

## **APPENDIX III**

# **KCBL 2007 Geotechnical Site Investigation**

June 12, 2008

Pacific Booker Minerals Inc.  
#1702 – 1166 Alberni Street  
Vancouver, British Columbia  
V6E 3Z3

**Mr. Erik Tornquist**  
**Executive Director**

Dear Mr. Tornquist:

**Morrison Copper/Gold Project**  
**2007 Geotechnical Site Investigation – Rev. 0**

We are pleased to submit our final report for the 2007 Geotechnical Site Investigation for the Morrison Copper Gold Project. This report provides a summary of the data collected during the field drilling, instrumentation, and test pitting program carried out between Nov. 11 and Dec. 17, 2007; and interpretation of the resistivity survey completed by Frontier Geoscience Ltd. in May 2007.

Please contact the undersigned at your convenience if you have any questions or wish to discuss any aspect of this report.

Yours truly,

**KLOHN CRIPPEN BERGER LTD.**



Harvey McLeod, P.Eng.  
Project Manager

HM:cw

# PACIFIC BOOKER MINERALS INC.

## Morrison Copper/Gold Project

Title: 2007 Geotechnical Site Investigation

REV. NO.	ORIGINATOR	REV. DATE	REVISION DESCRIPTION
A	T.Jibiki	April 25, 2008	Issued for client review
B			Not used
C	T. Jibiki	May 28, 2008	Final report based on client feedback
0	T. Jibiki	June 12, 2008	Final accepted by PBM

REV. NO.	REVIEWER	INITIAL	DATE
A	A. Morrison		April 24, 2008
C	A. Morrison		May 28, 2008
0	A. Morrison		June 12, 2008

M09382A01



## **EXECUTIVE SUMMARY**

The Morrison Copper Gold Project is located approximately 70 km northeast of Smithers, in northern-central British Columbia. The proposed open pit and plantsite are about 4 km south southwest of the proposed tailings storage facility (TSF). The deposit is approximately 500 m by 900 m in plan and extends to a depth of approximately 330 m below ground surface. Material from the mine will be processed at the plant site located adjacent to the open pit. Tailings will be transported via pipeline to the TSF. A portion of the waste rock will be disposed in a surface dump adjacent to the open pit. The remaining waste rock will be disposed in the TSF and submerged by tailings.

This report summarizes the results of fieldwork conducted by Klohn Crippen Berger Ltd. in 2007 for the feasibility level design of the TSF and plantsite foundation design. Fieldwork consisted of geotechnical drilling and testing, test pitting, and a geophysical survey.

Drilling consisted of 15 geotechnical holes at 10 sites, 5 at the TSF and 5 at the plantsite. Testing in drillholes consisted of standard penetration tests (SPT) every 1.5 m to 3 m in overburden, falling head and constant head (packer) tests as required, and the installation of standpipe piezometers. Eight test pits were excavated, 2 at the TSF, and 6 along the current access road between the proposed plantsite and TSF. Six lines of resistivity surveying comprised the geophysical investigation, 1 at the proposed plantsite, and 5 in the TSF. Laboratory testing includes particle size analysis, Atterberg limits, proctor compaction, and moisture content.

Drilling and test pitting revealed a uniform surface cover of glacial till overlying fractured sedimentary bedrock. Glacial till is stiff, clay rich, and of variable thickness, typically between 4 and 20 m. Bedrock is Cretaceous sedimentary and minor volcanic rock with Tertiary block faulting. It is moderately fractured and moderately permeable. Test pitting delineated an area of sand and gravel that could be exploited as a source of aggregate. The geophysical survey revealed that glacial till masks an undulating bedrock surface. Geophysical data allowed the bedrock-till contact to be demarcated between drillholes.

The results of the 2007 site investigation show that the TSF site is feasible. The plantsite layout was adjusted to locate critical buildings on bedrock as shown by drilling and geophysics.

## TABLE OF CONTENTS

	<b>PAGE</b>
EXECUTIVE SUMMARY .....	i
1. INTRODUCTION .....	1
1.1 General.....	1
1.2 Background.....	2
1.3 Limitations and Uses of Report .....	2
2. DRILLING PROGRAM.....	4
2.1 Tailings Facility .....	4
2.2 Plantsite.....	4
2.3 Drilling Methods.....	5
2.4 Standard Penetration Testing .....	6
2.5 Standpipe Installations .....	11
3. HYDAULIC CONDUCTIVITY TESTS.....	13
3.1 Packer Tests .....	13
3.2 Falling Head Tests .....	14
3.3 Hydraulic Conductivity Results.....	15
4. TEST PIT PROGRAM .....	16
5. LABORATORY TESTING.....	17
5.1 General.....	17
5.2 Geotechnical Tests .....	17
6. GEOPHYSICS PROGRAM .....	20
7. GEOLOGY .....	22
7.1 General.....	22
7.2 Bedrock Geology .....	22
7.3 Structural Geology .....	24
7.4 Surficial Geology and Geomorphology .....	25
7.5 Surficial Material Types .....	28
REFERENCES .....	29

## TABLE OF CONTENTS

(continued)

### TABLES

Table 2.1	2007 Drilling Program .....	6
Table 2.2	Rod Length Correction Factor $C_R$ .....	8
Table 2.3	Standard Penetration Values for Glacial Till .....	10
Table 2.4	2007 Standpipe Installations <sup>1</sup> .....	12
Table 3.1	Packer Testing and Hydraulic Conductivity (K) .....	14
Table 3.2	Falling Head Testing and Hydraulic Conductivity (K).....	14
Table 4.1	2007 Test Pit Program .....	16
Table 5.1	Laboratory Test Results .....	18
Table 7.1	Rock Types Within the Tailings Storage Facility Footprint.....	23

### FIGURES

Figure 5.1	SPT Sample Water Contents.....	19
Figure 7.1	Bedrock Geology Of The Tailings Impoundment .....	24

### APPENDICES

Appendix I	Photographs
Appendix II	Borehole Logs
Appendix III	Test pits Logs
Appendix IV	Packer Test and Falling Head Test Data Sheets
Appendix V	KCBL Laboratory Testing Results
Appendix VI	Report on Resistivity Imaging Survey
Appendix VII	Interpreted Geophysical Sections
Appendix VIII	Raw SPT Data
Appendix IX	( $N_1$ ) <sub>60</sub> Correction of STP Results

## TABLE OF CONTENTS

(continued)

### DRAWINGS

D-1001	Site Location Plan
D-1002	General Site Arrangement
D-1003	Site Investigation Plan
D-1004	Geologic Sections Plan
D-1005	Geologic Sections, Section A – Main Dam Sheet 1 of 3
D-1006	Geologic Sections, Section B – North Dam Sheet 2 of 3
D-1007	Geologic Sections, Section C, D, and E Sheet 3 of 3

## **1. INTRODUCTION**

### **1.1 General**

This report summarized the results of the 2007 Site Investigation Program conducted for Pacific Booker Minerals Inc. at the Morrison Copper Gold Project, located north of Morrison Lake, 65 km north east of Smithers, in central British Columbia (D-1001). This work was directed towards the feasibility design of the tailings storage facility and plantsite foundations (D-1002). The investigation consisted of the following components:

- Geophysical survey;
- Borehole and standpipe installation program;
- Hydraulic conductivity testing;
- Test pit program; and
- Laboratory testing.

The site investigation plan is shown in D-1003. Photographs from the investigation program are presented in Appendix I. Borehole logs are presented in Appendix II. Test pit logs are presented in Appendix III. Hydraulic conductivity results interpreted from packer and falling head tests are presented in Appendix IV. The results of the laboratory testing conducted by KCBL are presented in Appendix V. The report on the geophysical survey program from Frontier Geoscience Inc is presented in Appendix VI.



## 1.2 Background

Over the period of Nov. 11 to Dec. 7, 2007, KCBL carried out a site investigation program for the feasibility design of the tailings facility and plantsite foundations. The investigation program consisted of:

1. a drilling program with 15 boreholes at 10 sites;
2. standard penetration tests (SPT) every 1.5m to 3 m in overburden;
3. installation of 16 standpipe piezometers in 13 boreholes at 8 sites; and
4. excavation of 8 test pits.

The investigation program provides preliminary data for dam and plant foundation designs.

## 1.3 Limitations and Uses of Report

This report is an instrument of service of Klohn Crippen Berger Ltd. The report has been prepared for the exclusive use of Pacific Booker Minerals Inc. for the specific application to the Morrison Copper Gold Project. The report's contents may not be relied upon by any other party without the express written permission of Klohn Crippen Berger. In this report, Klohn Crippen Berger has endeavoured to comply with generally accepted geotechnical practice common to the local area. Klohn Crippen Berger makes no warranty, express or implied.

The analyses, conclusions and recommendations contained in this report are based on data derived from a limited number of test holes obtained from widely spaced subsurface explorations. The methods used indicate subsurface conditions only at the specific locations where samples were obtained or where in-situ tests would infer, only at the time

they were obtained, and only to the depths penetrated. The samples and tests cannot be relied on to accurately reflect the nature and extent of strata variations that usually exist between sampling or testing locations.

The recommendations included in this report have been based in part on assumptions about strata variations between test holes that will not become evident until construction or further investigation. Klohn Crippen Berger cannot assume responsibility or liability for the adequacy of its recommendations when they are used in the field without a qualified geotechnical engineer being retained to observe construction.

Although Klohn Crippen Berger has explored subsurface conditions as part of this program, Klohn Crippen Berger has conducted limited analytical laboratory testing of samples obtained, but has not evaluated the site for potential presence of contaminated soil, and has not evaluated groundwater geochemical conditions.

## **2. DRILLING PROGRAM**

The drilling program was conducted from Nov. 11 to Dec. 17, 2007, and was completed under the technical supervision of KCBL. All of the sites were drilling using a skidder mounted Mobile B-53, owned and operated by Geotechnical Drilling Services Ltd. (GDSL). The B-53 was capable of ODEX air rotary and mud rotary drilling. All geotechnical testing equipment and supplies for instrument installations were provided by GDSL. Drilling was conducted in one 12 hour shift per day. The drilling program can be summarized as follows:

### **2.1 Tailings Facility**

- 10 boreholes at 5 sites, with one deep and one shallow hole per site.
- 5 deep boreholes drilled through overburden, between 11 m and 39 m into bedrock, to depths of between 35m and 58m.
- 5 shallow boreholes drilled into overburden between 11m and 25 m.
- 13 piezometers in 10 boreholes at 5 sites.

### **2.2 Plantsite**

- 5 boreholes at 5 sites drilled into overburden up to 20 m, or 3 m into bedrock if encountered before 20 m.
- 3 piezometers were installed in 3 boreholes.
- 1 borehole was cored 35 m into bedrock to ensure the plantsite area does not contain ore mineralization.

## 2.3 Drilling Methods

The drill holes were completed using some or all of the following drilling methods, depending on the ground conditions:

- ODEX 90 hammer pushing 4.5” casing in overburden, hole diameter is 123 mm
- HQ triple tube mud rotary diamond drilling in rock, hole diameter is 96 mm.

Once about 1 m of bedrock was encountered during ODEX drilling, mud rotary was implemented by coring through the ODEX HW casing shoe using HQ rods and bit. This was successful at all holes except at borehole DH07-5A, where coring was initiated in highly fractured rock. The hole would not stay open and began collapsing, so the hole was used for the overburden piezometer and DH07-5B was drilled deep to obtain rock core for geotechnical logging. Standard penetration testing is described in the next section. No Shelby tube samples were collected because of the presence of gravel and cobbles in the soil.

The drilling program is summarized in Table 2.1. Borehole logs are presented in Appendix II. Standpipe installation methods are described in Section 2.1 and summarized in Table 2.4.

**Table 2.1 2007 Drilling Program**

Drilling Hole ID	Location	Date Started (2007)	Northing (m) #	Easting (m)#	Collar Elevation (m)*	Depth to Bedrock (m)	Hole Depth (m)
DH07-1A	North Dam	Nov. 11	6,125,281	671,989	973	20.44	49.4
DH07-1B	North Dam	Nov. 15	6,125,279	671,996	973		17.4
DH07-2A	North Dam	Nov. 16	6,125,496	671,403	990	23.9	35.1
DH07-2B	North Dam	Nov. 18	6,125,493	671,396	990		11
DH07-3A	Main Dam	Nov. 19	6,123,345	671,446	974	21.9	41.6
DH07-3B	Main Dam	Nov. 22	6,123,335	671,450	974		15.4
DH07-4A	Main Dam	Nov. 23	6,123,637	671,060	960	12.8	46.2
DH07-4B	Main Dam	Nov. 26	6,123,634	671,070	960		11.4
DH07-5A	Main Dam	Nov. 27	6,123,951	670,477	935	19.2	21.5
DH07-5B	Main Dam	Nov. 29	6,123,965	670,477	935	19.2	58.2
DH07-6	Plantsite	Dec. 3	6,120,025	671,245	863		23.2
DH07-7	Plantsite	Dec. 4	6,120,115	671,105	851		22.9
DH07-8	Plantsite	Dec. 5	6,120,422	671,193	877	5.2	9.1
DH07-9	Plantsite	Dec. 5	6,120,197	671,101	841	22.3	25.3
DH07-10	Plantsite	Dec. 6	6,120,299	671,036	845	8.2	47.5

Notes:

# Coordinate were determined by handheld Global Positioning System (GPS).

\* Elevations were estimated from 2 m contours provided by PBL.

Packer testing was done in bedrock and falling head tests in overburden. See below for details.

## 2.4 Standard Penetration Testing

Field soil logging was carried out on Standard Penetration Test (SPT) split spoon samples taken every 1.5 m (5 ft). Select samples were submitted to the KCBL soil lab for visual classification, grain size analysis, moisture content and Atterberg Limit tests. Pocket penetrometer readings were taken on “disturbed” split spoon samples in the field. These readings provide a crude measure of the relative consistency of cohesive soils.

The SPT split spoon was 61 cm (24 inch) long with a 5 cm (2 inch) outside diameter. SPT and large penetration test (LPT) split spoons were driven by an automatic (safety) trip hammer. During split-spoon sampling, the blow count for each 5 cm (2 inches) of incremental depth penetration was recorded (Appendix VIII). The automatic hammer was fixed to the drill rig tower and was swung into place over an anvil, which was securely attached to the end of the rods. The rods were attached to the split spoon and lowered into the drill hole. The SPT split spoons were used without liners, and plastic sand catchers were used to help retrieve the sample.

The automatic trip hammer SPT system was last calibrated November 21, 2005, by ConeTec in Vancouver. The results show an average hammer efficiency of 104%.

$(N_1)_{60}$  is the SPT blow count normalized to an overburden pressure of 100kPa and a hammer efficiency of 60%.  $(N_1)_{60}$  values were calculated with corrections for overburden pressure, hammer efficiency, rod length, and sampling method by using the procedure outlined in National Center for Earthquake Engineering Research (NCEER) Youd et al. (2001). Given the above corrections, the relation between  $(N_1)_{60}$  and  $N_m$  is:

$$(N_1)_{60} = N_m C_N C_E C_R C_S$$

where

- $N_m$  = Measured standard penetration resistance
- $C_N$  = Overburden pressure correction factor
- $C_E$  = Hammer efficiency correction factor
- $C_R$  = Rod length correction factor
- $C_S$  = Sampling method correction factor

A hammer efficiency of 60% is generally accepted as the average for most SPTs (Youd et al., 2001). The SPTs at Morrison Copper Gold had an average hammer efficiency of

104%. The  $C_E$  correction factor is the measured hammer efficiency divided by 60%, which gives a  $C_E$  value of 1.73.

For rod lengths under 10m, the  $C_R$  correction factor was taken from Youd et al. (2001) as shown in Table 2.2.

**Table 2.2 Rod Length Correction Factor  $C_R$**

Rod Length	Correction
<3 m	0.75
3-4 m	0.8
4-6 m	0.85
6-10 m	0.95

Youd et al. (2001) recommends applying a correction factor between 1.1 and 1.3 for the use of samplers without liners. A  $C_S$  correction factor of 1.2 was adopted since the SPT sampler used at Morrison Copper Gold had no liner.

For the  $C_N$  correction factor for overburden pressure, Youd et al. (2001) recommends using the Liao and Whitman (1986) relationship for effective pressures less than 200 kPa:

$$C_N = (P_a / \sigma'_{vo})^{0.5}$$

Where  $P_a$  is atmospheric pressure of approximately 100 kPa, and  $\sigma'_{vo}$  is the effective overburden pressure. For effective overburden pressures between 200 and 300 kPa, Youd et al. (2001) recommends using the Seed and Idriss (1982) relationship:

$$C_N = 2.2 / (1.2 + \sigma'_{vo} / P_a)$$

Youd et al. (2001) indicates that the  $C_N$  correction factor by either method is uncertain for effective overburden pressures greater than 300 kPa, particularly for the Liao and Whitman (1986) relationship.

We have presented  $(N_1)_{60}$  values using  $C_N$  predicted by both the Liao and Whitman (1986) and Seed and Idriss (1982) methods in Appendix IX to demonstrate the range of possible  $(N_1)_{60}$  values at depth.

A summary of the  $(N_1)_{(60)}$  values for each site is included in Table 2.3.



**Table 2.3 Standard Penetration Values for Glacial Till**

Bore Hole	Number of Tests	$N_{60}^1$				$(N_1)_{60}$				$(N_1)_{60}$			
						$(C_N \text{ based on Seed and Idriss (1982)})$				$(C_N \text{ based on Liao and Whitman (1986)})$			
	SPT	min	max	mean	median	min	max	mean	median	min	max	mean	median
DH07-01A	13	16	42	27	26	13	57	32	27	13	60	33	27
DH07-02A	13	21	49	30	28	12	62	25	20	14	72	28	21
DH07-03A	12	21	83	44	33	22	58	35	32	22	62	37	35
DH07-04A	8	21	47	32	33	22	62	32	28	22	72	34	28
DH07-05A	12	17	94	65	73	22	82	55	53	25	82	57	57
DH07-6	10	10	63	45	52	14	74	44	46	14	74	45	47
DH07-7	10	7	59	35	39	9	51	35	36	11	53	36	36
DH07-8	3	37	172	115	137	48	197	135	160	56	201	142	169
DH07-9	10	21	47	36	37	20	56	38	38	21	56	39	39
DH07-10	5	26	139	63	45	34	153	72	53	40	153	75	54

NOTES:

1.  $N_{60}$ :  $N_{SPT}$  corrected for 60% efficiency

## 2.5 Standpipe Installations

Sixteen standpipe piezometers were installed as summarized in Table 2.4 to monitor groundwater level. At tailings dams, at least two piezometers were installed; one in overburden and one in bedrock. Separate holes were drilled for deep and shallow piezometers, rather than putting both in a single hole, because of the difficulty and expense of sealing the long distance between the bottom of the hole and the base of overburden with bentonite. At selected sites, two piezometers separated by a bentonite seal were installed in a single hole.

1” PVC pipe was used for all installations. Coarse silica sand was placed in the annular space between the borehole wall and piezometer screen to a distance of 0.3 m to 0.6 m above the screen. Approximately 0.6 m to 2 m of bentonite was then placed above the filter sand. The hole was then filled with grout made of a bentonite cement mix to the surface. The grout mix was 100 kg water:34 kg cement:19 kg bentonite for all holes. The grout mix was tremied into the hole from the bottom up. A monument was installed to protect the riser pipe, and concrete was poured around the base to hold it in place.

Static water levels were measured during the 2007 Site Investigation Program, but response times in the overburden were typically much too slow to get an accurate water level. Water level in bedrock responded much more quickly.

**Table 2.4 2007 Standpipe Installations<sup>1</sup>**

Drilling Hole ID	Nested Piezo	Location	Installation Date (2007)	Total Hole Depth (mbg <sup>2</sup> )	Piezo Stickup (mags <sup>3</sup> )	Screen Depth (mbg <sup>2</sup> )	Filter Pack Interval (m)	Geologic Unit at Screen Depth	Static Water Level (mbg <sup>2</sup> ) <sup>5</sup>	Static Water Level (mbTOC <sup>4</sup> ) <sup>6</sup>
DH07-1A		North Dam	Nov. 15	49.4	0.90	43.1 - 49.2	42.8 – 49.4	Sandstone and siltstone	-4.5 (artesian)	(artesian)
DH07-1B		North Dam	Nov. 16	17.4	0.83	14.2 - 17.2	13.6 – 17.4	Gravelly clay/silt (TILL)	unknown	frozen
DH07-2A		North Dam	Nov. 18	35.1	0.97	31.7 - 34.7	31.1 – 35.1	Siltstone	27.7	28.71
DH07-2B		North Dam	Nov. 19	11	0.93	7.6 - 10.7	7 – 11	Gravelly clay (TILL)	unknown	7.25
DH07-3A		Main Dam	Nov. 22	41.6	0.92	38.4 - 41.5	37.8 – 41.6	Siltstone	10.7	9.51
DH07-3B		Main Dam	Nov. 23	15.4	0.86	12 - 15.1	11.6 – 15.4	Gravelly clay (TILL)	unknown	11.58
DH07-4A	S1	Main Dam	Nov. 25	46.2	0.82	43 - 46	42.5 – 46.2	Siltstone	9.7	11.1
DH07-4A	S2	Main Dam	Nov. 25	46.2	0.84	33.4 - 36.4	32.9 – 36.7	Sandy siltstone	10.5	11.78
DH07-4B	S1	Main Dam	Nov. 26	11.4	0.90	9.8 - 11.3	9.4 – 11.4	Gravelly clay (TILL)	unknown	11.67
DH07-4B	S2	Main Dam	Nov. 26	11.4	0.92	3 - 4.6	2.7 – 4.7	Gravelly clay (TILL)	unknown	4.96
DH07-5A	S1	Main Dam	Nov. 28	21.5	0.85	19.2 - 21.3	19.1 – 21.5	Volcaniclastic	9.3	12.32
DH07-5A	S2	Main Dam	Nov. 28	21.5	0.87	13.7 - 15.2	13.6 – 15.4	Gravel and clay (TILL)	10	11.49
DH07-5B		Main Dam	Dec. 2	58.2	0.88	55 - 58.1	54.3 – 58.2	Sandstone	unknown	12.38
DH07-6		Plantsite	Dec. 3	23.2	0.86	21 - 22.6	20.7 – 23.2	Silty clay (TILL)	unknown	
DH07-7		Plantsite	Dec. 4	22.9	0.91	21 - 22.6	20.7 – 22.9	Clay, some gravel (TILL)	unknown	
DH07-9		Plantsite	Dec. 6	25.3	0.91	18.3 - 19.8	18 – 19.8	Silty clay (TILL)	unknown	

Notes:

1. Pipe diameter: 26 mm.
2. mbg – meters below ground.
3. mags – metres above ground surface.
4. mbTOC – metres below top of casing/pipe.
5. Static water levels measured from Nov. 15 to Dec. 6, 2007 during the drilling program.
6. Static water levels measured on April 6 2008 by Rescan

### **3. HYDAULIC CONDUCTIVITY TESTS**

The foundation materials below the tailings facility will likely become saturated as the facility fills with tailings. 10 packer tests and 2 falling head tests were performed in bedrock in 5 open boreholes. In overburden, 2 falling head tests were conducted in standpipes, and 3 were done in open boreholes. These tests were used to estimate the saturated hydraulic conductivity (K) of the foundation glacial till and bedrock.

#### **3.1 Packer Tests**

Packer testing was done in the bedrock using a single and double packer system. The single packer tests were from the packer to the base of the hole, and in double packer tests an additional packer was used to seal the base of the tested rock interval. Tests were performed in HQ drill holes at depths selected by the engineer, specifically for good rock quality so that the packer would be inflated against sound rock. Prior to testing, the drill rods were raised several metres to expose the desired test interval. The packer system was lowered down the hole such that the lower inflatable section was seated against sound bedrock below the drill bit. An upper packer was inflated within the drill rods. The test zone was always located below the lower packer. A Lugeon test procedure was used, whereby the rods and test interval were filled with water, the packers were inflated, and then water was pumped into the test interval in at least three ascending stages and at least two descending stages of pressure. Flow and pressure readings were recorded throughout the duration of the test.

Packer tests were performed in DH07-01A, DH07-02A, DH07-03A, DH07-4A, and DH07-5B with the test zone ranging from 3 m to 6.4 m in length. Packer test results are summarized in Table 3.1, and presented in Appendix IV.

**Table 3.1 Packer Testing and Hydraulic Conductivity (K)**

Drill hole	Test Interval (mbg)		K (m/s) Average	Geologic Unit	Confidence
	Top	Bottom			
DH07-1A	23.35	35.66	<b>6.0E-07</b>	Sandstone/mudstone	Good
DH07-1A	35.51	49.38	<b>7.0E-08</b>	Sandstone/mudstone	Good
DH07-2A	26.20	35.10	<b>2.4E-07</b>	Siltstone	Fair
DH07-3A	24.23	35.51	<b>1.6E-06</b>	Sandstone	Very good
DH07-3A	35.51	41.61	<b>1.8E-06</b>	Sandstone/siltstone	Very good
DH07-4A	15.54	27.89	<b>3.2E-07</b>	Sandstone/siltstone	Very good
DH07-4A	36.12	46.18	<b>2.3E-07</b>	Siltstone	Good
DH07-4A	27.89	36.12	<b>1.5E-07</b>	Sandstone/siltstone	Good
DH07-5B	26.37	42.98	<b>9.2E-07</b>	Volcaniclastic	Poor
DH07-5B	45.26	58.22	<b>6.6E-08</b>	Siltstone/Sandstone Cong.	Fair

Notes:

1. mbg – meters below ground

### 3.2 Falling Head Tests

Falling head tests involved taking an initial static water level reading, filling the standpipe or cased open hole full of water, and periodically measuring the water level until it returned to the static level. The Bouwer and Rice (1976) solution was used to calculate the saturated K value for falling head tests. The falling head test data is presented in Appendix IV, and summarized in Table 3.2.

**Table 3.2 Falling Head Testing and Hydraulic Conductivity (K)**

Drill hole	Test Interval (mbg)		K (m/s)	Geologic Unit	Confidence
	Top	Bottom			
DH07-1A	2.7	5.8	<b>4.7E-11</b>	Till	Poor
DH07-2B	7.6	10.7	<b>1.4E-10</b>	Till	Poor
DH07-3A	8.8	18.0	<b>Insuf. data</b>	Till	None
DH07-3A	24.2	35.5	<b>2.2E-06</b>	Sandstone	Poor
DH07-3B	12.0	15.1	<b>3.1E-10</b>	Till	Poor
DH07-5A	10.4	18.0	<b>Insuf. data</b>	Till	None
DH07-5B	26.4	43.0	<b>6.2E-07</b>	Volcaniclastic	Poor

Notes:

1. mbg – meters below ground

### 3.3 Hydraulic Conductivity Results

Falling head and constant head test results were given a confidence rating (good, fair, poor) based on field test observations, quantity of data, and whether it was in the expected range of permeabilities for the lithology.

#### North Dam

DH07-1A, 1B, 2A, and 2B are within the footprint of the north dam (D-1002). Till was practically impervious ( $10^{-10}$  m/s to  $10^{-11}$  m/s). Rock in 1A and 2A had low to moderate permeabilities ( $10^{-7}$  m/s to  $10^{-8}$  m/s), decreasing with depth in 1A. This is on the low end of the expected range for sandstone and jointed igneous rocks (Franklin and Dussealt, 1989). DH07-1A showed artesian flow from the bedrock, with 4.5 m of head and about 0.05 L/s of flow.

#### Main Dam

DH07-3A, 3B, 4A, 4B, 5A, and 5B are within the footprint of the main dam (D-1002). In till, only a single falling head test at 3B provided enough data to calculate K ( $10^{-10}$  m/s), however, other falling head tests confirmed that glacial till is homogenous and practically impermeable. Bedrock at DH07-3A had moderate permeability ( $10^{-6}$  m/s), and DH07-4A and 5B had low permeability ( $10^{-7}$  m/s to  $10^{-8}$  m/s). All sites had decreasing permeability with depth. Falling head tests in bedrock at DH07-3A and 5B correlated very closely to K values obtained with packer testing.

#### 4. TEST PIT PROGRAM

The test pit program consisted of 8 test pits and was conducted from Dec. 5 to Dec. 7, 2007. A 345 Cat excavator supplied by Babine Barge was used to dig the test pits. Test pit depth ranged from 0.8 m to 11.0 m. Grab samples were taken for moisture content, grain size, and Atterberg testing. The test pit program is summarized in Table 4.1. The test pit logs are presented in Appendix III.

**Table 4.1 2007 Test Pit Program**

Test Pit	Date (2007)	Northing	Easting	Elevation (m)	Depth (m)	Depth to Bedrock (m)	Surface Material
TP07-1	Dec. 5	6,120,423	670,641	821	5		Glacial Till
TP07-2	Dec. 6	6,121,305	670,015	795	6		Sand and Gravel
TP07-3	Dec. 6	6,121,117	669,994	795	6		Sand and Gravel
TP07-4	Dec. 6	6,120,999	669,939	789	6		Sand and Gravel
TP07-5	Dec. 5	6,120,486	670,347	828	6		Glacial Till
TP07-6	Dec. 6	6,120,827	669,928	776	6		Glacial Till
TP07-7	Dec. 7	6,123,188	672,197	1,040	2	1	Glacial Till
TP07-8	Dec. 7	6,123,524	672,499	1,025	3.4	2.4	Glacial Till

## **5. LABORATORY TESTING**

### **5.1 General**

Geotechnical testing of selected representative soil samples was performed in Klohn Crippen Berger's Vancouver laboratory. Grab samples were collected from test pit excavations, and SPT split spoon samples were obtained at regular intervals in overburden boreholes. Photographs of the SPT samples, taken in the laboratory and in the field, are shown in Appendix I.

### **5.2 Geotechnical Tests**

A suite of geotechnical laboratory tests was performed on selected soil samples to characterize gradation and plasticity properties. The following is a summary of the tests performed:

- 104 moisture content tests (ASTM D2216) to determine in situ moisture contents;
- 21 washed sieve analyses (ASTM D422) to determine gradation;
- 10 hydrometer analyses (ASTM D422) to determine gradation of the fine portion;
- 10 Atterberg Limit tests (ASTM D4318) to assess the soil classification of the fine portion; and
- 2 Standard Proctor tests (ASTM D698) to determine a moisture-density relationship.

All the test results are presented in Appendix V. Moisture contents, fines contents and Atterberg Limits are also presented on the borehole logs in Appendix II. Table 5.1 shows

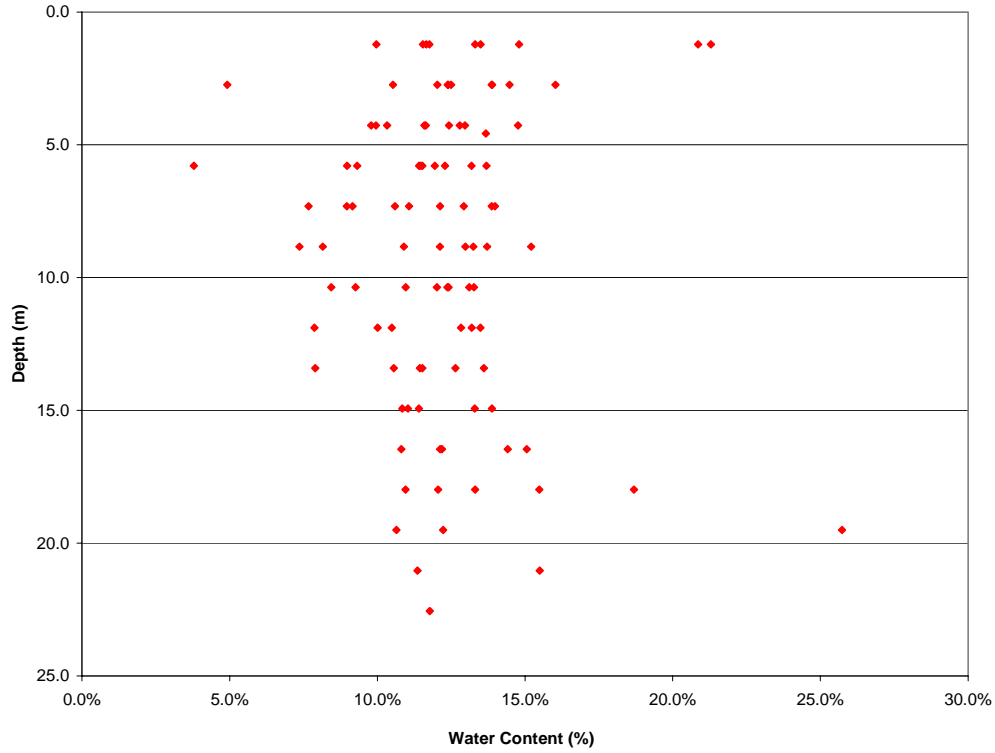


a summarized tabulation of the pertinent properties for each tested sample. Figure 5.1 shows the water content of each SPT sample.

**Table 5.1 Laboratory Test Results**

TEST HOLE LOCATION	SAMPLE No.	DEPTH (m)	W (%)	WL (%)	WP (%)	IP (%)	% GRAVEL	% SAND	% FINES	Material Type
DH07-1A	SPT 4	5.8	13	32	13	19	32	31	38	GLACIAL TILL
DH07-1A	SPT 13	19.5	26	45	17	28	10	23	67	GLACIAL TILL
DH07-2A	SPT 4	5.8	14	34	14	20	18	32	50	GLACIAL TILL
DH07-2A	SPT 10	14.9	14				23	31	46	GLACIAL TILL
DH07-3A	SPT 4	5.8	11	33	13	20	17	33	49	GLACIAL TILL
DH07-3A	SPT 11	18.0	19	30	18	11	0	20	80	GLACIAL TILL
DH07-4A	SPT 4	5.8	12	36	13	23	23	28	49	GLACIAL TILL
DH07-5A	SPT 3	4.3	13	32	13	18	15	30	55	GLACIAL TILL
DH07-5A	SPT 4	5.8	9				20	43	37	GLACIAL TILL
DH07-5A	SPT 11	16.5	11	36	13	23	23	26	51	GLACIAL TILL
DH07-6	SPT 3	4.3	10	28	13	15	22	35	42	GLACIAL TILL
DH07-7	SPT 3	4.3	15				12	35	53	GLACIAL TILL
DH07-8	SPT 3	4.3	10				1	59	39	GLACIAL TILL
DH07-9	SPT 3	4.3	12				19	36	45	GLACIAL TILL
DH07-10	SPT 2	2.7	11	34	14	20	23	35	42	GLACIAL TILL
TP07-2		3.0					47	46	7	GRAVEL
TP07-2		5.8					22	73	5	SAND
TP07-3		3.0					61	36	3	GRAVEL
TP07-4		3.0					54	43	3	GRAVEL
TP07-7		0.6					21	32	47	GLACIAL TILL
TP07-8		1.2					30	29	41	GLACIAL TILL

W – Natural water content  
W<sub>L</sub> – Liquid Limit  
W<sub>P</sub> – Plastic Limit  
I<sub>P</sub> – Plasticity Index



**Figure 5.1 SPT Sample Water Contents**

## **6. GEOPHYSICS PROGRAM**

Six electrical resistivity lines totaling approximately 9.5 km were surveyed between May 4 and June 12, 2007 by Frontier Geosciences Inc. under subcontract to KCBL. Lines were located as shown in D-1003. Data processing and inversion was done by Frontier. The survey methodology and data processing for the geophysics program are described in Appendix VI.

The inverted resistivity sections were interpreted by KCBL. The interpreted resistivity sections are presented in Appendix VII.

In general, the interpreted resistivity sections correlate well with drillhole data and available regional structural data suggesting that data quality is good. Three main units were identified; conductive overburden, resistive bedrock and conductive bedrock. The conductive overburden unit is interpreted to be till, and typically has resistivity values ranging between 0 ohm·m and 150 ohm·m. Highly conductive areas (<50 ohm·m) likely correspond to regions with higher moisture content, while resistive layers (>100 ohm·m) are interpreted to be layers of coarse material within the till. The extent and thickness of the overburden unit varies across the site. The northwest region covered by RL-KC07-4A and RL-KC07-4B shows only small patches of overburden with a maximum thickness of approximately 10 m, while the other areas show large extents of overburden, averaging approximately 15 m thick but in places showing >30 m (greater than the depth of the survey). Given that the resolution of the resistivity data is approximately 2 m vertical and 5 m horizontal, it is not suitable for identifying small or thin features and thus the till appears relatively homogeneous.

Limited geology data and rock drilling data was available to assist interpretation of the underlying rock units, and so the bedrock was broadly classified into two types, resistive

and conductive. Bedrock regions with resistivities generally between 200 ohm·m and 400 ohm·m were identified as conductive bedrock and interpreted to be siltstone or other fine grained sedimentary rock, while regions with resistivity greater than 400 ohm·m were generally identified as resistive bedrock and interpreted to be sandstone. The highly resistive bedrock (600 ohm·m to 1200 ohm·m) on lines RL-KC07-4A and RL-KC07-4B could be sandstone, but given the resistivity values and local geology observations, is more likely to be basalt.

Several faults were interpreted on the inverted resistivity sections. Some, such as the one at the NW end of RL-KC07-1B are interpreted based on a sudden, large change in resistivity which indicates that two different materials are in contact. This could simply be due to steeply dipping beds of sedimentary material, but given the common occurrence of faults in the area, it is more likely associated with faulting. Other faults have been interpreted in places where there is a linear conductive anomaly. Faults often produce brecciated zones that promote weathering, alteration and fluid flow, all factors that typically result in increased conductivity.

## **7. GEOLOGY**

### **7.1 General**

The Morrison deposit is located in the Intermontane Belt of central British Columbia, in the Stikine volcanic arc terrane near its northern margin with the Cache Creek terrane (Schiarizza and MacIntyre 1999; Gabrielse and Yorath, 1989).

The topography is controlled by northwesterly trending block faulting related to Eocene extension (Figure 7.1). The block faulting has resulted in older Hazelton Group (Lower to Middle Jurassic) volcanic and sedimentary rock being exposed in uplands, and younger Bowser Lake Group (Middle to Upper Jurassic) sedimentary rocks exposed in lowlands, in the areas surrounding Morrison Lake (MacIntyre 2001).

### **7.2 Bedrock Geology**

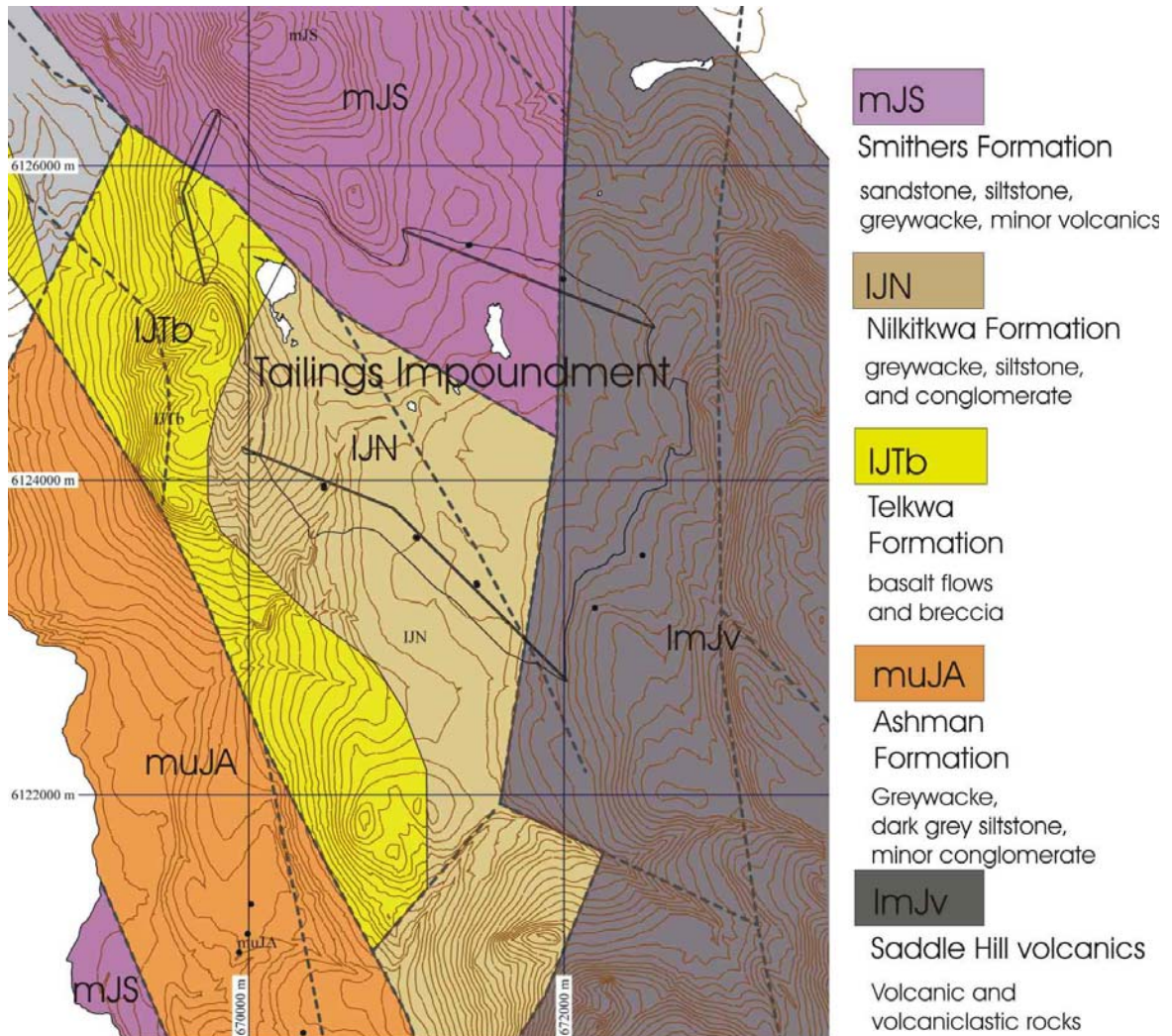
In the vicinity of the Tailings Facility, the Ashman Formation is the only Bowser Lake Group rocks exposed. Hazelton Group rocks exposed around the site include Smithers Formation, Nilkitkwa Formation, Telkwa Formation, and Saddle Hill volcanics (Table 7.1). Eocene intrusive rocks are also present, and are host to the Morrison ore deposit. However, as these intrusive rocks were not observed in the vicinity of the tailings facility, they are not described here.

**Table 7.1 Rock Types Within the Tailings Storage Facility Footprint.**

Group	Formation	Description
Bowser Lake Group	Ashman Formation	Dark grey siltstone, silty and sandy argillite, minor granule to pebble conglomerate, thin to medium bedded, locally fossiliferous.
Hazelton Group	Smithers Formation	Greenish grey to maroon, well-bedded, fossiliferous, sandstone, siltstone, wacke and volcanic pebble conglomerate. Locally glauconitic.
	Saddle Hill volcanics	Brown weathering, greenish grey to green basalt flows, breccias, and tuffs. Locally amygdaloidal and vesicular, with minor volcaniclastic rocks.
	Nilkitkwa Formation	Dark grey, well bedded sand and siltstones, greywacke, with minor pebble conglomerate. Overlies Telkwa Formation.
	Telkwa Formation	Maroon to greenish grey amygdaloidal basalt flows and breccias. Calcite and chlorite filled amygdules. Underlies Nilkitkwa Formation.

(Based on MacIntyre et al. 1997 and MacIntyre 2001).

Varying degrees of alteration have occurred throughout the rocks of the area, resulting in enrichment in carbonate especially, with lesser chlorite, and biotite. Intense clay carbonate alteration is primarily associated with faults and related shears.



----- Fault (location approximate)  
 (Based on MacIntyre 2001)

**Figure 7.1 Bedrock Geology Of The Tailings Impoundment**

### 7.3 Structural Geology

Four major tectonic events have been documented in the region (MacIntyre et al. 1997). Mid to Late Jurassic folding and uplift was followed by mid Cretaceous contraction that produced northwest trending folds and northeast directed thrusts. Crustal extension in

Late Eocene time produced north trending grabens and horsts. The youngest tectonic event was during the Miocene, resulting in tilted fault blocks.

The most prominent structural feature is the northwest trending Morrison Fault, which dextrally disrupted the porphyry system, with displacement estimated at 300 m (Kimura, 2003). Smaller dextral en echelon-oriented faults lie sub-parallel to the Morrison Fault (Simpson, 2007). Intense clay carbonate alteration is associated with fault zones. Mineralized fractures 2 to 10 cm apart are visible in trenches and outcrops. The fractures have orientations in all directions but mostly dip steeply and trend northerly, parallel to the strike of the Morrison fault. At the northern end of the deposit, the strikes of the fractures swing to the east and northeast (Carter, 1973; Richards, 1974).

#### **7.4 Surficial Geology and Geomorphology**

The current landscape is the result of the most recent geologic process, erosion and deposition by the Cordilleran Ice Sheet, which likely covered the Nechako Plateau several times during the Pleistocene. The most recent glacial event is known as the Fraser Glaciation, which reached its maximum ice extent between 25,000 and 12,000 years ago. The surficial material in the study area appears to have been deposited during this glaciation and in the post-glaciation period.

Surficial materials include glacial till, glaciofluvial gravels, colluvium, and organics. Silt/clay glacial till is by far the most common unit, and overlies fractured fine grained sedimentary and volcanic rocks. Steeper slopes are typically covered by a thin veneer of glacial till or colluvium overlying bedrock, and flat areas between northwesterly trending ridges have a thicker cover of glacial till. The impermeability of glacial till creates poor drainage and wet conditions in flat areas where till has filled depressions in the bedrock.



Flat areas are poorly drained, and tend to be swampy with accumulations of organic sediments of 1 to 2 metres. Organics present the biggest challenge to pioneering roads.

Well developed flutings and drumlins oriented parallel to Morrison Lake are a dominant feature of the area, and are the result of ice flowing southeastward from the Coast Mountains (Levson 2002). Below about 950 m elevation, glaciolacustrine sediments are widespread to the south around Babine Lake, but are rare around Morrison Lake. Glaciofluvial deposits are present in isolated fan-deltas at elevations of about 800 m, and may be present at lower elevations as well.

Detailed surficial mapping and terrain stability mapping could not be conducted during the 2007 site investigation due to heavy snow and ice. Previous terrain mapping covering the project site was undertaken for British Columbia Ministry of Forests by Klohn Crippen (1998). This mapping was done at Terrain Survey Intensity Level (TSIL) D (BC Ministry of Environment 1995). This mapping assessed terrain stability at a reconnaissance scale, and identified unstable and possibly unstable areas.

#### **Main Dam Foundation:**

The main dam straddles a broad flat area for much of its length, with steeper terrain at the right (west) and left (east) abutments. The central flat area is underlain by clayey glacial till varying in thickness from 0 m to 21 m. Glacial till masks the undulating bedrock, in the rolling plateau topography (see RL-KC07-1A). Bedrock was observed to outcrop at the crest of small slopes separating flat areas. Water saturated organic silt and peat fill the poorly drained areas between the small steps, and are between 1 m and 2 m thick. The right (west) abutment is a moderately sloping gully, transitioning into a bedrock controlled slope rising to the west. In the vicinity of the gully, coarser fluvial and glaciofluvial sediments overlie glacial till. Post-glacial fluvial sediments appear to be thin

and restricted to the modern channel. The bedrock controlled slope has a decreasing thickness of glacial till with increasing elevation, and accumulations of colluvium (reworked glacial till) were seen in the resistivity profile at the toe of steeper slopes.

### **North Dam Foundation:**

The north dam straddles a saddle separating southward drainage towards Morrison Lake and the Skeena River, from northward drainage towards Nakinilerak Lake and the Fraser River. Topography in the vicinity of the saddle is subdued with generally gentle slopes. The right (east) abutment has a thin cover of glacial till between 2 m and 5 m thick, and the left (west) abutment has a variable thickness of glacial till between 1 m and 24 m thick. Glacial till was the only surficial sediment observed besides very thin and localized fluvial and organic sediments. Glacial till is very similar to that observed at the Main Dam foundation. An exception is clay with no stones observed just above the bedrock contact in DH07-1A.

### **West Dam Foundation:**

No drilling was performed at the West Dam, however, resistivity data show a very thin cover of surficial material over bedrock, typically less than 2 m thick.

The overburden deposits at each of the dam sites were classified into three generalized units based on physical and depositional characteristics, such as method of deposition, gradation, and permeability. These soil units are classified and described as follows:

- Water saturated surface organics;
- Permeable glaciofluvial sand and gravel; and
- Dense impermeable glacial till.

## 7.5 Surficial Material Types

### Water Saturated Surface Organics

At surface is: PEAT (PT), dark brown, moist to wet, fine to coarse fibrous, some silt. At >0.3m depth is: ORGANIC SILT (OL), low plasticity, soft, dark brown, wet, massive, low dry strength, rapid dilatancy, organics are amorphous to fine fibrous. Pockets of organics are located in flat poorly drained areas.

### Permeable Glaciofluvial Sand and Gravel

GRAVEL (GW), fine to medium grained, fine to coarse sandy to some sand, loose, rounded, brownish grey, up to trace cobbles, no fines, moist, glaciofluvial. Glaciofluvial sediments were not observed within the footprint of the TSF, but are suspected within the gully of the Main Dam.

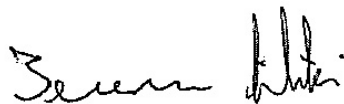
### Impermeable Glacial Till

Sandy Lean CLAY (CI), trace to some gravel, low to intermediate plasticity, firm to stiff, brown, no odour, moist, uncemented, very high dry strength, slow dilatancy, glacial till. Till is uniform and structureless, with rare lenses of gravel and sand, usually mixed with fines. It is widespread.

## KLOHN CRIPPEN BERGER LTD.



Harvey McLeod, P.Eng.  
Project Manager



Terence Jibiki, P.Eng.  
Project Engineer

## REFERENCES

- Bouwer, H. and R.C. Rice, 1976. A slug test method for determining hydraulic conductivity of unconfined aquifers with completely or partially penetrating wells, *Water Resources Research*, vol. 12, no. 3, pp. 423-428.
- Knight Piesold Ltd, 2006. Geotechnical Site Investigation Report – Morrison Copper Gold Project. Issued to Pacific Booker Minerals Inc., July 7, 2006.
- Liao, S., and Whitman, R.C. 1986. Overburden correction factors for SPT in sand. *Journal of Geotechnical Engineering*. ASCE, 112 (3): 373, 377.
- MacIntyre, D. 2001. Geological compilation map, Babine porphyry copper district, central British Columbia (NTS 93L/9,16; 93M/1,2E,7E,8). Geological Survey of Canada, Open File 2001-3, map scale 1:100 000.
- Seed, H.B., and Idriss, I.M. 1982. Ground motions and soil liquefaction during earthquakes. *Earthquake Engineering Research Institute Monograph*, Oakland, California.
- Youd, T.L., Idriss, I.M., Andrus, R.D., Arango, I., Castro, G., Christian, J.T., Dobry, R., Liam Finn, W.D., Harder, L.F. Jr, Hynes, M.E., Ishihara, K., Koester, J.P., Liao, S.S.C., Marcuson, W.F. III, Martin, G.R., Mitchell, J.K., Marowaki, Y., Power, M.S., Robertson, P.K., Seed, R.B., Stokeo, K.H. II. 2001. Liquefaction resistance of soils: Summary report from the 1996 NCEER and 1998 NCEER/NSF workshops on evaluation of liquefaction resistance of soils. *Journal of Geotechnical and Geoenvironmental Engineering*, vol. 127, no. 10, pp. 817-833.

# **APPENDIX I**

## **Photographs**



**Photo I-1** View of rolling topography to the south of the impoundment. Ridges are bedrock-cored, glacial till flutings.



**Photo I-2** View to the west overlooking Morrison Lake



**Photo I-3 Skidder mounted drill rig**



**Photo I-4 ODEX 90 hammer**

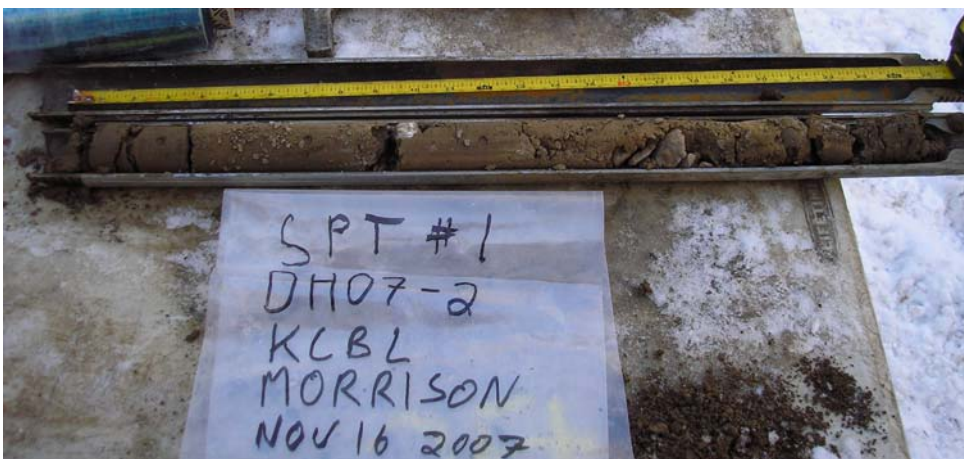




**Photo I-5      Automatic trip SPT hammer**



**Photo I-6** Typical gravelly clay seen in SPT



**Photo I-7** Dry gravelly clay 1.3 m below the surface. Note gravel broken during SPT blows.



**Photo I-8 SPT sample with broken gravel midway**



**Photo I-9 Rock core from DH07-1A. Note the inclined stratification**



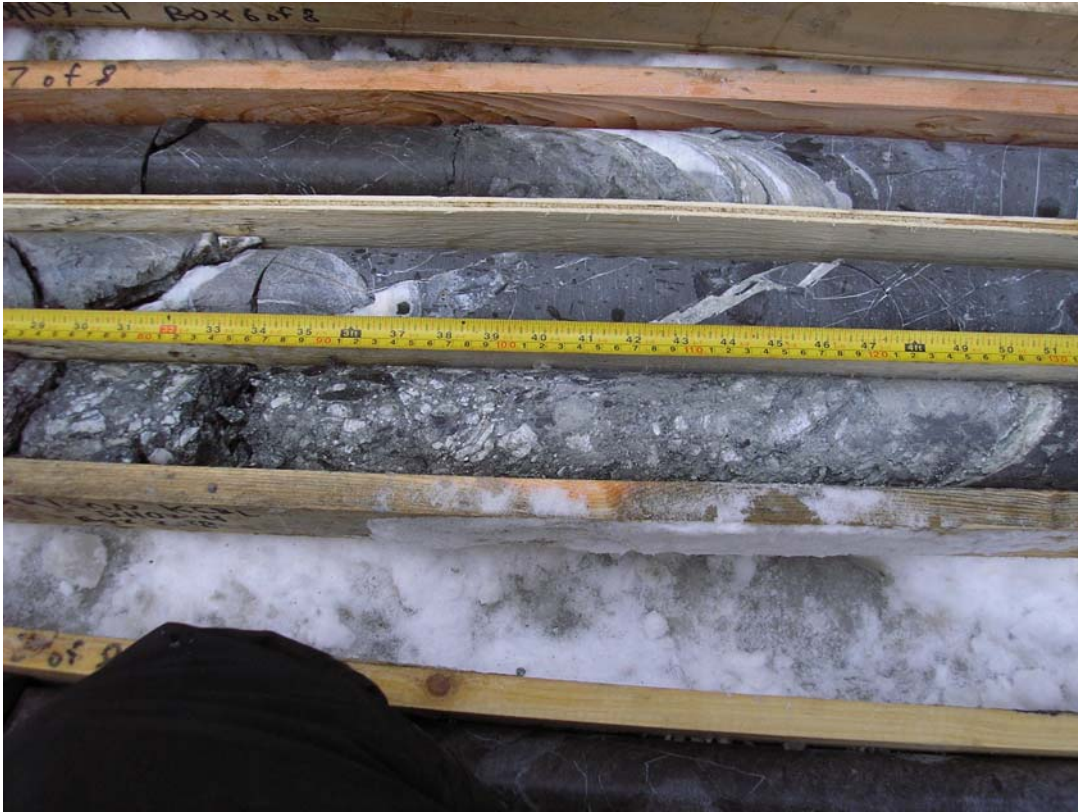
**Photo I-10** Rock core from DH07-2. Rock is dark grey with joints filled with weathered calcite.



**Photo I-11** Rock core from DH07-3A. Rock is purple with green staining



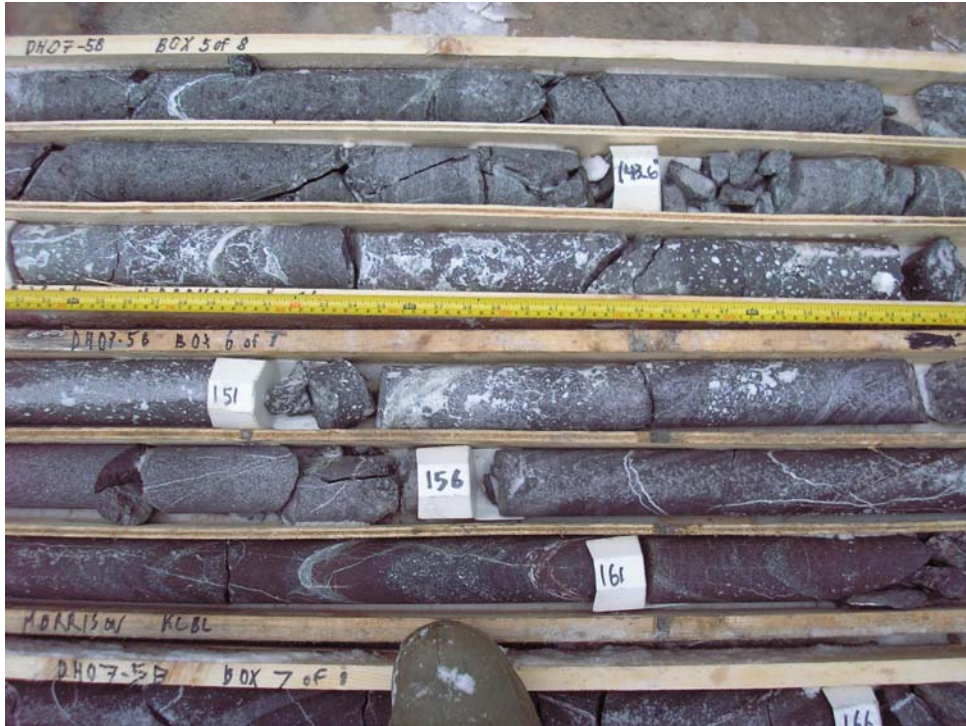
**Photo I-12** Rock core from DH07-4A. Note the change in colour from green to dark grey and the presence of many shears filled with gouge.



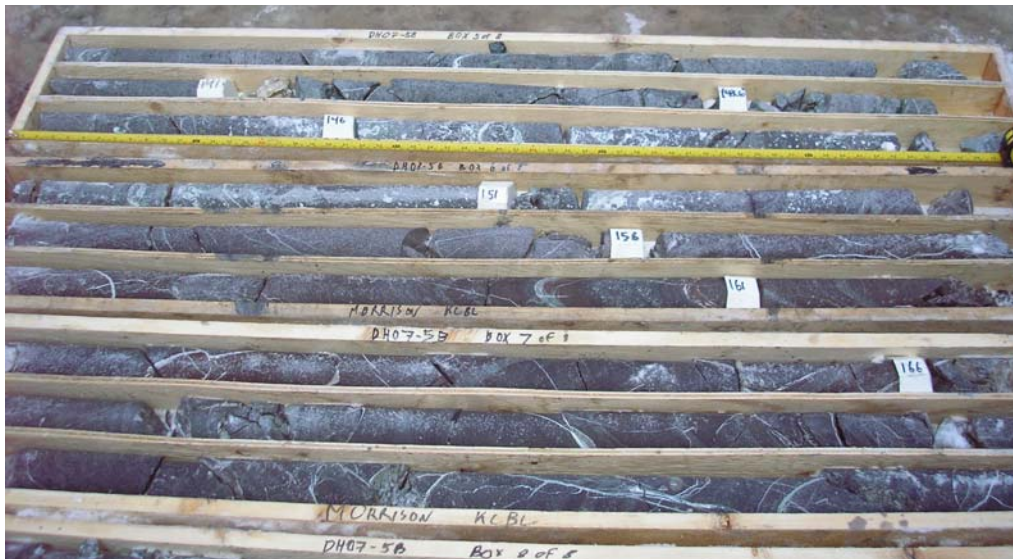
**Photo I-13 Close-up of fault gouge at DH07-4A**



**Photo I-14 Rock core from DH07-5B showing moderately weathered material**



**Photo I-15** Rock core from DH07-5B showing calcite vugs and change from light grey to purple rock



**Photo I-16** Rock core from DH07-5B showing calcite filled joints and shears





**Photo I-17** Sand and gravel and TP07-3. Plastic bag is 25 cm wide.



**Photo I-18** Packer system. The metal ring between the two packers lands on the drill head. The upper packer inflates in the drill stem, and the lower packer inflates against the rock in the open hole.



**Photo I-19** Stuffing box used to seal the top of the drill pipes. The yellow hose pumps water into the interval being tested. The clear tube is the packer inflation hose.



**Photo I-20** The pressure and flow gauges used to perform the packer tests

## **APPENDIX II**

### **Borehole Logs**

# TEST HOLE LOG

Su - kPa

20    60    100    140    180

VANE PEAK	FIELD	LAB	▲ UC/2
REMO	◇	□	△ P.PEN/2
★ % FINES		● SPT N	
W <sub>p</sub> %	W%	W <sub>L</sub> %	
x - - - - -	o - - - - -	x - - - - -	
20	40	60	80

DEPTH (m)	SPT BLOWS PER 0.15m	SAMPLE TYPE AND NO.	SAMPLE RECOVERY	SYMBOL	DESCRIPTION OF MATERIALS	INSTRUMENT	DETAILS
					STARTED: Nov. 11 2007 FINISHED: Nov. 15 2007		
					DRILL METHOD: ODEX90 Hammer		
					GROUND ELEV. (m): 973.00		
					COORDINATES (m): N 6125281 E 671989		
					TOPSOIL		
1	4, 12, 14, 12	SPT 1	67%		0.60 972.40 Sandy Lean CLAY (CL) with some subangular to subrounded gravel, low plasticity, firm, grey, no odour, moist, uncemented, high dry strength, slow dilatancy. HCL reaction moderate. GLACIAL TILL.		
2							
3	4, 8, 10, 12	SPT 2	83%		@ 2.6 m to 5.8 m Hydraulic Conductivity is 4.7E-9 cm/s		
4							
5	4, 6, 9, 12	SPT 3	67%				
6	4, 12, 18, 16	SPT 4	75%		5.80 967.20 Clayey Gravel (GC), sandy, coarse, max particle size 20 mm, subrounded, grey, moist, uncemented. HCL reaction moderate. GLACIAL TILL.		
7							
8	3, 8, 9, 11	SPT 5	100%		7.30 965.70 Sandy Lean CLAY (CL) with some subangular to subrounded gravel, low plasticity, Soft, grey, no odour, moist, uncemented, very high dry strength, slow dilatancy. HCL reaction moderate. GLACIAL TILL.		
9	4, 7, 14, 9	SPT 6	63%				
10							

Continued Next Page



**PROJECT NO.:** M09382A01

**PROJECT:** Morrison Copper Gold

**LOCATION:** Morrison Lake, BC

**LOGGED BY:** T.J. C.K. **CHECKED BY:** S.W.

**SHEET 1 OF 3**

**HOLE NO.:** DH07-1A

# TEST HOLE LOG

**STARTED:** Nov. 11 2007 **FINISHED:** Nov. 15 2007

**DRILL METHOD:** ODEX90 Hammer

**GROUND ELEV. (m):** 973.00

**COORDINATES (m):** N 6125281 E 671989

Su - kPa

20 60 100 140 180

VANE FIELD LAB

PEAK REMOLD

★ % FINES

W<sub>p</sub>% W% W<sub>L</sub>%

x o x

20 40 60 80

INSTRUMENT  
DETAILS

**DESCRIPTION OF MATERIALS**

DEPTH (m)	SPT BLOWS PER 0.15m	SAMPLE TYPE AND NO.	SAMPLE RECOVERY	SYMBOL
11	4, 5, 8, 9	SPT 7		
12	3, 6, 8, 10	SPT 8	108%	
14	3, 6, 7, 11	SPT 9	108%	
15	3, 6, 10, 12	SPT 10	113%	
17	3, 6, 7, 9	SPT 11	113%	
18	3, 6, 8, 12	SPT 12	113%	
20	5	SPT 13	113%	

some elongated angular to subangular gravel

trace angular to subangular gravel

Continued Next Page



**PROJECT NO.:** M09382A01

**PROJECT:** Morrison Copper Gold

**LOCATION:** Morrison Lake, BC

**LOGGED BY:** T.J. C.K. **CHECKED BY:** S.W.

**SHEET 2 OF** 3

**HOLE NO.:** DH07-1A

# TEST HOLE LOG

Su - kPa

20    60    100    140    180

VANE PEAK	FIELD ◆	LAB ■	▲ UC/2
REMOIL	◇	□	△ P.PEN/2
★ % FINES		● SPT N	
W <sub>p</sub> %	W%	W <sub>L</sub> %	
x - - - - - x	o - - - - - x		
20	40	60	80

DEPTH (m)	SPT BLOWS PER 0.15m	SAMPLE TYPE AND NO.	SAMPLE RECOVERY	SYMBOL	DESCRIPTION OF MATERIALS	INSTRUMENT	DETAILS
					<b>STARTED:</b> Nov. 11 2007 <b>FINISHED:</b> Nov. 15 2007 <b>DRILL METHOD:</b> ODEX90 Hammer <b>GROUND ELEV. (m):</b> 973.00 <b>COORDINATES (m):</b> N 6125281    E 671989		
21	6.9.4			<div style="border: 1px solid black; width: 20px; height: 20px; background: repeating-linear-gradient(45deg, transparent, transparent 2px, black 2px, black 4px); margin: 0 auto;"></div>	20.40 952.60  SEE ROCK LOG FOR DETAILS FROM 20.4 m to 49.4 m.  End of Hole at 49.4 m	<div style="border: 1px solid black; width: 20px; height: 20px; background: repeating-linear-gradient(45deg, transparent, transparent 2px, black 2px, black 4px); margin: 0 auto;"></div>	
22					Installation Details: See Rock Log		
23							
24							
25							
26							
27							
28							
29							
30							



<b>PROJECT NO.:</b> M09382A01
<b>PROJECT:</b> Morrison Copper Gold
<b>LOCATION:</b> Morrison Lake, BC
<b>LOGGED BY:</b> T.J. C.K. <b>CHECKED BY:</b> S.W.
<b>SHEET 3 OF 3</b> <b>HOLE NO.:</b> DH07-1A





# GEOLOGIC LOG OF DRILL HOLE NO.: DH07-1A

CLIENT: Pacific Booker Ltd.	PROJECT NO.: M09382A01
PROJECT: Morrison Copper Gold	DATE HOLE STARTED: 11/11/2007 FINISHED: 11/15/2007
LOCATION: North Dam	DATUM: NAD 83
DIRECTION AZIMUTH: DIP (from horiz): -90	TOP OF PIPE ELEVATION: m
CO-ORDINATES: E 671989m N 6125281m	GROUND ELEVATION: 973 m
MANUFACTURER'S DRILL DESIGNATION:	TOTAL DEPTH OF HOLE: 49.4 m
DRILLING CONTRACTOR: Geotech Drilling Services Ltd.	DRILLING METHOD SOIL: ODEX90 Hammer ROCK: HQ Core
LOGGED BY: T.J. C.K.	DRILLING FLUID: Water CASED TO: 22.1m
CHECKED BY: S.W.	HOLE DIA.:

DEPTH (m)	SYMBOL	LITHOLOGY	PIEZOMETER DETAILS	HYDRAULIC CONDUCTIVITY CM/SEC		DISCONT- INUITY DATA	ROCK STRENGTH BASED ON POINT LOAD TEST (MPa) (a) = axial, (c) = diametrical	ROCK HARDNESS					RECOVERY DATA											
				10-6	10-4			SEE BOTTOM OF FORM FOR CODES	ROCK HARDNESS					CORE RECOVERY %			R.Q.D. %							
				10-2	Dip Angle 30 60			1	2	3	4	5	25	50	75	25	50	75						
0		TILL, SEE SOIL LOG FOR DETAILS																						
1																								
2																								
3																								
4																								
5																								
6																								
7																								
8																								

DISCONTINUITY CODES: B: BEDDING D: DRILL BRK F: FAULT G: GNEISS'TY J: JOINT M: SCHIST'TY S: SHEAR T: TENSION CRK  
 CORE LOSS FRACTURED/BROKEN CORE DIP ANGLES MEASURED WITH RESPECT TO HORIZONTAL

KCB\_L-ROCK-SI\_060423 MORRISON DH LOGS-ROCK GPJ ROCK-LOG.GDT\_4/23/08



# GEOLOGIC LOG OF DRILL HOLE NO.: DH07-1A

DEPTH (m)	SYMBOL	LITHOLOGY  (continued from previous page)	PIEZOMETER DETAILS	HYDRAULIC CONDUCTIVITY CM/SEC		DISCONT- INUITY DATA	ROCK STRENGTH BASED ON POINT LOAD TEST (MPa) <small>(a)=axial, (d)=diametrical</small>	ROCK HARDNESS			RECOVERY DATA							
				10-6	10-4	SEE BOTTOM OF FORM FOR CODES		CORE RECOVERY %	R.Q.D. %									
				10-2	Dip Angle 30 60				25	50	75	25	50	75				
9																		
10																		
11																		
12																		
13																		
14																		
15																		
16																		
17																		
18																		

DISCONTINUITY CODES: B: BEDDING D: DRILL BRK F: FAULT G: GNEISS'TY J: JOINT M: SCHIST'TY S: SHEAR T: TENSION CRK  
 CORE LOSS FRACTURED/BROKEN CORE DIP ANGLES MEASURED WITH RESPECT TO HORIZONTAL

KCBL-ROCK-SI 06/04/23 MORRISON DH LOGS-ROCK GPJ ROCK-LOG.GDT 4/23/08



GEOLOGIC LOG OF DRILL HOLE NO.: DH07-1A

DEPTH (m)	SYMBOL	LITHOLOGY  (continued from previous page)	PIEZOMETER DETAILS	HYDRAULIC CONDUCTIVITY CM/SEC			DISCONTINUITY DATA		ROCK STRENGTH BASED ON POINT LOAD TEST (MPa) (a)=axial; (c)=circumferential	ROCK HARDNESS		RECOVERY DATA							
				10-6	10-4	10-2	SEE BOTTOM OF FORM FOR CODES			CORE RECOVERY %			R.Q.D. %						
				Dip Angle 30 60		1	2	3		4	5	25	50	75	25	50	75		
19																			
20																			
20.4 952.6		SANDSTONE																	
21																			
22																			
22.1 950.9		SILTY SANDSTONE, dark grey with thin light grey stratification, very fine grained, trace coarse grained, slightly to moderately weathered, closely jointed, weak rock. Smithers Formation.						J											
23																			
23.5 949.5		SILTY SANDSTONE, very dark grey, very fine grained, fresh, moderately jointed, medium strong rock. Smithers Formation.						J											
24																			
25																			
26																			
26																			
27		closely to moderately jointed, weak to medium strong rock						J											
27																			
28																			

DISCONTINUITY CODES: B: BEDDING D: DRILL BRK F: FAULT G: GNEISS'TY J: JOINT M: SCHIST'TY S: SHEAR T: TENSION CRK  
 CORE LOSS    FRACTURED/BROKEN CORE    DIP ANGLES MEASURED WITH RESPECT TO HORIZONTAL

KCBL-ROCK-SJ 06/04/23 MORRISON DH LOGS-ROCK GPJ ROCK-LOG.GDT 4/23/08



# GEOLOGIC LOG OF DRILL HOLE NO.: DH07-1A

DEPTH (m)	SYMBOL	LITHOLOGY  (continued from previous page)	PIEZOMETER DETAILS	HYDRAULIC CONDUCTIVITY CM/SEC		DISCONTINUITY DATA SEE BOTTOM OF FORM FOR CODES		ROCK STRENGTH BASED ON POINT LOAD TEST (MPa) (a)=axial, (c)=circumferential	ROCK HARDNESS					RECOVERY DATA									
				10-6	10-4	Dip Angle 30 60								CORE RECOVERY %			R.Q.D. %						
				10-2					1	2	3	4	5	25	50	75	25	50	75				
29		dark grey, moderately jointed, strong rock.					J										100			97			
30							J										100			100			
31																							
32								J										100			100		
33																		100			95		
34								J															
35																	100			97			
36		35.7 937.3 SILTSTONE, very dark grey, trace very fine sand, fresh, moderately jointed, strong rock. Smithers Formation.																					
37							J										100			100			
38																							

DISCONTINUITY CODES: B: BEDDING D: DRILL BRK F: FAULT G: GNEISS'TY J: JOINT M: SCHIST'TY S: SHEAR T: TENSION CRK  
 CORE LOSS FRACTURED/BROKEN CORE DIP ANGLES MEASURED WITH RESPECT TO HORIZONTAL

KCBL-ROCK-SI 0610423 MORRISON DH LOGS-ROCK GPJ ROCK-LOG.GDT 4/23/08



# GEOLOGIC LOG OF DRILL HOLE NO.: DH07-1A

DEPTH (m)	SYMBOL	LITHOLOGY	PIEZOMETER DETAILS	HYDRAULIC CONDUCTIVITY CM/SEC		DISCONTINUITY DATA	ROCK STRENGTH BASED ON POINT LOAD TEST (MPa) (a)=axial, (c)=circumferential	ROCK HARDNESS					RECOVERY DATA					
				10-6	10-4	Dip Angle 30 60		CORE RECOVERY %					R.Q.D. %					
				10-2	30			60	25	50	75	25	50	75				
		(continued from previous page)																
39						J							100				95	
40						J							100				95	
40.2		932.8																
		SILTSTONE AND SILTY SANDSTONE, dark grey to green and purple, glauconitic, fresh to discoloured, closely jointed, strong rock. Smithers Formation.																
41						J							100				91	
41.8		931.2																
		SILTSTONE, very dark grey, fresh, moderately jointed, medium strong to strong rock. Smithers Formation.																
42						J							100				93	
43																		
44						J S							100				97	
44.2		928.8																
		SANDSTONE, grey green, glauconitic, fresh to discoloured, fine to medium grained, tightly folded with shears and gouge, weak rock. Smithers Formation.																
44.7		928.3																
		SILTSTONE, very dark grey, fresh, moderately jointed, medium strong to strong rock. Smithers Formation.																
45						J							100				100	
46																		
46.0		927.0																
		SANDSTONE, medium grey, fine to coarse grained, fresh, moderately jointed, strong rock. Smithers Formation.																
46.3		926.7																
		SILTSTONE, very dark grey, fresh, moderately jointed, medium strong to strong rock. Fossiliferous. Smithers Formation.																
47						J							100				88	
47.4		925.6																
		SANDSTONE, medium grey, fine to coarse grained, fresh, moderately jointed, strong rock. Smithers Formation.																
48																		
47.9																		

DISCONTINUITY CODES: B: BEDDING D: DRILL BRK F: FAULT G: GNEISS'TY J: JOINT M: SCHIST'TY S: SHEAR T: TENSION CRK  
 CORE LOSS CORE LOSS FRACTURED/BROKEN CORE DIP ANGLES MEASURED WITH RESPECT TO HORIZONTAL

KCB\_L\_ROCK-SI\_060423 MORRISON DH LOGS-ROCK GPJ ROCK-LOG.GDT\_4/23/08



# GEOLOGIC LOG OF DRILL HOLE NO.: DH07-1A

DEPTH (m)	SYMBOL	LITHOLOGY	PIEZOMETER DETAILS	HYDRAULIC CONDUCTIVITY CM/SEC			DISCONTINUITY DATA		ROCK STRENGTH BASED ON POINT LOAD TEST (MPa) <small>(a)=axial; (c)=circumferential</small>	ROCK HARDNESS	RECOVERY DATA					
				10-6	10-4	10-2	SEE BOTTOM OF FORM FOR CODES				CORE RECOVERY %			R.Q.D. %		
							Dip Angle 30 60				25	50	75	25	50	75
49		(continued from previous page) 925.1 SILTSTONE, very dark grey, fresh, moderately jointed, medium strong to strong rock. Smithers Formation. 49.4 923.6 End of Hole at: 49.4 m					J		1 2 3 4 5							
50		Installation Details: Stick-up 0.90 m PVC pipe 1" diameter - schedule 40 Filter pack coarse silica sand (1 mm) Filter pack interval 42.8 - 49.4 m Screen is 1" PVC, 0.25 mm gap Screen interval 43.1 - 49.2 m														
51																
52																
53																
54																
55																
56																
57																
58																

DISCONTINUITY CODES: B: BEDDING D: DRILL BRK F: FAULT G: GNEISS'TY J: JOINT M: SCHIST'TY S: SHEAR T: TENSION CRK  
 CORE LOSS FRACTURED/BROKEN CORE DIP ANGLES MEASURED WITH RESPECT TO HORIZONTAL

KCBL-ROCK-SI 06/04/23 MORRISON DH LOGS-ROCK GPJ ROCK-LOG.GDT 4/23/08

# TEST HOLE LOG

Su - kPa

20 60 100 140 180

VANE FIELD LAB  
PEAK  $\blacklozenge$   $\blacksquare$   
REMOLD  $\diamond$   $\square$   $\blacktriangle$  UC/2  
 $\triangle$  P.PEN/2  
 $\star$  % FINES  $\bullet$  SPT N

W<sub>p</sub>% W% W<sub>L</sub>%  
x - - - - o - - - - x  
20 40 60 80

DEPTH (m)	SPT BLOWS PER 0.15m	SAMPLE TYPE AND NO.	SAMPLE RECOVERY	SYMBOL
1				
2				
3				
4				
5				
6				
7				
8				
9				
10				

STARTED: Nov. 15 2007 FINISHED: Nov. 16 2007

DRILL METHOD: ODEX90 Hammer

GROUND ELEV. (m): 973.00

COORDINATES (m): N 6125279 E 671996

**DESCRIPTION OF MATERIALS**

Sandy Lean CLAY (CL) with some subangular to subrounded gravel, low plasticity, firm, grey, no odour, moist, uncemented, high dry strength, slow dilatancy. HCL reaction moderate. GLACIAL TILL.

INSTRUMENT  
DETAILS

Continued Next Page



<b>PROJECT NO.:</b> M09382A01
<b>PROJECT:</b> Morrison Copper Gold
<b>LOCATION:</b> Morrison Lake, BC
<b>LOGGED BY:</b> T.J. C.K. <b>CHECKED BY:</b> S.W.
<b>SHEET 1 OF 2</b> <b>HOLE NO.:</b> DH07-1B

# TEST HOLE LOG

Su - kPa

20 60 100 140 180

VANE PEAK REMOLD  
 FIELD  $\diamond$   
 LAB  $\square$   
 $\blacktriangle$  UC/2  
 $\triangle$  P.PEN/2  
 \* % FINES  $\bullet$  SPT N  
 W<sub>p</sub>% W% W<sub>L</sub>%  
 x - - - - o - - - - x  
 20 40 60 80

STARTED: Nov. 15 2007 FINISHED: Nov. 16 2007

DRILL METHOD: ODEX90 Hammer

GROUND ELEV. (m): 973.00

COORDINATES (m): N 6125279 E 671996

DESCRIPTION OF MATERIALS

INSTRUMENT  
 DETAILS

DEPTH (m)	SPT BLOWS PER 0.15m	SAMPLE TYPE AND NO.	SAMPLE RECOVERY	SYMBOL
11				
12				
13				
14				
15				
16				
17				
18				
19				
20				

17.40  
955.60

End of Hole at 17.4 m

Installation Details:

Stick-up 0.83 m  
 PVC pipe 1 diameter - schedule 40  
 Filter pack coarse silica sand (1 mm)  
 Filter pack interval 13.6 - 17.4 m  
 Screen is 1 PVC, 0.25 mm gap  
 Screen interval 14.2 - 17.2 m

KCBL\_TEST\_HOLE-SI 080123 MORRISON.DH.LOGS-SOIL.GPJ KC\_DATA.GDT 4/23/08



PROJECT NO.: M09382A01

PROJECT: Morrison Copper Gold

LOCATION: Morrison Lake, BC

LOGGED BY: T.J. C.K. CHECKED BY: S.W.

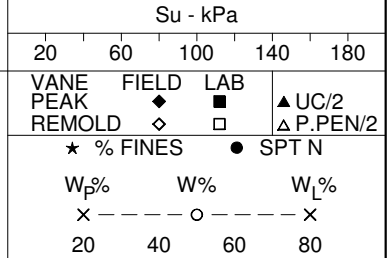
SHEET 2 OF 2

HOLE NO.: DH07-1B



# TEST HOLE LOG

**STARTED:** Nov. 16 2007 **FINISHED:** Nov. 18 2007  
**DRILL METHOD:** ODEX90 Hammer  
**GROUND ELEV. (m):** 990.00  
**COORDINATES (m):** N 6125496 E 671403  
**DESCRIPTION OF MATERIALS**



DEPTH (m)	SPT BLOWS PER 0.15m	SAMPLE TYPE AND NO.	SAMPLE RECOVERY	SYMBOL
1				0.60
2	12, 13, 14, 16	SPT 1	98%	
3	13.5, 22, 35, 26	SPT 2	29%	
5	6, 5.5, 8, 9	SPT 3	96%	
6	4.5, 6, 7, 9	SPT 4	83%	
8	2.5, 5, 7, 9	SPT 5	100%	
9	4, 7, 7, 9	SPT 6	88%	

TOPSOIL

989.40 Sandy Lean CLAY (CL) with trace subangular to subrounded gravel, low plasticity, very hard, brown, no odour, moist, uncemented, very high dry strength, slow dilatancy. HCL reaction strong. GLACIAL TILL.

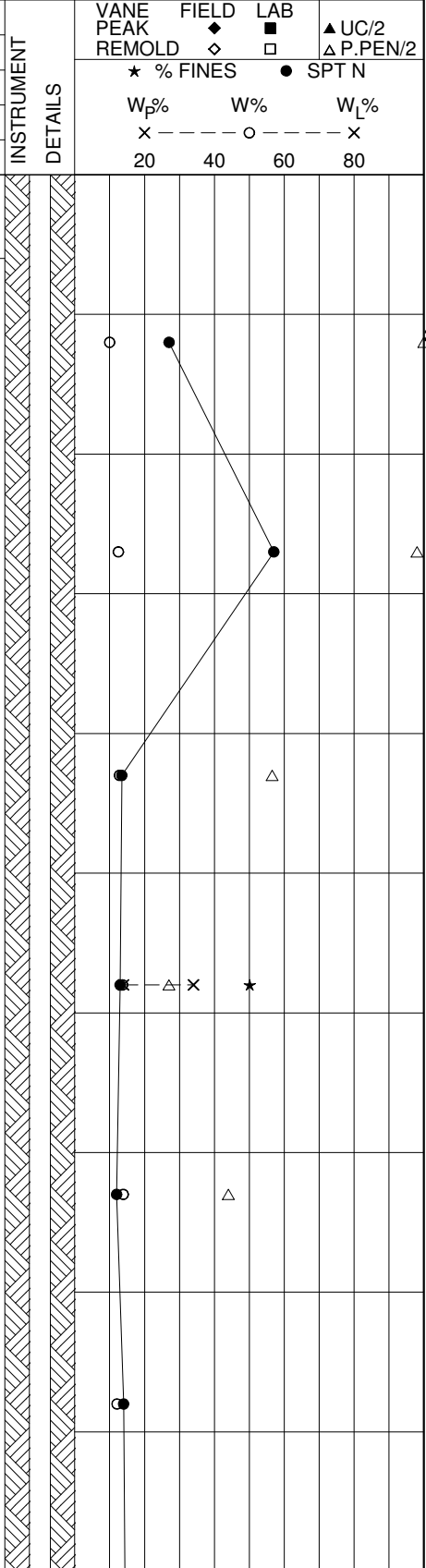
some gravel, soft, wet, HCL reaction moderate.

trace gravel, firm, wet.

some gravel, soft, moist.

trace gravel, soft to firm.

firm.



Continued Next Page

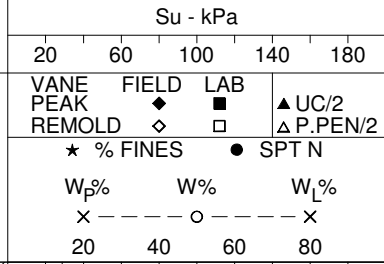


**PROJECT NO.:** M09382A01  
**PROJECT:** Morrison Copper Gold  
**LOCATION:** Morrison Lake, BC  
**LOGGED BY:** C.K. **CHECKED BY:** S.W.  
**SHEET 1 OF 3** **HOLE NO.:** DH07-2A

KCBL\_TEST\_HOLE-SI 080123 MORRISON.DH LOGS-SOIL.GPJ KC\_DATA.GDT 4/23/08

# TEST HOLE LOG

**STARTED:** Nov. 16 2007 **FINISHED:** Nov. 18 2007  
**DRILL METHOD:** ODEX90 Hammer  
**GROUND ELEV. (m):** 990.00  
**COORDINATES (m):** N 6125496 E 671403



DEPTH (m)	SPT BLOWS PER 0.15m	SAMPLE TYPE AND NO.	SAMPLE RECOVERY	SYMBOL
11	3, 6.5, 8, 12	SPT 7	100%	
12	3, 8, 8, 11	SPT 8	73%	
14	28, 14, 14, 17	SPT 9	58%	
15	4.5, 5.5, 11, 13	SPT 10	100%	
17	5, 4.5, 7.5, 10	SPT 11	100%	
18	5, 7, 16, 16	SPT 12	69%	

**DESCRIPTION OF MATERIALS**  
 13.40  
 976.60 Clayey SAND (SC), angular to subangular gravelly, grey, moist, uncemented. HCL reaction moderate. GLACIAL TILL  
 14.90  
 975.10 Sandy Lean CLAY (CL) with some subangular to subrounded gravel, low plasticity, soft to firm, grey, no odour, moist, uncemented, very high dry strength, slow dilatancy. HCL reaction moderate. GLACIAL TILL  
 soft, wet.

INSTRUMENT DETAILS

Continued Next Page



**PROJECT NO.:** M09382A01  
**PROJECT:** Morrison Copper Gold  
**LOCATION:** Morrison Lake, BC  
**LOGGED BY:** C.K. **CHECKED BY:** S.W.  
**SHEET 2 OF 3** **HOLE NO.:** DH07-2A

KCBL\_TEST\_HOLE-SI 080123 MORRISON.DH LOGS-SOIL.GPJ KC\_DATA.GDT 4/23/08

# TEST HOLE LOG

Su - kPa

20    60    100    140    180

DEPTH (m)	SPT BLOWS PER 0.15m	SAMPLE TYPE AND NO.	SAMPLE RECOVERY	SYMBOL	TEST HOLE LOG		Su - kPa												
					STARTED: Nov. 16 2007 FINISHED: Nov. 18 2007		VANE PEAK	FIELD	LAB	UC/2									
					DRILL METHOD: ODEX90 Hammer		REMO	◇	□	▲ P.PEN/2									
					GROUND ELEV. (m): 990.00		★ % FINES    ● SPT N												
COORDINATES (m): N 6125496    E 671403		W <sub>p</sub> %		W%		W <sub>L</sub> %													
DESCRIPTION OF MATERIALS					X	O	X												
					20	40	60	80											
21	2.5, 9.5, 14, 9	SPT 13	104%		firm, moist.	○	●	▲											
22																			
23																			
24					23.90 966.10														
25					SEE ROCK LOG FOR DETAILS FROM 23.9 m to 35.1 m.														
26					End of Hole at 35.1 m														
27					Installation Details: See Rock Log														
28																			
29																			
30																			

KCBL\_TEST\_HOLE-SI 080123 MORRISON.DH LOGS-SOIL.GPJ KC\_DATA.GDT 4/23/08



<b>PROJECT NO.:</b> M09382A01	
<b>PROJECT:</b> Morrison Copper Gold	
<b>LOCATION:</b> Morrison Lake, BC	
<b>LOGGED BY:</b> C.K.	<b>CHECKED BY:</b> S.W.
<b>SHEET 3 OF 3</b>	<b>HOLE NO.:</b> DH07-2A



# GEOLOGIC LOG OF DRILL HOLE NO.: DH07-2A

CLIENT: Pacific Booker Ltd.	PROJECT NO.: M09382A01
PROJECT: Morrison Copper Gold	DATE HOLE STARTED: 11/16/2007 FINISHED: 11/18/2007
LOCATION: North Dam	DATUM: NAD 83
DIRECTION AZIMUTH:                      DIP (from horiz): -90	TOP OF PIPE ELEVATION: m
CO-ORDINATES:        E 671403m    N 6125496m	GROUND ELEVATION: 990 m
MANUFACTURER'S DRILL DESIGNATION:	TOTAL DEPTH OF HOLE: 35.1 m
DRILLING CONTRACTOR: Geotech Drilling Services Ltd.	DRILLING METHOD SOIL: ODEX90 Hammer ROCK: HQ Core
LOGGED BY: C.K.	DRILLING FLUID: Water                      CASED TO: 24.8m
CHECKED BY: S.W.	HOLE DIA.:

DEPTH (m)	SYMBOL	LITHOLOGY	PIEZOMETER DETAILS	HYDRAULIC CONDUCTIVITY CM/SEC			DISCONTINUITY DATA	ROCK STRENGTH BASED ON POINT LOAD TEST (MPa) (a) = axial, (d) = diametrical	ROCK HARDNESS					RECOVERY DATA						
				10-6	10-4	10-2			SEE BOTTOM OF FORM FOR CODES Dip Angle 30 60		CORE RECOVERY %					R.Q.D. %				
										1	2	3	4	5	25	50	75	25	50	75
0		TILL, SEE SOIL LOG FOR DETAILS																		
1																				
2																				
3																				
4																				
5																				
6																				
7																				
8																				

DISCONTINUITY CODES:    B: BEDDING    D: DRILL BRK    F: FAULT    G: GNEISS'TY    J: JOINT    M: SCHIST'TY    S: SHEAR    T: TENSION CRK

	CORE LOSS		FRACTURED/BROKEN CORE	DIP ANGLES MEASURED WITH RESPECT TO HORIZONTAL
--	-----------	--	-----------------------	--

KCB\_L-ROCK-SI\_0810423\_MORRISON\_DH\_LOGS-ROCK.GPJ ROCK-LOG.GDT\_4/23/08



GEOLOGIC LOG OF DRILL HOLE NO.: DH07-2A

DEPTH (m)	SYMBOL	LITHOLOGY  (continued from previous page)	PIEZOMETER DETAILS	HYDRAULIC CONDUCTIVITY CM/SEC			DISCONT- INUITY DATA		ROCK STRENGTH BASED ON POINT LOAD TEST (MPa) (a)=axial, (d)=diametrical	ROCK HARDNESS			RECOVERY DATA						
				10-6	10-4	10-2	SEE BOTTOM OF FORM FOR CODES			CORE RECOVERY %			R.Q.D. %						
							Dip Angle 30 60			1	2	3	4	5	25	50	75	25	50
9																			
10																			
11																			
12																			
13																			
14																			
15																			
16																			
17																			
18																			

DISCONTINUITY CODES: B: BEDDING D: DRILL BRK F: FAULT G: GNEISS'TY J: JOINT M: SCHIST'TY S: SHEAR T: TENSION CRK  
 CORE LOSS FRACTURED/BROKEN CORE DIP ANGLES MEASURED WITH RESPECT TO HORIZONTAL

KCBL-ROCK-SI 060423 MORRISON DH LOGS-ROCK GPJ ROCK-LOG.GDT 4/23/08



# GEOLOGIC LOG OF DRILL HOLE NO.: DH07-2A

DEPTH (m)	SYMBOL	LITHOLOGY	PIEZOMETER DETAILS	HYDRAULIC CONDUCTIVITY CM/SEC			DISCONTINUITY DATA		ROCK STRENGTH BASED ON POINT LOAD TEST (MPa) (a)=axial, (c)=circumferential	ROCK HARDNESS			RECOVERY DATA							
				10-6	10-4	10-2	SEE BOTTOM OF FORM FOR CODES						CORE RECOVERY %			R.Q.D. %				
				30	60	Dip Angle	30	60		1	2	3	4	5	25	50	75	25	50	75
		(continued from previous page)																		
19																				
20																				
21																				
22																				
23																				
24		23.9 966.1 SILTSTONE																		
25		24.8 965.2 SILTSTONE, very dark grey, some rusty weathering, very fine grained, moderately to slightly weathered, closely jointed, medium strong rock. Smithers Formation.					J	J												
26		26.2 963.8 SILTSTONE, very dark grey, very fine grained, fresh, closely jointed, medium strong rock. Smithers Formation.					J	J												
27																				
28																				

KCBL-ROCK-SJ 0610423 MORRISON DH LOGS-ROCK GPJ ROCK-LOG.GDT 4/23/08

DISCONTINUITY CODES: B: BEDDING D: DRILL BRK F: FAULT G: GNEISS'TY J: JOINT M: SCHIST'TY S: SHEAR T: TENSION CRK  
 CORE LOSS FRACTURED/BROKEN CORE DIP ANGLES MEASURED WITH RESPECT TO HORIZONTAL



# GEOLOGIC LOG OF DRILL HOLE NO.: DH07-2A

DEPTH (m)	SYMBOL	LITHOLOGY	PIEZOMETER DETAILS	HYDRAULIC CONDUCTIVITY CM/SEC		DISCONTINUITY DATA		ROCK STRENGTH BASED ON POINT LOAD TEST (MPa) (a)=axial; (c)=circumferential	ROCK HARDNESS			RECOVERY DATA							
				10-6	10-4	SEE BOTTOM OF FORM FOR CODES						CORE RECOVERY %			R.Q.D. %				
				10-2	10-2	Dip Angle 30 60			1 2 3 4 5	25 50 75	25 50 75								
		(continued from previous page)																	
29							J	J											
		29.3 960.7 SANDSTONE, greenish grey, fine to coarse grained, fresh, glauconitic, closely jointed, medium strong rock. Smithers Formation.											100					17	
30		29.9 960.1 SILTSTONE, very dark grey, very fine grained, fresh, closely jointed, medium strong rock. Fossiliferous. Smithers Formation.					J	J											
31		30.5 959.5 SANDSTONE, greenish grey, fine to coarse grained, fresh, glauconitic, closely jointed, medium strong rock.					J	J					100					37	
32		31.4 958.6 SILTSTONE, very dark grey, very fine grained, fresh, closely jointed, medium strong rock. Fossiliferous. Smithers Formation.					S	J											
33							J	J					100					26	
34																			
35		34.4 955.6 SILTY SANDSTONE, greenish grey, fine to coarse grained, fresh, glauconitic, closely jointed, medium strong rock.						S					100					28	
35		35.1 954.9 End of Hole at: 35.1 m																	
36		Installation Details: Stick-up 0.97 m PVC pipe 1" diameter - schedule 40 Filter pack coarse silica sand (1 mm) Filter pack interval 31.1 - 35.1 m Screen is 1" PVC, 0.25 mm gap Screen interval 31.7 - 34.7 m																	
37																			
38																			

KCBL-ROCK-SJ 0610423 MORRISON DH LOGS-ROCK GPJ ROCK-LOG.GDT 4/23/08

DISCONTINUITY CODES: B: BEDDING D: DRILL BRK F: FAULT G: GNEISS'TY J: JOINT M: SCHIST'TY S: SHEAR T: TENSION CRK  
 CORE LOSS FRACTURED/BROKEN CORE DIP ANGLES MEASURED WITH RESPECT TO HORIZONTAL

# TEST HOLE LOG

Su - kPa

20    60    100    140    180

DEPTH (m)	SPT BLOWS PER 0.15m	SAMPLE TYPE AND NO.	SAMPLE RECOVERY	SYMBOL	<b>STARTED:</b> Nov. 18 2007 <b>FINISHED:</b> Nov. 19 2007		INSTRUMENT	DETAILS	Su - kPa					
					<b>DRILL METHOD:</b> ODEX90 Hammer				VANE PEAK	FIELD	LAB	UC/2		
					<b>GROUND ELEV. (m):</b> 990.00				REMO	◇	□	▲ P.PEN/2		
					<b>COORDINATES (m):</b> N 6125493    E 671396				★ % FINES    ● SPT N					
					<b>DESCRIPTION OF MATERIALS</b>				W <sub>p</sub> %	W%	W <sub>L</sub> %			
1				/	Sandy Lean CLAY (CL) with trace subangular to subrounded gravel, low plasticity, very hard to firm, brown, no odour, moist, uncemented, very high dry strength, slow dilatancy. HCL reaction strong. GLACIAL TILL.									
2				/										
3				/										
4				/										
5				/										
6				/										
7				/			▽							
8				/										
9				/										
10				/										

@ 7.6 m to 10.7 m Hydraulic Conductivity is 1.4E-8 cm/s

Continued Next Page



<b>PROJECT NO.:</b> M09382A01	
<b>PROJECT:</b> Morrison Copper Gold	
<b>LOCATION:</b> Morrison Lake, BC	
<b>LOGGED BY:</b> C.K.	<b>CHECKED BY:</b> S.W.
<b>SHEET 1 OF 2</b>	<b>HOLE NO.:</b> DH07-2B

KCBL\_TEST\_HOLE-SI 080123 MORRISON.DH LOGS-SOIL.GPJ KC\_DATA.GDT 4/23/08



# TEST HOLE LOG

Su - kPa

20    60    100    140    180

DEPTH (m)	SPT BLOWS PER 0.15m	SAMPLE TYPE AND NO.	SAMPLE RECOVERY	SYMBOL	STARTED: Nov. 18 2007 FINISHED: Nov. 19 2007		INSTRUMENT	DETAILS	Su - kPa						
					DRILL METHOD: ODEX90 Hammer				VANE PEAK	FIELD	LAB	UC/2			
					GROUND ELEV. (m): 990.00				REMOLD	◆	■	▲ P.PEN/2			
					COORDINATES (m): N 6125493 E 671396				★ % FINES		●	SPT N			
					DESCRIPTION OF MATERIALS				W <sub>p</sub> %	W%	W <sub>L</sub> %				
								x	o	x					
11				11.00 979.00											
12					End of Hole at 11 m										
13					Installation Details:  Stick-up 0.93 m PVC pipe 1 diameter - schedule 40 Filter pack coarse silica sand (1 mm) Filter pack interval 7.0 - 11.0 m Screen is 1 PVC, 0.25 mm gap Screen interval 7.6 - 10.7 m										
14															
15															
16															
17															
18															
19															
20															

KCBL\_TEST\_HOLE-SI 080123 MORRISON.DH LOGS-SOIL.GPJ KC\_DATA.GDT 4/23/08



<b>PROJECT NO.:</b> M09382A01
<b>PROJECT:</b> Morrison Copper Gold
<b>LOCATION:</b> Morrison Lake, BC
<b>LOGGED BY:</b> C.K. <b>CHECKED BY:</b> S.W.
<b>SHEET 2 OF 2</b> <b>HOLE NO.:</b> DH07-2B

# TEST HOLE LOG

Su - kPa

20 60 100 140 180

VANE PEAK REMOLD  
 FIELD  $\diamond$  LAB  $\square$   
 $\blacktriangle$  UC/2  $\triangle$  P.PEN/2  
 \* % FINES  $\bullet$  SPT N  
 W<sub>p</sub>% W% W<sub>L</sub>%  
 x - - - - - o - - - - - x  
 20 40 60 80

**STARTED:** Nov. 19 2007 **FINISHED:** Nov. 22 2007  
**DRILL METHOD:** ODEX90 Hammer  
**GROUND ELEV. (m):** 974.00  
**COORDINATES (m):** N 6123345 E 671446

INSTRUMENT DETAILS

**DESCRIPTION OF MATERIALS**

DEPTH (m)	SPT BLOWS PER 0.15m	SAMPLE TYPE AND NO.	SAMPLE RECOVERY	SYMBOL	DESCRIPTION OF MATERIALS	INSTRUMENT DETAILS	Su - kPa	W <sub>p</sub> %	W%	W <sub>L</sub> %
0.20					TOPSOIL					
973.80					Sandy Lean CLAY (CL) with some subrounded gravel, low plasticity, hard, brown, no odour, moist, uncemented, very high dry strength, slow dilatancy. HCL reaction strong. GLACIAL TILL.					
1										
5, 12, 8, 10,	SPT 1		83%							
2										
4, 6, 8, 8	SPT 2		81%							
3										
3, 6, 6, 10	SPT 3		63%							
4										
5										
4, 14, 41, 11	SPT 4		96%							
5.80					Clayey SAND (SC) with some gravel, brown, moist, uncemented. HCL reaction moderate, GLACIAL TILL.					
968.20										
6										
7										
7.30					Sandy Lean CLAY (CL) with trace angular to subangular gravel. <2 flat coarse gravel encountered, low plasticity, firm, grey, no odour, moist, uncemented, very high dry strength, slow dilatancy. HCL reaction moderate. GLACIAL TILL.					
966.70										
8										
8, 8, 9, 15	SPT 5		56%							
9										
3, 9, 8, 13	SPT 6		69%							
10					soft.					

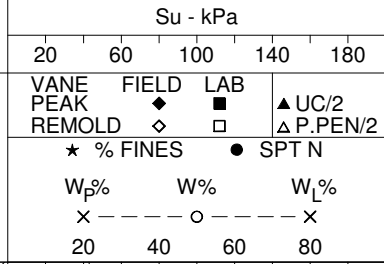
Continued Next Page



**PROJECT NO.:** M09382A01  
**PROJECT:** Morrison Copper Gold  
**LOCATION:** Morrison Lake, BC  
**LOGGED BY:** C.K. **CHECKED BY:** S.W.  
**SHEET 1 OF 3** **HOLE NO.:** DH07-3A

# TEST HOLE LOG

**STARTED:** Nov. 19 2007 **FINISHED:** Nov. 22 2007  
**DRILL METHOD:** ODEX90 Hammer  
**GROUND ELEV. (m):** 974.00  
**COORDINATES (m):** N 6123345 E 671446



DEPTH (m)	SPT BLOWS PER 0.15m	SAMPLE TYPE AND NO.	SAMPLE RECOVERY	SYMBOL
11	4, 7, 16, 13	SPT 7	96%	[Hatched]
12	5, 12, 16, 22	SPT 8	92%	[Hatched]
14	8, 13, 19, 22	SPT 9		[Hatched]
15	11, 23, 25, 32	SPT 10	21%	[Hatched]
18	10, 20, 27, 30	SPT 11		[Hatched]

**DESCRIPTION OF MATERIALS**

11 - firm.

12 - hard.

14 - wet, trace gravel.

15 - some angular to subangular gravel, firm, moist.

18 - no gravel.

**INSTRUMENT DETAILS**

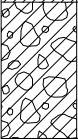






Continued Next Page



**PROJECT NO.:** M09382A01  
**PROJECT:** Morrison Copper Gold  
**LOCATION:** Morrison Lake, BC  
**LOGGED BY:** C.K. **CHECKED BY:** S.W.  
**SHEET 2 OF 3** **HOLE NO.:** DH07-3A

KCBL\_TEST\_HOLE-SI 080123 MORRISON.DH LOGS-SOIL.GPJ KC\_DATA.GDT 4/23/08

# TEST HOLE LOG

					Su - kPa													
					20	60	100	140	180									
DEPTH (m)	SPT BLOWS PER 0.15m	SAMPLE TYPE AND NO.	SAMPLE RECOVERY	SYMBOL	STARTED: Nov. 19 2007 FINISHED: Nov. 22 2007		INSTRUMENT	DETAILS	VANE PEAK REMOLD		FIELD		LAB		UC/2 P.PEN/2			
					DRILL METHOD: ODEX90 Hammer				* % FINES		● SPT N		W <sub>p</sub> %		W%		W <sub>L</sub> %	
					GROUND ELEV. (m): 974.00				x - - - - - o - - - - - x		20 40 60 80							
					COORDINATES (m): N 6123345 E 671446													
DESCRIPTION OF MATERIALS																		
21	11, 17, 21, 40	SPT 12	75%		21.00 953.00 Sandy GRAVEL (GP) with trace to some sand, trace to some fines, loose, max particle size 10 mm, angular, grey, wet, uncemented. HCL reaction moderate. WEATHERED BEDROCK.  21.90 952.10	  	  											
22				SEE ROCK LOG FOR DETAILS FROM 21.9 m to 41.6 m.														
23	End of Hole at 41.6 m																	
24	Installation Details: See Rock Log																	
25																		
26																		
27																		
28																		
29																		
30																		

KCBL\_TEST\_HOLE-SI 080123 MORRISON.DH LOGS-SOIL.GPJ KC\_DATA.GDT 4/23/08



PROJECT NO.: M09382A01	
PROJECT: Morrison Copper Gold	
LOCATION: Morrison Lake, BC	
LOGGED BY: C.K.	CHECKED BY: S.W.
SHEET 3 OF 3	HOLE NO.: DH07-3A



Klohn Crippen Berger

GEOLOGIC LOG OF DRILL HOLE NO.: DH07-3A

CLIENT: Pacific Booker Ltd.	PROJECT NO.: M09382A01
PROJECT: Morrison Copper Gold	DATE HOLE STARTED: 11/19/2007 FINISHED: 11/22/2007
LOCATION: Main Dam	DATUM: NAD 83
DIRECTION AZIMUTH: DIP (from horiz): -90	TOP OF PIPE ELEVATION: m
CO-ORDINATES: E 671446m N 6123345m	GROUND ELEVATION: 974 m
MANUFACTURER'S DRILL DESIGNATION:	TOTAL DEPTH OF HOLE: 41.6 m
DRILLING CONTRACTOR: Geotech Drilling Services Ltd.	DRILLING METHOD SOIL: ODEX90 Hammer ROCK: HQ Core
LOGGED BY: C.K.	DRILLING FLUID: Water CASSED TO: 22.9m
CHECKED BY: S.W.	HOLE DIA.:

DEPTH (m)	SYMBOL	LITHOLOGY	PIEZOMETER DETAILS	HYDRAULIC CONDUCTIVITY CM/SEC			DISCONTINUITY DATA	ROCK STRENGTH BASED ON POINT LOAD TEST (MPa) (a) = axial, (c) = diametrical	ROCK HARDNESS		RECOVERY DATA							
				10-6	10-4	10-2			SEE BOTTOM OF FORM FOR CODES	CORE RECOVERY %		R.Q.D. %						
							Dip Angle		30	60	1	2	3	4	5	25	50	75
0		TILL, SEE SOIL LOG FOR DETAILS																
1																		
2																		
3																		
4																		
5																		
6																		
7																		
8																		

DISCONTINUITY CODES: B: BEDDING D: DRILL BRK F: FAULT G: GNEISS'TY J: JOINT M: SCHIST'TY S: SHEAR T: TENSION CRK  
 CORE LOSS FRACTURED/BROKEN CORE DIP ANGLES MEASURED WITH RESPECT TO HORIZONTAL

KCBL-ROCK-SI 060423 MORRISON DH LOGS-ROCK GPJ ROCK-LOG.GDT 4/23/08



GEOLOGIC LOG OF DRILL HOLE NO.: DH07-3A

DEPTH (m)	SYMBOL	LITHOLOGY  (continued from previous page)	PIEZOMETER DETAILS	HYDRAULIC CONDUCTIVITY CM/SEC			DISCONT- INUITY DATA	ROCK STRENGTH BASED ON POINT LOAD TEST (MPa) (a)=axial, (c)=circumferential	ROCK HARDNESS			RECOVERY DATA						
				10-6	10-4	10-2	SEE BOTTOM OF FORM FOR CODES		CORE RECOVERY %	R.Q.D. %								
				Dip Angle														
						30	60	1	2	3	4	5	25	50	75	25	50	75
9																		
10																		
11																		
12																		
13																		
14																		
15																		
16																		
17																		
18																		

DISCONTINUITY CODES: B: BEDDING D: DRILL BRK F: FAULT G: GNEISS'TY J: JOINT M: SCHIST'TY S: SHEAR T: TENSION CRK  
 CORE LOSS FRACTURED/BROKEN CORE DIP ANGLES MEASURED WITH RESPECT TO HORIZONTAL

KCB\_L-ROCK-SI\_060423 MORRISON DH LOGS-ROCK GPJ ROCK-LOG.GDT\_4/23/08



# GEOLOGIC LOG OF DRILL HOLE NO.: DH07-3A

DEPTH (m)	SYMBOL	LITHOLOGY	PIEZOMETER DETAILS	HYDRAULIC CONDUCTIVITY CM/SEC			DISCONTINUITY DATA		ROCK STRENGTH BASED ON POINT LOAD TEST (MPa) (a)=axial, (c)=circumferential	ROCK HARDNESS			RECOVERY DATA					
				10-6	10-4	10-2	SEE BOTTOM OF FORM FOR CODES			CORE RECOVERY %			R.Q.D. %					
				30	60	Dip Angle	30	60		1	2	3	4	5	25	50	75	25
		(continued from previous page)																
19																		
20																		
21																		
22		21.9 952.1 SANDSTONE																
23		22.9 951.1 SANDSTONE, medium dark grey, very fine to medium grained, fresh, closely to moderately jointed, medium strong rock. 40 cm thick breccia with 60% calcite fill. Nilkitwa Formation.					J	J					100				89	
24							J	J					100				81	
25		24.8 949.2 SANDSTONE, light grey, fine to medium grained, fresh, moderately jointed, strong rock. Nilkitwa Formation.					J	J					100				60	
26																		
27		26.4 947.6 SILTSTONE, medium grey and purple, very fine grained, fresh, discoloured, moderately jointed, medium strong rock. Nilkitwa Formation.					J	J					100				77	
28																		

KCBL-ROCK-SI 0610423 MORRISON DH LOGS-ROCK GPJ ROCK-LOG.GDT 4/23/08

DISCONTINUITY CODES: B: BEDDING D: DRILL BRK F: FAULT G: GNEISS'TY J: JOINT M: SCHIST'TY S: SHEAR T: TENSION CRK  
 CORE LOSS FRACTURED/BROKEN CORE DIP ANGLES MEASURED WITH RESPECT TO HORIZONTAL



# GEOLOGIC LOG OF DRILL HOLE NO.: DH07-3A

DEPTH (m)	SYMBOL	LITHOLOGY  (continued from previous page)	PIEZOMETER DETAILS	HYDRAULIC CONDUCTIVITY CM/SEC			DISCONTINUITY DATA SEE BOTTOM OF FORM FOR CODES		ROCK STRENGTH BASED ON POINT LOAD TEST (MPa) (a)=axial, (c)=circumferential	ROCK HARDNESS	RECOVERY DATA					
				10-6	10-4	10-2	Dip Angle				CORE RECOVERY %			R.Q.D. %		
							30	60			25	50	75	25	50	75
29											100			72		
30											92			64		
31											100			80		
32											100			82		
33		32.5 941.5 SILTSTONE, dark purple, very fine grained, fresh, discoloured, moderately jointed, medium strong rock, volcanoclastic. Telkwa Formation.					J	J	J		100			100		
34											100			100		
35											100			88		
36											100			88		
37		37.0 937.0 SILTSTONE, dark purple with some grey, very fine grained, fresh, discoloured, closely to moderately jointed, medium strong rock, volcanoclastic. Telkwa Formation.									100			88		
38											100			88		

DISCONTINUITY CODES: B: BEDDING D: DRILL BRK F: FAULT G: GNEISS'TY J: JOINT M: SCHIST'TY S: SHEAR T: TENSION CRK  
 CORE LOSS FRACTURED/BROKEN CORE DIP ANGLES MEASURED WITH RESPECT TO HORIZONTAL

KCBL-ROCK-SI 060423 MORRISON DH LOGS-ROCK GPJ ROCK-LOG.GDT 4/23/08





# GEOLOGIC LOG OF DRILL HOLE NO.: DH07-3A

DEPTH (m)	SYMBOL	LITHOLOGY	PIEZOMETER DETAILS	HYDRAULIC CONDUCTIVITY CM/SEC			DISCONTINUITY DATA SEE BOTTOM OF FORM FOR CODES	ROCK STRENGTH BASED ON POINT LOAD TEST (MPa) (a)=axial, (d)=diametrical	ROCK HARDNESS		RECOVERY DATA						
				10-6	10-4	10-2			Dip Angle 30 60		CORE RECOVERY %			R.Q.D. %			
										1	2	3	4	5	25	50	75
		(continued from previous page)															
39																	
40																	
41																	
41.6 932.4		End of Hole at: 41.6 m															
42		Installation Details: Stick-up 0.92 m PVC pipe 1" diameter - schedule 40 Filter pack coarse silica sand (1 mm) Filter pack interval 37.8 - 41.6 m Screen is 1" PVC, 0.25 mm gap Screen interval 38.4 - 41.5 m															
43																	
44																	
45																	
46																	
47																	
48																	

DISCONTINUITY CODES: B: BEDDING D: DRILL BRK F: FAULT G: GNEISS'TY J: JOINT M: SCHIST'TY S: SHEAR T: TENSION CRK  
 CORE LOSS FRACTURED/BROKEN CORE DIP ANGLES MEASURED WITH RESPECT TO HORIZONTAL

KCBL-ROCK-SI 06/04/23 MORRISON DH LOGS-ROCK GPJ ROCK-LOG.GDT 4/23/08

# TEST HOLE LOG

Su - kPa

20    60    100    140    180

DEPTH (m)	SPT BLOWS PER 0.15m	SAMPLE TYPE AND NO.	SAMPLE RECOVERY	SYMBOL	STARTED: Nov. 22 2007 FINISHED: Nov. 23 2007 DRILL METHOD: ODEX90 Hammer GROUND ELEV. (m): 974.00 COORDINATES (m): N 6123335    E 671450		INSTRUMENT	DETAILS	Su - kPa										
					VANE PEAK    FIELD    LAB REMOLD <span style="font-size: x-small;">◆</span> <span style="font-size: x-small;">■</span> <span style="font-size: x-small;">▲</span> UC/2 <span style="font-size: x-small;">△</span> P.PEN/2				★ % FINES    ● SPT N W <sub>p</sub> %    W%    W <sub>L</sub> % x --- o --- x 20    40    60    80										
					DESCRIPTION OF MATERIALS														
					Sandy Lean CLAY (CL) with trace angular to subangular gravel. <2 flat coarse gravel encountered, low plasticity, soft to hard, grey, no odour, moist to wet, uncemented, very high dry strength, slow dilatancy. HCL reaction moderate. GLACIAL TILL.														
1																			
2																			
3																			
4																			
5																			
6																			
7																			
8																			
9																			
10																			

Continued Next Page



<b>PROJECT NO.:</b> M09382A01	
<b>PROJECT:</b> Morrison Copper Gold	
<b>LOCATION:</b> Morrison Lake, BC	
<b>LOGGED BY:</b> C.K.	<b>CHECKED BY:</b> S.W.
<b>SHEET 1 OF</b> 2	<b>HOLE NO.:</b> DH07-3B

KCBL\_TEST\_HOLE-SI 080123 MORRISON DH LOGS-SOIL.GPJ KC\_DATA.GDT 4/23/08

# TEST HOLE LOG

Su - kPa

20    60    100    140    180

DEPTH (m)	SPT BLOWS PER 0.15m	SAMPLE TYPE AND NO.	SAMPLE RECOVERY	SYMBOL	STARTED: Nov. 22 2007 FINISHED: Nov. 23 2007		Su - kPa													
					DRILL METHOD: ODEX90 Hammer		VANE PEAK	FIELD	LAB	UC/2										
					GROUND ELEV. (m): 974.00		REMOLD	◆	■	▲	△									
					COORDINATES (m): N 6123335 E 671450		★ % FINES		● SPT N		W <sub>p</sub> %									
DESCRIPTION OF MATERIALS					INSTRUMENT	DETAILS	W <sub>p</sub> %      W%      W <sub>L</sub> % x - - - - x    o - - - - x 20      40      60      80													
11						▽														
12					@ 12 m to 15.1 m Hydraulic Conductivity is 3.1E-8 cm/s															
13																				
14																				
15																				
16					End of Hole at 15.4 m															
17					Installation Details: Stick-up 0.86 m PVC pipe 1 diameter - schedule 40 Filter pack coarse silica sand (1 mm) Filter pack interval 11.6 - 15.4 m Screen is 1 PVC, 0.25 mm gap Screen interval 12.0 - 15.1 m															
18																				
19																				
20																				

15.40  
958.60

End of Hole at 15.4 m

Installation Details:  
Stick-up 0.86 m  
PVC pipe 1 diameter - schedule 40  
Filter pack coarse silica sand (1 mm)  
Filter pack interval 11.6 - 15.4 m  
Screen is 1 PVC, 0.25 mm gap  
Screen interval 12.0 - 15.1 m

<b>PROJECT NO.:</b> M09382A01	
<b>PROJECT:</b> Morrison Copper Gold	
<b>LOCATION:</b> Morrison Lake, BC	
<b>LOGGED BY:</b> C.K.	<b>CHECKED BY:</b> S.W.
<b>SHEET 2 OF</b> 2	<b>HOLE NO.:</b> DH07-3B



KCBL\_TEST\_HOLE-SI 080123 MORRISON.DH LOGS-SOIL.GPJ KC\_DATA.GDT 4/23/08

# TEST HOLE LOG

Su - kPa

20    60    100    140    180

VANE PEAK	FIELD	LAB	▲ UC/2
REMOULD	◆	■	△ P.PEN/2
★ % FINES		● SPT N	
W <sub>p</sub> %	W%	W <sub>L</sub> %	
x - - - - -	o - - - - -	x - - - - -	
20	40	60	80

**STARTED:** Nov. 23 2007 **FINISHED:** Nov. 25 2007

**DRILL METHOD:** ODEX90 Hammer

**GROUND ELEV. (m):** 960.00

**COORDINATES (m):** N 6123637    E 671060

**DESCRIPTION OF MATERIALS**

INSTRUMENT  
DETAILS

DEPTH (m)	SPT BLOWS PER 0.15m	SAMPLE TYPE AND NO.	SAMPLE RECOVERY	SYMBOL	DESCRIPTION OF MATERIALS	INSTRUMENT	DETAILS
0.30				▽	PEAT (PT) soft, fibrous.		
1					959.70 Sandy Lean CLAY (CL) with trace angular gravel. Flat, up to 3/4 gravel encountered, low plasticity, firm, brown, no odour, moist, uncemented, very high dry strength, slow dilatancy. HCL reaction moderate. GLACIAL TILL.		
2	12, 26, 15, 18	SPT 1	79%				
3					soft.		
4							
5	20, 8, 5, 9	SPT 2	46%				
6					grey.		
7							
8	3, 5, 7, 9	SPT 3	54%				
9					5.80 954.20 Clayey SAND (SC), subangular to subrounded gravelly, brown, moist, uncemented. HCL reaction moderate. GLACIAL TILL.		
10	5, 7, 8, 12	SPT 4	75%				
11					7.30 952.70 Sandy Lean CLAY (CL) with trace angular to subangular gravel. <2 flat coarse gravel encountered, low plasticity, firm, grey, no odour, moist, uncemented, very high dry strength, slow dilatancy. HCL reaction moderate. GLACIAL TILL.		
12							
13	4, 7, 12, 24	SPT 5	71%				
14					soft.		
15							
16	4, 8, 11, 16	SPT 6	88%				

Continued Next Page



**PROJECT NO.:** M09382A01

**PROJECT:** Morrison Copper Gold

**LOCATION:** Morrison Lake, BC

**LOGGED BY:** C.K.

**CHECKED BY:** S.W.

**SHEET 1 OF 2**

**HOLE NO.:** DH07-4A

# TEST HOLE LOG

Su - kPa

20    60    100    140    180

DEPTH (m)	SPT BLOWS PER 0.15m	SAMPLE TYPE AND NO.	SAMPLE RECOVERY	SYMBOL	<b>STARTED: Nov. 23 2007 FINISHED: Nov. 25 2007</b> <b>DRILL METHOD: ODEX90 Hammer</b> <b>GROUND ELEV. (m): 960.00</b> <b>COORDINATES (m): N 6123637 E 671060</b>		INSTRUMENT	DETAILS	VANE PEAK REMOLD    FIELD    LAB    UC/2 P.PEN/2 * % FINES    SPT N W <sub>p</sub> %    W%    W <sub>L</sub> % x - - - - - o - - - - - x 20    40    60    80			
					DESCRIPTION OF MATERIALS							
					firm to hard.							
					SEE ROCK LOG FOR DETAILS FROM 12.8 m to 46.2 m.							
11	6, 10, 10, 12	SPT 7	113%						o ●    △			
12	17, 19, 11, 14	SPT 8	92%						o ●    △			
13					12.80 947.20							
14					SEE ROCK LOG FOR DETAILS FROM 12.8 m to 46.2 m.							
15					End of Hole at 46.2 m							
16					Installation Details: See Rock Log							
17												
18												
19												
20												



**PROJECT NO.:** M09382A01  
**PROJECT:** Morrison Copper Gold  
**LOCATION:** Morrison Lake, BC  
**LOGGED BY:** C.K.    **CHECKED BY:** S.W.  
**SHEET 2 OF 2**    **HOLE NO.:** DH07-4A



# GEOLOGIC LOG OF DRILL HOLE NO.: DH07-4A

CLIENT: Pacific Booker Ltd.	PROJECT NO.: M09382A01
PROJECT: Morrison Copper Gold	DATE HOLE STARTED: 11/23/2007 FINISHED: 11/25/2007
LOCATION: Main Dam	DATUM: NAD 83
DIRECTION AZIMUTH: DIP (from horiz): -90	TOP OF PIPE ELEVATION: m
CO-ORDINATES: E 671060m N 6123637m	GROUND ELEVATION: 960 m
MANUFACTURER'S DRILL DESIGNATION:	TOTAL DEPTH OF HOLE: 46.2 m
DRILLING CONTRACTOR: Geotech Drilling Services Ltd.	DRILLING METHOD SOIL: ODEX90 Hammer ROCK: HQ Core
LOGGED BY: C.K.	DRILLING FLUID: Water CASSED TO: 13.6m
CHECKED BY: S.W.	HOLE DIA.:

DEPTH (m)	SYMBOL	LITHOLOGY	PIEZOMETER DETAILS	HYDRAULIC CONDUCTIVITY CM/SEC		DISCONT- INUITY DATA	ROCK STRENGTH BASED ON POINT LOAD TEST (MPa) <small>(a) = axial, (c) = diametrical</small>	ROCK HARDNESS					RECOVERY DATA							
				10-6 10-4 10-2	Dip Angle 30 60	SEE BOTTOM OF FORM FOR CODES		CORE RECOVERY %					R.Q.D. %							
								1	2	3	4	5	25	50	75	25	50	75		
1		TILL, SEE SOIL LOG FOR DETAILS																		
2																				
3																				
4																				
5																				
6																				
7																				
8																				

DISCONTINUITY CODES: B: BEDDING D: DRILL BRK F: FAULT G: GNEISS'TY J: JOINT M: SCHIST'TY S: SHEAR T: TENSION CRK  
 CORE LOSS FRACTURED/BROKEN CORE DIP ANGLES MEASURED WITH RESPECT TO HORIZONTAL

KCBL-ROCK-SI 060423 MORRISON DH LOGS-ROCK GPJ ROCK-LOG.GDT 4/23/08



# GEOLOGIC LOG OF DRILL HOLE NO.: DH07-4A

DEPTH (m)	SYMBOL	LITHOLOGY  (continued from previous page)	PIEZOMETER DETAILS	HYDRAULIC CONDUCTIVITY CM/SEC			DISCONTINUITY DATA  SEE BOTTOM OF FORM FOR CODES	ROCK STRENGTH BASED ON POINT LOAD TEST (MPa) (a)=axial; (c)=circumferential	ROCK HARDNESS					RECOVERY DATA						
				10-6	10-4	10-2			Dip Angle 30 60							CORE RECOVERY %			R.Q.D. %	
										1	2	3	4	5	25	50	75	25	50	75
9																				
10																				
11																				
12																				
12.8 - 13.6	○ ○ ○ ○ ○ ○ ○ ○ ○ ○	CONGLOMERATE																		
13.6 - 14.3	○ ○ ○ ○ ○ ○ ○ ○ ○ ○	CONGLOMERATE, light grey, medium to coarse grained, fresh, closely jointed, strong rock.				J														
14.3 - 14.6	▨ ▨ ▨ ▨ ▨ ▨ ▨ ▨ ▨ ▨	SANDY SILTSTONE, dark grey, very fine grained, fresh, stratified, closely jointed, medium strong rock. Nilkitkwa Formation.				B														
14.6 - 15.0	▨ ▨ ▨ ▨ ▨ ▨ ▨ ▨ ▨ ▨	SANDSTONE, dark grey, fine to medium grained, fresh, stratified, moderately jointed, medium strong rock. Nilkitkwa Formation.				J	J													
16.0 - 17.0	▨ ▨ ▨ ▨ ▨ ▨ ▨ ▨ ▨ ▨	SANDY SILTSTONE, dark grey, very fine grained, fresh, stratified, closely jointed, medium strong rock. Nilkitkwa Formation.				J														
17.0 - 18.0	▨ ▨ ▨ ▨ ▨ ▨ ▨ ▨ ▨ ▨					J	J													

KCBL-ROCK-SI 060423 MORRISON DH LOGS-ROCK GPJ ROCK-LOG.GDT 4/23/08

DISCONTINUITY CODES: B: BEDDING D: DRILL BRK F: FAULT G: GNEISS'TY J: JOINT M: SCHIST'TY S: SHEAR T: TENSION CRK  
 CORE LOSS FRACTURED/BROKEN CORE DIP ANGLES MEASURED WITH RESPECT TO HORIZONTAL



# GEOLOGIC LOG OF DRILL HOLE NO.: DH07-4A

DEPTH (m)	SYMBOL	LITHOLOGY	PIEZOMETER DETAILS	HYDRAULIC CONDUCTIVITY CM/SEC			DISCONTINUITY DATA		ROCK STRENGTH BASED ON POINT LOAD TEST (MPa) (a)=axial, (d)=diametrical	ROCK HARDNESS			RECOVERY DATA				
				10-6	10-4	10-2	SEE BOTTOM OF FORM FOR CODES			CORE RECOVERY %			R.Q.D. %				
							Dip Angle 30 60			1	2	3	4	5	25	50	75
		(continued from previous page)															
19.5		SANDSTONE, light grey, fine grained, fresh, stratified, moderately jointed, medium strong rock. Nilkitkwa Formation.					J	J						100			60
19.8		SANDY SILTSTONE, dark grey, very fine grained, fresh, closely jointed, medium strong rock. Nilkitkwa Formation.					S							92			48
20.5		At 25 m, 10 cm of breccia with 25% calcite fill.												98			19
21.5														100			83
22.5							J	J						100			58
23.5														100			52
24.5														100			60
25.5														100			80

DISCONTINUITY CODES: B: BEDDING D: DRILL BRK F: FAULT G: GNEISS'TY J: JOINT M: SCHIST'TY S: SHEAR T: TENSION CRK  
 CORE LOSS FRACTURED/BROKEN CORE DIP ANGLES MEASURED WITH RESPECT TO HORIZONTAL

KCBL-ROCK-SI 0610423 MORRISON DH LOGS-ROCK GPJ ROCK-LOG.GDT 4/23/08





# GEOLOGIC LOG OF DRILL HOLE NO.: DH07-4A

DEPTH (m)	SYMBOL	LITHOLOGY  (continued from previous page)	PIEZOMETER DETAILS	HYDRAULIC CONDUCTIVITY CM/SEC		DISCONTINUITY DATA		ROCK STRENGTH BASED ON POINT LOAD TEST (MPa) <small>(a)=axial, (c)=circumferential</small>	ROCK HARDNESS					RECOVERY DATA							
				10-6	10-4	Dip Angle								CORE RECOVERY %			R.Q.D. %				
				10-2		30	60		1	2	3	4	5	25	50	75	25	50	75		
29						J	JS								100			77			
30						J	J								100			42			
31						J	S								100			88			
32						J	J								100			58			
33						J	J								100			75			
34						J	J								96			78			
35						J	J								100			65			
36						J	J								100						
37						J	J								100						
38		37.5 922.5 SANDSTONE, medium to light grey-green, fine grained, fresh, stratified, moderately jointed, medium strong rock. Nilkitwa Formation.				J	J								100						

DISCONTINUITY CODES: B: BEDDING D: DRILL BRK F: FAULT G: GNEISS'TY J: JOINT M: SCHIST'TY S: SHEAR T: TENSION CRK  
 CORE LOSS FRACTURED/BROKEN CORE DIP ANGLES MEASURED WITH RESPECT TO HORIZONTAL

KCBL-ROCK-SI 060423 MORRISON DH LOGS-ROCK GPJ ROCK-LOG.GDT 4/23/08



# GEOLOGIC LOG OF DRILL HOLE NO.: DH07-4A

DEPTH (m)	SYMBOL	LITHOLOGY	PIEZOMETER DETAILS	HYDRAULIC CONDUCTIVITY CM/SEC			DISCONTINUITY DATA		ROCK STRENGTH BASED ON POINT LOAD TEST (MPa) (a)=axial, (c)=circumferential	ROCK HARDNESS		RECOVERY DATA							
				10-6	10-4	10-2	SEE BOTTOM OF FORM FOR CODES					CORE RECOVERY %			R.Q.D. %				
							Dip Angle					25	50	75	25	50	75		
		(continued from previous page)																	
39		39.0 921.0 SILTSTONE, alternating light and dark grey, very fine grained, fresh, closely jointed, medium strong rock. Nilkitkwa Formation.					J	J											
		dark grey						S											
40		light grey																	
		dark grey					J	J											
41																			
42							J	J											
43																			
44							J	J											
		light grey																	
45		About 50% is fault gouge, clay and rock fragments, firm, carbonate alteration.					J	J											
46		46.2 913.8 End of Hole at: 46.2 m																	
47																			
48																			

DISCONTINUITY CODES: B: BEDDING D: DRILL BRK F: FAULT G: GNEISS'TY J: JOINT M: SCHIST'TY S: SHEAR T: TENSION CRK  
 CORE LOSS FRACTURED/BROKEN CORE DIP ANGLES MEASURED WITH RESPECT TO HORIZONTAL

KCBL-ROCK-SJ 0610423 MORRISON DH LOGS-ROCK-GPJ ROCK-LOG-GDT 4/23/08



GEOLOGIC LOG OF DRILL HOLE NO.: DH07-4A

DEPTH (m)	SYMBOL	LITHOLOGY	PIEZOMETER DETAILS	HYDRAULIC CONDUCTIVITY CM/SEC			DISCONT- INUITY DATA		ROCK STRENGTH BASED ON POINT LOAD TEST (MPa) (a)=axial; (d)=diametrical	ROCK HARDNESS			RECOVERY DATA							
				10-6	10-4	10-2	SEE BOTTOM OF FORM FOR CODES			1	2	3	4	5	CORE RECOVERY %			R.Q.D. %		
				Dip Angle			30	60							25	50	75	25	50	75
49		Installation Details:  S1: Stick-up 0.82 m PVC pipe 1" diameter - schedule 40 Filter pack coarse silica sand (1 mm) Filter pack interval 42.5 - 46.2 m Screen is 1" PVC, 0.25 mm gap Screen interval 43.0 - 46.0 m  S2: Stick-up 0.84 m PVC pipe 1" diameter - schedule 40 Filter pack coarse silica sand (1 mm) Filter pack interval 32.9 - 36.7 m Screen is 1" PVC, 0.25 mm gap Screen interval 33.4 - 36.4 m																		
50																				
51																				
52																				
53																				
54																				
55																				
56																				
57																				
58																				

DISCONTINUITY CODES: B: BEDDING D: DRILL BRK F: FAULT G: GNEISS'TY J: JOINT M: SCHIST'TY S: SHEAR T: TENSION CRK  
 CORE LOSS FRACTURED/BROKEN CORE DIP ANGLES MEASURED WITH RESPECT TO HORIZONTAL

KCBL-ROCK-SI 06/04/23 MORRISON DH LOGS-ROCK GPJ ROCK-LOG.GDT 4/23/08

# TEST HOLE LOG

Su - kPa

20    60    100    140    180

DEPTH (m)	SPT BLOWS PER 0.15m	SAMPLE TYPE AND NO.	SAMPLE RECOVERY	SYMBOL
-----------	---------------------	---------------------	-----------------	--------

**STARTED:** Nov. 26 2007 **FINISHED:** Nov. 26 2007

**DRILL METHOD:** ODEX90 Hammer

**GROUND ELEV. (m):** 960.00

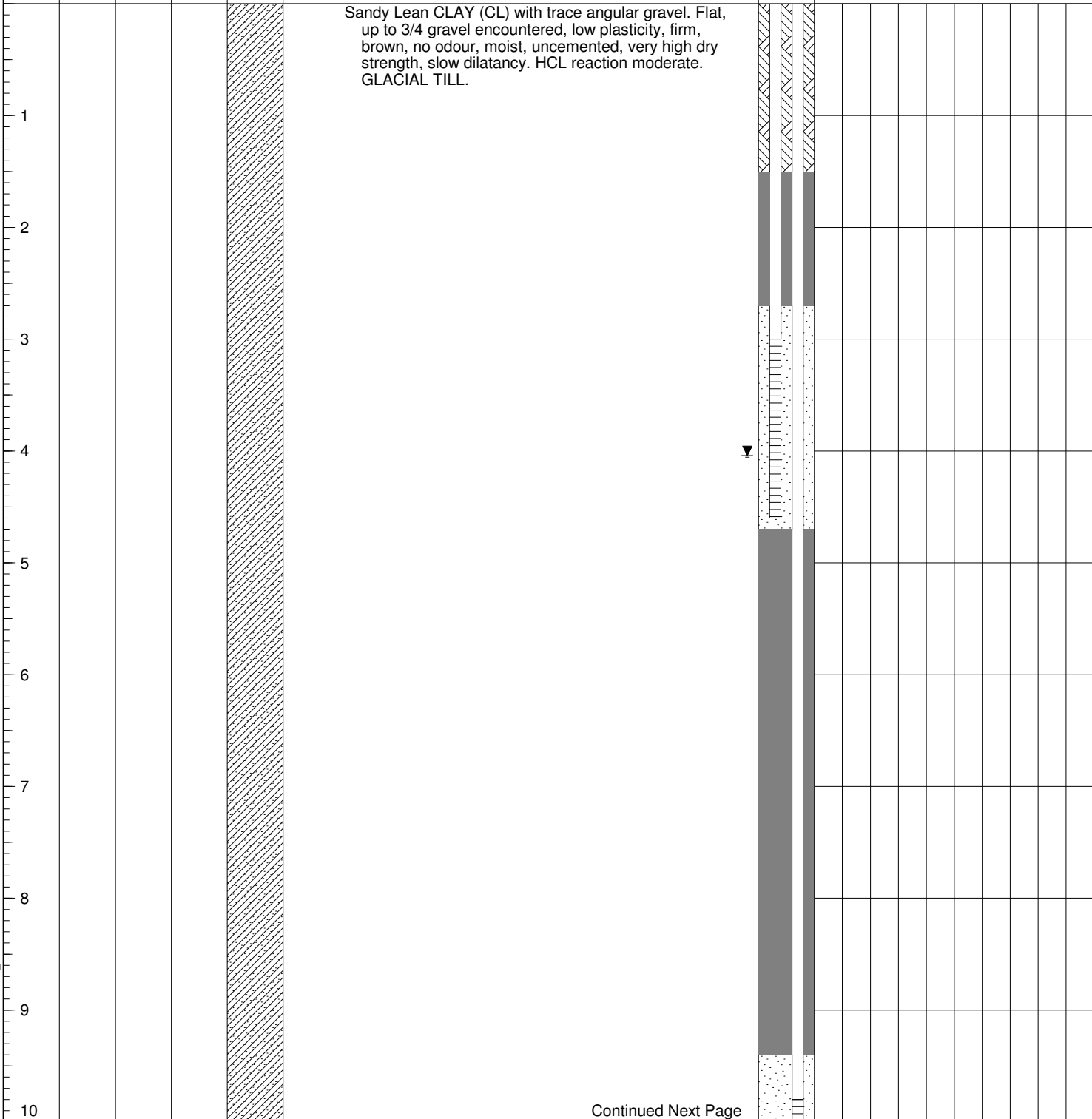
**COORDINATES (m):** N 6123634    E 671070

**DESCRIPTION OF MATERIALS**

INSTRUMENT DETAILS

VANE PEAK	FIELD	LAB	UC/2
REMO	◆	■	▲ P.PEN/2
★ % FINES	◇	□	● SPT N
W <sub>p</sub> %	W%	W <sub>L</sub> %	
x - - - - x	o - - - - o		
20	40	60	80

Sandy Lean CLAY (CL) with trace angular gravel. Flat, up to 3/4 gravel encountered, low plasticity, firm, brown, no odour, moist, uncemented, very high dry strength, slow dilatancy. HCL reaction moderate. GLACIAL TILL.



Continued Next Page



<b>PROJECT NO.:</b> M09382A01
<b>PROJECT:</b> Morrison Copper Gold
<b>LOCATION:</b> Morrison Lake, BC
<b>LOGGED BY:</b> C.K. <b>CHECKED BY:</b> S.W.
<b>SHEET 1 OF 2</b> <b>HOLE NO.:</b> DH07-4B

# TEST HOLE LOG

Su - kPa

20    60    100    140    180

DEPTH (m)	SPT BLOWS PER 0.15m	SAMPLE TYPE AND NO.	SAMPLE RECOVERY	SYMBOL	STARTED: Nov. 26 2007 FINISHED: Nov. 26 2007		INSTRUMENT	DETAILS	Su - kPa						
					DRILL METHOD: ODEX90 Hammer				VANE PEAK	FIELD	LAB	UC/2			
					GROUND ELEV. (m): 960.00				REMOLD	◆	■	▲ P.PEN/2			
					COORDINATES (m): N 6123634 E 671070				★ % FINES		● SPT N				
					DESCRIPTION OF MATERIALS				W <sub>p</sub> %	W%	W <sub>L</sub> %				
								x - - - - x	o - - - - x	x					
								20	40	60	80				
11					11.40 948.60		▽								
12						End of Hole at 11.4 m									
13						Installation Details:									
14						S1: Stick-up 0.90 m PVC pipe 1 diameter - schedule 40 Filter pack coarse silica sand (1 mm) Filter pack interval 9.4 - 11.4 m Screen is 1 PVC, 0.25 mm gap Screen interval 9.8 - 11.3 m									
15						S2: Stick-up 0.92 m PVC pipe 1 diameter - schedule 40 Filter pack coarse silica sand (1 mm) Filter pack interval 2.7 - 4.7 m Screen is 1 PVC, 0.25 mm gap Screen interval 3.0 - 4.6 m									
16															
17															
18															
19															
20															

KCBL\_TEST\_HOLE-SI 080123 MORRISON.DH LOGS-SOIL.GPJ KC\_DATA.GDT 4/23/08



<b>PROJECT NO.:</b> M09382A01	
<b>PROJECT:</b> Morrison Copper Gold	
<b>LOCATION:</b> Morrison Lake, BC	
<b>LOGGED BY:</b> C.K.	<b>CHECKED BY:</b> S.W.
<b>SHEET 2 OF 2</b>	<b>HOLE NO.:</b> DH07-4B

# TEST HOLE LOG

Su - kPa				
20	60	100	140	180
VANE PEAK	FIELD	LAB	▲ UC/2	
REMOVED	◆	■	△ P.PEN/2	
★ % FINES		●	SPT N	
W <sub>p</sub> %	W%	W <sub>L</sub> %		
x	o	x		
20	40	60	80	

**STARTED:** Nov. 27 2007 **FINISHED:** Nov. 28 2007  
**DRILL METHOD:** ODEX90 Hammer  
**GROUND ELEV. (m):** 935.00  
**COORDINATES (m):** N 6123951 E 670477

INSTRUMENT  
DETAILS

**DESCRIPTION OF MATERIALS**

DEPTH (m)	SPT BLOWS PER 0.15m	SAMPLE TYPE AND NO.	SAMPLE RECOVERY	SYMBOL
1				
2	3.5, 5.5, 4, 4	SPT 1	83%	
3	6, 11, 14, 18	SPT 2	67%	
4				
5	4, 8, 24, 14	SPT 3	100%	
6	15, 20, 31, 38	SPT 4	83%	
7				
8	21, 23, 28, 33	SPT 5	88%	
9	14, 24, 30, 33	SPT 6	117%	
10				

Sandy Lean CLAY (CL) with trace subrounded gravel; Organic material encountered in first 1m, low plasticity, hard, yellow, no odour, moist, uncemented, very high dry strength, slow dilatancy. HCL reaction weak. GLACIAL TILL.

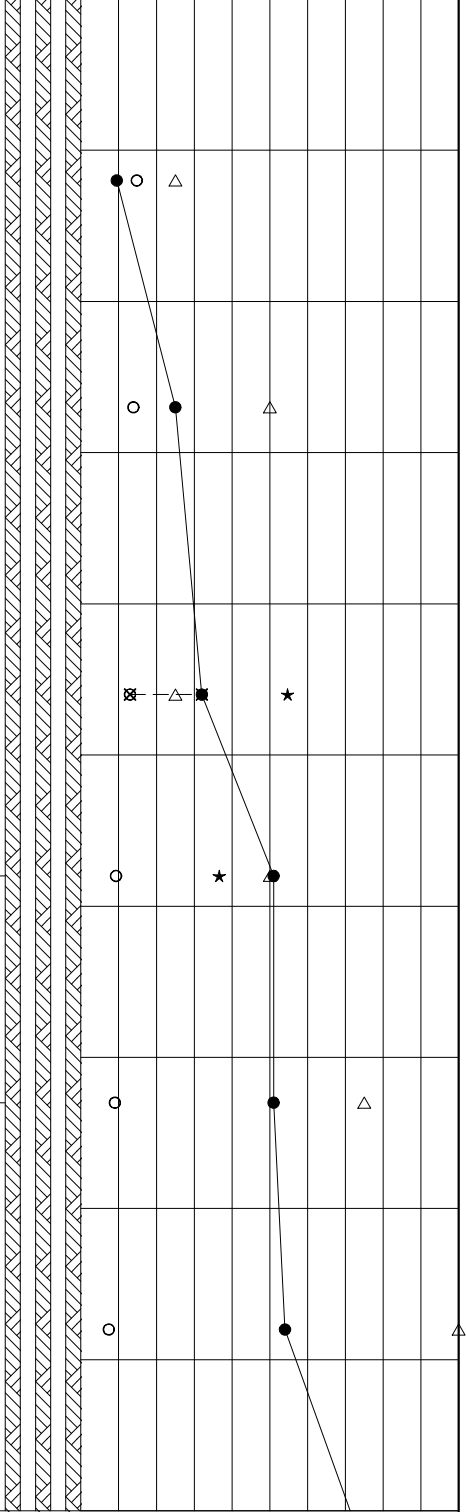
firm, brown, HCL reaction moderate.

some subangular to subrounded gravel, grey.

5.80  
929.20 Clayey SAND (SC), gravelly, grey, moist, uncemented. HCL reaction moderate. GLACIAL TILL.

7.30  
927.70 Sandy Lean CLAY (CL) with some angular to subrounded gravel, low plasticity, firm, grey, no odour, moist, uncemented, very high dry strength, slow dilatancy. HCL reaction moderate. GLACIAL TILL.

hard.



Continued Next Page



**PROJECT NO.:** M09382A01  
**PROJECT:** Morrison Copper Gold  
**LOCATION:** Morrison Lake, BC  
**LOGGED BY:** C.K. **CHECKED BY:** S.W.  
**SHEET 1 OF 3** **HOLE NO.:** DH07-5A

# TEST HOLE LOG

Su - kPa

20 60 100 140 180

VANE PEAK	FIELD	LAB	
REMOVED	◆	■	▲ UC/2
	◇	□	△ P.PEN/2
★ % FINES		● SPT N	
W <sub>p</sub> %	W%	W <sub>L</sub> %	
x	o	x	
20	40	60	80

DEPTH (m)	SPT BLOWS PER 0.15m	SAMPLE TYPE AND NO.	SAMPLE RECOVERY	SYMBOL
-----------	---------------------	---------------------	-----------------	--------

**STARTED:** Nov. 27 2007 **FINISHED:** Nov. 28 2007

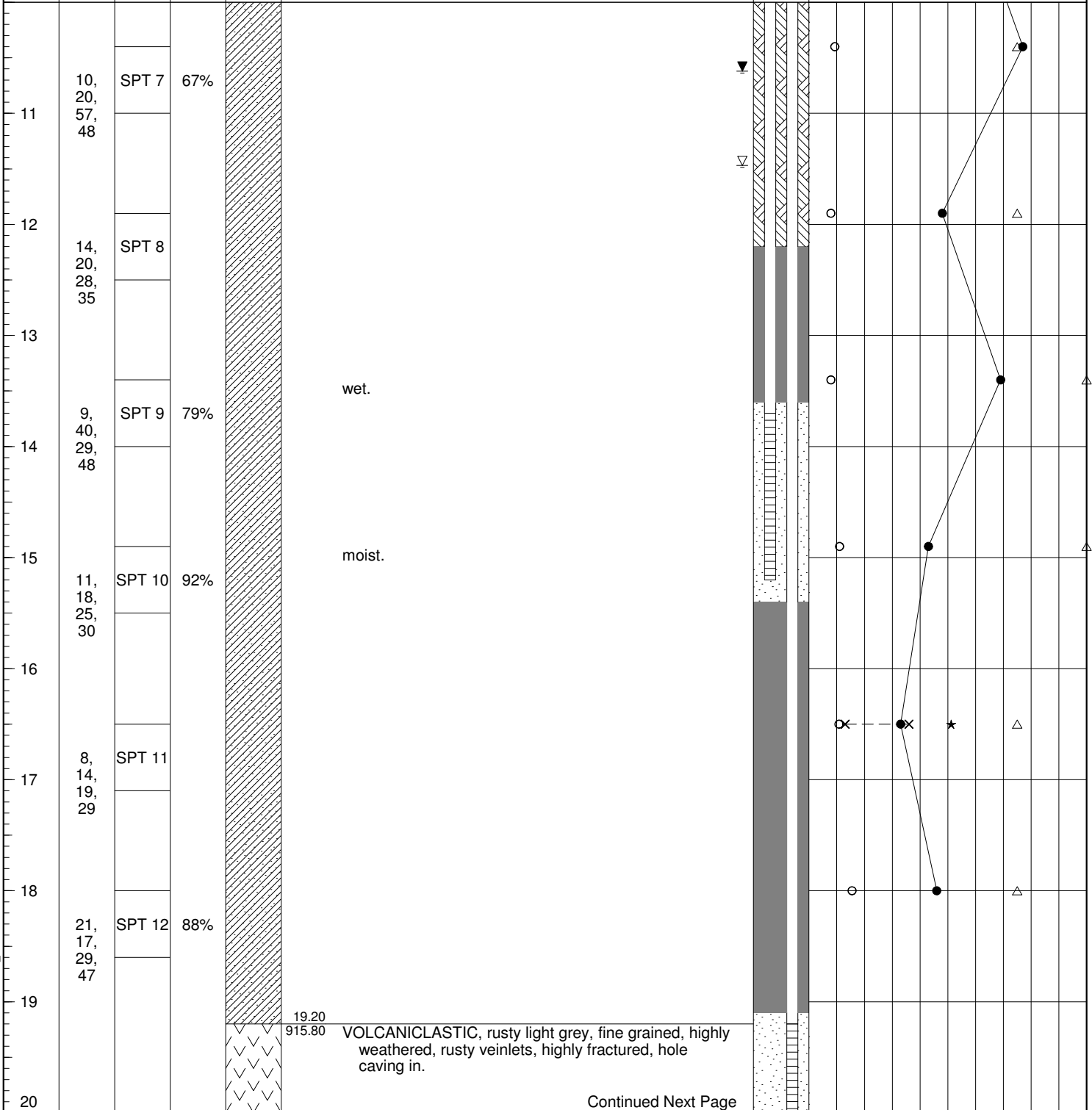
**DRILL METHOD:** ODEX90 Hammer

**GROUND ELEV. (m):** 935.00

**COORDINATES (m):** N 6123951 E 670477

**DESCRIPTION OF MATERIALS**

INSTRUMENT DETAILS



Continued Next Page



**PROJECT NO.:** M09382A01

**PROJECT:** Morrison Copper Gold

**LOCATION:** Morrison Lake, BC

**LOGGED BY:** C.K.

**CHECKED BY:** S.W.

**SHEET 2 OF 3**

**HOLE NO.:** DH07-5A

# TEST HOLE LOG

Su - kPa

20 60 100 140 180

DEPTH (m)	SPT BLOWS PER 0.15m	SAMPLE TYPE AND NO.	SAMPLE RECOVERY	SYMBOL	STARTED: Nov. 27 2007 FINISHED: Nov. 28 2007		INSTRUMENT	DETAILS	Su - kPa			
					DRILL METHOD: ODEX90 Hammer				VANE PEAK	FIELD	LAB	UC/2
					GROUND ELEV. (m): 935.00				REMOLD			P.PEN/2
					COORDINATES (m): N 6123951 E 670477				★ % FINES	● SPT N		
					DESCRIPTION OF MATERIALS				W <sub>p</sub> %	W%	W <sub>L</sub> %	
x	o	x										
								20	40	60	80	
21				▽			□					
22					21.50 913.50	End of Hole at 21.5 m						
23						Note: Pocket Pen Su value estimated by thumbnail observation of consistency						
24						Installation Details:						
25						S1: Stick-up 0.85 m PVC pipe 1 diameter - schedule 40 Filter pack coarse silica sand (1 mm) Filter pack interval 19.1 - 21.5 m Screen is 1 PVC, 0.25 mm gap Screen interval 19.2 - 21.3 m						
26						S2: Stick-up 0.87 m PVC pipe 1 diameter - schedule 40 Filter pack coarse silica sand (1 mm) Filter pack interval 13.6 - 15.4 m Screen is 1 PVC, 0.25 mm gap Screen interval 13.7 - 15.2 m						
27												
28												
29												
30												

KCBLL\_TEST\_HOLE-SI 080123 MORRISON.DH LOGS-SOIL.GPJ KC\_DATA.GDT 5/5/08



<b>PROJECT NO.:</b> M09382A01	
<b>PROJECT:</b> Morrison Copper Gold	
<b>LOCATION:</b> Morrison Lake, BC	
<b>LOGGED BY:</b> C.K.	<b>CHECKED BY:</b> S.W.
<b>SHEET 3 OF 3</b>	<b>HOLE NO.:</b> DH07-5A





# GEOLOGIC LOG OF DRILL HOLE NO.: DH07-5B

CLIENT: Pacific Booker Ltd.	PROJECT NO.: M09382A01
PROJECT: Morrison Copper Gold	DATE HOLE STARTED: 11/29/2007 FINISHED: 12/2/2007
LOCATION: Main Dam	DATUM: NAD 83
DIRECTION AZIMUTH:                      DIP (from horiz): -90	TOP OF PIPE ELEVATION: m
CO-ORDINATES:      E 670477m N 6123965m	GROUND ELEVATION: 935 m
MANUFACTURER'S DRILL DESIGNATION:	TOTAL DEPTH OF HOLE: 58.2 m
DRILLING CONTRACTOR: Geotech Drilling Services Ltd.	DRILLING METHOD SOIL: ODEX90 Hammer ROCK: HQ Core
LOGGED BY: C.K.	DRILLING FLUID: Water                      CASSED TO: 24.2m
CHECKED BY: S.W.	HOLE DIA.:

D E P T H (m)	S Y M B O L	LITHOLOGY	PIEZOMETER DETAILS	HYDRAULIC CONDUCTIVITY CM/SEC			DISCONT- INUITY DATA		ROCK STRENGTH BASED ON POINT LOAD TEST (MPa) <small>(a) = axial; (r) = diametrical</small>	RECOVERY DATA											
				10-6	10-4	10-2	SEE BOTTOM OF FORM FOR CODES			ROCK HARDNESS	CORE RECOVERY %			R.Q.D. %							
							30	60			1	2	3	4	5	25	50	75	25	50	75
1		CLAY (CH) and fine to coarse gravel, sandy, silty, stiff, medium brown, moist, GLACIAL TILL																			
2																					
3																					
4																					
5																					
6																					
7																					
8																					

DISCONTINUITY CODES: B: BEDDING D: DRILL BRK F: FAULT G: GNEISS'TY J: JOINT M: SCHIST'TY S: SHEAR T: TENSION CRK  
 CORE LOSS    
 FRACTURED/BROKEN CORE    
DIP ANGLES MEASURED WITH RESPECT TO HORIZONTAL



# GEOLOGIC LOG OF DRILL HOLE NO.: DH07-5B

DEPTH (m)	SYMBOL	LITHOLOGY  (continued from previous page)	PIEZOMETER DETAILS	HYDRAULIC CONDUCTIVITY CM/SEC		DISCONT- INUITY DATA	ROCK STRENGTH BASED ON POINT LOAD TEST (MPa) <small>(a)=axial; (d)=diametrical</small>	ROCK HARDNESS					RECOVERY DATA							
				10-6	10-4	SEE BOTTOM OF FORM FOR CODES		CORE RECOVERY %					R.Q.D. %							
				10-2	Dip Angle 30 60			1	2	3	4	5	25	50	75	25	50	75		
9																				
10																				
11																				
12																				
13																				
14																				
15																				
16																				
17																				
18																				

DISCONTINUITY CODES: B: BEDDING D: DRILL BRK F: FAULT G: GNEISS'TY J: JOINT M: SCHIST'TY S: SHEAR T: TENSION CRK  
 CORE LOSS FRACTURED/BROKEN CORE DIP ANGLES MEASURED WITH RESPECT TO HORIZONTAL

KCBL-ROCK-SI 060423 MORRISON DH LOGS-ROCK GPJ ROCK-LOG.GDT 4/23/08



# GEOLOGIC LOG OF DRILL HOLE NO.: DH07-5B

DEPTH (m)	SYMBOL	LITHOLOGY	PIEZOMETER DETAILS	HYDRAULIC CONDUCTIVITY CM/SEC			DISCONTINUITY DATA		ROCK STRENGTH BASED ON POINT LOAD TEST (MPa) (a)=axial, (c)=circumferential	ROCK HARDNESS			RECOVERY DATA							
				10-6	10-4	10-2	SEE BOTTOM OF FORM FOR CODES			CORE RECOVERY %			R.Q.D. %							
				30	60	Dip Angle	30	60		1	2	3	4	5	25	50	75	25	50	75
		(continued from previous page)																		
19																				
19.2		GRAVEL (GW) fine to medium, medium to coarse sandy, no fines, angular to very angular - Highly fractured and weathered bedrock.																		
19.8																				
20																				
21																				
22																				
23																				
24																				
24.2		VOLCANICLASTIC, rusty light grey, fine grained, highly weathered, rusty veinlets throughout, closely to moderately jointed, weak rock. Telkwa Formation.							J											
24.8																				
25																				
26																				
27		light greyish green.							J S											
27		rusty light grey.							JS											
28																				

DISCONTINUITY CODES: B: BEDDING D: DRILL BRK F: FAULT G: GNEISS'TY J: JOINT M: SCHIST'TY S: SHEAR T: TENSION CRK  
 CORE LOSS FRACTURED/BROKEN CORE DIP ANGLES MEASURED WITH RESPECT TO HORIZONTAL

KCBL-ROCK-SI 0610423 MORRISON DH LOGS-ROCK GPJ ROCK-LOG.GDT 4/23/08



# GEOLOGIC LOG OF DRILL HOLE NO.: DH07-5B

DEPTH (m)	SYMBOL	LITHOLOGY	PIEZOMETER DETAILS	HYDRAULIC CONDUCTIVITY CM/SEC			DISCONTINUITY DATA		ROCK STRENGTH BASED ON POINT LOAD TEST (MPa) (a)=axial, (c)=circumferential	ROCK HARDNESS	RECOVERY DATA								
				10-6	10-4	10-2	SEE BOTTOM OF FORM FOR CODES				CORE RECOVERY %			R.Q.D. %					
							Dip Angle 30 60				25	50	75	25	50	75			
		(continued from previous page)																	
		light greyish green.																	
28.7																			
906.3		VOLCANIC, dark purple grey, fine grained, moderately weathered, rusty weathering along joints, 10% to 20% calcite filled amygdules, closely jointed, medium strong rock. Telkwa Formation.																	
29																			
30																			
31																			
32																			
33		fresh, 10% to 20% calcite veins up to 40 mm thick.																	
34																			
35																			
36																			
36.6																			
898.4		CONGLOMERATE, medium light grey, medium grained, fresh, 10% to 15% calcite filled veins, epiclastic, closely jointed, strong rock. Telkwa Formation.																	
37																			
37.5																			
897.5		SANDSTONE, medium grey to light purple, very fine to fine grained, fresh, epiclastic, moderately jointed, strong rock. Telkwa																	
38																			

DISCONTINUITY CODES: B: BEDDING D: DRILL BRK F: FAULT G: GNEISS'TY J: JOINT M: SCHIST'TY S: SHEAR T: TENSION CRK  
 CORE LOSS FRACTURED/BROKEN CORE DIP ANGLES MEASURED WITH RESPECT TO HORIZONTAL

KCBL-ROCK-SI 060423 MORRISON DH LOGS-ROCK GPJ ROCK-LOG.GDT 4/23/08



# GEOLOGIC LOG OF DRILL HOLE NO.: DH07-5B

DEPTH (m)	SYMBOL	LITHOLOGY	PIEZOMETER DETAILS	HYDRAULIC CONDUCTIVITY CM/SEC		DISCONTINUITY DATA		ROCK STRENGTH BASED ON POINT LOAD TEST (MPa) <small>(a)=axial, (d)=diametrical</small>	ROCK HARDNESS		RECOVERY DATA						
				10-6	10-4	Dip Angle					CORE RECOVERY %			R.Q.D. %			
				10-2		30	60		1	2	3	4	5	25	50	75	25
		(continued from previous page)															
39		Formation.					J	J					100			66	
40								S									
41							J	J					100			73	
42							J	J					100			90	
43							S	S									
44		10% calcite.					J	J					90			0	
45													100			60	
46		medium purple.											100			85	
47													100			70	
48		15% conglomerate layers and 20% siltstone, dark purple.															

DISCONTINUITY CODES: B: BEDDING D: DRILL BRK F: FAULT G: GNEISS'TY J: JOINT M: SCHIST'TY S: SHEAR T: TENSION CRK  
 CORE LOSS FRACTURED/BROKEN CORE DIP ANGLES MEASURED WITH RESPECT TO HORIZONTAL

KCBL-ROCK-SI 06/04/23 MORRISON DH LOGS-ROCK GPJ ROCK-LOG.GDT 4/23/08



# GEOLOGIC LOG OF DRILL HOLE NO.: DH07-5B

DEPTH (m)	SYMBOL	LITHOLOGY  (continued from previous page)	PIEZOMETER DETAILS	HYDRAULIC CONDUCTIVITY CM/SEC			DISCONTINUITY DATA SEE BOTTOM OF FORM FOR CODES		ROCK STRENGTH BASED ON POINT LOAD TEST (MPa) (a)=axial, (c)=circumferential	ROCK HARDNESS					RECOVERY DATA							
				10-6	10-4	10-2	Dip Angle 30 60								CORE RECOVERY %			R.Q.D. %				
										1	2	3	4	5	25	50	75	25	50	75		
49		49.1 885.9 CONGLOMERATE and SILTSTONE, interstratified, med grey conglomerate, dark purple siltstone, fresh, epiclastic, moderately jointed, strong rock. Telkwa Formation.					J	J										100	100			
50		50.6 884.4 SANDSTONE, CONGLOMERATE, and SILTSTONE, grey to purple, fresh, epiclastic, closely jointed, strong rock. Telkwa Formation.					J	J										100	83			
51							J	J										100	57			
52							J	J										100	75			
53							J	J	S									100	77			
54							J	J	S									100	60			
55							J	J	S									100	58			
56							J	J	S									100	60			
57							J	J										100	58			
58							J	J										100	58			

DISCONTINUITY CODES: B: BEDDING D: DRILL BRK F: FAULT G: GNEISS'TY J: JOINT M: SCHIST'TY S: SHEAR T: TENSION CRK  
 CORE LOSS FRACTURED/BROKEN CORE DIP ANGLES MEASURED WITH RESPECT TO HORIZONTAL

KCBL-ROCK-SI 0610423 MORRISON DH LOGS-ROCK GPJ ROCK-LOG.GDT 4/23/08



# GEOLOGIC LOG OF DRILL HOLE NO.: DH07-5B

DEPTH (m)	SYMBOL	LITHOLOGY	PIEZOMETER DETAILS	HYDRAULIC CONDUCTIVITY CM/SEC			DISCONTINUITY DATA	ROCK STRENGTH BASED ON POINT LOAD TEST (MPa) <small>(a)=axial, (d)=diametrical</small>	ROCK HARDNESS	RECOVERY DATA						
				10-6	10-4	10-2				SEE BOTTOM OF FORM FOR CODES		CORE RECOVERY %			R.Q.D. %	
				Dip Angle						1	2	3	4	5	25	50
		(continued from previous page)														
		58.2 876.8 End of Hole at: 58.2 m														
59		Installation Details: Stick-up 0.88 m PVC pipe 1" diameter - schedule 40 Filter pack coarse silica sand (1 mm) Filter pack interval 54.3 - 58.2 m Screen is 1" PVC, 0.25 mm gap Screen interval 55.0 - 58.1 m														
60																
61																
62																
63																
64																
65																
66																
67																
68																

DISCONTINUITY CODES: B: BEDDING D: DRILL BRK F: FAULT G: GNEISS'TY J: JOINT M: SCHIST'TY S: SHEAR T: TENSION CRK  
 CORE LOSS FRACTURED/BROKEN CORE DIP ANGLES MEASURED WITH RESPECT TO HORIZONTAL

KCBL-ROCK-SI 0610423 MORRISON DH LOGS-ROCK GPJ ROCK-LOG.GDT 4/23/08

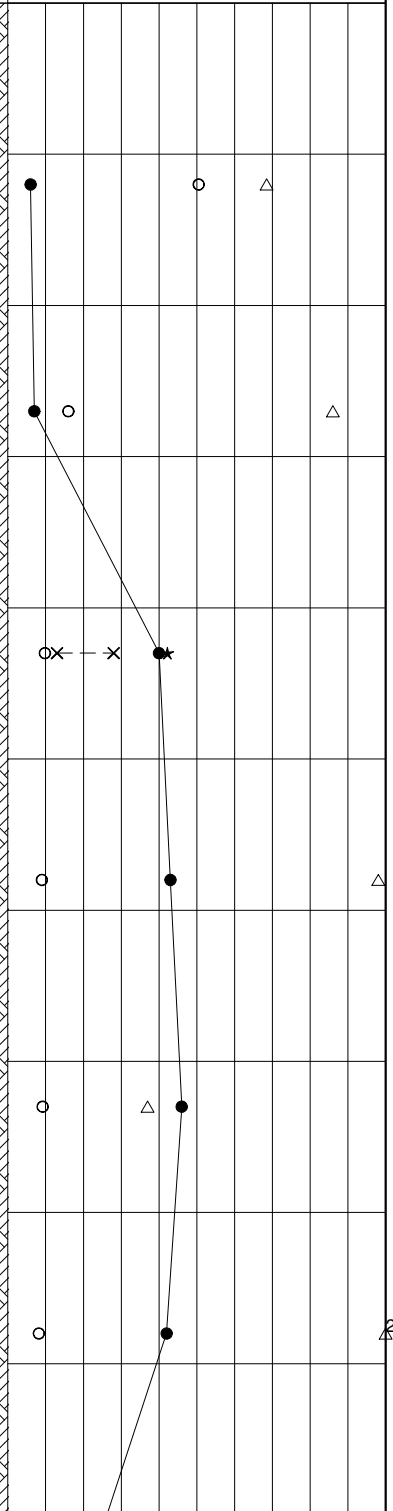
# TEST HOLE LOG

Su - kPa

20    60    100    140    180

VANE PEAK	FIELD	LAB	▲ UC/2
REMOLO	◆	■	△ P.PEN/2
★ % FINES		● SPT N	
W <sub>p</sub> %	W%	W <sub>L</sub> %	
x - - - - x	o - - - - o	x - - - - x	
20	40	60	80

DEPTH (m)	SPT BLOWS PER 0.15m	SAMPLE TYPE AND NO.	SAMPLE RECOVERY	SYMBOL	DESCRIPTION OF MATERIALS	INSTRUMENT	DETAILS
					STARTED: Dec. 3 2007    FINISHED: Dec 3 2007		
					DRILL METHOD: ODEX90 Hammer		
					GROUND ELEV. (m): 863.00		
					COORDINATES (m):    N 6120025    E 671245		
					TOPSOIL		
1	4, 3.5, 2.5, 3	SPT 1	29%		0.60 862.40 Sandy GRAVEL (GP) coarse, with some to trace fines; very loose, >35 mm, Subangular to subrounded, brown, no odour, wet, uncemented. GLACIAL TILL.		
2							
3	3, 3, 4, 6	SPT 2	54%		2.70 860.30 Sandy Lean CLAY (CL) with trace to some subangular to subrounded gravel, low plasticity, very soft, brown, no odour, moist, uncemented, very high dry strength, slow dilatancy. HCL reaction moderate. GLACIAL TILL.		
4							
5	15, 23, 17, 19	SPT 3	79%		4.30 858.70 Clayey SAND (SC), angular to subangular gravelly, dense, max particle size 10 mm, Angular to subangular, grey, moist, uncemented. HCL reaction moderate. GLACIAL TILL.		
6	7, 15, 28, 25	SPT 4	67%		5.80 857.20 Sandy Lean CLAY, (CL) with some angular to subangular gravel, low plasticity, hard, grey, no odour, moist, uncemented, very high dry strength, slow dilatancy. HCL reaction moderate. GLACIAL TILL.		
7					firm to hard.		
8	12, 23, 23, 21	SPT 5					
9	8, 13, 29, 30	SPT 6	83%		firm, brown.		
10							



Continued Next Page



PROJECT NO.: M09382A01	
PROJECT: Morrison Copper Gold	
LOCATION: Morrison Lake, BC	
LOGGED BY: C.K.	CHECKED BY: S.W.
SHEET 1 OF 3	HOLE NO.: DH07-6



# TEST HOLE LOG

Su - kPa

20    60    100    140    180

VANE PEAK	FIELD	LAB	▲ UC/2
REMOIL	◆	■	△ P.PEN/2
★ % FINES		● SPT N	
W <sub>p</sub> %	W%	W <sub>L</sub> %	
x - - - - x	o - - - - o	x - - - - x	
20	40	60	80

**STARTED:** Dec. 3 2007    **FINISHED:** Dec 3 2007

**DRILL METHOD:** ODEX90 Hammer

**GROUND ELEV. (m):** 863.00

**COORDINATES (m):**    N 6120025    E 671245

**DESCRIPTION OF MATERIALS**

INSTRUMENT  
DETAILS

DEPTH (m)	SPT BLOWS PER 0.15m	SAMPLE TYPE AND NO.	SAMPLE RECOVERY	SYMBOL	DESCRIPTION OF MATERIALS	INSTRUMENT	DETAILS
11	6, 9, 12, 16	SPT 7			firm to hard, grey.		○ ● △
12	13, 14, 17, 26	SPT 8	96%		brown.		○ ● △
15	5, 10, 12, 17	SPT 9	113%		grey, soft to firm.		○ ● △
18	6, 12, 20, 21	SPT 10			firm.		○ ● △

Continued Next Page



**PROJECT NO.:** M09382A01

**PROJECT:** Morrison Copper Gold

**LOCATION:** Morrison Lake, BC

**LOGGED BY:** C.K.

**CHECKED BY:** S.W.

**SHEET 2 OF 3**

**HOLE NO.:** DH07-6

# TEST HOLE LOG

Su - kPa

20    60    100    140    180

DEPTH (m)	SPT BLOWS PER 0.15m	SAMPLE TYPE AND NO.	SAMPLE RECOVERY	SYMBOL	STARTED: Dec. 3 2007    FINISHED: Dec 3 2007		Su - kPa											
					DRILL METHOD: ODEX90 Hammer		VANE PEAK	FIELD	LAB	UC/2								
					GROUND ELEV. (m): 863.00		REMOVED	REMOVED	REMOVED	P.PEN/2								
					COORDINATES (m):    N 6120025    E 671245		★ % FINES    ● SPT N											
DESCRIPTION OF MATERIALS							W <sub>p</sub> %	W%	W <sub>L</sub> %									
							x - - - - - o - - - - - x	20	40	60	80							
21																		
22																		
23	14, 18, 14, 19	SPT 11	100%		soft.	23.20 839.80		○	●	△								
24					End of Hole at 23.2 m													
25					Installation Details:													
26					Stick-up 0.86 m PVC pipe 1 diameter - schedule 40 Filter pack coarse silica sand (1 mm) Filter pack interval 20.7 - 23.2 m Screen is 1 PVC, 0.25 mm gap Screen interval 21.0 - 22.6 m													
27																		
28																		
29																		
30																		



<b>PROJECT NO.:</b> M09382A01	
<b>PROJECT:</b> Morrison Copper Gold	
<b>LOCATION:</b> Morrison Lake, BC	
<b>LOGGED BY:</b> C.K.	<b>CHECKED BY:</b> S.W.
<b>SHEET 3 OF 3</b>	<b>HOLE NO.:</b> DH07-6

# TEST HOLE LOG

Su - kPa

20    60    100    140    180

DEPTH (m)	SPT BLOWS PER 0.15m	SAMPLE TYPE AND NO.	SAMPLE RECOVERY	SYMBOL	STARTED: Dec. 4 2007    FINISHED: Dec. 4 2007	INSTRUMENT	DETAILS	VANE PEAK REMOLD    FIELD    LAB    UC/2 P.PEN/2 ◆    ◇    ■    ▲ * % FINES    ● SPT N			
					DRILL METHOD: ODEX90 Hammer			W <sub>p</sub> %    W%    W <sub>L</sub> %			
					GROUND ELEV. (m): 851.00			x --- o --- x			
					COORDINATES (m):    N 6120115    E 671105			20    40    60    80			

## DESCRIPTION OF MATERIALS

1					Clayey SAND (SC) with trace subangular gravel, very loose, yellow, no odour, wet, uncemented. GLACIAL TILL or COLLUVIUM			
2	2, 2, 2, 2	SPT 1	67%					●
3	8, 12, 13, 14	SPT 2	67%	2.70 848.30	Sandy Lean CLAY (CL) with trace to some subrounded gravel, low plasticity, firm, grey, no odour, moist, uncemented, very high dry strength, slow dilatancy. HCL reaction moderate. GLACIAL TILL.			●
4					very soft.			●
5	5, 7, 9, 11	SPT 3	94%					●
6	3, 7, 7, 11	SPT 4	75%		soft.			●
7								●
8	3.5, 5.5, 8, 12	SPT 5	92%					●
9	5, 12, 56, 13	SPT 6	79%		brown.			●
10								●

Continued Next Page



PROJECT NO.: M09382A01	
PROJECT: Morrison Copper Gold	
LOCATION: Morrison Lake, BC	
LOGGED BY: C.K.	CHECKED BY: S.W.
SHEET 1 OF 3	HOLE NO.: DH07-7

# TEST HOLE LOG

						Su - kPa							
						20	60	100	140	180			
DEPTH (m)	SPT BLOWS PER 0.15m	SAMPLE TYPE AND NO.	SAMPLE RECOVERY	SYMBOL	STARTED: Dec. 4 2007 FINISHED: Dec. 4 2007		INSTRUMENT	VANE FIELD LAB					
					DRILL METHOD: ODEX90 Hammer			PEAK REMOLD		◆	■	▲ UC/2	△ P.PEN/2
					GROUND ELEV. (m): 851.00			★ % FINES		● SPT N			
					COORDINATES (m): N 6120115 E 671105			x	o	x	x		
DESCRIPTION OF MATERIALS						W <sub>p</sub> %		W%		W <sub>L</sub> %			
						20	40	60	80				
11	7, 9, 12, 16	SPT 7			grey, HCL reaction strong.	○	●	△					
14	5, 11, 13, 20	SPT 8	79%		brown, HCL reaction moderate.	○	●	△					
17	8, 15, 19, 21	SPT 9	75%		firm.	○	●				△		
20	6,	SPT 10	117%		soft.	○	●	△					

Continued Next Page



**PROJECT NO.:** M09382A01

**PROJECT:** Morrison Copper Gold

**LOCATION:** Morrison Lake, BC

**LOGGED BY:** C.K.

**CHECKED BY:** S.W.

**SHEET 2 OF 3**

**HOLE NO.:** DH07-7

# TEST HOLE LOG

DEPTH (m)	SPT BLOWS PER 0.15m	SAMPLE TYPE AND NO.	SAMPLE RECOVERY	SYMBOL	STARTED: Dec. 4 2007 FINISHED: Dec. 4 2007		Su - kPa							
					DRILL METHOD: ODEX90 Hammer	GROUND ELEV. (m): 851.00	20	60	100	140	180			
COORDINATES (m): N 6120115 E 671105							INSTRUMENT	DETAILS	VANE PEAK		FIELD		LAB	
									REMOVED		◆	■	▲ UC/2	△ P.PEN/2
DESCRIPTION OF MATERIALS									★ % FINES		● SPT N			
									W <sub>p</sub> %		W%		W <sub>L</sub> %	
									x	o	x			
									20	40	60	80		
14, 12, 18														
21														
22														
23					22.90 828.10									
24					End of Hole at 22.9 m									
25					Installation Details:  Stick-up 0.91 m PVC pipe 1 diameter - schedule 40 Filter pack coarse silica sand (1 mm) Filter pack interval 20.7 - 22.9 m Screen is 1 PVC, 0.25 mm gap Screen interval 21.0 - 22.6 m									
26														
27														
28														
29														
30														

KCBL\_TEST\_HOLE-SI\_080123\_MORRISON.DH.LOGS-SOIL.GPJ\_KC\_DATA.GDT\_4/23/08



<b>PROJECT NO.:</b> M09382A01
<b>PROJECT:</b> Morrison Copper Gold
<b>LOCATION:</b> Morrison Lake, BC
<b>LOGGED BY:</b> C.K. <b>CHECKED BY:</b> S.W.
<b>SHEET 3 OF 3</b> <b>HOLE NO.:</b> DH07-7

# TEST HOLE LOG

Su - kPa

20    60    100    140    180

VANE PEAK	FIELD	LAB	▲ UC/2
REMOILD	◆	■	△ P.PEN/2
★ % FINES		● SPT N	
W <sub>p</sub> %	W%	W <sub>L</sub> %	
x - - - - -	o - - - - -	x - - - - -	
20	40	60	80

DEPTH (m)	SPT BLOWS PER 0.15m	SAMPLE TYPE AND NO.	SAMPLE RECOVERY	SYMBOL
-----------	---------------------	---------------------	-----------------	--------

**STARTED:** Dec. 5 2007    **FINISHED:** Dec. 5 2007

**DRILL METHOD:** ODEX90 Hammer

**GROUND ELEV. (m):** 877.00

**COORDINATES (m):** N 6120422    E 671193

**DESCRIPTION OF MATERIALS**

INSTRUMENT DETAILS

1				
2	9, 9, 12, 31	SPT 1	63%	
3	26, 39, 40, 49	SPT 2	71%	
4	35, 64, REFUSAL 50/6	SPT 3	33%	
5	REFUSAL	SPT 4	0%	
6	REFUSAL	SPT 4	0%	
7				
8				
9				
10				

Sandy Lean CLAY (CL) with some subangular to subrounded gravel, low plasticity, very hard, brown, no odour, moist, uncemented, very high dry strength, slow dilatancy. HCL reaction moderate. GLACIAL TILL.

2.70  
874.30

GRAVEL (GC) silty, clayey, some sand, subangular, fine to medium grained, dry, GLACIAL TILL

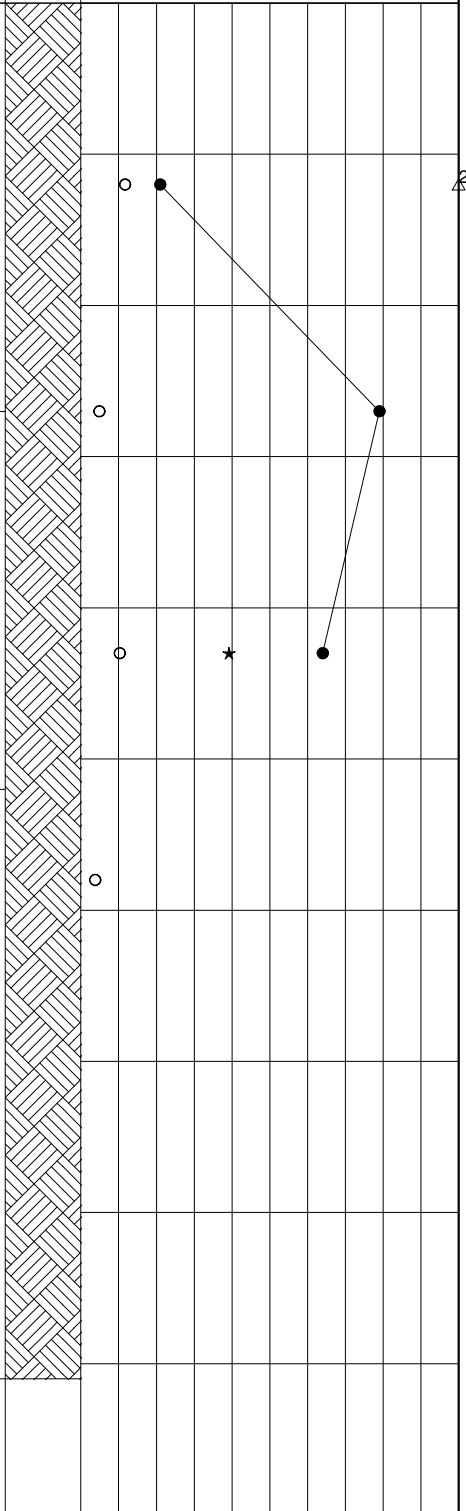
5.20  
871.80

VOLCANIC, very fine grained, moderately weathered, purple to greyish purple. Telkwa Formation.

9.10  
867.90

Installation Details:  
Backfilled with grout

End of Hole at 9.1 m



KCBL\_TEST\_HOLE-SI 080123 MORRISON.DH LOGS-SOIL.GPJ KC\_DATA.GDT 4/23/08



<b>PROJECT NO.:</b> M09382A01	
<b>PROJECT:</b> Morrison Copper Gold	
<b>LOCATION:</b> Morrison Lake, BC	
<b>LOGGED BY:</b> C.K.	<b>CHECKED BY:</b> S.W.
<b>SHEET 1 OF 1</b>	<b>HOLE NO.:</b> DH07-8

# TEST HOLE LOG

DEPTH (m)	SPT BLOWS PER 0.15m	SAMPLE TYPE AND NO.	SAMPLE RECOVERY	SYMBOL	DESCRIPTION OF MATERIALS	INSTRUMENT	DETAILS	Su - kPa						
								20	60	100	140	180		
					STARTED: Dec. 5 2007 FINISHED: Dec. 6 2007									
					DRILL METHOD: ODEX90 Hammer									
					GROUND ELEV. (m): 841.00									
					COORDINATES (m): N 6120197 E 671101									
					VANE PEAK    FIELD    LAB REMOLD    ◊    ◻    ▲ UC/2 * % FINES    ● SPT N W <sub>p</sub> %    W%    W <sub>L</sub> % x - - - - - o - - - - - x 20    40    60    80									
1					Clayey SAND (SC) with trace gravel, very loose, brown, wet, uncemented. HCL reaction weak.									
2	6, 6, 6, 6	SPT 1	42%											
3	4, 7, 9, 14	SPT 2	75%		2.70 838.30 Sandy Lean CLAY (CL) with trace subrounded gravel, low plasticity, hard, brown, no odour, moist, uncemented, very high dry strength, slow dilatancy. HCL reaction moderate. GLACIAL TILL.									216
4														
5	12, 15, 12, 20	SPT 3	42%											
6	9, 12, 18, 26	SPT 4	71%		firm, grey.									
7														
8	5, 10, 30, 36	SPT 5	63%		hard.									
9	4, 9, 20, 22	SPT 6	83%		firm.									
10														

Continued Next Page



PROJECT NO.: M09382A01	
PROJECT: Morrison Copper Gold	
LOCATION: Morrison Lake, BC	
LOGGED BY: C.K.	CHECKED BY: S.W.
SHEET 1 OF 3	HOLE NO.: DH07-9

KCBL\_TEST\_HOLE-SI 080123 MORRISON.DH LOGS-SOIL.GPJ KC\_DATA.GDT 4/23/08

# TEST HOLE LOG

Su - kPa

20    60    100    140    180

VANE PEAK	FIELD	LAB	▲ UC/2
REMOLED	◆	■	△ P.PEN/2
★ % FINES		● SPT N	
W <sub>p</sub> %	W%	W <sub>L</sub> %	
x	o	x	
20	40	60	80

**STARTED:** Dec. 5 2007    **FINISHED:** Dec. 6 2007

**DRILL METHOD:** ODEX90 Hammer

**GROUND ELEV. (m):** 841.00

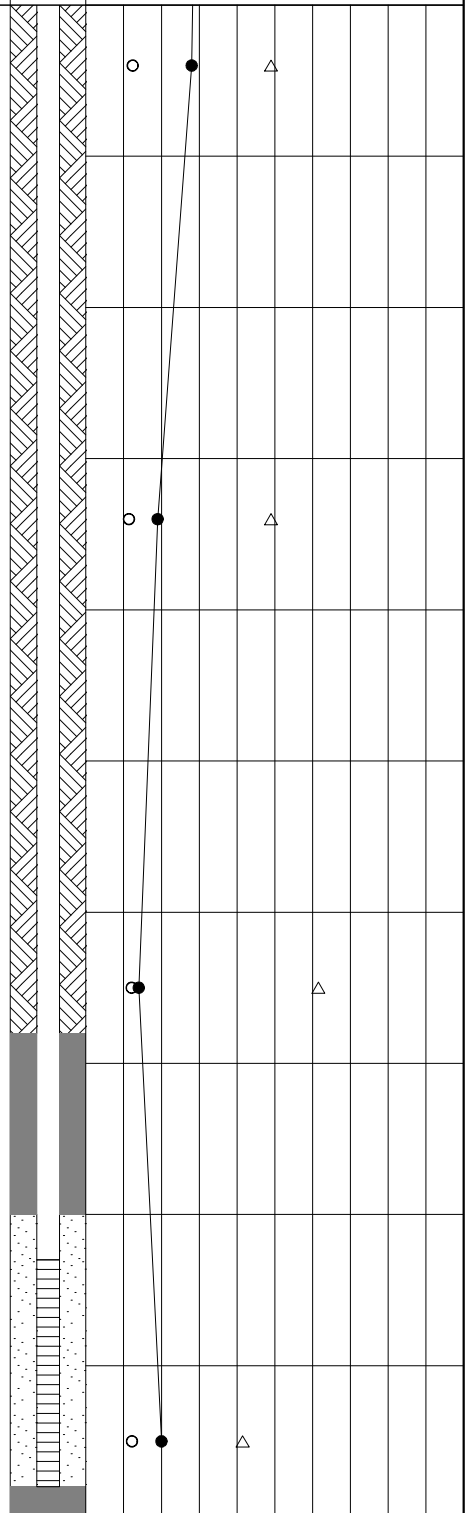
**COORDINATES (m):**    N 6120197    E 671101

**DESCRIPTION OF MATERIALS**

INSTRUMENT DETAILS

DEPTH (m)	SPT BLOWS PER 0.15m	SAMPLE TYPE AND NO.	SAMPLE RECOVERY	SYMBOL
11	8, 15, 13, 17	SPT 7	50%	
14	4, 7, 12, 15	SPT 8	75%	
17	6, 5, 9, 11	SPT 9	21%	
20	5,	SPT 10		

soft, wet.



Continued Next Page



<b>PROJECT NO.:</b> M09382A01	
<b>PROJECT:</b> Morrison Copper Gold	
<b>LOCATION:</b> Morrison Lake, BC	
<b>LOGGED BY:</b> C.K.	<b>CHECKED BY:</b> S.W.
<b>SHEET 2 OF 3</b>	<b>HOLE NO.:</b> DH07-9



# TEST HOLE LOG

Su - kPa

20    60    100    140    180

DEPTH (m)	SPT BLOWS PER 0.15m	SAMPLE TYPE AND NO.	SAMPLE RECOVERY	SYMBOL	STARTED: Dec. 5 2007    FINISHED: Dec. 6 2007		INSTRUMENT	Su - kPa													
					DRILL METHOD: ODEX90 Hammer			VANE PEAK	FIELD	LAB	UC/2										
					GROUND ELEV. (m): 841.00			REMOLD	SPT N	P.PEN/2	P.PEN/2										
					COORDINATES (m):    N 6120197    E 671101			* % FINES    ● SPT N W <sub>p</sub> %    W%    W <sub>L</sub> % x - - - - x    o - - - - x													
DESCRIPTION OF MATERIALS																					
21	8 12 43																				
22					22.30 818.70    SILTSTONE, slightly weathered, very fine grained, dark grey, trace purple, 2% calcite veins. Ashman or Nilkitkwa Formation.																
23																					
24																					
25					25.30 815.70																
26					End of Hole at 25.3 m																
27					Installation Details:  Stick-up 0.91 m PVC pipe 1 diameter - schedule 40 Filter pack coarse silica sand (1 mm) Filter pack interval 18.0 - 19.8 m Screen is 1 PVC, 0.25 mm gap Screen interval 18.3 - 19.8 m																
28																					
29																					
30																					



<b>PROJECT NO.:</b> M09382A01	
<b>PROJECT:</b> Morrison Copper Gold	
<b>LOCATION:</b> Morrison Lake, BC	
<b>LOGGED BY:</b> C.K.	<b>CHECKED BY:</b> S.W.
<b>SHEET 3 OF 3</b>	<b>HOLE NO.:</b> DH07-9

KCBL\_TEST\_HOLE-SI 080123 MORRISON.DH LOGS-SOIL.GPJ KC\_DATA.GDT 4/23/08

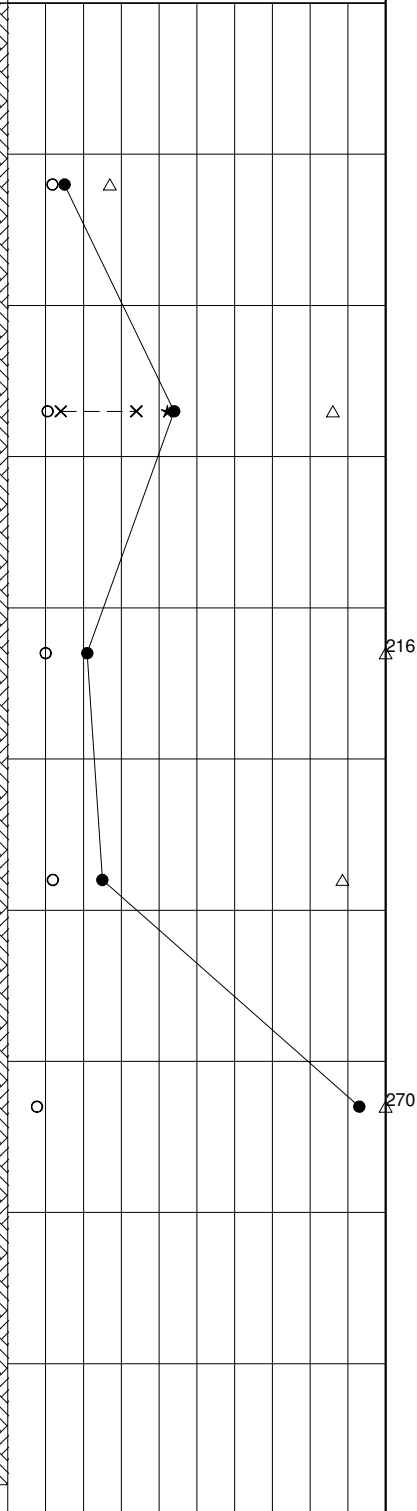
# TEST HOLE LOG

Su - kPa

20    60    100    140    180

VANE PEAK	FIELD	LAB	▲ UC/2
REMOLO	◆	■	△ P.PEN/2
★ % FINES		● SPT N	
W <sub>p</sub> %	W%	W <sub>L</sub> %	
x - - - - - x	o - - - - - o	x - - - - - x	
20	40	60	80

DEPTH (m)	SPT BLOWS PER 0.15m	SAMPLE TYPE AND NO.	SAMPLE RECOVERY	SYMBOL	DESCRIPTION OF MATERIALS	INSTRUMENT DETAILS
					0.20 TOPSOIL	
1					844.80 Sandy Lean CLAY (CL) with some subangular to subrounded gravel, low plasticity, soft to firm, grey, no odour, moist, uncemented, very high dry strength, slow dilatancy. HCL reaction moderate. GLACIAL TILL.	
2	3, 7, 8, 7	SPT 1	63%			
3					2.50 842.50 Clayey SAND (SC) subangular to subrounded gravelly, compact, max particle size <50 mm, grey, moist, uncemented. HCL reaction moderate. GLACIAL TILL.	
4	46, 19, 25, 26	SPT 2	100%			
5					4.30 840.70 Sandy Lean CLAY (CL) with some subangular to subrounded gravel, low plasticity, hard, grey, no odour, moist, uncemented, very high dry strength, slow dilatancy. HCL reaction moderate. GLACIAL TILL.	
5	5, 10, 11, 16	SPT 3	92%			
6					firm to hard	
6	5, 11, 15, 20	SPT 4	104%			
7					soft, single stone of flat 3/8 gravel	
7						
8	28, 35, 58, >50/6	SPT 5	83%			
8	REFUSAL				8.20 836.80 SILTSTONE, moderately to slightly weathered, dark grey, very fine grained, 5% rusty calcite viens, medium strong to strong rock. Ashman or Nilkitkwa Formation.	
9						
9					9.80 835.20	
10						



Continued Next Page



**PROJECT NO.:** M09382A01

**PROJECT:** Morrison Copper Gold

**LOCATION:** Morrison Lake, BC

**LOGGED BY:** C.K.

**CHECKED BY:** S.W.

**SHEET 1 OF 2**

**HOLE NO.:** DH07-10

# TEST HOLE LOG

Su - kPa

20 60 100 140 180

DEPTH (m)	SPT BLOWS PER 0.15m	SAMPLE TYPE AND NO.	SAMPLE RECOVERY	SYMBOL	<b>STARTED:</b> Dec. 6 2007 <b>FINISHED:</b> Dec. 8 2007	INSTRUMENT DETAILS	Su - kPa											
					<b>DRILL METHOD:</b> ODEX90 Hammer		VANE PEAK REMOLD	FIELD	LAB	▲ UC/2	△ P.PEN/2							
					<b>GROUND ELEV. (m):</b> 845.00		★ % FINES	● SPT N										
					<b>COORDINATES (m):</b> N 6120299 E 671036		W <sub>p</sub> %	W%	W <sub>L</sub> %									
					<b>DESCRIPTION OF MATERIALS</b>		x	o	x	20	40	60	80					
11					ROCK CORE FOR MILL STERILIZATION. NOT LOGGED FROM 9.8m to 47.5m. End of Hole at 47.5 m													
12					Installation Details: Backfilled with grout													
13																		
14																		
15																		
16																		
17																		
18																		
19																		
20																		

KCBL\_TEST\_HOLE-SI\_080123 MORRISON.DH LOGS-SOIL.GPJ KC\_DATA.GDT 4/23/08



<b>PROJECT NO.:</b> M09382A01	
<b>PROJECT:</b> Morrison Copper Gold	
<b>LOCATION:</b> Morrison Lake, BC	
<b>LOGGED BY:</b> C.K.	<b>CHECKED BY:</b> S.W.
<b>SHEET 2 OF</b> 2	<b>HOLE NO.:</b> DH07-10

## **APPENDIX III**

### **Test Pit Logs**

# TEST PIT LOG

Su - kPa

20    60    100    140    180

DEPTH (m)	SAMPLE TYPE	SAMPLE NUMBER	SYMBOL	STARTED: Dec. 5 2007      FINISHED: Dec. 5 2007	INSTRUMENT	Su - kPa							
				EXCAVATOR TYPE: CAT 345 Excavator		VANE PEAK	FIELD	LAB	▲ UC/2 △ P.PEN/2				
				GROUND ELEV. (m): 821.0		REMOLD	◆	□					
				COORDINATES (m): N 6120423    E 670641		★ % FINES							
DESCRIPTION OF MATERIALS				W <sub>p</sub> %      W%      W <sub>L</sub> % x - - - - - o - - - - - x 20      40      60      80									
0.5				CLAY (CL) silty, some to trace fine to coarse gravel, medium brown, subangular, stiff, moist, GLACIAL TILL									
1.0													
1.5													
2.0													
2.5				2.50 818.5 CLAY (CL) fine to coarse gravelly, very stiff, very dark brown, subangular, moist, GLACIAL TILL.									
3.0													
3.5													
4.0													
4.5													
5.0				5.00									

Continued Next Page



<b>PROJECT NO.:</b> M09382A01	
<b>PROJECT:</b> Morrison Copper Gold	
<b>LOCATION:</b> Morrison Lake, BC	
<b>LOGGED BY:</b> C.K.	<b>CHECKED BY:</b>
<b>SHEET 1 OF</b> 2	<b>HOLE NO.:</b> TP07-1

# TEST PIT LOG

Su - kPa

20    60    100    140    180

DEPTH (m)	SAMPLE TYPE	SAMPLE NUMBER	SYMBOL	STARTED: Dec. 5 2007      FINISHED: Dec. 5 2007		INSTRUMENT	DETAILS	Su - kPa										
				EXCAVATOR TYPE: CAT 345 Excavator				VANE PEAK	FIELD	LAB	▲ UC/2							
				GROUND ELEV. (m): 821.0				REMOLD	◆	□	△ P.PEN/2							
				COORDINATES (m): N 6120423    E 670641				★ % FINES										
				DESCRIPTION OF MATERIALS				W <sub>p</sub> %	W%	W <sub>L</sub> %								
5.5				816.0	End of Hole at 5.00 m													
6.0					MAX BOOM REACH													
6.5																		
7.0																		
7.5																		
8.0																		
8.5																		
9.0																		
9.5																		
10.0																		

KC\_TEST\_PIT-SI\_080123 MORRISON TEST PIT LOGSL.GPJ KC\_DATA.GDT 4/9/08



**PROJECT NO.:** M09382A01

**PROJECT:** Morrison Copper Gold

**LOCATION:** Morrison Lake, BC

**LOGGED BY:** C.K.

**CHECKED BY:**

**SHEET 2 OF 2**

**HOLE NO.:** TP07-1

# TEST PIT LOG

Su - kPa

20    60    100    140    180

DEPTH (m)	SAMPLE TYPE	SAMPLE NUMBER	SYMBOL	STARTED: Dec. 6 2007      FINISHED: Dec. 6 2007		INSTRUMENT	DETAILS	Su - kPa						
				EXCAVATOR TYPE: CAT 345 Excavator				VANE	FIELD	LAB	▲ UC/2			
				GROUND ELEV. (m): 795.0				PEAK	◆	■	▲ P.PEN/2			
				COORDINATES (m): N 6121305    E 670015				REMO	◇	□	★ % FINES			
				DESCRIPTION OF MATERIALS				W <sub>p</sub> %	W%	W <sub>L</sub> %				
0.5			●	GRAVEL (GW), fine to medium grained, fine to coarse sandy to some sand, loose, rounded, brownish grey, up to trace cobbles, no fines, moist, GLACIOFLUVIAL.										
1.0			●											
1.5			●											
2.0			●											
2.5			●											
3.0	GRAB	1	●											
3.5			●											
4.0			●											
4.5			●											
5.0			●											

Continued Next Page



<b>PROJECT NO.:</b> M09382A01	
<b>PROJECT:</b> Morrison Copper Gold	
<b>LOCATION:</b> Morrison Lake, BC	
<b>LOGGED BY:</b> C.K.	<b>CHECKED BY:</b>
<b>SHEET 1 OF 2</b>	<b>HOLE NO.:</b> TP07-2

# TEST PIT LOG

Su - kPa

20    60    100    140    180

DEPTH (m)	SAMPLE TYPE	SAMPLE NUMBER	SYMBOL	STARTED: Dec. 6 2007      FINISHED: Dec. 6 2007		INSTRUMENT	Su - kPa						
				EXCAVATOR TYPE: CAT 345 Excavator			VANE PEAK	FIELD	LAB	UC/2			
				GROUND ELEV. (m): 795.0			REMOLD	◆	□	▲ P.PEN/2			
				COORDINATES (m): N 6121305    E 670015			★ % FINES						
				DESCRIPTION OF MATERIALS			W <sub>p</sub> %	W%	W <sub>L</sub> %				
		x	o	x									
		20	40	60	80								
5.5	GRAB	2	5.40 789.6	SAND (SW) fine to coarse grained, fine to medium gravelly, trace silt, greyish brown, subround, loose to compact, up to medium gravel, moist, GLACIOFLUVIAL.									
6.0			6.00 789.0	End of Hole at 6.00 m									
6.5				MAX BOOM REACH									
7.0													
7.5													
8.0													
8.5													
9.0													
9.5													
10.0													

KC\_TEST\_PIT-SI\_080123 MORRISON TEST PIT LOGSL.GPJ KC\_DATA.GDT 4/9/08



**PROJECT NO.:** M09382A01

**PROJECT:** Morrison Copper Gold

**LOCATION:** Morrison Lake, BC

**LOGGED BY:** C.K.      **CHECKED BY:**


**SHEET 2 OF 2**      **HOLE NO.:** TP07-2



# TEST PIT LOG

Su - kPa

20    60    100    140    180

DEPTH (m)	SAMPLE TYPE	SAMPLE NUMBER	SYMBOL	STARTED: Dec. 6 2007      FINISHED: Dec. 6 2007		INSTRUMENT	DETAILS	Su - kPa					
				EXCAVATOR TYPE: CAT 345 Excavator				VANE PEAK	FIELD	LAB	▲ UC/2		
				GROUND ELEV. (m): 795.0				REMOLD	◇	□	△ P.PEN/2		
				COORDINATES (m): N 6121117      E 669994				★ % FINES					
				DESCRIPTION OF MATERIALS				W <sub>p</sub> %	W%	W <sub>L</sub> %			
0.5				GRAVEL (GW) fine to coarse, sandy to some sand, subround, up to trace cobbles, no fines, moist, GLACIOFLUVIAL.									
1.0													
1.5													
2.0													
2.5													
3.0	GRAB	1											
3.5													
4.0													
4.5													
5.0													

Continued Next Page



<b>PROJECT NO.:</b> M09382A01	
<b>PROJECT:</b> Morrison Copper Gold	
<b>LOCATION:</b> Morrison Lake, BC	
<b>LOGGED BY:</b> C.K.	<b>CHECKED BY:</b>
<b>SHEET 1 OF</b> 2	<b>HOLE NO.:</b> TP07-3

# TEST PIT LOG

DEPTH (m)	SAMPLE TYPE	SAMPLE NUMBER	SYMBOL	STARTED: Dec. 6 2007      FINISHED: Dec. 6 2007		Su - kPa															
				EXCAVATOR TYPE: CAT 345 Excavator		20	60	100	140	180	VANE			FIELD		LAB					
				GROUND ELEV. (m): 795.0																	
				COORDINATES (m): N 6121117      E 669994																	
				DESCRIPTION OF MATERIALS																	
5.5			●																		
6.0			●	6.00 789.0	End of Hole at 6.00 m																
6.5					MAX BOOM REACH																
7.0																					
7.5																					
8.0																					
8.5																					
9.0																					
9.5																					
10.0																					

KC\_TEST\_PIT-SI\_080123 MORRISON TEST PIT LOGSL.GPJ KC\_DATA.GDT 4/9/08



<b>PROJECT NO.:</b> M09382A01	
<b>PROJECT:</b> Morrison Copper Gold	
<b>LOCATION:</b> Morrison Lake, BC	
<b>LOGGED BY:</b> C.K.	<b>CHECKED BY:</b>
<b>SHEET 2 OF</b> 2	<b>HOLE NO.:</b> TP07-3

# TEST PIT LOG

Su - kPa

20    60    100    140    180

DEPTH (m)	SAMPLE TYPE	SAMPLE NUMBER	SYMBOL	STARTED: Dec. 6 2007      FINISHED: Dec. 6 2007		INSTRUMENT	DETAILS	Su - kPa						
				EXCAVATOR TYPE: CAT 345 Excavator				VANE	FIELD	LAB	▲ UC/2			
				GROUND ELEV. (m): 789.0				PEAK	◆	■	△ P.PEN/2			
				COORDINATES (m): N 6120999      E 669939				REMO	◇	□	★ % FINES			
				DESCRIPTION OF MATERIALS				W <sub>p</sub> %	W%	W <sub>L</sub> %				
0.5			●	GRAVEL (GW) fine to coarse, sandy to some sand, subround, up to trace cobbles, no fines, moist, GLACIOFLUVIAL.										
1.0			●											
1.5			●											
2.0			●											
2.5			●											
3.0	GRAB	1	●											
3.5			●											
4.0			●											
4.5			●											
5.0			●											

Continued Next Page



<b>PROJECT NO.:</b> M09382A01	
<b>PROJECT:</b> Morrison Copper Gold	
<b>LOCATION:</b> Morrison Lake, BC	
<b>LOGGED BY:</b> C.K.	<b>CHECKED BY:</b>
<b>SHEET 1 OF 2</b>	<b>HOLE NO.:</b> TP07-4

# TEST PIT LOG

Su - kPa

20    60    100    140    180

DEPTH (m)	SAMPLE TYPE	SAMPLE NUMBER	SYMBOL	STARTED: Dec. 6 2007	FINISHED: Dec. 6 2007	INSTRUMENT	DETAILS	Su - kPa					
				EXCAVATOR TYPE: CAT 345 Excavator				VANE PEAK	FIELD	LAB	▲ UC/2		
				GROUND ELEV. (m): 789.0				REMOLD	◇	□	△ P.PEN/2		
				COORDINATES (m): N 6120999    E 669939				★ % FINES					
				DESCRIPTION OF MATERIALS				W <sub>p</sub> %	W%	W <sub>L</sub> %			

5.5																				
6.0			6.00 783.0	End of Hole at 6.00 m																
6.5				MAX BOOM REACH																
7.0																				
7.5																				
8.0																				
8.5																				
9.0																				
9.5																				
10.0																				

KC\_TEST\_PIT-SI\_080123 MORRISON TEST PIT LOGSL.GPJ KC\_DATA.GDT 4/9/08



<b>PROJECT NO.:</b> M09382A01	
<b>PROJECT:</b> Morrison Copper Gold	
<b>LOCATION:</b> Morrison Lake, BC	
<b>LOGGED BY:</b> C.K.	<b>CHECKED BY:</b>
<b>SHEET 2 OF 2</b>	<b>HOLE NO.:</b> TP07-4

# TEST PIT LOG

Su - kPa

20    60    100    140    180

DEPTH (m)	SAMPLE TYPE	SAMPLE NUMBER	SYMBOL	<b>STARTED:</b> Dec. 5 2007 <b>FINISHED:</b> Dec. 5 2007		INSTRUMENT	DETAILS	VANE PEAK    FIELD    LAB    ▲ UC/2 REMOLD    ◇    □    △ P.PEN/2 ★ % FINES W <sub>p</sub> %    W%    W <sub>L</sub> % x - - - - - o - - - - - x 20    40    60    80											
				EXCAVATOR TYPE: CAT 345 Excavator															
				GROUND ELEV. (m): 828.0															
				COORDINATES (m): N 6120486    E 670347															
				<b>DESCRIPTION OF MATERIALS</b>															
0.5				CLAY (CL) gravelly to and gravel, stiff, medium brown, fine to coarse gravel, up to trace boulders, subangular to subround, moist, GLACIAL TILL.															
1.0																			
1.5																			
2.0																			
2.5				2.40 825.6    CLAY (CL) gravelly to and gravel, very stiff, very dark brown, fine to coarse gravel, up to trace boulders, subangular to subround, moist, GLACIAL TILL.															
3.0																			
3.5																			
4.0																			
4.5																			
5.0																			

Continued Next Page



<b>PROJECT NO.:</b> M09382A01	
<b>PROJECT:</b> Morrison Copper Gold	
<b>LOCATION:</b> Morrison Lake, BC	
<b>LOGGED BY:</b> C.K.	<b>CHECKED BY:</b>
<b>SHEET 1 OF 2</b>	<b>HOLE NO.:</b> TP07-5

# TEST PIT LOG

Su - kPa

20    60    100    140    180

DEPTH (m)	SAMPLE TYPE	SAMPLE NUMBER	SYMBOL	STARTED: Dec. 5 2007	FINISHED: Dec. 5 2007	INSTRUMENT	DETAILS	Su - kPa												
				EXCAVATOR TYPE: CAT 345 Excavator				VANE PEAK	FIELD	LAB	▲ UC/2	△ P.PEN/2								
				GROUND ELEV. (m): 828.0				REMOLD	◆	□	★ % FINES									
				COORDINATES (m): N 6120486 E 670347				W <sub>p</sub> %		W%		W <sub>L</sub> %								
DESCRIPTION OF MATERIALS																				
5.5																				
6.0				6.00 822.0	End of Hole at 6.00 m															
6.5					MAX BOOM REACH															
7.0																				
7.5																				
8.0																				
8.5																				
9.0																				
9.5																				
10.0																				

KC\_TEST\_PIT-SI 080123 MORRISON TEST PIT LOGSL.GPJ KC\_DATA.GDT 4/9/08



<b>PROJECT NO.:</b> M09382A01	
<b>PROJECT:</b> Morrison Copper Gold	
<b>LOCATION:</b> Morrison Lake, BC	
<b>LOGGED BY:</b> C.K.	<b>CHECKED BY:</b>
<b>SHEET 2 OF</b> 2	<b>HOLE NO.:</b> TP07-5

# TEST PIT LOG

Su - kPa

20    60    100    140    180

DEPTH (m)	SAMPLE TYPE	SAMPLE NUMBER	SYMBOL	STARTED: Dec. 6 2007      FINISHED: Dec. 6 2007		INSTRUMENT	DETAILS	Su - kPa				
				EXCAVATOR TYPE: CAT 345 Excavator				VANE	FIELD	LAB	▲ UC/2	
				GROUND ELEV. (m): 776.0				PEAK	◆	■	▲ P.PEN/2	
				COORDINATES (m): N 6120827    E 669928				REMO	◇	□	★ % FINES	
DESCRIPTION OF MATERIALS								W <sub>p</sub> %	W%	W <sub>L</sub> %		
								x - - - - -	o - - - - -	x - - - - -		
								20	40	60	80	
0.5				CLAY (CL) gravelly to and gravel, stiff, medium brown, fine to coarse gravel, up to trace boulders, subangular to subround, moist, GLACIAL TILL.								
1.0												
1.5												
2.0				1.80 774.2	CLAY (CL) gravelly to and gravel, very stiff, very dark brown, fine to coarse gravel, up to trace boulders, subangular to subround, moist, GLACIAL TILL.							
2.5												
3.0												
3.5												
4.0												
4.5												
5.0												

Continued Next Page



<b>PROJECT NO.:</b> M09382A01	
<b>PROJECT:</b> Morrison Copper Gold	
<b>LOCATION:</b> Morrison Lake, BC	
<b>LOGGED BY:</b> C.K.	<b>CHECKED BY:</b>
<b>SHEET 1 OF 2</b>	<b>HOLE NO.:</b> TP07-6

# TEST PIT LOG

Su - kPa

20    60    100    140    180

DEPTH (m)	SAMPLE TYPE	SAMPLE NUMBER	SYMBOL	STARTED: Dec. 6 2007      FINISHED: Dec. 6 2007		INSTRUMENT	DETAILS	Su - kPa									
				EXCAVATOR TYPE: CAT 345 Excavator				VANE	FIELD	LAB	▲ UC/2						
				GROUND ELEV. (m): 776.0				PEAK	◆	■	△ P.PEN/2						
				COORDINATES (m): N 6120827    E 669928				REMO	◇	□	★ % FINES						
				DESCRIPTION OF MATERIALS				W <sub>p</sub> %	W%	W <sub>L</sub> %							
5.5			[Symbol]														
6.0			[Symbol]	6.00 770.0	End of Hole at 6.00 m												
6.5					MAX BOOM REACH												
7.0																	
7.5																	
8.0																	
8.5																	
9.0																	
9.5																	
10.0																	

KC\_TEST\_PIT-SI\_080123 MORRISON TEST PIT LOGSL.GPJ KC\_DATA.GDT 4/9/08



<b>PROJECT NO.:</b> M09382A01	
<b>PROJECT:</b> Morrison Copper Gold	
<b>LOCATION:</b> Morrison Lake, BC	
<b>LOGGED BY:</b> C.K.	<b>CHECKED BY:</b>
<b>SHEET 2 OF</b> 2	<b>HOLE NO.:</b> TP07-6



# TEST PIT LOG

				Su - kPa										
				20	60	100	140	180						
DEPTH (m)	SAMPLE TYPE	SAMPLE NUMBER	SYMBOL	STARTED: Dec. 7 2007      FINISHED: Dec. 7 2007		INSTRUMENT DETAILS		VANE		FIELD		LAB		
				EXCAVATOR TYPE: CAT 345 Excavator				PEAK	REMO	◆	◻	▲	△	
				GROUND ELEV. (m): 1040.0		COORDINATES (m): N 6123188      E 672197		★ % FINES		W <sub>p</sub> %	W%	W <sub>L</sub> %	UC/2	P.PEN/2
				DESCRIPTION OF MATERIALS		x	o	x	x	x				
		20	40	60	80									
0.5		1	0.30	CLAY (CL) silty, gravelly, some-trace sand, fine to coarse gravel, subangular, moist to dry, firm, GLACIAL TILL										
			1039.7	CLAY (CL) silty, gravelly, some-trace sand, fine to coarse gravel, subangular, moist to dry, very stiff, GLACIAL TILL										
1.0	GRAB		1.00	BASALT, moderately weathered, dark brownish grey, very fine grained, strong rock. Saddle Hill volcanics.										
2.0			2.00	End of Hole at 2.00 m										
2.5			1038.0	REFUSAL ON BEDROCK										
3.0														
3.5														
4.0														
4.5														
5.0														

KC\_TEST\_PIT-SI 080123 MORRISON TEST PIT LOGS.GPJ KC\_DATA.GDT 4/9/08



<b>PROJECT NO.:</b> M09382A01	
<b>PROJECT:</b> Morrison Copper Gold	
<b>LOCATION:</b> Morrison Lake, BC	
<b>LOGGED BY:</b> C.K.	<b>CHECKED BY:</b>
<b>SHEET 1 OF 1</b>	<b>HOLE NO.:</b> TP07-7

# TEST PIT LOG

Su - kPa

20    60    100    140    180

DEPTH (m)	SAMPLE TYPE	SAMPLE NUMBER	SYMBOL	STARTED: Dec. 7 2007	FINISHED: Dec. 7 2007	INSTRUMENT DETAILS					
				EXCAVATOR TYPE: CAT 345 Excavator							
				GROUND ELEV. (m): 1025.0		VANE PEAK	FIELD	LAB	UC/2		
				COORDINATES (m): N 6123524    E 672499		REMOLD	★ % FINES	W <sub>p</sub> %	W%	W <sub>L</sub> %	
DESCRIPTION OF MATERIALS											
0.5	GRAB	1		CLAY (CL) silty, gravelly, some-trace sand, fine to coarse gravel, subangular, moist to dry, firm, GLACIAL TILL							
1.0											
1.5											
2.0											
2.5				2.40		BASALT, moderately weathered, dark brownish grey, very fine grained, strong rock. Saddle Hill volcanics.					
3.0				1022.6							
3.5				3.40		End of Hole at 3.40 m					
4.0				1021.6		REFUSAL ON BEDROCK					
4.5											
5.0											

KC\_TEST\_PIT-SI\_080123 MORRISON TEST PIT LOGS\_LGPJ\_KC\_DATA.GDT 4/9/08



**PROJECT NO.:** M09382A01

**PROJECT:** Morrison Copper Gold

**LOCATION:** Morrison Lake, BC

**LOGGED BY:** C.K.

**CHECKED BY:**

**SHEET 1 OF 1**

**HOLE NO.:** TP07-8

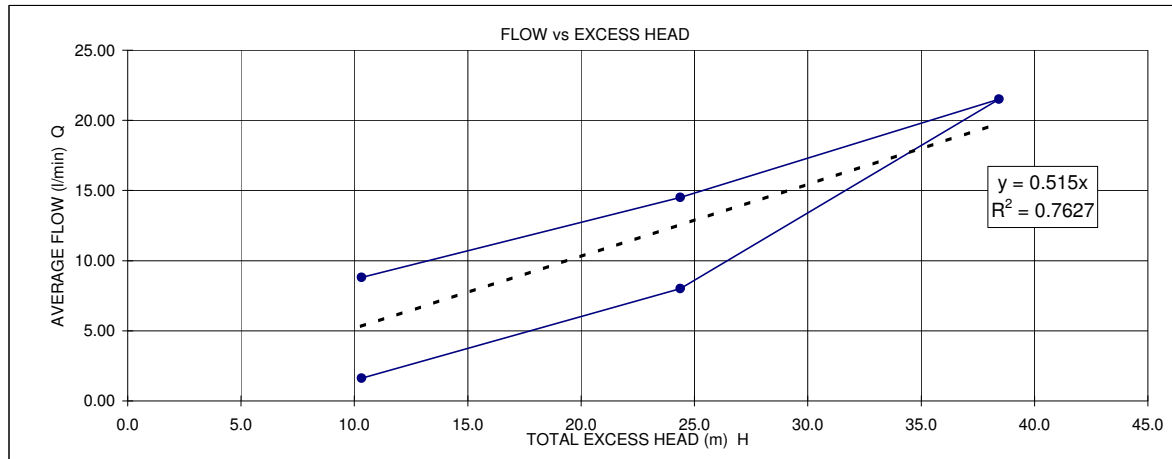
## **APPENDIX IV**

# **Packer Test and Falling Head Test Data Sheets**

PRESSURE PACKER TEST - CONSTANT HEAD TEST			
DATE OF TEST	Nov 13 2007	DEPTH OF HOLE AT TIME OF TEST (m) along dip	35.66
DRILL HOLE NO.	DH07-1A	TEST SECTION from - to (m)	23.35
TEST NO	#1	LENGTH OF TEST SECTION (m) along dip (L)	12.31
PACKER TYPE	Single	STATIC GROUNDWATER LEVEL (m) vertical below gr. level (1)*	-4.5
INFLATION PRESSURE (psi)	350	HEIGHT OF GAUGE ABOVE GROUND LEVEL (m) (2)	0.762
CASING DETAILS	21.9 - ODEX 90	INCLINATION OF HOLE FROM HORIZONTAL (deg)	90
DIAMETER OF HOLE (mm) (D)	96.5	TRUE DEPTH OF DRILL HOLE (m)	35.66
I.D. of DRILLING RODS (mm)	65		

\*IF GROUNDWATER LEVEL UNKNOWN OR BELOW TEST SECTION, USE DEPTH TO CENTRE OF TEST SECTION

INJECTED FLOW RATE (l/min)	INJECTION PRESSURE (m)	FRICTION HEAD LOSS (m)		TOTAL EXCESS HEAD (m) (H)	COMMENTS
		BASIC PACKER (4)	RODS (5)		
	(3)			(1+2+3-4-5)	
8.80	14.1	0	0	10.3	
14.50	28.1	0	0	24.4	
21.50	42.2	0	0	38.4	
8.00	28.1	0	0	24.4	
1.62	14.1	0	0	10.3	



**CALCULATIONS**

<b>BULK HYDRAULIC CONDUCTIVITY (K) (m/s)</b> $K = Q \cdot \ln(2L/D) / (2\pi \cdot L \cdot H)$	1.0E-06	<b>LUGEON UNIT (LU) (m<sup>-1</sup>)</b> $LU = (100/L) \cdot (Q/H)$ 1 lugeon unit = 1 litre of water taken per metre of test length, per minute, at 10 bars pressure. 1 lugeon unit = approx 1.3 E- 7 m <sup>3</sup> /second	6.9E+00	DATA POINT 1
	7.1E-07		4.8E+00	DATA POINT 2
	6.7E-07		4.5E+00	DATA POINT 3
	3.9E-07		2.7E+00	DATA POINT 4
	1.9E-07		1.3E+00	DATA POINT 5
	6.0E-07		4.0E+00	AVERAGE
	6.1E-07			BEST FIT

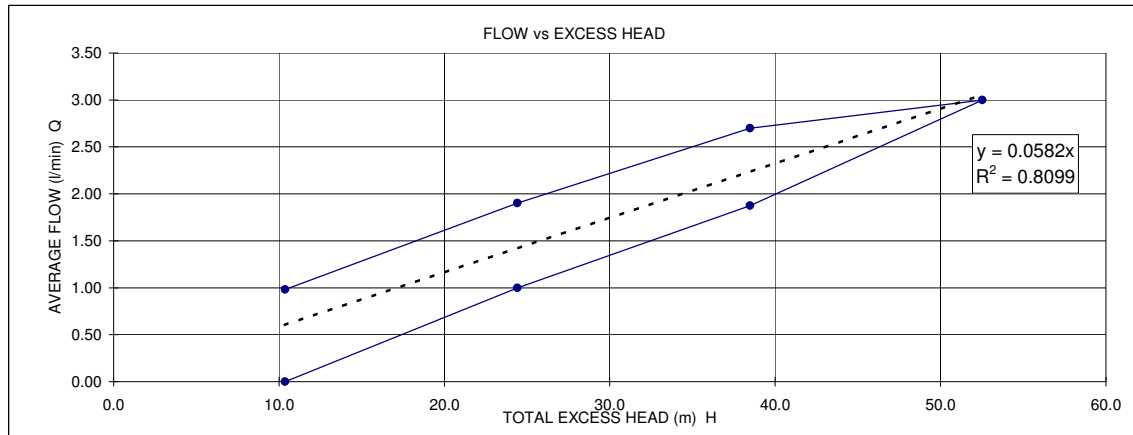


M09382A01

PRESSURE PACKER TEST - CONSTANT HEAD TEST			
DATE OF TEST	Nov 14 2007	DEPTH OF HOLE AT TIME OF TEST (m) along dip	49.38
DRILL HOLE NO.	DH07-1A	TEST SECTION from - to (m)	35.51
TEST NO	#2	LENGTH OF TEST SECTION (m) along dip (L)	13.87
PACKER TYPE	Single	STATIC GROUNDWATER LEVEL (m) vertical below gr. level (1)*	-4.5
INFLATION PRESSURE (psi)	400	HEIGHT OF GAUGE ABOVE GROUND LEVEL (m) (2)	0.813
CASING DETAILS	21.9 - ODEX	INCLINATION OF HOLE FROM HORIZONTAL (deg)	90
DIAMETER OF HOLE (mm) (D)	96.5	TRUE DEPTH OF DRILL HOLE (m)	49.38
I.D. of DRILLING RODS (mm)	65		

\*IF GROUNDWATER LEVEL UNKNOWN OR BELOW TEST SECTION, USE DEPTH TO CENTRE OF TEST SECTION

INJECTED FLOW RATE (l/min)	INJECTION PRESSURE (m)	FRICTION HEAD LOSS (m)		TOTAL EXCESS HEAD (m) (H)	COMMENTS
		BASIC PACKER (4)	RODS (5)		
	(3)			(1+2+3-4-5)	
0.98	14.1	0	0	10.4	
1.90	28.1	0	0	24.4	
2.70	42.2	0	0	38.5	
3.00	56.2	0	0	52.5	
1.88	42.2	0	0	38.5	
1.00	28.1	0	0	24.4	
0.00	14.1	0	0	10.4	



CALCULATIONS

BULK HYDRAULIC CONDUCTIVITY (K) (m/s) $K = Q \cdot \ln(2L/D) / (2\pi \cdot L \cdot H)$	1.0E-07	LUGEON UNIT (LU) (m <sup>-1</sup> ) $LU = (100/L) \cdot (Q/H)$  1 lugeon unit = 1 litre of water taken per metre of test length, per minute, at 10 bars pressure. 1 lugeon unit = approx 1.3 E- 7 m/second	6.8E-01	DATA POINT 1
	8.4E-08		5.6E-01	DATA POINT 2
	7.6E-08		5.1E-01	DATA POINT 3
	6.2E-08		4.1E-01	DATA POINT 4
	5.3E-08		3.5E-01	DATA POINT 5
	4.4E-08		3.0E-01	DATA POINT 6
	7.0E-08		4.7E-01	AVERAGE
6.3E-08		BEST FIT		

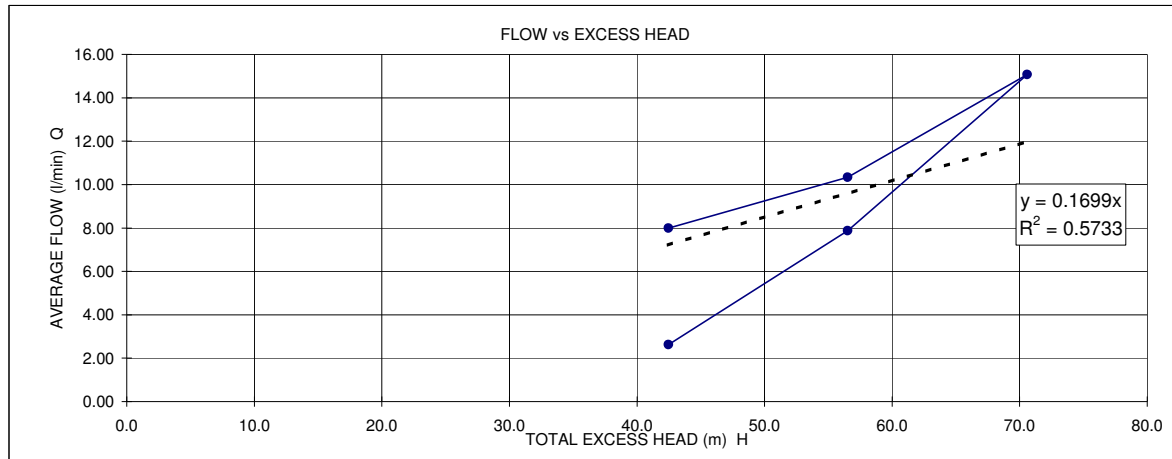


M09382A01

PRESSURE PACKER TEST - CONSTANT HEAD TEST			
DATE OF TEST	Nov 17 2007	DEPTH OF HOLE AT TIME OF TEST (m) along dip	35.10
DRILL HOLE NO.	DH07-2A	TEST SECTION from - to (m)	26.20
TEST NO	#1	LENGTH OF TEST SECTION (m) along dip (L)	8.90
PACKER TYPE	Single	STATIC GROUNDWATER LEVEL (m) vertical below gr. level (1)*	27.7
INFLATION PRESSURE (psi)	375	HEIGHT OF GAUGE ABOVE GROUND LEVEL (m) (2)	0.711
CASING DETAILS	24.7 - HQ ODEX	INCLINATION OF HOLE FROM HORIZONTAL (deg)	90
DIAMETER OF HOLE (mm) (D)	96.5	TRUE DEPTH OF DRILL HOLE (m)	35.10
I.D. of DRILLING RODS (mm)	65		

\*IF GROUNDWATER LEVEL UNKNOWN OR BELOW TEST SECTION, USE DEPTH TO CENTRE OF TEST SECTION

INJECTED FLOW RATE (l/min)	INJECTION PRESSURE (m)	FRICTION HEAD LOSS (m)		TOTAL EXCESS HEAD (m) (H)	COMMENTS
		BASIC PACKER (4)	RODS (5)		
	(3)			(1+2+3-4-5)	
2.63	14.1	0	0	42.5	
7.88	28.1	0	0	56.5	
15.08	42.2	0	0	70.6	
10.33	28.1	0	0	56.5	
8.00	14.1	0	0	42.5	



**CALCULATIONS**

BULK HYDRAULIC CONDUCTIVITY (K) (m/s)  K = $Q \cdot \ln(2L/D) / (2\pi \cdot L \cdot H)$	9.6E-08	LUGEON UNIT (LU) (m <sup>-1</sup> )  LU = $(100/L) \cdot (Q/H)$  1 lugeon unit = 1 litre of water taken per metre of test length, per minute, at 10 bars pressure. 1 lugeon unit = approx 1.3 E- 7 m/second	6.9E-01	DATA POINT 1
	2.2E-07		1.6E+00	DATA POINT 2
	3.3E-07		2.4E+00	DATA POINT 3
	2.8E-07		2.1E+00	DATA POINT 4
	2.9E-07		2.1E+00	DATA POINT 5
	2.4E-07		1.8E+00	AVERAGE
	2.6E-07			BEST FIT

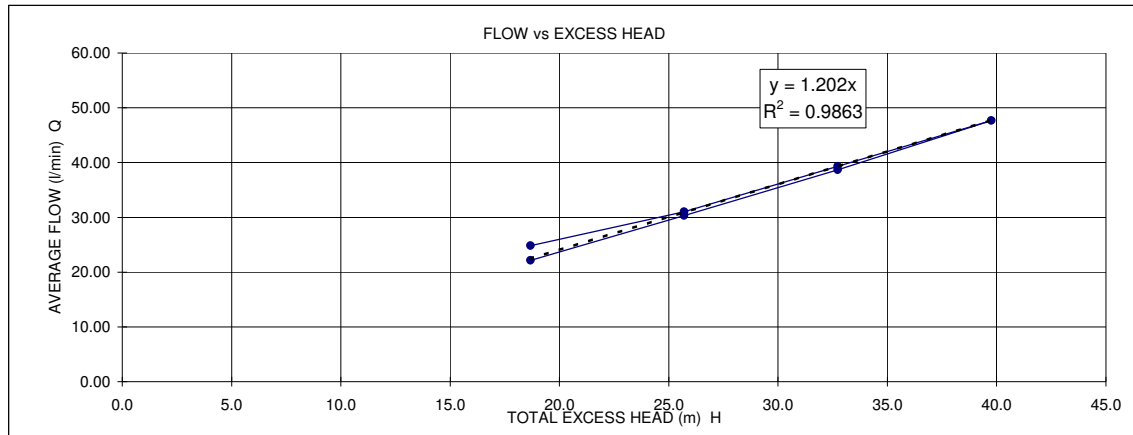


M09382A01

PRESSURE PACKER TEST - CONSTANT HEAD TEST			
DATE OF TEST	Nov 21 2007	DEPTH OF HOLE AT TIME OF TEST (m) along dip	35.51
DRILL HOLE NO.	DH07-3A	TEST SECTION from - to (m)	24.23
TEST NO	#1	LENGTH OF TEST SECTION (m) along dip (L)	11.28
PACKER TYPE	Single	STATIC GROUNDWATER LEVEL (m) vertical below gr. level (1)*	10.73
INFLATION PRESSURE (psi)	375	HEIGHT OF GAUGE ABOVE GROUND LEVEL (m) (2)	0.914
CASING DETAILS	22.9 - ODEX	INCLINATION OF HOLE FROM HORIZONTAL (deg)	90
DIAMETER OF HOLE (mm) (D)	96.5	TRUE DEPTH OF DRILL HOLE (m)	35.51
I.D. of DRILLING RODS (mm)	65		

\*IF GROUNDWATER LEVEL UNKNOWN OR BELOW TEST SECTION, USE DEPTH TO CENTRE OF TEST SECTION

INJECTED FLOW RATE (l/min)	INJECTION PRESSURE (m)	FRICTION HEAD LOSS (m)		TOTAL EXCESS HEAD (m) (H)	COMMENTS
		BASIC PACKER (4)	RODS (5)		
	(3)			(1+2+3-4-5)	
24.83	7.0	0	0	18.7	
31.00	14.1	0	0	25.7	
39.33	21.1	0	0	32.7	
47.67	28.1	0	0	39.8	
38.67	21.1	0	0	32.7	
30.33	14.1	0	0	25.7	
22.13	7.0	0	0	18.7	

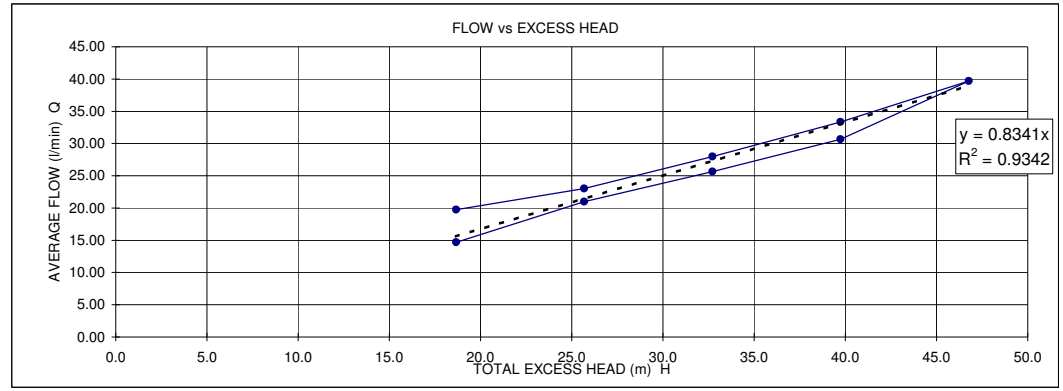


CALCULATIONS				
<b>BULK HYDRAULIC CONDUCTIVITY (K) (m/s)</b> $K = Q \cdot \ln(2L/D) / (2\pi \cdot L \cdot H)$	1.7E-06	<b>LUGEON UNIT (LU) (m<sup>-1</sup>)</b> $LU = (100/L) \cdot (Q/H)$ 1 lugeon unit = 1 litre of water taken per metre of test length, per minute, at 10 bars pressure. 1 lugeon unit = approx 1.3 E- 7 m/second	1.2E+01	DATA POINT 1
	1.5E-06		1.1E+01	DATA POINT 2
	1.5E-06		1.1E+01	DATA POINT 3
	1.5E-06		1.1E+01	DATA POINT 4
	1.5E-06		1.0E+01	DATA POINT 5
	1.5E-06		1.0E+01	DATA POINT 6
	1.5E-06		1.1E+01	DATA POINT 7
	1.6E-06		1.1E+01	AVERAGE
	1.5E-06			BEST FIT
		M09382A01		

PRESSURE PACKER TEST - CONSTANT HEAD TEST			
DATE OF TEST	Nov 21 2007	DEPTH OF HOLE AT TIME OF TEST (m) along dip	41.61
DRILL HOLE NO.	DH07-3A	TEST SECTION from - to (m)	35.51
TEST NO	2	LENGTH OF TEST SECTION (m) along dip (L)	6.10
PACKER TYPE	Single	STATIC GROUNDWATER LEVEL (m) vertical below gr. level (1)*	10.73
INFLATION PRESSURE (psi)	400	HEIGHT OF GAUGE ABOVE GROUND LEVEL (m) (2)	0.9
CASING DETAILS	? - ODEX	INCLINATION OF HOLE FROM HORIZONTAL (deg)	90
DIAMETER OF HOLE (mm) (D)	96.5	TRUE DEPTH OF DRILL HOLE (m)	41.61
I.D. of DRILLING RODS (mm)	65		

\*IF GROUNDWATER LEVEL UNKNOWN OR BELOW TEST SECTION, USE DEPTH TO CENTRE OF TEST SECTION

INJECTED FLOW RATE (l/min)	INJECTION PRESSURE (m)	FRICTION HEAD LOSS (m)		TOTAL EXCESS HEAD (m) (H)	COMMENTS
		BASIC PACKER (4)	RODS (5)		
	(3)			(1+2+3-4-5)	
19.75	7.0	0	0	18.7	
23.00	14.1	0	0	25.7	
28.00	21.1	0	0	32.7	
33.33	28.1	0	0	39.7	
39.67	35.1	0	0	46.8	
30.67	28.1	0	0	39.7	
25.67	21.1	0	0	32.7	
21.00	14.1	0	0	25.7	
14.67	7.0	0	0	18.7	



**CALCULATIONS**

BULK HYDRAULIC CONDUCTIVITY (K) (m/s)	2.2E-06	LUGEON UNIT (LU) (m <sup>-1</sup> )	1.7E+01	DATA POINT 1
	$K = Q \cdot \ln(2L/D) / (2\pi \cdot L \cdot H)$ 1 lugeon unit = 1 litre of water taken per metre of test length, per minute, at 10 bars pressure. 1 lugeon unit = approx 1.3 E- 7 m/second		1.9E-06	$LU = (100/L) \cdot (Q/H)$
1.8E-06		1.4E+01	DATA POINT 3	
1.8E-06		1.4E+01	DATA POINT 4	
1.8E-06		1.4E+01	DATA POINT 5	
1.6E-06		1.3E+01	DATA POINT 6	
1.7E-06		1.3E+01	DATA POINT 7	
1.7E-06		1.3E+01	DATA POINT 8	
1.7E-06		1.3E+01	DATA POINT 9	
1.8E-06		1.4E+01	AVERAGE	
1.8E-06			BEST FIT	



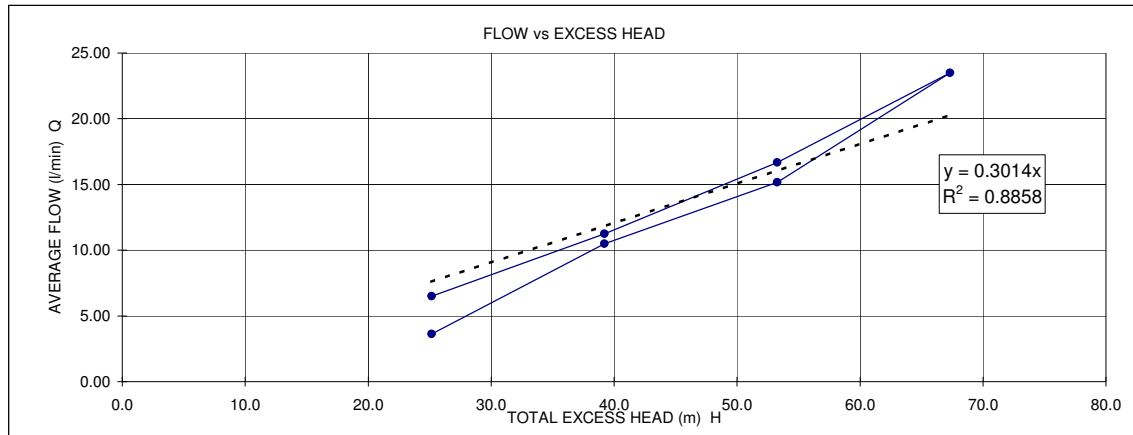
M09382A01



PRESSURE PACKER TEST - CONSTANT HEAD TEST			
DATE OF TEST	Nov 23 2007	DEPTH OF HOLE AT TIME OF TEST (m) along dip	27.89
DRILL HOLE NO.	DH07-4A	TEST SECTION from - to (m)	15.54
TEST NO	#1	LENGTH OF TEST SECTION (m) along dip (L)	12.35
PACKER TYPE	Single	STATIC GROUNDWATER LEVEL (m) vertical below gr. level (1)*	10.34
INFLATION PRESSURE (psi)	350	HEIGHT OF GAUGE ABOVE GROUND LEVEL (m) (2)	0.762
CASING DETAILS	13.6- ODEX	INCLINATION OF HOLE FROM HORIZONTAL (deg)	90
DIAMETER OF HOLE (mm) (D)	96.5	TRUE DEPTH OF DRILL HOLE (m)	27.89
I.D. of DRILLING RODS (mm)	65		

\*IF GROUNDWATER LEVEL UNKNOWN OR BELOW TEST SECTION, USE DEPTH TO CENTRE OF TEST SECTION

INJECTED FLOW RATE (l/min)	INJECTION PRESSURE (m)	FRICTION HEAD LOSS (m)		TOTAL EXCESS HEAD (m) (H)	COMMENTS
		BASIC PACKER (4)	RODS (5)		
	(3)			(1+2+3-4-5)	
3.63	14.1	0	0	25.2	
10.50	28.1	0	0	39.2	
15.17	42.2	0	0	53.3	
23.50	56.2	0	0	67.3	
16.67	42.2	0	0	53.3	
11.25	28.1	0	0	39.2	
6.50	14.1	0	0	25.2	



**CALCULATIONS**

<b>BULK HYDRAULIC CONDUCTIVITY (K) (m/s)</b> $K = Q \cdot \ln(2L/D) / (2\pi \cdot L \cdot H)$	1.7E-07	<b>LUGEON UNIT (LU) (m<sup>-1</sup>)</b> $LU = (100/L) \cdot (Q/H)$ 1 lugeon unit = 1 litre of water taken per metre of test length, per minute, at 10 bars pressure. 1 lugeon unit = approx 1.3 E- 7 m/second	1.2E+00	DATA POINT 1
	3.2E-07		2.2E+00	DATA POINT 2
	3.4E-07		2.3E+00	DATA POINT 3
	4.2E-07		2.8E+00	DATA POINT 4
	3.7E-07		2.5E+00	
	3.4E-07		2.3E+00	
	3.1E-07		2.1E+00	DATA POINT 4
	3.2E-07		2.2E+00	AVERAGE
	3.6E-07			BEST FIT

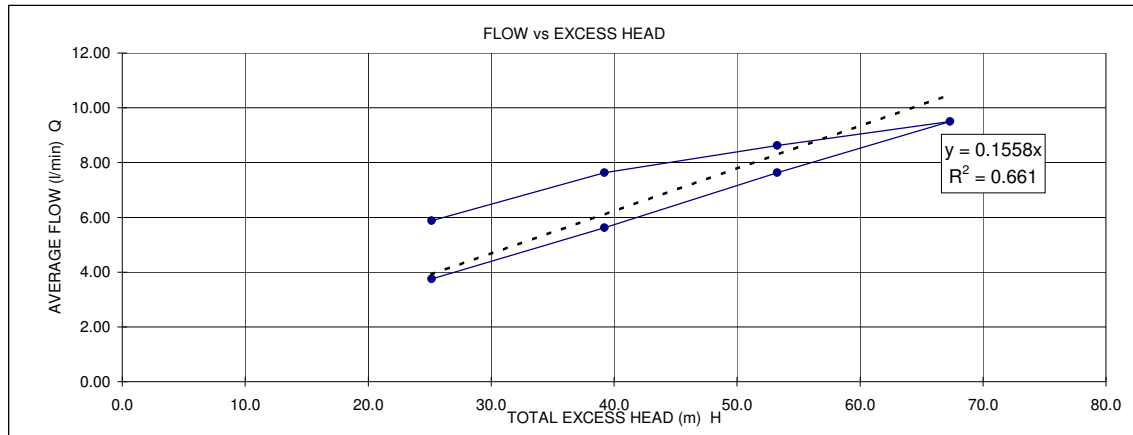


M09382A01

PRESSURE PACKER TEST - CONSTANT HEAD TEST			
DATE OF TEST	Nov 24 2007	DEPTH OF HOLE AT TIME OF TEST (m) along dip	46.18
DRILL HOLE NO.	DH07-4A	TEST SECTION from - to (m)	36.12
TEST NO	#2	LENGTH OF TEST SECTION (m) along dip (L)	10.06
PACKER TYPE	Single	STATIC GROUNDWATER LEVEL (m) vertical below gr. level (1)*	10.34
INFLATION PRESSURE (psi)	400	HEIGHT OF GAUGE ABOVE GROUND LEVEL (m) (2)	0.762
CASING DETAILS	13.6 - ODEX	INCLINATION OF HOLE FROM HORIZONTAL (deg)	90
DIAMETER OF HOLE (mm) (D)	96.5	TRUE DEPTH OF DRILL HOLE (m)	46.18
I.D. of DRILLING RODS (mm)	65		

\*IF GROUNDWATER LEVEL UNKNOWN OR BELOW TEST SECTION, USE DEPTH TO CENTRE OF TEST SECTION

INJECTED FLOW RATE (l/min)	INJECTION PRESSURE (m)	FRICTION HEAD LOSS (m)		TOTAL EXCESS HEAD (m) (H)	COMMENTS
		BASIC PACKER (4)	RODS (5)		
	(3)			(1+2+3-4-5)	
5.88	14.1	0	0	25.2	
7.63	28.1	0	0	39.2	
8.63	42.2	0	0	53.3	
9.50	56.2	0	0	67.3	
7.63	42.2	0	0	53.3	
5.63	28.1	0	0	39.2	
3.75	14.1	0	0	25.2	

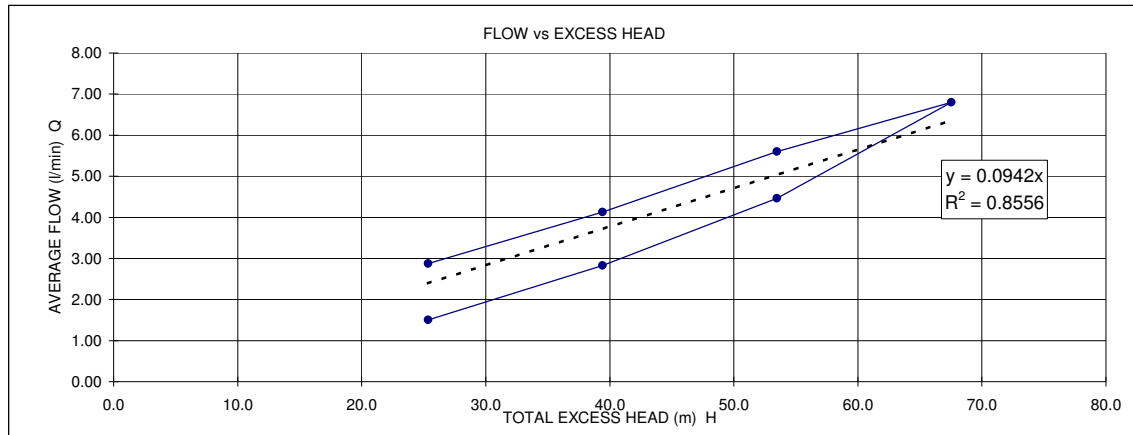


CALCULATIONS				
<b>BULK HYDRAULIC CONDUCTIVITY (K) (m/s)</b> $K = Q \cdot \ln(2L/D) / (2\pi \cdot L \cdot H)$	3.3E-07	<b>LUGEON UNIT (LU) (m<sup>-1</sup>)</b> $LU = (100/L) \cdot (Q/H)$ 1 lugeon unit = 1 litre of water taken per metre of test length, per minute, at 10 bars pressure. 1 lugeon unit = approx 1.3 E- 7 m/second	2.3E+00	DATA POINT 1
	2.7E-07		1.9E+00	DATA POINT 2
	2.3E-07		1.6E+00	DATA POINT 3
	2.0E-07		1.4E+00	DATA POINT 4
	2.0E-07		1.4E+00	DATA POINT 5
	2.0E-07		1.4E+00	DATA POINT 6
	2.1E-07		1.5E+00	DATA POINT 7
	2.3E-07		1.7E+00	AVERAGE
	2.2E-07			BEST FIT
		M09382A01		

PRESSURE PACKER TEST - CONSTANT HEAD TEST			
DATE OF TEST	?	DEPTH OF HOLE AT TIME OF TEST (m) along dip	36.12
DRILL HOLE NO.	DH07-4A	TEST SECTION from - to (m)	27.89
TEST NO	#3	LENGTH OF TEST SECTION (m) along dip (L)	8.23
PACKER TYPE	Double	STATIC GROUNDWATER LEVEL (m) vertical below gr. level (1)*	10.34
INFLATION PRESSURE (psi)	375	HEIGHT OF GAUGE ABOVE GROUND LEVEL (m) (2)	0.965
CASING DETAILS	- ODEX	INCLINATION OF HOLE FROM HORIZONTAL (deg)	90
DIAMETER OF HOLE (mm) (D)	96.5	TRUE DEPTH OF DRILL HOLE (m)	36.12
I.D. of DRILLING RODS (mm)	65		

\*IF GROUNDWATER LEVEL UNKNOWN OR BELOW TEST SECTION, USE DEPTH TO CENTRE OF TEST SECTION

INJECTED FLOW RATE (l/min)	INJECTION PRESSURE (m)	FRICTION HEAD LOSS (m)		TOTAL EXCESS HEAD (m) (H)	COMMENTS
		BASIC PACKER (4)	RODS (5)		
	(3)			(1+2+3-4-5)	
2.88	14.1	0	0	25.4	
4.13	28.1	0	0	39.4	
5.60	42.2	0	0	53.5	
6.80	56.2	0	0	67.5	
4.47	42.2	0	0	53.5	
2.83	28.1	0	0	39.4	
1.50	14.1	0	0	25.4	

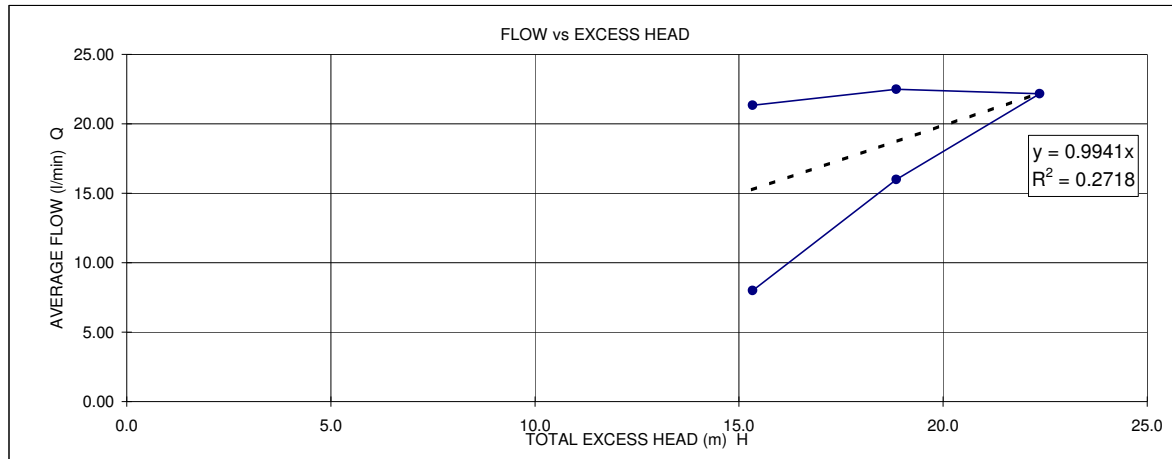


CALCULATIONS				
<b>BULK HYDRAULIC CONDUCTIVITY (K) (m/s)</b> $K = Q \cdot \ln(2L/D) / (2\pi \cdot L \cdot H)$	1.9E-07	<b>LUGEON UNIT (LU) (m<sup>-1</sup>)</b> $LU = (100/L) \cdot (Q/H)$ 1 lugeon unit = 1 litre of water taken per metre of test length, per minute, at 10 bars pressure. 1 lugeon unit = approx 1.3 E- 7 m/second	1.4E+00	DATA POINT 1
	1.7E-07		1.3E+00	DATA POINT 2
	1.7E-07		1.3E+00	DATA POINT 3
	1.7E-07		1.2E+00	DATA POINT 4
	1.4E-07		1.0E+00	DATA POINT 5
	1.2E-07		8.7E-01	DATA POINT 6
	9.8E-08		7.2E-01	DATA POINT 7
	1.5E-07		1.1E+00	AVERAGE
	1.6E-07			BEST FIT
		M09382A01		

PRESSURE PACKER TEST - CONSTANT HEAD TEST			
DATE OF TEST	Dec 1 2007	DEPTH OF HOLE AT TIME OF TEST (m) along dip	42.98
DRILL HOLE NO.	DH07-5B	TEST SECTION from - to (m)	26.37
TEST NO	#1	LENGTH OF TEST SECTION (m) along dip (L)	16.61
PACKER TYPE	Single	STATIC GROUNDWATER LEVEL (m) vertical below gr. level (1)*	10.45
INFLATION PRESSURE (psi)	375	HEIGHT OF GAUGE ABOVE GROUND LEVEL (m) (2)	1.372
CASING DETAILS	24.4 - ODEX	INCLINATION OF HOLE FROM HORIZONTAL (deg)	90
DIAMETER OF HOLE (mm) (D)	96.5	TRUE DEPTH OF DRILL HOLE (m)	42.98
I.D. of DRILLING RODS (mm)	65		

\*IF GROUNDWATER LEVEL UNKNOWN OR BELOW TEST SECTION, USE DEPTH TO CENTRE OF TEST SECTION

INJECTED FLOW RATE (l/min)	INJECTION PRESSURE (m)	FRICTION HEAD LOSS (m)		TOTAL EXCESS HEAD (m) (H)	COMMENTS
		BASIC PACKER (4)	RODS (5)		
	(3)			(1+2+3-4-5)	
21.33	3.5	0	0	15.3	
22.50	7.0	0	0	18.9	
22.17	10.5	0	0	22.4	
16.00	7.0	0	0	18.9	
8.00	3.5	0	0	15.3	



**CALCULATIONS**

<b>BULK HYDRAULIC CONDUCTIVITY (K) (m/s)</b>  $K = Q \cdot \ln(2L/D) / (2\pi \cdot L \cdot H)$	1.3E-06	<b>LUGEON UNIT (LU) (m<sup>-1</sup>)</b>  $LU = (100/L) \cdot (Q/H)$  1 lugeon unit = 1 litre of water taken per metre of test length, per minute, at 10 bars pressure. 1 lugeon unit = approx 1.3 E- 7 m <sup>3</sup> /second	8.4E+00	DATA POINT 1
	1.1E-06		7.2E+00	DATA POINT 2
	9.2E-07		6.0E+00	DATA POINT 3
	7.9E-07		5.1E+00	DATA POINT 4
	4.9E-07		3.1E+00	DATA POINT 5
	9.2E-07		6.0E+00	AVERAGE
	9.3E-07			BEST FIT

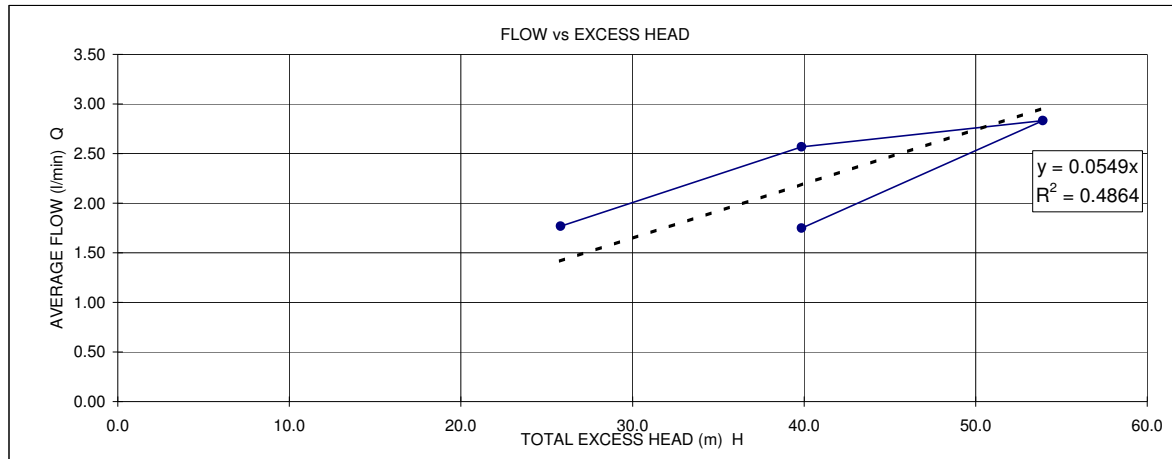


M09382A01

PRESSURE PACKER TEST - CONSTANT HEAD TEST			
DATE OF TEST	Dec 1 2007	DEPTH OF HOLE AT TIME OF TEST (m) along dip	58.22
DRILL HOLE NO.	DH07-5B	TEST SECTION from - to (m)	45.26
TEST NO	#2	LENGTH OF TEST SECTION (m) along dip (L)	12.96
PACKER TYPE	Single	STATIC GROUNDWATER LEVEL (m) vertical below gr. level (1)*	10.45
INFLATION PRESSURE (psi)	400	HEIGHT OF GAUGE ABOVE GROUND LEVEL (m) (2)	1.3
CASING DETAILS	24.4 - ODEX	INCLINATION OF HOLE FROM HORIZONTAL (deg)	90
DIAMETER OF HOLE (mm) (D)	96.5	TRUE DEPTH OF DRILL HOLE (m)	58.22
I.D. of DRILLING RODS (mm)	65		

\*IF GROUNDWATER LEVEL UNKNOWN OR BELOW TEST SECTION, USE DEPTH TO CENTRE OF TEST SECTION

INJECTED FLOW RATE (l/min)	INJECTION PRESSURE (m)	FRICTION HEAD LOSS (m)		TOTAL EXCESS HEAD (m) (H)	COMMENTS
		BASIC PACKER (4)	RODS (5)		
	(3)			(1+2+3-4-5)	
1.77	14.1	0		25.8	
2.57	28.1	0		39.9	
2.83	42.2	0		53.9	
1.75	28.1	0		39.9	



CALCULATIONS

BULK HYDRAULIC CONDUCTIVITY (K) (m/s)  K = $Q \cdot \ln(2L/D) / (2\pi \cdot L \cdot H)$	7.8E-08	LUGEON UNIT (LU) (m <sup>-1</sup> )  LU = $(100/L) \cdot (Q/H)$  1 lugeon unit = 1 litre of water taken per metre of test length, per minute, at 10 bars pressure. 1 lugeon unit = approx 1.3 E- 7 m/second	5.3E-01	DATA POINT 1
	7.4E-08		5.0E-01	DATA POINT 2
	6.0E-08		4.1E-01	DATA POINT 3
	5.0E-08		3.4E-01	DATA POINT 4
	6.6E-08		4.4E-01	AVERAGE
	6.3E-08			BEST FIT



M09382A01

## Slug Test Analysis Report

Project: Morrison Copper Gold

Number: M09382A01

Client: Pacific Booker Minerals Inc.

Location: Morrison Lake, BC

Slug Test: Falling Head DH07-01A 1

Test Well: DH07-01A open hole

Test Conducted by: CK

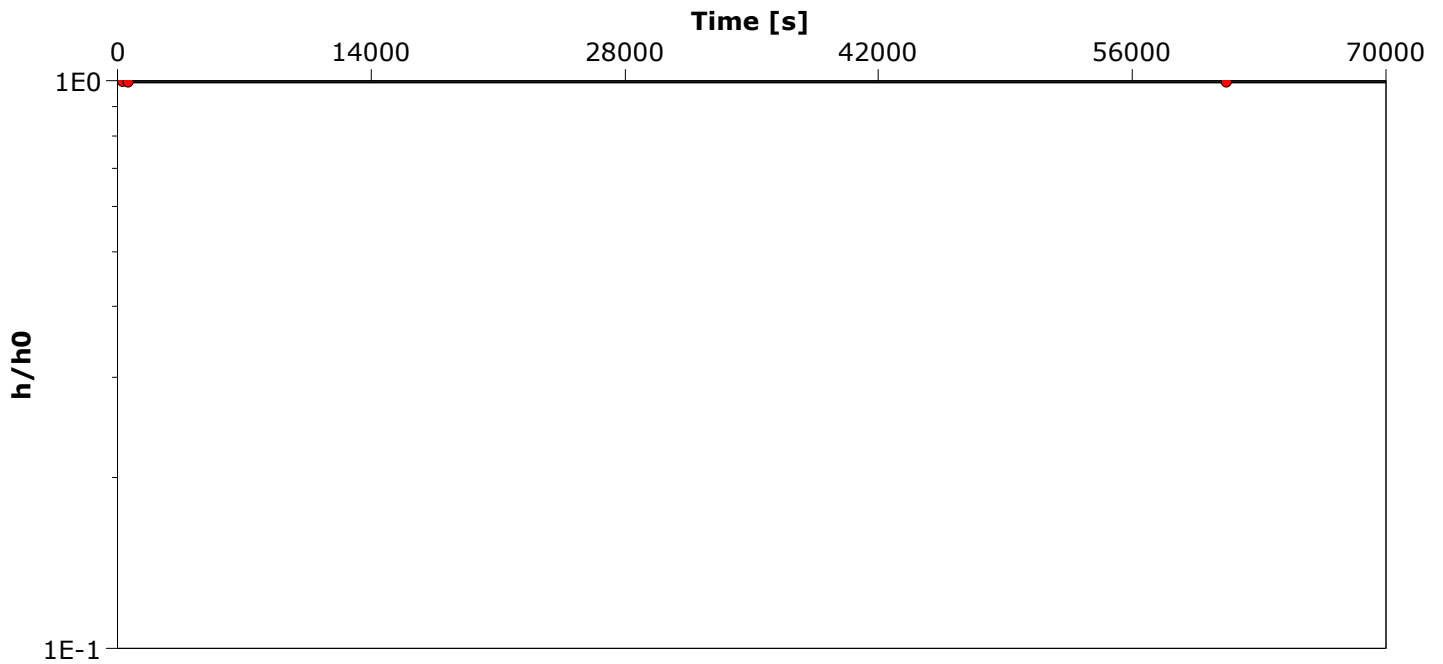
Test Date: 11/15/2007

Analysis Performed by: JEM

New analysis 1

Analysis Date: 1/21/2008

Aquifer Thickness: 20.40 m



Calculation after Bouwer & Rice

Observation Well	Hydraulic Conductivity [m/s]
DH07-01A open hole	$4.66 \times 10^{-11}$

Project: Morrison Copper Gold

Number: M09382A01

Client: Pacific Booker Minerals Inc.

Location: Morrison Lake, BC

Slug Test: Falling Head DH07-01A 1

Test Well: DH07-01A open hole

Test Conducted by: CK

Test Date: 11/15/2007

Water level at t=0 [m]: 0.30

Static Water Level [m]: 0.00

Water level change at t=0 [m]: 0.30

	Time [s]	Water Level [m]	WL Change [m]
1	300	0.299	0.299
2	600	0.298	0.298
3	61200	0.298	0.298

## Slug Test Analysis Report

Project: Morrison Copper Gold

Number: M09382A01

Client: Pacific Booker Minerals Inc.

Location: Morrison Lake, BC

Slug Test: Falling Head DH07-02B 1

Test Well: DH07-02B piezo

Test Conducted by: CK

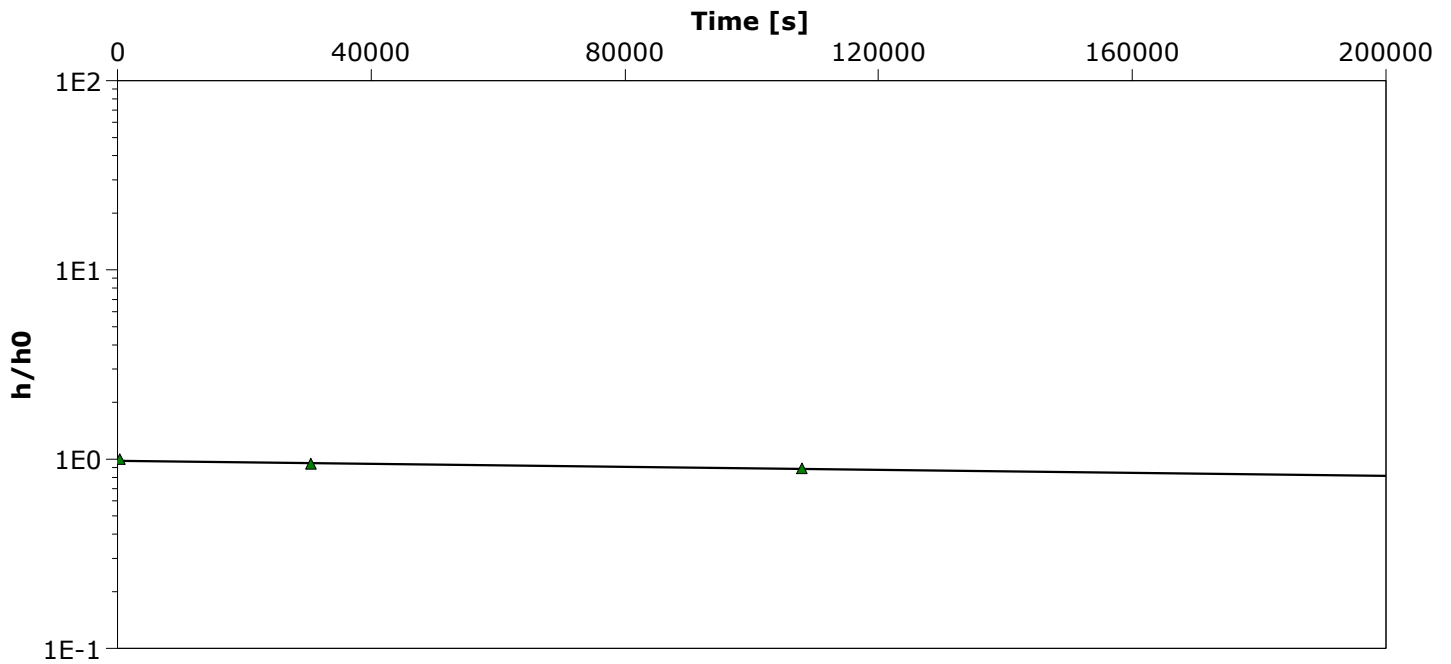
Test Date: 11/18/2007

Analysis Performed by: JEM

New analysis 1

Analysis Date: 1/21/2008

Aquifer Thickness: 23.90 m



Calculation after Bouwer & Rice

Observation Well	Hydraulic Conductivity [m/s]
DH07-02B piezo	$1.37 \times 10^{-10}$



Project: Morrison Copper Gold

Number: M09382A01

Client: Pacific Booker Minerals Inc.

Location: Morrison Lake, BC

Slug Test: Falling Head DH07-02B 1

Test Well: DH07-02B piezo

Test Conducted by: CK

Test Date: 11/18/2007

Water level at t=0 [m]: -0.33

Static Water Level [m]: 11.00

Water level change at t=0 [m]: 11.33

	Time [s]	Water Level [m]	WL Change [m]
1	360	-0.28	-11.28
2	30540	0.32	-10.68
3	107880	0.87	-10.13
4	788449	2.57	-8.43

## Slug Test Analysis Report

Project: Morrison Copper Gold

Number: M09382A01

Client: Pacific Booker Minerals Inc.

Location: Morrison Lake, BC

Slug Test: Falling Head DH07-03A 2

Test Well: DH07-03A open hole

Test Conducted by: CK

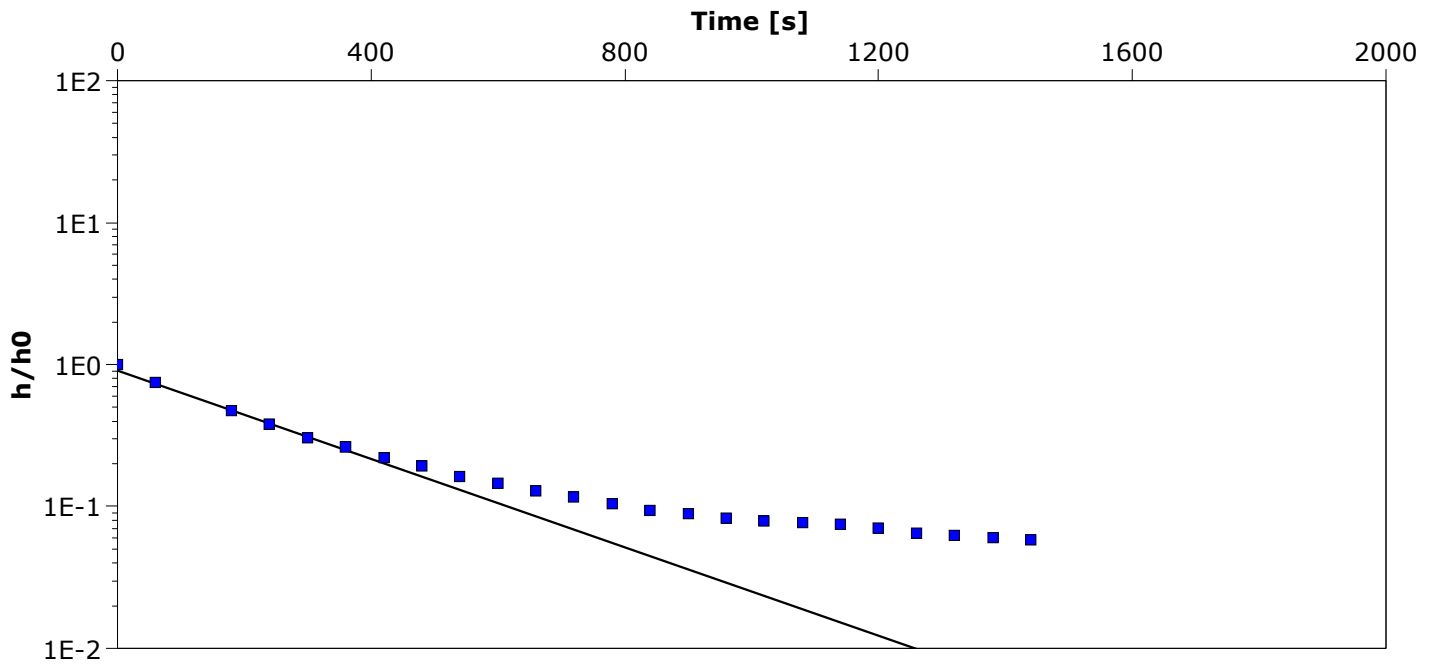
Test Date: 11/21/2007

Analysis Performed by: JEM

New analysis 1

Analysis Date: 1/21/2008

Aquifer Thickness: 50.00 m



Calculation after Bouwer & Rice

Observation Well	Hydraulic Conductivity [m/s]
DH07-03A open hole	$2.21 \times 10^{-6}$

Project: Morrison Copper Gold

Number: M09382A01

Client: Pacific Booker Minerals Inc.

Location: Morrison Lake, BC

Slug Test: Falling Head DH07-03A 2

Test Well: DH07-03A open hole

Test Conducted by: CK

Test Date: 11/21/2007

Water level at t=0 [m]: -1.24

Static Water Level [m]: 10.70

Water level change at t=0 [m]: 11.94

	Time [s]	Water Level [m]	WL Change [m]
1	0	-1.24	11.94
2	60	1.76	8.94
3	180	5.06	5.64
4	240	6.16	4.54
5	300	7.06	3.64
6	360	7.56	3.14
7	420	8.06	2.64
8	480	8.41	2.29
9	540	8.76	1.94
10	600	8.96	1.74
11	660	9.16	1.54
12	720	9.31	1.39
13	780	9.46	1.24
14	840	9.58	1.12
15	900	9.64	1.06
16	960	9.71	0.99
17	1020	9.76	0.94
18	1080	9.78	0.92
19	1140	9.81	0.89
20	1200	9.86	0.84
21	1260	9.93	0.77
22	1320	9.96	0.74
23	1380	9.98	0.72
24	1440	10.01	0.69

## Slug Test Analysis Report

Project: Morrison Copper Gold

Number: M09382A01

Client: Pacific Booker Minerals Inc.

Location: Morrison Lake, BC

Slug Test: Falling Head DH07-03B 1

Test Well: DH07-03B piezo

Test Conducted by: CK

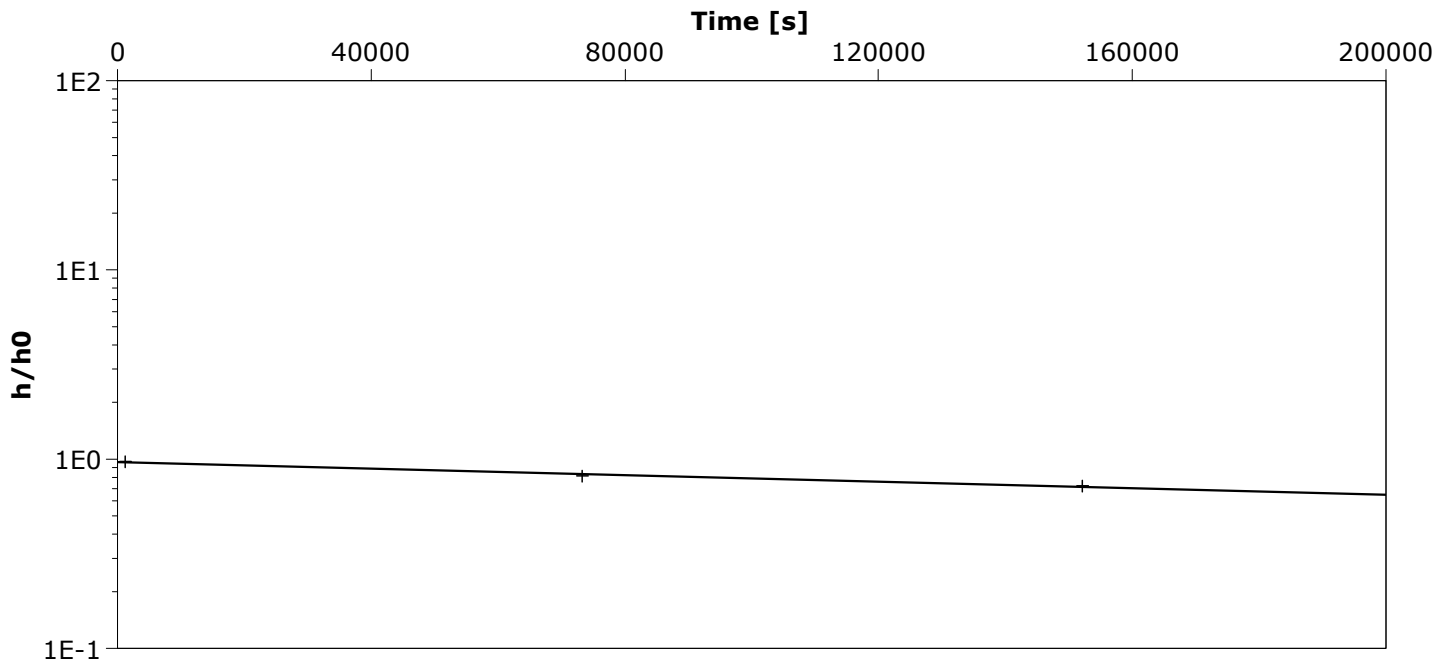
Test Date: 11/22/2007

Analysis Performed by: JEM

New analysis 1

Analysis Date: 1/21/2008

Aquifer Thickness: 21.90 m



Calculation after Bouwer & Rice

Observation Well	Hydraulic Conductivity [m/s]
DH07-03B piezo	$3.07 \times 10^{-10}$

Project: Morrison Copper Gold

Number: M09382A01

Client: Pacific Booker Minerals Inc.

Location: Morrison Lake, BC

Slug Test: Falling Head DH07-03B 1

Test Well: DH07-03B piezo

Test Conducted by: CK

Test Date: 11/22/2007

Water level at t=0 [m]: -0.84

Static Water Level [m]: 10.70

Water level change at t=0 [m]: 11.54

	Time [s]	Water Level [m]	WL Change [m]
1	1200	-0.56	11.26
2	73200	1.26	9.44
3	152100	2.36	8.34

## Slug Test Analysis Report

Project: Morrison Copper Gold

Number: M09382A01

Client: Pacific Booker Minerals Inc.

Location: Morrison Lake, BC

Slug Test: Falling Head DH07-05B 1

Test Well: DH07-05B open hole

Test Conducted by: CK

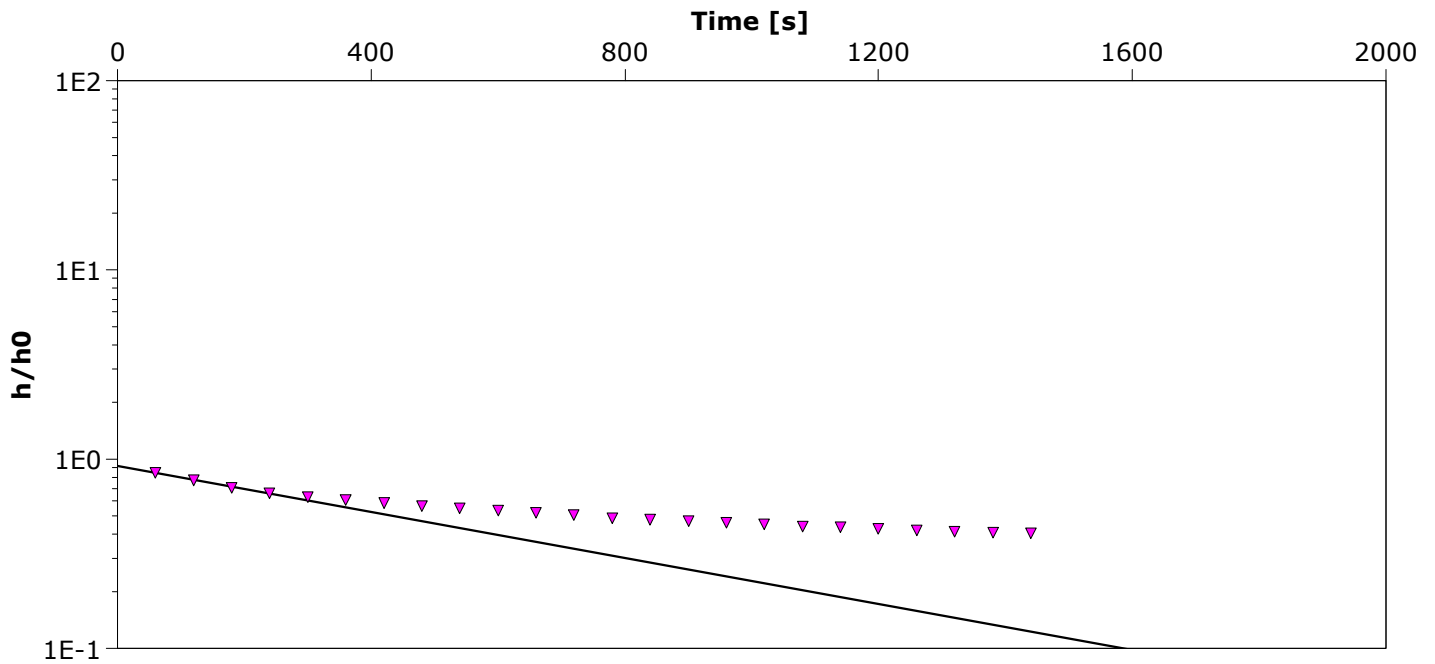
Test Date: 11/20/2007

Analysis Performed by: JEM

New analysis 1

Analysis Date: 1/21/2008

Aquifer Thickness: 50.00 m



Calculation after Bouwer & Rice

Observation Well	Hydraulic Conductivity [m/s]
DH07-05B open hole	$6.18 \times 10^{-7}$

Project: Morrison Copper Gold

Number: M09382A01

Client: Pacific Booker Minerals Inc.

Location: Morrison Lake, BC	Slug Test: Falling Head DH07-05B 1	Test Well: DH07-05B open hole
Test Conducted by: CK	Test Date: 11/20/2007	
Water level at t=0 [m]: -0.75	Static Water Level [m]: 10.50	Water level change at t=0 [m]: 11.25

	Time [s]	Water Level [m]	WL Change [m]
1	60	0.97	-9.53
2	120	1.77	-8.73
3	180	2.56	-7.94
4	240	3.05	-7.45
5	300	3.40	-7.10
6	360	3.67	-6.83
7	420	3.93	-6.57
8	480	4.13	-6.37
9	540	4.30	-6.20
10	600	4.46	-6.04
11	660	4.63	-5.87
12	720	4.82	-5.68
13	780	5.00	-5.50
14	840	5.14	-5.36
15	900	5.19	-5.31
16	960	5.31	-5.19
17	1020	5.42	-5.08
18	1080	5.53	-4.97
19	1140	5.61	-4.89
20	1200	5.70	-4.80
21	1260	5.77	-4.73
22	1320	5.84	-4.66
23	1380	5.90	-4.60
24	1440	5.95	-4.55

## **APPENDIX V**

# **KCBL Laboratory Testing Results**




## WATER CONTENT OF SOIL (ASTM D2216)

Hole No.	DH07-1A	DH07-1A	DH07-1A	DH07-1A	DH07-1A	DH07-1A	DH07-1A
Depth (ft)	4	9	14	19	24	29	34
Sample No.	SPT 1	SPT 2	SPT 3	SPT 4	SPT 5	SPT 6	SPT 7
Wet Weight + Tare (g)	336.12	302.01	328.14	268.93	321.35	379.79	421.96
Dry Weight + Tare (g)	309.14	279.15	305.12	250.66	298.41	346.61	386.66
Tare (g)	75.43	94.78	107.36	112.14	109.22	104.73	117.48
Water Weight (g)	26.98	22.86	23.02	18.27	22.94	33.18	35.30
Total Dry Weight (g)	233.71	184.37	197.76	138.52	189.19	241.88	269.18
Water Content (%)	11.5%	12.4%	11.6%	13.2%	12.1%	13.7%	13.1%

Hole No.	DH07-1A	DH07-1A	DH07-1A	DH07-1A	DH07-1A	DH07-1A	
Depth (ft)	39	44	49	54	59	64	
Sample No.	SPT 8	SPT 9	SPT 10	SPT 11	SPT 12	SPT 13	
Wet Weight + Tare (g)	382.58	455.48	387.98	431.50	381.48	307.28	
Dry Weight + Tare (g)	350.52	414.27	353.54	389.89	349.99	268.40	
Tare (g)	112.90	111.31	105.42	113.61	113.40	117.32	
Water Weight (g)	32.06	41.21	34.44	41.61	31.49	38.88	
Total Dry Weight (g)	237.62	302.96	248.12	276.28	236.59	151.08	
Water Content (%)	13.5%	13.6%	13.9%	15.1%	13.3%	25.7%	

Hole No.	DH07-2A	DH07-2A	DH07-2A	DH07-2A	DH07-2A	DH07-2A	DH07-2A
Depth (ft)	4	9	14	19	24	29	34
Sample No.	SPT 1	SPT 2	SPT 3	SPT 4	SPT 5	SPT 6	SPT 7
Wet Weight + Tare (g)	569.16	363.01	334.53	361.54	437.29	441.36	391.72
Dry Weight + Tare (g)	527.28	335.32	308.98	329.76	397.06	404.43	359.79
Tare (g)	107.10	113.75	109.23	97.68	107.10	99.75	102.55
Water Weight (g)	41.88	27.69	25.55	31.78	40.23	36.93	31.93
Total Dry Weight (g)	420.18	221.57	199.75	232.08	289.96	304.68	257.24
Water Content (%)	10.0%	12.5%	12.8%	13.7%	13.9%	12.1%	12.4%

Hole No.	DH07-2	DH07-2	DH07-2	DH07-2	DH07-2	DH07-2	
Depth (ft)	39	44	49	54	59	69	
Sample No.	SPT 8	SPT 9	SPT 10	SPT 11	SPT 12	SPT 13	
Wet Weight + Tare (g)	409.11	345.28	390.54	436.62	343.16	321.40	
Dry Weight + Tare (g)	374.86	320.72	357.14	391.00	314.87	296.40	
Tare (g)	115.27	107.62	106.00	74.48	80.25	76.32	
Water Weight (g)	34.25	24.56	33.40	45.62	28.29	25.00	
Total Dry Weight (g)	259.59	213.10	251.14	316.52	234.62	220.08	
Water Content (%)	13.2%	11.5%	13.3%	14.4%	12.1%	11.4%	

 <b>Klohn Crippen Berger</b>	JOB NO.:	M09382A01
	PROJECT:	Morrison Copper Gold
	LOCATION:	Smither, BC
	DATE:	Feb 11, 2008
	TESTED BY:	WD


## WATER CONTENT OF SOIL (ASTM D2216)

Hole No.	DH07-3A	DH07-3A	DH07-3A	DH07-3A	DH07-3A	DH07-3A	DH07-3A
Depth (ft)	4	9	14	19	24	29	34
Sample No.	SPT 1	SPT 2	SPT 3	SPT 4	SPT 5	SPT 6	SPT 7
Wet Weight + Tare (g)	478.37	408.14	266.16	307.31	394.58	376.70	498.56
Dry Weight + Tare (g)	435.44	372.41	250.16	286.04	367.13	340.79	457.69
Tare (g)	112.90	115.15	112.14	99.72	108.08	104.73	117.48
Water Weight (g)	42.93	35.73	16.00	21.27	27.45	35.91	40.87
Total Dry Weight (g)	322.54	257.26	138.02	186.32	259.05	236.06	340.21
Water Content (%)	13.3%	13.9%	11.6%	11.4%	10.6%	15.2%	12.0%

Hole No.	DH07-3A	DH07-3A	DH07-3A	DH07-3A	DH07-3A		
Depth (ft)	39	44	49	59	69		
Sample No.	SPT 8	SPT 9	SPT 10	SPT 11	SPT 12		
Wet Weight + Tare (g)	428.56	473.24	272.49	402.13	468.83		
Dry Weight + Tare (g)	396.87	438.67	255.58	356.66	421.16		
Tare (g)	94.78	111.31	107.36	113.40	113.61		
Water Weight (g)	31.69	34.57	16.91	45.47	47.67		
Total Dry Weight (g)	302.09	327.36	148.22	243.26	307.55		
Water Content (%)	10.5%	10.6%	11.4%	18.7%	15.5%		

Hole No.	DH07-4A	DH07-4A	DH07-4A	DH07-4A	DH07-4A	DH07-4A	DH07-4A
Depth (ft)	4	9	15	19	24	29	34
Sample No.	SPT 1	SPT 2	SPT 3	SPT 4	SPT 5	SPT 6	SPT 7
Wet Weight + Tare (g)	357.85	497.69	348.18	288.57	493.49	405.42	535.91
Dry Weight + Tare (g)	328.28	449.40	319.82	269.95	448.76	372.41	485.29
Tare (g)	109.22	115.84	112.44	108.41	102.72	118.18	103.89
Water Weight (g)	29.57	48.29	28.36	18.62	44.73	33.01	50.62
Total Dry Weight (g)	219.06	333.56	207.38	161.54	346.04	254.23	381.40
Water Content (%)	13.5%	14.5%	13.7%	11.5%	12.9%	13.0%	13.3%

Hole No.	DH07-4A						
Depth (ft)	39						
Sample No.	SPT 8						
Wet Weight + Tare (g)	356.62						
Dry Weight + Tare (g)	328.97						
Tare (g)	113.50						
Water Weight (g)	27.65						
Total Dry Weight (g)	215.47						
Water Content (%)	12.8%						

 <b>Klohn Crippen Berger</b>	JOB NO.:	M09382A01
	PROJECT:	Morrison Copper Gold
	LOCATION:	Smither, BC
	DATE:	Feb 11, 2008
	TESTED BY:	WD


## WATER CONTENT OF SOIL (ASTM D2216)

Hole No.	DH07-5A	DH07-5A	DH07-5A	DH07-5A	DH07-5A	DH07-5A	DH07-5A
Depth (ft)	4	9	14	19	24	29	34
Sample No.	SPT 1	SPT 2	SPT 3	SPT 4	SPT 5	SPT 6	SPT 7
Wet Weight + Tare (g)	372.82	416.37	382.19	349.60	498.19	504.76	414.37
Dry Weight + Tare (g)	341.42	378.99	350.62	329.42	466.66	477.96	389.21
Tare (g)	129.25	109.60	107.25	112.90	115.15	113.95	117.48
Water Weight (g)	31.4	37.4	31.6	20.2	31.5	26.8	25.2
Total Dry Weight (g)	212.2	269.4	243.4	216.5	351.5	364.0	271.7
Water Content (%)	14.8%	13.9%	13.0%	9.3%	9.0%	7.4%	9.3%

Hole No.	DH07-5A	DH07-5A	DH07-5A	DH07-5A	DH07-5A		
Depth (ft)	39	44	49	54	59		
Sample No.	SPT 8	SPT 9	SPT 10	SPT 11	SPT 12		
Wet Weight + Tare (g)	550.46	538.37	463.43	300.19	473.81		
Dry Weight + Tare (g)	518.57	507.28	426.78	281.08	425.94		
Tare (g)	113.40	113.61	94.78	104.26	116.78		
Water Weight (g)	31.9	31.1	36.7	19.1	47.9		
Total Dry Weight (g)	405.2	393.7	332.0	176.8	309.2		
Water Content (%)	7.9%	7.9%	11.0%	10.8%	15.5%		

Hole No.	DH07-6	DH07-6	DH07-6	DH07-6	DH07-6	DH07-6	DH07-6
Depth (ft)	4	9	14	19	24	29	34
Sample No.	SPT 1	SPT 2	SPT 3	SPT 4	SPT 5	SPT 6	SPT 7
Wet Weight + Tare (g)	427.55	348.81	280.09	307.61	374.24	334.20	329.57
Dry Weight + Tare (g)	320.02	315.71	264.91	291.46	349.24	315.05	313.06
Tare (g)	107.10	109.23	109.80	111.47	76.32	80.25	117.38
Water Weight (g)	107.5	33.1	15.2	16.2	25.0	19.2	16.5
Total Dry Weight (g)	212.9	206.5	155.1	180.0	272.9	234.8	195.7
Water Content (%)	50.5%	16.0%	9.8%	9.0%	9.2%	8.2%	8.4%

Hole No.	DH07-6	DH07-6	DH07-6	DH07-6			
Depth (ft)	39	49	59	74			
Sample No.	SPT 8	SPT 9	SPT 10	SPT 11			
Wet Weight + Tare (g)	383.73	389.98	406.64	398.51			
Dry Weight + Tare (g)	358.79	361.38	376.62	367.04			
Tare (g)	109.60	97.68	102.55	99.75			
Water Weight (g)	24.9	28.6	30.0	31.5			
Total Dry Weight (g)	249.2	263.7	274.1	267.3			
Water Content (%)	10.0%	10.8%	11.0%	11.8%			

 <b>Klohn Crippen Berger</b>	JOB NO.:	M09382A01
	PROJECT:	Morrison Copper Gold
	LOCATION:	Smither, BC
	DATE:	Feb 11, 2008
	TESTED BY:	WD


## WATER CONTENT OF SOIL (ASTM D2216)

Hole No.	DH07-7	DH07-7	DH07-7	DH07-7	DH07-7	DH07-7	DH07-7
Depth (ft)	4	9	14	19	24	29	34
Sample No.	SPT 1	SPT 2	SPT 3	SPT 4	SPT 5	SPT 6	SPT 7
Wet Weight + Tare (g)	403.25	347.60	536.40	432.45	417.24	353.67	405.06
Dry Weight + Tare (g)	351.95	322.65	481.45	396.89	380.38	325.63	375.63
Tare (g)	106.00	115.27	109.30	107.62	116.78	113.95	107.10
Water Weight (g)	51.3	25.0	55.0	35.6	36.9	28.0	29.4
Total Dry Weight (g)	246.0	207.4	372.2	289.3	263.6	211.7	268.5
Water Content (%)	20.9%	12.0%	14.8%	12.3%	14.0%	13.2%	11.0%

Hole No.	DH07-7	DH07-7	DH07-7				
Depth (ft)	44	54	64				
Sample No.	SPT 8	SPT 9	SPT 10				
Wet Weight + Tare (g)	333.50	398.77	438.44				
Dry Weight + Tare (g)	308.83	367.10	406.28				
Tare (g)	113.75	107.25	104.26				
Water Weight (g)	24.7	31.7	32.2				
Total Dry Weight (g)	195.1	259.9	302.0				
Water Content (%)	12.6%	12.2%	10.6%				

Hole No.	DH07-8	DH07-8	DH07-8	DH07-8	DH07-9	DH07-9	DH07-9
Depth (ft)	4	9	14	19	4	9	14
Sample No.	SPT 1	SPT 2	SPT 3	SPT 4	SPT 1	SPT 2	SPT 3
Wet Weight + Tare (g)	458.77	451.31	546.94	354.10	244.96	310.07	423.75
Dry Weight + Tare (g)	422.33	436.22	504.60	345.46	221.88	287.85	389.98
Tare (g)	109.60	129.25	94.78	117.48	113.50	108.41	118.18
Water Weight (g)	36.4	15.1	42.3	8.6	23.1	22.2	33.8
Total Dry Weight (g)	312.7	307.0	409.8	228.0	108.4	179.4	271.8
Water Content (%)	11.7%	4.9%	10.3%	3.8%	21.3%	12.4%	12.4%

Hole No.	DH07-9	DH07-9	DH07-9	DH07-9	DH07-9	DH07-9	DH07-9
Depth (ft)	19	24	29	34	44	54	64
Sample No.	SPT 4	SPT 5	SPT 6	SPT 7	SPT 8	SPT 9	SPT 10
Wet Weight + Tare (g)	386.95	385.53	374.97	300.22	425.35	330.52	569.83
Dry Weight + Tare (g)	358.83	358.35	348.66	279.54	392.38	305.56	520.55
Tare (g)	113.61	112.90	107.25	112.44	104.26	99.72	117.59
Water Weight (g)	28.1	27.2	26.3	20.7	33.0	25.0	49.3
Total Dry Weight (g)	245.2	245.5	241.4	167.1	288.1	205.8	403.0
Water Content (%)	11.5%	11.1%	10.9%	12.4%	11.4%	12.1%	12.2%

 <b>Klohn Crippen Berger</b>	JOB NO.:	M09382A01
	PROJECT:	Morrison Copper Gold
	LOCATION:	Smither, BC
	DATE:	Feb 11, 2008
	TESTED BY:	WD


## WATER CONTENT OF SOIL (ASTM D2216)

Hole No.	DH07-10	DH07-10	DH07-10	DH07-10	DH07-10		
Depth (ft)	4	9	14	19	24		
Sample No.	SPT 1	SPT 2	SPT 3	SPT 4	SPT 5		
Wet Weight + Tare (g)	472.48	371.57	763.52	521.59	459.71		
Dry Weight + Tare (g)	435.03	346.63	704.70	478.21	434.73		
Tare (g)	116.70	109.80	113.95	115.15	109.22		
Water Weight (g)	37.5	24.9	58.8	43.4	25.0		
Total Dry Weight (g)	318.3	236.8	590.8	363.1	325.5		
Water Content (%)	11.8%	10.5%	10.0%	11.9%	7.7%		

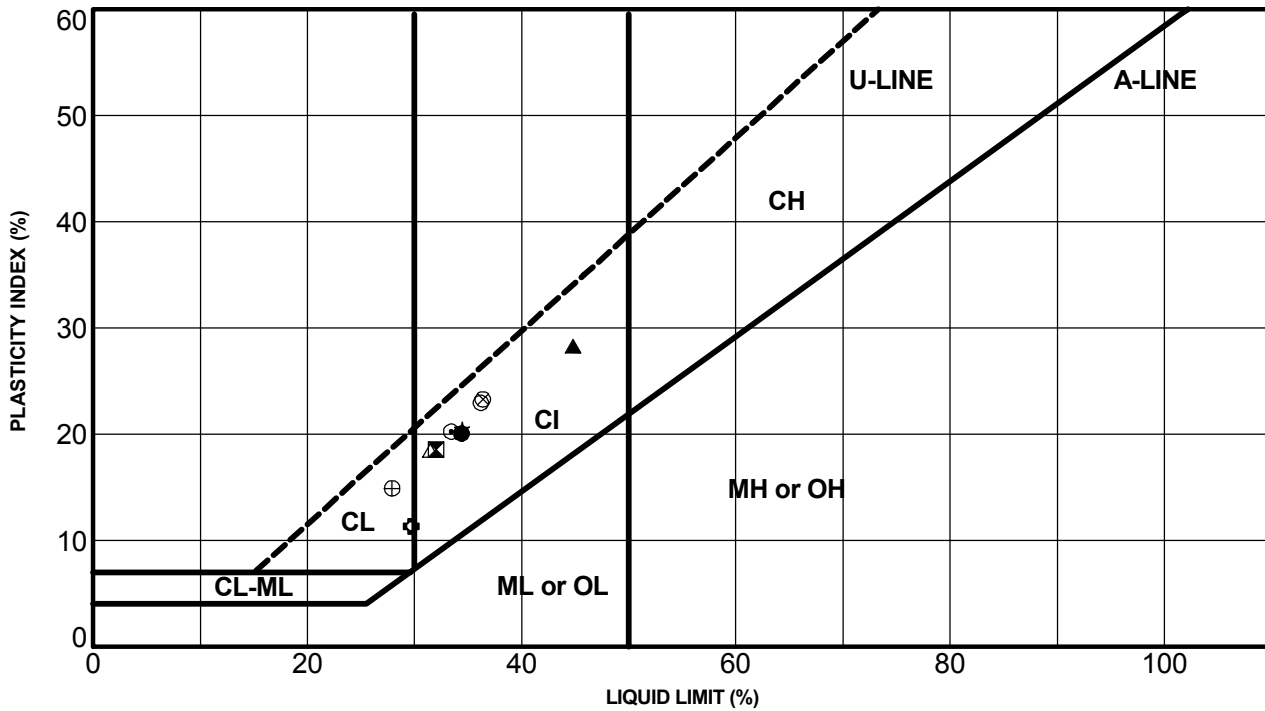
Hole No.							
Depth (ft)							
Sample No.							
Wet Weight + Tare (g)							
Dry Weight + Tare (g)							
Tare (g)							
Water Weight (g)							
Total Dry Weight (g)							
Water Content (%)							

Hole No.							
Depth (ft)							
Sample No.							
Wet Weight + Tare (g)							
Dry Weight + Tare (g)							
Tare (g)							
Water Weight (g)							
Total Dry Weight (g)							
Water Content (%)							

Hole No.							
Depth (ft)							
Sample No.							
Wet Weight + Tare (g)							
Dry Weight + Tare (g)							
Tare (g)							
Water Weight (g)							
Total Dry Weight (g)							
Water Content (%)							

 <b>Klohn Crippen Berger</b>	JOB NO.:	M09382A01
	PROJECT:	Morrison Copper Gold
	LOCATION:	Smither, BC
	DATE:	Feb 11, 2008
	TESTED BY:	WD

**PLASTICITY CHART**



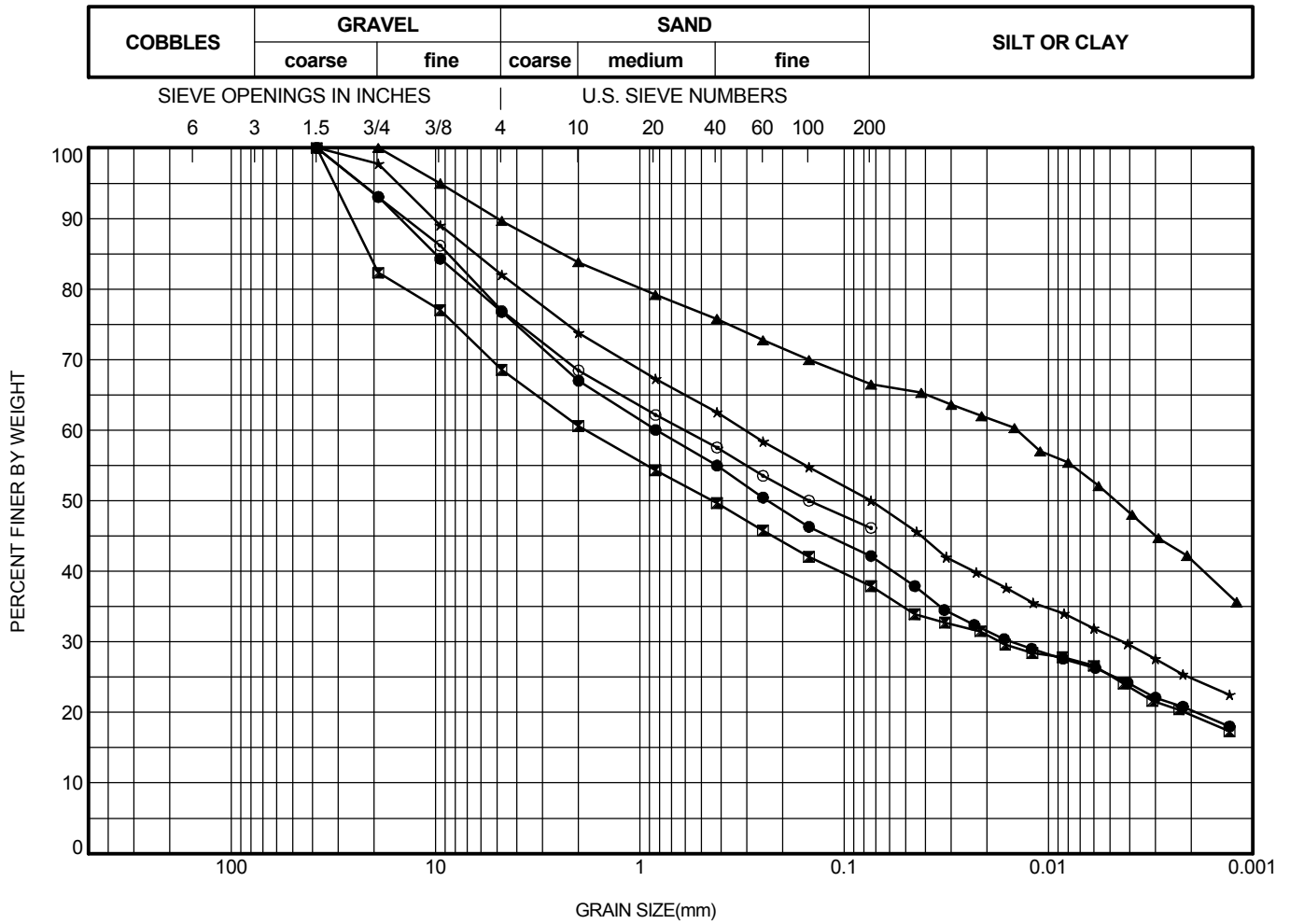
	HOLE	SAMPLE	DEPTH (ft)	W <sub>L</sub>	W <sub>p</sub>	PI	% FINES	REMARKS/SAMPLE DESCRIPTION
●	DH07-10	SPT 2	9.0	34	14	20		
☒	DH07-1A	SPT 4	19.0	32	13	19		
▲	DH07-1A	SPT 13	64.0	45	17	28		
★	DH07-2A	SPT 4	19.0	34	14	20		
⊙	DH07-3A	SPT 4	19.0	33	13	20		
⊕	DH07-3A	SPT 11	59.0	30	18	11		
○	DH07-4A	SPT 4	19.0	36	13	23		
△	DH07-5A	SPT 3	14.0	32	13	18		
⊗	DH07-5A	SPT 11	54.0	36	13	23		
⊕	DH07-6	SPT 3	14.0	28	13	15		

KCB\_ATTENBERG-IMP MORRISON.GPJ SIEVE.GDT 2/11/08



PROJECT NO.:	M09382A01
PROJECT:	Morrison Copper Gold Project
LOCATION:	Smithers, BC
FIGURE:	
DRAWN BY:	WD
CHECKED BY:	

## GRAIN SIZE DISTRIBUTION



	HOLE	DEPTH (ft)	D85	D60	D50	D15	D10	CU	%GRAVEL	%SAND	%FINES
●	DH07-10	9.00	10.078	0.835	0.237				23.3	34.5	42.2
☒	DH07-1A	19.00	21.226	1.846	0.441				31.5	30.6	37.9
▲	DH07-1A	64.00	2.387						10.4	23.1	66.5
★	DH07-2A	19.00	6.387	0.306	0.074				18.0	31.9	50.1
⊙	DH07-2A	49.00	8.730	0.608	0.149				23.1	30.7	46.2

	HOLE	SAMPLE	DEPTH (ft)	W%	W <sub>L</sub>	W <sub>P</sub>	PI	REMARKS / SAMPLE DESCRIPTION
●	DH07-10	SPT 2	9.00		34	14	20	
☒	DH07-1A	SPT 4	19.00		32	13	19	
▲	DH07-1A	SPT 13	64.00		45	17	28	
★	DH07-2A	SPT 4	19.00		34	14	20	
⊙	DH07-2A	SPT 10	49.00					

CU = COEFFICIENT OF UNIFORMITY = D60/D10      PARTICLE SIZES, e.g. D85, in mm      Tested by Wet Sieving Method (ASTM D1140 & D422)



PROJECT NO.: M09382A01

PROJECT: Morrison Copper Gold Project

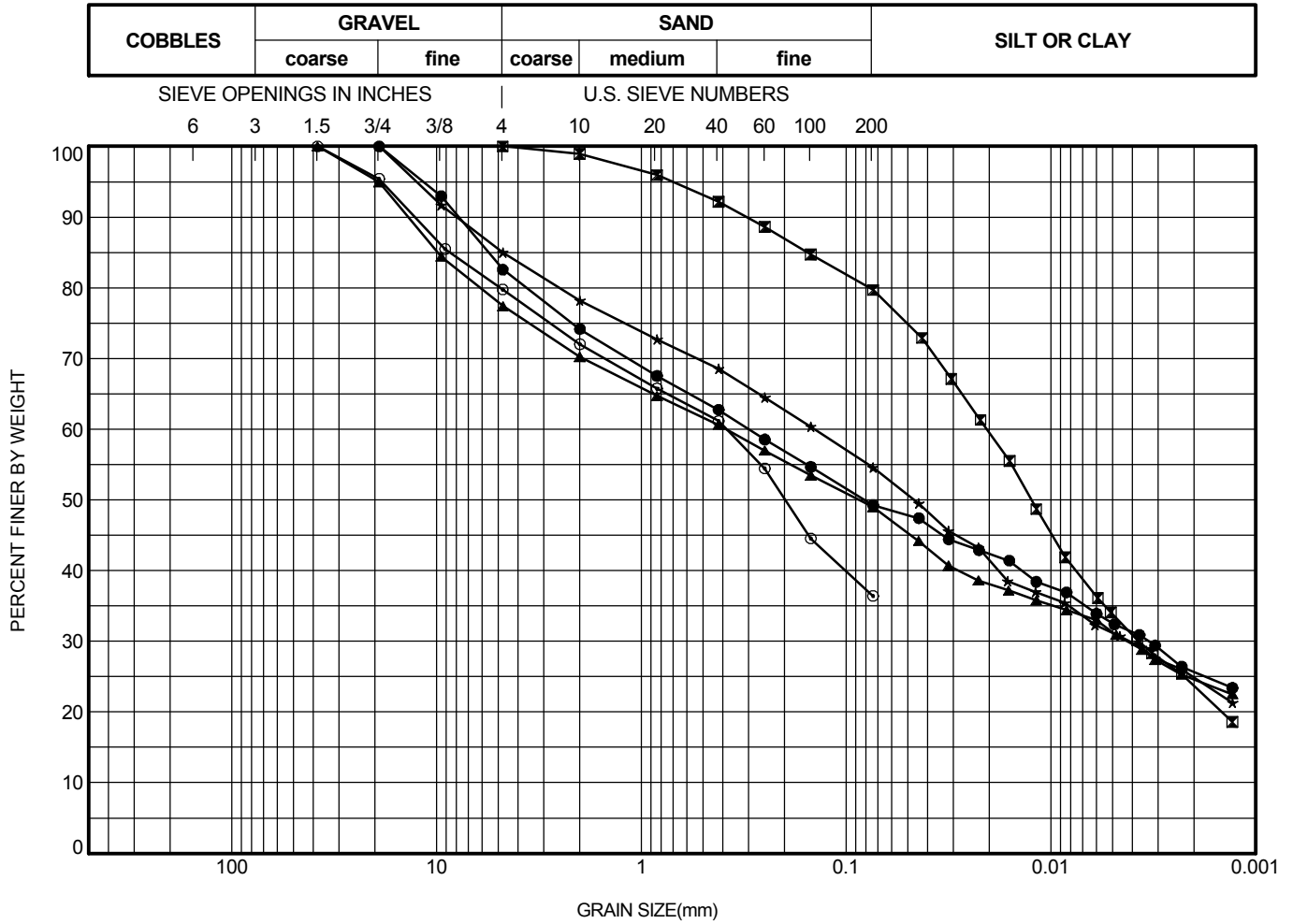
LOCATION: Smithers, BC

FIGURE:

DRAWN BY: WD

CHECKED BY:

## GRAIN SIZE DISTRIBUTION



	HOLE	DEPTH (ft)	D85	D60	D50	D15	D10	CU	%GRAVEL	%SAND	%FINES
●	DH07-3A	19.00	5.598	0.300	0.081				17.4	33.2	49.4
⊠	DH07-3A	59.00	0.155						0.0	20.2	79.8
▲	DH07-4A	19.00	9.894	0.385	0.087				22.6	28.3	49.0
★	DH07-5A	14.00	4.758	0.143					15.0	30.3	54.7
⊙	DH07-5A	19.00	8.620	0.384	0.198				20.3	43.2	36.6

	HOLE	SAMPLE	DEPTH (ft)	W%	W <sub>L</sub>	W <sub>P</sub>	PI	REMARKS / SAMPLE DESCRIPTION
●	DH07-3A	SPT 4	19.00		33	13	20	
⊠	DH07-3A	SPT 11	59.00		30	18	11	
▲	DH07-4A	SPT 4	19.00		36	13	23	
★	DH07-5A	SPT 3	14.00		32	13	18	
⊙	DH07-5A	SPT 4	19.00					

CU = COEFFICIENT OF UNIFORMITY = D60/D10

PARTICLE SIZES, e.g. D85, in mm

Tested by Wet Sieving Method (ASTM D1140 & D422)



PROJECT NO.: M09382A01

PROJECT: Morrison Copper Gold Project

LOCATION: Smithers, BC

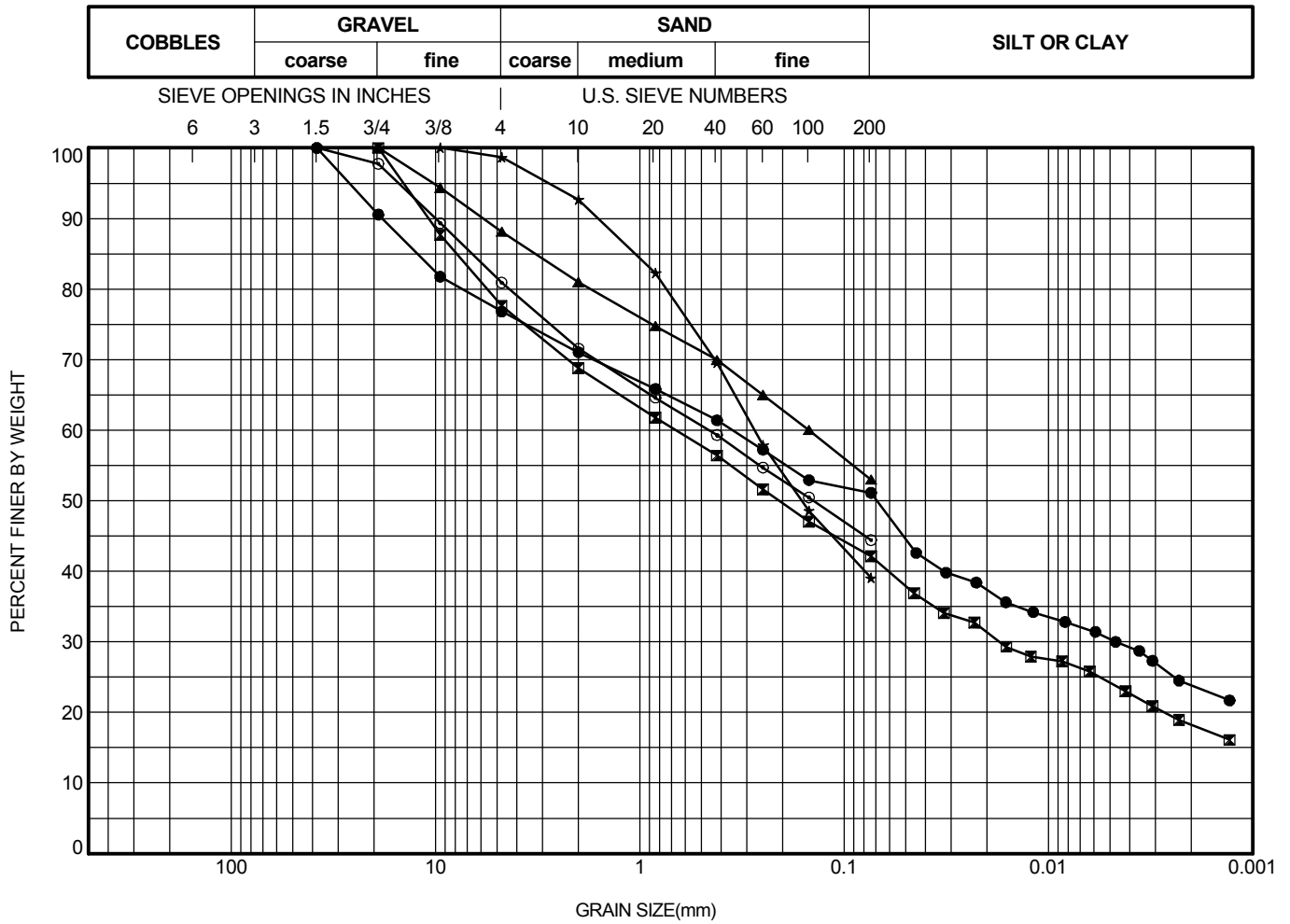
FIGURE:

DRAWN BY: WD

CHECKED BY:



## GRAIN SIZE DISTRIBUTION



	HOLE	DEPTH (ft)	D85	D60	D50	D15	D10	CU	%GRAVEL	%SAND	%FINES
●	DH07-5A	54.00	12.304	0.353					23.2	25.6	51.2
☒	DH07-6	14.00	7.907	0.667	0.208				22.4	35.4	42.2
▲	DH07-7	14.00	3.256	0.149					11.9	35.0	53.1
★	DH07-8	14.00	1.054	0.275	0.161				1.4	59.4	39.2
⊙	DH07-9	14.00	6.664	0.459	0.141				19.1	36.4	44.5

	HOLE	SAMPLE	DEPTH (ft)	W%	W <sub>L</sub>	W <sub>p</sub>	PI	REMARKS / SAMPLE DESCRIPTION
●	DH07-5A	SPT 11	54.00		36	13	23	
☒	DH07-6	SPT 3	14.00		28	13	15	
▲	DH07-7	SPT 3	14.00					
★	DH07-8	SPT 3	14.00					
⊙	DH07-9	SPT 3	14.00					

CU = COEFFICIENT OF UNIFORMITY = D60/D10

PARTICLE SIZES, e.g. D85, in mm

Tested by Wet Sieving Method (ASTM D1140 & D422)



PROJECT NO.: M09382A01

PROJECT: Morrison Copper Gold Project

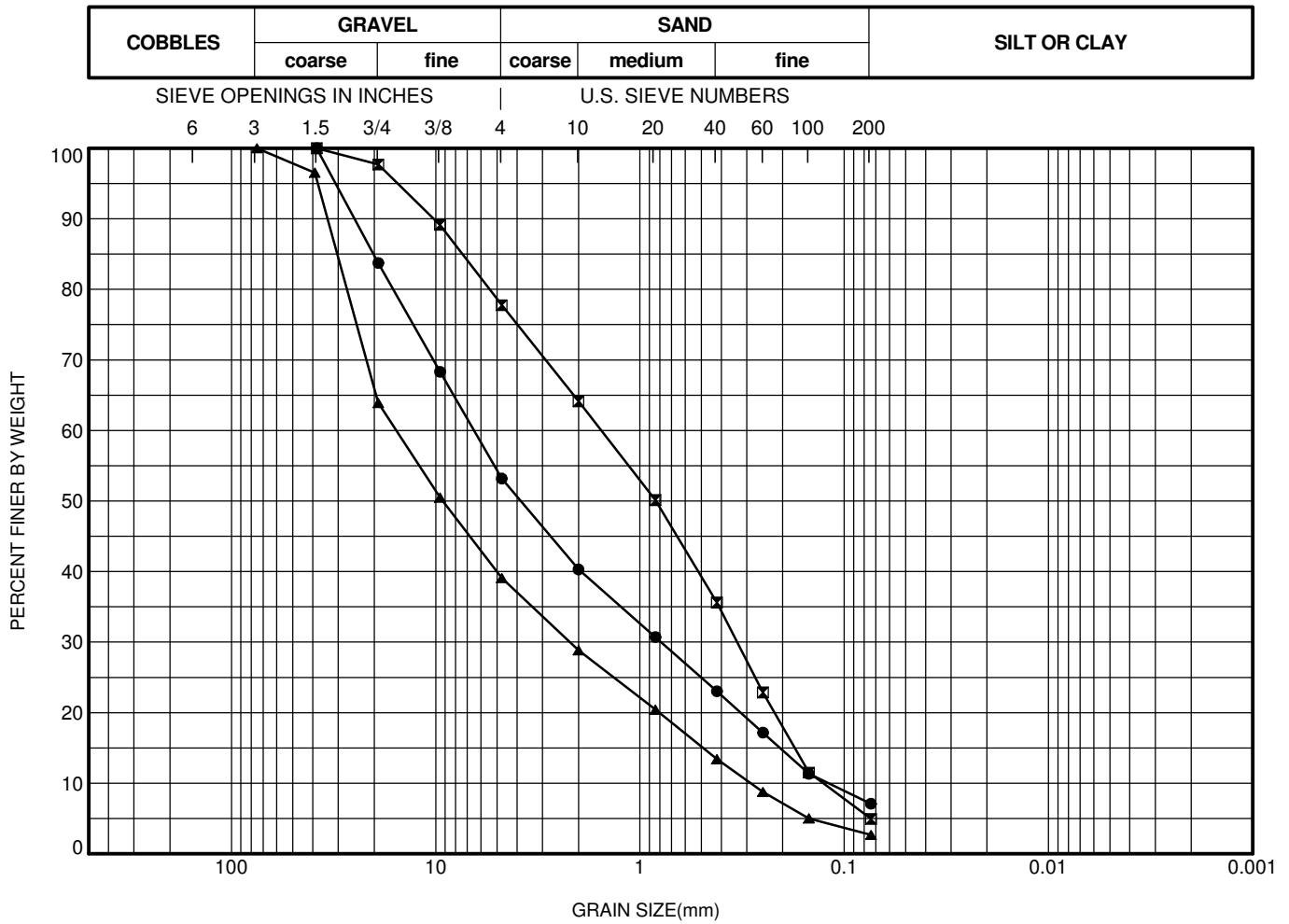
LOCATION: Smithers, BC

FIGURE:

DRAWN BY: WD

CHECKED BY:

## GRAIN SIZE DISTRIBUTION



	HOLE	DEPTH (m)	D85	D60	D50	D15	D10	CU	%GRAVEL	%SAND	%FINES
●	TP07-2	10.00	20.154	6.497	3.836	0.206	0.120	54.318	46.8	46.0	7.2
☒	TP07-2	19.00	7.396	1.549	0.835	0.175	0.127	12.203	22.2	72.7	5.1
▲	TP07-3	10.00	30.348	15.589	9.239	0.491	0.287	54.359	60.9	36.4	2.7

	HOLE	SAMPLE	DEPTH (m)	W%	W <sub>L</sub>	W <sub>P</sub>	PI	REMARKS / SAMPLE DESCRIPTION
●	TP07-2	1	10.00					
☒	TP07-2	2	19.00					
▲	TP07-3	1	10.00					

CU = COEFFICIENT OF UNIFORMITY = D60/D10      PARTICLE SIZES, e.g. D85, in mm      Tested by Wet Sieving Method (ASTM D1140 & D422)



PROJECT NO.: M09382A01

PROJECT: Morrison Copper Gold Project

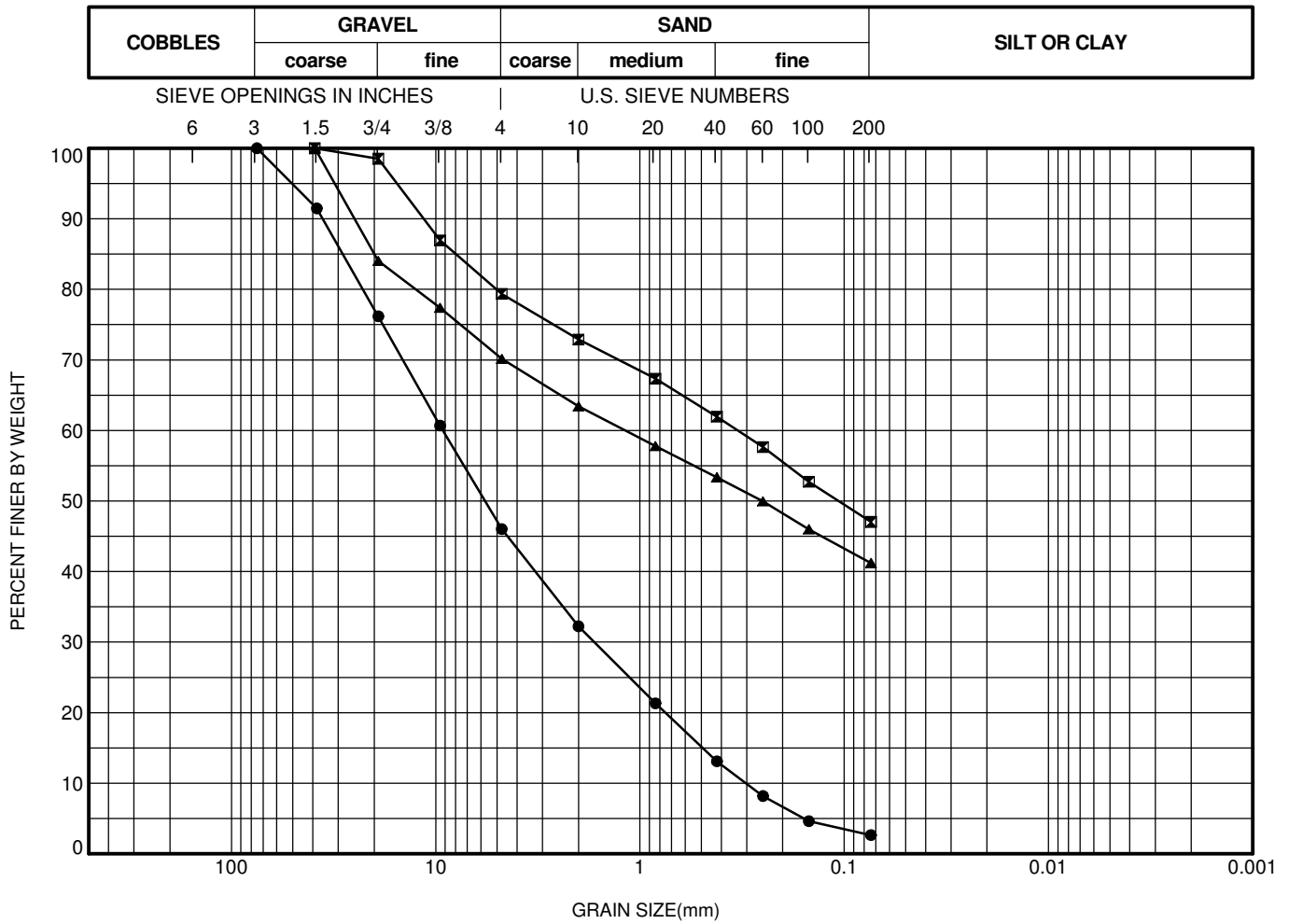
LOCATION: Smithers, BC

FIGURE:

DRAWN BY: BY

CHECKED BY:

## GRAIN SIZE DISTRIBUTION



	HOLE	DEPTH (m)	D85	D60	D50	D15	D10	CU	%GRAVEL	%SAND	%FINES
●	TP07-4	10.00	28.481	9.217	5.736	0.493	0.303	30.428	54.0	43.3	2.7
☒	TP07-7	2.00	7.966	0.332	0.107				20.6	32.2	47.2
▲	TP07-8	4.00	19.941	1.181	0.251				29.9	28.8	41.3

	HOLE	SAMPLE	DEPTH (m)	W%	W <sub>L</sub>	W <sub>P</sub>	PI	REMARKS / SAMPLE DESCRIPTION
●	TP07-4	1	10.00					
☒	TP07-7	1	2.00					
▲	TP07-8	1	4.00					

CU = COEFFICIENT OF UNIFORMITY = D60/D10      PARTICLE SIZES, e.g. D85, in mm      Tested by Wet Sieving Method (ASTM D1140 & D422)



PROJECT NO.: M09382A01

PROJECT: Morrison Copper Gold Project

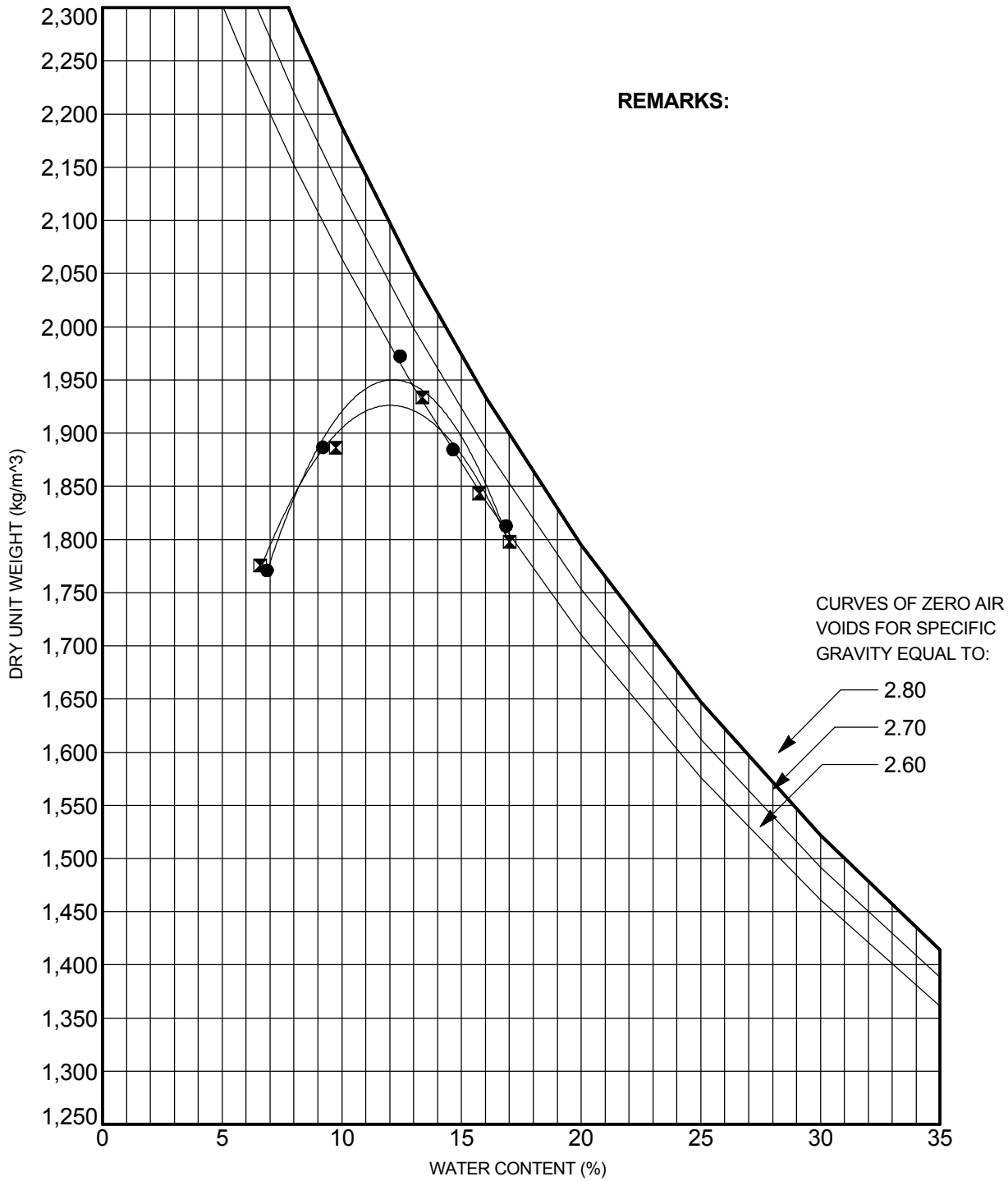
LOCATION: Smithers, BC

FIGURE:

DRAWN BY: BY

CHECKED BY:

**MOISTURE - DENSITY RELATIONSHIP**



TEST	DEPTH(m)	METHOD	OWC	MDW	MATERIAL DESCRIPTION
● Mix 1	4.0	698B			Mix: DH07-1A; 2A; SPT 1, 2, 3; 4-14' depth
⊠ Mix 2	4.0	698B			Mix: DH07-3A, 4A, 5A; SPT 1, 2; 4 - 9' depth

OWC = Optimum Water Content (%) MDW = Maximum dry Unit Weight (pcf)



<b>PROJECT NO.:</b> M09382A01
<b>PROJECT:</b> Morrison Copper Gold Project
<b>LOCATION:</b> Smithers, BC
<b>FIGURE:</b>
<b>DRAWN BY:</b> BY/WD <b>CHECKED BY:</b>

## **APPENDIX VI**

### **Report on Resistivity Imaging Survey**

**PACIFIC BOOKER MINERALS INC.**  
**REPORT ON**  
**RESISTIVITY IMAGING SURVEY**  
**PROPOSED MINE SITE FACILITIES**  
**MORRISON COPPER GOLD PROJECT**  
**BABINE LAKE, B.C.**

**by**

**Catherine Breton, B.Sc.**

**Russell A. Hillman, P.Eng.**

**June, 2007**

**PROJECT FGI-942**

## CONTENTS

	<u>page</u>
1. INTRODUCTION	1
2. SITE GEOLOGY	3
3. THE MULTI-ELECTRODE RESISTIVITY SURVEY	4
3.1 Equipment	4
3.2 Survey Procedure	4
3.3 Data Processing	5
4. GEOPHYSICAL RESULTS	6
4.1 General	6
4.2 Discussion	6
4.2.1 Tailings Facility	6
4.2.1.1 Main Dam	7
4.2.1.2 Northwest Dam	8
4.2.1.3 North Dam	8
4.2.2 Plant Site	9
5. LIMITATIONS	10

## ILLUSTRATIONS

	<u>location</u>
Figure 1 Survey Location Plan	Page 2
Figure 2 Site Plan	Appendix
Figure 3 Inverted Resistivity Section RL-1a	Appendix
Figure 4 Inverted Resistivity Section RL-1b	Appendix
Figure 5 Inverted Resistivity Section RL-2	Appendix
Figure 6 Inverted Resistivity Section RL-3	Appendix
Figure 7 Inverted Resistivity Section RL-4a	Appendix
Figure 8 Inverted Resistivity Section RL-4b	Appendix
Figure 9 Inverted Resistivity Section RL-5	Appendix
Figure 10 Inverted Resistivity Section RL-6	Appendix

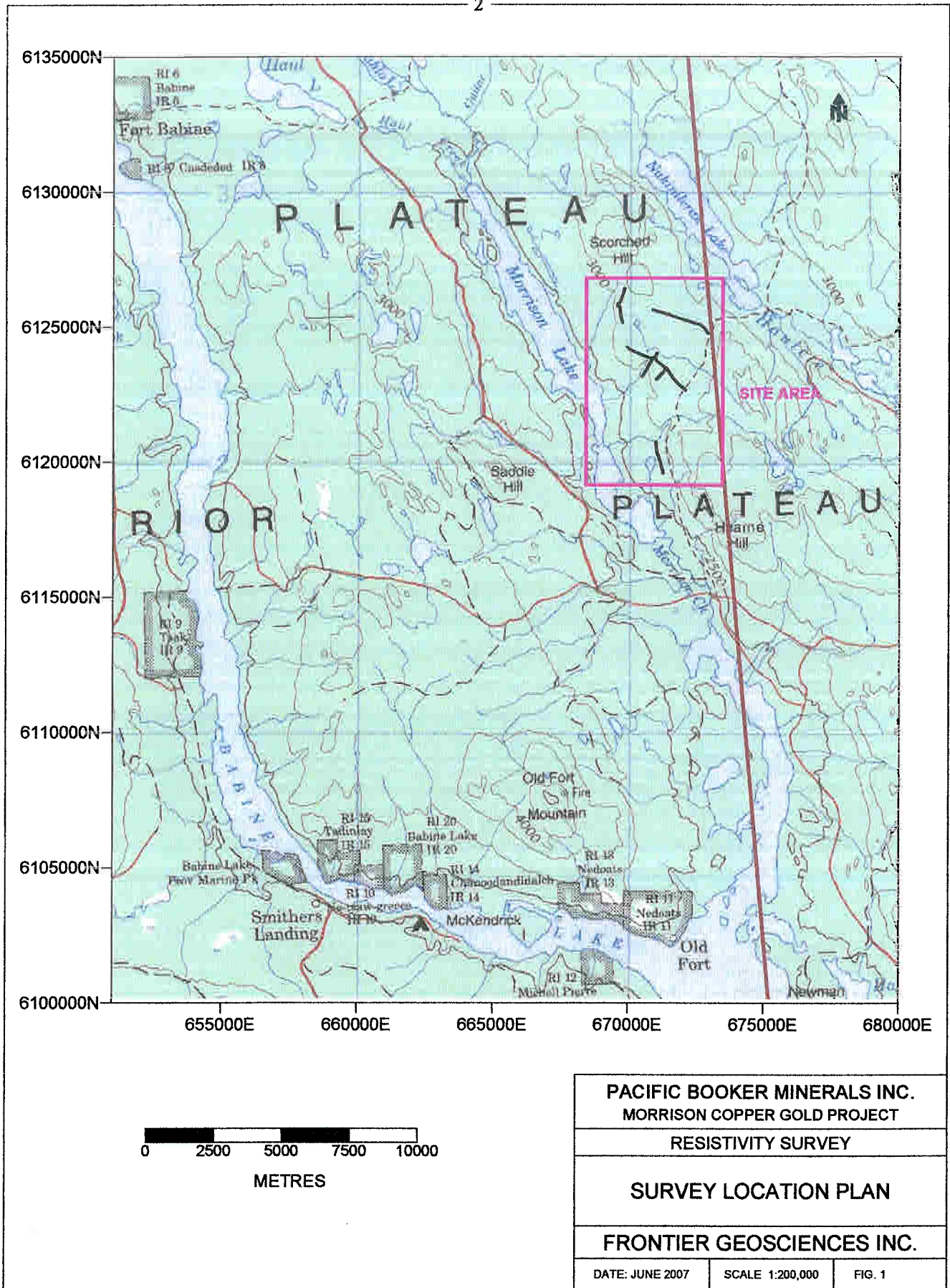
## **1. INTRODUCTION**

In the period May 4 to June 12, 2007, Frontier Geosciences Inc. carried out a program of multi-electrode resistivity surveying for Pacific Booker Minerals at the Morrison Copper Gold Project in British Columbia. A Survey Location Plan of the area of investigation is shown at a scale of 1:200,000 in Figure 1. The purpose of the geophysical investigation was to assist in mapping the subsurface geology by defining the electrical resistivity distribution of the earth materials at the location of the proposed plant site and three proposed dams at the tailings storage area.

The survey program consisted of six resistivity lines that totalled approximately 9.5 kilometres in length. The survey line locations are shown in detail at 1:25,000 scale in the Site Plan in the Appendix.

Several drillholes and test pits completed prior to the resistivity investigation, were utilised to corroborate the geophysical interpretations. For the majority of the survey, no soil conditions or bedrock outcrop information could be recorded due to the snow covered terrain.





## 2. SITE GEOLOGY

The Morrison Copper Gold Project is situated on the northern edge of the Skeena Arch in a region underlain by volcanic, clastic and epicalstic rocks ranging in age from the Lower Jurassic to Lower Cretaceous.

The Skeena Arch is a northeast trending belt of uplifted Jurassic and older rocks that transects central British Columbia and lies within the Intermontane Belt, which at this latitude includes the Stikine volcanic arc terrane and a small part of the oceanic Cache Creek Terrane. The Stikine Terrane comprises Carboniferous to Middle Jurassic volcanic and sedimentary rocks. The Stikine Terrane is well exposed along the Skeena Arch. The area is a zone of westward-directed thrust faulting that marks the boundary between the Stikine and Cache Creek terranes which is further complicated by a complex pattern of high-angle faults. The stratified rocks are cut by granodiorite and quartz diorite of the Late Triassic to Early Jurassic Topley intrusive suite.

The dominant and distinct geological feature on the Morrison project is the Morrison Graben that crosses the area in a north-northwest trend. The 2 km wide graben is composed of the siltstone, sandstone and greywacke sedimentary sequence of the Upper Jurassic Ashman Formation on the northern half of the project area and younger sandstone, shale and siltstone of Lower Cretaceous Skeena Group to the south. Much of the southern part of the graben is overlain by glacial overburden.

The recent borehole and test pit investigation reveal that overburden in the site area consists largely of silt/clay glacial till which is moist to wet. These deposits which are thick in some areas, are typically underlain by fractured siltstone which is in turn, underlain by calc-alkaline to quartz-rich volcanics.

### **3. THE MULTI-ELECTRODE RESISTIVITY SURVEY**

#### **3.1 Equipment**

The multi-electrode resistivity survey was carried out with a Super Sting R8, automatic resistivity and IP system from Advanced Geosciences Inc. of Austin, Texas. This 8-channel instrument has eight receivers. Therefore for each current injection, the potential between nine electrodes can be measured simultaneously, which significantly speeds up the data collection process.

During multi-electrode surveying two types of electrode switching systems can be utilised: the distributed switching system and the central switching system. In the distributed switching system, the actual switching happens at each electrode. The instrument assigns whether each electrode will be either a potential or current electrode. In the central switching system, the electrode switching occurs at the instrument. In this mode, a switchbox and 'passive' seismic cables are utilised. Data acquisition for the Morrison project was conducted using the central switching system and passive cables.

The purpose of electrical surveying is to determine the subsurface resistivity distribution by making measurements on the ground surface. From these measurement, the true resistivity of the subsurface can be estimated. The ground resistivity is related to various geological parameters such as the mineral and fluid content, porosity and degree of water saturation in the rock.

#### **3.2 Survey Procedure**

Field procedure consisted of driving 56 metal electrodes into the shallow subsurface at intervals of 5 metres along the resistivity cables. The cable system is grouped into four individual cables of 14 electrode take-outs, each connected to the multiplexing switchbox controller. The switchbox controller allows the electrodes to be in either standby, current or measuring potential modes. The electrodes were sequenced to measure the dipole-dipole electrode configuration as well as the Schlumberger configuration, where voltage electrodes are located outside the current electrode pair. The aforementioned combination of the arrays helps to reduce the disadvantages and certain limitations of the individual arrays. The dipole-dipole configuration has the property of good sensitivity to lateral variations but is relatively insensitive to vertical changes of resistivity. The inverted Schlumberger configuration provides improved signal to noise ratio with depth.

The Super Sting system is electronically configured to permit two different procedures for data acquisition. The first procedure consists of measurement of a 56 electrode array followed by the advance of 14 additional electrodes along the survey traverse. This new array is then measured with the sequence repeated along the entire survey traverse. With this procedure, the instrument continuously records the measurements and creates one large data file. The second procedure consists of advancing the entire array down the survey line. In this case, every data log is independent and represents a new 56 electrode survey with 50% overlap. The second procedure is more time consuming. Some time saving is realised by disconnecting the first two cables when the instrument indicates a completion of the measurement for the first two cable sections. The first two cables can then be moved down the survey line for the next advance of the survey. An obvious advantage of using the second procedure is the creation of a data file for each 56 electrode survey which significantly reduces the danger of losing valuable data in case of possible instrument malfunction.

In the case of this survey, the significant survey coverage resulted in switching from the roll-along procedure to advancing the entire array along the survey lines.

### **3.3 Data Processing**

The data were downloaded from the instrument and converted into the input file format for the Geomoto 2-D Resistivity and IP inversion package. This software utilises a finite difference modelling approach to calculate the resistivity values that best fit the observed data. All inversion methods essentially try to determine a model for the subsurface whose response agrees with the measured data subject to certain restrictions. In the cell based method used by RES2DINV program, the model parameters are the resistivity values of the model cell, while the data is the measured apparent resistivity values. The mathematical link between the model parameters and the model response is provided by the finite-difference or finite-element methods. In all optimisation methods, an initial model is modified in an iterative manner so that the difference between the model response and the data values is reduced.

To increase the accuracy of the modelling process, the elevation of each electrode is incorporated as a separate section of the input data file.

## **4. GEOPHYSICAL RESULTS**

### **4.1 General**

The results of the resistivity surveying for the eight traverses completed in the site area are illustrated at 1:2,000 natural scale in Figures 3 through 10 in the Appendix. Bedrock is generally outlined by darker colour, higher resistivities with the silt/clay overburden indicated by lower resistivity, green and blue tones. Topography along the pre-cut lines was determined by hand-held inclinometer readings with absolute elevations taken from 1:25,000 mapping of the area.

The survey area is divided into the tailings facility that includes the Main, North and Northwest dam sites and the proposed processing plant. Resistivity line RL-6 was located in the proposed plant site area with the balance of the lines at the dam sites at the future tailings facility.

### **4.2 Discussion**

#### **4.2.1 Tailings Facility**

The proposed tailings facility lies in a gently sloping valley, encompassing densely forested slopes and a large meadow/marsh area at lower elevations. Two large embankments will define the north and south limits, with two small embankments along a ridge to the west. A total of nine drillholes and fourteen testpits were completed in the area.

The depth of overburden varied in the drillholes between a minimum of 4 and a maximum of 25 metres. The soil in the testpits and drillholes was consistently a silt/clay matrix with some gravel and cobbles.

The bedrock encountered in the drillholes of the area was found to be either sedimentary or volcanic. The drillholes at the north dam revealed sedimentary rock that was slightly to highly calcareous siltstone. Drillholes on the south embankment showed a mixture of sedimentary and volcanic rock, where the volcanic rocks were moderately to highly calcareous.

#### 4.2.1.1 Main Dam

Resistivity lines RL-1a and RL-1b were initially surveyed and the results analysed in order to position subsequent lines RL-2 and RL-3 at optimum locations. The proposed location of line RL-2 was changed to investigate the area of intersection of lines RL-1a and RL-1b.

The resistivity contours of line RL-1a show a two layer earth model with uniformly low resistivities overlying basal higher resistivities. This apparent layering is interpreted as glacial overburden overlying bedrock.

Between the 300 and 450 metre marks, the section shows a high resistivity block of 200 to 800 ohm-m at or close to, the ground surface. This is interpreted as very shallow bedrock which is consistent with drillholes DH06-4, DH06-6 and DH06-7 located in the general area. These holes indicate bedrock intersections at depths ranging from 5.2 to 10.4 metres.

In the intervals 600 to 1150 m and 1320 to 1800 m, the section indicates uniformly low resistivities. These areas are interpreted as generally deep glacial overburden which may be over 25 m in thickness. These two areas are consistent with a change of terrain from an embankment to a marsh area. These low resistivity areas are interrupted by relatively small blocks of high resistivity of 200 ohm-m to 500 ohm-m. These areas between 1150 and 1320 m and around the 1600 m mark are interpreted as bedrock.

The resistivity contour section for line RL-1b is similar to line RL-1a. Between the 300 and 650 metre marks, the section indicates a distinct low resistivity block which is interpreted as glacial overburden. This correlates with a creek bed crossing the survey line at the 450 m mark and the results of nearby drillhole DH06-1. This drillhole intersected bedrock at a depth of 24.5 metres.

Between about 970 and 1070 metres, the section indicates a high, 200 to 2000 ohm-m block without the overlying low resistivity layer. This area, which is coincident with a distinct change in terrain, is interpreted as very shallow bedrock. Between 1080 and the 1155 metre mark, the section indicates a low resistivity block with an essential vertical boundary at 1180 metres. This area is interpreted as thick glacial overburden.

Resistivity line RL-2 was laid out perpendicular to lines RL-1a and RL-1b. The resistivity section in Figure 5 shows a two layer model. In general, shallow glacial overburden overlies the more electrically-resistive bedrock. Drillhole DH06-2 in the general vicinity intersected

bedrock at a depth of 9 metres. In the station intervals 0 to 150 m and 700 to 1030 m, the overburden is much thicker and may exceed 25 metres.

Resistivity line RL-3 was laid out parallel to Line RL-2 and perpendicular to line RL-1a. Between stations 0 to 270 m, a well-defined low resistivity area is interpreted as thick glacial till. Between 270 m and 550 m, the contoured section shows thinner glacial till overlying more highly resistive bedrock. From the approximate intersection with line RL-1a, the glacial overburden thickens to the north-east.

#### **4.2.1.2 Northwest Dam**

The northwest dam is located in steeper and generally higher terrain than the main dam. No drillholes or test pit data exist for this dam site.

Resistivity lines RL-4a and RL-4b run south to north and cross at a shallow angle. Both lines illustrate generally a two layer earth model. The high resistivities from 400 to 1300 ohm-m at the south abutment likely indicate shallow bedrock overlain by little or no glacial till. An exception to the two layer model occurs about station 150 m. In this area, the lower resistivities underlying the higher values likely indicates a weak or broken rock area infilled with conductive clays and possible higher water content. Immediately to the north of this area, the surficial clay layer becomes thicker coincident with a depression in the terrain.

The contour resistivity section for line RL-4b is similar to line RL-4a. Between 150 m and 500 m, there is high resistivity 400 ohm-m to 1300 ohm-m bedrock overlain by relatively thin, lower resistivity glacial till. Between stations 500 m and 720 m, the glacial till appears to thicken with a depression at station 560 m, possibly infilled with 25 m of glacial till.

#### **4.2.1.3 North Dam**

Resistivity line RL-5 was laid out southeast to northwest with drillhole DH06-12 coincident with the 750 m mark along the line. The line displays a highly variable resistivity distribution of lower resistivity glacial overburden and higher resistivity bedrock. Relatively thin or very thin glacial overburden is consistent with sections 0 to 50 m, 220 to 875 m and 1250 to 1450 m along the traverse. This interpretation is consistent with bedrock intersections in drillholes DH06-11 and DH06-12 at depths of 3.5 and 7.6 m, respectively.

There are two areas on traverse RL-5 that indicate thick or moderately thick glacial overburden. The segment between stations 50 m to 220 m may be a maximum of 25 metres in thickness. This zone appears to have almost vertical contacts with the higher resistivity bedrock to either side. Between stations 875 m and 1250 m, the glacial till is interpreted to range up to 35 m in thickness.

From station 1450 m to the northwest end of the line, the resistivity section shows uniform resistivities of 20 ohm-m to 100 ohm-m with thicknesses exceeding 20 metres. This apparently thick glacial overburden area is supported by drillhole DH06-10 which intersected bedrock at 22 metres.

#### **4.2.2 Plant Site**

The proposed plant site is characterised by low rolling hills between a small lake and the steep slope to the east. A few drillholes and several testpits were completed in the area. Drillholes DH06-9, DH06-14 and DH06-15 intersected bedrock at depths ranging from 20 to 33 metres. Bedrock was not reached at DH06-8, which was drilled to a depth of 40 metres. The soil in the drillholes was primarily silt and clay with some gravel. Testpits in the vicinity of the plant site revealed primarily till with some occurrences of peat, sand, silt and clay. The bedrock in drillhole DH06-14 in close proximity to line RL-6, consisted of moderately calcareous volcanics.

The resistivity contour section for line RL-6 indicates a two layer case, with uniform low resistivities overlying a basal, high resistivity layer. Between stations 0 and 400 m, the section shows low resistivity glacial till that generally exceeds 25 m in thickness. This conclusion is consistent with the results from drillhole DH06-8 that failed to intersect bedrock to the total drillhole depth of 40 metres.

Detection of the underlying bedrock is apparent at station 400 m. The interpreted bedrock surface rises to 800 m where it levels off. The interpreted bedrock surface then gently descends to the north end of the line.



## 5. LIMITATIONS

D.C. resistivity surveys are successful providing adequate contrasts exist in the subsurface in electrical resistivity between distinct geological materials. Also affecting resistivity are the degree of saturation of materials and the porosity, the concentration of dissolved electrolytes, the temperature and the amount and composition of colloids. Conductors identified in resistivity surveying are diverse and depending on geological settings, may include mineralisation, graphite, argillite, shear or fault zones, clay beds, marl, saturated materials, clay shale, clay till, mineralised leachate and zones of salt water intrusion. Electrically resistive materials include but are not limited to, sand and gravel, dry soils, glacial moraine, coarse glacial till, permafrost, underground voids and competent bedrock. The highest resistivities are generally recorded in crystalline rock. With few exceptions, no unique resistivity value defines a specific geological material.

Penetration depths may be affected by the presence of highly conductive surficial materials that may partially mask deeper geological layering. In addition, the resolution of the resistivity method decreases exponentially with depth. Given the diffuse nature of the method, resolution is inherently poorer at a depth greater than one wavelength. The survey results can also be influenced by electrode coupling, presence of noise and man-made infrastructure such as pipes, fences, power lines and buried metallic objects.

In the modelling process, a number of limitations constrain modelling of subsurface resistivity. For instance, due to non-uniqueness, more than one model can produce the same response that agrees with the observed data. The resulting model thus depends to a significant extent on the constraints used and will closely approximate the true subsurface conditions only if the constraints closely correspond to actual subsurface conditions.

The results are interpretive in nature and are considered to be a reasonably accurate representation of existing subsurface conditions within the limitations of the D.C. resistivity method. The geological interpretation is based on an estimation of subsurface conditions considering the resistivity information and all other available geological information.

For: Frontier Geosciences Inc.

*Catherine Breton*  
Catherine Breton, B.Sc.

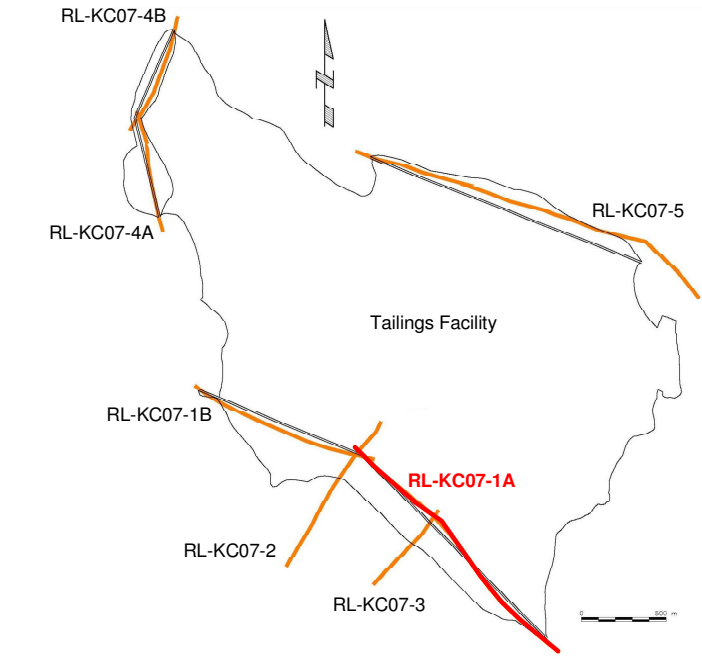
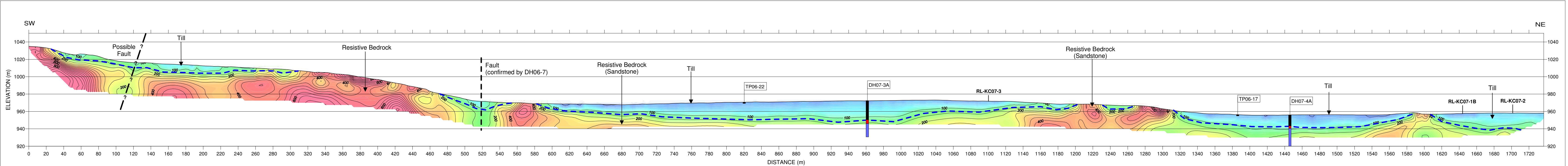
*Russell A. Hillman*  
Russell A. Hillman, P.Eng.



APPENDIX

# **APPENDIX VII**

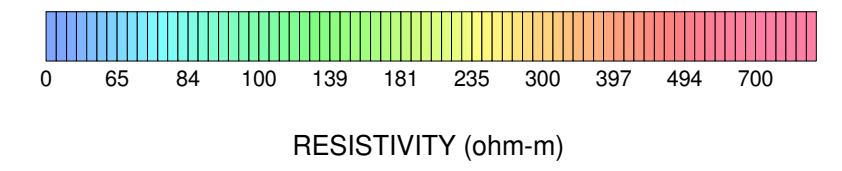
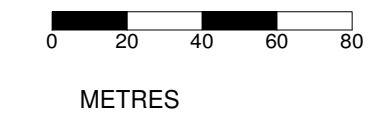
## **Interpreted Geophysical Sections**



**Legend**

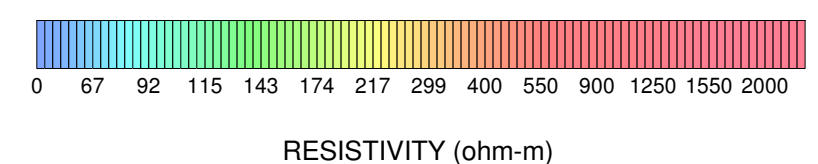
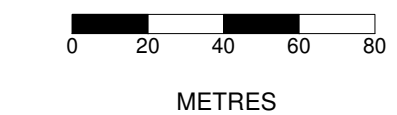
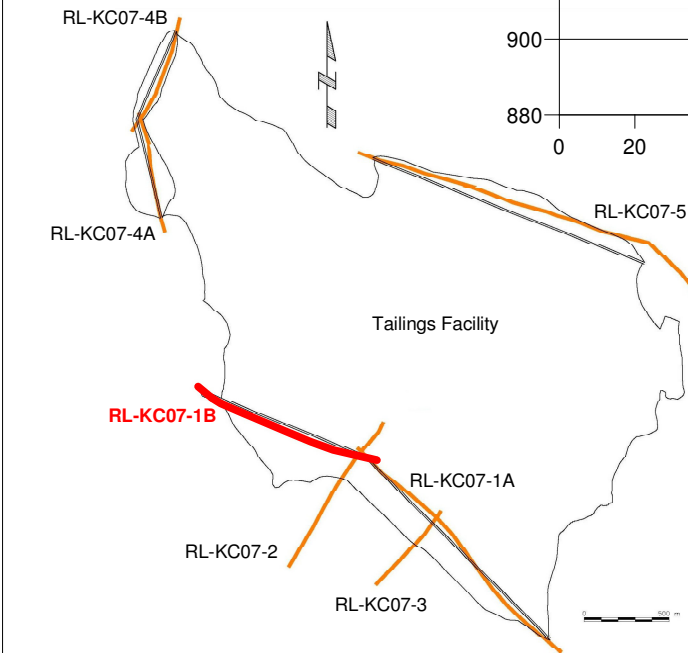
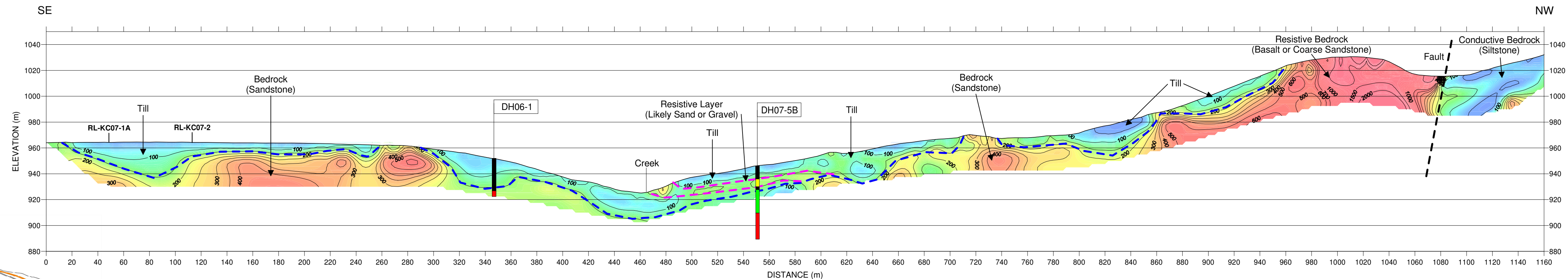
- Interpreted Base of Overburden
- Interpreted Fault
- No Recovery
- Till
- Siltstone
- Sandstone

Inverted resistivity section provided by Frontier Geoscience Inc.  
 Interpretation done by Klohn Crippen Berger.



AS A MUTUAL PROTECTION TO OUR CLIENT, THE PUBLIC AND OURSELVES, ALL REPORTS AND DRAWINGS ARE SUBMITTED FOR THE CONFIDENTIAL INFORMATION OF OUR CLIENT FOR A SPECIFIC PROJECT AND AUTHORIZATION FOR USE AND PUBLICATION OF DATA, STATEMENTS, CONCLUSIONS OR ABSTRACTS FROM OR REGARDING OUR REPORTS AND DRAWINGS IS PRESERVED PENDING OUR WRITTEN APPROVAL.	CLIENT	PROJECT		
	PACIFIC BOOKER MINERALS	MORRISON LAKE		
<b>Klohn Crippen Berger</b>	TITLE		FIG. No.	REV.
	LINE RL-KC07-1A INVERTED RESISTIVITY SECTION		FIGURE VII-1	1
FEBRUARY, 2008	PROJECT No. M09382A01	FIG. No.	REV.	

CANCEL PRINTS BEARING PREVIOUS



**Legend**

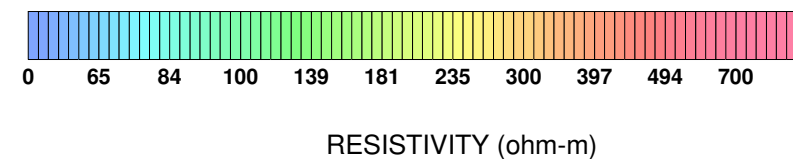
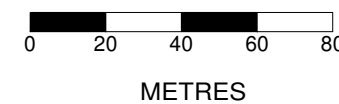
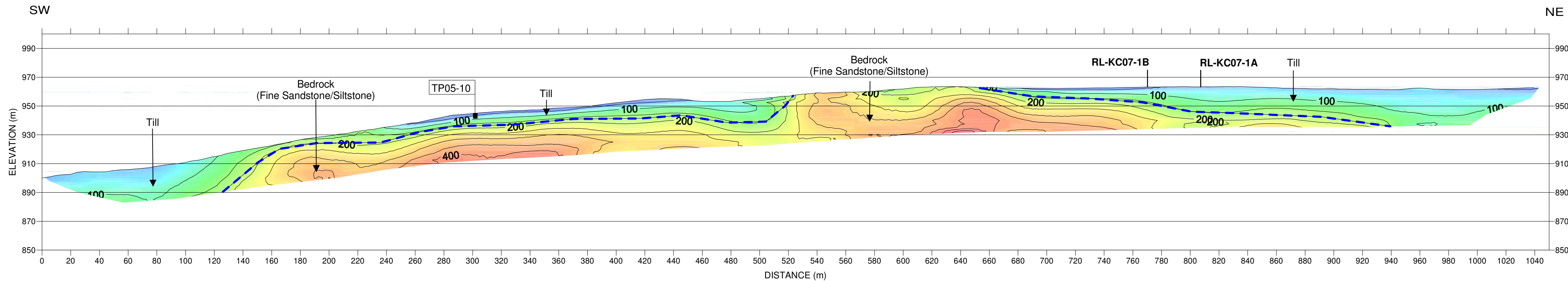
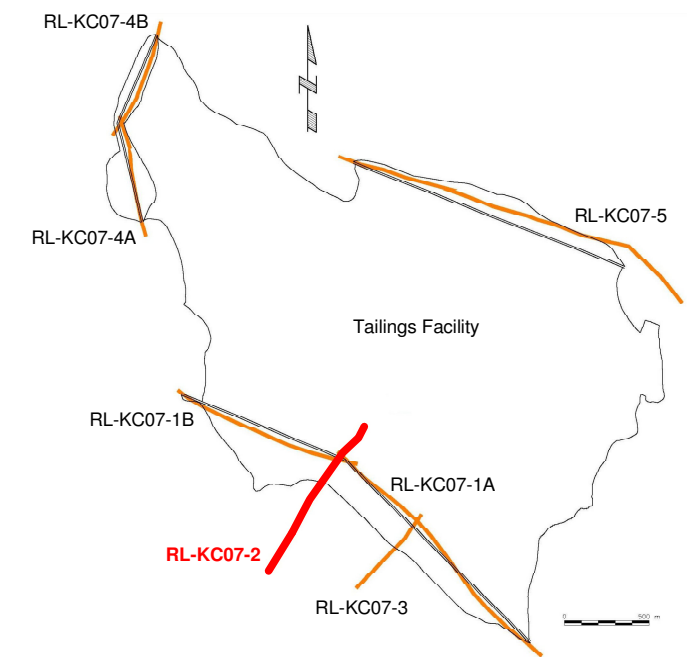
- Interpreted Base of Overburden
- Interpreted Fault
- No Recovery
- Till
- Siltstone
- Sandstone
- Metasedimentary
- Clayey Gravel

Inverted resistivity section provided by Frontier Geoscience Inc. Interpretation done by Klohn Crippen Berger.

AS A MUTUAL PROTECTION TO OUR CLIENT, THE PUBLIC AND OURSELVES, ALL REPORTS AND DRAWINGS ARE SUBMITTED FOR THE CONFIDENTIAL INFORMATION OF OUR CLIENT FOR A SPECIFIC PROJECT AND AUTHORIZATION OF USE AND/OR PUBLICATION OF DATA, STATEMENTS, CONCLUSIONS OR ABSTRACTS FROM OR REGARDING OUR REPORTS AND DRAWINGS IS RESERVED PENDING OUR WRITTEN APPROVAL.

CLIENT  
**PACIFIC BOOKER MINERALS**

PROJECT <b>MORRISON LAKE</b>	
TITLE <b>LINE RL-KC07-1B INVERTED RESISTIVITY SECTION</b>	
DATE FEBRUARY, 2008	PROJECT No. M09382A01
FIG. No. FIGURE VII-2	REV. 1



**Legend**

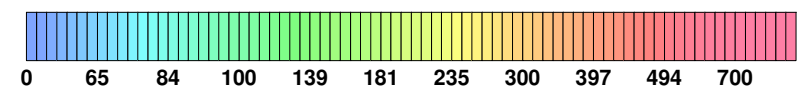
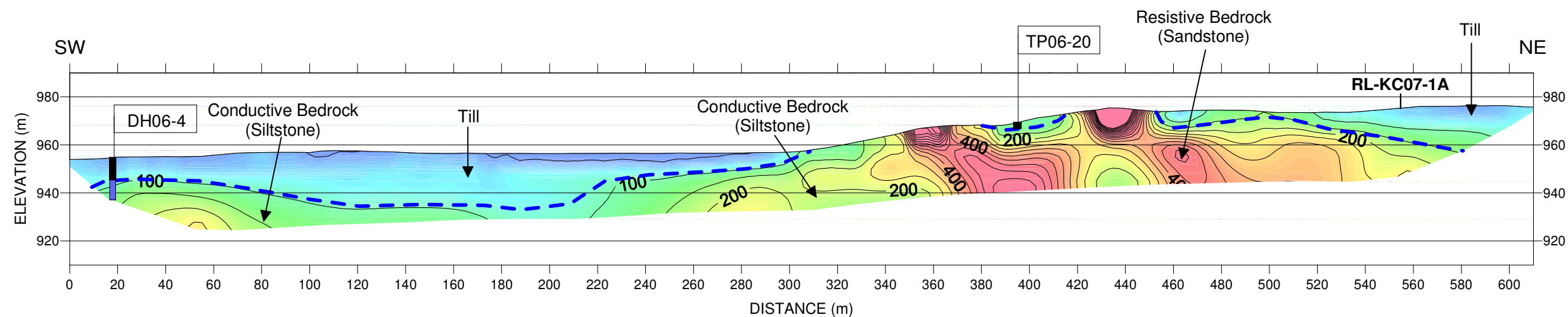
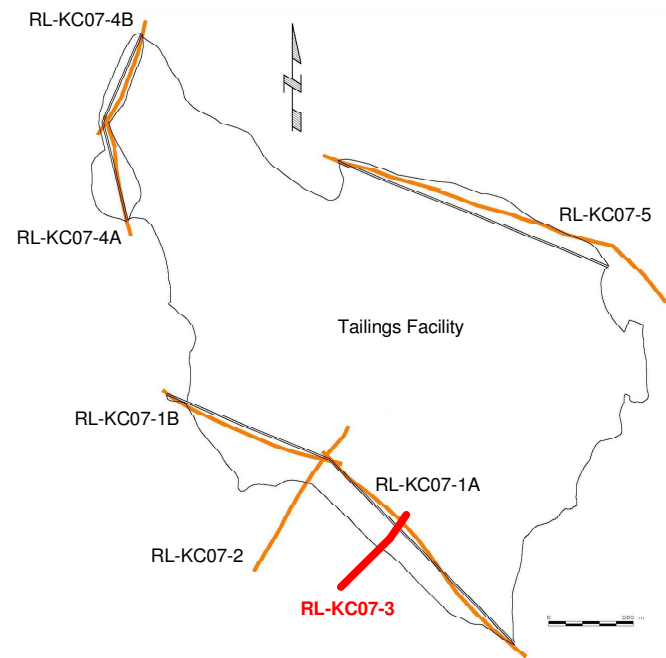
- Interpreted Base of Overburden
- Interpreted Fault
- No Recovery
- Till
- Siltstone
- Sandstone

Inverted resistivity section provided by Frontier Geoscience Inc.  
 Interpretation done by Klohn Crippen Berger.

AS A MUTUAL PROTECTION TO OUR CLIENT, THE PUBLIC AND OURSELVES, ALL REPORTS AND DRAWINGS ARE SUBMITTED FOR THE CONFIDENTIAL INFORMATION OF OUR CLIENT AND AUTHORIZATION FOR USE AND/OR PUBLICATION OF DATA STATEMENTS, CONCLUSIONS OR ABSTRACTS FROM OR REGARDING OUR REPORTS AND DRAWINGS IS RESERVED PENDING OUR WRITTEN APPROVAL.

	CLIENT	PACIFIC BOOKER MINERALS
	PROJECT	MORRISON LAKE

TITLE	LINE RL-KC07-2 INVERTED RESISTIVITY SECTION		
FEBRUARY, 2008	PROJECT No. M09382A01	FIG. No. FIGURE VII-3	REV. 1



### Legend

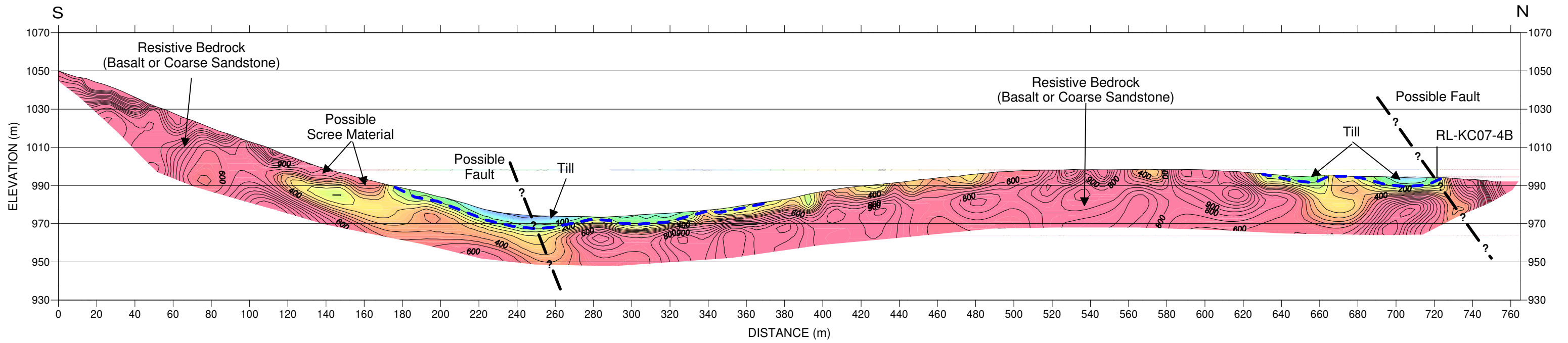
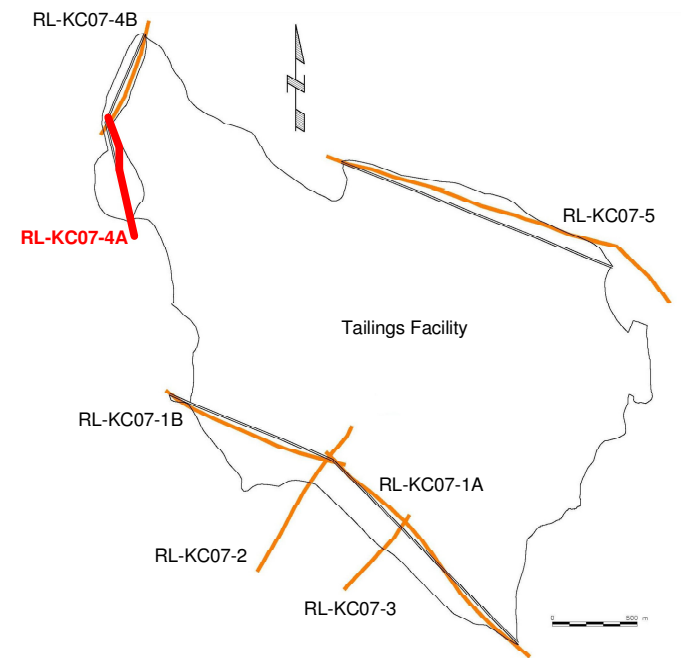
- Interpreted Base of Overburden
- Interpreted Fault
- No Recovery
- Till
- Siltstone
- Sandstone

Inverted resistivity section provided by Frontier Geoscience Inc.  
 Interpretation done by Klohn Crippen Berger.

AS A MUTUAL PROTECTION TO OUR CLIENT, THE PUBLIC AND OURSELVES, ALL REPORTS AND DRAWINGS ARE SUBMITTED FOR THE CONFIDENTIAL INFORMATION OF OUR CLIENT FOR A SPECIFIC PROJECT AND AUTHORIZATION FOR USE AND/OR PUBLICATION OF DATA, STATEMENTS, CONCLUSIONS OR ABSTRACTS FROM OR REGARDING OUR REPORTS AND DRAWINGS IS RESERVED PENDING OUR WRITTEN APPROVAL.	CLIENT	PACIFIC BOOKER MINERALS		
	PROJECT	MORRISON LAKE		
TITLE	LINE RL-KC07-3 INVERTED RESISTIVITY SECTION			
PROJECT No.	FEBRUARY, 2008	M09382A01	FIG. No.	REV.
			FIGURE VII-4	1

CANCEL PRINTS BEARING PREVIOUS

KCB008



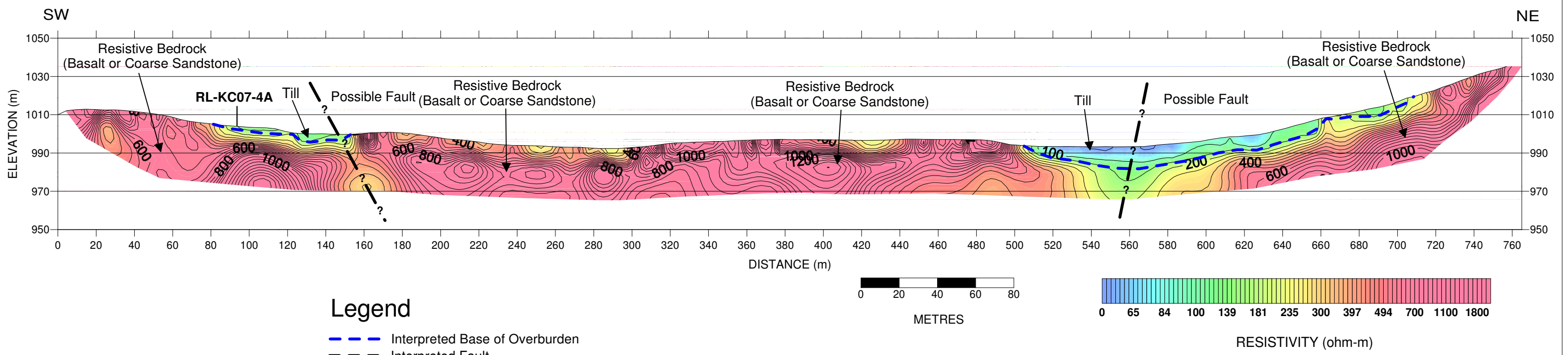
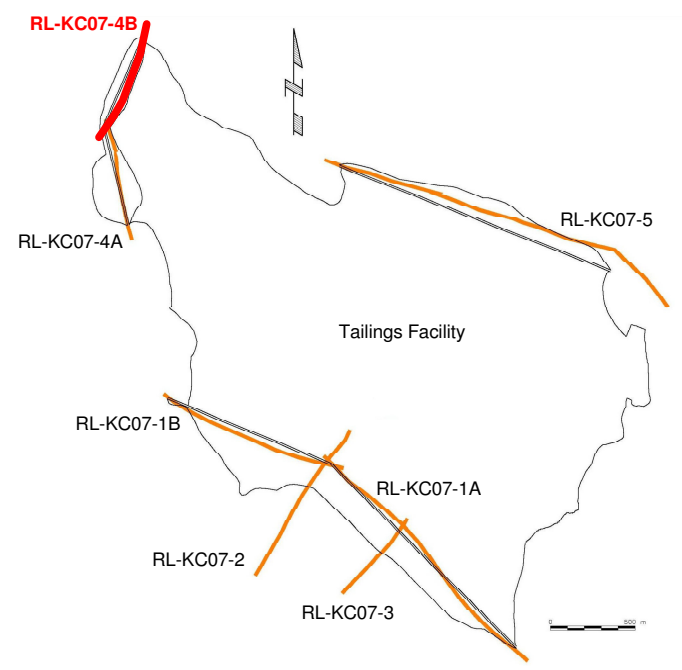
### Legend

- Interpreted Base of Overburden
- Interpreted Fault
- No Recovery
- Till
- Siltstone
- Sandstone

Inverted resistivity section provided by Frontier Geoscience Inc.  
Interpretation done by Klohn Crippen Berger.

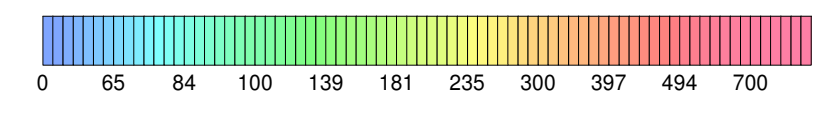
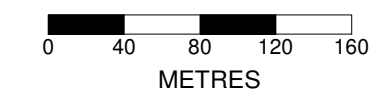
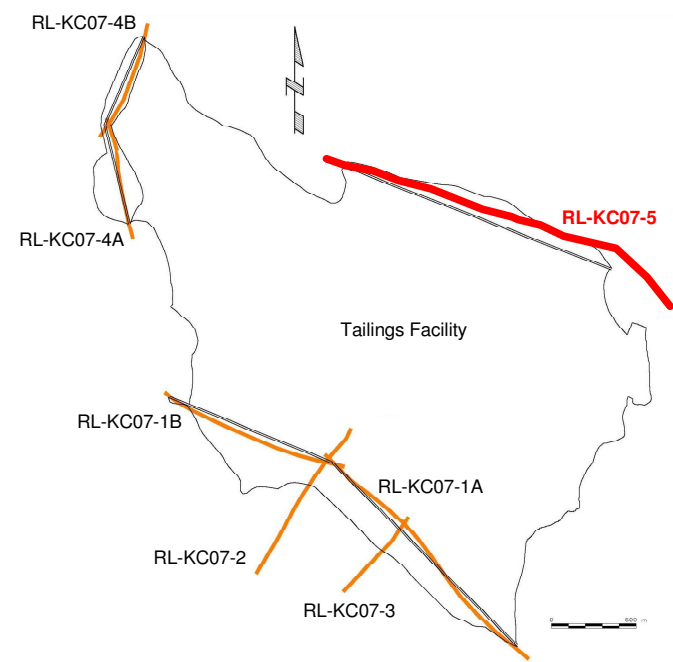
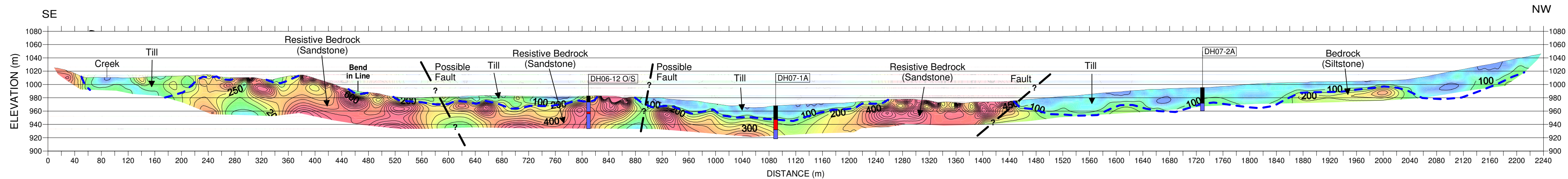
AS A MUTUAL PROTECTION TO OUR CLIENT, THE PUBLIC AND OURSELVES, ALL REPORTS AND DRAWINGS ARE SUBMITTED FOR THE CONFIDENTIAL INFORMATION OF OUR CLIENT FOR A SPECIFIC PROJECT AND AUTHORIZATION FOR USE AND/OR PUBLICATION OF DATA, STATEMENTS, CONCLUSIONS OR ABSTRACTS FROM OR REGARDING OUR REPORTS AND DRAWINGS IS RESERVED PENDING OUR WRITTEN APPROVAL.	CLIENT	PROJECT		
	<b>Klohn Crippen Berger</b>	<b>MORRISON LAKE</b>		
<b>PACIFIC BOOKER MINERALS</b>		TITLE		
<b>Klohn Crippen Berger</b>		<b>LINE RL-KC07-4A INVERTED RESISTIVITY SECTION</b>		
FEBRUARY, 2008	PROJECT No. M09382A01	FIG. No. FIGURE VII-5	REV. 1	





AS A MUTUAL PROTECTION TO OUR CLIENT, THE PUBLIC AND OURSELVES, ALL REPORTS AND DRAWINGS ARE SUBMITTED FOR THE CONFIDENTIAL INFORMATION OF OUR CLIENT FOR A SPECIFIC PROJECT AND AUTHORIZATION FOR USE AND/OR PUBLICATION OF DATA, STATEMENTS, CONCLUSIONS OR ABSTRACTS FROM OR REGARDING OUR REPORTS AND DRAWINGS IS RESERVED, PENDING OUR WRITTEN APPROVAL.	CLIENT	PROJECT		
	PACIFIC BOOKER MINERALS	MORRISON LAKE		
		TITLE		
LINE RL-KC07-4B INVERTED RESISTIVITY SECTION				
	FEBRUARY, 2008	PROJECT No. M09382A01	FIG. No. FIGURE VII-6	REV. 1

CANCEL PRINTS BEARING PREVIOUS

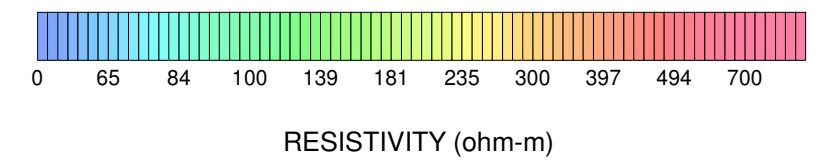
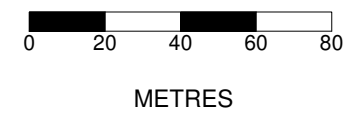
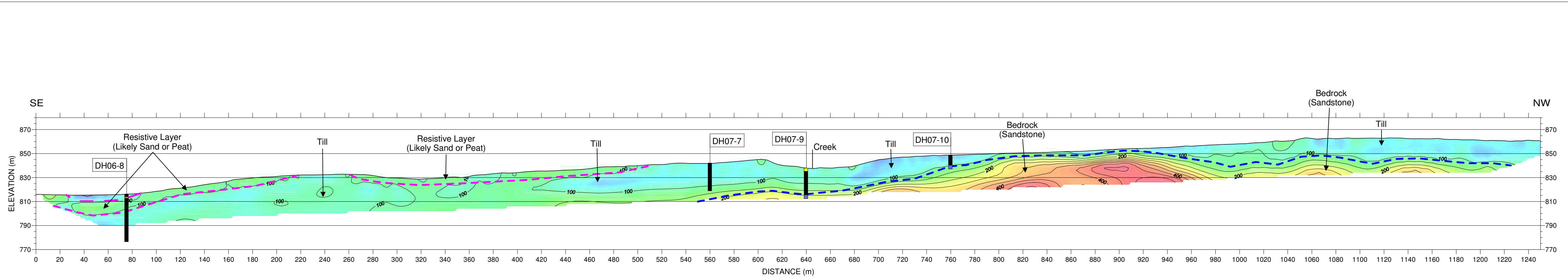


**Legend**

- Interpreted Base of Overburden
- Interpreted Fault
- No Recovery
- Till
- Siltstone
- Sandstone

Inverted resistivity section provided by Frontier Geoscience Inc.  
 Interpretation done by Klohn Crippen Berger.

AS A MUTUAL PROTECTION TO OUR CLIENT, THE PUBLIC AND OURSELVES, ALL REPORTS AND DRAWINGS ARE SUBMITTED FOR THE CONFIDENTIAL INFORMATION OF OUR CLIENT FOR A SPECIFIC PROJECT AND AUTHORIZATION OF USE AND/OR PUBLICATION OF DATA, STATEMENTS, CONCLUSIONS OR ABSTRACTS FROM OR REGARDING OUR REPORTS AND DRAWINGS IS RESERVED PENDING OUR WRITTEN APPROVAL.	CLIENT	PACIFIC BOOKER MINERALS		
	PROJECT	MORRISON LAKE		
	TITLE	LINE RL-KC07-5 INVERTED RESISTIVITY SECTION		
	FEBRUARY, 2008	PROJECT No. M09382A01	FIG. No. FIGURE VII-7	REV. 1



**Legend**

- Interpreted Base of Overburden
- Interpreted Fault
- No Recovery
- Till
- Clayey Gravel
- Sand
- Siltstone
- Sandstone

Inverted resistivity section provided by Frontier Geoscience Inc.  
 Interpretation done by Klohn Crippen Berger.

AS A MUTUAL PROTECTION TO OUR CLIENT, THE PUBLIC AND OURSELVES, ALL REPORTS AND DRAWINGS ARE SUBMITTED FOR THE CONFIDENTIAL INFORMATION OF OUR CLIENT FOR A SPECIFIC PROJECT AND AUTHORIZATION FOR USE AND/OR PUBLICATION OF DATA STATEMENTS, CONCLUSIONS OR ABSTRACTS FROM OR REGARDING OUR REPORTS AND DRAWINGS IS RESERVED PENDING OUR WRITTEN APPROVAL.

CLIENT  
**PACIFIC BOOKER MINERALS**

PROJECT <b>MORRISON LAKE</b>	
TITLE <b>LINE RL-KC07-6 INVERTED RESISTIVITY SECTION</b>	
PROJECT No. FEBRUARY, 2008	FIG. No. M09382A01 FIGURE VII-8
REV. 1	CANCEL PRINTS BEARING PREVIOUS

# **APPENDIX VIII**

## **Raw SPT Data**

Drillhole	DH07-1		
Date	Nov 11 2007		
SPT 1 - 4ft	4		
Depth (inches)	Blows/2"	Blows/6"	Recovery (inches)
2	1		?
4	3		
6	4	8	
8	7		
10	10		
12	16	33	
14	22		
16	26		
18	30	78	
20	34		
22	38		
24	42	114	
N <sub>m</sub> (8"-18") =	111	Blows/ft	
Pocket Pen	?		
Description	?		

Drillhole	DH07-1		
Date	Nov 11 2007		
SPT 2 - 9ft	9		
Depth (inches)	Blows/2"	Blows/6"	Recovery (inches)
2	1		20"
4	3		
6	4	8	
8	7		
10	9		
12	12	28	
14	15		
16	18		
18	22	55	
20	26		
22	30		
24	34	90	
N <sub>m</sub> (8"-18") =	83	Blows/ft	
Pocket Pen			
Description			

Drillhole	DH07-1		
Date	Nov 11 2007		
SPT 3 - 14ft	14		
Depth (inches)	Blows/2"	Blows/6"	Recovery (inches)
2			16"
4	2		
6	4	6	
8	5		
10	7		
12	10	22	
14	13		
16	16		
18	19	48	
20	22		
22	26		
24	31	79	
N <sub>m</sub> (8"-18") =	70	Blows/ft	
Pocket Pen			
Description			

Drillhole	DH07-1		
Date	Nov 11 2007		
SPT 4- 19ft	19		
Depth (inches)	Blows/2"	Blows/6"	Recovery (inches)
2			18"
4	2		
6	4	6	
8	6		
10	12		
12	16	34	
14	21		
16	28		
18	34	83	
20	40		
22	45		
24	50	135	
N <sub>m</sub> (8"-18") =	117 Blows/ft		
Pocket Pen			
Description			

Drillhole	DH07-1		
Date	Nov 12 2007		
SPT 5 at 24ft	24		
Depth (inches)	Blows/2"	Blows/6"	Recovery (inches)
2	0.5		24
4	2		
6	3	5.5	
8	6		
10	8		
12	11	25	
14	13		
16	17		
18	20	50	
20	23		
22	26		
24	31	80	
N <sub>m</sub> (8"-18") =	75 Blows/ft		
Pocket Pen	4.25	2.5	1.5 1.75 3.75 3.25 1.6 AVG 2.12
Description	?		

Drillhole	DH07-1		
Date	Nov 12 2007		
SPT 6 at 29ft	29		
Depth (inches)	Blows/2"	Blows/6"	Recovery (inches)
2	1		15
4	2		
6	4	7	
8	5		
10	8		
12	11	24	
14	16		
16	21		
18	25	62	
20	28		
22	31		
24	34	93	
N <sub>m</sub> (8"-18") =	86 Blows/ft		
Pocket Pen	1.25	0.75	1 0.75 2.5 AVG 0.9375
Description	?		

Drillhole	DH07-1								
Date	Nov 12 2007								
SPT 7 at 34ft	34								
Depth (inches)	Blows/2"	Blows/6"	Recovery (inches)						
2	1								
4	2								
6	4	7							
8	6								
10	7								
12	9	22							
14	11								
16	14								
18	17	42							
20	19								
22	21								
24	26	66							
N <sub>m</sub> (8"-18") =	64 Blows/ft								
Pocket Pen	2.5	1.5	1.5	3.5	2.5	1.5	2.75	1.25 AVG	1.9
Description	?								

Drillhole	DH07-1								
Date	Nov 12 2007								
SPT 8 at 39ft	39								
Depth (inches)	Blows/2"	Blows/6"	Recovery (inches)						
2	1		26						
4	2								
6	3	6							
8	4								
10	6								
12	9	19							
14	11								
16	14								
18	17	42							
20	20								
22	24								
24	27	71							
N <sub>m</sub> (8"-18") =	61 Blows/ft								
Pocket Pen	1	1	1.2	1.25	1.5	2.5	1.5	1.25 AVG	1.242857
Description	?								

Drillhole	DH07-1								
Date	Nov 12 2007								
SPT 9 at 44ft	44								
Depth (inches)	Blows/2"	Blows/6"	Recovery (inches)						
2	1		26						
4	2								
6	3	6							
8	5								
10	7								
12	9	21							
14	10								
16	13								
18	16	39							
20	19								
22	22								
24	27	68							
N <sub>m</sub> (8"-18") =	60 Blows/ft								
Pocket Pen	3	1.75	1.75	1	2	2	1	AVG	1.583333
Description	?								

Drillhole	DH07-1										
Date	Nov 12 2007										
SPT 10 at 49ft	49										
Depth (inches)	Blows/2"	Blows/6"	Recovery (inches)								
2	1		27								
4	2										
6	3	6									
8	5										
10	7										
12	9	21									
14	13										
16	16										
18	19	48									
20	23										
22	26										
24	31	80									
N <sub>m</sub> (8"-18") =	69 Blows/ft										
Pocket Pen	1.25	1	1.75	1.75	1.5	1.25			AVG	1.416667	
Description											

Drillhole	DH07-1											
Date	Nov 12 2007											
SPT 11 at 54ft	54											
Depth (inches)	Blows/2"	Blows/6"	Recovery (inches)									
2	1		27									
4	2											
6	3	6										
8	5											
10	7											
12	9	21										
14	12											
16	14											
18	16	42										
20	20											
22												
24	25	45										
N <sub>m</sub> (8"-18") =	63 Blows/ft											
Pocket Pen	1	1.5	1	1.75	1	1	1.25	1.25	1	1	AVG	1.175
Description												

Drillhole	DH07-1										
Date	Nov 12 2007										
SPT 12 at 59ft	59										
Depth (inches)	Blows/2"	Blows/6"	Recovery (inches)								
2	0		27								
4	2										
6	3	5									
8	5										
10	7										
12	9	21									
14	12										
16	15										
18	17	44									
20	20										
22	24										
24	29	73									
N <sub>m</sub> (8"-18") =	65 Blows/ft										
Pocket Pen	1.25	1.75	1.25	1	1.75	1.75	3.5	AVG	1.458333		
Description											



Drillhole DH07-1  
 Date Nov 12 2007  
 SPT 13 at 64ft 64

Depth (inches)	Blows/2"	Blows/6"	Recovery (inches)
2	2		27
4	4		
6	5	11	
8	7		
10	8		
12	9	24	
14	11		
16	12		
18	14	37	
20	17		
22			
24	21	38	

N<sub>m</sub> (8"-18") = 61 Blows/ft  
 Pocket Pen 1.25 1 1 1.25 0.75 1 0.75 1 1 AVG 1  
 Description

START DEPTH (ft)	MIDDLE DEPTH (ft)	FIELD N
4	5	111
9	10	83
14	15	70
19	20	117
24	25	75
29	30	86
34	35	64
39	40	61
44	45	60
49	50	69
54	55	63
59	60	65
64	65	61

Drillhole	DH07-2		
Date	Nov 16 2007		
SPT 1 at 4ft	4		
Depth (inches)	Blows/2"	Blows/6"	Recovery (inches)
2	2		23.5
4	3		
6	7	12	
8	5		
10	3		
12	5	13	
14	5		
16	4		
18	5	14	
20	6		
22	5		
24	5	16	
N <sub>m</sub> (8"-18") =	27 Blows/ft		
Pocket Pen	max	max	max
Description	SILT (MH) clayey, gravelly, sandy, very stiff, red brown, high plasticity, dry		

Drillhole	DH07-2		
Date	Nov 16 2007		
SPT 2 at 9ft	9		
Depth (inches)	Blows/2"	Blows/6"	Recovery (inches)
2	1.5		7
4	4		
6	8	13.5	
8	8		
10	6		
12	8	22	
14	11		
16	12	<--	hung up on rock, jammed in end
18	12	35	
20	11		
22	9		
24	6	26	
N <sub>m</sub> (8"-18") =	57 Blows/ft		
Pocket Pen	2.5 max	max	4
Description	CLAY (CH) silty, fine gravelly, sandy, very stiff, sub angular, red brown, high plasticity, moist		

AVG 4

Drillhole	DH07-2		
Date	Nov 16 2007		
SPT 3 at 14ft	14		
Depth (inches)	Blows/2"	Blows/6"	Recovery (inches)
2	2		23
4	2		
6	2	6	
8	1.5		
10	2		
12	2	5.5	
14	2		
16	3		
18	3	8	
20	3		
22	3		
24	3	9	
N <sub>m</sub> (8"-18") =	13.5 Blows/ft		
Pocket Pen	2.25	4	2.5 2
Description	same as above		

AVG 2.25

Drillhole	DH07-2								
Date	Nov 16 2007								
SPT 4 at 19ft	19								
Depth (inches)	Blows/2"	Blows/6"	Recovery (inches)						
2	1		20 (double check in photo)						
4	2								
6	1.5	4.5							
8	2								
10	2								
12	2	6							
14	2								
16	2								
18	3	7							
20	3								
22	3								
24	3	9							
N <sub>m</sub> (8"-18") =	13	Blows/ft							
Pocket Pen	1.5	1	0.75	1	1.25	1	1.25	AVG	1.107143
Description									

Drillhole	DH07-2								
Date	Nov 16 2007								
SPT 5 at 24ft	24								
Depth (inches)	Blows/2"	Blows/6"	Recovery (inches)						
2	0.5		24						
4	1								
6	1	2.5							
8	1.5								
10	1.5								
12	2	5							
14	2								
16	2								
18	3	7							
20	3								
22	3								
24	3	9							
N <sub>m</sub> (8"-18") =	12	Blows/ft							
Pocket Pen	1.5	4.5	1.5	2	3	1.25	1.5	AVG	1.791667
Description	same as above but more gravelly at 28ft with hammer ~6" thick								

Drillhole	DH07-2								
Date	Nov 16 2007								
SPT 6 at 29ft	29								
Depth (inches)	Blows/2"	Blows/6"	Recovery (inches)						
2	0.5		21						
4	2.5								
6	2	5							
8	2								
10	2.5								
12	2.5	7							
14	2								
16	2								
18	3	7							
20	3								
22	3								
24	3	9							
N <sub>m</sub> (8"-18") =	14	Blows/ft							
Pocket Pen									
Description	same as above but a bit more gravelly								

Drillhole	DH07-2		
Date	Nov 16 2007		
SPT 7 at 34ft	34		
Depth (inches)	Blows/2"	Blows/6"	Recovery (inches)
2	0.5		24
4	1		
6	1.5	3	
8	1.5		
10	2		
12	3	6.5	
14	3		
16	2.5		
18	2.5	8	
20	4		
22	4		
24	4	12	
N <sub>m</sub> (8"-18") =	14.5 Blows/ft		
Pocket Pen	1.5	1.5	2 1.75 2 1.25
Description			

AVG 1.666667

Drillhole	DH07-2		
Date	Nov 16 2007		
SPT 8 at 39ft	39		
Depth (inches)	Blows/2"	Blows/6"	Recovery (inches)
2	0.5		17.5
4	0.5		
6	2	3	
8	3		
10	3		
12	2	8	
14	2		
16	3		
18	3	8	
20	3		
22	4		
24	4	11	
N <sub>m</sub> (8"-18") =	16 Blows/ft		
Pocket Pen	1.5	2	1.25 1.5 2 1.25
Description	same as above		

AVG 1.583333

Drillhole	DH07-2		
Date	Nov 16 2007		
SPT 9 at 44ft	44		
Depth (inches)	Blows/2"	Blows/6"	Recovery (inches)
2	2		14
4	9		
6	17	28	
8	6		
10	4		
12	4	14	
14	5		
16	4		
18	5	14	
20	5		
22	5		
24	7	17	
N <sub>m</sub> (8"-18") =	28 Blows/ft		
Pocket Pen			
Description	Bent the SPT sampler, 30cm boulder at ~47ft		

Drillhole	DH07-2									
Date	Nov 16 2007									
SPT 10 at 49ft	49									
Depth (inches)	Blows/2"	Blows/6"	Recovery (inches)							
2	1		24							
4	1									
6	2.5	4.5								
8	1.5									
10	2									
12	2	5.5								
14	4									
16	4									
18	3	11								
20	4									
22	4									
24	5	13								
N <sub>m</sub> (8"-18") =	16.5 Blows/ft									
Pocket Pen	1.5	3	1	2	1.5	1.25	2.5	1.5	AVG	1.458333
Description	same as above									

Drillhole	DH07-2									
Date	Nov 16 2007									
SPT 11 at 54ft	54									
Depth (inches)	Blows/2"	Blows/6"	Recovery (inches)							
2	2		24							
4	1									
6	2	5								
8	1.5									
10	1									
12	2	4.5								
14	2.5									
16	2									
18	3	7.5								
20	3									
22	3									
24	4	10								
N <sub>m</sub> (8"-18") =	12 Blows/ft									
Pocket Pen	1.25	0.75	1.75	1	2	0.75			AVG	1.1
Description	same as above									

Drillhole	DH07-2									
Date	Nov 16 2007									
SPT 12 at 59ft	59									
Depth (inches)	Blows/2"	Blows/6"	Recovery (inches)							
2	1		16.5							
4	2									
6	2	5								
8	2									
10	2									
12	3	7								
14	3									
16	7									
18	6	16								
20	4									
22	5									
24	7	16								
N <sub>m</sub> (8"-18") =	23 Blows/ft									
Pocket Pen	1.25	1.5	1.75	1.25	1.75	1.5			AVG	1.375
Description	same as above									

Drillhole DH07-2  
 Date Nov 16 2007  
 SPT 13 at 69ft 69  
 Depth (inches) Blows/2" Blows/6" Recovery (inches)  
 2 0.5 25  
 4 1  
 6 1 2.5  
 8 2.5  
 10 4  
 12 3 9.5  
 14 6  
 16 5  
 18 3 14  
 20 2  
 22 3  
 24 4 9  
 N<sub>m</sub> (8"-18") = 23.5 Blows/ft  
 Pocket Pen 1.5 1.75 2 2 1.25 1.25 1 AVG 1.535714  
 Description same as above

START DEPTH (ft)	MIDDLE DEPTH (ft)	FIELD N
4	5	27
9	10	57
14	15	13.5
19	20	13
24	25	12
29	30	14
34	35	14.5
39	40	16
44	45	28
49	50	16.5
54	55	12
59	60	23
69	70	23.5

Drillhole	DH07-3A		
Date	Nov 19 2007		
SPT 1 at 4ft	4		
Depth (inches)	Blows/2"	Blows/6"	Recovery (inches)
2	1		20
4	2		
6	2	5	
8	2		
10	5		
12	5	12	
14	2		
16	3		
18	3	8	
20	3		
22	3		
24	4	10	
N <sub>m</sub> (8"-18") =	20 Blows/ft		
Pocket Pen	max	max	AVG MAX
Description	CLAY (CH) silty, gravelly, sandy, dry - moist, med brown, hard high plasticity, from ground, weathered sandstone pebble, till		

Drillhole	DH07-3A		
Date	Nov 19 2007		
SPT 2 at 9ft	9		
Depth (inches)	Blows/2"	Blows/6"	Recovery (inches)
2	1		19.5
4	1		
6	2	4	
8	1.5		
10	2.5		
12	2	6	
14	3		
16	2		
18	3	8	
20	2		
22	3		
24	3	8	
N <sub>m</sub> (8"-18") =	14 Blows/ft		
Pocket Pen	2.25	3.75	4.25 3.75
Description	CLAH (CH) silty, some gravel, moist		
			AVG 3.25

Drillhole	DH07-3A		
Date	Nov 19 2007		
SPT 3 at 14ft	14		
Depth (inches)	Blows/2"	Blows/6"	Recovery (inches)
2	1		15
4	1		
6	1	3	
8	2		
10	2		
12	2	6	
14	2		
16	2		
18	2	6	
20	3		
22	4		
24	3	10	
N <sub>m</sub> (8"-18") =	12 Blows/ft		
Pocket Pen	2.5	2.5	3.25
Description	same as above only more gravelly and firm		
			AVG 2.75

Drillhole	DH07-3A		
Date	Nov 19 2007		
SPT 4 at 19ft	19		
Depth (inches)	Blows/2"	Blows/6"	Recovery (inches)
2	1		23
4	1		
6	2	4	
8	1.5		
10	2.5		
12	10	14	
14	22		
16	15		
18	4	41	
20	4		
22	4		
24	3	11	

N<sub>m</sub> (8"-18") = 55 Blows/ft  
 Pocket Pen 1.75 max max 1.5 3.75 max AVG 2.333333  
 Description same as above, dry-moist

Drillhole	DH07-3A		
Date	Nov 19 2007		
SPT 5 at 24ft	24		
Depth (inches)	Blows/2"	Blows/6"	Recovery (inches)
2	2		13.5
4	3		
6	3	8	
8	4		
10	2		
12	2	8	
14	2		
16	3		
18	4	9	
20	6		
22	5		
24	4	15	

N<sub>m</sub> (8"-18") = 17 Blows/ft  
 Pocket Pen 2.25 3 2.5 1.75 2.5 AVG 2.25  
 Description same as above, granit and sandstone pebbles switched from dry to wet hammering

Drillhole	DH07-3A		
Date	Nov 19 2007		
SPT 6 at 29ft	29		
Depth (inches)	Blows/2"	Blows/6"	Recovery (inches)
2	1		16.5
4	1		
6	1	3	
8	3		
10	3		
12	3	9	
14	2		
16	3		
18	3	8	
20	3		
22	5		
24	5	13	

N<sub>m</sub> (8"-18") = 17 Blows/ft  
 Pocket Pen 2.25 1.25 max max 3 AVG 2.166667  
 Description same as above



Drillhole DH07-3A  
 Date Nov 19 2007  
 SPT 7 at 34ft 34  
 Depth (inches) Blows/2" Blows/6" Recovery (inches)

2	1		23
4	1		
6	2	4	
8	2		
10	2		
12	3	7	
14	4		
16	7		
18	5	16	
20	5		
22	4		
24	4	13	

N<sub>m</sub> (8"-18") = 23 Blows/ft  
 Pocket Pen 2 2.5 2.5 4.5  
 Description same as above but more f-gravel

AVG 2.333333

Drillhole DH07-3A  
 Date Nov 19 2007  
 SPT 8 at 39ft 39  
 Depth (inches) Blows/2" Blows/6" Recovery (inches)

2	1		22
4	1		
6	3	5	
8	4		
10	4		
12	4	12	
14	5		
16	5		
18	6	16	
20	7		
22	7		
24	8	22	

N<sub>m</sub> (8"-18") = 28 Blows/ft  
 Pocket Pen 4.5 4.25 4.5 3 3.5  
 Description same as above

AVG 3.583333

Drillhole DH07-3A  
 Date Nov 19 2007  
 SPT 9 at 44ft 44  
 Depth (inches) Blows/2" Blows/6" Recovery (inches)

2	1		?
4	3		
6	4	8	
8	4		
10	4		
12	5	13	
14	6		
16	6		
18	7	19	
20	7		
22	7		
24	8	22	

N<sub>m</sub> (8"-18") = 32 Blows/ft  
 Pocket Pen max max max max  
 Description

AVG MAX

Drillhole DH07-3A  
 Date Nov 19 2007  
 SPT 10 at 49ft 49  
 Depth (inches) Blows/2" Blows/6" Recovery (inches)  
 2 1 5  
 4 3  
 6 7 11  
 8 7  
 10 9  
 12 7 23  
 14 7  
 16 9  
 18 9 25  
 20 10  
 22 10  
 24 12 32  
 N<sub>m</sub> (8"-18") = 48 Blows/ft  
 Pocket Pen too crumbly  
 Description same as above

Drillhole DH07-3A  
 Date Nov 19 2007  
 SPT 11 at 59ft 59  
 Depth (inches) Blows/2" Blows/6" Recovery (inches)  
 2 2 ?  
 4 3  
 6 5 10  
 8 5  
 10 7  
 12 8 20  
 14 9  
 16 8  
 18 10 27  
 20 10  
 22 10  
 24 10 30  
 N<sub>m</sub> (8"-18") = 47 Blows/ft  
 Pocket Pen max max max  
 Description Silt (MH) clayey with a trace of gravel, hard, moist, high plasticity, red brown  
 Nov. 20 Open shoe on casing wrecked. Pulled casing up and put on closed shoe passed 59ft new shoe

AVG MAX

Drillhole DH07-3A  
 Date Nov 19 2007  
 SPT 12 at 69ft 69  
 Depth (inches) Blows/2" Blows/6" Recovery (inches)  
 2 2 18  
 4 3  
 6 6 11  
 8 6  
 10 5  
 12 6 17  
 14 6  
 16 7  
 18 8 21  
 20 10  
 22 15  
 24 15 40  
 N<sub>m</sub> (8"-18") = 38 Blows/ft  
 Pocket Pen 2.75 max 1.5 3.5  
 Description GRAVEL (GC) and Clay, some silt, sandy, fine to medium gravel, moist, greyish brown, dense (finger indent) subangular-angular, sandstone, siltstone

AVG 2.583333

Cored to 116.5ft by 5pm

START DEPTH (ft)	MIDDLE DEPTH (ft)	FIELD N
4	5	20
9	10	14
14	15	12
19	20	55
24	25	17
29	30	17
34	35	23
39	40	28
44	45	32
49	50	48
59	60	47

MAX  
 3.25  
 2.75  
 2.333333  
 2.25  
 2.166667  
 2.333333  
 3.583333

69

70

38

MAX  
MAX  
2.583333

Drillhole	DH07-4A		
Date	Nov 23 2007		
SPT 1 at 4ft	4		
Depth (inches)	Blows/2"	Blows/6"	Recovery (inches)
2	3		19
4	5		
6	4	12	
8	4		
10	12		
12	10	26	
14	4		
16	5		
18	6	15	
20	6		
22	6		
24	6	18	
N <sub>m</sub> (8"-18") =	41 Blows/ft		
Pocket Pen	3.25	3.75	AVG 3.5
Description	CLAY (CH) silty, fine to medium gravelly, stiff moist-wet (dry drilling), high plasticity, dark brown, angular, TILL		

Drillhole	DH07-4A		
Date	Nov 23 2007		
SPT 2 at 9ft	9		
Depth (inches)	Blows/2"	Blows/6"	Recovery (inches)
2	3		11
4	10		
6	7	20	
8	4		
10	2		
12	2	8	
14	1		
16	2		
18	2	5	
20	2		
22	3		
24	4	9	
N <sub>m</sub> (8"-18") =	13 Blows/ft		
Pocket Pen	1	1	2 1 1.5 1 AVG 1.25
Description	same as above but firm, trace of fine to coarse gravel, dark grey sandstone, pebbly		

Drillhole	DH07-4A		
Date	Nov 23 2007		
SPT 3 at 15ft	15		
Depth (inches)	Blows/2"	Blows/6"	Recovery (inches)
2	1		13
4	1		
6	1	3	
8	1.5		
10	2		
12	1.5	5	
14	1		
16	3		
18	3	7	
20	3		
22	3		
24	3	9	
N <sub>m</sub> (8"-18") =	12 Blows/ft		
Pocket Pen	2.5 max	1	1 1.25 AVG 1.4375
Description	same as above only sandy and gravelly boulder (~1ft) at 14ft		

Drillhole	DH07-4A						
Date	Nov 23 2007						
SPT 4 at 19ft	19						
Depth (inches)	Blows/2"	Blows/6"	Recovery (inches)				
2	1		18				
4	2						
6	2	5					
8	2						
10	2						
12	3	7					
14	2						
16	3						
18	3	8					
20	4						
22	4						
24	4	12					
N <sub>m</sub> (8"-18") =	15 Blows/ft						
Pocket Pen	3	1.75	1.75 max	1.75		AVG	2.0625
Description	same as above						

Drillhole	DH07-4A						
Date	Nov 23 2007						
SPT 5 at 24ft	24						
Depth (inches)	Blows/2"	Blows/6"	Recovery (inches)				
2	0.5		17"				
4	1.5						
6	2	4					
8	2						
10	2						
12	3	7					
14	4						
16	4						
18	4	12					
20	6						
22	8						
24	10	24					
N <sub>m</sub> (8"-18") =	19 Blows/ft						
Pocket Pen	1.75	2.25	1.75	2.5	2.25	2.5	AVG 2.166667
Description	same as above, black fine grain igneous pebbles						

Drillhole	DH07-4A						
Date	Nov 23 2007						
SPT 6 at 29ft	29						
Depth (inches)	Blows/2"	Blows/6"	Recovery (inches)				
2	1		21 might of lost a few inches				
4	1						
6	2	4					
8	2						
10	3						
12	3	8					
14	3						
16	4						
18	4	11					
20	5						
22	4						
24	7	16					
N <sub>m</sub> (8"-18") =	19 Blows/ft						
Pocket Pen	2.25	3.25	1.75 max	2.5	2.25	AVG	2.1875
Description	same as above, dark grey sandstone pebbles						

Drillhole	DH07-4A		
Date	Nov 23 2007		
SPT 7 at 34ft	34		
Depth (inches)	Blows/2"	Blows/6"	Recovery (inches)
2	1		27
4	2		
6	3	6	
8	4		
10	3		
12	3	10	
14	3		
16	3		
18	4	10	
20	4		
22	4		
24	4	12	
N <sub>m</sub> (8"-18") =	20 Blows/ft		
Pocket Pen	1.75	1.75 max	3.75 2.25
Description	same as above		

AVG 1.916667

Drillhole	DH07-4A		
Date	Nov 23 2007		
SPT 8 at 39ft	39		
Depth (inches)	Blows/2"	Blows/6"	Recovery (inches)
2	5		22
4	5		
6	7	17	
8	7		
10	7		
12	5	19	
14	4		
16	3		
18	4	11	
20	3		
22	6		
24	5	14	
N <sub>m</sub> (8"-18") =	30 Blows/ft		
Pocket Pen	2.5	2.25	2.5 2.25 2.25
Description	same as above bedrock at 42ft started coring at 44.5ft drilled until 5.30pm to 66.5'		

AVG 2.35

START DEPTH (ft)	MIDDLE DEPTH (ft)	FIELD N
4	5	41
9	10	13
15	16	12
19	20	15
24	25	19
29	30	19
34	35	20
39	40	30

AVG 3.5  
 AVG 1.25  
 AVG 1.4375  
 AVG 2.0625  
 AVG 2.166667  
 AVG 2.1875  
 AVG 1.916667  
 AVG 2.35

Drillhole DH07-5A  
 Date Nov 27 2007  
 SPT 1 at 4ft 4  
 Depth (inches) Blows/2" Blows/6" Recovery (inches)

Depth (inches)	Blows/2"	Blows/6"	Recovery (inches)
2	1		20
4	1		
6	1.5	3.5	
8	1.5		
10	2		
12	2	5.5	
14	1		
16	2		
18	1	4	
20	1		
22	2		
24	1	4	

N<sub>m</sub> (8"-18") = 9.5 Blows/ft  
 Pocket Pen thumb indent  
 Description CLAY (CH) silty, fine gravelly some sand, meddled brown, firm, dry to moist, high plasticity

Drillhole DH07-5A  
 Date Nov 27 2007  
 SPT 2 at 9ft 9  
 Depth (inches) Blows/2" Blows/6" Recovery (inches)

Depth (inches)	Blows/2"	Blows/6"	Recovery (inches)
2	1		16
4	2		
6	3	6	
8	3		
10	4		
12	4	11	
14	4		
16	4		
18	6	14	
20	6		
22	6		
24	6	18	

N<sub>m</sub> (8"-18") = 25 Blows/ft  
 Pocket Pen thumbnail-thumb  
 Description same as above fine to medium gravelly, moist (wet drilling)

Drillhole DH07-5A  
 Date Nov 27 2007  
 SPT 3 at 14ft 14

Depth (inches)	Blows/2"	Blows/6"	Recovery (inches)
2	1		24
4	1.5		
6	1.5	4	
8	2		
10	3		
12	3	8	
14	8		
16	11		
18	5	24	
20	5		
22	4		
24	5	14	

N<sub>m</sub> (8"-18") = 32 Blows/ft  
 Pocket Pen Thumb  
 Description same as above, fine gravelly

Drillhole DH07-5A  
 Date Nov 27 2007  
 SPT 4 at 19ft 19

Depth (inches)	Blows/2"	Blows/6"	Recovery (inches)
2	3		20
4	4		
6	8	15	
8	7		
10	5		
12	8	20	
14	11		
16	10		
18	10	31	
20	12		
22	12		
24	14	38	

N<sub>m</sub> (8"-18") = 51 Blows/ft  
 Pocket Pen CLAYEY GRAVEL-nail-thumb

Description Sand - whole finger - non cohesive  
 interbedded sand and clayey gravel  
 SAND - 2.4"  
 GRAVEL (GC) - 3.6"  
 beds of gravel clayey, silty sand, fine to coarse gravel, dark brown, stiff, moist,  
 high - med plasticity, subangular, varies b/w CLAY and GRAVEL  
 SAND (SM) fine to medium grain, some silt, dark greyish brown, soft-noncohesive



Drillhole	DH07-5A		
Date	Nov 27 2007		
SPT 5 at 24ft	24		
Depth (inches)	Blows/2"	Blows/6"	Recovery (inches)
2	3		21
4	8		
6	10	21	
8	7		
10	7		
12	9	23	
14	9		
16	9		
18	10	28	
20	10		
22	11		
24	12	33	

N<sub>m</sub> (8"-18") = 51 Blows/ft

Pocket Pen Thumbnail

Description CLAY (CH) and fine to coarse gravel, sandy, silty, moist, dense/stiff, granite fine grain igneous and sandstone

Drillhole	DH07-5A		
Date	Nov 27 2007		
SPT 6 at 29ft	29		
Depth (inches)	Blows/2"	Blows/6"	Recovery (inches)
2	3		28
4	5		
6	6	14	
8	6		
10	9		
12	9	24	
14	8		
16	11		
18	11	30	
20	10		
22	11		
24	12	33	

N<sub>m</sub> (8"-18") = 54 Blows/ft

Pocket Pen Thumbnail to harder

Description Same as above, 35-45% gravel

Drillhole	DH07-5A		
Date	Nov 27 2007		
SPT 7 at 34ft	34		
Depth (inches)	Blows/2"	Blows/6"	Recovery (inches)
2	2		16
4	3		
6	5	10	
8	5		
10	7		
12	8	20	
14	23		
16	21		
18	13	57	
20	16		
22	14		
24	18	48	

N<sub>m</sub> (8"-18") = 77 Blows/ft

Pocket Pen Thumbnail  
 Description GRAVEL (GC) and clay, silty, sandy, stiff, subangular, red brown, moist, fine to medium fravel, fine to coarse sand

Drillhole	DH07-5A		
Date	Nov 27 2007		
SPT 8 at 39ft	39		
Depth (inches)	Blows/2"	Blows/6"	Recovery (inches)
2	3		
4	5		
6	6	14	
8	5		
10	8		
12	7	20	
14	8		
16	10		
18	10	28	
20	11		
22	12		
24	12	35	

N<sub>m</sub> (8"-18") = 48 Blows/ft

Pocket Pen nail  
 Description same as above

Drillhole DH07-5A  
 Date Nov 27 2007  
 SPT 9 at 44ft 44

Depth (inches)	Blows/2"	Blows/6"	Recovery (inches)
2	2		19
4	2		
6	5	9	
8	11		
10	14		
12	15	40	
14	7		
16	10		
18	12	29	
20	15		
22	16		
24	17	48	

N<sub>m</sub> (8"-18") = 69 Blows/ft  
 Pocket Pen nail - harder  
 Description same as above

Drillhole DH07-5A  
 Date Nov 27 2007  
 SPT 10 at 49ft 49

Depth (inches)	Blows/2"	Blows/6"	Recovery (inches)
2	2		22
4	4		
6	5	11	
8	5		
10	6		
12	7	18	
14	8		
16	9		
18	8	25	
20	9		
22	12		
24	9	30	

N<sub>m</sub> (8"-18") = 43 Blows/ft  
 Pocket Pen nail-harder, except sand, whole thumb  
 Description same as above 2cm sand lens at 10"

Drillhole DH07-5A  
 Date Nov 27 2007  
 SPT 11 at 54ft 54

Depth (inches)	Blows/2"	Blows/6"	Recovery (inches)
2	1		25
4	4		
6	3	8	
8	3		
10	5		
12	6	14	
14	5		
16	6		
18	8	19	
20	9		
22	10		
24	10	29	

N<sub>m</sub> (8"-18") = 33 Blows/ft  
 Pocket Pen nail  
 Description Clay (CH) and - some fine to coarse gravel, sandy, silty, dense, moist, red brown

Drillhole DH07-5A  
 Date Nov 27 2007  
 SPT 12 at 59ft 59  
 Depth (inches) Blows/2" Blows/6" Recovery (inches)  
 2 4 21  
 4 7  
 6 10 21  
 8 5  
 10 6  
 12 6 17  
 14 6  
 16 10  
 18 13 29  
 20 15  
 22 16  
 24 16 47  
 N<sub>m</sub> (8"-18") = 46 Blows/ft  
 Pocket Pen nail  
 Description same as above but 7-16" of CLAY, trace of sand, trace of fine gravel

START DEPTH (ft)	MIDDLE DEPTH (ft)	FIELD N
4	5	9.5
9	10	25
14	15	32
19	20	51
24	25	51
29	30	54
34	35	77
39	40	48
44	45	69
49	50	43
54	55	33
59	60	46

Drillhole DH07-5B  
 Date Nov 29 2007  
 SPT 1 at 63.5ft- 63.5

Depth (inches)	Blows/2"	Blows/6"	Recovery (inches)
2	22		?
4	70		
6	Refusal	92	
8			
10			
12		0	
14			
16			
18		0	
20			
22			
24		0	

N<sub>m</sub> (8"-18") = 0 Blows/ft  
 Pocket Pen ?  
 Description GRAVEL (GW) fine to medium gravel, medium to coarse sandy, no fines angular - to very angular - maybe with rock and cuttings

Drillhole DH07-5B  
 Date Nov 29 2007  
 SPT 2 at 63.5ft - 63.5

Depth (inches)	Blows/2"	Blows/6"	Recovery (inches)
2	1		?
4	50		
6	Refusal	51	
8			
10			
12		0	
14			
16			
18		0	
20			
22			
24		0	

N<sub>m</sub> (8"-18") = 0 Blows/ft  
 Pocket Pen ?  
 Description ?

Drillhole DH07-5B  
 Date Nov 29 2007  
 SPT3 - 69ft 69  
 bouncing at 0.1" - refusal  
 69--79ft-hammer through rotten rock switched to coring and 1/2 run intact core 5p

START DEPTH (ft)	MIDDLE DEPTH (ft)	FIELD N
63.5	64.5	0
63.5	64.5	0
69	70	0

Drillhole DH07-6  
 Date Dec 3 2007  
 SPT 1 at 4ft 4  
 Depth (inches) Blows/2" Blows/6" Recovery (inches)

Depth (inches)	Blows/2"	Blows/6"	Recovery (inches)
2	1		7
4	1		
6	2	4	
8	1		
10	1.5		
12	1	3.5	
14	1.5		
16	0.5		
18	0.5	2.5	
20	1		
22	1		
24	1	3	

N<sub>m</sub> (8"-18") = 6 Blows/ft  
 Pocket Pen 2.5 3 Frozen crust  
 Description CLAY (CH) silty, some sand, trace of fine gravel, firm, moist, red-brown

Drillhole DH07-6  
 Date Dec 3 2007  
 SPT 2 at 9ft 9  
 Depth (inches) Blows/2" Blows/6" Recovery (inches)

Depth (inches)	Blows/2"	Blows/6"	Recovery (inches)
2	1		13
4	1		
6	1	3	
8	1		
10	1		
12	1	3	
14	1		
16	1		
18	2	4	
20	2		
22	2		
24	2	6	

N<sub>m</sub> (8"-18") = 7 Blows/ft  
 Pocket Pen max max 3.5  
 Description CLAY (CH) silty sandy gravelly firm  
 same as before but 12ft noticeably harder

Drillhole	DH07-6		
Date	Dec 3 2007		
SPT 3 at 14ft	14		
Depth (inches)	Blows/2"	Blows/6"	Recovery (inches)
2	2		19
4	4		
6	9	15	
8	12		
10	7		
12	4	23	
14	6		
16	5		
18	6	17	
20	6		
22	7		
24	6	19	
N <sub>m</sub> (8"-18") =	40 Blows/ft		
Pocket Pen	?		
Description	?		

Drillhole	DH07-6		
Date	Dec 3 2007		
SPT 4 at 19ft	19		
Depth (inches)	Blows/2"	Blows/6"	Recovery (inches)
2	1		16
4	3		
6	3	7	
8	3		
10	5		
12	7	15	
14	11		
16	10		
18	7	28	
20	9		
22	8		
24	8	25	
N <sub>m</sub> (8"-18") =	43 Blows/ft		
Pocket Pen	max	max	4
Description	CLAY same as before, wet horizontal fracture in till, otherwise moist, (dry drilling)		

Drillhole DH07-6  
 Date Dec 3 2007  
 SPT 5 at 24ft 24  
 Depth (inches) Blows/2" Blows/6" Recovery (inches)  
 2 2 ?  
 4 4  
 6 6 12  
 8 6  
 10 7  
 12 10 23  
 14 12  
 16 5  
 18 6 23  
 20 5  
 22 8  
 24 8 21  
 N<sub>m</sub> (8"-18") = 46 Blows/ft  
 Pocket Pen 4 1.5 crumbly  
 Description wet horizontal seam otherwise moist, same as above

Drillhole DH07-6  
 Date Dec 3 2007  
 SPT 6 at 29ft 29  
 Depth (inches) Blows/2" Blows/6" Recovery (inches)  
 2 3 20  
 4 2  
 6 3 8  
 8 4  
 10 4  
 12 5 13  
 14 6  
 16 8  
 18 15 29  
 20 11  
 22 10  
 24 9 30  
 N<sub>m</sub> (8"-18") = 42 Blows/ft  
 Pocket Pen max max  
 Description same as above



Drillhole	DH07-6		
Date	Dec 3 2007		
SPT 7 at 34ft	34		
Depth (inches)	Blows/2"	Blows/6"	Recovery (inches)
2	3		?
4	3		
6	17	23	
8	30-bounces		<-- 12" boulder
10			
12		0	
14			
16			
18		0	
20			
22			
24		0	
N <sub>m</sub> (8"-18") =	0 Blows/ft		
Pocket Pen	max	max	2.5 crumbly
Description	same as above moist		

Drillhole	DH07-6		
Date	Dec 3 2007		
SPT 8 at 39ft	39		
Depth (inches)	Blows/2"	Blows/6"	Recovery (inches)
2	6		23
4	4		
6	3	13	
8	4		
10	5		
12	5	14	
14	5		
16	6		
18	6	17	
20	8		
22	9		
24	9	26	
N <sub>m</sub> (8"-18") =	31 Blows/ft		
Pocket Pen	3.5	3.5	3.5 4
Description	same as above - wet (still dry drilling) water coming into hole since depth>39ft		

Drillhole	DH07-6		
Date	Dec 3 2007		
SPT 9 at 49ft	49		
Depth (inches)	Blows/2"	Blows/6"	Recovery (inches)
2	1		27
4	2		
6	2	5	
8	3		
10	3		
12	4	10	
14	3		
16	5		
18	4	12	
20	6		
22	6		
24	5	17	
N <sub>m</sub> (8"-18") =	22	Blows/ft	
Pocket Pen	max	max	2 max
Description	same as above		

Drillhole	DH07-6		
Date	Dec 3 2007		
SPT 10 at 59ft	59		
Depth (inches)	Blows/2"	Blows/6"	Recovery (inches)
2	2		?
4	2		
6	2	6	
8	3		
10	4		
12	5	12	
14	6		
16	7		
18	7	20	
20	6		
22	7		
24	8	21	
N <sub>m</sub> (8"-18") =	32	Blows/ft	
Pocket Pen	4	4	4.5 2.5
Description	same as above		

Drillhole DH07-6  
 Date Dec 3 2007  
 SPT 11 at 74ft 74  
 Depth (inches) Blows/2" Blows/6" Recovery (inches)  
 2 2 24  
 4 2  
 6 10 14  
 8 6  
 10 6  
 12 6 18  
 14 5  
 16 4  
 18 5 14  
 20 8  
 22 6  
 24 5 19  
 N<sub>m</sub> (8"-18") = 32 Blows/ft  
 Pocket Pen 3 3 2.25  
 Description same as above - sandy gravelly

START DEPTH (ft)	MIDDLE DEPTH (ft)	FIELD N
4	5	6
9	10	7
14	15	40
19	20	43
24	25	46
29	30	42
34	35	0
39	40	31
49	50	22
59	60	32
74	75	32

Drillhole DH07-7  
 Date Dec 4 2007  
 SPT 1 at 4ft 4

Depth (inches)	Blows/2"	Blows/6"	Recovery (inches)
2			16
4			
6		0	
8			
10			
12		0	
14			
16			
18		0	
20			
22			
24		0	

**8 total to 24"**

$N_m$  (8"-18") = 0 Blows/ft  
 Pocket Pen 0.25 0.5 0.25  
 Description CLAY (CH) silty, medium brown, high plasticity, wet (dry drilling), soft 10% 1 inch sand and fine gravel layer, clayey, soft, Harder at 8ft

Drillhole DH07-7  
 Date Dec 4 2007  
 SPT 2 at 9ft 9

Depth (inches)	Blows/2"	Blows/6"	Recovery (inches)
2	1		16
4	3		
6	4	8	
8	4		
10	4		
12	4	12	
14	4		
16	5		
18	4	13	
20	4		
22	5		
24	5	14	

$N_m$  (8"-18") = 25 Blows/ft  
 Pocket Pen max max max  
 Description CLAY (CH) gravel subangular stiff moist red brown

Drillhole DH07-7  
 Date Dec 4 2007  
 SPT 3 at 14ft 14

Depth (inches)	Blows/2"	Blows/6"	Recovery (inches)
2	1		22.5
4	2		
6	2	5	
8	2		
10	2		
12	3	7	
14	3		
16	3		
18	3	9	
20	4		
22	4		
24	3	11	

$N_m$  (8"-18") = 16 Blows/ft  
 Pocket Pen squeezed past  
 Description same as above

Drillhole DH07-7  
 Date Dec 4 2007  
 SPT 4 at 19ft 19

Depth (inches)	Blows/2"	Blows/6"	Recovery (inches)
2	1		18
4	1		
6	1	3	
8	2		
10	3		
12	2	7	
14	2		
16	3		
18	2	7	
20	3		
22	4		
24	4	11	

$N_m$  (8"-18") = 14 Blows/ft  
 Pocket Pen 1.5 1.5 1.25 1.75  
 Description same as above but less gravel

Drillhole	DH07-7		
Date	Dec 4 2007		
SPT 5 at 24ft	24		
Depth (inches)	Blows/2"	Blows/6"	Recovery (inches)
2	1		22
4	1		
6	1.5	3.5	
8	1.5		
10	2		
12	2	5.5	
14	2		
16	3		
18	3	8	
20	4		
22	5		
24	3	12	
$N_m$ (8"-18") =	13.5	Blows/ft	
Pocket Pen	2.25	2.5	2
Description	same as above		

Drillhole	DH07-7		
Date	Dec 4 2007		
SPT 6 at 29ft	29		
Depth (inches)	Blows/2"	Blows/6"	Recovery (inches)
2	1		19
4	2		
6	2	5	
8	3		
10	4		
12	5	12	
14	12		
16	30		
18	14	56	
20	4		
22	5		
24	4	13	
$N_m$ (8"-18") =	68	Blows/ft	
Pocket Pen	1	1.5	1.25
Description	same as above but gravelly		

Drillhole	DH07-7			
Date	Dec 4 2007			
SPT 7 at 34ft	34			
Depth (inches)	Blows/2"	Blows/6"	Recovery (inches)	
2	2			
4	2			
6	3	7		
8	2			
10	3			
12	4	9		
14	3			
16	4			
18	5	12		
20	7			
22	5			
24	4	16		
N <sub>m</sub> (8"-18") =	21	Blows/ft		
Pocket Pen	2	1.75	2.5	4
Description	same as above			

Drillhole	DH07-7			
Date	Dec 4 2007			
SPT 8 at 44ft	44			
Depth (inches)	Blows/2"	Blows/6"	Recovery (inches)	
2	1		19	
4	2			
6	2	5		
8	3			
10	4			
12	4	11		
14	4			
16	4			
18	5	13		
20	6			
22	7			
24	7	20		
N <sub>m</sub> (8"-18") =	24	Blows/ft		
Pocket Pen	4	3.5	2.5	2.75
Description	same as above - less gravelly			

Drillhole DH07-7  
 Date Dec 4 2007  
 SPT 9 at 54ft 54

Depth (inches)	Blows/2"	Blows/6"	Recovery (inches)
2	2		18
4	2		
6	4	8	
8	4		
10	5		
12	6	15	
14	7		
16	5		
18	7	19	
20	7		
22	7		
24	7	21	

$N_m$  (8"-18") = 34 Blows/ft  
 Pocket Pen max max max 4  
 Description same as above - more gravelly

Drillhole DH07-7  
 Date Dec 4 2007  
 SPT 10 at 64ft 64

Depth (inches)	Blows/2"	Blows/6"	Recovery (inches)
2	1		28
4	3		
6	2	6	
8	5		
10	5		
12	4	14	
14	4		
16	4		
18	4	12	
20	6		
22	6		
24	6	18	

$N_m$  (8"-18") = 26 Blows/ft  
 Pocket Pen 1.5 1.75 2.25 1.75  
 Description same as above

START DEPTH (ft)	MIDDLE DEPTH (ft)	FIELD N
4	5	0
9	10	25
14	15	16
19	20	14
24	25	13.5
29	30	68
34	35	21
44	45	24
54	55	34
64	65	26



Drillhole	DH07-8		
Date	Dec 5 2007		
SPT 1 at 4ft	4		
Depth (inches)	Blows/2"	Blows/6"	Recovery (inches)
2	2		15
4	3		
6	4	9	
8	2		
10	3		
12	4	9	
14	4		
16	4		
18	4	12	
20	14		
22	9		
24	8	31	

N<sub>m</sub> (8"-18") = 21 Blows/ft

Pocket Pen max max max max

Description CLAY (CH) gravelly fine to medium grain, red brown, stiff to hard, moist-dry, sandstone, till

Drillhole	DH07-8		
Date	Dec 5 2007		
SPT 2 at 9ft	9		
Depth (inches)	Blows/2"	Blows/6"	Recovery (inches)
2	6		17
4	9		
6	11	26	
8	14		
10	13		
12	12	39	
14	14		
16	12		
18	14	40	
20	14		
22	15		
24	20	49	

N<sub>m</sub> (8"-18") = 79 Blows/ft

Pocket Pen non cohesive

Description GRAVEL (GM) silty, sand

Drillhole DH07-8  
 Date Dec 5 2007  
 SPT 3 at 14ft 14

Depth (inches)	Blows/2"	Blows/6"	Recovery (inches)
2	4		8
4	13		
6	18	35	
8	20		
10	20		
12	24	64	
14	Refusal >50/6"		
16			
18		0	
20			
22			
24		0	

$N_m$  (8"-18") = 64 Blows/ft  
 Pocket Pen non cohesive  
 Description same as above - GRAVEL highly weathered bedrock

Drillhole DH07-8  
 Date Dec 5 2007  
 SPT 4 at 19ft 19

Depth (inches)	Blows/2"	Blows/6"	Recovery (inches)
2	bouncing		
4	refusal		
6		0	
8			
10			
12		0	
14			
16			
18		0	
20			
22			
24		0	

$N_m$  (8"-18") = 0 Blows/ft  
 Pocket Pen ?  
 Description competent bedrock at 17ft

START DEPTH (ft)	MIDDLE DEPTH (ft)	FIELD N
4	5	21
9	10	79
14	15	64
19	20	0

Drillhole	DH07-9		
Date	Dec 5 2007		
SPT 1 at 4ft	4		
Depth (inches)	Blows/2"	Blows/6"	Recovery (inches)
2	2		10
4	2		
6	2	6	
8	2		
10	2		
12	2	6	
14	2		
16	2		
18	2	6	
20	2		
22	2		
24	2	6	

N<sub>m</sub> (8"-18") = 12 Blows/ft

Pocket Pen non cohesive

Description GRAVEL (GC) clayey, some sand, firm, angular, wet, red brown FILL, organics, roots, needl

Drillhole	DH07-9		
Date	Dec 5 2007		
SPT 2 at 9ft	9		
Depth (inches)	Blows/2"	Blows/6"	Recovery (inches)
2	1		18
4	1		
6	2	4	
8	2		
10	2		
12	3	7	
14	3		
16	3		
18	3	9	
20	5		
22	5		
24	4	14	

N<sub>m</sub> (8"-18") = 16 Blows/ft

Pocket Pen max 4.5 4.25

Description CLAY (CH) silty, sandy, some gravel, red brown, moist dry, very stiff, subangular, TILL

Drillhole	DH07-9			
Date	Dec 5 2007			
SPT 3 at 14ft	14			
Depth (inches)	Blows/2"	Blows/6"	Recovery (inches)	
2	1		10	
4	2			
6	9	12		
8	8			
10	3			
12	4	15		
14	3			
16	4			
18	5	12		
20	5			
22	7			
24	8	20		
N <sub>m</sub> (8"-18") =	27 Blows/ft			
Pocket Pen	2.5	3.5	4.25	2.5
Description	same as above - more gravelly			

Drillhole	DH07-9			
Date	Dec 5 2007			
SPT 4 at 19ft	19			
Depth (inches)	Blows/2"	Blows/6"	Recovery (inches)	
2	2		17	
4	4			
6	3	9		
8	3			
10	5			
12	4	12		
14	4			
16	9			
18	5	18		
20	8			
22	10			
24	8	26		
N <sub>m</sub> (8"-18") =	30 Blows/ft			
Pocket Pen	3.5	3.25	2.5	
Description	same as above			

Drillhole	DH07-9		
Date	Dec 5 2007		
SPT 5 at 24ft	24		
Depth (inches)	Blows/2"	Blows/6"	Recovery (inches)
2	0		15
4	2		
6	3	5	
8	3		
10	3		
12	4	10	
14	11		
16	14		
18	5	30	
20	19		
22	10		
24	7	36	
N <sub>m</sub> (8"-18") =	40 Blows/ft		
Pocket Pen	2.5	2.25	2.75
Description	same as above		

Drillhole	DH07-9		
Date	Dec 5 2007		
SPT 6 at 29ft	29		
Depth (inches)	Blows/2"	Blows/6"	Recovery (inches)
2	1		20
4	1		
6	2	4	
8	3		
10	3		
12	3	9	
14	10		
16	5		
18	5	20	
20	9		
22	8		
24	5	22	
N <sub>m</sub> (8"-18") =	29 Blows/ft		
Pocket Pen	3.5	3.75	3.25
Description	same as above - gravelly		

Drillhole	DH07-9		
Date	Dec 5 2007		
SPT 7 at 34ft	34		
Depth (inches)	Blows/2"	Blows/6"	Recovery (inches)
2	4		12
4	2		
6	2	8	
8	4		
10	7		
12	4	15	
14	4		
16	4		
18	5	13	
20	6		
22	6		
24	5	17	
N <sub>m</sub> (8"-18") =	28 Blows/ft		
Pocket Pen	2	2.25	1.75
Description			

Drillhole	DH07-9		
Date	Dec 5 2007		
SPT 8 at 44ft	44		
Depth (inches)	Blows/2"	Blows/6"	Recovery (inches)
2	1		18
4	1		
6	2	4	
8	1		
10	3		
12	3	7	
14	3		
16	4		
18	5	12	
20	5		
22	5		
24	5	15	
N <sub>m</sub> (8"-18") =	19 Blows/ft		
Pocket Pen	2	2.25	1.75
Description	less gravel		

Drillhole DH07-9  
 Date Dec 5 2007  
 SPT 9 at 54ft 54  
 Depth (inches) Blows/2" Blows/6" Recovery (inches)

2	1		5
4	1		
6	4	6	
8	1		
10	2		
12	2	5	
14	3		
16	3		
18	3	9	
20	3		
22	4		
24	4	11	

N<sub>m</sub> (8"-18") = 14 Blows/ft  
 Pocket Pen ~2.5  
 Description same as above

Drillhole DH07-9  
 Date Dec 6 2007  
 SPT 10 at 64ft 64  
 Depth (inches) Blows/2" Blows/6" Recovery (inches)

2	1		
4	2		
6	2	5	
8	3		
10	3		
12	2	8	
14	4		
16	4		
18	4	12	
20	6		
22	7		
24	30	43	

N<sub>m</sub> (8"-18") = 20 Blows/ft  
 Pocket Pen 1.5 1.75 1.75 4 max  
 Description same as above

Bedrock - 73ft  
 Hammer to 83 ft  
**SILTSTONE (SW)**

START DEPTH (ft)	MIDDLE DEPTH (ft)	FIELD N
4	5	12
9	10	16
14	15	27
19	20	30
24	25	40
29	30	29
34	35	28
44	45	19
54	55	14
64	65	20

Drillhole	DH07-10		
Date	Dec 6 2007		
SPT 1 at 4ft	4		
Depth (inches)	Blows/2"	Blows/6"	Recovery (inches)
2	1		15
4	1		
6	1	3	
8	3		
10	2		
12	2	7	
14	3		
16	2		
18	3	8	
20	2		
22	2		
24	3	7	
N <sub>m</sub> (8"-18") =	15 Blows/ft		
Pocket Pen	0.5	1.5	1.25
Description	GRAVEL AND CLAY (GC), silty, some sand, firm to soft, red brown, moist to wet, subangular		

Drillhole	DH07-10		
Date	Dec 6 2007		
SPT 2 at 9ft	9		
Depth (inches)	Blows/2"	Blows/6"	Recovery (inches)
2	13		24
4	28		
6	5	46	
8	6		
10	7		
12	6	19	
14	12		
16	6		
18	7	25	
20	7		
22	10		
24	9	26	
N <sub>m</sub> (8"-18") =	44 Blows/ft		
Pocket Pen	3.5	3	4
Description			



Drillhole DH07-10  
 Date Dec 6 2007  
 SPT 3 at 14ft 14  
 Depth (inches) Blows/2" Blows/6" Recovery (inches)

2	1		22
4	2		
6	2	5	
8	3		
10	3		
12	4	10	
14	4		
16	3		
18	4	11	
20	5		
22	5		
24	6	16	

N<sub>m</sub> (8"-18") = 21 Blows/ft  
 Pocket Pen max 4.25 max 4.5  
 Description CLAY (CH) some gravel, dense, moist red brown

Drillhole DH07-10  
 Date Dec 6 2007  
 SPT 4 at 19ft 19  
 Depth (inches) Blows/2" Blows/6" Recovery (inches)

2	1		25
4	2		
6	2	5	
8	3		
10	4		
12	4	11	
14	5		
16	5		
18	5	15	
20	6		
22	6		
24	8	20	

N<sub>m</sub> (8"-18") = 26 Blows/ft  
 Pocket Pen 3.25 3.5 4 max  
 Description same as above

Drillhole DH07-10  
 Date Dec 6 2007  
 SPT 5 at 24ft 24  
 Depth (inches) Blows/2" Blows/6" Recovery (inches)  
 2 5 20  
 4 12  
 6 11 28  
 8 12  
 10 10  
 12 13 35  
 14 16  
 16 18  
 18 24 58  
 20 Refusal >50/6"  
 22  
 24 0  
 N<sub>m</sub> (8"-18") = 93 Blows/ft  
 Pocket Pen max max max max  
 Description same as above - GRAVEL (GC) clayey-sand clay red brown

27'-32' - SILTSTONE (MW-SW) M-H dark gre, rusty, ~5% calcite

START DEPTH (ft)	MIDDLE DEPTH (ft)	FIELD N
4	5	15
9	10	44
14	15	21
19	20	26
24	25	93

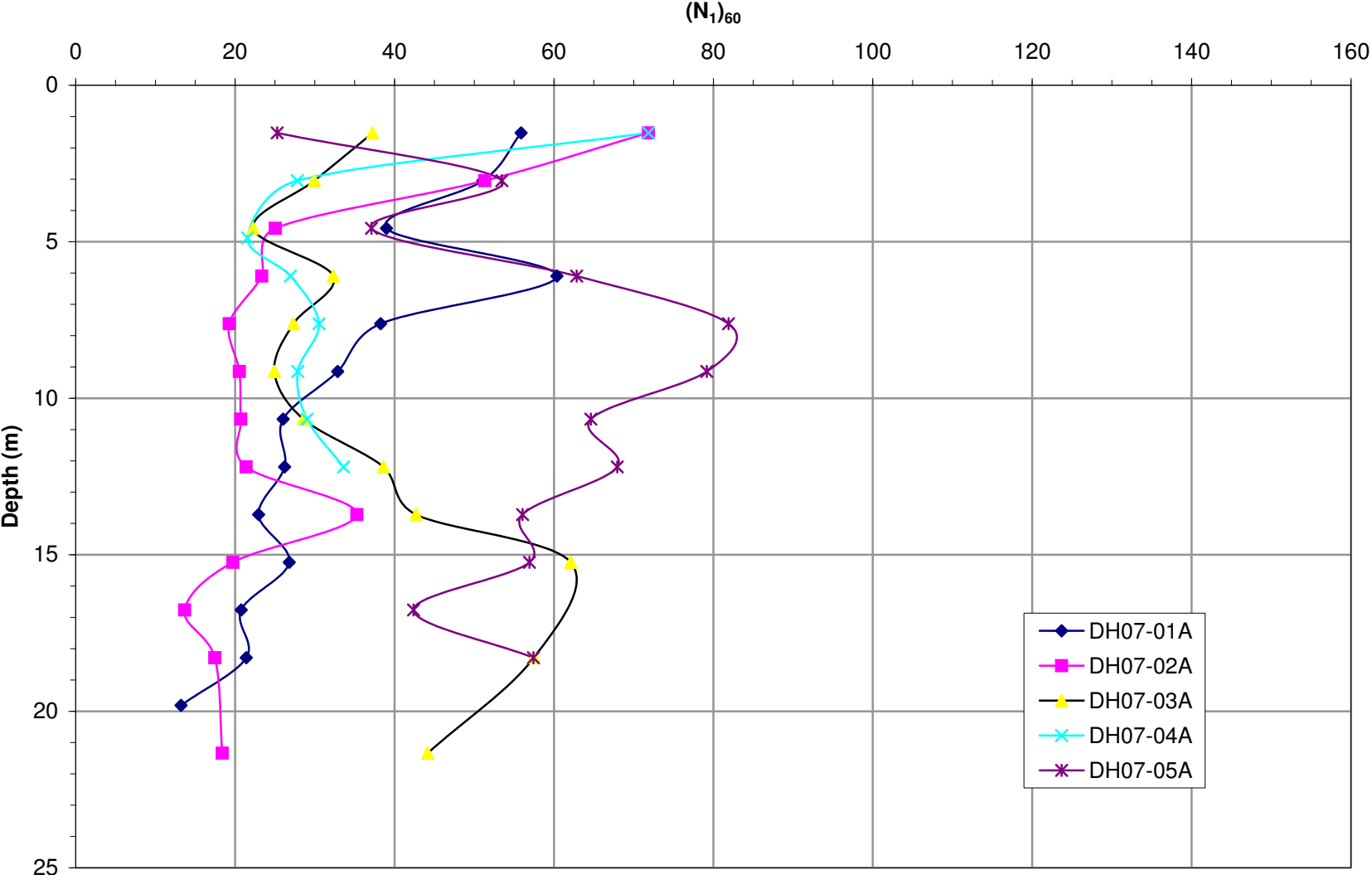
# **APPENDIX IX**

## **(N<sub>1</sub>)<sub>60</sub> Correction of SPT Results**

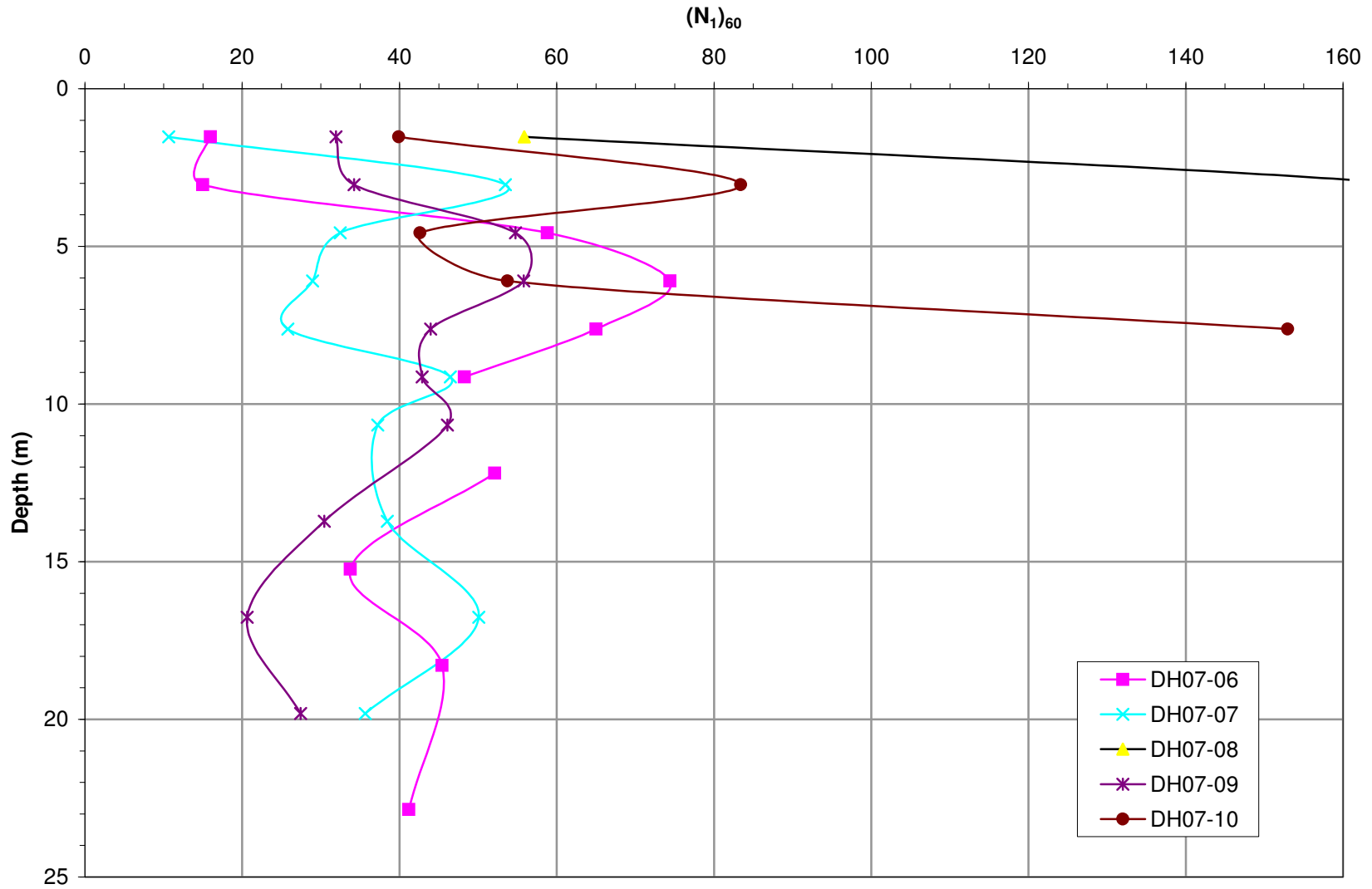
Morrison 2007 Geotechnical Site Investigation

BOREHOLE	SOIL TYPE	NUMBER OF TESTS	N <sub>60</sub> <sup>2</sup>				(N <sub>1</sub> ) <sub>60</sub>				(N <sub>1</sub> ) <sub>60</sub>			
							(C <sub>N</sub> based on the NCEER Youd et. al. (2001) recommendations)				(C <sub>N</sub> based on Liao and Whitman (1986) recommendations)			
			(SPT) <sup>1</sup>	min	max	mean	median	min	max	mean	median	min	max	mean
DH07-01A	glacial till	13	16	42	27	26	13	57	32	27	13	60	33	27
DH07-02A	glacial till	13	21	49	30	28	12	62	25	20	14	72	28	21
DH07-03A	glacial till	12	21	83	44	33	22	58	35	32	22	62	37	35
DH07-04A	glacial till	8	21	47	32	33	22	62	32	28	22	72	34	28
DH07-05A	glacial till	12	17	94	65	73	22	82	55	53	25	82	57	57
DH07-6	glacial till	10	10	63	45	52	14	74	44	46	14	74	45	47
DH07-7	glacial till	10	7	59	35	39	9	51	35	36	11	53	36	36
DH07-8	glacial till	3	37	172	115	137	48	197	135	160	56	201	142	169
DH07-9	glacial till	10	21	47	36	37	20	56	38	38	21	56	39	39
DH07-10	glacial till	5	26	139	63	45	34	153	72	53	40	153	75	54

**(N<sub>1</sub>)<sub>60</sub> SPT Profiles - 2007 Morrison Drilling Program  
Tailings & Waste Rock Impoundment**



**(N<sub>1</sub>)<sub>60</sub> SPT Profiles - 2007 Morrison Drilling Program  
Process Plant Area**



**CORRECTION OF STANDARD PENETRATION TEST RESULTS**

**DH07-01A**

**Generalized Stratigraphy**

Soil Profile	Soil Type	Bottom Depth (m)	Total Unit Unit Weight (kN/m <sup>3</sup> )	Effective Unit Weight (kN/m <sup>3</sup> )	Layer Overburden Pressure (kPa)
LAYER 1	Glacial Till	30.00	20.00	10.19	0.00
LAYER 2				0.00	600.00
LAYER 3				0.00	600.00
LAYER 4				0.00	600.00
LAYER 5				0.00	600.00
LAYER 6				0.00	600.00
LAYER 7				0.00	600.00
LAYER 8				0.00	600.00
LAYER 9				0.00	600.00

Water Table Efficiency (%) **0.0**  
**104** (Assumed for Safety Hammer)

DRILL HOLE	TEST NAME	MIDDLE DEPTH (ft)	MIDDLE DEPTH (m)	FIELD N	N <sub>60</sub>	SAMPLER CORRECTION	ROD LENGTH CORRECTION	TOTAL STRESS (kPa)	EFFECTIVE STRESS (kPa)	EFFECTIVE STRESS (tsf)	Seed and	Liao and	Seed and	Liao and
											Idriss	Whitman	Idriss	Whitman
DH07-01A	SPT-1	5.0	1.52	21	37	1.2	0.75	30.48	15.53	0.16	1.623	1.700	53	56
	SPT-2	10.0	3.05	18	31	1.2	0.80	60.96	31.06	0.32	1.456	1.700	44	51
	SPT-3	15.0	4.57	15	26	1.2	0.85	91.44	46.59	0.49	1.321	1.465	35	39
	SPT-4	20.0	6.10	24	42	1.2	0.95	121.92	62.12	0.65	1.208	1.269	57	60
	SPT-5	25.0	7.62	17	30	1.2	0.95	152.40	77.65	0.81	1.113	1.135	38	38
	SPT-6	30.0	9.14	16	28	1.2	0.95	182.88	93.18	0.97	1.032	1.036	33	33
	SPT-7	35.0	10.67	13	23	1.2	1.00	213.36	108.71	1.14	0.962	0.959	26	26
	SPT-8	40.0	12.19	14	24	1.2	1.00	243.84	124.24	1.30	0.901	0.897	26	26
	SPT-9	45.0	13.72	13	23	1.2	1.00	274.32	139.77	1.46	0.847	0.846	23	23
	SPT-10	50.0	15.24	16	28	1.2	1.00	304.80	155.30	1.62	0.799	0.802	27	27
	SPT-11	55.0	16.76	13	23	1.2	1.00	335.28	170.83	1.78	0.756	0.765	21	21
	SPT-12	60.0	18.29	14	24	1.2	1.00	365.76	186.36	1.95	0.718	0.733	21	21
	SPT-13	65.0	19.81	9	16	1.2	1.00	396.24	201.88	2.11	0.683	0.704	13	13

**CORRECTION OF STANDARD PENETRATION TEST RESULTS**

**DH07-02A**

**Generalized Stratigraphy**

Soil Profile	Soil Type	Bottom Depth (m)	Total Unit Unit Weight (kN/m <sup>3</sup> )	Effective Unit Weight (kN/m <sup>3</sup> )	Vertical Overburden Pressure (kPa)
LAYER 1	-	30.00	20.00	10.19	0.00
LAYER 2				0.00	600.00
LAYER 3				0.00	600.00
LAYER 4				0.00	600.00
LAYER 5				0.00	600.00
LAYER 6				0.00	600.00
LAYER 7				0.00	600.00
LAYER 8				0.00	600.00
LAYER 9				0.00	600.00

Water Table Efficiency (%) 27.7  
 104 (Assumed for Safety Hammer)

DRILL HOLE	TEST NAME	MIDDLE DEPTH (ft)	MIDDLE DEPTH (m)	FIELD N	N <sub>60</sub>	SAMPLER CORRECTION	ROD LENGTH CORRECTION	TOTAL STRESS (kPa)	EFFECTIVE STRESS (kPa)	EFFECTIVE STRESS (tsf)	Seed and	Liao and	Seed and	Liao and
											Idriss	Whitman	Idriss	Whitman
											C <sub>N</sub>	C <sub>N</sub>	(N <sub>1</sub> ) <sub>60</sub>	(N <sub>1</sub> ) <sub>60</sub>
DH07-02A	SPT-1	5.0	1.52	27	47	1.2	0.75	30.48	30.48	0.32	1.462	1.700	62	72
	SPT-2	10.0	3.05	24	42	1.2	0.80	60.96	60.96	0.64	1.216	1.281	49	51
	SPT-3	15.0	4.57	14	23	1.2	0.85	91.44	91.44	0.95	1.040	1.046	25	25
	SPT-4	20.0	6.10	13	23	1.2	0.95	121.92	121.92	1.27	0.909	0.906	23	23
	SPT-5	25.0	7.62	12	21	1.2	0.95	152.40	152.40	1.59	0.808	0.810	19	19
	SPT-6	30.0	9.14	14	24	1.2	0.95	182.88	182.88	1.91	0.726	0.739	20	21
	SPT-7	35.0	10.67	15	25	1.2	1.00	213.36	213.36	2.23	0.660	0.685	20	21
	SPT-8	40.0	12.19	16	28	1.2	1.00	243.84	243.84	2.55	0.605	0.640	20	21
	SPT-9	45.0	13.72	28	49	1.2	1.00	274.32	274.32	2.86	0.558	0.604	33	35
	SPT-10	50.0	15.24	17	29	1.2	1.00	304.80	304.80	3.18	0.518	0.573	18	20
	SPT-11	55.0	16.76	12	21	1.2	1.00	335.28	335.28	3.50	0.483	0.546	12	14
	SPT-12	60.0	18.29	16	28	1.2	1.00	365.76	365.76	3.82	0.453	0.523	15	17
	SPT-13	70.0	21.34	18	32	1.2	1.00	426.72	426.72	4.46	0.402	0.484	15	18



**CORRECTION OF STANDARD PENETRATION TEST RESULTS**

**DH07-03A**

**Generalized Stratigraphy**

Soil Profile	Soil Type	Bottom Depth (m)	Total Unit Unit Weight (kN/m <sup>3</sup> )	Effective Unit Weight (kN/m <sup>3</sup> )	er Overburden Pressure (kPa)
LAYER 1	-	30.00	20.00	10.19	0.00
LAYER 2				0.00	600.00
LAYER 3				0.00	600.00
LAYER 4				0.00	600.00
LAYER 5				0.00	600.00
LAYER 6				0.00	600.00
LAYER 7				0.00	600.00
LAYER 8				0.00	600.00
LAYER 9				0.00	600.00

Water Table Efficiency (%) 10.7  
 104 (Assumed for Safety Hammer)

DRILL HOLE	TEST NAME	MIDDLE DEPTH (ft)	MIDDLE DEPTH (m)	FIELD N	N <sub>60</sub>	SAMPLER CORRECTION	ROD LENGTH CORRECTION	TOTAL STRESS (kPa)	EFFECTIVE STRESS (kPa)	EFFECTIVE STRESS (tsf)	Seed and	Liao and	Seed and	Liao and
											Idriss C <sub>N</sub>	Whitman C <sub>N</sub>	Idriss (N) <sub>60</sub>	Whitman (N) <sub>60</sub>
DH07-03A	SPT-1	5.0	1.52	14	24	1.2	0.75	30.48	30.48	0.32	1.462	1.700	32	37
	SPT-2	10.0	3.05	14	24	1.2	0.80	60.96	60.96	0.64	1.216	1.281	28	30
	SPT-3	15.0	4.57	12	21	1.2	0.85	91.44	91.44	0.95	1.040	1.046	22	22
	SPT-4	20.0	6.10	18	31	1.2	0.95	121.92	121.92	1.27	0.909	0.906	32	32
	SPT-5	25.0	7.62	17	30	1.2	0.95	152.40	152.40	1.59	0.808	0.810	27	27
	SPT-6	30.0	9.14	17	30	1.2	0.95	182.88	182.88	1.91	0.726	0.739	24	25
	SPT-7	35.0	10.67	20	35	1.2	1.00	213.36	213.36	2.23	0.660	0.685	28	29
	SPT-8	40.0	12.19	28	49	1.2	1.00	243.84	229.20	2.39	0.630	0.661	37	39
	SPT-9	45.0	13.72	32	56	1.2	1.00	274.32	244.73	2.56	0.603	0.639	40	43
	SPT-10	50.0	15.24	48	83	1.2	1.00	304.80	260.26	2.72	0.579	0.620	58	62
	SPT-11	60.0	18.29	47	82	1.2	1.00	365.76	291.32	3.04	0.535	0.586	52	57
	SPT-12	70.0	21.34	38	66	1.2	1.00	426.72	322.38	3.37	0.497	0.557	39	44

**CORRECTION OF STANDARD PENETRATION TEST RESULTS**

**DH07-04A**

**Generalized Stratigraphy**

Soil Profile	Soil Type	Bottom Depth (m)	Total Unit Unit Weight (kN/m <sup>3</sup> )	Effective Unit Weight (kN/m <sup>3</sup> )	Vertical Overburden Pressure (kPa)
LAYER 1	-	30.00	20.00	10.19	0.00
LAYER 2				0.00	600.00
LAYER 3				0.00	600.00
LAYER 4				0.00	600.00
LAYER 5				0.00	600.00
LAYER 6				0.00	600.00
LAYER 7				0.00	600.00
LAYER 8				0.00	600.00
LAYER 9				0.00	600.00

Water Table Efficiency (%) **10.0**  
**104** (Assumed for Safety Hammer)

DRILL HOLE	TEST NAME	MIDDLE DEPTH (ft)	MIDDLE DEPTH (m)	FIELD N	N <sub>60</sub>	SAMPLER CORRECTION	ROD LENGTH CORRECTION	TOTAL STRESS (kPa)	EFFECTIVE STRESS (kPa)	EFFECTIVE STRESS (tsf)	Seed and	Liao and	Seed and	Liao and
											Idriss	Whitman	Idriss	Whitman
											C <sub>N</sub>	C <sub>N</sub>	(N <sub>1</sub> ) <sub>60</sub>	(N <sub>1</sub> ) <sub>60</sub>
DH07-04A	SPT-1	5.0	1.52	27	47	1.2	0.75	30.48	30.48	0.32	1.462	1.700	62	72
	SPT-2	10.0	3.05	13	23	1.2	0.80	60.96	60.96	0.64	1.216	1.281	26	28
	SPT-3	16.0	4.88	12	21	1.2	0.85	97.54	97.54	1.02	1.011	1.013	22	22
	SPT-4	20.0	6.10	15	26	1.2	0.95	121.92	121.92	1.27	0.909	0.906	27	27
	SPT-5	25.0	7.62	19	33	1.2	0.95	152.40	152.40	1.59	0.808	0.810	30	31
	SPT-6	30.0	9.14	19	33	1.2	0.95	182.88	182.88	1.91	0.726	0.739	27	28
	SPT-7	35.0	10.67	20	35	1.2	1.00	213.36	206.81	2.16	0.673	0.695	28	29
	SPT-8	40.0	12.19	24	42	1.2	1.00	243.84	222.34	2.32	0.643	0.671	32	34

**CORRECTION OF STANDARD PENETRATION TEST RESULTS**

**DH07-05A**

**Generalized Stratigraphy**

Soil Profile	Soil Type	Bottom Depth (m)	Total Unit Weight (kN/m <sup>3</sup> )	Effective Unit Weight (kN/m <sup>3</sup> )	Vertical Overburden Pressure (kPa)
LAYER 1	-	30.00	20.00	10.19	0.00
LAYER 2				0.00	600.00
LAYER 3				0.00	600.00
LAYER 4				0.00	600.00
LAYER 5				0.00	600.00
LAYER 6				0.00	600.00
LAYER 7				0.00	600.00
LAYER 8				0.00	600.00
LAYER 9				0.00	600.00

Water Table Efficiency (%) **9.5**  
**104** (Assumed for Safety Hammer)

DRILL HOLE	TEST NAME	MIDDLE DEPTH (ft)	MIDDLE DEPTH (m)	FIELD N	N <sub>60</sub>	SAMPLER CORRECTION	ROD LENGTH CORRECTION	TOTAL STRESS (kPa)	EFFECTIVE STRESS (kPa)	EFFECTIVE STRESS (tsf)	Seed and	Liao and	Seed and	Liao and
											Idriss C <sub>N</sub>	Whitman C <sub>N</sub>	Idriss (N) <sub>60</sub>	Whitman (N) <sub>60</sub>
DH07-05A	SPT-1	5.0	1.52	10	17	1.2	0.75	30.48	30.48	0.32	1.462	1.700	22	25
	SPT-2	10.0	3.05	25	43	1.2	0.80	60.96	60.96	0.64	1.216	1.281	51	53
	SPT-3	15.0	4.57	20	35	1.2	0.85	91.44	91.44	0.95	1.040	1.046	37	37
	SPT-4	20.0	6.10	35	61	1.2	0.95	121.92	121.92	1.27	0.909	0.906	63	63
	SPT-5	25.0	7.62	51	89	1.2	0.95	152.40	152.40	1.59	0.808	0.810	82	82
	SPT-6	30.0	9.14	54	94	1.2	0.95	182.88	182.88	1.91	0.726	0.739	78	79
	SPT-7	35.0	10.67	44	77	1.2	1.00	213.36	201.90	2.11	0.683	0.704	63	65
	SPT-8	40.0	12.19	48	83	1.2	1.00	243.84	217.43	2.27	0.652	0.678	65	68
	SPT-9	45.0	13.72	41	71	1.2	1.00	274.32	232.96	2.43	0.623	0.655	53	56
	SPT-10	50.0	15.24	43	75	1.2	1.00	304.80	248.49	2.59	0.597	0.634	54	57
	SPT-11	55.0	16.76	33	57	1.2	1.00	335.28	264.02	2.76	0.573	0.615	39	42
	SPT-12	60.0	18.29	46	80	1.2	1.00	365.76	279.55	2.92	0.551	0.598	53	57

**CORRECTION OF STANDARD PENETRATION TEST RESULTS**

**DH07-06**

**Generalized Stratigraphy**

Soil Profile	Soil Type	Bottom Depth (m)	Total Unit Weight (kN/m <sup>3</sup> )	Effective Unit Weight (kN/m <sup>3</sup> )	Vertical Overburden Pressure (kPa)
LAYER 1	-	30.00	20.00	10.19	0.00
LAYER 2				0.00	600.00
LAYER 3				0.00	600.00
LAYER 4				0.00	600.00
LAYER 5				0.00	600.00
LAYER 6				0.00	600.00
LAYER 7				0.00	600.00
LAYER 8				0.00	600.00
LAYER 9				0.00	600.00

Water Table **3.0** (unknown but assumed)  
 Efficiency (%) **104** (Assumed for Safety Hammer)

DRILL HOLE	TEST NAME	MIDDLE DEPTH (ft)	MIDDLE DEPTH (m)	FIELD N	N <sub>60</sub>	SAMPLER CORRECTION	ROD LENGTH CORRECTION	TOTAL STRESS (kPa)	EFFECTIVE STRESS (kPa)	EFFECTIVE STRESS (tsf)	Seed and	Liao and	Seed and	Liao and
											Idriss	Whitman	Idriss	Whitman
											C <sub>N</sub>	C <sub>N</sub>	(N <sub>1</sub> ) <sub>60</sub>	(N <sub>1</sub> ) <sub>60</sub>
DH07-06	SPT-1	5.0	1.52	6	10	1.2	0.75	30.48	30.48	0.32	1.462	1.700	14	16
	SPT-2	10.0	3.05	7	12	1.2	0.80	60.96	60.96	0.64	1.216	1.281	14	15
	SPT-3	15.0	4.57	29	50	1.2	0.85	91.44	76.49	0.80	1.120	1.143	58	59
	SPT-4	20.0	6.10	36	63	1.2	0.95	121.92	92.02	0.96	1.038	1.042	74	74
	SPT-5	25.0	7.62	34	59	1.2	0.95	152.40	107.55	1.12	0.967	0.964	65	65
	SPT-6	30.0	9.14	27	47	1.2	0.95	182.88	123.08	1.29	0.905	0.901	48	48
	SPT-7	35.0	10.67				1.2	213.36	138.61	1.45	0.851	0.849		
	SPT-8	40.0	12.19	31	54	1.2	1.00	243.84	154.14	1.61	0.803	0.805	52	52
	SPT-9	50.0	15.24	22	38	1.2	1.00	304.80	185.20	1.93	0.721	0.735	33	34
	SPT-10	60.0	18.29	32	56	1.2	1.00	365.76	216.26	2.26	0.654	0.680	44	45
	SPT-11	75.0	22.86	32	56	1.2	1.00	457.20	262.84	2.74	0.575	0.617	38	41

**CORRECTION OF STANDARD PENETRATION TEST RESULTS**

**DH07-07**

**Generalized Stratigraphy**

Soil Profile	Soil Type	Bottom Depth (m)	Total Unit Weight (kN/m <sup>3</sup> )	Effective Unit Weight (kN/m <sup>3</sup> )	Vertical Overburden Pressure (kPa)
LAYER 1	-	30.00	20.00	10.19	0.00
LAYER 2				0.00	600.00
LAYER 3				0.00	600.00
LAYER 4				0.00	600.00
LAYER 5				0.00	600.00
LAYER 6				0.00	600.00
LAYER 7				0.00	600.00
LAYER 8				0.00	600.00
LAYER 9				0.00	600.00

Water Table **3.0** (unknown but assumed)  
 Efficiency (%) **104** (Assumed for Safety Hammer)

DRILL HOLE	TEST NAME	MIDDLE DEPTH (ft)	MIDDLE DEPTH (m)	FIELD N	N <sub>60</sub>	SAMPLER CORRECTION	ROD LENGTH CORRECTION	TOTAL STRESS (kPa)	EFFECTIVE STRESS (kPa)	EFFECTIVE STRESS (tsf)	Seed and	Liao and	Seed and	Liao and
											Idriss	Whitman	Idriss	Whitman
											C <sub>N</sub>	C <sub>N</sub>	(N <sub>1</sub> ) <sub>60</sub>	(N <sub>1</sub> ) <sub>60</sub>
DH07-07	SPT-1	5.0	1.52	4	7	1.2	0.75	30.48	30.48	0.32	1.462	1.700	9	11
	SPT-2	10.0	3.05	25	43	1.2	0.80	60.96	60.96	0.64	1.216	1.281	51	53
	SPT-3	15.0	4.57	16	28	1.2	0.85	91.44	76.49	0.80	1.120	1.143	32	32
	SPT-4	20.0	6.10	14	24	1.2	0.95	121.92	92.02	0.96	1.038	1.042	29	29
	SPT-5	25.0	7.62	14	23	1.2	0.95	152.40	107.55	1.12	0.967	0.964	26	26
	SPT-6	30.0	9.14	26	45	1.2	0.95	182.88	123.08	1.29	0.905	0.901	47	46
	SPT-7	35.0	10.67	21	37	1.2	1.00	213.36	138.61	1.45	0.851	0.849	37	37
	SPT-8	45.0	13.72	24	42	1.2	1.00	274.32	169.67	1.77	0.759	0.768	38	38
	SPT-9	55.0	16.76	34	59	1.2	1.00	335.28	200.73	2.10	0.686	0.706	49	50
	SPT-10	65.0	19.81	26	45	1.2	1.00	396.24	231.79	2.42	0.625	0.657	34	36

**CORRECTION OF STANDARD PENETRATION TEST RESULTS**

**DH07-08**

**Generalized Stratigraphy**

Soil Profile	Soil Type	Bottom Depth (m)	Total Unit Weight (kN/m <sup>3</sup> )	Effective Unit Weight (kN/m <sup>3</sup> )	Vertical Overburden Pressure (kPa)
LAYER 1	-	30.00	20.00	10.19	0.00
LAYER 2				0.00	600.00
LAYER 3				0.00	600.00
LAYER 4				0.00	600.00
LAYER 5				0.00	600.00
LAYER 6				0.00	600.00
LAYER 7				0.00	600.00
LAYER 8				0.00	600.00
LAYER 9				0.00	600.00

Water Table                    **3.0**                    (unknown but assumed)  
 Efficiency (%)                **104**                    (Assumed for Safety Hammer)

DRILL HOLE	TEST NAME	MIDDLE DEPTH (ft)	MIDDLE DEPTH (m)	FIELD N	N <sub>60</sub>	SAMPLER CORRECTION	ROD LENGTH CORRECTION	TOTAL STRESS (kPa)	EFFECTIVE STRESS (kPa)	EFFECTIVE STRESS (tsf)	Seed and	Liao and	Seed and	Liao and
											Idriss	Whitman	Idriss	Whitman
											C <sub>N</sub>	C <sub>N</sub>	(N <sub>1</sub> ) <sub>60</sub>	(N <sub>1</sub> ) <sub>60</sub>
DH07-08	SPT-1	5.0	1.52	21	37	1.2	0.75	30.48	30.48	0.32	1.462	1.700	48	56
	SPT-2	10.0	3.05	79	137	1.2	0.80	60.96	60.96	0.64	1.216	1.281	160	169
	SPT-3	15.0	4.57	99	172	1.2	0.85	91.44	76.49	0.80	1.120	1.143	197	201
	SPT-4	20.0	6.10			1.2	0.95	121.92	92.02	0.96	1.038	1.042		

**CORRECTION OF STANDARD PENETRATION TEST RESULTS**

**DH07-09**

**Generalized Stratigraphy**

Soil Profile	Soil Type	Bottom Depth (m)	Total Unit Weight (kN/m <sup>3</sup> )	Effective Unit Weight (kN/m <sup>3</sup> )	Vertical Overburden Pressure (kPa)
LAYER 1	-	30.00	20.00	10.19	0.00
LAYER 2				0.00	600.00
LAYER 3				0.00	600.00
LAYER 4				0.00	600.00
LAYER 5				0.00	600.00
LAYER 6				0.00	600.00
LAYER 7				0.00	600.00
LAYER 8				0.00	600.00
LAYER 9				0.00	600.00

Water Table                    **3.0**                    (unknown but assumed)  
 Efficiency (%)                **104**                    (Assumed for Safety Hammer)

DRILL HOLE	TEST NAME	MIDDLE DEPTH (ft)	MIDDLE DEPTH (m)	FIELD N	N <sub>60</sub>	SAMPLER CORRECTION	ROD LENGTH CORRECTION	TOTAL STRESS (kPa)	EFFECTIVE STRESS (kPa)	EFFECTIVE STRESS (tsf)	Seed and	Liao and	Seed and	Liao and
											Idriss	Whitman	Idriss	Whitman
											C <sub>N</sub>	C <sub>N</sub>	(N <sub>1</sub> ) <sub>60</sub>	(N <sub>1</sub> ) <sub>60</sub>
DH07-09	SPT-1	5.0	1.52	12	21	1.2	0.75	30.48	30.48	0.32	1.462	1.700	27	32
	SPT-2	10.0	3.05	16	28	1.2	0.80	60.96	60.96	0.64	1.216	1.281	32	34
	SPT-3	15.0	4.57	27	47	1.2	0.85	91.44	76.49	0.80	1.120	1.143	54	55
	SPT-4	20.0	6.10	27	47	1.2	0.95	121.92	92.02	0.96	1.038	1.042	56	56
	SPT-5	25.0	7.62	23	40	1.2	0.95	152.40	107.55	1.12	0.967	0.964	44	44
	SPT-6	30.0	9.14	24	42	1.2	0.95	182.88	123.08	1.29	0.905	0.901	43	43
	SPT-7	35.0	10.67	26	45	1.2	1.00	213.36	138.61	1.45	0.851	0.849	46	46
	SPT-8	45.0	13.72	19	33	1.2	1.00	274.32	169.67	1.77	0.759	0.768	30	30
	SPT-9	55.0	16.76	14	24	1.2	1.00	335.28	200.73	2.10	0.686	0.706	20	21
	SPT-10	65.0	19.81	20	35	1.2	1.00	396.24	231.79	2.42	0.625	0.657	26	27

**CORRECTION OF STANDARD PENETRATION TEST RESULTS**

**DH07-10**

**Generalized Stratigraphy**

Soil Profile	Soil Type	Bottom Depth (m)	Total Unit Weight (kN/m <sup>3</sup> )	Effective Unit Weight (kN/m <sup>3</sup> )	Vertical Effective Pressure (kPa)
LAYER 1	-	30.00	20.00	10.19	0.00
LAYER 2				0.00	600.00
LAYER 3				0.00	600.00
LAYER 4				0.00	600.00
LAYER 5				0.00	600.00
LAYER 6				0.00	600.00
LAYER 7				0.00	600.00
LAYER 8				0.00	600.00
LAYER 9				0.00	600.00

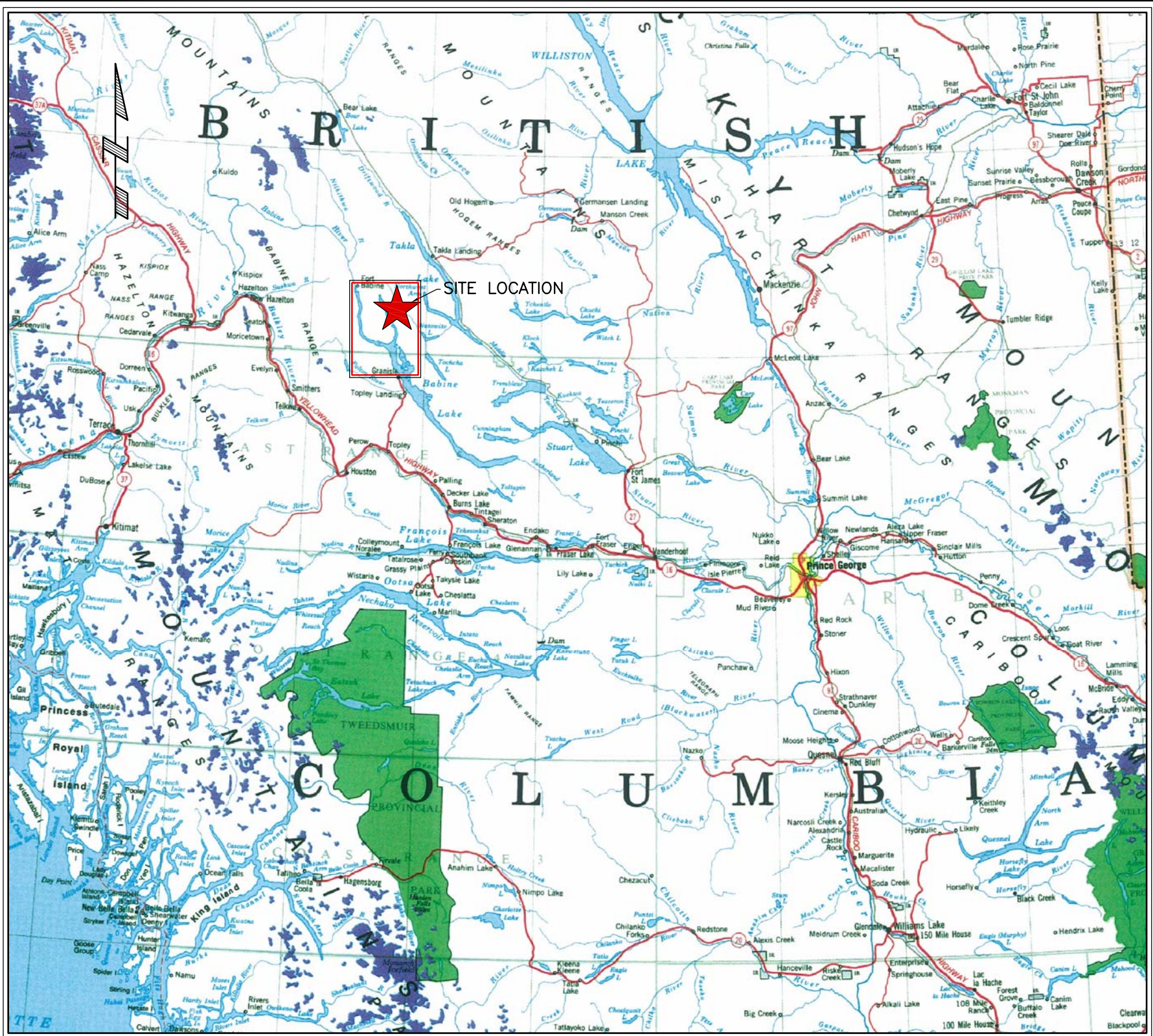
Water Table **3.0** (unknown but assumed)  
 Efficiency (%) **104** (Assumed for Safety Hammer)

DRILL HOLE	TEST NAME	MIDDLE DEPTH (ft)	MIDDLE DEPTH (m)	FIELD N	N <sub>60</sub>	SAMPLER CORRECTION	ROD LENGTH CORRECTION	TOTAL STRESS (kPa)	EFFECTIVE STRESS (kPa)	EFFECTIVE STRESS (tsf)	Seed and	Liao and	Seed and	Liao and
											Idriss	Whitman	Idriss	Whitman
DH07-10	SPT-1	5.0	1.52	15	26	1.2	0.75	30.48	30.48	0.32	1.462	1.700	34	40
	SPT-2	10.0	3.05	39	68	1.2	0.80	60.96	60.96	0.64	1.216	1.281	79	83
	SPT-3	15.0	4.57	21	37	1.2	0.85	91.44	76.49	0.80	1.120	1.143	42	43
	SPT-4	20.0	6.10	26	45	1.2	0.95	121.92	92.02	0.96	1.038	1.042	53	54
	SPT-5	25.0	7.62	80	139	1.2	0.95	152.40	107.55	1.12	0.967	0.964	153	153



## **DRAWINGS**

<b>D-1001</b>	<b>Site Location Plan</b>
<b>D-1002</b>	<b>General Site Arrangement</b>
<b>D-1003</b>	<b>Site Investigation Plan</b>
<b>D-1004</b>	<b>Geologic Sections Plan</b>
<b>D-1005</b>	<b>Geologic Sections, Section A – Main Dam Sheet 1 of 3</b>
<b>D-1006</b>	<b>Geologic Sections, Section B – North Dam Sheet 2 of 3</b>
<b>D-1007</b>	<b>Geologic Sections, Section C, D, and E Sheet 3 of 3</b>



**SITE LOCATION**  
SCALE A

NOT FOR CONSTRUCTION

**SITE LOCATION**  
N.T.S.

SCALE A: 0 10 km

**NOTES:**

- TOPOGRAPHY COURTESY OF SOFTMAP.

NO.	DATE	ISSUE / REVISION	DRAWN	CHK'D	DESIGN	APP'D
C	MAY 28 2008	ISSUED FOR FINAL REPORT	PL	TJ		HM
B		NOT USED				
A	APRIL 25, 2008	ISSUED FOR CLIENT REVIEW	PL			

AS A MUTUAL PROTECTION TO OUR CLIENT, THE PUBLIC AND OURSELVES, ALL REPORTS AND DRAWINGS ARE SUBMITTED FOR THE CONFIDENTIAL INFORMATION OF OUR CLIENT FOR A SPECIFIC PROJECT AND AUTHORIZATION FOR USE AND/OR PUBLICATION OF DATA STATEMENTS, CONCLUSIONS OR ABSTRACTS FROM OR REGARDING OUR REPORTS AND DRAWINGS IS RESERVED PENDING OUR WRITTEN APPROVAL.

CLIENT

PACIFIC BOOKER MINERALS INC.



PROJECT

MORRISON COPPER GOLD PROJECT  
FEASIBILITY DESIGN

TITLE

SITE LOCATION PLAN

SCALE

PROJECT No.

DWG. No.

REV.

AS SHOWN

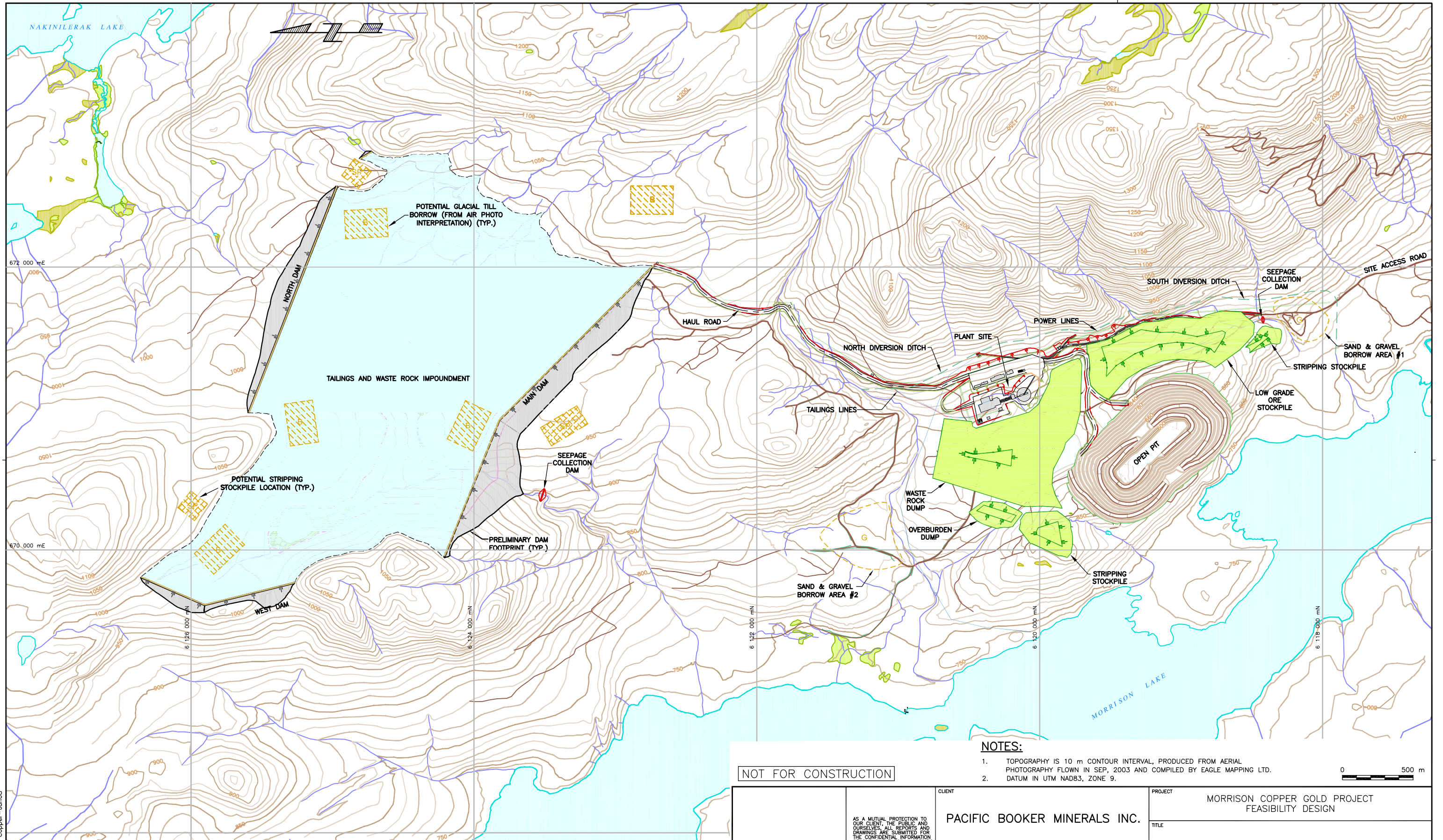
M09382 A01

D-1001

C

CANCEL PRINTS BEARING PREVIOUS REVISION

Time: 9:59:44  
 Date: 5/23/2008  
 Scale: 1=13(FS)  
 Drawing File: M:\M09382A01 - Morrison Copper Gold 400 Design\410 Drawings\Issued for Final Report (Revision C, 28May08)\D1002to4C.dwg (plee)  
 Xrefs: BM-Morrison Copper-Jan08



**NOTES:**

1. TOPOGRAPHY IS 10 m CONTOUR INTERVAL, PRODUCED FROM AERIAL PHOTOGRAPHY FLOWN IN SEP, 2003 AND COMPILED BY EAGLE MAPPING LTD.
2. DATUM IN UTM NAD83, ZONE 9.



NOT FOR CONSTRUCTION

NO.	DATE	ISSUE / REVISION	DRAWN	CHK'D	DESIGN	APP'D
C	MAY 28 2008	ISSUED FOR FINAL REPORT	PL	TJ		HM
B		NOT USED				
A	APRIL 25, 2008	ISSUED FOR CLIENT REVIEW	PL			

DRAWING NO.	REFERENCE DRAWING

AS A MUTUAL PROTECTION TO OUR CLIENT, THE PUBLIC AND OURSELVES, ALL REPORTS AND DRAWINGS ARE SUBMITTED FOR THE CONFIDENTIAL INFORMATION OF OUR CLIENT FOR A SPECIFIC PROJECT AND AUTHORIZATION FOR USE AND/OR PUBLICATION OF DATA STATEMENTS, CONCLUSIONS OR ABSTRACTS FROM OR REGARDING OUR REPORTS AND DRAWINGS IS RESERVED PENDING OUR WRITTEN APPROVAL.

CLIENT  
**PACIFIC BOOKER MINERALS INC.**



PROJECT  
**MORRISON COPPER GOLD PROJECT  
FEASIBILITY DESIGN**

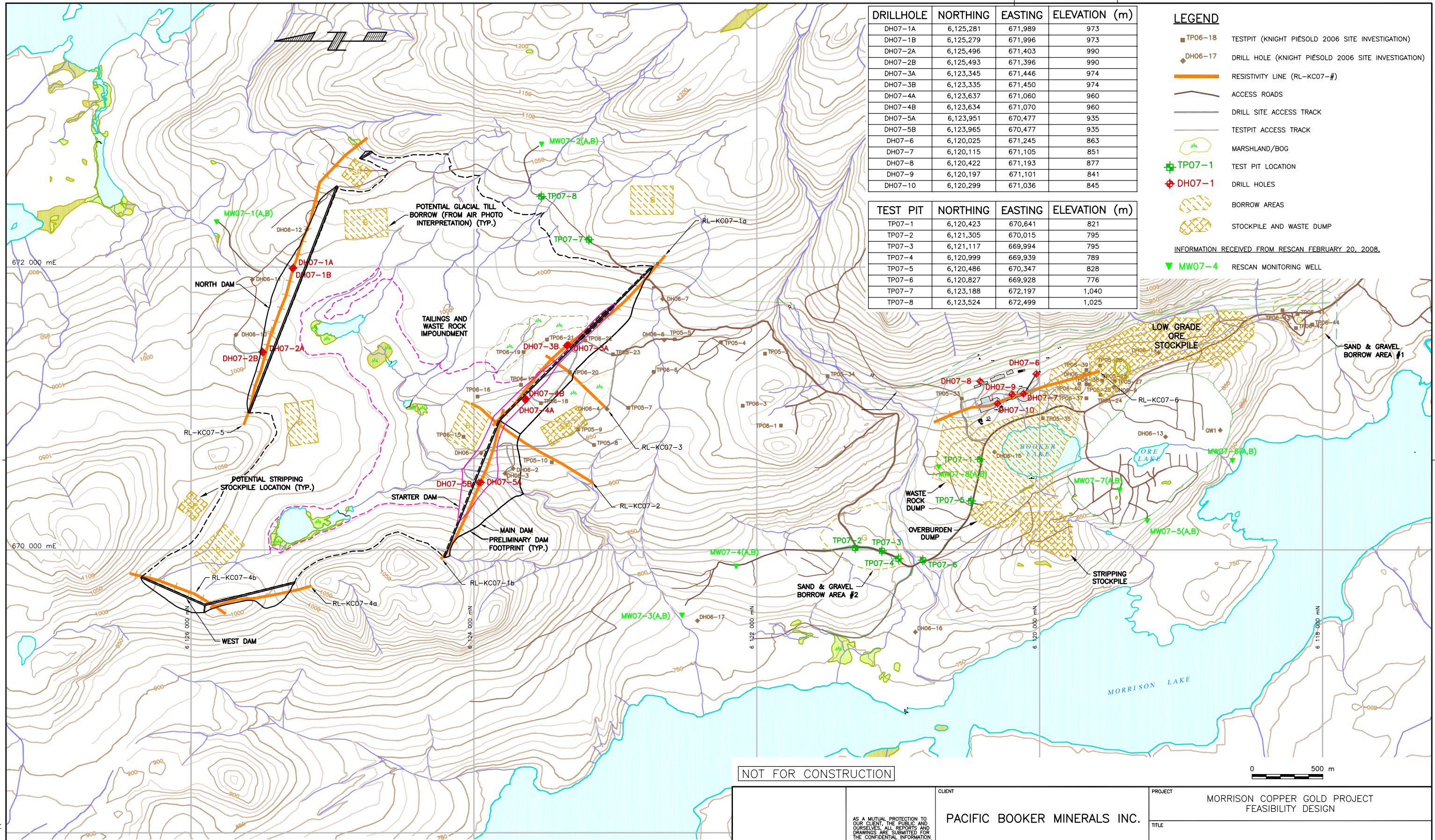
TITLE  
**GENERAL SITE ARRANGEMENT**

SCALE	PROJECT No.	DWG. No.	REV.
AS SHOWN	M09382 A01	D-1002	C

CANCEL PRINTS BEARING PREVIOUS REVISION

KCB-C-14D

Time: 9:59:44  
 Date: 5/29/2008  
 Scale: 1=133(P5)  
 Drawing File: M:\M09382A01 - Morrison Copper Gold 400 Design\410 Drawings\Issued for Final Report (Revision C, 28May08)\D1002to4C.dwg (plee)  
 Xrefs: BM-Morrison Copper-Jan08



DRILLHOLE	NORTHING	EASTING	ELEVATION (m)
DH07-1A	6,125,281	671,989	973
DH07-1B	6,125,279	671,996	973
DH07-2A	6,125,496	671,403	990
DH07-2B	6,125,493	671,396	990
DH07-3A	6,123,345	671,446	974
DH07-3B	6,123,335	671,450	974
DH07-4A	6,123,637	671,060	960
DH07-4B	6,123,634	671,070	960
DH07-5A	6,123,951	670,477	935
DH07-5B	6,123,965	670,477	935
DH07-6	6,120,025	671,245	863
DH07-7	6,120,115	671,105	851
DH07-8	6,120,422	671,193	877
DH07-9	6,120,197	671,101	841
DH07-10	6,120,299	671,036	845

TEST PIT	NORTHING	EASTING	ELEVATION (m)
TP07-1	6,120,423	670,641	821
TP07-2	6,121,305	670,015	795
TP07-3	6,121,117	669,994	795
TP07-4	6,120,999	669,939	789
TP07-5	6,120,486	670,347	828
TP07-6	6,120,827	669,928	776
TP07-7	6,123,188	672,197	1,040
TP07-8	6,123,524	672,499	1,025

- LEGEND**
- TP06-18 TESTPIT (KNIGHT PIÉSOLD 2006 SITE INVESTIGATION)
  - ◆ DH06-17 DRILL HOLE (KNIGHT PIÉSOLD 2006 SITE INVESTIGATION)
  - RESISTIVITY LINE (RL-KC07-#)
  - ACCESS ROADS
  - DRILL SITE ACCESS TRACK
  - TESTPIT ACCESS TRACK
  - MARSHLAND/BOG
  - TP07-1 TEST PIT LOCATION
  - ◆ DH07-1 DRILL HOLES
  - BORROW AREAS
  - STOCKPILE AND WASTE DUMP
  - INFORMATION RECEIVED FROM RESCAN FEBRUARY 20, 2008.
  - ▼ MW07-4 RESCAN MONITORING WELL

- NOTES:**
- TOPOGRAPHY IS 10 m CONTOUR INTERVAL, PRODUCED FROM AERIAL PHOTOGRAPHY FLOWN IN SEP, 2003 AND COMPILED BY EAGLE MAPPING LTD.
  - DATUM IN UTM NAD83, ZONE 9.

NO.	DATE	ISSUE / REVISION	DRAWN	CHK'D	DESIGN	APP'D
C	MAY 28 2008	ISSUED FOR FINAL REPORT	PL	TJ		HM
B	APRIL 25, 2008	ISSUED FOR CLIENT REVIEW	PL			
A	APRIL 11, 2008	DRAFT FOR CLIENT REVIEW	PL			

NOT FOR CONSTRUCTION

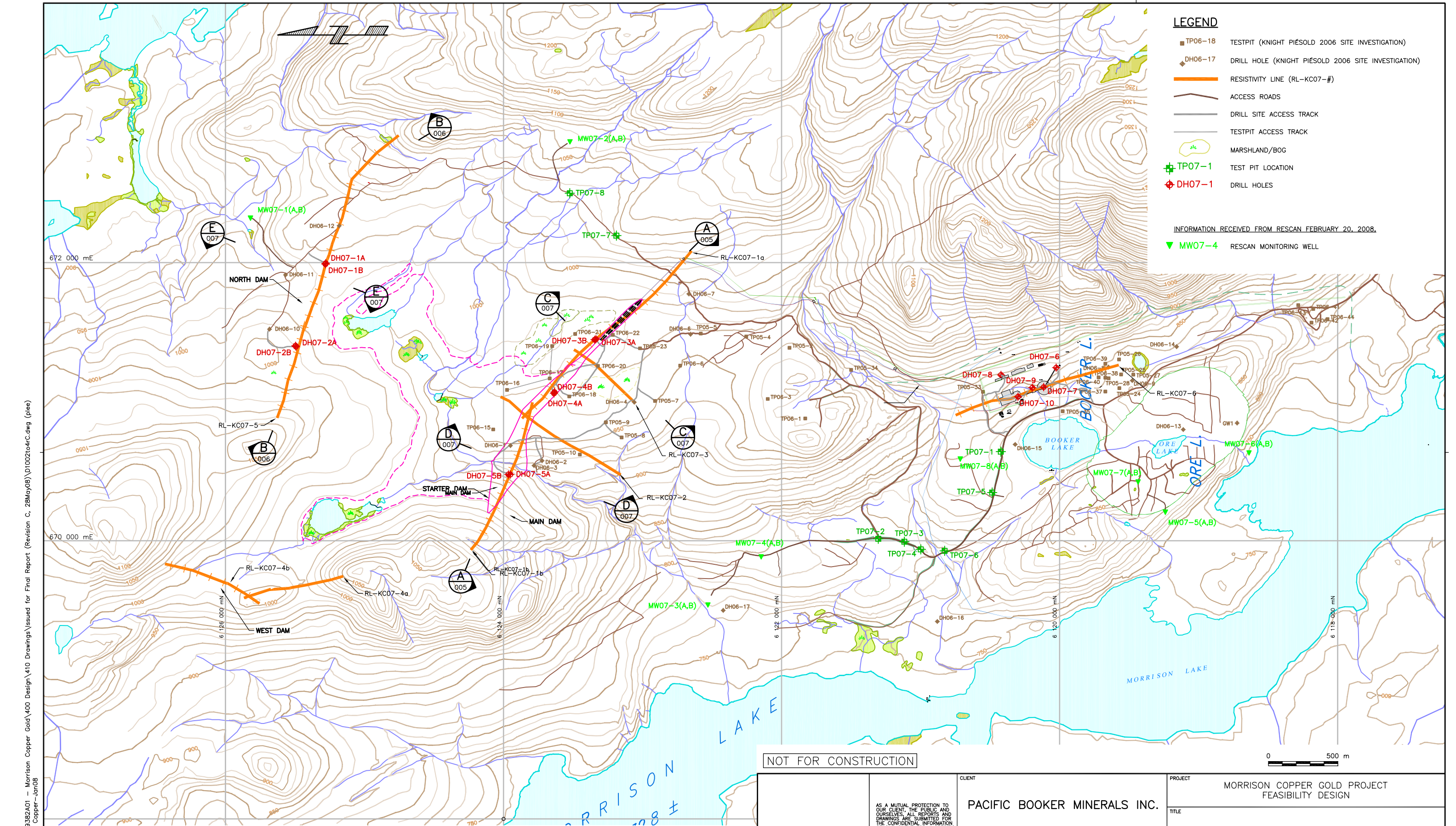


DRAWING NO.	REFERENCE DRAWING	NO.	DATE	ISSUE / REVISION	DRAWN	CHK'D	DESIGN	APP'D	CLIENT	PACIFIC BOOKER MINERALS INC.	PROJECT	MORRISON COPPER GOLD PROJECT FEASIBILITY DESIGN	TITLE	SITE INVESTIGATION PLAN	SCALE	AS SHOWN	PROJECT No.	M09382 A01	DWG. No.	D-1003	REV.	C
-------------	-------------------	-----	------	------------------	-------	-------	--------	-------	--------	------------------------------	---------	--	-------	-------------------------	-------	----------	-------------	------------	----------	--------	------	---



AS A MUTUAL PROTECTION TO OUR CLIENT, THE PUBLIC AND OURSELVES, ALL REPORTS AND DRAWINGS ARE SUBMITTED FOR THE CONFIDENTIAL INFORMATION OF OUR CLIENT FOR A SPECIFIC PROJECT AND AUTHORIZATION FOR USE AND/OR PUBLICATION OF DATA, STATEMENTS, CONCLUSIONS OR ABSTRACTS FROM OR REGARDING OUR REPORTS AND DRAWINGS IS RESERVED PENDING OUR WRITTEN APPROVAL.

CANCEL PRINTS BEARING PREVIOUS REVISION



**LEGEND**

- TP06-18 TESTPIT (KNIGHT PIÉSOLD 2006 SITE INVESTIGATION)
- ◆ DH06-17 DRILL HOLE (KNIGHT PIÉSOLD 2006 SITE INVESTIGATION)
- RESISTIVITY LINE (RL-KC07-#)
- ACCESS ROADS
- DRILL SITE ACCESS TRACK
- TESTPIT ACCESS TRACK
- Marshland/Bog
- ⊕ TP07-1 TEST PIT LOCATION
- ⊕ DH07-1 DRILL HOLES

INFORMATION RECEIVED FROM RESCAN FEBRUARY 20, 2008.

- ▼ MW07-4 RESCAN MONITORING WELL

Time: 9:59:44  
 Date: 5/29/2008  
 Scale: 1=133(FS)  
 Drawing File: M:\M09382A01 - Morrison Copper Gold 400 Design\410 Drawings\Issued for Final Report (Revision C, 28May08)\D1002to4C.dwg (plee)  
 Xrefs: BM-Morrison Copper-Jan08

- NOTES:**
- TOPOGRAPHY IS 10 m CONTOUR INTERVAL, PRODUCED FROM AERIAL PHOTOGRAPHY FLOWN IN SEP, 2003 AND COMPILED BY EAGLE MAPPING LTD.
  - DATUM IN UTM NAD83, ZONE 9.

NO.	DATE	ISSUE / REVISION	DRAWN	CHK'D	DESIGN	APP'D
C	MAY 28 2008	ISSUED FOR FINAL REPORT	PL	TJ		HM
B		NOT USED				
A	APRIL 25, 2008	ISSUED FOR CLIENT REVIEW	PL			

NOT FOR CONSTRUCTION

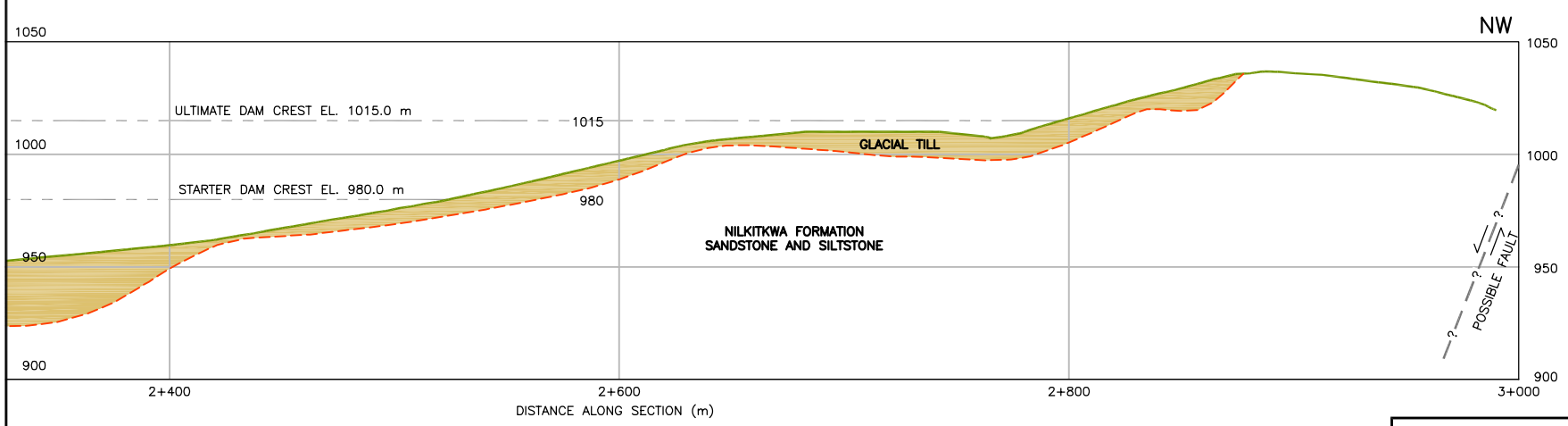
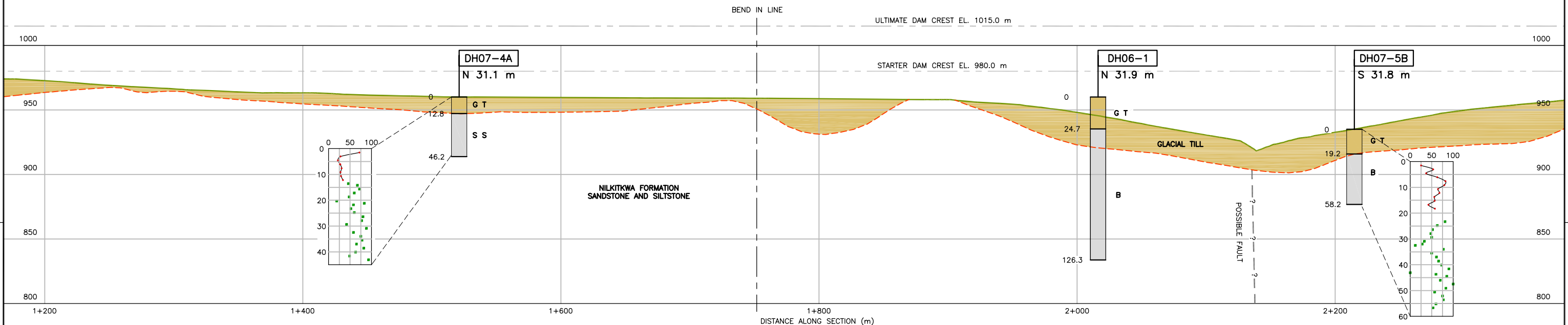
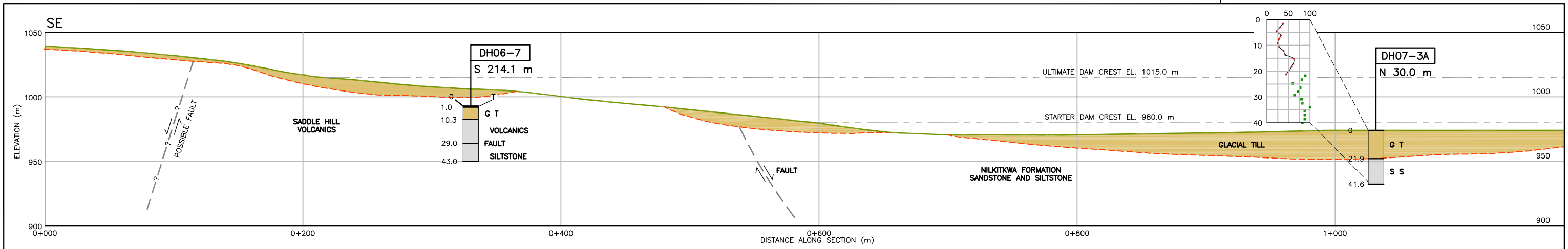


AS A MUTUAL PROTECTION TO OUR CLIENT, THE PUBLIC AND OURSELVES, ALL REPORTS AND DRAWINGS ARE SUBMITTED FOR THE CONFIDENTIAL INFORMATION OF OUR CLIENT FOR A SPECIFIC PROJECT AND AUTHORIZATION FOR USE AND/OR PUBLICATION OF DATA, STATEMENTS, CONCLUSIONS OR ABSTRACTS FROM OR REGARDING OUR REPORTS AND DRAWINGS IS RESERVED PENDING OUR WRITTEN APPROVAL.

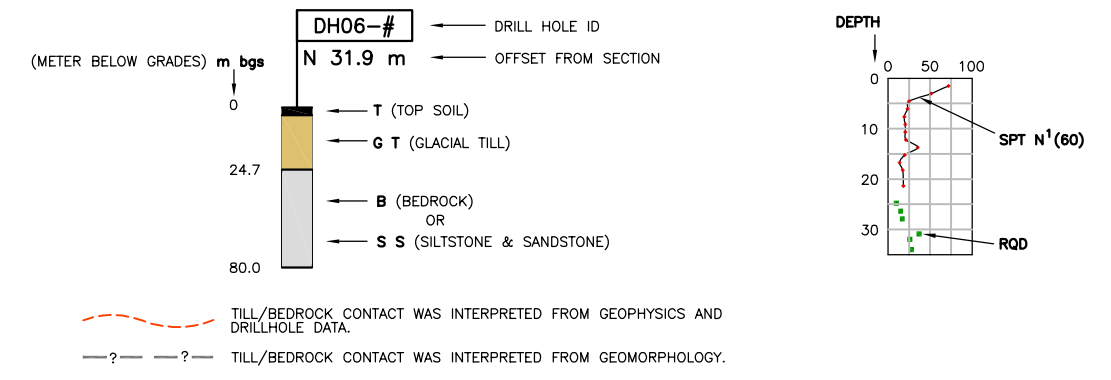
CLIENT  
**PACIFIC BOOKER MINERALS INC.**

PROJECT MORRISON COPPER GOLD PROJECT FEASIBILITY DESIGN	
TITLE GEOLOGIC SECTIONS PLAN	
SCALE AS SHOWN	PROJECT No. M09382 A01
DWG. No. D-1004	REV. C

CANCEL PRINTS BEARING PREVIOUS REVISION



**LEGEND**



NOT FOR CONSTRUCTION

**NOTES:**

- 1. REFER TO DWG. D-1004 FOR PLAN VIEW OF SECTIONS.

NO.	DATE	ISSUE / REVISION	DRAWN	CHK'D	DESIGN	APP'D
C	MAY 28 2008	ISSUED FOR FINAL REPORT	PL	TJ		HM
B		NOT USED				
A	MAY 16, 2008	ISSUED FOR CLIENT REVIEW	PL			

AS A MUTUAL PROTECTION TO OUR CLIENT, THE PUBLIC AND OURSELVES, ALL REPORTS AND DRAWINGS ARE SUBMITTED FOR THE CONFIDENTIAL INFORMATION OF OUR CLIENT FOR A SPECIFIC PROJECT AND AUTHORIZATION FOR USE AND/OR PUBLICATION OF DATA, STATEMENTS, CONCLUSIONS OR ABSTRACTS FROM OR REGARDING OUR REPORTS AND DRAWINGS IS RESERVED PENDING OUR WRITTEN APPROVAL.

CLIENT  
**PACIFIC BOOKER MINERALS INC.**

PROJECT  
**MORRISON COPPER GOLD PROJECT FEASIBILITY DESIGN**

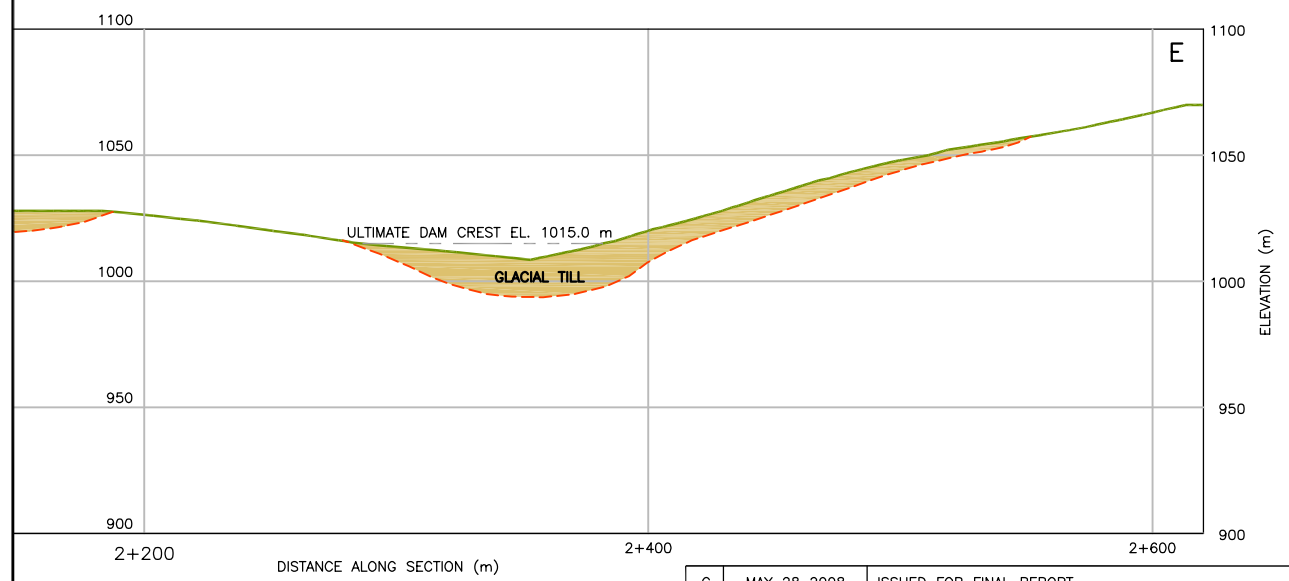
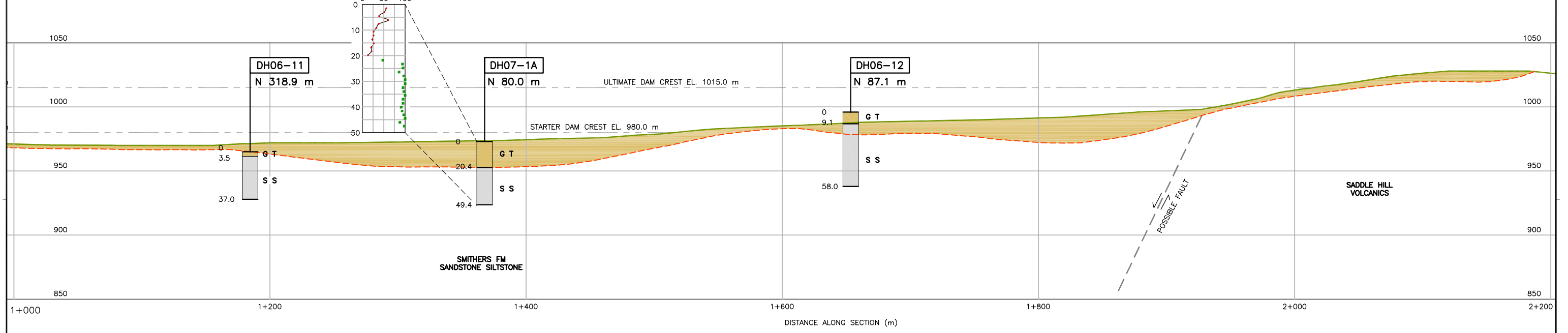
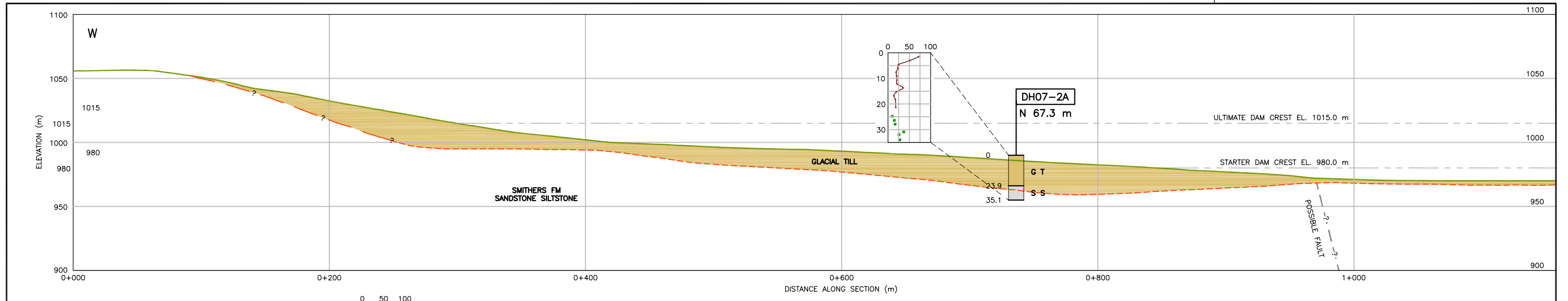
TITLE  
**GEOLOGIC SECTIONS SECTION A - MAIN DAM SHEET 1 OF 3**

SCALE AS SHOWN	PROJECT No. M09382 A01	DWG. No. D-1005	REV. C
-------------------	---------------------------	--------------------	-----------

Time: 9:48:51 Date: 5/29/2008 Scale: 1=13(FS) Drawing File: M:\M09382A01 - Morrison Copper Gold 400 Design\410 Drawings\Issued for Final Report (Revision C, 28May08)\D1005to7C.dwg (p1ee)

CANCEL PRINTS BEARING PREVIOUS REVISION

Time: 9:48:51  
 Date: 5/29/2008  
 Scale: 1=13(FS)  
 Drawing File: M:\09382A01 - Morrison Copper Gold 400 Design\410 Drawings\Issued for Final Report (Revision C, 28May08)\D1005to7C.dwg (p1e)



**NOTES:**  
 1. REFER TO DWG. D-1004 FOR PLAN VIEW OF SECTIONS.

**LEGEND**

(METER BELOW GRADES) m bgs

DRILL HOLE ID  
 OFFSET FROM SECTION

T (TOP SOIL)  
 G T (GLACIAL TILL)  
 B (BEDROCK)  
 OR  
 S S (SILTSTONE & SANDSTONE)

--- TILL/BEDROCK CONTACT WAS INTERPRETED FROM GEOPHYSICS AND DRILLHOLE DATA.  
 -?- TILL/BEDROCK CONTACT WAS INTERPRETED FROM GEOMORPHOLOGY.

DEPTH  
 0 50 100  
 SPT N<sup>1</sup>(60)  
 RQD

0 100 m

NOT FOR CONSTRUCTION

DRAWING NO.	REFERENCE DRAWING
-------------	-------------------

NO.	DATE	ISSUE / REVISION	DRAWN	CHK'D	DESIGN	APP'D
C	MAY 28 2008	ISSUED FOR FINAL REPORT	PL	TJ		HM
B		NOT USED				
A	MAY 16, 2008	ISSUED FOR CLIENT REVIEW	PL			

CLIENT  
**PACIFIC BOOKER MINERALS INC.**

PROJECT  
**MORRISON COPPER GOLD PROJECT  
 FEASIBILITY DESIGN**

TITLE  
**GEOLOGIC SECTIONS  
 SECTION B - NORTH DAM  
 SHEET 2 OF 3**

SCALE  
 AS SHOWN

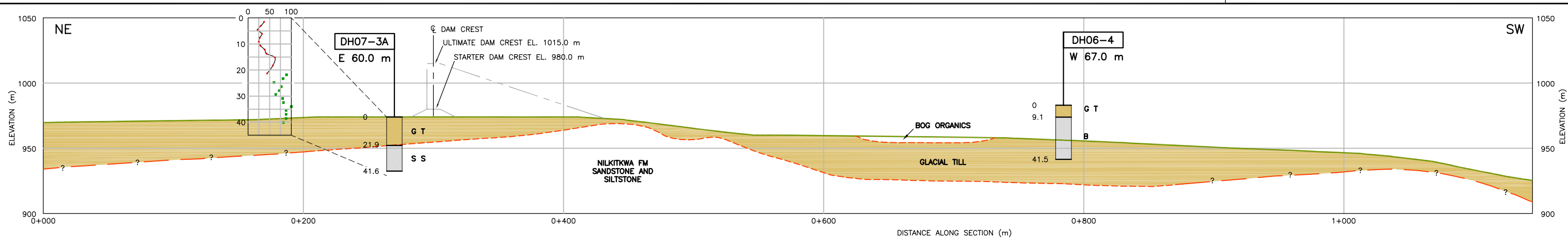
PROJECT No.  
 M09382 A01

DWG. No.  
 D-1006

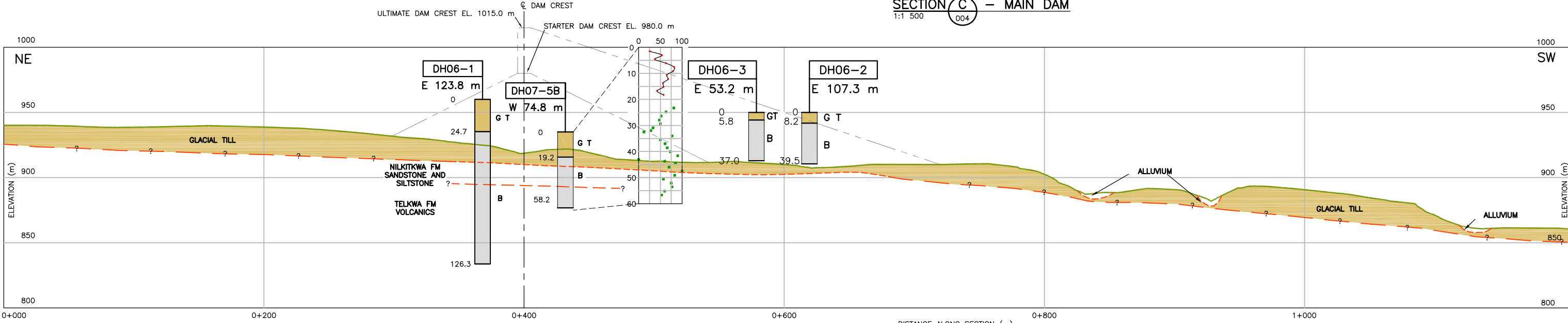
REV.  
 C

AS A MUTUAL PROTECTION TO OUR CLIENT, THE PUBLIC AND OURSELVES, ALL REPORTS AND DRAWINGS ARE SUBMITTED FOR THE CONFIDENTIAL INFORMATION OF OUR CLIENT FOR A SPECIFIC PROJECT AND AUTHORIZATION FOR USE AND/OR PUBLICATION OF DATA STATEMENTS, CONCLUSIONS OR ABSTRACTS FROM OR REGARDING OUR REPORTS AND DRAWINGS IS RESERVED PENDING OUR WRITTEN APPROVAL.

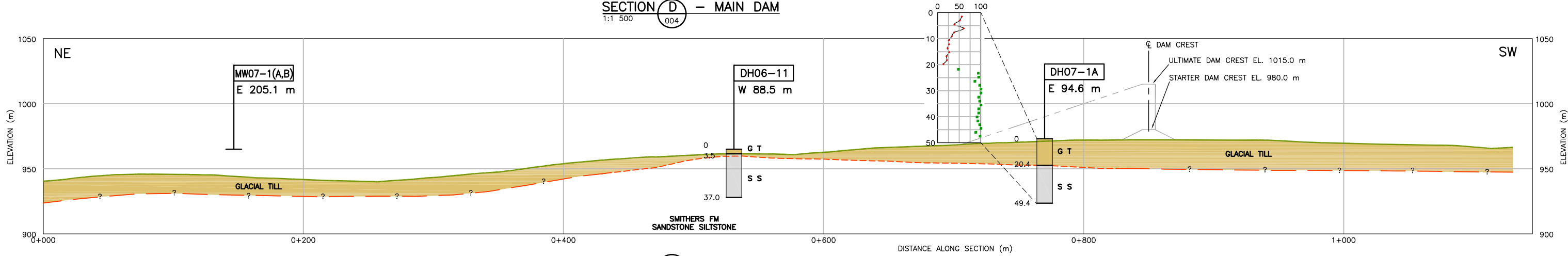
CANCEL PRINTS BEARING PREVIOUS REVISION
---



SECTION C - MAIN DAM  
1:1 500



SECTION D - MAIN DAM  
1:1 500



SECTION E - NORTH DAM  
1:1 500

NOT FOR CONSTRUCTION

**NOTES:**

- REFER TO DWG. D-1004 FOR PLAN VIEW OF SECTIONS.
- FOR LEGEND SEE DWG. D-1005.

NO.	DATE	ISSUE / REVISION	DRAWN	CHK'D	DESIGN	APP'D
C	MAY 28 2008	ISSUED FOR FINAL REPORT	PL	TJ		HM
B		NOT USED				
A	MAY 16, 2008	ISSUED FOR CLIENT REVIEW	PL			

AS A MUTUAL PROTECTION TO OUR CLIENT, THE PUBLIC AND OURSELVES, ALL REPORTS AND DRAWINGS ARE SUBMITTED FOR THE CONFIDENTIAL INFORMATION OF OUR CLIENT FOR A SPECIFIC PROJECT AND AUTHORIZATION FOR USE AND/OR PUBLICATION OF DATA STATEMENTS, CONCLUSIONS OR ABSTRACTS FROM OR REGARDING OUR REPORTS AND DRAWINGS IS RESERVED PENDING OUR WRITTEN APPROVAL.

CLIENT  
**PACIFIC BOOKER MINERALS INC.**



PROJECT  
MORRISON COPPER GOLD PROJECT  
FEASIBILITY DESIGN

TITLE  
GEOLOGIC SECTIONS  
SECTION C, D AND E  
SHEET 3 OF 3

SCALE	PROJECT No.	DWG. No.	REV.
AS SHOWN	M09382 A01	D-1007	C

CANCEL PRINTS BEARING PREVIOUS REVISION

Time: 9:48:51  
 Date: 5/29/2008  
 Scale: 1:13(P/S)  
 Drawing File: M:\M09382A01 - Morrison Copper Gold\400 Design\410 Drawings\Issued for Final Report (Revision C, 28May08)\D1005to7C.dwg (p1ee)

KCB-C-MD