

## DAILY REPORT #85 – DORIS NORTH INFRASTRUCTURE/ NORTH DAM

Prepared by:	Iozsef Miskolczi Megan Miller	Date:	2012.03.30
Reviewed by:		Project #:	1CH008.058.0320
Role	Company	Personnel – Position	On Site
Client	Hope Bay Mining Limited (HBML)	Angela Holzapfel – ESR Compliance Manager David Vokey – ESR Coordinator Don Ethelston – HSLP Advisor Dean Wold - Safety Jill Turk – ESR Coordinator Katsky Venter – ESR Manger Michelle Tanquay – ESR Site Manager Stirling Kelly – HSLP Advisor	No No No No Yes Yes No No
	JDS	Lloyd Jackson – Mechanical Superintendent Doug Fielding – Construction Manager Ishan Fechter – Construction Coordinator Jerry Graham – Construction Manager Kevin Whieldon – Project Coordinator Mark Valeriote – Construction Manager Calvin Goldschmidt – Construction Coordinator	No No No Yes No No Yes
Engineering Design Consultants	SRK Consulting (Canada) Inc.	John Kurylo – Site Engineer Megan Miller – Site Engineer Lawrence Borowski – Site Engineer Murray McGregor – Site Engineer Iozsef Miskolczi – Site Engineer Lowell Wade – Senior Engineer	No Yes No No Yes No
	EBA Engineering Consultants Ltd.	Jeff Orr – Project Manager Jennifer Stirling – Geologist Thomas Bradshaw – Junior Engineer Ernest Palczewski – Geologist	No No No Yes
Earthworks Contractor	Nuna Logistics	Benny Vostermans – Foreman (Day Shift) Doug Haverland – Area Superintendent Gary Sodhi – Field Engineer Georges Cornelissen – Survey Manager Jeff Roberts - Surveyor Jim Cardinal – Foreman (Day Shift) Jordan Gunter – Foreman Kevin Kozdrowski – Foreman Kyle Kuntz – Project Engineer Margaret Caley – Surveyor Matt McKay – Civil Supervisor Mike MacMaster – Surveyor Mike Price – Field Engineer Rick Peter – Foreman (Night Shift) Ron MacMaster – Surveyor Simon Chipper – Civil Supervisor	Yes No Yes Yes No Yes No No No No No Yes No Yes No No
External Distribution List:	SRK: Maritz Rykaart, Lowell Wade, Seema Kang, Silkie Wong EBA: Robert Zschuppe Nuna: Chris Petrovic HBML: Dave Power		
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**WEATHER (ROBERTS BAY)**

<http://www.wunderground.com/weatherstation/WXDailyHistory.asp?ID=INUNAVUT3>

Temperature/Wind Chill (°C)	6AM: -17/-25	12PM: -15/-23	6 PM: -10/-17	12 AM: -9/-15
Precipitation (mm)	<b>Rain:</b> None		<b>Snow:</b> 2 mm	
Conditions	<b>Day Shift:</b> Variable. Trace snow and ice fog in AM, sunny with clouds in PM and moderate cold wind.		<b>Night Shift:</b> Overcast, light to moderate wind. Light flurries.	
Daily norms (°C)	24 hour high: -8.8		24 hour low: -19.2	

**HEALTH, SAFETY AND ENVIRONMENT**

- Megan Miller attended the dayshift Nuna toolbox meeting.
- A fox was spotted sleeping on the tundra near the north end of the airstrip.

**COMMENTS, CORRESPONDENCE AND ACTIVITIES****DAILY MEETING WITH NUNA AND HBML TEAM:**

- The daily meeting was attended by Nuna [Trevor Sorken, Lucas Evans], Newmont Safety [Stirling Kelly] ESR [Katsky Venter], JDS [Jerry Graham, Calvin Goldschmidt], SRK [Iozsef Miskolczi, Megan Miller]

Topic	Status
Health and Safety and Environment	<ul style="list-style-type: none"> <li>• Safety and ESR had no incidents to report.</li> <li>• ESR asked about Jetty status, this was to be discussed later.</li> </ul>
North Dam	<ul style="list-style-type: none"> <li>• Freeze back was not achieved on the south most thermistor by the end of the March 29, 2012 nightshift. An exception allowing for the cleaning of the slope once the temperature indicated by the thermistor was below zero was discussed.</li> <li>• Nuna plans to start placing ROQ on the south side of the dam.</li> <li>• Nuna plans to install the settlement monitoring points as ROQ placement occurs; rather than installing them after placement is complete.</li> </ul>
Water Management Structures	<ul style="list-style-type: none"> <li>• SRK discussed the email received asking to use frozen overburden to backfill the sumps. Only thawed overburden can be used for this backfill.</li> <li>• Discussions were had regarding when the sump lids had to be installed. As long as temperatures remain cold the sump lids do not have to be installed directly after overburden backfill.</li> <li>• Nuna plans on working on the snowed-in section of the diversion berm.</li> </ul>
General	<ul style="list-style-type: none"> <li>• JDS and Nuna to have a separate schedule meeting.</li> <li>• Nuna plans a blast in Quarry 2 on Monday.</li> <li>• Water Management will be tying the pipes together at the Doris Creek bridge and the pond crossings.</li> </ul>

**SURVEY:**

<b>Required</b>	<ul style="list-style-type: none"> <li>• GCL panels placed March 30, 2012</li> <li>• Overliner material placed March 30, 2012</li> </ul>
<b>Data Received</b>	<ul style="list-style-type: none"> <li>• As-built surfaces and AutoCAD files of the diversion berm to-date.</li> </ul>
<b>Outstanding</b>	<ul style="list-style-type: none"> <li>•</li> </ul>
<b>Upcoming</b>	<ul style="list-style-type: none"> <li>• Diversion Berm material as placed</li> <li>• Dam material (ongoing)</li> </ul>

**NORTH DAM/FROZEN CORE PLANT PAD:****Multi-bead Thermistors**

- Multi-bead thermistor readings were collected for all thermistors.
  - ND-HTS-085-33.5 remains non-functional.

**Frozen Core Plant***Dayshift*

- No material produced.
- Transition material was hauled to the stockpile behind the frozen core plant.
- The Nuna superintendent was asked if there was sufficient overliner material stockpiled at the pad to complete the overliner placement. Nuna re-checked their quantity estimates.

*Nightshift*

- The plant was started up at 9:30 PM. Following an initial issue with the burner not starting, the plant operated within parameters until 1:30 AM.
- 17 truckloads of overliner material were produced, using 109 loader buckets of dry aggregate.
- The spec 5 mm minus core material was mixed with ¾ inch crush to produce overliner material aggregate. The mixing was done at the FCP stockpile, using the loader.
- Water setting on the plant dial was 41.5, and temperature of the core was about 21 °C.
- Haultrucks were hauling transition material from the crusher stockpile to the stockpile by the FCP.

**Dam Shell***Dayshift*

- The CAT D8 dozer placed ROQ along the upstream slope in the second lift, which brings most of the second lift up to the elevation of the transition material crest. This lift was extended to approximately station 0+85.
- ROQ material was also placed along the crest of the dam to the final ROQ elevation. This lift extended to around 1+30 at the end of dayshift.
- The CAT 345 excavator sloped the ROQ on the upstream slope.

*Nightshift*

- Placement of ROQ on the final lift was resumed after the overliner placement was completed. The final lift reached Station 1+20 toward the end of the shift.
- The 4H:1V slope on the upstream side was finished by the CAT 330 excavator around Station 1+75. Some of the excess ROQ was loaded into haultrucks and was short-hauled to the placement front of the final lift of ROQ.
- The ramp of ROQ from the upstream side slope to the toe of the core was compacted. No compaction of the final lift of ROQ was observed.

**Key Trench/ Central Core***Dayshift*

- Freeze back of the single bead thermistors placed in the last lift of core material was monitored. Only one of the beads had not reached freeze back by the end of dayshift.
- Four panels of GCL were placed from approximately station 0+85 to station 0+75.
  - Prior to placement the slope was smoothed with the back of the CAT 345 excavator bucket. The slope was not scraped with the excavator as only the excavator with the toothed bucket was available.
  - Pieces of excess GCL material were placed over any rough or sharp spots as additional padding.
  - The air compressor was used to blow the slopes clean. The air compressor was down for several hours.
  - The GCL was placed directly adjacent to the thermistor bead which was not frozen back. At the time of material placement in this area the thermistor bead was reading -1.3°C.

*Nightshift*

- Overliner core material was placed to cover the CGL liner installed on dayshift.
  - Compaction of the core was initially done by driving the compactor up and backing down the slope on static compaction mode. This method proved to be inefficient, as significant amount of material would be carried down-slope when the compactor would travel down. A variation of this method was to drive the compactor up onto the crest of the core; the downside of this method was that the wheels would spin out and dig into the already compacted material on the top third of the slope. Finally, at the foreman's instruction the compactor would run up the slope on vibration mode as far as it could without spinning out, and then roll back on static mode. By repeating this cycle the core material would eventually become dense enough to allow travel all the way up to the crest of the core. Some small amount of material would still be displaced downslope when the compactor would back down the slope.
  - The final grades were checked by the surveyor after compaction, and more material was added where required. Compaction of this additional material was done by tamping it with the excavator bucket, to minimise disturbance to the already finished surface.
  - A buffer zone of approximately 1.5 m was left between the placed overliner and the edge of the GCL liner
  - The remaining portion of the frozen core slope was scraped smooth with the excavator and subsequently cleaned using compressed air.
- The transition material was not placed onto the finished overliner immediately, to limit the amount of mixing between the core and the transition material. The foreman was asked to allow the surface to develop a thin crust of frozen material before transition material is to be placed.

**Field Geotechnical Testing, Laboratory and Sampling****SINGLE BEAD THERMISTOR STATUS**

Installed Today			Active			Destroyed / Abandoned		
ID	Station	US/DS/Center	ID	Station	US/DS/Center	ID	Station	US/DS/Center
			SB6	0+60	CL	SB9	0+70	CL
						SB20	0+65	CL

- A summary of today's material testing progress is presented in the tables below.

**PARTICLE SIZE DISTRIBUTION SUMMARY**

Collected	Testing In Progress	Completed
None	None	None

**MOISTURE CONTENT SUMMARY**

Collected	Testing In Progress	Completed
HB12-FCP-COVER-MC409-QA-20120330	HB12-FCP-COVER-MC409-QA-20120330	None
HB12-FCP-COVER-MC410-QA-20120330	HB12-FCP-COVER-MC410-QA-20120330	
HB12-FCP-COVER-MC411-QA-20120330	HB12-FCP-COVER-MC411-QA-20120330	
HB12-ND-COVER-MC412-QA-20120330	HB12-ND-COVER-MC412-QA-20120330	
HB12-ND-COVER-MC413-QA-20120330	HB12-ND-COVER-MC413-QA-20120330	
HB12-ND-COVER-MC414-QA-20120330	HB12-ND-COVER-MC414-QA-20120330	

**DRILLED CORE**

Collected	Testing In Progress	Completed
None	None	HB12-ND-CORE-DC89-QA-20120329

**COMPACTION TESTING SUMMARY**

Number of Tests	Material	Tested By	Shift	Notes
4	GCL cover	EP	Night	No FCM Placed

**DORIS NORTH DIVERSION BERM:**

- Overnight the wind caught the liner in the corner near the culverts. The HDPE and geotextile slid down the slope to approximately station 050, this included some liner which was covered with compacted crush material. The crew spent to day shoveling out the crush and fixing the liner. Pictures are provided below.

**QUARRY #2:**

- One drill continues to drill on both day and night shifts.
- The CAT 385 excavator was used to load ROQ material.

**GENERAL:**

- The first two hours of the nightshift occupied the CAT D8 dozer, a loader, and the laborers with hauling the Challenger loaded on a skid from the ice on Doris Lake to camp.

**PHOTOS:**

**Photo 1:** Progress photo of North Dam from photo point 1. Looking south west.



**Photo 2:** Progress photo of North Dam from photo point 2. Looking north west.



**Photo 3:** Progress photo of North Dam from photo point 3. Looking north east along dam alignment.





**Photo 4:** North Dam – GCL being placed along slope.



**Photo 5:** Diversion Berm - Liner and geotextile slid down the slope at the diversion berm near the culvert crossing. Photo looking south east.



**Photo 6:** Diversion Berm – HDPE liner under the uncompactd crush slid down the slope.



**Photo 7:** Wildlife Sighting – A red fox sleeping on the tundra near the north side of the airstrip.





**Photo 8:** North Dam – Progress photo at end of dayshift looking north east along dam alignment from station 0+80..



**Photo 9:** North Dam – General view of the North Dam. Note extent of the GCL liner placed on dayshift. Photo looking west.



**Photo 10:** North Dam – preparations for placement of overliner core material. Note the grade marks on the crest of the previously placed overliner material. Photo looking north from Sta. 0+40.

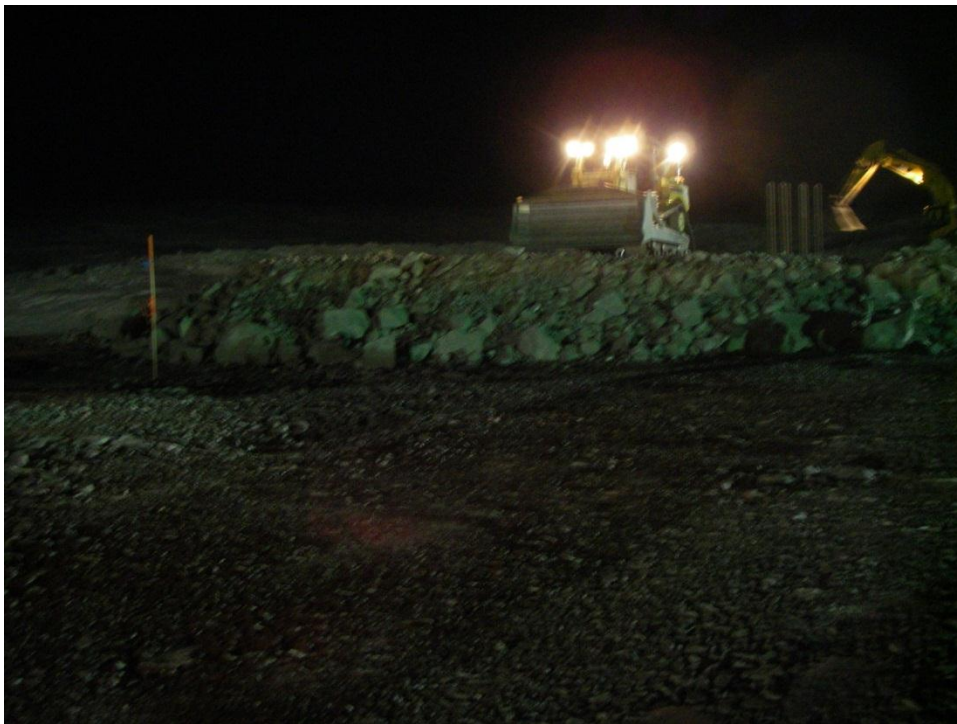


**Photo 11:** North Dam – finishing the surface of the placed overliner core material, before compaction. Photo looking south-west, from Sta. 0+90.





**Photo 12:** North Dam – compacting the placed overliner core material. Photo looking north from Sta. 0+50



**Photo 13:** North Dam – progress photo of final ROQ lift placement. Photo looking north from Sta. 0+80.



**Photo 14:** North Dam – finishing the downstream slope of the dam around Sta. 1+75. Surveyor is providing grade control support to the excavator operator. Photo looking south from the ice road.



## FIGURES:

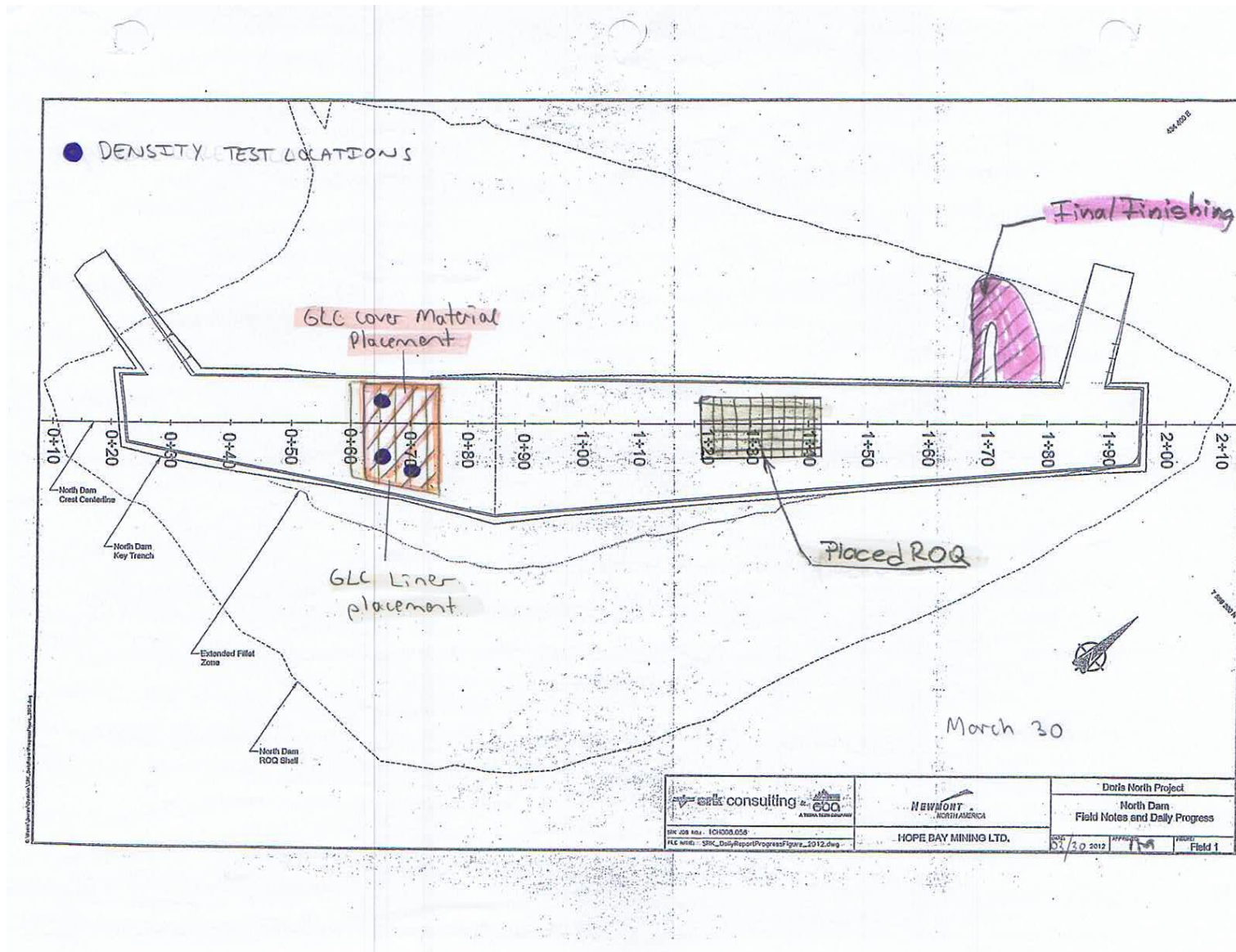


Figure 1: North Dam Progress Figure