



**FOUNDATION INVESTIGATION REPORT
SWAMP AND HIGH FILL CROSSINGS**

for

**HIGHWAY 69 FOUR-LANING
FROM 5.3 KM SOUTH OF HIGHWAY 529 (NORTH JUNCTION)
NORTHERLY TO 2.2 KM NORTH OF HIGHWAY 529, 7.5 KM
G.W.P. 5112-07-00
MAGNETAWAN FIRST NATION / WALLBRIDGE TOWNSHIP, ONTARIO**

VOLUME 2

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PML Ref.: 09TF043
Index No.: 387FIR
GEOCRES No.: 41H-148
March 11, 2015



APPENDIX B

Explanation of Terms Used in Report

Record of Borehole Sheets and Record of Penetration Test Sheets:
Swamps 101 to North Transfer Swamp 2

EXPLANATION OF TERMS USED IN REPORT

N VALUE: THE STANDARD PENETRATION TEST (SPT) N VALUE IS THE NUMBER OF BLOWS REQUIRED TO CAUSE A STANDARD 51mm O.D. SPLIT BARREL SAMPLER TO PENETRATE 0.3m INTO UNDISTURBED GROUND IN A BOREHOLE WHEN DRIVEN BY A HAMMER WITH A MASS OF 63.5kg, FALLING FREELY A DISTANCE OF 0.76m. FOR PENETRATIONS OF LESS THAN 0.3m N VALUES ARE INDICATED AS THE NUMBER OF BLOWS FOR THE PENETRATION ACHIEVED. AVERAGE N VALUE IS DENOTED THUS \bar{N} .

DYNAMIC CONE PENETRATION TEST: CONTINUOUS PENETRATION OF A CONICAL STEEL POINT (51mm O.D. 60° CONE ANGLE) DRIVEN BY 475 J IMPACT ENERGY ON 'A' SIZE DRILL RODS. THE RESISTANCE TO CONE PENETRATION IS MEASURED AS THE NUMBER OF BLOWS FOR EACH 0.3m ADVANCE OF THE CONICAL POINT INTO THE UNDISTURBED GROUND.

SOILS ARE DESCRIBED BY THEIR COMPOSITION AND CONSISTENCY OR DENSENESS.

COMPOSITION: SECONDARY SOIL COMPONENTS ARE DESCRIBED ON THE BASIS OF PERCENTAGE BY MASS OF THE WHOLE SAMPLE AS FOLLOWS:

PERCENT BY MASS	0 - 10	10 - 20	20 - 30	30 - 40	> 40
	TRACE	SOME	WITH	ADJECTIVE (SILTY)	AND (AND SILT)

CONSISTENCY: COHESIVE SOILS ARE DESCRIBED ON THE BASIS OF THEIR UNDRAINED SHEAR STRENGTH (c_u) AS FOLLOWS:

c_u (kPa)	0 - 12	12 - 25	25 - 50	50 - 100	100 - 200	> 200
	VERY SOFT	SOFT	FIRM	STIFF	VERY STIFF	HARD

DENSENESS: COHESIONLESS SOILS ARE DESCRIBED ON THE BASIS OF DENSENESS AS INDICATED BY SPT N VALUES AS FOLLOWS:

N (BLOWS/0.3m)	0 - 5	5 - 10	10 - 30	30 - 50	> 50
	VERY LOOSE	LOOSE	COMPACT	DENSE	VERY DENSE

ROCKS ARE DESCRIBED BY THEIR COMPOSITION AND STRUCTURAL FEATURES AND / OR STRENGTH.

RECOVERY: SUM OF ALL RECOVERED ROCK CORE PIECES FROM A CORING RUN EXPRESSED AS A PERCENT OF THE TOTAL LENGTH OF THE CORING RUN.

MODIFIED RECOVERY: SUM OF THOSE INTACT CORE PIECES, 100mm+ IN LENGTH EXPRESSED AS A PERCENT OF THE LENGTH OF THE CORING RUN. THE ROCK QUALITY DESIGNATION (R Q D), FOR MODIFIED RECOVERY, IS:

R Q D (%)	0 - 25	25 - 50	50 - 75	75 - 90	90 - 100
	VERY POOR	POOR	FAIR	GOOD	EXCELLENT

JOINTING AND BEDDING:

SPACING	50mm	50 - 300mm	0.3m - 1m	1m - 3m	> 3m
JOINTING	VERY CLOSE	CLOSE	MOD. CLOSE	WIDE	VERY WIDE
BEDDING	VERY THIN	THIN	MEDIUM	THICK	VERY THICK

ABBREVIATIONS AND SYMBOLS

FIELD SAMPLING

S S SPLIT SPOON	T P THINWALL PISTON
W S WASH SAMPLE	O S OSTERBERG SAMPLE
S T SLOTTED TUBE SAMPLE	R C ROCK CORE
B S BLOCK SAMPLE	P H T W ADVANCED HYDRAULICALLY
C S CHUNK SAMPLE	P M T W ADVANCED MANUALLY
T W THINWALL OPEN	F S FOIL SAMPLE
F V FIELD VANE	

STRESS AND STRAIN

u_w	kPa	PORE WATER PRESSURE
u	1	PORE PRESSURE RATIO
σ	kPa	TOTAL NORMAL STRESS
σ'	kPa	EFFECTIVE NORMAL STRESS
τ	kPa	SHEAR STRESS
$\sigma_1, \sigma_2, \sigma_3$	kPa	PRINCIPAL STRESSES
ϵ	%	LINEAR STRAIN
$\epsilon_1, \epsilon_2, \epsilon_3$	%	PRINCIPAL STRAINS
E	kPa	MODULUS OF LINEAR DEFORMATION
G	kPa	MODULUS OF SHEAR DEFORMATION
μ	1	COEFFICIENT OF FRICTION

MECHANICAL PROPERTIES OF SOIL

m_v	kPa ⁻¹	COEFFICIENT OF VOLUME CHANGE
C_c	1	COMPRESSION INDEX
C_s	1	SWELLING INDEX
C_α	1	RATE OF SECONDARY CONSOLIDATION
c_v	m ² /s	COEFFICIENT OF CONSOLIDATION
H	m	DRAINAGE PATH
T_v	1	TIME FACTOR
U	%	DEGREE OF CONSOLIDATION
σ'_{v0}	kPa	EFFECTIVE OVERBURDEN PRESSURE
σ'_p	kPa	PRECONSOLIDATION PRESSURE
τ_f	kPa	SHEAR STRENGTH
c'	kPa	EFFECTIVE COHESION INTERCEPT
ϕ'	-°	EFFECTIVE ANGLE OF INTERNAL FRICTION
c_u	kPa	APPARENT COHESION INTERCEPT
ϕ_u	-°	APPARENT ANGLE OF INTERNAL FRICTION
τ_R	kPa	RESIDUAL SHEAR STRENGTH
τ_r	kPa	REMOULDED SHEAR STRENGTH
S_i	1	SENSITIVITY = $\frac{c_u}{\tau_r}$

PHYSICAL PROPERTIES OF SOIL

ρ_s	kg/m ³	DENSITY OF SOLID PARTICLES	n	1, %	POROSITY	e_{max}	1, %	VOID RATIO IN LOOSEST STATE
γ_s	kN/m ³	UNIT WEIGHT OF SOLID PARTICLES	w	1, %	WATER CONTENT	e_{min}	1, %	VOID RATIO IN DENSEST STATE
ρ_w	kg/m ³	DENSITY OF WATER	S_r	%	DEGREE OF SATURATION	I_D	1	DENSITY INDEX = $\frac{e_{max} - e}{e_{max} - e_{min}}$
γ_w	kN/m ³	UNIT WEIGHT OF WATER	w_L	%	LIQUID LIMIT	D	mm	GRAIN DIAMETER
ρ	kg/m ³	DENSITY OF SOIL	w_p	%	PLASTIC LIMIT	D_n	mm	n PERCENT - DIAMETER
γ	kN/m ³	UNIT WEIGHT OF SOIL	w_s	%	SHRINKAGE LIMIT	C_u	1	UNIFORMITY COEFFICIENT
ρ_d	kg/m ³	DENSITY OF DRY SOIL	I_p	%	PLASTICITY INDEX = $w_L - w_p$	h	m	HYDRAULIC HEAD OR POTENTIAL
γ_d	kN/m ³	UNIT WEIGHT OF DRY SOIL	I_L	1	LIQUIDITY INDEX = $\frac{w - w_p}{I_p}$	q	m ³ /s	RATE OF DISCHARGE
ρ_{sat}	kg/m ³	DENSITY OF SATURATED SOIL	I_C	1	CONSISTENCY INDEX = $\frac{w_L - w}{I_p}$	v	m/s	DISCHARGE VELOCITY
γ_{sat}	kN/m ³	UNIT WEIGHT OF SATURATED SOIL	DTPL		DRIER THAN PLASTIC LIMIT	i	1	HYDRAULIC GRADIENT
ρ'	kg/m ³	DENSITY OF SUBMERGED SOIL	APL		ABOUT PLASTIC LIMIT	k	m/s	HYDRAULIC CONDUCTIVITY
γ'	kN/m ³	UNIT WEIGHT OF SUBMERGED SOIL	WTP		WETTER THAN PLASTIC LIMIT	j	kN/m ³	SEEPAGE FORCE
e	1, %	VOID RATIO						

RECORD OF BOREHOLE No 101-1

1 of 1

METRIC

G.W.P. 5112-07-00 **LOCATION** Hwy 69, Sta. 16+075, o/s 18.8m Rt. **ORIGINATED BY** R.B.
DIST Wallbridge Twp **HWY** 69 **BOREHOLE TYPE** Manual Probing **COMPILED BY** G.D.
DATUM Geodetic **DATE** October 06, 2011 **CHECKED BY** C.N.

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	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												
194.7 0.0	Ground Surface							20	40	60	80	100								
194.6 0.1	Topsoil																			
	End of borehole																			
	Refusal on probable bedrock																			
							</													

RECORD OF BOREHOLE No 101-2

1 of 1

METRIC

G.W.P. 5112-07-00 **LOCATION** Hwy 69, Sta. 16+087.5, o/s 4.0m Rt. **ORIGINATED BY** R.B.
DIST Wallbridge Twp **HWY** 69 **BOREHOLE TYPE** Manual Probing **COMPILED BY** G.D.
DATUM Geodetic **DATE** October 06, 2011 **CHECKED BY** C.N.

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			20	40	60	80	100					
194.5	Ground Surface					*											
0.0 194.2 0.3	Peat, fine fibrous	~ ~ ~															
	Dark Wet brown/black																
	End of borehole																
	Refusal on probable bedrock																
	* Borehole dry																

RECORD OF BOREHOLE No 101-3

1 of 1

METRIC

G.W.P. 5112-07-00 **LOCATION** Hwy 69, Sta. 16+087.5, o/s 35.0m Rt. **ORIGINATED BY** R.B.
DIST Wallbridge Twp **HWY** 69 **BOREHOLE TYPE** Manual Probing **COMPILED BY** G.D.
DATUM Geodetic **DATE** October 06, 2011 **CHECKED BY** C.N.

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	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										
194.8 0.0	Ground Surface					*		20	40	60	80	100				kN/m ³	GR SA SI CL	
194.7 0.1	Topsoil																	
	End of borehole																	
	Refusal on probable bedrock																	

RECORD OF BOREHOLE No 101-4

1 of 1

METRIC

G.W.P. <u>5112-07-00</u>	LOCATION <u>Hwy 69, Sta. 16+100, o/s 18.8m Rt.</u>	ORIGINATED BY <u>J.H.</u>
DIST <u>Wallbridge Twp</u> HWY <u>69</u>	BOREHOLE TYPE <u>Tripod 'N' Casing with Washbore</u>	COMPILED BY <u>G.D.</u>
DATUM <u>Geodetic</u>	DATE <u>February 08, 2012</u>	CHECKED BY <u>C.N.</u>

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RECORD OF BOREHOLE No 101-5

1 of 1

METRIC

G.W.P. 5112-07-00 **LOCATION** Hwy 69, Sta. 16+112.5, o/s 4.0m Rt. **ORIGINATED BY** J.H.
DIST Wallbridge Twp **HWY** 69 **BOREHOLE TYPE** Tripod 'N' Casing with Washbore **COMPILED BY** G.D.
DATUM Geodetic **DATE** February 08, 2012 **CHECKED BY** C.N.

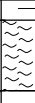


SOIL PROFILE			SAMPLES			GROUND WATER CONDITIONS	ELEVATION SCALE	DYNAMIC CONE PENETRATION RESISTANCE PLOT					PLASTIC LIMIT w _p	NATURAL MOISTURE CONTENT w	LIQUID LIMIT w _L	UNIT WEIGHT γ kN/m ³	REMARKS & GRAIN SIZE DISTRIBUTION (%) GR SA SI CL			
ELEV DEPTH	DESCRIPTION	STRAT PLOT	NUMBER	TYPE	"N" VALUES			SHEAR STRENGTH kPa										WATER CONTENT (%)		
								○ UNCONFINED + FIELD VANE ● QUICK TRIAXIAL × LAB VANE												
194.4	Top of Snow/Ice							20	40	60	80	100								
0.0	Snow/Ice					▽* ▼*	194													
193.9	Water																			
0.5	Peat, fine fibrous																			
	Black		1	SS	WH**										287					
193.0							193													
1.4	Clayey silt, sandy																			
	Stiff Grey Moist		2	SS	10															
192.0			3	SS	25/15cm		192													
2.4	End of borehole																			
	Refusal on probable bedrock																			

RECORD OF BOREHOLE No 101-6

1 of 1

METRIC

G.W.P. 5112-07-00 **LOCATION** Hwy 69, Sta. 16+112.5, o/s 35.0m Rt. **ORIGINATED BY** R.B.
DIST Wallbridge Twp **HWY** 69 **BOREHOLE TYPE** Manual Probing **COMPILED BY** G.D.
DATUM Geodetic **DATE** October 06, 2011 **CHECKED BY** C.N.

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	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									
194.3 0.0	Top of water																			
194.1 0.2	Water																			
193.4 0.9	Peat, fine fibrous																			
	Dark brown/ black																			
	Wet																			
	End of borehole																			
	Refusal on probable bedrock																			

RECORD OF BOREHOLE No 101-7

1 of 1

METRIC

G.W.P. 5112-07-00	LOCATION Hwy 69, Sta. 16+125, o/s 18.8m Rt.	ORIGINATED BY R.B.
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DIST	Wallbridge Twp	HWY	69	BOREHOLE TYPE	Manual Probing	COMPILED BY	G.D.
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DATUM	Geodetic	DATE	October 06, 2011	CHECKED BY	C.N.
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[illegible]

RECORD OF BOREHOLE No 102-1

1 of 1

METRIC

G.W.P. 5112-07-00 **LOCATION** Hwy 69, Sta. 16+530, o/s 18.8m Rt. **ORIGINATED BY** R.B.
DIST Wallbridge Twp **HWY** 69 **BOREHOLE TYPE** Manual Probing **COMPILED BY** G.D.
DATUM Geodetic **DATE** October 06, 2011 **CHECKED BY** C.N.

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	REMARKS & GRAIN SIZE DISTRIBUTION (%)	
ELEV DEPTH	DESCRIPTION	STRAT PLOT	NUMBER	TYPE	"N" VALUES			SHEAR STRENGTH kPa										WATER CONTENT (%)
								○ UNCONFINED	● QUICK TRIAXIAL	+	×	FIELD VANE						
196.3	Ground Surface					*		20	40	60	80	100					GR SA SI CL	
0.0	Bedrock at surface																	
	* Borehole dry																	

RECORD OF BOREHOLE No 102-2

1 of 1

METRIC

G.W.P. 5112-07-00 **LOCATION** Hwy 69, Sta. 16+537.5, o/s 5.0m Rt. **ORIGINATED BY** R.B.
DIST Wallbridge Twp **HWY** 69 **BOREHOLE TYPE** Manual Probing **COMPILED BY** G.D.
DATUM Geodetic **DATE** October 06, 2011 **CHECKED BY** C.N.

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	REMARKS & GRAIN SIZE DISTRIBUTION (%)			
ELEV DEPTH	DESCRIPTION	STRAT PLOT	NUMBER	TYPE	"N" VALUES			SHEAR STRENGTH kPa										WATER CONTENT (%)		
								<div>○ UNCONFINED + FIELD VANE ● QUICK TRIAXIAL × LAB VANE</div>												
195.0 0.0	Ground Surface							20	40	60	80	100				kn/m³	GR SA SI CL			
194.9 0.1	Topsoil																			
	End of borehole																			
	Refusal on probable bedrock																			

RECORD OF BOREHOLE No 102-3

1 of 1

METRIC

G.W.P. 5112-07-00 **LOCATION** Hwy 69, Sta. 16+537.5, o/s 34.0m Rt. **ORIGINATED BY** R.B.
DIST Wallbridge Twp **HWY** 69 **BOREHOLE TYPE** Manual Probing **COMPILED BY** G.D.
DATUM Geodetic **DATE** October 06, 2011 **CHECKED BY** C.N.


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 (%)		
								<div><div>○ UNCONFINED + FIELD VANE</div><div>● QUICK TRIAXIAL × LAB VANE</div></div>										<div><div>○</div><div>○</div><div>○</div></div>		
196.0	Ground Surface							20	40	60	80	100								
0.0 195.7	Topsoil																			
0.3	End of borehole Refusal on probable bedrock																			
	* Borehole dry																			

RECORD OF BOREHOLE No 102-4

1 of 1

METRIC

G.W.P. 5112-07-00 **LOCATION** Hwy 69, Sta. 16+550, o/s 18.8m Rt. **ORIGINATED BY** R.B.
DIST Wallbridge Twp **HWY** 69 **BOREHOLE TYPE** Manual Probing **COMPILED BY** G.D.
DATUM Geodetic **DATE** October 06, 2011 **CHECKED BY** C.N.

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										WATER CONTENT (%)		
								○ UNCONFINED + FIELD VANE ● QUICK TRIAXIAL × LAB VANE												
194.3	Ground Surface							20	40	60	80	100								
0.0	Topsoil																			
194.1	End of borehole																			
0.2	Refusal on probable bedrock																			
						</														

RECORD OF BOREHOLE No 102-5

1 of 1

METRIC

G.W.P. 5112-07-00 **LOCATION** Hwy 69, Sta. 16+562.5 CL **ORIGINATED BY** R.B.
DIST Wallbridge Twp **HWY** 69 **BOREHOLE TYPE** Manual Probing **COMPILED BY** G.D.
DATUM Geodetic **DATE** October 06, 2011 **CHECKED BY** C.N.

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	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								
194.9	Ground Surface					*										GR	SA	SI	CL
0.0	Bedrock at surface																		
	* Borehole dry																		

RECORD OF BOREHOLE No 102-6

1 of 1

METRIC

G.W.P. 5112-07-00 **LOCATION** Hwy 69, Sta. 16+562.5, o/s 42.0m Rt. **ORIGINATED BY** F.P.
DIST Wallbridge Twp **HWY** 69 **BOREHOLE TYPE** Manual Probing **COMPILED BY** G.D.
DATUM Geodetic **DATE** February 07, 2012 **CHECKED BY** C.N.

SOIL PROFILE			SAMPLES			GROUND WATER CONDITIONS	ELEVATION SCALE	DYNAMIC CONE PENETRATION RESISTANCE PLOT					PLASTIC LIMIT	NATURAL MOISTURE CONTENT	LIQUID LIMIT	UNIT WEIGHT	REMARKS & GRAIN SIZE DISTRIBUTION (%)			
ELEV DEPTH	DESCRIPTION	STRAT PLOT	NUMBER	TYPE	"N" VALUES			SHEAR STRENGTH kPa										w _p	w	w _L
								○ UNCONFINED	+ FIELD VANE	● QUICK TRIAXIAL	× LAB VANE									
195.4	Ground Surface					*		20	40	60	80	100				kN/m³	GR SA SI CL			
0.0	Bedrock at surface																			
	* Borehole dry																			

RECORD OF BOREHOLE No 102-7

1 of 1

METRIC

G.W.P. 5112-07-00 **LOCATION** Hwy 69, Sta. 16+575, o/s 18.8m Rt. **ORIGINATED BY** R.B.
DIST Wallbridge Twp **HWY** 69 **BOREHOLE TYPE** Manual Probing **COMPILED BY** G.D.
DATUM Geodetic **DATE** October 06, 2011 **CHECKED BY** C.N.

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	REMARKS & GRAIN SIZE DISTRIBUTION (%)			
ELEV DEPTH	DESCRIPTION	STRAT PLOT	NUMBER	TYPE	"N" VALUES			SHEAR STRENGTH kPa										WATER CONTENT (%)		
								○ UNCONFINED	● QUICK TRIAXIAL	+	×	FIELD VANE						LAB VANE		
194.6	Ground Surface					*		20	40	60	80	100				GR	SA	SI	CL	
0.0	Bedrock at surface																			
	* Borehole dry																			

RECORD OF BOREHOLE No 102-8

1 of 1

METRIC

G.W.P. 5112-07-00 **LOCATION** Hwy 69, Sta. 16+575, o/s 38.5m Rt. **ORIGINATED BY** F.P.
DIST Wallbridge Twp **HWY** 69 **BOREHOLE TYPE** Tripod 'N' Casing with Washbore **COMPILED BY** G.D.
DATUM Geodetic **DATE** February 07, 2012 **CHECKED BY** C.N.

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									
193.1	Top of Ice					▽ * * ▼	193	<div><div></div><div></div><div></div><div></div><div></div></div>									
0.0	Ice																
192.7	Water																
0.4	Peat, fine fibrous		1	SS	WH**												
192.5	Dark brown																
0.6	Clay, trace sand organics		2	SS	8		192					125					
	Stiff to Grey Wet very stiff																
			3	SS	9							125				0 4 29 67	
							191										
							190										
189.7	Sand		4	SS	7												
3.4	trace silt, trace gravel																
189.3	Compact Grey Wet																
3.8	End of borehole Refusal on probable bedrock																
	* 2012 02 07																
	▽ Water level observed during drilling																
	▼ Water level measured after drilling																
	■ Penetrometer test																
	WH** denotes penetration due to weight of rods and hammer																

* 2012 02 07

▽ Water level observed
during drilling

▼ Water level measured
after drilling

■ Penetrometer test

WH** denotes penetration
due to weight of rods
and hammer

RECORD OF BOREHOLE No 102-9

1 of 1

METRIC

G.W.P. 5112-07-00 **LOCATION** Hwy 69, Sta. 16+585, o/s 2.5m Rt. **ORIGINATED BY** R.B.
DIST Wallbridge Twp **HWY** 69 **BOREHOLE TYPE** Manual Probing **COMPILED BY** G.D.
DATUM Geodetic **DATE** October 06, 2011 **CHECKED BY** C.N.

SOIL PROFILE			SAMPLES			GROUND WATER CONDITIONS	ELEVATION SCALE	DYNAMIC CONE PENETRATION RESISTANCE PLOT					PLASTIC LIMIT	NATURAL MOISTURE CONTENT	LIQUID LIMIT	UNIT WEIGHT	REMARKS & GRAIN SIZE DISTRIBUTION (%)			
ELEV DEPTH	DESCRIPTION	STRAT PLOT	NUMBER	TYPE	"N" VALUES			SHEAR STRENGTH kPa										W _p	W	W _L
								○ UNCONFINED	● QUICK TRIAXIAL	+	×	FIELD VANE								
195.9	Ground Surface					*		20	40	60	80	100				GR SA SI CL				
0.0	Bedrock at surface																			
	* Borehole dry																			

RECORD OF BOREHOLE No 102-10

1 of 1

METRIC

G.W.P.	5112-07-00	LOCATION	Hwy 69, Sta. 16+585, o/s 36.5m Rt.	ORIGINATED BY	F.P.
DIST	Wallbridge Twp	HWY	69	BOREHOLE TYPE	Tripod 'N' Casing with Washbore
DATUM	Geodetic	DATE	February 07, 2012	CHECKED BY	C.N.



[illegible]

RECORD OF BOREHOLE No 103-1

1 of 1

METRIC

G.W.P. 5112-07-00 **LOCATION** Hwy 69, Sta. 16+695 CL **ORIGINATED BY** F.P.
DIST Wallbridge Twp **HWY** 69 **BOREHOLE TYPE** Continuous Flight Hollow Stem Augers **COMPILED BY** G.D.
DATUM Geodetic **DATE** February 06, 2012 **CHECKED BY** C.N.

SOIL PROFILE			SAMPLES		GROUND WATER CONDITIONS	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		SHEAR STRENGTH kPa					W _p	w	W _L		
193.1	Ground Surface					20 40 60 80 100					20 40 60			kN/m ³	GR SA SI CL
0.0 192.8 0.3	Peat, fine fibrous Dark brown		1	SS											
	Organic silty sand														
192.0	Very loose Dark Wet to loose grey		2	SS											
1.1	Clayey silt, with sand organics to 1.4m														
	Firm Grey Wet Mottled grey/brown		3	SS											
			4	SS											
	silty clay layers														
	Soft Grey		5	SS											
				FV											
188.6	Silt, trace sand														
4.5 188.2	Loose Grey Wet		6	SS											
4.9 187.9	Sand, trace gravel														
5.2	Compact Brown Wet														
	End of borehole														
	Refusal on probable bedrock														
* 2012 02 06  Water level observed during drilling  Penetrometer test WH** denotes penetration due to weight of rods and hammer															

RECORD OF BOREHOLE No 103-2

1 of 1

METRIC

G.W.P. 5112-07-00 **LOCATION** Hwy 69, Sta. 16+695, o/s 41.0m Rt. **ORIGINATED BY** R.B.
DIST Wallbridge Twp **HWY** 69 **BOREHOLE TYPE** Manual Probing **COMPILED BY** G.D.
DATUM Geodetic **DATE** October 06, 2011 **CHECKED BY** C.N.

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	REMARKS & GRAIN SIZE DISTRIBUTION (%)						
ELEV DEPTH	DESCRIPTION	STRAT PLOT	NUMBER	TYPE	"N" VALUES			SHEAR STRENGTH kPa									WATER CONTENT (%)			GR	SA	SI	CL
								○ UNCONFINED	● QUICK TRIAXIAL	+	×	FIELD VANE					LAB VANE						
194.6	Ground Surface					*																	
0.0	Bedrock at surface																						
	* Borehole dry																						

RECORD OF BOREHOLE No 103-3

1 of 1

METRIC

G.W.P. 5112-07-00 **LOCATION** Hwy 69, Sta. 16+700, o/s 18.8m Rt. **ORIGINATED BY** F.P.
DIST Wallbridge Twp **HWY** 69 **BOREHOLE TYPE** Tripod 'N' Casing with Washbore **COMPILED BY** G.D.
DATUM Geodetic **DATE** February 07, 2012 **CHECKED BY** C.N.

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										WATER CONTENT (%)		
								○ UNCONFINED		+ FIELD VANE		● QUICK TRIAXIAL						× LAB VANE		○
193.2	Top of Snow/Ice							20	40	60	80	100								
193.0	Snow/Ice																			
0.2	Peat, fine fibrous		1	SS	1		193													
192.6	Dark brown																			
0.6	Clay, trace sand organics		2	SS	6															
	Stiff Mottled Moist brown/grey						192													
	Brown		3	SS	9															
190.9			4	SS	20/0cm		191													
2.3	End of borehole																			
	Refusal on probable bedrock																			
	Sample 4: Sampler bouncing																			
	<div>* 2012 02 07</div> <div>▽ Water level observed during drilling</div> <div>▼ Water level measured after drilling</div> <div>■ Penetrometer test</div>																			

RECORD OF BOREHOLE No 103-4

1 of 1

METRIC

G.W.P. 5112-07-00 **LOCATION** Hwy 69, Sta. 16+712.5 CL **ORIGINATED BY** F.P.
DIST Wallbridge Twp **HWY** 69 **BOREHOLE TYPE** Continuous Flight Hollow Stem Augers **COMPILED BY** G.D.
DATUM Geodetic **DATE** February 06, 2012 **CHECKED BY** C.N.

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									
								○ UNCONFINED + FIELD VANE									
								● QUICK TRIAXIAL × LAB VANE					WATER CONTENT (%)				
								20 40 60 80 100					20 40 60				
193.2	Ground Surface																
0.0 192.9	Peat, fine fibrous Dark brown		1	SS	1		193							○			
0.3	Organic silty sand, trace clay																
	Very loose Dark grey		2	SS	1		192							○		0 54 37 9	
191.8	Clayey silt, with sand organics to 2.2m		3	SS	3		192							○			
1.4	Firm Grey Wet		4	SS	4		191							○			
			5	SS	1		190							○		0 27 41 32	
				FV			190							○			
							189										
188.3	Silt trace sand, trace clay		6	SS	4		188							○			
4.9 187.7	Loose Grey Wet																
5.5	End of borehole Refusal on probable bedrock																
<div>* 2012 02 06</div> <div>▽ Water level observed during drilling</div> <div>▼ Water level measured after drilling</div> <div>■ Penetrometer test</div>																	

* 2012 02 06

▽ Water level observed
during drilling

▼ Water level measured
after drilling


■ Penetrometer test

RECORD OF BOREHOLE No 103-5

1 of 1

METRIC

G.W.P. 5112-07-00 **LOCATION** Hwy 69, Sta. 16+712.5, o/s 42.5m Rt. **ORIGINATED BY** R.B.
DIST Wallbridge Twp **HWY** 69 **BOREHOLE TYPE** Manual Probing **COMPILED BY** G.D.
DATUM Geodetic **DATE** October 06, 2011 **CHECKED BY** C.N.

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										WATER CONTENT (%)		
								<div><div>20406080100</div><div>○ UNCONFINED + FIELD VANE</div><div>● QUICK TRIAXIAL × LAB VANE</div></div>										<div><div>W_p W_L</div><div>○</div></div>		
193.5	Ground Surface																			
0.0	Peat, fine fibrous						193													
	Dark brown																			
192.6	End of borehole																			
0.9	Refusal on probable bedrock																			
	* Borehole dry																			

RECORD OF BOREHOLE No 103-6

1 of 1

METRIC

G.W.P. 5112-07-00 **LOCATION** Hwy 69, Sta. 16+725, o/s 18.8m Rt. **ORIGINATED BY** F.P.
DIST Wallbridge Twp **HWY** 69 **BOREHOLE TYPE** Tripod 'N' Casing with Washbore **COMPILED BY** G.D.
DATUM Geodetic **DATE** February 07, 2012 **CHECKED BY** C.N.


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	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								
193.0	Top of Snow/Ice						20	40	60	80	100				kN/m³	GR SA SI CL		
0.0 192.7	Snow/Ice					▽*												
0.3 192.4	Peat, amorphous Dark brown		1	SS	WH**	▽*												
0.6	Clay, trace sand organics to 1.4m		2	SS	8													
	Stiff Mottled Moist grey/brown																	
			3	SS	9											0 7 31 62		
189.9 3.1	Grey		4	SS	10/5cm													
3.1	End of borehole																	
	Refusal on probable bedrock																	
	Sample 4: Sampler bouncing																	
	* 2012 02 07																	
	▽ Water level observed during drilling																	
	▼ Water level measured after drilling																	
	■ Penetrometer test																	
	WH** denotes penetration due to weight of rods and hammer																	

RECORD OF BOREHOLE No 103-7

1 of 1

METRIC

G.W.P. 5112-07-00 **LOCATION** Hwy 69, Sta. 16+730 CL **ORIGINATED BY** R.B.
DIST Wallbridge Twp **HWY** 69 **BOREHOLE TYPE** Manual Probing **COMPILED BY** G.D.
DATUM Geodetic **DATE** October 06, 2011 **CHECKED BY** C.N.

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	REMARKS & GRAIN SIZE DISTRIBUTION (%)	
ELEV DEPTH	DESCRIPTION	STRAT PLOT	NUMBER	TYPE	"N" VALUES			SHEAR STRENGTH kPa										WATER CONTENT (%)
								○ UNCONFINED	● QUICK TRIAXIAL	+	×	FIELD VANE						
193.3	Ground Surface					*											GR SA SI CL	
0.0	Topsoil																	
193.1	End of borehole																	
0.2	Refusal on probable bedrock																	
	* Borehole dry																	

RECORD OF BOREHOLE No 103-8

1 of 1

METRIC

G.W.P. 5112-07-00	LOCATION Hwy 69, Sta. 16+735, o/s 41.0m Rt.	ORIGINATED BY F.P.
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DIST	Wallbridge Twp	HWY	69	BOREHOLE TYPE	Tripod 'N' Casing with Washbore	COMPILED BY	G.D.
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DATUM	Geodetic	DATE	February 07, 2012	CHECKED BY	C.N.
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[illegible]

RECORD OF BOREHOLE No 104-1

1 of 1

METRIC

G.W.P. 5112-07-00 **LOCATION** Hwy 69, Sta. 16+795 CL **ORIGINATED BY** F.P.
DIST Wallbridge Twp **HWY** 69 **BOREHOLE TYPE** Continuous Flight Hollow Stem Augers **COMPILED BY** G.D.
DATUM Geodetic **DATE** February 08, 2012 **CHECKED BY** C.N.

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												
193.6	Ground Surface																			
193.4	Topsoil																			
0.2	Silt, trace sand			1	SS	11														
193.0	trace clay, organics																			
0.6	Compact Brown Moist Clayey silt, trace sand organics		2	SS	11/15cm															
192.4	Stiff Grey Moist																			
1.2	End of borehole																			
	Refusal on probable bedrock																			
	Sample 2: Sampler bouncing																			
	* Borehole dry																			

RECORD OF BOREHOLE No 104-2

1 of 1

METRIC

G.W.P. 5112-07-00 **LOCATION** Hwy 69, Sta. 16+795, o/s 40.5m Rt. **ORIGINATED BY** R.B.
DIST Wallbridge Twp **HWY** 69 **BOREHOLE TYPE** Manual Probing **COMPILED BY** G.D.
DATUM Geodetic **DATE** October 06, 2011 **CHECKED BY** C.N.

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	● QUICK TRIAXIAL	+	×	FIELD VANE	LAB VANE	WATER CONTENT (%)			GR	SA	SI	CL
194.3	Ground Surface					*														
0.0	Bedrock at surface																			
	* Borehole dry																			

RECORD OF BOREHOLE No 104-3

1 of 1

METRIC

G.W.P. 5112-07-00 **LOCATION** Hwy 69, Sta. 16+800, o/s 18.8m Rt. **ORIGINATED BY** R.B.
DIST Wallbridge Twp **HWY** 69 **BOREHOLE TYPE** Continuous Flight Hollow Stem Augers **COMPILED BY** G.D.
DATUM Geodetic **DATE** February 09, 2012 **CHECKED BY** C.N.

SOIL PROFILE			SAMPLES		GROUND WATER CONDITIONS *	ELEVATION SCALE	DYNAMIC CONE PENETRATION RESISTANCE PLOT					PLASTIC NATURAL LIQUID LIMIT MOISTURE LIMIT CONTENT			UNIT WEIGHT γ kN/m ³	REMARKS & GRAIN SIZE DISTRIBUTION (%)
ELEV DEPTH	DESCRIPTION	STRAT PLOT	NUMBER	TYPE			SHEAR STRENGTH kPa					W _p	W	W _L		
193.4	Ground Surface						20	40	60	80	100					
0.0 193.1	Peat, fine fibrous Dark brown		1	SS		193							o			
0.3 192.8	Organic silt															
0.6 192.3	Loose Grey Moist to wet		2	SS									o			
1.1 192.3	Clayey silt sand partings															
	Stiff Brown/ Moist grey to wet		3	SS		192					137		o			
191.4 2.0	Silty clay, trace sand															
	Stiff to Brown Moist very stiff															
	End of borehole															
	Refusal on probable bedrock															
	Sample 3: Sampler bouncing															
	* Borehole dry															
	■ Penetrometer test															

RECORD OF BOREHOLE No 104-4

1 of 1

METRIC

G.W.P. 5112-07-00

LOCATION Hwy 69, Sta. 16+812.5 CL

ORIGINATED BY F.P.

DIST Wallbridge Twp HWY 69

BOREHOLE TYPEContinuous Flight Hollow Stem Augers

COMPILED BY G.D.

DATUM Geodetic

DATE February 09, 2012

CHECKED BY C.N.

[illegible]

RECORD OF PENETRATION TEST No 104-5

1 of 1

METRIC

G.W.P. 5112-07-00	LOCATION	Hwy 69, Sta. 16+812.5, o/s 18.8m Rt.	ORIGINATED BY	F.P.
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DIST	Wallbridge Twp	HWY	69	BOREHOLE TYPE	Dynamic Cone Penetration Test	COMPILED BY	G.D.
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DATUM Geodetic **DATE** February 29, 2012 **CHECKED BY** C.N.

[illegible]

RECORD OF BOREHOLE No 104-6

1 of 1

METRIC

G.W.P. 5112-07-00 **LOCATION** Hwy 69, Sta. 16+812.5, o/s 42.5m Rt. **ORIGINATED BY** R.B.
DIST Wallbridge Twp **HWY** 69 **BOREHOLE TYPE** Tripod 'N' Casing with Washbore **COMPILED BY** G.D.
DATUM Geodetic **DATE** February 29, 2012 **CHECKED BY** C.N.

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	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												
193.2	Top of Snow/Ice						20	40	60	80	100									
0.0	Snow/Ice					▽*														
192.9																				
0.3	peat, fine fibrous layers of organic sand		1	SS	2										87					
	Dark brown		2	SS	3															
			3	SS	2															
191.0																				
2.2	Clay, trace sand clayey silt seams		4	SS	3						125					0 4 27 69				
	Stiff to Grey Moist very stiff																			
190.0			5	SS	50/0cm															
3.2	End of borehole Refusal on probable bedrock Sample 5: Sampler bouncing 																			

* 2012 02 29

▽ Water level observed during drilling

▽ Water level measured after drilling

■ Penetrometer test

RECORD OF BOREHOLE No 104-7

1 of 1

METRIC

G.W.P. 5112-07-00 **LOCATION** Hwy 69, Sta. 16+825, o/s 15.0m Rt. **ORIGINATED BY** F.P.
DIST Wallbridge Twp **HWY** 69 **BOREHOLE TYPE** Continuous Flight Hollow Stem Augers **COMPILED BY** G.D.
DATUM Geodetic **DATE** February 09, 2012 **CHECKED BY** C.N.

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												
193.5	Ground Surface						20	40	60	80	100									
0.0	Topsoil																			
193.2																				
0.3	Silty sand, organics		1	SS	5															
	Loose to Brown Wet compact		2	SS	14															
192.1																				
1.4	Clayey silt																			
191.7	sandy silt seams		3	SS	6															
1.8	Stiff Grey Wet Clay, trace sand																			
	Firm to Grey Wet to moist stiff		4	SS	WH**															
				FV																
			5	SS	WH															
				FV																
			6	TW	-															
				FV																
			7	SS	WH															
				FV																
187.9																				
5.6	Sandy silt, trace clay																			
	Very loose Grey Wet		8	SS	2															
186.2																				
7.3	Sand with gravel, trace silt																			
	Compact Grey Wet		9	SS	21															
185.4																				
8.1	End of borehole																			
	Refusal on probable bedrock																			
* 2012 02 09																				
▽ Water level observed during drilling																				
▼ Water level measured after drilling																				
■ Penetration test																				
WH** denotes penetration due to weight of rods and hammer																				

RECORD OF PENETRATION TEST No 104-8

1 of 1

METRIC

G.W.P. 5112-07-00 **LOCATION** Hwy 69, Sta. 16+831, o/s 29.0m Rt. **ORIGINATED BY** F.P.
DIST Wallbridge Twp **HWY** 69 **BOREHOLE TYPE** Dynamic Cone Penetration Test **COMPILED BY** G.D.
DATUM Geodetic **DATE** February 09, 2012 **CHECKED BY** C.N.


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	REMARKS & GRAIN SIZE DISTRIBUTION (%)
ELEV. DEPTH	DESCRIPTION	STRAT PLOT	NUMBER	TYPE	"N" VALUES			20	40	60	80	100					
193.6 0.0	Ground Surface																
	Probable peat																
	Probable organic silt																
	Loose																
	Probable clayey silt																
192.1 1.5	Firm to stiff																
	End of dynamic cone penetration test																
	Refusal on probable bedrock																

RECORD OF BOREHOLE No 104-9

1 of 1

METRIC

G.W.P. 5112-07-00 **LOCATION** Hwy 69, Sta. 16+837.5 CL **ORIGINATED BY** R.B.
DIST Wallbridge Twp **HWY** 69 **BOREHOLE TYPE** Manual Probing **COMPILED BY** G.D.
DATUM Geodetic **DATE** October 06, 2011 **CHECKED BY** C.N.

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 (%)		
								<div>○ UNCONFINED + FIELD VANE</div> <div>● QUICK TRIAXIAL × LAB VANE</div>												
194.3	Ground Surface							20	40	60	80	100								
0.0	Topsoil						194													
193.8	End of borehole																			
0.5	Refusal on probable bedrock																			
	* Borehole dry																			

RECORD OF BOREHOLE No 104-10

1 of 1

METRIC

G.W.P. 5112-07-00 **LOCATION** Hwy 69, Sta. 16+837.5, o/s 40.0m Rt. **ORIGINATED BY** F.P.
DIST Wallbridge Twp **HWY** 69 **BOREHOLE TYPE** Continuous Flight Hollow Stem Augers **COMPILED BY** G.D.
DATUM Geodetic **DATE** February 09, 2012 **CHECKED BY** C.N.

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												
194.0	Ground Surface						20	40	60	80	100									
0.0 193.7 0.3	Peat, coarse fibrous Dark brown		1	SS	4								○							
193.5 0.5	Silty sand, organics																			
	Loose Brown Moist																			
	Clayey silt, trace sand silt layers		2	SS	13								○							
192.5 1.5	Firm to Brown/ Moist stiff grey																			
192.2 1.8	Sandy silt, trace clay		3	SS	6/15cm								○							
	Compact Brown/ Moist grey to wet																			
	End of borehole																			
	Refusal on probable bedrock																			
	Sample 3: Sampler bouncing																			
	* Borehole dry																			

RECORD OF BOREHOLE No 105-1

1 of 1

METRIC

G.W.P. 5112-07-00 **LOCATION** Hwy 69, Sta. 16+925, o/s 18.8m Rt. **ORIGINATED BY** F.P.
DIST Wallbridge Twp **HWY** 69 **BOREHOLE TYPE** Manual Probing **COMPILED BY** G.D.
DATUM Geodetic **DATE** February 09, 2012 **CHECKED BY** C.N.

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 (%)
								<div>○ UNCONFINED + FIELD VANE</div> <div>● QUICK TRIAXIAL × LAB VANE</div>										
195.9	Ground Surface							20	40	60	80	100						
0.0	Topsoil	~ ~ ~																
195.6	End of borehole																	
0.3	Refusal on probable bedrock																	
	* Borehole dry																	

RECORD OF PENETRATION TEST No 105-2

1 of 1

METRIC

G.W.P. <u>5112-07-00</u>	LOCATION <u>Hwy 69, Sta. 16+937.5, o/s 1.0m Rt.</u>	ORIGINATED BY <u>F.P.</u>
DIST <u>Wallbridge Twp</u> HWY <u>69</u>	BOREHOLE TYPE <u>Dynamic Cone Penetration Test</u>	COMPILED BY <u>G.D.</u>
DATUM <u>Geodetic</u>	DATE <u>February 09, 2012</u>	CHECKED BY <u>C.N.</u>

[illegible]

RECORD OF BOREHOLE No 105-3

1 of 1

METRIC

G.W.P.	5112-07-00	LOCATION	Hwy 69, Sta. 16+937.5, o/s 36.5m Rt.	ORIGINATED BY	F.P.
DIST	Wallbridge Twp	HWY	69	BOREHOLE TYPE	Continuous Flight Hollow Stem Augers
DATUM	Geodetic	DATE	February 09, 2012	COMPILED BY	G.D.
				CHECKED BY	C.N.

[illegible]

RECORD OF BOREHOLE No 105-4

1 of 1

METRIC

G.W.P.	5112-07-00	LOCATION	Hwy 69, Sta. 16+950, o/s 18.8m Rt.	ORIGINATED BY	F.P.
DIST	Wallbridge Twp	HWY	69	BOREHOLE TYPE	Continuous Flight Hollow Stem Augers
DATUM	Geodetic	DATE	February 10, 2012	COMPILED BY	G.D.
				CHECKED BY	C.N.

[illegible]

RECORD OF BOREHOLE No 105-5

1 of 1

METRIC

G.W.P. 5112-07-00 **LOCATION** Hwy 69, Sta. 16+962.5, o/s 0.5m Rt. **ORIGINATED BY** F.P.
DIST Wallbridge Twp **HWY** 69 **BOREHOLE TYPE** Continuous Flight Hollow Stem Augers **COMPILED BY** G.D.
DATUM Geodetic **DATE** February 13, 2012 **CHECKED BY** C.N.

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	REMARKS & GRAIN SIZE DISTRIBUTION (%) GR SA SI CL	
ELEV DEPTH	DESCRIPTION	STRAT PLOT	NUMBER	TYPE	"N" VALUES			SHEAR STRENGTH kPa										
								○ UNCONFINED + FIELD VANE										
								● QUICK TRIAXIAL × LAB VANE										
					WATER CONTENT (%)													
196.8	Top of Snow/Ice							20	40	60	80	100						
0.0	Snow/Ice																	
196.5	Peat, fine fibrous		1	SS	2		196											
0.3	Dark brown																	
195.7			2	SS	11/15cm													
1.1	End of borehole																	
	Refusal on probable bedrock																	
	Sample 2: Sampler bouncing																	
	 <																	

RECORD OF PENETRATION TEST No 105-6

1 of 1

METRIC

G.W.P. <u>5112-07-00</u>	LOCATION <u>Hwy 69, Sta. 16+962.5, o/s 38.5m Rt.</u>	ORIGINATED BY <u>F.P.</u>
DIST <u>Wallbridge Twp</u> HWY <u>69</u>	BOREHOLE TYPE <u>Dynamic Cone Penetration Test</u>	COMPILED BY <u>G.D.</u>
DATUM <u>Geodetic</u>	DATE <u>February 10, 2012</u>	CHECKED BY <u>C.N.</u>












[illegible]

RECORD OF BOREHOLE No 105-7

1 of 1

METRIC

G.W.P. 5112-07-00 **LOCATION** Hwy 69, Sta. 16+975, o/s 18.8m Rt. **ORIGINATED BY** F.P.
DIST Wallbridge Twp **HWY** 69 **BOREHOLE TYPE** Continuous Flight Hollow Stem Augers **COMPILED BY** G.D.
DATUM Geodetic **DATE** February 10, 2012 **CHECKED BY** C.N.

SOIL PROFILE			SAMPLES			GROUND WATER CONDITIONS	ELEVATION SCALE	DYNAMIC CONE PENETRATION RESISTANCE PLOT					PLASTIC LIMIT	NATURAL MOISTURE CONTENT	LIQUID LIMIT	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 (%)		
								<div><div><div>20406080100</div><div>UNCONFINED</div></div><div><div>20406080100</div><div>QUICK TRIAXIAL</div></div><div><div>FIELD VANE</div><div>LAB VANE</div></div></div>										<div><div><div>W_p</div><div>W</div><div>W_L</div></div><div><div>○</div></div></div>		
196.1	Ground Surface																			
0.0	Peat, fine fibrous Dark brown		1	SS	6	 * 	196													
195.0			2	SS	WH**		195							○						
1.1	Clayey silt, trace sand organics																			
194.5																				
1.6	Firm Grey Moist Clay, trace sand		3	SS	2		194													
	Firm Grey/ reddish grey																			
	silt seams		4	SS	WH								○							
192.9			5	SS	10/8cm		193													
3.2	End of borehole																			
	Refusal on probable bedrock																			
	Sample 5: Sampler bouncing																			

RECORD OF BOREHOLE No 105-8

1 of 1

METRIC

G.W.P. 5112-07-00 **LOCATION** Hwy 69, Sta. 16+987.5 CL **ORIGINATED BY** R.B.
DIST Wallbridge Twp **HWY** 69 **BOREHOLE TYPE** Manual Probing **COMPILED BY** G.D.
DATUM Geodetic **DATE** October 07, 2011 **CHECKED BY** C.N.

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	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												
196.3	Ground Surface																			
0.0	Peat, fine fibrous																			
196.1	Dark brown/black																			
0.2	Wet																			
	End of borehole																			
	Refusal on probable bedrock																			

RECORD OF BOREHOLE No 105-9

1 of 1

METRIC

G.W.P. 5112-07-00 **LOCATION** Hwy 69, Sta. 16+987.5, o/s 39.0m Rt. **ORIGINATED BY** R.B.
DIST Wallbridge Twp **HWY** 69 **BOREHOLE TYPE** Manual Probing **COMPILED BY** G.D.
DATUM Geodetic **DATE** October 07, 2011 **CHECKED BY** C.N.

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									
								○ UNCONFINED + FIELD VANE ● QUICK TRIAXIAL × LAB VANE									
196.1	Ground Surface						20	40	60	80	100						
0.0	Peat, fine fibrous						196										
195.5	Dark brown/black																
0.6	Wet																
	End of borehole																
	Refusal on probable bedrock																
	* Borehole dry																

RECORD OF BOREHOLE No 105-10

1 of 1

METRIC

G.W.P. <u>5112-07-00</u>	LOCATION <u>Hwy 69, Sta. 17+000, o/s 18.8m Rt.</u>	ORIGINATED BY <u>F.P.</u>
DIST <u>Wallbridge Twp</u> HWY <u>69</u>	BOREHOLE TYPE <u>Continuous Flight Hollow Stem Augers</u>	COMPILED BY <u>G.D.</u>
DATUM <u>Geodetic</u>	DATE <u>February 13, 2012</u>	CHECKED BY <u>C.N.</u>

[illegible]

RECORD OF BOREHOLE No 105-11

1 of 1

METRIC

G.W.P. 5112-07-00 **LOCATION** Hwy 69, Sta. 17+012.5 CL **ORIGINATED BY** F.P.
DIST Wallbridge Twp **HWY** 69 **BOREHOLE TYPE** Continuous Flight Hollow Stem Augers **COMPILED BY** G.D.
DATUM Geodetic **DATE** February 13, 2012 **CHECKED BY** C.N.

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										WATER CONTENT (%)		
								○ UNCONFINED + FIELD VANE ● QUICK TRIAXIAL × LAB VANE												
196.6	Ground Surface							20	40	60	80	100								
0.0	Topsoil		1	SS	1		196													
196.2	(FILL)																			
0.4	Peat, fine fibrous																			
	Dark brown		2	SS	2															
194.9			3	SS	10/5cm		195													
1.7	End of borehole																			
	Refusal on probable bedrock																			
	Sample 3: Sampler bouncing																			
	* Borehole dry																			

RECORD OF BOREHOLE No 105-12

1 of 1

METRIC

G.W.P. 5112-07-00 **LOCATION** Hwy 69, Sta. 17+012.5, o/s 40.5m Rt. **ORIGINATED BY** F.P.
DIST Wallbridge Twp **HWY** 69 **BOREHOLE TYPE** Continuous Flight Hollow Stem Augers **COMPILED BY** G.D.
DATUM Geodetic **DATE** February 13, 2012 **CHECKED BY** C.N.

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 (%)		
196.3	Ground Surface							20	40	60	80	100								
0.0	Peat, fine fibrous		1	SS	3		196													
196.1	Dark brown																			
0.2	Clayey silt, with sand organics																			
	Firm Mottled Wet grey/brown		2	SS	8												0 29 54 17			
194.8							195													
1.5	End of borehole																			
	Refusal on probable bedrock																			
	* Borehole dry																			

RECORD OF BOREHOLE No 105-13

1 of 1

METRIC

G.W.P. 5112-07-00 **LOCATION** Hwy 69, Sta. 17+025, o/s 18.8m Rt. **ORIGINATED BY** R.B.
DIST Wallbridge Twp **HWY** 69 **BOREHOLE TYPE** Manual Probing **COMPILED BY** G.D.
DATUM Geodetic **DATE** October 07, 2011 **CHECKED BY** C.N.

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	REMARKS & GRAIN SIZE DISTRIBUTION (%)			
ELEV DEPTH	DESCRIPTION	STRAT PLOT	NUMBER	TYPE	"N" VALUES			SHEAR STRENGTH kPa										WATER CONTENT (%)		
								<div>○ UNCONFINED + FIELD VANE</div> <div>● QUICK TRIAXIAL × LAB VANE</div>												
197.3 0.0	Ground Surface					*		20	40	60	80	100								
197.2 0.1	Topsoil																			
	End of borehole																			
	Refusal on probable bedrock																			
	</																			

RECORD OF BOREHOLE No 105-14

1 of 1

METRIC

G.W.P. 5112-07-00 **LOCATION** Hwy 69, Sta. 17+030, o/s 4.0m Rt. **ORIGINATED BY** R.B.
DIST Wallbridge Twp **HWY** 69 **BOREHOLE TYPE** Manual Probing **COMPILED BY** G.D.
DATUM Geodetic **DATE** October 07, 2011 **CHECKED BY** C.N.


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	REMARKS & GRAIN SIZE DISTRIBUTION (%)		
ELEV DEPTH	DESCRIPTION	STRAT PLOT	NUMBER	TYPE	"N" VALUES	SHEAR STRENGTH kPa					WATER CONTENT (%)									
						○ UNCONFINED			● QUICK TRIAXIAL	+		×	FIELD VANE						LAB VANE	
197.0	Ground Surface					*			20	40	60	80	100	20	40	60	GR	SA	SI	CL
0.0	Bedrock at surface																			
	* Borehole dry																			

RECORD OF BOREHOLE No 105-15

1 of 1

METRIC

G.W.P. 5112-07-00 **LOCATION** Hwy 69, Sta. 17+030, o/s 34.5m Rt. **ORIGINATED BY** R.B.
DIST Wallbridge Twp **HWY** 69 **BOREHOLE TYPE** Manual Probing **COMPILED BY** G.D.
DATUM Geodetic **DATE** October 07, 2011 **CHECKED BY** C.N.














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	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												
198.4	Ground Surface							20	40	60	80	100					GR SA SI CL			
0.0	Topsoil																			
198.2	End of borehole																			
0.2	Refusal on probable bedrock																			
	* Borehole dry																			

RECORD OF BOREHOLE No 106-1

1 of 1

METRIC

G.W.P. 5112-07-00 **LOCATION** Hwy 69, Sta. 17+537.5 CL **ORIGINATED BY** F.P.
DIST Wallbridge Twp **HWY** 69 **BOREHOLE TYPE** Continuous Flight Hollow Stem Augers **COMPILED BY** G.D.
DATUM Geodetic **DATE** February 13, 2012 **CHECKED BY** C.N.

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 (%)		
198.0	Ground Surface							20	40	60	80	100								
0.0	Topsoil		1	SS	2	 *  *														
197.6	Sand, trace silt organics																			
0.4	Loose Brown Wet		2	SS	9															
																				
																				
			3	SS	5												0 94 (6)			
195.7	End of borehole																			
2.3	Refusal on probable bedrock																			
<div>* 2012 02 13</div> <div> Water level observed during drilling</div> <div> Water level measured after drilling</div>																				

RECORD OF BOREHOLE No 106-2

1 of 1

METRIC

G.W.P. 5112-07-00 **LOCATION** Hwy 69, Sta. 17+537.5, o/s 40.0m Rt.









ORIGINATED BY J.H.

DIST Wallbridge Twp HWY 69 BOREHOLE TYPE Tripod 'N' Casing with Washbore

COMPILED BY G.D.

DATUM Geodetic **DATE** February 09, 2012

CHECKED BY C.N.

SOIL PROFILE			SAMPLES			GROUND WATER CONDITIONS	ELEVATION SCALE	DYNAMIC CONE PENETRATION RESISTANCE PLOT					PLASTIC LIMIT NATURAL MOISTURE CONTENT LIQUID LIMIT			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 (%) w _p w w _L				GR	SA	SI	CL			
197.4 0.0	Top of Snow/Ice		1	SS	WH**	 *  *	197																
196.9 0.5	Snow/Ice																						
196.7 0.7	Water																						
196.0 1.4	Peat, fine fibrous Black																						
196.0 1.4	Silty sand, trace clay organics		2	SS	3	 *  *	196																
196.0 1.4	Very loose Grey Wet Clayey silt, sandy																						
196.0 1.4	Firm to Grey Moist stiff																						
194.7 2.7	End of borehole Refusal on probable bedrock																						
<div>* 2012 02 09</div> <div> Water level observed during drilling</div> <div> Water level measured after drilling</div>																							

RECORD OF BOREHOLE No 106-3

1 of 1

METRIC

G.W.P.	5112-07-00	LOCATION	Hwy 69, Sta. 17+550, o/s 18.8m Rt.	ORIGINATED BY	F.P.
DIST	Wallbridge Twp	HWY	69	BOREHOLE TYPE	Continuous Flight Hollow Stem Augers
DATUM	Geodetic	DATE	February 13, 2012	CHECKED BY	C.N.

[illegible]

RECORD OF BOREHOLE No 106-4

1 of 1

METRIC

G.W.P. 5112-07-00 **LOCATION** Hwy 69, Sta. 17+562.5 CL **ORIGINATED BY** R.B.
DIST Wallbridge Twp **HWY** 69 **BOREHOLE TYPE** Manual Probing **COMPILED BY** G.D.
DATUM Geodetic **DATE** October 07, 2011 **CHECKED BY** C.N.

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	REMARKS & GRAIN SIZE DISTRIBUTION (%)
ELEV DEPTH	DESCRIPTION	STRAT PLOT	NUMBER	TYPE	"N" VALUES	SHEAR STRENGTH kPa					WATER CONTENT (%)							
						○ UNCONFINED			● QUICK TRIAXIAL	+		×	FIELD VANE					
197.9	Ground Surface					*											GR SA SI CL	
0.0	Bedrock at surface																	
	* Borehole dry																	

RECORD OF BOREHOLE No 106-5

1 of 1

METRIC

G.W.P. 5112-07-00 **LOCATION** Hwy 69, Sta. 17+562.5, o/s 40.5m Rt. **ORIGINATED BY** R.B.
DIST Wallbridge Twp **HWY** 69 **BOREHOLE TYPE** Manual Probing **COMPILED BY** G.D.
DATUM Geodetic **DATE** October 07, 2011 **CHECKED BY** C.N.

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	REMARKS & GRAIN SIZE DISTRIBUTION (%)	
ELEV DEPTH	DESCRIPTION	STRAT PLOT	NUMBER	TYPE	"N" VALUES	SHEAR STRENGTH kPa					WATER CONTENT (%)								
						○ UNCONFINED			● QUICK TRIAXIAL	+		×	FIELD VANE						LAB VANE
198.4	Ground Surface					*				20	40	60	80	100	20	40	60	kN/m ³	GR SA SI CL
0.0	Bedrock at surface																		
	* Borehole dry																		

RECORD OF BOREHOLE No 106-6

1 of 1

METRIC

G.W.P. 5112-07-00 **LOCATION** Hwy 69, Sta. 17+575, o/s 18.8m Rt. **ORIGINATED BY** R.B.
DIST Wallbridge Twp **HWY** 69 **BOREHOLE TYPE** Manual Probing **COMPILED BY** G.D.
DATUM Geodetic **DATE** October 07, 2011 **CHECKED BY** C.N.

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												
197.7	Ground Surface							20	40	60	80	100								
0.0	Peat, fine fibrous																			
197.1	Dark brown/black																			
0.6	Wet																			
	End of borehole																			
	Refusal on probable bedrock																			
	* Borehole dry																			

RECORD OF BOREHOLE No 106-7

1 of 1

METRIC

G.W.P. 5112-07-00 **LOCATION** Hwy 69, Sta. 17+587.5 CL **ORIGINATED BY** R.B.
DIST Wallbridge Twp **HWY** 69 **BOREHOLE TYPE** Manual Probing **COMPILED BY** G.D.
DATUM Geodetic **DATE** October 07, 2011 **CHECKED BY** C.N.



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			20	40	60	80	100					
198.4	Ground Surface																
0.0	Topsoil	~ ~ ~															
198.1	End of borehole																
0.3	Refusal on probable bedrock																
	* Borehole dry																

RECORD OF BOREHOLE No 106-8

1 of 1

METRIC

G.W.P. 5112-07-00 **LOCATION** Hwy 69, Sta. 17+587.5, o/s 40.5m Rt. **ORIGINATED BY** R.B.
DIST Wallbridge Twp **HWY** 69 **BOREHOLE TYPE** Manual Probing **COMPILED BY** G.D.
DATUM Geodetic **DATE** October 07, 2011 **CHECKED BY** C.N.

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									
								○ UNCONFINED + FIELD VANE ● QUICK TRIAXIAL × LAB VANE									
197.8 0.0	Ground Surface Peat, fine fibrous					*											
197.2 0.6	Dark brown/black Wet																
	End of borehole Refusal on probable bedrock																
	* Borehole dry																

RECORD OF BOREHOLE No 106-9

1 of 1

METRIC

G.W.P. 5112-07-00 **LOCATION** Hwy 69, Sta. 17+600, o/s 18.8m Rt. **ORIGINATED BY** F.P.
DIST Wallbridge Twp **HWY** 69 **BOREHOLE TYPE** Continuous Flight Hollow Stem Augers **COMPILED BY** G.D.
DATUM Geodetic **DATE** February 13, 2012 **CHECKED BY** C.N.

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										WATER CONTENT (%)		
								○ UNCONFINED		+ FIELD VANE		● QUICK TRIAXIAL						× LAB VANE		
197.7	Top of Snow/Ice						20	40	60	80	100									
0.0 197.4	Snow/Ice		1	SS	2	▽* ▼*														
197.2	Peat, fine fibrous Dark brown																			
0.5 196.9	Silty sand, organics																			
0.8	Very loose Grey Wet		2	SS	1															
196.3	Clay, trace sand, organics																			
1.4	Firm Grey Moist		3	SS	10/8cm															
195.9	Sand trace silt, trace clay																			
1.8	Loose to Grey Wet compact																			
	End of borehole																			
	Refusal on probable bedrock																			
	Sample 3: Sampler bouncing																			
	* 2012 02 13																			
	▽ Water level observed during drilling																			
	▼ Water level measured after drilling																			

RECORD OF PENETRATION TEST No 106-10

1 of 1

METRIC

G.W.P. <u>5112-07-00</u>	LOCATION <u>Hwy 69, Sta. 17+610 CL</u>	ORIGINATED BY <u>F.P.</u>
DIST <u>Wallbridge Twp</u> HWY <u>69</u>	BOREHOLE TYPE <u>Dynamic Cone Penetration Test</u>	COMPILED BY <u>G.D.</u>
DATUM <u>Geodetic</u>	DATE <u>February 13, 2012</u>	CHECKED BY <u>C.N.</u>

[illegible]

RECORD OF BOREHOLE No 106-11

1 of 1

METRIC

G.W.P. 5112-07-00 **LOCATION** Hwy 69, Sta. 17+610, o/s 37.0m Rt. **ORIGINATED BY** R.B.
DIST Wallbridge Twp **HWY** 69 **BOREHOLE TYPE** Manual Probing **COMPILED BY** G.D.
DATUM Geodetic **DATE** October 07, 2011 **CHECKED BY** C.N.

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	REMARKS & GRAIN SIZE DISTRIBUTION (%)
ELEV DEPTH	DESCRIPTION	STRAT PLOT	NUMBER	TYPE	"N" VALUES			20	40	60	80	100					
199.2	Ground Surface					*											
0.0 198.9	Topsoil	~ ~ ~					199										
0.3	End of borehole																
	Refusal on probable bedrock																
	* Borehole dry																

RECORD OF BOREHOLE No 107-1

1 of 1

METRIC

G.W.P. 5112-07-00 **LOCATION** Hwy 69, Sta. 17+700, o/s 18.8m Rt. **ORIGINATED BY** R.B.
DIST Wallbridge Twp **HWY** 69 **BOREHOLE TYPE** Manual Probing **COMPILED BY** N.S.B.
DATUM Geodetic **DATE** October 11, 2011 **CHECKED BY** C.N.

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	REMARKS & GRAIN SIZE DISTRIBUTION (%)			
ELEV DEPTH	DESCRIPTION	STRAT PLOT	NUMBER	TYPE	"N" VALUES			SHEAR STRENGTH kPa										WATER CONTENT (%)		
								<div><div>○ UNCONFINED</div><div>● QUICK TRIAXIAL</div></div> <div><div>+ FIELD VANE</div><div>× LAB VANE</div></div>												
198.7 0.0	Ground Surface					*		20	40	60	80	100				kn/m³	GR SA SI CL			
198.6 0.1	Topsoil																			
	End of borehole																			
	Refusal on probable bedrock																			

RECORD OF BOREHOLE No 107-2

1 of 1

METRIC

G.W.P. 5112-07-00 **LOCATION** Hwy 69, Sta. 17+712.5, o/s 2.0m Rt. **ORIGINATED BY** R.B.
DIST Wallbridge Twp **HWY** 69 **BOREHOLE TYPE** Manual Probing **COMPILED BY** N.S.B.
DATUM Geodetic **DATE** October 11, 2011 **CHECKED BY** C.N.

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									
197.8	Ground Surface																
0.0	Peat, fine fibrous																
	Dark brown/black																
196.9	End of borehole						197										
0.9	Refusal on probable bedrock																

RECORD OF BOREHOLE No 107-3

1 of 1

METRIC

G.W.P. 5112-07-00 **LOCATION** Hwy 69, Sta. 17+712.5, o/s 37.0m Rt. **ORIGINATED BY** R.B.
DIST Wallbridge Twp **HWY** 69 **BOREHOLE TYPE** Manual Probing **COMPILED BY** N.S.B.
DATUM Geodetic **DATE** October 11, 2011 **CHECKED BY** C.N.


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	REMARKS & GRAIN SIZE DISTRIBUTION (%)
ELEV DEPTH	DESCRIPTION	STRAT PLOT	NUMBER	TYPE	"N" VALUES	SHEAR STRENGTH kPa					WATER CONTENT (%)							
						○ UNCONFINED			● QUICK TRIAXIAL	+		×	FIELD VANE					
198.8	Ground Surface					*											GR SA SI CL	
0.0	Bedrock at surface																	
	* Borehole dry																	

RECORD OF BOREHOLE No 107-4

1 of 1

METRIC

G.W.P. 5112-07-00 **LOCATION** Hwy 69, Sta. 17+725, o/s 18.8m Rt. **ORIGINATED BY** R.B.
DIST Wallbridge Twp **HWY** 69 **BOREHOLE TYPE** Manual Probing **COMPILED BY** N.S.B.
DATUM Geodetic **DATE** October 11, 2011 **CHECKED BY** C.N.

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	REMARKS & GRAIN SIZE DISTRIBUTION (%)			
ELEV DEPTH	DESCRIPTION	STRAT PLOT	NUMBER	TYPE	"N" VALUES			SHEAR STRENGTH kPa										WATER CONTENT (%)		
								<div><div></div><div></div><div></div><div></div><div></div></div> <div>○ UNCONFINED + FIELD VANE</div> <div>● QUICK TRIAXIAL × LAB VANE</div>										<div><div></div><div></div><div></div></div> <div></div>		
198.7 0.0	Ground Surface																			
	Topsoil																			
198.5 0.2	End of borehole																			
	Refusal on probable bedrock																			
	* Borehole dry																			

RECORD OF BOREHOLE No 107-5

1 of 1

METRIC

G.W.P. 5112-07-00 **LOCATION** Hwy 69, Sta. 17+737.5, o/s 4.5m Rt. **ORIGINATED BY** R.B.
DIST Wallbridge Twp **HWY** 69 **BOREHOLE TYPE** Manual Probing **COMPILED BY** N.S.B.
DATUM Geodetic **DATE** October 11, 2011 **CHECKED BY** C.N.

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										WATER CONTENT (%)
								○ UNCONFINED + FIELD VANE ● QUICK TRIAXIAL × LAB VANE										
198.5	Ground Surface							20	40	60	80	100						
0.0	Topsoil	~~~~																
198.1	End of borehole																	
0.4	Refusal on probable bedrock																	
	* Borehole dry																	

RECORD OF BOREHOLE No 107-6

1 of 1

METRIC

G.W.P. 5112-07-00 **LOCATION** Hwy 69, Sta. 17+737.5, o/s 34.5m Rt. **ORIGINATED BY** R.B.
DIST Wallbridge Twp **HWY** 69 **BOREHOLE TYPE** Manual Probing **COMPILED BY** N.S.B.
DATUM Geodetic **DATE** October 11, 2011 **CHECKED BY** C.N.

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												
198.6	Ground Surface							20	40	60	80	100								
0.0	Peat, fine fibrous																			
198.0	Dark brown/black						198													
0.6	Wet																			
	End of borehole																			
	Refusal on probable bedrock																			
	* Borehole dry																			

RECORD OF BOREHOLE No 107-7

1 of 1

METRIC

G.W.P.	5112-07-00	LOCATION	Hwy 69, Sta. 17+750, o/s 18.8m Rt.	ORIGINATED BY	R.B.
DIST	Wallbridge Twp	HWY	69	BOREHOLE TYPE	Manual Probing
DATUM	Geodetic	DATE	October 11, 2011	CHECKED BY	C.N.







[illegible]

RECORD OF BOREHOLE No 107-8

1 of 1

METRIC

G.W.P. <u>5112-07-00</u>	LOCATION <u>Hwy 69, Sta. 17+755, o/s 36.0m Rt.</u>	ORIGINATED BY <u>J.H.</u>
DIST <u>Wallbridge Twp</u> HWY <u>69</u>	BOREHOLE TYPE <u>Tripod 'N' Casing with Washbore</u>	COMPILED BY <u>G.D.</u>
DATUM <u>Geodetic</u>	DATE <u>February 09, 2012</u>	CHECKED BY <u>C.N.</u>

SOIL PROFILE			SAMPLES			*GROUND WATER CONDITIONS	ELEVATION SCALE	DYNAMIC CONE PENETRATION RESISTANCE PLOT					PLASTIC LIMIT NATURAL MOISTURE CONTENT LIQUID LIMIT			UNIT WEIGHT γ kN/m ³	REMARKS & GRAIN SIZE DISTRIBUTION (%)			
ELEV DEPTH	DESCRIPTION	STRAT PLOT	NUMBER	TYPE	"N" VALUES			SHEAR STRENGTH kPa					w _p	w	w _L		GR	SA	SI	CL
								20	40	60	80	100								
197.8 0.0	Top of Snow/Ice Snow/Ice _____ Water _____																			
197.2 0.6	Peat, coarse fibrous																			
196.7 1.1	Dark brown End of borehole Refusal on probable bedrock		1	SS	3/15cm		197								o					
<div><div>* 2012 02 09</div><div> Water level observed during drilling  Water level measured after drilling</div></div>																				

RECORD OF BOREHOLE No 107-9

1 of 1

METRIC

G.W.P. 5112-07-00	LOCATION Hwy 69, Sta. 17+762.5, o/s 3.0m Rt.	ORIGINATED BY J.H.
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DIST	Wallbridge Twp	HWY	69	BOREHOLE TYPE	Manual Probing	COMPILED BY	G.D.
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DATUM	Geodetic	DATE	February 09, 2012	CHECKED BY	C.N.
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[illegible]

RECORD OF BOREHOLE No 107-10

1 of 1

METRIC

G.W.P.	5112-07-00	LOCATION	Hwy 69, Sta. 17+762.5, o/s 10.0m Rt.	ORIGINATED BY	J.H.
DIST	Wallbridge Twp	HWY	69	BOREHOLE TYPE	Tripod 'N' Casing with Washbore
DATUM	Geodetic	DATE	February 09, 2012	CHECKED BY	C.N.

SOIL PROFILE			SAMPLES		
ELEV DEPTH	DESCRIPTION	STRAT PLOT	NUMBER	TYPE	"N" VALUES
197.9	Top of Snow/Ice				
0.0	Snow/Ice				
197.6	Water		1	SS	WH**
0.3	Peat, fine fibrous				
197.3	Black				
0.6	Clayey silt, organics				
	Stiff to Grey Moist		2	SS	13
196.4	very stiff				
1.5	End of borehole				
	Refusal on probable bedrock				
<div>* 2012 02 09</div> <div><div>▽</div> Water level observed during drilling</div> <div><div>▼</div> Water level measured after drilling</div> <div>WH** denotes penetration due to weight of rods and hammer</div>					

RECORD OF BOREHOLE No 107-11

1 of 1

METRIC

G.W.P. 5112-07-00	LOCATION Hwy 69, Sta. 17+762.5, o/s 36.0m Rt.	ORIGINATED BY F.P.
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DIST Wallbridge Twp **HWY** 69 **BOREHOLE TYPE** Manual Probing **COMPILED BY** N.S.B.

DATUM	Geodetic	DATE	February 09, 2012	CHECKED BY	C.N.
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[illegible]

RECORD OF BOREHOLE No 107-12

1 of 1

METRIC

G.W.P.	5112-07-00	LOCATION	Hwy 69, Sta. 17+775, o/s 18.8m Rt.	ORIGINATED BY	J.H.
DIST	Wallbridge Twp	HWY	69	BOREHOLE TYPE	Tripod 'N' Casing with Washbore
DATUM	Geodetic	DATE	February 09, 2012	CHECKED BY	C.N.

SOIL PROFILE			SAMPLES		
ELEV DEPTH	DESCRIPTION	STRAT PLOT	NUMBER	TYPE	"N" VALUES
197.80.0	Top of Snow/Ice				
197.40.4	Snow/Ice _____ Water _____		1	SS	WH**
196.90.9	Peat, fine fibrous Black		2	SS	1/15cm
	End of borehole Refusal on probable bedrock				
* 2012 02 09					
▽	Water level observed during drilling				
▼	Water level measured after drilling				
WH**	denotes penetration due to weight of rods and hammer				

RECORD OF BOREHOLE No 107-13

1 of 1

METRIC

G.W.P. <u>5112-07-00</u>	LOCATION <u>Hwy 69, Sta. 17+787.5 CL</u>	ORIGINATED BY <u>J.H.</u>
DIST <u>Wallbridge Twp</u> HWY <u>69</u>	BOREHOLE TYPE <u>Tripod 'N' Casing with Washbore</u>	COMPILED BY <u>G.D.</u>
DATUM <u>Geodetic</u>	DATE <u>February 09, 2012</u>	CHECKED BY <u>C.N.</u>

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			20	40	60	80	100	w _p	w	w _l		
197.4	Top of Snow/Ice					▽	▽*										
0.0	Snow/Ice																
197.1	Water		1	SS	WH**										117		
0.3																	
196.9	Peat, fine fibrous Black																
0.5	End of borehole Refusal on probable bedrock																
<div> <div>* 2012 02 09</div> <div>▽ Water level observed during drilling</div> <div>▼ Water level measured after drilling</div> <div>WH** denotes penetration due to weight of rods and hammer</div> </div>																	

RECORD OF BOREHOLE No 107-14

1 of 1

METRIC

G.W.P. 5112-07-00 **LOCATION** Hwy 69, Sta. 17+787.5, o/s 39.0m Rt. **ORIGINATED BY** R.B.
DIST Wallbridge Twp **HWY** 69 **BOREHOLE TYPE** Manual Probing **COMPILED BY** N.S.B.
DATUM Geodetic **DATE** October 11, 2011 **CHECKED BY** C.N.


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	REMARKS & GRAIN SIZE DISTRIBUTION (%)							
ELEV DEPTH	DESCRIPTION	STRAT PLOT	NUMBER	TYPE	"N" VALUES			SHEAR STRENGTH kPa									WATER CONTENT (%)				GR	SA	SI	CL
								○ UNCONFINED	+	FIELD VANE	● QUICK TRIAXIAL	×					LAB VANE							
198.1	Ground Surface					*																		
0.0	Bedrock at surface																							
	* Borehole dry																							

RECORD OF PENETRATION TEST No 107-15

1 of 1

METRIC

G.W.P. 5112-07-00 **LOCATION** Hwy 69, Sta. 17+800 CL **ORIGINATED BY** J.H.
DIST Wallbridge Twp **HWY** 69 **BOREHOLE TYPE** Dynamic Cone Penetration Test **COMPILED BY** G.D.
DATUM Geodetic **DATE** February 13, 2012 **CHECKED BY** C.N.

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	REMARKS & GRAIN SIZE DISTRIBUTION (%)	
ELEV DEPTH	DESCRIPTION	STRAT PLOT	NUMBER	TYPE	"N" VALUES			SHEAR STRENGTH kPa								WATER CONTENT (%)
								○ UNCONFINED	+ FIELD VANE	● QUICK TRIAXIAL						
197.1 0.0	Top of Snow/Ice Ice/water Probable peat Probable clayey silt Firm Probable sand Compact to dense						197									
192.1 5.0	End of dynamic cone penetration test Refusal on probable bedrock															

RECORD OF BOREHOLE No 107-16

1 of 1

METRIC

G.W.P. 5112-07-00 **LOCATION** Hwy 69, Sta. 17+800, o/s 18.8m Rt. **ORIGINATED BY** R.B.
DIST Wallbridge Twp **HWY** 69 **BOREHOLE TYPE** Manual Probing **COMPILED BY** N.S.B.
DATUM Geodetic **DATE** October 11, 2011 **CHECKED BY** C.N.

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	REMARKS & GRAIN SIZE DISTRIBUTION (%)			
ELEV DEPTH	DESCRIPTION	STRAT PLOT	NUMBER	TYPE	"N" VALUES			SHEAR STRENGTH kPa										WATER CONTENT (%)		
								○ UNCONFINED	● QUICK TRIAXIAL	+	×	FIELD VANE						LAB VANE		
197.7	Ground Surface					*		20	40	60	80	100					GR SA SI CL			
0.0	Bedrock at surface																			
	* Borehole dry																			

RECORD OF BOREHOLE No 107-17

1 of 1

METRIC

G.W.P. 5112-07-00	LOCATION	Hwy 69, Sta. 17+805.5, o/s 40.0m Rt.
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ORIGINATED BY J.H.

DIST	Wallbridge Twp	HWY	69	BOREHOLE TYPE	Tripod 'N' Casing with Washbore
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COMPILED BY G.D.

DATUM Geodetic **DATE** February 09, 2012

CHECKED BY C.N.

[illegible]

RECORD OF BOREHOLE No 107-18

1 of 1

METRIC

G.W.P. <u>5112-07-00</u>	LOCATION <u>Hwy 69, Sta. 17+812.5 CL</u>	ORIGINATED BY <u>J.H.</u>
DIST <u>Wallbridge Twp</u> HWY <u>69</u>	BOREHOLE TYPE <u>Tripod 'N' Casing with Washbore</u>	COMPILED BY <u>G.D.</u>
DATUM <u>Geodetic</u>	DATE <u>February 09, 2012</u>	CHECKED BY <u>C.N.</u>

SOIL PROFILE			SAMPLES		
ELEV DEPTH	DESCRIPTION	STRAT PLOT	NUMBER	TYPE	"N" VALUES
197.2 0.0	Top of Snow/Ice Snow/Ice _____ Water _____	[Symbol]			
196.4 0.8	Peat, coarse fibrous _____ Black _____ fine fibrous _____	[Symbol]	1	SS	1
			2	SS	1
194.7 2.5	Silt some sand, trace clay	[Symbol]	3	SS	1
194.2 3.0	Very loose Brown Wet Clayey silt, some sand	[Symbol]	4	SS	2
	Soft to Grey Wet firm _____	[Symbol]	5	SS	1/15cm
193.1 4.1	trace sand End of borehole refusal on probable bedrock	[Symbol]			
<div>* 2012 02 09</div> <div> Water level observed during drilling</div> <div> Water level measured after drilling</div>					

RECORD OF BOREHOLE No 107-19

1 of 1

METRIC

G.W.P.	5112-07-00	LOCATION	Hwy 69, Sta. 17+812.5, o/s 40.0m Rt.	ORIGINATED BY	J.H.
DIST	Wallbridge Twp	HWY	69	BOREHOLE TYPE	Tripod
DATUM	Geodetic	DATE	February 09, 2012	CHECKED BY	C.N.

[illegible]

RECORD OF BOREHOLE No 107-20

1 of 1

METRIC

G.W.P. 5112-07-00 **LOCATION** Hwy 69, Sta. 17+825, o/s 18.8m Rt. **ORIGINATED BY** J.H.
DIST Wallbridge Twp **HWY** 69 **BOREHOLE TYPE** Tripod 'N' Casing with Washbore **COMPILED BY** G.D.
DATUM Geodetic **DATE** February 10 & 13, 2012 **CHECKED BY** C.N.

SOIL PROFILE			SAMPLES			*GROUND WATER CONDITIONS	ELEVATION SCALE	DYNAMIC CONE PENETRATION RESISTANCE PLOT					PLASTIC NATURAL LIMIT MOISTURE CONTENT			UNIT WEIGHT γ	REMARKS & GRAIN SIZE DISTRIBUTION (%)
ELEV DEPTH	DESCRIPTION	STRAT PLOT	NUMBER	TYPE	"N" VALUES			SHEAR STRENGTH kPa					W _p	W	W _L		
197.6	Top of Snow/Ice					▽*		20	40	60	80	100					
0.0	Snow/Ice					▼*		20	40	60	80	100					
196.8	Water																
0.8	Peat, fine fibrous		1	SS	WH**										87		
	Black		2	SS	WH										122		
195.4																	
2.2	Sandy silt organics to 2.5m		3	SS	WH												
	Very loose Brown Wet																
194.3			4	SS	WH												
3.3	Silty clay, trace sand			FV													
	Soft to Grey Wet firm		5	SS	WH												
			6	SS	WH												
			7	TW	-												
			8	SS	WH												
				FV													
188.9	Gravelly sand																
8.7	some silt, trace clay																
	Very dense Grey Wet to moist		9	SS	53												
188.0																	
9.6	End of borehole																
	Refusal on probable bedrock																

RECORD OF PENETRATION TEST No 107-21

1 of 1

METRIC

G.W.P. 5112-07-00	LOCATION	Hwy 69, Sta. 17+837.5 CL	ORIGINATED BY	J.H.
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DIST	Wallbridge Twp	HWY	69	BOREHOLE TYPE	Dynamic Cone Penetration Test	COMPILED BY	G.D.
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DATUM Geodetic	DATE February 13, 2012	CHECKED BY C.N.
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SOIL PROFILE				SAMPLES		
ELEV DEPTH	DESCRIPTION	STRAT PLOT	NUMBER	TYPE	"N" VALUES	GROUND WATER CONDITIONS
197.7 0.0	Top of Snow/Ice Ice/water ----- Probable peat ----- Probable silty clay Firm					
186.1 11.6	End of dynamic cone penetration test Refusal on probable bedrock					

DYNAMIC CONE PENETRATION RESISTANCE PLOT			
 ELEVATION SCALE 197 196 195 194 193 192 191 190 189 188 187			
SHEAR STRENGTH kPa ○ UNCONFINED + FIELD VANE ● QUICK TRIAXIAL × LAB VANE			
WATER CONTENT (%) PLASTIC LIMIT (wp) NATURAL MOISTURE CONTENT (w) LIQUID LIMIT (wl)			

UNIT WEIGHT γ kN/m³	REMARKS & GRAIN SIZE DISTRIBUTION (%) GR SA SI CL

RECORD OF BOREHOLE No 107-22

1 of 1

METRIC

G.W.P. 5112-07-00 **LOCATION** Hwy 69, Sta. 17+837.5, o/s 40.5m Rt. **ORIGINATED BY** R.B.
DIST Wallbridge Twp **HWY** 69 **BOREHOLE TYPE** Manual Probing **COMPILED BY** N.S.B.
DATUM Geodetic **DATE** October 11, 2011 **CHECKED BY** C.N.

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	REMARKS & GRAIN SIZE DISTRIBUTION (%)
ELEV DEPTH	DESCRIPTION	STRAT PLOT	NUMBER	TYPE	"N" VALUES	SHEAR STRENGTH kPa					WATER CONTENT (%)							
						○ UNCONFINED			● QUICK TRIAXIAL	+		×	FIELD VANE					
199.7	Ground Surface					*											GR SA SI CL	
0.0	Bedrock at surface																	
	* Borehole dry																	

RECORD OF BOREHOLE No 107-23

1 of 1

METRIC

G.W.P. 5112-07-00 **LOCATION** Hwy 69, Sta. 17+850, o/s 18.8m Rt. **ORIGINATED BY** J.H.
DIST Wallbridge Twp **HWY** 69 **BOREHOLE TYPE** Tripod 'N' Casing with Washbore **COMPILED BY** G.D.
DATUM Geodetic **DATE** February 13, 2012 **CHECKED BY** C.N.

SOIL PROFILE			SAMPLES			*GROUND WATER CONDITIONS	ELEVATION SCALE	DYNAMIC CONE PENETRATION RESISTANCE PLOT					PLASTIC NATURAL LIQUID LIMIT			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					W _p	W	W _L		
197.4	Top of Snow/Ice					<div><div>▽</div><div>▼</div><div>*</div></div>	<div>20406080100</div>					<div>204060</div>					
0.0	Snow/Ice						<div>20406080100</div>					<div>204060</div>					
196.7	Water																
0.7	Peat, coarse fibrous Black		1	SS	12							<div>40</div>					
196.5	Sand, some silt some clay, trace gravel																
0.9	Compact Grey Wet to loose		2	SS	5							<div>30</div>					
195.2	Clayey silt, some sand																
2.2	Soft Grey Wet		3	SS	1							<div>35</div>					
			4	SS	1							<div>555560</div>					
				FV													
			5	SS	WH**						<div>65</div>						
191.9	End of borehole																
5.5	Refusal on probable bedrock																

RECORD OF BOREHOLE No 107-24

1 of 1

METRIC

G.W.P. 5112-07-00 **LOCATION** Hwy 69, Sta. 17+856, o/s 19.0m Rt.

ORIGINATED BY J.H.

DIST Wallbridge Twp HWY 69 BOREHOLE TYPE Tripod 'N' Casing with Washbore

COMPILED BY G.D.

DATUM Geodetic **DATE** February 14, 2012

CHECKED BY C.N.

[illegible]

RECORD OF PENETRATION TEST No 107-25

1 of 1

METRIC

G.W.P. <u>5112-07-00</u>	LOCATION <u>Hwy 69, Sta. 17+862.5 CL</u>	ORIGINATED BY <u>J.H.</u>
DIST <u>Wallbridge Twp</u> HWY <u>69</u>	BOREHOLE TYPE <u>Dynamic Cone Penetration Test</u>	COMPILED BY <u>G.D.</u>
DATUM <u>Geodetic</u>	DATE <u>February 13, 2012</u>	CHECKED BY <u>C.N.</u>

[illegible]

RECORD OF BOREHOLE No 107-26

1 of 1

METRIC

G.W.P. 5112-07-00 **LOCATION** Hwy 69, Sta. 17+862.5, o/s 41.0m Rt. **ORIGINATED BY** R.B.
DIST Wallbridge Twp **HWY** 69 **BOREHOLE TYPE** Manual Probing **COMPILED BY** N.S.B.
DATUM Geodetic **DATE** October 11, 2011 **CHECKED BY** C.N.

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	REMARKS & GRAIN SIZE DISTRIBUTION (%)	
ELEV DEPTH	DESCRIPTION	STRAT PLOT	NUMBER	TYPE	"N" VALUES			SHEAR STRENGTH kPa										WATER CONTENT (%)
								○ UNCONFINED	● QUICK TRIAXIAL	+	×	FIELD VANE						
198.0	Ground Surface					*											GR SA SI CL	
0.0	Topsoil																	
197.4	End of borehole																	
0.6	Refusal on probable bedrock																	
	* Borehole dry																	

RECORD OF BOREHOLE No 107-27

1 of 1

METRIC

G.W.P. 5112-07-00	LOCATION Hwy 69, Sta. 17+865, o/s 19.0m Rt.	ORIGINATED BY J.H.
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DIST	Wallbridge Twp	HWY	69	BOREHOLE TYPE	Tripod 'N' Casing with Washbore	COMPILED BY	G.D.
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DATUM	Geodetic	DATE	February 14, 2012	CHECKED BY	C.N.
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SOIL PROFILE			SAMPLES		
ELEV DEPTH	DESCRIPTION	STRAT PLOT	NUMBER	TYPE	"N" VALUES
197.7 0.0	Top of Snow/Ice				
197.0 0.7	Snow/Ice				
196.8 0.9	Water				
197.0 0.7	Silty sand, trace clay organics		1	SS	100/15cm
196.8 0.9	Very dense Brown Wet End of borehole Refusal on probable bedrock				
<div>* 2012 02 14</div> <div><div>▽</div> Water level observed during drilling</div> <div><div>▼</div> Water level measured after drilling</div>					

RECORD OF BOREHOLE No 107-28

1 of 1

METRIC

G.W.P. 5112-07-00 **LOCATION** Hwy 69, Sta. 17+870, o/s 18.8m Rt. **ORIGINATED BY** J.H.
DIST Wallbridge Twp **HWY** 69 **BOREHOLE TYPE** Manual Probing **COMPILED BY** G.D.
DATUM Geodetic **DATE** February 14, 2012 **CHECKED BY** C.N.

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	REMARKS & GRAIN SIZE DISTRIBUTION (%)
ELEV DEPTH	DESCRIPTION	STRAT PLOT	NUMBER	TYPE	"N" VALUES	SHEAR STRENGTH kPa					WATER CONTENT (%)							
						○ UNCONFINED			● QUICK TRIAXIAL	+		×	FIELD VANE					
199.9	Ground Surface					*											GR SA SI CL	
0.0	Bedrock at surface																	
	* Borehole dry																	

RECORD OF BOREHOLE No 108-1

1 of 1

METRIC

G.W.P. 5112-07-00 **LOCATION** Hwy 69, Sta. 18+220 CL **ORIGINATED BY** R.B.
DIST Wallbridge Twp **HWY** 69 **BOREHOLE TYPE** Manual Probing **COMPILED BY** G.D.
DATUM Geodetic **DATE** October 11, 2011 **CHECKED BY** C.N.

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	REMARKS & GRAIN SIZE DISTRIBUTION (%)
ELEV DEPTH	DESCRIPTION	STRAT PLOT	NUMBER	TYPE	"N" VALUES			20	40	60	80	100					
199.4	Ground Surface					*											GR SA SI CL
0.0	Topsoil																
199.3	End of borehole																
0.1	Refusal on probable bedrock																
	* Borehole dry																

RECORD OF BOREHOLE No 108-2

1 of 1

METRIC

G.W.P.	5112-07-00	LOCATION	Hwy 69, Sta. 18+220, o/s 39.0m Rt.	ORIGINATED BY	J.H.
DIST	Wallbridge Twp	HWY	69	BOREHOLE TYPE	Tripod 'N' Casing with Washbore
DATUM	Geodetic	DATE	February 14, 2012	CHECKED BY	C.N.

[illegible]

RECORD OF BOREHOLE No 108-3

1 of 1

METRIC

G.W.P. 5112-07-00 **LOCATION** Hwy 69, Sta. 18+225, o/s 18.8m Rt. **ORIGINATED BY** R.B.
DIST Wallbridge Twp **HWY** 69 **BOREHOLE TYPE** Continuous Flight Hollow Stem Augers **COMPILED BY** G.D.
DATUM Geodetic **DATE** October 11, 2011 **CHECKED BY** C.N.

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			20	40	60	80	100					
195.9	Ground Surface																
0.0	Topsoil	~ ~ ~															
195.6	End of borehole																
0.3	Refusal on probable bedrock																
	* Borehole dry																

RECORD OF BOREHOLE No 108-4

1 of 1

METRIC

G.W.P. 5112-07-00 **LOCATION** Hwy 69, Sta. 18+230, o/s 39.0m Rt. **ORIGINATED BY** J.H.
DIST Wallbridge Twp **HWY** 69 **BOREHOLE TYPE** Tripod 'N' Casing with Washbore **COMPILED BY** G.D.
DATUM Geodetic **DATE** February 14, 2012 **CHECKED BY** C.N.

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	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												
195.7	Top of Ice					▽*		20	40	60	80	100					GR SA SI CL			
0.0	Ice					▽*														
195.1	Water																			
0.6	Peat, coarse fibrous						195													
194.7	Black		1	SS	4															
1.0	Silty sand, trace clay organics to 1.2m																			
194.3	Loose Brown/ Wet grey		2	SS	12		194										0 11 48 41			
1.4	Silty clay, some sand																			
	Stiff Grey Wet to firm		3	SS	1		193													
192.6	End of borehole																			
3.1	Refusal on probable bedrock																			
	 * 2012 02 14 ▽ Water level observed during drilling ▼ Water level measured after drilling																			

RECORD OF BOREHOLE No 108-5

1 of 1

METRIC

G.W.P.	5112-07-00	LOCATION	Hwy 69, Sta. 18+237.5, o/s 3.5m Rt.	ORIGINATED BY	F.P.
DIST	Wallbridge Twp	HWY	69	BOREHOLE TYPE	Continuous Flight Hollow Stem Augers
DATUM	Geodetic	DATE	February 14, 2012	CHECKED BY	C.N.

[illegible]

RECORD OF PENETRATION TEST No 108-6

1 of 1

METRIC

G.W.P. <u>5112-07-00</u>	LOCATION <u>Hwy 69, Sta. 18+237.5, o/s 35.5m Rt.</u>	ORIGINATED BY <u>F.P.</u>
DIST <u>Wallbridge Twp</u> HWY <u>69</u>	BOREHOLE TYPE <u>Dynamic Cone Penetration Test</u>	COMPILED BY <u>G.D.</u>
DATUM <u>Geodetic</u>	DATE <u>February 14, 2012</u>	CHECKED BY <u>C.N.</u>



[illegible]

RECORD OF BOREHOLE No 108-7

1 of 1

METRIC

G.W.P. 5112-07-00 **LOCATION** Hwy 69, Sta. 18+250, o/s 18.8m Rt. **ORIGINATED BY** R.B.
DIST Wallbridge Twp **HWY** 69 **BOREHOLE TYPE** Manual Probing **COMPILED BY** G.D.
DATUM Geodetic **DATE** October 11, 2011 **CHECKED BY** C.N.

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 (%)		
								<div><div>20406080100</div><div>○ UNCONFINED + FIELD VANE</div><div>● QUICK TRIAXIAL × LAB VANE</div></div>										<div><div>204060</div><div>○</div></div>		
197.1	Ground Surface					*	197													
0.0 196.8	Topsoil																			
0.3	End of borehole Refusal on probable bedrock																			
	* Borehole dry																			

RECORD OF BOREHOLE No 109-1

1 of 1

METRIC

G.W.P. 5112-07-00 **LOCATION** Hwy 69, Sta. 18+580, o/s 18.8m Rt. **ORIGINATED BY** F.P.
DIST Wallbridge Twp **HWY** 69 **BOREHOLE TYPE** Tripod 'N' Casing with Washbore **COMPILED BY** G.D.
DATUM Geodetic **DATE** February 16, 2012 **CHECKED BY** C.N.

SOIL PROFILE			SAMPLES			GROUND WATER CONDITIONS	ELEVATION SCALE	DYNAMIC CONE PENETRATION RESISTANCE PLOT					PLASTIC LIMIT	NATURAL MOISTURE CONTENT	LIQUID LIMIT	UNIT WEIGHT	REMARKS & GRAIN SIZE DISTRIBUTION (%)			
ELEV DEPTH	DESCRIPTION	STRAT PLOT	NUMBER	TYPE	"N" VALUES			SHEAR STRENGTH kPa										W _p	W	W _L
								○ UNCONFINED	● QUICK TRIAXIAL	+	×	FIELD VANE								
193.1	Ground Surface					*		20	40	60	80	100				GR SA SI CL				
0.0	Bedrock at surface																			
	* Borehole dry																			

RECORD OF PENETRATION TEST No 109-2

1 of 2

METRIC

G.W.P. <u>5112-07-00</u>	LOCATION <u>Hwy 69, Sta. 18+587.5, o/s 9.0m Rt.</u>	ORIGINATED BY <u>F.P.</u>
DIST <u>Wallbridge Twp</u> HWY <u>69</u>	BOREHOLE TYPE <u>Dynamic Cone Penetration Test</u>	COMPILED BY <u>G.D.</u>
DATUM <u>Geodetic</u>	DATE <u>February 15, 2012</u>	CHECKED BY <u>C.N.</u>

[illegible]

MOT_DCPT R2012 SWAMP 109.GPJ ON MOT.GDT 5/8/2013 9:46:56 AM

$+^7, \times^5$: Numbers refer to Sensitivity

20
15 — 5 (%) STRAIN AT FAILURE
10

RECORD OF PENETRATION TEST No 109-2

2 of 2

METRIC

G.W.P. <u>5112-07-00</u>	LOCATION <u>Hwy 69, Sta. 18+587.5, o/s 9.0m Rt.</u>	ORIGINATED BY <u>F.P.</u>
DIST <u>Wallbridge Twp</u> HWY <u>69</u>	BOREHOLE TYPE <u>Dynamic Cone Penetration Test</u>	COMPILED BY <u>G.D.</u>
DATUM <u>Geodetic</u>	DATE <u>February 15, 2012</u>	CHECKED BY <u>C.N.</u>


[illegible]

RECORD OF BOREHOLE No 109-3

1 of 1

METRIC

G.W.P. 5112-07-00 **LOCATION** Hwy 69, Sta. 18+587.5, o/s 36.5m Rt. **ORIGINATED BY** R.B.
DIST Wallbridge Twp **HWY** 69 **BOREHOLE TYPE** Manual Probing **COMPILED BY** G.D.
DATUM Geodetic **DATE** October 11, 2011 **CHECKED BY** C.N.

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										WATER CONTENT (%)
								<div>○ UNCONFINED + FIELD VANE</div> <div>● QUICK TRIAXIAL × LAB VANE</div>										
192.5	Ground Surface					*		20	40	60	80	100						
0.0	Topsoil																	
192.3	End of borehole																	
0.2	Refusal on probable bedrock																	
	<div>* Borehole dry</div>																	

RECORD OF PENETRATION TEST No 109-4

1 of 2

METRIC

G.W.P. 5112-07-00 **LOCATION** Hwy 69, Sta. 18+592, o/s 18.8m Rt. **ORIGINATED BY** F.P.
DIST Wallbridge Twp **HWY** 69 **BOREHOLE TYPE** Dynamic Cone Penetration Test **COMPILED BY** G.D.
DATUM Geodetic **DATE** February 16, 2012 **CHECKED BY** C.N.

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				WATER CONTENT (%)							
189.1 0.0	Top of Ice Ice/water																
	Probable peat																
	Probable silty clay																
	Firm to stiff																

MOT_DCPT R2012 SWAMP 109.GPJ ON_MOT.GDT 5/8/2013 9:46:57 AM

+7, X⁵: Numbers refer to
Sensitivity

20
15—5
10
(%) STRAIN AT FAILURE

RECORD OF PENETRATION TEST No 109-4

2 of 2

METRIC

G.W.P. 5112-07-00 **LOCATION** Hwy 69, Sta. 18+592, o/s 18.8m Rt. **ORIGINATED BY** F.P.
DIST Wallbridge Twp **HWY** 69 **BOREHOLE TYPE** Dynamic Cone Penetration Test **COMPILED BY** G.D.
DATUM Geodetic **DATE** February 16, 2012 **CHECKED BY** C.N.

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	REMARKS & GRAIN SIZE DISTRIBUTION (%)
ELEV. DEPTH	DESCRIPTION	STRAT PLOT	NUMBER	TYPE	"N" VALUES			20	40	60	80	100					
174.1	Probable sandy silt to silty sand						174										
173.3	Compact																
15.8	End of dynamic cone penetration test																

RECORD OF BOREHOLE No 109-5

1 of 2

METRIC

G.W.P.	5112-07-00	LOCATION	Hwy 69, Sta. 18+600, o/s 18.8m Rt.	ORIGINATED BY	F.P.
DIST	Wallbridge Twp	HWY	69	BOREHOLE TYPE	Tripod 'N' Casing with Washbore
DATUM	Geodetic	DATE	February 15, 2012	CHECKED BY	C.N.

[illegible]

RECORD OF BOREHOLE No 109-5

2 of 2

METRIC

G.W.P. 5112-07-00 **LOCATION** Hwy 69, Sta. 18+600, o/s 18.8m Rt. **ORIGINATED BY** F.P.
DIST Wallbridge Twp **HWY** 69 **BOREHOLE TYPE** Tripod 'N' Casing with Washbore **COMPILED BY** G.D.
DATUM Geodetic **DATE** February 15, 2012 **CHECKED BY** C.N.

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 (%)		
173.2							20	40	60	80	100									
172.6 15.6	Clay						173													
	Firm Grey Wet (Cont'd.)		12	SS	WH															
	Sand, trace silt																			
171.5 16.7	Compact Grey Wet						172													
		13	SS	27																
16.7	End of borehole																			
	Refusal on probable bedrock																			
	* 2012 02 15																			
	Water level observed during drilling																			
	Water level measured after drilling																			
	Penetrometer test																			
	WH** denotes penetration due to weight of rods and hammer																			

RECORD OF PENETRATION TEST No 109-6

1 of 1

METRIC

G.W.P. 5112-07-00	LOCATION	Hwy 69, Sta. 18+600, o/s 38.0m Rt.	ORIGINATED BY	F.P.
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DIST	Wallbridge Twp	HWY	69	BOREHOLE TYPE	Dynamic Cone Penetration Test	COMPILED BY	G.D.
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DATUM Geodetic	DATE February 16, 2012	CHECKED BY C.N.
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[illegible]

RECORD OF PENETRATION TEST No 109-7

1 of 1

METRIC

G.W.P. 5112-07-00 **LOCATION** Hwy 69, Sta. 18+607, o/s 15.0m Rt. **ORIGINATED BY** F.P.
DIST Wallbridge Twp **HWY** 69 **BOREHOLE TYPE** Dynamic Cone Penetration Test **COMPILED BY** G.D.
DATUM Geodetic **DATE** February 16, 2012 **CHECKED BY** C.N.

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						
188.2 0.0	Top of Ice Ice/water						20	40	60	80	100					
	Probable peat						188									
							187									
	Probable silty clay						186									
	Firm to stiff						185									
							184									
							183									
	Probable sandy silt to silty sand						182									
	Compact to dense						181									
180.1 8.1	End of dynamic cone penetration test															
	Refusal on probable bedrock															

RECORD OF BOREHOLE No 109-8

1 of 1

METRIC

G.W.P. 5112-07-00 **LOCATION** Hwy 69, Sta. 18+612.5, o/s 12.0m Rt. **ORIGINATED BY** F.P.
DIST Wallbridge Twp **HWY** 69 **BOREHOLE TYPE** Tripod 'N' Casing with Washbore **COMPILED BY** G.D.
DATUM Geodetic **DATE** February 16, 2012 **CHECKED BY** C.N.

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									
189.3	Top of Ice							20	40	60	80	100					
0.0	Ice					▽*	189										
188.7	Water					▼*											
0.6	Peat, fine fibrous																
	Dark brown		1	SS	1		188										
187.7	Silty clay trace sand, trace gravel organics to 3.0m		2	SS	3		187							○			
1.6	Firm Grey Moist to wet		3	SS	3		186							○			
			4	SS	3												
				FV													
184.9			5	SS	20/10cm		185										
4.4	End of borehole Refusal on probable bedrock																
* 2012 02 16 ▽ Water level observed during drilling ▼ Water level measured after drilling ■ Penetrometer test																	

RECORD OF PENETRATION TEST No 109-9

1 of 1

METRIC

G.W.P. 5112-07-00 **LOCATION** Hwy 69, Sta. 18+612.5, o/s 39.0m Rt. **ORIGINATED BY** F.P.
DIST Wallbridge Twp **HWY** 69 **BOREHOLE TYPE** Dynamic Cone Penetration Test **COMPILED BY** G.D.
DATUM Geodetic **DATE** February 16, 2012 **CHECKED BY** C.N.

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		
188.1 0.0	Top of Ice Ice/water						20	40	60	80	100	20	40	60				
	Probable peat																	
	Probable silty clay																	
	Firm to stiff																	
	Probable sandy silt to silty sand																	
	Compact to dense																	

RECORD OF BOREHOLE No 109-10

1 of 1

METRIC

G.W.P. <u>5112-07-00</u>	LOCATION <u>Hwy 69, Sta. 18+625, o/s 18.8m Rt.</u>	ORIGINATED BY <u>F.P.</u>
DIST <u>Wallbridge Twp</u> HWY <u>69</u>	BOREHOLE TYPE <u>Tripod and Washboring</u>	COMPILED BY <u>G.D.</u>
DATUM <u>Geodetic</u>	DATE <u>February 15, 2012</u>	CHECKED BY <u>C.N.</u>

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			20	40	60						80	100	SHEAR STRENGTH kPa		
																		○ UNCONFINED	+ FIELD VANE	
																		● QUICK TRIAXIAL	× LAB VANE	WATER CONTENT (%)
187.6 0.0	Top of Snow/Ice Snow/Ice Water					▽* ▼*														
186.4 1.2	Peat, fine fibrous Dark brown		1	SS	WH**															
186.0 1.6	Organic silty clay																			
185.7 1.9	Soft Dark Wet brown brown																			
	Silty clay, trace sand silt partings		2	SS	6															
	Firm to Grey Wet soft soft		3	SS	2															
				FV																
			4	SS	1															
				FV																
182.0 5.6	End of borehole Refusal on probable bedrock																			
	<div>* 2012 02 15</div> <div>▽ Water level observed during drilling</div> <div>▼ Water level measured after drilling</div> <div>■ Penetrometer test</div> <div>WH** denotes penetration due to weight of rods and hammer</div>																			

RECORD OF PENETRATION TEST No 109-11

1 of 1

METRIC

G.W.P. 5112-07-00 **LOCATION** Hwy 69, Sta. 18+625, o/s 38.0m Rt. **ORIGINATED BY** F.P.
DIST Wallbridge Twp **HWY** 69 **BOREHOLE TYPE** Dynamic Cone Penetration Test **COMPILED BY** G.D.
DATUM Geodetic **DATE** February 17, 2012 **CHECKED BY** C.N.

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							
								○ UNCONFINED	+ FIELD VANE	● QUICK TRIAXIAL					
187.8 0.0	Top of Ice Ice/water						20	40	60	80	100	20	40	60	
	Probable peat														
	Probable silty clay Firm to stiff														
	Probable sandy silt to silty sand Loose to compact														
178.7 9.1	End of dynamic cone penetration test Refusal on probable bedrock														

RECORD OF PENETRATION TEST No 109-12

1 of 1

METRIC

G.W.P. <u>5112-07-00</u>	LOCATION <u>Hwy 69, Sta. 18+632, o/s 18.8m Rt.</u>	ORIGINATED BY <u>F.P.</u>
DIST <u>Wallbridge Twp</u> HWY <u>69</u>	BOREHOLE TYPE <u>Dynamic Cone Penetration Test</u>	COMPILED BY <u>G.D.</u>
DATUM <u>Geodetic</u>	DATE <u>February 17, 2012</u>	CHECKED BY <u>C.N.</u>

[illegible]

RECORD OF PENETRATION TEST No 109-13

1 of 1

METRIC

G.W.P. 5112-07-00 **LOCATION** Hwy 69, Sta. 18+634, o/s 18.8m Rt. **ORIGINATED BY** F.P.
DIST Wallbridge Twp **HWY** 69 **BOREHOLE TYPE** Dynamic Cone Penetration Test **COMPILED BY** G.D.
DATUM Geodetic **DATE** February 17, 2012 **CHECKED BY** C.N.

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	REMARKS & GRAIN SIZE DISTRIBUTION (%)
ELEV. DEPTH	DESCRIPTION	STRAT PLOT	NUMBER	TYPE	"N" VALUES			20	40	60	80	100					
190.4 0.0	Top of Ice Ice/water						190										
189.2 1.2	Probable peat End of dynamic cone penetration test Refusal on probable bedrock																

RECORD OF BOREHOLE No 109-14

1 of 1

METRIC

G.W.P. 5112-07-00 **LOCATION** Hwy 69, Sta. 18+637.5, o/s 3.5m Rt. **ORIGINATED BY** R.B.
DIST Wallbridge Twp **HWY** 69 **BOREHOLE TYPE** Manual Probing **COMPILED BY** G.D.
DATUM Geodetic **DATE** October 11, 2011 **CHECKED BY** C.N.

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 (%)		
								<div>○ UNCONFINED + FIELD VANE</div> <div>● QUICK TRIAXIAL × LAB VANE</div>												
191.8	Ground Surface							20	40	60	80	100								
0.0	Topsoil	~ ~ ~																		
191.5	End of borehole																			
0.3	Refusal on probable bedrock																			
	* Borehole dry																			

RECORD OF BOREHOLE No 109-15

1 of 1

METRIC

G.W.P. 5112-07-00 **LOCATION** Hwy 69, Sta. 18+637.5, o/s 35.5m Rt. **ORIGINATED BY** R.B.
DIST Wallbridge Twp **HWY** 69 **BOREHOLE TYPE** Manual Probing **COMPILED BY** G.D.
DATUM Geodetic **DATE** October 11, 2011 **CHECKED BY** C.N.

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	REMARKS & GRAIN SIZE DISTRIBUTION (%)	
ELEV DEPTH	DESCRIPTION	STRAT PLOT	NUMBER	TYPE	"N" VALUES			SHEAR STRENGTH kPa										WATER CONTENT (%)
								○ UNCONFINED	● QUICK TRIAXIAL	+	×	FIELD VANE						
193.3	Ground Surface					*		20	40	60	80	100					GR SA SI CL	
0.0	Bedrock at surface																	
	* Borehole dry																	

RECORD OF BOREHOLE No 109-16

1 of 1

METRIC

G.W.P. 5112-07-00 **LOCATION** Hwy 69, Sta. 18+650, o/s 18.8m Rt. **ORIGINATED BY** R.B.
DIST Wallbridge Twp **HWY** 69 **BOREHOLE TYPE** Manual Probing **COMPILED BY** G.D.
DATUM Geodetic **DATE** October 11, 2011 **CHECKED BY** C.N.

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										WATER CONTENT (%)		
								<div>○ UNCONFINED + FIELD VANE</div> <div>● QUICK TRIAXIAL × LAB VANE</div>												
191.6	Ground Surface							20	40	60	80	100								
0.0	Topsoil	~ ~ ~																		
191.3	End of borehole																			
0.3	Refusal on probable bedrock																			
	* Borehole dry																			

RECORD OF PENETRATION TEST No 110-1

1 of 1

METRIC

G.W.P. 5112-07-00	LOCATION	Hwy 69, Sta. 18+780 CL	ORIGINATED BY	F.P.
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DIST	Wallbridge Twp	HWY	69	BOREHOLE TYPE	Dynamic Cone Penetration Test	COMPILED BY	G.D.
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DATUM Geodetic	DATE February 22, 2012	CHECKED BY C.N.
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[illegible]

RECORD OF PENETRATION TEST No 110-2

1 of 1

METRIC

G.W.P. 5112-07-00 **LOCATION** Hwy 69, Sta. 18+790 CL **ORIGINATED BY** F.P.
DIST Wallbridge Twp **HWY** 69 **BOREHOLE TYPE** Dynamic Cone Penetration Test **COMPILED BY** G.D.
DATUM Geodetic **DATE** February 21, 2012 **CHECKED BY** C.N.

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				WATER CONTENT (%)							
195.4 0.0	Top of Snow/Ice																
	Ice/snow																
	Probable water																
	Probable peat																
	Probable silty clay																
	Stiff																
	Probable silty sand																
	Loose to compact																
187.0 8.4	End of dynamic cone penetration tests																
	Refusal on probable bedrock																

RECORD OF BOREHOLE No 110-3

1 of 1

METRIC

G.W.P. <u>5112-07-00</u>	LOCATION <u>Hwy 69, Sta. 18+790, o/s 18.8m Rt.</u>	ORIGINATED BY <u>F.P.</u>
DIST <u>Wallbridge Twp</u> HWY <u>69</u>	BOREHOLE TYPE <u>Tripod, Washbore and Dynamic Cone Penetration Test</u>	COMPILED BY <u>G.D.</u>
DATUM <u>Geodetic</u>	DATE <u>February 22, 2012</u>	CHECKED BY <u>C.N.</u>

[illegible]

RECORD OF BOREHOLE No 110-4

1 of 1

METRIC

G.W.P. 5112-07-00 **LOCATION** Hwy 69, Sta. 18+790, o/s 39.0m Rt. **ORIGINATED BY** F.P.
DIST Wallbridge Twp **HWY** 69 **BOREHOLE TYPE** Manual Probing **COMPILED BY** G.D.
DATUM Geodetic **DATE** February 21, 2012 **CHECKED BY** C.N.

SOIL PROFILE			SAMPLES			GROUND WATER CONDITIONS	ELEVATION SCALE	DYNAMIC CONE PENETRATION RESISTANCE PLOT					PLASTIC LIMIT	NATURAL MOISTURE CONTENT	LIQUID LIMIT	UNIT WEIGHT	REMARKS & GRAIN SIZE DISTRIBUTION (%)			
ELEV DEPTH	DESCRIPTION	STRAT PLOT	NUMBER	TYPE	"N" VALUES			SHEAR STRENGTH kPa										w _p	w	w _L
								○ UNCONFINED	● QUICK TRIAXIAL	+	×	FIELD VANE								
198.4	Ground Surface					*		20	40	60	80	100				GR SA SI CL				
0.0	Bedrock at surface																			
	* Borehole dry																			

RECORD OF BOREHOLE No 110-5

1 of 1

METRIC

G.W.P. 5112-07-00 **LOCATION** Hwy 69, Sta. 18+800, o/s 18.8m Rt. **ORIGINATED BY** F.P.
DIST Wallbridge Twp **HWY** 69 **BOREHOLE TYPE** Tripod 'N' Casing with Washbore **COMPILED BY** G.D.
DATUM Geodetic **DATE** February 21, 2012 **CHECKED BY** C.N.

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 (%)		
								20 40 60 80 100										w _p w w _L		
194.5	Top of Snow/Ice																			
0.0	Snow/Ice					▽*	▼*													
193.8	Water																			
0.7	Peat, fine fibrous		1	SS	WH**															
	Dark brown		2	SS	1															
192.3	Silty clay, trace sand																			
2.2	Firm to Grey Wet stiff		3	SS	2															
			4	SS	6/15cm															
191.1	End of borehole																			
3.4	Refusal on probable bedrock																			
<div>* 2012 02 21</div> <div>▽ Water level observed during drilling</div> <div>▼ Water level measured after drilling</div> <div>WH** denotes penetration due to weight of rods and hammer</div>																				

* 2012 02 21

▽ Water level observed during drilling

▼ Water level measured after drilling

WH** denotes penetration due to weight of rods and hammer

RECORD OF BOREHOLE No 110-6

1 of 1

METRIC

G.W.P. 5112-07-00 **LOCATION** Hwy 69, Sta. 18+812.5 CL **ORIGINATED BY** R.B.
DIST Wallbridge Twp **HWY** 69 **BOREHOLE TYPE** Manual Probing **COMPILED BY** G.D.
DATUM Geodetic **DATE** October 11, 2011 **CHECKED BY** C.N.

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 (%)		
								<div>○ UNCONFINED + FIELD VANE</div> <div>● QUICK TRIAXIAL × LAB VANE</div>												
195.0	Ground Surface							20	40	60	80	100								
0.0	Peat, coarse fibrous																			
	Dark brown/black																			
193.9							194													
1.1	End of borehole																			
	Refusal on probable bedrock																			
	* Borehole dry																			

RECORD OF BOREHOLE No 110-7

1 of 1

METRIC

G.W.P. 5112-07-00 **LOCATION** Hwy 69, Sta. 18+812.5, o/s 40.0m Rt. **ORIGINATED BY** F.P.
DIST Wallbridge Twp **HWY** 69 **BOREHOLE TYPE** Manual Probing **COMPILED BY** G.D.
DATUM Geodetic **DATE** February 21, 2012 **CHECKED BY** C.N.

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	REMARKS & GRAIN SIZE DISTRIBUTION (%)
ELEV DEPTH	DESCRIPTION	STRAT PLOT	NUMBER	TYPE	"N" VALUES	SHEAR STRENGTH kPa					WATER CONTENT (%)							
						○ UNCONFINED			● QUICK TRIAXIAL	+		×	FIELD VANE					
195.6	Ground Surface					*											GR SA SI CL	
0.0	Bedrock at surface																	
	* Borehole dry																	

RECORD OF BOREHOLE No 110-8

1 of 1

METRIC

G.W.P.	5112-07-00	LOCATION	Hwy 69, Sta. 18+825, o/s 18.8m Rt.	ORIGINATED BY	F.P.
DIST	Wallbridge Twp	HWY	69	BOREHOLE TYPE	Tripod 'N' Casing with Washbore
DATUM	Geodetic	DATE	February 21, 2012	CHECKED BY	C.N.

[illegible]

RECORD OF BOREHOLE No 110-9

1 of 1

METRIC

G.W.P. 5112-07-00 **LOCATION** Hwy 69, Sta. 18+837.5 CL **ORIGINATED BY** R.B.
DIST Wallbridge Twp **HWY** 69 **BOREHOLE TYPE** Manual Probing **COMPILED BY** G.D.
DATUM Geodetic **DATE** October 11, 2011 **CHECKED BY** C.N.

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	REMARKS & GRAIN SIZE DISTRIBUTION (%)			
ELEV DEPTH	DESCRIPTION	STRAT PLOT	NUMBER	TYPE	"N" VALUES			SHEAR STRENGTH kPa										WATER CONTENT (%)		
								<div><div></div><div></div><div></div><div></div><div></div></div> <div>○ UNCONFINED + FIELD VANE ● QUICK TRIAXIAL × LAB VANE</div>										<div><div></div><div></div><div></div></div> <div></div>		
196.7	Ground Surface					*										GR SA SI CL				
0.0	Bedrock at surface																			
	* Borehole dry																			

RECORD OF BOREHOLE No 110-10

1 of 1

METRIC

G.W.P. 5112-07-00 **LOCATION** Hwy 69, Sta. 18+837.5, o/s 40.5m Rt. **ORIGINATED BY** F.P.
DIST Wallbridge Twp **HWY** 69 **BOREHOLE TYPE** Tripod 'N' Casing with Washbore **COMPILED BY** G.D.
DATUM Geodetic **DATE** February 21, 2012 **CHECKED BY** C.N.

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												
196.7	Top of Snow/Ice						20	40	60	80	100									
0.0	Snow/Ice					▽* ▼*														
196.0	Water																			
0.7	Peat, fine fibrous		1	SS	1															
	Dark brown																			
			2	SS	2															
194.5																				
2.2	Silty clay, trace sand		3	SS	WH**															
	Firm Grey Wet																			
			4	SS	3															
193.2																				
3.5	Silty sand, organics																			
192.9	Loose to Reddish Wet compact brown																			
3.8	End of borehole																			
	Refusal on probable bedrock																			
* 2012 02 21																				
▽ Water level observed during drilling																				
▼ Water level measured after drilling																				
WH** denotes penetration due to weight of rods and hammer																				

RECORD OF BOREHOLE No 110-11

1 of 1

METRIC

G.W.P.	5112-07-00	LOCATION	Hwy 69, Sta. 18+850, o/s 18.8m Rt.	ORIGINATED BY	F.P.
DIST	Wallbridge Twp	HWY	69	BOREHOLE TYPE	Tripod 'N' Casing with Washbore
DATUM	Geodetic	DATE	February 21, 2012	CHECKED BY	C.N.

[illegible]

RECORD OF BOREHOLE No 110-12

1 of 1

METRIC

G.W.P. 5112-07-00 **LOCATION** Hwy 69, Sta. 18+862.5 CL **ORIGINATED BY** R.B.
DIST Wallbridge Twp **HWY** 69 **BOREHOLE TYPE** Manual Probing **COMPILED BY** G.D.
DATUM Geodetic **DATE** October 11, 2011 **CHECKED BY** C.N.

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 (%)		
								<div>○ UNCONFINED + FIELD VANE</div> <div>● QUICK TRIAXIAL × LAB VANE</div>												
195.7	Ground Surface							20	40	60	80	100								
0.0	Topsoil																			
195.2	End of borehole																			
0.5	Refusal on probable bedrock																			
	* Borehole dry																			

RECORD OF PENETRATION TEST No 110-13

1 of 1

METRIC

G.W.P. 5112-07-00 **LOCATION** Hwy 69, Sta. 18+862.5, o/s 40.5m Rt. **ORIGINATED BY** F.P.
DIST Wallbridge Twp **HWY** 69 **BOREHOLE TYPE** Dynamic Cone Penetration Test **COMPILED BY** G.D.
DATUM Geodetic **DATE** February 21, 2012 **CHECKED BY** C.N.

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									WATER CONTENT (%)
								○ UNCONFINED	+ FIELD VANE	● QUICK TRIAXIAL	× LAB VANE						
194.5 0.0	Top of Snow/Ice																
	Snow/Ice																
	Probable water																
	Probable peat																
	Probable silty clay																
	Soft to stiff																
189.8 4.7	End of dynamic cone penetration test																
	Refusal on probable bedrock																
				</													

RECORD OF BOREHOLE No 110-14

1 of 1

METRIC

G.W.P. 5112-07-00 **LOCATION** Hwy 69, Sta. 18+875, o/s 18.8m Rt. **ORIGINATED BY** R.B.
DIST Wallbridge Twp **HWY** 69 **BOREHOLE TYPE** Manual Probing **COMPILED BY** G.D.
DATUM Geodetic **DATE** October 11, 2011 **CHECKED BY** C.N.

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	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		
196.3	Ground Surface					*											GR SA SI CL			
0.0	Bedrock at surface																			
	* Borehole dry																			

RECORD OF BOREHOLE No 110-15

1 of 1

METRIC

G.W.P. 5112-07-00 **LOCATION** Hwy 69, Sta. 18+887.5, o/s 5.0m Rt. **ORIGINATED BY** R.B.
DIST Wallbridge Twp **HWY** 69 **BOREHOLE TYPE** Manual Probing **COMPILED BY** G.D.
DATUM Geodetic **DATE** October 11, 2011 **CHECKED BY** C.N.

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	REMARKS & GRAIN SIZE DISTRIBUTION (%)
ELEV DEPTH	DESCRIPTION	STRAT PLOT	NUMBER	TYPE	"N" VALUES	SHEAR STRENGTH kPa					WATER CONTENT (%)							
						○ UNCONFINED			● QUICK TRIAXIAL	+		×	FIELD VANE					
199.7	Ground Surface					*											GR SA SI CL	
0.0	Bedrock at surface																	
	* Borehole dry																	

RECORD OF BOREHOLE No 110-16

1 of 1

METRIC

G.W.P. 5112-07-00 **LOCATION** Hwy 69, Sta. 18+887.5, o/s 34.0m Rt. **ORIGINATED BY** R.B.
DIST Wallbridge Twp **HWY** 69 **BOREHOLE TYPE** Manual Probing **COMPILED BY** G.D.
DATUM Geodetic **DATE** October 11, 2011 **CHECKED BY** C.N.

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												
196.2	Ground Surface							20	40	60	80	100								
0.0	Topsoil	~~~~					196													
195.8	End of borehole																			
0.4	Refusal on probable bedrock																			
	* Borehole dry																			

RECORD OF BOREHOLE No 110-17

1 of 1

METRIC

G.W.P. 5112-07-00 **LOCATION** Hwy 69, Sta. 18+900, o/s 18.8m Rt. **ORIGINATED BY** R.B.
DIST Wallbridge Twp **HWY** 69 **BOREHOLE TYPE** Manual Probing **COMPILED BY** G.D.
DATUM Geodetic **DATE** October 11, 2011 **CHECKED BY** C.N.

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	REMARKS & GRAIN SIZE DISTRIBUTION (%)			
ELEV DEPTH	DESCRIPTION	STRAT PLOT	NUMBER	TYPE	"N" VALUES			SHEAR STRENGTH kPa										WATER CONTENT (%)		
								<div><div>○ UNCONFINED</div><div>● QUICK TRIAXIAL</div></div> <div><div>+ FIELD VANE</div><div>× LAB VANE</div></div>												
196.0	Ground Surface					*		20	40	60	80	100				GR	SA	SI	CL	
0.0	Topsoil																			
195.9	End of borehole																			
0.1	Refusal on probable bedrock																			
	* Borehole dry																			

RECORD OF BOREHOLE No 110-18

1 of 1

METRIC

G.W.P. 5112-07-00 **LOCATION** Hwy 69, Sta. 18+912.5 CL **ORIGINATED BY** R.B.
DIST Wallbridge Twp **HWY** 69 **BOREHOLE TYPE** Manual Probing **COMPILED BY** G.D.
DATUM Geodetic **DATE** October 11, 2011 **CHECKED BY** C.N.

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	REMARKS & GRAIN SIZE DISTRIBUTION (%)			
ELEV DEPTH	DESCRIPTION	STRAT PLOT	NUMBER	TYPE	"N" VALUES			SHEAR STRENGTH kPa									WATER CONTENT (%)			
196.1 0.0	Ground Surface					*		20	40	60	80	100								
196.0 0.1	Topsoil						196													
	End of borehole																			
	Refusal on probable bedrock																			
	* Borehole dry																			

RECORD OF BOREHOLE No 110-19

1 of 1

METRIC

G.W.P. 5112-07-00 **LOCATION** Hwy 69, Sta. 18+912.5, o/s 41.0m Rt. **ORIGINATED BY** R.B.
DIST Wallbridge Twp **HWY** 69 **BOREHOLE TYPE** Manual Probing **COMPILED BY** G.D.
DATUM Geodetic **DATE** October 11, 2011 **CHECKED BY** C.N.

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					W _p	W	W _L		GR	SA	SI	CL
								○ UNCONFINED	● QUICK TRIAXIAL	+	×	FIELD VANE	LAB VANE							
195.9	Ground Surface					*														
0.0	Bedrock at surface																			
	* Borehole dry																			

RECORD OF BOREHOLE No 110-20

1 of 1

METRIC

G.W.P. 5112-07-00 **LOCATION** Hwy 69, Sta. 18+925, o/s 18.8m Rt. **ORIGINATED BY** R.B.
DIST Wallbridge Twp **HWY** 69 **BOREHOLE TYPE** Manual Probing **COMPILED BY** G.D.
DATUM Geodetic **DATE** October 11, 2011 **CHECKED BY** C.N.

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												
194.4	Ground Surface					*		20	40	60	80	100								
0.0	Peat, coarse fibrous						194													
193.7	Dark brown/black Wet																			
0.7	End of borehole Refusal on probable bedrock																			
	* Borehole dry																			

RECORD OF PENETRATION TEST No 110-21

1 of 1

METRIC

G.W.P. 5112-07-00	LOCATION	Hwy 69, Sta. 18+937.5 CL	ORIGINATED BY	F.P.
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DIST	Wallbridge Twp	HWY	69	BOREHOLE TYPE	Dynamic Cone Penetration Test	COMPILED BY	G.D.
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DATUM Geodetic	DATE February 22, 2012	CHECKED BY C.N.
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[illegible]

RECORD OF BOREHOLE No 110-22

1 of 1

METRIC

G.W.P. 5112-07-00	LOCATION Hwy 69, Sta. 18+934, o/s 42.0m Rt.	ORIGINATED BY F.P.
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DIST	Wallbridge Twp	HWY	69	BOREHOLE TYPE	Continuous Flight Hollow Stem Augers	COMPILED BY	G.D.
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DATUM	Geodetic	DATE	February 22, 2012	CHECKED BY	C.N.
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[illegible]

RECORD OF BOREHOLE No 110-23

1 of 1

METRIC

G.W.P. 5112-07-00 **LOCATION** Hwy 69, Sta. 18+950, o/s 18.8m Rt. **ORIGINATED BY** F.P.
DIST Wallbridge Twp **HWY** 69 **BOREHOLE TYPE** Continuous Flight Hollow Stem Augers **COMPILED BY** G.D.
DATUM Geodetic **DATE** February 14, 2012 **CHECKED BY** C.N.

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												
194.6	Top of Snow/Ice						20	40	60	80	100									
0.0	Snow/Ice		1	SS	2															
194.1	Water																			
0.5	Topsoil																			
193.9	Sand, with silt some clay, trace gravel organics		2	SS	27															
0.7	Compact Brpwn Moist to wet		3	SS	50/8cm															
192.8	End of borehole																			
1.8	Refusal on probable bedrock																			
	Sample 2: Sampler bouncing																			
	 <																			

RECORD OF BOREHOLE No 110-24

1 of 1

METRIC

G.W.P. 5112-07-00 **LOCATION** Hwy 69, Sta. 18+962.5 CL **ORIGINATED BY** R.B.
DIST Wallbridge Twp **HWY** 69 **BOREHOLE TYPE** Manual Probing **COMPILED BY** G.D.
DATUM Geodetic **DATE** October 11, 2011 **CHECKED BY** C.N.

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	REMARKS & GRAIN SIZE DISTRIBUTION (%)	
ELEV DEPTH	DESCRIPTION	STRAT PLOT	NUMBER	TYPE	"N" VALUES			SHEAR STRENGTH kPa										WATER CONTENT (%)
								○ UNCONFINED	● QUICK TRIAXIAL	+	×	FIELD VANE						
196.3	Ground Surface					*		20	40	60	80	100					GR SA SI CL	
0.0	Bedrock at surface																	
	* Borehole dry																	

RECORD OF PENETRATION TEST No 110-25

1 of 1

METRIC

G.W.P. 5112-07-00	LOCATION	Hwy 69, Sta. 18+962.5, o/s 42.5m Rt.	ORIGINATED BY	F.P.
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DIST	Wallbridge Twp	HWY	69	BOREHOLE TYPE	Dynamic Cone Penetration Test	COMPILED BY	G.D.
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DATUM Geodetic	DATE February 22, 2012	CHECKED BY C.N.
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[illegible]

RECORD OF BOREHOLE No 110-26

1 of 1

METRIC

G.W.P.	5112-07-00	LOCATION	Hwy 69, Sta. 18+970, o/s 18.8m Rt.	ORIGINATED BY	R.B.
DIST	Wallbridge Twp	HWY	69	BOREHOLE TYPE	Manual Probing
DATUM	Geodetic	DATE	October 11, 2011	CHECKED BY	C.N.

[illegible]

RECORD OF BOREHOLE No 111-1

1 of 1

METRIC

G.W.P. 5112-07-00 **LOCATION** Hwy 69, Sta. 19+030, o/s 18.8m Rt. **ORIGINATED BY** F.P.
DIST Wallbridge Twp **HWY** 69 **BOREHOLE TYPE** Tripod 'N' Casing with Washbore **COMPILED BY** G.D.
DATUM Geodetic **DATE** February 22, 2012 **CHECKED BY** C.N.

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												
195.2	Ground Surface						20	40	60	80	100									
0.0	Peat, coarse fibrous		1	SS	14		195													
194.6	Dark brown																			
0.6	End of borehole																			
	Refusal on probable bedrock																			
	* Borehole dry																			

RECORD OF BOREHOLE No 111-2

1 of 1

METRIC

G.W.P. 5112-07-00 **LOCATION** Hwy 69, Sta. 19+037.5 CL **ORIGINATED BY** R.B.
DIST Wallbridge Twp **HWY** 69 **BOREHOLE TYPE** Manual Probing **COMPILED BY** G.D.
DATUM Geodetic **DATE** October 11, 2011 **CHECKED BY** C.N.

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	REMARKS & GRAIN SIZE DISTRIBUTION (%)
ELEV DEPTH	DESCRIPTION	STRAT PLOT	NUMBER	TYPE	"N" VALUES	SHEAR STRENGTH kPa					WATER CONTENT (%)							
						○ UNCONFINED			● QUICK TRIAXIAL	+		×	FIELD VANE					
197.5	Ground Surface					*											GR SA SI CL	
0.0	Bedrock at surface																	
	* Borehole dry																	

RECORD OF BOREHOLE No 111-3

1 of 1

METRIC

G.W.P. 5112-07-00 **LOCATION** Hwy 69, Sta. 19+037.5, o/s 44.0m Rt. **ORIGINATED BY** F.P.
DIST Wallbridge Twp **HWY** 69 **BOREHOLE TYPE** Tripod 'N' Casing with Washbore **COMPILED BY** G.D.
DATUM Geodetic **DATE** February 22, 2012 **CHECKED BY** C.N.

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												
194.3	Top of Snow/Ice							20	40	60	80	100								
0.0	Snow/Ice					▽*	▼*	194												
	Water																			
193.5																				
0.8	Organic silty clay		1	SS	4															
192.9	Firm Dark Wet		2	SS	15/5cm			193												
1.4	sand pockets																			
	End of borehole																			
	Refusal on probable bedrock																			
	Sample 2: Sampler bouncing																			
								</												

RECORD OF BOREHOLE No 111-4

1 of 1

METRIC

G.W.P.	5112-07-00	LOCATION	Hwy 69, Sta. 19+050, o/s 18.8m Rt.	ORIGINATED BY	F.P.
DIST	Wallbridge Twp	HWY	69	BOREHOLE TYPE	Tripod 'N' Casing with Washbore
DATUM	Geodetic	DATE	February 22, 2012	CHECKED BY	C.N.


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								
195.0	Top of Snow/Ice						20	40	60	80	100							
0.0	Snow/Ice Water					▽*												
193.5																		
1.5	Peat, fine fibrous Dark brown		1	SS	WH**													
193.3	Silty clay, organics																	
1.7	Firm to Grey Moist stiff to wet sand seams/partings		2	SS	10													
			3	SS	12													
191.3	End of borehole Refusal on probable bedrock																	
3.7																		
	<div>* 2012 02 22</div> <div>▽ Water level observed during drilling</div> <div>▼ Water level measured after drilling</div> <div>■ Penetrometer test</div> <div>WH** denotes penetration due to weight of rods and hammer</div>																	

RECORD OF BOREHOLE No 111-5

1 of 1

METRIC

G.W.P. 5112-07-00 **LOCATION** Hwy 69, Sta. 19+060, o/s 0.5m Rt. **ORIGINATED BY** R.B.
DIST Wallbridge Twp **HWY** 69 **BOREHOLE TYPE** Manual Probing **COMPILED BY** G.D.
DATUM Geodetic **DATE** October 11, 2011 **CHECKED BY** C.N.

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	REMARKS & GRAIN SIZE DISTRIBUTION (%)			
ELEV DEPTH	DESCRIPTION	STRAT PLOT	NUMBER	TYPE	"N" VALUES			SHEAR STRENGTH kPa										WATER CONTENT (%)		
								○ UNCONFINED	● QUICK TRIAXIAL	+	×	FIELD VANE						LAB VANE		
195.2	Ground Surface					*	195										GR SA SI CL			
0.0	Topsoil																			
195.0	End of borehole																			
0.2	Refusal on probable bedrock																			
	* Borehole dry																			

RECORD OF BOREHOLE No 111-6

1 of 1

METRIC

G.W.P. 5112-07-00 **LOCATION** Hwy 69, Sta. 19+060, o/s 38.5m Rt. **ORIGINATED BY** R.B.
DIST Wallbridge Twp **HWY** 69 **BOREHOLE TYPE** Manual Probing **COMPILED BY** G.D.
DATUM Geodetic **DATE** October 11, 2011 **CHECKED BY** C.N.

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	REMARKS & GRAIN SIZE DISTRIBUTION (%)
ELEV DEPTH	DESCRIPTION	STRAT PLOT	NUMBER	TYPE	"N" VALUES	SHEAR STRENGTH kPa					WATER CONTENT (%)							
						○ UNCONFINED			● QUICK TRIAXIAL	+		×	FIELD VANE					
196.4	Ground Surface					*			20	40	60	80	100	20	40	60	kn/m³	GR SA SI CL
0.0	Bedrock at surface																	
	* Borehole dry																	

Swamp 112

RECORD OF BOREHOLE No 112-1

1 of 1

METRIC

G.W.P. 5112-07-00	LOCATION Hwy 69 Realigned, Sta. 19+350, o/s 18.8m Rt.	ORIGINATED BY K.D.
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DIST	Parry Sound	HWY	69	BOREHOLE TYPE	Manual Probing	COMPILED BY	G.D.
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DATUM	Geodetic	DATE	September 24, 2012	CHECKED BY	B.R.G.
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[illegible]

RECORD OF BOREHOLE No 112-2

1 of 1

METRIC

G.W.P. 5112-07-00 **LOCATION** Hwy 69 Realigned, Sta. 19+362.5, o/s 5.0m Rt. **ORIGINATED BY** K.D.
DIST Parry Sound **HWY** 69 **BOREHOLE TYPE** Manual Probing **COMPILED BY** G.D.
DATUM Geodetic **DATE** September 24, 2012 **CHECKED BY** B.R.G.

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	REMARKS & GRAIN SIZE DISTRIBUTION (%)
ELEV DEPTH	DESCRIPTION	STRAT PLOT	NUMBER	TYPE	"N" VALUES	SHEAR STRENGTH kPa					WATER CONTENT (%)							
						○ UNCONFINED			● QUICK TRIAXIAL	+		×	FIELD VANE					
193.8	Ground Surface					*											GR SA SI CL	
0.0	Bedrock at surface																	
	* Borehole dry																	

RECORD OF BOREHOLE No 112-3

1 of 1

METRIC

G.W.P. 5112-07-00	LOCATION Hwy 69 Realigned, Sta. 19+362.5, o/s 34.0m Rt.	ORIGINATED BY K.D.
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DIST	Parry Sound	HWY	69	BOREHOLE TYPE	Manual Probing	COMPILED BY	G.D.
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DATUM	Geodetic	DATE	September 24, 2012	CHECKED BY	B.R.G.
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[illegible]

RECORD OF BOREHOLE No 112-4

1 of 1

METRIC

G.W.P. 5112-07-00 **LOCATION** Hwy 69 Realigned, Sta. 19+376, o/s 10.9m Rt. **ORIGINATED BY** F.P.
DIST Parry Sound **HWY** 69 **BOREHOLE TYPE** Tripod **COMPILED BY** G.D.
DATUM Geodetic **DATE** February 28, 2012 **CHECKED BY** C.N.

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		
189.4	Top of Snow/Ice						20	40	60	80	100									
0.0	Snow/Ice					▽*														
188.8	Peat, fine fibrous Dark brown					▽*														
188.3			1	SS	6								○							
1.1	Silty sand, trace clay																			
188.0																				
1.4	Loose Grey Wet																			
	Clayey silt trace to some sand layers of amorphous peat		2	SS	2									○						
	Soft to Dark Wet firm grey													○						
			3	SS	1															
186.4																				
3.0	Clay, trace sand clayey silt layers to 4.0m		4	SS	3								○							
	Stiff to Grey Moist very soft to wet			FV																
			5	SS	2															
				FV																
			6	SS	WH**															
				FV																
182.2			7	SS	20/0cm															
7.2	End of borehole Refusal on probable bedrock																			
</																				

* 2012 02 28

▽ Water level observed during drilling

▼ Water level measured after drilling

WH** denotes penetration due to weight of rods and hammer

RECORD OF BOREHOLE No 112-5

1 of 1

METRIC

G.W.P. <u>5112-07-00</u>	LOCATION <u>Hwy 69 Realigned, Sta. 19+377, o/s 19.0m Rt.</u>	ORIGINATED BY <u>F.P.</u>
DIST <u>Parry Sound</u> HWY <u>69</u>	BOREHOLE TYPE <u>Tripod + Casing</u>	COMPILED BY <u>G.D.</u>
DATUM <u>Geodetic</u>	DATE <u>February 20, 2013</u>	CHECKED BY <u>B.R.G.</u>

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												
								○ UNCONFINED + FIELD VANE												
								● QUICK TRIAXIAL × LAB VANE												
							WATER CONTENT (%)													
							20	40	60	80	100	20	40	60						
188.7 0.0	Top of Snow/Ice																			
188.5	Snow/Ice																			
0.2 188.2	Peat, fine fibrous Dark brown		1	SS	1	* *														
0.5	Clayey silt, trace sand organics						188													
	Stiff Grey Moist		2	SS	4															
							187													
			3	SS	2															
	sandy, trace gravel						186													
			4	SS	3															
185.7 3.0	FV						186													
	Clay, trace sand		5	SS	2															
	Stiff to soft Grey Moist to wet			FV			185													
			6	SS	2															
				FV																
			7	TW	PM		184													
				FV																
183.2 5.5	End of borehole																			
	Refusal on probable bedrock																			

RECORD OF BOREHOLE No 112-6

1 of 1

METRIC

G.W.P. <u>5112-07-00</u>	LOCATION <u>Hwy 69 Realigned, Sta. 19+384, o/s 40.0m Rt.</u>	ORIGINATED BY <u>F.P.</u>
DIST <u>Parry Sound</u> HWY <u>69</u>	BOREHOLE TYPE <u>Tripod + Washbore</u>	COMPILED BY <u>G.D.</u>
DATUM <u>Geodetic</u>	DATE <u>February 12, 2013</u>	CHECKED BY <u>B.R.G.</u>

[illegible]

RECORD OF BOREHOLE No 112-7

1 of 1

METRIC

G.W.P. 5112-07-00	LOCATION Hwy 69 Realigned, Sta. 19+391, o/s 10.0m Rt.	ORIGINATED BY F.P.
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DIST	Parry Sound	HWY	69	BOREHOLE TYPE	Tripod and Dynamic Cone Penetration Test	COMPILED BY	G.D.
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DATUM	Geodetic	DATE	February 28, 2012	CHECKED BY	C.N.
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[illegible]

RECORD OF BOREHOLE No 112-8

1 of 1

METRIC

G.W.P. 5112-07-00 **LOCATION** Hwy 69 Realigned, Sta. 19+400, o/s 18.8m Rt. **ORIGINATED BY** K.D.
DIST Parry Sound **HWY** 69 **BOREHOLE TYPE** Manual Probing **COMPILED BY** G.D.
DATUM Geodetic **DATE** September 24, 2012 **CHECKED BY** B.R.G.

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	REMARKS & GRAIN SIZE DISTRIBUTION (%)
ELEV DEPTH	DESCRIPTION	STRAT PLOT	NUMBER	TYPE	"N" VALUES	SHEAR STRENGTH kPa					WATER CONTENT (%)							
						○ UNCONFINED			● QUICK TRIAXIAL	+		×	FIELD VANE					
192.9	Ground Surface					*											GR SA SI CL	
0.0	Bedrock at surface																	
	* Borehole dry																	

RECORD OF BOREHOLE No 112-9

1 of 1

METRIC

G.W.P. 5112-07-00 **LOCATION** Hwy 69 Realigned, Sta. 19+412, o/s 7.9m Lt. **ORIGINATED BY** R.B.
DIST Parry Sound **HWY** 69 **BOREHOLE TYPE** Manual Probing **COMPILED BY** G.D.
DATUM Geodetic **DATE** October 11, 2011 **CHECKED BY** C.N.

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	REMARKS & GRAIN SIZE DISTRIBUTION (%)	
ELEV DEPTH	DESCRIPTION	STRAT PLOT	NUMBER	TYPE	"N" VALUES			SHEAR STRENGTH kPa										WATER CONTENT (%)
								○ UNCONFINED	● QUICK TRIAXIAL	+	×	FIELD VANE						
193.7	Ground Surface					*		20	40	60	80	100					GR SA SI CL	
0.0	Bedrock at surface																	
	* Borehole dry																	

RECORD OF BOREHOLE No 112-10

1 of 1

METRIC

G.W.P. 5112-07-00 **LOCATION** Hwy 69 Realigned, Sta. 19+412.5, o/s 3.5m Rt. **ORIGINATED BY** K.D.
DIST Parry Sound **HWY** 69 **BOREHOLE TYPE** Manual Probing **COMPILED BY** G.D.
DATUM Geodetic **DATE** September 24, 2012 **CHECKED BY** B.R.G.

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	REMARKS & GRAIN SIZE DISTRIBUTION (%)	
ELEV DEPTH	DESCRIPTION	STRAT PLOT	NUMBER	TYPE	'N' VALUES			SHEAR STRENGTH kPa										WATER CONTENT (%)
								○ UNCONFINED	● QUICK TRIAXIAL	+	×	FIELD VANE						
193.7	Ground Surface					*		20	40	60	80	100					GR SA SI CL	
0.0	Bedrock at surface																	
	* Borehole dry																	

RECORD OF BOREHOLE No 112-11

1 of 1

METRIC

G.W.P.	5112-07-00	LOCATION	Hwy 69 Realigned, Sta. 19+412.5, o/s 35.5m Rt.	ORIGINATED BY	K.D.
DIST	Parry Sound	HWY	69	BOREHOLE TYPE	Manual Probing
DATUM	Geodetic	DATE	September 24, 2012	CHECKED BY	B.R.G.

[illegible]

RECORD OF BOREHOLE No 112-12

1 of 1

METRIC

G.W.P. 5112-07-00 **LOCATION** Hwy 69 Realigned, Sta. 19+425, o/s 18.8m Lt. **ORIGINATED BY** K.D.
DIST Parry Sound **HWY** 69 **BOREHOLE TYPE** Manual Probing **COMPILED BY** G.D.
DATUM Geodetic **DATE** September 24, 2012 **CHECKED BY** B.R.G.

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	REMARKS & GRAIN SIZE DISTRIBUTION (%)	
ELEV DEPTH	DESCRIPTION	STRAT PLOT	NUMBER	TYPE	"N" VALUES	SHEAR STRENGTH kPa					WATER CONTENT (%)								
						○ UNCONFINED			● QUICK TRIAXIAL	+		×	FIELD VANE						LAB VANE
194.7	Ground Surface					*				20	40	60	80	100	20	40	60	kN/m ³	GR SA SI CL
0.0	Rockfill at surface																		
	* Borehole dry																		

RECORD OF BOREHOLE No 112-13

1 of 1

METRIC

G.W.P.	5112-07-00	LOCATION	Hwy 69 Realigned, Sta. 19+425, o/s 19.0m Rt.	ORIGINATED BY	F.P.
DIST	Parry Sound	HWY	69	BOREHOLE TYPE	Tripod
DATUM	Geodetic	DATE	February 12 and 19, 2013	COMPILED BY	G.D.
				CHECKED BY	B.R.G.

SOIL PROFILE			SAMPLES			GROUND WATER CONDITIONS	ELEVATION SCALE	DYNAMIC CONE PENETRATION RESISTANCE PLOT					PLASTIC NATURAL LIQUID LIMIT MOISTURE CONTENT			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		GR	SA	SI	CL	
191.1	Top of Snow/Ice						191														
0.0	Snow/Ice																				
190.8	Topsoil		1	SS	6																
0.3	Silty clay, trace sand organics to 1.4m																				
190.5	Stiff Mottled Moist grey/brown		2	SS	7		190														
0.6			3	SS	6																
189.0	End of borehole Refusal on probable bedrock						189														
2.1																					
<div>* 2013 02 12 and 19</div> <div> Water level observed during drilling</div> <div> Water level measured after drilling</div> <div> Penetrometer test</div>																					

RECORD OF BOREHOLE No 112-14

1 of 1

METRIC

G.W.P.	5112-07-00	LOCATION	Hwy 69 Realigned, Sta. 19+437, o/s 9.0m Lt.	ORIGINATED BY	F.P.
DIST	Parry Sound	HWY	69	BOREHOLE TYPE	Tripod
DATUM	Geodetic	DATE	February 29, 2012	COMPILED BY	G.D.
				CHECKED BY	C.N.

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										WATER CONTENT (%)		
								○ UNCONFINED + FIELD VANE ● QUICK TRIAXIAL × LAB VANE												
192.5	Ground Surface																			
0.0	Topsoil																			
192.2																				
0.3	Sand trace silt, trace gravel		1	SS	2															
	Very loose Brown Moist to loose		2	SS	3								o			1 93 (6)				
190.5			3	SS	6									o						
2.0	Clayey silt, trace sand organics																			
	Stiff Mottled Moist grey/brown		4	SS	11						■		o			0 8 61 31				
189.4																				
3.1	End of borehole																			
	Refusal on probable bedrock																			
								</												

RECORD OF BOREHOLE No 112-15

1 of 1

METRIC

G.W.P. 5112-07-00 **LOCATION** Hwy 69 Realigned, Sta. 19+437.5, o/s 36.0m Rt. **ORIGINATED BY** F.P.
DIST Parry Sound **HWY** 69 **BOREHOLE TYPE** Tripod + Casing **COMPILED BY** G.D.
DATUM Geodetic **DATE** February 19, 2013 **CHECKED BY** B.R.G.

SOIL PROFILE			SAMPLES		GROUND WATER CONDITIONS	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		SHEAR STRENGTH kPa					W _p	W	W _L		
191.7	Top of Snow/Ice														
0.0	Snow/Ice														
191.4	Topsoil		1	SS											
0.3	Clayey silt, trace sand organics														
191.2	Stiff to firm Brown Moist		2	SS											
0.5	Mottled grey/brown														
190.0	Clay, trace sand		3	SS											
1.7	Firm to very soft Grey Moist to wet														
			4	SS											
			5	SS											
				FV											
187.8	Sand, trace gravel		6	SS											
3.9	Dense Grey Wet														
187.7	End of borehole														
4.0	Refusal on probable bedrock														

* 2013 02 19

▽ Water level observed during drilling

▼ Water level measured after drilling

■ Penetrometer test

RECORD OF BOREHOLE No 112-16

1 of 1

METRIC

G.W.P. 5112-07-00 **LOCATION** Hwy 69 Realigned, Sta. 19+450, o/s 18.8m Lt. **ORIGINATED BY** K.D.
DIST Parry Sound **HWY** 69 **BOREHOLE TYPE** Manual Probing **COMPILED BY** G.D.
DATUM Geodetic **DATE** September 24, 2012 **CHECKED BY** B.R.G.

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	REMARKS & GRAIN SIZE DISTRIBUTION (%)			
ELEV DEPTH	DESCRIPTION	STRAT PLOT	NUMBER	TYPE	"N" VALUES			SHEAR STRENGTH kPa										WATER CONTENT (%)		
								○ UNCONFINED	● QUICK TRIAXIAL	+	×	FIELD VANE						LAB VANE		
196.6	Ground Surface					*			20	40	60	80	100				GR SA SI CL			
0.0	Bedrock at surface																			
	* Borehole dry																			

RECORD OF BOREHOLE No 112-17

1 of 1

METRIC

G.W.P. 5112-07-00	LOCATION Hwy 69 Realigned, Sta. 19+450, o/s 18.8m Rt.	ORIGINATED BY K.D.
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DIST	Parry Sound	HWY	69	BOREHOLE TYPE	Manual Probing	COMPILED BY	G.D.
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DATUM	Geodetic	DATE	September 24, 2012	CHECKED BY	B.R.G.
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[illegible]

RECORD OF BOREHOLE No 112-18

1 of 1

METRIC

G.W.P. 5112-07-00 **LOCATION** Hwy 69 Realigned, Sta. 19+460, o/s 10.5m Lt. **ORIGINATED BY** K.D.
DIST Parry Sound **HWY** 69 **BOREHOLE TYPE** Manual Probing **COMPILED BY** G.D.
DATUM Geodetic **DATE** September 24, 2012 **CHECKED BY** B.R.G.

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	REMARKS & GRAIN SIZE DISTRIBUTION (%)			
ELEV DEPTH	DESCRIPTION	STRAT PLOT	NUMBER	TYPE	"N" VALUES			SHEAR STRENGTH kPa										WATER CONTENT (%)		
								<div><div></div><div></div><div></div><div></div><div></div></div> <div>○ UNCONFINED + FIELD VANE ● QUICK TRIAXIAL × LAB VANE</div>										<div><div></div><div></div><div></div></div> <div></div>		
198.4	Ground Surface					*										GR SA SI CL				
0.0	Bedrock at surface																			
	* Borehole dry																			

Swamp 113

RECORD OF BOREHOLE No 113-1

1 of 1

METRIC

G.W.P. 5112-07-00	LOCATION Hwy 69, Sta. 19+750, 18.8 m Lt.	ORIGINATED BY K.D.
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DIST	Parry Sound	HWY	69	BOREHOLE TYPE	Manual Probing	COMPILED BY	G.D.
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DATUM	Geodetic	DATE	September 27, 2012	CHECKED BY	B.R.G.
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[illegible]

RECORD OF BOREHOLE No 113-2

1 of 1

METRIC

G.W.P. 5112-07-00 **LOCATION** Hwy 69, Sta. 19+760, o/s 18.8 m Rt. **ORIGINATED BY** K.D.
DIST Parry Sound **HWY** 69 **BOREHOLE TYPE** Manual Probing **COMPILED BY** G.D.
DATUM Geodetic **DATE** September 27, 2012 **CHECKED BY** B.R.G.

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	REMARKS & GRAIN SIZE DISTRIBUTION (%)
ELEV DEPTH	DESCRIPTION	STRAT PLOT	NUMBER	TYPE	"N" VALUES	SHEAR STRENGTH kPa					WATER CONTENT (%)							
						○ UNCONFINED			● QUICK TRIAXIAL	+		×	FIELD VANE					
199.6	Ground Surface					*			20	40	60	80	100	20	40	60	kn/m³	GR SA SI CL
0.0	Bedrock at surface																	
	* Borehole dry																	

RECORD OF PENETRATION TEST No 113-3

1 of 1

METRIC

G.W.P. 5112-07-00 **LOCATION** Hwy 69, Sta. 19+762.5, o/s 36.5 m Lt. **ORIGINATED BY** F.P.
DIST Parry Sound **HWY** 69 **BOREHOLE TYPE** Dynamic Cone Penetration Test **COMPILED BY** G.D.
DATUM Geodetic **DATE** February 09, 2013 **CHECKED BY** B.R.G.


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	REMARKS & GRAIN SIZE DISTRIBUTION (%)
ELEV. DEPTH	DESCRIPTION	STRAT PLOT	NUMBER	TYPE	"N" VALUES			20	40	60	80	100					
194.4 0.0	Top of Ice																
	Ice						194										
	Probable peat																
193.5 0.9	Probable clayey silt																
	Stiff																
	End of dynamic cone penetration test																
	Refusal on probable bedrock																

RECORD OF BOREHOLE No 113-4

1 of 1

METRIC

G.W.P. 5112-07-00 **LOCATION** Hwy 69, Sta. 19+762.5, o/s 2.5 m Lt. **ORIGINATED BY** K.D.
DIST Parry Sound **HWY** 69 **BOREHOLE TYPE** Manual Probing **COMPILED BY** G.D.
DATUM Geodetic **DATE** September 27, 2012 **CHECKED BY** B.R.G.

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	REMARKS & GRAIN SIZE DISTRIBUTION (%)	
ELEV DEPTH	DESCRIPTION	STRAT PLOT	NUMBER	TYPE	"N" VALUES			SHEAR STRENGTH kPa										WATER CONTENT (%)
								○ UNCONFINED	● QUICK TRIAXIAL	+	×	FIELD VANE						
196.3 0.0	Ground Surface																	
196.1 0.2	Topsoil																	
	End of borehole																	
	Refusal on probable bedrock																	
							</											

RECORD OF BOREHOLE No 113-5

1 of 1

METRIC

G.W.P. 5112-07-00	LOCATION Hwy 69, Sta. 19+762.5, o/s 10.5 m Rt.	ORIGINATED BY K.D.
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DIST	Parry Sound	HWY	69	BOREHOLE TYPE	Manual Probing	COMPILED BY	G.D.
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DATUM	Geodetic	DATE	September 27, 2012	CHECKED BY	B.R.G.
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SOIL PROFILE					
ELEV DEPTH	DESCRIPTION	STRAT PLOT	SAMPLES	GROUND WATER CONDITIONS	ELEVATION SCALE
198.8 0.0	Ground Surface	 	NUMBER	TYPE	"N" VALUES
198.7 0.1	Topsoil End of borehole Refusal on probable bedrock				
* Borehole dry					

RECORD OF BOREHOLE No 113-6

1 of 1

METRIC

G.W.P. 5112-07-00 **LOCATION** Hwy 69, Sta. 19+762.5, o/s 28.5 m Rt. **ORIGINATED BY** K.D.
DIST Parry Sound **HWY** 69 **BOREHOLE TYPE** Manual Probing **COMPILED BY** G.D.
DATUM Geodetic **DATE** September 27, 2012 **CHECKED BY** B.R.G.

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	REMARKS & GRAIN SIZE DISTRIBUTION (%)		
ELEV DEPTH	DESCRIPTION	STRAT PLOT	NUMBER	TYPE	"N" VALUES			SHEAR STRENGTH kPa											
								○ UNCONFINED	+	FIELD VANE	● QUICK TRIAXIAL	×						LAB VANE	
199.1	Ground Surface					*										GR	SA	SI	CL
0.0	Bedrock at surface																		
	* Borehole dry																		

RECORD OF BOREHOLE No 113-7

1 of 1

METRIC

G.W.P. 5112-07-00 **LOCATION** Hwy 69, Sta. 19+772, o/s 19.0 m Lt. **ORIGINATED BY** F.P.
DIST Parry Sound **HWY** 69 **BOREHOLE TYPE** Tripod + Casing **COMPILED BY** G.D.
DATUM Geodetic **DATE** February 09, 2013 **CHECKED BY** B.R.G.

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		
193.9	Top of Ice						20	40	60	80	100									
0.0	Ice					▽*														
193.3	Water					▼*														
0.6	Peat, coarse to fine fibrous		1	SS	1															
192.7	Dark brown																			
1.2	Silty clay trace sand, trace gravel organics to 2.4m		2	SS	4															
	Stiff to soft			FV																
	Brown to grey		3	TW	PM															
	Moist to wet			FV																
			4	SS	WH**															
				FV																
190.1	End of borehole																			
3.8	Refusal on probable bedrock																			

RECORD OF BOREHOLE No 113-8

1 of 1

METRIC

G.W.P. 5112-07-00 **LOCATION** Hwy 69, Sta. 19+775, o/s 18.8 m Rt. **ORIGINATED BY** F.P.
DIST Parry Sound **HWY** 69 **BOREHOLE TYPE** Manual Probing **COMPILED BY** G.D.
DATUM Geodetic **DATE** February 09, 2013 **CHECKED BY** B.R.G.

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	REMARKS & GRAIN SIZE DISTRIBUTION (%)
ELEV DEPTH	DESCRIPTION	STRAT PLOT	NUMBER	TYPE	"N" VALUES	SHEAR STRENGTH kPa					WATER CONTENT (%)							
						○ UNCONFINED			● QUICK TRIAXIAL	+		×	FIELD VANE					
195.4	Ground Surface					*											GR SA SI CL	
0.0	Bedrock at surface																	
	* Borehole dry																	

RECORD OF BOREHOLE No 113-9

1 of 1

METRIC

G.W.P. 5112-07-00	LOCATION Hwy 69, Sta. 19+780.0, o/s 40.0 m Lt.	ORIGINATED BY F.P.
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DIST	Parry Sound	HWY	69	BOREHOLE TYPE	Test Pit	COMPILED BY	G.D.
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DATUM Geodetic **DATE** February 09, 2013 **CHECKED BY** B.R.G.

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 (%) GR SA SI CL
ELEV DEPTH	DESCRIPTION	STRAT PLOT	NUMBER	TYPE	"N" VALUES			SHEAR STRENGTH kPa					W _p	W	W _L		
								○ UNCONFINED + FIELD VANE					WATER CONTENT (%)				
						● QUICK TRIAXIAL × LAB VANE											
194.0 0.0	Top of Ice Ice Water					* *											
193.1 0.9 192.8 1.2	Peat, coarse fibrous Dark brown End of borehole Refusal on probable bedrock						193										
<div>* 2013 02 09</div> <div> Water level observed during drilling</div> <div> Water level measured after drilling</div>																	

RECORD OF BOREHOLE No 113-10

1 of 1

METRIC

G.W.P.	5112-07-00	LOCATION	Hwy 69, Sta. 19+787.5 CL	ORIGINATED BY	F.P.
DIST	Parry Sound	HWY	69	BOREHOLE TYPE	Tripod + Casing
DATUM	Geodetic	DATE	February 08, 2013	COMPILED BY	G.D.
				CHECKED BY	B.R.G.

[illegible]

RECORD OF BOREHOLE No 113-11

1 of 1

METRIC

G.W.P. 5112-07-00 **LOCATION** Hwy 69, Sta. 19+787.5, o/s 40.5 m Rt. **ORIGINATED BY** F.P.
DIST Parry Sound **HWY** 69 **BOREHOLE TYPE** Manual Probing **COMPILED BY** G.D.
DATUM Geodetic **DATE** February 09, 2013 **CHECKED BY** B.R.G.

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	REMARKS & GRAIN SIZE DISTRIBUTION (%)																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																	
ELEV DEPTH	DESCRIPTION	STRAT PLOT	NUMBER	TYPE	"N" VALUES			SHEAR STRENGTH kPa									WATER CONTENT (%)				GR	SA	SI	CL																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																										
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194.6	Ground Surface					*																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																												

RECORD OF BOREHOLE No 113-12

1 of 1

METRIC

G.W.P.	5112-07-00	LOCATION	Hwy 69, Sta. 19+793, o/s 19.0 m Lt.	ORIGINATED BY	F.P.
DIST	Parry Sound	HWY	69	BOREHOLE TYPE	Tripod
DATUM	Geodetic	DATE	February 10, 2013	CHECKED BY	B.R.G.

[illegible]

RECORD OF BOREHOLE No 113-13

1 of 1

METRIC

G.W.P. 5112-07-00 **LOCATION** Hwy 69, Sta. 19+790, o/s 13.0 m Rt. **ORIGINATED BY** F.P.
DIST Parry Sound **HWY** 69 **BOREHOLE TYPE** Tripod + Casing **COMPILED BY** G.D.
DATUM Geodetic **DATE** February 09, 2013 **CHECKED BY** B.R.G.

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	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		
194.5	Top of Ice							20	40	60	80	100					GR SA SI CL			
0.0	Ice					▽	▲													
193.9	Water																			
0.6	Peat, coarse fibrous		1	SS	1		194													
	Dark brown		2	SS	20/0cm															
193.1	End of borehole																			
1.4	Refusal on probable bedrock																			
	Sample 2: Sampler bouncing																			
	* 2013 02 09																			
	▽ Water level observed during drilling																			
	▼ Water level measured after drilling																			

RECORD OF BOREHOLE No 113-14

1 of 1

METRIC

G.W.P. 5112-07-00	LOCATION Hwy 69, Sta. 19+810, o/s 4.5 m Rt.	ORIGINATED BY K.D.
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DIST	Parry Sound	HWY	69	BOREHOLE TYPE	Manual Probing	COMPILED BY	G.D.
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DATUM	Geodetic	DATE	September 28, 2012	CHECKED BY	B.R.G.
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[illegible]

RECORD OF BOREHOLE No 113-15

1 of 1

METRIC

G.W.P. 5112-07-00 **LOCATION** Hwy 69, Sta. 19+810, o/s 34.5 m Rt. **ORIGINATED BY** F.P.
DIST Parry Sound **HWY** 69 **BOREHOLE TYPE** Tripod + Casing **COMPILED BY** G.D.
DATUM Geodetic **DATE** February 08, 2013 **CHECKED BY** B.R.G.

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			SHEAR STRENGTH kPa									
195.6 0.0	Top of Ice/Snow				▼*		20	40	60	80	100					
195.3 0.3	Snow/Ice				▽*											
195.1 0.5	Topsoil		1	SS		195										
194.8 0.8	Clayey silt, trace sand organics															
	Very stiff Mottled Moist grey/brown															
	End of borehole															
	Refusal on probable bedrock															
	* 2013 02 08															
	▽ Water level observed during drilling															
	▼ Water level measured after drilling															

Swamp 114

RECORD OF BOREHOLE No 114-1

1 of 1

METRIC

G.W.P. 5112-07-00 **LOCATION** Hwy 69, Sta. 19+857, o/s 19.0 m Rt. **ORIGINATED BY** F.P.
DIST Wallbridge Twp **HWY** 69 **BOREHOLE TYPE** Tripod + Casing **COMPILED BY** G.D.
DATUM Geodetic **DATE** February 07, 2013 **CHECKED BY** B.R.G.

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												
196.3 0.0	Top of Snow/Ice							20	40	60	80	100								
196.1 0.2	Peat, coarse fibrous					▽* ▼*	196													
	Dark brown		1	SS	1															
195.4 0.9	Clayey silt, trace sand organics		2	SS	7		195							○						
	Stiff Mottled Moist grey/brown		3	SS	4									○						
				FV			194				+ 32									
194.0 2.3	Clay, trace sand		4	SS	2											○				
	Soft to firm Grey Wet to moist			FV							- 10									
	sandy silt seams		5	SS	3		193							○						
192.4 3.9	End of borehole		6	SS	20/8cm															
	Refusal on probable bedrock																			
	Sample 6: Sampler bouncing																			
	 * 2013 02 07																			
	▽ Water level observed during drilling																			
	▼ Water level measured after drilling																			

RECORD OF BOREHOLE No 114-2

1 of 1

METRIC

G.W.P. 5112-07-00 **LOCATION** Hwy 69, Sta. 19+862.5, o/s 4.5 m Rt. **ORIGINATED BY** F.P.
DIST Wallbridge Twp **HWY** 69 **BOREHOLE TYPE** Tripod + Casing **COMPILED BY** G.D.
DATUM Geodetic **DATE** February 07, 2013 **CHECKED BY** B.R.G.

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												
196.5	Ground Surface						20	40	60	80	100									
0.0	Topsoil						196													
196.0	End of borehole																			
0.5	Refusal on probable bedrock																			
	* Borehole dry																			

RECORD OF BOREHOLE No 114-3

1 of 1

METRIC

G.W.P. 5112-07-00	LOCATION Hwy 69, Sta. 19+862.0, o/s 35.0 m Rt.	ORIGINATED BY F.P.
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DIST	Wallbridge Twp	HWY	69	BOREHOLE TYPE	Tripod	COMPILED BY	G.D.
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DATUM Geodetic **DATE** February 06, 2013 **CHECKED BY** B.R.G.

[illegible]

RECORD OF BOREHOLE No 114-4

1 of 1

METRIC

G.W.P. <u>5112-07-00</u>	LOCATION <u>Hwy 69, Sta. 19+875, o/s 18.8 m Rt.</u>	ORIGINATED BY <u>F.P.</u>
DIST <u>Wallbridge Twp</u> HWY <u>69</u>	BOREHOLE TYPE <u>Tripod + Casing</u>	COMPILED BY <u>G.D.</u>
DATUM <u>Geodetic</u>	DATE <u>February 06, 2013</u>	CHECKED BY <u>B.R.G.</u>

[illegible]

RECORD OF BOREHOLE No 114-5

1 of 1

METRIC

G.W.P. 5112-07-00 **LOCATION** Hwy 69, Sta. 19+886 o/s 18.8 m Lt. **ORIGINATED BY** S.A.
DIST Wallbridge Twp **HWY** 69 **BOREHOLE TYPE** Manual Probing **COMPILED BY** G.D.
DATUM Geodetic **DATE** March 12, 2013 **CHECKED BY** B.R.G.

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	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		
193.6	Ground Surface					*											GR SA SI CL			
0.0	Bedrock at surface																			
	* Borehole dry																			

RECORD OF PENETRATION TEST No 114-6

1 of 1

METRIC

G.W.P. <u>5112-07-00</u>	LOCATION <u>Hwy 69, Sta. 19+887.5, o/s 43.0 m Lt.</u>	ORIGINATED BY <u>F.P.</u>
DIST <u>Wallbridge Twp</u> HWY <u>69</u>	BOREHOLE TYPE <u>Tripod + Dynamic Cone Penetration Test</u>	COMPILED BY <u>G.D.</u>
DATUM <u>Geodetic</u>	DATE <u>February 07, 2013</u>	CHECKED BY <u>B.R.G.</u>

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 (%)
								<div><div><div></div><div></div><div></div><div></div><div></div></div><div>20406080100</div></div> <div><div>○ UNCONFINED</div><div>● QUICK TRIAXIAL</div><div>+ FIELD VANE</div><div>× LAB VANE</div></div>										
193.5 0.0	Top of Ice						193											
192.7 0.8	Loose to compact																	
	End of dynamic cone penetration test																	
	Refusal on probable bedrock																	

RECORD OF BOREHOLE No 114-7

1 of 1

METRIC

G.W.P. 5112-07-00	LOCATION Hwy 69, Sta. 19+887.5 CL	ORIGINATED BY K.D.
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DIST	Wallbridge Twp	HWY	69	BOREHOLE TYPE	Manual Probing	COMPILED BY	G.D.
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DATUM	Geodetic	DATE	September 28, 2012	CHECKED BY	B.R.G.
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[illegible]

RECORD OF BOREHOLE No 114-8

1 of 1

METRIC

G.W.P. 5112-07-00	LOCATION Hwy 69, Sta. 19+887.5, o/s 34.5 m Rt.	ORIGINATED BY F.P.
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DIST	Wallbridge Twp	HWY	69	BOREHOLE TYPE	Tripod + Casing	COMPILED BY	G.D.
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DATUM Geodetic **DATE** February 06, 2013 **CHECKED BY** B.R.G.

[illegible]

RECORD OF BOREHOLE No 114-9

1 of 1

METRIC

G.W.P. 5112-07-00 **LOCATION** Hwy 69, Sta. 19+895, o/s 18.8 m Lt. **ORIGINATED BY** F.P.
DIST Wallbridge Twp **HWY** 69 **BOREHOLE TYPE** Manual Probing **COMPILED BY** G.D.
DATUM Geodetic **DATE** February 07, 2013 **CHECKED BY** B.R.G.

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	REMARKS & GRAIN SIZE DISTRIBUTION (%)
ELEV DEPTH	DESCRIPTION	STRAT PLOT	NUMBER	TYPE	"N" VALUES	SHEAR STRENGTH kPa					WATER CONTENT (%)							
						○ UNCONFINED			● QUICK TRIAXIAL	+		×	FIELD VANE					
195.3	Ground Surface					*											GR SA SI CL	
0.0	Bedrock at surface																	
	* Borehole dry																	

RECORD OF BOREHOLE No 114-10

1 of 1

METRIC

G.W.P.	5112-07-00	LOCATION	Hwy 69, Sta. 19+900, o/s 18.8 m Rt.	ORIGINATED BY	F.P.
DIST	Wallbridge Twp	HWY	69	BOREHOLE TYPE	Tripod + Casing
DATUM	Geodetic	DATE	February 06, 2013	CHECKED BY	B.R.G.

[illegible]

RECORD OF BOREHOLE No 114-11

1 of 1

METRIC

G.W.P. 5112-07-00 **LOCATION** Hwy 69, Sta. 19+912.5, o/s 6.0 m Rt. **ORIGINATED BY** K.D.
DIST Wallbridge Twp **HWY** 69 **BOREHOLE TYPE** Manual Probing **COMPILED BY** G.D.
DATUM Geodetic **DATE** September 28, 2012 **CHECKED BY** B.R.G.

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	REMARKS & GRAIN SIZE DISTRIBUTION (%)
ELEV DEPTH	DESCRIPTION	STRAT PLOT	NUMBER	TYPE	"N" VALUES			SHEAR STRENGTH kPa									
198.2	Ground Surface					*		20	40	60	80	100					GR SA SI CL
0.0	Bedrock at surface																
	* Borehole dry																

RECORD OF BOREHOLE No 114-12

1 of 1

METRIC

G.W.P. 5112-07-00 **LOCATION** Hwy 69, Sta. 19+912.5, o/s 33.0 m Rt. **ORIGINATED BY** F.P.
DIST Wallbridge Twp **HWY** 69 **BOREHOLE TYPE** Tripod + Casing **COMPILED BY** G.D.
DATUM Geodetic **DATE** February 06, 2013 **CHECKED BY** B.R.G.

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									
195.1	Top of Ice							20	40	60	80	100					
0.0	Ice					▽*	195										
	Water					▼											
193.9							194										
1.2	End of borehole																
	Refusal on probable bedrock																
	* 2013 02 06																
	▽ Water level observed during drilling																
	▼ Water level measured after drilling																

RECORD OF BOREHOLE No 114-13

1 of 1

METRIC

G.W.P. 5112-07-00	LOCATION Hwy 69, Sta. 19+925, o/s 18.8 m Rt.	ORIGINATED BY K.D.
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DIST	Wallbridge Twp	HWY	69	BOREHOLE TYPE	Manual Probing	COMPILED BY	G.D.
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DATUM Geodetic	DATE September 28, 2012	CHECKED BY B.R.G.
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[illegible]

RECORD OF PENETRATION TEST No 114-14

1 of 1

METRIC

G.W.P. 5112-07-00 **LOCATION** Hwy 69, Sta. 19+937.5, o/s 4.0 m Rt. **ORIGINATED BY** F.P.
DIST Wallbridge Twp **HWY** 69 **BOREHOLE TYPE** Tripod + Dynamic Cone Penetration Test **COMPILED BY** G.D.
DATUM Geodetic **DATE** February 07, 2013 **CHECKED BY** B.R.G.


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	REMARKS & GRAIN SIZE DISTRIBUTION (%)
ELEV. DEPTH	DESCRIPTION	STRAT PLOT	NUMBER	TYPE	"N" VALUES			SHEAR STRENGTH kPa									
195.6 0.0	Top of Ice							20	40	60	80	100					
	Ice																
	Probable peat																
	Probable silty clay																
194.8 0.8	Firm						195										
	End of dynamic cone penetration test																
	Refusal on probable bedrock																

RECORD OF BOREHOLE No 114-15

1 of 1

METRIC

G.W.P. 5112-07-00 **LOCATION** Hwy 69, Sta. 19+937.5, o/s 35.0 m Rt. **ORIGINATED BY** F.P.
DIST Wallbridge Twp **HWY** 69 **BOREHOLE TYPE** Tripod + Casing **COMPILED BY** G.D.
DATUM Geodetic **DATE** February 07, 2013 **CHECKED BY** B.R.G.

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									
								○ UNCONFINED	● QUICK TRIAXIAL	+	×	FIELD VANE					
197.6 0.0	Top of Ice							20	40	60	80	100					
197.4 0.2	Ice																
197.1 0.5	Topsoil																
	End of borehole																
	Refusal on probable bedrock																
	* Borehole dry																

RECORD OF BOREHOLE No 114-16

1 of 1

METRIC

G.W.P. 5112-07-00 **LOCATION** Hwy 69, Sta. 19+950, o/s 18.8 m Rt. **ORIGINATED BY** F.P.
DIST Wallbridge Twp **HWY** 69 **BOREHOLE TYPE** Tripod + Casing **COMPILED BY** G.D.
DATUM Geodetic **DATE** February 07, 2013 **CHECKED BY** B.R.G.

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 ○ UNCONFINED + FIELD VANE ● QUICK TRIAXIAL × LAB VANE									
196.5	Top of Ice							20	40	60	80	100					
0.0	Ice					▽*	▼*										
	Water																
195.3																	
1.2	Peat, fine fibrous		1	SS	1												
195.0	Dark brown																
1.5	Silty clay, trace sand organics																
194.2	Soft Grey Moist to wet		2	SS	20/3cm												
2.3	End of borehole																
	Refusal on probable bedrock																
	Sample 2: Sampler bouncing																
	 * 2013 02 07																
	▽ Water level observed during drilling																
	▼ Water level measured after drilling																

RECORD OF BOREHOLE No 114-17

1 of 1

METRIC

G.W.P. 5112-07-00 **LOCATION** Hwy 69, Sta. 19+955, o/s 4.5 m Rt. **ORIGINATED BY** K.D.
DIST Wallbridge Twp **HWY** 69 **BOREHOLE TYPE** Manual Probing **COMPILED BY** G.D.
DATUM Geodetic **DATE** September 28, 2012 **CHECKED BY** B.R.G.

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	REMARKS & GRAIN SIZE DISTRIBUTION (%)			
ELEV DEPTH	DESCRIPTION	STRAT PLOT	NUMBER	TYPE	"N" VALUES			SHEAR STRENGTH kPa									WATER CONTENT (%)			
198.8	Ground Surface					*		20	40	60	80	100								
0.0	Bedrock at surface																			
	* Borehole dry																			

RECORD OF PENETRATION TEST No 114-18

1 of 1

METRIC

G.W.P. <u>5112-07-00</u>	LOCATION <u>Hwy 69, Sta. 19+955, o/s 34.5 m Rt.</u>	ORIGINATED BY <u>F.P.</u>
DIST <u>Wallbridge Twp</u> HWY <u>69</u>	BOREHOLE TYPE <u>Tripod + Dynamic Cone Penetration Test</u>	COMPILED BY <u>G.D.</u>
DATUM <u>Geodetic</u>	DATE <u>February 07, 2013</u>	CHECKED BY <u>B.R.G.</u>

[illegible]

Swamp 115

RECORD OF BOREHOLE No 115-1

1 of 1

METRIC

G.W.P. 5112-07-00 **LOCATION** Hwy 69, Sta. 20+175, 18.8 m Lt. **ORIGINATED BY** K.D.
DIST Wallbridge Twp **HWY** 69 **BOREHOLE TYPE** Manual Probing **COMPILED BY** G.D.
DATUM Geodetic **DATE** September 28, 2012 **CHECKED BY** B.R.G.

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	REMARKS & GRAIN SIZE DISTRIBUTION (%)
ELEV DEPTH	DESCRIPTION	STRAT PLOT	NUMBER	TYPE	"N" VALUES	SHEAR STRENGTH kPa					WATER CONTENT (%)							
						○ UNCONFINED			● QUICK TRIAXIAL	+		×	FIELD VANE					
200.0	Ground Surface					*											GR SA SI CL	
0.0	Bedrock at surface																	
	* Borehole dry																	

RECORD OF PENETRATION TEST No 115-2

1 of 1

METRIC

G.W.P. 5112-07-00 **LOCATION** Hwy 69, Sta. 20+187.5, o/s 41.0 m Lt. **ORIGINATED BY** F.P.
DIST Wallbridge Twp **HWY** 69 **BOREHOLE TYPE** Dynamic Cone Penetration Test **COMPILED BY** G.D.
DATUM Geodetic **DATE** January 25, 2013 **CHECKED BY** B.R.G.

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	REMARKS & GRAIN SIZE DISTRIBUTION (%)
ELEV. DEPTH	DESCRIPTION	STRAT PLOT	NUMBER	TYPE	"N" VALUES			SHEAR STRENGTH kPa									
195.0 0.0	Top of Ice							20	40	60	80	100					
	Ice																
	Water																
	Probable peat																
	Probable silty clay																
193.1 1.9	Firm to stiff																
	End of dynamic cone penetration test																
	Refusal on probable bedrock																

RECORD OF BOREHOLE No 115-3

1 of 1

METRIC

G.W.P. 5112-07-00 **LOCATION** Hwy 69, Sta. 20+187.5 CL **ORIGINATED BY** F.P.
DIST Wallbridge Twp **HWY** 69 **BOREHOLE TYPE** Manual Probing **COMPILED BY** G.D.
DATUM Geodetic **DATE** February 05, 2013 **CHECKED BY** B.R.G.

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			20	40	60	80	100					
197.5	Ground Surface																
0.0	Topsoil	~ ~ ~															Frozen
197.2	End of borehole																
0.3	Refusal on probable bedrock																
	* Borehole dry																

RECORD OF BOREHOLE No 115-4

1 of 1

METRIC

G.W.P. 5112-07-00 **LOCATION** Hwy 69, Sta. 20+187.5, 44.0 m Rt. **ORIGINATED BY** F.P.
DIST Wallbridge Twp **HWY** 69 **BOREHOLE TYPE** Manual Probing **COMPILED BY** G.D.
DATUM Geodetic **DATE** February 05, 2013 **CHECKED BY** B.R.G.

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	REMARKS & GRAIN SIZE DISTRIBUTION (%)
ELEV DEPTH	DESCRIPTION	STRAT PLOT	NUMBER	TYPE	"N" VALUES			SHEAR STRENGTH kPa									
198.9	Ground Surface					*		20	40	60	80	100					GR SA SI CL
0.0	Bedrock at surface																
	* Borehole dry																

RECORD OF BOREHOLE No 115-5

1 of 1

METRIC

G.W.P. 5112-07-00 **LOCATION** Hwy 69, Sta. 20+200, o/s 19.0 m Lt.

ORIGINATED BY F.P.

DIST Wallbridge Twp HWY 69 BOREHOLE TYPE Tripod and 'N' Casing

COMPILED BY G.D.

DATUM Geodetic **DATE** January 28, 2013

CHECKED BY B.R.G.

[illegible]

RECORD OF BOREHOLE No 115-6

1 of 1

METRIC

G.W.P. <u>5112-07-00</u>	LOCATION <u>Hwy 69, Sta. 20+200, o/s 18.8 m Rt.</u>	ORIGINATED BY <u>F.P.</u>
DIST <u>Wallbridge Twp</u> HWY <u>69</u>	BOREHOLE TYPE <u>Tripod and 'N' Casing</u>	COMPILED BY <u>G.D.</u>
DATUM <u>Geodetic</u>	DATE <u>January 29, 2013</u>	CHECKED BY <u>B.R.G.</u>

SOIL PROFILE			SAMPLES		
ELEV DEPTH	DESCRIPTION	STRAT PLOT	NUMBER	TYPE	"N" VALUES
195.9 0.0	Top of Ice Ice _____ Water _____				
195.2 0.7	Peat, amorphous Dark brown		1	SS	9
194.9 1.0	Organic clayey silt Stiff Dark grey Moist				
194.7 1.2	Clayey silt, trace sand organics, sandy silt seams to 1.6m		2	SS	15
193.6 2.3	Stiff to Mottled Moist very stiff brown/ grey to wet		3	SS	20/0cm
<div>End of borehole</div> <div>Refusal on probable bedrock</div> <div>Sample 3: Sampler bouncing</div> <div>* 2013 01 29</div> <div> Water level observed during drilling</div> <div> Water level measured after drilling</div> <div> Penetrometer test</div>					

RECORD OF BOREHOLE No 115-7

1 of 1

METRIC

G.W.P. 5112-07-00

LOCATION Hwy 69, Sta. 20+212.5, 42.5 m Lt.

ORIGINATED BY F.P.

DIST Wallbridge Twp HWY 69

BOREHOLE TYPE Tripod and 'N' Casing

COMPILED BY G.D.

DATUM Geodetic

DATE February 05, 2013

CHECKED BY B.R.G.

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 (%) GR SA SI CL
ELEV DEPTH	DESCRIPTION	STRAT PLOT	NUMBER	TYPE	"N" VALUES			SHEAR STRENGTH kPa		w _p	w	w _L		
								○ UNCONFINED + FIELD VANE	WATER CONTENT (%)					
								● QUICK TRIAXIAL × LAB VANE						
194.5	Top of Ice					▽* ▼*	194						0 1 37 62	
0.0	Ice													
	Water													
193.6	Peat, coarse fibrous		1	SS	2						○			
0.9	Dark brown													
193.3	Silty clay, trace sand organics to 2.2m		2	SS	1						○			
1.2	Firm Mottled Moist grey/brown													
	sand seams													
	Stiff		3	SS	11						○			
			4	SS	6						○			
190.8	Clay, trace sand			FV			191		+					
3.7	Firm Grey Moist		5	SS	2					○				
189.9	End of borehole			FV			190		+					
4.6	Refusal on probable bedrock													
* 2013 02 05														
▽ Water level observed during drilling														
▼ Water level measured after drilling														
■ Penetrometer test														

RECORD OF PENETRATION TEST No 115-8

1 of 1

METRIC

G.W.P. 5112-07-00 **LOCATION** Hwy 69, Sta. 20+212.5 CL **ORIGINATED BY** F.P.
DIST Wallbridge Twp **HWY** 69 **BOREHOLE TYPE** Dynamic Cone Penetration Test **COMPILED BY** G.D.
DATUM Geodetic **DATE** January 24, 2013 **CHECKED BY** B.R.G.

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									
195.0 0.0	Top of Ice							20	40	60	80	100					
	Ice																
	Water																
	Probable peat																
	Probable silty clay																
	Firm to very stiff																
192.1 2.9	End of dynamic cone penetration test																
	Refusal on probable bedrock																

RECORD OF BOREHOLE No 115-9

1 of 1

METRIC

G.W.P. 5112-07-00 **LOCATION** Hwy 69, Sta. 20+212.5, 51.0 m Rt. **ORIGINATED BY** F.P.
DIST Wallbridge Twp **HWY** 69 **BOREHOLE TYPE** Auger Probe **COMPILED BY** G.D.
DATUM Geodetic **DATE** February 05, 2013 **CHECKED BY** B.R.G.

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	REMARKS & GRAIN SIZE DISTRIBUTION (%)
ELEV DEPTH	DESCRIPTION	STRAT PLOT	NUMBER	TYPE			SHEAR STRENGTH kPa									
197.9	Ground Surface						20	40	60	80	100					
0.0	Topsoil															
197.7 0.2	Sand, some silt organics to 0.6m		1	AS	▽* ▼*											
197.0 0.9	Brown Moist to wet					197										
	End of borehole Refusal on probable bedrock															
	* 2013 02 05															
	▽ Water level observed during drilling															
	▼ Water level measured after drilling															

RECORD OF BOREHOLE No 115-10

1 of 1

METRIC

G.W.P. 5112-07-00 **LOCATION** Hwy 69, Sta. 20+225, 19.0 Lt. **ORIGINATED BY** F.P.
DIST Wallbridge Twp **HWY** 69 **BOREHOLE TYPE** Tripod and 'N' Casing **COMPILED BY** G.D.
DATUM Geodetic **DATE** January 28, 2013 **CHECKED BY** B.R.G.

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	REMARKS & GRAIN SIZE DISTRIBUTION (%)			
ELEV DEPTH	DESCRIPTION	STRAT PLOT	NUMBER	TYPE	"N" VALUES			SHEAR STRENGTH kPa										WATER CONTENT (%)		
								<div><div>○ UNCONFINED</div><div>● QUICK TRIAXIAL</div><div>+ FIELD VANE</div><div>× LAB VANE</div></div>												
195.3	Top of Ice							20	40	60	80	100								
0.0	Ice					▽*	▼*	195												
194.7	Water																			
0.6	Organic silty sand		1	SS	WH**															
194.4	Very loose Dark grey Wet																			
0.9	Silty clay, trace sand organics							194												
193.6	Firm Mottled Moist brown/grey		2	SS	16/28cm															
1.7	Sand, trace gravel																			
193.3	Loose to Brown Wet compact																			
2.0	End of borehole																			
	Refusal on probable bedrock																			
	Sample 2: Sampler bouncing																			
	* 2013 01 28																			
	▽* Water level observed during drilling																			
	▼* Water level measured after drilling																			
	WH** denotes penetration due to weight of rods and hammer																			

RECORD OF BOREHOLE No 115-11

1 of 1

METRIC

G.W.P. 5112-07-00 **LOCATION** Hwy 69, Sta. 20+225, o/s 18.8 m Rt.

ORIGINATED BY F.P.

DIST Wallbridge Twp HWY 69 BOREHOLE TYPE Tripod and 'N' Casing

COMPILED BY G.D.

DATUM Geodetic **DATE** January 24, 2013

CHECKED BY B.R.G.

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										
194.8 0.0	Top of Ice					▽* ▼*		20	40	60	80	100					GR SA SI CL	
194.1 0.7	Ice																	
193.7 1.1	Peat, amorphous Dark brown		1	SS	6													
193.4 1.4	Organic silt Loose Dark grey Wet																	
	Clay, trace sand organics to 2.1m silt seams		2	SS	6													
	Firm to Mottled Moist stiff brown/grey																	
			3	SS	7													
			4	TW	PH													
				FV														
			5	SS	25/5cm													
190.9 3.9	End of borehole						191											
	Refusal on probable bedrock																	
	Sample 5: Sampler bouncing																	
	* 2013 01 24																	
	▽ Water level observed during drilling																	
	▼ Water level measured after drilling																	
	■ Penetrometer test																	

RECORD OF PENETRATION TEST No 115-12

1 of 1

METRIC

G.W.P. 5112-07-00 **LOCATION** Hwy 69, Sta. 20+238.5, o/s 43.0 m Lt. **ORIGINATED BY** F.P.
DIST Wallbridge Twp **HWY** 69 **BOREHOLE TYPE** Dynamic Cone Penetration Test **COMPILED BY** G.D.
DATUM Geodetic **DATE** January 25, 2013 **CHECKED BY** B.R.G.

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	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												
196.1 0.0	Top of Ice						196	20	40	60	80	100								
	Ice Probable peat Probable silty clay																			
195.0 1.1	Firm						195													
	End of dynamic cone penetration test																			
	Refusal on probable bedrock																			

RECORD OF BOREHOLE No 115-13

1 of 1

METRIC

G.W.P. <u>5112-07-00</u>	LOCATION <u>Hwy 69, Sta. 20+237.5 CL</u>	ORIGINATED BY <u>F.P.</u>
DIST <u>Wallbridge Twp</u> HWY <u>69</u>	BOREHOLE TYPE <u>Tripod and 'N' Casing</u>	COMPILED BY <u>G.D.</u>
DATUM <u>Geodetic</u>	DATE <u>January 23, 2013</u>	CHECKED BY <u>B.R.G.</u>

[illegible]

RECORD OF PENETRATION TEST No 115-14

1 of 1

METRIC

G.W.P. 5112-07-00 **LOCATION** Hwy 69, Sta. 20+237.5, o/s 53.0 m Rt. **ORIGINATED BY** F.P.
DIST Wallbridge Twp **HWY** 69 **BOREHOLE TYPE** Dynamic Cone Penetration Test **COMPILED BY** G.D.
DATUM Geodetic **DATE** January 24, 2013 **CHECKED BY** B.R.G.

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	REMARKS & GRAIN SIZE DISTRIBUTION (%)			
ELEV DEPTH	DESCRIPTION	STRAT PLOT	NUMBER	TYPE	"N" VALUES			SHEAR STRENGTH kPa							WATER CONTENT (%)			GR
195.8 0.0	Top of Ice							20	40	60	80	100						
	Ice																	
	Water																	
	Probable peat																	
	Probable silty clay																	
	Firm to stiff																	
193.8 2.0	End of dynamic cone penetration test																	
	Refusal on probable bedrock																	
									</									

RECORD OF BOREHOLE No 115-15

1 of 1

METRIC

G.W.P. 5112-07-00 **LOCATION** Hwy 69, Sta. 20+250, o/s 18.8 m Lt. **ORIGINATED BY** F.P.
DIST Wallbridge Twp **HWY** 69 **BOREHOLE TYPE** Continuous Flight Hollow Stem Augers **COMPILED BY** G.D.
DATUM Geodetic **DATE** January 29, 2013 **CHECKED BY** B.R.G.

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									
								○ UNCONFINED + FIELD VANE ● QUICK TRIAXIAL × LAB VANE									
196.4	Ground Surface						20	40	60	80	100						
0.0	Snow																
196.2	Topsoil		1	SS	51/25cm												
0.3	Clayey silt trace sand, trace gravel rootlets																
195.8	Firm Brown Wet																
0.6	End of borehole																
	Refusal on probable bedrock																
	Sample 1: Sampler bouncing																
	* Borehole dry																

RECORD OF BOREHOLE No 115-16

1 of 1

METRIC

G.W.P. 5112-07-00 **LOCATION** Hwy 69, Sta. 20+250, o/s 18.8 m Rt. **ORIGINATED BY** F.P.
DIST Wallbridge Twp **HWY** 69 **BOREHOLE TYPE** Tripod and 'N' Casing **COMPILED BY** G.D.
DATUM Geodetic **DATE** January 24 and 25, 2013 **CHECKED BY** B.R.G.

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							
194.7	Top of Ice						20	40	60	80	100							
0.0	Ice					▽*												
	Water					▼*												
193.7																		
1.0	Peat, amorphous		1	SS	1													
193.3	Dark brown																	
1.4	Organic clayey silt		2	SS	2													
	Firm Mottled Moist																	
192.5	brown/grey																	
2.2	Clayey silt, trace sand		3	SS	6													
	Very stiff Mottled Moist																	
	to stiff brown/grey			FV														
			4	SS	7													
				FV														
190.4																		
4.3	Clay, trace sand		5	SS	2													
	Firm to soft Grey Moist																	
	to wet			FV														
			6	SS	1													
				FV														
			7	SS	1													
				FV														
186.2																		
8.5	Sand, trace gravel		8	SS	50/8cm													
185.9																		
8.8	Compact Grey Wet																	
	End of borehole																	
	Refusal on probable bedrock																	
	Sample 8: Sampler bouncing																	
													</					

RECORD OF PENETRATION TEST No 115-17

1 of 1

METRIC

G.W.P. <u>5112-07-00</u>	LOCATION <u>Hwy 69, Sta. 20+262.5, o/s 2.0 m Lt.</u>	ORIGINATED BY <u>A.L.</u>
DIST <u>Wallbridge Twp</u> HWY <u>69</u>	BOREHOLE TYPE <u>Dynamic Cone Penetration Test</u>	COMPILED BY <u>G.D.</u>
DATUM <u>Geodetic</u>	DATE <u>January 29, 2013</u>	CHECKED BY <u>B.R.G.</u>

[illegible]

RECORD OF BOREHOLE No 115-18

1 of 1

METRIC

G.W.P. <u>5112-07-00</u>	LOCATION <u>Hwy 69, Sta. 20+262.5, o/s 55.0 m Rt.</u>	ORIGINATED BY <u>F.P.</u>
DIST <u>Wallbridge Twp</u> HWY <u>69</u>	BOREHOLE TYPE <u>Tripod and 'N' Casing</u>	COMPILED BY <u>G.D.</u>
DATUM <u>Geodetic</u>	DATE <u>January 29, 2013</u>	CHECKED BY <u>B.R.G.</u>

SOIL PROFILE				SAMPLES		GROUND WATER CONDITIONS	ELEVATION SCALE	DYNAMIC CONE PENETRATION RESISTANCE PLOT	PLASTIC LIMIT w _p	NATURAL MOISTURE CONTENT	LQUID LIMIT	UNIT WEIGHT γ kN/m³	REMARKS & GRAIN SIZE DISTRIBUTION (%)
ELEV DEPTH	DESCRIPTION	STRAT PLOT	NUMBER	TYPE	"N" VALUES			SHEAR STRENGTH kPa		w	w _L		
								○ UNCONFINED + FIELD VANE ● QUICK TRIAXIAL × LAB VANE					
194.6 0.0	Top of Ice Ice _____ Water _____	[Strat Plot]				* * *							
193.7 0.9	Peat, amorphous	[Strat Plot]	1	SS	1								
193.4 1.2	Dark brown	[Strat Plot]											
193.0 1.6	Organic silt trace sand, trace clay	[Strat Plot]	2	SS	9								
192.6 2.0	Very loose Dark grey Wet	[Strat Plot]											
	Organic silty clay	[Strat Plot]											
	Firm to stiff Mottled brown/grey Moist	[Strat Plot]	3	SS	8								
	Silty clay, trace sand	[Strat Plot]		FV									
	Stiff Grey Moist to firm to wet	[Strat Plot]	4	SS	2								
		[Strat Plot]		FV									
190.6 4.0	End of borehole Refusal on probable bedrock	[Strat Plot]											
<p>* 2013 01 29</p> <p>▽ Water level observed during drilling</p> <p>▼ Water level measured after drilling</p> <p>■ Penetrometer test</p>													

RECORD OF BOREHOLE No 115-19

1 of 1

METRIC

G.W.P. 5112-07-00	LOCATION Hwy 69, Sta. 20+270.0, o/s 11.0 m Rt.	ORIGINATED BY A.L.
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DIST	Wallbridge Twp	HWY	69	BOREHOLE TYPE	Continuous Flight Hollow Stem Augers	COMPILED BY	G.D.
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DATUM	Geodetic	DATE	January 29, 2013	CHECKED BY	B.R.G.
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[illegible]

Swamp 116

RECORD OF BOREHOLE No 116-1

1 of 1

METRIC

G.W.P. 5112-07-00	LOCATION Hwy 69, Sta. 20+760 CL	ORIGINATED BY K.D.
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DIST	Wallbridge Twp	HWY	69	BOREHOLE TYPE	Manual Probing	COMPILED BY	G.D.
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DATUM Geodetic	DATE August 17, 2012	CHECKED BY B.R.G.
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[illegible]

RECORD OF BOREHOLE No 116-2

1 of 1

METRIC

G.W.P. 5112-07-00	LOCATION Hwy 69, Sta. 20+762, o/s 27.0 m Rt.	ORIGINATED BY A.L.
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DIST	Wallbridge Twp	HWY	69	BOREHOLE TYPE	Continuous Flight Hollow Stem Augers	COMPILED BY	G.D.
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DATUM Geodetic **DATE** February 04, 2013 **CHECKED BY** B.R.G.









[illegible]

RECORD OF BOREHOLE No 116-3

1 of 1

METRIC

G.W.P. 5112-07-00 **LOCATION** Hwy 69, Sta. 20+775, o/s 18.8 m Rt. **ORIGINATED BY** A.L.
DIST Wallbridge Twp **HWY** 69 **BOREHOLE TYPE** Continuous Flight Hollow Stem Augers **COMPILED BY** G.D.
DATUM Geodetic **DATE** February 04, 2013 **CHECKED BY** B.R.G.

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		
194.3 0.0	Ground Surface																			
194.2 0.1	Topsoil																			
194.0 0.3	Organic sand trace clay, trace gravel		1	SS	5	 [*]  [*]	194													
	Loose Dark Moist brown																			
	Silty clay, some sand trace to some gravel		2	SS	14		193													
	Firm to Greyish Moist very stiff brown		3	SS	54/23cm															
192.4 1.9	End of borehole																			
	Refusal on probable bedrock																			
	<div>* 2013 02 04</div> <div> Water level observed during drilling</div> <div> Water level measured after drilling</div> <div> Penetrometer test</div>																			

RECORD OF BOREHOLE No 116-4

1 of 1

METRIC

G.W.P. 5112-07-00 **LOCATION** Hwy 69, Sta. 20+787.5, o/s 4.9 m Rt. **ORIGINATED BY** A.L.
DIST Wallbridge Twp **HWY** 69 **BOREHOLE TYPE** Continuous Flight Hollow Stem Augers **COMPILED BY** G.D.
DATUM Geodetic **DATE** February 04, 2013 **CHECKED BY** B.R.G.

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												
193.9 0.0	Ground Surface						20	40	60	80	100									
193.8 0.1	Topsoil						20	40	60	80	100									
193.7 0.2	Organic sand, trace silt		1	SS	4															
	Very loose Dark Moist brown																			
	Clay, trace sand		2	SS	8															
192.3 1.6	Firm to Greyish Moist very stiff brown		3	SS	50/10cm															
	End of borehole																			
	Refusal on probable bedrock																			

* 2013 02 04

▼ Water level measured after drilling

■ Penetrometer test

RECORD OF BOREHOLE No 116-5

1 of 1

METRIC

G.W.P. 5112-07-00 **LOCATION** Hwy 69, Sta. 20+787.5, o/s 34.1 m Rt. **ORIGINATED BY** A.L.
DIST Wallbridge Twp **HWY** 69 **BOREHOLE TYPE** Manual Probing **COMPILED BY** G.D.
DATUM Geodetic **DATE** February 04, 2013 **CHECKED BY** B.R.G.

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	REMARKS & GRAIN SIZE DISTRIBUTION (%)
ELEV DEPTH	DESCRIPTION	STRAT PLOT	NUMBER	TYPE	"N" VALUES	SHEAR STRENGTH kPa					WATER CONTENT (%)							
						○ UNCONFINED			● QUICK TRIAXIAL	+		×	FIELD VANE					
193.9	Ground Surface					*											GR SA SI CL	
0.0	Bedrock at surface																	
	* Borehole dry																	

RECORD OF BOREHOLE No 116-6

1 of 1

METRIC

G.W.P. 5112-07-00 **LOCATION** Hwy 69, Sta. 20+800, o/s 18.8 m Rt. **ORIGINATED BY** A.L.
DIST Wallbridge Twp **HWY** 69 **BOREHOLE TYPE** Manual Probing **COMPILED BY** G.D.
DATUM Geodetic **DATE** February 04, 2013 **CHECKED BY** B.R.G.






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	REMARKS & GRAIN SIZE DISTRIBUTION (%)	
ELEV DEPTH	DESCRIPTION	STRAT PLOT	NUMBER	TYPE	"N" VALUES			SHEAR STRENGTH kPa										WATER CONTENT (%)
								○ UNCONFINED	● QUICK TRIAXIAL	+	×	FIELD VANE						
193.9	Ground Surface					*		20	40	60	80	100					GR SA SI CL	
0.0	Bedrock at surface																	
	* Borehole dry																	

RECORD OF BOREHOLE No 116-7

1 of 1

METRIC

G.W.P. 5112-07-00 **LOCATION** Hwy 69, Sta. 20+812.5, o/s 3.5 m Rt. **ORIGINATED BY** A.L.
DIST Wallbridge Twp **HWY** 69 **BOREHOLE TYPE** Power Auger **COMPILED BY** G.D.
DATUM Geodetic **DATE** February 08, 2013 **CHECKED BY** B.R.G.

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	REMARKS & GRAIN SIZE DISTRIBUTION (%)			
ELEV DEPTH	DESCRIPTION	STRAT PLOT	NUMBER	TYPE	"N" VALUES			SHEAR STRENGTH kPa										WATER CONTENT (%)		
								20 40 60 80 100										w _p w w _L		
								○ UNCONFINED + FIELD VANE ● QUICK TRIAXIAL × LAB VANE												
193.9 0.0	Ground Surface Peat, amorphous Dark brown					 193														
193.2 0.7	Clayey silt, trace sand		1	AS	-															
192.6 1.3	Grey/ Moist brown																			
	End of borehole Refusal on probable bedrock																			
	* 2013 02 08  Water level measured after drilling																			

RECORD OF BOREHOLE No 116-8

1 of 1

METRIC

G.W.P. 5112-07-00 **LOCATION** Hwy 69, Sta. 20+812.5, o/s 33.0 m Rt. **ORIGINATED BY** K.D.
DIST Wallbridge Twp **HWY** 69 **BOREHOLE TYPE** Manual Probing **COMPILED BY** G.D.
DATUM Geodetic **DATE** August 17, 2012 **CHECKED BY** B.R.G.

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	REMARKS & GRAIN SIZE DISTRIBUTION (%)			
ELEV DEPTH	DESCRIPTION	STRAT PLOT	NUMBER	TYPE	"N" VALUES			SHEAR STRENGTH kPa									WATER CONTENT (%)			
196.9	Ground Surface					*		20	40	60	80	100								
0.0	Bedrock at surface																			
	* Borehole dry																			

RECORD OF BOREHOLE No 116-9

1 of 1

METRIC

G.W.P. 5112-07-00 **LOCATION** Hwy 69, Sta. 20+825, o/s 18.8 m Rt. **ORIGINATED BY** K.D.
DIST Wallbridge Twp **HWY** 69 **BOREHOLE TYPE** Manual Probing **COMPILED BY** G.D.
DATUM Geodetic **DATE** August 17, 2012 **CHECKED BY** B.R.G.

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	REMARKS & GRAIN SIZE DISTRIBUTION (%)																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																				
ELEV DEPTH	DESCRIPTION	STRAT PLOT	NUMBER	TYPE	"N" VALUES			SHEAR STRENGTH kPa									WATER CONTENT (%)				GR	SA	SI	CL																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																													
								○ UNCONFINED	● QUICK TRIAXIAL	+	×	FIELD VANE					LAB VANE																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																				
196.5	Ground Surface					*																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																															

RECORD OF BOREHOLE No 116-10

1 of 1

METRIC

G.W.P. 5112-07-00

LOCATION Hwy 69, Sta. 20+837.5 CL

ORIGINATED BY A.L.

DIST Wallbridge Twp HWY 69

BOREHOLE TYPEContinuous Flight Hollow Stem Augers

COMPILED BY G.D.

DATUM Geodetic

DATE February 05, 2013

CHECKED BY B.R.G.

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												
193.2 0.0	Top of Ice					▽*	▼*	193												
192.6 0.6	Ice Water																			
192.4 0.8	Peat, amorphous Dark brown		1	SS	6															
192.0 1.2	Organic sand some silt, trace clay							192				150								
	Loose Dark Wet brown brown		2	SS	4							125								
	Clayey silt, trace sand																			
	Very stiff Greyish Moist to firm brown/ to wet grey			FV				191			5									
190.5 2.7	End of borehole Refusal on probable bedrock		3	SS	2												0 7 71 22			
<div>* 2013 02 05</div> <div>▽ Water level observed during drilling</div> <div>▼ Water level measured after drilling</div> <div>■ Penetrometer test</div>																				

RECORD OF BOREHOLE No 116-11

1 of 1

METRIC

G.W.P. 5112-07-00	LOCATION Hwy 69, Sta. 20+837.5, o/s 40.5 m Rt.	ORIGINATED BY A.L.
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DIST	Wallbridge Twp	HWY	69	BOREHOLE TYPE	Manual Probing	COMPILED BY	G.D.
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DATUM	Geodetic	DATE	February 05, 2013	CHECKED BY	B.R.G.
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[illegible]

RECORD OF BOREHOLE No 116-12

1 of 1

METRIC

G.W.P.	5112-07-00	LOCATION	Hwy 69, Sta. 20+850, o/s 18.8 m Rt.	ORIGINATED BY	A.L.
DIST	Wallbridge Twp	HWY	69	BOREHOLE TYPE	'N' Casing + Wash boring
DATUM	Geodetic	DATE	February 24, 2013	CHECKED BY	B.R.G.

[illegible]

RECORD OF BOREHOLE No 116-13

1 of 1

METRIC

G.W.P. 5112-07-00 **LOCATION** Hwy 69, Sta. 20+862.5, o/s 38.5 m Rt. **ORIGINATED BY** A.L.
DIST Wallbridge Twp **HWY** 69 **BOREHOLE TYPE** Manual Probing **COMPILED BY** G.D.
DATUM Geodetic **DATE** February 05, 2013 **CHECKED BY** B.R.G.

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	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											
195.0	Ground Surface					*			20	40	60	80	100		20	40	60	kn/m³	GR SA SI CL				
0.0	Topsoil		1	AS	-																		
194.9	Organic sand, trace silt																						
0.1																							
194.5	Dark Moist brown																						
0.5	End of borehole																						
	Refusal on probable bedrock																						

RECORD OF BOREHOLE No 116-14

1 of 1

METRIC

G.W.P. 5112-07-00	LOCATION Hwy 69, Sta. 20+875, o/s 18.8 m Rt.	ORIGINATED BY A.L.
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DIST	Wallbridge Twp	HWY	69	BOREHOLE TYPE	Continuous Flight Hollow Stem Augers	COMPILED BY	G.D.
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DATUM Geodetic **DATE** February 05, 2013 **CHECKED BY** B.R.G.







[illegible]

RECORD OF BOREHOLE No 116-15

1 of 1

METRIC

G.W.P. 5112-07-00 **LOCATION** Hwy 69, Sta. 20+887.5, o/s 4.5 m Rt. **ORIGINATED BY** A.L.
DIST Wallbridge Twp **HWY** 69 **BOREHOLE TYPE** Manual Probing **COMPILED BY** G.D.
DATUM Geodetic **DATE** February 05, 2013 **CHECKED BY** B.R.G.







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	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												
193.2 0.0	Ground Surface							20	40	60	80	100								
193.1 0.1	Topsoil		1	AS	-		193													
	Organic sand trace silt, trace gravel																			
192.4 0.8	Dark Moist brown																			
	End of borehole																			
	Refusal on probable bedrock																			
	* Borehole dry																			

RECORD OF BOREHOLE No 116-16

1 of 1

METRIC

G.W.P. 5112-07-00 **LOCATION** Hwy 69, Sta. 20+887.5, o/s 35.0 m Rt. **ORIGINATED BY** A.L.
DIST Wallbridge Twp **HWY** 69 **BOREHOLE TYPE** Continuous Flight Hollow Stem Augers **COMPILED BY** G.D.
DATUM Geodetic **DATE** February 06, 2013 **CHECKED BY** B.R.G.







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									
								○ UNCONFINED + FIELD VANE ● QUICK TRIAXIAL × LAB VANE									
196.3 0.0	Ground Surface						20	40	60	80	100						
196.2 0.1	Topsoil		1	SS	57/23cm		196										
195.6 0.7	Organic sand, trace gravel rootlets, boulders																
	Compact Dark Moist brown																
	End of borehole																
	Refusal on probable bedrock																
	 <																

RECORD OF BOREHOLE No 116-17

1 of 1

METRIC

G.W.P. 5112-07-00 **LOCATION** Hwy 69, Sta. 20+900, o/s 21.0 m Rt. **ORIGINATED BY** A.L.
DIST Wallbridge Twp **HWY** 69 **BOREHOLE TYPE** Continuous Flight Hollow Stem Augers **COMPILED BY** G.D.
DATUM Geodetic **DATE** February 06, 2013 **CHECKED BY** B.R.G.





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									
								○ UNCONFINED + FIELD VANE ● QUICK TRIAXIAL × LAB VANE									
193.9 0.0	Ground Surface							20	40	60	80	100					
193.8 0.1	Topsoil		1	SS	4												
	Organic sand, trace silt																
193.2 0.7	Loose Dark Moist brown																
	End of borehole																
	Refusal on probable bedrock																

RECORD OF PENETRATION TEST No 116-18

1 of 1

METRIC

G.W.P. 5112-07-00 **LOCATION** Hwy 69, Sta. 20+912.5 CL **ORIGINATED BY** A.L.
DIST Wallbridge Twp **HWY** 69 **BOREHOLE TYPE** Dynamic Cone Penetration Test **COMPILED BY** G.D.
DATUM Geodetic **DATE** February 07, 2013 **CHECKED BY** B.R.G.

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 ○ UNCONFINED + FIELD VANE ● QUICK TRIAXIAL × LAB VANE								WATER CONTENT (%)	
193.2 0.0	Ground Surface						193	20	40	60	80	100	20	40	60		
192.4 0.8	Topsoil — — — — Probable organic sand Very loose																
	End of dynamic cone penetration test																
	Refusal on probable bedrock																
				</													

RECORD OF BOREHOLE No 116-19

1 of 1

METRIC

G.W.P. 5112-07-00 **LOCATION** Hwy 69, Sta. 20+912.5, o/s 31.0 m Rt. **ORIGINATED BY** A.L.
DIST Wallbridge Twp **HWY** 69 **BOREHOLE TYPE** Continuous Flight Hollow Stem Augers **COMPILED BY** G.D.
DATUM Geodetic **DATE** February 06, 2013 **CHECKED BY** B.R.G.

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										WATER CONTENT (%)		
								○ UNCONFINED		+ FIELD VANE		● QUICK TRIAXIAL						× LAB VANE		
193.3	Ground Surface						20	40	60	80	100									
0.0	Topsoil																			
193.2	Organic sand, trace silt		1	SS	6															
0.1																				
192.8	Loose Dark Moist brown																			
0.5	Silty clay, trace sand		2	SS	13															
	Stiff to Greyish Moist very stiff brown																			
191.6			3	SS	50/3cm															
1.7	End of borehole Refusal on probable bedrock																			

RECORD OF BOREHOLE No 116-20

1 of 1

METRIC

G.W.P.	5112-07-00	LOCATION	Hwy 69, Sta. 20+925, o/s 18.8 m Rt.
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ORIGINATED BY A.L.

DIST	Wallbridge Twp	HWY	69	BOREHOLE TYPE	'N' Casing + Wash boring + Dynamic Cone Penetration Test
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COMPILED BY G.D.

DATUM Geodetic **DATE** February 25, 2013

CHECKED BY B.R.G.

SOIL PROFILE			SAMPLES		
ELEV DEPTH	DESCRIPTION	STRAT PLOT	NUMBER	TYPE	"N" VALUES
193.1 0.0	Top of Snow/Ice				
	Snow/Ice				
192.4 0.7	Water				
	Peat, amorphous Dark brown		1	SS	18
192.2 0.9	Clayey silt, trace sand silt seams				
191.5 1.6	Stiff to Greyish Moist very stiff brown		2	SS	56/28cm
191.1 2.0	Silty sand, trace gravel				
	Compact Grey Wet				
	End of borehole				
	Refusal on probable bedrock				
	Sample 2: Sampler bouncing				
* 2013 02 25					
▽	Water level observed during drilling				
▼	Water level measured after drilling				

RECORD OF BOREHOLE No 116-21

1 of 1

METRIC

G.W.P. 5112-07-00 **LOCATION** Hwy 69, Sta. 20+937.5 CL **ORIGINATED BY** A.L.
DIST Wallbridge Twp **HWY** 69 **BOREHOLE TYPE** Continuous Flight Hollow Stem Augers **COMPILED BY** G.D.
DATUM Geodetic **DATE** February 07, 2013 **CHECKED BY** B.R.G.

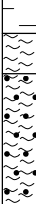
SOIL PROFILE			SAMPLES			GROUND WATER CONDITIONS *	ELEVATION SCALE	DYNAMIC CONE PENETRATION RESISTANCE PLOT					PLASTIC LIMIT w _p	NATURAL MOISTURE CONTENT w	LIQUID LIMIT w _L	UNIT WEIGHT γ	REMARKS & GRAIN SIZE DISTRIBUTION (%)			
ELEV DEPTH	DESCRIPTION	STRAT PLOT	NUMBER	TYPE	"N" VALUES			SHEAR STRENGTH kPa										WATER CONTENT (%)		
								○ UNCONFINED + FIELD VANE ● QUICK TRIAXIAL × LAB VANE												
193.5	Ground Surface							20	40	60	80	100					GR SA SI CL			
0.0	Topsoil																			
193.4	Organic sand, trace silt		1	SS	2		193							o						
0.1																				
192.7	Very loose Dark Moist to loose brown to wet																			
0.8	Clayey silt, trace sand		2	SS	50/5cm															
192.5	Stiff Greyish Moist brown																			
1.0	End of borehole Refusal on probable bedrock																			
	* Borehole dry																			
	■ Penetrometer test																			

RECORD OF PENETRATION TEST No 116-22

1 of 1

METRIC

G.W.P. 5112-07-00 **LOCATION** Hwy 69, Sta. 20+937.5, o/s 42.0 m Rt. **ORIGINATED BY** A.L.
DIST Wallbridge Twp **HWY** 69 **BOREHOLE TYPE** Dynamic Cone Penetration Test **COMPILED BY** G.D.
DATUM Geodetic **DATE** February 24, 2013 **CHECKED BY** B.R.G.

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	REMARKS & GRAIN SIZE DISTRIBUTION (%)
ELEV DEPTH	DESCRIPTION	STRAT PLOT	NUMBER	TYPE	"N" VALUES			SHEAR STRENGTH kPa							
192.3 0.0	Top of Snow/Ice Snow/Ice Probable peat Probable organic sand Loose to compact						192								
190.1 2.2	End of dynamic cone penetration test Refusal on probable bedrock						191								

RECORD OF BOREHOLE No 116-23

1 of 1

METRIC

G.W.P.	5112-07-00	LOCATION	Hwy 69, Sta. 20+950, o/s 18.8 m Rt.	ORIGINATED BY	A.L.
DIST	Wallbridge Twp	HWY	69	BOREHOLE TYPE	'N' Casing + Wash boring
DATUM	Geodetic	DATE	February 24, 2013	CHECKED BY	B.R.G.

[illegible]

RECORD OF PENETRATION TEST No 116-24

1 of 1

METRIC

G.W.P. 5112-07-00 **LOCATION** Hwy 69, Sta. 20+962.5 CL **ORIGINATED BY** A.L.
DIST Wallbridge Twp **HWY** 69 **BOREHOLE TYPE** Dynamic Cone Penetration Test **COMPILED BY** G.D.
DATUM Geodetic **DATE** February 07, 2013 **CHECKED BY** B.R.G.

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	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												
194.6 0.0	Ground Surface							20	40	60	80	100					GR SA SI CL			
	Topsoil																Frozen			
	Probable organic sand																			
193.7 0.9	Compact						194													
	End of dynamic cone penetration test																			
	Refusal on probable bedrock																			

RECORD OF BOREHOLE No 116-25

1 of 1

METRIC

G.W.P. 5112-07-00	LOCATION Hwy 69, Sta. 20+962.5, o/s 38.5 m Rt.	ORIGINATED BY A.L.
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DIST	Wallbridge Twp	HWY	69	BOREHOLE TYPE	Test Pit	COMPILED BY	G.D.
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DATUM	Geodetic	DATE	February 07, 2013	CHECKED BY	B.R.G.
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[illegible]

RECORD OF BOREHOLE No 116-26

1 of 1

METRIC

G.W.P. 5112-07-00 **LOCATION** Hwy 69, Sta. 20+970, o/s 18.8 m Rt. **ORIGINATED BY** A.L.
DIST Wallbridge Twp **HWY** 69 **BOREHOLE TYPE** Continuous Flight Hollow Stem Augers **COMPILED BY** G.D.
DATUM Geodetic **DATE** February 07, 2013 **CHECKED BY** B.R.G.

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			20	40	60	80	100	w_p	w	w_L		
195.8	Ground Surface															
0.0	Topsoil															
195.7	Organic sand, trace silt		1	SS												
0.1	trace gravel, boulders															
195.1	Compact Dark Moist															
0.7	to dense brown															
	End of borehole															
	Refusal on probable bedrock															
	* Borehole dry															

Swamp 117

RECORD OF BOREHOLE No 117-1

1 of 1

METRIC

G.W.P. 5112-07-00	LOCATION Hwy 69, Sta. 20+817, o/s 40.0 m Lt.	ORIGINATED BY A.L.
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DIST	Wallbridge Twp	HWY	69	BOREHOLE TYPE	Auger Probing	COMPILED BY	G.D.
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DATUM Geodetic **DATE** February 08, 2013 **CHECKED BY** B.R.G.

[illegible]

RECORD OF BOREHOLE No 117-2

1 of 1

METRIC

G.W.P. 5112-07-00 **LOCATION** Hwy 69, Sta. 20+815 CL **ORIGINATED BY** A.L.
DIST Wallbridge Twp **HWY** 69 **BOREHOLE TYPE** Continuous Flight Hollow Stem Augers **COMPILED BY** G.D.
DATUM Geodetic **DATE** February 07, 2013 **CHECKED BY** B.R.G.

SOIL PROFILE			SAMPLES		GROUND WATER CONDITIONS *	ELEVATION SCALE	DYNAMIC CONE PENETRATION RESISTANCE PLOT					PLASTIC LIMIT NATURAL MOISTURE CONTENT			UNIT WEIGHT γ kN/m ³	REMARKS & GRAIN SIZE DISTRIBUTION (%)
ELEV DEPTH	DESCRIPTION	STRAT PLOT	NUMBER	TYPE			SHEAR STRENGTH kPa					W _p	W	W _L		
193.9	Ground Surface						20	40	60	80	100					
0.0	Topsoil	~ ~ ~	1	SS	53/18cm											
193.5																
0.4	End of borehole Refusal on probable bedrock															
	* Borehole dry															

RECORD OF BOREHOLE No 117-3

1 of 1

METRIC

G.W.P. 5112-07-00 **LOCATION** Hwy 69, Sta. 20+825, o/s 18.8 m Lt.

ORIGINATED BY A.L.

DIST Wallbridge Twp HWY 69 BOREHOLE TYPE 'N' Casing + Wash Boring

COMPILED BY G.D.

DATUM Geodetic **DATE** February 23, 2013

CHECKED BY B.R.G.

SOIL PROFILE					
ELEV DEPTH	DESCRIPTION	STRAT PLOT	SAMPLES	GROUND WATER CONDITIONS	ELEVATION SCALE
			NUMBER	TYPE	"N" VALUES
193.30.0	Top of Snow/Ice Snow/Ice	[Symbol]			
192.80.5	Water	[Symbol]			
192.50.8	Peat, amorphous Dark brown	[Symbol]			
	Silty clay, trace sand	[Symbol]	1	SS	21
	Very stiff Greyish Moist to firm brown/ to wet grey	[Symbol]			
		[Symbol]	2	SS	10
		[Symbol]			
		[Symbol]	3	SS	4
190.52.8	End of borehole Refusal on probable bedrock	[Symbol]			
	* 2013 02 23 [Symbol] Water level observed during drilling [Symbol] Water level measured after drilling ■ Penetrometer test				

RECORD OF BOREHOLE No 117-4

1 of 1

METRIC

G.W.P. 5112-07-00 **LOCATION** Hwy 69, Sta. 20+837.5, o/s 44.0 m Lt. **ORIGINATED BY** A.L.
DIST Wallbridge Twp **HWY** 69 **BOREHOLE TYPE** Manual Probing **COMPILED BY** G.D.
DATUM Geodetic **DATE** February 23, 2013 **CHECKED BY** B.R.G.

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	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												
193.8 0.0	Ground Surface					*		20	40	60	80	100					GR SA SI CL			
193.7 0.1	Topsoil																			
	End of borehole																			
	Refusal on probable bedrock																			

RECORD OF BOREHOLE No 117-5

1 of 1

METRIC

G.W.P. 5112-07-00 **LOCATION** Hwy 69, Sta. 20+850, o/s 18.8 m Lt. **ORIGINATED BY** A.L.
DIST Wallbridge Twp **HWY** 69 **BOREHOLE TYPE** 'N' Casing + Wash Boring **COMPILED BY** G.D.
DATUM Geodetic **DATE** February 22 and 23, 2013 **CHECKED BY** B.R.G.

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									
192.6	Top of Snow/Ice							20	40	60	80	100								
0.0	Snow/Ice					▽* ▼*	192													
191.7	Water																			
0.9	Silty clay, trace sand rootlets to 2.0m		1	SS	8									○						
	Stiff Greyish Moist to soft brown/ to wet grey		2	SS	7									○						
			3	SS	2									○						
			4	TW	PM															
				FV																
188.3	Sand and gravel, trace silt		5	SS	50/0cm															
4.3	Dense Grey Wet																			
188.0	End of borehole																			
4.6	Refusal on probable bedrock																			
	Sample 5: Sampler bouncing																			
	* Borehole dry																			
	▽ Water level observed during drilling																			
	▼ Water level measured after drilling																			
	■ Penetrometer test																			

RECORD OF BOREHOLE No 117-6

1 of 1

METRIC

G.W.P. 5112-07-00 **LOCATION** Hwy 69, Sta. 20+862.5, o/s 43.0 m Lt. **ORIGINATED BY** A.L.
DIST Wallbridge Twp **HWY** 69 **BOREHOLE TYPE** Manual Probing **COMPILED BY** G.D.
DATUM Geodetic **DATE** February 22, 2013 **CHECKED BY** B.R.G.

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	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										
193.2	Ground Surface						20	40	60	80	100							
0.0	Peat, amorphous	~~~~~					193											
192.7	Dark brown	~~~~~																
0.5	End of borehole																	
	Refusal on probable bedrock																	
	* Borehole dry																	

RECORD OF BOREHOLE No 117-7

1 of 1

METRIC

G.W.P. 5112-07-00	LOCATION Hwy 69, Sta. 20+862.5 CL	ORIGINATED BY A.L.
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DIST Wallbridge Twp **HWY** 69 **BOREHOLE TYPE** 'N' Casing + Wash Boring + Dynamic Cone Penetration Test **COMPILED BY** G.D.

DATUM	Geodetic	DATE	February 23, 2013	CHECKED BY	B.R.G.
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SOIL PROFILE			SAMPLES			GROUND WATER CONDITIONS	ELEVATION SCALE	DYNAMIC CONE PENETRATION RESISTANCE PLOT				PLASTIC LIMIT	NATURAL MOISTURE CONTENT	LIQUID LIMIT	UNIT WEIGHT	REMARKS & GRAIN SIZE DISTRIBUTION (%)	
ELEV DEPTH	DESCRIPTION	STRAT PLOT	NUMBER	TYPE	"N" VALUES			SHEAR STRENGTH kPa									WATER CONTENT (%)
193.5 0.0	Top of Snow/Ice						193									kN/m³	GR SA SI CL
193.0 0.5	Snow/Ice																
193.0 0.5	Water																
192.5 0.5	Organic sand, trace silt rootlets		1	SS	50/10cm												
1.0	Loose to compact Dark brown Wet End of borehole Refusal on probable bedrock Sample 1: Sampler bouncing																
<div>* 2013 02 23</div> <div> Water level observed during drilling</div> <div> Water level measured after drilling</div>																	

RECORD OF BOREHOLE No 117-8

1 of 1

METRIC

G.W.P. 5112-07-00 **LOCATION** Hwy 69, Sta. 20+873, o/s 18.8 m Lt. **ORIGINATED BY** A.L.
DIST Wallbridge Twp **HWY** 69 **BOREHOLE TYPE** 'N' Casing + Wash Boring **COMPILED BY** G.D.
DATUM Geodetic **DATE** February 22, 2013 **CHECKED BY** B.R.G.

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										WATER CONTENT (%)		
								20 40 60 80 100										w _p w w _L		
								○ UNCONFINED + FIELD VANE ● QUICK TRIAXIAL × LAB VANE												
193.1	Top of Snow/Ice						193													
0.0	Snow/Ice					▽* ▼*														
192.4	Water																			
0.7	Silty clay, trace sand rootlets to 1.4m		1	SS	13		192													
	Stiff to Greyish Moist very stiff brown																			
	Greyish brown		2	SS	11											0 1 58 41				
190.9	End of borehole						191													
2.2	Refusal on probable bedrock																			
<div>* 2013 02 22</div> <div>▽ Water level observed during drilling</div> <div>▼ Water level measured after drilling</div> <div>■ Penetrometer test</div>																				

RECORD OF BOREHOLE No 117-9

1 of 1

METRIC

G.W.P. 5112-07-00 **LOCATION** Hwy 69, Sta. 20+880, o/s 38.5 m Lt. **ORIGINATED BY** A.L.
DIST Wallbridge Twp **HWY** 69 **BOREHOLE TYPE** Manual Probing **COMPILED BY** G.D.
DATUM Geodetic **DATE** February 22, 2013 **CHECKED BY** B.R.G.

SOIL PROFILE			SAMPLES			GROUND WATER CONDITIONS	ELEVATION SCALE	DYNAMIC CONE PENETRATION RESISTANCE PLOT					PLASTIC NATURAL LIQUID LIMIT MOISTURE LIMIT CONTENT			UNIT WEIGHT γ	REMARKS & GRAIN SIZE DISTRIBUTION (%)
ELEV DEPTH	DESCRIPTION	STRAT PLOT	NUMBER	TYPE	"N" VALUES			20	40	60	80	100	w_p	w	w_L		
193.6	Ground Surface					*											GR SA SI CL
0.0	Topsoil																
193.1	End of borehole																
0.5	Refusal on probable bedrock																
	* Borehole dry																

RECORD OF BOREHOLE No 117-10

1 of 1

METRIC

G.W.P. 5112-07-00 **LOCATION** Hwy 69, Sta. 20+880 CL **ORIGINATED BY** A.L.
DIST Wallbridge Twp **HWY** 69 **BOREHOLE TYPE** Manual Probing **COMPILED BY** G.D.
DATUM Geodetic **DATE** February 22, 2013 **CHECKED BY** B.R.G.

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	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												
193.0	Ground Surface					*		20	40	60	80	100					GR SA SI CL			
0.0	Peat, amorphous	~~~~~																		
192.5	Dark brown	~~~~~																		
0.5	End of borehole																			
	Refusal on probable bedrock																			

Swamp 118

RECORD OF BOREHOLE No 118-1

1 of 1

METRIC

G.W.P. 5112-07-00 **LOCATION** Hwy 69, Sta. 22+225, o/s 18.8 m Lt. **ORIGINATED BY** K.D.
DIST Parry Sound **HWY** 69 **BOREHOLE TYPE** Manual Probing **COMPILED BY** G.D.
DATUM Geodetic **DATE** September 05, 2012 **CHECKED BY** B.R.G.

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	REMARKS & GRAIN SIZE DISTRIBUTION (%)			
ELEV DEPTH	DESCRIPTION	STRAT PLOT	NUMBER	TYPE	"N" VALUES			SHEAR STRENGTH kPa										WATER CONTENT (%)		
								○ UNCONFINED	● QUICK TRIAXIAL	+	×	FIELD VANE						LAB VANE		
198.5	Ground Surface					*											GR SA SI CL			
0.0	Bedrock at surface																			
	* Borehole dry																			

RECORD OF BOREHOLE No 118-2

1 of 1

METRIC

G.W.P. 5112-07-00 **LOCATION** Hwy 69, Sta. 22+237.5, o/s 41.0 m Lt. **ORIGINATED BY** K.D.
DIST Parry Sound **HWY** 69 **BOREHOLE TYPE** Manual Probing **COMPILED BY** G.D.
DATUM Geodetic **DATE** September 05, 2012 **CHECKED BY** B.R.G.

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	REMARKS & GRAIN SIZE DISTRIBUTION (%)			
ELEV DEPTH	DESCRIPTION	STRAT PLOT	NUMBER	TYPE	"N" VALUES			SHEAR STRENGTH kPa												
								○ UNCONFINED + FIELD VANE ● QUICK TRIAXIAL × LAB VANE												
199.2	Ground Surface					*		20	40	60	80	100					GR	SA	SI	CL
0.0	Bedrock at surface																			
	* Borehole dry																			

RECORD OF BOREHOLE No 118-3

1 of 1

METRIC

G.W.P. 5112-07-00	LOCATION Hwy 69, Sta. 22+237.5 CL	ORIGINATED BY K.D.
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DIST	Parry Sound	HWY	69	BOREHOLE TYPE	Manual Probing	COMPILED BY	G.D.
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DATUM Geodetic	DATE September 05, 2012	CHECKED BY B.R.G.
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[illegible]

RECORD OF BOREHOLE No 118-4

1 of 1

METRIC

G.W.P. 5112-07-00	LOCATION Hwy 69, Sta. 22+240, o/s 39.0 m Rt.	ORIGINATED BY K.D.
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DIST	Parry Sound	HWY	69	BOREHOLE TYPE	Manual Probing	COMPILED BY	G.D.
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DATUM Geodetic	DATE September 05, 2012	CHECKED BY B.R.G.
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[illegible]

RECORD OF BOREHOLE No 118-5

1 of 1

METRIC

G.W.P. 5112-07-00	LOCATION Hwy 69, Sta. 22+250, o/s 18.8 m Lt.	ORIGINATED BY K.D.
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DIST	Parry Sound	HWY	69	BOREHOLE TYPE	Manual Probing	COMPILED BY	G.D.
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DATUM Geodetic	DATE September 05, 2012	CHECKED BY B.R.G.
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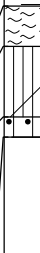
[illegible]

RECORD OF BOREHOLE No 118-6

1 of 1

METRIC

G.W.P.	5112-07-00	LOCATION	Hwy 69, Sta. 22+250, o/s 18.8 m Rt.	ORIGINATED BY	S.A.
DIST	Parry Sound	HWY	69	BOREHOLE TYPE	Tripod + Casing
DATUM	Geodetic	DATE	February 08, 2013	CHECKED BY	B.R.G.



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 (%) GR SA SI CL
ELEV DEPTH	DESCRIPTION	STRAT PLOT	NUMBER	TYPE	"N" VALUES			SHEAR STRENGTH kPa					W _p W W _L				
								○ UNCONFINED + FIELD VANE ● QUICK TRIAXIAL × LAB VANE					WATER CONTENT (%)				
197.5 0.0	Top of Ice																
197.4 0.1	Ice																
197.0 0.5	Peat, amorphous Dark brown		1	SS	3												
	Clayey silt, trace sand rootlets																
196.3 1.2	Stiff Grey Moist		2	SS	15												
196.1 1.4	Silty sand, trace gravel cobbles																
	Compact Grey/ black Wet																
	End of borehole																
	Refusal on probable bedrock																

RECORD OF BOREHOLE No 118-7

1 of 1

METRIC

G.W.P. 5112-07-00 **LOCATION** Hwy 69, Sta. 22+262.5, o/s 42.0 m Lt. **ORIGINATED BY** K.D.
DIST Parry Sound **HWY** 69 **BOREHOLE TYPE** Manual Probing **COMPILED BY** G.D.
DATUM Geodetic **DATE** September 05, 2012 **CHECKED BY** B.R.G.

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	REMARKS & GRAIN SIZE DISTRIBUTION (%) GR SA SI CL			
ELEV DEPTH	DESCRIPTION	STRAT PLOT	NUMBER	TYPE	"N" VALUES			SHEAR STRENGTH kPa										WATER CONTENT (%)		
								<div><div>20406080100</div><div>○ UNCONFINED + FIELD VANE</div><div>● QUICK TRIAXIAL × LAB VANE</div></div>										<div><div>w_p w w_L</div><div>○</div></div>		
198.1	Ground Surface						198													
0.0	Topsoil																			
197.8	End of borehole																			
0.3	Refusal on probable bedrock																			
	* Borehole dry																			

RECORD OF BOREHOLE No 118-8

1 of 1

METRIC

G.W.P. 5112-07-00	LOCATION Hwy 69, Sta. 22+262.5 CL	ORIGINATED BY K.D.
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DIST	Parry Sound	HWY	69	BOREHOLE TYPE	Manual Probing	COMPILED BY	G.D.
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DATUM Geodetic	DATE September 05, 2012	CHECKED BY B.R.G.
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
[illegible]

RECORD OF PENETRATION TEST No 118-9

1 of 1

METRIC

G.W.P. 5112-07-00 **LOCATION** Hwy 69, Sta. 22+262.5, o/s 44.0 m Rt. **ORIGINATED BY** S.A.
DIST Parry Sound **HWY** 69 **BOREHOLE TYPE** Tripod + Dynamic Cone Penetration Test **COMPILED BY** G.D.
DATUM Geodetic **DATE** February 08, 2013 **CHECKED BY** B.R.G.

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	REMARKS & GRAIN SIZE DISTRIBUTION (%)
ELEV. DEPTH	DESCRIPTION	STRAT PLOT	NUMBER	TYPE	"N" VALUES			20	40	60	80	100					
197.9 0.0	Top of Ice Ice ——— Probable peat																
197.1 0.8	End of dynamic cone penetration test Refusal on probable bedrock																

RECORD OF BOREHOLE No 118-10

1 of 1

METRIC

G.W.P. 5112-07-00 **LOCATION** Hwy 69, Sta. 22+275, o/s 18.8 m Lt. **ORIGINATED BY** S.A.
DIST Parry Sound **HWY** 69 **BOREHOLE TYPE** Tripod + Casing **COMPILED BY** G.D.
DATUM Geodetic **DATE** February 08, 2013 **CHECKED BY** B.R.G.

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			SHEAR STRENGTH kPa									
197.5 0.0	Top of Ice						20	40	60	80	100					
197.3 0.2	Ice		1	SS	WH**	197										
	Peat, amorphous															
	Dark brown															
196.6 0.9	Silty sand, organics		2	SS	50/15cm									389		
196.4 1.1	Compact Grey/ Wet black															
	End of borehole															
	Refusal on probable bedrock															
	Sample 2: Sampler bouncing															
	* Borehole dry															
	WH** denotes penetration due to weight of rods and hammer															

RECORD OF BOREHOLE No 118-11

1 of 1

METRIC

G.W.P.	5112-07-00	LOCATION	Hwy 69, Sta. 22+275, o/s 18.8 m Rt.	ORIGINATED BY	S.A.
DIST	Parry Sound	HWY	69	BOREHOLE TYPE	Tripod + Casing
				COMPILED BY	G.D.
DATUM	Geodetic	DATE	February 08, 2013	CHECKED BY	B.R.G.

[illegible]

RECORD OF BOREHOLE No 118-12

1 of 1

METRIC

G.W.P. 5112-07-00 **LOCATION** Hwy 69, Sta. 22+287.5, o/s 42.0 m Lt. **ORIGINATED BY** K.D.
DIST Parry Sound **HWY** 69 **BOREHOLE TYPE** Manual Probing **COMPILED BY** G.D.
DATUM Geodetic **DATE** September 05, 2012 **CHECKED BY** B.R.G.

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	REMARKS & GRAIN SIZE DISTRIBUTION (%)			
ELEV DEPTH	DESCRIPTION	STRAT PLOT	NUMBER	TYPE	"N" VALUES			SHEAR STRENGTH kPa										WATER CONTENT (%)		
								<div><div>○ UNCONFINED</div><div>● QUICK TRIAXIAL</div></div> <div><div>+ FIELD VANE</div><div>× LAB VANE</div></div>												
198.4 0.0	Ground Surface					*		20	40	60	80	100	20	40	60	kN/m ³	GR SA SI CL			
198.3 0.1	Topsoil																			
	End of borehole																			
	Refusal on probable bedrock																			

RECORD OF BOREHOLE No 118-13

1 of 1

METRIC

G.W.P. 5112-07-00	LOCATION Hwy 69, Sta. 22+287.5 CL	ORIGINATED BY S.A.
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DIST	Parry Sound	HWY	69	BOREHOLE TYPE	Manual Probing	COMPILED BY	G.D.
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DATUM	Geodetic	DATE	February 07, 2013	CHECKED BY	B.R.G.
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[illegible]

RECORD OF BOREHOLE No 118-14

1 of 1

METRIC

G.W.P. 5112-07-00	LOCATION Hwy 69, Sta. 22+287.5, o/s 44.0 m Rt.	ORIGINATED BY S.A.
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DIST	Parry Sound	HWY	69	BOREHOLE TYPE	Tripod	COMPILED BY	G.D.
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DATUM	Geodetic	DATE	February 09, 2013	CHECKED BY	B.R.G.
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[illegible]

RECORD OF BOREHOLE No 118-15

1 of 1

METRIC

G.W.P. 5112-07-00	LOCATION Hwy 69, Sta. 22+300, o/s 18.8 m Lt.	ORIGINATED BY S.A.
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DIST	Parry Sound	HWY	69	BOREHOLE TYPE	Manual Probing	COMPILED BY	G.D.
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DATUM Geodetic	DATE February 07, 2013	CHECKED BY B.R.G.
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[illegible]

RECORD OF BOREHOLE No 118-16

1 of 1

METRIC

G.W.P.	5112-07-00	LOCATION	Hwy 69, Sta. 22+300, o/s 18.8 m Rt.	ORIGINATED BY	S.A.
DIST	Parry Sound	HWY	69	BOREHOLE TYPE	Manual Probing
DATUM	Geodetic	DATE	February 07, 2013	CHECKED BY	B.R.G.

[illegible]

RECORD OF BOREHOLE No 118-17

1 of 1

METRIC

G.W.P. 5112-07-00 **LOCATION** Hwy 69, Sta. 22+310, o/s 38.0 m Lt. **ORIGINATED BY** K.D.
DIST Parry Sound **HWY** 69 **BOREHOLE TYPE** Manual Probing **COMPILED BY** G.D.
DATUM Geodetic **DATE** September 06, 2012 **CHECKED BY** B.R.G.

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	REMARKS & GRAIN SIZE DISTRIBUTION (%)			
ELEV DEPTH	DESCRIPTION	STRAT PLOT	NUMBER	TYPE	"N" VALUES			SHEAR STRENGTH kPa										WATER CONTENT (%)		
								<div><div></div><div>20406080100</div></div> <div>○ UNCONFINED + FIELD VANE</div> <div>● QUICK TRIAXIAL × LAB VANE</div>										<div><div></div><div>204060</div></div>		
201.9 0.0	Ground Surface					*										GR SA SI CL				
201.8 0.1	Topsoil																			
	End of borehole																			
	Refusal on probable bedrock																			

RECORD OF BOREHOLE No 118-18

1 of 1

METRIC

G.W.P.	5112-07-00	LOCATION	Hwy 69, Sta. 22+312.5 CL	ORIGINATED BY	K.D.
DIST	Parry Sound	HWY	69	BOREHOLE TYPE	Manual Probing
DATUM	Geodetic	DATE	September 06, 2012	CHECKED BY	B.R.G.

[illegible]

RECORD OF PENETRATION TEST No 118-19

1 of 1

METRIC

G.W.P. 5112-07-00 **LOCATION** Hwy 69, Sta. 22+312.5, o/s 38.5 m Rt. **ORIGINATED BY** S.A.
DIST Parry Sound **HWY** 69 **BOREHOLE TYPE** Tripod + Dynamic Cone Penetration Test **COMPILED BY** G.D.
DATUM Geodetic **DATE** February 09, 2013 **CHECKED BY** B.R.G.

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	REMARKS & GRAIN SIZE DISTRIBUTION (%)
ELEV. DEPTH	DESCRIPTION	STRAT PLOT	NUMBER	TYPE	"N" VALUES			SHEAR STRENGTH kPa									
197.4 0.0	Top of Ice Ice ——— Probable peat						197	20	40	60	80	100					
196.6 0.8	End of dynamic cone penetration test Refusal on probable bedrock							120/15cm									

RECORD OF BOREHOLE No 118-20

1 of 1

METRIC

G.W.P. 5112-07-00 **LOCATION** Hwy 69, Sta. 22+320, o/s 18.8 m Rt. **ORIGINATED BY** K.D.
DIST Parry Sound **HWY** 69 **BOREHOLE TYPE** Manual Probing **COMPILED BY** G.D.
DATUM Geodetic **DATE** September 06, 2012 **CHECKED BY** B.R.G.

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	REMARKS & GRAIN SIZE DISTRIBUTION (%)
ELEV DEPTH	DESCRIPTION	STRAT PLOT	NUMBER	TYPE	"N" VALUES	SHEAR STRENGTH kPa					WATER CONTENT (%)							
						○ UNCONFINED			● QUICK TRIAXIAL	+		×	FIELD VANE					
198.6	Ground Surface					*			20	40	60	80	100	20	40	60	GR SA SI CL	
0.0	Bedrock at surface																	
	* Borehole dry																	

Swamp 119

RECORD OF BOREHOLE No 119-1

1 of 1

METRIC

G.W.P. 5112-07-00	LOCATION Hwy 69, Sta. 22+350, o/s 18.8 m Rt.	ORIGINATED BY K.D.
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DIST	Parry Sound	HWY	69	BOREHOLE TYPE	Manual Probing	COMPILED BY	G.D.
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DATUM	Geodetic	DATE	September 06, 2012	CHECKED BY	B.R.G.
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SOIL PROFILE					
ELEV DEPTH	DESCRIPTION	STRAT PLOT	SAMPLES	GROUND WATER CONDITIONS	ELEVATION SCALE
198.2 0.0	Ground Surface			*	DYNAMIC CONE PENETRATION RESISTANCE PLOT
198.1 0.1	Topsoil				SHEAR STRENGTH kPa ○ UNCONFINED + FIELD VANE ● QUICK TRIAXIAL × LAB VANE
	End of borehole				
	Refusal on probable bedrock				
	* Borehole dry				

RECORD OF BOREHOLE No 119-2

1 of 1

METRIC

G.W.P. 5112-07-00	LOCATION Hwy 69, Sta. 22+375 CL	ORIGINATED BY K.D.
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DIST	Parry Sound	HWY	69	BOREHOLE TYPE	Manual Probing	COMPILED BY	G.D.
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DATUM Geodetic **DATE** September 06, 2012 **CHECKED BY** B.R.G.

[illegible]

RECORD OF BOREHOLE No 119-3

1 of 1

METRIC

G.W.P. 5112-07-00 **LOCATION** Hwy 69, Sta. 22+375, o/s 40.0 m Rt. **ORIGINATED BY** S.A.
DIST Parry Sound **HWY** 69 **BOREHOLE TYPE** Tripod + Casing **COMPILED BY** G.D.
DATUM Geodetic **DATE** February 05, 2013 **CHECKED BY** B.R.G.

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	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												
196.7	Top of Ice						20	40	60	80	100									
0.0	Ice					▽* ▼*														
196.1	Water																			
0.6	Peat, amorphous																			
	Dark brown		1	SS	1															
194.9			2	SS	9										471					
1.8	Clayey silt, trace gravel organics																			
194.4			3	SS	50/3cm															
2.3	Stiff Dark Moist brown																			
	End of borehole																			
	Refusal on probable bedrock																			
	Sample 3: Sampler bouncing																			

RECORD OF BOREHOLE No 119-4

1 of 1

METRIC

G.W.P.	5112-07-00	LOCATION	Hwy 69, Sta. 22+400, o/s 18.8 m Rt.	ORIGINATED BY	S.A.
DIST	Parry Sound	HWY	69	BOREHOLE TYPE	Tripod
DATUM	Geodetic	DATE	February 04, 2013	COMPILED BY	G.D.
				CHECKED BY	B.R.G.

[illegible]

RECORD OF BOREHOLE No 119-5

1 of 1

METRIC

G.W.P. 5112-07-00	LOCATION Hwy 69, Sta. 22+425 CL	ORIGINATED BY K.D.
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DIST	Parry Sound	HWY	69	BOREHOLE TYPE	Manual Probing	COMPILED BY	G.D.
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DATUM Geodetic **DATE** September 06, 2012 **CHECKED BY** B.R.G.

[illegible]

RECORD OF PENETRATION TEST No 119-6

1 of 1

METRIC

G.W.P. 5112-07-00	LOCATION	Hwy 69, Sta. 22+425, o/s 40.0 m Rt.	ORIGINATED BY	S.A.
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DIST	Parry Sound	HWY	69	BOREHOLE TYPE	Tripod + Dynamic Cone Penetration Test	COMPILED BY	G.D.
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DATUM Geodetic **DATE** February 04, 2013 **CHECKED BY** B.R.G.



[illegible]

RECORD OF BOREHOLE No 119-7

1 of 1

METRIC

G.W.P. 5112-07-00 **LOCATION** Hwy 69, Sta. 22+450, o/s 18.8 m Rt. **ORIGINATED BY** K.D.
DIST Parry Sound **HWY** 69 **BOREHOLE TYPE** Manual Probing **COMPILED BY** G.D.
DATUM Geodetic **DATE** September 07, 2012 **CHECKED BY** B.R.G.

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										WATER CONTENT (%)		
								<div><div>20406080100</div><div>○ UNCONFINED + FIELD VANE</div><div>● QUICK TRIAXIAL × LAB VANE</div></div>										<div><div>204060</div><div>○</div></div>		
198.6	Ground Surface																			
0.0	Topsoil																			
198.3	End of borehole																			
0.3	Refusal on probable bedrock																			
	* Borehole dry																			

RECORD OF BOREHOLE No 119-8

1 of 1

METRIC

G.W.P. 5112-07-00 **LOCATION** Hwy 69, Sta. 22+475, o/s 3.0 m Rt. **ORIGINATED BY** K.D.
DIST Parry Sound **HWY** 69 **BOREHOLE TYPE** Manual Probing **COMPILED BY** G.D.
DATUM Geodetic **DATE** September 07, 2012 **CHECKED BY** B.R.G.

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	REMARKS & GRAIN SIZE DISTRIBUTION (%)			
ELEV DEPTH	DESCRIPTION	STRAT PLOT	NUMBER	TYPE	"N" VALUES			SHEAR STRENGTH kPa										WATER CONTENT (%)		
								○ UNCONFINED	● QUICK TRIAXIAL	+	×	FIELD VANE						LAB VANE		
199.2	Ground Surface					*											GR SA SI CL			
0.0	Bedrock at surface																			
	* Borehole dry																			

RECORD OF BOREHOLE No 119-9

1 of 1

METRIC

G.W.P. 5112-07-00 **LOCATION** Hwy 69, Sta. 22+475, o/s 36.0 m Rt. **ORIGINATED BY** S.A.
DIST Parry Sound **HWY** 69 **BOREHOLE TYPE** Tripod **COMPILED BY** G.D.
DATUM Geodetic **DATE** February 05, 2013 **CHECKED BY** B.R.G.

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	REMARKS & GRAIN SIZE DISTRIBUTION (%)
ELEV DEPTH	DESCRIPTION	STRAT PLOT	NUMBER	TYPE			SHEAR STRENGTH kPa									
197.6	Top of Ice						20	40	60	80	100					
0.0	Ice															
197.3	Water		1	SS	2											
0.3	Peat, amorphous															
197.0	Dark brown		2	SS	50/3cm	197										
0.6	Sand and gravel															
196.8	Compact Dark Wet grey															
0.8	End of borehole															
	Refusal on probable bedrock															
	Sample 2: Sampler bouncing															
	* 2013 02 05															
	▽ Water level observed during drilling															
	▼ Water level measured after drilling															

RECORD OF BOREHOLE No 119-10

1 of 1

METRIC

G.W.P.	5112-07-00	LOCATION	Hwy 69, Sta. 22+500, o/s 18.8 m Rt.	ORIGINATED BY	S.A.
DIST	Parry Sound	HWY	69	BOREHOLE TYPE	Tripod + Casing
DATUM	Geodetic	DATE	February 05, 2013	CHECKED BY	B.R.G.

[illegible]

RECORD OF BOREHOLE No 119-11

1 of 1

METRIC

G.W.P. 5112-07-00 **LOCATION** Hwy 69, Sta. 22+527, o/s 2.0 m Rt. **ORIGINATED BY** S.A.
DIST Parry Sound **HWY** 69 **BOREHOLE TYPE** Tripod + Casing **COMPILED BY** G.D.
DATUM Geodetic **DATE** February 06, 2013 **CHECKED BY** B.R.G.

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	REMARKS & GRAIN SIZE DISTRIBUTION (%)				
ELEV DEPTH	DESCRIPTION	STRAT PLOT	NUMBER	TYPE	"N" VALUES			SHEAR STRENGTH kPa										WATER CONTENT (%)			
								○ UNCONFINED	● QUICK TRIAXIAL	+	×	FIELD VANE							LAB VANE		
196.9 0.0	Top of Ice		1	SS	WH**		196														
196.5 0.4	Snow/Ice																				
196.3 0.6	Water																				
195.7 1.2	Peat, amorphous Dark brown		2	SS	60																
	Sand and gravel																				
	Compact Dark grey Wet																				
	End of borehole																				
	Refusal on probable bedrock																				
	* 2013 02 06																				
	Water level observed during drilling																				
	Water level measured after drilling																				
	WH** denotes penetration due to weight of rods and hammer																				

RECORD OF PENETRATION TEST No 119-12

1 of 1

METRIC

G.W.P. 5112-07-00 **LOCATION** Hwy 69, Sta. 22+525, o/s 37.0 m Rt. **ORIGINATED BY** S.A.
DIST Parry Sound **HWY** 69 **BOREHOLE TYPE** Tripod + Dynamic Cone Penetration Test **COMPILED BY** G.D.
DATUM Geodetic **DATE** February 06, 2013 **CHECKED BY** B.R.G.



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	REMARKS & GRAIN SIZE DISTRIBUTION (%)
ELEV. DEPTH	DESCRIPTION	STRAT PLOT	NUMBER	TYPE	"N" VALUES			SHEAR STRENGTH kPa									
196.5 0.0	Top of Ice							20	40	60	80	100					
	Ice — — — — —																
	Water — — — — —																
	Probable peat																
195.2 1.3	Probable sand and gravel																
	Compact																
	End of borehole																
	Refusal on probable bedrock																

RECORD OF BOREHOLE No 119-13

1 of 1

METRIC

G.W.P. 5112-07-00 **LOCATION** Hwy 69, Sta. 22+550, o/s 18.8 m Rt. **ORIGINATED BY** K.D.
DIST Parry Sound **HWY** 69 **BOREHOLE TYPE** Manual Probing **COMPILED BY** G.D.
DATUM Geodetic **DATE** September 07, 2012 **CHECKED BY** B.R.G.

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										WATER CONTENT (%)		
								<div><div>20406080100</div><div>○ UNCONFINED + FIELD VANE</div><div>● QUICK TRIAXIAL × LAB VANE</div></div>										<div><div>204060</div><div>○</div></div>		
197.6	Ground Surface																			
0.0 197.3	Topsoil																			
0.3	End of borehole																			
	Refusal on probable bedrock																			

RECORD OF BOREHOLE No 119-14

1 of 1

METRIC

G.W.P. 5112-07-00 **LOCATION** Hwy 69, Sta. 22+575, o/s 5.0m Rt. **ORIGINATED BY** K.D.
DIST Parry Sound **HWY** 69 **BOREHOLE TYPE** Manual Probing **COMPILED BY** G.D.
DATUM Geodetic **DATE** September 07, 2012 **CHECKED BY** B.R.G.

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	REMARKS & GRAIN SIZE DISTRIBUTION (%)			
ELEV DEPTH	DESCRIPTION	STRAT PLOT	NUMBER	TYPE	"N" VALUES			SHEAR STRENGTH kPa										WATER CONTENT (%)		
								<div><div></div><div></div><div></div><div></div><div></div></div> <div>○ UNCONFINED + FIELD VANE</div> <div>● QUICK TRIAXIAL × LAB VANE</div>										<div><div></div><div></div><div></div></div> <div></div>		
198.2	Ground Surface					*	198									GR SA SI CL				
0.0	Topsoil																			
198.0	End of borehole																			
0.2	Refusal on probable bedrock																			
	* Borehole dry																			

RECORD OF BOREHOLE No 119-15

1 of 1

METRIC

G.W.P. 5112-07-00 **LOCATION** Hwy 69, Sta. 22+575, o/s 34.0 m Rt. **ORIGINATED BY** S.A.
DIST Parry Sound **HWY** 69 **BOREHOLE TYPE** Tripod **COMPILED BY** G.D.
DATUM Geodetic **DATE** February 09, 2013 **CHECKED BY** B.R.G.

SOIL PROFILE			SAMPLES		GROUND WATER CONDITIONS	ELEVATION SCALE	DYNAMIC CONE PENETRATION RESISTANCE PLOT					PLASTIC NATURAL LIQUID LIMIT MOISTURE LIMIT CONTENT			UNIT WEIGHT γ	REMARKS & GRAIN SIZE DISTRIBUTION (%)
ELEV DEPTH	DESCRIPTION	STRAT PLOT	NUMBER	TYPE			SHEAR STRENGTH kPa					w_p	w	w_L		
197.6	Ground Surface						20	40	60	80	100					
0.0	Peat, amorphous		1	SS	WH**											
197.0	Dark brown					197										
0.6	Sand and gravel		2	SS	50/15cm											
196.7	Compact Dark grey Wet															
0.9	End of borehole															
	Refusal on probable bedrock															
	* Borehole dry															
	WH** denotes penetration due to weight of rods and hammer															

RECORD OF BOREHOLE No 119-16

1 of 1

METRIC

G.W.P.	5112-07-00	LOCATION	Hwy 69, Sta. 22+600, o/s 18.8 m Rt.	ORIGINATED BY	S.A.
DIST	Parry Sound	HWY	69	BOREHOLE TYPE	Tripod
DATUM	Geodetic	DATE	February 12, 2013	CHECKED BY	B.R.G.

[illegible]

RECORD OF BOREHOLE No 119-17

1 of 1

METRIC

G.W.P. 5112-07-00 **LOCATION** Hwy 69, Sta. 22+623, o/s 2.0 m Rt. **ORIGINATED BY** S.A.
DIST Parry Sound **HWY** 69 **BOREHOLE TYPE** Tripod **COMPILED BY** G.D.
DATUM Geodetic **DATE** February 12, 2013 **CHECKED BY** B.R.G.

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									
								○ UNCONFINED + FIELD VANE ● QUICK TRIAXIAL × LAB VANE									
196.5 0.0	Top of Ice						20	40	60	80	100						
196.4 0.1	Ice		1	SS	WH**		196										
	Peat, amorphous																
	Dark brown		2	SS	50/15cm												
195.6 0.9	End of borehole																
	Refusal on probable bedrock																

RECORD OF PENETRATION TEST No 119-18

1 of 1

METRIC

G.W.P. 5112-07-00	LOCATION	Hwy 69, Sta. 22+625, o/s 37.0 m Rt.	ORIGINATED BY	S.A.
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DIST	Parry Sound	HWY	69	BOREHOLE TYPE	Tripod + Dynamic Cone Penetration Test	COMPILED BY	G.D.
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DATUM Geodetic	DATE February 12, 2013	CHECKED BY B.R.G.
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[illegible]

RECORD OF BOREHOLE No 119-19

1 of 1

METRIC

G.W.P. 5112-07-00 **LOCATION** Hwy 69, Sta. 22+650, o/s 18.8 m Rt. **ORIGINATED BY** K.D.
DIST Parry Sound **HWY** 69 **BOREHOLE TYPE** Manual Probing **COMPILED BY** G.D.
DATUM Geodetic **DATE** September 07, 2012 **CHECKED BY** B.R.G.

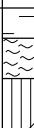
SOIL PROFILE			SAMPLES			GROUND WATER CONDITIONS	ELEVATION SCALE	DYNAMIC CONE PENETRATION RESISTANCE PLOT					PLASTIC LIMIT w _p	NATURAL MOISTURE CONTENT w	LIQUID LIMIT w _L	UNIT WEIGHT γ	REMARKS & GRAIN SIZE DISTRIBUTION (%)			
ELEV DEPTH	DESCRIPTION	STRAT PLOT	NUMBER	TYPE	"N" VALUES			SHEAR STRENGTH kPa										WATER CONTENT (%)		
								<div><div></div><div></div><div></div><div></div><div></div></div> <div>○ UNCONFINED + FIELD VANE</div> <div>● QUICK TRIAXIAL × LAB VANE</div>										<div><div></div><div></div><div></div></div> <div></div>		
197.7 0.0	Ground Surface					*										GR SA SI CL				
197.6 0.1	Topsoil																			
	End of borehole																			
	Refusal on probable bedrock																			
	* Borehole dry																			

RECORD OF PENETRATION TEST No 119-20

1 of 1

METRIC

G.W.P. 5112-07-00 **LOCATION** Hwy 69, Sta. 22+675 CL **ORIGINATED BY** S.A.
DIST Parry Sound **HWY** 69 **BOREHOLE TYPE** Tripod + Dynamic Cone Penetration Test **COMPILED BY** G.D.
DATUM Geodetic **DATE** February 10, 2013 **CHECKED BY** B.R.G.

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	REMARKS & GRAIN SIZE DISTRIBUTION (%)
ELEV. DEPTH	DESCRIPTION	STRAT PLOT	NUMBER	TYPE	"N" VALUES			20	40	60	80	100					
196.5 0.0	Top of Ice Ice ——— Water ——— Probable peat ——— Probable clayey silt ——— Firm						196										
195.1 1.4	End of dynamic cone penetration test Refusal on probable bedrock																

RECORD OF BOREHOLE No 119-21

1 of 1

METRIC

G.W.P.	5112-07-00	LOCATION	Hwy 69, Sta. 22+675, o/s 40.5 m Rt.	ORIGINATED BY	S.A.
DIST	Parry Sound	HWY	69	BOREHOLE TYPE	Tripod
DATUM	Geodetic	DATE	February 12, 2013	CHECKED BY	B.R.G.









[illegible]

RECORD OF BOREHOLE No 119-22

1 of 1

METRIC

G.W.P. 5112-07-00 **LOCATION** Hwy 69, Sta. 22+700, o/s 18.8 m Rt. **ORIGINATED BY** S.A.
DIST Parry Sound **HWY** 69 **BOREHOLE TYPE** Tripod **COMPILED BY** G.D.
DATUM Geodetic **DATE** February 20, 2013 **CHECKED BY** B.R.G.

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										WATER CONTENT (%)		
								○ UNCONFINED + FIELD VANE ● QUICK TRIAXIAL × LAB VANE												
197.0 0.0	Ground Surface						20	40	60	80	100									
196.8 0.2	Topsoil		1	SS	3															
196.6 0.4	Silty sand, trace gravel organics																			
	Very loose Brown Wet Clayey silt, trace sand rootlets		2	SS	6															
195.6 1.4	Firm Brown/ grey Moist to wet																			
	Clay, trace sand		3	SS	10															
	Stiff Grey Moist		4	SS	50/5cm															
194.7 2.3	End of borehole Refusal on probable bedrock Sample 4: Sampler bouncing * Borehole dry																			

RECORD OF BOREHOLE No 119-23

1 of 1

METRIC

G.W.P. 5112-07-00 **LOCATION** Hwy 69, Sta. 22+725, o/s 1.0 m Rt. **ORIGINATED BY** S.A.
DIST Parry Sound **HWY** 69 **BOREHOLE TYPE** Tripod + Shovelling **COMPILED BY** G.D.
DATUM Geodetic **DATE** February 20, 2013 **CHECKED BY** B.R.G.

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	REMARKS & GRAIN SIZE DISTRIBUTION (%)																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																												
ELEV DEPTH	DESCRIPTION	STRAT PLOT	NUMBER	TYPE	"N" VALUES			SHEAR STRENGTH kPa															WATER CONTENT (%)																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																											
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197.9	Ground Surface					*																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																												</

RECORD OF BOREHOLE No 119-24

1 of 1

METRIC

G.W.P. 5112-07-00	LOCATION Hwy 69, Sta. 22+725, o/s 38.0 m Rt.	ORIGINATED BY K.D.
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DIST	Parry Sound	HWY	69	BOREHOLE TYPE	Manual Probing	COMPILED BY	G.D.
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DATUM Geodetic	DATE September 10, 2012	CHECKED BY B.R.G.
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[illegible]

Swamp 120

RECORD OF BOREHOLE No 120-1

1 of 1

METRIC

G.W.P. 5112-07-00 **LOCATION** Hwy 69, Sta. 22+390, o/s 38.0 m Lt. **ORIGINATED BY** K.D.
DIST Parry Sound **HWY** 69 **BOREHOLE TYPE** Manual Probing **COMPILED BY** G.D.
DATUM Geodetic **DATE** September 06, 2012 **CHECKED BY** B.R.G.

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	REMARKS & GRAIN SIZE DISTRIBUTION (%)			
ELEV DEPTH	DESCRIPTION	STRAT PLOT	NUMBER	TYPE	"N" VALUES			SHEAR STRENGTH kPa										WATER CONTENT (%)		
								<div><div></div><div></div><div></div><div></div><div></div></div> <div>○ UNCONFINED + FIELD VANE ● QUICK TRIAXIAL × LAB VANE</div>										<div><div></div><div></div><div></div></div> <div></div>		
198.4	Ground Surface					*										GR SA SI CL				
0.0	Bedrock at surface																			
	* Borehole dry																			

RECORD OF BOREHOLE No 120-2

1 of 1

METRIC

G.W.P.	5112-07-00	LOCATION	Hwy 69, Sta. 22+390, o/s 1.0 m Lt.	ORIGINATED BY	S.A.
DIST	Parry Sound	HWY	69	BOREHOLE TYPE	Manual Probing
DATUM	Geodetic	DATE	February 09, 2013	CHECKED BY	B.R.G.

[illegible]

RECORD OF BOREHOLE No 120-3

1 of 1

METRIC

G.W.P. 5112-07-00 **LOCATION** Hwy 69, Sta. 22+400, o/s 18.8 m Lt. **ORIGINATED BY** K.D.
DIST Parry Sound **HWY** 69 **BOREHOLE TYPE** Manual Probing **COMPILED BY** G.D.
DATUM Geodetic **DATE** September 06, 2012 **CHECKED BY** B.R.G.

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	REMARKS & GRAIN SIZE DISTRIBUTION (%)			
ELEV DEPTH	DESCRIPTION	STRAT PLOT	NUMBER	TYPE	"N" VALUES			SHEAR STRENGTH kPa										WATER CONTENT (%)		
								<div><div></div><div></div><div></div><div></div><div></div></div> <div>○ UNCONFINED + FIELD VANE</div> <div>● QUICK TRIAXIAL × LAB VANE</div>										<div><div></div><div></div><div></div></div> <div>w_p w w_L</div>		
197.4	Ground Surface					*										GR SA SI CL				
0.0	Topsoil																			
197.3	End of borehole																			
0.1	Refusal on probable bedrock																			
	* Borehole dry																			

RECORD OF BOREHOLE No 120-4

1 of 1

METRIC

G.W.P. 5112-07-00 **LOCATION** Hwy 69, Sta. 22+412.5, o/s 38.0 m Lt. **ORIGINATED BY** K.D.
DIST Parry Sound **HWY** 69 **BOREHOLE TYPE** Manual Probing **COMPILED BY** G.D.
DATUM Geodetic **DATE** September 06, 2012 **CHECKED BY** B.R.G.

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										WATER CONTENT (%)
								○ UNCONFINED + FIELD VANE ● QUICK TRIAXIAL × LAB VANE										
198.3	Ground Surface						20	40	60	80	100							
0.0	Topsoil	~ ~ ~					198											
198.0	End of borehole																	
0.3	Refusal on probable bedrock																	
	* Borehole dry																	

RECORD OF PENETRATION TEST No 120-5

1 of 1

METRIC

G.W.P. <u>5112-07-00</u>	LOCATION <u>Hwy 69, Sta. 22+412.5, o/s 1.0 m Lt.</u>	ORIGINATED BY <u>S.A.</u>
DIST <u>Parry Sound</u> HWY <u>69</u>	BOREHOLE TYPE <u>Tripod + Dynamic Cone Penetration Test</u>	COMPILED BY <u>G.D.</u>
DATUM <u>Geodetic</u>	DATE <u>February 09, 2013</u>	CHECKED BY <u>B.R.G.</u>



[illegible]

RECORD OF BOREHOLE No 120-6

1 of 1

METRIC

G.W.P. 5112-07-00 **LOCATION** Hwy 69, Sta. 22+425, o/s 18.8 m Lt. **ORIGINATED BY** K.D.
DIST Parry Sound **HWY** 69 **BOREHOLE TYPE** Manual Probing **COMPILED BY** G.D.
DATUM Geodetic **DATE** September 06, 2012 **CHECKED BY** B.R.G.

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 (%)		
								<div><div>20406080100</div><div>○ UNCONFINED + FIELD VANE</div><div>● QUICK TRIAXIAL × LAB VANE</div></div>										<div><div>204060</div><div>○</div></div>		
197.4	Ground Surface																			
0.0	Topsoil																			
197.1	End of borehole																			
0.3	Refusal on probable bedrock																			
	* Borehole dry																			

RECORD OF BOREHOLE No 120-7

1 of 1

METRIC

G.W.P. 5112-07-00 **LOCATION** Hwy 69, Sta. 22+430, o/s 36.0 m Lt. **ORIGINATED BY** K.D.
DIST Parry Sound **HWY** 69 **BOREHOLE TYPE** Manual Probing **COMPILED BY** G.D.
DATUM Geodetic **DATE** September 06, 2012 **CHECKED BY** B.R.G.

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	REMARKS & GRAIN SIZE DISTRIBUTION (%)																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																			
ELEV DEPTH	DESCRIPTION	STRAT PLOT	NUMBER	TYPE	"N" VALUES			SHEAR STRENGTH kPa									WATER CONTENT (%)				GR	SA	SI	CL																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																												
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198.7	Ground Surface					*																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																														

RECORD OF BOREHOLE No 120-8

1 of 1

METRIC

G.W.P. 5112-07-00 **LOCATION** Hwy 69, Sta. 22+430, o/s 3.0 m Lt. **ORIGINATED BY** K.D.
DIST Parry Sound **HWY** 69 **BOREHOLE TYPE** Manual Probing **COMPILED BY** G.D.
DATUM Geodetic **DATE** September 06, 2012 **CHECKED BY** B.R.G.

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	REMARKS & GRAIN SIZE DISTRIBUTION (%)			
ELEV DEPTH	DESCRIPTION	STRAT PLOT	NUMBER	TYPE	"N" VALUES			SHEAR STRENGTH kPa										WATER CONTENT (%)		
								○ UNCONFINED	● QUICK TRIAXIAL	+	×	FIELD VANE						LAB VANE		
198.4	Ground Surface					*		20	40	60	80	100		20	40	60	GR SA SI CL			
0.0	Bedrock at surface																			
	* Borehole dry																			

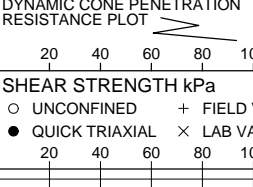

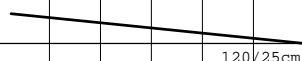
Swamp 121

RECORD OF PENETRATION TEST No 121-1

1 of 1

METRIC

G.W.P. 5112-07-00 **LOCATION** Hwy 69, Sta. 22+590, o/s 36.0 m Lt. **ORIGINATED BY** S.A.
DIST Parry Sound **HWY** 69 **BOREHOLE TYPE** Tripod + Dynamic Cone Penetration Test **COMPILED BY** G.D.
DATUM Geodetic **DATE** February 09, 2013 **CHECKED BY** B.R.G.

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 (%)									
197.1 0.0	Top of Ice						197													
196.5 0.6	Ice Probable peat																			
	End of dynamic cone penetration test							120 / 25cm												
	Refusal on probable bedrock																			

RECORD OF BOREHOLE No 121-2

1 of 1

METRIC

G.W.P. 5112-07-00 **LOCATION** Hwy 69, Sta. 22+590, o/s 3.0 m Lt. **ORIGINATED BY** S.A.
DIST Parry Sound **HWY** 69 **BOREHOLE TYPE** Tripod + Shovelling **COMPILED BY** G.D.
DATUM Geodetic **DATE** February 11, 2013 **CHECKED BY** B.R.G.

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												
197.8 0.0	Ground Surface							20	40	60	80	100								
	Topsoil		1	SS	1															
197.0 0.8	Boulders						197													
	End of borehole																			
	Refusal on probable bedrock																			
	* Borehole dry																			

RECORD OF BOREHOLE No 121-3

1 of 1

METRIC

G.W.P.	5112-07-00	LOCATION	Hwy 69, Sta. 22+600, o/s 18.8 m Lt.	ORIGINATED BY	S.A.
DIST	Parry Sound	HWY	69	BOREHOLE TYPE	Tripod + Casing
DATUM	Geodetic	DATE	February 09, 2013	CHECKED BY	B.R.G.

[illegible]

RECORD OF BOREHOLE No 121-4

1 of 1

METRIC

G.W.P. 5112-07-00 **LOCATION** Hwy 69, Sta. 22+612.5, o/s 40.5 m Lt. **ORIGINATED BY** K.D.
DIST Parry Sound **HWY** 69 **BOREHOLE TYPE** Manual Probing **COMPILED BY** G.D.
DATUM Geodetic **DATE** September 10, 2012 **CHECKED BY** B.R.G.


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	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												
197.6 0.0	Ground Surface					*		20	40	60	80	100					GR SA SI CL			
197.5 0.1	Topsoil																			
	End of borehole																			
	Refusal on probable bedrock																			

RECORD OF PENETRATION TEST No 121-5

1 of 1

METRIC

G.W.P. <u>5112-07-00</u>	LOCATION <u>Hwy 69, Sta. 22+612.5 CL</u>	ORIGINATED BY <u>S.A.</u>
DIST <u>Parry Sound</u> HWY <u>69</u>	BOREHOLE TYPE <u>Tripod + Dynamic Cone Penetration Test</u>	COMPILED BY <u>G.D.</u>
DATUM <u>Geodetic</u>	DATE <u>February 10, 2013</u>	CHECKED BY <u>B.R.G.</u>

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	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														
197.1 0.0	Ground Surface Peat, amorphous Dark brown																			
196.4 0.7	End of dynamic cone penetration test Refusal on probable bedrock																			

RECORD OF BOREHOLE No 121-6

1 of 1

METRIC

G.W.P. 5112-07-00	LOCATION Hwy 69, Sta. 22+622, o/s 18.8 m Lt.	ORIGINATED BY S.A.
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DIST	Parry Sound	HWY	69	BOREHOLE TYPE	Manual Probing	COMPILED BY	G.D.
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DATUM	Geodetic	DATE	February 12, 2013	CHECKED BY	B.R.G.
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[illegible]

RECORD OF PENETRATION TEST No 121-7

1 of 1

METRIC

G.W.P. 5112-07-00 **LOCATION** Hwy 69, Sta. 22+635.5, o/s 40.5 m Lt. **ORIGINATED BY** S.A.
DIST Parry Sound **HWY** 69 **BOREHOLE TYPE** Tripod + Dynamic Cone Penetration Test **COMPILED BY** G.D.
DATUM Geodetic **DATE** February 10, 2013 **CHECKED BY** B.R.G.

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									
								○ UNCONFINED	+ FIELD VANE	● QUICK TRIAXIAL	× LAB VANE						
196.4 0.0	Top of Ice Ice — — — — — Water — — — — — Probable peat — — — — — Probable sandy silt — — — — — Loose — — — — —																
194.4 2.0	End of dynamic cone penetration test Refusal on probable bedrock																

RECORD OF BOREHOLE No 121-8

1 of 1

METRIC

G.W.P. 5112-07-00	LOCATION Hwy 69, Sta. 22+637.5 CL	ORIGINATED BY S.A.
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DIST	Parry Sound	HWY	69	BOREHOLE TYPE	Manual Probing	COMPILED BY	G.D.
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DATUM	Geodetic	DATE	February 12, 2013	CHECKED BY	B.R.G.
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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					W _p	W	W _L	WATER CONTENT (%)							
196.3 0.0	Top of water					▽	196																
195.4 0.9	Water																						
195.3 1.0	Peat, amorphous Dark brown End of borehole Refusal on probable bedrock																						
<div>* 2013 02 12</div> <div>▽ Water level observed during drilling</div> <div>▼ Water level measured after drilling</div>																							

RECORD OF BOREHOLE No 121-9

1 of 1

METRIC

G.W.P. 5112-07-00 **LOCATION** Hwy 69, Sta. 22+650, o/s 18.8 m Lt. **ORIGINATED BY** K.D.
DIST Parry Sound **HWY** 69 **BOREHOLE TYPE** Manual Probing **COMPILED BY** G.D.
DATUM Geodetic **DATE** September 10, 2012 **CHECKED BY** B.R.G.


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	REMARKS & GRAIN SIZE DISTRIBUTION (%)			
ELEV DEPTH	DESCRIPTION	STRAT PLOT	NUMBER	TYPE	"N" VALUES			SHEAR STRENGTH kPa										WATER CONTENT (%)		
								<div><div></div><div></div><div></div><div></div><div></div></div> <div>○ UNCONFINED + FIELD VANE</div> <div>● QUICK TRIAXIAL × LAB VANE</div>										<div><div></div><div></div><div></div></div> <div></div>		
197.2	Ground Surface					*	197									GR SA SI CL				
0.0	Topsoil																			
197.0	End of borehole																			
0.2	Refusal on probable bedrock																			
	* Borehole dry																			

RECORD OF BOREHOLE No 121-10

1 of 1

METRIC

G.W.P. 5112-07-00 **LOCATION** Hwy 69, Sta. 22+662.5, o/s 38.0 m Lt. **ORIGINATED BY** S.A.
DIST Parry Sound **HWY** 69 **BOREHOLE TYPE** Tripod **COMPILED BY** G.D.
DATUM Geodetic **DATE** February 28, 2013 **CHECKED BY** B.R.G.

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												
196.2	Ground Surface																			
0.0	Peat, amorphous topsoil inclusions		1	SS	1		196													
195.4	Dark brown	2	SS	50/3cm																
0.8	End of borehole																			
	Refusal on probable bedrock																			
	Sample 2: Sampler bouncing																			

RECORD OF BOREHOLE No 121-11

1 of 1

METRIC

G.W.P. 5112-07-00 **LOCATION** Hwy 69, Sta. 22+662.5, o/s 1.0m Lt. **ORIGINATED BY** K.D.
DIST Parry Sound **HWY** 69 **BOREHOLE TYPE** Manual Probing **COMPILED BY** G.D.
DATUM Geodetic **DATE** September 10, 2012 **CHECKED BY** B.R.G.

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	REMARKS & GRAIN SIZE DISTRIBUTION (%)			
ELEV DEPTH	DESCRIPTION	STRAT PLOT	NUMBER	TYPE	"N" VALUES			SHEAR STRENGTH kPa										WATER CONTENT (%)		
								<div><div>○ UNCONFINED</div><div>● QUICK TRIAXIAL</div></div> <div><div>+ FIELD VANE</div><div>× LAB VANE</div></div>												
197.1	Ground Surface					*		20	40	60	80	100				kn/m³	GR SA SI CL			
0.0	Topsoil						197													
197.0	End of borehole																			
0.1	Refusal on probable bedrock																			
	* Borehole dry																			

RECORD OF BOREHOLE No 121-12

1 of 1

METRIC

G.W.P. <u>5112-07-00</u>	LOCATION <u>Hwy 69, Sta. 22+675, o/s 18.8 m Lt.</u>	ORIGINATED BY <u>S.A.</u>
DIST <u>Parry Sound</u> HWY <u>69</u>	BOREHOLE TYPE <u>Tripod + Casing</u>	COMPILED BY <u>G.D.</u>
DATUM <u>Geodetic</u>	DATE <u>February 10, 2013</u>	CHECKED BY <u>B.R.G.</u>

[illegible]

RECORD OF BOREHOLE No 121-13

1 of 1

METRIC

G.W.P. 5112-07-00	LOCATION Hwy 69, Sta. 22+687.5, o/s 41.0 m Lt.	ORIGINATED BY K.D.
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DIST	Parry Sound	HWY	69	BOREHOLE TYPE	Manual Probing	COMPILED BY	G.D.
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DATUM	Geodetic	DATE	September 10, 2012	CHECKED BY	B.R.G.
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[illegible]

RECORD OF BOREHOLE No 121-14

1 of 1

METRIC

G.W.P. 5112-07-00	LOCATION Hwy 69, Sta. 22+687.5 CL	ORIGINATED BY S.A.
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DIST	Parry Sound	HWY	69	BOREHOLE TYPE	Tripod + Hammer Spoon	COMPILED BY	G.D.
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DATUM	Geodetic	DATE	February 11, 2013	CHECKED BY	B.R.G.
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[illegible]

RECORD OF BOREHOLE No 121-15

1 of 1

METRIC

G.W.P. 5112-07-00 **LOCATION** Hwy 69, Sta. 22+700, o/s 18.8 m Lt. **ORIGINATED BY** S.A.
DIST Parry Sound **HWY** 69 **BOREHOLE TYPE** Tripod + Casing **COMPILED BY** G.D.
DATUM Geodetic **DATE** February 10, 2013 **CHECKED BY** B.R.G.

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		
196.7	Ground Surface																				
196.5 0.2	Peat, amorphous Dark brown		1	SS	2																
196.3 0.4	Clayey silt, trace sand organics, rootlets																				
195.5 1.2	Soft Grey Moist Sand and silt trace clay, trace gravel Compact Brown Wet End of borehole Refusal on probable bedrock		2	SS	58																
	* Borehole dry																				

Swamp 122

RECORD OF BOREHOLE No 122-1

1 of 1

METRIC

G.W.P. 5112-07-00 **LOCATION** Hwy 69, Sta. 22+800, o/s 18.8 m Lt. **ORIGINATED BY** K.D.
DIST Wallbridge Twp **HWY** 69 **BOREHOLE TYPE** Manual Probing **COMPILED BY** G.D.
DATUM Geodetic **DATE** September 11, 2012 **CHECKED BY** B.R.G.

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		WATER CONTENT (%)	GR	SA	SI	CL
								○ UNCONFINED	● QUICK TRIAXIAL	+	×	FIELD VANE	LAB VANE								
199.5	Ground Surface					*															
0.0	Bedrock at surface																				
	* Borehole dry																				

RECORD OF PENETRATION TEST No 122-2

1 of 1

METRIC

G.W.P. <u>5112-07-00</u>	LOCATION <u>Hwy 69, Sta. 22+812.5, o/s 41.0 m Lt.</u>	ORIGINATED BY <u>S.A.</u>
DIST <u>Wallbridge Twp</u> HWY <u>69</u>	BOREHOLE TYPE <u>Tripod + Dynamic Cone Penetration Test</u>	COMPILED BY <u>G.D.</u>
DATUM <u>Geodetic</u>	DATE <u>February 20, 2013</u>	CHECKED BY <u>B.R.G.</u>

[illegible]

RECORD OF BOREHOLE No 122-3

1 of 1

METRIC

G.W.P. 5112-07-00 **LOCATION** Hwy 69, Sta. 22+812.5 CL **ORIGINATED BY** S.A.
DIST Wallbridge Twp **HWY** 69 **BOREHOLE TYPE** Tripod **COMPILED BY** G.D.
DATUM Geodetic **DATE** February 20, 2013 **CHECKED BY** B.R.G.








SOIL PROFILE			SAMPLES			GROUND WATER CONDITIONS *	ELEVATION SCALE	DYNAMIC CONE PENETRATION RESISTANCE PLOT					PLASTIC LIMIT NATURAL MOISTURE CONTENT			LIQUID LIMIT	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 (%)					
								<div><div><div>20406080100</div><div>○ UNCONFINED + FIELD VANE</div><div>● QUICK TRIAXIAL × LAB VANE</div></div></div>					<div><div><div>W_pW_L</div><div>W</div></div></div>					
198.9 0.0	Ground Surface																	
198.7 0.2	Peat, amorphous Dark brown		1	SS	11													
198.0 0.9	Silty sand, trace gravel organics		2	SS	50/15cm													
	Loose to compact Brown/ grey Moist																	
	End of borehole																	
	Refusal on probable bedrock																	
	Sample 2: Sampler bouncing																	

RECORD OF BOREHOLE No 122-4

1 of 1

METRIC

G.W.P. 5112-07-00 **LOCATION** Hwy 69, Sta. 22+825, o/s 18.8 m Lt. **ORIGINATED BY** S.A.
DIST Wallbridge Twp **HWY** 69 **BOREHOLE TYPE** Tripod **COMPILED BY** G.D.
DATUM Geodetic **DATE** February 21, 2013 **CHECKED BY** B.R.G.

SOIL PROFILE			SAMPLES			GROUND WATER CONDITIONS *	ELEVATION SCALE	DYNAMIC CONE PENETRATION RESISTANCE PLOT					PLASTIC NATURAL LIQUID LIMIT MOISTURE LIMIT CONTENT			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 (%)				
								<div><div>20406080100</div><div>○ UNCONFINED + FIELD VANE</div><div>● QUICK TRIAXIAL × LAB VANE</div></div>					<div><div>W_pWw_L</div><div>○</div></div>				
198.9	Ground Surface																
0.0																	
198.6	Topsoil																
0.3	Silty sand, trace gravel organics, rootlets		1	SS	2												
																	
																	
197.8	Loose to Brown/ Moist compact grey		2	SS	57/20cm		198										
1.1	End of borehole																
	Refusal on probable bedrock																
	Sample 2: Sampler bouncing																

RECORD OF BOREHOLE No 122-5

1 of 1

METRIC

G.W.P. 5112-07-00 **LOCATION** Hwy 69, Sta. 22+840, o/s 40.0 m Lt. **ORIGINATED BY** S.A.
DIST Wallbridge Twp **HWY** 69 **BOREHOLE TYPE** Tripod + Shovelling **COMPILED BY** G.D.
DATUM Geodetic **DATE** February 21, 2013 **CHECKED BY** B.R.G.

SOIL PROFILE			SAMPLES		GROUND WATER CONDITIONS	ELEVATION SCALE	DYNAMIC CONE PENETRATION RESISTANCE PLOT					PLASTIC LIMIT NATURAL MOISTURE CONTENT			UNIT WEIGHT γ	REMARKS & GRAIN SIZE DISTRIBUTION (%)
ELEV DEPTH	DESCRIPTION	STRAT PLOT	NUMBER	TYPE			20	40	60	80	100	W _p	W	W _L		
198.4	Ground Surface															
0.0 198.1 0.3	Peat, amorphous Dark brown	~ ~ ~	1	SS	54/18cm											
	End of borehole															
	Refusal on probable bedrock															
	Sample 1: Sampler bouncing															
	* Borehole dry															

RECORD OF BOREHOLE No 122-6

1 of 1

METRIC

G.W.P. 5112-07-00	LOCATION Hwy 69, Sta. 22+840 CL	ORIGINATED BY K.D.
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DIST	Wallbridge Twp	HWY	69	BOREHOLE TYPE	Manual Probing	COMPILED BY	G.D.
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DATUM	Geodetic	DATE	September 11, 2012	CHECKED BY	B.R.G.
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[illegible]

Swamp 123

RECORD OF BOREHOLE No 123-1

1 of 1

METRIC

G.W.P. 5112-07-00 **LOCATION** Hwy 69, Sta. 22+850, o/s 18.8 m Rt. **ORIGINATED BY** D.K.
DIST Parry Sound **HWY** 69 **BOREHOLE TYPE** Manual Probing **COMPILED BY** G.D.
DATUM Geodetic **DATE** September 12, 2012 **CHECKED BY** B.R.G.

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	REMARKS & GRAIN SIZE DISTRIBUTION (%)																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																								
ELEV DEPTH	DESCRIPTION	STRAT PLOT	NUMBER	TYPE	"N" VALUES			SHEAR STRENGTH kPa									WATER CONTENT (%)				GR	SA	SI	CL																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																	
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RECORD OF BOREHOLE No 123-2

1 of 1

METRIC

G.W.P. 5112-07-00 **LOCATION** Hwy 69, Sta. 22+862.5, o/s 2.5 m Rt. **ORIGINATED BY** D.K.
DIST Parry Sound **HWY** 69 **BOREHOLE TYPE** Manual Probing **COMPILED BY** G.D.
DATUM Geodetic **DATE** September 12, 2012 **CHECKED BY** B.R.G.

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	REMARKS & GRAIN SIZE DISTRIBUTION (%)			
ELEV DEPTH	DESCRIPTION	STRAT PLOT	NUMBER	TYPE	"N" VALUES			SHEAR STRENGTH kPa										WATER CONTENT (%)		
								<div><div>○ UNCONFINED</div><div>● QUICK TRIAXIAL</div><div>+ FIELD VANE</div><div>× LAB VANE</div></div>										<div><div></div><div></div><div></div></div>		
200.6	Ground Surface					*		20	40	60	80	100					GR SA SI CL			
0.0	Bedrock at surface																			
	* Borehole dry																			

RECORD OF BOREHOLE No 123-3

1 of 1

METRIC

G.W.P. 5112-07-00 **LOCATION** Hwy 69, Sta. 22+862.5, o/s 36.5 m Rt. **ORIGINATED BY** S.A.
DIST Parry Sound **HWY** 69 **BOREHOLE TYPE** Tripod **COMPILED BY** G.D.
DATUM Geodetic **DATE** February 22, 2013 **CHECKED BY** B.R.G.

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						W _p W W _L																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																					
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RECORD OF BOREHOLE No 123-4

1 of 1

METRIC

G.W.P. 5112-07-00 **LOCATION** Hwy 69, Sta. 22+875, o/s 18.8 m Rt. **ORIGINATED BY** D.K.
DIST Parry Sound **HWY** 69 **BOREHOLE TYPE** Manual Probing **COMPILED BY** G.D.
DATUM Geodetic **DATE** September 12, 2012 **CHECKED BY** B.R.G.

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	REMARKS & GRAIN SIZE DISTRIBUTION (%)		
ELEV DEPTH	DESCRIPTION	STRAT PLOT	NUMBER	TYPE	"N" VALUES			SHEAR STRENGTH kPa											
								○ UNCONFINED	+	FIELD VANE	● QUICK TRIAXIAL	×						LAB VANE	
201.1	Ground Surface					*										GR	SA	SI	CL
0.0	Bedrock at surface																		
	* Borehole dry																		

RECORD OF BOREHOLE No 123-5

1 of 1

METRIC

G.W.P. 5112-07-00 **LOCATION** Hwy 69, Sta. 22+887.5, o/s 6.0 m Rt. **ORIGINATED BY** D.K.
DIST Parry Sound **HWY** 69 **BOREHOLE TYPE** Manual Probing **COMPILED BY** G.D.
DATUM Geodetic **DATE** September 12, 2012 **CHECKED BY** B.R.G.


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	REMARKS & GRAIN SIZE DISTRIBUTION (%)
ELEV DEPTH	DESCRIPTION	STRAT PLOT	NUMBER	TYPE	"N" VALUES	SHEAR STRENGTH kPa					WATER CONTENT (%)							
						○ UNCONFINED			● QUICK TRIAXIAL	+		×	FIELD VANE					
201.3	Ground Surface					*											GR SA SI CL	
0.0	Bedrock at surface																	
	* Borehole dry																	

RECORD OF PENETRATION TEST No 123-6

1 of 1

METRIC

G.W.P. 5112-07-00 **LOCATION** Hwy 69, Sta. 22+887.5, o/s 33.0 m Rt. **ORIGINATED BY** S.A.
DIST Parry Sound **HWY** 69 **BOREHOLE TYPE** Tripod + Dynamic Cone Penetration Test **COMPILED BY** G.D.
DATUM Geodetic **DATE** February 22, 2013 **CHECKED BY** B.R.G.

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	REMARKS & GRAIN SIZE DISTRIBUTION (%)			
ELEV DEPTH	DESCRIPTION	STRAT PLOT	NUMBER	TYPE	"N" VALUES			SHEAR STRENGTH kPa									WATER CONTENT (%)			
199.8 0.0	Ground Surface Peat, amorphous Dark brown							20	40	60	80	100								
199.2 0.6	End of dynamic cone penetration test Refusal on probable bedrock																			

RECORD OF BOREHOLE No 123-7

1 of 1

METRIC

G.W.P. 5112-07-00 **LOCATION** Hwy 69, Sta. 22+900, o/s 18.8 m Rt. **ORIGINATED BY** D.K.
DIST Parry Sound **HWY** 69 **BOREHOLE TYPE** Manual Probing **COMPILED BY** G.D.
DATUM Geodetic **DATE** September 12, 2012 **CHECKED BY** B.R.G.

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	REMARKS & GRAIN SIZE DISTRIBUTION (%)
ELEV DEPTH	DESCRIPTION	STRAT PLOT	NUMBER	TYPE	"N" VALUES	SHEAR STRENGTH kPa					WATER CONTENT (%)							
						○ UNCONFINED			● QUICK TRIAXIAL	+		×	FIELD VANE					
200.5	Ground Surface					*											GR SA SI CL	
0.0	Bedrock at surface																	
	* Borehole dry																	

RECORD OF PENETRATION TEST No 123-8

1 of 1

METRIC

G.W.P. <u>5112-07-00</u>	LOCATION <u>Hwy 69, Sta. 22+912.5 CL</u>	ORIGINATED BY <u>S.A.</u>
DIST <u>Parry Sound</u> HWY <u>69</u>	BOREHOLE TYPE <u>Tripod + Dynamic Cone Penetration Test</u>	COMPILED BY <u>G.D.</u>
DATUM <u>Geodetic</u>	DATE <u>February 22, 2013</u>	CHECKED BY <u>B.R.G.</u>

[illegible]

RECORD OF BOREHOLE No 123-9

1 of 1

METRIC

G.W.P. 5112-07-00 **LOCATION** Hwy 69, Sta. 22+912.5, o/s 39.0 m Rt. **ORIGINATED BY** S.A.
DIST Parry Sound **HWY** 69 **BOREHOLE TYPE** Tripod **COMPILED BY** G.D.
DATUM Geodetic **DATE** February 22, 2013 **CHECKED BY** B.R.G.

SOIL PROFILE			SAMPLES		GROUND WATER CONDITIONS *	ELEVATION SCALE	DYNAMIC CONE PENETRATION RESISTANCE PLOT					PLASTIC LIMIT NATURAL MOISTURE CONTENT			UNIT WEIGHT γ	REMARKS & GRAIN SIZE DISTRIBUTION (%)
ELEV DEPTH	DESCRIPTION	STRAT PLOT	NUMBER	TYPE			20	40	60	80	100	W _p	W	W _L		
199.7	Top of Ice															
199.6	Ice															
199.3	Peat, amorphous		1	SS												
0.4	Dark brown/ black															
199.1	Sand, some gravel															
0.6	Loose to Grey/ Wet compact black															
	End of borehole															
	Refusal on probable bedrock															
	* Borehole dry															

RECORD OF BOREHOLE No 123-10

1 of 1

METRIC

G.W.P. 5112-07-00 **LOCATION** Hwy 69, Sta. 22+920, o/s 18.8 m Rt. **ORIGINATED BY** D.K.
DIST Parry Sound **HWY** 69 **BOREHOLE TYPE** Manual Probing **COMPILED BY** G.D.
DATUM Geodetic **DATE** September 12, 2012 **CHECKED BY** B.R.G.

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					w _p	w	w _L		WATER CONTENT (%)						
								○ UNCONFINED	● QUICK TRIAXIAL	+	×	FIELD VANE	LAB VANE										
200.9	Ground Surface					*														GR	SA	SI	CL
0.0	Bedrock at surface																						
	* Borehole dry																						


Swamp 124

RECORD OF BOREHOLE No 124-1

1 of 1

METRIC

G.W.P. 5112-07-00 **LOCATION** Hwy 69, Sta. 22+960, o/s 18.8m Rt. **ORIGINATED BY** K.D.
DIST Parry Sound **HWY** 69 **BOREHOLE TYPE** Manual Probing **COMPILED BY** G.D.
DATUM Geodetic **DATE** September 13, 2012 **CHECKED BY** B.R.G.

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 (%)		
								<div><div>○ UNCONFINED</div><div>● QUICK TRIAXIAL</div></div> <div><div>+ FIELD VANE</div><div>× LAB VANE</div></div>												
200.6	Ground Surface					*														
0.0	Topsoil																			
200.4	End of borehole																			
0.2	Refusal on probable bedrock																			
	* Borehole dry																			

RECORD OF BOREHOLE No 124-2

1 of 1

METRIC

G.W.P. 5112-07-00	LOCATION Hwy 69, Sta. 22+962.5 CL	ORIGINATED BY K.D.
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DIST	Parry Sound	HWY	69	BOREHOLE TYPE	Manual Probing	COMPILED BY	G.D.
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DATUM Geodetic	DATE September 13, 2012	CHECKED BY B.R.G.
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[illegible]

RECORD OF BOREHOLE No 124-3

1 of 1

METRIC

G.W.P. 5112-07-00	LOCATION Hwy 69, Sta. 22+962.5, o/s 38.5m Rt.	ORIGINATED BY K.D.
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DIST	Parry Sound	HWY	69	BOREHOLE TYPE	Manual Probing	COMPILED BY	G.D.
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DATUM	Geodetic	DATE	September 13, 2012	CHECKED BY	B.R.G.
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[illegible]

RECORD OF BOREHOLE No 124-4

1 of 1

METRIC

G.W.P. 5112-07-00 **LOCATION** Hwy 69, Sta. 22+975, o/s 18.8m Rt. **ORIGINATED BY** S.A.
DIST Parry Sound **HWY** 69 **BOREHOLE TYPE** Tripod **COMPILED BY** G.D.
DATUM Geodetic **DATE** February 23, 2013 **CHECKED BY** B.R.G.

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 (%)		
								<div><div></div><div>20406080100</div></div> <div>○ UNCONFINED + FIELD VANE ● QUICK TRIAXIAL × LAB VANE</div>										<div><div></div><div>204060</div></div>		
199.6 0.0	Ground Surface Peat, amorphous Dark brown/ black		1	SS	51										○					
199.1 0.5	End of borehole Refusal on probable bedrock <																			

RECORD OF BOREHOLE No 124-5

1 of 1

METRIC

G.W.P. 5112-07-00 **LOCATION** Hwy 69, Sta. 22+987.5 CL **ORIGINATED BY** K.D.
DIST Parry Sound **HWY** 69 **BOREHOLE TYPE** Manual Probing **COMPILED BY** G.D.
DATUM Geodetic **DATE** September 13, 2012 **CHECKED BY** B.R.G.

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	REMARKS & GRAIN SIZE DISTRIBUTION (%)			
ELEV DEPTH	DESCRIPTION	STRAT PLOT	NUMBER	TYPE	"N" VALUES			SHEAR STRENGTH kPa										WATER CONTENT (%)		
								<div><div></div><div></div><div></div><div></div><div></div></div> <div>○ UNCONFINED + FIELD VANE ● QUICK TRIAXIAL × LAB VANE</div>										<div><div></div><div></div><div></div></div> <div>w_p w w_L</div>		
199.2	Ground Surface					*		20	40	60	80	100	20	40	60	kn/m³	GR SA SI CL			
0.0	Bedrock at surface																			
	* Borehole dry																			

RECORD OF PENETRATION TEST No 124-6

1 of 1

METRIC

G.W.P.	5112-07-00	LOCATION	Hwy 69, Sta. 22+987.5, o/s 44.5m Rt.	ORIGINATED BY	S.A.
DIST	Parry Sound	HWY	69	BOREHOLE TYPE	Tripod + Dynamic Cone Penetration Test
DATUM	Geodetic	DATE	February 23, 2013	CHECKED BY	B.R.G.
COMPILED BY G.D.					

[illegible]

RECORD OF BOREHOLE No 124-7

1 of 1

METRIC

G.W.P. 5112-07-00 **LOCATION** Hwy 69, Sta. 23+000, o/s 18.8m Rt. **ORIGINATED BY** S.A.
DIST Parry Sound **HWY** 69 **BOREHOLE TYPE** Tripod **COMPILED BY** G.D.
DATUM Geodetic **DATE** February 23, 2013 **CHECKED BY** B.R.G.

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	REMARKS & GRAIN SIZE DISTRIBUTION (%)			
ELEV DEPTH	DESCRIPTION	STRAT PLOT	NUMBER	TYPE	"N" VALUES			SHEAR STRENGTH kPa										WATER CONTENT (%)		
								<div>○ UNCONFINED + FIELD VANE</div> <div>● QUICK TRIAXIAL × LAB VANE</div>												
199.2	Top of Ice							20	40	60	80	100								
0.0	Ice		1	SS	WH**	<div>▽*</div> <div>▼*</div>	199													
198.6	Water																			
0.6	End of borehole																			
	Refusal on probable bedrock																			
	Sample 1: Sampler bouncing																			
							</													

RECORD OF BOREHOLE No 124-8

1 of 1

METRIC

G.W.P. 5112-07-00 **LOCATION** Hwy 69, Sta. 23+012.5 CL **ORIGINATED BY** K.D.
DIST Parry Sound **HWY** 69 **BOREHOLE TYPE** Manual Probing **COMPILED BY** G.D.
DATUM Geodetic **DATE** September 13, 2012 **CHECKED BY** B.R.G.

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	REMARKS & GRAIN SIZE DISTRIBUTION (%)		
ELEV DEPTH	DESCRIPTION	STRAT PLOT	NUMBER	TYPE	"N" VALUES	SHEAR STRENGTH kPa					WATER CONTENT (%)									
						<div><div></div><div></div><div></div><div></div><div></div></div> <div>○ UNCONFINED + FIELD VANE ● QUICK TRIAXIAL × LAB VANE</div>					<div><div></div><div></div><div></div></div> <div></div>									
200.2 0.0	Ground Surface Bedrock at surface					*											GR SA SI CL			
	* Borehole dry																			

RECORD OF BOREHOLE No 124-9

1 of 1

METRIC

G.W.P. 5112-07-00	LOCATION Hwy 69, Sta. 23+012.5, o/s 44.5m Rt.	ORIGINATED BY K.D.
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DIST	Parry Sound	HWY	69	BOREHOLE TYPE	Manual Probing	COMPILED BY	G.D.
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DATUM Geodetic	DATE September 13, 2012	CHECKED BY B.R.G.
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SOIL PROFILE					
ELEV DEPTH	DESCRIPTION	STRAT PLOT	SAMPLES	GROUND WATER CONDITIONS	ELEVATION SCALE
			NUMBER	TYPE	"N" VALUES
199.40.0	Ground Surface				*
199.30.1	Topsoil				
	End of borehole				
	Refusal on probable bedrock				
	* Borehole dry				

RECORD OF BOREHOLE No 124-10

1 of 1

METRIC

G.W.P. 5112-07-00 **LOCATION** Hwy 69, Sta. 23+025, o/s 18.8m Rt. **ORIGINATED BY** K.D.
DIST Parry Sound **HWY** 69 **BOREHOLE TYPE** Manual Probing **COMPILED BY** G.D.
DATUM Geodetic **DATE** September 13, 2012 **CHECKED BY** B.R.G.

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	REMARKS & GRAIN SIZE DISTRIBUTION (%) GR SA SI CL			
ELEV DEPTH	DESCRIPTION	STRAT PLOT	NUMBER	TYPE	"N" VALUES			SHEAR STRENGTH kPa										WATER CONTENT (%)		
								<div><div>20406080100</div><div>○ UNCONFINED + FIELD VANE</div><div>● QUICK TRIAXIAL × LAB VANE</div></div>										<div><div>204060</div><div>○</div></div>		
199.3 0.0	Ground Surface						199													
198.9 0.4	Topsoil																			
	End of borehole Refusal on probable bedrock																			
	* Borehole dry																			

RECORD OF BOREHOLE No 124-11

1 of 1

METRIC

G.W.P. 5112-07-00 **LOCATION** Hwy 69, Sta. 23+037.5 CL **ORIGINATED BY** K.D.
DIST Parry Sound **HWY** 69 **BOREHOLE TYPE** Manual Probing **COMPILED BY** G.D.
DATUM Geodetic **DATE** September 13, 2012 **CHECKED BY** B.R.G.

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					W _p	W	W _L		GR	SA	SI	CL
								○ UNCONFINED	● QUICK TRIAXIAL	+	×	FIELD VANE	LAB VANE							
200.4 0.0	Ground Surface					*														
200.3 0.1	Topsoil																			
	End of borehole																			
	Refusal on probable bedrock																			

RECORD OF PENETRATION TEST No 124-12

1 of 1

METRIC

G.W.P. <u>5112-07-00</u>	LOCATION <u>Hwy 69, Sta. 23+037.5, o/s 42.0m Rt.</u>	ORIGINATED BY <u>S.A.</u>
DIST <u>Parry Sound</u> HWY <u>69</u>	BOREHOLE TYPE <u>Tripod + Dynamic Cone Penetration Test</u>	COMPILED BY <u>G.D.</u>
DATUM <u>Geodetic</u>	DATE <u>February 23, 2013</u>	CHECKED BY <u>B.R.G.</u>

SOIL PROFILE					
ELEV DEPTH	DESCRIPTION	STRAT PLOT	SAMPLES	N° VALUES	GROUND WATER CONDITIONS
199.20.0	Top of Ice Ice Water Probable peat Probable silt Loose	[Strat Plot Diagram]			
196.92.3	End of dynamic cone penetration test Refusal on probable bedrock				

DYNAMIC CONE PENETRATION RESISTANCE PLOT			
20 40 60 80 100			
SHEAR STRENGTH kPa			
○ UNCONFINED + FIELD VANE			
● QUICK TRIAXIAL × LAB VANE			
WATER CONTENT (%)	PLASTIC LIMIT W _p	NATURAL MOISTURE CONTENT w	LIQUID LIMIT W _L
20 40 60			



UNIT WEIGHT γ	REMARKS & GRAIN SIZE DISTRIBUTION (%)
kN/m³ GR SA SI CL	

RECORD OF BOREHOLE No 124-13

1 of 1

METRIC

G.W.P. 5112-07-00 **LOCATION** Hwy 69, Sta. 23+050, o/s 18.8m Rt. **ORIGINATED BY** S.A.
DIST Parry Sound **HWY** 69 **BOREHOLE TYPE** Manual Probing **COMPILED BY** G.D.
DATUM Geodetic **DATE** February 23, 2013 **CHECKED BY** B.R.G.

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	REMARKS & GRAIN SIZE DISTRIBUTION (%)	
ELEV DEPTH	DESCRIPTION	STRAT PLOT	NUMBER	TYPE	"N" VALUES			SHEAR STRENGTH kPa										WATER CONTENT (%)
								○ UNCONFINED	● QUICK TRIAXIAL	+	×	FIELD VANE						
200.3	Ground Surface		1	SS	50/15cm												GR SA SI CL	
0.0	Topsoil																	
200.1	End of borehole																	
0.2	Refusal on probable bedrock																	
	Sample 1: Sampler bouncing																	

RECORD OF PENETRATION TEST No 124-14

1 of 1

METRIC

G.W.P. 5112-07-00	LOCATION	Hwy 69, Sta. 23+060 CL	ORIGINATED BY	S.A.
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DIST	Parry Sound	HWY	69	BOREHOLE TYPE	Tripod + Dynamic Cone Penetration Test	COMPILED BY	G.D.
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DATUM Geodetic	DATE February 23, 2013	CHECKED BY B.R.G.
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[illegible]

RECORD OF BOREHOLE No 124-15

1 of 1

METRIC

G.W.P. 5112-07-00 **LOCATION** Hwy 69, Sta. 23+060, o/s 38.5m Rt. **ORIGINATED BY** K.D.
DIST Parry Sound **HWY** 69 **BOREHOLE TYPE** Manual Probing **COMPILED BY** G.D.
DATUM Geodetic **DATE** September 13, 2012 **CHECKED BY** B.R.G.

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												
200.2 0.0	Ground Surface							20	40	60	80	100								
200.1 0.1	Topsoil																			
	End of borehole																			
	Refusal on probable bedrock																			

Ramp S-E/W Swamp

RECORD OF BOREHOLE No SEW-1

1 of 1

METRIC

G.W.P. <u>5112-07-00</u>	LOCATION <u>Ramp S-E/W, Sta. 20+250 CL</u>	ORIGINATED BY <u>F.P.</u>
DIST <u>Wallbridge Twp</u> HWY <u>69</u>	BOREHOLE TYPE <u>Tripod and 'N' Casing</u>	COMPILED BY <u>G.D.</u>
DATUM <u>Geodetic</u>	DATE <u>January 29, 2013</u>	CHECKED BY <u>B.R.G.</u>

[illegible]

RECORD OF BOREHOLE No SEW-2

1 of 1

METRIC

G.W.P. 5112-07-00 **LOCATION** Ramp S-E/W, Sta. 20+275 CL **ORIGINATED BY** F.P.
DIST Wallbridge Twp **HWY** 69 **BOREHOLE TYPE** Tripod and 'N' Casing **COMPILED BY** G.D.
DATUM Geodetic **DATE** January 31, 2013 **CHECKED BY** B.R.G.







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	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										
200.5	Top of Ice						20	40	60	80	100						GR SA SI CL	
0.0	Ice					▽*												
199.9	Water					▼*												
0.6	Organic silt, with sand some to with clay		1	SS	8		200									Org. 3.0%	0 27 52 21	
199.3	Loose Dark Wet grey																	
1.2	End of borehole Refusal on probable bedrock																	
* 2013 01 31																		
▽ Water level observed during drilling																		
▼ Water level measured after drilling																		

RECORD OF PENETRATION TEST No SEW-3

1 of 1

METRIC

G.W.P. 5112-07-00 **LOCATION** Ramp S-E/W, Sta. 20+287.5, o/s 26.0 m Lt. **ORIGINATED BY** F.P.
DIST Wallbridge Twp **HWY** 69 **BOREHOLE TYPE** Dynamic Cone Penetration Test **COMPILED BY** G.D.
DATUM Geodetic **DATE** February 05, 2013 **CHECKED BY** B.R.G.

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	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												
199.7 0.0	Ground Surface							20	40	60	80	100					GR SA SI CL			
	Peat																			
199.1 0.6	Probable silt																			
	Loose to compact																			
	End of dynamic cone penetration test																			
	Refusal on probable bedrock																			
		</																		

RECORD OF BOREHOLE No SEW-4

1 of 1

METRIC

G.W.P. 5112-07-00 **LOCATION** Ramp S-E/W, Sta. 20+287.5, o/s 20.0 m Rt. **ORIGINATED BY** F.P.
DIST Wallbridge Twp **HWY** 69 **BOREHOLE TYPE** Tripod and 'N' Casing **COMPILED BY** G.D.
DATUM Geodetic **DATE** February 04, 2013 **CHECKED BY** B.R.G.

SOIL PROFILE			SAMPLES			GROUND WATER CONDITIONS	ELEVATION SCALE	DYNAMIC CONE PENETRATION RESISTANCE PLOT			PLASTIC LIMIT NATURAL MOISTURE LIQUID LIMIT LIMIT CONTENT 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					w _p w w _L				
199.1	Top of Ice							20	40	60	80	100	20	40	60	kN/m ³	GR SA SI CL
0.0	Ice					▽*	▼*	199									
	Water																
198.2	Organic silt some clay to clayey trace sand		1	SS	2			198									
0.9	Very loose Grey Wet to loose		2	SS	6												
196.9	Clayey silt, trace sand							197									
2.2	Stiff Brown Moist to wet		3	SS	8												
196.1																	
3.0	Clay, trace sand		4	SS	4			196									
	Stiff to Grey Moist soft to wet			FV													
			5	TW	PM			195									
				FV													
			6	SS	1												
								194									
	sand seams																
								193									
			7	SS	1												
				FV													
191.8	Sand, trace gravel							192									
7.3	Compact Grey Wet		8	SS	24												
190.6								191									
8.5	End of borehole																
	Refusal on probable bedrock																

* 2013 02 04

▽ Water level observed during drilling

▼ Water level measured after drilling

■ Penetrometer test

RECORD OF BOREHOLE No SEW-5

1 of 1

METRIC

G.W.P. 5112-07-00 **LOCATION** Ramp S-E/W, Sta. 20+300 CL **ORIGINATED BY** F.P.
DIST Wallbridge Twp **HWY** 69 **BOREHOLE TYPE** Tripod and 'N' Casing **COMPILED BY** G.D.
DATUM Geodetic **DATE** February 04, 2013 **CHECKED BY** B.R.G.

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										WATER CONTENT (%)		
								○ UNCONFINED + FIELD VANE ● QUICK TRIAXIAL × LAB VANE												
199.8	Ground Surface																			
199.6	Topsoil																			
0.2	Silt			1	SS	2														
199.2	some clay, trace sand																			
0.6	Very loose Brown Clayey silt, trace sand organics																			
	Firm to stiff Mottled grey/brown		2	SS	9		199													
198.3	End of borehole																			
1.5	Refusal on probable bedrock																			
	* Borehole dry																			

Ramp N-E/W Swamp

RECORD OF BOREHOLE No NEW-1

1 of 1

METRIC

G.W.P. 5112-07-00 **LOCATION** Ramp N-E/W, Sta. 20+710 CL **ORIGINATED BY** A.L.
DIST Wallbridge Twp **HWY** 69 **BOREHOLE TYPE** Manual Probing **COMPILED BY** G.D.
DATUM Geodetic **DATE** February 25, 2013 **CHECKED BY** B.R.G.

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	REMARKS & GRAIN SIZE DISTRIBUTION (%)		
ELEV DEPTH	DESCRIPTION	STRAT PLOT	NUMBER	TYPE	"N" VALUES	SHEAR STRENGTH kPa					WATER CONTENT (%)									
						<div><div></div><div></div><div></div><div></div><div></div></div> <div>○ UNCONFINED + FIELD VANE ● QUICK TRIAXIAL × LAB VANE</div>					<div><div></div><div></div><div></div></div> <div></div>									
199.9	Ground Surface					*											GR SA SI CL			
0.0	Bedrock at surface																			
	* Borehole dry																			

RECORD OF BOREHOLE No NEW-2

1 of 1

METRIC

G.W.P. 5112-07-00	LOCATION Ramp N-E/W, Sta. 20+725, o/s 14.0 m Lt.	ORIGINATED BY A.L.
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DIST	Wallbridge Twp	HWY	69	BOREHOLE TYPE	Manual Probing	COMPILED BY	G.D.
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DATUM Geodetic	DATE February 26, 2013	CHECKED BY B.R.G.
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[illegible]

RECORD OF BOREHOLE No NEW-3

1 of 1

METRIC

G.W.P. 5112-07-00	LOCATION Ramp N-E/W, Sta. 20+725, o/s 20.0 m Rt.	ORIGINATED BY A.L.
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DIST	Wallbridge Twp	HWY	69	BOREHOLE TYPE	Manual Probing	COMPILED BY	G.D.
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DATUM	Geodetic	DATE	February 26, 2013	CHECKED BY	B.R.G.
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[illegible]

RECORD OF BOREHOLE No NEW-4

1 of 1

METRIC

G.W.P. 5112-07-00	LOCATION Ramp N-E/W, Sta. 20+750 CL	ORIGINATED BY A.L.
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DIST	Wallbridge Twp	HWY	69	BOREHOLE TYPE	Manual Probing	COMPILED BY	G.D.
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DATUM	Geodetic	DATE	February 27, 2013	CHECKED BY	B.R.G.
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[illegible]

RECORD OF BOREHOLE No NEW-5

1 of 1

METRIC

G.W.P.	5112-07-00	LOCATION	Ramp N-E/W, Sta. 20+775, o/s 14.0 m Lt.	ORIGINATED BY	A.L.
DIST	Wallbridge Twp	HWY	69	BOREHOLE TYPE	'N' Casing + Wash Boring
DATUM	Geodetic	DATE	February 28, 2013	CHECKED BY	B.R.G.

SOIL PROFILE			SAMPLES		
ELEV DEPTH	DESCRIPTION	STRAT PLOT	NUMBER	TYPE	"N" VALUES
192.5	Top of Snow				
0.0	Snow				
192.2	Topsoil				
0.3	Organic sand, trace silt rootlets		1	SS	9
192.1	Loose to compact Dark brown Wet		2	SS	22
0.4	Silty clay, trace sand clayey silt layers		3	SS	18
191.1	Very stiff Greyish Moist brown		4	SS	50 / 3cm
1.4	Silty sand, trace gravel				
190.3	Compact Grey Wet				
2.2	End of borehole				
190.2	Refusal on probable bedrock				
2.3	Sample 4: Sampler bouncing				
	* Borehole dry				
	■ Penetrometer test				

RECORD OF BOREHOLE No NEW-6

1 of 1

METRIC

G.W.P. 5112-07-00

LOCATION Ramp N-E/W, Sta. 20+775, o/s 20.0 m Rt.

ORIGINATED BY A.L.

DIST Wallbridge Twp HWY 69

BOREHOLE TYPEManual Probing

COMPILED BY G.D.

DATUM Geodetic

DATE February 27, 2013

CHECKED BY B.R.G.

[illegible]

RECORD OF BOREHOLE No NEW-7

1 of 1

METRIC

G.W.P. 5112-07-00 **LOCATION** Ramp N-E/W, Sta. 20+802, o/s 2.0 m Lt. **ORIGINATED BY** A.L.
DIST Wallbridge Twp **HWY** 69 **BOREHOLE TYPE** 'N' Casing + Wash Boring **COMPILED BY** G.D.
DATUM Geodetic **DATE** February 21, 2013 **CHECKED BY** B.R.G.

SOIL PROFILE			SAMPLES			GROUND WATER CONDITIONS	ELEVATION SCALE	DYNAMIC CONE PENETRATION RESISTANCE PLOT				PLASTIC LIMIT NATURAL MOISTURE CONTENT LIQUID LIMIT			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				
192.6	Top of Snow						20	40	60	80	100					
0.0	Snow					∇^* \blacktriangledown^*										
192.1	Water															
0.5	Organic sand, trace silt		1	SS	7											
	Loose to Dark Wet compact brown		2	SS	12								○			
191.1	Silty clay, trace sand		3	SS	9											
1.5	Stiff Greyish Moist brown												○		0 4 56 40	
190.4	Clay, trace sand		4	SS	2											
2.2	Firm to Grey Moist soft to wet															
			5	TW	PM										0 2 35 63	
				FV												
188.4	End of borehole															
4.2	Refusal on probable bedrock															
* 2013 02 21																
∇ Water level observed during drilling																
\blacktriangledown Water level measured after drilling																
■ Penetrometer test																

RECORD OF BOREHOLE No NEW-8

1 of 1

METRIC

G.W.P. 5112-07-00

LOCATION Ramp N-E/W, Sta. 20+825, o/s 12.0 m Lt.

ORIGINATED BY A.L.

DIST Wallbridge Twp HWY 69

BOREHOLE TYPE 'N' Casing + Wash Boring

COMPILED BY G.D.

DATUM Geodetic

DATE February 20, 2013

CHECKED BY B.R.G.







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 (%) GR SA SI CL
ELEV DEPTH	DESCRIPTION	STRAT PLOT	NUMBER	TYPE	"N" VALUES			SHEAR STRENGTH kPa					W _p W W _L				
								○ UNCONFINED + FIELD VANE ● QUICK TRIAXIAL × LAB VANE					WATER CONTENT (%)				
191.8 0.0	Top of Snow/Ice						20	40	60	80	100						
191.2 0.6	Snow/Ice					▽*											
191.0 0.8	Water					▼*											
190.7 1.1	Peat, amorphous Dark brown		1	SS	9									○			
	Sandy silt, trace gravel																
	Loose Grey Wet																
	Clay, trace sand clayey silt layers to 1.5m		2	SS	9						■				○		
	Stiff Greyish Moist brown																
	Firm Grey		3	SS	7										○		
188.7 3.1	End of borehole		4	SS	50 / 0cm												
	Refusal on probable bedrock																
	Sample 4: Sampler bouncing																

RECORD OF BOREHOLE No NEW-9

1 of 1

METRIC

G.W.P. 5112-07-00 **LOCATION** Ramp N-E/W, Sta. 20+825, o/s 18.5 m Rt. **ORIGINATED BY** A.L.
DIST Wallbridge Twp **HWY** 69 **BOREHOLE TYPE** Manual Probing **COMPILED BY** G.D.
DATUM Geodetic **DATE** February 13, 2013 **CHECKED BY** B.R.G.

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										WATER CONTENT (%)		
193.3 0.0	Ground Surface							20	40	60	80	100								
193.2 0.1	Topsoil		1	GS	-		193													
	Organic sand, trace silt																			
192.6 0.7	Dark Wet brown																			
	End of borehole																			
	Refusal on probable bedrock																			
	* Borehole dry																			

RECORD OF BOREHOLE No NEW-10

1 of 1

METRIC

G.W.P. 5112-07-00 **LOCATION** Ramp N-E/W, Sta. 20+850 CL **ORIGINATED BY** A.L.
DIST Wallbridge Twp **HWY** 69 **BOREHOLE TYPE** 'N' Casing + Wash Boring **COMPILED BY** G.D.
DATUM Geodetic **DATE** February 19, 2013 **CHECKED BY** B.R.G.

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									
								20	40	60	80	100					
192.3	Top of Snow/Ice																
0.0	Snow/Ice																
	Water																
191.4	Peat, amorphous																
0.9	Dark brown																
191.2	Silty clay, trace sand		1	SS	13												
1.1	clayey silt layers to 1.5m																
	Very stiff Greyish Moist		2	SS	7												
	to stiff brown to wet																
	Firm Grey		3	SS	WH**												
189.1	Silty sand, trace gravel			FV													
3.2	Dense Grey Wet		4	SS	44												
188.3																	
4.0	End of borehole																
	Refusal on probable bedrock																

RECORD OF BOREHOLE No NEW-11

1 of 1

METRIC

G.W.P. 5112-07-00 **LOCATION** Ramp N-E/W, Sta. 20+875, o/s 10.0 m Lt. **ORIGINATED BY** A.L.
DIST Wallbridge Twp **HWY** 69 **BOREHOLE TYPE** Manual Probing **COMPILED BY** G.D.
DATUM Geodetic **DATE** February 13, 2013 **CHECKED BY** B.R.G.



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	REMARKS & GRAIN SIZE DISTRIBUTION (%)			
ELEV DEPTH	DESCRIPTION	STRAT PLOT	NUMBER	TYPE	'N' VALUES			SHEAR STRENGTH kPa										WATER CONTENT (%)		
								<div><div></div><div></div><div></div><div></div><div></div></div> <div>○ UNCONFINED + FIELD VANE ● QUICK TRIAXIAL × LAB VANE</div>										<div><div></div><div></div><div></div></div>		
193.9 0.0	Ground Surface					*										GR SA SI CL				
193.8 0.1	Topsoil																			
	End of borehole																			
	Refusal on probable bedrock																			
														</						

RECORD OF PENETRATION TEST No NEW-12

1 of 1

METRIC

G.W.P. 5112-07-00 **LOCATION** Ramp N-E/W, Sta. 20+875, o/s 15.0 m Rt. **ORIGINATED BY** F.P.
DIST Wallbridge Twp **HWY** 69 **BOREHOLE TYPE** Dynamic Cone Penetration Test **COMPILED BY** G.D.
DATUM Geodetic **DATE** February 20, 2013 **CHECKED BY** B.R.G.

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												
191.9 0.0	Ground Surface Peat, amorphous Probable organic sand Loose						191													
190.9 1.0	End of dynamic cone penetration test Refusal on probable bedrock																			

RECORD OF BOREHOLE No NEW-13

1 of 1

METRIC

G.W.P. 5112-07-00 **LOCATION** Ramp N-E/W, Sta. 20+900 CL **ORIGINATED BY** A.L.
DIST Wallbridge Twp **HWY** 69 **BOREHOLE TYPE** Manual Probing **COMPILED BY** G.D.
DATUM Geodetic **DATE** February 13, 2013 **CHECKED BY** B.R.G.

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	REMARKS & GRAIN SIZE DISTRIBUTION (%)																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																										
ELEV DEPTH	DESCRIPTION	STRAT PLOT	NUMBER	TYPE	"N" VALUES			SHEAR STRENGTH kPa															WATER CONTENT (%)																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																									
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192.9	Ground Surface					*																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																										

RECORD OF PENETRATION TEST No NEW-14

1 of 1

METRIC

G.W.P. 5112-07-00	LOCATION	Ramp N-E/W, Sta. 20+925, o/s 18.0 m Lt.	ORIGINATED BY	A.L.
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DIST	Wallbridge Twp	HWY	69	BOREHOLE TYPE	Dynamic Cone Penetration Test	COMPILED BY	G.D.
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DATUM Geodetic	DATE February 12, 2013	CHECKED BY B.R.G.
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






[illegible]

RECORD OF BOREHOLE No NEW-15

1 of 1

METRIC

G.W.P. 5112-07-00 **LOCATION** Ramp N-E/W, Sta. 20+925, o/s 24.0 m Rt. **ORIGINATED BY** A.L.
DIST Wallbridge Twp **HWY** 69 **BOREHOLE TYPE** Manual Probing **COMPILED BY** G.D.
DATUM Geodetic **DATE** February 14, 2013 **CHECKED BY** B.R.G.












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	REMARKS & GRAIN SIZE DISTRIBUTION (%)			
ELEV DEPTH	DESCRIPTION	STRAT PLOT	NUMBER	TYPE	"N" VALUES			SHEAR STRENGTH kPa										WATER CONTENT (%)		
193.1 0.0	Ground Surface						193													
193.0 0.1	Topsoil																			
	Organic sand, trace silt		1	GS	-															
192.3 0.8	Dark Wet brown																			
	End of borehole																			
	Refusal on probable bedrock																			
	* Borehole dry																			

RECORD OF BOREHOLE No NEW-16

1 of 1

METRIC

G.W.P. 5112-07-00 **LOCATION** Ramp N-E/W, Sta. 20+950, o/s 2.0 m Lt. **ORIGINATED BY** A.L.
DIST Wallbridge Twp **HWY** 69 **BOREHOLE TYPE** Tripod + 'N' Casing **COMPILED BY** G.D.
DATUM Geodetic **DATE** February 12 and 13, 2013 **CHECKED BY** B.R.G.

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												
192.5	Ground Surface						20	40	60	80	100									
0.0 192.2	Peat, amorphous Dark brown		1	SS	7															
0.3 191.8	Organic sand, trace silt																			
0.7	Compact Dark Wet brown		2	SS	13								175							
	Clay, trace sand																			
	Stiff to Brown/ Moist very stiff grey		3	SS	36															
190.7 1.8	Silty sand, trace gravel																			
190.3 2.2	Dense to Grey Wet very dense		4	SS	50/10cm															
	Sand and gravel, trace silt																			
	Very dense Grey Wet																			
189.2 3.3	End of borehole		5	SS	50/8cm															
	Refusal on probable bedrock																			
	Samples 4 and 5: Sampler bouncing																			
	* Borehole dry																			
	■ Penetrometer test																			

RECORD OF BOREHOLE No NEW-17

1 of 1

METRIC

G.W.P. 5112-07-00

LOCATION Ramp N-E/W, Sta. 20+965, o/s 13.5 m Lt.

ORIGINATED BY A.L.

DIST Wallbridge Twp HWY 69

BOREHOLE TYPE Auger Probe

COMPILED BY G.D.

DATUM Geodetic

DATE February 12, 2013

CHECKED BY B.R.G.

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										WATER CONTENT (%)		
								○ UNCONFINED + FIELD VANE ● QUICK TRIAXIAL × LAB VANE												
192.7	Ground Surface																			
0.0	Topsoil																			
192.6	Organic sand, trace silt		1	AS	-															
0.1																				
192.1	Dark Wet brown																			
0.6	Silty clay, trace sand																			
191.4	Brown Moist		2	AS	-															
1.3	End of borehole																			
	Refusal on probable bedrock																			
				</																

RECORD OF BOREHOLE No NEW-18

1 of 1

METRIC

G.W.P. 5112-07-00

LOCATION Ramp N-E/W, Sta. 20+965, o/s 20.0 m Rt.

ORIGINATED BY A.L.

DIST Wallbridge Twp HWY 69

BOREHOLE TYPEContinuous Flight Hollow Stem Augers

COMPILED BY G.D.

DATUM Geodetic

DATE February 08, 2013

CHECKED BY B.R.G.

[illegible]

Interchange Service Road Swamp

RECORD OF BOREHOLE No IC-1

1 of 1

METRIC

G.W.P. 5112-07-00 **LOCATION** ICS Road, Sta. 9+900 CL **ORIGINATED BY** K.D.
DIST Wallbridge Twp **HWY** 69 **BOREHOLE TYPE** Manual Probing **COMPILED BY** G.D.
DATUM Geodetic **DATE** August 30, 2012 **CHECKED BY** B.R.G.

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	REMARKS & GRAIN SIZE DISTRIBUTION (%)
ELEV DEPTH	DESCRIPTION	STRAT PLOT	NUMBER	TYPE	"N" VALUES	SHEAR STRENGTH kPa					WATER CONTENT (%)							
						○ UNCONFINED			● QUICK TRIAXIAL	+		×	FIELD VANE					
201.0	Ground Surface					*											GR SA SI CL	
0.0	Bedrock ar surface																	
	* Borehole dry																	

RECORD OF BOREHOLE No IC-2

1 of 1

METRIC

G.W.P. 5112-07-00 **LOCATION** ICS Road, Sta. 9+912.5, 10.5 m Lt. **ORIGINATED BY** K.D.
DIST Wallbridge Twp **HWY** 69 **BOREHOLE TYPE** Manual Probing **COMPILED BY** G.D.
DATUM Geodetic **DATE** August 30, 2012 **CHECKED BY** B.R.G.

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					w _p	w	w _L	WATER CONTENT (%)			GR	SA	SI		CL																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																									
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201.5	Ground Surface					*																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																										</

RECORD OF BOREHOLE No IC-3

1 of 1

METRIC

G.W.P. 5112-07-00 **LOCATION** ICS Road, Sta. 9+912.5, 10.5 m Rt. **ORIGINATED BY** K.D.
DIST Wallbridge Twp **HWY** 69 **BOREHOLE TYPE** Manual Probing **COMPILED BY** G.D.
DATUM Geodetic **DATE** August 30, 2012 **CHECKED BY** B.R.G.

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	REMARKS & GRAIN SIZE DISTRIBUTION (%)		
ELEV DEPTH	DESCRIPTION	STRAT PLOT	NUMBER	TYPE	"N" VALUES	SHEAR STRENGTH kPa					WATER CONTENT (%)									
						<div><div></div><div></div><div></div><div></div><div></div></div> <div>○ UNCONFINED + FIELD VANE ● QUICK TRIAXIAL × LAB VANE</div>					<div><div></div><div></div><div></div></div>									
202.5	Ground Surface					*											GR SA SI CL			
0.0	Bedrock ar surface																			
	* Borehole dry																			

RECORD OF BOREHOLE No IC-4

1 of 1

METRIC

G.W.P.	5112-07-00	LOCATION	ICS Road, Sta. 9+925 CL	ORIGINATED BY	K.D.
DIST	Wallbridge Twp	HWY	69	BOREHOLE TYPE	Manual Probing
DATUM	Geodetic	DATE	August 30, 2012	CHECKED BY	B.R.G.

[illegible]

RECORD OF BOREHOLE No IC-5

1 of 1

METRIC

G.W.P.	5112-07-00	LOCATION	ICS Road, Sta. 9+937.5, 11.5 m Lt.	ORIGINATED BY	A.L.
DIST	Wallbridge Twp	HWY	69	BOREHOLE TYPE	Manual Probing
DATUM	Geodetic	DATE	February 01, 2013	CHECKED BY	B.R.G.






[illegible]

RECORD OF BOREHOLE No IC-6

1 of 1

METRIC

G.W.P. 5112-07-00 **LOCATION** ICS Road, Sta. 9+937.5, 11.5 m Rt. **ORIGINATED BY** A.L.
DIST Wallbridge Twp **HWY** 69 **BOREHOLE TYPE** Manual Probing **COMPILED BY** G.D.
DATUM Geodetic **DATE** February 25, 2013 **CHECKED BY** B.R.G.

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	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												
201.5	Top of Snow/Ice					▽*	▼*	201												
0.0	Snow/Ice																			
200.9	Water																			
0.6	Peat, amorphous																			
200.5	Dark brown																			
1.0	End of borehole																			
	Refusal on probable bedrock																			

RECORD OF BOREHOLE No IC-7

1 of 1

METRIC

G.W.P. 5112-07-00 **LOCATION** ICS Road, Sta. 9+950 CL **ORIGINATED BY** A.L.
DIST Wallbridge Twp **HWY** 69 **BOREHOLE TYPE** 'N' Casing + Wash Boring + Dynamic Cone Penetration Test **COMPILED BY** G.D.
DATUM Geodetic **DATE** February 25, 2013 **CHECKED BY** B.R.G.


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												
201.3	Top of Snow/Ice							20	40	60	80	100								
0.0	Snow/Ice																			
200.5	Water																			
0.8	Organic sand, trace silt rootlets		1	SS	4															
200.2	Loose Dark brown Wet																			
1.1																				
199.5	Silty clay, trace sand		2	SS	50/8cm															
1.8	Firm to Grey Moist stiff																			
	End of borehole																			
	Refusal on probable bedrock																			
	Sample 2: Sampler bouncing																			
				</																

RECORD OF BOREHOLE No IC-8

1 of 1

METRIC

G.W.P. 5112-07-00 **LOCATION** ICS Road, Sta. 10+050 CL **ORIGINATED BY** A.L.
DIST Wallbridge Twp **HWY** 69 **BOREHOLE TYPE** Manual Probing **COMPILED BY** G.D.
DATUM Geodetic **DATE** February 01, 2013 **CHECKED BY** B.R.G.

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	REMARKS & GRAIN SIZE DISTRIBUTION (%)	
ELEV DEPTH	DESCRIPTION	STRAT PLOT	NUMBER	TYPE	"N" VALUES			SHEAR STRENGTH kPa										WATER CONTENT (%)
								○ UNCONFINED	● QUICK TRIAXIAL	+	×	FIELD VANE						
198.5 0.0	Ground Surface					*											GR SA SI CL	
198.3 0.2	Topsoil																	
	End of borehole																	
	Refusal on probable bedrock																	
																</		

RECORD OF BOREHOLE No IC-9

1 of 1

METRIC

G.W.P. 5112-07-00 **LOCATION** ICS Road, Sta. 10+062.5, 17.0 m Lt. **ORIGINATED BY** A.L.
DIST Wallbridge Twp **HWY** 69 **BOREHOLE TYPE** Manual Probing **COMPILED BY** G.D.
DATUM Geodetic **DATE** February 01, 2013 **CHECKED BY** B.R.G.

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	REMARKS & GRAIN SIZE DISTRIBUTION (%)	
ELEV DEPTH	DESCRIPTION	STRAT PLOT	NUMBER	TYPE	"N" VALUES			SHEAR STRENGTH kPa										WATER CONTENT (%)
								○ UNCONFINED	● QUICK TRIAXIAL	+	×	FIELD VANE						
196.7	Ground Surface					*		20	40	60	80	100					GR SA SI CL	
0.0	Topsoil	~ ~ ~																
196.4	End of borehole																	
0.3	Refusal on probable bedrock																	
	* Borehole dry																	

RECORD OF BOREHOLE No IC-10

1 of 1

METRIC

G.W.P.	5112-07-00	LOCATION	ICS Road, Sta. 10+062.5, 18.5 m Rt.	ORIGINATED BY	A.L.
DIST	Wallbridge Twp	HWY	69	BOREHOLE TYPE	Continuous Flight Hollow Stem Augers
DATUM	Geodetic	DATE	February 01, 2013	CHECKED BY	B.R.G.

[illegible]

RECORD OF BOREHOLE No IC-11

1 of 1

METRIC

G.W.P. 5112-07-00 **LOCATION** ICS Road, Sta. 10+073 CL **ORIGINATED BY** A.L.
DIST Wallbridge Twp **HWY** 69 **BOREHOLE TYPE** 'N' Casing + Wash Boring **COMPILED BY** G.D.
DATUM Geodetic **DATE** February 26 and 27, 2013 **CHECKED BY** B.R.G.

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	
197.1	Top of Snow/Ice						20	40	60	80	100	20	40	60					
0.0	Snow/Ice																		
196.8																			
0.3	Peat, amorphous																		
196.6	Dark brown																		
0.5	Organic silt, trace sand rootlets		1	SS	5										○				
196.2																			
0.9	Loose Dark brown Wet		2	SS	22														
	Clayey silt, some sand																		
	Very stiff Greyish Moist to stiff brown to wet		3	SS	15										○				
194.9																			
2.2	Clay trace sand, trace gravel		4	SS	2											○			
	Firm to soft Grey Moist to wet			FV															
			5	TW	PM														
				FV															
192.6																			
4.5	Silty sand, trace gravel		6	SS	50/10cm														
192.4	Compact Grey Wet																		
4.7	End of borehole																		
	Refusal on probable bedrock																		
	Sample 6: Sampler bouncing																		

* Borehole dry

■ Penetrometer test

RECORD OF BOREHOLE No IC-12

1 of 1

METRIC

G.W.P. 5112-07-00 **LOCATION** ICS Road, Sta. 10+087.5, 13.5 m Lt. **ORIGINATED BY** K.D.
DIST Wallbridge Twp **HWY** 69 **BOREHOLE TYPE** Manual Probing **COMPILED BY** G.D.
DATUM Geodetic **DATE** August 30, 2012 **CHECKED BY** B.R.G.

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	REMARKS & GRAIN SIZE DISTRIBUTION (%)			
ELEV DEPTH	DESCRIPTION	STRAT PLOT	NUMBER	TYPE	"N" VALUES			SHEAR STRENGTH kPa										WATER CONTENT (%)		
								<div><div>○ UNCONFINED</div><div>● QUICK TRIAXIAL</div></div> <div><div>+ FIELD VANE</div><div>× LAB VANE</div></div>												
201.8 0.0	Ground Surface					*		20	40	60	80	100	20	40	60	kN/m ³	GR SA SI CL			
201.7 0.1	Topsoil																			
	End of borehole																			
	Refusal on probable bedrock																			

RECORD OF BOREHOLE No IC-13

1 of 1

METRIC

G.W.P. 5112-07-00	LOCATION ICS Road, Sta. 10+087.5, 19.0 m Rt.	ORIGINATED BY A.L.
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DIST	Wallbridge Twp	HWY	69	BOREHOLE TYPE	Manual Probing	COMPILED BY	G.D.
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DATUM	Geodetic	DATE	February 01, 2013	CHECKED BY	B.R.G.
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[illegible]

RECORD OF BOREHOLE No IC-14

1 of 1

METRIC

G.W.P. 5112-07-00	LOCATION ICS Road, Sta. 10+100 CL	ORIGINATED BY K.D.
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DIST	Wallbridge Twp	HWY	69	BOREHOLE TYPE	Manual Probing	COMPILED BY	G.D.
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DATUM	Geodetic	DATE	August 30, 2012	CHECKED BY	B.R.G.
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[illegible]

NBL Transfer Swamp 1

RECORD OF BOREHOLE No. NT1-1

1 of 1

METRIC

G.W.P.	5112-07-00	LOCATION	North Transfer, Sta. 42+551 CL	ORIGINATED BY	S.A.
DIST	Parry Sound	HWY	69	BOREHOLE TYPE	Tripod
DATUM	Geodetic	DATE	February 26, 2013	COMPILED BY	G.D.
				CHECKED BY	B.R.G.

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	REMARKS & GRAIN SIZE DISTRIBUTION (%)
ELEV DEPTH	DESCRIPTION	STRAT PLOT	NUMBER	TYPE	"N" VALUES			SHEAR STRENGTH kPa									
								○ UNCONFINED + FIELD VANE									
								● QUICK TRIAXIAL × LAB VANE									
195.9	Top of Ice																
0.0	Ice																
0.7	Water																
195.2	Peat, amorphous																
0.9	Dark brown		1	SS	4												
1.0	Clayey silt, trace sand rootlets																
194.9	Stiff to Brown/ Wet																
1.0	very stiff grey		2	SS	8												
194.1	Silty clay, trace sand																
1.8	Stiff Grey Moist			FV													
193.3	Sand, with gravel some silt, trace clay		3	SS	13												
2.6	Compact Grey Wet to dense		4	SS	31												
192.4	End of borehole																
3.5	Refusal on probable bedrock																
* 2013 02 26																	
▽ Water level observed during drilling																	
▼ Water level measured after drilling																	
■ Penetrometer test																	

RECORD OF PENETRATION TEST No NT1-2

1 of 1

METRIC

G.W.P. 5112-07-00 **LOCATION** North Transfer, Sta. 42+562.5, o/s 12.5m Lt. **ORIGINATED BY** S.A.
DIST Parry Sound **HWY** 69 **BOREHOLE TYPE** Tripod + Dynamic Cone Penetration Test **COMPILED BY** G.D.
DATUM Geodetic **DATE** February 26, 2013 **CHECKED BY** B.R.G.

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							
196.0	Top of Ice																	
0.0	Ice																	
195.5	Water																	
0.5	End of dynamic cone penetration test																	
	Refusal on probable bedrock																	

RECORD OF BOREHOLE No. NT1-3

1 of 1

METRIC

G.W.P.	5112-07-00	LOCATION	North Transfer, Sta. 42+562.5, o/s 13.5m Rt.	ORIGINATED BY	S.A.
DIST	Parry Sound	HWY	69	BOREHOLE TYPE	Tripod
DATUM	Geodetic	DATE	February 26, 2013	CHECKED BY	B.R.G.
COMPILED BY G.D.					

[illegible]

RECORD OF BOREHOLE No. NT1-4

1 of 1

METRIC

G.W.P.	5112-07-00	LOCATION	North Transfer, Sta. 42+575 CL	ORIGINATED BY	K.D.
DIST	Parry Sound	HWY	69	BOREHOLE TYPE	Manual Probing
DATUM	Geodetic	DATE	September 26, 2012	CHECKED BY	B.R.G.

SOIL PROFILE					
ELEV DEPTH	DESCRIPTION	STRAT PLOT	SAMPLES	GROUND WATER CONDITIONS	ELEVATION SCALE
					DYNAMIC CONE PENETRATION RESISTANCE PLOT
					20 40 60 80 100
					SHEAR STRENGTH kPa
					○ UNCONFINED + FIELD VANE
					● QUICK TRIAXIAL × LAB VANE
					WATER CONTENT (%)
					PLASTIC LIMIT NATURAL MOISTURE CONTENT LIQUID LIMIT
					w _p w w _L
					UNIT WEIGHT γ
					REMARKS & GRAIN SIZE DISTRIBUTION (%)
					GR SA SI CL

RECORD OF BOREHOLE No. NT1-5

1 of 1

METRIC

G.W.P.	5112-07-00	LOCATION	North Transfer, Sta. 42+587.5, o/s 10.0m Lt.	ORIGINATED BY	S.A.
DIST	Parry Sound	HWY	69	BOREHOLE TYPE	Tripod
DATUM	Geodetic	DATE	February 26, 2013	COMPILED BY	G.D.
				CHECKED BY	B.R.G.



SOIL PROFILE			SAMPLES			GROUND WATER CONDITIONS	ELEVATION SCALE	DYNAMIC CONE PENETRATION RESISTANCE PLOT					PLASTIC LIMIT			NATURAL MOISTURE CONTENT			LIQUID LIMIT			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					W _p			W			W _L				
								○ UNCONFINED	+	FIELD VANE	● QUICK TRIAXIAL	×	LAB VANE	WATER CONTENT (%)									
195.2	Top of Ice																						
195.0	Ice																						
0.2	Water																						
	Peat, amorphous		1	SS	1																		
	Dark brown																						
194.3	End of borehole																						
0.9	Refusal on probable bedrock																						

RECORD OF PENETRATION TEST No NT1-6

1 of 1

METRIC

G.W.P. 5112-07-00 **LOCATION** North Transfer, Sta. 42+587.5, o/s 13.5m Rt. **ORIGINATED BY** S.A.
DIST Parry Sound **HWY** 69 **BOREHOLE TYPE** Tripod + Dynamic Cone Penetration Test **COMPILED BY** G.D.
DATUM Geodetic **DATE** February 26, 2013 **CHECKED BY** B.R.G.

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 ○ UNCONFINED + FIELD VANE ● QUICK TRIAXIAL × LAB VANE									
195.4 0.0	Top of Ice Ice — — — — Probable peat						195										
194.5 0.9	End of dynamic cone penetration test Refusal on probable bedrock																

RECORD OF BOREHOLE No. NT1-7

1 of 1

METRIC

G.W.P.	5112-07-00	LOCATION	North Transfer, Sta. 42+600 CL	ORIGINATED BY	S.A.
DIST	Parry Sound	HWY	69	BOREHOLE TYPE	Tripod
DATUM	Geodetic	DATE	February 25, 2013	CHECKED BY	B.R.G.

[illegible]

RECORD OF PENETRATION TEST No NT1-8

1 of 1

METRIC

G.W.P. 5112-07-00 **LOCATION** North Transfer, Sta. 42+612.5, o/s 10.0m Lt. **ORIGINATED BY** S.A.
DIST Parry Sound **HWY** 69 **BOREHOLE TYPE** Tripod + Dynamic Cone Penetration Test **COMPILED BY** G.D.
DATUM Geodetic **DATE** February 25, 2013 **CHECKED BY** B.R.G.

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	REMARKS & GRAIN SIZE DISTRIBUTION (%)
ELEV DEPTH	DESCRIPTION	STRAT PLOT	NUMBER	TYPE	"N" VALUES			SHEAR STRENGTH kPa									
195.5	Top of Ice							20	40	60	80	100					GR SA SI CL
0.0	Ice																
	Water						195										
194.7	End of dynamic cone penetration test																
0.8	Refusal on probable bedrock																
																</	

RECORD OF BOREHOLE No. NT1-9

1 of 1

METRIC

G.W.P. 5112-07-00	LOCATION North Transfer, Sta. 42+612.5, o/s 13.5m Rt.	ORIGINATED BY S.A.
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DIST	Parry Sound	HWY	69	BOREHOLE TYPE	Tripod	COMPILED BY	G.D.
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DATUM	Geodetic	DATE	February 25, 2013	CHECKED BY	B.R.G.
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[illegible]

RECORD OF BOREHOLE No. NT1-10

1 of 1

METRIC

G.W.P.	5112-07-00	LOCATION	North Transfer, Sta. 42+625 CL	ORIGINATED BY	S.A.
DIST	Parry Sound	HWY	69	BOREHOLE TYPE	Tripod
DATUM	Geodetic	DATE	February 25, 2013	CHECKED BY	B.R.G.
COMPILED BY G.D.					

[illegible]

RECORD OF BOREHOLE No. NT1-11

1 of 1

METRIC

G.W.P. 5112-07-00 **LOCATION** North Transfer, Sta. 42+640, o/s 12.0m Lt. **ORIGINATED BY** S.A.
DIST Parry Sound **HWY** 69 **BOREHOLE TYPE** Tripod **COMPILED BY** G.D.
DATUM Geodetic **DATE** February 26, 2013 **CHECKED BY** B.R.G.



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			20	40	60	80	100					
195.4	Ground Surface																
0.0	Peat, amorphous		1	SS	50/3cm												
195.1	Dark brown																
0.3	End of borehole																
	Refusal on probable bedrock																
	Sample 1: Sampler bouncing																
	* Borehole dry																

RECORD OF PENETRATION TEST No NT1-12

1 of 1

METRIC

G.W.P. <u>5112-07-00</u>	LOCATION <u>North Transfer, Sta. 42+640, o/s 12.0m Rt.</u>	ORIGINATED BY <u>S.A.</u>
DIST <u>Parry Sound</u> HWY <u>69</u>	BOREHOLE TYPE <u>Tripod + Dynamic Cone Penetration Test</u>	COMPILED BY <u>G.D.</u>
DATUM <u>Geodetic</u>	DATE <u>February 26, 2013</u>	CHECKED BY <u>B.R.G.</u>

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	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												
195.9 0.0	Ground Surface Peat, amorphous							20	40	60	80	100	20	40	60		GR SA SI CL			
195.4 0.5	Dark brown End of dynamic cone penetration test Refusal on probable bedrock							120/15cm												

NBL Transfer Swamp 2

RECORD OF PENETRATION TEST No NT2-1

1 of 1

METRIC

G.W.P. 5112-07-00 **LOCATION** North Transfer, Sta. 42+960, o/s 12.0m Lt. **ORIGINATED BY** S.A.
DIST Parry Sound **HWY** 69 **BOREHOLE TYPE** Tripod + Dynamic Cone Penetration Test **COMPILED BY** G.D.
DATUM Geodetic **DATE** February 27, 2013 **CHECKED BY** B.R.G.

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			20	40	60	80	100					
196.8 0.0	Top of Ice																
	Ice																
	Water																
	Probable peat																
	Probable clayey silt																
195.1 1.7	Firm																
	End of dynamic cone penetration test																
	Refusal on probable bedrock																

RECORD OF BOREHOLE No. NT2-2

1 of 1

METRIC

G.W.P. 5112-07-00	LOCATION North Transfer, Sta. 42+960, o/s 12.0m Rt.	ORIGINATED BY S.A.
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DIST	Parry Sound	HWY	69	BOREHOLE TYPE	Tripod	COMPILED BY	G.D.
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DATUM	Geodetic	DATE	February 27, 2013	CHECKED BY	B.R.G.
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[illegible]

RECORD OF BOREHOLE No. NT2-3

1 of 1

METRIC

G.W.P.	5112-07-00	LOCATION	North Transfer, Sta. 42+975 CL	ORIGINATED BY	S.A.
DIST	Parry Sound	HWY	69	BOREHOLE TYPE	Tripod
DATUM	Geodetic	DATE	February 27, 2013	CHECKED BY	B.R.G.

[illegible]

RECORD OF BOREHOLE No. NT2-4

1 of 1

METRIC

G.W.P.	5112-07-00	LOCATION	North Transfer, Sta. 42+987.5, o/s 12.5m Lt.	ORIGINATED BY	S.A.
DIST	Parry Sound	HWY	69	BOREHOLE TYPE	Tripod
				COMPILED BY	G.D.
DATUM	Geodetic	DATE	February 27, 2013	CHECKED BY	B.R.G.



[illegible]

RECORD OF PENETRATION TEST No NT2-5

1 of 1

METRIC

G.W.P. <u>5112-07-00</u>	LOCATION <u>North Transfer, Sta. 42+987.5, o/s 13.5m Rt.</u>	ORIGINATED BY <u>S.A.</u>
DIST <u>Parry Sound</u> HWY <u>69</u>	BOREHOLE TYPE <u>Tripod + Dynamic Cone Penetration Test</u>	COMPILED BY <u>G.D.</u>
DATUM <u>Geodetic</u>	DATE <u>February 27, 2013</u>	CHECKED BY <u>B.R.G.</u>

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														
197.1 0.0	Ground Surface Peat, amorphous Dark brown						197													
196.1 1.0	End of dynamic cone penetration test Refusal on probable bedrock							120/15cm												

RECORD OF BOREHOLE No. NT2-6

1 of 1

METRIC

G.W.P. 5112-07-00 **LOCATION** North Transfer, Sta. 43+000 CL **ORIGINATED BY** K.D.
DIST Parry Sound **HWY** 69 **BOREHOLE TYPE** Manual Probing **COMPILED BY** G.D.
DATUM Geodetic **DATE** September 27, 2012 **CHECKED BY** B.R.G.

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					w _p	w	w _L		WATER CONTENT (%)																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																				
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