# APPENDIX 'A' GEOTECHNICAL REPORT

#### **APPENDIX 'A' - GEOTECHNICAL REPORT**

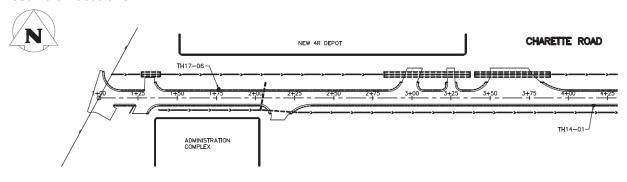
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The geotechnical report is provided to aid in the Contractor's evaluation of the soil conditions. The information presented is considered accurate at the locations shown on the Drawings and at the time of drilling. However, variations in soil conditions may exist between test holes and fluctuations in groundwater levels can be expected seasonally and may occur as a result of construction activities. The nature and extent of variations may not become evident until construction commences.

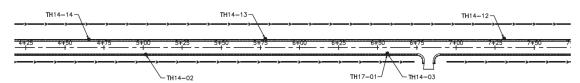
#### **Geotechnical Report for Charette Road**

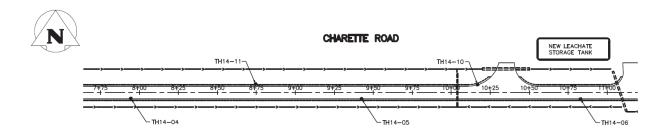
#### **Test Hole Locations**

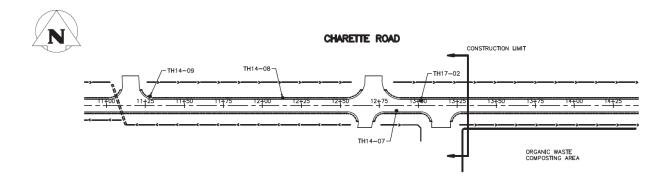




#### CHARETTE ROAD







CLIEN' PROJE SITE LOCAT DRILLI	FION C	014/1 trady l haret	DF WINNIPEG - WATER AND WASTE DEPARTMENT 5 Granular Roadway Renewal Program Landfill e Road 1 o Solid Stem Auger, Acker MP8			TOP WAT DAT		PVC ELE RILL	ELE V.	2 V. 6 N E	4-010 34,91 /3/201 5,51 628,	4 2,93 950	4
ELEVATION (m)	B DEPTH	GRAPHICS	DESCRIPTION AND CLASSIFICATION	SAMPLE TYPE	RECOVERY %	DYN	VS/0.	C CC s/ft			M %	60 C	1000
234 S	متيناتينيآد	0.	GRANULAR FILL (TRAFFIC GRAVEL) - Tan, dry, compact, fine to coarse grained sand, fine to coarse grained gravet, subangular to angular particles, mixed with day fit. CLAY FILL (CL) - Black, damp, stift, low plasticity, trace sit pockets, trace rootlets, trace organics, trace oxidation.	Ha Ha							•		
233 233 _ 2	آبيب إسبيآب	W THI	SILTY CLAY (Cf) - Brown, damp to moist, soft, low plasticity, trace day, trace could be content.  SILTY CLAY (Cf) - Motiled grey and brown, damp to moist, stiff, high plasticity, trace	TANALA S	d								
232 3	بلىبىللىيا		sit pockets.	H s	6								•
231 4				ß.	7								
230 5	سبآسي		END OF TEST HOLE at 4.57 m  Notes:  1. No groundwater encountered. 2. Backfilled TH14-01 with auger cuttings and bentonite chips to surface.										
229 6	Harry Services												
220 7	1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1												
227 8	ا مهلّمیسیان												
220 9	30												

SITE	JECT 2	2014/1 Brady Charet	DF WINNIPEG - WATER AND WASTE DEPARTMENT 15 Granular Roadway Renewal Program Landfill te Road n ø Solid Stem Auger, Acker MP8			TOF WA		PVC ELE RILL		2 V. 6 N E	4-0107 34,69 /3/201 5,512 629,0	4 1,977 124	
ELEVATION (m)	E DEPTH	GRAPHICS	DESCRIPTION AND CLASSIFICATION	SAMPLE TYPE	NUMBER RECOVERY %	DYN (N)	(N) ws/0 lAMI blow	C Co			M(	(KPa)	30 LL
234.4 _ 234	والمرابع المرابع		GRANULAR FILL (TRAFFIC GRAVEL) - Brown, dry, compact, fine to coarse grained sand, fine to coarse grained gravel, subangular to angular particles, mixed with clay fill. CLAY FILL (CL) - Black, damp, stiff, low plasticity, some silt pockets, trace rootlets, trace organics.	41	S1 S2 S3								
233.2 _ 2883 _	2-3		SILTY CLAY (CI) - Brown, frozen, low plasticity, high sit content.  - trozen from 1.52 m to 2.13 m.  SILTY CLAY (CH) - Motiled grey and brown, frozen, trace sift pockets, trace oxidation.	H	84								•
202	3 10		- Moist, stiff, high plasticity below 1.83 m.	닭	S5							•	1 1 1 1 1 1 1
231	بېلىپ بېلىر		- Trace to some oxidation below 3.65 m.	21	S6								
230.1	15	414	END OF TEST HOLE at 4.57 m	Ħ	87	11111		020 1121	1464 1464	11	++*	#	
229	5-1		Notes:  1. No ground water encountered.  2. Backfilled TH14-02 with auger cultings and bentonite chips to surface.										
220	6-20												
227	25												
226	9-30												
225	4												

OC	JECT 2	014/1 Brady L harett	DF WINNIPEG - WATER AND WASTE DEPARTMENT 5 Granular Roadway Renewal Program Landfill te Road n ø Solid Stem Auger, Acker MP8			JOB I GRO TOP ( WATI DATE UTM	OF PV ER EL DRIL	EV.	2. 6. N E	4-0107- 34.44 /3/2014 5,513 629,1	1 ,054 58
ELEVATION (m)	∃ DEPTH	GRAPHICS	DESCRIPTION AND CLASSIFICATION	SAMPLE TYPE	RECOVERY %	SPT (blow: DYNA (N) bl	MIC ( ows/fi	ONE	11 11 11 11	MC	(kPa)
91.4 234	سيستستس		GRANULAR FILL (TRAFFIC GRAVEL) - Tan, dry, compact, fine to coarse grained sand, fine to coarse grained gravet, subangular to angular particles, mixed with day fill. CLAY FILL (CH) - Black, damp, stiff, low to high plasticity, trace sitt pockets, trace rootlets, trace organics, trace oxidation.	ूर स	2						
232	25		SILTY CLAY (Cf) - Brown, moist to wel, soft, low plasticity, high silt content.  - Frozen from 1,82 m to 2,13 m.		4						
n.s _	3 10 10 10 10 10 10 10 10 10 10 10 10 10		SILTY CLAY (CH) - Moltied grey and brown, moist, firm to stiff, high plasticity, trace silt pockets, trace oxidation.	H°						- +	
2	5-15		END OF TEST HOLE at 4.57 m  Notes:  1. No groundwater encountered. 2. Backfilled TH14-03 with auger cuttings and bentonite chips to surface.								
nes 227	7-25										
MI.	***************************************										
25	- The state of										

SITE	JECT 2 E E ATION (	2014/1 Brady L Charett	DF WINNIPEG - WATER AND WASTE DEPARTMENT 5 Granular Roadway Renewal Program Landfill te Road n ø Solid Stem Auger, Acker MP8			TOF WA	OF	PV(	LEV. C ELE EV. LED	EV.	6/3/2 6/3/2 N 5,	2014 513,12 29,278	23
ELEVATION (m)	∃ DEPTH	GRAPHICS	DESCRIPTION AND CLASSIFICATION	SAMPLE TYPE	NUMBER RECOVERY %	DYN (N)	MAM	IC O	m ▲ ONE △	Cu T	D 4	MC MC %	30 LL
294 294	سينايسيلب	· n•	GRANULAR FILL (TRAFFIC GRAVEL) - Brown, dry, compact, fine to coarse grained sand, some fine grained gravel, mixed with clay fill.  CLAY FILL (CL) - Brown to Black, damp, stiff, low plasticity, trace sit pockets, trace organics.	H	S1 S2 S3						•		
202 202	2 2 3		SILTY CLAY (CH) - Brown, damp to moist, stiff, high plasticity, frace fine grained sand.	23	S4 S5	1121				1	•		•
231	4 15		Mottled grey and brown, moist, trace siti pockets, trace oxidation below 3.35 m.  END OF TEST HOLE at 4.57 m.	41	S6 S7			100				• - -	
229	11/11/11/11/11/11/20 11/11/11/11/11/11/20		Notes:  1. No groundwater encountered: 2. Backfilled TH14-04 with auger cuttings and bentonite chips to surface.										
220	7-1-25												
1206													
225	, , , ,												

SITE LOC DRII	JECT 2 E E ATION (	2014/1 Brady I Charett	DF WINNIPEG - WATER AND WASTE DEPARTMENT 5 Granular Roadway Renewal Program Landfill te Road n ø Solid Stem Auger, Acker MP8			JOB N GROU TOP O WATE DATE UTM	JND E OF PV ER EL DRIL	C ELE	EV.	6/3/2 6/3/2 N 5,3 E 62	2014 513,1 29,40	197 6
ELEVATION (m)	EPTH &	GRAPHICS	DESCRIPTION AND CLASSIFICATION	SAMPLE TYPE	RECOVERY %	SPT (blows DYNA (N) blows	0.15 MIC (	ONE	Cu T	ORVA D 4	MC %	Pa) 0 80 LI
294.5	a type	.0.	GRANULAR FILL (TRAFFIC GRAVEL) - Brown, dry, compact, fine to coarse grained sand, fine to coarse grained gravel, subangular to angular particles, mixed with day fill. CLAY FILL (CL) - Black to grey, damp, stiff, low plasticity, trace fine grained sand, trace	H	31			H				
234	, 3		oxidation.	#	32					÷		
23.2	1			H	33							
233	2		SILTY CLAY (CH) - Brown, Frazen, trace sitt pockets.  - Frazen from 1.52 m to 1.82 m.  - Damp to molst, stiff, high plasticity below 1.82 m.	Ħ.	34					ļ		1
19 N. D.	1		Postrip to mode, our, regit peasing below 1.ce. in.	2000								44
232	3-10	Ш		Ħ.	35							•
231	uttur	W	- Mottled grey and brown, moist, trace oxidation, trace gypsum pockets below 3.35 m.	<b>3</b>	36							#
	4-7	W			57							
230	15	3141	END OF TEST HOLE at 4.57 m	21							Ĭ	Ħ
	5-		Notes:  1. No groundwater encountered.									
229	1		Backfilled TH14-05 with auger cuttings and bentonite chips to surface.									
	20											
220	-											
	/ <del>T</del>											
227	9-25											
	1											
2290	94											
	30											
225	3											

SITE	JECT 2	2014/1 Brady Charet	DF WINNIPEG - WATER AND WASTE DEPARTMENT 15 Granular Roadway Renewal Program Landfill te Road n ø Solid Stem Auger, Acker MP8	Ť.			OF TER TE D	PV( ELE RILL		EV.	6/3/2 4 5,	2014 513,2 29,52	267 8	
ELEVATION (m)	E DEPTH	GRAPHICS	DESCRIPTION AND CLASSIFICATION	SAMPLE TY NUMBER	RECOVERY %	DYN (N) I	MAS	.15 i IC O	n ▲ ONE △	Cu T	ORVA 0 4 L	MC %	Pa) 0 8	0
234 234	سيطيسيلس		GRANULAR FILL (TRAFFIC GRAVEL) - Brown, dry, compact, fine to coarse grained sand, fine to coarse grained gravel, subangular to angular particles, mixed with clay fill. CLAY FILL (CL) - Black, damp, stiff, low plasticity, trace silt pockets, trace rootlets, trace organics, trace oxidation.								•			
233 -	2		SILTY CLAY (CI) - Brown, damp to moist, soft, low plasticity, trace day, trace oxidation, high sit content.	₽ 23°×										
232	2 1 10		SILTY CLAY (CH) - Moltiled grey and brown, moist, stiff, high plasticity, trace sit. pockets.	₽ ss							•		•	STATES CA
231	ىيىلىيىنىلىر بىلىيىنىلىيىنىلىر		- Trace oxidation below 3.65 m.	₹3 se				100						
966 _	15	Ш	END OF TEST HOLE at 4.57 m	Ħ 87		11111		0-fr)				•	•	
229	5 1 1 1 1 1 20		Notes:  1. No groundwater encountered: 2. Backfilled TH14-06 with auger cuttings and bentonite chips to surface.											AT STATE OF STATE OF
220	7-1													150111111111
227	25													STORY STORY
226	9 1 30													A 34 8 3 14 3 10 10
225	1													

SITE	JECT 2	2014/1 Brady L Charett	DF WINNIPEG - WATER AND WASTE DEPARTMENT 5 Granular Roadway Renewal Program Landfill te Road 1 o Solid Stem Auger, Acker MP8	12:		TOP WAT DAT		PVC ELE RILL	2. V. 6. N E	4-0107 34,65 /3/201- 5,513 629,7	4 ,369 04	
ELEVATION (m)	∃ DEPTH	GRAPHICS	DESCRIPTION AND CLASSIFICATION	SAMPLE TYPE	RECOVERY %	DYN (N) I	(N) ws/0. LAMI blow	C CC s/ft		MC	(KPa) 60	30 LL
23H.3 _	والمرابعة المرادة	-0-	GRANULAR FILL (TRAFFIC GRAVEL) - Brown, dry, compact, fine to coarse grained sand, fine to coarse grained gravet, subangular to angular particles, mixed with clay fit. CLAY FILL (CL) - Black, damp, stirf, low plasticity, trace sit pockets, trace organics.	H	S1 S2					111		
233.1 _ 233	2		SiLTY CLAY (CH) - Brown to grey, damp, strff, intermediate plasticity, trace sitt pockets Frozen from 1.52 m to 1.83 m	27	34							
232	3 10		Tan, block, increased sift content from 2.44 m to 3.05 m.      Mottled grey and brown, moist, high plasticity, trace sift pockets, trace oxidation below 3.05 m.	स	95 96							
230.1 _ 230	4-1-15		END OF TEST HOLE at 13.41 m	ਸ਼ <sup>਼</sup>	57							
225	5		Notes:  1. No groundwater encountered. 2. Backfilled TH14-07 with auger cuttings and bentonite chips to surface.									
220	7-1											
227	25 8								11. 11.			
224	9 30											
225	d and a											

CLIEN PROJI SITE LOCA DRILL METH	ECT 2	014/1 Brady L harett	DF WINNIPEG - WATER AND WASTE DEPARTMENT 5 Granular Roadway Renewal Program Landfill te Road To Solid Stem Auger, Acker MP8				OF OF TER E DI	PVC ELE RILL	2. V. 6. N E	4-0107 34,62 /3/201 5,513 629,6	4 3,339 36	,
ELEVATION (m)	(E) DEPTH	GRAPHICS	DESCRIPTION AND CLASSIFICATION	SAMPLE TYPE	NUMBER RECOVERY%	SPT blow DYN (N) t	VS/0.	C CC s/ft		M:	(KPa 60 C	30 LL
234	المرابات والمراد	•	GRANULAR FILL (TRAFFIC GRAVEL) - Brown, dry, compact, fine to coarse grained lsand, fine to coarse grained gravel, subangular to angular particles, mixed with day fill. CLAY FILL (CL) - Black to brown, damp, stiff, low plasticity, trace sift pockets, trace rootiets, trace organics, trace oxidation.	Н	S1 52 S3							
233.1	2-1		SiLTY CLAY (CH) - Mottled grey and brown, some slit pockets, trace fine grained gravel.  - Frozen from 1.52 m to 2.13 m Damp to moist, stiff, high plasticity below 2.13 m.		54							1
201.6;	3 10		SILTY CLAY (Cf) - Brown, moist, soft, non plastic, some oxidation, high silt content.  SILTY CLAY (CH) - Mottled grey and brown, moist, firm to stiff, high plasticity.	#	85							
231	4		- Trace sit pockets below 3.65 m.	H	96 57					•	•	
230 7	5 20		END OF TEST HOLE at 4.57 m  Notes:  1. No groundwater encountered. 2. Backfilled TH14-08 with auger cuttings and bentonite chips to surface.									
226	7-1											
227	8-1											
	9 1 30											

RO	JECT 2	2014/1 Brady Charet	DF WINNIPEG - WATER AND WASTE DEPARTMENT 5 Granular Roadway Renewal Program Landfill te Road n ø Solid Stem Auger, Acker MP8			TOP	OF P ER E E DR	ELEV VC EL LEV.	EV.	6/3/ N 5 E 6	/2014 ,513, 29,56	298 52
ELEVALION (m)	(#) DEPTH	GRAPHICS	DESCRIPTION AND CLASSIFICATION	SAMPLE TYPE	NUMBER RECOVERY %	DYN	AMIC lows	973) 0	Cu	TORV 20 PL	ANE (I	kPa) (0 8
43.	4		GRANULAR FILL (TRAFFIC GRAVEL) - Brown, dry, compact, fine to coarse grained sand, some fine grained gravet, mixed with clay fill.  CLAY FILL (CL) - Black, damp, stiff, low plasticity, trace sift pockets, trace rootlets,	17	S1 S2							
3H 0.6	1		trace organics, trace oxidation.			of o						
33	1-1		SILTY CLAY (Ct) - Brown, damp, soft, low plasticity, high sitt content.  -Frozen from 1.52 m to 2.13 m.	Į,	93					*		
720	27		- Trace oxidation, trace coarse grained sand, trace fine grained gravel, trace clay below 1.82 m.	Ħ	54				4	+		
2	2			H	95		d	7-	-4	14		
s _	3-10		SILTY CLAY (CH) - Motiled grey and brown, moist, stiff, high plasticity, trace sit	8						#1		
ņ	4		pockets:	8	96							
1	15	140	- Trace oxidation below 4.26 m.	H	57							4
0	5		END OF TEST HOLE at 4.57 m  Notes:	-1255-03						11		
9	1		No groundwater encountered.     Backfilled TH14-09 with auger cuttings and bentonite chips to surface.									
	6 20											
n	1									11. 		
	7								ļį:			
	25									44. 11		
	8-1											
g	9-						4					
	= 30						#					
5				Ш								

SITE	JECT 2	014/1 Brady L harett	DF WINNIPEG - WATER AND WASTE DEPARTMENT 5 Granular Roadway Renewal Program Landfill te Road to Solid Stem Auger, Acker MP8			TOF WA	OF	PV( ELE RILL	LEV. C ELE EV. LED	EV.	6/3/2 4 5,	2014 513,2 29,466	242 6
ELEVATION (m)	∃ DEPTH	GRAPHICS	DESCRIPTION AND CLASSIFICATION	SAMPLE TYPE	NUMBER RECOVERY %	DYN (N)	MAM	.15 i IC O	m ▲ ONE △	Cu T	ORVA 0 4 L	ANE (KI	Pa)
234 234	سيبتليسيلي		GRANULAR FILL (TRAFFIC GRAVEL) - Brown, dry, compact, fine to coarse grained sand, some fine to coarse grained gravel, subangular to angular particles, mixed with clay nit.  CLAY FILL (CL) - Black, damp, stiff, low plasticity, trace sift pockets, trace rootlets, trace organics, trace fine to medium grained sand.	Ħ	S1 S2 S3						•		
2333 332.8 _	2 2 2		SILTY CLAY (CH) - Brown, damp, stiff, high plasticity.	H	54								1
232	F		- Mottled grey and brown below 2,60 m.  - Trace sit pockets below 3,04 m.	Ħ	S5 S6							•	•
231	مالىيىنىل بىلىيىنىل		- Trace oxidation below 3.65 m.  - Firm to stiff below below 4.26 m.	H	57							•	
229	سياسينا		END OF TEST HOLE at 4.57 m  Notes:  1. No groundwater encountered. 2. Backfilled TH14-10 with auger cuttings and bentonite chips to surface.										
226	7-20												
27	**************************************												
201	3 30	I											
	PLE TYPE	स्रा	Auger Grab										

PROJECT SITE I	2014/1 Brady I Charett	DF WINNIPEG - WATER AND WASTE DEPARTMENT 5 Granular Roadway Renewal Program Landfill te Road n ø Solid Stem Auger, Acker MP8			TOP	OF PA ER EL E DRI		EV.	234. 6/3/ N 5. E 6.	2014 ,513,1 29,34	71 3
ELEVATION (m)	GRAPHICS	DESCRIPTION AND CLASSIFICATION	SAMPLE TYPE	RECOVERY %	DYN	s/0.15 AMIC lows/f	m ▲ CONE t △	Cu 1	ORV	ANE ()  MC	0/8/T \ /
254 254 1		**GRANULAR FILL (TRAFFIC GRAVEL) - Brown, dry, compact, fine to coarse grained sand, fine to coarse grained gravel, subangular to angular particles, mixed with clay fill. CLAY FILL (CL) - Black, moist, stiff, low plasticity, trace sit pockets, trace rootlets, trace organics, trace sit.	ूर्व स	2							
200.8 5		SILTY CLAY (Ct) - Brown, frozen, trace clay, trace oxidation, high sit content.  - Frozen from 1.52 m to 2.13 m,  SILTY CLAY (CH) - Moltiled grey and brown, damp, stiff, high plasticity, trace sitt pockets.	######################################	4							
231 3 10		- Some axidation packets below 3.35 m.	E a	6						*	
220 - 15	HH.	- Firm to stiff below 4.26 m.  END OF TEST HOLE at 4.57 m  Notes:  1. No groundwater encountered. 2. Backfilled TH14-11 with auger cuttings and bentonite chips to surface.	H s	7							
7 - 221											
228   1 9-1 30											

CLIENT CITY OF WINNIPEG - WATER AND WASTE DEPARTMENT PROJECT 2014/15 Granular Roadway Renewal Program  SITE Brady Landfill LOCATION Charette Road  DRILLING METHOD 125 mm ø Solid Stem Auger, Acker MP8					4.700	OF OF TER E DI	PVC ELE RILL	ELE V.	2 V. 6 N E	14-0107-010 234.36 v. 6/3/2014 N 5,513,100 E 629,218 CU POCKET PEN (KP)				
ELEVATION (m)	GRAPHICS	DESCRIPTION AND CLASSIFICATION	SAMPLE TYPE NUMBER	RECOVERY %	SPT blov DYN (N) b	VS/0.	C CC s/ft			0RVA/ 0 40	MC (KP	Pa)		
H2 - 1	<b>#</b> 17.3.	GRANULAR FILL (TRAFFIC GRAVEL) - Brown, dry, compact, fine to coarse grained sand, fine to coarse grained gravel, subangular to angular particles, mixed with day fill. CLAY FILL (CL) - Black, damp, stift, low plasticity, trace to some slit pockets, trace rootiets, trace organics, trace to some slit, trace day.	XX 82	800										
2 - 5		SILTY CLAY (CH) - Brown, damp, stiff, high plasticity, trace silf pockets, trace fine grained sand, fissured:	H 54									•		
3 - 10	- Mottled grey and brown, trace oxidation, moist below 3.65 m.	- Mottled grey and brown, trace oxidation, moist below 3.65 m.		0.0			10.				•	†   1 		
229	Notes:													
6														
25				0.000										
9-30	9-1-30													

CLIENT PROJECT SITE LOCATION DRILLING METHOD		2014/15 Granular Roadway Renewal Program  Brady Landfill  ION Charette Road  NG 125 mm a Solid Stem Auger, Acker MP8						ELEV ELEV RILLE	ELEV D	14-0107-010 234.47 EV. 6/3/2014 N 5,513,023 E 629,086 Cu POCKET PEN (kPa)				
ELEVATION (m)	(#) (#)	GRAPHICS	DESCRIPTION AND CLASSIFICATION		NUMBER RECOVERY %	DYN	AMIC dows	CON vft	VE △		40 40	MC (KP	Pa)	
234	111		GRANULAR FILL (TRAFFIC GRAVEL) - Brown, dty, compact, fine to coarse grained sand, fine to coarse grained gravet, subengular to angular particles, mixed with clay fill. CLAY FILL (CL) - Black to brown, damp, stiff, low plasticity, trace sit pockets, trace fine grained sand, trace rootlets.	감	S1 S2 S3						11			
232	2 10 10 10 10 10 10 10 10 10 10 10 10 10		SILTY CLAY (CH) - Brown, damp, stiff, high plasticity, trace silt pockets.  - Frozen from 1.52 m to 2.13 m,  - Mottled grey and brown, damp, stiff, high plasticity below 2.13 m.	41	S4 S5									
231	3 10		- Trace oxidation below 3.35 m.	23	96 87							+		
229	5 1 1 1 20	2018-310	END OF TEST HOLE at 4.57 m  Notes:  1. No groundwater encountered: 2. Backfilled TH14-13 with auger cultings and bentonite chips to surface.						D					
227	7 - 25 8 - 1 - 25 9 - 1													
25	30													

ROJECT ITE OCATION	2014/1 Brady I Charett	DF WINNIPEG - WATER AND WASTE DEPARTMENT 5 Granular Roadway Renewal Program Landfill te Road n ø Solid Stem Auger, Acker MP8			GRO TOP WAT	OF I	PVC ELEV	ELE /. ED	V. (N. E	034.6 0/3/2 1 5,5 62	014 512,9 8,988	67 8
B DEPTH	GRAPHICS	DESCRIPTION AND CLASSIFICATION	SAMPLE TYPE	NUMBER RECOVERY %	DYN	VS/0.	C CO	NE A		ORVA	MC %	Pa)
44 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1		GRANULAR FILL (TRAFFIC GRAVEL) - Brown, dty, compact, fine to coarse grained [sand, fine to coarse grained gravet, angular particles, mixed with clay fill. CLAY FILL (CL) - Black, damp, stiff, low plasticity, trace sift pockets, trace fine grained sand.	J <sub>E</sub>	S1 S2						4-1		
33 5		SILTY CLAY (Cf) - Brown, trace day, trace oxidation, high sift content.  - Frozen from 1.22 m to 2.29 m.  SILTY CLAY (CH) - Brown, frozen, trace sift pockets.	Ħ	83								
2 - 10 2 - 10		- Moist, stiff, high plasticity below 2.28 m Mottled grey and brown below 2.43 m Trace to some oxidation pockets below 3.04 m.	41	S4 S5								
31 4 4 15 15 15 15 15 15 15 15 15 15 15 15 15		END OF TEST HOLE at 4.57 m	14	96 97							*	
5 - 1 5 - 1 6 - 20		Notes:  1. No groundwater encountered: 2. Backfilled TH14-14 with auger cuttings and bentonite chips to surface.										
7-1												
8 - 25												
9-30												

CLIENT CITY OF WINNIPEG - WATER AND WASTE DEPARTMENT Charette Road Paving Design  SITE Brady Landfill LOCATION Charette Road  DRILLING METHOD 125 mm ø Solid Stem Auger, ACKER MP5 Drill Rig				JOB NO. GROUND ELI TOP OF CASI WATER ELEV DATE DRILLE UTM (m)					ing i V.	NG ELEV.				
ELEVATION (m)	(E) (E)	GRAPHICS	DESCRIPTION AND CLASSIFICATION	SAMPLE TYPE	NUMBER RECOVERY %	SPT blow DYN (N) I		C C(	n ▲ ONE △	Cu T	ORV	MC %	kPa)	0.00
54.7 _ Z94			GRANULAR FILL (GRAVEL SURFACING) - (305 mm) Tan, damp, compact, fine to coarse grained sand, fine to angular particles, trace (ay (fill), CLAY FILL (CH) - (1.22 m) Black, moist, stiff, medium to high plasticity, trace silt pockets, trace rootlet, trace organic, trace oxidation.	B							- -  - -  •			•
202	2-2-2-3-3-3-3-3-3-3-3-3-3-3-3-3-3-3-3-3		<u>SILTY CLAY</u> (CH) - (3.05 m) Dark brown, moist, stiff, medium to high plasticity, trace slit, trace fine grained sand pockets, trace fine grained gravel.	R R	i.						•			*
251	3 10		<ul> <li>Light brown, high silt contents, no fine grained sand pockets, below 2.74 m.</li> <li>Mottled grey and brown, firm to stiff, high plasticity, trace silt pockets, trace oxidation below 2.74 m.</li> </ul>	R	S4 S5								•	•
en _	5-15		END OF TEST HOLE at 4.57 m  Notes:  1. No groundwater encountered. 2. Backfilled TH17-01 with auger cuttings and bentonite chips to surface.	ਸ	S6								•	
29	6	2.1												
27	7-3-25													
8	9													
á	- 3-30 -					2								

PRO SITE LOC. DRIL	CITY OF WINNIPEG - WATER AND WASTE DEPARTMENT CATION Charette Road  LLLING THOD  CATION Charette Road  CATION Charette Road				JOB NO. GROUND ELEV TOP OF CASING WATER ELEV. DATE DRILLED UTM (m)						N.E. 6/26/2017 N 5,513,382 E 629,714				
ELEVATION (m)	(B) DEPTH	GRAPHICS	DESCRIPTION AND CLASSIFICATION	SAMPLE TYPE	NUMBER RECOVERY %	DYNA (N) bi	MIC ( lows/f	60	Cu T	ORV/	40 6 MC 40 6	ornana.			
DH4 _	1		GRANULAR FILL (GRAVEL SURFACING) - (305 mm) Brown, damp, compact, fine to coarse grained sand, fine to coarse grained gravel, subangular to angular particles, trace clay (fill).	I H	St		Acres 6		1.1.	1-1-					
234	1-1		CLAY FILL (CH) - (1.22 m) Black, molst, stiff, high plasticity, trace slit pockets, trace organic.	 ਸ	82				::::::::	•	1:1:1				
33.2	=======================================	****	SILTY CLAY (CH) - (3.05 m) Brown to grey, moist, stiff, intermediate to high	27	83					-					
233	2-		plasticity, trace slit pockets.	8,5											
	3			स	84							↓			
252	}						3-1 3-1								
	3—10		- Mottled grey and brown, high plasticity, trace oxidation below 3.81 m.	ਸ	85							•			
231	1							9-1	11:						
201	4-			н	86	44						- +			
280.1	3			स	87										
230	15		END OF TEST HOLE at 4.57 m												
	5-		Notes:				H								
229	1		No groundwater encountered.     Backfilled TH17-02 with auger cuttings and bentonite chips to surface.				$\exists$								
	6 = 20								100	1.1		(40.00)			
	1						4	45							
28	. 1														
	1						1								
27	-25							-							
	8-														
	4						Щ	44.							
226	9						11								
	30														
25	1														
<u> </u>	_3	图			بالك	++21-	200		1	1.1.	1-1-1	and.			

PRO SITE LOC DRIL	CATION Charette Road  RILLING ETHOD  125 mm ø Solid Stem Auger, ACKER MP5 Drill Rig				TOF WA	OF	CAS ELE RILL	ing i V.	E	017 017 823 7	37:						
ELEVATION (m)	(a) DEPTH	GRAPHICS	DESCRIPTION AND CLASSIFICATION	SAMPLE TYPE	NUMBER RECOVERY %	SPT blo DYN (N)	LAM blow	IC Co	n ▲ ONE △	Cu To	ORVA 0 4	ANE (N O 6 MC	(Pa)	0			
254.2 _ 254	سيطسيكسا		GRANULAR FILL IGRAVEL SURFACING! - (457 mm) Brown, molet, compact, fine to coarse grained sand, fine to coarse grained gravel, subangular to angular particles, some clay (fill).  CLAY FILL (CH) - (1.68 m) Black to grey, molet, very stiff, intermediate to high plasticity, trace slit pockets, trace coarse grained sand, trace organic, trace oxidation.	H							·						
200 2025 _	2-		SILTY CLAY (CH) - (2.44 m) Grey, moist, stiff, high plasticity, trace coarse grained sand, trace gypsum nodules.	a a	82		2000										
252	3 10		Mottled brown and grey, intermediate to high plasticity, increase in sit content, trace oxidation below 2.74 m.	स	84		1222		1000	:1::1							
231	4		Brown, high plasticity, decrease in slit content, some gypsum nodules below 3.66 m.     Mottled brown and grey, trace gypsum nodules below 4.27 m.	ਸ ਸ	S5 S6		20.00						*				
220	5 - 20					Notes:  1. No groundwater encountered. 2. Backfilled TH17-06 with auger cuttings and bentonite chips to surface.	230										
28	7-																
20	8—25																
226	9 - 30																
25	PLE TYPE	स्र	Auger Grab		۱,									ij			