

## DAILY REPORT #18 – DORIS NORTH INFRASTRUCTURE/ NORTH DAM

Prepared by:	John Kurylo/ Jeff Orr / Megan Miller	Date:	2012.01.23
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 Yes No No No Yes No
	JDS	Lloyd Jackson – Mechanical Superintendent Sven Archimowtiz – Electrical Superintendent Doug Fielding – Construction Manager Ishan Fechter – Construction Coordinator Jerry Graham – Construction Manager Kevin Whieldon – Project Coordinator Mark Valeriote – Construction Manager	No Yes Yes Yes No No Out
Engineering Design Consultants	SRK Consulting (Canada) Inc.	John Kurylo – Site Engineer Megan Miller – Site Engineer Lawrence Borowski – Site Engineer Murry McGregor – Site Engineer Iozsef Miskolczi – Site Engineer	Yes Yes No No No
	EBA Engineering Consultants Ltd.	Jeff Orr – Project Manager Jennifer Stirling – Geologist Thomas Bradshaw – Junior Engineer Ernest Palczewki – Geologist	Yes Yes No No
Earthworks Contractor	Nuna Logistics	Bradford Watkin – QC Manager Dale Craig – Safety Don Webber – Foreman Doug Haverland – Area Superintendent Gary Sodhi – Field Engineer Georges Cornelissen – Survey Manager Jeff Roberts - Surveyor Jim Cardinal – Foreman Kevin Oakes – Project Engineer Kevin Kozdrowski – Foreman Margret Caley – Surveyor Matt McKay – Civil Supervisor Mike MacMaster – Surveyor Mike Price – Field Engineer Nick Stoneberger – Superintendent Rick Peters – Foreman Ron MacMaster – Surveyor Simon Chipper – Civil Supervisor	No No No Yes No Yes Yes Yes No No Yes Yes Yes Yes No No Yes No
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**WEATHER (ROBERTS BAY)**

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

Temperature/Wind Chill (°C)	6AM:-32.3/-45	12 PM:-31.4/-38	6 PM: -33.3/-33.3	12 AM: -34.2/-34.2
Precipitation (mm)	<b>Rain:</b> None		<b>Snow:</b> None	
Conditions	<b>Day Shift:</b> Light to moderate wind.		<b>Night Shift:</b> Light wind.	
Daily norms (°C)	24 hour high: -31.3		24 hour low: -34.4	

**HEALTH, SAFETY AND ENVIRONMENT**

- Jeff Orr attended daily Nuna construction meeting.
- Megan Miller attended the nightly Nuna construction meeting.

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

- The daily meeting was attended by ADCO, Williams Wireless, ACI, Nuna [Doug Haverland], ESR [Michelle Tanquay], Newmont Safety [Don Ethelston], JDS [Doug Fielding, Ishan Fechter, Mark Valeriotte], SRK [John Kurylo]

Topic	Status
Health and Safety and Environment	<ul style="list-style-type: none"> <li>• No manlifts are to be used to day, in account of the cold weather.</li> <li>• Trucks should be warmed up frost before use. Make sure frost is cleared/ windows defrosted to ensure proper visibility</li> <li>• An issue with the installed GPS giving warnings for idling in the extremely cold conditions was discussed.</li> <li>• Before the 330 excavator (currently down) is moved from the N Dam area some minor clean up around the current area the excavator is sitting is required.</li> </ul>
North Dam	<ul style="list-style-type: none"> <li>• Freezeback on all recently placed material has been achieved in the key trench. Traffic can drive in all areas of the key trench now.</li> <li>• FCM placement at the Dam is planned for today.</li> <li>• The FCP needs water.</li> </ul>
Water Management Structures	<ul style="list-style-type: none"> <li>• WestArc starting drilling at Sump 2 yesterday. ~ 30 holes were drilled yesterday.</li> <li>• SRK has coordinates for the revised Sump 1 location; these will be provided to Nuna survey today. Cables at this location will be required to be moved, based on the revised location. JDS/ Nuna will require some sort of documentation noting the revised location. Notes on the revised location will be sent to survey and document in the SRK daily report.</li> <li>• Hording is being placed on the D9 today. Later in the day a test strip is expected to be ripped at the DN Diversion Berm with the D9.</li> <li>• Additional discussions were held about drilling at the DN Diversion Berm alignment. This is to be reassessed after test ripping is completed in the alignment.</li> </ul>
General	<ul style="list-style-type: none"> <li>• The crane that was planned to be used to assist ACI with their work is having issues (mechanical).</li> <li>• ADCO's bobcat was serviced by nightshift crew.</li> <li>• ~8 additional frost fighters were put together by nightshift and will be used at various locations on site.</li> </ul>

**SURVEY:**

<b>Required</b>	<ul style="list-style-type: none"> <li>As-built survey of FCM placed on 2012/01/21</li> </ul>
<b>Data Received</b>	<ul style="list-style-type: none"> <li>None</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 frozen core surface after cleaning/ scraping activities at N. Dam (on going).</li> <li>Survey of FCM after placement (on going).</li> </ul>

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

- The FCP started FCM production around 2:30 pm today.
  - The temperature of the FCM was exiting the plat chute around 33°C.
  - Some minor occurrences of unsaturated FCM clumps were still observed at the FCP.

*Nightshift*

- The plant was started at ~1:15 am and ran until ~5:00 am. Ninety-nine loader buckets of material were fed through the frozen core plant on this shift.
- Some lumps of frozen material were noted exiting the mixing-heating drum at start up; however no frozen clumps were noted in the placed material.

**Dam Shell**

- No significant activity.

**Key Trench***Dayshift*

- SRK held discussions with JDS about the North Dam construction:
  - SRK and JDS discussed plans for the upper and lower GCL liner tie-in. Details of these discussions are presented as Figure 3.
  - JDS is proposing to place granular material, processed as frozen core material prior to March 2011, over the GCL as cover (cover as outlined on the IFC). This is acceptable. The lines and grades shown on the IFC drawings and the appropriate section of Technical Specifications Rev. G are/ to be maintained.
- A progress figure showing today's the approximate extent of today's placement is provided as Figure 1.
- The 345 excavators (equipped with toothed bucket) was used during dayshift to assist with removal of additional frozen 5/8" clear material.
  - 5/8" material was removed from the downstream edge and dental cleaned from ~ 0+62 to 0+45.
  - The bottom (flat) area cleaning from ~0+70 to 0+42 was approved for placement. The upstream fillet slope still requires additional cleaning.
- Core material placement was started at around 14:30. Nuna ran out of clean areas to place core material and had to stop by 17:30.

*Nightshift*

- A progress figure showing tonight's placement extent is provided as Figure 2.
- ROQ material along the downstream slope of the key trench north east of station 1+80 was cleared down to original ground with the CAT 345 excavator.
- The key trench from ~sta. 0+00 to 1+40 and the hole of excavated material from ~0+75 to 0+00 was cleaned with the bobcat equipped with the brush. Labourers with brooms and shovel were also used to clear material from the corner of the excavated area.
- Saturated core material was placed in the area cleared described above. This material was placed

with the CAT 345 excavator. Everything went well. The surface of the placed material appears to be slightly undulating.

- A single, single bead thermistor (#56) was placed in the material in this area.
- All multi bead thermistors with the exception of ND-VTS-085-DS, ND-HTS-060-28.8, ND-VTS-085-KT and ND-HTS-085-25.3 were read and found in working order. Several of the protective caps from the thermistor connectors are missing, some plastic on one of the thermistor connectors is broken (see photo below) however the thermistor still works fine.
- Multi-bead thermistor ND-HTS-060-28.8 remains broken/ severed.

#### **Field Geotechnical Testing, Laboratory and Sampling**

- Single bead #55 and #56 were installed and read. Single bead #38 was read once than decommissioned. A summary of the single bead thermistor status are provided below.

##### **SINGLE BEAD THERMISTOR STATUS**

Installed Today			Active			Destroyed / Abandoned		
ID	Station	US/DS/Center	ID	Station	US/DS/Center	ID	Station	US/DS/Center
SB55	0+50	Center				SB37	0+95	Center
SB56	0+90	Center				SB38	1+20	US
						SB39	0+48	Center

- A summary of the material testing progress for 2012/01/23 is presented in the tables below.

##### **PARTICLE SIZE DISTRIBUTION SUMMARY**

Collected	Processed	Completed
HB-FCP-CORE-PSD7-QA-20120123		HB-FCP-CORE-PSD5-QA-20120121 HB-FCP-CORE-PSD6-QA-20120122

##### **MOISTURE CONTENT SUMMARY**

Collected	Processed	Completed
HB-FCP-CORE-MC14-QA-20120123 HB-FCP-CORE-MC15-QA-20120123 HB-FCP-CORE-MC16-QA-20120123		HB-FCP-CORE-MC12-QA-20120122 HB-FCP-CORE-MC13-QA-20120122

##### **COMPACTION TESTING SUMMARY**

Number of Tests	Material	Tested By	Shift	Notes
4	Core	JO	Day	All Passed
6	Core	JS	Night	All Passed

- Compaction and saturation results from the nuclear densometer were acceptable.

#### **DORIS NORTH CAMP:**

- Westarc started drilling around Sump 2. Drilling at Sump 2 is expected to be completed in the next day or two.
- The spillway culverts at the Sediment Pond were inspected today in the field.
- Snow road construction around the DN Diversion Berm continued. Minor work and snow road watering was completed today.
- A test strip was ripped along the W side of the DN Diversion berm alignment with the D9. Tundra was encountered during this trial rip. Additional trials to result in the coming days.
- SRK provided JDS and Nuna with the updated/ revised Sump 1 location. Additional notes and comments on Sump 1 discussions are presented as Figure 4.

**GENERAL:**

- A new generator was obtained for coring; this generator is lighter and more portable than the previous generator.
- EBA wired up some additional more portable extension cords to assist with coring.



PHOTOS:



**Photo 1:** ~Westarc drilling at Sump #2 location. ~SE view towards Doris Lake.



**Photo 2:** Outer ring of drill holes completed at the Sump #2 footprint.



**Photo 3:** Close up view of drill hole spacing at Sump #2 (note ~ 3 to 4" spacing between holes).



**Photo 4:** ~ENE view of 345 excavator starting to clean up the area where material was previously removed from (see SRK Daily #16 for additional details on area).



**Photo 5:** ~NNE view down keytrench. Taken from ~ station 0+60.



**Photo 6:** Labourers dental cleaning downstream edge of key trench around station 0+60 to 0+40, ~ WNW view.





**Photo 7:** Progress photo of the North Dam taken from photo point 1. ~SE view.



**Photo 8:** Progress photo of North Dam from photo point 2. ~WNW view.





**Photo 9:** ~WNW view down key trench. Note excavator in background cleaning the downstream edge of the key trench around station 0+50.



**Photo 10:** ~ ENE view down the key trench. Note cleaning activities being completed in the forefront of this picture, in preparation for today's placement.



**Photo 11:** ~NW view of vibrator compactor working on FCM being placed around station 0+60.



**Photo 12:** ~ N view over Pollution Pond towards the Pad I waste rock area.





**Photo 13:** ~ SES view down the Pollution Pond (left) and Sedimentation Pond (right) separator/ divider berm.



**Photo 14:** ~ SSW view of the Pollution Pond (left forefront) and the Sedimentation Pond (right background). Looking towards Doris Windy AWR.





**Photo 15:** ~ E view of SW corner of Pollution Pond, where spillway culverts are currently buried in snow.



**Photo 16:** ~N close-up view of Pollution Pond Culvert outlet (on S side of the Float Plan Dock Access Road).



**Photo 17:** ~ S close-up view of Sedimentation Pond spillway culverts.



**Photo 18:** ~ ESE close-up side profile view of Sedimentation Pond spillway culverts.



**Photo 19:** ~ N close-up view of Sedimentation Pond spillway culvert outlet (on S side of the Float Plane Dock Access Road).



**Photo 20:** ~ NWW view of the Sedimentation Pond; taken from the edge of the Float Plan Dock Access Road.





**Photo 21:** Thermistor connector with damaged plastic. This thermistor still works fine.



**Photo 22:** A few clumps of frozen material were noticed in the plant at start up. No lumps of frozen material were noticed in placed core.



**Photo 23:** CAT 345 excavator placing saturated frozen core material in the key trench during the night shift.



**Photo 24:** Dental cleaned surface of core material excavated 2012/01/21. Photo looking NE along trench.



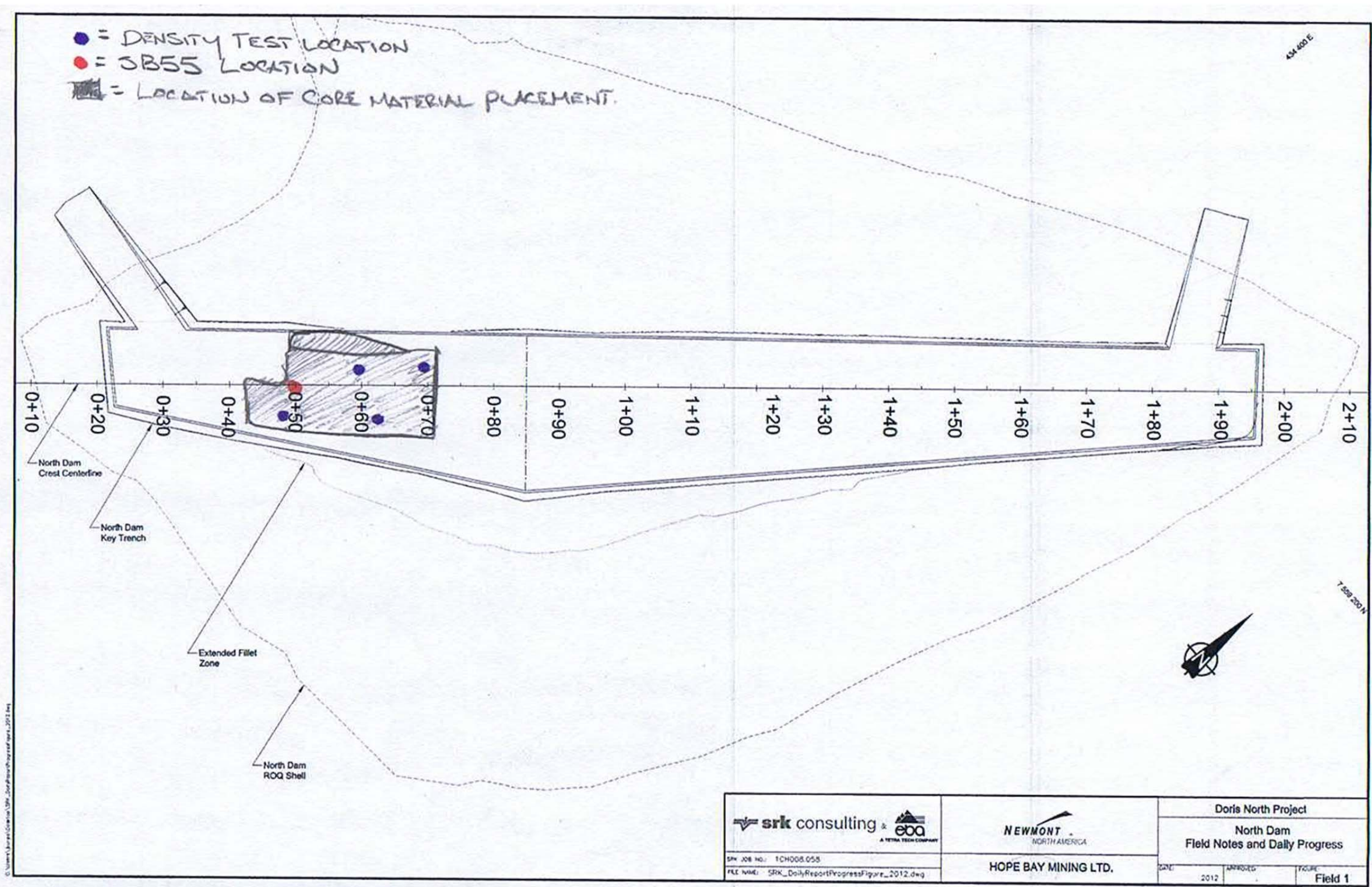
**Photo 25:** Labourers cleaning hole in key trench.



**Photo 26:** Density testing of first few truckloads of saturated FCM placed on night shift.



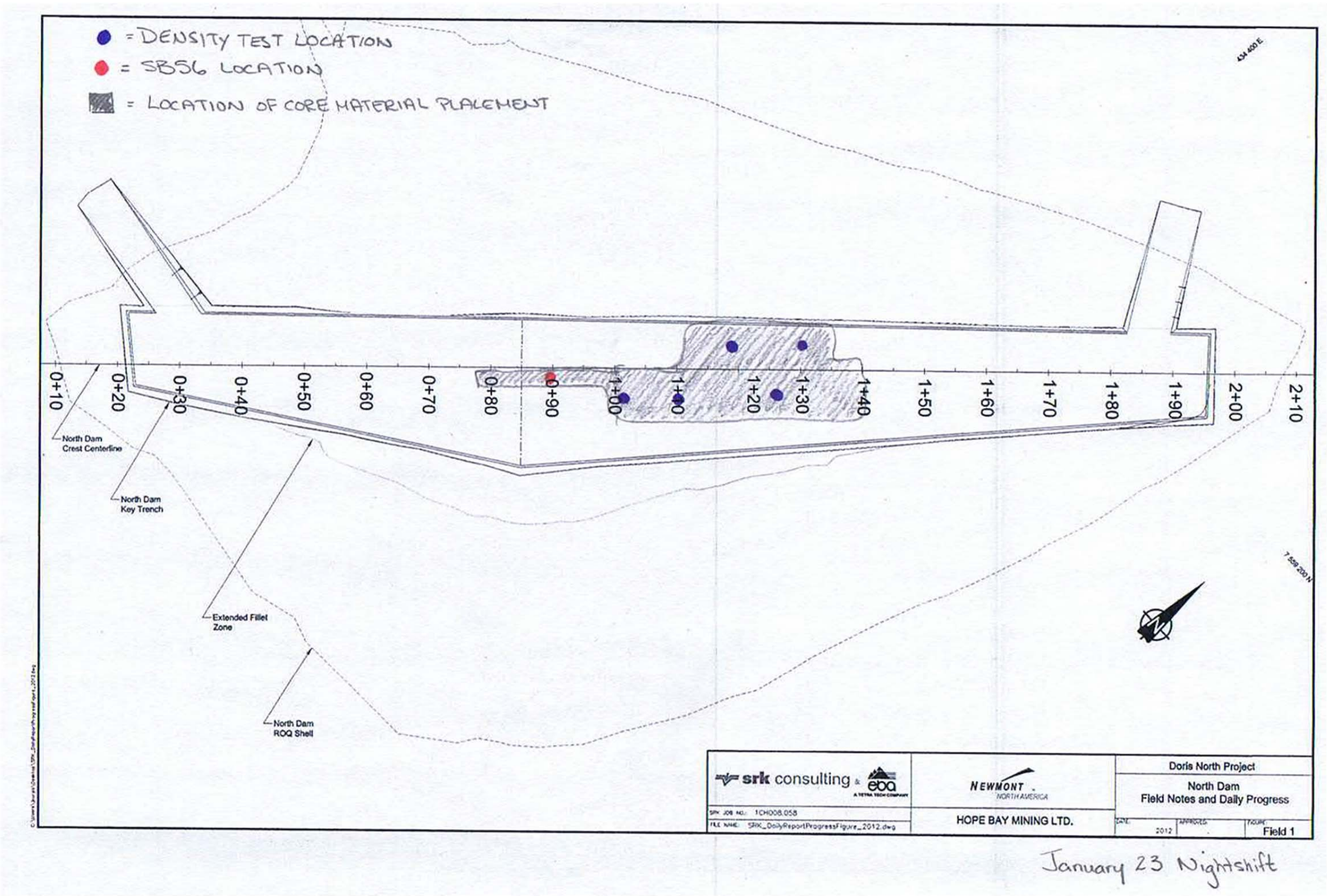
FIGURES:  
• Figure 1 - FCM Progress/ Placement – DAYSHIFT Jan 23<sup>rd</sup>



JANUARY 23 DAYSHIFT



• Figure 2 - FCM Progress/ Placement – NIGHTSHIFT Jan 23<sup>rd</sup>





• Figure 3 – Notes from onsite discussions about North Dam GCL liner tie-in (tie in details to be further discussed in the coming weeks).

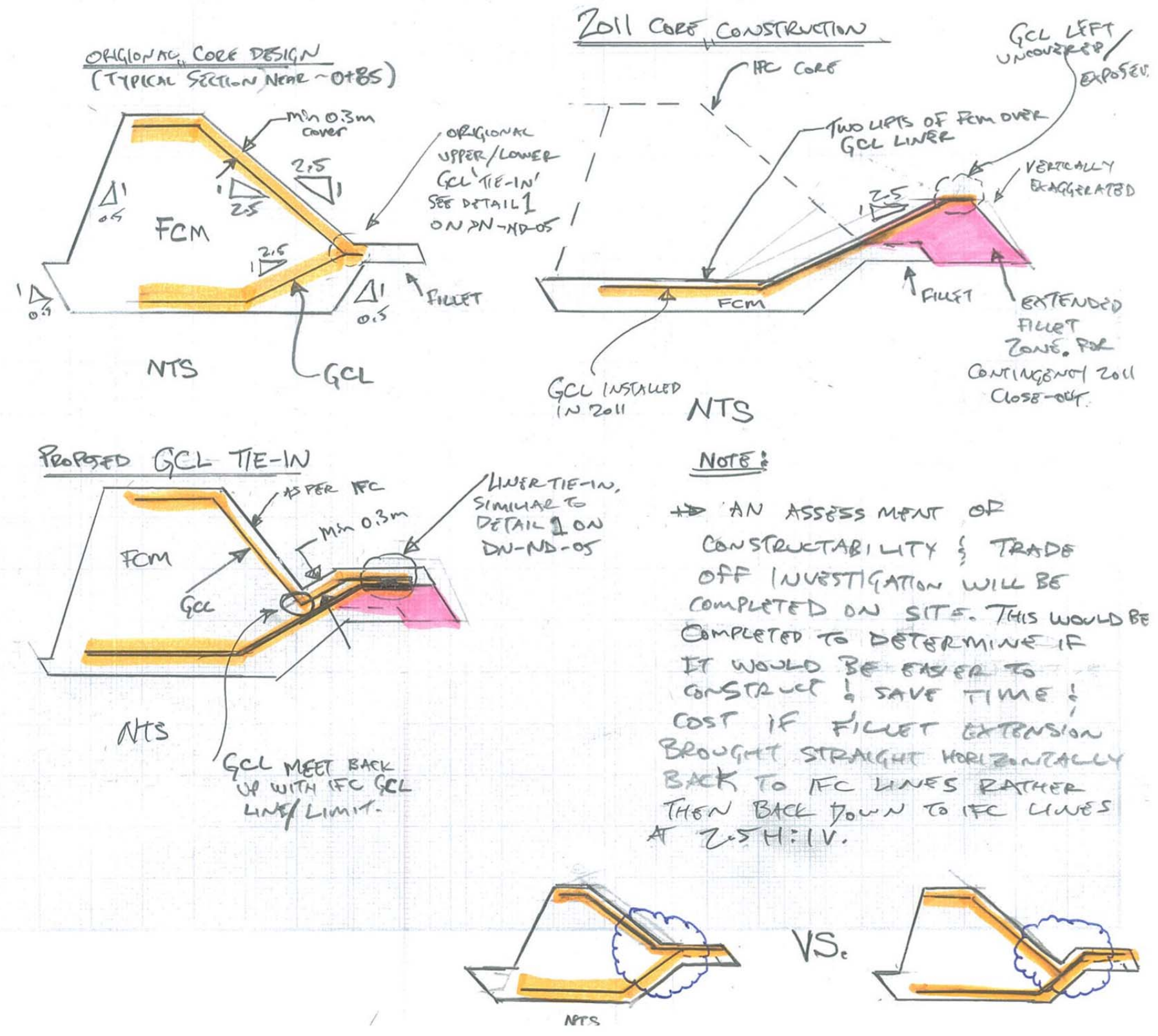
Project No. 1CH008.058 Site HOPE BA-1-FIELD

Prepared by SRK Date 2012/01/23

Approved by \_\_\_\_\_ Date \_\_\_\_\_

Sheet 1 of \_\_\_\_\_

Subject N. DAM CONSTRUCTION - GCL TIE-IN DISCUSSION





• **Figure 4 – Field Fit Notes on Revised Sump #1 Location.**

**Note:**

- The original location of Sump 1 was selected to intercept the surface and subsurface flow of water that has come into contact with Mine Waste. When the location of Sump 1 was originally laid out (see SRK Daily Report #) it was found that the Sump was on the pipe bench of the extended Float Plane Dock Access Road. A field fit with Nuna survey was worked out/ determined. Observed seeps have previously (in Summer 2011) been observed to exit near the toe of the road. To best capture flows the sump was/ is required to be as close to the road shoulder as possible. Further, future expected work will require that these sumps be in place to collect seepage. Today SRK provided Nuna and JDS with the revised Sump #1 location. The update location for Sump #1 is N = 7558868.7, E = 433341.1
- The revised location of the sump it near the toe of the road and does currently intersect two cables that are frozen on the tundra. JDS and Nuna expressed concerns about moving the cables.
- Nuna survey has proposed a new location from the outlined sump that will be ~ 1m from the cable. This move requires the sump to be shifted slightly downstream and outwards on the order of ~1.5 to 1.6m. As the sump location is further from the toe of the road it is seen as less favourable for seepage collection. Final discussions on Sump 1 to result on Jan 23<sup>rd</sup>.

