

STRATA PLOT

Strata plots symbolize the soil or bedrock description. They are combinations of the following basic symbols. The dimensions within the strata symbols are not indicative of the particle size, layer thickness, etc.



Boulders
Cobbles
Gravel



Sand



Silt



Clay



Organics



Asphalt



Concrete



Fill



Bedrock

SAMPLE TYPE

SS	Split spoon sample (obtained by performing the Standard Penetration Test)
ST	Shelby tube or thin wall tube
DP	Direct-Push sample (small diameter tube sampler hydraulically advanced)
PS	Piston sample
BS	Bulk sample
WS	Wash sample
HQ, NQ, BQ, etc.	Rock core samples obtained with the use of standard size diamond coring bits.

WATER LEVEL MEASUREMENT



measured in standpipe,
piezometer, or well



inferred

RECOVERY

For soil samples, the recovery is recorded as the length of the soil sample recovered. For rock core, recovery is defined as the total cumulative length of all core recovered in the core barrel divided by the length drilled and is recorded as a percentage on a per run basis.

N-VALUE





Numbers in this column are the field results of the Standard Penetration Test: the number of blows of a 140 pound (64 kg) hammer falling 30 inches (760 mm), required to drive a 2 inch (50.8 mm) O.D. split spoon sampler one foot (305 mm) into the soil. For split spoon samples where insufficient penetration was achieved and N-values cannot be presented, the number of blows are reported over sampler penetration in millimetres (e.g. 50/75). Some design methods make use of N value corrected for various factors such as overburden pressure, energy ratio, borehole diameter, etc. No corrections have been applied to the N-values presented on the log.

DYNAMIC CONE PENETRATION TEST (DCPT)

Dynamic cone penetration tests are performed using a standard 60 degree apex cone connected to A size drill rods with the same standard fall height and weight as the Standard Penetration Test. The DCPT value is the number of blows of the hammer required to drive the cone one foot (305 mm) into the soil. The DCPT is used as a probe to assess soil variability.

OTHER TESTS

S	Sieve analysis
H	Hydrometer analysis
k	Laboratory permeability
γ	Unit weight
G_s	Specific gravity of soil particles
CD	Consolidated drained triaxial
CU	Consolidated undrained triaxial with pore pressure measurements
UU	Unconsolidated undrained triaxial
DS	Direct Shear
C	Consolidation
Q_u	Unconfined compression
I_p	Point Load Index (I_p on Borehole Record equals $I_p(50)$ in which the index is corrected to a reference diameter of 50 mm)

	Single packer permeability test; test interval from depth shown to bottom of borehole
	Double packer permeability test; test interval as indicated
	Falling head permeability test using casing
	Falling head permeability test using well point or piezometer



Stantec

RECORD OF BOREHOLE No BH 10-01

1 OF 2

METRIC

W.P. 3002-05-00 LOCATION 9+964 16.5m Rt CL Laird Road N: 4 816 938 E: 247 125 ORIGINATED BY M.A.
 DIST HWY 6 BOREHOLE TYPE Splitspoons, Hollow Stem Augers COMPILED BY KF
 DATUM Geodetic DATE 2010 07 26 - 2010 07 27 CHECKED BY SG

SOIL PROFILE			SAMPLES			GROUND WATER CONDITIONS	ELEVATION SCALE	DYNAMIC CONE PENETRATION RESISTANCE PLOT		PLASTIC LIMIT NATURAL MOISTURE CONTENT LIQUID LIMIT			UNIT WEIGHT γ kN/m³	REMARKS & GRAIN SIZE DISTRIBUTION (%)
ELEV DEPTH	DESCRIPTION	STRAT PLOT	NUMBER	TYPE	"N" VALUES			SHEAR STRENGTH kPa		w _p	w	w _L		
								○ UNCONFINED	✕ FIELD VANE					
330.3								20	40	60	80	100		
0.0	Sandy silt, dark brown, some roots		1	SS	6		330							
329.8														
0.5	Poorly-graded gravel with silt and sand (GP-GM), compact to very dense, moist, brown to light brown		2	SS	10		329							
	- occasional cobbles		3	SS	44		328							
			4	SS	64		327							
			5	SS	45		326							
			6	SS	20		325							
325.8			7	SS	18		324							
4.6	Poorly-graded sand with silt (SP-SM), loose to compact, wet, brown		8	SS	6		323							
			9	SS	8		322							
			10	SS	31		321							
			11	SS	32		320							
			12	SS	20		319							
			13	SS	21									
323.6														
6.7	Silt with sand (ML), compact to dense, wet, brown													

ONTARIO MTO STANTEC 165000749 - HWY 6 & LAIRD RD.GPJ ONTARIO MOT.GDT 5/5/11

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✕, ✕³: Numbers refer to Sensitivity ○ 3% STRAIN AT FAILURE

RECORD OF BOREHOLE No BH 10-01

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METRIC

W.P. 3002-05-00 LOCATION 9+964 16.5m Rt CL Laird Road N: 4 816 938 E: 247 125 ORIGINATED BY MA
 DIST HWY 6 BOREHOLE TYPE Splitspoons, Hollow Stem Augers COMPILED BY KF
 DATUM Geodetic DATE 2010 07 26 - 2010 07 27 CHECKED BY SG

SOIL PROFILE			SAMPLES			GROUND WATER CONDITIONS	ELEVATION SCALE	DYNAMIC CONE PENETRATION RESISTANCE PLOT		PLASTIC LIMIT w _p	NATURAL MOISTURE CONTENT w	LIQUID LIMIT w _L	UNIT WEIGHT γ kN/m ³	REMARKS & GRAIN SIZE DISTRIBUTION (%) GR SA SI CL	
ELEV DEPTH	DESCRIPTION	STRAT PLOT	NUMBER	TYPE	"N" VALUES			SHEAR STRENGTH kPa							WATER CONTENT (%)
								○ UNCONFINED ● QUICK TRIAXIAL	✕ FIELD VANE ✕ LAB VANE						
318.2								20 40 60 80 100							
12.2	Sandy silt with gravel (ML), compact to very dense, moist, grey, TILL		14	SS	20		318							16 32 (52)	
								317							
					15	SS	35		316						
					16	SS	100/ 250mm		315						
					17	SS	110/ 230mm		314						
							313								
							312								
311.6			18	SS	110/ 280mm										
18.7	End of Borehole														
	25 mm standpipe installed														
	Groundwater level measured in standpipe on August 16, 2010 at elevation 326.1 m														

ONTARIO MTO STANTEC 165000749 - HWY 6 & LAIRD RD.GPJ ONTARIO MOT.GDT 5/5/11

RECORD OF BOREHOLE No BH 10-02

1 OF 2

METRIC

W.P. 3002-05-00 LOCATION 9+964 21.0m Lt CL Laird Road N: 4 816 965 E: 247 098 ORIGINATED BY MA
 DIST HWY 6 BOREHOLE TYPE Splitterspoons, Hollow Stem Augers, NQ Coring Equipment COMPILED BY KF
 DATUM Geodetic DATE 2010 07 19 - 2010 07 20 CHECKED BY SG

SOIL PROFILE			SAMPLES			GROUND WATER CONDITIONS	ELEVATION SCALE	DYNAMIC CONE PENETRATION RESISTANCE PLOT			UNIT WEIGHT kN/m³	REMARKS & GRAIN SIZE DISTRIBUTION (%)	
ELEV DEPTH	DESCRIPTION	STRAT PLOT	NUMBER	TYPE	"N" VALUES			SHEAR STRENGTH kPa					
								○ UNCONFINED ● QUICK TRIAXIAL	✕ FIELD VANE ✕ LAB VANE	WATER CONTENT (%) w _p w w _L			
330.2							20	40	60	80	100		
0.0	Sandy silt, dark brown, some roots		1	SS	7								
329.6													
0.6	Silty sand with gravel (SM), dense to very dense, moist, brown to light brown		2	SS	37								
	- frequent cobbles												
	- occasional boulders		3	SS	60								
			4	SS	67								
			5	SS	82								
			6	SS	39								
325.6													
4.6	Poorly-graded sand (SP), compact		7	SS	20								
			8	SS	18								
324.1													
6.1	Sandy silt to silt (ML), compact, wet, grey		9	SS	29								
	- becomes loose												
			10	SS	27								
			11	SS	24								
			12	SS	8								
321.0													
9.1	Sandy silt with gravel to silt (ML), compact to very dense, moist, grey, TILL		13	SS	11								
			14	SS	20								
			15	SS	28								
			16	SS	20								

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✕³, ✕³: Numbers refer to Sensitivity ○ 3% STRAIN AT FAILURE

RECORD OF BOREHOLE No BH 10-03

1 OF 2

METRIC

W.P. 3002-05-00 LOCATION 10+000 22.0m Rt CL Laird Road N: 4 816 960 E: 247 154 ORIGINATED BY M.A.
 DIST HWY 6 BOREHOLE TYPE Splitspoons, Hollow Stem Augers COMPILED BY KF
 DATUM Geodetic DATE 2010 07 29 - 2010 07 29 CHECKED BY SG

SOIL PROFILE			SAMPLES			GROUND WATER CONDITIONS	ELEVATION SCALE	DYNAMIC CONE PENETRATION RESISTANCE PLOT			UNIT WEIGHT γ kN/m ³	REMARKS & GRAIN SIZE DISTRIBUTION (%)			
ELEV DEPTH	DESCRIPTION	STRAT PLOT	NUMBER	TYPE	"N" VALUES			SHEAR STRENGTH kPa							
								○ UNCONFINED	✕ FIELD VANE	● QUICK TRIAXIAL			✕ LAB VANE		
331.6						20	40	60	80	100	PLASTIC LIMIT w _p	NATURAL MOISTURE CONTENT w	LIQUID LIMIT w _L		
0.0	Sandy silt, dark brown, some roots		1	SS	10										
331.0															
0.6	Silty gravel with sand (GM) to silty sand with gravel (SM), compact to very dense, moist, brown to light brown		2	SS	13										
	- frequent cobbles														
			3	SS	67										
			4	SS	78										
			5	SS	68										
			6	SS	68										
327.1															
4.6	Poorly-graded sand (SP), compact to dense, moist, brown/grey		7	SS	34										
			8	SS	12										
325.7															
5.9	Silty sand (SM) to silt (ML), dense to very dense, moist, brown/grey		9	SS	35										
			10	SS	71										
322.5															
9.1	Sandy silt to sandy silt with gravel (ML), compact to very dense, moist, brown/grey, TILL		11	SS	12										
			12	SS	100/ 280mm										
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✕, ✕³: Numbers refer to Sensitivity ○ 3% STRAIN AT FAILURE

RECORD OF BOREHOLE No BH 10-04

1 OF 2

METRIC

W.P. 3002-05-00 LOCATION 10+000 22.5m Lt CL Laird Road N: 4 816 991 E: 247 123 ORIGINATED BY MA.
 DIST HWY 6 BOREHOLE TYPE Splitspoons, Hollow Stem Augers COMPILED BY KF
 DATUM Geodetic DATE 2010 08 03 - 2010 08 03 CHECKED BY SG

SOIL PROFILE			SAMPLES			GROUND WATER CONDITIONS	ELEVATION SCALE	DYNAMIC CONE PENETRATION RESISTANCE PLOT			UNIT WEIGHT γ kN/m ³	REMARKS & GRAIN SIZE DISTRIBUTION (%)
ELEV DEPTH	DESCRIPTION	STRAT PLOT	NUMBER	TYPE	"N" VALUES			SHEAR STRENGTH kPa				
								20 40 60 80 100				
								20 40 60 80 100				
331.2												
0.0	Sandy silt, dark brown, some roots		1	SS	5		331					
330.6												
0.6	Silty gravel with sand (GM), dense to very dense, moist, brown to light brown		2	SS	48		330					52 34 (14)
			3	SS	100/100mm							
							329					
			4	SS	85							
							328					46 41 (13)
			5	SS	36							
							327					
326.8			6	SS	47							
4.4	Silty sand (SM), compact, wet, brown						326					
			7	SS	23							
							325					
			8	SS	18							1 82 (17)
							324					
			9	SS	25							
323.6							323					
7.6	Poorly-graded sand with silt and gravel (SP-SM) to silty sand with gravel (SM), compact to dense, wet, brown, TILL		10	SS	31							41 53 (6)
							322					
			11	SS	22							
							321					
320.2							320					
11.0	Sandy silt with gravel (ML), compact to very dense, moist, grey, TILL		12	SS	10							20 64 (16)

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✕.✕.✕: Numbers refer to Sensitivity

○ 3% STRAIN AT FAILURE

RECORD OF BOREHOLE No BH 10-05

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METRIC

W.P. 3002-05-00 LOCATION 10+034 19.0m Rt CL Laird Road N: 4 816 984 E: 247 175 ORIGINATED BY M.A.
 DIST HWY 6 BOREHOLE TYPE Splitspoons, Hollow Stem Augers, NO Coring Equipment COMPILED BY KF
 DATUM Geodetic DATE 2010 07 27 - 2010 07 28 CHECKED BY SG

SOIL PROFILE			SAMPLES			GROUND WATER CONDITIONS	ELEVATION SCALE	DYNAMIC CONE PENETRATION RESISTANCE PLOT			PLASTIC LIMIT w _p	NATURAL MOISTURE CONTENT w	LIQUID LIMIT w _L	UNIT WEIGHT γ kN/m³	REMARKS & GRAIN SIZE DISTRIBUTION (%) GR SA SI CL		
ELEV DEPTH	DESCRIPTION	STRAT PLOT	NUMBER	TYPE	"N" VALUES			SHEAR STRENGTH kPa									
								20	40	60						80	100
								○ UNCONFINED	✕ FIELD VANE	● QUICK TRIAXIAL						✕ LAB VANE	WATER CONTENT (%)
331.4							20	40	60	80	100	10	20	30			
0.0	Sandy silt, dark brown, some roots		1	SS	10												
331.0																	
0.5	Well-graded gravel with sand and silt (GW-GM) to poorly-graded sand with gravel and silt (SP-SM), very dense, brown to light brown		2	SS	91												
	- frequent cobbles		3	SS	81												
	- occasional boulders		4	SS	75												
			5	SS	110												
			6	SS	55												
326.9																	
4.6	Poorly-graded sand with silt (SP-SM), compact to dense, brown		7	SS	31												
	- becomes wet		8	SS	26												
			9	SS	34												
323.8																	
7.6	Silty sand with gravel (SM) to sandy silt (ML), compact to very dense, moist, brown/grey, TILL		10	SS	14												
			11	SS	41												
			12	SS	18												

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✕³, ✕³: Numbers refer to Sensitivity ○ 3% STRAIN AT FAILURE

✕³, ✕³: Numbers refer to Sensitivity ○^{3%} STRAIN AT FAILURE

RECORD OF BOREHOLE No BH 10-06

1 OF 2

METRIC

W.P. 3002-05-00 LOCATION 10+034 15.0 Lt CL Laird Road N: 4 817 009 E: 247 152 ORIGINATED BY M.A.
 DIST HWY 6 BOREHOLE TYPE Splittings, Hollow Stem Augers COMPILED BY KF
 DATUM Geodetic DATE 2010 07 21 - 2010 07 22 CHECKED BY SG

SOIL PROFILE			SAMPLES			GROUND WATER CONDITIONS	ELEVATION SCALE	DYNAMIC CONE PENETRATION RESISTANCE PLOT			PLASTIC LIMIT w _p	NATURAL MOISTURE CONTENT w	LIQUID LIMIT w _L	UNIT WEIGHT γ kN/m ³	REMARKS & GRAIN SIZE DISTRIBUTION (%)
ELEV DEPTH	DESCRIPTION	STRAT PLOT	NUMBER	TYPE	"N" VALUES			SHEAR STRENGTH kPa							
330.9								20 40 60 80 100							
0.0	Sandy silt, dark brown, some roots		1	SS	8				○ UNCONFINED	✕ FIELD VANE					
330.5									● QUICK TRIAXIAL	✕ LAB VANE					
0.4	Well-graded gravel with sand and silt (GW-GM) to poorly-graded sand with gravel and silt (SP-SM), dense to very dense, brown to light brown		2	SS	67		330								
			3	SS	96		329								
			4	SS	79		328								59 29 (12)
			5	SS	82		327								
			6	SS	76		326								40 50 (10)
325.8			7	SS	34		325								
5.2	Silty sand (SM) to sandy silt (ML), compact to dense, wet, grey		8	SS	25		324								0 34 (66)
			9	SS	44		323								
			10	SS	16		322								
321.8			11	SS	11		321								21 39 (40)
9.1	Silty sand with gravel (SM) to sandy silt (ML), compact to very dense, moist, grey, TILL		12	SS	30		320								
							319								

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✕ 3. ✕ 3: Numbers refer to Sensitivity

○ 3% STRAIN AT FAILURE

RECORD OF BOREHOLE No BH 10-07

1 OF 1

METRIC

W.P. 3002-05-00 LOCATION 9+476 6.3m Lt CL Ramp W-S N: 4 816 816 E: 247 010 ORIGINATED BY MA
DIST HWY 6 BOREHOLE TYPE Splitterspoons, Hollow Stem Augers COMPILED BY KF
DATUM Geodetic DATE 2010 07 22 - 2010 07 22 CHECKED BY SG

SOIL PROFILE			SAMPLES			GROUND WATER CONDITIONS	ELEVATION SCALE	DYNAMIC CONE PENETRATION RESISTANCE PLOT				PLASTIC LIMIT w _p	NATURAL MOISTURE CONTENT w	LIQUID LIMIT w _L	UNIT WEIGHT γ kN/m ³	REMARKS & GRAIN SIZE DISTRIBUTION (%) GR SA SI CL			
ELEV DEPTH	DESCRIPTION	STRAT PLOT	NUMBER	TYPE	"N" VALUES			SHEAR STRENGTH kPa									WATER CONTENT (%)		
								○ UNCONFINED	✕ FIELD VANE	● QUICK TRIAXIAL	✕ LAB VANE						w _p	w	w _L
329.3							20	40	60	80	100								
0.0	Sandy silt, moist, dark brown, some roots		1	SS	8														
328.9																			
0.4	Silty sand with gravel (SM) to well-graded gravel with silt and sand (GW-GM), dense to very dense, moist to wet, brown - hard augering - cobbles and boulders encountered		2	SS	52														
			3	SS	68														
			4	SS	64											42 42 (16)			
			5	SS	46														
			6	SS	39											56 35 (9)			
			7	SS	45														
			8	SS	51											39 55 (6)			
			9	SS	57														
322.6																			
6.7	End of Borehole 25 mm standpipe installed Groundwater level measured in standpipe on August 18, 2010 at elevation 326.4 m																		

RECORD OF BOREHOLE No BH 10-09

1 OF 1

METRIC

W.P. 3002-05-00 LOCATION 9+550 CL Ramp W-S N: 4 816 862 E: 247 072 ORIGINATED BY MA
 DIST HWY 6 BOREHOLE TYPE Splitterspoons, Hollow Stem Augers COMPILED BY KF
 DATUM Geodetic DATE 2010 07 30 - 2010 07 30 CHECKED BY SG

SOIL PROFILE			SAMPLES			GROUND WATER CONDITIONS	ELEVATION SCALE	DYNAMIC CONE PENETRATION RESISTANCE PLOT					PLASTIC LIMIT NATURAL MOISTURE CONTENT LIQUID LIMIT			UNIT WEIGHT γ	REMARKS & GRAIN SIZE DISTRIBUTION (%)		
ELEV DEPTH	DESCRIPTION	STRAT PLOT	NUMBER	TYPE	"N" VALUES			SHEAR STRENGTH kPa					WATER CONTENT (%)						
								○ UNCONFINED	✕ FIELD VANE	● QUICK TRIAXIAL	✕ LAB VANE	20	40	60	80			100	W _p
330.8																GR	SA	SI	CL
0.0	Sandy silt, moist, dark brown, some roots																		
330.5			1	SS	8		330												
0.4	Silty gravel with sand (GM) to poorly graded gravel with silt and sand (GP-GM), dense to very dense, moist, brown																		
	- frequent cobbles		2	SS	54														
			3	SS	100/ 80mm		329												
			4	SS	86		328												
			5	SS	105/ 280mm		327												
			6	SS	35		326												
			7	SS	42		325												
			8	SS	40														
			9	SS	30														
324.3																			
324.1	Silt with sand (ML), compact, wet																		
6.7	End of Borehole																		
	Groundwater level inferred during drilling																		

ONTARIO MTO STANTEC 165000749 - HWY 6 & LAIRD RD GPJ ONTARIO MOT. GDT. 5/5/11

RECORD OF BOREHOLE No BH 10-10

1 OF 1

METRIC

W.P. 3002-05-00 LOCATION 10+387 8.4m Rt CL Ramp N-E/W N: 4 816 877 E: 247 018 ORIGINATED BY MA
 DIST HWY 6 BOREHOLE TYPE Splittings, Hollow Stem Augers COMPILED BY KF
 DATUM Geodetic DATE 2010 08 04 - 2010 08 04 CHECKED BY SG

SOIL PROFILE			SAMPLES			GROUND WATER CONDITIONS	ELEVATION SCALE	DYNAMIC CONE PENETRATION RESISTANCE PLOT				PLASTIC LIMIT w _p	NATURAL MOISTURE CONTENT w	LIQUID LIMIT w _L	UNIT WEIGHT γ kN/m ³	REMARKS & GRAIN SIZE DISTRIBUTION (%)
ELEV DEPTH	DESCRIPTION	STRAT PLOT	NUMBER	TYPE	"N" VALUES			SHEAR STRENGTH kPa								
329.1							20	40	60	80	100					
0.0	Sandy silt, moist, dark brown, some roots		1	SS	7											
328.6																
0.6	Silty gravel with sand (GM) to well-graded gravel with silt and sand (GW-GM), dense to very dense, wet, brown		2	SS	42											
	- frequent cobbles															
			3	SS	56											47 40 (13)
			4	SS	82											
			5	SS	35											50 41 (9)
			6	SS	53											
324.6																
4.6	Poorly graded sand (SP), loose to compact, wet, brown		7	SS	7											8 88 (4)
			8	SS	26											
323.0																
6.1	Silt (ML), compact to dense, wet, brown		9	SS	50											
			10	SS	20											
			11	SS	51											
319.4																
9.8	End of Borehole															
	Groundwater level inferred during drilling															

RECORD OF BOREHOLE No BH 10-11

1 OF 1

METRIC

W.P. 3002-05-00 LOCATION 10+358 6.0m Rt CL Ramp N-E/W N: 4 816 892 E: 246 996 ORIGINATED BY M.A.
 DIST HWY 6 BOREHOLE TYPE Splitterspoons, Hollow Stem Augers COMPILED BY KF
 DATUM Geodetic DATE 2010 08 04 - 2010 08 04 CHECKED BY SG

SOIL PROFILE			SAMPLES			GROUND WATER CONDITIONS	ELEVATION SCALE	DYNAMIC CONE PENETRATION RESISTANCE PLOT					PLASTIC LIMIT W _p	NATURAL MOISTURE CONTENT W	LIQUID LIMIT W _L	UNIT WEIGHT γ kN/m ³	REMARKS & GRAIN SIZE DISTRIBUTION (%)
ELEV DEPTH	DESCRIPTION	STRAT PLOT	NUMBER	TYPE	"N" VALUES			SHEAR STRENGTH kPa									
								20 40 60 80 100									
								20 40 60 80 100									
								20 40 60 80 100					10 20 30			GR SA SI CL	
328.5																	
0.0	Sandy silt, moist, dark brown, some roots		1	SS	6		328										
328.0																	
0.5	Well-graded sand with silt and gravel (SW-SM), compact to very dense, wet, brown		2	SS	42												
	- some cobbles		3	SS	100/ 200mm		327										
			4	SS	100/ 200mm		326										
			5	SS	35		325										
			6	SS	24		324									46 47 (7)	
			7	SS	17												
323.3																	
5.2	Silt (ML), dense, wet, brown to grey, some sand		8	SS	30		323										
			9	SS	35		322									0 16 (84) Non-plastic	
			10	SS	22		321									0 2 (98) Non-plastic	
							320										
			11	SS	15		319										
318.8																	
9.8	End of Borehole																
	Groundwater level inferred during drilling																

RECORD OF BOREHOLE No BH 10-13

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METRIC

W.P. 3002-05-00 LOCATION 10+256 11.6m Lt CL Ramp N-E/W N: 4 816 982 E: 246 958 ORIGINATED BY M.A.
 DIST HWY 6 BOREHOLE TYPE Splitterspoons, Hollow Stem Augers COMPILED BY KF
 DATUM Geodetic DATE 2010 08 10 - 2010 08 10 CHECKED BY SG

SOIL PROFILE			SAMPLES			GROUND WATER CONDITIONS	ELEVATION SCALE	DYNAMIC CONE PENETRATION RESISTANCE PLOT				PLASTIC LIMIT W _p	NATURAL MOISTURE CONTENT W	LIQUID LIMIT W _L	UNIT WEIGHT γ kN/m ³	REMARKS & GRAIN SIZE DISTRIBUTION (%)	
ELEV DEPTH	DESCRIPTION	STRAT PLOT	NUMBER	TYPE	"N" VALUES			SHEAR STRENGTH kPa									WATER CONTENT (%)
								○ UNCONFINED	✕ FIELD VANE	● QUICK TRIAXIAL	✕ LAB VANE						
328.7							20	40	60	80	100						
0.0	Sandy silt, moist, dark brown, some roots		1	SS	10												
328.4																	
0.4	Well graded gravel with silt and sand (GW-GM), compact to very dense, moist, brown																
	- hard augering		2	SS	24												
	- some cobbles																
			3	SS	85											52 37 (11)	
			4	SS	107/ 230 mm												
			5	SS	51											48 46 (6)	
325.1																	
3.7	Poorly graded sand with silt (SP-SM) to silty sand (SM), compact to dense, wet, brown		6	SS	25												
			7	SS	25												
			8	SS	23												
			9	SS	47												
			10	SS	14											0 52 (48) Non-plastic	
319.6																	
9.1	Silt with sand (ML), trace clay, very dense, wet, grey		11	SS	50												
319.0																	
9.8	End of Borehole																
	Groundwater level inferred during drilling																

RECORD OF BOREHOLE No BH 10-14

1 OF 1

METRIC

W.P. 3002-05-00 LOCATION 10+208 CL Ramp N-E/W N: 4 817 029 E: 246 943 ORIGINATED BY MA
 DIST HWY 6 BOREHOLE TYPE Splitterspoons, Hollow Stem Augers COMPILED BY KF
 DATUM Geodetic DATE 2010 08 11 - 2010 08 11 CHECKED BY SG

SOIL PROFILE			SAMPLES			GROUND WATER CONDITIONS	ELEVATION SCALE	DYNAMIC CONE PENETRATION RESISTANCE PLOT			PLASTIC LIMIT w _p	NATURAL MOISTURE CONTENT w	LIQUID LIMIT w _L	UNIT WEIGHT γ kN/m ³	REMARKS & GRAIN SIZE DISTRIBUTION (%) GR SA SI CL			
ELEV DEPTH	DESCRIPTION	STRAT PLOT	NUMBER	TYPE	"N" VALUES			SHEAR STRENGTH kPa								WATER CONTENT (%)		
								○ UNCONFINED	✕ FIELD VANE	● QUICK TRIAXIAL							✕ LAB VANE	
328.4 0.0	Sandy silt, moist, dark brown, some roots		1	SS	8	▽	328											
327.9 0.5	Poorly graded sand with silt and gravel (SP-SM), wet, brown																	
			2	SS	25			327										
			3	SS	108/ 250 mm													
			4	SS	24			326										
			5	SS	22			325										
324.6 3.8	Silty sand (SM), compact to dense, wet, brown		6	SS	29			324										
			7	SS	34													
			8	SS	30			323										
			9	SS	32			322										
								321										
		10	SS	46		320												
319.3 9.1	Well graded gravel with silt and sand (GW-GM), dense, brown		11	SS	43		319											
318.6 9.8	End of Borehole																	
	Groundwater level inferred during drilling																	

ONTARIO MTO STANTEC 165000749 - HWY 6 & LAIRD RD.GPJ ONTARIO MOT GDT 5/5/11

RECORD OF BOREHOLE No BH 10-15

1 OF 1

METRIC

W.P. 3002-05-00 LOCATION 9+900 CL Ramp E-S N: 4 817 011 E: 246 985 ORIGINATED BY MA
 DIST HWY 6 BOREHOLE TYPE Splittings, Hollow Stem Augers COMPILED BY KF
 DATUM Geodetic DATE 2010 08 10 - 2010 08 10 CHECKED BY SG

SOIL PROFILE			SAMPLES			GROUND WATER CONDITIONS	ELEVATION SCALE	DYNAMIC CONE PENETRATION RESISTANCE PLOT		PLASTIC LIMIT w _p	NATURAL MOISTURE CONTENT w	LIQUID LIMIT w _L	UNIT WEIGHT γ kN/m ³	REMARKS & GRAIN SIZE DISTRIBUTION (%)
ELEV DEPTH	DESCRIPTION	STRAT PLOT	NUMBER	TYPE	"N" VALUES			SHEAR STRENGTH kPa						
328.4								20 40 60 80 100						
0.0								20 40 60 80 100						
328.1	Sandy silt, moist, dark brown, some roots		1	SS	10		328							
0.3	Well graded gravel with silt and sand (GW-GM), compact to very dense, wet, brown - some cobbles		2	SS	38		327							47 45 (8)
			3	SS	100/ 230 mm									
326.1							326							
2.3	Poorly graded sand with silt and gravel (SP-SM) to silty sand (SM), compact to very dense, wet, brown - some cobbles		4	SS	56		325							
			5	SS	31									
			6	SS	51		324							
			7	SS	27									
323.2							323							
5.2	Sandy silt (ML), compact to dense, wet, brown		8	SS	11		322							0 39 (61)
			9	SS	37									0 44 (56)
321.7							321							
6.7	Silty sand with gravel (SM), compact, wet, brown		10	SS	34		320							
			11	SS	7		319							
318.6														
9.8	End of Borehole													
	25mm standpipe installed													
	Groundwater level measured in standpipe on August 18, 2010 at elevation 325.9m													

ONTARIO MTO STANTEC 165000749 - HWY 6 & LAIRD RD.GPJ ONTARIO MOT.GDT 5/5/11

RECORD OF BOREHOLE No BH 10-16

1 OF 1

METRIC

W.P. 3002-05-00 LOCATION 9+760 13.7m Lt CL Ramp E-S N: 4 816 906 E: 247 043 ORIGINATED BY MA
 DIST HWY 6 BOREHOLE TYPE Splitterspoons, Hollow Stem Augers COMPILED BY KF
 DATUM Geodetic DATE 2010 08 05 - 2010 08 05 CHECKED BY SG

SOIL PROFILE			SAMPLES			GROUND WATER CONDITIONS	ELEVATION SCALE	DYNAMIC CONE PENETRATION RESISTANCE PLOT		PLASTIC LIMIT NATURAL MOISTURE CONTENT LIQUID LIMIT			UNIT WEIGHT γ kN/m³	REMARKS & GRAIN SIZE DISTRIBUTION (%)			
ELEV DEPTH	DESCRIPTION	STRAT PLOT	NUMBER	TYPE	"N" VALUES			SHEAR STRENGTH kPa							WATER CONTENT (%)		
								○ UNCONFINED	✕ FIELD VANE	● QUICK TRIAXIAL	✕ LAB VANE	20			40	60	80
								20	40	60	80	100	10	20	30		
329.9																	
0.0	Sandy silt, moist, dark brown, some roots		1	SS	10												
329.3																	
0.6	Silty gravel with sand (GM) to poorly graded sand (SP), loose to very dense, moist to wet, brown		2	SS	30									52 36 (12)			
	- some cobbles																
	- becoming less gravelly with depth																
			3	SS	44												
			4	SS	42												
			5	SS	75/ 130mm												
			6	SS	85												
			7	SS	20												
324.6																	
5.3	Poorly graded sand (SP), loose to dense, wet, brown		8	SS	9									11 85 (4)			
			9	SS	31												
322.3																	
7.6	Sandy silt (ML), compact, wet, brown		10	SS	15									0 49 (51) Non-plastic			
			11	SS	27												
320.1																	
9.8	End of Borehole																
	Groundwater level inferred during drilling																

3. X 3. Numbers refer to Sensitivity

3% STRAIN AT FAILURE

RECORD OF BOREHOLE No BH 10-17

1 OF 1

METRIC

W.P. 3002-05-00 LOCATION 9+650 CL Ramp W-S N: 4 816 865 E: 247 170 ORIGINATED BY MA
 DIST HWY 6 BOREHOLE TYPE Splitterspoons, Hollow Stern Augers COMPILED BY KF
 DATUM Geodetic DATE 2010 08 05 - 2010 08 05 CHECKED BY SG

SOIL PROFILE			SAMPLES			GROUND WATER CONDITIONS	ELEVATION SCALE	DYNAMIC CONE PENETRATION RESISTANCE PLOT				UNIT WEIGHT γ kN/m ³	REMARKS & GRAIN SIZE DISTRIBUTION (%)							
ELEV DEPTH	DESCRIPTION	STRAT PLOT	NUMBER	TYPE	"N" VALUES			SHEAR STRENGTH kPa												
								UNCONFINED		FIELD VANE										
								QUICK TRIAXIAL	LAB VANE	WATER CONTENT (%)										
331.4						20	40	60	80	100	W _p	W	W _L	10	20	30	GR	SA	SI	CL
0.0	Sandy silt, moist, dark brown, some roots		1	SS	20															
331.0																				
0.4	Well graded gravel with silt and sand (GW-GM), compact to very dense, moist, brown - frequent cobbles		2	SS	37															
			3	SS	72															
			4	SS	60															
			5	SS	32															
			6	SS	27															
326.8																				
4.6	Well graded sand with silt and gravel (SW-SM) to poorly graded sand (SP), compact to dense, wet, brown		7	SS	47															
			8	SS	10															
			9	SS	18															
324.7																				
6.7	End of Borehole																			
	Groundwater level inferred during drilling																			

ONTARIO MTO STANTEC 165000749 - HWY 6 & LAIRD RD.GPJ ONTARIO MOT.GDT 5/5/11

RECORD OF BOREHOLE No BH 10-21

1 OF 1

METRIC

W.P. 3002-05-00 LOCATION 9+750 1.4m Lt CL Ramp W-N N: 4 817 034 E: 247 228 ORIGINATED BY MA
 DIST HWY 6 BOREHOLE TYPE Splitterspoons, Hollow Stem Augers COMPILED BY KF
 DATUM Geodetic DATE 2010 08 12 - 2010 08 12 CHECKED BY SG

SOIL PROFILE			SAMPLES			GROUND WATER CONDITIONS	ELEVATION SCALE	DYNAMIC CONE PENETRATION RESISTANCE PLOT				PLASTIC LIMIT w _p	NATURAL MOISTURE CONTENT w	LIQUID LIMIT w _L	UNIT WEIGHT γ kN/m ³	REMARKS & GRAIN SIZE DISTRIBUTION (%)
ELEV DEPTH	DESCRIPTION	STRAT PLOT	NUMBER	TYPE	"N" VALUES			SHEAR STRENGTH kPa								
								○ UNCONFINED	✕ FIELD VANE	● QUICK TRIAXIAL	✕ LAB VANE					
								WATER CONTENT (%)								
331.2						20	40	60	80	100	10	20	30		GR SA SI CL	
0.0	Sandy silt, moist, dark brown, some roots		1	SS	10											
330.6																
0.6	Well graded gravel with silt and sand (GW-GM), dense to very dense, wet, brown		2	SS	100/ 80mm											
	- frequent cobbles															
			3	SS	48											
			4	SS	62											
			5	SS	43											
327.0			6	SS	100/ 230mm											
4.2	Poorly graded sand (SP), compact to very dense, wet, brown		7	SS	52											
			8	SS	18											
			9	SS	43											
324.5																
6.7	Silty sand (SM), very dense, wet, brown		10	SS	59											
			11	SS	104/ 280mm											
			12	SS	65											
319.9	End of Borehole															
11.3	Groundwater level inferred during drilling															

ONTARIO MTO STANTEC 165000749 - HWY 6 & LAIRD RD.GPJ ONTARIO MOT.GDT 5/5/11

RECORD OF BOREHOLE No BH 10-22

1 OF 1

METRIC

W.P. 3002-05-00 LOCATION 9+613 6.5m Rt CL Ramp E-N N: 4 817 082 E: 247 143 ORIGINATED BY MA
 DIST HWY 6 BOREHOLE TYPE Splitterspoons, Hollow Stem Augers COMPILED BY KF
 DATUM Geodetic DATE 2010 08 16 - 2010 08 16 CHECKED BY SG

SOIL PROFILE			SAMPLES			GROUND WATER CONDITIONS	ELEVATION SCALE	DYNAMIC CONE PENETRATION RESISTANCE PLOT				PLASTIC LIMIT w _p	NATURAL MOISTURE CONTENT w	LIQUID LIMIT w _L	UNIT WEIGHT γ kN/m ³	REMARKS & GRAIN SIZE DISTRIBUTION (%)
ELEV DEPTH	DESCRIPTION	STRAT PLOT	NUMBER	TYPE	"N" VALUES			SHEAR STRENGTH kPa								
								○ UNCONFINED	✕ FIELD VANE	● QUICK TRIAXIAL	✕ LAB VANE					
								WATER CONTENT (%)								
330.0						20	40	60	80	100	10	20	30		GR SA SI CL	
0.0	Sandy silt, moist, dark brown, some roots		1	SS	16											
329.7																
0.3	Well graded gravel with silt and sand (GW-GM), compact to very dense, wet, brown		2	SS	42											
328.6																
1.4	Sand with silt and gravel, compact to dense, moist, brown		3	SS	63											
			4	SS	100/ 230mm											
326.9																
3.1	Silty sand with gravel (SM), dense to very dense, wet, brown - becoming less gravelly with depth		5	SS	53										18 50 (32)	
			6	SS	30											
			7	SS	35										2 72 (26)	
			8	SS	57											
			9	SS	65											
323.3																
6.7	End of Borehole															
	Groundwater level inferred during drilling															

RECORD OF BOREHOLE No BH 10-23

1 OF 1

METRIC

W.P. 3002-05-00 LOCATION 9+555 CL Ramp E-N N: 4 817 084 E: 247 199 ORIGINATED BY MA
 DIST HWY 6 BOREHOLE TYPE Splitspoons, Hollow Stem Augers COMPILED BY KF
 DATUM Geodetic DATE 2010 08 13 - 2010 08 16 CHECKED BY SG

SOIL PROFILE			SAMPLES			GROUND WATER CONDITIONS	ELEVATION SCALE	DYNAMIC CONE PENETRATION RESISTANCE PLOT				PLASTIC LIMIT W _p	NATURAL MOISTURE CONTENT W	LIQUID LIMIT W _L	UNIT WEIGHT γ kN/m ³	REMARKS & GRAIN SIZE DISTRIBUTION (%)					
ELEV DEPTH	DESCRIPTION	STRAT PLOT	NUMBER	TYPE	"N" VALUES			SHEAR STRENGTH kPa									WATER CONTENT (%)				
								○ UNCONFINED	✕ FIELD VANE	● QUICK TRIAXIAL	✕ LAB VANE										
330.7							20	40	60	80	100					GR	SA	SI	CL		
0.0	Sandy silt, dark brown, moist, FILL		1	SS	11																
330.1																					
0.6	Sand with silt and gravel, dense, moist, brown, FILL		2	SS	33			330													
329.4																					
1.4	Silty gravel with sand (GM), compact to very dense, wet, brown		3	SS	26			329												46 37 (17)	
			4	SS	100/ 230mm			328													
								327													
			5	SS	53			326													
			6	SS	101/ 280mm			325													
325.6			7	SS	40																
5.2	Silty sand (SM), compact, wet, brown		8	SS	24																
				9	SS	10													3 85 (12)		
324.0																					
6.7	End of Borehole																				
	Groundwater level inferred during drilling																				

✱³, ✕³

Numbers refer to
Sensitivity

○^{3%}

STRAIN AT FAILURE

RECORD OF BOREHOLE No BH 10-24

1 OF 1

METRIC

W.P. 3002-05-00 LOCATION 9+846 CL Ramp W-N N: 4 816 985 E: 247 308 ORIGINATED BY M.A.
 DIST HWY 6 BOREHOLE TYPE Splitspoons, Hollow Stem Augers COMPILED BY KF
 DATUM Geodetic DATE 2010 08 11 - 2010 08 11 CHECKED BY SG


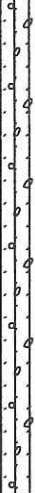
SOIL PROFILE			SAMPLES			GROUND WATER CONDITIONS	ELEVATION SCALE	DYNAMIC CONE PENETRATION RESISTANCE PLOT				UNIT WEIGHT γ kN/m ³	REMARKS & GRAIN SIZE DISTRIBUTION (%)	
ELEV DEPTH	DESCRIPTION	STRAT PLOT	NUMBER	TYPE	"N" VALUES			SHEAR STRENGTH kPa						
332.3								20	40	60	80	100		
332.0	Sandy silt, dark brown, moist, FILL		1	SS	14		332							
0.2	Sand with gravel, very dense, damp, brown, FILL													
331.7														
0.6	Well-graded gravel with silt and sand (GW-GM), very dense, moist, brown - frequent cobbles		2	SS	100/ 230 mm		331							55 33 (12)
			3	SS	100/ 230 mm		330							
			4	SS	100/ 200 mm		329							57 34 (9)
			5	SS	100/ 230 mm		328							
			6	SS	100/ 100 mm		327							
			7	SS	100/ 130 mm		326							
327.0							325							
5.3	Poorly graded sand with silt (SP-SM), loose to very dense, wet, brown		8	SS	39									
			9	SS	26									
			10	SS	9									1 73 (26)
324.1														
8.2	End of Borehole													
	25 mm standpipe installed													
	Groundwater level measured in standpipe on August 18, 2010 at elevation 327.0m													

RECORD OF BOREHOLE No BH 10-25

1 OF 1

METRIC

W.P. 3002-05-00 LOCATION 10+330 10.5m Lt CL Ramp S-E/W N: 4 817 031 E: 247 290 ORIGINATED BY MA
 DIST HWY 6 BOREHOLE TYPE Splitspoons, Hollow Stem Augers COMPILED BY KF
 DATUM Geodetic DATE 2010 08 12 - 2010 08 12 CHECKED BY SG

SOIL PROFILE			SAMPLES			GROUND WATER CONDITIONS	ELEVATION SCALE	DYNAMIC CONE PENETRATION RESISTANCE PLOT				PLASTIC LIMIT w _p	NATURAL MOISTURE CONTENT w	LIQUID LIMIT w _L	UNIT WEIGHT γ kN/m ³	REMARKS & GRAIN SIZE DISTRIBUTION (%)			
ELEV DEPTH	DESCRIPTION	STRAT PLOT	NUMBER	TYPE	"N" VALUES			SHEAR STRENGTH kPa									WATER CONTENT (%)		
								20	40	60	80						100	10	20
332.2																			
332.2 0.1	Sandy silt, moist, dark brown, FILL		1	SS	20														
331.6	Sand with gravel, very dense, damp, brown, FILL																		
331.6 0.6	Well graded gravel with silt and sand (GW-GM), dense to very dense, moist, brown		2	SS	100/ 200 mm														
	- some cobbles																		
			3	SS	100/ 230 mm														
			4	SS	38														
			5	SS	73														
			6	SS	100/ 250 mm														
327.6	Poorly graded sand (SP), compact to very dense, wet, brown		7	SS	32														
4.6	- some cobbles		8	SS	24														
			9	SS	28														
325.5	End of Borehole																		
6.7	Groundwater level inferred during drilling																		

RECORD OF BOREHOLE No BH 10-26

1 OF 1

METRIC

W.P. 3002-05-00 LOCATION 10+371 7.0m LI CL Ramp S-E/W N: 4 817 064 E: 247 258 ORIGINATED BY MA
DIST HWY 6 BOREHOLE TYPE Splitterspoons, Hollow Stem Augers COMPILED BY KF
DATUM Geodetic DATE 2010 08 12 - 2010 08 12 CHECKED BY SG

SOIL PROFILE			SAMPLES			GROUND WATER CONDITIONS	ELEVATION SCALE	DYNAMIC CONE PENETRATION RESISTANCE PLOT					UNIT WEIGHT γ kN/m ³	REMARKS & GRAIN SIZE DISTRIBUTION (%)			
ELEV DEPTH	DESCRIPTION	STRAT PLOT	NUMBER	TYPE	"N" VALUES			SHEAR STRENGTH kPa									
331.9								20	40	60	80	100					
0.0	Sandy silt, moist, dark brown, FILL		1	SS	11		331								6 32 (62)		
331.3																	
0.6	Sandy silt with gravel (ML), dark brown, compact, moist, FILL		2	SS	15												
			3	SS	18			330									
329.8																	
2.1	Silty gravel with sand (GM) to poorly graded sand with silt and gravel (SP-SM), compact to very dense, moist to wet, brown	4	SS	100/ 130mm	329												
	- frequent cobbles	5	SS	100/ 100mm													
		6	SS	100/ 50mm				328									
			7	SS	50	327											
326.4							326										
5.5	Poorly graded sand with silt (SP-SM), compact to very dense, wet, brown	8	SS	51													
			9	SS	21												
325.2																	
6.7	End of Borehole																
	Groundwater level inferred during drilling																

ONTARIO MTO STANTEC 165000749 - HWY 6 & LAIRD RD.GPJ ONTARIO MOT.GDT 5/5/11

RECORD OF BOREHOLE No BH 10-27

1 OF 1

METRIC

W.P. 3002-05-00 LOCATION 9+508 8.0m Lt CL Ramp E-N N: 4 817 101 E: 247 242 ORIGINATED BY MA
 DIST HWY 6 BOREHOLE TYPE Splittings, Hollow Stem Augers COMPILED BY KF
 DATUM Geodetic DATE 2010 08 13 - 2010 08 13 CHECKED BY SG

SOIL PROFILE			SAMPLES			GROUND WATER CONDITIONS	ELEVATION SCALE	DYNAMIC CONE PENETRATION RESISTANCE PLOT				UNIT WEIGHT γ kN/m³	REMARKS & GRAIN SIZE DISTRIBUTION (%) GR SA SI CL				
ELEV DEPTH	DESCRIPTION	STRAT PLOT	NUMBER	TYPE	"N" VALUES			SHEAR STRENGTH kPa									
								20 40 60 80 100									
								20 40 60 80 100									
				20 40 60 80 100				PLASTIC LIMIT NATURAL MOISTURE CONTENT LIQUID LIMIT w _p w w _L									
				● UNCONFINED × FIELD VANE ● QUICK TRIAXIAL × LAB VANE				WATER CONTENT (%)									
330.7	Sandy silt, moist, dark brown		1	SS	13	330								41 34 (25)			
0.0																	
330.2			2	SS	45		329										
0.5																	
			3	SS	22												
					4		SS	11	328								
					5		SS	18		327							
					6		SS	18									
					7		SS	24	326								
			8	SS	30	325											
			9	SS	33												
326.9	Silty sand (SM), compact to dense, wet, brown						324								8 74 (18)		
3.8																	
324.0	End of Borehole																
6.7	Groundwater level inferred during drilling																



Stantec

Field Core Log

Client:	MTO	Project No.:	165000749
Project:	Highway 6 and Laird Road Interchange, Guelph	Date:	July 20, 2010
Contractor:	DBW	Borehole No.:	BH10-2
		Logger:	M. Abdel-Mesih

DEPTH FROM (m)	RUN NO.	% CORE RECOVERY	% RQD	DEPTH TO (m)	GENERAL DESCRIPTION (Rock Type/s, %, Colour, Texture, etc.)	STRENGTH	WEATHERING	DISCONTINUITIES						OCCASIONAL FEATURES	DRILLING OBSERVATIONS
								NO. OF SETS	TYPE/S	ORIENTATION	SPACING	ROUGHNESS	APERTURE	FILLING	
18.44	1	62	0	18.9	Grey limestone	S	S	1	B	F	C-M	RP		T	
18.9	2	98	74	20.42	Grey limestone		S	1	B	F	C-M	RP		T	
20.42	3	100	92	22.25	Grey limestone	VS	S	1	B	F	C-M	RP		T	

STRENGTH (MPa)
EH = Extremely Strong = > 250
VS = Very Strong = 100-250
S = Strong = 50-100
MS = Medium Strong = 25-50
W = Weak = 5 - 25

WEATHERING
U = Unweathered = No Signs
S = Slightly = Oxidized
M = Moderately = Discoloured
H = Highly = Friable
C = Completely = Soil-like

DISCONTINUITY TYPE
B = Bedding Joint
J = Cross Joint
F = Fault
S = Shear Plane

SPACING
VW = Very Wide = >3m
W = Wide = 1-3 m
M = Moderate = 0.3-1 m
C = Close = 5-30 cm
VC = Very Close = <5 cm

ORIENTATION
F = Flat = 0-20°
D = Dipping = 20-50°
V = n-Vertical = >50°

ROUGHNESS
RU = Rough Undulating
RP = Rough Planar
SU = Smooth Undulating
SP = Smooth Planar
LU = Slickensided Undulating
LP = Slickensided Planar

FILLING
T = Tight, Hard
O = Oxidized
SA = Slightly Altered, Clay Free
S = Sandy, Clay Free
Si = Silty, Minor Clay
NC = Non-softening Clay
SC = Swelling, Soft Clay



Stantec

Field Core Log

Client: MTO Project No.: 165000749
 Project: Highway 6 and Laird Road Interchange, Guelph Date: July 28, 2010
 Contractor: DBW Borehole No.: BH10-5
 Logger: M. Abdel-Mesih

DEPTH FROM (m)	RUN NO.	% CORE RECOVERY	% RQD	DEPTH TO (m)	GENERAL DESCRIPTION (Rock Type/s, %, Colour, Texture, etc.)	STRENGTH	WEATHERING	DISCONTINUITIES						OCCASIONAL FEATURES	DRILLING OBSERVATIONS
								NO. OF SETS	TYPE/S	ORIENTATION	SPACING	ROUGHNESS	APERTURE	FILLING	
22.05	1	93	71	23.01	Grey limestone	S	S	1	B	F	C	RP		T	
23.01	2	96	75	24.84	Grey limestone		S	1	B	D		RP		T	
24.84	3	96	84	26.7	Grey limestone	S	S	1	B	F		RP		T	

STRENGTH (MPa)

EH = Extremely Strong = > 250
 VS = Very Strong = 100-250
 S = Strong = 50-100
 MS = Medium Strong = 25-50
 W = Weak = 5 - 25
 VW = Very Weak = 1-5
 EW = Extremely Weak = < 1

WEATHERING

U = Unweathered = No Signs
 S = Slightly = Oxidized
 M = Moderately = Discoloured
 H = Highly = Friable
 C = Completely = Soil-like

DISCONTINUITY TYPE

B = Bedding Joint
 J = Cross Joint
 F = Fault
 S = Shear Plane

ORIENTATION

F = Flat = 0-20°
 D = Dipping = 20-50°
 V = n-Vertical = >50°

FILLING

T = Tight, Hard
 O = Oxidized
 SA = Slightly Altered, Clay Free
 S = Sandy, Clay Free
 Si = Sandy, Silty, Minor Clay
 NC = Non-softening Clay
 SC = Swelling, Soft Clay

ROUGHNESS

RU = Rough Undulating
 RP = Rough Planar
 SU = Smooth Undulating
 SP = Smooth Planar
 LU = Slickensided Undulating
 LP = Slickensided Planar

SPACING

VW = Very Wide = >3m
 W = Wide = 1-3 m
 M = Moderate = 0.3-1 m
 C = Close = 5-30 cm
 VC = Very Close = <5 cm

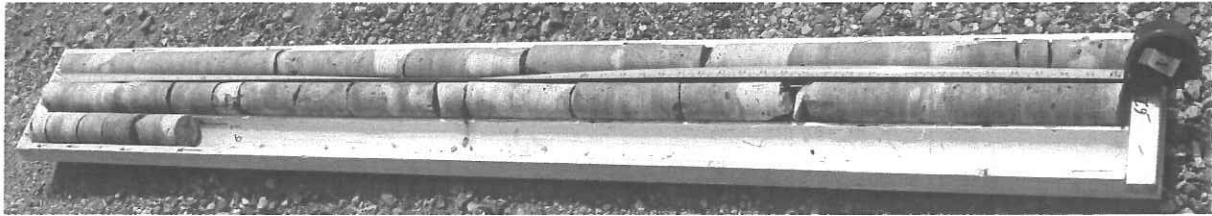


Photo No. 1: BH10-2 – Depth 18.44 m to 22.25 m

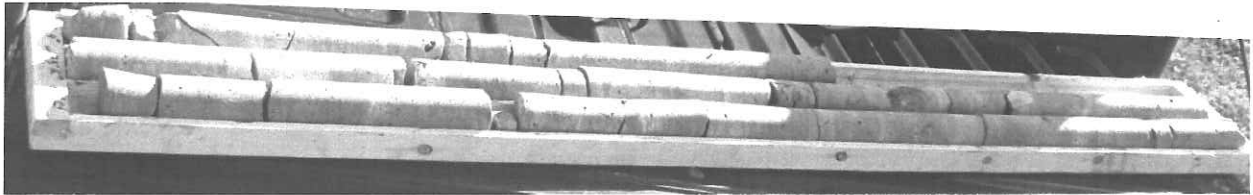


Photo No. 2: BH10-5 – Depth 22.05 m to 26.7 m



Stantec

Project No. 165000749