	•								estimated present channe 5.0m; estimated full bank
27JD-20	452399	6816394	0			unfrozen	-	SAND	gravelly		GW	glaciofluvial	gsFGt	0.64	on flat-topped, low relief r terrace; sloughing on gull
27JD-21	452454	6816441				Stream Cro Pitch Cro	-								estimated present channe 4.5m; estimated full bank
27JD-22	452563	6816470	0			unfrozen	-	SAND and	GRAVEL				gsFGr	0.60	eroded glaciofluvial terrac
27JD-23	452741	6816688	270° W	20	15	frozen below 0.32m	Nbn	-	-	-	-	organic	pOv/[C?]	0.45	sidehill bog; uniform slop polygon back to 50m N o
27JD-24	453747	6818790	0			unfrozen	-	GRAVEL	some sand			bedrock	sgCx/R	0.70	south side cutslope at Ro relief ridge oriented SW-I
27JD-25	453916	6818763	0			unfrozen	-	GRAVEL	and SAND			glaciofluvial	sgFGt	4	gravel borrow pit on Rob glaciofluvial terrace; ~10

#### PARTICULARS

rock and minor till overlying bedrock; bedrock outcrops; dry; platy jointing meta-volcanics(?).

rock and minor till overlying bedrock; irregular slope: rrow 3m relief ridges trending downslope; dry; platy jointing dness 5-6; jointing is steeply dipping 55° South

th 0.45 peat/organics overlying colluvium and bedrock; in e; uniform slope; permafrost

ope; benchy hillslope; ~20% visible ice, weakly stratified; ice ermafrost

depth: 0.07m; meandering; flowing within sidehill bog;

th 0.28 peat/organics overlying colluvium and (bedrock?); rm slope; permafrost

area with moss cover

sts (till) mixed with colluvium (angular and sub-angular us slope?

th; average channel width: 0.8m; depth: 0.15m;

lepth: 0.11m; uniform slope; within shallow, wide swale

sts (till) with sub-angular clasts (colluvium)

7JD14; similar in size to 27JD12

ea with moss cover; C and O mixed within seasonally active

depth: 0.10m; flowing within sidehill bog; flows into flat

nics at 0.59m; mostly non-visible ice, but a shallow peat layer us 20mm thick strata of 50% visible stratified ice.

nnel width: 1.4m; depth: 0.25m; estimated full bank width: nk depth: 0.5m.

of ridge between Light Creek and Pitch Creek; eroded FG gully sideslopes noted 30m NE of this site

nnel width: 1.1m; depth: 0.1m; estimated full bank width: nk depth: 1.6m.

race

ope; "refusal" within frozen organics at 0.45m; same terrain I of 27JD22.

Robert Campbell Highway; on crest of broad, rounded low-V-NE;

obert Campbell Highway 200m east of access road; 0% oversize (>75mm)

# **APPENDIX**

APPENDIX A *General Conditions



#### **GEOTECHNICAL REPORT – GENERAL CONDITIONS**

This report incorporates and is subject to these "General Conditions".

#### 1.0 USE OF REPORT AND OWNERSHIP

This geotechnical report pertains to a specific site, a specific development and a specific scope of work. It is not applicable to any other sites nor should it be relied upon for types of development other than that to which it refers. Any variation from the site or development would necessitate a supplementary geotechnical assessment.

This report and the recommendations contained in it are intended for the sole use of EBA's client. EBA does not accept any responsibility for the accuracy of any of the data, the analyses or the recommendations contained or referenced in the report when the report is used or relied upon by any party other than EBA's client unless otherwise authorized in writing by EBA. Any unauthorized use of the report is at the sole risk of the user.

This report is subject to copyright and shall not be reproduced either wholly or in part without the prior, written permission of EBA. Additional copies of the report, if required, may be obtained upon request.

#### 2.0 NATURE AND EXACTNESS OF SOIL AND ROCK DESCRIPTIONS

Classification and identification of soils and rocks are based upon commonly accepted systems and methods employed in professional geotechnical practice. This report contains descriptions of the systems and methods used. Where deviations from the system or method prevail, they are specifically mentioned.

Classification and identification of geological units are judgmental in nature as to both type and condition. EBA does not warrant conditions represented herein as exact, but infers accuracy only to the extent that is common in practice.

Where subsurface conditions encountered during development are different from those described in this report, qualified geotechnical personnel should revisit the site and review recommendations in light of the actual conditions encountered.

#### 3.0 LOGS OF TESTHOLES

The testhole logs are a compilation of conditions and classification of soils and rocks as obtained from field observations and laboratory testing of selected samples. Soil and rock zones have been interpreted. Change from one geological zone to the other, indicated on the logs as a distinct line, can be, in fact, transitional. The extent of transition is interpretive. Any circumstance which requires precise definition of soil or rock zone transition elevations may require further investigation and review.

#### 4.0 STRATIGRAPHIC AND GEOLOGICAL INFORMATION

The stratigraphic and geological information indicated on drawings contained in this report are inferred from logs of test holes and/or soil/rock exposures. Stratigraphy is known only at the locations of the test hole or exposure. Actual geology and stratigraphy between test holes and/or exposures may vary from that shown on these drawings. Natural variations in geological conditions are inherent and are a function of the historic environment. EBA does not represent the conditions illustrated as exact but recognizes that variations will exist. Where knowledge of more precise locations of geological units is necessary, additional investigation and review may be necessary.

#### 5.0 SURFACE WATER AND GROUNDWATER CONDITIONS

Surface and groundwater conditions mentioned in this report are those observed at the times recorded in the report. These conditions vary with geological detail between observation sites; annual, seasonal and special meteorologic conditions; and with development activity. Interpretation of water conditions from observations and records is judgmental and constitutes an evaluation of circumstances as influenced by geology, meteorology and development activity. Deviations from these observations may occur during the course of development activities.

#### 6.0 PROTECTION OF EXPOSED GROUND

Excavation and construction operations expose geological materials to climatic elements (freeze/thaw, wet/dry) and/or mechanical disturbance which can cause severe deterioration. Unless otherwise specifically indicated in this report, the walls and floors of excavations must be protected from the elements, particularly moisture, desiccation, frost action and construction traffic.

### 7.0 SUPPORT OF ADJACENT GROUND AND STRUCTURES

Unless otherwise specifically advised, support of ground and structures adjacent to the anticipated construction and preservation of adjacent ground and structures from the adverse impact of construction activity is required.



There is a direct correlation between construction activity and structural performance of adjacent buildings and other installations. The influence of all anticipated construction activities should be considered by the contractor, owner, architect and prime engineer in consultation with a geotechnical engineer when the final design and construction techniques are known.

INFLUENCE OF CONSTRUCTION ACTIVITY

#### 9.0 OBSERVATIONS DURING CONSTRUCTION

Because of the nature of geological deposits, the judgmental nature of geotechnical engineering, as well as the potential of adverse circumstances arising from construction activity, observations during site preparation, excavation and construction should be carried out by a geotechnical engineer. These observations may then serve as the basis for confirmation and/or alteration of geotechnical recommendations or design guidelines presented herein.

### 10.0 DRAINAGE SYSTEMS

8.0

Where temporary or permanent drainage systems are installed within or around a structure, the systems which will be installed must protect the structure from loss of ground due to internal erosion and must be designed so as to assure continued performance of the drains. Specific design detail of such systems should be developed or reviewed by the geotechnical engineer. Unless otherwise specified, it is a condition of this report that effective temporary and permanent drainage systems are required and that they must be considered in relation to project purpose and function.

#### 11.0 BEARING CAPACITY

Design bearing capacities, loads and allowable stresses quoted in this report relate to a specific soil or rock type and condition. Construction activity and environmental circumstances can materially change the condition of soil or rock. The elevation at which a soil or rock type occurs is variable. It is a requirement of this report that structural elements be founded in and/or upon geological materials of the type and in the condition assumed. Sufficient observations should be made by qualified geotechnical personnel during construction to assure that the soil and/or rock conditions assumed in this report in fact exist at the site.

#### 12.0 SAMPLES

EBA will retain all soil and rock samples for 30 days after this report is issued. Further storage or transfer of samples can be made at the client's expense upon written request, otherwise samples will be discarded.

#### 13.0 STANDARD OF CARE

Services performed by EBA for this report have been conducted in a manner consistent with the level of skill ordinarily exercised by members of the profession currently practising under similar conditions in the jurisdiction in which the services are provided. Engineering judgement has been applied in developing the conclusions and/or recommendations provided in this report. No warranty or guarantee, express or implied, is made concerning the test results, comments, recommendations, or any other portion of this report.

#### 14.0 ENVIRONMENTAL AND REGULATORY ISSUES

Unless stipulated in the report, EBA has not been retained to investigate, address or consider and has not investigated, addressed or considered any environmental or regulatory issues associated with development on the subject site.

#### 15.0 ALTERNATE REPORT FORMAT

Where EBA submits both electronic file and hard copy versions of reports, drawings and other project-related documents and deliverables (collectively termed EBA's instruments of professional service), the Client agrees that only the signed and sealed hard copy versions shall be considered final and legally binding. The hard copy versions submitted by EBA shall be the original documents for record and working purposes, and, in the event of a dispute or discrepancies, the hard copy versions shall govern over the electronic versions. Furthermore, the Client agrees and waives all future right of dispute that the original hard copy signed version archived by EBA shall be deemed to be the overall original for the Project.

The Client agrees that both electronic file and hard copy versions of EBA's instruments of professional service shall not, under any circumstances, no matter who owns or uses them, be altered by any party except EBA. The Client warrants that EBA's instruments of professional service will be used only and exactly as submitted by EBA.

The Client recognizes and agrees that electronic files submitted by EBA have been prepared and submitted using specific software and hardware systems. EBA makes no representation about the compatibility of these files with the Client's current or future software and hardware systems.

