



MARCH APRIL 2022 Environmental Update for SLEMA Board

MAY, 2022

Acronyms

- AEMP – Aquatic Effects Monitoring Program
- ARD – Acid Rock Drainage
- DFO – Fisheries and Oceans Canada
- ECCC – Environment and Climate Change Canada
- ECM – Extended Care and Maintenance
- ENR – Department of Environment and Natural Resources, GNWT
- EQC – Effluent Quality Criterion
- GNWT – Government of the Northwest Territories
- MVEIRB – Mackenzie Valley Environmental Impact Review Board
- MVLWB – Mackenzie Valley Land and Water Board
- PK – Processed Kimberlite
- SNP – Surveillance Network Program
- TDS – Total Dissolved Solids
- WEMP – Wildlife Effects Monitoring Program
- WTP – Water Treatment Plant



Outline

1. Mine Update
2. SNP Reports
3. Water Monitoring
4. Incidents at Site
5. Regulatory Inspections
6. Regulatory News
7. De Beers' News
8. SLEMA's Activities



1. Mine Update

- The Snap Lake Mine is currently in Extended Care and Maintenance (ECM).
- The discharge of treated effluent to Snap Lake ceased on September 30th, 2021.
- There will be no effluent discharge during the fall and winter months.
- On March 17, the GNWT Inspector inspected the site



2. SNP Reports

- During this period, DeBeers submitted the following SNP Reports:
 - February SNP Report, and
 - March 2022 SNP Report.
- The Reports describe activities at the mine site, including on-site monitoring in Feb and March 2022.



2. SNP Reports

➤ WATER MANAGEMENT AT THE SITE

○ Water Extraction from Snap Lake:

The quantity of fresh water extracted from Snap Lake was:

- Feb: 485 m³
- March: 785 m³
- The Sewage Treatment Plant (STP) operated in Feb & March

The quantity of wastewater treated was:

- Feb: 315 m³
- March: 333 m³



2. SNP Reports

➤ GENERAL WASTE MANAGEMENT AT SITE

- Glass jars, tin cans, and most food related plastic containers are washed and stored until they can be shipped off site.
- Waste wood products and cardboard are burned in the authorized pit as per the LUP
- Waste is handled as per the approved operational procedures for waste handling.



2. SNP Reports

➤ ENVIROMENTAL STUDIES/SURVEYS

- Fuel tank inspections;
- Air quality monitoring;
- SNP monitoring and sampling;
- Perimeter Sump monitoring and sampling;
- Monthly North Pile, ditch, and perimeter sump monitoring.



2. SNP Reports

➤ OTHER ON-SITE ACTIVITIES

- Main camp building inspection;
- Dam and Water Management Pond monitoring;
- Collection of data from on-site piezometers and thermistors;
- Geotechnical investigations;
- Wildlife monitoring;
- Weather station monitoring



3. Water Monitoring



Fig 1: SNP Sampling Stations



3. 2022 WATER MONITORING SCHEDULE

Monitoring Station	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
02-02 North Pile	N											
02-05 Run off Rock Pad	N											
02-06 Runoff Quarry	N											
02-11 WMP Dam	N											
02-14 WMP	N											

N= None



3. 2022 WATER MONITORING SCHEDULE

Monitoring Station	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
02-15 Water Intake	x	x										
02-16i Sewage Effluent	x	x										
02-17b Treated Effluent												
02-20d 02-20e 02-20f Diffuser Stations												

X = sampled



3. WATER MONITORING

Results:

- 2021 Reported TDS at Snap Lake mixing zones:

	TDS (mg/L) Jun	TDS (mg/L) Jul	TDS (mg/L) Aug	TDS (mg/L) Sep
SNP 02-20d	245	235	216	207
SNP 02-20 e	269	231	217	208
SNP 02-20 f	246	235	217	209



4. INCIDENTS AT SITE

- March 03, 2022, Greywater Spill (approx. 15 L)
 - While transferring greywater from the Sewage Treatment Plant (STP) via a vacuum truck, the operator was unaware that ice was picked up in the hose
 - When the operator turned off the suction, the ice blockage was immediately released, causing a back flow of greywater down the line
 - The greywater spill was released to snow-covered ground
 - Affected snow and snow underlying the release was immediately cleaned up and stored in a metal bin
 - After cleaning up, no trace of spill remains in the area.



4. INCIDENTS AT SITE

- March 11, 2022, Greywater Spill (less than 1L)
 - The vacuum tank used to transfer greywater to storage containers had frozen greywater
 - During the storage period, the frozen material thawed
 - When the operator tried to reinitiate the vacuum, the thawed greywater was discharged
 - The greywater spill was released to snow-covered ground
 - Affected snow was vacuumed up and added to waste at the sewage treatment plant
 - After cleaning up, no trace of spill remains in the area.



4. INCIDENTS AT SITE

- April 7, 2022, Diesel Exhaust Fluid Spill (approx. 400 L)
 - While a worker was moving totes of diesel exhaust fluid at the Logistics Building
 - The plastic bottom of a tote was unintentionally open
 - This resulted in approx. 400L of diesel exhaust fluid released to the snow-covered ground
 - Immediately the release of any further Fluid was stopped
 - The contaminated snow and soil was cleaned up and disposed of into yellow drums
 - The yellow drums were transferred to the appropriate Waste Management area.



4. INCIDENTS AT SITE

- Diesel Fuel Non-Reportable Spills at site
 - There were two non-reportable spills in the month of February
 - Both occurred on the winter road where 3 L and 4 L of diesel fuel were spilled in separate events
 - Clean-up activities were completed immediately, and hydrocarbon impacted snow was collected and removed for proper disposal at Margaret Lake Camp.



5. Site Inspection

- An inspection of the Snap Lake Winter Road and the Snap Lake fuel transfer area was conducted by Inspectors Joe Heron and Jamie Steele on March 17th, 2022
- The inspection was carried out to ensure operating conditions under the LUP are satisfied
- The winter road construction was complete and the road was opened to traffic on March 2nd, 2022
- The Permittee must continue to diligently monitor the winter road conditions during haul operations to ensure an adequate surface coverage of a 10 cm minimum is maintained on the portages
- Upon closure of the Winter Road, all gravel deposited on the road portages and lake ice surfaces must be scraped back in such a manner as to prevent the flushing of sediments into water bodies during the spring freshet



5. Site Inspection



1: Looking south at the Snap Lake Winter Road approach on Portage #1. A grader under repair can be seen staged on the right of the photo.



5. Site Inspection



2: Looking north at the ramp along Portage #1 on the winter road



3: Looking south at the Portage #11 access ramp



5. Site Inspection



4: As seen, lake ice portions along the winter road have been cleared to width



5: This grader was staged on the north of Portage #1 on Mackay Lake and was under repair



5. Site Inspection



6: As seen, there was secondary containment under the area of the front wheel spindle. However, the containment did not appear satisfactory and hydrocarbons were dripping onto the lake ice

7: Secondary containment structures under parked equipment, such as this drip board, must be properly maintained.



5. Site Inspection



8: This grader was parked on the lake ice on the south of Portage #1



#9: As seen, there was properly maintained secondary containment under the grader



5. Site Inspection



10: Looking south at the access ramp from the winter road onto the Snap Lake Mine property

#11: This truck parking/staging laydown is adjacent to and west of the Snap Lake Mine winter road access ramp



5. Site Inspection



12: Looking south at the truckers rest area with septic tank. This trailer is staged immediately south of the bulk fuel offload station.



#13: There appeared to be adequate & readily accessible spill response materials and secondary containment at the bulk fuel transfer station ramp.



5. Site Inspection



#14: Looking east at the bulk fuel offload area. The pump with the hose line will be the primary offload station and a secondary offload station can be seen in the bottom-centre of the photo



6. MVLWB Regulatory Update

- De Beers Snap Lake – North Pile Management Plan (NPMP) Version 4.1 – Confirmation of Conformity
 - On March 3, 2022 The MVLWB issued a letter indicating that the changes requested have been addressed
 - Therefore, the MVLWB approved the North Pile Management Plan Version 4.1



6. MVLWB Regulatory Update

- De Beers' Snap Lake – North Pile Design and Construction Plan (NPDCP) Version 1 – Invitation to Submit Recommendation for Focused Review
- On March 10, the Board distributed the revised Plan for a focused review on
- the PK Toe Berm associated sections of the Design and Construction Plan and
- the assessment of spatial extent of the impact from dam breaching



6. MVLWB Regulatory Update

- Acid Rock Drainage and Geochemical Characterization and Management Plan (ARDMP) v1- Invitation to Submit Recommendation for Focused Review
- On March 16, the Board submitted the ARDM Plan for a focused public review



6. MVLWB Regulatory Update

- Invitation to submit recommendations for AEMP Design Plan Version 1.2
- The Aquatic Effects Monitoring Program (AEMP) Design Plan is required by Licence MV2019L2-0004, Part G, and was submitted by DeBeers in 2021.
- The Board approved AEMP Design Plan Version 1.1 on an interim basis
- De Beers submitted an updated version of the AEMP Design Plan, Version 1.2 on April 1, 2022
- On April 12, the Board invited to submit comments on this updated Plan.



7. DeBeers News

- DeBeers completed the construction of the Snap Lake spur winter road, and it was opened to traffic on March 2nd, 2022
- On March 1, 2022, activities at the site associated with the Closure phase, as authorized by LUP and Water Licence, began
- Closure activities will involve demolition of structures, stabilization of the North Pile, site reclamation and revegetation, and transition from active water management to passive water management



7. DeBeers News

- On March 1, MetNuna JV assumed care and maintenance and Mine closure activities at the site

The following project activities are undertaken by MetNuna JV :

- ✓ Preparation of site services and utilities
- ✓ Camp and facilities upgrades
- ✓ Equipment maintenance
- ✓ Utilities decommissioning



7. DeBeers News

- On March 1, the following project activities were undertaken by MetNuna JV (cont.) :
 - ✓ Upgrading of the camp and related facilities to accommodate increased occupancy during Closure
 - ✓ Decommission, removal and transport off site of the utilities building main power plant



9. SLEMA ACTIVITIES

➤ SLEMA reviews in March & April 2022:

Review of the Surveillance Network Program - SNP
monthly reports

- Review of February and
- March 2022 SNP Reports



9. SLEMA ACTIVITIES

- SLEMA reviews in March & April 2022:
 - Review of North Pile Design and Construction Plan (NPDCP) Version 1
 - Review of Acid Rock Drainage and Geochemical Characterization and Management Plan (ARDMP)
 - Review of the AEMP Design Plan Version 1.2



9. SLEMA ACTIVITIES

➤ SLEMA Board Meeting in April

On April 13, 2022, a SLEMA Board Meeting was held;

The meeting was in person in Yellowknife.

