

DAILY REPORT #61 – DORIS NORTH INFRASTRUCTURE/ NORTH DAM

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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 Yes No Yes No Yes Yes 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	Yes No No Yes Yes 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	Yes No Yes No No No
	EBA Engineering Consultants Ltd.	Jeff Orr – Project Manager Jennifer Stirling – Geologist Thomas Bradshaw – Junior Engineer Ernest Palczewski – Geologist	Yes Yes No No
Earthworks Contractor	Nuna Logistics	Bradford Watkin – QC Manager Doug Haverland – Area Superintendent Gary Sodhi – Field Engineer Georges Cornelissen – Survey Manager Jeff Roberts - Surveyor Jim Cardinal – Foreman Jordan Gunter – Foreman Kevin Oakes – Project Engineer Kevin Kozdrowski – Foreman (Night shift) Kyle Kuntz – Project Engineer Margaret Caley – Surveyor Matt McKay – Civil Supervisor Mike MacMaster – Surveyor Mike Price – Field Engineer Nick Stoneberger – Superintendent Rick Peter – Foreman (Day shift) Ron MacMaster – Surveyor Simon Chipper – Civil Supervisor	No No Yes No Yes No No No Yes No No Yes Yes No Yes Yes Yes No
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WEATHER (ROBERTS BAY)

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

Temperature/Wind Chill (°C)	6AM: -29/-43	12PM: -27/-41	6 PM: -30/-49	12 AM: -30
Precipitation (mm)	Rain: None		Snow: None	
Conditions	Day Shift: Clear, windy, very cold.		Night Shift: Clear, cold and windy	
Daily norms (°C)	24 hour high: -25.0C		24 hour low: -30.8C	

HEALTH, SAFETY AND ENVIRONMENT

- Wolf spotted by the north connector road.
- 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 [Katsky Venter], Newmont [Dean Wold], JDS [Gerry Graham, Kevin Whieldon, Mark Valeriotte,]; Nuna [Nick Stoneberger] and SRK [Lawrence Borowski, Jeff Orr, John Kurylo].

Topic	Status
Health and Safety and Environment	<ul style="list-style-type: none"> • Safety: No issues. • ESR: Barrels by generators need to be cleaned up. • ESR inquired with Nuna about a recent minor spill that occurred around the DN Diversion berm area. This has been addressed. • Spill trays required under stationary generators. • KIA awarded Hope Bay Environmental Stewardship.
North Dam	<ul style="list-style-type: none"> • Burners have been cleaned out at the FCP and are ready to operate. • Bearing / trunnion issue is expected to be a small fix. • Excavator cleaned downstream ROQ of snow. (Later it was questioned why snow was removed from the downstream ROQ given that this work has already been signed off. There are stakes at the toe of the ROQ. ESR requested that the dam footprint be staked out. Also this assist the operator with blending slope together and grading downstream at 4H:1V). • During the day shift ROQ was placed on the downstream shell. All ROQ placed during the day shift was packed with the vibratory packer. • ROQ was placed on the downstream shell during the nightshift. This ROQ was not packed. • Started cleaning the FCM slope on the upstream side to prepare for finalizing a portion of the slope today. • Freeze back was achieved on nightshift. The frozen back areas were cored. • Plan to place FCM on the upstream slope and on the surface covered March 4th.
Water Management Structures	<ul style="list-style-type: none"> • Lids for sumps are being manufactured today. • Excavator is continuing with filling the key trench with ROQ working east of Sta 0+580 • Snow removal with the excavator starting today. • Culverts are expected to have arrived on last night's Herc. JDS and Nuna discussed the priority of 5 set of culverts that will be installed around various areas of site.

General	<ul style="list-style-type: none"> Drilling at quarry 2 to continue. Blast is expect to result tomorrow and generate slightly greater than 13,000 m³ of material. Meridian will be here testing ground cables around the gensets and portal on Thursday. Discussion on the number and locations of the ground rods that need to be exposed.
<ul style="list-style-type: none"> After the daily meeting a subsequent meeting was held. This meeting was attended by JDS [Gerry Graham, Kevin Whieldon]; Nuna [Nick Stoneberger] and SRK [Lawrence Borowski, John Kurylo]. <ul style="list-style-type: none"> Nuna indicated that the electricians had expressed concerns about a power drop for a electrical cable that intersects the DN Diversion berm alignment. <ul style="list-style-type: none"> The Nuna electricians would like to use additional cable rather than routing the existing cable through a junction box. Nuna proposed a plan to extend the electrical cable in question along the OG under the DN Diversion berm and into the excavation. This cable would be bedded in suitable crush under the crush under the liner. Bentonite would then be placed under the liner and around this cable as required. SRK suggested that the grounding cable come up the center of the berm and then travel on the crush above the liner. This cable would then be embedded in crush and then covered with the specified ROQ. SRK indicated that having the cable go over rather than under the liner is more favourable at this time as it reduces the potential for a seepage path under the liner, along the cable, to form. For all options discussed it was noted that it would be very difficult to exhume this cable if it became damaged. 	
SURVEY:	
Required	<ul style="list-style-type: none"> FCM and Transition material placed on March 6th.
Data Received	<ul style="list-style-type: none"> QC Cross sections of work in progress (Rec'd Mar 6th) Core sample locations (Rec'd Mar 6th) Frozen Core Volumes (including March 6th placement).
Outstanding	<ul style="list-style-type: none">
Upcoming	<ul style="list-style-type: none"> Survey of FCM after placement (ongoing). Survey of Doris North Diversion berm (ongoing).
NORTH DAM/FROZEN CORE PLANT PAD: <u>Multi-Bead Thermistors</u> <ul style="list-style-type: none"> Multi-bead strings ND-HTS-040-31.5, ND-VTS-040-KT, ND-HTS-060-31.0, ND-HTS-060-28.8, ND-VTS-060-KT, ND-VTS-060-US, ND-VTS-085-US, ND-VTS-130-US were read. <ul style="list-style-type: none"> ND-HTS-040-31.5 has been previously noted to have a 3/4 broken plastic connector housing. ND-HTS-060-28.8, as previously noted, has one bead that is not reading. Potentially from a damaged / pushed in pin in the connector. <u>Frozen Core Plant</u> <i>Dayshift</i> <ul style="list-style-type: none"> Plant started at noon with no start up issues and produced FCM until 5:00 pm Temperature of the FCM was +40C. This higher temperature was selected due to cold windy conditions. Winds were from 30 kph to 40 kph during the day shift. <i>Nightshift</i> <ul style="list-style-type: none"> Issues with a fuel line at the plant were experienced at the start of nightshift. The FCP started up around 21:30. 	

- Temperatures started around +28C and were immediately raised to +33C. At start up similar setting to that which dayshift had been using were utilized. The water dial was set around 56.1 at start-up.
- Around 00:15 the water was adjusted downward to 55.2 on the dial. This was completed as water was noted to be pooling on the surface in areas and notable running to low points. FCM temperature around this time at the plant was ~ +40C.
- The plant was shut down around 01:45 – 02:00.
- 14 loads for FCM were sent to the dam on nightshift.
- Maintenance and clean-up was performed at the end of shift at the plant.

Dam Shell

Dayshift

- No activity on the dam shell.
- JDS questioned the removal of snow from the downstream slope as this slope has been signed off. See additional notes in the daily meeting section of this report.

Nightshift

- Additional snow cleared on the downstream dam around station 1+20 area was completed.
- Additional ROQ material was placed on the downstream side of the dam in spots around ~0+60 to 1+20.
- After FCM placement Transition material was placed along the core placed on nightshift (around station 1+20 to 1+60). The small amount of snow again the downstream area was removed or scraped by the excavator prior to the Transition material placement. In a few areas a small / trace amount of Transition material was knocked by the excavator onto the wet FCM. This material is expected to be removed from the core after freezeback has occurred in this area.
- Some work smoothing / grading the gap between the FCM placed on dayshift and the Transition was completed (around 0+60 to 1+20). No additional material was placed in this area.

Key Trench/ Central Core

Dayshift

- Freezeback was achieved overnight and cores were taken during the night shift.
- The section from Sta 0+60 north to ~ Sta 1+50 was ready, except for cleaning.
- The core is now reaching heights that are at the extremities of the excavators reach. Accordingly the pour for today included placing core material over the previously stepped pours down to the GCL.(2 m)
- Recent blowing snow had covered the stepped portion with snow.
- The excavator was used to remove the bulk of the snow. This was followed up with compressed air which yielded a satisfactory result.
- With winds in the 30 kph to 40 kph range all day, drifting snow soon became an issue.
- To resolve the issue, it was agreed that blowing snow away with the compressor immediately prior to placement of FCM would suffice.
- The initial plan was to fill in the slopes first, then place FCM on the main core. This plan was changed and Nuna decided to build the core and slopes simultaneously.
- There was a need to clean the surface of the work area with the skid steer prior to starting up the plant.
- Cleaning, arranging for a plate packer, and mobilizing all other equipment took until noon.
- Production proceeded from noon until 5:00 pm. The area covered was from Sta 0+60 to Sta 1+15. As the FCM was crusting, temperature was raised to +40 C and the water content raised.
- All test results were within specification limits.

Nightshift

- At the start of shift the top surface from ~ 1+75 to 1+40 was scraped down with the excavator to remove some of the ice on the core surface.

- Cleaning, with the skid steer, resulted from ~ 1+20 to 1+70 and approved for placement.
- FCM was placed from ~1+20 to 1+60. Material was placed by the excavator and then packed.
 - Some issues were experienced by the operator (in part due to issues with visibility through the steam) and resulted in a slightly undulating surface in areas. Lager depressions were point out by SRK to the Nuna Forman and were filled with additional FCM before packing.
 - Water was noted to be pooling in a few areas of the core. Based on the way the FCM was graded, see point above, the water was noted to preferentially flow to two low points around 1+25 and 1+30. Water was noted to be discharging down the slope in these areas. Some erosion along the top of the upstream crest and along the site was noted in these areas. Ice along the side slopes is expected to be required to be removed, after freeze back, and minor additional FCM is expected to be required to bring the eroded areas to grade.
 - Nightshift placement tied into the end of the dayshift placement.
 - Around 23:30 the temperate of the FCM at the plant was increased. This was done as the packer and excavator were in a confined area and a top crust was noted to be just starting to form before the packing was able to work the material. Material temperature was raised to ~ +39C.
 - Around station 1+25 to 1+35 some FCM was built up and onto the existing Transition material. As placement continued FCM was cleaned off the Transition material in this area by hand to create an appropriate downstream core edge. This was done to allow for better joint between the current and next lift.
 - The previously existing low point/ hole around ~ station 1+40 was filled in. In this area the FCM was slightly graded down to create a smooth surface that was not excessively thick.
 - Typically FCM lift thicknesses were around 0.2 to 0.4m.
 - Upstream slopes were overbuilt then cut back to ~ 2.5H:1V. The final slope was finished with manual labour.
 - The area of the upstream slope that was stopped short / offset inwards on March 4th nightshift was filled in and graded today.
 - The initial density testing showed greater than 90% compaction, greater than 80% Saturation and oven dry moistures in excess of 10.5%.
- Hording and heating with frost fighters continued over the GCL around station 0+50 area.
 - Some hand shovelling of frozen material over the GCL liner was completed at the beginning of the night.
 - The small 308 excavator was readied to be used to assist with excavating material over the GCL in this area.
- The elevations of the dam core at the four remaining multibead locations were checked in the field with survey. Below shows the status of the core at the respective location.

Station	Current Elevation (m)	Install Elevation (m)
1+30	33.15 (before placement)	33.50
0+85	32.95	33.50
0+60	33.20	33.50
0+40	33.50 (at top only)	33.50

- Station 1+30 to be rechecked tomorrow. Near grade after last night's placement. Will require minor smoothing work due to undulating surface and noted ice and erosion closer to downstream edge.
- The dayshift single bead thermistor was monitored on nightshift. Around the end of nightshift this single bead was still slightly above 0C.
- **After tonight's placement a total of 8,525.5 m³ has been placed at the North Dam in 2012.**

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
SB17	0+70	CL				SB19	0+80	D/S
SB10	1+40	U/S				SB18	1+45	U/S

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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-PSD65-20120306

MOISTURE CONTENT SUMMARY

Collected	Testing In Progress	Completed
HB12-FCP-CORE-MC269-QA-20120306		HB12-FCP-CORE-MC269-QA-20120306
HB12-ND-CORE-MC270-QA-20120306		HB12-ND-CORE-MC270-QA-20120306
HB12-ND-CORE-MC271-QA-20120306		HB12-ND-CORE-MC271-QA-20120306
HB12-FCP-CORE-MC272-QA-20120306		HB12-FCP-CORE-MC272-QA-20120306
HB12-ND-CORE-MC273-QA-20120306		HB12-ND-CORE-MC273-QA-20120306
HB12-ND-CORE-MC274-QA-20120306		HB12-ND-CORE-MC274-QA-20120306
HB12-FCP-CORE-MC275-QA-20120306		HB12-FCP-CORE-MC275-QA-20120306
HB12-ND-CORE-MC276-QA-20120306		HB12-ND-CORE-MC276-QA-20120306
HB12-ND-CORE-MC277-QA-20120306		HB12-ND-CORE-MC277-QA-20120306
HB12-FCP-CORE-MC278-QA-20120306		HB12-FCP-CORE-MC278-QA-20120306
HB12-ND-CORE-MC279-QA-20120306		HB12-ND-CORE-MC279-QA-20120306
HB12-FCP-CORE-MC280-QA-20120306		HB12-FCP-CORE-MC280-QA-20120306
HB12-ND-CORE-MC281-QA-20120306		HB12-ND-CORE-MC281-QA-20120306
HB12-ND-CORE-MC282-QA-20120306		HB12-ND-CORE-MC282-QA-20120306

DRILLED CORE

Collected	Testing In Progress	Completed
		HB12-ND-CORE-DC66-20120305 HB12-ND-CORE-DC67-20120305

DORIS NORTH DIVERSION BERM:

- Excavator placing ROQ in the key starting at Sta 6+50
- ROQ was hauled to the berm before work at the dam started.
- The second excavator was used to excavate snow from trenches.

DORIS SUMPS:

- No activity: sumps are covered with tarps
- Construction of the lids started today.

QUARRY #2:

- Two drills working on dayshift.
- ROQ was hauled to the Doris North Diversion Berm

GENERAL:

- Overall weather conditions were extreme, with cold temperatures and strong winds on dayshift. On nightshift the weather calmed and the winds were dramatically reduced.
- No labour crews at the Doris North Diversion Berm. All available labourers were at the dam.
- Glycol drilling supplies were refilled and some clean-up was completed around the materials testing lab.

PHOTOS:

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



Photo 2: Progress photo from photo point 2, facing NNW.



Photo 3: Progress photo from Photo Point 3, facing NW.



Photo 4: Sump 1 progress photo.



Photo 5: Sump 2 progress photo.



Photo 6: Placing ROQ ~ Sta.0+80



Photo 7: Excavator clearing snow at bottom of core. Labourers ready to blow snow. Labourers in foreground working with frost fighters.



Photo 8: Dental cleaning with compressed air.



Photo 9: Raking and compaction at bottom of slope.



Photo 10: Labour crew at the dam



Photo 11: Excavator continuing with ROQ placement at the berm



Photo 12: Snow in key trench that needs to be removed before any further work can be done.



Photo 13: Stitched panoramic view of the upstream dam slope. Taking looking ~NNE from the dam shell around station 0+90. Note the dark patch in the bottom right of the picture that shows the area where dayshift placed FCM to remove the lower 'steps' in the upstream slope.



Photo 14: Stitched panoramic view of the upstream dam slope. Taking looking ~ NWW from the dam shell around station 0+85. Note the severely underbuilt US slope from 0+60 westward and the heating and hording of the GCL taking place.



Photo 15: ~NE view looking down upstream dam slope.



Photo 16: ~ NE view down core of nightshift placement.



Photo 16: ~N view of upstream core slope. Note areas where water ponded and seeped/ discharged down the upstream slope. The ice on the slope in these areas is expected to be scraped down along with the areas of minor water erosion. Some additional FCM is expected to be required near the upstream crest in these areas to bring the crest to the design lines / limit.

FIGURES:

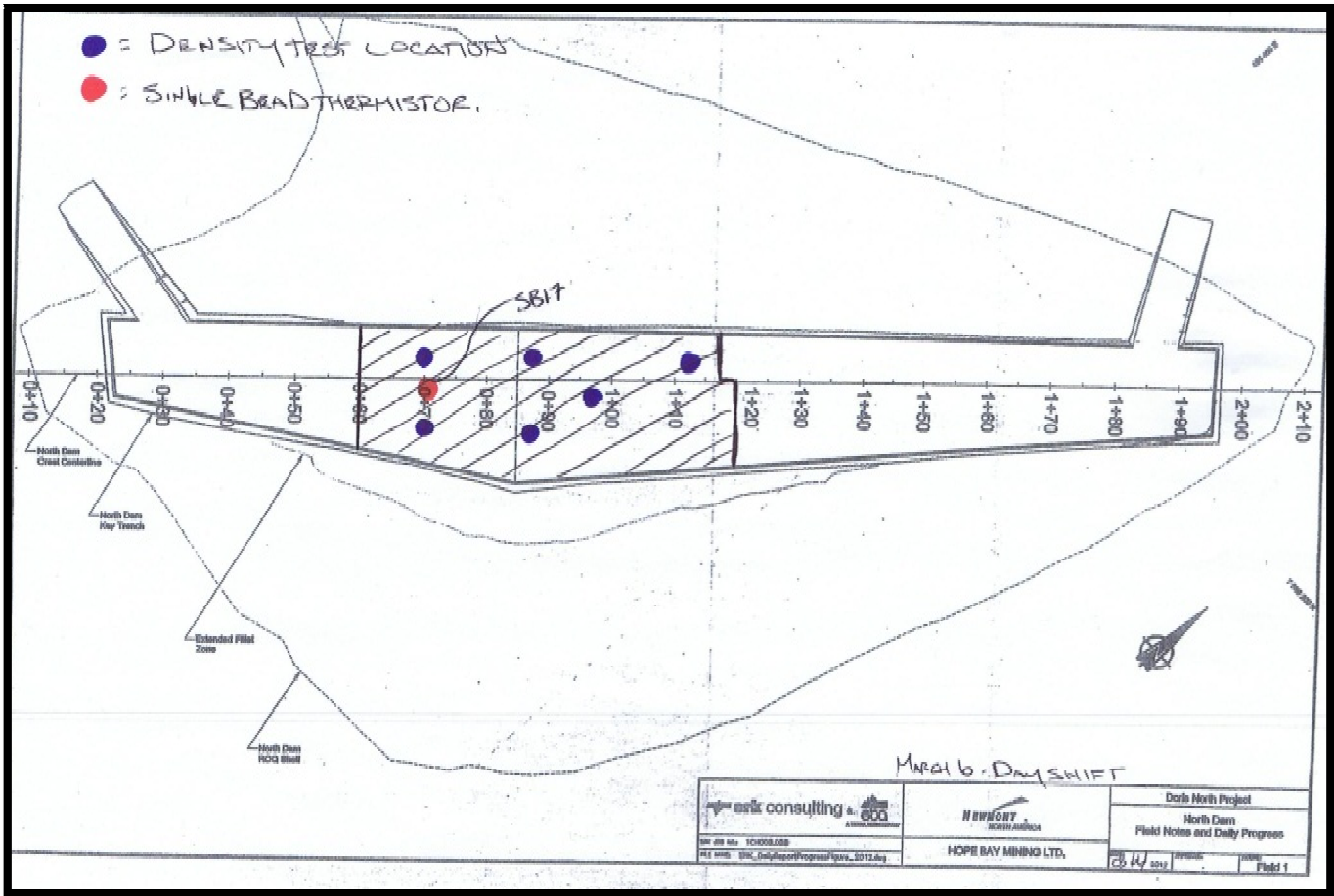


Figure 1 – North Dam Progress – Dayshift

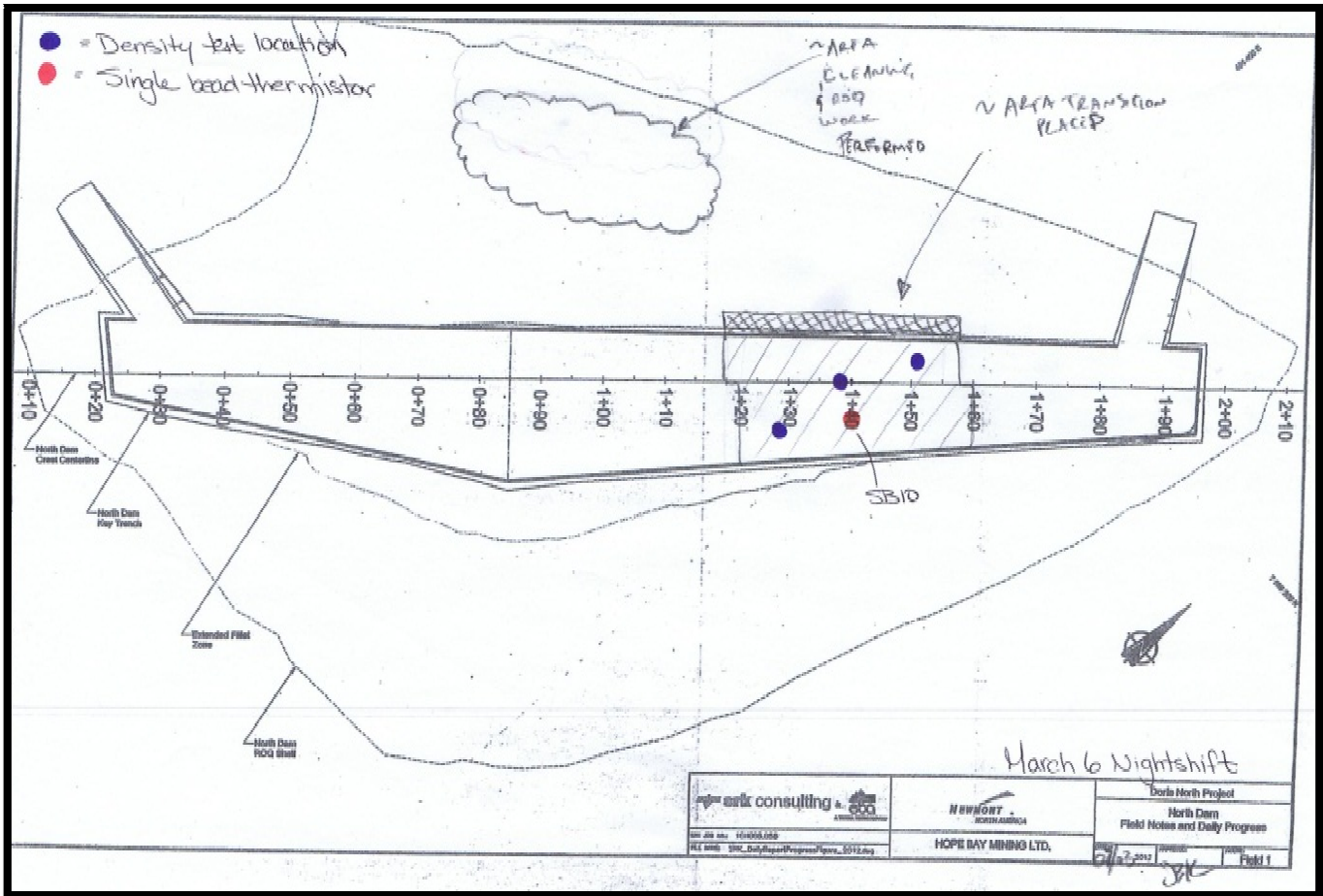


Figure 2 – North Dam Progress – Nightshift