



TABLE A
SUMMARIZED SUBSURFACE INFORMATION

BOREHOLE NO.	LOCATION		GROUND SURFACE ELEVATION (m)	SUBSOIL SUMMARY	TOTAL DEPTH (m)	BEDROCK ELEVATION (m)
	Northings	Eastings				
F1	5121946	321450	246.9	Outcrop	0.0	246.9
F2	5121972	321452	250.8	Outcrop; Cored 3.5 m length rock	3.5	250.8
F3	5121961	321463	246.9	200 mm topsoil over 500 mm silty sand mantled granitic gneiss bedrock; Cored 3.5 m length rock	4.2	246.2
F4	5121951	321475	247.8	Outcrop; Cored 3.1 m length rock	3.1	247.8
F5	5121989	321467	247.8	200 mm topsoil overlying granitic gneiss bedrock; Cored 3.1 m length rock	3.3	247.6
F6	5121978	321479	248.4	200 mm topsoil overlying granitic gneiss bedrock; Cored 9.0 m length rock	9.2	248.2
F7	5121968	321490	247.1	200 mm topsoil overlying 600 mm sand with silt underlain by 2.4 m thick cobbles and boulders mantling granitic gneiss bedrock; Cored 3.4 m length rock	6.6	243.9
F8	5122000	321477	247.3	Outcrop; Cored 3.3 m length rock	3.3	247.3
F9	5121989	321489	247.6	Outcrop; Cored 3.3 m length rock	3.3	247.6
F10	5121979	321500	248.1	Outcrop; Cored 3.6 m length rock	3.6	248.1
F11	5122017	321493	246.8	Outcrop; Cored 3.2 m length rock	3.2	246.8
F12	5122006	321504	246.6	500 mm thick topsoil mantling granitic gneiss bedrock; Cored 5.0 m length rock	5.5	246.1



TABLE A
SUMMARIZED SUBSURFACE INFORMATION

BOREHOLE NO.	LOCATION		GROUND SURFACE ELEVATION (m)	SUBSOIL SUMMARY	TOTAL DEPTH (m)	BEDROCK ELEVATION (m)
	Northings	Eastings				
F13	5121996	321516	246.8	200 mm thick topsoil overlying 500 mm thick silty sand mantling granitic gneiss bedrock; Cored 3.2 m length rock	3.9	246.1
F14	5122021	321517	246.4	Outcrop	0.0	246.4
AP1	5121964	321487	246.5	800 mm thick cobbles and boulders some gravel trace sand trace silt mantling probable bedrock	0.8	245.7
AP2	5121973	321495	246.3	700 mm thick topsoil mantling probable bedrock	0.7	245.6
AP3	5121965	321494	246.5	700 mm thick sand, trace silt, cobbles and boulders mantling probable bedrock	0.7	245.8
AP4	5121973	321485	248.2	100 mm thick topsoil overlying probable bedrock	0.1	248.1



TABLE B
ROCK CORE DESCRIPTION

CORE RECOVERY					CORE DESCRIPTION	
HOLE NO.	CORE NO.	DEPTH (m)	RECOVERY (%)	RQD (%)	DEPTH (m)	DESCRIPTION
F2	1	0.0 – 1.2	93	83	3.5	GRANITIC GNEISS: Grey, fine to medium grained, slight banding, high strength, unweathered, moderate to wide spaced dipping cross joints, rough planar, tight to oxidized with red residue on parting surface, good to excellent quality.
	2	1.2 – 2.8	97	97		
	3	2.8 – 3.5	98	98		
F3	1	0.7 – 2.0	89	64	0.7 - 4.2	GRANITIC GNEISS: Grey to dark grey, fine to medium grained, slight banding, high strength, unweathered, (with 300 mm thick layer of light grey, rust stained, moderately to highly weathered, friable at 1.7 m depth), very close to close becoming close to moderate spaced flat to dipping cross joints, rough planar, tight to oxidized with black mineralization on parting surface, locally sandy (rust coloured, friable to 10 mm thick), fair to excellent quality.
	2	2.0 – 3.5	100	91		
	3	3.5 – 4.2	100	100		
F4	1	0.0 – 1.6	93	83	3.1	GRANITIC GNEISS: Grey, fine to medium grained, slight banding, high strength, unweathered, moderate to wide spaced dipping cross joints, rough planar, oxidized to slightly altered, brown residue on parting surface, locally very minor voiding with secondary crystal growth, excellent quality.
	2	1.6 – 3.1	97	97		
F5	1	0.2 – 1.8	98	89	0.2 – 3.3	GRANITIC GNEISS: Grey, fine to medium grained, slight banding, high strength, unweathered, close to moderate (locally very close) spaced dipping cross joints, rough planar, tight to oxidized, becoming wide spaced at depth, good to excellent quality.
	2	1.8 – 3.3	100	100		

Originated: FP
 Compiled: JFW
 Checked: NR/CN



TABLE B
ROCK CORE DESCRIPTION

CORE RECOVERY					CORE DESCRIPTION	
HOLE NO.	CORE NO.	DEPTH (m)	RECOVERY (%)	RQD (%)	DEPTH (m)	DESCRIPTION
F6	1	0.2 – 1.8	97	94	0.2 – 9.2	GRANITIC GNEISS: Grey, fine to medium grained, slight banding, high strength, slightly weathered to unweathered, close to wide spaced float to dipping cross joints, rough planar, tight to oxidized with red mineralization on parting surface, locally silty, locally with brown scale, excellent quality.
	2	1.8 – 3.4	100	100		
	3	3.4 – 4.9	100	94		
	4	4.9 – 6.4	100	100		
	5	6.4 – 7.9	100	100		
	6	7.9 – 9.2	100	100		
F7	3	3.2 – 4.6	88	86	3.2 – 6.6	GRANITIC GNEISS: Grey, fine to medium grained, slight banding, high strength, unweathered, close to wide (locally very close) spaced dipping cross joints, rough planar, oxidized with brown scale to silt on parting surface, good to excellent quality.
	4	4.6 – 6.1	100	100		
	5	6.1 – 6.6	100	100		
F8	1	0.0 – 1.6	85	78	0.0 – 3.3	GRANITIC GNEISS: Grey, fine to medium grained, slight banding, high strength, unweathered, close to wide spaced dipping cross joints, rough planar, tight to oxidized, separates easily on schistosity, good to excellent quality.
	2	1.6 – 2.0	100	100		
	3	2.0 – 3.3	100	100		
F9	1	0.0 – 1.4	100	100	0.0 – 3.3	GRANITIC GNEISS: Grey, fine to medium grained, slight banding, high strength, unweathered, close to wide spaced flat to dipping cross joints, rough planar, tight to oxidized, with red scale on partings, excellent quality.
	2	1.4 – 2.7	100	100		
	3	2.7 – 3.3	100	100		

Originated: FP
 Compiled: JFW
 Checked: NR/CN

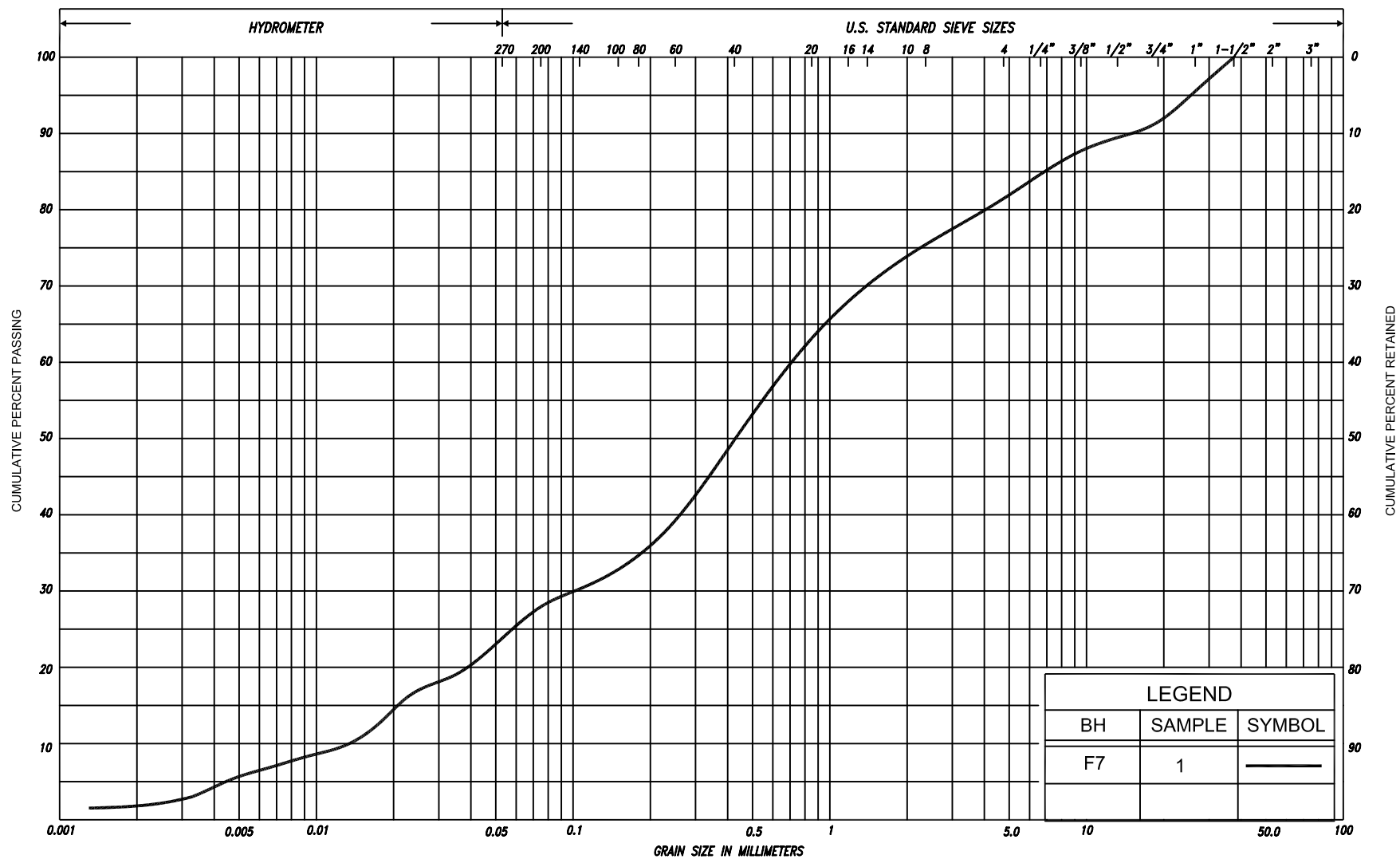


TABLE B
ROCK CORE DESCRIPTION

CORE RECOVERY					CORE DESCRIPTION	
HOLE NO.	CORE NO.	DEPTH (m)	RECOVERY (%)	RQD (%)	DEPTH (m)	DESCRIPTION
F10	1	0.0 – 1.4	100	100	0.0 – 3.6	GRANITIC GNEISS: Grey, fine to medium grained, slight banding, high strength, unweathered, close to wide spaced flat to dipping cross joints, rough planar, tight to oxidized, with red scale on partings, excellent quality.
	2	1.4 – 2.6	100	100		
	3	2.6 – 3.6	100	100		
F11	1	0.0 – 1.6	96	92	0.0 – 3.2	GRANITIC GNEISS: Grey, fine to medium grained, slight banding, high strength, unweathered, close to wide spaced dipping cross joints, rough planar, tight to slightly altered with red oxidation on partings, locally silty, excellent quality.
	2	1.6 – 3.2	98	94		
F12	1	0.5 – 1.8	95	92	0.5 – 5.5	GRANITIC GNEISS: Grey, fine to medium grained, slight banding, high strength, unweathered, generally wide (locally close) flat to dipping cross joints, becoming close to moderate spaced dipping to vertical cross joints, rough planar, tight to oxidized, excellent quality.
	2	1.8 – 3.4	100	100		
	3	3.4 – 4.9	100	100		
	4	4.9 – 5.5	93	93		
F13	1	0.7 – 2.1	100	100	0.7 – 3.9	GRANITIC GNEISS: Grey, fine to medium grained, slight banding, high strength, unweathered, generally wide becoming close to moderate spaced flat to dipping cross joints, oxidized with red or purple colouration on partings, some white scale, excellent quality.
	2	2.1 – 3.5	100	100		
	3	3.5 – 3.9	100	100		

NOTES: RQD: Rock Quality Designation

Originated: FP
 Compiled: JFW
 Checked: NR/CN



SILT & CLAY					FINE		MEDIUM		COARSE		GRAVEL			COB BLES	UNIFIED		
					SAND												
CLAY	FINE		MEDIUM		COARSE		FINE		MEDIUM		COARSE		GRAVEL			COBBLES	M.I.T.
	SILT																
CLAY		SILT			V. FINE		FINE		MED.		COARSE		GRAVEL			U.S. BUREAU	
					SAND												

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.

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 (RQD), FOR MODIFIED RECOVERY, IS:

RQD (%)	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'_{vo}	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_t	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	WTPL		WETTER THAN PLASTIC LIMIT	j	kN/m^2	SEEPAGE FORCE
e	1, %	VOID RATIO						


RECORD OF BOREHOLE No F 1

1 of 1

METRIC

G.W.P. 5265-05-01 LOCATION Co-ords: 5 121 946 N; 321 450 E ORIGINATED BY F.P.
 DIST 54 HWY 69 BOREHOLE TYPE Shovel Probe COMPILED BY N.R.
 DATUM Geodetic DATE September 02, 2008 CHECKED BY _____

SOIL PROFILE		SAMPLES				* GROUND WATER CONDITIONS	ELEVATION SCALE	DYNAMIC CONE PENETRATION kPa 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			40	80	120	160	200					
246.9	Ground Surface																
0.0	Bedrock at surface																
	* Borehole dry																

RECORD OF BOREHOLE No F 2 1 of 1 METRIC																	
G.W.P. 5265-05-01		LOCATION		Co-ords: 5 121 972 N; 321 452 E						ORIGINATED BY F.P.							
DIST 54 HWY 69		BOREHOLE TYPE		NQ DIAMOND CORING						COMPILED BY N.R.							
DATUM Geodetic		DATE		September 03, 2008						CHECKED BY							
SOIL PROFILE			SAMPLES			* GROUND WATER CONDITIONS	ELEVATION SCALE	DYNAMIC CONE PENETRATION kPa 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			40	80	120	160	200	W _p	W	W _L		
250.8	Ground Surface																
0.0	Granitic gneiss bedrock Unweathered High strength Good to excellent quality		1	RC NQ	REC 93%											RQD 83%	
			2	RC NQ	REC 97%												RQD 97%
			3	RC NQ	REC 98%												RQD 98%
247.3	End of borehole																
3.5	* Borehole charged with drilling water																

RECORD OF BOREHOLE No F 3

1 of 1


METRIC

G.W.P. 5265-05-01 LOCATION Co-ords: 5 121 961 N; 321 463 E ORIGINATED BY F.P.
 DIST 54 HWY 69 BOREHOLE TYPE NQ DIAMOND CORING COMPILED BY N.R.
 DATUM Geodetic DATE September 03, 2008 CHECKED BY _____

SOIL PROFILE			SAMPLES			* GROUND WATER CONDITIONS	ELEVATION SCALE	DYNAMIC CONE PENETRATION kPa 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			40	80	120	160	200					
246.9 0.0	Ground Surface																
246.7 0.2	Topsoil																
246.2 0.7	Silty sand, trace gravel cobbles and boulders																
	Granitic gneiss bedrock						246										RQD 64%
	Unweathered		1	RC NQ	REC 89%		245										RQD 91%
	High strength		2	RC NQ	REC 100%		244										
	Fair to excellent quality		3	RC NQ	REC 100%		243										RQD 100%
242.7 4.2	End of borehole																
	* Borehole charged with drilling water																

RECORD OF BOREHOLE No F 4 1 of 1 METRIC																	
G.W.P. 5265-05-01		LOCATION		Co-ords: 5 121 951 N; 321 457 E						ORIGINATED BY F.P.							
DIST 54 HWY 69		BOREHOLE TYPE		NQ DIAMOND CORING						COMPILED BY N.R.							
DATUM Geodetic		DATE		September 04, 2008						CHECKED BY							
SOIL PROFILE			SAMPLES			* GROUND WATER CONDITIONS	ELEVATION SCALE	DYNAMIC CONE PENETRATION kPa 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			40	80	120	160	200	W _p	W	W _L		
247.8	Ground Surface																
0.0	Granitic gneiss bedrock Unweathered High strength Excellent quality		1	RC NQ	REC 93%											RQD 83%	
			2	RC NQ	REC 97%												RQD 97%
244.7																	
3.1	End of borehole																
	* Borehole charged with drilling water																

RECORD OF BOREHOLE No F 5										1 of 1		METRIC	
G.W.P. 5265-05-01		LOCATION		Co-ords: 5 121 989 N; 321 467 E						ORIGINATED BY F.P.			
DIST 54 HWY 69		BOREHOLE TYPE		NQ DIAMOND CORING						COMPILED BY G.D			
DATUM Geodetic		DATE		August 27, 2008						CHECKED BY			

SOIL PROFILE			SAMPLES			* GROUND WATER CONDITIONS	ELEVATION SCALE	DYNAMIC CONE PENETRATION kPa 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			40	80	120	160	200	W _p	w	W _L		
247.8 0.0	Ground Surface																
247.6 0.2	Topsoil		1	RC NQ	REC 98%	247											RQD 89%
	Granitic gneiss bedrock					246											
	Unweathered		2	RC NQ	REC 100%	245											RQD 100%
244.5 3.3	End of borehole																
	* Borehole charged with drilling water C.F.S.S. A. Denotes Continuous Flight Solid Stem Augers																

RECORD OF BOREHOLE No F 6

1 of 1

METRIC

G.W.P. 5265-05-01 LOCATION Co-ords: 5 121 978 N; 321 479 E ORIGINATED BY F.P.
 DIST 54 HWY 69 BOREHOLE TYPE NQ DIAMOND CORING COMPILED BY G.D.
 DATUM Geodetic DATE August 26, 2008 CHECKED BY

SOIL PROFILE			SAMPLES			* GROUND WATER CONDITIONS	ELEVATION SCALE	DYNAMIC CONE PENETRATION kPa 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			40	80	120	160	200					
248.4 0.0	Ground Surface																
248.2 0.2	Topsoil																
	Granitic gneiss bedrock																
	Slightly weathered to unweathered																
	High strength																
	Excellent quality																
			1	RC NQ	REC 97%		248										RQD 94%
							247										
			2	RC NQ	REC 100%		246										RQD 100%
							245										
			3	RC NQ	REC 100%		244										RQD 94%
							243										
			4	RC NQ	REC 100%		242										
							241										
			5	RC NQ	REC 100%		240										
			6	RC NQ	REC 100%												RQD 100%
239.2 9.2	End of borehole																
	* Borehole charged with drilling water																
	Rock coring charged drilling water																

RECORD OF BOREHOLE No F 7

1 of 1

METRIC

G.W.P. 5265-05-01 LOCATION Co-ords: 5 121 968 N; 321 490 E ORIGINATED BY F.P.
 DIST 54 HWY 69 BOREHOLE TYPE C.F.S.S.A. AND NQ DIAMOND CORING COMPILED BY G.D.
 DATUM Geodetic DATE August 26, 2008 CHECKED BY

SOIL PROFILE			SAMPLES			* GROUND WATER CONDITIONS	ELEVATION SCALE	DYNAMIC CONE PENETRATION kPa 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			40	80	120	160	200					
247.1 0.0	Ground Surface																
246.9 0.2	Topsoil		1	SS	2		247										
246.3 0.8	Sandy silt trace gravel, trace bedrock cobbles and boulders																
	Cobbles and boulders		2	SS	15/15cm												
							246										
							245										
							244										
243.9 3.2	Granitic gneiss bedrock Unweathered High strength Good to excellent quality		3	RC NQ	REC 88%		243										RQD 86%
			4	RC NQ	REC 100%		242										RQD 100%
240.5 6.6	End of borehole		5	RC NQ	REC 100%		241										RQD 100%
	Sample 2: Sampler bouncing																
	* Borehole charged with drilling water																
	C.F.S.S. A. Denotes Continuous Flight Solid Stem Augers																

RECORD OF BOREHOLE No F 8

1 of 1

METRIC

G.W.P. 5265-05-01 LOCATION Co-ords: 5 122 000 N; 321 477 E ORIGINATED BY F.P.
 DIST 54 HWY 69 BOREHOLE TYPE NQ DIAMOND CORING COMPILED BY G.D.
 DATUM Geodetic DATE August 27, 2008 CHECKED BY

SOIL PROFILE			SAMPLES			* GROUND WATER CONDITIONS	ELEVATION SCALE	DYNAMIC CONE PENETRATION kPa 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			40	80	120	160	200					
247.3	Ground Surface																
0.0	Granitic gneiss bedrock Unweathered High strength Good to excellent quality		1	RC NQ	REC 85%		247										RQD 78%
			2	RC NQ	REC 100%		246										RQD 100%
			3	RC NQ	REC 100%		245										RQD 100%
244.0	End of borehole						244										
3.3	* Borehole charged with drilling water																


RECORD OF BOREHOLE No F 9

1 of 1


METRIC

G.W.P. 5265-05-01 LOCATION Co-ords: 5 121 989 N; 321 489 E ORIGINATED BY F.P.
 DIST 54 HWY 69 BOREHOLE TYPE NQ DIAMOND CORING COMPILED BY N.R.
 DATUM Geodetic DATE September 02, 2008 CHECKED BY

SOIL PROFILE			SAMPLES			* GROUND WATER CONDITIONS	ELEVATION SCALE	DYNAMIC CONE PENETRATION kPa 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			40	80	120	160	200					
247.6	Ground Surface																
0.0	Granitic gneiss bedrock Unweathered High strength Excellent quality		1	RC NQ	REC 100%		247										RQD 100%
			2	RC NQ	REC 100%		246										RQD 100%
			3	RC NQ	REC 100%		245										RQD 100%
244.3	End of borehole																
3.3	* Borehole charged with drilling water																

RECORD OF BOREHOLE No F 10										1 of 1	METRIC							
G.W.P. 5265-05-01		LOCATION		Co-ords: 5 121 979 N; 321 500 E				ORIGINATED BY F.P.										
DIST 54 HWY 69		BOREHOLE TYPE		NQ DIAMOND CORING				COMPILED BY N.R										
DATUM Geodetic		DATE		September 03, 2008				CHECKED BY										
SOIL PROFILE			SAMPLES			* GROUND WATER CONDITIONS	ELEVATION SCALE	DYNAMIC CONE PENETRATION kPa 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			40	80	120	160	200						
248.1	Ground Surface																	
0.0	Granitic gneiss bedrock Unweathered High strength Excellent quality		1	RC NQ	REC 100%												RQD 100%	
			2	RC NQ	REC 100%													RQD 100%
			3	RC NQ	REC 100%													RQD 100%
244.5	End of borehole																	
3.6	* Borehole charged with drilling water																	

RECORD OF BOREHOLE No F 11										1 of 1	METRIC	
G.W.P. 5265-05-01		LOCATION		Co-ords: 5 122 017 N; 321 493 E				ORIGINATED BY F.P.				
DIST 54 HWY 69		BOREHOLE TYPE		NQ DIAMOND CORING				COMPILED BY N.R.				
DATUM Geodetic		DATE		August 28, 2008				CHECKED BY				

SOIL PROFILE			SAMPLES			* GROUND WATER CONDITIONS	ELEVATION SCALE	DYNAMIC CONE PENETRATION kPa 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			40	80	120	160	200	W _p	W	W _L			
246.8 0.0	Ground Surface		1	RC NQ	REC 96%													
	Granitic gneiss bedrock					246												RQD 92%
	Unweathered					245												
	High strength					244												
	Excellent quality		2	RC NQ	REC 98%												RQD 94%	
243.6 3.2	End of borehole																	
	* Borehole charged with drilling water																	

RECORD OF BOREHOLE No F 12

1 of 1

METRIC

G.W.P. 5265-05-01 LOCATION Co-ords: 5 122 006 N; 321 504 E ORIGINATED BY F.P.
 DIST 54 HWY 69 BOREHOLE TYPE NQ DIAMOND CORING COMPILED BY N.R.
 DATUM Geodetic DATE August 29, 2008 CHECKED BY

SOIL PROFILE			SAMPLES			* GROUND WATER CONDITIONS	ELEVATION SCALE	DYNAMIC CONE PENETRATION kPa 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			40	80	120	160	200					
246.6	Ground Surface																
0.0	Topsoil _____ with gravel, some sand																
246.1	cobbles																
0.5	Granitic gneiss bedrock																
	Unweathered																
	High strength																
	Good to excellent quality																
			1	RC NQ	REC 95%		246										RQD 92%
							245										
			2	RC NQ	REC 100%		244										RQD 100%
							243										
			3	RC NQ	REC 100%		242										RQD 100%
			4	RC NQ	REC 93%												RQD 93%
241.1	End of borehole																
5.5																	
	* Borehole charged with drilling water																
	C.F.S.S. A. Denotes Continuous Flight Solid Stem Augers																

RECORD OF BOREHOLE No F 13

1 of 1

METRIC

G.W.P. 5265-05-01 LOCATION Co-ords: 5 121 996 N; 321 516 E ORIGINATED BY F.P.
 DIST 54 HWY 69 BOREHOLE TYPE NQ DIAMOND CORING COMPILED BY N.R.
 DATUM Geodetic DATE September 03, 2008 CHECKED BY

SOIL PROFILE			SAMPLES			* GROUND WATER CONDITIONS	ELEVATION SCALE	DYNAMIC CONE PENETRATION kPa 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			40	80	120	160	200					
246.8 0.0	Ground Surface																
246.6 0.2	Topsoil																
246.1 0.7	Silty sand, some gravel cobbles and boulders																
	Granitic gneiss bedrock						246										
	Unweathered		1	RC NQ	REC 100%												RQD 100%
	High strength						245										
	Excellent quality		2	RC NQ	REC 100%		244										RQD 100%
242.9 3.9	End of borehole		3	RC NQ	REC 100%		243										RQD 100%
	* Borehole charged with drilling water																

METRIC


20
15 — 5 (%) STRAIN AT FAILURE
10

RECORD OF BOREHOLE No AP 1

1 of 1

METRIC


G.W.P. 5265-05-01 LOCATION Co-ords: 5 121 964 N; 321 487 E ORIGINATED BY W.L.
 DIST 54 HWY 69 BOREHOLE TYPE Shovel Probe COMPILED BY N.R.
 DATUM Geodetic DATE September 04, 2008 CHECKED BY _____

SOIL PROFILE			SAMPLES			* GROUND WATER CONDITIONS	ELEVATION SCALE	DYNAMIC CONE PENETRATION kPa 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			40	80	120	160	200					
246.5	Ground Surface																
0.0	Cobbles and boulders some gravel, trace sand trace silt						246										
245.7	Brown Moist																
0.8	End of borehole Refusal on probable bedrock																
	* Borehole dry																

METRIC

G.W.P.	5265-05-01	LOCATION	Co-ords: 5 121 973 N; 321 495 E	ORIGINATED BY	W.L.
DIST	54	HWY	69	BOREHOLE TYPE	Shovel Probe
				COMPILED BY	N.R
DATUM	Geodetic	DATE	September 04, 2008	CHECKED BY	

[illegible]

<div style="display: flex; justify-content: space-between;"> RECORD OF BOREHOLE No AP 3 1 of 1 METRIC </div>												
G.W.P. 5265-05-01		LOCATION Co-ords: 5 121 965 N; 321 494 E				ORIGINATED BY W.L.						
DIST 54 HWY 69		BOREHOLE TYPE Shovel Probe				COMPILED BY N.R.						
DATUM Geodetic		DATE September 04, 2008				CHECKED BY						
SOIL PROFILE			SAMPLES			DYNAMIC CONE PENETRATION kPa 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	* GROUND WATER CONDITIONS	ELEVATION SCALE	40 80 120 160 200	W _p W W _L			
246.5	Ground Surface											
0.0	Sand, trace silt cobbles and boulders											
245.8	Brown Moist						246					
0.7	End of borehole Refusal on probable bedrock											
	* Borehole dry											

METRIC

20
15 — 5 (%) STRAIN AT FAILURE
10

METRIC

DIMENSIONS ARE IN METRES
AND/OR MILLIMETRES UNLESS
OTHERWISE SHOWN. STATIONS
IN KILOMETRES + METRES

CONT No 2009-5131

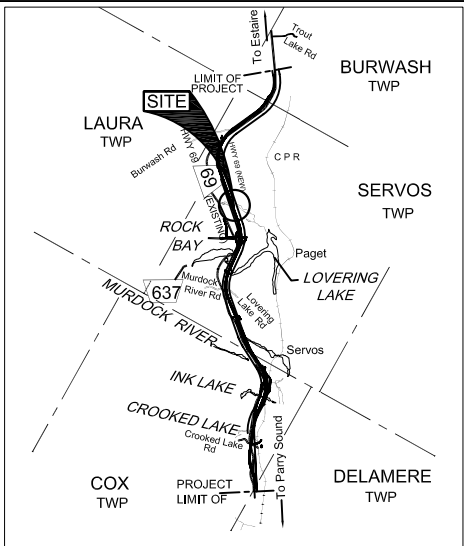
GWP No 5262-07-01

WILDLIFE UNDERPASS
HIGHWAY 69
BOREHOLE LOCATIONS AND SOIL STRATA



SHEET

PML Peto MacCallum Ltd.
CONSULTING ENGINEERS



KEY PLAN
SCALE
2 0 2 4 6km

LEGEND

- Borehole
- Dynamic Cone Penetration Test (Cone)
- Borehole & Cone
- Test Pit
- N Blows/0.3m (Std. Pen Test, 475 J/blow)
- CONE Blows/0.3m (60 Cone, 475 J blow)
- W L at time of investigation Jan-Feb 2007
- Head
- ARTESIAN WATER Encountered
- PIEZOMETER

BH No	ELEVATION	CO-ORDINATES	
		NORTHINGS	EASTINGS
F1	246.9	N 5 121 946	E 321 450
F2	250.8	N 5 121 972	E 321 452
F3	246.9	N 5 121 961	E 321 463
F4	247.8	N 5 121 951	E 321 475
F5	247.8	N 5 121 989	E 321 467
F6	248.4	N 5 121 978	E 321 479
F7	247.1	N 5 121 968	E 321 490

(Legend Continues)

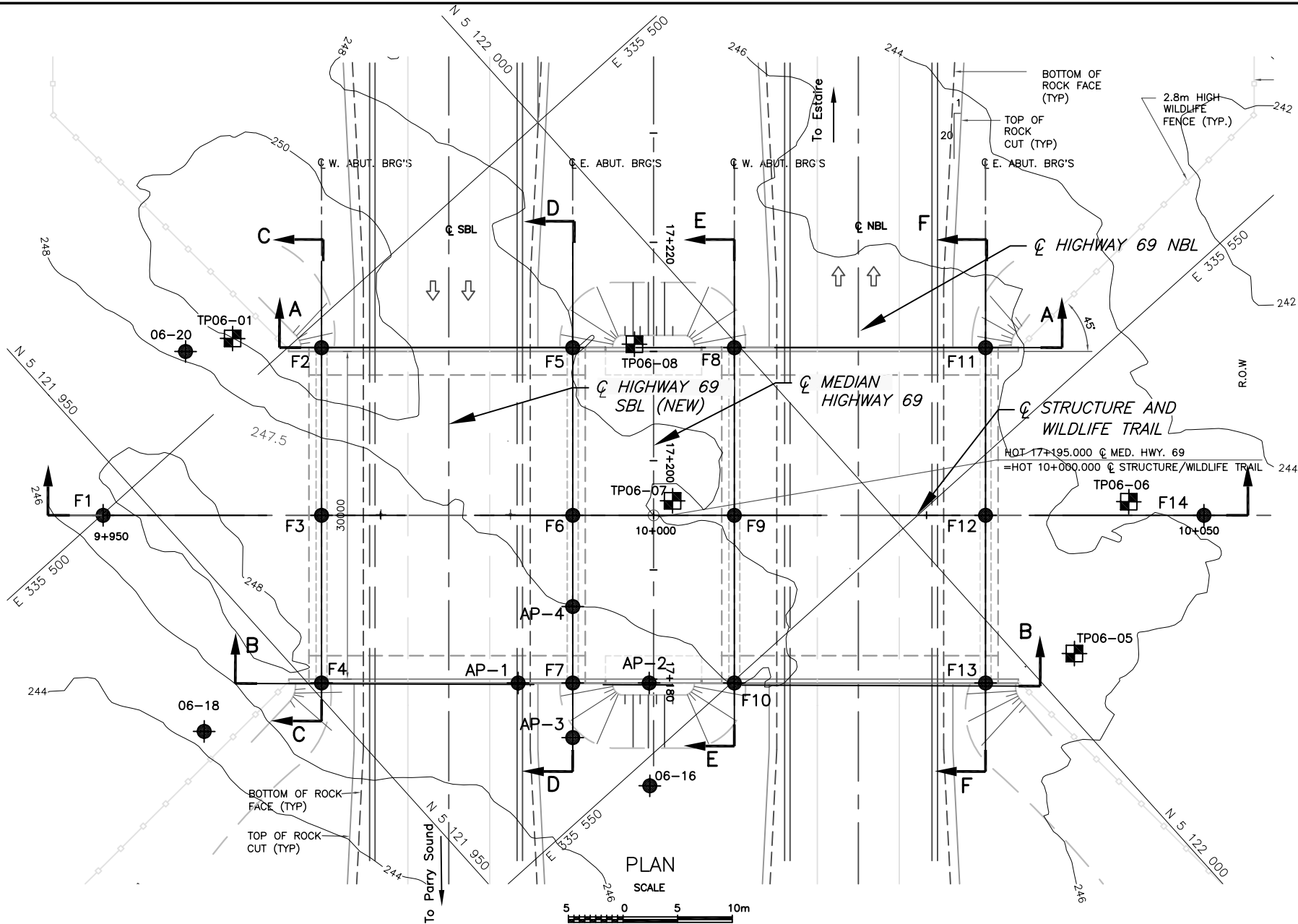
NOTE

The boundaries between soil strata have been established only at Borehole locations. Between Boreholes the boundaries are assumed from geological evidence.

DATE	BY	DESCRIPTION

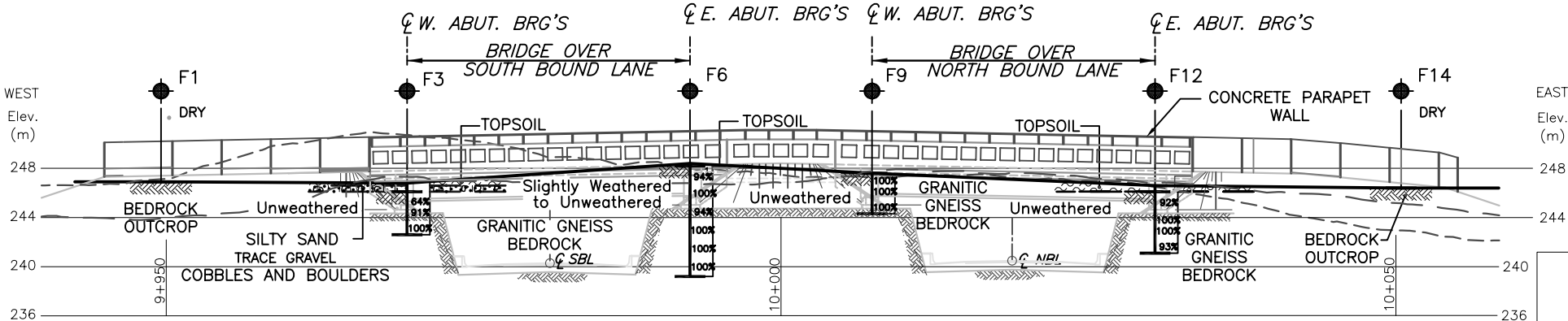
Geocres No. 411-233

HWY No	69	DIST	54
SUBM'D NR	CHECKED CN	DATE	APRIL 02, 2009
DRAWN NA	CHECKED CN	APPROVED BRG	DWG F-1



PLAN
SCALE
5 0 5 10m

HWY 69 MEDIAN



PROFILE OF STRUCTURE/WILDLIFE TRAIL

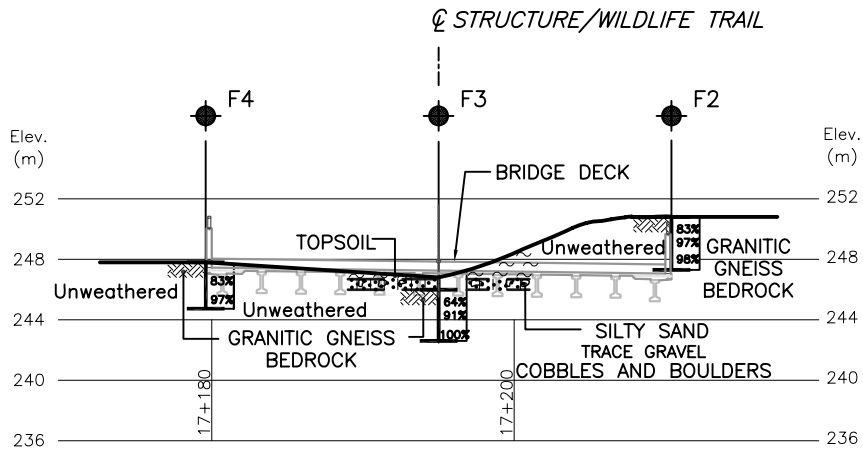
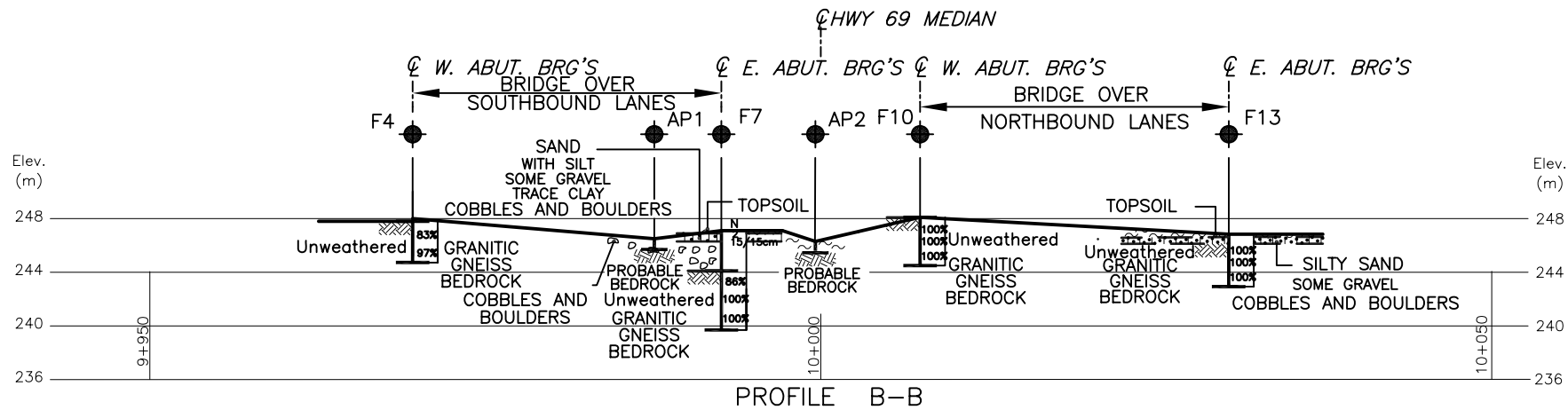
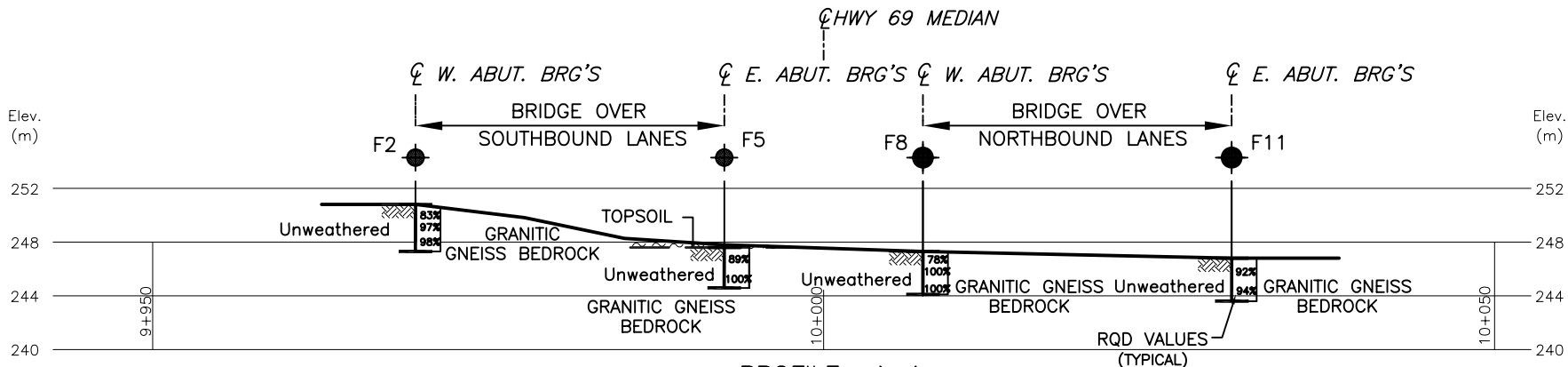
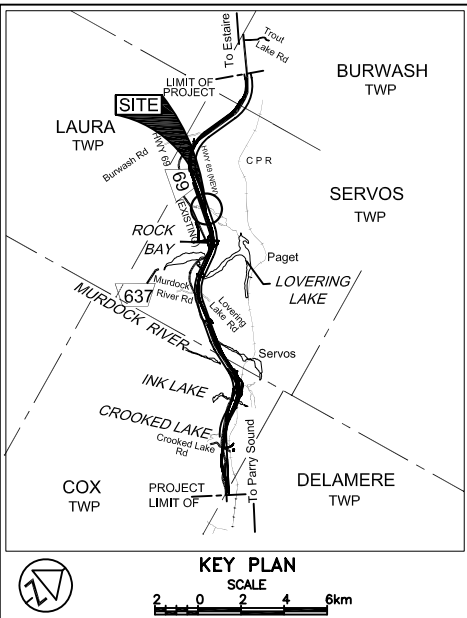
SCALE
5 0 5 10m

NOTES:

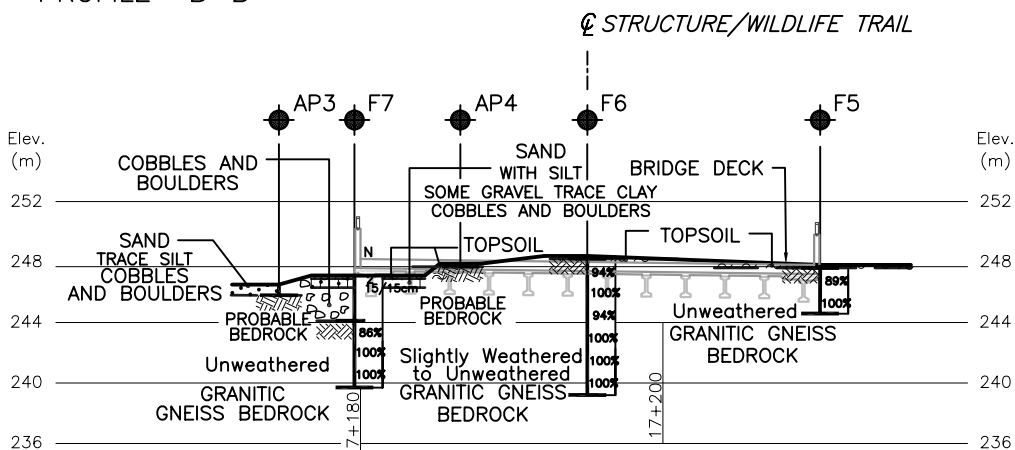
- REFER TO DRAWING F-2 FOR PROFILES A-A, B-B AND SECTIONS C-C, D-D, E-E, F-F.
- PREVIOUS DATA WAS TAKEN FROM PRELIMINARY FOUNDATION INVESTIGATION REPORT PREPARED BY GOLDER ASSOCIATES LIMITED (JULY 2006).
- THIS DRAWING IS FOR SUBSURFACE INFORMATION ONLY. SURFACE DETAILS AND FEATURES ARE FOR CONCEPTUAL ILLUSTRATION.



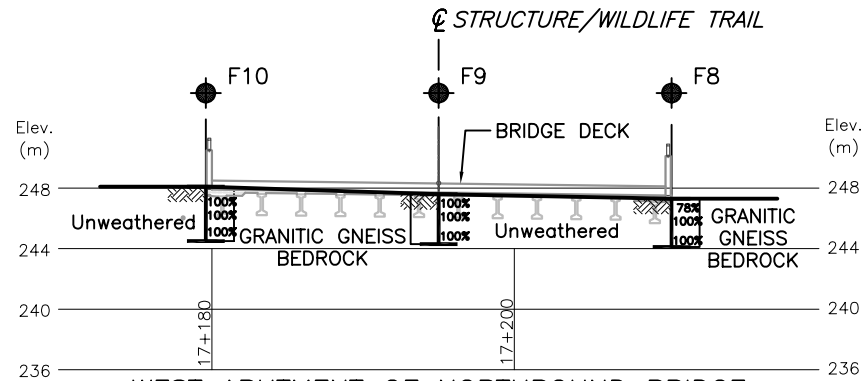
REF No. 42-91088-WILDLIFE U'PASS-1-GA (& Deck Alt. 1 to 4).dwg; Elk Crossing Des.dwg;



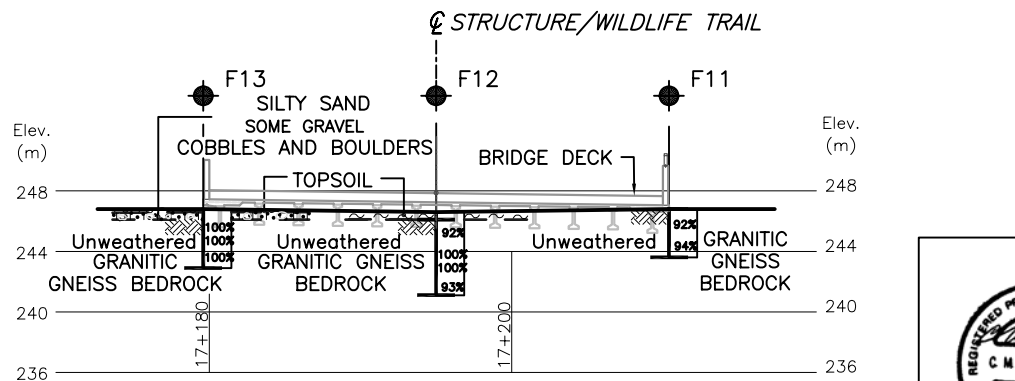
WEST ABUTMENT OF SOUTHBOUND BRIDGE
SECTION C-C



EAST ABUTMENT OF SOUTHBOUND BRIDGE
SECTION D-D



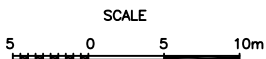
WEST ABUTMENT OF NORTHBOUND BRIDGE
SECTION E-E



EAST ABUTMENT OF NORTHBOUND BRIDGE
SECTION F-F

NOTES:

- REFER TO DRAWINGS F-1 FOR BOREHOLE LOCATIONS PLAN AND CENTERLINE PROFILE.
- THIS DRAWING IS FOR SUBSURFACE INFORMATION ONLY. SURFACE DETAILS AND FEATURES ARE FOR CONCEPTUAL ILLUSTRATION.



REF No. 42-91088-WILDLIFE U'PASS-1-GA (& Deck Alt. 1 to 4).dwg; Elk Crossing Des.dwg;

LEGEND			
	Borehole		
	Dynamic Cone Penetration Test (Cone)		
	Borehole & Cone		
N	Blows/0.3m (Std. Pen Test, 475 J/blow)		
CONE	Blows/0.3m (60 Cone, 475 J blow)		
	W L at time of investigation Jan-Feb 2007		
	Head		
	ARTESIAN WATER Encountered		
	PIEZOMETER		

BH No	ELEVATION	CO--ORDINATES	
		NORTHINGS	EASTINGS
SEE DRAWING F-1 FOR DETAILS			

NOTE:
The boundaries between soil strata have been established only at Borehole locations. Between Boreholes the boundaries are assumed from geological evidence.

REVISIONS	DATE	BY	DESCRIPTION

Geocres No. 411-233	HWY No 69	DIST 54
SUBM'D NR	CHECKED CN	DATE APRIL 02, 2009
DRAWN NA	CHECKED CN	APPROVED BRG
		DWG F-2



APPENDIX A

SITE PHOTOGRAPHS



Photograph 1: East approach to wildlife underpass, facing southerly. Boulders, cobbles and exposed rock outcrops are noted at the background and foreground of the photograph. (September 3, 2008)



Photograph 2: Viewing northerly at the drill rig stationed on borehole F10. Exposed bedrock is in view at the left foreground of the photograph. (September 3, 2008)



Photograph 3: Viewing westerly from borehole F11 location. Forested area on the right background of the photograph. Drill rig stationed on borehole F2 at the background. (September 3, 2008)



Photograph 4: Looking westerly from borehole F12. Boulders are in view at the foreground. (August 29, 2008)



APPENDIX B

ROCK CORE PHOTOGRAPHS



Photograph 1: Rock cores from borehole F2. Runs 1 to 3



Photograph 2: Rock cores from borehole F3. Runs 1 to 3



Photograph 3: Rock cores from borehole F4. Runs 1 and 2



Photograph 4: Rock cores from borehole F5. Runs 1 and 2



Photograph 5: Rock cores from borehole F6. Runs 1 and 5



Photograph 6: Rock cores from borehole F7. Runs 1 to 3



Photograph 7: Rock cores from borehole F8. Runs 1 to 3



Photograph 8: Rock cores from borehole F9. Runs 1 to 3



Photograph 9: Rock cores from borehole F10. Runs 1 to 3



Photograph 10: Rock cores from borehole F11. Runs 1 and 2



Photograph 11: Rock cores from borehole F12. Runs 1 to 4



Photograph 12: Rock cores from borehole 13. Runs 1 to 3



APPENDIX C

Previous Borehole and Test Pit Logs
(06-16, 06-18, 06-20, TP06-01
and TP06-05 to TP06-08)



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

PROJECT: 06-1111-001

RECORD OF DRILLHOLE: 06-16

SHEET 2 OF 2

LOCATION: Sta. 17+170 CL Med.

DRILLING DATE: May 2-3, 2006

DATUM: Geodetic

INCLINATION: -90°

AZIMUTH: —

DRILL RIG: CME-55 Bombardier

DRILLING CONTRACTOR: Marathon Drilling Ltd.

DEPTH SCALE METRES	DRILLING RECORD	DESCRIPTION	SYMBOLIC LOG	ELEV. DEPTH (m)	RUN No.	PENETRATION RATE (m/min)	FLUSH % RETURN	COLOUR	JN - Joint FLT - Fault SHR - Shear VN - Vein CJ - Congealite	BO - Breeding FO - Foliation CO - Contact OR - Orthogonal CL - Cleavage	PL - Planar CU - Curved UN - Undulating ST - Stepped IR - Irregular	PO - Polished K - Sackness SM - Smooth Ro - Rough MB - Mechanical Break	BR - Broken Rock	NOTES For additional abbreviations refer to list of abbreviations & symbols.	RECOVERY TOTAL CORRECTION % SOLID CORRECTION %	R.Q.D. %	FRACT INDEX PER 0.3 m	DISCONTINUITY DATA TYPE AND SURFACE DESCRIPTION	HYDRAULIC CONDUCTIVITY K, cm/sec 10 ⁻¹⁰ 10 ⁻⁹ 10 ⁻⁸ 10 ⁻⁷ 10 ⁻⁶ 10 ⁻⁵ 10 ⁻⁴ 10 ⁻³ 10 ⁻² 10 ⁻¹ 10 ⁰ 10 ¹ 10 ² 10 ³ 10 ⁴ 10 ⁵ 10 ⁶ 10 ⁷ 10 ⁸ 10 ⁹ 10 ¹⁰ 10 ¹¹ 10 ¹² 10 ¹³ 10 ¹⁴ 10 ¹⁵ 10 ¹⁶ 10 ¹⁷ 10 ¹⁸ 10 ¹⁹ 10 ²⁰ 10 ²¹ 10 ²² 10 ²³ 10 ²⁴ 10 ²⁵ 10 ²⁶ 10 ²⁷ 10 ²⁸ 10 ²⁹ 10 ³⁰ 10 ³¹ 10 ³² 10 ³³ 10 ³⁴ 10 ³⁵ 10 ³⁶ 10 ³⁷ 10 ³⁸ 10 ³⁹ 10 ⁴⁰ 10 ⁴¹ 10 ⁴² 10 ⁴³ 10 ⁴⁴ 10 ⁴⁵ 10 ⁴⁶ 10 ⁴⁷ 10 ⁴⁸ 10 ⁴⁹ 10 ⁵⁰ 10 ⁵¹ 10 ⁵² 10 ⁵³ 10 ⁵⁴ 10 ⁵⁵ 10 ⁵⁶ 10 ⁵⁷ 10 ⁵⁸ 10 ⁵⁹ 10 ⁶⁰ 10 ⁶¹ 10 ⁶² 10 ⁶³ 10 ⁶⁴ 10 ⁶⁵ 10 ⁶⁶ 10 ⁶⁷ 10 ⁶⁸ 10 ⁶⁹ 10 ⁷⁰ 10 ⁷¹ 10 ⁷² 10 ⁷³ 10 ⁷⁴ 10 ⁷⁵ 10 ⁷⁶ 10 ⁷⁷ 10 ⁷⁸ 10 ⁷⁹ 10 ⁸⁰ 10 ⁸¹ 10 ⁸² 10 ⁸³ 10 ⁸⁴ 10 ⁸⁵ 10 ⁸⁶ 10 ⁸⁷ 10 ⁸⁸ 10 ⁸⁹ 10 ⁹⁰ 10 ⁹¹ 10 ⁹² 10 ⁹³ 10 ⁹⁴ 10 ⁹⁵ 10 ⁹⁶ 10 ⁹⁷ 10 ⁹⁸ 10 ⁹⁹ 10 ¹⁰⁰ 10 ¹⁰¹ 10 ¹⁰² 10 ¹⁰³ 10 ¹⁰⁴ 10 ¹⁰⁵ 10 ¹⁰⁶ 10 ¹⁰⁷ 10 ¹⁰⁸ 10 ¹⁰⁹ 10 ¹¹⁰ 10 ¹¹¹ 10 ¹¹² 10 ¹¹³ 10 ¹¹⁴ 10 ¹¹⁵ 10 ¹¹⁶ 10 ¹¹⁷ 10 ¹¹⁸ 10 ¹¹⁹ 10 ¹²⁰ 10 ¹²¹ 10 ¹²² 10 ¹²³ 10 ¹²⁴ 10 ¹²⁵ 10 ¹²⁶ 10 ¹²⁷ 10 ¹²⁸ 10 ¹²⁹ 10 ¹³⁰ 10 ¹³¹ 10 ¹³² 10 ¹³³ 10 ¹³⁴ 10 ¹³⁵ 10 ¹³⁶ 10 ¹³⁷ 10 ¹³⁸ 10 ¹³⁹ 10 ¹⁴⁰ 10 ¹⁴¹ 10 ¹⁴² 10 ¹⁴³ 10 ¹⁴⁴ 10 ¹⁴⁵ 10 ¹⁴⁶ 10 ¹⁴⁷ 10 ¹⁴⁸ 10 ¹⁴⁹ 10 ¹⁵⁰ 10 ¹⁵¹ 10 ¹⁵² 10 ¹⁵³ 10 ¹⁵⁴ 10 ¹⁵⁵ 10 ¹⁵⁶ 10 ¹⁵⁷ 10 ¹⁵⁸ 10 ¹⁵⁹ 10 ¹⁶⁰ 10 ¹⁶¹ 10 ¹⁶² 10 ¹⁶³ 10 ¹⁶⁴ 10 ¹⁶⁵ 10 ¹⁶⁶ 10 ¹⁶⁷ 10 ¹⁶⁸ 10 ¹⁶⁹ 10 ¹⁷⁰ 10 ¹⁷¹ 10 ¹⁷² 10 ¹⁷³ 10 ¹⁷⁴ 10 ¹⁷⁵ 10 ¹⁷⁶ 10 ¹⁷⁷ 10 ¹⁷⁸ 10 ¹⁷⁹ 10 ¹⁸⁰ 10 ¹⁸¹ 10 ¹⁸² 10 ¹⁸³ 10 ¹⁸⁴ 10 ¹⁸⁵ 10 ¹⁸⁶ 10 ¹⁸⁷ 10 ¹⁸⁸ 10 ¹⁸⁹ 10 ¹⁹⁰ 10 ¹⁹¹ 10 ¹⁹² 10 ¹⁹³ 10 ¹⁹⁴ 10 ¹⁹⁵ 10 ¹⁹⁶ 10 ¹⁹⁷ 10 ¹⁹⁸ 10 ¹⁹⁹ 10 ²⁰⁰ 10 ²⁰¹ 10 ²⁰² 10 ²⁰³ 10 ²⁰⁴ 10 ²⁰⁵ 10 ²⁰⁶ 10 ²⁰⁷ 10 ²⁰⁸ 10 ²⁰⁹ 10 ²¹⁰ 10 ²¹¹ 10 ²¹² 10 ²¹³ 10 ²¹⁴ 10 ²¹⁵ 10 ²¹⁶ 10 ²¹⁷ 10 ²¹⁸ 10 ²¹⁹ 10 ²²⁰ 10 ²²¹ 10 ²²² 10 ²²³ 10 ²²⁴ 10 ²²⁵ 10 ²²⁶ 10 ²²⁷ 10 ²²⁸ 10 ²²⁹ 10 ²³⁰ 10 ²³¹ 10 ²³² 10 ²³³ 10 ²³⁴ 10 ²³⁵ 10 ²³⁶ 10 ²³⁷ 10 ²³⁸ 10 ²³⁹ 10 ²⁴⁰ 10 ²⁴¹ 10 ²⁴² 10 ²⁴³ 10 ²⁴⁴ 10 ²⁴⁵ 10 ²⁴⁶ 10 ²⁴⁷ 10 ²⁴⁸ 10 ²⁴⁹ 10 ²⁵⁰ 10 ²⁵¹ 10 ²⁵² 10 ²⁵³ 10 ²⁵⁴ 10 ²⁵⁵ 10 ²⁵⁶ 10 ²⁵⁷ 10 ²⁵⁸ 10 ²⁵⁹ 10 ²⁶⁰ 10 ²⁶¹ 10 ²⁶² 10 ²⁶³ 10 ²⁶⁴ 10 ²⁶⁵ 10 ²⁶⁶ 10 ²⁶⁷ 10 ²⁶⁸ 10 ²⁶⁹ 10 ²⁷⁰ 10 ²⁷¹ 10 ²⁷² 10 ²⁷³ 10 ²⁷⁴ 10 ²⁷⁵ 10 ²⁷⁶ 10 ²⁷⁷ 10 ²⁷⁸ 10 ²⁷⁹ 10 ²⁸⁰ 10 ²⁸¹ 10 ²⁸² 10 ²⁸³ 10 ²⁸⁴ 10 ²⁸⁵ 10 ²⁸⁶ 10 ²⁸⁷ 10 ²⁸⁸ 10 ²⁸⁹ 10 ²⁹⁰ 10 ²⁹¹ 10 ²⁹² 10 ²⁹³ 10 ²⁹⁴ 10 ²⁹⁵ 10 ²⁹⁶ 10 ²⁹⁷ 10 ²⁹⁸ 10 ²⁹⁹ 10 ³⁰⁰ 10 ³⁰¹ 10 ³⁰² 10 ³⁰³ 10 ³⁰⁴ 10 ³⁰⁵ 10 ³⁰⁶ 10 ³⁰⁷ 10 ³⁰⁸ 10 ³⁰⁹ 10 ³¹⁰ 10 ³¹¹ 10 ³¹² 10 ³¹³ 10 ³¹⁴ 10 ³¹⁵ 10 ³¹⁶ 10 ³¹⁷ 10 ³¹⁸ 10 ³¹⁹ 10 ³²⁰ 10 ³²¹ 10 ³²² 10 ³²³ 10 ³²⁴ 10 ³²⁵ 10 ³²⁶ 10 ³²⁷ 10 ³²⁸ 10 ³²⁹ 10 ³³⁰ 10 ³³¹ 10 ³³² 10 ³³³ 10 ³³⁴ 10 ³³⁵ 10 ³³⁶ 10 ³³⁷ 10 ³³⁸ 10 ³³⁹ 10 ³⁴⁰ 10 ³⁴¹ 10 ³⁴² 10 ³⁴³ 10 ³⁴⁴ 10 ³⁴⁵ 10 ³⁴⁶ 10 ³⁴⁷ 10 ³⁴⁸ 10 ³⁴⁹ 10 ³⁵⁰ 10 ³⁵¹ 10 ³⁵² 10 ³⁵³ 10 ³⁵⁴ 10 ³⁵⁵ 10 ³⁵⁶ 10 ³⁵⁷ 10 ³⁵⁸ 10 ³⁵⁹ 10 ³⁶⁰ 10 ³⁶¹ 10 ³⁶² 10 ³⁶³ 10 ³⁶⁴ 10 ³⁶⁵ 10 ³⁶⁶ 10 ³⁶⁷ 10 ³⁶⁸ 10 ³⁶⁹ 10 ³⁷⁰ 10 ³⁷¹ 10 ³⁷² 10 ³⁷³ 10 ³⁷⁴ 10 ³⁷⁵ 10 ³⁷⁶ 10 ³⁷⁷ 10 ³⁷⁸ 10 ³⁷⁹ 10 ³⁸⁰ 10 ³⁸¹ 10 ³⁸² 10 ³⁸³ 10 ³⁸⁴ 10 ³⁸⁵ 10 ³⁸⁶ 10 ³⁸⁷ 10 ³⁸⁸ 10 ³⁸⁹ 10 ³⁹⁰ 10 ³⁹¹ 10 ³⁹² 10 ³⁹³ 10 ³⁹⁴ 10 ³⁹⁵ 10 ³⁹⁶ 10 ³⁹⁷ 10 ³⁹⁸ 10 ³⁹⁹ 10 ⁴⁰⁰ 10 ⁴⁰¹ 10 ⁴⁰² 10 ⁴⁰³ 10 ⁴⁰⁴ 10 ⁴⁰⁵ 10 ⁴⁰⁶ 10 ⁴⁰⁷ 10 ⁴⁰⁸ 10 ⁴⁰⁹ 10 ⁴¹⁰ 10 ⁴¹¹ 10 ⁴¹² 10 ⁴¹³ 10 ⁴¹⁴ 10 ⁴¹⁵ 10 ⁴¹⁶ 10 ⁴¹⁷ 10 ⁴¹⁸ 10 ⁴¹⁹ 10 ⁴²⁰ 10 ⁴²¹ 10 ⁴²² 10 ⁴²³ 10 ⁴²⁴ 10 ⁴²⁵ 10 ⁴²⁶ 10 ⁴²⁷ 10 ⁴²⁸ 10 ⁴²⁹ 10 ⁴³⁰ 10 ⁴³¹ 10 ⁴³² 10 ⁴³³ 10 ⁴³⁴ 10 ⁴³⁵ 10 ⁴³⁶ 10 ⁴³⁷ 10 ⁴³⁸ 10 ⁴³⁹ 10 ⁴⁴⁰ 10 ⁴⁴¹ 10 ⁴⁴² 10 ⁴⁴³ 10 ⁴⁴⁴ 10 ⁴⁴⁵ 10 ⁴⁴⁶ 10 ⁴⁴⁷ 10 ⁴⁴⁸ 10 ⁴⁴⁹ 10 ⁴⁵⁰ 10 ⁴⁵¹ 10 ⁴⁵² 10 ⁴⁵³ 10 ⁴⁵⁴ 10 ⁴⁵⁵ 10 ⁴⁵⁶ 10 ⁴⁵⁷ 10 ⁴⁵⁸ 10 ⁴⁵⁹ 10 ⁴⁶⁰ 10 ⁴⁶¹ 10 ⁴⁶² 10 ⁴⁶³ 10 ⁴⁶⁴ 10 ⁴⁶⁵ 10 ⁴⁶⁶ 10 ⁴⁶⁷ 10 ⁴⁶⁸ 10 ⁴⁶⁹ 10 ⁴⁷⁰ 10 ⁴⁷¹ 10 ⁴⁷² 10 ⁴⁷³ 10 ⁴⁷⁴ 10 ⁴⁷⁵ 10 ⁴⁷⁶ 10 ⁴⁷⁷ 10 ⁴⁷⁸ 10 ⁴⁷⁹ 10 ⁴⁸⁰ 10 ⁴⁸¹ 10 ⁴⁸² 10 ⁴⁸³ 10 ⁴⁸⁴ 10 ⁴⁸⁵ 10 ⁴⁸⁶ 10 ⁴⁸⁷ 10 ⁴⁸⁸ 10 ⁴⁸⁹ 10 ⁴⁹⁰ 10 ⁴⁹¹ 10 ⁴⁹² 10 ⁴⁹³ 10 ⁴⁹⁴ 10 ⁴⁹⁵ 10 ⁴⁹⁶ 10 ⁴⁹⁷ 10 ⁴⁹⁸ 10 ⁴⁹⁹ 10 ⁵⁰⁰ 10 ⁵⁰¹ 10 ⁵⁰² 10 ⁵⁰³ 10 ⁵⁰⁴ 10 ⁵⁰⁵ 10 ⁵⁰⁶ 10 ⁵⁰⁷ 10 ⁵⁰⁸ 10 ⁵⁰⁹ 10 ⁵¹⁰ 10 ⁵¹¹ 10 ⁵¹² 10 ⁵¹³ 10 ⁵¹⁴ 10 ⁵¹⁵ 10 ⁵¹⁶ 10 ⁵¹⁷ 10 ⁵¹⁸ 10 ⁵¹⁹ 10 ⁵²⁰ 10 ⁵²¹ 10 ⁵²² 10 ⁵²³ 10 ⁵²⁴ 10 ⁵²⁵ 10 ⁵²⁶ 10 ⁵²⁷ 10 ⁵²⁸ 10 ⁵²⁹ 10 ⁵³⁰ 10 ⁵³¹ 10 ⁵³² 10 ⁵³³ 10 ⁵³⁴ 10 ⁵³⁵ 10 ⁵³⁶ 10 ⁵³⁷ 10 ⁵³⁸ 10 ⁵³⁹ 10 ⁵⁴⁰ 10 ⁵⁴¹ 10 ⁵⁴² 10 ⁵⁴³ 10 ⁵⁴⁴ 10 ⁵⁴⁵ 10 ⁵⁴⁶ 10 ⁵⁴⁷ 10 ⁵⁴⁸ 10 ⁵⁴⁹ 10 ⁵⁵⁰ 10 ⁵⁵¹ 10 ⁵⁵² 10 ⁵⁵³ 10 ⁵⁵⁴ 10 ⁵⁵⁵ 10 ⁵⁵⁶ 10 ⁵⁵⁷ 10 ⁵⁵⁸ 10 ⁵⁵⁹ 10 ⁵⁶⁰ 10 ⁵⁶¹ 10 ⁵⁶² 10 ⁵⁶³ 10 ⁵⁶⁴ 10 ⁵⁶⁵ 10 ⁵⁶⁶ 10 ⁵⁶⁷ 10 ⁵⁶⁸ 10 ⁵⁶⁹ 10 ⁵⁷⁰ 10 ⁵⁷¹ 10 ⁵⁷² 10 ⁵⁷³ 10 ⁵⁷⁴ 10 ⁵⁷⁵ 10 ⁵⁷⁶ 10 ⁵⁷⁷ 10 ⁵⁷⁸ 10 ⁵⁷⁹ 10 ⁵⁸⁰ 10 ⁵⁸¹ 10 ⁵⁸² 10 ⁵⁸³ 10 ⁵⁸⁴ 10 ⁵⁸⁵ 10 ⁵⁸⁶ 10 ⁵⁸⁷ 10 ⁵⁸⁸ 10 ⁵⁸⁹ 10 ⁵⁹⁰ 10 ⁵⁹¹ 10 ⁵⁹² 10 ⁵⁹³ 10 ⁵⁹⁴ 10 ⁵⁹⁵ 10 ⁵⁹⁶ 10 ⁵⁹⁷ 10 ⁵⁹⁸ 10 ⁵⁹⁹ 10 ⁶⁰⁰ 10 ⁶⁰¹ 10 ⁶⁰² 10 ⁶⁰³ 10 ⁶⁰⁴ 10 ⁶⁰⁵ 10 ⁶⁰⁶ 10 ⁶⁰⁷ 10 ⁶⁰⁸ 10 ⁶⁰⁹ 10 ⁶¹⁰ 10 ⁶¹¹ 10 ⁶¹² 10 ⁶¹³ 10 ⁶¹⁴ 10 ⁶¹⁵ 10 ⁶¹⁶ 10 ⁶¹⁷ 10 ⁶¹⁸ 10 ⁶¹⁹ 10 ⁶²⁰ 10 ⁶²¹ 10 ⁶²² 10 ⁶²³ 10 ⁶²⁴ 10 ⁶²⁵ 10 ⁶²⁶ 10 ⁶²⁷ 10 ⁶²⁸ 10 ⁶²⁹ 10 ⁶³⁰ 10 ⁶³¹ 10 ⁶³² 10 ⁶³³ 10 ⁶³⁴ 10 ⁶³⁵ 10 ⁶³⁶ 10 ⁶³⁷ 10 ⁶³⁸ 10 ⁶³⁹ 10 ⁶⁴⁰ 10 ⁶⁴¹ 10 ⁶⁴² 10 ⁶⁴³ 10 ⁶⁴⁴ 10 ⁶⁴⁵ 10 ⁶⁴⁶ 10 ⁶⁴⁷ 10 ⁶⁴⁸ 10 ⁶⁴⁹ 10 ⁶⁵⁰ 10 ⁶⁵¹ 10 ⁶⁵² 10 ⁶⁵³ 10 ⁶⁵⁴ 10 ⁶⁵⁵ 10 ⁶⁵⁶ 10 ⁶⁵⁷ 10 ⁶⁵⁸ 10 ⁶⁵⁹ 10 ⁶⁶⁰ 10 ⁶⁶¹ 10 ⁶⁶² 10 ⁶⁶³ 10 ⁶⁶⁴ 10 ⁶⁶⁵ 10 ⁶⁶⁶ 10 ⁶⁶⁷ 10 ⁶⁶⁸ 10 ⁶⁶⁹ 10 ⁶⁷⁰ 10 ⁶⁷¹ 10 ⁶⁷² 10 ⁶⁷³ 10 ⁶⁷⁴ 10 ⁶⁷⁵ 10 ⁶⁷⁶ 10 ⁶⁷⁷ 10 ⁶⁷⁸ 10 ⁶⁷⁹ 10 ⁶⁸⁰ 10 ⁶⁸¹ 10 ⁶⁸² 10 ⁶⁸³ 10 ⁶⁸⁴ 10 ⁶⁸⁵ 10 ⁶⁸⁶ 10 ⁶⁸⁷ 10 ⁶⁸⁸ 10 ⁶⁸⁹ 10 ⁶⁹⁰ 10 ⁶⁹¹ 10 ⁶⁹² 10 ⁶⁹³ 10 ⁶⁹⁴ 10 ⁶⁹⁵ 10 ⁶⁹⁶ 10 ⁶⁹⁷ 10 ⁶⁹⁸ 10 ⁶⁹⁹ 10 ⁷⁰⁰ 10 ⁷⁰¹ 10 ⁷⁰² 10 ⁷⁰³ 10 ⁷⁰⁴ 10 ⁷⁰⁵ 10 ⁷⁰⁶ 10 ⁷⁰⁷ 10 ⁷⁰⁸ 10 ⁷⁰⁹ 10 ⁷¹⁰ 10 ⁷¹¹ 10 ⁷¹² 10 ⁷¹³ 10 ⁷¹⁴ 10 ⁷¹⁵ 10 ⁷¹⁶ 10 ⁷¹⁷ 10 ⁷¹⁸ 10 ⁷¹⁹ 10 ⁷²⁰ 10 ⁷²¹ 10 ⁷²² 10 ⁷²³ 10 ⁷²⁴ 10 ⁷²⁵ 10 ⁷²⁶ 10 ⁷²⁷ 10 ⁷²⁸ 10 ⁷²⁹ 10 ⁷³⁰ 10 ⁷³¹ 10 ⁷³² 10 ⁷³³ 10 ⁷³⁴ 10 ⁷³⁵ 10 ⁷³⁶ 10 ⁷³⁷ 10 ⁷³⁸ 10 ⁷³⁹ 10 ⁷⁴⁰ 10 ⁷⁴¹ 10 ⁷⁴² 10 ⁷⁴³ 10 ⁷⁴⁴ 10 ⁷⁴⁵ 10 ⁷⁴⁶ 10 ⁷⁴⁷ 10 ⁷⁴⁸ 10 ⁷⁴⁹ 10 ⁷⁵⁰ 10 ⁷⁵¹ 10 ⁷⁵² 10 ⁷⁵³ 10 ⁷⁵⁴ 10 ⁷⁵⁵ 10 ⁷⁵⁶ 10 ⁷⁵⁷ 10 ⁷⁵⁸ 10 ⁷⁵⁹ 10 ⁷⁶⁰ 10 ⁷⁶¹ 10 ⁷⁶² 10 ⁷⁶³ 10 ⁷⁶⁴ 10 ⁷⁶⁵ 10 ⁷⁶⁶ 10 ⁷⁶⁷ 10 ⁷⁶⁸ 10 ⁷⁶⁹ 10 ⁷⁷⁰ 10 ⁷⁷¹ 10 ⁷⁷² 10 ⁷⁷³ 10 ⁷⁷⁴ 10 ⁷⁷⁵ 10 ⁷⁷⁶ 10 ⁷⁷⁷ 10 ⁷⁷⁸ 10 ⁷⁷⁹ 10 ⁷⁸⁰ 10 ⁷⁸¹ 10 ⁷⁸² 10 ⁷⁸³ 10 ⁷⁸⁴ 10 ⁷⁸⁵ 10 ⁷⁸⁶ 10 ⁷⁸⁷ 10 ⁷⁸⁸ 10 ⁷⁸⁹ 10 ⁷⁹⁰ 10 ⁷⁹¹ 10 ⁷⁹² 10 ⁷⁹³ 10 ⁷⁹⁴ 10 ⁷⁹⁵ 10 ⁷⁹⁶ 10 ⁷⁹⁷ 10 ⁷⁹⁸ 10 ⁷⁹⁹ 10 ⁸⁰⁰ 10 ⁸⁰¹ 10 ⁸⁰² 10 ⁸⁰³ 10 ⁸⁰⁴ 10 ⁸⁰⁵ 10 ⁸⁰⁶ 10 ⁸⁰⁷ 10 ⁸⁰⁸ 10 ⁸⁰⁹ 10 ⁸¹⁰ 10 ⁸¹¹ 10 ⁸¹² 10 ⁸¹³ 10 ⁸¹⁴ 10 ⁸¹⁵ 10 ⁸¹⁶ 10 ⁸¹⁷ 10 ⁸¹⁸ 10 ⁸¹⁹ 10 ⁸²⁰ 10 ⁸²¹ 10 ⁸²² 10 ⁸²³ 10 ⁸²⁴ 10 ⁸²⁵ 10 ⁸²⁶ 10 ⁸²⁷ 10 ⁸²⁸ 10 ⁸²⁹ 10 ⁸³⁰ 10 ⁸³¹ 10 ⁸³² 10 ⁸³³ 10 ⁸³⁴ 10 ⁸³⁵ 10 ⁸³⁶ 10 ⁸³⁷ 10 ⁸³⁸ 10 ⁸³⁹ 10 ⁸⁴⁰ 10 ⁸⁴¹ 10 ⁸⁴² 10 ⁸⁴³ 10 ⁸⁴⁴ 10 ⁸⁴⁵ 10 ⁸⁴⁶ 10 ⁸⁴⁷ 10 ⁸⁴⁸ 10 ⁸⁴⁹ 10 ⁸⁵⁰ 10 ⁸⁵¹ 10 ⁸⁵² 10 ⁸⁵³ 10 ⁸⁵⁴ 10 ⁸⁵⁵ 10 ⁸⁵⁶ 10 ⁸⁵⁷ 10 ⁸⁵⁸ 10 ⁸⁵⁹ 10 ⁸⁶⁰ 10 ⁸⁶¹ 10 ⁸⁶² 10 ⁸⁶³ 10 ⁸⁶⁴ 10 ⁸⁶⁵ 10 ⁸⁶⁶ 10 ⁸⁶⁷ 10 ⁸⁶⁸ 10 ⁸⁶⁹ 10 ⁸⁷⁰ 10 ⁸⁷¹ 10 ⁸⁷² 10 ⁸⁷³ 10 ⁸⁷⁴ 10 ⁸⁷⁵ 10 ⁸⁷⁶ 10 ⁸⁷⁷ 10 ⁸⁷⁸ 10 ⁸⁷⁹ 10 ⁸⁸⁰ 10 ⁸⁸¹ 10 ⁸⁸² 10 ⁸⁸³ 10 ⁸⁸⁴ 10 ⁸⁸⁵ 10 ⁸⁸⁶ 10 ⁸⁸⁷ 10 ⁸⁸⁸ 10 ⁸⁸⁹ 10 ⁸⁹⁰ 10 ⁸⁹¹ 10 ⁸⁹² 10 ⁸⁹³ 10 ⁸⁹⁴ 10 ⁸⁹⁵ 10 ⁸⁹⁶ 10 ⁸⁹⁷ 10 ⁸⁹⁸ 10 ⁸⁹⁹ 10 ⁹⁰⁰ 10 ⁹⁰¹ 10 ⁹⁰² 10 ⁹⁰³ 10 ⁹⁰⁴ 10 ⁹⁰⁵ 10 ⁹⁰⁶ 10 ⁹⁰⁷ 10 ⁹⁰⁸ 10 ⁹⁰⁹ 10 ⁹¹⁰ 10 ⁹¹¹ 10 ⁹¹² 10 ⁹¹³ 10 ⁹¹⁴ 10 ⁹¹⁵ 10 ⁹¹⁶ 10 ⁹¹⁷ 10 ⁹¹⁸ 10 ⁹¹⁹ 10 ⁹²⁰ 10 ⁹²¹ 10 ⁹²² 10 ⁹²³ 10 ⁹²⁴ 10 ⁹²⁵ 10 ⁹²⁶ 10 ⁹²⁷ 10 ⁹²⁸ 10 ⁹²⁹ 10 ⁹³⁰ 10 ⁹³¹ 10 ⁹³² 10 ⁹³³ 10 ⁹³⁴ 10 ⁹³⁵ 10 ⁹³⁶ 10 ⁹³⁷ 10 ⁹³⁸ 10 ⁹³⁹ 10 ⁹⁴⁰ 10 ⁹⁴¹ 10 ⁹⁴² 10 ⁹⁴³ 10 ⁹⁴⁴ 10 ⁹⁴⁵ 10 ⁹⁴⁶ 10 ⁹⁴⁷ 10 ⁹⁴⁸ 10 ⁹⁴⁹ 1
-----------------------	-----------------	-------------	--------------	-----------------------	---------	-----------------------------	-------------------	--------	--	---	---	---	------------------	--	--	-------------	--------------------------------	---	--

PROJECT 06-1111-001		RECORD OF BOREHOLE No 06-18		1 OF 1 METRIC	
W.P. 5379-02-00		LOCATION Sta. 17+175 o/s 41 m West CL Med.		ORIGINATED BY EHS	
DIST HWY 69		BOREHOLE TYPE CME-55 Bombardier		COMPILED BY MM	
DATUM Geodetic		DATE May 11, 2006		CHECKED BY KG	

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 (%)				
								20 40 60 80 100	20 40 60 80 100	10 20 30				
						○ UNCONFINED + FIELD VANE ● QUICK TRIAXIAL x REMOULDED								
244.9	GROUND SURFACE													
0.0	Silty Organics (TOPSOIL)													
0.2	Moist		1	SS	9									
	SAND, some gravel, trace silt													
	Loose to very dense													
243.8	Light brown with oxidation		2	SS	35/0.15		244							
	Moist													
243.5	BOULDER													
243.2	COBBLES and GRAVEL													
1.7	COBBLES and BOULDERS in a sand and gravel matrix													
241.7														
3.2	BEDROCK													
	Refer to Record of Drillhole log 06-18 for coring details.													
233.8														
11.1	END OF BOREHOLE													
	Note: 1. Water level in open borehole measured at 0.5 m depth (Elev. 244.4 m) upon completion of drilling operations.													

MIS-MTO 001 06-1111-001.GPJ GAL-MISS.GDT 7/7/06 MSM

PROJECT: 06-1111-001

RECORD OF DRILLHOLE: 06-18

SHEET 2 OF 2

LOCATION: Sta. 17+175 o/s 41 m West CL Med.

DRILLING DATE: May 11, 2006

DATUM: Geodetic

INCLINATION: -90° AZIMUTH: —

DRILL RIG: CME-55 Bombardier

DRILLING CONTRACTOR: Marathon Drilling Ltd.

DEPTH SCALE METRES	DRILLING RECORD	DESCRIPTION	SYMBOLIC LOG	ELEV. DEPTH (m)	RUN No.	PENETRATION RATE (mm/s)	FLUSH % RETURN	COLOUR	JN - Joint FLT - Fault SHR - Shear VN - Vein CJ - Conglomerate	BD - Bedding FO - Foliation CO - Contact DR - Orthogonal CL - Cleavage	PL - Planar CU - Curved UN - Unfolding ST - Stepped IR - Irregular	PC - Polished K - Slickensided SM - Smooth Ro - Rough MB - Mechanical Break	SR - Broken Rock	NOTE: For additional abbreviations refer to list of abbreviations & symbols	RECOVERY TOTAL CORE % SOLID CORE %	R.Q.D. %	FRACT INDEX PER 0.3 m	B Angle °	DIP #1 CORE AXIS °	DIP #2 CORE AXIS °	DISCONTINUITY DATA TYPE AND SURFACE DESCRIPTION	HYDRAULIC CONDUCTIVITY K, cm/sec	Diameter Pore Load Index (MPa)	PAC % AVG	NOTES WATER LEVELS INSTRUMENTATION
		Continued from Borehole 06-18		241.67																					
4		Moderately weathered (W3), medium strong (R3), medium grained, reddish grey GRANITE GNEISS with Garnet inclusions with healed and partially healed joints. Joints filled mostly with Hematite and Quartz Carbonate and occasionally with sulphides.		3.23	1																JN,IR,Ro				
		Partially healed vertical joints from 3.2 m to 4.7 m, heavily jointed and weathered from 4.9 m to 5.3 m.		239.65																	JN,PL,SM				
5		Slightly weathered (W2), medium strong (R3), medium grained, black and grey GRANITE GNEISS with Garnet inclusions with healed and partially healed joints. Joints filled with Hematite.		5.25	2																MB...				
6																					JN,IR,SM				
7																					JN,IR,Ro				
8																					MB...				
9																					JN,IR,SM				
10																					JN,IR,SM				
11																					MB...				
12																					JN,IR,Ro				
13																					MB...				
14																					JN,IR,Ro				
15																					JN,IR,Ro				
16																					JN,IR,Ro				
17																					JN,IR,Ro				
18																					JN,IR,Ro				
		Redrilled/over drilled between 8.9 m and 10.5 m depth.																			JN,IR,Ro				
		END OF DRILLHOLE		233.81	6																MB...				
				11.09																					

DEPTH SCALE

1:75



LOGGED: EHS

CHECKED: KG

MIS-RCK 004 06-1111-001.GPJ GAL-MISS.GDT 7/7/06 MSM

PROJECT 06-1111-001		RECORD OF BOREHOLE No 06-20		1 OF 1 METRIC	
W.P. 5379-02-00		LOCATION Sta. 17+210 o/s 43 m West CL Med.		ORIGINATED BY EHS	
DIST HWY 69		BOREHOLE TYPE CME-55 Bombardier		COMPILED BY MM	
DATUM Geodetic		DATE May 12, 2006		CHECKED BY KG	

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			20 40 60 80 100	20 40 60 80 100	W _p	W	W _L		
249.6	GROUND SURFACE													
6.0	Moss and Organics (TOPSOIL)													
0.3	BOULDER		1	SS	11/0.05									
	SAND and GRAVEL													
	COBBLES													
248.5	SAND and GRAVEL, trace silt, some cobbles		2	SS	11									
1.1	Very dense to compact Oxidized Wet BEDROCK													
	Refer to Record of Drillhole log 06-20 for coring details.													
245.4	END OF BOREHOLE													
4.2	Note: 1. Water level in open borehole measured at 0.5 m depth (Elev. 249.1 m) upon completion of drilling operations.													

MIS-MTO 001 06-1111-001.GPJ GAL-MISS.GDT 7/7/06 MSM

PROJECT: 06-1111-001

RECORD OF DRILLHOLE: 06-20

SHEET 2 OF 2

LOCATION: Sta. 17+210 o/s 43 m West CL Med.

DRILLING DATE: May 12, 2006

DATUM: Geodetic

INCLINATION: -90° AZIMUTH: —

DRILL RIG: CME-55 Bombardier

DRILLING CONTRACTOR: Marathon Drilling Ltd.

DEPTH SCALE METRES	DRILLING RECORD	DESCRIPTION	SYMBOLIC LOG	ELEV. DEPTH (m)	RUN No.	PENETRATION RATE (mm/min)	COLOUR FLUSH % RETURN	JN - Joint FLT - Fault SHR - Shear VN - Vein CU - Congregate	BD - Bedding FO - Foliation CO - Contact OR - Orthogonal CL - Cleavage	PL - Planar CU - Curved UN - Undulating ST - Stepped IR - Irregular	PO - Polished K - Slickensided SM - Smooth Ro - Rough MB - Mechanical Break	BR - Broken Rock	NOTES For additional abbreviations refer to list of abbreviations & symbols	WATER LEVELS	INSTRUMENTATION
		Continued from Borehole 06-20		248.50											
2	CME 55 NO May 12/06	Slightly weathered (W2), medium strong (R3), medium grained, black and grey GRANITE GNEISS, highly foliated, with healed and partially healed joints. Some joints healed with Hematite and Quartz Carbonate. Joints show strong iron-oxide (Hematite) staining.		1.13	1		grey 100								
3					2		grey 100								
4					3		grey 100								
		END OF DRILLHOLE		245.39 4.24											
5															
6															
7															
8															
9															
10															
11															
12															
13															
14															
15															
16															

MIS-RCR 004 06-1111-001.GPJ GAL-MISS.GDT 7/7/06 MSM

DEPTH SCALE

1 : 75

Golder
Associates

LOGGED: EHS

CHECKED: KG

FIELD TEST PIT LOG

JOB NUMBER:	06-1111-001	JOB NAME:	URS/ Wildlife Crossing/ Burwash	DATE:	May 16, 2006
TEST PIT NUMBER:	TP06-01	LOCATION:	Stn. 17+211 o/s 38 m west of CL Med.	ELEVATION:	249.9
MACHINE TYPE:	Komatsu PC 45	TEST PIT SIZE:	3.5 m L x 3 m W x 0.3 m D	DATUM:	Geodetic
TEMP/WEATHER:	16 °C Sun/Clouds	CONTRACTOR:	M ^c Guire Tree Guys		

Depth		Soil Description	Samples*		Remarks
From (m)	To (m)		No.	Depth (m)	
0.0	0.2	Dark brown, sandy organics			
0.2	0.3	Moist, oxidized, medium SAND some gravel containing cobbles and boulders			
0.3		Exposed Bedrock End of Test Pit			

Comments:

Water Conditions in Test Pit:

☒ Test Pit Dry

JOB No. 06-1111-001
TEST PIT No.: TP06-01
Technician: Ed Savard

FIELD TEST PIT LOG

Golder Associates

FIELD TEST PIT LOG

JOB NUMBER:	06-1111-001	JOB NAME:	URS/ Wildlife Crossing/ Burwash	DATE:	May 16, 2006
TEST PIT NUMBER:	TP06-05	LOCATION:	Stn. 17+182 o/s 39 m east of CL Med.	ELEVATION:	246.5
MACHINE TYPE:	Komatsu PC 45	TEST PIT SIZE:	4 m L x 4 m W x 0.2 m D	DATUM:	Geodetic
TEMP/WEATHER:	16 °C Sun/Clouds	CONTRACTOR:	M ^c Guire Tree Guys		

Depth		Soil Description	Samples*		Remarks
From (m)	To (m)		No.	Depth (m)	
0.0	0.1	Moss with dark brown silty organics			
0.1	0.2	Moist, oxidized, medium SAND some gravel containing cobbles and boulders			
0.2		Exposed Bedrock End of Test Pit			Jointed with loose blocks

Comments:

Water Conditions in Test Pit:

☒ Test Pit Dry

JOB No.	06-1111-001
TEST PIT No.:	TP06-05
Technician:	Ed Savard

FIELD TEST PIT LOG

Golder Associates

FIELD TEST PIT LOG

JOB NUMBER:	06-1111-001	JOB NAME:	URS/ Wildlife Crossing/ Burwash	DATE:	May 16, 2006
TEST PIT NUMBER:	TP06-06	LOCATION:	Stn. 17+196 o/s 44 m east of CL Med.	ELEVATION:	246.1
MACHINE TYPE:	Komatsu PC 45	TEST PIT SIZE:	5 m L x 3 m W x 0.2 m D	DATUM:	Geodetic
TEMP/WEATHER:	16 °C Sun/Clouds	CONTRACTOR:	M ^c Guire Tree Guys		

Depth		Soil Description	Samples*		Remarks
From (m)	To (m)		No.	Depth (m)	
0.0	0.2	Dark brown, moist, silty organics containing roots			
0.2		Exposed Bedrock End of Test Pit			Bedrock dipping east

Comments:

Water Conditions in Test Pit:

☒ Test Pit Dry

JOB No. 06-1111-001
TEST PIT No.: TP06-06
Technician: Ed Savard

FIELD TEST PIT LOG

Golder Associates

FIELD TEST PIT LOG

JOB NUMBER:	06-1111-001	JOB NAME:	URS/ Wildlife Crossing/ Burwash	DATE:	May 16, 2006
TEST PIT NUMBER:	TP06-07	LOCATION:	Stn. 17+196 o/s 2 m east of CL Med.	ELEVATION:	247.9
MACHINE TYPE:	Komatsu PC 45	TEST PIT SIZE:	4 m L x 4 m W x 0.6 m D	DATUM:	Geodetic
TEMP/WEATHER:	17 °C Sun/Clouds	CONTRACTOR:	M ^c Guire Tree Guys		

Depth		Soil Description	Samples*		Remarks
From (m)	To (m)		No.	Depth (m)	
0.0	0.2	Dark brown, moist, silty organics			
0.2	0.5	Moist, oxidized, silty fine SAND trace gravel containing cobbles, boulders and roots			Light brown, silty SAND, trace gravel extending from 0.2 to 0.6 m depth on east edge of TP06-07.
0.5		Exposed Bedrock End of Test Pit			Bedrock jointed blocky dipping towards the north

Comments:

Water Conditions in Test Pit:

- Wet in dips of bedrock

☐ Test Pit Dry

JOB No.	06-1111-001
TEST PIT No.:	TP06-07
Technician:	Ed Savard

FIELD TEST PIT LOG

Golder Associates

FIELD TEST PIT LOG

JOB NUMBER:	06-1111-001	JOB NAME:	URS/ Wildlife Crossing/ Burwash	DATE:	May 16, 2006
TEST PIT NUMBER:	TP06-08	LOCATION:	Stn. 17+211 o/s 2 m west of CL Med.	ELEVATION:	247.4
MACHINE TYPE:	Komatsu PC 45	TEST PIT SIZE:	4 m L x 4 m W x 0.1 m D	DATUM:	Geodetic
TEMP/WEATHER:	16 °C Overcast/showers	CONTRACTOR:	M ^c Guire Tree Guys		

Depth		Soil Description	Samples*		Remarks
From (m)	To (m)		No.	Depth (m)	
0.0	0.1	Dark brown, silty organics with moss			
0.1		Exposed Bedrock End of Test Pit			

Comments:

Water Conditions in Test Pit:

☒ Test Pit Dry

JOB No. 06-1111-001
TEST PIT No.: TP06-08
Technician: Ed Savard

FIELD TEST PIT LOG

Golder Associates