HOPE BAY MINING LIMITED

2008 Annual Geotechnical Inspection, Boston Advanced Exploration Project, Hope Bay, Nunavut

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Project No. 1CM008.006

March 2009

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SRK Project Number 1CH008.006

March 2009

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Executive Summary

The Boston Advanced Exploration Project (Boston Camp) is a wholly owned exploration camp of Hope Bay Mining Ltd. (HBML), which is a wholly owned subsidiary of Newmont Mining Company (NMC). The camp is located about 170 km southwest of Cambridge Bay within the western Kitikmeot Region, Nunavut (with general coordinates of latitude 67°39'N and longitude 106°22'W). Boston Camp is currently used on a seasonal basis from which to carry out prospecting and exploration, various forms of exploration drilling, core splitting and logging. In addition, the site has historically been subjected to bulk underground sampling and processing.

Site operations are currently conducted under Nunavut Water Board (NWB) License 2BB-BOS0712, dated July 6, 2007, which entitles HBML to use water and dispose of waste associated with their operations. HBML contracted SRK Consulting (Canada) Inc. (SRK) to conduct the annual geotechnical site inspection of Boston Camp in accordance with the License requirements. This investigation was carried out on July 25, 2008.

Table A below provides a summary of the inspection components and the primary recommendations stemming from the inspection. These recommendations are compared with those listed in the 2007 annual geotechnical report (SRK 2008a). There are no issues that require urgent and immediate action. SRK understands projects have been initiated to address the concerns raised in this report for those elements for which action plans are required.

Table A: Summary of Inspection Items and Associated Inspection Recommendations

Inspection Item	2007 Recommendations	2008 Recommendations
Thermistors	• Consider installing two shallow thermistors in the camp rockfill pad	• Locate the 1996/1997 thermistors • Establish a formal quarterly monitoring program if the 1996/1997 thermistors are still functional
Primary Tank Farm Settlement Monitoring	• Install two permanent survey beacons at opposing ends on the secondary containment facility berms • Survey these beacons at least once every quarter	• Continue quarterly monitoring • Recognize foundation settlement risk in spill response plan
Primary Tank Farm	• Install two permanent survey beacons at opposing ends on the secondary containment facility berms • Survey these beacons at least once every quarter	• Monitor the surficial slip surfaces and tension cracks on the tank farm berms • Continue settlement monitoring as described above
Power Plant Fuel Containment	• Repair breached containment berms	• No action required
Jet Fuel Containment	• Confirm if it is necessary to retrofit facility with secondary fuel containment liner • Implement remediation works to provide level working base for the containment facility	• No action required

Inspection Item	2007 Recommendations	2008 Recommendations
Solid Waste Disposal Site (including burn pit)	• Clean out burn pit and dispose wood waste in solid waste disposal site • Remediate burn pit, or reclassify for other functional use	• Confirm that waste containment is not required through an appropriate waste inventory • Clean out burn pit and dispose wood waste as appropriate • Remediate burn pit, or reclassify for other functional use
Ore Stockpiles	• Compile site-wide water quality (seep) samples in consistent single database and have it reviewed by a specialist	• Review findings of the ongoing geochemical studies and develop appropriate mitigation plan
Settling Pond	• If pond is no longer needed: Decommission and remove liner • If pond is still required: Reconstruct by installing new liners • Construct suitable barrier around the pond to prevent inadvertent human and/or animal access	• Clear out debris in pond that could damage liner • Develop management plan for pond • Construct suitable barrier around the pond to prevent inadvertent human and/or animal access
Soil Containment Berm (Landfarm)	• Review soil sampling protocols to ensure best practice standards are followed • Develop an action plan to clean contaminated soils inside the soil containment berm	• Work plan has been initiated to remove the contaminated soils and decommission the landfarm
Diamond Drill Cuttings and Settling Pond	• Develop appropriate remediation plan for the pond • Evaluate action plan for storing more drill cuttings in this area taking into consideration the remediation plan	• Develop appropriate remediation plan for the pond • Develop appropriate management plan for storage of drill cuttings, including possible use as remediation method for permafrost degradation zones
Portal	• Install new notices at the portal entrance advising of the dangers associated with unauthorized access to the area • During the next annual geotechnical inspection have the rock bolts and mesh armouring above the portal inspected by a qualified rock mechanics engineer and implement remediation measures to arrest rock-fall risks if deemed necessary	• Replace the faded notices at the portal entrance advising of the dangers associated with unauthorized access to the area • Develop site specific hazard assessment for people entering the portal area to address the rockfall hazard • Consider installing a small diameter wire mesh over the exposed section of the portal roof to address the rockfall hazard
Vent Raise	• Ensure that this is inspected during the 2008 geotechnical inspection	• Replace weathered protective tarps covering the shelter erected over the vent raise • Install notices at the vent raise advising of the dangers associated with unauthorized access to the area
Road to Dock	• Maintain current maintenance practices	• Maintain current maintenance practices, but do not use crushed ore material for repairs; find an alternate clean source • Implement speed control measures
Camp Complex Foundation Pad	• Re-survey the pad and develop an action plan to fill in and re-grade the pad to re-establish constant pad drainage	• Re-survey the pad and develop an action plan to fill in and re-grade the pad to re-establish constant pad drainage

Inspection Item	2007 Recommendations	2008 Recommendations
Road to Airstrip	• Maintain current maintenance practices	• Maintain current maintenance practices, but do not use crushed ore material for repairs; find an alternate clean source • Implement speed control measures
Airstrip	• Maintain current maintenance practices	• Maintain current maintenance practices, but do not use crushed ore material for repairs; find an alternate clean source
Drill Road	• Maintain current maintenance practices	• Maintain current maintenance practices, but do not use crushed ore material for repairs; find an alternate clean source • Implement speed control measures
Core Storage Road	• Maintain current maintenance practices	• Maintain current maintenance practices, but do not use crushed ore material for repairs; find an alternate clean source • Monitor the pipe culvert for progressive permafrost degradation • Implement speed control measures
Wooden Walkway to Boat Dock	• Not inspected	• Consider raising the walkway above the tundra to prevent onset of permafrost degradation • If boat dock is to be decommissioned consider removing the walkway altogether
Core Storage Area	• Consolidate core storage and ensure that none are inadvertently stored on the tundra • Develop a long-term core storage plan	• Consolidate core storage and ensure that none are inadvertently stored on the tundra • Develop a long-term core storage plan
Grey Water Discharge	• Develop discharge strategy that would allow for more frequent movement of the discharge point	• Develop discharge strategy that would allow for more frequent movement of the discharge point
Drill sites	• Develop remediation strategy to prevent further permafrost degradation	• Develop remediation strategy to prevent further permafrost degradation
Vegetation Dieback Zone	• Not identified due to snow cover present at time of inspection	• Initiate study to determine why dieback continues; involve a tundra vegetation expert • Develop remediation strategy to prevent further dieback and permafrost degradation

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1 Introduction

1.1 Inspection Requirement

The Boston Advanced Exploration Project (Boston Camp) is a wholly owned exploration camp of Hope Bay Mining Limited (HBML), *formerly* Miramar Hope Bay Limited. The camp is located about 170 km southwest of Cambridge Bay within the western Kitikmeot Region, Nunavut (with general coordinates of latitude 67°39'N and longitude 106°22'W, as shown in Figure 1).

The Boston Camp is currently used on a seasonal basis from which to carry out prospecting and exploration, various forms of exploration drilling, core splitting and logging. In addition, the site has historically been subjected to bulk underground sampling and processing.

Site operations are currently conducted under Nunavut Water Board (NWB) License 2BB-BOS0712 (the License), dated July 6, 2007, which entitles HBML (the Licensee) to use water and dispose of waste associated with their operations. Part D, Item 20 of the License states the following:

"An inspection of the earthworks, geological regime, and the hydrological regime of the Project is to be carried out annually during the summer by a Geotechnical Engineer. The Geotechnical Engineer's report shall be submitted to the Board within sixty (60) days of the inspection, with a covering letter from the Licensee outlining an implementation plan to respond to the Engineer's recommendations."

Additionally, Part D, Item 10 states:

"The Licensee shall ensure that Containment Ponds are designed and bermed in such a way to ensure there is no seepage. A report on seepage shall be included as part of the Geotechnical Engineer's annual report required by Part D, Item 20."

In fulfillment of these regulatory requirements, Mr. Chris Hanks, Director for Environment and Social Responsibility from HBML, requested that SRK Consulting (Canada) Inc. (SRK) conduct the 2008 geotechnical site inspection. This report provides a summary of the conditions observed and the resulting mitigation recommendations. Table 1 provides a summary of the inspection components.

Table 1: List of Individual Inspection Items

Facility/Data Type	Inspection Item
Instrumentation/Data	Thermistors
	Primary Tank Farm Settlement Surveys
Containment Structures	Primary Tank Farm
	Power Plant Fuel Containment
	Jet Fuel Containment
	Solid Waste Disposal Site (including burn pit)
	Ore Stockpiles
	Settling Pond
	Soil Containment Berm (Landfarm)
	Diamond Drill Cuttings and Settling Pond
Mine Openings	Portal
	Vent Raise
Infrastructure	Road to Dock
	Camp Complex Foundation Pad
	Road to Airstrip
	Airstrip
	Drill Road
	Core Storage Road
	Wooden Walkway to Boat Dock
Other Areas	Core Storage Area
	Grey Water Discharge
	Drill Sites
	Vegetation Dieback Zones

The first formal geotechnical inspection in fulfillment of the Water Licence Condition was carried out by SRK in October 2007 (SRK 2008a). This report describes the second formal annual inspection.

1.2 Report Structure

Section 2 of this report provides a brief summary of the site history and physical conditions to provide context for the report content. The inspection conditions are described in Section 3 and an overall summary of recommendations is provided in Section 4. A site inspection photo log is attached as Appendix A.

1.3 Disclaimer

This report and the opinions and conclusions contained herein ("Report") contains the expression of the professional opinion of SRK Consulting (Canada) Inc. ("SRK") as to the matters set out herein, subject to the terms and conditions of the agreement dated April 2008, HBML Consulting Services Agreement (CSA-0240-0408) (the "Agreement") between SRK and Hope Bay Mining Ltd. ("Hope Bay Mining"), the methodology, procedures and sampling techniques used, SRK's assumptions, and the circumstances and constraints under which Services under the Agreement were performed by SRK. This Report is written solely for the purpose stated in the Agreement, and for the sole and exclusive benefit of Hope Bay Mining, whose remedies are limited to those set out in the Agreement. This Report is meant to be read as a whole, and sections or parts thereof should thus not be read or relied upon out of context. In addition, this Report is based in part on information not within the control of SRK. Accordingly, use of such Report shall be at the user's sole risk. Such use by users other than Hope Bay Mining and its corporate affiliates shall constitute a release and agreement to defend and indemnify SRK from and against any liability (including but not limited to liability for special, indirect or consequential damages) in connection with such use. Such release from and indemnification against liability shall apply in contract, tort (including negligence of SRK whether active, passive, joint or concurrent), strict liability, or other theory of legal liability; provided, however, such release, limitation and indemnity provisions shall be effective to, and only to, the maximum extent, scope or amount allowable by law.

2 Site Conditions

2.1 Site History

A brief summary of the site history is listed in Table 2.

Table 2: Summary of Pertinent Site Ownership History

Period	Comment
1964	Sporadic exploration in the Hope Bay area begins, resulting in several gold and silver showings including Ida Point, Ida Bay and Roberts Lake.
1970	Roberts Bay Mining explores the area for about a decade up to 1980.
1977	Noranda begins exploring for volcanogenic massive sulphide deposits. They leave the belt in 1990. Prior to 1980, Roberts Bay Mining also explored the area.
1987	Albermin Corporation stake claims in the vicinity of Spyder- and Doris Lakes. After completing some exploration they allow their claims to expire.
1988	BHP Minerals Canada Inc. (BHP) explores the southern portion of Hope Bay Volcanic Belt.
1991	BHP acquires a contiguous block of claims covering about 1,106 square kilometres.
1992	BHP commences exploration drilling at the Boston property.
1993	The first camp is constructed on the southwest shores of Spyder Lake by BHP.
1994	Construction of 35 person camp at Stickleback Lake. The Spyder Lake camp is dismantled and moved to this site.
1996 and 1997	BHP complete 2,300 m of underground development, underground exploration (drilling and sampling) and bulk sampling of the Boston deposit.
1999	BHP sells all its interests in the Hope Bay Belt to Hope Bay Joint Venture (HBJV), a 50:50 joint venture between Hope Bay Gold Corporation Inc. (formerly Cambiex Exploration Inc.), and Miramar Hope Bay Limited (MHBL), a wholly owned subsidiary of Miramar Mining Corporation (MMC).
2002	Hope Bay Gold Corporation Inc. formerly merges with MMC, and the Hope Bay site is operated under MHBL.
2008	Hope Bay Mining Limited (HBML), a wholly owned subsidiary of Newmont Mining Corporation (NMC) buys out all interests in the Hope Bay Belt from MMC.

2.2 Site Infrastructure

The Boston Camp is situated on a ridge which comprises a peninsula extending northwards into Spyder Lake, as illustrated on Figure 2. The main camp footprint spans about 325 m from north to south, and 150 m east to west. The bulk of the camp facilities are located on a crushed rock pad, ranging in thickness from 0.6 m to 3 m. The pad was designed to slope generally north at a gradient of about 1%.

The camp consists of a series of joined trailers to provide accommodation and office space for about 50 people. One trailer houses the water treatment plant and another, the sewage treatment plant. In addition there are six tents that act as additional office space and core logging shacks. A “Weatherhaven” type building that used to contain the bulk sampling crushing plant is now used as a workshop and general equipment storage shed. The last remaining buildings consist of a maintenance shop and the power generator shed. Generator fuel (diesel) is supplied from two aboveground storage tanks, adjacent to the power house. Eight additional bulk fuel tanks are housed in an engineered containment facility.

An overall site layout plan is presented in Figure 2, and a more detailed illustration of the main camp complex is presented in Figure 3. In addition to the main camp complex, these figures illustrate the relative locations of all the main infrastructure components, containment structures and mine openings.

2.3 Climate

Site specific climate data at Boston Camp is limited to a few years of data collected by BHP in the late 1990s. Comparison of this data with regional weather stations operated by Environment Canada suggests that the mean annual site temperature is about -13.5°C. The extrapolated mean annual precipitation is about 208 mm, with 108 mm of that falling as rain and the remainder as snow. The area is classified as arctic desert (EBA 1997).

2.4 Regional Geology

During the Quaternary period, the region was subjected to multiple glaciations. The north-western sector of the vast Laurentide Ice Sheet covered the area during each glaciation, and the present day landscape provides clear evidence of the most recent (Late Wisconsin) glaciation. Striations, orientation of eskers, grooves and drumlins indicate that the predominant glacial ice movement was north-northwest (EBA 1996).

The ice disappeared about 8,800 years ago leaving a blanket of basal till. The sea level was about 200 m higher than present immediately following de-glaciation. At that time, the project area was submerged and the edge of the ice sheet abutted the open sea. Melt water streams from the ice carried fine grained sediments towards the sea, resulting in the accumulation of marine sediments on top of the till, with the greatest accumulation in deeper water zones, which now form the valley bottoms (EBA 1996).

Isostatic rebound after de-glaciation resulted in emergent landforms, and during this process all parts of the land were washed by waves. The easily erodible marine sediments, till and glacio-fluvial sands and gravels were subsequently reworked by waves, currents and sea ice. This has resulted in the present day outcrops where thin soil veneers were washed off the uplands and deposited in the valley bottoms. Since emergence, the natural effects of slope processes, frost action and permafrost have transformed the landscape to its present day shape (EBA 1996).

2.5 Geotechnical Conditions

Surficial geotechnical investigations at the Boston project area are limited to a series of seven drill holes and a subsequent terrain analysis carried out by EBA Engineering Consultants Ltd. (EBA) in 1996 (EBA 1996, 1997). There is also a series of thermistors that have been installed at the site including three shallow strings in 1996 (EBA 1996), one deep string in 1997 (EBA 1997; Golder 2000a, b) and three more deep strings in 2008 (SRK 2008b). The location of all surficial geology drill holes and thermistor string locations are presented in Figure 2, and summarized in Table 3.

Table 3: Summary of Permafrost Drillholes and Thermistor Installations

Drill Hole ID	UTM Coordinates		Surface Elevation (m)	Completion Depth (m)	Thermistor Installed (Serial #)	Source
	Northing	Easting				
12259-01 (BH1)	7,504,261*	441,482*	68.6*	10.9 (below lake)	No	EBA (1996, 1997)
12259-02 (BH2)	7,504,141	441,213	71.7	4.1	No	
12259-03 (BH3)	7,504,380	441,113	77.6	16.1	Yes (#1049)	
12259-04 (BH4)	7,503,905*	442,323*	73.9	13.9	No	
12259-05 (BH5)	7,504,778	441,172	80.8	15.6	Yes (#1050)	
12259-06 (BH6)	7,505,683	441,327	69.7	15.8	Yes (#1051)	
12259-07 (BH7)	7,506,153*	441,830*	Unknown	Unknown	No	
97NOD176	7,504,962	441,481	78.3	367 @ -60^o (298 true)	Yes	Golder (2000a)
08SBD380	7,504,780	441,080	77.3	402 @-60^o (334 true)	Yes	SRK (2008b)
08SBD381A	7,504,814	441,070	69.6	401 @ -55^o (298 true)	Yes	
08SBD382	7,505,141	441,026	72.8	404 @-60^o (323 true)	Yes	

* Approximate information as interpolated from source drawings by SRK. Exact information is not available. Locations not marked with asterisk are surveyed coordinates.

Figures 4 through 8 summarize all available thermistor string data. It is not known if any other data from the 1996 and 1997 installations has been recorded since their installation and reporting in 1997 (EBA 1997). Golder (2000a, b) documents the findings of a site inspection, including revisiting some of the thermistors; however, no additional data is added. SRK did not try and locate any of the historic thermistors during the geotechnical inspection to determine their functionality. This should be attempted during the 2009 geotechnical inspection.

The available information confirms that the Boston Camp is located well within the region of cold, continuous permafrost. Permafrost temperatures are below about -8°C and the active layer is generally less than 1 m thick, with the depth of zero annual amplitude about 10 m. Based on data from the deep thermistor installed in 1997, permafrost depth is estimated to be about 520 m (Golder 2000a).

Laboratory testing (moisture contents, Atterberg Limits, grain size distribution and pore water salinity) on intact samples collected during the drilling campaign in 1996 confirms that overburden soils are comprised mainly of marine silt and morainal till ranging in thickness from 1.5 to 8 m. The silt contains up to 50% (by volume of soil) ground ice, while the till contains low to moderate ice contents (5 to 25%) (EBA 1997).

3 Inspection Conditions

Mr. Maritz Rykaart, P.Eng., Ph.D., a Principal Geotechnical Engineer with SRK conducted the geotechnical inspection on July 25, 2008. He was accompanied by Ms. Michelle Murphy, EIT, an SRK Staff Engineer. The detailed site inspection was carried out on foot, after travelling to site via helicopter from the Doris North airstrip. HBML personnel did not accompany SRK during the inspection; however, HBML Environmental staff Mr. Matthew Kawai and Ms. Jill Turk were on site and available for questioning.

Weather conditions during the inspection were cool and overcast with periods of rain and strong wind. A detailed photo log of the inspection is included as Appendix A.

3.1 Instrumentation/Data

3.1.1 Thermistors

A summary of the available site thermistors are discussed in Section 2.5 and all available data are presented graphically in Figures 4 through 8. SRK did not attempt to find the 1996 and 1997 thermistor strings during the geotechnical inspection so no comments can be made as to their integrity. The 2008 strings were in the process of being installed at the time of the inspection, and all data collected from these strings, up to October 2008, are presented in Figure 8.

The 2007 annual geotechnical report (SRK 2008a) recommended installation of two shallow thermistors in the camp rockfill pad to monitor if the pad was affecting the underlying permafrost. Whilst this data would be of academic value, SRK no longer believes that it would be advantageous to know this in order to adequately monitor site performance.

Recommendations:

1. An attempt should be made during the 2009 annual geotechnical inspection to locate the four 1996 and 1997 thermistor strings. If found, they should be tested and, if operational, a formal monitoring program should be implemented.

2. A formal monitoring program should be established to ensure regular collection of thermistor data from the three strings installed in 2008, as well as the 1996/1997 thermistors. Quarterly readings (or as close to this schedule as the camp operating window allows) should be collected as a minimum. This data should be reported as part of all subsequent annual geotechnical inspections.

3.1.2 Primary Tank Farm Settlement Monitoring

The 2007 annual geotechnical report recommended that a series of settlement beacons be installed on the primary tank farm containment berm to allow quarterly settlement surveys to provide early warning signs of undue tank settlement as a result of foundation settlement due to permafrost degradation. HBML opted not to install the recommended beacons, but rather initiated a survey program based on three control points on each of the eight tanks in the containment area. This is an appropriate monitoring program, in the opinion of SRK. The control points were established by the site surveyor, Mr. Jay Hallman, on April 21, 2008. The control point co-ordinates and elevations are listed in Table 4.

Table 4: Summary of Survey Control Points Established for the Primary Tank Farm

Tank	Control Point	Northing (m)*	Easting (m)*	Elevation (m)
1	A	5,325.879	1,305.901	80.674
	B	5,326.428	1,308.581	80.989
	C	5,328.263	1,306.711	80.992
2	A	5,327.678	1,315.749	80.877
	B	5,326.866	1,318.217	81.190
	C	5,329.353	1,318.048	81.114
3	A	5,331.618	1,306.850	81.057
	B	5,331.612	1,309.744	81.062
	C	5,335.467	1,307.263	81.090
4	A	5,331.166	1,318.159	81.128
	B	5,334.739	1,317.563	81.092
	C	5,334.220	1,314.710	81.128
5	A	5,337.355	1,307.654	80.896
	B	5,337.490	1,310.713	81.075
	C	5,341.035	1,307.826	81.089
6	A	5,337.092	1,317.422	80.991
	B	5,340.813	1,317.436	81.031
	C	5,340.311	1,314.183	81.061
7	A	5,343.001	1,307.814	80.875
	B	5,343.343	1,310.862	81.005
	C	5,346.505	1,307.626	81.060
8	A	5,342.700	1,317.450	80.956
	B	5,345.860	1,317.826	80.962
	C	5,345.604	1,313.962	81.033

* This is a local grid for use of the settlement surveying only.

Two subsequent settlement surveys were carried out on August 7, 2008 and October 17, 2008. These surveys were completed by HBML survey staff using a TOTAL Station and prisms. The survey accuracy is not stated; however, should be within ±3 mm. The averaged survey results for each tank are presented in Table 5. With only two comparative data points, SRK does not believe that statistically significant conclusions can be drawn at this time. Notwithstanding that, the data was reviewed for any clear trends that may suggest a problem, but none were observed.

Table 5: Summary of Settlement Data for the Primary Tank Farm (Apr. to Oct. 2008)

Tank	Survey Date[1]	Average Survey Differences (mm)		
		Northing[2]	Easting[2]	Elevation[3]
#1	7-Aug-08	9.5	-5.7	-17.0
	17-Oct-08	-2.8	5.6	10.7
#2	7-Aug-08	11.2	1.0	-17.5
	17-Oct-08	3.1	0.7	3.6
#3	7-Aug-08	5.1	-0.6	-22.8
	17-Oct-08	-5.1	1.9	21.0
#4	7-Aug-08	6.9	-0.2	-23.2
	17-Oct-08	0.7	0.5	21.9
#5	7-Aug-08	-2.8	-1.8	-5.9
	17-Oct-08	-2.9	7.6	20.4
#6	7-Aug-08	9.3	-6.2	-31.2
	17-Oct-08	-1.3	0.4	23.8
#7	7-Aug-08	-28.4	3.6	-36.3
	17-Oct-08	-1.3	3.6	15.0
#8	7-Aug-08	9.7	-5.3	-28.0
	17-Oct-08	0.3	1.1	34.4
Minimum	**7-Aug-08**	**-28.4**	**-6.2**	**-36.3**
Maximum		**11.2**	**3.6**	**-5.9**
Average		**2.6**	**-1.9**	**-22.7**
Minimum	**17-Oct-08**	**-5.1**	**0.4**	**3.6**
Maximum		**3.1**	**7.6**	**34.4**
Average		**-1.1**	**2.7**	**18.9**
Minimum	**Overall Period**	**-28.4**	**-6.2**	**-36.3**
Maximum		**11.2**	**7.6**	**34.4**
Average		**0.7**	**0.4**	**-1.9**

1. The baseline (reference) survey was completed on April 21, 2008.
2. The difference denotes the difference in survey data between the survey on the date, and the previous survey. A negative value implies tank has moved to the south (Northing) or the west (Easting).
3. The difference denotes the difference in survey data between the survey on the date, and the previous survey. A negative value implies tank has moved down.

Recommendations

1. Quarterly monitoring (or as close to this schedule as the camp operating window allows) of tank settlement should continue. This data should be reviewed and reported on as part of the annual geotechnical inspection, and should there be any signs of undue movement, appropriate mitigation plans can be put in motion.

2. The foundation settlement risk should be recognized in the spill response plan for the tank farm.

3.2 Containment Structures

3.2.1 Primary Tank Farm

The primary tank farm, housing eight large fuel tanks is located in an engineered secondary containment facility constructed in 2001. SRK understands that there is no formal as-built documentation for the facility. Based on interviews, SRK concluded that the facility was designed by EBA Engineering Consultants Ltd. (EBA) and subsequently constructed by MHBL with engineering supervision by EBA.

It is understood that secondary containment is provided by a PVC liner (type unspecified) placed on a prepared rockfill pad with constructed containment berms of rockfill providing the necessary containment capacity. The liner has a top cover of gravel (crushed ore stockpile material) as a protection layer. The eight tanks are placed directly onto the protection layer and are interconnected with permanent steel piping. Fuel transfer from these main tanks into equipment, fuel drums and Tidy Tanks are done in a contained fuel transfer area, using an electric pump. The entire facility is constructed directly on permafrost overburden soils, as described in Section 2.5.

Visual inspection of the secondary containment facility showed several signs of surficial slip surfaces on the containment side slopes, as well as small tension cracks along the berm crest. These were not observed during the 2007 inspection and should be monitored closely. These slip surfaces could be an early indication of settlement, or may simply be due to the oversteepened nature of the gravel berm. The liner is not exposed anywhere, and the containment berms for both the main containment facility and the fuel transfer areas are intact. There were no visible signs of fuel spills outside of the respective containment areas. HBML has rigorous protocols in place for fuel transfer, and provided those are followed, the facility design appears adequate to ensure environmental protection.

Settlement could occur as a result of permafrost thaw due to the foundation conditions under the tank. A settlement monitoring program was put in place in April 2008 as described in Section 3.1.2. At this time it is too early to comment on whether there has been any significant tank movement. Notwithstanding the limited settlement data, there were no visible signs of settlement during the inspection, other than the tension cracks mentioned previously.

Recommendations:

1. The appearance of surficial slip surfaces and tension cracks on the containment berms should be closely monitored. Remedial measures should be put in place if there are any signs of these progressing. Should excessive deformation of these berms occur (the probability of which is likely low), the tank integrity is not at risk. It is simply the secondary containment that will no longer be in place.

2. The tank settlement monitoring program that has been put in place is good. Quarterly monitoring (or as close to this schedule as the camp operating window allows) of tank

settlement should continue. This data should be reviewed and reported on as part of the annual geotechnical inspection and, should there be any signs of undue movement appropriate mitigation, plans should be put in motion.

3.2.2 Power Plant Fuel Containment

Two double-wall fuel tanks servicing the power plant are located in a secondary containment facility (rockfill berm) immediately west of the maintenance shop. Construction details for this secondary containment are not available; however, visual inspection in 2007 suggested that there was no secondary containment liner. It was further noted during the 2007 inspection that this berm was breached in two locations to accommodate service piping to the facility. These breaches have been repaired to the extent practical, without relocating the feeder pipes, and HBML staff confirms that a liner was installed in 2008.

Recommendations:

1. No action required. The presence of the liner should however be confirmed during the 2009 inspection.

3.2.3 Jet Fuel Containment

At the time of the 2007 inspection, drums of jet fuel were stored in a secondary containment facility, the construction details of which were not available. Visual inspection suggested that there was no containment liner installed, and the facility had a highly irregular base, resulting in fuel drums heeling over at various angles. SRK recommended that this facility be retrofitted with a liner, and that the irregular base be levelled to avoid inadvertent toppling of drums.

During the 2008 inspection, SRK noted that this facility was no longer being used to store jet fuel, but rather was only used for Tidy Tanks. Jet fuel is stored in drums grouped together on wooden pallets, stacked two high, in an area of the rockfill pad northeast of the primary fuel tank farm. A portable pollution control berm is used to provide secondary containment.

Recommendations:

1. No action required.

3.2.4 Solid Waste Disposal Site (Including Burn Pit)

Combustible domestic waste is incinerated on site. Other non-hazardous and hazardous waste is stockpiled, packaged and seasonally removed from site to Yellowknife as backhaul opportunities present themselves. There remains a significant backlog of material that still has to be hauled away. This material is not stored within designated containment facilities; however, the waste is neatly organized and due to the nature of the waste (as described by site staff), environmental containment does not appear to be necessary. This should be confirmed through an appropriate inventory.

At one time, all wood waste was burned in a burn pit (a converted sedimentation pond) located immediately south of the active sedimentation pond; however, this practice has been discontinued and all non-combustible materials was removed from the pit. The reason for discontinuing this practice is not clear. The burn pit itself is still used to contain unburned wood waste and ash, until such time as HBML adopts an alternate strategy to dispose of these elements.

Recommendations:

1. Confirm through an appropriate waste inventory that there are no waste that require environmental containment.

2. Since the burn pit no longer serves its original design intent, it should be cleaned out by removing all the wood waste and ash and relocating it to an appropriate disposal site.

3. If the burn pit could be used to perform another functional use it should be so designated, otherwise HBML should prepare a plan to completely decommission this facility. SRK understands that HBML has commissioned a project to develop a closure plan for the Boston Camp, and addressing the burn pit will be part of that scope of work.

3.2.5 Ore Stockpiles

A large number of crushed ore stockpiles are located on the north-western portion of the camp complex foundation pad. This ore comes from the 27,000 ton bulk sampling program carried out between 1996 and 1997. These stockpiles are individual uncompacted end-dump piles. Surface water drainage from this part of the foundation pile is not specifically separated from the rest of the foundation fill pad, and is not contained, but allowed to flow directly onto the tundra.

The 2007 inspection report recommended that HBML compile a detailed database of all the seep sampling tests carried out over the life of the facility and have that data reviewed by an appropriately qualified professional with the specific objective of determining whether there is any poor quality seepage emanating from the exposed ore stockpiles. Based on the outcome of the review mentioned above, HBML may have to consider implementing measures to isolate surface drainage from the ore stockpile area from the remainder of the camp foundation fill pad.

HBML subsequently contracted a specialist geochemical study with SRK to complete an inspection and sampling program to assess the geochemical performance of historic waste rock and ore at Boston. The objectives of this work were twofold: (1) to fulfill the conditions of Water License No. 2BB-BOS0112 Part E, Item 8 and, (2) to assess the geochemical performance of the weathered materials as a part of the geochemical characterization currently in progress to support future permitting activities.

The program included sampling of waste rock and ore from the ore stockpiles, roads and airstrip, as well as a seep survey around the perimeter of the site. This work was done in July 2008. Testing of the waste rock included field contact tests, acid-base accounting, metal analyses, and leach extraction tests. There is also historical seepage available for this area that will be analyzed as part of this program. The results of this study will be presented in a separate technical report, and will be submitted to the Nunavut Water Board in late March 2009.

Recommendations:

1. Review the findings of the specialist geochemical studies as part of the 2009 annual geotechnical inspection to confirm if any physical remedial works are required.

3.2.6 Settling Pond

One lined settling pond has been constructed along the eastern perimeter of the camp foundation pad (immediately north of the burn pit). As-built records for the construction of this pond are not available, and the intent of it is also unclear. Visual inspection of the pond confirms that it could not have been constructed to collect surface runoff from the ore stockpile area, and the inspector suspects that it was likely used to contain wash water from the bulk sampling crushing and screening plant. This could not be confirmed by HBML site staff.

During the 2007 inspection it was noted that the pond was in extremely poor condition, and SRK recommended that the pond either be decommissioned or repaired. The 2008 inspection revealed that HBML had done some remedial work on the liner. HBML confirmed that a contractor was brought in to repair and reset the liner, and the top of the liner was repositioned and re-bedded with sand bags. The pond still has a small amount of water in it, likely from rainwater and/or snowmelt. The pond also contained various amounts of gravel (crushed ore) and wood debris which would compromise the liner integrity.

HBML stipulated that this pond will be used as an emergency holding pond for things like possible fuel spills or when the sewage treatment plant experience upset conditions. SRK is of the opinion that, if this pond is to be used for anything where there would be solids collected in the pond, its design would make it extremely difficult to remove these solids to retain pond capacity due to its depth and the fact that the liner is not protected. Furthermore, since the pond does not have a designed overflow facility (i.e. spillway), it would experience uncontrolled overflow when its capacity is exceeded. HBML has stipulated that an overflow is not required as the management practice is to pump out snowmelt and rainwater as required, after testing for contaminants.

The pond has no instrumentation of any nature and, as such nothing can be said about its historic performance. A reconnaissance survey of the pond did not show any visible signs of new or historic seepage.

Recommendations:

1. The debris in the pond should be cleared out as it poses a potential puncture risk to the liner.

2. A management plan must be implemented to ensure sediment (i.e. hydrocarbon contaminated soil, sewage treatment plant sludge, etc.) can be removed without damaging the liner.

3. If the pond is to be used to retain water for any length of time, a suitable leak detection monitoring system should be implemented. As a minimum, a protocol involving frequent visual inspections would have to be put in place for the pond. Excessive and prolonged leaking will lead to permafrost degradation, which in turn will result in differential settlement that may cause the liner in the pond to fail.

4. The pond should have a suitable barricade around it to prevent human and animal access. Due to the current design, it would be extremely difficult to get out of the pond unassisted if a human or animal were to inadvertently enter or fall in.

3.2.7 Soil Containment Berm (Landfarm)

As a result of a historic fuel spill, HBML constructed a lined soil containment facility within which all excavated contaminated soils have been stored (EBA 2004). SRK reviewed the as-built records for this facility (EBA 2004) and, supported by visual inspection, confirms that it consists of a bermed and lined area in which contaminated soil is placed. In addition to soils spread about 1 m thick over the entire surface of the facility, there are also a large number of old fuel drums filled with contaminated soils contained within the confines of the facility.

From discussions with HBML site staff in 2007 and a review of the as-built report, it appears that the soil containment berm was designed to be used as an active hydrocarbon landfarm area. A landfarming protocol was not provided in the as-built report; however, site staff confirmed that since initial placement of the contaminated soils into the containment area, there has been no work carried out in the form of tilling or any other means of soil mixing. HBML routinely conducts soil sampling within the confines of this facility, the results of which are reported as part of the annual Licence conditions. Based on a review of the formal operational procedure of HBML landfarming practices (MHBL 2007a, b), and comparison of that with the site staff, SRK doubts whether the soil sampling results reported by HBML would be representative. The primary reason for coming to this conclusion is that the soil in the facility is about 1 m thick, and has never been tilled or reworked in any way, as confirmed by HBML staff. Furthermore, the soil sampling only effectively covers the upper 10 cm of the profile.

The containment facility itself however appears to be in-tact; although it is filled to capacity and would not be able to contain more soil until some of it has been adequately treated and relocated.

Recommendations:

1. SRK understands that HBML is planning on relocating all soils contained in the landfarm to an appropriately designed facility and completely decommissioning the existing landfarm. Work plans towards this goal are targeted for 2009.

3.2.8 Diamond Drill Cuttings and Settling Pond

Some drill cuttings have historically been disposed of permanently in a settling pond immediately west of the airstrip. Site staff could not confirm if this pond was intentionally designed, but if so there are no as-built records and the timeframe for how long this practice has been in operation is not clear. Visual inspection suggests that the pond is located at a historic drill hole. Poor control of the drill fluid resulted in permafrost degradation and subsequent annual thaw created by a pool of standing water resulted in the pool increasing in size. At some stage, the pond started to overflow and silt-laden water started to flow overland towards open water bodies. At that time, drill cuttings were placed in the pond in an attempt to stop further degradation. A geotextile was also installed to control silt flowing from the pond.

Although there were signs of this pond being actively used in 2007, there was no evidence of it being used in 2008. Considering the amount of standing water present during the time of the inspection, as well as the apparent previous random placement of drill cuttings, SRK is not convinced that the permafrost degradation has stopped, and although there was no visual evidence of silt laden water flowing from the pond, there remains a significant section of the pond downstream of the geotextile silt barrier.

Recommendations:

1. SRK is not convinced that the settling pond is appropriate for its current use. Should there be a need for a settling pond, it is recommended that it be re-engineered to control the permafrost degradation, and to ensure that silt traps are located in the optimal positions.

2. Considering the fact that HBML will continue to collect significant amounts of drill cuttings, an appropriate management plan for these cuttings will have to be developed. This may include specific placement procedures for drill cuttings into permafrost degradation areas. An operational plan should be developed for this, possibly with the assistance of an appropriately qualified Professional Engineer with permafrost experience.

3.3 Mine Openings

3.3.1 Portal

A bulk sampling program was completed by BHP in 1996 and 1997 at which time 27,000 tonnes of ore and 106,000 tonnes of waste rock were extracted. The ore was crushed on site, and stockpiled on a rockfill pad constructed from the waste rock. The waste rock was also used for other infrastructure such as the airstrip. The bulk sampling extraction was via 2,300 m of underground development (completed by Procon Mining and Tunnelling Ltd.) using a ramp that extends from ground surface at approximately 4,035 m elevation to approximately 3,850 m elevation (local mine grid). The 185 m deep ramp dimensions are approximately 5 m in wide by 3.6 m high. The orientation of the ramp is generally north-south. Five cross-cuts was established, three into the B2 Zone and the remaining two into the B3 Zone.

The portal, which is located about 25 m east of the maintenance shop, was collared in altered volcanic rock, all within the permafrost. This was confirmed through installation of four underground thermistors (Golder 2000a, b). During extraction of the bulk sample, the portal was not heated but operated at an ambient temperature of about -10°C. The portal was operated under dry conditions with no groundwater inflow. After completion of the bulk sample collection, the portal was abandoned and sealed off with a locked gate.

The decline was reported to be dry and geotechnically sound during a site inspection by Golder Associates Ltd. in April 2000 (Golder 2000b). According to site personnel the last operational entrance of the portal was in 2001. An attempt to enter in 2004 was aborted, reportedly due to the presence of a frost plug, likely created due to pooled water (from rainfall and snowmelt) at the portal entrance. There are also unconfirmed reports that water has run down the ramp some distance and formed an ice dam.

The visible portion of the portal access was inspected during 2008 site inspection (i.e. the area outside of the gate). The portal seal to prevent unauthorized access is intact; however, the signpost that identifies the area as potentially hazardous, warning persons against entering the area without permission is badly weathered and barely legible. At the time of the inspection, the area was partly flooded.

There has been minor rock spalling along the exposed section of the portal roof, and although the roof appears to be essentially structurally intact, there is evidence of small fragments (less than 10 cm diameter) having broken off. The roof is armoured with 10 cm wide steel banding and rock bolts at this time. The most likely cause of spalling is freeze-thaw action.

Recommendations:

1. SRK recommends that HBML replace the weathered warning notices at the portal entrance advising of the dangers associated with unauthorized access to the area.

2. The rock spalling on the exposed section of the portal roof is likely a fall hazard. Persons entering the area should wear the appropriate personal protective equipment; however, a site specific hazard assessment should be completed to make people aware of the dangers. Should there be a need for any people to enter the area for reasons other than a brief inspection; consideration should be given to installing a small diameter wire mesh (50 mm mesh).

3.3.2 Vent Raise

There is a single vent raise located about 100 m south-west of the portal entrance. Mechanical and electrical support equipment is installed on a levelled wooden platform about 0.6 m off the tundra. The vent area and wooden platform base is sealed off with tarps and the mechanical and electrical equipment is locked in a steel shed. Overall the facility looks weathered; but there appears to be no permafrost degradation. Site staff could not confirm when the facility was last accessed or inspected in detail.

Recommendations

1. The tarps are significantly weathered and their attachment points are starting to come apart. The tarps should be replaced.

2. There are no signposts warning visitors of any potential dangers associated with accessing the area. It is recommended that signs be erected.

3.4 Infrastructure

3.4.1 Road to Dock

The single lane road to the dock consists of 0.3 to 0.6 m thick rockfill placed directly onto the tundra. Since the road runs down-gradient towards Stickleback Lake, small contour berms have been constructed, redirecting surface runoff from the roadway. Minor signs of surface water erosion are evident along the road, but this damage would be considered quite normal for a road of this nature. Likewise minor undulations (deformation) in the road suggest there may be isolated small pockets where permafrost degradation has occurred, and/or peat in the active layer has compressed. There is no thermal instrumentation or geologic data to support this observation. Considering the time the road has been in operation, this deformation is likely historic; however, the undulating road could be a safety concern. Appropriate speed control must be implemented for the road.

Site staff confirmed that repairs are conducted to the road surface if and when there are any signs of surface erosion or other significant undulations. Based on descriptions from site staff, the predominant material used for maintenance purposes is crushed ore. This amount of maintenance has never been substantial.

Recommendations:

1. Maintain the current level of care and maintenance on this road.

2. Ensure that appropriate speed control is exercised on this road.

3.4.2 Camp Complex Foundation Pad

The foundation pad of crushed rock, which underlies most of the site infrastructure, varies in thickness from 0.6 to 3 m according to previous records. Initially the pad was constructed to ensure north-south drainage with the pad sloping about 1% towards the north. The foundation pad was designed to prevent thaw settlement and permafrost degradation within the operating footprint of the advanced exploration camp.

There is no instrumentation installed in the pad to confirm the thermal regime beneath the pad (see recommendations in Section 3.1.1). Visual inspection suggests that localized settlement has occurred, as there are local low spots and evidence of significant ponding on the pad. There is no longer a constant drainage grade off the pad.

Differential settlement of the pad appears to be within areas where the pad is the thinnest, although there are no as-built records to corroborate this observation. The accommodation complex does not appear to be impacted structurally by differential settlement, probably since these structures can be levelled by simply adding more blocking as required. It is not known how much levelling of the camp has occurred over the years. The only significant consequence of differential settlement is localized ponding of water. This ponding is likely an inconvenience in day-to-day camp life, but more importantly, it acts as a new heat source and further increases the active layer depth leading to more settlement.

There is one large erosion gully south of the camp complex. This gully has been repaired by infilling with fine crush material, likely from the ore stockpiles. Whilst this appears to have been successful in preventing further erosion and permafrost degradation, the geochemical suitability of this material should be checked. Other than this gully, there are no visual signs of concentrated flows from this pad, and there is no evidence of any erosion gulleys along the edge of the pad.

Recommendations:

1. HBML should have the pad surveyed and develop an action plan to fill in and re-grade the pad to re-establish constant drainage from the pad. Special attention must be given to preventing further ponding on the pad as it may promote permafrost degradation.

3.4.3 Road to Airstrip

The single lane roadway to the airstrip is constructed from crushed rock ranging in thickness from 0.3 to 0.6 m. There are local depressions along the road that are more pronounced than the immediately adjacent topography, suggesting that some permafrost degradation has occurred resulting in settlement. Site staff confirmed that on a few occasions minor infilling of low spots has been carried out; however, there does not appear to be a formal record of any such remediation works.

Visual inspection did not identify any signs of surface water erosion, and although there are no culverts through the road, there are no signs that the road is resulting in surface water ponding.

Recommendations:

1. Maintain the current level of care and maintenance on this road.
2. Ensure that appropriate speed control is exercised on this road.

3.4.4 Airstrip

The airstrip was constructed in the summer of 1997 by Procon Mining & Tunnelling Ltd. under contract to BHP. Boston development waste rock was used to construct the airstrip (BHP 1997).

The north-south all-weather airstrip is a rockfill structure similar to the roads and foundation pad. It appears to be generally thicker than the road, and although there is no as-built information available, visual inspection suggests that its thickness ranges between 0.6 and 1.2 m.

Significant settlement along the airstrip alignment reportedly occurs every year, and as a result frequent infilling and levelling has had to be carried out on the airstrip over the years to ensure safe aircraft operation. According to HBML staff the airstrip is inspected annually by the aircraft charter company for operational suitability, and if requested HBML carries out maintenance as needed. The latest levelling and maintenance was carried out in August 2007 by Nuna Logistics, under the direction of SNC-Lavalin Engineers and Contractors (SLEC). Material from the crushed ore stockpiles was used as infill material for the repairs, and site staff confirmed that this material was used for repairs in previous years as well.

Although there is no thermal monitoring instrumentation under the airstrip, the settlement is most likely as a result of thaw settlement in the underlying permafrost.

There are no signs of surface erosion on the airstrip. The airstrip does not have any culverts to allow water flow; however, visual inspection did not identify any pre-construction flow paths that may have been obstructed by the airstrip. There is a significant number of standing water ponds immediately adjacent to the airstrip. These ponds are permafrost degradation zones resulting from drillholes. More details about these ponds are discussed later in the report; however, the presence of these ponds does threaten the integrity of the airstrip, and lead to elevated maintenance costs.

Recommendations:

1. The ponding immediately adjacent the airstrip, resulting from permafrost degradation at historic drill sites, should be prevented. More details about this issue are discussed elsewhere in this report.

3.4.5 Drill Road

This road leads off from the north end of the airstrip to an old drill staging area. It has the same design as the other sites' roads. There are no additional issues or concerns relating to this road other than that previously raised for other roads.

Recommendations:

1. Maintain the current level of care and maintenance on this road.

2. Ensure that appropriate speed control is exercised on this road.

3.4.6 Core Storage Road

The core storage road leads off midway from the airstrip towards a rock outcrop area where core boxes are stored. This road, which receives relatively little traffic, is of similar design to the other site roads. There is a 200 mm steel pipe culvert at the west end of the road, apparently allowing water from the large permafrost degradation zone pond to the north to drain towards the south. The pipe culvert appears to have settled to a point where its invert level is below that of the areas to be drained. Subsequently the culvert no longer functions and ponding at either end of the pipe is contributing to additional permafrost degradation.

Recommendations:

1. Consideration should be given to removing the culvert and implementing appropriate remedial measures to the areas of permafrost degradation. This should not be done without developing a comprehensive permafrost degradation plan for the site, as there are many ponded areas that may have to be interconnected to resolve the problem in the long term (see also Section 3.5.3).

2. Ensure that appropriate speed control is exercised on this road.

3.4.7 Wooden Walkway to Boat Dock

The wooden walkway leading from the southern end of the airstrip to a boat dock in Stickleback Lake has been constructed as a floating walkway directly on the tundra. The walkway has settled into the tundra hummocks and although there is no lasting permafrost damage at this time, vegetation dieback may ultimately result in the start of an erosion gulley, which in turn would lead to permafrost degradation.

SRK understands that HBML is considering decommissioning the boat dock in Stickleback Lake. If this is done, SRK recommends removing the walkway altogether.

Recommendations:

1. Consideration should be given to reconstructing the walkway such that it does not rest directly on the tundra. If this is not practical given the use the walkway gets, a monitoring program should be implemented during the summer months to ensure that erosion gulleys do not go unnoticed.

2. If the boat dock is decommissioned, remove the walkway.

3.5 Other Areas

3.5.1 Core Storage Area

Core boxes are being stored east of the airstrip scattered around sections of exposed bedrock. Occasionally boxes are stored directly on the tundra; however, due to the location, the permafrost overburden at these locations is likely shallow. Visual inspection yielded no concerns with respect to permafrost degradation.

SRK understands that HBML is reviewing the core storage protocols. Wherever possible core storage should be on rock outcrops or dedicated gravel pads. Where there are no reasonable alternative, but to store core on the tundra, the boxes should be placed on timber, and the area must not be low-lying or poorly drained.

Recommendations:

1. HBML should re-evaluate their core storage requirements, as the random aerial spread of core boxes at this location may not be a suitable in the long-term.

2. Consideration should also be given to relocating any core storage boxes that are not currently on exposed bedrock. This should be done as part of a long-term core storage plan.

3.5.2 Grey Water Discharge

Grey water from the sewage treatment plant is currently being discharged at a location immediately north of the camp foundation fill pad. This water ultimately flows overland towards the east arm of Stickleback Lake. During the 2007 inspection it was noted that a large clearing devoid of any vegetation has developed where the water is discharged, and although there was no standing water at the time of the inspection, it is evident that at times significant ponding did exist. A well developed overland channel has also formed where the ponds overflow onto the tundra, and since the vegetation in this area no longer exists there are signs of overland erosion.

The 2008 inspection revealed that HBML had constructed a permanent drop box for the grey water discharge. Water overflowed from this box onto an area covered with cocoa fibre matting that has been placed in the area where vegetation dieback was observed in 2007. Whilst this is an improvement, a long-term management plan is still required to prevent permanent vegetation dieback and permafrost degradation. SRK understands that HBML has a protocol in place which stipulates that the sewage treatment plant effluent discharge must be spread out over the tundra to prevent ponding and prevent rapid drainage into Spyder Lake.

Recommendations:

1. SRK understands that HBML is in the process of revisiting their sewage management practices, including grey water discharge. Special attention should be given to the issues listed in this report during this revision, which is expected to be completed in 2009.

2. The erosion protection measures implemented in 2008 will certainly help; however, a long-term plan is required as prolonged application of grey water in the same area will not be managed through erosion protection measures alone.

3. HBML should consult the services of an expert knowledgeable with tundra vegetation to implement appropriate remediation strategies.

3.5.3 Drill Sites

The bulk of exploration drilling is carried out with diamond core drills, using mud and brine as drilling fluid. Much of this drilling fluid is recycled; however, there are instances where a significant amount of this fluid ends up being discharged at the drill site (or at least this has historically been the case). Along the north and eastern perimeter of the foundation fill pad, there are a number of locations where drill fluid was allowed to discharge directly onto the tundra. At these locations vegetation dieback has occurred, which in time has resulted in minor erosion damage.

A number of historic drill sites are visible from the airstrip (some of which are immediately adjacent to the airstrip). In these areas the brine resulted in vegetation dieback and, because natural drainage in the area is poor, the ponded water remained in place. This ponding causes permafrost degradation, which causes a larger pond and this process of increased degradation continues to get progressively worse over time.

HBML will whenever practical during the early spring pump out any standing ponds. This practice must however cease once the bird nesting season begins.

Recommendations:

1. HBML has initiated remediation measures to address some of the erosion gulleys formed by drill fluid using cocoa matting and re-vegetation. This program appears to be successful at controlling erosion and although vegetation re-growth appears slow, it is likely to occur. HBML should consult the services of an expert knowledgeable with tundra vegetation to implement appropriate remediation strategies.

2. An action plan is needed to remediate the drill sites where significant permafrost degradation has resulted in permanent ponds of standing water. These ponds are resulting in increased permafrost degradation, which in turn results in increased ponds.

3.5.4 Vegetation Dieback Zones

In addition to the localized areas of vegetation dieback described in Section 3.5.2 and 3.5.3, there are two large areas of vegetation dieback on the property, the origin of which is not clear. The first is an area south of the core storage road and east of the airstrip. In this area the vegetation has died but the underlying soils have not yet been exposed. The second area is between the drill road and the airstrip. At this location the vegetation has died and the overburden soils have been exposed. The area is wet and difficult to traffic.

Recommendations:

1. HBML should initiate a study to determine why vegetation dieback has occurred in these areas.

2. An appropriate mitigation plan should be implemented to address these areas. If left unattended permafrost degradation will continue to get worse.

3. HBML should consult the services of an expert knowledgeable with tundra vegetation to implement appropriate remediation strategies.

4 Summary of Recommendations

This report provides a performance assessment of the numerous structures at the Boston Advanced Exploration Camp. The findings are based on a site visit and walkover survey on July 25, 2008 and subsequent consultation with site staff. This is the second formal annual geotechnical inspection undertaken at the site, and shows many improvements over the findings observed in 2007. SRK also understands that HBML has initiated a number of projects to be executed in 2009, which are specifically targeted to address many of the remaining issues during this geotechnical inspection.

Overall there are no immediate significant areas of concern at the Boston Camp from a geotechnical point of view. There are no issues that require urgent and immediate action, but there are elements that should be closely monitored. Table 6 below provides a summary of recommendations resulting from the geotechnical inspection completed in 2008, complete with observations listed in the 2007 annual geotechnical report (SRK 2008a).

Table 6: Summary of Inspection Items and Associated Recommendations

Inspection Item	2007 Recommendations	2008 Recommendations
Thermistors	• Consider installing two shallow thermistors in the camp rockfill pad	• Locate the 1996/1997 thermistors • Establish a formal quarterly monitoring program if the 1996/1997 thermistors are still functional
Primary Tank Farm Settlement Monitoring	• Install two permanent survey beacons at opposing ends on the secondary containment facility berms • Survey these beacons at least once every quarter	• Continue quarterly monitoring • Recognize foundation settlement risk in spill response plan
Primary Tank Farm	• Install two permanent survey beacons at opposing ends on the secondary containment facility berms • Survey these beacons at least once every quarter	• Monitor the surficial slip surfaces and tension cracks on the tank farm berms • Continue settlement monitoring as described above
Power Plant Fuel Containment	• Repair breached containment berms	• No action required
Jet Fuel Containment	• Confirm if it is necessary to retrofit facility with secondary fuel containment liner • Implement remediation works to provide level working base for the containment facility	• No action required
Solid Waste Disposal Site (including burn pit)	• Clean out burn pit and dispose wood waste in solid waste disposal site • Remediate burn pit, or reclassify for other functional use	• Confirm that waste containment is not required through an appropriate waste inventory • Clean out burn pit and dispose wood waste as appropriate • Remediate burn pit, or reclassify for other functional use

Inspection Item	2007 Recommendations	2008 Recommendations
Ore Stockpiles	• Compile site-wide water quality (seep) samples in consistent single database and have it reviewed by a specialist	• Review findings of the ongoing geochemical studies and develop appropriate mitigation plan
Settling Pond	• If pond is no longer needed: Decommission and remove liner • If pond is still required: Reconstruct by installing new liners • Construct suitable barrier around the pond to prevent inadvertent human and/or animal access	• Clear out debris in pond that could damage liner • Develop management plan for pond • Construct suitable barrier around the pond to prevent inadvertent human and/or animal access
Soil Containment Berm (Landfarm)	• Review soil sampling protocols to ensure best practice standards are followed • Develop an action plan to clean contaminated soils inside the soil containment berm	• Work plan has been initiated to remove the contaminated soils and decommission the landfarm
Diamond Drill Cuttings and Settling Pond	• Develop appropriate remediation plan for the pond • Evaluate action plan for storing more drill cuttings in this area taking into consideration the remediation plan	• Develop appropriate remediation plan for the pond • Develop appropriate management plan for storage of drill cuttings, including possible use as remediation method for permafrost degradation zones
Portal	• Install new notices at the portal entrance advising of the dangers associated with unauthorized access to the area • During the next annual geotechnical inspection have the rock bolts and mesh armouring above the portal inspected by a qualified rock mechanics engineer and implement remediation measures to arrest rock-fall risks if deemed necessary	• Replace the faded notices at the portal entrance advising of the dangers associated with unauthorized access to the area • Develop site specific hazard assessment for people entering the portal area to address the rockfall hazard • Consider installing a small diameter wire mesh over the exposed section of the portal roof to address the rockfall hazard
Vent Raise	• Ensure that this is inspected during the 2008 geotechnical inspection	• Replace weathered protective tarps covering the shelter erected over the vent raise • Install notices at the vent raise advising of the dangers associated with unauthorized access to the area
Road to Dock	• Maintain current maintenance practices	• Maintain current maintenance practices, but do not use crushed ore material for repairs; find an alternate clean source • Implement speed control measures
Camp Complex Foundation Pad	• Re-survey the pad and develop an action plan to fill in and re-grade the pad to re-establish constant pad drainage	• Re-survey the pad and develop an action plan to fill in and re-grade the pad to re-establish constant pad drainage
Road to Airstrip	• Maintain current maintenance practices	• Maintain current maintenance practices, but do not use crushed ore material for repairs; find an alternate clean source • Implement speed control measures
Airstrip	• Maintain current maintenance practices	• Maintain current maintenance practices, but do not use crushed ore material for repairs; find an alternate clean source

Inspection Item	2007 Recommendations	2008 Recommendations
Drill Road	• Maintain current maintenance practices	• Maintain current maintenance practices, but do not use crushed ore material for repairs; find an alternate clean source • Implement speed control measures
Core Storage Road	• Maintain current maintenance practices	• Maintain current maintenance practices, but do not use crushed ore material for repairs; find an alternate clean source • Monitor the pipe culvert for progressive permafrost degradation • Implement speed control measures
Wooden Walkway to Boat Dock	• Not inspected	• Consider raising the walkway above the tundra to prevent onset of permafrost degradation • If boat dock is to be decommissioned consider removing the walkway altogether
Core Storage Area	• Consolidate core storage and ensure that none are inadvertently stored on the tundra • Develop a long-term core storage plan	• Consolidate core storage and ensure that none are inadvertently stored on the tundra • Develop a long-term core storage plan
Grey Water Discharge	• Develop discharge strategy that would allow for more frequent movement of the discharge point	• Develop discharge strategy that would allow for more frequent movement of the discharge point
Drill sites	• Develop remediation strategy to prevent further permafrost degradation	• Develop remediation strategy to prevent further permafrost degradation
Vegetation Dieback Zone	• Not identified due to snow cover present at time of inspection	• Initiate study to determine why dieback continues; involve a tundra vegetation expert • Develop remediation strategy to prevent further dieback and permafrost degradation

This report, **"2008 Annual Geotechnical Inspection, Boston Advanced Exploration Project, Hope Bay, Nunavut"** has been prepared by SRK Consulting (Canada) Inc.

ORIGINAL SIGNED AND STAMPED

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Principal

ORIGINAL SIGNED AND STAMPED

Cameron C. Scott, P.Eng.
Principal

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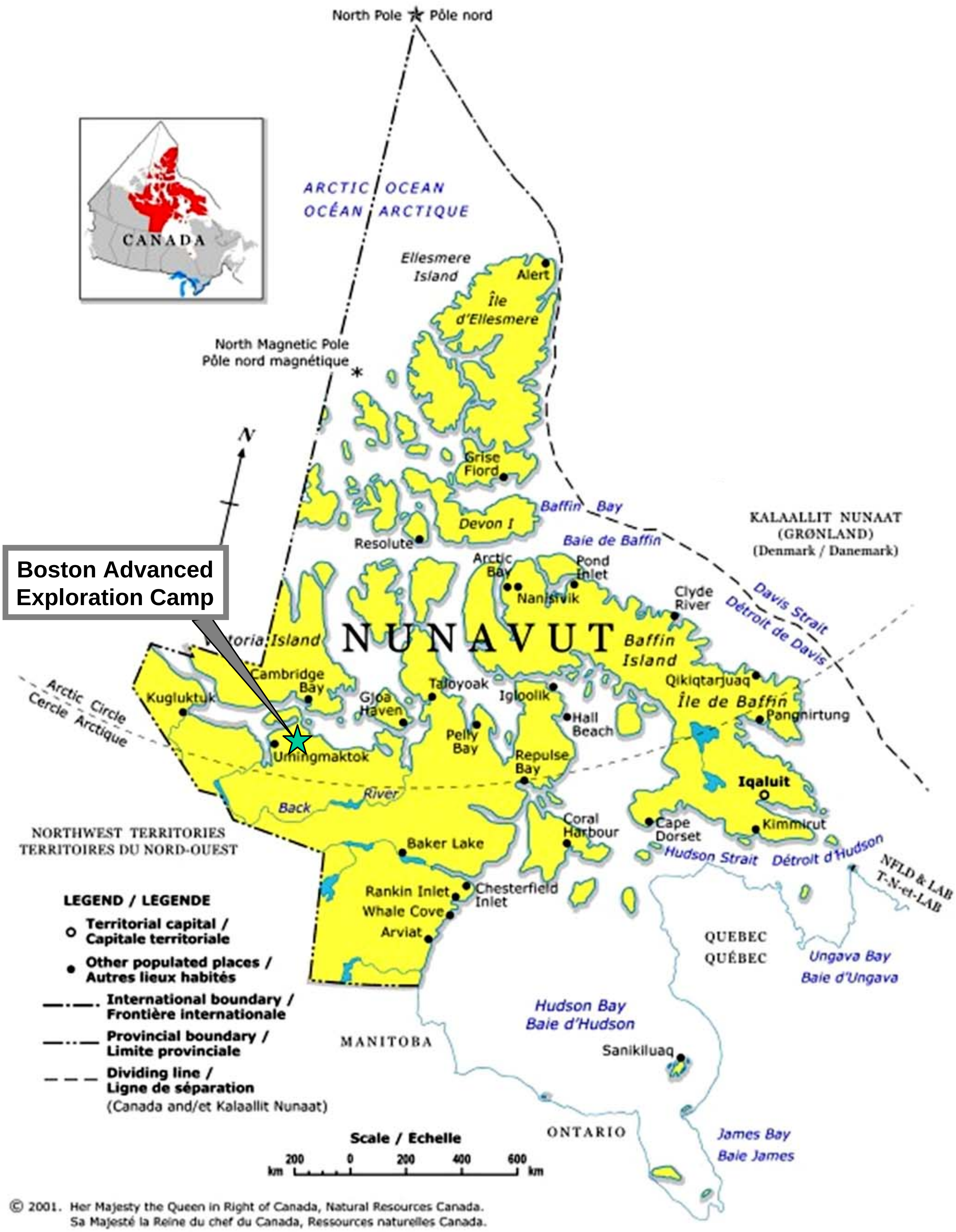
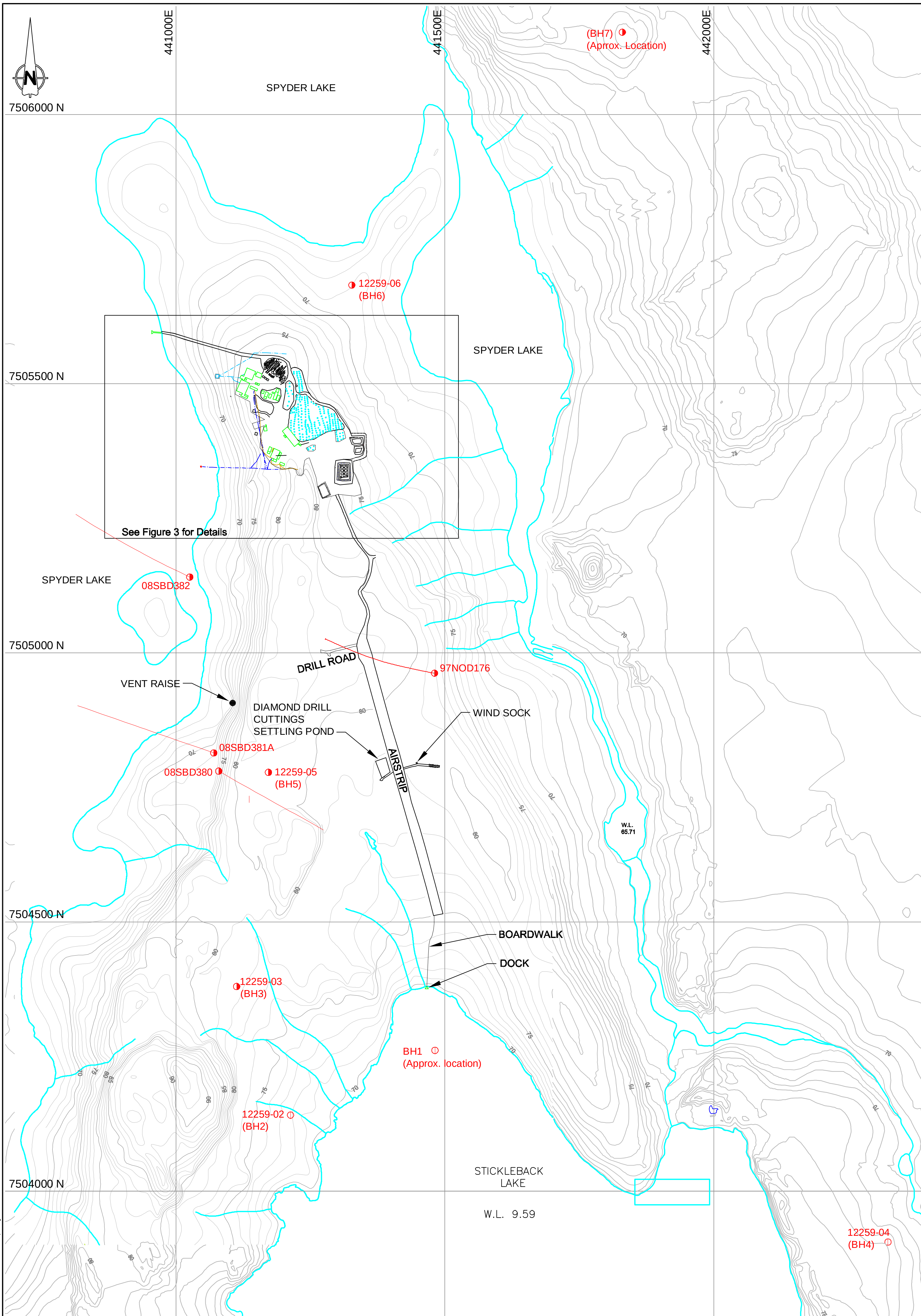
Figures



SRK Consulting Engineers and Scientists VANCOUVER	HOPE BAY MINING LTD.	2008 Geotechnical Inspection **Location Map**
Job No: 1CH008.006 Filename: Figure 1_Location_20090122.ppt	Boston Advanced Exploration Camp	Date: January 2009 · Approved: EMR · Figure: 1



Legend

12259-03	Thermistor Installed
(BH1)	Thermistor Not Installed
08SBD380	Angled Holes

Scale 0 100 200 300 Metres

SRK Consulting Engineers and Scientists Vancouver B.C.

HOPE BAY MINING LTD

Boston Advanced Exploration Camp

2008 Geotechnical Inspection

Overall Site Layout

SRK JOB NO.:	1CH008.006
FILE NAME:	BOSTON_SITE_PLAN_Geotech_Insp.dwg

DATE:	APPROVED:	FIGURE:
Jan. 2009	E.M.R.	2

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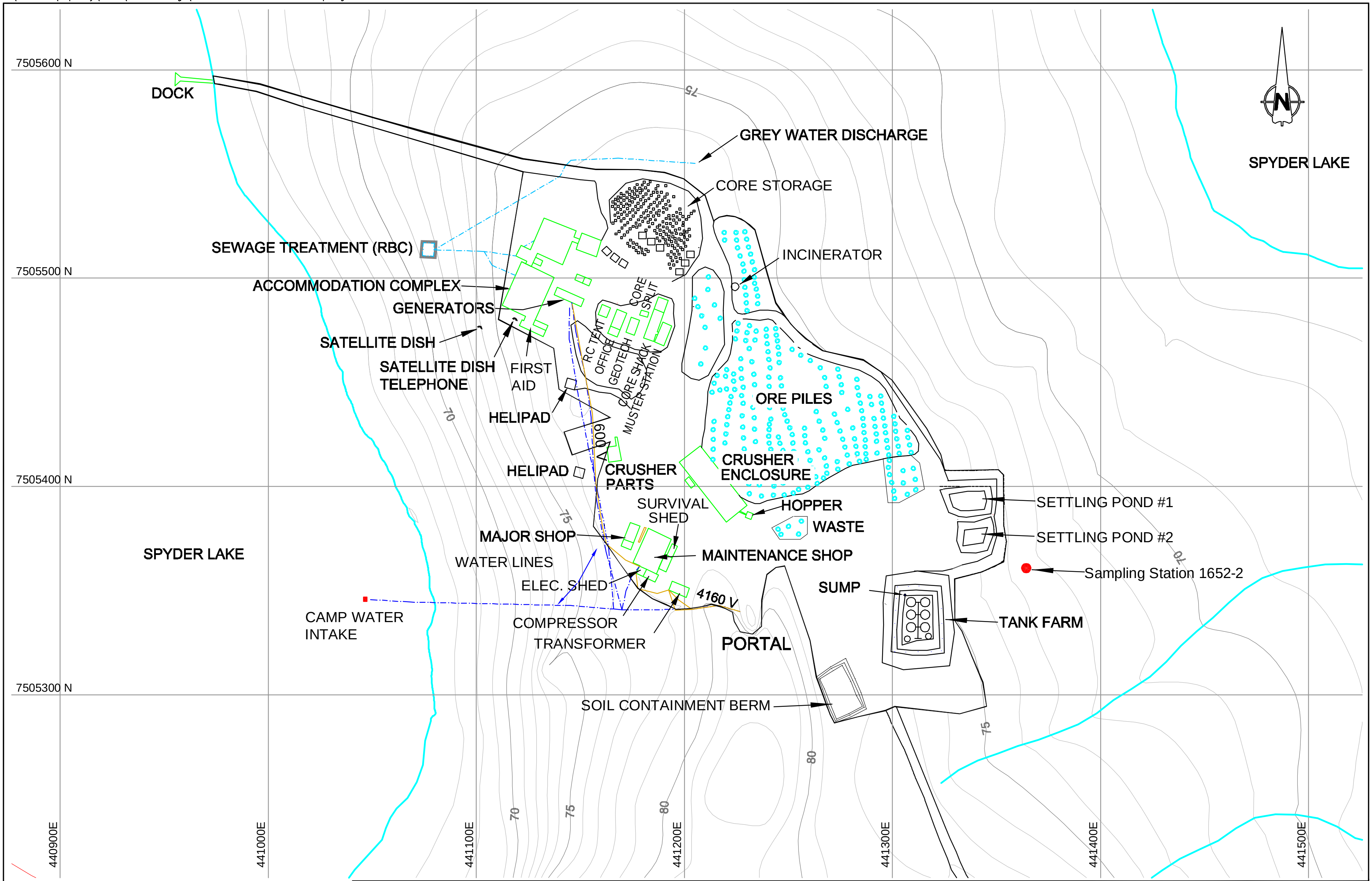


0 20 40 60 80 100 METRES

1:2500

SRK Consulting
Engineers and Scientists
Vancouver B.C.

HOPE BAY MINING LTD

2008 Geotechnical Inspection

Detailed Site Layout

SRK JOB NO.: 1CH008.006

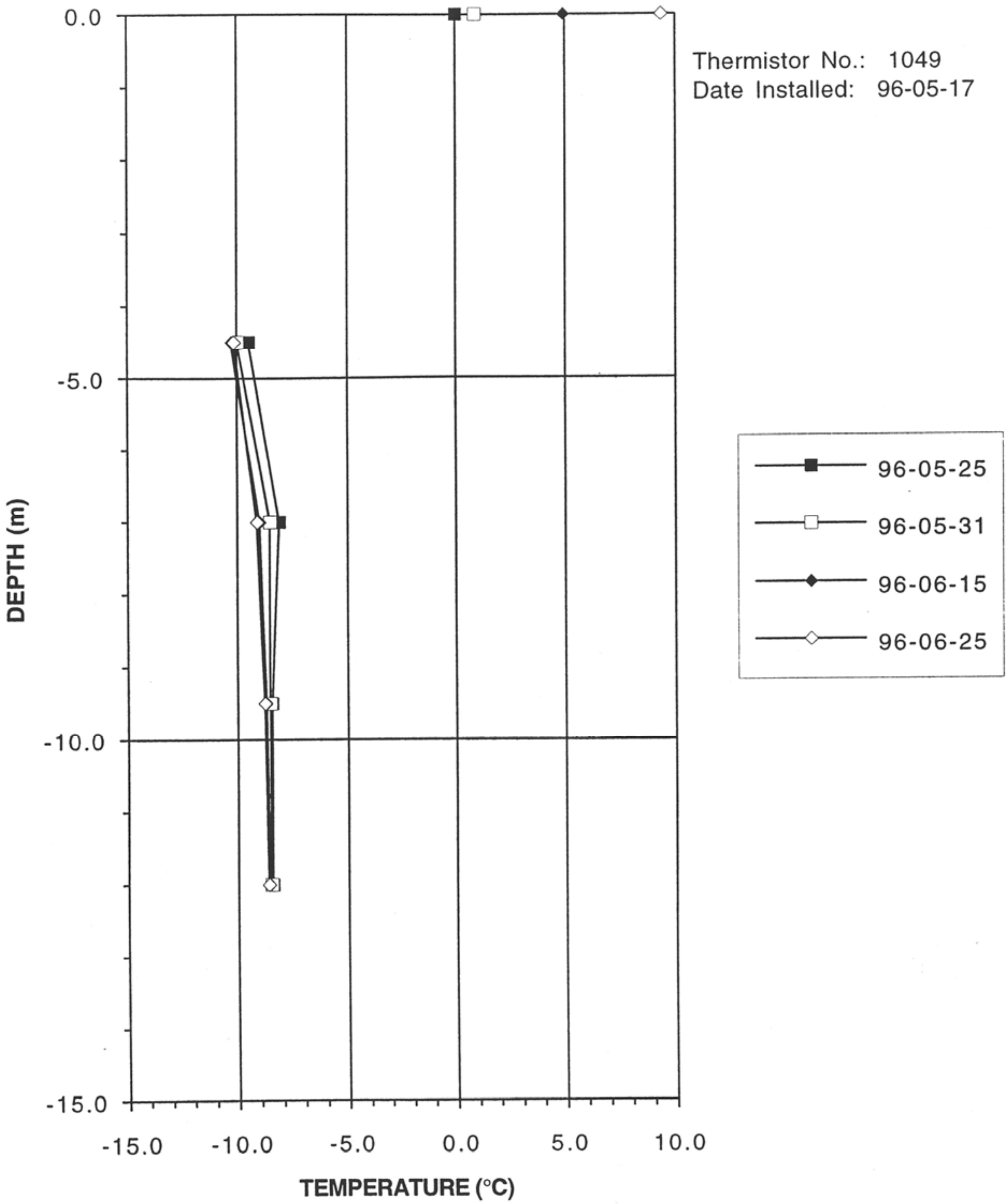
FILE NAME: BOSTON_SITE_PLAN_Geotech_Insp.dwg

Boston Advanced Exploration Camp

DATE: Jan. 2009

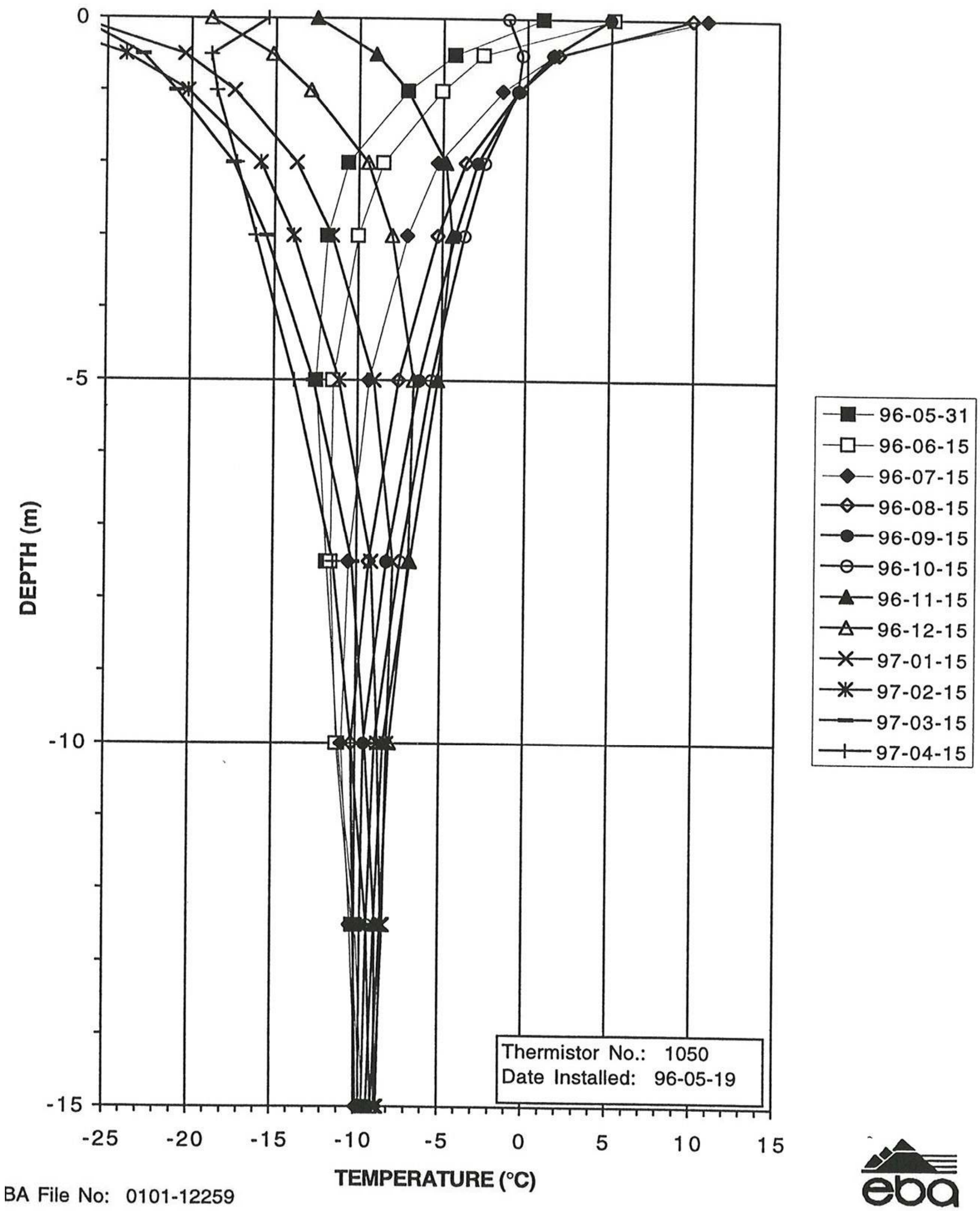
APPROVED: E.M.R.

FIGURE: 3



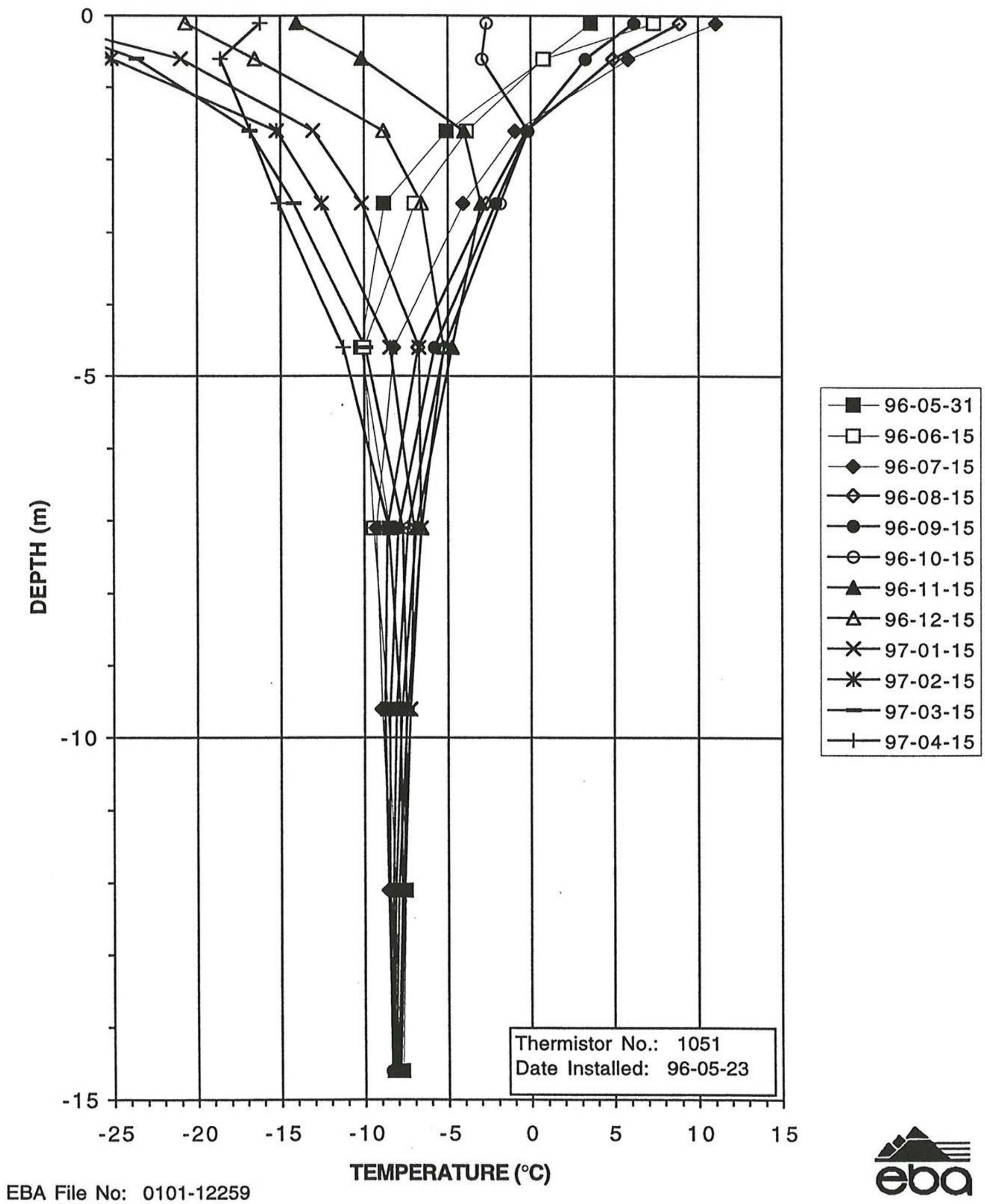
Source: Boston Gold Project – Surficial Geology and Permafrost Features, EBA Engineering 1996

SRK Consulting Engineers and Scientists VANCOUVER	**HOPE BAY MINING LTD.**	2008 Geotechnical Inspection **Ground Temperature Profiles** **EBA Drillhole 12259-03**
Job No: 1CH008.006 Filename: Figure 4-5-6_EBA graphs_20090122.ppt	Boston Advanced Exploration Camp	Date: January 2009 · Approved: EMR · Figure: **4**



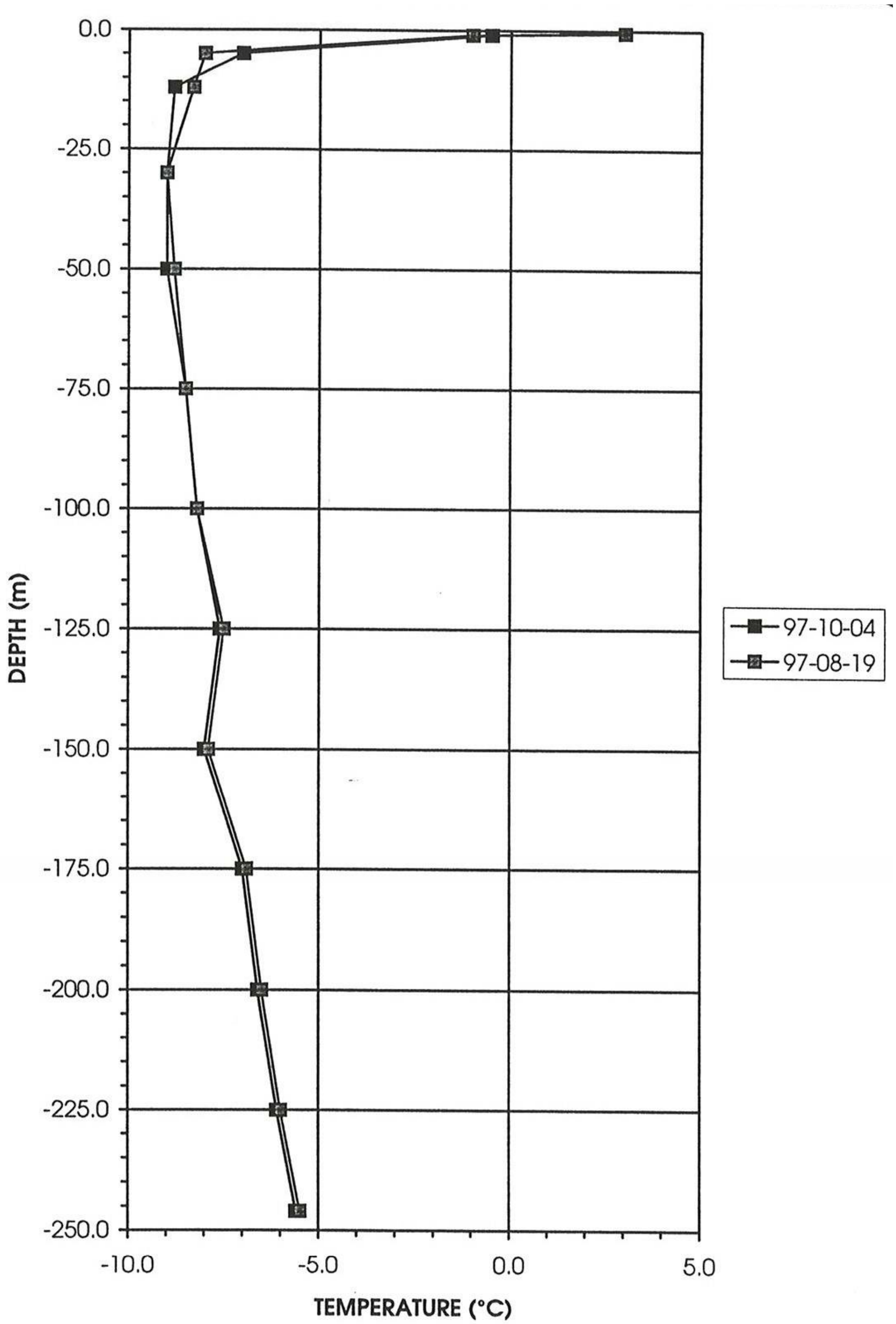
Source: Boston Technical Reports – Environmental General, Tailings Disposal Evaluation-Draft, EBA Engineering 1997

SRK Consulting Engineers and Scientists VANCOUVER	**HOPE BAY MINING LTD.**	2008 Geotechnical Inspection **Ground Temperature Profiles EBA Drillhole 12259-05**
Job No: 1CH008.006 Filename: Figure 4-5-6_EBA graphs_20090122.ppt	Boston Advanced Exploration Camp	Date: January 2009 / Approved: EMR / Figure: **5**



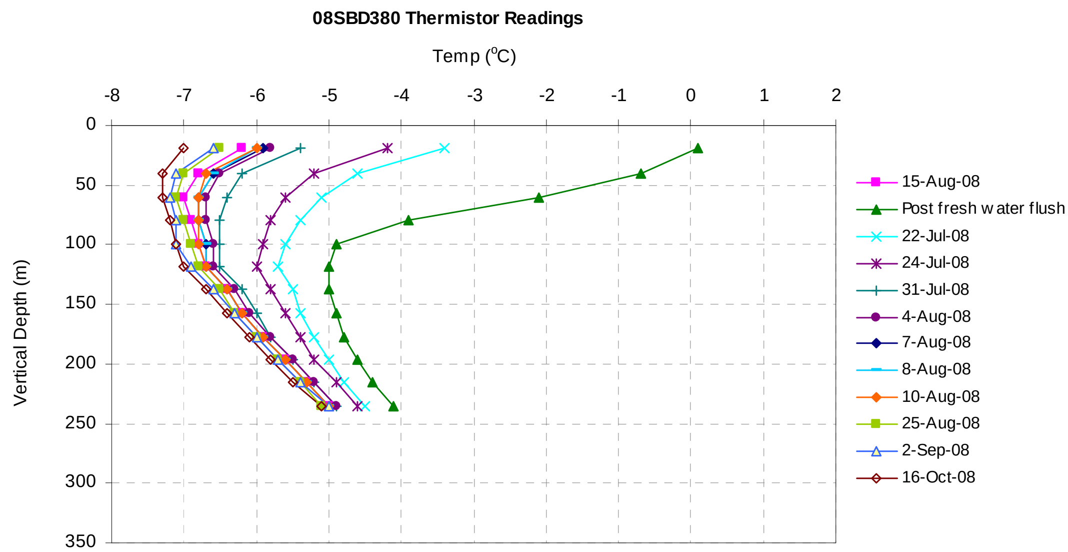
Source: Boston Technical Reports – Environmental General, Tailings Disposal Evaluation-Draft, EBA Engineering 1997

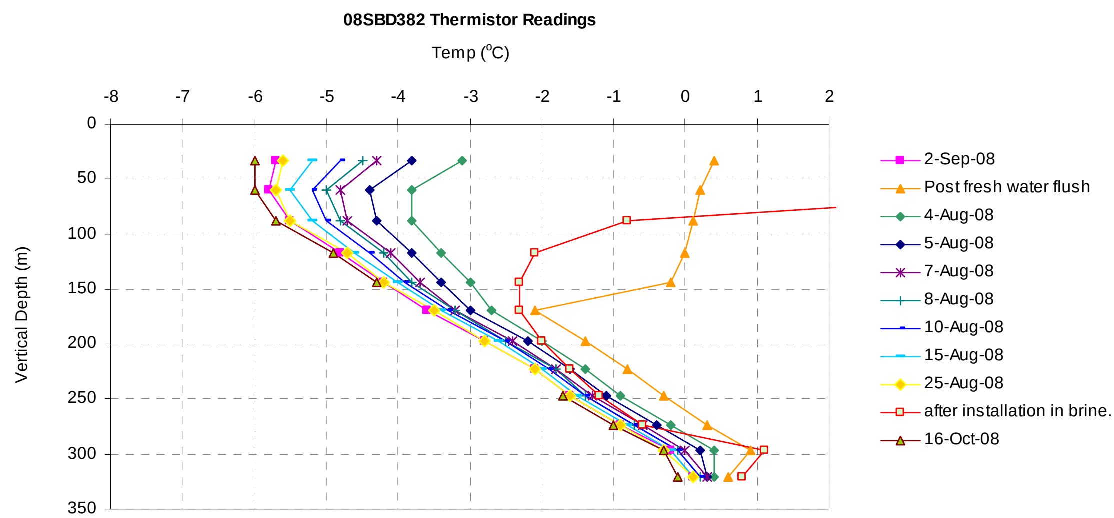
SRK Consulting Engineers and Scientists VANCOUVER	HOPE BAY MINING LTD.	2008 Geotechnical Inspection
		Ground Temperature Profiles EBA Drillhole 12259-06
Job No: 1CH008.006 Filename: Figure 4-5-6_EBA graphs_20090122.ppt	Boston Advanced Exploration Camp	Date: January 2009 | Approved: EMR | Figure: 6

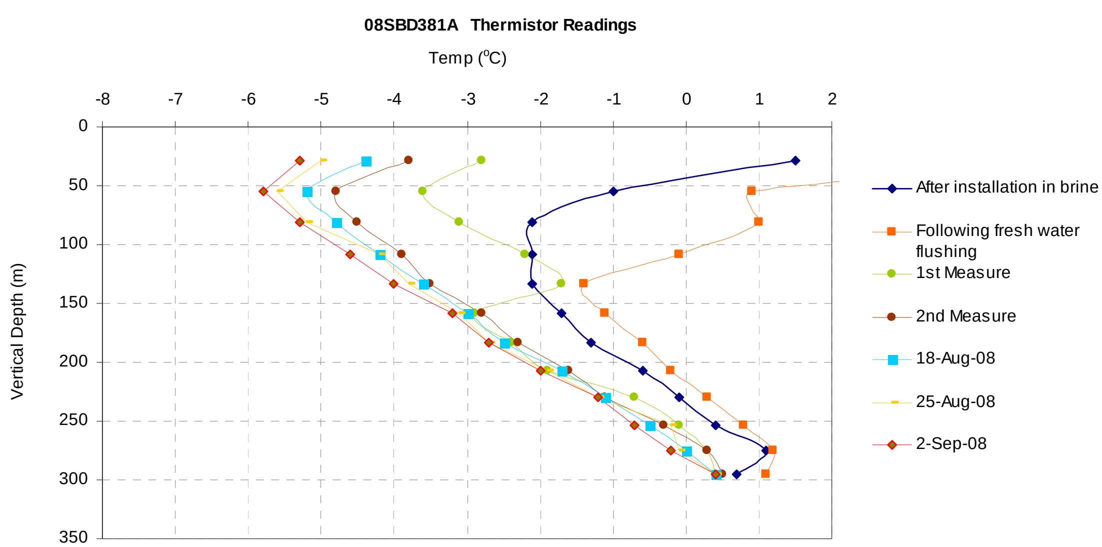


Source: Boston Technical Reports – Environmental General, Tailings Disposal Evaluation-Draft, EBA Engineering 1997

SRK Consulting Engineers and Scientists VANCOUVER	**HOPE BAY MINING LTD.**	2008 Geotechnical Inspection **Ground Temperature Profile EBA Deep Drillhole (97NOD176)**
Job No: 1CH008.006 Filename: Figure 4-5-6_EBA graphs_20090122.ppt	Boston Advanced Exploration Camp	Date: January 2009 / Approved: EMR / Figure: **7**







SRK Consulting Engineers and Scientists VANCOUVER	HOPE BAY MINING LTD.	2008 Geotechnical Inspection **Thermistor Readings** **Drillholes 08SBD380, 381A, 382**
Job No: 1CH008.006 Filename: Figure 8_Thermistors_20090122.ppt	Boston Advanced Exploration Camp	Date: January 2009 / Approved: EMR / Figure: 8

Appendices

Appendix A
Site Inspection Photo Log

Photo 1: Aerial view of Boston Advanced Exploration Camp, looking south-east (this picture was taken by the inspector during a site visit in July 2002 and does not present current conditions, but illustrates the general site layout and features).

Photo 2: Aerial view of the Boston Advanced Exploration Camp, looking south (see note for Photo 1).

Photo 3: The accommodation complex trailers are installed on skids, which are leveled on the foundation pad by means of timbers (see note for Photo 1).

Photo 4: Modular workshop, with generator house to the right (see note for Photo 1).

Photo 5: Heated sprung structure used to house the bulk sample crushing plant (see note for Photo 1). The crushing plant was dismantled and the structure is currently used for general storage and heavy equipment shelter.

Photo 6: Looking east across the camp pod. The red building in the foreground is the powerhouse with the modular workshop immediately behind it. Note: the green fuel supply tanks are for the powerhouse.

Photo 7: View west across the modular workshop.

Photo 8: View of scrap metal, old fuel drums and other garbage stockpiled for off-site removal as backhaul opportunities present themselves.

Photo 9: Primary fuel tank farm.

Photo 10: Surficial slip surfaces on the west face of the primary tank farm berm.

Photo 11: Tension cracks on the primary tank farm berm crest.

Photo 12: Ponded water in the primary tank farm. This suggests that the liner is performing as intended.

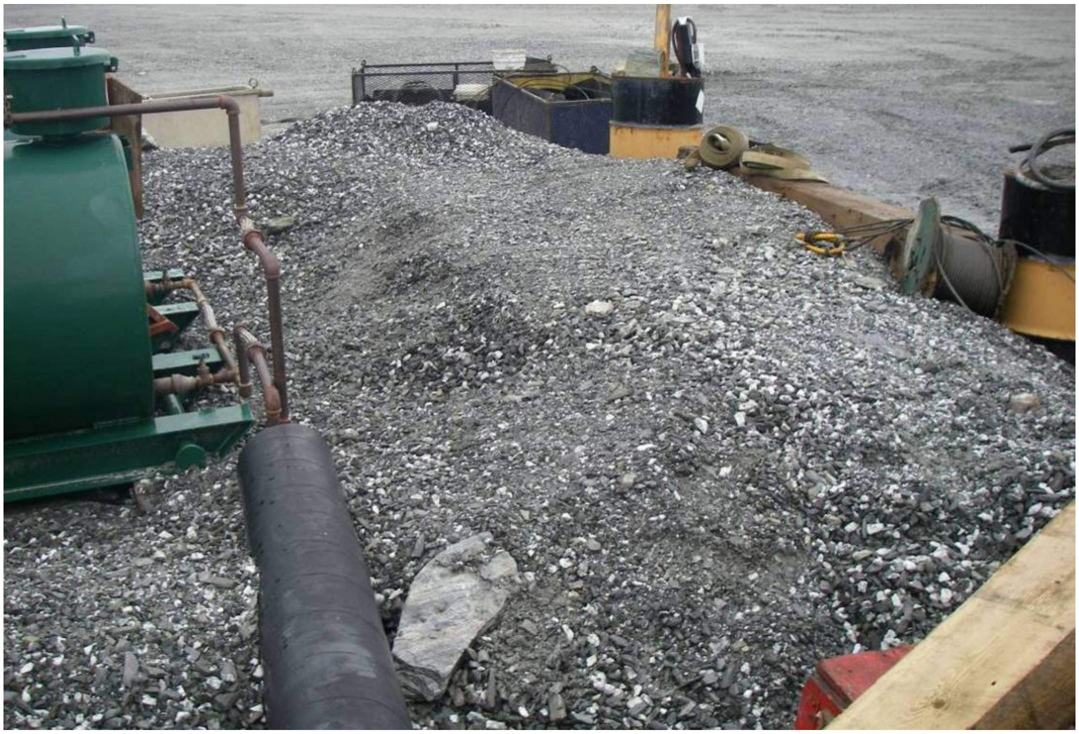


Photo 13: Diesel fuel tank supply to the camp powerhouse. Containment dike breaches have been repaired.

Photo 14: Drill supplies in foreground and jet fuel stored in drums on pallets in the background. No secondary containment.

Photo 15: Tidy tanks refueling area in lined facility.

Photo 16: Wood debris in burn pit.

Photo 17: Crushed ore stockpiles.

Photo 18: Sedimentation pond liner repositioned and repacked with sand bags.

Photo 19: Note: wood debris, gravel and other sediment in base of sedimentation pond.

Photo 20: North end of landfarm. Note: ramp into landfarm.

Photo 21: Fuel drums filled with contaminated soil stored on top of the soil filled landfarm.

Photo 22: Drill cutting sedimentation pond.

Photo 23: Drill cutting sedimentation pond outlet with geotextile filter cloth wrapped around old fuel drums. Water however by-passes this system which is in disrepair.

Photo 24: Drill cutting sedimentation pond outlet. Note: filter cloth is no longer functional.

Photo 25: Portal entrance. Note: upper barricade needs to be repaired.

Photo 26: Portal entrance. Note: access warning sign is faded and the area is flooded at time of inspection.

Photo 27: Steel mesh band and rock bolts supporting the portal access roof. Note: spalding rock will be a hazard should the roof support collapse.

Photo 28: Looking north across the vent raise.

Photo 29: Looking east across the vent raise.

Photo 30: Looking north across the eastern edge of the camp pad with the burn pit and sedimentation pond in the background. Note: the old drill site is damaged and covered in the foreground.

Photo 31: Cocoa matting placed on vegetation dieback areas to control erosion and promote revegetation. Note: damage from the drainage in the background.

Photo 32: Vegetation dieback and erosion damage immediately downstream of the camp pod.

Photo 33: Vegetation dieback zone north of the camp pod. Spyder Lake shown in the background.

Photo 34: Repaired erosion gulley southwest of camp pad. Crushed ore material used for repair.

Photo 35: Pipe culvert outlet with no apparent drainage. This culvert is under the core storage area road.

Photo 36: Wooden walkway at south end of airstrip leading towards boat dock at Stickleback Lake.

Photo 37: Drill core boxes stored on the road leading to the core storage area.

Photo 38: Core storage area. Many of the pallets are stored directly on the tundra.

Photo 39: Drop box for the sewage grey water discharge.

Photo 40: Drop box for the sewage grey water discharge. Note: the cocoa matting in the background.

Photo 41: Example of permafrost degradation at the historic drill site. Note: same gravel (crushed ore) has been placed at one time in an attempt to mitigate the damage.

Photo 42: Another drill hole with standing water, extensive permafrost damage and vegetation dieback.

Photo 43: Permafrost damage and vegetation dieback at the historic drill hole location immediately adjacent to the airstrip.

Photo 44: Large pool of standing water immediately adjacent to the airstrip. Ponding due to permafrost degradation at the old drillhole location.

Photo 45: Another example of ponded water in a historic drill site leading to a progressive permafrost degradation.

Photo 46: Another example of standing water at an old drillhole location. Note: the vegetation dieback occurring at the pond outlet.

Photo 47: Extensive vegetation dieback along flowpaths created due to drillhole ponds overflowing and getting interconnected.

Photo 48: Large interconnected ponds from permafrost degradation at drillhole locations next to the airstrip. Note: the two signposts which SRK understands to be official sampling stations.

Photo 49: Another example of standing water adjacent to airstrip.

Photo 50: More standing ponds at old drill hole sites.

Photo 51: Vegetation dieback area between the core storage area and the airstrip. No apparent reason for this.

Photo 52: Vegetation dieback area immediately south of old drill access road.

Photo 53: Another view of vegetation dieback area immediately south of old drill access road.

Photo 54: Close-up of vegetation dieback at end of old drill access road.