

## DAILY REPORT #64 – DORIS NORTH INFRASTRUCTURE/ NORTH DAM

Prepared by:	John Kurylo Lawrence Borowski	Date:	2012.03.09		
Reviewed by:		Project #:	1CH008.058.0320		
Role	Company	Personnel – Position	On Site		
Client	Hope Bay Mining Limited (HBML)	Angela Holzapfel – ESR Compliance Manager	No		
		David Vokey – ESR Coordinator	Yes		
		Don Ethelston – HSLP Advisor	No		
		Dean Wold - Safety	Yes		
		Jill Turk – ESR Coordinator	No		
		Katsky Venter – ESR Manger	No		
		Michelle Tanquay – ESR Site Manager	Yes		
		Stirling Kelly – HSLP Advisor	Yes		
	JDS	Lloyd Jackson – Mechanical Superintendent	No		
		Doug Fielding – Construction Manager	No		
		Ishan Fechter – Construction Coordinator	Yes		
		Jerry Graham – Construction Manager	Yes		
		Kevin Whieldon – Project Coordinator	No		
		Mark Valeriote – Construction Manager	Yes		
Engineering Design Consultants	SRK Consulting (Canada) Inc.	John Kurylo – Site Engineer	Yes		
		Megan Miller – Site Engineer	No		
		Lawrence Borowski – Site Engineer	Yes		
		Murray McGregor – Site Engineer	No		
		Iozsef Miskolczi – Site Engineer	No		
		Lowell Wade – Senior Engineer	No		
	EBA Engineering Consultants Ltd.	Jeff Orr – Project Manager	Yes		
		Jennifer Stirling – Geologist	Yes		
		Thomas Bradshaw – Junior Engineer	No		
		Ernest Palczewski – Geologist	No		
		Earthworks Contractor	Nuna Logistics	Bradford Watkin – QC Manager	No
				Doug Haverland – Area Superintendent	Yes
Gary Sodhi – Field Engineer	Yes				
Georges Cornelissen – Survey Manager	No				
Jeff Roberts - Surveyor	Yes				
Jim Cardinal – Foreman	Yes				
Jordan Gunter – Foreman	No				
Kevin Oakes – Project Engineer	No				
Kevin Kozdrowski – Foreman (Night shift)	Yes				
Kyle Kuntz – Project Engineer	No				
Margaret Caley – Surveyor	No				
Matt McKay – Civil Supervisor	No				
Mike MacMaster – Surveyor	No				
Mike Price – Field Engineer	No				
Nick Stoneberger – Superintendent	No				
Rick Peter – Foreman (Day shift)	Yes				
Ron MacMaster – Surveyor	Yes				
Simon Chipper – Civil Supervisor	No				
External Distribution List:	SRK: Maritz Rykaart, Lowell Wade, Seema Kang, Silkie Wong EBA: Robert Zschuppe Nuna: Chris Petrovic JDS: Bob Prince-Wright, Calvin Goldschmidt HBML: Dave Power, Gerry Benson				
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**WEATHER (ROBERTS BAY)**

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

Temperature/Wind Chill (°C)	6AM: -34/-34	12PM: -29/-41	6 PM: -29/-43	12AM:
Precipitation (mm)	<b>Rain:</b> None		<b>Snow:</b> ~1mm	
Conditions	<b>Day Shift:</b> Clear, calm in am, light wind in pm.		<b>Night Shift:</b> Light to moderate wind, period of very light snowfall. Getting colder as night progressed.	
Daily norms (°C)	24 hour high: -27		24 hour low: -32	

**HEALTH, SAFETY AND ENVIRONMENT**

- John Kurylo and Jennifer Stirling attended the nightly Nuna toolbox meeting.

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

- The daily meeting was attended by HBML [Michelle Tanguay], Newmont [Sterling Kelly], JDS [Gerry Graham, Ishan Fechter, Mark Valeriot]; Nuna [Doug Haverland, Kyle Kuntz] and SRK [Lawrence Borowski, Jeff Orr, John Kurylo].

Topic	Status
Health and Safety and Environment	<ul style="list-style-type: none"> <li>Safety: Brief discussion for licenses to operate snowmobiles or other craft suitable for access on to the tundra. There is a requirement for someone to go out on the tundra.</li> <li>Safety: Discussion about being able to contact / reach drillers in Quarry 2.</li> <li>ESR: Enquired about how much 5/8 in. material would be left in stockpile.</li> <li>Discussed requirement for 30 cu.m. of crush and 30 cu.m. of fine overburden for rehabilitation work at Boston. JDS advised that this requirement was not their responsibility and that ESR should contact Nuna Services.</li> </ul>
North Dam	<ul style="list-style-type: none"> <li>With shift change, placing FCM on the north dam did not commence until 2:20 pm. And was shut down at 5:00 pm</li> <li>Placing FCM resumed at 10:30 pm and continued until breakdown at 1:00 am</li> <li>Approximately 25 loads were placed</li> <li>Plan to continue placing up to ~ Sta 0+70 today.</li> <li>South east corner was cleaned and patched last night. Also plan to fill the hollow at the inflexion point up to the top.</li> </ul>
Water Management Structures	<ul style="list-style-type: none"> <li>Little work done yesterday due to crew change.</li> <li>Additional Tli Cho personell will be coming to site to help with labour.</li> <li>Plan to start in new area, clean snow from bentonite and start placing liner.</li> <li>Layfield to repair any cuts to previously installed HDPE.</li> <li>The bulk of the main fabrication for one of the sump lids is now completed. Note that this sump lid still requires insulation.</li> <li>Fabrication of the second lid can proceed.</li> </ul>
General	<ul style="list-style-type: none"> <li>One drill worked at quarry yesterday</li> <li>Two drills to work today.</li> </ul>

**SURVEY:**

<b>Required</b>	<ul style="list-style-type: none"> <li>QC Cross sections of work in progress (after current lift across the dam is fully completed)</li> <li>FCM and Transition material placed on March 9.</li> </ul>
<b>Data Received</b>	<ul style="list-style-type: none"> <li>Frozen Core Volumes (for up to and including March 9<sup>th</sup>).</li> </ul>
<b>Outstanding</b>	<ul style="list-style-type: none"> <li></li> </ul>
<b>Upcoming</b>	<ul style="list-style-type: none"> <li>Survey of FCM after placement (ongoing).</li> <li>Survey of Doris North Diversion berm (ongoing).</li> </ul>

**NORTH DAM/FROZEN CORE PLANT PAD:****Frozen Core Plant***Dayshift*

- Frozen core plant started at 9:30 this morning and shut down at 11:30 due to issues with the burner.
- Plant restarted at 12:30 and ran until 4:30 pm
- The water dial was set at 55 and wasn't changed all day
- Temperature was +40C

*Nightshift*

- Plant was started up around 03:15.
  - Initially the water dial was set to 56.5 and the belt speed was set to 20.9
  - Initial temperatures were around +33C but quickly increased to +37C
- Maintenance and clean-up was performed at the plant. The drum and belts were cleaned.

**Dam Shell***Dayshift*

- No activity

*Nightshift*

- Transition material was placed from ~1+00 to 0+50 on the downstream of the FCM placed today. Some compaction of the Transition material resulted in areas.
- Transition material appeared of good quality.
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**Key Trench/ Central Core***Dayshift*

- Nuna started the day shift working in the SE corner.
- SRK inspected patches and cleaning at the corner. A thorough job of patching was evident
- Load of FCM was dumped at ~ Sta 0+40. The excavator was used to fill the hollow at the inflection point starting at Sta 0+60 and heading up to Sta 0+20. At the top end, the available space for placing widened
- Much of the FCM placed was hand raked, and packed with a small plate tamper. As placement came closer to the top the excavator was able to spread most of the FCM and the 10 ton packer was used for compaction.
- The placing operation then moved to ~ Sta.1+00, resuming from the point placed last night.
- Placing stop at ~ Sta 0+70. Going any higher would place the floor beyond the reach of the excavator
- Frost fighters were moved and additional patching carried out late in the afternoon.
- Small ponds of water were evident after the FCM was placed.

*Nightshift*

- Hording and heating with frost fighters continued over the GCL around station 0+70 to 0+85 areas.
- From ~ 0+60 to 0+70 the GCL by the hinge of the fillet expansion was cleaned (i.e. the small exposed portion of the slope before the horizontal fort part of the core). GCL patches were placed in this section in areas where the liner had been previously ripped or damaged. Powder bentonite beads were placed around the edges, as appropriate / needed.
- The last bead from string ND-HTS-040-28.98 was buried in frozen core today.
- Originally no FCM placement was scheduled for nightshift as Nuna wanted to minimize FCM waste (there were only two small areas that could be filled originally). These aforementioned areas were expected to only take 1 load of FCM and placement and other areas were expected to affect the logistics and planning of future lift placement around the SW end.
- SRK and Nuna survey went out and completed detailed spot checks around the entire SW end of the dam. A notable area around station 0+50 to 0+70 was noticed to be one lift lower the inflection point area (the expected low point), making this area the new lowest point in the top surface. To avoid unnecessary future delays SRK discussed placing a few loads of FCM in the low areas to ensure that a minimum grade only ~1.8m below the design grades was maintained at any point on the dam. The Nuna foreman agreed to the plan and FCM placement started.
- FCM was placed from ~0+70 to 0+47
  - Material looked of good quality for compaction and saturation.
  - Approximately 5 loads were placed on nightshift
  - FCM was placed at the area where GCL was repaired around the hinge of the fillet expansion at 0+60 to 0+70. The 330 excavator moved some material to the toe of the existing slope in this area. This FCM was then spread with shovels and rakes and was packed with the plate tamper. See Photo 16 and 17 for additional details of this area.
  - Material was placed on the top of the dam areas from ~ 0+70 to 0+47. One small bench was filled in this SW area. The upstream side of the lift was unable to be pack by the 10 ton packer, due to the neighbouring slope drop, so the hand tamper was used to achieve compaction.
  - A small area missed around the end of the dam core at station ~0+20 was filled in. This is at the SSW most end of the core. The tie into the original ground was packed with the hand tamper after the general area had been packed with the vibratory roller.
- The elevations of the dam core at the four remaining multibead locations are outlined below.

Station	Current Top Elevation (m)	Install Elevation (m)	Comment
1+30	33.50	33.50	Graded to multibead elevation. Thermistor string to be installed when next lift placed over this area.
0+85	32.95	33.30	Lift placed over area
0+60	33.50	33.50	Graded to multibead elevation. Top beads of the thermistor string to be installed when next lift placed over area.
0+40	33.50	33.50	No change in elevation today

- Additional crush was placed around the multi bead thermistor cable groups at station 0+85 and 0+60 before Transition material placement.
- Single bead thermistors were monitored. No new areas of freeze back were noted. At 6:00am the area placed on dayshift on March 8<sup>th</sup> was at -1C.
- A notable amount of work is required to bring the SE corner up to the design lines / limits. It is estimated at this time that there will be around another 5 to 6 lifts to get the upstream slope to design.

**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
SB12	0+65	U/S	SB1	1+50	CL	SB17	0+70	CL

SB15	0+55	CL	SB13	1+10	CL			
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- A summary of today's material testing progress is presented in the tables below.

**PARTICLE SIZE DISTRIBUTION SUMMARY**

Collected	Testing In Progress	Completed
HB12-ND-CORE-PSD67-20120309		HB12-FCP-TRANS-PSD66-20120307

**MOISTURE CONTENT SUMMARY**

Collected	Testing In Progress	Completed
HB12-FCP-CORE-MC294-QA-20120309		HB12-FCP-CORE-MC294-QA-20120309
HB12-ND-CORE-MC295-QA-20120309		HB12-ND-CORE-MC295-QA-20120309
HB12-FCP-CORE-MC296-QA-20120309		HB12-FCP-CORE-MC296-QA-20120309
HB12-ND-CORE-MC297-QA-20120309		HB12-ND-CORE-MC297-QA-20120309
HB12-ND-CORE-MC298-QA-20120309		HB12-ND-CORE-MC298-QA-20120309
HB12-FCP-CORE-MC299-QA-20120309		HB12-FCP-CORE-MC299-QA-20120309
HB12-ND-CORE-MC300-QA-20120309		HB12-ND-CORE-MC300-QA-20120309
HB12-ND-CORE-MC301-QA-20120309		HB12-ND-CORE-MC301-QA-20120309

**DRILLED CORE**

Collected	Testing In Progress	Completed
		HB12-ND-CORE-DC68-20120307
		HB12-ND-CORE-DC69-20120307

**DORIS NORTH DIVERSION BERM:**

- Layfield repaired HDPE Liner at ~ Sta 5+00
- HDPE liner and geotextile is placed to Sta 4+45. The section from Sta 4+45 to Sta 5+80 filled in partly with snow before the upper layer of bentonite was placed. This section must now be cleared by hand. It is in this section that attempts to clear snow with the excavator resulted with a cut HDPE Liner
- It was decided to leave this section for now.
- Snow clearing was carried out between Sta 3+80 and 4+45. This section already has underliner crush and bentonite placed. This section was inspected and approved for geotextile placement.
- Geotextile placement started ~ 3:30 pm. The area cleared of snow will be covered with geotextile by the end of shift.

**DORIS SUMPS:**

- Nuna enquired whether they could start fabricating the second lid.
- SRK saw no reason why fabrication could not proceed.
- The overburden saved being saved for backfill around the sump is in bags, thawing in the batch plant.

**QUARRY 2:**

- Two drills working.

**GENERAL:**

- Overall a productive day.
- The snow pile on Tails Lake was pushed further out into the lake with a Dozer today (day and nightshift). This is being done to get the snow pile to a deeper area of the lake and away from the expected lake intake.
- Although wind chills were ~ -40 there were no complaints about weather.

PHOTOS:



Photo 1: Progress photo from photo point 1, facing SSE



Photo 2: Progress photo from point 3, facing NNE



Photo 3: Progress photo facing south





Photo 4: Patches along inflexion line



Photo 5: SE corner ready to place FCM



Photo 6: Raking and packing 1st load



Photo 7: Workers hand finishing FCM at SE corner



Photo 8: Overall view



Photo 9: Finished product, SE corner





Photo 10: Snow clearing crew



Photo 11: Cleared area ready for geotextile



Photo 12: Layfield patching HDPE liner



Photo 13: Layfield placing geotextile



Photo 14: puddles of water on final product.





**Photo 15:** ~NW view of SW corner of the North Dam. Taken before GCL patches place around the fillet expansion at 0+60 to 0+70.



**Photo 16:** ~WSW view of GCL repairs around the fillet expansion at station 0+60 to 0+70.

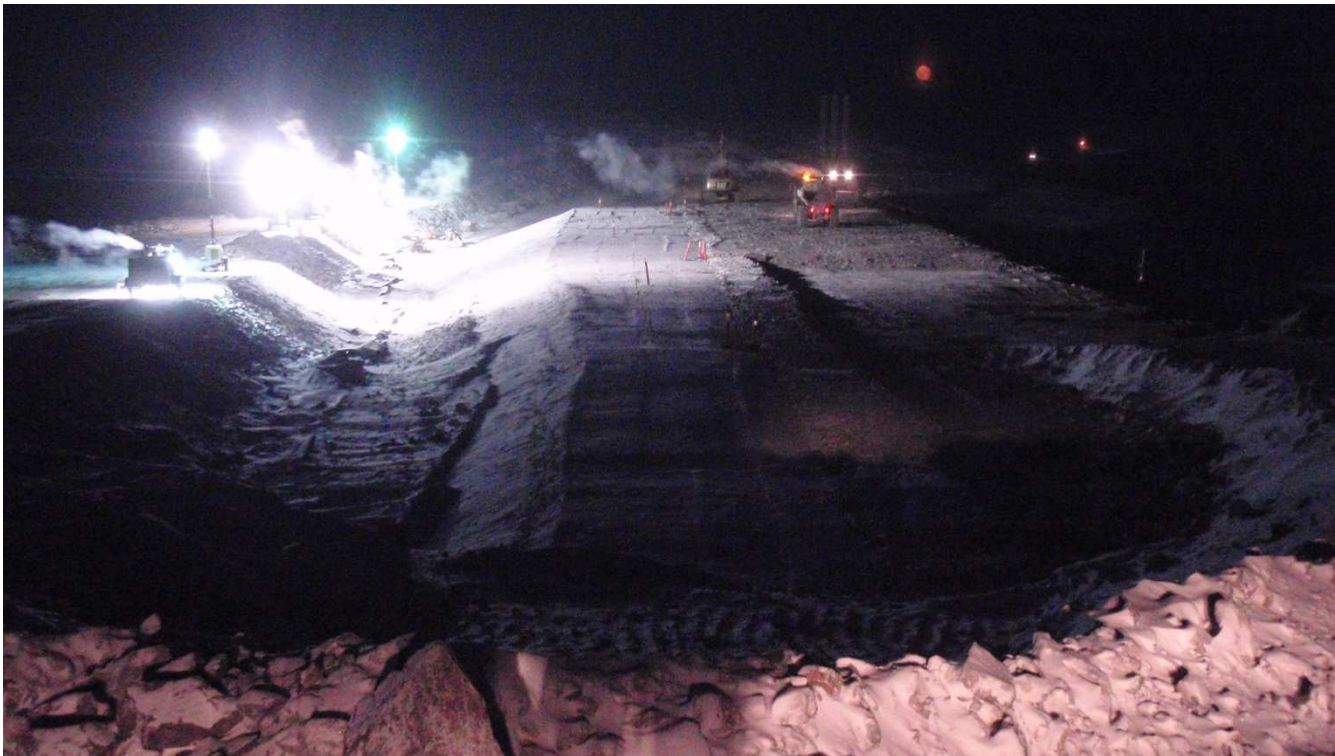


**Photo 17:** Placing and spreading FCM by hand around the fillet expansion at station 0+60 to 0+70, ~ SW view.



**Photo 18:** ~SW view down core towards nightshift placement.





**Photo 19:** ~ SW view of construction progress at the North Dam.



**Photo 20:** ~N view of core placement around station 0+47 to 0+65. Note plate tamper in foreground that was used to pack the upstream edge.



**Photo 21:** ~NE view of core placement around station 0+47 to 0+65.



FIGURES:

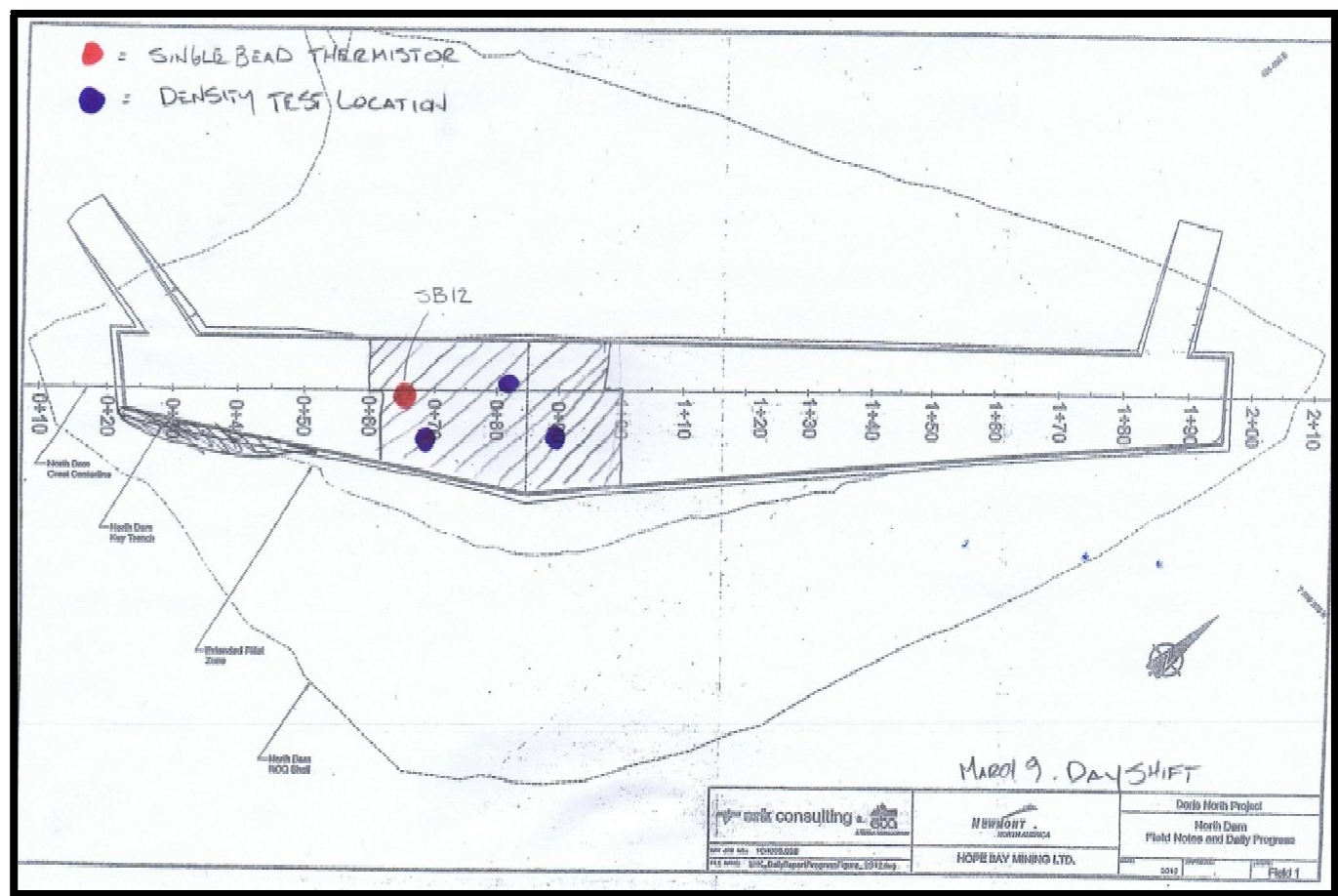


Figure 1 – North Dam Progress – Dayshift

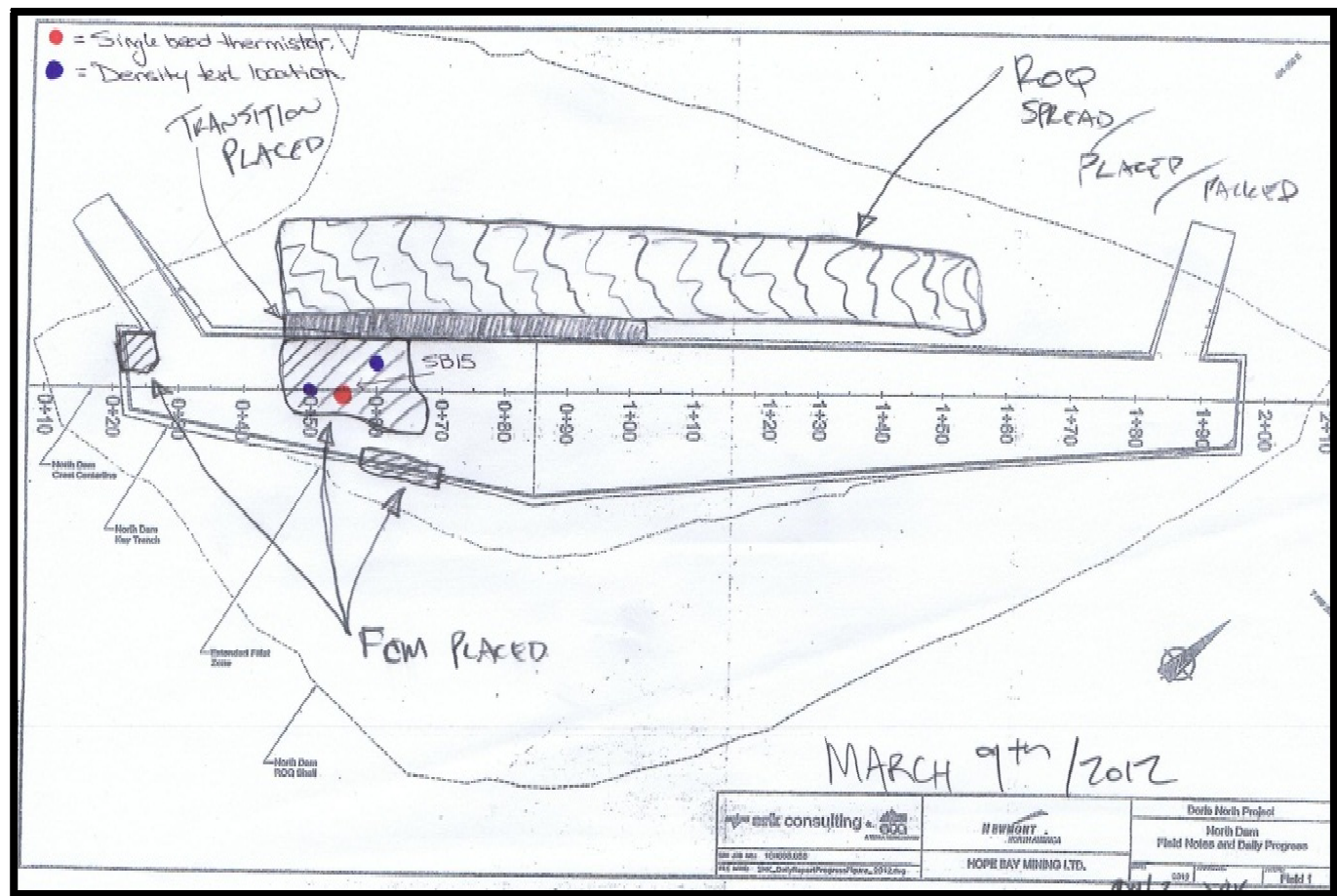


Figure 2 – North Dam Progress – Nightshift